

Before the
COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of)
)
ADJUSTMENT OF RATES AND TERMS FOR)
PREEXISTING SUBSCRIPTION SERVICES) Docket No. 2006-1 CRB DSTRA
AND SATELLITE DIGITAL AUDIO RADIO)
SERVICES)
)

**JOINT PROPOSED FINDINGS OF FACT, SUBMITTED BY
SIRIUS SATELLITE RADIO INC. AND XM SATELLITE RADIO INC.**

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INDEX OF WITNESS TESTIMONY BY CITATION FORMAT

<u>Citation Format</u>	<u>Witness Name</u>	<u>Type of Testimony</u>	<u>Party</u>	<u>Exhibit Number</u>
Benston WRT	George Benston	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 74
Blatter WDT	Steven Blatter	Written Direct	Sirius	SIR Ex. 36
Bronfman WDT	Edgar Bronfman, Jr.	Written Direct	SoundExchange	SX Trial Ex. 59
Butson WDT	Sean Butson	Written Direct	SoundExchange	SX Trial Ex. 57
Butson WRT	Sean Butson	Written Rebuttal	SoundExchange	SX Trial Ex. 123
Chmelewski WDT	Edward Chmelewski	Written Direct	SoundExchange	SX Trial Ex. 64
Ciongoli WDT	Charles Ciongoli	Written Direct	SoundExchange	SX Trial Ex. 67
Ciongoli WRT	Charles Ciongoli	Written Rebuttal	SoundExchange	SX Trial Ex. 118
Cohen WDT	Steve Cohen	Written Direct	Sirius	SIR Ex. 35
Coleman WDT	Jeremy Coleman	Written Direct	Sirius	SIR Ex. 34
Cook WDT	Stephen Cook	Written Direct	XM	XM Ex. 6
Eisenberg WDT	Mark Eisenberg	Written Direct	SoundExchange	SX Trial Ex. 53
Eisenberg WRT	Mark Eisenberg	Written Rebuttal	SoundExchange	SX Trial Ex. 126
Elbert WRT	Bruce Elbert	Written Rebuttal	SoundExchange	SX Trial Ex. 122
Frear WDT	David Frear	Written Direct	Sirius	SIR Ex. 39
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Hauser WRT	John Hauser	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 77
Herscovici WRT	Steven Herscovici	Written Rebuttal	SoundExchange	SX Trial Ex. 130
Heye WDT	Christine Heye	Written Direct	Sirius	SIR Ex. 37
Joachimsthaler WRT	Erich Joachimsthaler	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 73

PUBLIC VERSION

<u>Citation Format</u>	<u>Witness Name</u>	<u>Type of Testimony</u>	<u>Party</u>	<u>Exhibit Number</u>
Karmazin WDT	Mel Karmazin	Written Direct	Sirius	SIR Ex. 1.1
Karmazin WRT	Mel Karmazin	Written Rebuttal	Sirius	SIR Ex. 62
Kenswil WDT	Lawrence Kenswil	Written Direct	SoundExchange	SX Trial Ex. 66
Kessler WDT	Barrie Kessler	Written Direct	SoundExchange	SX Trial Ex. 55
Kessler WRT	Barrie Kessler	Written Rebuttal	SoundExchange	SX Trial Ex. 127
Kushner WDT	Michael Kushner	Written Direct	SoundExchange	SX Trial Ex. 65
Law WDT	Robert Law	Written Direct	Sirius	SIR Ex. 42
Logan WDT	Eric Logan	Written Direct	XM	XM Ex. 2
Mantis WRT	George Mantis	Written Rebuttal	SoundExchange	SX Trial Ex. 132
Martin & Parr WRT	Daryl Martin and Russell Parr	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 75
Masiello WDT	Anthony Masiello	Written Direct	XM	XM Ex. 7
Moore WDT	Michael J. Moore	Written Direct	Sirius	SIR Ex. 38
Musey WDT	J. Armand Musey	Written Direct	Joint Sirius/XM	XM Ex. 9
Navarro WDT	Dan Navarro	Written Direct	SoundExchange	SX Trial Ex. 63
Noll WRT	Roger Noll	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 72
Ordover WDT	Janusz Ordover	Written Direct	SoundExchange	SX Trial Ex. 61
Ordover WRT	Janusz Ordover	Written Rebuttal	SoundExchange	SX Trial Ex. 119
Parsons WDT	Gary Parsons	Written Direct	XM	XM Ex. 1
Pelcovits AWDT	Michael Pelcovits	Amended Written Direct	SoundExchange	SX Trial Ex. 70
Pelcovits WDT	Michael Pelcovits	Written Direct	SoundExchange	SX Trial Ex. 68

PUBLIC VERSION

<u>Citation Format</u>	<u>Witness Name</u>	<u>Type of Testimony</u>	<u>Party</u>	<u>Exhibit Number</u>
Pelcovits WRT	Michael Pelcovits	Written Rebuttal	SoundExchange	SX Trial Ex. 124
Renshaw WDT	Simon Renshaw	Written Direct	SoundExchange	SX Trial Ex. 60
Smith WDT	Terrence Smith	Written Direct	Sirius	SIR Ex. 32
Vendetti WDT	Mark Vendetti	Written Direct	XM	XM Ex. 4
Vendetti WRT	Mark Vendetti	Written Rebuttal	XM	XM Ex. 10
Wilsterman WDT	Douglas Wilsterman	Written Direct	Sirius	SIR Ex. 33
Wind AWDT	Yoram (Jerry) Wind	Amended Written Direct	SoundExchange	SX Trial Ex. 52
Wind WDT	Yoram (Jerry) Wind	Written Direct	SoundExchange	SX Trial Ex. 51
Wind WRT	Yoram (Jerry) Wind	Written Rebuttal	SoundExchange	SX Trial Ex. 129
Woodbury AWDT	John Woodbury	Written Direct	Joint Sirius/XM	XM Ex. 8
Woodbury WRT	John Woodbury	Written Rebuttal	Joint Sirius/XM	SDARS Ex. 80

I. INTRODUCTION AND EXECUTIVE SUMMARY

A. Introduction

This statutory license proceeding pits the lucrative \$11 billion-a-year record industry¹ against the sole and still-developing satellite radio companies that, combined, are a small fraction of its size and have yet to generate either positive cash flow or a single penny of profit. Notwithstanding that satellite radio has opened a significant new market for the promotion of sound recordings; generates copyright royalties to the record labels and artists that its arch-competitor, terrestrial radio, does not; and already pays more in copyright royalties to the record industry than all other statutory licensees combined, the record industry seeks, through this proceeding, an increase ranging from roughly three to ten times in the percentage of total revenues earned by the SDARS that would be payable for the sound recording rights at issue over the 2007-2012 license period.

The SDARS today pay sound recording performance (and related ephemeral recording) license fees to the record industry in the range of 2 to 2.5% of revenues. The SDARS believe that this rate is, if anything, above what is “reasonable” in light of the governing section 801(b)(1) standards, and they have proposed fees in this proceeding, calculated on a per-play basis, that would lessen that burden somewhat. The SDARS acknowledge, however, that statutory rate-setting is not an exact science, and, through affirmative alternative approaches to fee-setting and appropriate adjustments made to certain of the benchmarks proposed by SoundExchange, have identified a cluster of rates,

¹ See SDARS Ex. 99.

in a band equivalent to between 1.2% of revenue at the low end and approximately 4% on the high end, that defines the zone of a reasonable outcome here.

These Proposed Findings of Fact and Conclusions of Law discuss in detail why the totality of the record warrants a fee at the lower end of this zone; but the surpassingly important point is that a result somewhere in this range – as opposed to the wildly higher range proposed by the record industry – is not only fully supported by the record, but is necessary to avoid threatening the continued viability of the SDARS.

SoundExchange's fee proposal calls for payment of fees beginning at 8% of each of XM's and Sirius' revenues and, keyed to subscriber growth, escalating to as high as 23% of such revenues (including revenue attributable to non-music programming and other elements of the service). Thus, as of day one, the record industry proposal would call for more than a trebling of current percent-of-revenue fee levels, with the potential that by the end of the license term, those payment levels could increase by a factor of ten – all the while applied to growing revenue. Were the pending merger of the two companies approved, the immediate impact of SoundExchange's rate proposal would be to raise the combined entity's royalties dramatically above the sum of the royalties that the uncombined entities would owe – without even a dollar of incremental revenue having been earned or a dollar in cost savings yet achieved via the combination.

To put real numbers to these divergent positions, at a per-play fee based on 1.2% of projected 2007-2012 SDARS; revenues (and assuming the entities remain separate companies), the record industry would stand to receive some \$251 million from Sirius and XM combined over the license period; at 2.5%, some \$523 million. On that same assumption, SoundExchange's proposal, by contrast, is projected to place in the record

industry's pockets some \$2.5 billion in fees from Sirius and XM combined over the license term.

Under the SoundExchange proposal, using its own expert's overly favorable financial projections for the SDARS, Sirius would not earn any net income until 2013 for Sirius and XM would not earn any net income until 2015, *i.e.*, after the license term. Sirius would not generate any net income on a cumulative basis until 2017, XM not until 2019. In other words, SoundExchange proposes leaving the SDARS with no cumulative income at all for a decade or more.

This dispute involves more than astonishingly different conceptions as to the appropriate license fee for use of the intellectual property involved. The parties also fundamentally differ in their conceptions of the very nature of this proceeding, and most particularly of its governing legal and economic framework. The SDARS invoked the protections of the statutory licensing scheme embodied in section 114(f)(1) of the Copyright Act with the understanding and expectation that

- the principal copyright right here at issue – to publicly perform sound recordings by means of digital audio transmission – is a limited right of the record companies, the exercise of which Congress has constrained in relation to the SDARS;
- the SDARS are entitled in this proceeding to have a “reasonable” license fee determined in accordance with the policies embodied in section 801(b)(1), including:
 - rewarding innovations such as those of the SDARS in “opening new markets for creative expression and media for their communications”;
 - giving due credit to the one-sided (as against the record industry) “technological contribution, capital investment, cost and risk” made and assumed by the SDARS in developing their businesses;

- assuring not merely that the copyright owners secure a “fair return” within the conception of the statute but also that the SDARS can earn a “fair income” “under existing economic conditions”;
- preventing of disruption to the “structure of the [SDARS industry] or to generally prevailing industry practices”; and
- the foregoing section 801(b) objectives invoke important policy considerations that are separate and distinct from those that normally form the calculus of a marketplace rate.

The legislative history surrounding these provisions makes clear Congress’ intent to constrain the market power of copyright owners in order to encourage the development of new digital transmission technologies.

The SDARS’ understanding of the rights implicated and the protections afforded to them in this proceeding is reinforced by 1998 amendments to the Copyright Act, which preserved the application of the 801(b)(1) policy factors to the SDARS (along with certain other pre-existing services), in contrast to the distinctly different statutory license criteria that Congress enacted for the setting of royalty rates for other emerging digital-music-using services. This alternative standard – applicable to other users but not to the SDARS – called for the setting of rates “that most clearly represent the rates that would have been negotiated in the marketplace between a willing buyer and a willing seller.” *Compare* 17 U.S.C. § 114(f)(2)(B) *with* § 114(f)(1)(B). Accompanying these legislative revisions were express statements in the legislative history affirming the intent to afford the SDARS on a continuing basis the benefits of the policy objectives set forth in section 801(b)(1) and not subject the SDARS to the new willing-buyer/willing-seller standard – in recognition that the SDARS had only recently acquired FCC licenses and were in the

process of developing their multi-billion dollar satellite/terrestrial infrastructure and nationwide distribution systems.

SoundExchange, in derogation of this legislative backdrop, has approached this proceeding from a starkly different perspective. It purports to justify the extraordinary sums it seeks through invocation of a series of fundamentally mistaken premises. Most prominently, it ignores the statutory mandate that governs fee-setting here by attempting to substitute the expressly rejected “willing-buyer/willing-seller” rate-making standard found in section 114(f)(2)(B) of the Act for the governing section 114(f)(1)(B) requirement that the 801(b)(1) guidelines are to be applied to the SDARS.

No stranger to statutory license proceedings governed by both standards, the record industry knows full well the meaningfulness of the distinction it seeks to ignore here – a distinction it has litigated over and lost, time and again. It is indisputable that, in setting rates under section 801(b)(1), the standard “is not fair market value”; rather, “[u]nlike a marketplace rate which represents the negotiated price a willing buyer will pay a willing seller, reasonable rates are determined based on policy considerations.” *Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings*, 63 Fed. Reg. 25,394, 25,399 (May 8, 1998) Those policy considerations are designed to promote the entrepreneurship demonstrated by the SDARS in opening new channels for disseminating creative expression, a critical public benefit that furthers the purpose of copyright law.

The reason for the record industry’s minimizing of, if not outright disregard for, the governing section 801(b)(1) standard is transparent. As the now completed record attests, the section 801(b)(1) policy determinants drive the setting of rates within the low

single-digit universe proposed by the SDARS, rather than at the confiscatory levels sought by SoundExchange. As the Proposed Findings of Fact and the accompanying Joint Conclusions of Law Submitted by Sirius and XM demonstrate, only rates set within the range proposed by the SDARS will, among other statutory requirements, minimize disruption to the SDARS industry, as well as enable the SDARS to earn a fair income within a reasonable period of time and, as a result, maximize the availability of creative works.

It is not surprising that the record industry attempts to avoid this congressionally mandated result by resorting to purported “benchmark” evidence from various inapposite unregulated marketplaces and pressing the fiction that the distinct statutory standards found in sections 114(f)(1)(B) and 114(f)(2)(B) are, in the end, distinctions without a difference. SoundExchange is not simply wrong as a matter of law; to adopt its premise – and the flawed benchmarks it relies upon in pressing it² – would serve to undermine the very purpose of section 801(b)(1) by significantly impairing the economic viability of the SDARS. SoundExchange’s paying of lip service to section 801(b)(1) by proposing to “phase in” its confiscatory rates over the license term to avoid disruption is but a palliative that does not even come close to avoiding disruption.

The appropriate outcome here may be unpalatable to a record industry that is belatedly seeking to adapt to fundamental changes in how consumers listen to, and purchase, recorded music – and to offset whatever degree of decline in revenues from CD

² As shown below, the evidence is clear that the rates sought by SoundExchange far exceed even those that would prevail in the “competitive marketplace” that SoundExchange’s experts purport to model.

sales has been occasioned thereby. But those woes cannot be laid at the doorstep of the SDARS (who were not even in operation when the CD sales began to decline), and it is not the role of the Judges here to attempt to restore reduced profits of the record industry occasioned by unrelated causes through the imposition upon the SDARS of billions of dollars in royalties.

B. The SDARS' Rate Proposal

The rate proposal offered by the SDARS is directly responsive to section 114(f)(1)(B)'s express invitation to the Judges to consider, in addition to the section 801(b)(1) factors, voluntary agreements reached by parties subject to rate-making under section 114(f)(1)(A) – *viz.*, the SDARS as well as the pre-existing subscription services (PSS). The SDARS' fee proposal derives from just such an agreement: the rate negotiated with SoundExchange by the PSS in 2003, covering the years 2002 to 2007 (the "PSS rate"). The appropriateness of that rate is reinforced by application of the section 801(b) factors, which support a rate low enough to permit the SDARS to generate reasonable rates of return on investment, *i.e.*, a "fair income," and provide no principled basis for a payment to SoundExchange above that level.

Specifically, the SDARS' Second Amended Rate Proposal is based on the written rebuttal testimony of Dr. John Woodbury, in which he analyzes the 7.25 percent PSS rate for sound recording public performance and ephemeral recording rights. This rate – alone among those presented by the parties in this proceeding – has the following pertinent attributes as a point of reference for the Judges' analysis: (1) as noted, it is specifically contemplated by section 114(f)(1)(B) of the statute; (2) it was agreed to in anticipation of the application of section 801(b)(1), such that, as acknowledged by both

parties' economists, it can be assumed to reflect the parties' assessment of the statutory factors; and (3) it involves a similar buyer, the same seller, and the same rights as are at issue here. (The chart appearing as Appendix B to the SDARS' Proposed Findings of Fact compares the various benchmarks proffered by the parties against the list of criteria identified by Dr. Woodbury during the rebuttal phase.)

Dr. Woodbury conservatively adjusts the PSS rate to account for (i) the end-to-end functionality (programming, infrastructure, distribution, and retail customer service) provided by the SDARS but not by the PSS, which is distributed via a cable television provider's infrastructure not financed or developed by the PSS, and (ii) the significant amount of non-music programming on the SDARS. As Dr. Woodbury demonstrated in his written rebuttal testimony, the "hand-off-provider" versus end-to-end service cost ratio he uses to adjust the PSS rate in order to credit the SDARS for their investment in and continuing cost of their end-to-end distribution networks and customer service, and for the significant and necessary costs they incur to subsidize satellite radios, will remain relatively stable during the license period. Dr. Woodbury makes a further adjustment for non-music programming that is extremely conservative in that it does not account for the increasing reliance by the SDARS on non-music programming as a percentage of their content offerings. He confirms the reasonableness of his calculation with reference to the monthly per-subscriber fee received by the primary PSS, Music Choice, adjusted for the difference in listening time as between Music Choice and the SDARS and divided by the average revenue per user for the SDARS, as discussed in Part VI of the Proposed Findings. The result of this analysis is a rate equaling 1.20% of the SDARS' revenues.

The SDARS have translated this resulting percentage-of-revenue rate into a per-play rate of \$1.60 by dividing the number of compensable plays on the SDARS by the dollar value of the percentage-of-revenue rate as applied to the SDARS' projected 2007 revenues. By presenting their amended rate proposal in the form of a per-play fee of \$1.60, adjustable based on percentage increases in subscriber levels during the license term, the SDARS present a royalty structure enabling them to manage their license fees against the amount of music they actually play and thus avoid generating windfall revenues to the record industry resulting from aspects of the services (*e.g.*, talk and sports programming) to which the record industry does not provide any intellectual property.

C. Corroborative Evidence

The reasonableness of the PSS-derived rate proposed by the SDARS (which would produce over a quarter of a billion dollars in royalty payments by the SDARS during the license period) is buttressed by other evidence – including other apposite agreements and even a properly adjusted SoundExchange benchmark – which generate rates ranging from 2% to 4.2% – or \$2.67 to \$5.61 per play. All but one of these data points are taken from services not subject to the criteria implicated in section 801(b)(1) rate-making – and therefore overstate the appropriate fee level for this proceeding.³ They nonetheless corroborate the reasonableness of the rate range in which Dr. Woodbury's PSS-generated rate falls.

³ Many of the data points also overstate the appropriate SDARS fee level for other reasons, as discussed in these Proposed Findings of Fact.

1. The Prior SDARS-RIAA Agreement (\$2.67-\$3.34/Play)

As described later in these Proposed Findings, SoundExchange elicited the core economic terms of the 2003 agreement between XM, Sirius, and SoundExchange on the record during the trial. *See infra* Part V.C; 6/6/07 Tr. 16:5-8 (Vendetti); 6/12/07 Tr. 192:6-22 (Frear); *see also* 8/15/07 Tr. 80:1-4 (Frear). The resulting testimony revealed a rate in the range of 2.0% to 2.5% of the SDARS' revenues over the five-year term of that agreement. 6/6/07 Tr. 16:5-8 (Vendetti); 6/12/07 Tr. 192:6-22 (Frear); Frear WRT ¶ 24. This agreement, involving the identical parties and conveying the very same rights and subject to 801(b) ratemaking oversight, would equate to a rate of \$2.67 and \$3.34 per Play for 2007, with increases in subsequent years scaled to the percentage increase in combined SDARS subscribers.

2. The SDARS' Musical Works Agreements (\$3.14/Play)

Dr. Woodbury also analyzed the licenses the SDARS have negotiated with the performance rights organizations (PROs) – ASCAP, BMI, and SESAC – for the public performance of the musical works underlying the sound recordings performed on the SDARS. *See generally* Woodbury AWDT at 36-40. Taken together, these agreements suggest a benchmark rate of 2.35% of revenue, or \$3.14 per Play for 2007. Woodbury AWDT at 38 (calculating musical works rate based on XM payments to ASCAP and implied payments to BMI and SESAC); 6/12/07 Tr. 307:09-309:6 (Woodbury) (same). These musical works license agreements involve the same purchaser (the SDARS) and same right (public performance only) as the statutory license in this proceeding, albeit under section 106(4), as opposed to 106(6), of the Act, as well as sellers in a comparable economic position to the record labels. 6/12/07 Tr. 246:9-247:7, 306:10-17, 307:3-8

(Woodbury). Like the section 114 license, the musical works licenses also are subject to court supervision to ensure their reasonableness, but they are not subject to the section 801(b)(1) factors. *Id.* at 247:21-248:17, 306:18-307:2 (describing antitrust consent decree governing ASCAP and BMI); Woodbury AWDT at 38 (same).

3. Custom Radio Agreements (\$3.43/Play)

The record in this proceeding reveals another set of marketplace record company agreements with rates that corroborate the SDARS' rate proposal: so-called "custom radio" services which, like the SDARS, offer noninteractive, radio-like stations, albeit "customized" to a particular user's tastes rather than pre-programmed by the service or genre-based. For example, Yahoo!'s custom-radio agreement with Sony pays \llbracket \rrbracket for its subscription Launchcast service. 6/18/07 Tr. 289:20-291:13 (Eisenberg); *see also* Woodbury WRT ¶¶ 78-79 and nn.53-55 (describing other similar Yahoo! custom radio rates. As Dr. Woodbury demonstrated in his rebuttal testimony, when adjusted for the differing functionality and non-music programming of the SDARS – which one must do for a rate from a service provider that uses the existing Internet for distribution and existing computers for reception – the Yahoo!-Sony deal equates to an SDARS rate of 2.57% of revenue, or \$3.43 per Play. Woodbury WRT at 29-31; *see also* Noll WRT at 115-16. Although the rates from these custom radio services like Yahoo! would still need to be adjusted to account for the fact that the customized radio service is much more personalized than the SDARS and not subject to the section 801(b)(1) rate standard, they nonetheless represent a rate from a service far closer in functionality to the SDARS than the interactive services relied upon by Professor Ordovery.

4. Dr. Pelcovits' Non-Music Programming Benchmark (\$4.69/Play)

SoundExchange economist Dr. Pelcovits offered as a benchmark for the SDARS the percentage of revenue that the SDARS pay for non-music programming. *See generally* Pelcovits AWDT at 8-11. Dr. Pelcovits' non-music benchmark and its many conceptual and empirical flaws are discussed in a separate section of these Proposed Findings. *See* Part VII.D. However, if just the major errors with the Pelcovits analysis were corrected – for example, by calculating the non-music royalty percentages using the SDARS' 2007-2012 revenues and costs rather than relying on a year, 2006, that is not even in the license term, and by accounting for the proportion of the SDARS' non-music expenditures that reflect payments directly offset by net advertising revenues rather than for content – Dr. Pelcovits' data would point to an SDARS rate much closer to that proposed by Dr. Woodbury than that proposed by SoundExchange. *See* Part VII.D.3. Indeed, as Professor Benston testified, making just the two straightforward corrections mentioned above reduces the SDARS' non-music programming fees to of revenue – or \$4.69 per Play. Benston AWRT at 10-11 and Tbls. 1, 1A, 1B. That result still significantly overstates the appropriate sound recording license fee because, among other things, (i) it does not adjust for the many additional rights and benefits bargained and paid for by the SDARS in their non-music programming deals (*e.g.*, use of logos, promotional appearances, direct mentions, etc.) that are not similarly obtained under the sound recording statutory license, and (ii) it is not based on section 801(b).

5. Other Supporting Testimony

Two other pieces of evidence bear mention. First, the testimony of Professor Noll clearly demonstrates how, even under SoundExchange's incorrect "forward-looking cost"

standard, a royalty rate that allows the SDARS to receive a competitive return on depreciation and accumulated deficit would be in the range of the rate proposed by Dr. Woodbury, if not close to zero. Second, the testimony cited in Part V.I of the Proposed Findings also clearly shows that a rate above 4.0% or 4.2% of revenue – that is, approximately double the level at which XM and Sirius have booked sound recording royalties in their financial records – would be disruptive of the SDARS businesses and thus directly in contravention of the fourth section 801(b)(1) factor.

The combination of the foregoing benchmarks (each with its relevance and imperfections) presents a body of evidence bounding **a range of reasonable rates from 1.2% to, at the very most, 4.2% of revenue (or \$1.60 - \$5.61/Play)**. Based on the facts and reasoning set forth in the sections of these Proposed Findings addressing the 801(b)(1) factors, the SDARS have offered a rate proposal at the lower end of that range.

D. SoundExchange's Rate Proposals

SoundExchange compounds the error of its reliance on the mistaken interpretation of section 801(b)(1) discussed above by resort to purported “willing-buyer/willing-seller” benchmarks for rate-setting that are anything but reasonable. Michael Pelcovits, appearing previously as SoundExchange's expert in the 2005-1 webcasting proceeding, there testified, and reconfirmed here, that:

- a benchmarking approach to rate-setting is superior to other potential approaches
- such benchmarking is invited by the statute
- in examining comparative rates, it is safer to rely on the outcomes of actual negotiations rather than on purely theoretical premises that yield academic predictions of rates, and

- one needs to avoid constructing a benchmark rate from what might constitute an outlier.

Dr. Pelcovits proceeded to list “what constitutes a good benchmark”: the same sellers; the same buyers; the same “product,” namely, a digital audio transmission of a sound recording (*i.e.*, the same rights); the same music; and the same ability to use the music for various commercial purposes.

Reappearing for SoundExchange in this proceeding, Dr. Pelcovits abandoned virtually all of these touchstones. He proffered in his original direct testimony here two ostensibly optimal benchmarks for valuing the SDARS’ performances of sound recordings: (a) a one-of-a-kind, non-music content deal between Sirius and talk show personality Howard Stern and (b) application of a “Shapley” solution to a game theory model to divide a surplus that was estimated (and admittedly overstated by a different SoundExchange expert) to be generated by the SDARS’ businesses as of 2012 – in other words, he resorted to the very form of academic, theoretical modeling exercise that Dr. Pelcovits cautioned against in sworn testimony some five months earlier.

Dr. Pelcovits’ earlier advice proved sound. The hearing record demonstrated the wholly inapposite nature of the Stern contract as a measure of the appropriate sound recording performance royalty. The testimony also exposed critical errors in applying the Shapley surplus model to this situation and the misuse of single-year (2012) financial projections on which the results were based.

Another basic flaw pervades SoundExchange’s fee models: virtually all are based on an over-valuation of the sound recording performance right in the Wind consumer survey. As Professor Hauser demonstrated, the single survey question on which SoundExchange relied, systematically over-valued the SDARS’ music programming

because it was based on the assumptions that music programming was the first programming removed (the “tires on the car” error). It also incorrectly treated music as “all or nothing” rather than considering increments of music. Finally, Professor Wind attributed essentially the entire value of the SDARS’ music programming to copyrighted sound recordings. As Professor Hauser’s Internet survey showed, much of the value of that programming results from (i) the SDARS’ own contributions and (ii) non-copyrighted music.

1. Howard Stern

The hearing record shows that Dr. Pelcovits’ analysis deriving a proposed percentage-of-revenue sound recording rate from the deal between Sirius and Howard Stern is invalid in numerous respects and should be disregarded. The Stern deal does not meet the criteria for a good benchmark, which would involve similar buyers and sellers and very similar products (“the same music, the same ability to use the music for commercial purposes,” [Pelcovits]). Regarding the Stern transaction, the proposed benchmark and the SDARS’ music rights are too dissimilar, with, among other things, dramatically different opportunity costs. Further, the Stern deal is a single, atypical data point – a one-of-a-kind transaction negotiated under extraordinary circumstances. It is the paradigmatic outlier of the type Dr. Pelcovits previously cautioned against relying on.

In addition, the Stern deal does not reflect the section 801(b)(1) factors, rendering it an unsuitable benchmark on its face. What is more, the deal provided Sirius with important rights and enormous value that do not accompany the sound recording performance license at issue here. Among the many benefits Sirius expected to receive, beyond the value of the program content itself, were: (i) substantial advertising revenues;

(ii) the right to use and associate itself with the Howard Stern brand; (iii) immediate publicity and name recognition; (iv) direct endorsements of its service by Stern and ongoing promotional benefits; and (v) enhanced credibility with key business partners of Sirius, such as automobile manufacturers and retail outlets. Sirius also received the important added value associated with being granted the exclusive right to broadcast Stern's radio programming as well as the exclusive Internet radio rights to such programming.

The Stern benchmark is further rendered invalid by its flawed economic theory. As stated by Professor Benston, "[U]se of Howard Stern's contract as [a] meaningful indicator[] of the value of sound recording performance right to the SDARS [is] contrary to basic economic reasoning." Benston AWRT at 6. Going beyond that, the Stern benchmark (as presented by Dr. Pelcovits) relies on flawed and inaccurate inputs and figures that lead to unreliable and inaccurate results, as discussed in Part VII.C of the Proposed Findings.

2. Surplus/Shapley Value Analysis

This SoundExchange approach to rate-setting is premised on calculation of a theoretical "surplus" projected to be earned by Sirius and XM in the last year of the license term (2012). From this hypothesized surplus, calculated by SoundExchange expert Sean Butson three different times with three different sets of results, Dr. Pelcovits developed a proposed rate by dividing the theoretical surplus in accordance with the "Shapley" cooperative game model.

This methodology was predicated on the express assertion by Dr. Pelcovits that "reliable projections" of the SDARS' expected revenues in 2012 were available. Quite to

the contrary, the hearing record demonstrates the completely speculative, volatile, and unreliable nature of such projections for a time frame as far out as 2012 – or, indeed, for earlier years of the license term as well. This reality of the SDARS marketplace is reflected in the dramatic changes that Mr. Butson made to his “reliable” projections in a matter of months from the time he initially sponsored them.

Equally flawed is a second assumption underlying this analysis: that by the year 2012, the SDARS would be mature and profitable businesses – propositions that neither Mr. Butson nor Dr. Pelcovits was able to support on the stand. No less fatal to this presentation was the fact that, while the model is intended to set rates for each of the years 2007-2012, Dr. Pelcovits presented calculations for only one of those years – 2012 – the year, not coincidentally, for which the projections were most favorable to SoundExchange.

Application of the surplus/Shapley model to the SDARS’ situation was shown to suffer from other crippling flaws. While purporting to capture all of the SDARS’ costs, Dr. Pelcovits’ use of the model in fact ignored most of the costs incurred in building the businesses prior to 2012 – an omission amounting to billions of dollars. As SDARS expert Professor Roger Noll testified, Dr. Pelcovits compounded this error by underestimating the forward-looking costs the model was claimed to measure.

More significantly, as Professor Noll explained, the Shapley value model is not an appropriate tool for allocating any surplus, even if one were reliably calculable. In a nutshell, “it is derived from game theory that is based on assumptions that are not satisfied by the problem of determining performance rates.” Noll WRT at 78. In addition, Professor Noll and Dr. Woodbury demonstrated at the hearing that Dr. Pelcovits

rigged his game, applying the Shapley model in a biased manner that both ignored reality and favored SoundExchange, producing a monopoly pricing result that is antithetical to section 801(b)(1).

The fatal flaws in the Stern and surplus/Shapley model analyses leave SoundExchange with three remaining arguments to support its rate proposal: one based on certain selective alternative record company benchmark agreements offered by another of its experts, Janusz Ordover; a second based on wholly inapposite DBS television service benchmarks; and the third, a subsequently developed theory based on the SDARS' payments for the rights to non-music programming in general. These benchmarks also fared poorly under trial scrutiny.

E. Ordover Benchmarks

At the hearing, Professor Ordover knew remarkably little about the purported benchmark agreements he identified – having relied entirely on his staff to review and assess them. On examination, the various proffered agreements – spanning permanent audio download service, over-the-air download service, ringtone service, portable and non-portable interactive subscription service agreements, and even fees paid for content by direct broadcast satellite television services – were shown to be for different rights (than SDARS sound recording performance rights) sold to different types of services with different costs and functionalities, thereby failing to meet the most basic requirements for qualifying as valid benchmarks. Professor Ordover failed to take account of virtually any of the many distinguishing attributes of this array of agreements – perhaps most notably making no adjustments for the different cost structures of the service providers involved relative to SDARS.

Nor do these proffered benchmarks reflect the section 801(b)(1) factors, and they involve non-SDARS services, such that, by definition, they cannot and do not take account of the SDARS' capital investment, cost, risk, and creative contribution or provide a fair income to the SDARS. What is more, SoundExchange failed to establish that the selected contracts reflect the industry norm. In fact, in numerous instances, it was demonstrated at the hearing that they do not. In others, it was shown that the markets are unstable and that pricing has varied widely over time. In sum, these agreements, individually and collectively, are not of meaningful probative value in this proceeding.

F. The SDARS' Non-Music Programming Expenses

In his Amended Written Direct Testimony, Dr. Pelcovits asserted that the total amount paid by the SDARS for "non-music content" (excluding amounts paid by Sirius to Howard Stern) provides another benchmark for the sound recording rights here at issue. As the SDARS demonstrated in their rebuttal testimony, Dr. Pelcovits' use of this aggregate non-music, non-Stern benchmark is conceptually misguided – it does not meet the criteria (discussed above) that define a good benchmark and relies on invalid and misapplied economic theory. In Professor Benston's words, Dr. Pelcovits' approach is "totally inappropriate" and "doesn't make any economic sense." In other words: "It's just nonsense." 8/20/07 Tr. 80:6-15; *id.* 106:15-107:4 (Benston).

The hearing record further reveals that even if the benchmark were conceptually valid, Dr. Pelcovits implemented it incorrectly and in a biased manner that dramatically inflates the resulting implied sound recording license fee. Although he declared 2012 to be the right year for analysis when evaluating his hypothetical surplus, for his non-music

benchmark, Dr. Pelcovits relied on a year not even in the relevant license period (2006) to construct his percentage of revenue represented by non-music programming costs, thereby distorting the purported ratio that such costs bear to SDARS revenues by failing, among other things, to reflect the fact that the non-music programming is contractually negotiated and fixed over a long-term contract spanning the new license period. He also failed to take account of the advertising revenues earned by the SDARS on non-music channels, which offset the fees paid for non-music programming and are not generated by the SDARS' music channels.

Simply applying Dr. Pelcovits' analysis to the license years at issue in this case (2007-2012) and properly taking account of offsetting revenues from advertising on the non-music channels would result in an implied sound recording license fee in the range of [[]] of revenue – far less than the fee Dr. Pelcovits calculates.

Moreover, Dr. Pelcovits fails to take account of the fact that the fees paid by the SDARS under their non-music content deals (and included in Dr. Pelcovits' analysis) include payment for a basket of rights and benefits obtained by the SDARS in addition to the right to program content (which is the only right at issue here). In particular, the SDARS presented evidence at the hearing that pricing of the key non-music content deals forming the basis of Dr. Pelcovits' analysis include the cost of significant rights such as: (i) trademark and brand exploitation rights; (ii) the endorsement of the SDARS by well-known celebrities and sports leagues; and (iii) exclusivity. *See, e.g.*, Benston AWRT at 5, 9-10. Dr. Pelcovits also fails to take into account the value of publicity expected and received by the SDARS when they entered into the non-music contracts.

G. Application of Section 801(b)(1)

Section 801(b)(1), as properly interpreted and applied to the record evidence, supports the SDARS' fee proposal. As the SDARS demonstrate herein, the record evidence as to their parallel corporate histories – how they got where they are and where they appear to be heading – qualifies them under section 801(b)(1) for rates low enough to preserve the potential to reap the benefits of their vision and investment in pioneering satellite radio services without having those benefits siphoned off by a recording industry that played no role, and incurred no costs or risks, in connection with the launch or operation of the SDARS.

1. Maximizing availability of creative works

The first 801(b)(1) objective – maximizing the availability of creative works to the public – is fostered by the dissemination as well as by the creation of works of expression, as discussed in the SDARS' Proposed Conclusions of Law. The broadcast of sound recordings by the SDARS makes them available for consumption by their subscribers continuously across the country (whether at home or in the automobile). The SDARS must be credited for offering, on more than 60 commercial-free channels each, a far wider diversity and depth of music than is available on terrestrial radio, with its increasingly narrow playlists. In addition to performances of a great breadth and depth of sound recordings, the SDARS' music programming includes original features such as artist profiles and interviews, artist-hosted shows, live concerts, and in-studio performances. The SDARS provide valuable exposure for niche genres such as bluegrass, folk, gospel, and jazz, new artists, non-mainstream work by established artists, and deep catalogue selections that cannot be heard in even major terrestrial radio markets.

PUBLIC VERSION

In addition, the SDARS have created extensive non-music sports, talk, and entertainment programming that also must be taken into account under this factor.

As Professor Noll testified, availability of creative work to the public will be maximized by rates that are as low as possible (consistent with not impacting the supply of music), as lower rates lead to lower prices, which will increase penetration of the services. Conversely, higher rates will have the opposite effect, contracting the availability of sound recordings and other music and non-music content to the nation's consumers, as the SDARS will have no choice but to alter their business models in response to higher rates.

On the other hand, as SDARS' expert Dr. John Woodbury testified that even if the SDARS were required to pay the PSS (Music Choice) rate without any downward adjustments, *i.e.*, 7.25%, it "would likely have an undetectable effect on increasing the supply of sound recordings," Woodbury AWDT at 43, an assessment confirmed by evidence that SoundExchange royalties are, and even under SoundExchange's proposal would be, a relatively small fraction of total record-company revenues.

Professor Noll further explained that SoundExchange failed to analyze the magnitude of the "inducement effect" – the extent to which additional profits are necessary to induce additional output from recording artists, in particular "superstar" artists who already earn "excess" profits and for whom increased demand will lead to higher prices, not more output; in other words, there will be no "inducement effect." By contrast, the exposure on satellite radio of music that is rarely, if ever, played on terrestrial radio, such as jazz, folk, and international music will likely generate interest that will lead to record sales and a positive "inducement effect."

In sum, this objective favors the SDARS; at the very least, it entitles them to equal credit.

2. Fair return/fair income

The second of the section 801(b)(1) objectives – fair return to the copyright owner and fair income to the copyright user under existing economic conditions – implicates the economic principle of fairness, defined as a risk-adjusted competitive return on investment, as Professor Noll testified. Assessing “fair return” to the record companies under this criterion, Professor Noll explained that if (as the record shows) satellite radio does not substitute significantly for other sources of record-company revenues, and if (as the record also shows) the record companies currently earn a competitive return on investment (notwithstanding declining CD sales), the concept of “fair return” does not justify increasing the SDARS’ royalty fee.

As Professor Noll explained, an economically valid concept of fairness must distinguish between income necessary to induce supply and income that is a form of rent rather than a reward for effort and sacrifice. In that regard, as the recording industry incurs no additional costs of any significance in connection with satellite radio, and there is no evidence that higher rates are necessary to induce supply, there is no justification for a rate significantly above zero.

Nor is a rate significantly above zero justified by evidence of sales displacement caused by the performance of licensed sound recordings on the SDARS, which was the specific concern that led to the creation of a digital sound recording performance right in 1995. Professor Noll explained that there is no evidence of substitution by satellite radio for sources of music other than terrestrial radio that is attributable to the playing of

compensable sound recordings on the SDARS. To the contrary, he testified that if satellite radio exposes listeners to music they otherwise would not know about, it would not reduce, and may well increase, sales of music. Moreover, even if SDARS airplay did lead to an overall reduction in CD sales – of which there is no credible evidence⁴ – there is no basis for the Judges to determine an appropriate license fee based on industry-wide statistics rather than on the effect of airplay on individual firms (*i.e.*, the unilateral, independent competitive behavior of individual record companies). At the firm-specific level, the abundant trial record evidence of record-company expenditures on promoting sound recording performances on the SDARS suggests an understanding by the record companies that the promotional effects of the SDARS outweigh any substitutional effects, which points toward a zero royalty under traditional concepts of economic fairness. The SDARS' rate proposal, however, will in fact result in the payment of over a quarter of a billion dollars in royalties to the recording industry over the license period.

With respect to the SDARS, “fair income” requires a competitive reward for their effort and sacrifice in the past (*i.e.*, historical investments) and on a forward-looking basis. Professor Noll demonstrated that SoundExchange's position, advanced through Dr. Pelcovits and Mr. Butson, that the potential for recovery of start-up losses need not be considered in assessing fair income, is simply wrong as a matter of economics, even

⁴ The only evidence offered by SoundExchange purporting to show that listening to satellite radio substituted for the purchase of CDs and music downloads consisted of two consumer surveys, by Professor Wind and by George Mantis. Professor Wind's survey was properly excluded by the Judges as unreliable and replete with errors. Mr. Mantis' survey is entitled to no weight. That survey – apart from other methodological flaws – failed to demonstrate a causal effect between listening to satellite radio and any decline in purchases.

under the competitive market paradigm advocated by SoundExchange, and is untenable as a matter of policy. Indeed, Professor Ordover, Dr. Herscovici, and even Dr. Pelcovits himself acknowledged that the potential for recovery of *all* investments is necessary to induce investment in the first place. Professor Noll showed that the SoundExchange fee proposal would not permit the SDARS to recover even the correctly computed forward-looking cost of their physical capital across the license term, much less total forward-looking costs or historical investments, and thus would result in expropriation of SDARS' investments that is incompatible with fairness.

In sum, the record discloses no "fairness" rationale for a royalty significantly above zero.

3. Relative contributions

The third section 801(b)(1) factor, relating to relative contributions to and risks incurred in connection with "the product made available to the public" and the relative roles in opening new markets for copyrighted works, also heavily favors the SDARS. This factor properly is construed as relating to contribution to the SDARS' services as a whole, not just to the creation of sound recordings, which constitute significant but fundamentally nonexclusive content that is available without royalty to terrestrial radio. With respect to each of the subfactors, the record reveals major contributions by the SDARS.

a. Creative contribution

The SDARS have made substantial creative contributions to their programming in order to differentiate themselves from terrestrial radio. They have developed a wide array of original entertainment, talk and news programming, much of it from scratch.

They have devoted substantial resources to hiring expert programmers to create diverse music channels with distinctive personalities that provide context for and insight into the music; and created a wealth of original music programming, including celebrity-hosted shows, branded channels such as Willie's Place on XM and Jimmy Buffet's Radio Margaritaville on Sirius, artist profiles, and live concert broadcasts. Although the record companies and artists obviously make significant creative contributions to the original sound recordings, those contributions are made independent of the SDARS and have been/would be made even if the SDARS did not exist. Moreover, post-1971 sound recordings – the only ones for which performance royalties are owed – are but one element of SDARS services that offer more non-music than music programming, as well as a substantial amount of non-compensable music programming, such as live concerts and pre-1972 sound recordings. Hence, this subfactor favors the SDARS.

b. Technological contributions

The SDARS each faced and overcame a number of daunting technological challenges in establishing the first seamless, integrated satellite radio services offering essentially uninterrupted programming to moving vehicles from coast-to-coast, accumulating some 50 patents between them in the process. Custom designing and procuring new-generation satellites, terrestrial repeaters, radio receivers, chipsets, and miniaturized antennas all required expert systems engineering skills and technological ingenuity to solve problems never before confronted on the scale and under the commercial demands faced by the SDARS. The significant ongoing in-house R&D expenses the SDARS continue to incur reflects the continuing need to innovate to remain

competitive with emerging alternative sources of music distribution. The recording industry has made no technological contributions to satellite radio.

c. Capital investment and costs

The capital investment and operating costs of the SDARS – in space- and terrestrial-based technology; in studios, content, and programming; in real estate; in obtaining regulatory approval; in operations; in personnel; in marketing and promotion; and in subsidies to manufacturers and retailers – have been enormous, totaling over \$6 billion for XM and over \$5 billion for Sirius as of year-end 2006. The SDARS detail in these Proposed Findings of Fact the substantial ongoing investments and costs needed to continue to grow their businesses in order to begin to generate positive cash flow and net income within the next several years, which depends upon increasing their subscriber bases at a reasonable cost. These costs include substantial subsidies to the manufacturers and retailers of its receivers and to auto manufacturers to induce them to pre-install the receivers in their cars as well as the cost of the exclusive non-music programming to which the SDARS have turned in order to, *inter alia*, drive subscriber growth by differentiating themselves from terrestrial radio, raise their brand profiles, and generate advertising revenues. By contrast, the recording industry has invested nothing and incurs no costs in connection with satellite radio.

d. Risks

The massive infrastructure and other investments undertaken by the SDARS in creating the first satellite radio businesses have been fraught with significant regulatory, technological, and business risks. These include the risk of not obtaining FCC licenses after having invested several years in research and development; the risk of launch failure

or in-orbit destruction of satellites and failure of other custom-designed components of the SDARS' systems; the business risk of having to attract enough paying subscribers away from terrestrial radio to cover the huge start-up losses needed to launch their services and eventually begin to generate profits; and the risk that unanticipated events in the future could require the SDARS to seek additional funding, which will be difficult to obtain if increased costs diminish the prospects that the SDARS will generate an adequate return on investment in an increasingly competitive environment.

By contrast, the record industry has received material benefits from satellite radio with no risk, including both a new source of revenue and a powerful promotional vehicle for its products.

e. Opening new markets

The SDARS have literally created a new avenue for creative expression and a new medium for its communication, *i.e.*, a new "market" in the sense that term is used in section 801(b)(1). As the evidence in this proceeding shows, satellite radio is an entirely new medium for disseminating to cars, homes, and portable devices nationwide a tremendous diversity of music and news/talk/sports/entertainment programming. The SDARS have expanded the audience for music that is not broadcast on terrestrial radio, while generating royalty revenue for the recording industry that terrestrial radio does not. All of this has been accomplished without any incremental effort or expenditure by the recording industry, which, the record shows, has courted the SDARS, seeking airplay for its records and exposure for its artists. Thus, this subfactor too favors the SDARS.

4. Disruption

The evidence as to the final 801(b)(1) objective – minimizing disruption of the structure or practices of the industries involved – is properly concerned with, among other things, not damaging the viability and liquidity of the industry, issues that squarely confront the SDARS but not the record companies in relation to the outcome of this proceeding. In the absence of any evidence that the outcome of this proceeding will have any bearing on the long-term viability of the record industry, which remains profitable, this factor must focus on the potential effects of the royalty rate on the SDARS, which, while progressing toward realization of their first profits during the license term, remain in a fragile, if improving, financial position.

The record demonstrates that the highest rate that would not significantly harm the SDARS' ability to remain viable through the license term and beyond is in the area of 4% (approximately twice the most recently negotiated rate applied to significantly increasing revenue). SoundExchange's dramatically higher fee proposal (up to 23%) would be enormously disruptive, if not catastrophic, to the industry. The projection models put together by SoundExchange expert Sean Butson, which build in the SoundExchange rate proposal, demonstrate that even assuming all of Mr. Butson's optimistic assumptions are correct – and many are not – the proposed fees would (i) postpone realization of any net income until after the license term; (ii) in the interim, extract over a billion dollars in additional royalties from each company above what they pay now; (iii) cause the SDARS to incur hundreds of millions of dollars in cumulative net losses over the license term; and (iv) imperil the companies' ability to refinance debt obligations maturing during the licenses term, thus forcing them to take on additional

debt or raise additional capital, without any near-term prospects of profitability, in order to remain liquid.

In other words, the SoundExchange proposal would gravely threaten the viability of businesses that are improving but remain fragile as they move toward ultimate success several years down the road. As Professor Noll demonstrates, even a fraction of the SoundExchange proposal would imperil the survival of the SDARS during the license term, as it would not even permit them to recover their forward-looking cost of physical capital. SoundExchange's view of disruption ignores the recovery of sunk investments, positing that the relevant inquiry is solely forward-looking. Because this analysis, if replicated in each license determination, would prevent services from ever recovering their start-up losses or past investments, it would not only undermine the incentive for start-up investment but also the incentive for ongoing investments (from debt and equity investors) to finance the new satellites and acquire the new customers needed to keep the business viable. It would destroy the incentive to undertake precisely the kind of investment in innovative technology that section 801(b)(1) is designed to foster.

Conclusion

For the foregoing reasons, more fully addressed in the SDARS' Proposed Findings of Fact and Conclusions of Law, the Copyright Royalty Judges should adopt the Proposed Rates and Terms submitted by XM and Sirius.

II. THE NATURE AND HISTORY OF THE PROCEEDING

A. The Nature of the Proceeding

1. This is a rate determination proceeding convened under 17 U.S.C. § 803(b) *et seq.* and 37 C.F.R. § 351 *et seq.* This proceeding will determine the rates and

terms for the digital public performance of sound recordings by means of a preexisting satellite digital audio radio service (“preexisting SDARS” or “SDARS”) under section 114 of the Copyright Act, as amended by the Digital Performance Right in Sound Recordings Act of 1995 (“DPRA”) and by the Digital Millennium Copyright Act (“DMCA”), and for the making of ephemeral copies in furtherance of these digital public performances under section 112.

2. The rates and terms set in this proceeding will apply to the SDARS for the period of January 1, 2007 through December 31, 2012. 17 U.S.C. § 804(b)(3)(B).

3. In determining the rates and terms applicable to the SDARS in this proceeding, Congress has instructed the Judges to consider the four policy factors set forth in section 801(b)(1) of the Copyright Act, as well as “the rates and terms for comparable types of subscription digital audio transmission services and comparable circumstances under voluntary license agreements described in [a prior subparagraph].” *Id.* § 114(f)(1)(B). The 801(b)(1) factors, in contrast to the willing-buyer/willing-seller standard that applies to other types of rate-setting proceedings such as the recent webcasting proceeding, apply to preexisting subscription services and to the preexisting SDARS. The statute’s use of the term “preexisting” refers to the fact that these services existed before the digital performance right in sound recordings was extended to webcasters and new subscription services in 1998. As explained more fully in these Proposed Findings of Fact and accompanying Proposed Conclusions of Law, the “reasonableness” inquiry pursuant to the 801(b)(1) factors is distinct from that conducted under a willing-buyer/willing-seller standard.

4. This is the first proceeding that will be decided by the Copyright Royalty Judges under the 801(b)(1) standard. Last year's webcasting case was decided under the willing-buyer/willing-seller standard of section 114(f)(2)(B).

B. The History of the Proceeding

1. Initiation of the Proceeding

5. On January 9, 2006, the Interim Chief Copyright Royalty Judge issued a notice announcing the commencement of this proceeding, together with a request for petitions to participate. *Adjustment of Rates and Terms for Preexisting Subscription and Satellite Digital Audio Radio Services*, 71 Fed. Reg. 1455 (Jan. 9, 2006). According to that notice, the purpose of this proceeding is to "determine the reasonable rates and terms for preexisting subscription and satellite digital audio radio services." *Id.*

6. All of the participants who eventually filed written direct statements filed Petitions to Participate on February 8, 2006. A voluntary negotiation period began on March 1, 2006 and concluded on May 31, 2006. *See Announcement of Negotiation Period 1* (Feb. 14, 2006). During the voluntary negotiation period, the parties were not able to come to a settlement.

2. The Direct Phase of the Proceeding

7. Written direct statements were filed on October 30, 2006 by Sirius Satellite Radio Inc., XM Satellite Radio Inc., and SoundExchange, Inc.

8. Music Choice also filed a written direct statement on the same date as the other parties, but it was able to reach a settlement on June 12, 2007 with SoundExchange as to the rates and terms applicable to preexisting subscription services for the period of January 1, 2007 through December 31, 2012. *See Notice of Settlement*

Between Music Choice and SoundExchange (June 12, 2007). As a result of the settlement, Music Choice's active participation in the proceeding and SoundExchange's participation in the proceeding with regard to preexisting subscription services ceased. From that point, the proceeding was limited to rates and terms for the preexisting SDARS, as there were no longer any preexisting subscription services participating.

9. Following the statutory sixty-day discovery period, which included document requests, document production, interrogatories, depositions, and motions practice, live testimony in the direct phase of the proceeding was taken from June 4, 2007 to July 9, 2007. The witnesses presented by each party are listed in Part III.B below.

3. The Rebuttal Phase of the Proceeding

10. Written rebuttal statements were filed on July 24, 2007. After an accelerated discovery period involving document production, interrogatories, depositions, and motions practice, live testimony was taken from August 15, 2007 to August 30, 2007. The witnesses presented by each party are listed in Part III.B below.

III. THE PARTICIPANTS IN THE PROCEEDING

A. The Parties

11. Sirius Satellite Radio Inc. is a company whose primary business is the broadcasting of a complete package of audio programming via satellite to special radio receivers. It broadcasts over 100 channels featuring a broad array of content, including live sporting event coverage, talk and entertainment channels, including channels that feature well-known celebrities, news, traffic, weather information, and commercial-free music. Sirius' history and business are described in detail in Part IV.A of the Proposed Findings.

12. XM Satellite Radio Inc. is also engaged primarily in the business of satellite broadcasting of diverse audio content to specialized receivers. XM, too, has dozens of channels devoted to music, talk, live sports, entertainment, traffic, and weather. XM's history and business are described in detail in Part IV.B of the Proposed Findings.

13. SoundExchange, Inc. is a 501(c)(6) nonprofit organization, established to facilitate the collection and distribution of royalties subject to sections 114 and 112 statutory licenses. It is currently governed by a board of directors made up of nine representatives of record labels (copyright holders) and nine performing artists. Kessler WDT at 2-3.

B. The Witnesses

1. Witnesses for Sirius

14. Mel Karmazin is the Chief Executive Officer of Sirius, a position he has held since November 2004. Karmazin WDT ¶ 2. Prior to joining Sirius, Mr. Karmazin was the President and Chief Operating Officer of Viacom Inc. from 2000 to 2004. Before that, he served as President and Chief Executive Officer of CBS Corporation from 1999 to 2000, and President and Chief Operating Officer of CBS Corporation from 1998 to 1999. *Id.* ¶ 4. Mr. Karmazin testified before the Judges during the direct phase of the proceeding on June 6, 2007 and June 7, 2007. 6/6/07 Tr. 247:14-364:14 (Karmazin); 6/7/07 Tr. 6:20-35:21 (Karmazin). Mr. Karmazin also testified during the rebuttal phase of the proceeding on August 22, 2007. 8/22/07 Tr. 131:2-253:9 (Karmazin).

15. Terrence Smith is the Senior Vice President of Engineering for Sirius. He is responsible for Sirius' engineering activities and technology developments. Smith

WDT ¶¶ 1, 3. Mr. Smith testified before the Judges during the direct phase of the proceeding on June 7, 2007. 6/7/07 Tr. 36:20-141:19 (Smith).

16. Douglas Wilsterman is the Senior Vice President and General Manager of the Original Equipment Manufacturing (“OEM”) Division for Sirius. Wilsterman WDT ¶ 1. He oversees Sirius’ arrangements with automotive manufacturers and OEM receiver makers and manages the teams that implement Sirius’ automotive distribution strategy and programs. *Id.* ¶ 3. He testified before the Judges during the direct phase of the proceeding on June 7, 2007. 6/7/07 Tr. 143:12-196:8 (Wilsterman).

17. Jeremy Coleman is the Vice President and General Manager of Talk, Entertainment, and Information Programming for Sirius. 6/7/07 Tr. 198:10-18 (Coleman). He oversees the programming on Sirius’ 54 news, talk, and other non-music, non-sports entertainment channels. Coleman WDT ¶ 1. Mr. Coleman testified before the Judges during the direct phase of the proceeding on June 7, 2007. 6/7/07 Tr. 197:21-332:14 (Coleman).

18. Steve Cohen is the Vice President of Sports for Sirius. He oversees all of the sports programming that appears on Sirius including NFL programming, NBA programming, college sports programming, and NASCAR programming. Cohen WDT ¶ 1. Mr. Cohen testified during the direct phase of the proceeding on June 7, 2007 and on June 11, 2007. 6/7/07 Tr. 333:10-362:3 (Cohen); 6/11/07 Tr. 8:12-49:6 (Cohen).

19. Steven Blatter is the Senior Vice President for Music Programming for Sirius. Blatter WDT ¶ 1. He is responsible for the content and programming of all 64 of the Sirius music channels. *Id.* ¶ 2. Mr. Blatter testified before the Judges during the direct phase of the proceeding on June 11, 2007. 6/11/07 Tr. 49:18-183:15 (Blatter).

20. Christine Heye was the Vice President of Research for Sirius from July 2002 until January 2007. 6/11/07 Tr. 185:8-15 (Heye). She was responsible for Sirius' research concerning its subscribers and their listening habits and preferences. Heye WDT ¶ 1. Ms. Heye testified before the Judges during the direct phase of the proceeding on June 11, 2007. 6/11/07 Tr. 184:19-283:14 (Heye).

21. Michael J. Moore is the Vice President of Customer Care for Sirius. Moore WDT ¶ 1. He oversees Sirius' customer call centers, which are responsible for system activation, responding to customer inquiries, account management, billing, and renewal. *Id.* ¶ 2. Mr. Moore testified before the Judges during the direct phase of the proceeding on June 11, 2007. 6/11/07 Tr. 284:20-341:11 (Moore).

22. David Frear is the Executive Vice President and Chief Financial Officer of Sirius. Frear WDT ¶ 1. He is responsible for managing the financial and accounting aspects of all areas of Sirius' business. *Id.* ¶ 3. Mr. Frear testified before the Judges during the direct phase of the proceeding on June 11, 2007 and June 12, 2007. 6/11/07 Tr. 342:12-380:18 (Frear). 6/12/07 Tr. 8:1-209:16 (Frear). Mr. Frear also testified during the rebuttal phase of the proceeding on August 15, 2007. 8/15/07 Tr. 66:8-227:11 (Frear).

23. Robert Law is the Senior Vice President and General Manager of the Consumer Electronics Division for Sirius. Law WDT ¶ 1. He is responsible for development of new Sirius radios and for sales of those radios through outlets other than OEMs, such as consumer electronics retailers. *Id.* Pursuant to agreement among the parties and permission from the Judges, Mr. Law did not appear to present live testimony,

but his written direct testimony was admitted into evidence. 6/13/07 Tr. 124:20-126:3 (admission of Mr. Law's written direct statement).

2. Witnesses for XM

24. Gary M. Parsons is Chairman of the Board for XM. He is responsible for overseeing and implementing all of XM's business operations. Parsons WDT ¶ 1. Mr. Parsons testified before the Judges during the direct phase of the proceeding on June 4, 2007 and June 5, 2007. 6/4/07 Tr. 299:10-334:12 (Parsons); 6/5/07 Tr. 5:12-118:1 (Parsons).

25. Eric Logan is the Executive Vice President of Programming for XM. He is responsible for programming and strategy for the over 170 channels on the XM radio service. Logan WDT ¶ 1. Mr. Logan testified before the Judges during the direct phase of the proceeding on June 5, 2007. 6/5/07 Tr. 119:12-283:5 (Logan).

26. Mark Vendetti is the Senior Vice President of Corporate Finance for XM. His responsibilities include directing finance activities such as forecasting, analysis, reporting and budgeting. Vendetti WDT ¶ 11. Mr. Vendetti testified before the Judges during the direct phase of the proceeding on June 5, 2007 and June 6, 2007. 6/5/07 Tr. 284:16-362:6 (Vendetti); 6/6/07 Tr. 7:12-44:4 (Vendetti). Mr. Vendetti also testified during the rebuttal phase of the proceeding on August 15, 2007. 8/15/07 Tr. 12:5-65:6 (Vendetti).

27. Stephen Cook is the Executive Vice President of Automotive for XM. He oversees XM's business relationships with automotive companies, including XM's efforts to increase factory-installed penetration of XM radios in vehicles. 6/6/07 Tr.

49:14-50:6 (Cook). He testified before the Judges during the direct phase of the proceeding on June 6, 2007. 6/6/07 Tr. 44:18-194:4 (Cook).

28. Anthony Masiello is the Senior Vice President of Operations for XM. His responsibilities include all technical aspects of XM's broadcast operation, including broadcast signal, broadcast studios, transmission equipment, network operations, and radio receivers. Masiello WDT ¶ 1. Mr. Masiello testified before the Judges during the direct phase of the proceeding on June 6, 2007. 6/6/07 Tr. 194:16-244:18 (Masiello).

3. Joint Witnesses for XM and Sirius

29. John R. Woodbury is a Vice President at CRA International, an economics and business consulting firm. He received a B.A. from the College of the Holy Cross, as well as an M.A. and Ph.D. in Economics from Washington University (St. Louis). Woodbury AWDT at 1. Dr. Woodbury has testified in Copyright Royalty Tribunal and Copyright Arbitration Royalty Panel ("CARP") proceedings. *Id.* at 1-2. Dr. Woodbury testified before the Judges during the direct phase of the proceeding on June 12, 2007 and June 13, 2007. 6/12/07 Tr. 211:2-369:17 (Woodbury); 6/13/07 Tr. 4:8-124:18 (Woodbury). He also testified before the Judges during the rebuttal phase of the proceeding on August 23, 2007. 8/23/07 Tr. 34:08-194:1 (Woodbury). The Judges accepted Dr. Woodbury as an expert on industrial organization, competition economics, the economics of regulation, and the pricing of intellectual property. 6/12/07 Tr. 222:21-223:17 (Woodbury).

30. J. Armand Musey is a chartered financial analyst and the former President and Partner of Near Earth LLC, a specialty investment banking firm based in New York, NY that focuses on the satellite industry and related telecom and media

sectors. He received a bachelor's degree from the University of Chicago and a graduate degree from the Kellogg Graduate School of Management at Northwestern University. Musey WDT ¶ 1. He previously provided expert witness testimony in *Gross v. SES*. *Id.* ¶ 5. Mr. Musey testified before the Judges during the direct phase of the proceeding on June 13, 2007. 6/13/07 Tr. 160:21-230:10 (Musey). The Judges accepted Mr. Musey as an expert financial analyst in the satellite industry. *Id.* at 133:2-16.

31. Roger Noll is a Professor of Economics *Emeritus*, a Senior Fellow in the Stanford Institute for Economic Policy Research, and Co-Director of the Program in Regulatory Policy at Stanford University. He received a B.S. with honors in mathematics from the California Institute of Technology and a Ph. D. in economics from Harvard University. He has provided testimony in several cases in the past. Noll WRT at 1. Professor Noll testified before the Judges during the rebuttal phase of the proceeding on August 16, 2007. 8/16/07 Tr. 4:17-243:17 (Noll). The Judges accepted Professor Noll as an expert in the economics of industrial organization, including the economics of antitrust regulation and intellectual property. *Id.* at 16:15-17:8.

32. Erich Joachimsthaler is the founder and Chief Executive Officer of Vivaldi Partners (formerly known as The Brand Leadership Company), a strategic marketing and brand strategy consulting firm. Joachimsthaler WRT ¶ 2. Dr. Joachimsthaler graduated from the University of Kansas with a Master's Degree of Science with emphasis in quantitative methods and a Ph.D. in Business Administration with emphasis on statistics and marketing. Dr. Joachimsthaler also completed a post-doctoral fellowship at the Harvard Business School in 1988. Joachimsthaler *Id.* ¶ 6. Dr. Joachimsthaler has served as an expert witness in several cases. Joachimsthaler *Id.* ¶ 7.

He testified before the Judges during the rebuttal phase of the proceeding on August 16, 2007 and August 20, 2007. 8/16/07 Tr. 246:2-325:7 (Joachimsthaler); 8/20/07 Tr. 5:3-52:9 (Joachimsthaler). The Judges accepted Dr. Joachimsthaler as an expert in brands and brand management. 8/16/07 Tr. 257:1-9 (Joachimsthaler).

33. George Benston is the John H. Harland Professor of Finance, Accounting and Economics at the Goizueta Business School and Professor of Economics in the College, both at Emory University. Benston WRT at 1. Professor Benston received a Ph.D. in finance and economics from the Graduate School of Business of the University of Chicago and an M.B.A. in accounting and taxation from the Graduate School of Business of New York University, and is also a registered CPA. Professor Benston has been qualified as an expert witness on numerous occasions and has testified (at depositions, hearings, or trial) over thirty-five times. *Id.* at 2-3. He testified before the Judges during the rebuttal phase of the proceeding on August 20, 2007. 8/20/07 Tr. 53:12-195:1 (Benston). The Judges accepted Professor Benston as an expert in accounting, finance, and microeconomics. *Id.* at 60:4-12.

34. Daryl Martin and Russell Parr co-authored written rebuttal testimony for Sirius and XM. Mr. Martin is the Vice President of CONSOR[®] Intellectual Asset Management and oversees the valuation division at CONSOR[®] in La Jolla, California. Mr. Martin is an honors graduate of San Diego State University with an undergraduate degree in Business Administration and a Masters in Finance. Martin & Parr WRT at 3-4. Mr. Parr is a consultant to CONSOR[®] and President of IPRA, Inc., an intellectual property valuation consulting firm. He is a graduate of Rutgers University with an undergraduate degree in Electrical Engineering and a Masters in Business

Administration. *Id.* Mr. Martin testified before the Judges during the rebuttal phase of the proceeding on August 20, 2007 and August 21, 2007. 8/20/07 Tr. 196:4-344:20 (Martin); 8/21/07 Tr. 4:6-88:8 (Martin). The Judges accepted Mr. Martin as an expert in valuation of intellectual property and intangible assets. 8/20/07 Tr. 221:5-9 (Martin).

35. John Hauser is the Kirin Professor of Marketing and Head of the Management Science Area at the MIT Sloan School of Management at the Massachusetts Institute of Technology (“MIT”). Hauser WRT ¶ 1. Professor Hauser graduated from MIT with an S.B. in Electrical Engineering, an S.M. in Civil and Electrical Engineering, and a Sc.D in Operations Research. Hauser Ex. A at 1. Professor Hauser has served as an expert witness in connection with a range of disputes, most of which involved surveys and other market research to measure customers’ attitudes, beliefs, and intentions. Hauser WRT ¶ 4. Professor Hauser testified before the Judges during the rebuttal phase of the proceeding on August 21, 2007. 8/21/07 Tr. 107:1-335:21 (Hauser). The Judges accepted Professor Hauser as an expert in marketing, marketing research, and survey design. *Id.* at 110:4-14.

36. Bruce Silverman is a marketing, advertising, and media consultant, and has worked in the industry for over 40 years. 8/22/07 Tr. 5:12-15 (Silverman). He has served as an expert witness on a number of occasions on marketing, advertising, and media issues. 8/22/07 Tr. 13:10-20 (Silverman). Mr. Silverman testified before the Judges during the rebuttal phase of the proceeding on August 22, 2007. 8/22/07 Tr. 4:21-128:13; 254:7-303:10 (Silverman). The Judges accepted Dr. Silverman as an expert in advertising, media buying, and marketing communications. *Id.* at 29:6-20.

4. Witnesses for SoundExchange

37. Yoram (Jerry) Wind is the Lauder Professor of Marketing at the Wharton School of Business at the University of Pennsylvania. Wind WDT at 1. He testified during the direct phase of the proceeding on June 14, 2007 and June 18, 2007. 6/14/07 Tr. 52:02-344:08 (Wind); 6/18/07 Tr. 4:16-91:18 (Wind). Professor Wind also testified during the rebuttal phase of the proceeding on August 29, 2007. 8/29/07 Tr. 91:12-166:13 (Wind).

38. Mark Eisenberg is the Senior Vice President of Business and Legal Affairs for the Global Digital Business Group at Sony BMG Music Entertainment. Eisenberg WDT at 1. He testified during the direct phase of the proceeding on June 18, 2007 and June 19, 2007. 6/18/07 Tr. 92:22-327:1 (Eisenberg); 6/19/07 Tr. 9:16-18:11 (Eisenberg). Mr. Eisenberg also testified during the rebuttal phase of the proceeding on August 28, 2007 and August 29, 2007. 8/28/07 Tr. 257:21-327:3 (Eisenberg); 8/29/07 Tr. 4:12-16:9 (Eisenberg).

39. Barrie Kessler is the Chief Operating Officer for SoundExchange, Inc. Kessler WDT at 1. She testified during the direct phase of the proceeding on June 19, 2007. 6/19/07 Tr. 20:20-118:11 (Kessler). Ms. Kessler also testified during the rebuttal phase of the proceeding on August 29, 2007. 8/29/07 Tr. 17:11-38:9 (Kessler).

40. Sean Butson is a Consultant and Chartered Financial Analyst. He testified during the direct phase of the proceeding on June 19, 2007. Butson WDT at 1. 6/19/07 Tr. 119:6-218:15 (Butson). Mr. Butson also testified during the rebuttal phase of the proceeding on August 28, 2007. 8/28/07 Tr. 4:13-47:7 (Butson).

41. Edgar Bronfman, Jr. is the Chairman and Chief Executive Officer of the Warner Music Group Corporation. Bronfman WDT at 1. He testified during the direct phase of the proceeding on June 20, 2007. 6/20/07 Tr. 5:20-119:22 (Bronfman).

42. Simon Renshaw is the President of Strategic Artist Management. Renshaw WDT at 1. He testified during the direct phase of the proceeding on June 21, 2007. 6/21/07 Tr. 4:17-84:14 (Renshaw).

43. Janusz Ordover is a Professor of Economics and former Director of the Masters in Economics Program at New York University. Ordover WDT at 2. He testified during the direct phase of the proceeding on June 21, 2007. 6/21/07 Tr. 85:14-333:1 (Ordover). Professor Ordover also testified during the rebuttal phase of the proceeding on August 23, 2007 and August 27, 2007. 8/23/07 Tr. 242:18-311:12 (Ordover); 8/27/07 Tr. 6:02-146:17 (Ordover).

44. Dan Navarro is a recording and performing artist. Navarro WDT at 1. He testified during the direct phase of the proceeding on June 25, 2007. 6/25/07 Tr. 7:10-58:11 (Navarro).

45. Edward Chmelewski is the President of Blind Pig Records. Chmelewski WDT at 1. He testified during the direct phase of the proceeding on June 26, 2007. 6/26/07 Tr. 5:17-74:21 (Chmelewski).

46. Michael Kushner is the Senior Vice President of Business and Legal Affairs for the Atlantic Recording Corporation. Kushner WDT at 1. He testified during the direct phase of the proceeding on June 26, 2007. 6/26/07 Tr. 76:14-237:6 (Kushner).

47. Lawrence J. Kenswil is the President of Universal eLabs, a division of Vivendi Universal's Universal Music Group. Kenswil WDT at 1. He testified during the direct phase of the proceeding on June 27, 2007. 6/27/07 Tr. 5:9-124:14 (Kenswil).

48. Charles Ciongoli is the Executive Vice President and Chief Financial Officer for Universal Music Group North America. Ciongoli WDT at 1. He testified during the direct phase of the proceeding on June 27, 2007. 6/27/07 Tr. 125:18-162:15 (Ciongoli). He also testified during the rebuttal phase of the proceeding on August 23, 2007. 8/23/07 Tr. 194:21-242:1 (Ciongoli).

49. Michael J. Pelcovits is a Principal at Microeconomic Consulting and Research Associates, Inc. Pelcovits WDT at 1. He testified during the direct phase of the proceeding on July 9, 2007. 7/9/07 Tr. 4:18-304:21 (Pelcovits). Dr. Pelcovits also testified during the rebuttal phase of the proceeding on August 28, 2007. 8/28/07 Tr. 48:11-256:21 (Pelcovits).

50. Bruce Elbert is the President of Application Technology Strategy, Inc. Elbert WRT at 1. He testified during the rebuttal phase of the proceeding on August 28, 2007. 8/27/07 Tr. 149:11-258:2 (Elbert).

51. Steven Herscovici is a Managing Principal at Analysis Group, Inc. Herscovici WRT at 1. He testified during the rebuttal phase of the proceeding on August 29, 2007 and August 30, 2007. 8/29/07 Tr. 168:9-237:17 (Herscovici). 8/30/07 Tr. 4:13-104:18 (Herscovici).

52. George Mantis is the President of The Mantis Group, Inc. Mantis WRT at 1. He testified during the rebuttal phase of the proceeding on August 30, 2007. 8/30/07 Tr. 106:18-255:9 (Mantis).

IV. THE SDARS' EARLY HISTORY AND CHALLENGES

A. Sirius

1. The History of Sirius and Its Initial Challenges in Offering Its Service

53. On May 17, 1990, Sirius began life as Satellite CD Radio, Inc.⁵

Karmazin WDT ¶ 14. Sirius was founded by a lawyer, a rocket scientist, and a young entrepreneur who had developed the idea of satellite radio. 6/11/07 Tr. 370:2-6 (Frear).

Since its founding seventeen years ago, Sirius has created an entirely new means of providing audio programming. Karmazin WDT ¶ 3.

54. Getting there was an enormous undertaking. Sirius expended great effort and succeeded in:

- convincing federal regulators to authorize a satellite radio service in the face of opposition from the terrestrial radio industry;
- winning an auction for one of two satellite radio licenses and paying more than \$83 million to the government for its license;
- designing, building, and launching dedicated satellites in a unique, highly inclined, geosynchronous orbit as well as designing and building the ground facilities and systems to control those satellites;
- building an extensive system of terrestrial repeaters to enhance reception in cities and other areas where satellite transmissions would be blocked;
- obtaining FCC approval for the terrestrial repeaters, again over the opposition of the terrestrial radio industry;
- convincing the investment community of the satellite radio business model's validity in order to raise billions of dollars to fund capital expenditures and start-up losses;

⁵ The company is referred to as Sirius throughout its history.

- inventing the world's smallest satellite antenna that could receive signals from two satellites and terrestrial repeaters on moving vehicles;
- developing an entirely new line of radios and integrated circuits capable of receiving, decoding and decompressing Sirius satellite and terrestrial transmissions;
- creating compelling audio content, including both non-music content and music content, that could compete with free terrestrial radio and with other emerging audio entertainment media for the ear of the listener;
- convincing and subsidizing automakers to include Sirius radios in their vehicles and retailers to stock and sell new Sirius radios, both in the face of growing competition from other consumer electronic devices for vehicle and shelf space;
- establishing Sirius, an unknown company offering an unknown service, as a strong consumer brand that could compete for consumers' attention against more established names;
- building an infrastructure capable of handling millions of subscriber accounts; and millions of customers service inquiries and requests; and
- convincing the consuming public to pay \$12.95 per month for a service that traditionally could be obtained for free.

See Karmazin WDT ¶ 3; 6/11/07 Tr. 371:9-372:20 (Frear). Sirius continues to invest substantial time, creativity and money in designing, developing, creating and building its satellite delivery system and terrestrial repeater network, chipset and radio design, automotive and retail partnerships, subscriber management systems, programming and content offerings, and corporate infrastructure and management. Frear WDT ¶¶ 7-8; *infra* Part V.D-F. All told, Sirius has invested over \$5 billion in developing, designing and providing its service and has accumulated a deficit of over \$4 billion.

55. All of Sirius' investments of time, effort and money have allowed it to grow rapidly since its service was launched in 2002. In that time, Sirius' revenues, subscriber numbers and retail market share have increased, its relationships with OEM

partners have expanded, and it has acquired and developed a deeper catalogue of diverse programming. *See* SX Trial Ex. 74 at 1-2. Sirius has led the industry in net subscriber adds, had a low churn rate and continues to capture the majority share of the retail market. *Id.* Sirius' success is evident in the fact that this year it expects to achieve \$1 billion in revenue, faster than any company in the history of radio, while controlling its costs and providing a quality product that will attract and retain subscribers. *See* SX Trial Ex. 74; 6/6/07 Tr. 323:10-328:21 (Karmazin). Sirius' investments in becoming "the best radio on radio" have been critical to establishing the foundation for its future success. *See* 6/6/07 Tr. 323:10-328:21 (Karmazin) (explaining that in order to have a successful SDARS business model, Sirius has made necessary investments to provide a quality product while watching costs).

56. While the technological innovations, creative contributions, capital investments made and risks Sirius undertook in developing its satellite radio service are detailed in other sections (*infra* Part V.D-G), the following is a brief history of the path Sirius took to provide the service it offers today.

57. Before they could even embark in the business of satellite radio, the original founders of Sirius first had to convince the Federal Communications Commission ("FCC") that the idea of a satellite radio service actually made sense, over substantial opposition from the existing terrestrial radio industry. Karmazin WDT ¶¶ 14-15; 6/11/07 Tr. 370:5-7 (Frear); 6/6/07 Tr. 268:15-269:8 (Karmazin) (testifying that during the five years after filing its FCC application, Sirius faced opposition from "the existing broadcasting industry that was doing everything in its power to stop satellite radio from ever becoming a reality"). Sirius took the first step in 1990, when its founders

proposed that the FCC establish a satellite radio service in the S-Band, and subsequently applied for a license. Karmazin WDT ¶¶ 14-15. It was not until the fall of 1992 that the FCC called for license applications from parties interested in establishing a satellite radio service. *Id.*

58. For the next four years, Sirius spent a considerable amount of time and money on developing the satellite radio technology, demonstrating and testing the transmission of S-band signals to prototype radios, engaging in the regulatory process to create the rules governing the new service, researching and establishing relationships in the consumer electronics and automotive markets, negotiating satellite and launch contracts, and developing programming plans. Karmazin WDT ¶ 16. In March 1997, the FCC finally adopted satellite radio licensing regulations authorizing two national licenses to be obtained by auction. *Id.* ¶ 18. After over seven years of planning, lobbying and substantial investments, Sirius still had to bid for one of the two FCC licenses, which it won for \$83.3 million. *Id.*

59. After the licenses were awarded to Sirius and American Mobile Radio Corporation (which later changed its name to XM Satellite Radio Inc.) in October 1997, Karmazin WDT ¶ 18, Sirius' founders began raising capital and working on building a business that would require the design and manufacture of satellites, chipsets and radios; distribution partnerships in the automotive and the retail channels; programming; a subscriber management platform, billing systems, and other support systems; and corporate infrastructure and management. 6/11/07 Tr. 370:7-371:4 (Frear); Karmazin WDT ¶ 19 (once the licenses were awarded, Sirius began to recruit personnel, contracted for the design, development and manufacture of its chipsets, began construction of its

broadcast studios, began work on its terrestrial repeater network, and obtained additional financing). Sirius also sought approval from the FCC for its network of terrestrial repeaters that would aid in providing service in urban areas. *Id.* ¶ 19. Again, the terrestrial radio industry opposed those efforts. *Id.*

60. Sirius launched its three satellites in July, September and December 2000. Karmazin WDT ¶ 20. Sirius invested approximately \$950 million in its first-generation satellite infrastructure (including the design, construction and launch of the three in-orbit satellites, the design and construction of the ground spare, purchase of long-time lead parts for a potential fifth satellite, and design and construction of the telemetry, tracking and control systems for the satellites). Frear WDT ¶ 14.

61. At the same time Sirius was working to launch its satellites, Sirius was entering into exclusive agreements with DaimlerChrysler, Ford Motor Company, and BMW for installation of Sirius radios in those manufacturers' vehicles and began establishing alliances with consumer electronics retailers to sell Sirius radios. Karmazin WDT ¶ 20. These deals did not guarantee that satellite radio would be a success in the market. Sirius' automotive partners "were not going to put any satellite radios into cars, not in a factory basis and not into their dealer partners' inventory, without being certain that the system worked with what they described as 99.9 percent service availability in the 48 states and southern Canada." 6/11/07 Tr. 374:12-18 (Frear). Nor was "getting satellite radio shelf space in retail stores . . . a guarantee. You had to go in and sell the retailers that it was worth them . . . devoting any of their floor space, either to your product or to the retail displays that go there or the ads we get in our Sunday circulars . . . there's an opportunity cost to all of it. There's something else that they can put in there.

And it took years to convince the retailers that [Sirius'] product [was] worth carrying.” *Id.* at 373:9-22 (Frear). Sirius therefore had to make substantial investments of time and money with automotive and retail partners in an effort to reach consumers. *See infra* Part V.E-G.

62. Despite these substantial time and monetary investments, the launch of Sirius' service was delayed for two years because of problems with the development of Sirius' chipsets. Karmazin WDT ¶ 20; Frear WDT ¶ 6; *infra* Part V.E. Sirius finally launched its service on February 14, 2002, in select markets, and July 1, 2002, nationwide – more than twelve years after the founding of the company and five years after Sirius obtained its FCC license. Karmazin WDT ¶ 22. Sirius had spent over \$1 billion between 1990 and 2002 just to launch its service and prior to gaining its first subscriber. Frear WDT ¶ 9.

2. Sirius' Transition from a Music Service to an Entertainment Service

63. Sirius' original programming strategy was to market itself as “the world's best music service.” Karmazin WDT ¶ 40. The founders of Sirius conceived of satellite radio as “solely a music service with CD quality sound, ergo the name of the company at that time which was CD Radio.” 6/12/07 Tr. 14:14-19 (Frear). As time went on, Sirius determined that it would need to diversify its program offering. *Id.* at 14:19-21.

64. At the time it filed its FCC application, Sirius' founders intended to deliver only 50 channels of digital audio programming, with 30 channels of commercial-free music and 20 talk channels. Karmazin WDT ¶ 17. The central concept was to provide uninterrupted, nationwide programming to vehicles. *Id.* By the time the service

was launched, Sirius had expanded its programming line-up to include 100 channels, 60 music, and 40 news, talk and entertainment. 6/12/07 Tr. 14:21-15:3 (Frear).

65. As an outsider at the time and with many years of experience in the radio industry, Mel Karmazin believed that the content Sirius was offering at the time was “nothing . . . in my judgment, that [people] would, in large numbers, pay \$12.95 . . . to hear.” 6/6/07 Tr. 256:8-16 (Karmazin).

66. The company soon discovered that focusing on music programming would not be a successful strategy because music is available to the public through terrestrial radio, television, restaurants and coffee shops, and a host of other sources for no actual (or perceived) cost. Karmazin WDT ¶ 41. As Mr. Karmazin pointed out, “you can get music all day long, any place you want it on terrestrial radio for free. So why, again, would somebody pay us \$12.95 to be able to hear music, if they can get music for free?” 6/6/07 Tr. 304:13-17 (Karmazin). Ultimately, “everybody [at Sirius] realized that the model of just continuing to offer music and charging \$12.95 was not something that was going to work as a business model.” *Id.* at 308:6-9.

67. In addition to the fact that music is freely available from other sources, Sirius’ music programming did not generate any advertising revenue. Moreover, unless Sirius entered into a separate agreement with an artist, Sirius obtained no promotional benefits or brand value from the play of music on its music channels. Karmazin WRT ¶ 21; 8/22/07 Tr. 160:2-21, 166:21-168:4 (Karmazin) (discussing fact that the sound recording compulsory license does not confer any promotional or branding benefits on Sirius as compared to the substantial branding and promotional benefits Sirius obtains from deals it negotiates with non-music content providers).

68. Sirius therefore began to focus on developing other compelling programming that would drive people to pay subscription fees – *i.e.*, programming that they could not get anywhere else. Karmazin WDT ¶ 42. In this vein, Sirius zeroed in on sports, talk and entertainment channels. *Id.*

69. Sirius' first major content deal was with the NFL in late 2003 in which Sirius became the official satellite radio partner of the NFL and became the only place where a fan could listen to the home-and-away broadcast of every NFL game. Karmazin WDT ¶ 43; SIR Ex. 4. This deal was “a seismic change in the ability to give consumers something that they couldn't get before.” 6/6/07 Tr. 256:18-20 (Karmazin). The impact of Sirius' deal with the NFL is discussed more fully below. *See infra* Part IV.A.3.a.

70. Sirius' next big content deal, in October 2004, brought Howard Stern to Sirius exclusively beginning in January 2006. Karmazin WDT ¶ 45; SIR Ex. 6. This deal was widely reported as “The Most Important Deal in Radio History.” Karmazin WDT ¶ 45. As Mr. Karmazin testified, at the time the deal was announced he “was blown away by the fact that Howard Stern was recruited away from terrestrial radio and was going to be on exclusively on satellite radio.” 6/6/07 Tr. 258:3-6 (Karmazin). To Mr. Karmazin, Howard Stern was the single biggest radio personality in history, and “the fact that Sirius had stepped up to bring him to their service exclusively indicated to [him] that [Sirius was] serious about growing [its] business and had a business model that was different than the business model that [he] had known before the [deals with the] NFL and . . . Howard [Stern].” *Id.* at 258:21-259:7 (Karmazin).

71. Since the launch of its service, Sirius has added approximately 35 more channels. 6/12/07 Tr. 15:4-5 (Frear). Of those channels, “[v]irtually all of them

[are] talk channels adding sports content, adding Martha Stewart, adding Howard Stern.”

Id. at 15:5-7. Indeed, Sirius has added a wide variety of non-music content channels, including:

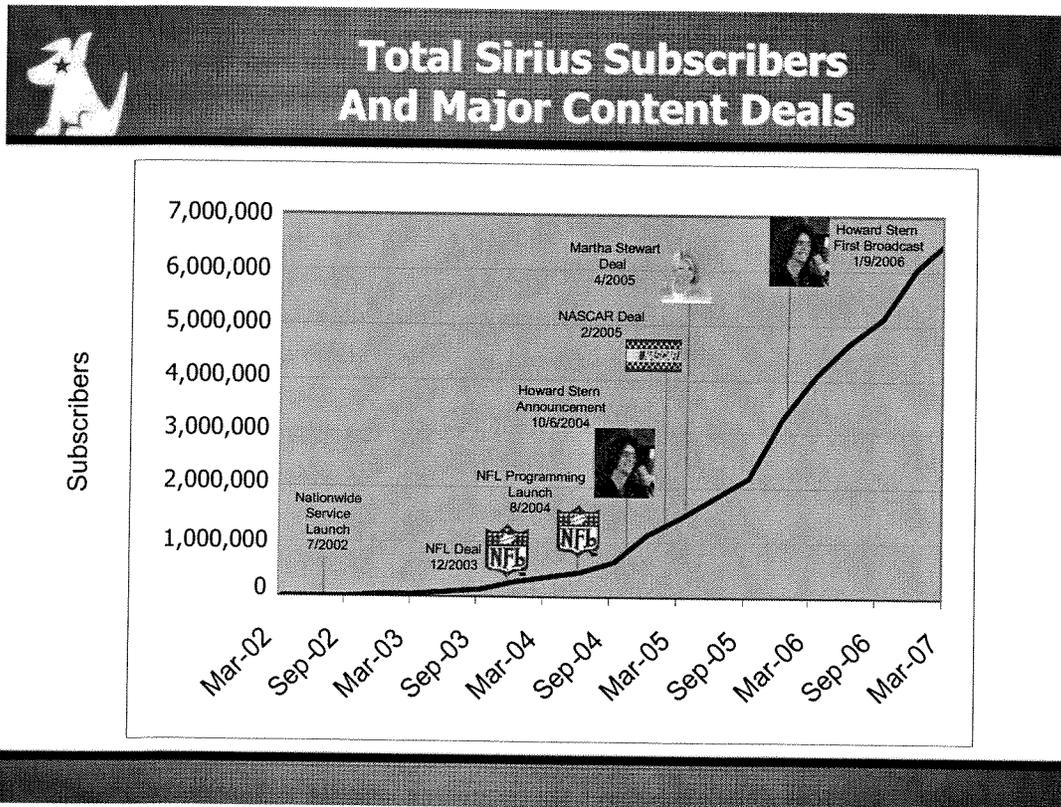
- Martha Stewart Radio;
- NASCAR Radio (including live coverage of NASCAR races);
- NBA Radio (including live coverage of NBA games);
- College Sports Radio (including live college football and the NCAA Men’s Basketball Tournament);
- Sirius Left and Sirius Patriot political talk channels;
- COSMO Radio (talk and entertainment channel based on Cosmopolitan magazine);
- Traffic and weather channels;
- Playboy Radio (talk and entertainment channel based on Playboy magazine); and
- The Catholic Channel (talk and entertainment channel featuring programming by the Archdiocese of New York and Notre Dame football);

Karmazin WDT ¶¶ 44-50 (discussing some of the many additions of non-music programming to Sirius’ channel line-up). Sirius has also added eight music channels in that time frame, but what Sirius has found “is that people like talk radio.” 6/12/07 Tr. 15:8-10 (Frear).

72. As Sirius has added more unique and compelling non-music content, its subscriber base has grown dramatically. The impact of some of these deals on Sirius’ subscriber growth is illustrated by the following chart and graph (Karmazin WRT ¶ 25; SIR Ex. 56):

PUBLIC VERSION

Date	Event	Total Subs Day Prior
12/16/03	NFL deal announced	214,499
8/2/04	NFL Programming launch	530,083
10/6/04	Howard Stern deal announced	674,459
2/22/05	NASCAR deal announced	1,325,154
4/18/05	Martha Stewart deal announced	1,498,579
1/9/06	Howard Stern first broadcast	3,491,779
12/31/06	End of FY 2006	6,024,555
3/31/07	End 1Q 2007	6,581,045



73. These figures suggest that non-music content has caused Sirius' subscriber numbers to increase beyond what they would have been if Sirius had remained a music-focused service. Karmazin WRT ¶ 26.

3. The Importance of Non-Music Content to Sirius' Brand

74. As discussed above, Sirius' results in its early years support the conclusion that a focus on music programming was not going to sustain the satellite radio business model. As Sirius CFO David Frear testified:

Subscription rates were slow. The service launched in 2002. I joined in 2003. There were about 120,000 subscribers at the time.

6/12/07 Tr. 16:5-12 (Frear); *see also* 6/6/07 Tr. 308:18-309:1 (Karmazin) (stating that in the first quarter of 2004 when Sirius' programming was focused on music, Sirius only

had a 33% share of the net retail subscriber additions in the retail market channel, as opposed to the 76% of net subscriber additions it had in the first quarter of 2007).

75. In order to “galvanize the attention of the listening public,” Sirius management made the decision to add brand-name content to its programming line-up. 6/12/07 Tr. 16:14-21 (Frear) (discussing need to add “recognized brands that actually got us something that we could sell to the people who were going to go through the doors of a big box retailer to buy new technology product”).

76. Sirius recognized that development of relationships with compelling non-music content brands was important not only for the content itself but also for the valuable brand association. Sirius’ alliances with these well-known content providers would help drive awareness for Sirius and satellite radio in general, which would in turn drive subscription behavior. *Id.* 15:9-17. As Mr. Karmazin testified, Sirius needed a certain amount of content like the NFL and Howard Stern “to get the buzz, to distinguish [itself], to get [its own] brand.” 6/6/07 Tr. 328:3-4 (Karmazin).

77. When the company launched its service in 2002, “most people didn’t know what satellite radio was and they certainly didn’t know what Sirius was. So the opportunity for us to partner with these well-established brands [was] very, very important for us to be able to show our credibility to the consumers.” 8/22/07 Tr. 146:17-147:1 (Karmazin); *see also id.* at 147:20-148:1 (“[As] a start-up company with no credibility because nobody knew it, having the association with these brands, [was] absolutely critical for us.”). As a result of the importance of association with strong brands, the shift of focus from music content to non-music content was “very important for Sirius.” *Id.* at 146:15.

78. For purposes of illustration, in 2003, just before Sirius announced its deal with the NFL, only about 10% of adults had any unaided awareness of Sirius or its service. Karmazin WRT ¶ 25. Since that time, during which Sirius announced numerous new deals to offer well-known and unique non-music content, including the content listed above, awareness of Sirius and its service among adults has risen to over 50%. *Id.* The chart below summarizes how awareness of the Sirius brand has increased in relation to the announcement of some of Sirius’ most notable non-music content deals:

Date	Event	Unaided Brand Awareness Month After
12/16/03	NFL deal announced	9% of adults 1/04
8/2/04	NFL Programming launch	16% of adults 9/04
10/6/04	Howard Stern deal announced	29% of adults 11/04
2/22/05	NASCAR deal announced	39% of adults 3/05
4/18/05	Martha Stewart deal announced	42% of adults 5/05
1/9/06	Howard Stern first broadcast	54% of adults 2/06

79. According to Mr. Karmazin, “[Sirius’] strategy has paid off.” Karmazin WDT ¶ 47. When Sirius focused its programming on music, “we were a second class brand, with limited brand awareness, trailing significantly in the marketplace. That all changed with our focus on high-profile news, sports and entertainment programming.” *Id.*

4. The Impact of Sirius' Deals with the NFL and Howard Stern

80. As discussed above, Sirius' performance prior to obtaining compelling non-music content was lackluster at best. However, Sirius' deals with the NFL and Howard Stern had a particularly positive impact on Sirius' business. Indeed, as Mr. Karmazin testified, "the reason that I considered coming to Sirius was because of the fact that they had made a commitment to the NFL and Howard Stern[.] [T]hat was important, in my opinion, as a radio executive, to think that this company had a chance of becoming profitable because of making those kind of commitments." 8/22/07 Tr. 151:17-152:2 (Karmazin).

a. The NFL

81. The NFL deal was important to Sirius from a programming perspective for several reasons. First, the NFL represents "the number one sport in the United States." 6/7/07 Tr. 346:2-3 (Cohen). In addition, by airing the home and away radio feeds of every NFL game, Sirius was offering listeners who were not necessarily only interested in the NFL game being aired in their market the opportunity to listen to the games of any team they wanted. 6/6/07 Tr. 257:6-11 (Karmazin); *see also id.* at 298:17-300:3 (describing in detail Sirius' ability to make "all of the games available"). Moreover, Sirius was able to offer a 24/7 channel devoted to the NFL. 6/7/07 Tr. 346:8-347:1 (Cohen) ("[Sirius] launched the NFL channel in August [2004], and . . . it was very noticeable the subscribers that were signing up for the NFL service. And it's a . . . channel, our NFL channel, that really goes year-round, and is so popular that you can't get through on the phone lines."); *see also infra* Part V.D.1.b (describing content on Sirius' NFL channel).

82. Sirius NFL Radio was also important to Sirius' efforts to grow its subscriber base. The combination of home and away broadcasts and a 24/7 NFL channel enabled Sirius "to create programming . . . that [listeners are] not able to find anywhere else." 6/7/07 Tr. 346:21-347:1 (Cohen). As a result, Sirius' deal with the NFL was "huge" because it "demonstrated something that terrestrial radio was not doing" and could not do. 6/7/07 Tr. 257:12-14 (Karmazin). In fact, Sirius' NFL programming has "been insanely popular with . . . subscribers, and helping [Sirius] get new subscribers." 6/7/07 Tr. 347:1-7 (Cohen) (discussing fact that customer research in late 2004 indicated that, at that point, "the number one reason to subscribe to Sirius was sports and the NFL").

83. In addition, Sirius' deal with the NFL was also significant in establishing awareness of Sirius among the consuming public, as well as retailers and automotive manufacturers. Adding the well-recognized NFL brand "actually got us something that we could sell to the people who were going to go through the doors of a big box retailer to buy new technology product[s]." 6/12/07 Tr. 16:14-21 (Frear). Indeed, the opportunity for Sirius to partner with a well-established brand like the NFL was very important to establish credibility with consumers who did not "know about Sirius, but they certainly knew about the NFL." 8/22/07 Tr. 146:20-147:4 (Karmazin).

84. The impact of the NFL deal on retailers and automotive manufacturers was substantial. As David Frear testified:

I was new to the consumer electronics business when I joined Sirius four years ago. And one of the things that I kept hearing was that we were, in essence, selling to 25 to 54-year-old men. That's who went through the door of a big box retailer to buy a new technology product.

But we weren't just [selling] the 25 to 54-year-old men [] the radios they walked out of Best Buy with. Those are the same people making the decisions at the automotive companies, at the retailers. Pretty much everywhere we went we were trying to convince a 25 to 54-year-old man to do something. . . .

So one of the things that sells to 25 to 54-year-old men is sports. And so . . . a lot of the early sports decisions were made not only for attracting subscribers but also for the purpose of finishing the industrialization of the company and actually bringing the product to market.

6/11/07 Tr. 375:11-376:21 (Frear). The exclusive arrangement to offer home-and-away broadcasts of every NFL game was also important to Sirius' relationship with automakers: "it was the first concrete means of distinguishing Sirius' satellite radio service from the terrestrial radios that are standard in all cars and trucks." Karmazin WRT ¶ 6. Shortly after Sirius announced that deal, Chrysler agreed to a factory-installation program with Sirius. *Id.*; see also SIR Exs. 44, 45. Prior to that time, Chrysler had not announced an intent to factory install Sirius radios. 8/22/07 Tr. 252:20-253:3 (Karmazin).

b. Howard Stern

85. Sirius followed up its NFL deal with "The Most Important Deal in Radio History," signing Howard Stern to an exclusive contract in October 2004 to begin airing on Sirius in January 2006. The Howard Stern deal was designed not only to maintain the subscribers that Sirius already had and to bring in new subscribers, but also to create invaluable brand awareness. Karmazin WDT ¶ 45.

86. With respect to subscribers, Sirius' deal with Howard Stern was important because Howard Stern is perhaps "the single biggest radio personality . . . in history." 6/6/07 Tr. 258:21-22 (Karmazin). Mr. Stern "had millions of people who were

listening to him” and Sirius believed that having his programming exclusively would attract those listeners. *Id.* at 302:15-20.

87. The trend of subscriber growth after the announcement of that deal suggests that Sirius’ belief was correct. The day before Sirius announced Howard Stern would become exclusive to Sirius, Sirius had approximately 675,000 subscribers. Karmazin WRT ¶ 25. By the time Mr. Stern aired his first broadcast just over a year later in January 2006, Sirius’ subscribers had increased by 2.7 million to a total of almost 3.5 million. *Id.* A year later, Sirius’ subscribers had increased another 2.5 million to just over 6 million total subscribers. *Id.* Sirius now has over 7 million subscribers. 8/22/07 Tr. 235:8-15 (Karmazin).

88. These figures substantially exceeded analysts’ consensus for Sirius’ subscriber growth prior to the Stern deal. *See* SX Trial Ex. 27 at SIR00010476 (showing pre-Stern analyst consensus for Sirius subscribers). This growth suggests that Howard Stern has been a major driver of subscriptions for Sirius. 8/22/07 Tr. 235:8-15 (Karmazin) (stating belief that Howard Stern was “major driver” of increase in subscriptions from 675,000 in October 2004 to over 7,000,000 as of August 2007).

89. Perhaps an even bigger impact of the Howard Stern deal was the substantial brand and promotional benefits Sirius received. When Sirius announced its deal with Howard Stern in October of 2004, “the attention of the media around it was staggering. It was front page news in virtually every newspaper in the country. It made all the nightly news broadcasts, . . . he was on magazine covers. . . . [T]here were [an estimated] five billion impressions between newspapers and magazines in the United States alone.” 6/12/07 Tr. 17:4-12 (Frear); *see also* Karmazin WRT ¶ 8 (describing

publicity surrounding announcement of Stern deal); 6/6/07 Tr. 301:16-302:11 (Karmazin) (same); 8/22/07 Tr. 155:1-7 (Karmazin) (“[W]hen the deal was announced . . . we got a great deal of promotion from Howard Stern to say nothing about [the fact that] Howard was promoting [Sirius] on CBS’ channels where his audience was listening.”).

90. Aside from this publicity, Mr. Stern himself was promoting Sirius during media appearances. 6/12/07 Tr. 17:15-19 (Frear) (“He spent a half an hour on Letterman. Twice he did a half an hour on Larry King. He had a segment on 60 Minutes. It was really sort of a staggering media blitz.”). In addition, Mr. Stern was promoting Sirius on his terrestrial radio program for fifteen months before he joined Sirius. Karmazin WRT ¶ 8; 6/6/07 Tr. 302:2-5 (Karmazin) (“Howard continued on his CBS radio stations after he announced it for another 15 months, and during that 15-month period was talking and promoting Sirius.”).

91. Sirius’ deal with Howard Stern and its association with the Howard Stern brand was integral to advancing Sirius’ position with automakers and retailers:

Adding the Howard Stern brand . . . played an important role in advancing Sirius’ relationships with automakers and retailers. Howard Stern was and is the number one radio personality in morning drive time, creating an incentive for automakers to include Sirius radios in their vehicles. Moreover, Howard Stern has enormous appeal with 18-49 year-old males, not only a large demographic for auto buyers and consumers of electronics, but also a defining characteristic of those in management positions at automobile manufacturers and dealerships and in large retail chains that sell consumer electronics who would be making the decision on whether to include Sirius radios in their cars and on their shelves.

Karmazin WRT ¶ 12.

92. The Howard Stern deal played a key role in convincing automobile manufacturers to install satellite radios at the factory. One factor was that Mr. Stern was

the most successful radio personality in morning drive-time. 6/6/07 Tr. 258:17-259:1

(Karmazin). As Mr. Karmazin indicated:

[I]f you think about when people are driving in their car, . . . the heaviest time of the day that you drive in your car is morning drive time. It's generally . . . considered somewhere in the 6:00 to 10:00 in the morning, Monday through Friday, and well, the number one radio personality is Howard, so if, in fact, the car companies are interested in pleasing people when they're in the car the most, the ability to have that was very important.

8/22/07 Tr. 149:8-18 (Karmazin).

93. As an example of the impact of the Stern deal on automakers, less than two weeks after announcing that deal, Ford Motor Company announced that "it would be expanding its availability of Sirius as a dealer-installed option and would be targeting up to 20 vehicle lines for factory installations beginning in 2005." See Karmazin WRT ¶ 13 (citing SIR Exs. 48-51). In August 2005, Ford began selling vehicles with Sirius radios installed. *Id.* Prior to that time, Ford had not announced that it would install Sirius radios in its vehicles. 8/22/07 Tr. 252:20-253:3 (Karmazin); *id.* at 250:7-16.

94. The Stern deal was also important to securing renewal of its deals with automakers. 8/22/07 Tr. 148:21-149:7 (Karmazin) ("[O]ur relationship with the Ford Motor Company and our relationship with the Chrysler Corporation were due for renewals and the fact that we were able to come to them with content like NASCAR, Howard Stern and the NFL was very important insofar as providing us with the credibility that we were prepared to bring to them these important brands."). Indeed, even though Sirius had research and development deals with automakers prior to its deals with Stern and other branded content, these major content deals "were important because they tied to putting the satellite radio in the car, not just doing R&D and development

work.” *Id.* at 250:8-11. In fact, at the end of 2004, after announcing the deal with Howard Stern, Sirius OEM subscribers totaled only 203,000. SIR Ex. 47 at 31. By the end of the first quarter of 2007, the number of OEM subscribers to Sirius had grown to ten times that amount to 2.3 million. SIR Ex. 57 at 24.

95. Sirius’ deal with Mr. Stern also had an impact on Sirius’ position in the financial markets. For example, “Sirius’ market capitalization increased by approximately \$1 billion in the days immediately surrounding the Stern announcement.” Karmazin WRT ¶ 11. While “Wall Street may not have had a bunch of credibility in Sirius and [investors] might not have known Sirius” prior to the announcement of the Stern deal “but they certainly knew of the success that Howard Stern had.” 8/22/07 Tr. 150:18-22 (Karmazin). Indeed, from the time of that announcement until Mr. Stern’s programming first aired, “Sirius’ stock price increased by 95%, adding over \$4 billion in market capitalization.” Karmazin WRT ¶ 11.

B. XM’s History and Overview of Its Business

96. XM was incorporated in 1992 under its former corporate name, American Mobile Radio Corporation, with the initial mission of studying a multi-channel, nationwide audio service provided via satellite direct to subscribers. Parsons WDT ¶ 4; 6/4/07 Tr. 305:14-306:8 (Parsons). With the consolidation of terrestrial radio stations, escalating commercial minutes, and narrowing formats, XM perceived an unmet consumer need for XM’s satellite radio concept: a nationwide service offering programming diversity and choice, coupled with high-quality audio and few if any commercials on the music channels. Parsons WDT ¶ 6; 6/4/07 Tr. 307:1-308:2 (Parsons). Based on the belief that satellite technology would appeal to a wider

consumer market for audio radio services as well as for data services, XM set out to create a wholly new market for satellite radio. Parsons WDT ¶ 7.

97. Over more than a decade, by dint of overcoming significant technological challenges, managing to attract enormous capital investment, and developing innovative and diverse programming, XM managed to transform its vision into reality. Today, XM reaches 7.9 million subscribers nationwide in the vehicle, in the home, on portable radios, and over the Internet. Vendetti WRT, Ex. 2 at 32. XM offers over 170 channels, including 69 commercial-free music channels; 37 news, talk and entertainment channels; 38 sports channels; 21 instant traffic and weather channels; and one emergency alert channel. Vendetti WRT, Ex. 1 at 1; XM Ex. 3.

98. The challenge of taking XM from concept to on-the-air broadcast service was virtually unprecedented in the radio industry and was, and continues to be, fraught with technological, market, and financial risks. Parsons WDT ¶ 2. Despite these risks, XM and its investors have continued to pursue operational and financial success because of a strong belief in XM's fundamental value proposition: diversity of programming, exclusive content, and a unique and powerful delivery platform to serve both the mobile and home environment. *Id.*

1. Securing a License

99. To take its vision beyond the concept stage, XM first had to obtain a satellite digital audio radio service license from the FCC. Beginning in 1992, XM engaged in years of research and analysis of the technological and business prospects of satellite radio, without any assurance that that investment of time and resources would be

rewarded with one of the two licenses to be awarded. XM finally secured a license in 1997 for \$90 million. Woodbury AWDT at 7; Parsons WDT ¶ 8.

2. Technology and Infrastructure

100. As explained in detail in PFF Part V.E., before XM could launch its service, it had to design and build all aspects of the satellite broadcast transmission system, which required billions of dollars in capital investment in what was then seen (rightly) by investors as an uncertain enterprise. Parsons WDT ¶ 8. The transmission system XM ultimately designed and launched consists of satellite uplink dishes that send XM's signal to multiple geostationary satellites, which in turn re-transmit the signals to specially designed portable satellite radio receivers and to a network of approximately 800 terrestrial repeaters. Masiello WDT ¶ 20.

101. Since a signal by a conventional satellite would be too weak to be received by a typical car antenna, and since a conventional satellite dish could not be mounted practically on top of a car, XM designed satellites with transmission power strong enough to be received by XM's receivers. *Id.* ¶ 24. To receive its high-powered signal XM's receivers were designed to include a customized chipset, software, and antenna – all of which had to be specially designed by XM. *Id.* ¶¶ 30-33. XM continues to invest millions in research and development to reduce the size of its receivers while increasing their functionality. *Id.* ¶ 43. Because the satellites' signals could be blocked by natural obstructions such as buildings, trees, and mountains, XM designed its network of terrestrial repeaters to re-transmit the satellite signal to the radio receivers, thus providing seamless nationwide reception. *Id.* ¶ 21. XM and Sirius were the first (and remain the only) satellite based service to make such extensive use of these integrated

satellite-terrestrial transmission systems. *Id.* All of these technological developments were necessary to create a satellite audio entertainment service with uninterrupted national reach in the home, office, and, most importantly, the automobile. Parsons WDT ¶ 7.

102. To broadcast its customized signal, XM built in Washington D.C. the largest digital broadcast studio complex under one roof, using state-of-the-art digital production and broadcast technology. Masiello WDT ¶ 11. To accommodate certain of its talk and entertainment content providers and performances of live music in other parts of the country, XM later built three additional studios in New York City, Nashville, and Chicago. *Id.* ¶ 12.

3. Strategic Marketing Partnerships

103. A key to the successful launch of XM's service was the formation of strategic partnerships with automakers, electronics manufacturers, and electronics retailers to aggressively market XM to a mass audience. Parsons WDT ¶ 18; 6/4/07 Tr. 325:15-327:1 (Parsons); 6/5/07 Tr. 16:14-17:5 (Parsons). XM formed business relationships with consumer electronics companies to build the radios that XM designed; with automobile manufacturers such as GM, Honda, and others to include the radios and service as a factory-installed feature in their vehicles; and with sales distribution partners such as Circuit City and Best Buy to help get radios into the hands of consumers. Parsons WDT ¶ 18; Cook WDT ¶¶ 16-20. In return for their support of XM's novel and risky business venture, XM's business partners required, and continue to require, significant economic incentives. Parsons WDT ¶ 19; 6/4/07 Tr. 330:14-331:19 (Parsons); Cook WDT ¶¶ 16-18. XM's future growth remains dependent on maintaining these

strategic partnerships, especially with automakers, as XM's retail sales have softened in recent years. Vendetti WRT ¶¶ 6-7.

4. Diverse and Innovative Programming

104. XM faced the additional daunting challenge of developing sufficiently diverse, vibrant, and innovative programming to attract subscribers willing to pay for it in lieu of the content they have historically received without charge from terrestrial radio. Indeed, to compete against terrestrial radio and its burgeoning free digital offspring, "HD" radio, as well as against its satellite radio competitor, Sirius, XM has turned to "exclusive" sports, news, talk, and entertainment programming that is only available on XM – unlike sound recordings, which are generally available on terrestrial radio, HD radio, and Sirius. Logan WDT ¶ 25. In general, there are three different degrees of exclusivity to XM's non-music programming. *See* 6/5/07 Tr. 159:15-160:17 (Logan). There is programming content that is only available on XM, such as the shows presented on the Oprah and Friends channel. *Id.* There is programming available on satellite radio but not on terrestrial radio, such as audio simulcasts of Fox News and CNN. *Id.* And there is programming available on XM but not on Sirius that is also available on terrestrial radio, such as Air America, the political talk radio station. *Id.*

105. When XM launched in 2001 with fewer than 300,000 subscribers, it offered 29 sports, news, talk, and entertainment channels and 65 music channels. Logan WDT ¶ 9. Over the years, as XM has sought to drive subscriber growth and raise its brand profile by acquiring an extensive line-up of exclusive sports, news, talk, and entertainment content offerings, the number of channels dedicated to such non-music content has grown to 75, while the number of commercial free music channels has

increased by only four to 69 channels. Vendetti WRT, Ex. 1 at 1. *See* 6/5/07 Tr. 134:8-12 (Logan) (testifying that XM content is trending toward greater non-music content). These program offerings, which have commanded premium prices attributable to their degree of exclusivity, have yielded enormous returns to XM in subscriber growth, subscriber satisfaction, advertising revenue, and enhancement of the XM brand. Cook WDT ¶ 28.

106. XM's sports play-by-play programming has been one of XM's primary subscriber acquisition tools. Logan WDT ¶ 26. XM's sports programming strategy focuses on attracting displaced fans nationwide who are unable to follow games of their favorite team because they do not live in the team's market or because the games are not carried in their local market. *Id.* For example, in 2005 XM acquired the rights to broadcast all Major League Baseball ("MLB") regular season games nationwide through 2012, with MLB having the option to extend through 2015. *Id.*; Vendetti WRT, Ex. 1 at 19. While some terrestrial radio stations may carry some local games, only XM can provide audio access to all MLB games in the car, home, or office. Thus, New York Yankees or Boston Red Sox fans living in Los Angeles, Dallas, or Detroit cannot hear all of the broadcasts of their favorite team on terrestrial radio, but they are available – exclusively – on XM. XM also broadcasts live National Hockey League games, basketball and football coverage of four Division One college sports conferences, PGA Tour golf tournaments, US Open Tennis, Mexican League soccer matches, and FIFA World Cup coverage. Logan WDT ¶ 26; XM-Vendetti, Ex. 1 at 2. XM's ability to acquire sports programming that is unavailable on its terrestrial and satellite radio

competitors has proven to be a significant driver of XM's subscriber acquisitions. Logan WDT ¶ 26.

107. Like XM's sports programming strategy, XM's programming strategy relating to talk, news, and entertainment content is driven by the same desire to target and acquire subscribers across a broad range of demographic groups. Parsons WDT ¶ 25. For example, XM carries news, sports, and music programming in Spanish. *Id.* The XM Kids channel appeals to children and their parents. *Id.* For women, XM launched the Oprah and Friends channel in 2006, in addition to its Take Five channel featuring talk programming from other popular female personalities such as Ellen DeGeneres and Tyra Banks. *Id.*

108. Another subscriber acquisition strategy that has aided XM is to broadcast audio simulcasts of well-known television networks with high brand recognition. Logan WDT ¶ 31. The brand recognition, the nature and quality of the programming, and the diversity of the programming are significant inducements to consumers to pay for XM's service. *Id.* ¶ 16. With XM's service, for example, subscribers can listen to their favorite television news programs from CNN, Fox News, CNBC, and ESPN – options that are not available on terrestrial radio. *Id.* ¶ 31.

109. In addition to increasing subscriber acquisition, XM's association with well-known brands, such as Fox News and MLB, and celebrities, such as Oprah Winfrey and Ellen DeGeneres, provides enormous benefits in terms of marketing, publicity, and consumer awareness of the unique attributes and benefits of XM. Cook WDT ¶ 28. Indeed, these marketing benefits are often central to XM's sports, talk, and entertainment content agreements.

110. XM's deal with Oprah Winfrey is a good example of how XM's non-music programming deals support – indeed, are integral to – its marketing efforts.

||

||. Vendetti WRT ¶ 17, Ex. 6.

||

||. *Id.* ||

||. *Id.* See *infra* Part V.D.2.d (explaining in detail the marketing and promotional benefits to XM of its agreement with Oprah Winfrey). These and similar marketing commitments from celebrated personalities and well-known brands are extremely value to XM as it seeks to grow a mass audience in order to reach financial and operational stability.

111. XM also has developed innovative and unique music programming as a means of differentiating itself from terrestrial radio. 6/5/07 Tr. 18:15-19:16 (Parsons). Specifically, XM has created music channels with a special character and personality shaped by expert music programmers and on-air talent. Logan WDT ¶¶ 2, 35, 40-61. For example, XM's music programmers have designed decade-themed channels dedicated to the sounds of the 1940s, 1950s, and 1960s (which play pre-1972 sound recordings), and have tailored blocks of channels to music genres such as bluegrass, traditional jazz, and classical music that are neglected by terrestrial radio. *Id.* ¶¶ 49-61; XM Ex. 3. XM also produces exclusive music programming, such as concert

performances, artist profiles, and artist-hosted programs, which adds value for XM subscribers, the performers, and the recording labels. Logan WDT ¶¶ 41-48. This category includes branded programs such as Willie's Place, where Willie Nelson and other on-air personalities play classic country songs in a make-believe honky-tonk saloon, XM's "Artist Confidential" and "Classical Confidential" series, which feature live music and interviews with musical artists, and "Theme Time Radio Hour" with Bob Dylan, where Mr. Dylan each week plays songs in a different theme. *Id.* ¶¶ 14, 43; *see infra* Part V.D. (discussing in detail XM's innovative and diverse music programming).

5. Large Capital Investments

112. The foregoing regulatory, technological, business, and creative achievements required enormous infusions of capital. From inception through year-end 2006, XM has invested over \$6.3 billion in its business, including approximately \$1.7 billion in capital expenditures and \$4.6 billion in operating expenditures. Parsons WDT ¶ 2; Vendetti WDT ¶ 2. *See infra* PFF Part V.F. (describing in detail XM's cumulative capital investments and costs to date). *See also* Vendetti WDT ¶ 5 (estimating the XM's cumulative investment in its business will approach \$14 billion by 2010).

6. Current State of Operations and Financial Condition

113. While XM has grown substantially since initiating commercial broadcasts in November 2001, the company has yet to generate any profits or positive cash flow and continues to lose hundreds of millions of dollars each year. Vendetti WRT, Ex. 1 at F-5, F-8. Even with 7.9 million subscribers, XM is still far short of reaching its essential goal of becoming a financially viable mass-market consumer

service, as is necessary for the company's to achieve long-term operational and financial viability. Parsons WDT ¶ 2; Vendetti WDT ¶ 7; Cook WDT ¶ 13.

114. While continuing to grow its business, XM also must service the \$1.5 billion in debt the company assumed in order to build and launch its service, \$428 million of which is maturing in 2009 and will have to be refinanced. Vendetti WRT ¶ 15; Vendetti WRT, Ex. 2 at 14. To continue building its subscriber base, XM requires significant ongoing investments to maintain and improve its technology infrastructure and to effectively market XM's satellite radio service to consumers. Parsons WDT ¶ 2. XM's ability to refinance its current debts and the availability of additional capital are contingent on the company's ability to demonstrate that its costs can be controlled and that it is on a reasonable path to profitability. Vendetti WRT ¶ 15; 6/5/07 Tr. 355:11-21 (Vendetti); 6/6/07 Tr. 17:18-18:7 (Vendetti).

115. XM is projecting improving financial strength such that, under current economic assumptions and predicated on a sound recording performance royalty that does not exceed 4%, it can expect to be cash flow positive by 2009 and earn positive net income by 2011. *See infra* Part V.I. Conversely, were a royalty significantly in excess of XM's current royalty rate imposed, it would impede, if not impair altogether, XM's prospects for achieving economic viability. *Id.*

V. THE SDARS AND THE 801(B)(1) STATUTORY OBJECTIVES

A. Section 801(B)(1) Embodies Governing Policy Objectives, the Application of Which Favors the SDARS' Fee Proposal.

116. As discussed more fully in the SDARS' Proposed Conclusions of Law, section 801(b)(1) of the Copyright Act requires that the rates and terms in this

proceeding “shall be calculated to achieve” four enumerated statutory objectives: (1) maximizing the availability of creative works to the public; (2) affording the copyright owner a fair return for his creative work and the copyright user a fair income under existing economic conditions; (3) reflecting the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to (i) relative creative contribution, (ii) technological contribution, (iii) capital investment, (iv) cost and risk, and (v) and contribution to the opening of new markets for creative expression and media for their communication; and (4) minimizing any disruptive impact on the structure of the industries involved and on generally prevailing industry practices. 17 U.S.C. § 801(b)(1).

117. Binding precedent establishes that the “reasonable rates” to be set here in light of the policy objectives of section 801(b)(1) do not equate to “a marketplace rate which represents the negotiated price a willing buyer will pay a willing seller.”

Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings, 63 Fed. Reg. 25,394, 25,4399 (May 8, 1998). Rather, the rates in a section 114 proceeding must be calculated to achieve the four policy objectives of section 801(b)(1). See *Recording Industry Association of America v. Librarian of Congress*, 176 F.3d 528, 533 (D.C. Cir. 1999).

118. As discussed below, the record evidence relating to the section 801(b)(1) objectives, construed in accordance with the statutory language and binding precedent, as well as fundamental principles of economics, demonstrates that each of them – most overwhelmingly – favors a license fee at or close to the SDARS’ proposal.

119. The SDARS' rate proposal addresses the section 801(b)(1) objectives in at least two important ways: (i) it is derived, via appropriate adjustments, from a bargained-for rate established as to an entity, Music Choice, which itself was entitled to the benefits of rate-making under that section, and hence is, as acknowledged by both sides' economists, a rate that presumably reflects the influence of the section 801(b)(1) factors; and (ii) its royalty level is one that promotes core section 801(b)(1) objectives, including avoiding having a disruptive impact on the SDARS' businesses and enabling the SDARS to realize a "fair income" over time, while still affording the record industry a "fair return" as that concept is properly construed in this statutory license setting.

120. By contrast, SoundExchange's rate proposal, which would increase present fee levels by anywhere from three to ten times, is divorced from a defensible interpretation or application of the section 801(b)(1) factors. None of the comparative benchmarks on which that proposal is constructed involve an entity subject to the statutory license provisions of section 114, let alone one entitled to the benefits of section 801(b)(1). SoundExchange instead reaches for license agreements inside and outside the music industry entered into by distinctly different buyers and sellers bargaining over different copyright and even non-copyright rights in wholly unregulated markets. In an attempt to "bridge" over to section 801(b)(1), SoundExchange erroneously contends that the license fees reflected in these disparate agreements satisfy the strictures of section 801(b)(1) on the completely bogus rationale that the 801(b)(1) factors are, in the end, intended simply to mirror the results that would come about in a willing-buyer/willing-seller marketplace.

121. SoundExchange's remaining effort is to propose a Shapley Surplus model that inappropriately applies an economic theory that ill fits a rate-making exercise such as this to a hypothesized 2012 Sirius and XM surplus. SoundExchange makes almost no effort to tie this effort to the policy objectives of section 801(b)(1), nor could it. In fact, the financial projections for Sirius and XM on which the Shapley Surplus model is built serve only to reinforce the invalidity of SoundExchange's fee proposal, demonstrating that imposition of SoundExchange's fee proposal would result in the SDARS incurring billions of dollars in additional losses during the license term, as well as postponing attainment of any positive cash flow or net income, let alone a return on investment, until well past the license term. As far as the interests served by section 801(b)(1) are concerned, this outcome would not merely be disruptive to the SDARS, it would jeopardize their very ability to survive.

122. In sum, the record evidence discussed below reveals SoundExchange's rate proposal to be non-responsive – and ultimately profoundly antithetical – to the central concerns of section 801(b)(1) and to the overarching interests of the section 114 compulsory license, namely, to strike the proper balance between fair compensation to copyright owners and preserving the promise of an innovative new medium for delivering creative works to the public. SoundExchange wants it all one way: extract billions of dollars from the SDARS, come what may as a consequence. This effort should be rejected.

B. The SDARS Contribute Significantly to Maximizing the Availability of Creative Works to the Public.

123. The first of the section 801(b)(1) objectives is to “maximize the availability of creative works to the public.” 17 U.S.C. § 801(b)(1)(A). As explained in

Part IV.A of the SDARS' Proposed Conclusions of Law, as a matter of both law and logic, the term "availability" encompasses the dissemination of creative works (both music and non-music) to the public by means of, *inter alia*, airplay on the SDARS.

124. There is no dispute that the SDARS increase the availability of music. When asked whether satellite radio increases the availability of music, SoundExchange expert Professor Ordover testified that "[t]he answer would be yes," 6/21/07 Tr. 209:4-6 (Ordover), while another SoundExchange economics expert, Dr. Steven Herscovici, testified that "the relative importance of satellite radio as a means of disseminating music is likely to grow significantly over time." Herscovici WRT ¶ 9.

125. The SDARS detail below the extent to which they enhance the range of creative expression by: broadcasting an unparalleled breadth and depth of sound recordings in an uninterrupted manner nationwide; by exposing listeners to music, both new and old, live and recorded, that they have not heard before and that is not broadcast elsewhere, thereby promoting record sales and providing an incentive for more sound recordings to be created; and by creating their own original music programming, including artist profiles, artist-hosted programs, and live performances, as well as by presenting a wide variety of original news/talk/sports/entertainment programming.

1. The SDARS Reach a Nationwide Audience.

126. One way in which the SDARS foster greater availability of music is through nationwide geographic coverage. *See, e.g.*, Blatter WDT ¶ 20 ("Sirius can reach millions of subscribers with its national signal," creating an audience "large enough to support many different musical channels with distinctive formats."); Logan

WDT ¶ 62 (“By our design, XM’s music channels provide a national platform to expose recording artists to audiences that appreciate new and different music.”).

127. For its part, XM recognized that in order to succeed, it had to be a truly robust coast-to-coast broadcast service: its signal had to blanket the country to reach automobiles, trucks, and pleasure craft, as well as fixed or portable XM radios used in a listener’s home, office, or other location. “XM had to be extremely reliable in a wide variety of challenging man-made and natural environments. Subscribers would expect to hear XM in their cars [for instance] without interference or interruption, regardless of vehicle speed or terrain.” Parsons WDT ¶ 14. Consistent with XM’s vision, its earliest adopters of XM were long-haul truckers who would drive outside a terrestrial radio market yet still receive the XM signal. 6/4/07 Tr. 325:8-14 (Parsons).

128. Sirius also recognized the importance of national radio coverage that offered the consumer, including those who travel long distance for a living (such as truck drivers), continuous and seamless access to its offerings, both music and non-music. As Mel Karmazin explained, Sirius’ “mission” is “to provide a very high quality digital audio experience to consumers in mobile vehicles across the entire nation with a system that provides coverage that is continuous and seamless and also importantly is affordable.” 6/7/07 Tr. 44:6-16 (Karmazin); *see also* 6/7/07 Tr. 223:6-18 (Coleman).

2. The SDARS Play Music Not Heard Elsewhere.

129. With respect to music programming, in addition to nationwide geographic reach of which terrestrial radio is not capable, the SDARS maximize the availability of creative works by playing a wealth of music that cannot be heard on terrestrial radio. *See, e.g.*, Blatter WDT ¶ 3 (shows Sirius produces with recording

artists such as Little Steven Van Zandt and others “give [Sirius] listeners access to music not available on terrestrial radio”).

130. This aspect of the SDARS’ programming reflects the fact that in order to reach the mass market of subscribers and to achieve long-term viability, the SDARS cannot offer only the most popular types of programming that anyone can hear on terrestrial AM and FM radio. *See* Karmazin WDT ¶¶ 40, 51. With respect to their music programming, the SDARS instead offer, in addition to the most popular “mainstream” types of music formats, different types of “niche” content (such as jazz, blues, and classical) that have been abandoned by local radio because it cannot attract sufficient support from a local audience. *See* Blatter WDT ¶ 19 (“Sirius has carefully chosen the formats of its 64 U.S. music channels to provide a breadth and quality of musical choice that is not . . . provided by traditional radio.”); *id.* ¶ 21 (typical terrestrial radio is designed to offer only a few “formats intended to appeal to large audience segments....”); Logan WDT ¶ 64 (“XM’s national reach enables XM to promote music that local radio formats have left behind.”); Parsons WDT ¶ 26 (“To reach [a] mass market, we cannot offer only the most popular types of programming that anyone can hear on terrestrial AM and FM radio. XM has to succeed both by offering the most popular ‘mainstream’ types of programming and by aggregating together different types of ‘niche’ content (such as jazz, blues, and classical) that had been abandoned by local radio because it could not attract sufficient support from a local audience.”).

131. Accordingly, XM and Sirius use their broadcast capacity to play everything from the top hits to Celtic and American Indian music programs, from

reggae to gospel, and so on. Logan WDT ¶ 13; Blatter WDT ¶ 24, 6/11/07 Tr. 83:21-85:1 (Blatter).

132. In other words, the SDARS are the opposite of terrestrial radio in that they seek breadth of content rather than the aggregate audience needed to be able to charge an advertising premium. 6/5/07 Tr. 169:2-170:10 (Logan); 6/11/07 Tr. 90:4-22 (Blatter); Blatter WDT ¶ 11 (“[W]e can serve listener interests, providing mixes of music that often do not fit with the advertising interests of . . . businesses that provide the core advertising for local terrestrial radio stations.”); *id.* ¶ 23 (Sirius is able to dedicate 10 of its music channels to younger listeners, a demographic underserved by terrestrial radio because of difficulty in finding enough local advertisers to make it economically viable).

133. Given the diversity of music programming available on the SDARS (not to mention the even greater amount of non-music programming), many subscribers are exposed to genres and artists they have never heard on broadcast radio or have not heard in years. Examples of channels offering such programming are XM’s Deep Tracks, The Loft, XMU, X Country, and The Move (Logan WDT ¶ 55), and Sirius’ Octane (SIR Ex. 27-D), Faction (Sir Ex. 27-E), Siriusly Sinatra (6/11/07 Tr. 57:13-20 (Blatter)), Bluegrass, Sirius Blues, and Reggae Rhythms (SIR Ex. 24). *See also* Blatter WDT ¶ 24. Indeed, XM was one of the first national media outlets to bring Southern gospel music to a national audience. 6/5/07 Tr. 146:14-147:12 (Logan). XM refers to this as “the Joy of Discovery” on XM. Logan WDT ¶ 38. Similarly, Sirius is able to “play . . . even more new music than you might hear on terrestrial radio,” such as Sirius’ Left of Center channel, which “plays almost entirely . . . new alternative rock that in

most cases isn't heard . . . on terrestrial radio at that stage." 6/11/07 Tr. 80:18-81:18 (Blatter).

134. In addition, music genres that are available on terrestrial radio are explored in greater depth on the SDARS. Each genre of music carried on the SDARS – Decades, Country, Pop & Hits, Christian, Rock, Hip-Hop & Urban or R&B, Jazz & Blues, Lifestyle, Dance, Latin/International, World, Standards, and Classical – features not only programs or even entire channels dedicated to mainstream and/or hit-based music but also “niche” channels that play music and performing artists that rarely find their way onto terrestrial radio. Logan WDT ¶ 13; XM Ex. 3; Blatter WDT ¶ 24; SIR Ex. 24; SIR Ex. 27; 6/11/07 Tr. 83:21-85:1 (Blatter); *see also* Logan WDT ¶ 80; Parsons WDT ¶ 31 (“Each of these [XM] music channels plays a much deeper and more diverse catalog of music than can be heard on terrestrial stations of the same format.”); Noll WRT at 42; Woodbury AWDT at 42 (“Sirius and XM both provide more music channels than are found in even the largest terrestrial radio markets, and those channels cover a more diverse set of genres”); *id.* (“even within the common genres, there is a greater diversity in the satellite radio offerings”); Blatter WDT ¶¶ 10, 11 (“We do everything terrestrial radio does and more . . . Sirius gets much deeper into the catalog.”).

135. XM's Pop & Hits category, for example, has a channel selection expansive enough to include traditional Top 40 songs along with soundtracks, show tunes, and international hits. The XM Christian music channels likewise encompass styles from pop to Southern gospel and play a deep catalog of well-known and lesser-known songs. Logan WDT ¶ 15.

136. Fourteen rock channels give XM's program directors the space and freedom to play any and every rock artist from the last fifty years and go far beyond the best-known cuts that receive airplay on commercial FM stations. Logan WDT ¶ 15.

137. XM's Hip-Hop & Urban channels provide a home to brand new music, old school music, and a channel of classics hosted by Snoop Dogg. Likewise, its jazz and blues channels play modern, contemporary and traditional jazz and blues, with a channel, High Standards (formerly Frank's Place), reserved for American Standards. Lifestyles channels have eclectic and new age sounds. XM has five channels of dance music, four Latin music channels, and three channels of World music. XM's three classical music channels include XM Classics, with traditional classical music, Vox, which features opera and vocal music, and XM Pops, which offers classical favorites in XM surround sound. Logan WDT ¶ 16; 6/5/07 Tr. 140:2-7 (Logan).

138. Sirius' extensive catalog also allows its listeners to experience the unique, niche music that is not available on terrestrial radio with the same depth. For example, while some terrestrial radio markets offer a classical music channel, many do not, and classical music availability often is limited to a "weekend program dedicated to classical music," or a classical music hour. 6/11/07 Tr. 85:5-86:14 (Blatter). By contrast, Sirius has three classical music channels that allow listeners to chose from symphonic classical, pops, and opera. *Id.*

139. Sirius also offers a wide variety of rock channels that allow fans to choose between specific formats of rock that meet their interests. For instance, Sirius' rock channel Octane offers a "much harder rock music" with a "more aggressive . . . sound", while All Nation plays a "much more mellower" rock sound. 6/11/07

83:21-85:1 (Blatter). This allows Sirius to better serve particular audiences and engage them in the music. *Id.*

140. The extent to which SDARS music programming encompasses genres that are not available at all on terrestrial radio in many markets or not available to the same extent is illustrated by the fact that XM has nine country music stations, 6/5/07 Tr. 140:12-142:14 (Logan), and Sirius has five country music stations (SIR Ex. 24), whereas some major markets, such as New York, currently have none. 6/5/07 Tr. 144:11-146:7 (Logan); Logan WDT, Ex. 19; Blatter WDT ¶ 22. No local market has nine country music stations. 6/5/07 Tr. 146:8-13 (Logan). Four of the top five terrestrial radio markets have only one station in the jazz and blues genre, whereas XM and Sirius have five each. Woodbury AWDT at 42; SIR Ex. 24. Whereas XM has fourteen rock music channels and Sirius has sixteen, New York has only two. 6/5/07 Tr. 147:18-148:2 (Logan); SIR Ex. 24.

141. As noted, XM and Sirius both provide more music channels, spanning more diverse genres, than are found in even the largest terrestrial radio markets, as Logan WDT Ex. 19 illustrates with respect to XM.

142. An example of how XM exposes listeners to music they otherwise would not hear is the rare music, such as old blues, folk, and bluegrass songs, played by Bob Dylan on his XM program “Theme Time Radio Hour with Bob Dylan.” Sometimes the songs Mr. Dylan selects are so obscure they are not even in XM’s vast library – indeed, sometimes experienced XM employees have never heard of them – and have to be found elsewhere. 6/5/07 Tr. 192:17-193:22 (Logan). The only reason people

would listen to such recordings is because Mr. Dylan has selected and presented them from his point of view. *Id.* at 194:1-14 (Logan).

143. The same holds true for the unique programming offered on Sirius channels co-produced by artists such as Eminem, Jimmy Buffet, Little Steven Van Zandt and Jeff Lorber. *See* Blatter WDT ¶ 18, SIR Exs. 9-A (Eminem will select and offer new and exclusive tracks to his audience), 9-J (Buffet programs his channels selecting music he listens to himself as well as known works), 6/12/07 19:15-21:12 (Frear). These artists “bring [] their creative talents to bear on shaping the overall listening experience” (Blatter WDT ¶ 18), by selecting the music played on the channel, including obsolete tracks, and bringing in new artists from their specific genre of music to introduce them and their music to the audience, and working as creative directors selecting and promoting music that has limited exposure on terrestrial radio. *See id.*; 6/12/07 19:15-21:12 (Frear); *see also infra* Part V.D.1.c and V.D.2.b.

144. As described in detail below, *infra* Part V.D.1.c and V.D.2.b, the SDARS offer a unique opportunity for new, niche, and even established artists to obtain nationwide exposure for music that is not aired on terrestrial radio.

145. By significantly enhancing the availability of and promoting music, the SDARS help drive demand for music and thus create an incentive for the creation of, sound recordings. 6/12/07 Tr. 324:22-326:22 (Woodbury); Woodbury AWDT at 43-44 (testifying that the increased exposure of listeners to artists, songs, and genres via the SDARS “will tend to encourage the sale of music . . . thus benefiting the artists and recording companies and thereby encouraging the production of new sound recordings”).

146. XM creates specials and showcases for artists who cannot obtain such exposure on terrestrial radio as a consequence of the limited formats and the pressure of having to air twelve to fourteen commercials per hour. 6/5/07 Tr. 173:12-174:10 (Logan).

147. By significantly enhancing the availability of music, the SDARS help drive demand for, and thus incentivize the creation of, sound recordings. 6/12/07 Tr. 324:22-326:22 (Woodbury); Woodbury AWDT at 43-44.

3. The SDARS Make Original Musical Content Available.

148. The SDARS also have contributed to the availability of new music by facilitating the creation of compelling new music content. For example, between 1200 and 1250 artists have recorded a total of some 8200 tracks in XM studios. 6/6/07 Tr. 204:15-205:1 (Masiello).

149. Further, the SDARS frequently welcome recording artists into their studios for live performances and promotional appearances. In addition to live performances by popular artists such as Phil Collins, Paul McCartney, Cecilia Bartoli, and Josh Groban on “Artist Confidential” programs in XM’s Performance Theater, Logan WDT ¶ 43; 6/5/07 Tr. 196:17-198:2 (Logan), artists also perform live in another XM studio as part of a regular feature called “Loft Sessions” on The Loft channel. *Id.* 197:14-20 (Logan). Sirius has consistently welcomed artists into its studios for live performances, Blatter WDT ¶ 28, and “record company reps will often make their artists available to participate in special programming that will air exclusively on Sirius.” Blatter WDT ¶ 40; *see id.* ¶ 17 (Sirius broadcasts hundreds of live studio performances

each year); Blatter WDT ¶ 40 (between January 1 and October 18 of 2006, over 800 record company artists visited the Sirius studios for interviews and/or performances).

150. In addition, the SDARS also have helped to create and release CDs of old and new music. For example, XM has collaborated with Concord Records to create CD compilations. The first of these, “Blistering Licks,” was released in June 2006 and features giants of jazz such as John Coltrane, Miles Davis, Wes Montgomery, and Art Tatum. In the fall of 2006, Starbucks began selling the first of a series of music compilations on CD with some of the best XM “Artist Confidential” performances. XM also has commercially released a Watercolors smooth jazz CD and plans to release a blues CD soon. Logan WDT ¶ 76. Sirius also has been involved in the creation of CDs, working alongside a major record company for a CD entitled “Paste” that was conceptually based upon the Sirius channel Outlaw Country. 6/11/2007 Tr. 126:20-127:9 (Blatter).

4. The SDARS Make Available a Substantial Amount of Non-Music Content.

151. In addition to the tremendous depth and breadth of their music offerings, a substantial portion of the SDARS’ programming – approximately half of Sirius’ and more than half of XM’s – consists of non-music programming in the form of news, talk, sports, and entertainment channels. *See* Parts V.D.1.a-b (discussing Sirius non-music channels) and V.D.2.c-e (discussing XM non-music channels); 6/5/07 Tr. 133:7-12, 137:18-138:1 (Logan) (XM Executive Vice President of Programming testifying that 103 out of 177 XM channels carry non-music content); *id.* at 134:8-12 (Logan testifying that XM programming is tending toward greater non-music content).

152. Much of the non-music content aired by Sirius and XM is original creative programming that Sirius and XM create themselves. For example, Sirius airs original content on Howard 100 and Howard 101 (the Howard Stern channels), Martha Stewart Radio, Cosmopolitan Radio, Maxim Radio, Playboy Radio, the Catholic Channel, OutQ (gay and lesbian channel), Sirius Left and Sirius Patriot (political channels), Road Dog (trucking channel), Sirius Stars (collection of celebrity hosted talk and entertainment programming), NFL Radio, NASCAR Radio, and NBA Radio. *See* Part V.D.1.a. Similarly, XM broadcasts a variety of original non-music content such as Oprah & Friends, Take Five (women's lifestyle), The Power (African-American talk), Family Talk (Christian talk), XM Sports Nation, XM Kids, Sonic Theater (readings and dramatic stage performances), and Open Road (trucking channel). *See* Part V.D.2.d. The original programming Sirius and XM create and air on these channels is not available on terrestrial radio – and in some cases not in any other medium.

153. The SDARS also air a substantial amount of “pass-through” programming, *i.e.*, a programming feed that the SDARS air unaltered to subscribers. Such programming includes live sports programming (such as NFL, MLB and NBA games and NASCAR races) and news and talk programming, such as Fox News, CNN, CNBC and ESPN News. *See* Part IV.A.2; Part V.D.1.a-b; V.D.2.c-d. Even though this programming is not original programming, the SDARS are unique in making this programming available as audio entertainment. *See* Part V.D.1.b (describing ability of Sirius to broadcast live feeds of every home-and-away NFL game and in-race driver communication feeds for NASCAR races that are unavailable anywhere else); Part IV.B.1.d (describing ability of XM to broadcast every MLB game and broadcast of

CNN, Fox News, CNBC, and ESPN programming that cannot be heard on terrestrial radio).

154. Finally, Sirius and XM broadcast a number of original non-music programs featuring unique personalities, including Barbara Walters, Bob Edwards, Ellen DeGeneres, Senator Bill Bradley, James Carville, Candace Bushnell, Tyra Banks, Deepak Chopra, Richard Simmons, Judith Regan, Jane Pratt, Opie and Anthony, Jim Breuer, Ronde and Tiki Barber, Jerry Rice, Jimmie Johnson, Dale Earnhardt, Jr., and Mike Kryzewski. *See* Parts IV.B.1.d; V.D.1.a; V.D.2.c-d.

155. All of this programming constitutes creative works of various types that the SDARS make available on their service that are not provided by SoundExchange's constituents. Moreover, the vast majority of this programming is not available to consumers through other media. Indeed, it is because consumers cannot obtain this programming elsewhere that the SDARS have found it to be valuable in differentiating themselves from terrestrial radio as a means of attracting and retaining subscribers. *See* Part IV.A; Part IV.B.

5. A Rate Higher Than the Rate the SDARS Propose Will Reduce Instead of Maximize the Availability of Creative Works to the Public.

156. The availability of works to the public will be maximized if rates are as low as possible, as lower rates lead to lower prices to consumers, which will increase the penetration of satellite radio and thus the availability of music to consumers, within the limits imposed by the effect on inducing creative product and the other statutory factors – an effect SoundExchange ignores. *See* Noll WRT at 41-42; Woodbury AWDT at 43-44 (“A lower SRPR fee leading to more widespread distribution of the XM and

Sirius services will expose listeners to artists, songs, and genres more or more effectively than would otherwise be the case.”).

157. Conversely, the “obvious economic implication of substantially higher rates” is “higher prices for consumers, hence fewer subscriptions, hence less availability of music to them.” Noll WRT at 42.

158. In addition to ignoring the effect of its fee proposal on the availability of the SDARS’ services to consumers, SoundExchange also fails to consider the inducement effect as it applies to the creative contributions made by the SDARS, discussed above and in greater detail in Part V.D. The content contributions by satellite radio are creative products for which satellite radio pays the cost of production. These include live performances, channels featuring superstar personalities, and the use of recording artists in music programs that feature not only their recordings but also music that influenced them. *See* Noll WRT at 47-48.

159. This creative product is available only because of investments in content, technology, infrastructure, and promotion by the satellite radio companies. It will continue to be induced only if the return on these investments to satellite broadcasters is at least a competitive return. *See* Noll WRT at 47. Professor Noll concluded that the amended SoundExchange rate proposal would “eliminate[] the incentive to create other forms of content on satellite radio by stripping away all of the net income derived from such content.” *Id.* at 8. *See* 6/6/07 Tr. 311:1-7 (Karmazin) testifying that a rate in excess of that proposed by the SDARS would have a detrimental impact on the SDARS ability to provide such programming).

160. Furthermore, a rate based on a percentage of revenues would place a tax on new creative content in that, under SoundExchange's current rate proposal, up to 23% of the gross revenue generated by new content would go not to the satellite radio company (the entity that financed the content) but instead to the record companies, thus providing a disincentive to undertake investment in such content. *See* Noll WRT at 47.

161. Therefore, as Professor Noll concludes, the inducement effect arising from SoundExchange's rate proposal is likely to be much more important for satellite radio than for record companies and is likely substantially to reduce, if not eliminate, satellite radio as a source of creative product. Noll WRT at 47-48.

162. Another aspect of SoundExchange's rate proposal that will reduce availability of creative works is the manner in which the rate increases as various subscriber plateaus are reached, such that as an SDARS operator crosses each threshold, its royalty payments increase dramatically, because the new rate applies to revenue from all subscribers, not just from the incremental subscribers. *See* Noll WRT at 42. Availability is not promoted by a rate structure that creates no incentive for the SDARS to increase their number of subscribers. Noll WRT at 42-43.

6. There Is No Evidence a Higher Rate Will Lead to the Creation of Sound Recordings.

163. On the other side of the ledger, there is no evidence that a rate set in the direction of that sought by SoundExchange in this proceeding will result in the creation of new sound recordings. As Dr. Woodbury testified, even if the SDARS were required to pay the 7.5% PSS rate without any downward adjustments, it "would likely have an undetectable effect on increasing the supply of sound recordings." Woodbury AWDT at 43.

164. SoundExchange has presented no evidence of any negative impact of the current royalty rate paid by the SDARS on the ability of record companies to produce additional music. In fact, Edgar Bronfman, CEO of Warner Music Group, conceded that he had seen no data indicating such a negative impact when questioned by Judge Roberts. 6/20/07 Tr. 36:9-37:9 (Bronfman).

165. Theoretical contentions by SoundExchange's expert witnesses that an increase in the returns to creative product can be expected to increase the quantity of such output (*e.g.*, Dr. Herscovici's assertion that "all else equal, higher copyright rates should lead to increased production of creative works," Herscovici WRT ¶ 44) are not based on any empirical evidence. Noll WRT at 45. In fact, Professor Ordovery specifically acknowledged that he has "done no empirical work" to show whether an increase in the royalty rate for sound recordings would cause record companies to increase their output of sound recordings. 6/21/07 Tr. 209:13-211:21 (Ordovery).

166. As Professor Noll pointed out, SoundExchange has not analyzed or provided any empirical evidence of the magnitude of the "inducement effect" – the extent to which additional profits are necessary to induce additional output from recording artists, in particular from "superstar" artists who already earn "excess" profits. Increased demand for the records of such artists will lead to higher prices, not more output, *i.e.*, there will be no "inducement effect." Noll WRT at 44-47.

167. Music is not a homogenous product. Some types of music, such as jazz, folk, and most international music, are rarely, if ever, played on terrestrial radio. Exposure of this music by means of the SDARS plausibly, it can be posited, provides

new information to consumers and thereby generates interest that would lead to more record sales. Noll WRT at 46-47.

168. Moreover, SoundExchange’s analysis of the “availability” factor erroneously gives no weight to the availability of music content to consumers. As Professor Noll explained, “[a]vailability refers to the ability to consumers to consume creative works,” Noll WRT at 7, and the “most obvious economic implication of substantially higher rates . . . is higher prices for consumers, hence fewer subscriptions, hence less availability of music to them.” *Id.* at 42. SoundExchange ignores the economic implication of substantially higher rates, namely, higher prices for consumers, fewer subscriptions, and, as a result, less availability of music to them. *Id.*

169. Contrary to SoundExchange’s theory that greater availability of music would be promoted by a higher royalty rate, the availability of works to the public will be maximized if rates are as low as possible. Lower rates lead to lower prices for consumers, which will increase the penetration of satellite radio and thus the availability of music to consumers, within the limits imposed by the effect on inducing creative product and the other statutory factors – an effect SoundExchange ignores. *See* Noll WRT at 41-42.

7. Conclusion

170. In sum, the record compellingly demonstrates the important contribution the SDARS make to maximizing, on a nationwide basis, the availability of a wealth of music – both recorded and live – that cannot otherwise be heard on the radio, including music by new artists with no access to terrestrial radio, with its narrower playlists and more limited channel lineups, as well as a wide range of creative

non-music content. A lower rate will make satellite radio relatively more affordable to consumers, thereby increasing the availability of the SDARS' diverse programming as well as preserving the incentive for the SDARS to invest in original programming. A higher rate will have the opposite effect, causing a detrimental impact on the availability of creative works to the public. On the other hand, there is no evidence that a higher royalty will induce the creation of sound recordings. Thus, this factor strongly favors the SDARS.

C. A Rate in the Range Proposed by the SDARS Will Best Afford a Fair Return to the Copyright Owners and Fair Income to The SDARS.

171. In their Proposed Conclusions of Law, the SDARS discuss the considerations that properly should bear upon determining whether a proposed royalty rate strikes the appropriate balance between the fair income due to the copyright user and the fair return due to the copyright owner. *See* PCL Part IV.B.

172. As the SDARS demonstrate in aforementioned section, a rate that affords the SDARS a fair income must permit them to obtain a competitive, risk-adjusted return on their past and future investments in delivering their services. Unless rate-making contemplates preserving the potential for realizing such a return, the incentive to invest in new technologies that perform sound recordings, such as the SDARS, will necessarily be eliminated by the expropriation of the returns to which their investors are entitled if the business is successful.

173. On the other hand, a rate that affords the recording industry a fair return will provide the record companies a competitive return on any investment they make in connection with the SDARS' services; it should not function as a rent that would provide the record companies with a windfall based on the exercise of market

power or on the ability of the SDARS to pay, divorced from any effort or sacrifice undertaken by the recording industry with respect to satellite radio. *See* Noll WRT at 53.

174. The record evidence establishes that the SDARS' rate proposal would provide fair income to the SDARS, as: (1) the SDARS have yet to generate any net income; (2) it would preserve the ability of investors to potentially earn a risk-adjusted return on their investment by not jeopardizing the viability of the SDARS; and (3) a significantly higher rate would impede the SDARS ability to recognize any net income during the license period and would threaten the ability of the SDARS' investors to recognize a risk-adjusted return at any point in the future. In fact, under Mr. Butson's projection models for Sirius and XM, SoundExchange's rate proposal would deprive the SDARS of any return for roughly the next decade. *See generally infra* Part V.I.

175. The rate proposed by the SDARS also will provide a fair return to the recording industry, as: (1) the record companies already receive a competitive return on sales of their sound recordings; (2) the record companies are not entitled to receive a return on expenses they incur unrelated to the creation of sound recordings; (3) there is no reliable evidence that the record companies are suffering lost sales as a result of the SDARS; and (4) the record companies benefit from utilizing the SDARS as a means of promoting sales of their sound recordings. In this regard, fair return must be construed in light of the narrow concern with the attenuated possibility of sales displacement by subscription noninteractive digital audio services that animated Congress' creation of a sound recording performance right subject to a compulsory license for such services pursuant to section 114(f). *See* PCL Part IV.D.1.

176. There is no fairness rationale for increasing the license fee in order to cushion the impact on record companies of declining CD sales in the absence of any evidence that the decline is attributable to plays of post-1971 sound recordings on the SDARS, or award the record companies a windfall in the face of evidence of the promotional value that the record companies obtain from airplay on the SDARS.

177. Ultimately, in order to afford the SDARS a fair income, the evidence establishes that the rate should be in the range proposed by the SDARS. Whereas the evidence establishes that the higher rate proposed by SoundExchange likely would prevent the SDARS from obtaining any income – much less a fair income – until after the end of the license term. There is, by contrast, no evidence that such a rate is necessary to afford the record companies a fair return on their overall investments or – more to the point – on investments attributable to the creation of sound recordings.

178. Even SoundExchange's own economists acknowledge that a fair income to the SDARS would take into account both past and future investments (Professor Ordover) and that businesses make investments with expectations of reaping a return on those investments (Drs. Herscovici and Pelcovits). *See* 6/21/07 Tr. 321:13-322:19 (Ordover); Herscovici WDT ¶ 76; 7/9/07 Tr. 212:20-213:16 (Pelcovits). Because the rate proposed by the SDARS affords the SDARS an opportunity for return on their past and future investments and the SoundExchange rate undermines any expectation of net income until many years after the license term, a rate within the range proposed by SDARS meets the statutory requirement

1. **Factors To Be Considered in Determining What Constitutes a Fair Income to the SDARS and a Fair Return to the Record Companies.**

a. **Fair Income to the Copyright User Requires the Judges To Set a Rate that Permits a Reasonable Risk Adjusted Return on Investment, Including Past Investments in Starting and Developing the Business.**

179. Fair income means income sufficient to generate a competitive risk-adjusted return on past and future investments. “The appropriate standard is whether a rate allows an SDARS to earn a competitive return on all of its investments, including the paid-in capital that has financed its early cash flow losses.” Noll WRT at 6 (¶ 3); see 8/16/07 Tr. 36:6 – 37:22 (Noll). SoundExchange expert economist Professor Ordover agreed that the fair income prong of the 801(b)(1) standard should permit the copyright user to obtain a reasonable risk-adjusted return on its start-up and past investments as well as future investments. “Otherwise,” Professor Ordover explained, the firm “simply will not come into the market and offer the service.” 6/21/07 Tr. 321:13-322:19 (Ordover). This principle, and why it is central both under section 801(b)(1) and in a competitive market, is discussed in greater detail in the SDARS’ Proposed Conclusions of Law at Part IV.D.

b. **Fair Return to the Copyright Owner requires the Judges to Set a Rate That Will Not Provide a Windfall to the Copyright Owner or Impose a Rent on the Copyright User Unrelated to the Copyright Owner’s Inducement to Create New Works.**

180. The fair return to the copyright owner is at most the competitive price of the input, and the concept of fairness requires that the competitive price of the input be adjusted based on principles of distributive justice. Noll WRT at 49-50. Economic theories of fairness all regard income from the exercise of market power and pure

Ricardian rents as lacking fairness. *Id.* at 53. Thus, a rate that provides a fair return must distinguish between a return that is necessary to induce supply versus a return that imposes a rent unrelated to effort and sacrifice. *Id.*

181. In this regard, Professor Noll testified: “Fairness . . . implies that prices should be no greater than is necessary to induce supply.” Noll WRT at 8. As a result, a fair rate will be less than the competitive price if artists would have sufficient incentive to create new works if they receive a lower income than they currently receive. Noll WRT at 53. *See generally* PCL Part IV.D.

182. Fair return also requires consideration of whether the copyright users’ service affects the copyright owners’ other sources of revenue. Noll WRT at 55. If the SDARS have no negative effect on the record companies’ profits (or have a positive effect), any returns obtained from the SDARS under the compulsory license will further increase the record companies’ return on their investments and will allow a lower rate to afford a fair return. *Id.*

2. A Royalty Rate Within the Range Proposed by the Preexisting SDARS Will Enable Them To Recognize a Fair Income.

183. “The income of an SDARS operator is fair to the extent that it is a competitive reward to effort and sacrifice, including sacrifices in the past as well as sacrifices that are incorporated into an estimate of forward looking costs.” Noll WRT at 53. In evaluating fairness, “the remuneration to an SDARS operator should be sufficient to enable the firm to earn a competitive return on investment.” *Id.*; *see also* Noll WRT at 50 (fair income to the SDARS requires a return on their investments equal to the competitive rate of return, which is “the minimum return that is necessary to induce investment”).

184. As demonstrated by Professor Noll, however, the rate proposed by SoundExchange is far too high to allow the SDARS to earn any net income, let alone a fair income, at any time during the license term. *See* Noll WRT at 22-25.

a. SDARS Have Yet To Earn Any Net Income, Much Less a “Fair Income.”

185. Based on the actual financial results to date and the projections proffered by all of the parties, the SDARS are not expected to generate any net income for several years and will not generate the return on investment contemplated by Professor Noll until several years after that. *See* Part V.I.

186. The nature of the satellite radio business is such that the SDARS had very high up-front costs with the possibility of large incremental returns in the future. 6/12/07 Tr. 55:13-56:1, 59:17-60:2 (Frear) (discussing historic losses and startup costs, as well as expected future returns); Noll WRT at 6 (stating that investments in research and development, programming, subscriber acquisition, and in other areas were required before any actual sales of service could be made). The SDARS and their respective investors have not yet reached the point where they have realized any return on their investments. *See* Noll WRT at 22-23 (noting the SDARS’ accumulated deficits and yearly losses and stating that “neither service is anywhere near showing a profit, let alone a competitive return on investment”).

187. Sirius’ total capital investments to date are over \$5 billion. 6/6/07 Tr. 274:13-16 (Karmazin); *see also supra* Part V.F.2. (discussing various Sirius capital investments and operating costs). However, Sirius has yet to earn a single dollar of profit and has an accumulated deficit of over \$4 billion. Karmazin WDT ¶¶ 8, 13; 6/6/07 Tr. 274:4-12 (Karmazin); *see also* 8/15/07 Tr. 118:6-8 (Frear). *See also* SIR Ex.

47 at F-4; SIR Ex. 57 at 1; SX Trial Ex. 74 at 1, 3 (showing revenues, operating expenses and net losses from 2004 through the first quarter of 2007).

188. XM's total capital investments since inception are over \$6.3 billion, including capital and operating expenditures. Vendetti WDT ¶ 2; *see also supra* Part V.F.3. (discussing XM's various capital investments and operating costs). While the gap is narrowing as the number of XM subscribers increases, XM's costs still far exceed its revenues. Vendetti WDT ¶ 14. XM has yet to produce positive earnings and has an accumulated deficit of over \$3.6 billion. Vendetti WDT ¶ 15; Vendetti WRT, Ex. 2 at 5. *See also* Vendetti WRT, Ex. 1 at 32 (showing historical financial data for the period of 2002-2006).

189. In addition to this past financial performance, the projections in evidence show that Sirius and XM expect to become profitable ||

|| but that the SDARS' investors will not realize any return on past and future investment during the license term. *See* SIR Ex. 58 and Vendetti WRT Ex. 4; *see also infra* Part V.I.

190. In connection with its rebuttal case, Sirius prepared a forecast (based on its current internal modeling and discussed in detail *infra* Part V.I.) that projects Sirius' financial performance over the license term at the SDARS originally proposed rate of 0.88% of revenues. *See* SIR Ex. 59. The table below summarizes the projections of Sirius' free cash flow and net profits/losses during the license term at that rate:

(figures in millions)	2007	2008	2009	2010	2011	2012
Revenues	\$960	\$1,242	\$1,535	\$1,888	\$2,184	\$2,492
Free Cash Flow at 0.88%						
Net Profit (Loss) at 0.88%						

See Frear WRT ¶ 14; SIR Ex. 59. Under a 0.88% royalty rate, which is just over three-tenths of a percentage point less than the rate equivalent to 1.2% of revenues that the SDARS now propose (a difference of only \$3.07 million in royalties in the first year of the license), Sirius would become free cash flow positive and earn a net profit for the first time in []. *Id.* In addition, at that rate, Sirius would generate cumulative free cash flow of [] for the entire term of the license. *Id.*

191. As part of its rebuttal case, XM submitted an updated average of analyst forecasts, for the period 2007-2012, issued between March and July 2007 by nineteen analysts who cover XM (the “analyst consensus projections”). Vendetti WRT, Ex. 4; Vendetti WRT ¶¶ 11-12; 8/15/07 Tr. 34:2-44:10 (Vendetti); Woodbury Ex. 27 (XM memorandum explaining the compilation of the analyst consensus projections). The projections represent the market’s view of XM’s current financial growth trajectory given its current cost and debt structure as well as challenges presented by the current marketplace. *See infra* Part V.K.2 (stating that XM Senior Vice President of Corporate Finance Mark Vendetti finds the analysts’ consensus projections reasonable estimates of XM’s financial performance over the license term). The table below sets forth the industry analysts’ projection of XM’s free cash flow and earnings over the license term, assuming no changes in XM’s existing cost structure (dollars in millions):

(figures in millions)	2007	2008	2009	2010	2011	2012
Free Cash Flow	(\$276)	(\$61)	\$47	\$270	\$435	\$532
Net Profit/(Loss)	(\$561)	(\$389)	(\$228)	(\$41)	\$138	\$233

According to the analyst consensus projections, XM will generate cumulative positive

cash flow over the course of the license term and will begin to reduce its projected accumulated deficit with positive earnings starting in 2011. Vendetti WRT, Ex. 4. *See infra* Part V.I.3.b. (explaining that the analysts' projections likely anticipate a sound recording royalty rate that ranges between two and four percent of revenues).

192. In contrast, under the SoundExchange rate proposal, the SDARS likely will not earn any net income during the license term. In the projections prepared by SoundExchange's expert witness Sean Butson using SoundExchange's proposed rates, which contain flaws that result in an understatement of the potential negative cash flow and losses (*see infra* Part V.I.4.a.), Sirius is not projected to become profitable until after the end of the license term, in 2013. Moreover, Mr. Butson projects that over the term of the license, Sirius will lose a total of \$1.802 billion and will have total negative cash flows of \$538.8 million. Butson WRT App. A. Thus, under Mr. Butson's projections using the SoundExchange proposed rates, over the term of the license Sirius would have [] more in losses than under a rate in the range proposed by the SDARS. In addition, under the SoundExchange rates, Sirius would be cash flow negative for the term rather than cash flow positive, as it would be under a rate close to the rate proposed by the SDARS, with a cumulative cash flow difference of []

]].

193. Even when SoundExchange's fee proposal is run through Sirius' own model, which is more accurate than Mr. Butson's model, Sirius does not project to earn any income during the license term and instead projects to further increase its accumulated deficit. 8/15/07 Tr. 129:12-18 (Frear) ("The SoundExchange proposal . . .

run through the [Sirius] model . . . produces a . . . billion dollar cash deficit. You don't have a single year of income, not a single year of positive free cash flow.”).

194. As explained in Part V.I.3.b., XM currently budgets two percent of total revenues for the sound recording royalty, based on its historic costs. Using SoundExchange's revenue projections, the difference between what XM currently budgets and the rates SoundExchange proposes equals \$1.1 billion.⁶ The impact of adoption of SoundExchange's proposal would be to push the time when XM first earns positive net income out to 2015 (versus 2011) and to lose a cumulative \$541 million in free cash flow over the course of the license term, as opposed to generating cumulative positive cash flow during that term. *Compare* Butson WRT, App. B; Vendetti WRT, Ex. 4. These consequences would be enormously disruptive to XM; indeed, they would jeopardize XM's viability as an enterprise. *See* Part V.I.5.b.

b. Based on the Preexisting SDARS' Past and Projected Financial Performance, a Rate in the Range the SDARS Propose is Necessary To Afford Them a Fair Return.

195. Whereas a rate that afforded a fair income would allow the SDARS to receive a competitive return on both their forward-looking costs as well as on their historical investments, the SoundExchange fee proposal would preclude even a return on the forward-looking physical cost of capital (a fraction of overall forward-looking costs), which even Dr. Pelcovits agrees must be considered. A rate in the range

⁶ This number is calculated by deducting two percent of the XM revenues projected by SoundExchange over the license term from the total sound recording royalty payments projected by SoundExchange. Butson WRT, App. B.

proposed by the SDARS is necessary to provide the SDARS an opportunity to obtain a fair income.

196. As discussed above, at the end of 2006, the SDARS had a combined accumulated deficit of \$7.3 billion (\$3.5 billion for XM and \$3.8 billion for Sirius).

Butson WRT Apps. A and B at 2 (“accumulated deficit” line). Because the SoundExchange rate will generate substantial additional losses for the SDARS during the entire license term (\$2.5 billion for XM and \$1.8 billion for Sirius under Mr. Butson’s model), those accumulated deficits will increase to a total of more than \$11.6 billion in 2012, \$4 billion more than at the beginning of the license term. *Id.* Under SoundExchange’s fee proposal, the SDARS will not be afforded any opportunity for a return on investments made during the license term until years beyond the end of the term.

197. Under Mr. Butson’s overly-favorable projections, the accumulated net-income deficit for Sirius would not return to its 2006 year-end level until sometime in 2018. XM’s accumulated deficit would exceed its 2006 year-end starting point past the end of the Butson model in 2020. *Id.*; *see also* 8/27/07 Tr. 328:22-329:12 (Butson).

198. In other words, SoundExchange asks the Judges to adopt a fee proposal that would mean the SDARS would earn a grand total of zero net income over more than the next decade. That is not “fair” income under any reasonable concept of fair income.

199. In contrast, Sirius and XM would both have their first year of net profit four years earlier than SoundExchange projects under its fee proposal – and during the license term – under a fee in the range they propose. Compare SIR Ex. 59

(demonstrating that a rate of 0.88% would allow Sirius to become profitable in [[]]) with Butson WRT App. A (projecting no net profit until 2013); compare Vendetti Ex. 4 (projecting first year of net profit in 2011) with Butson WRT App. B (projecting no net profit until 2015).

200. While a rate in the 1.2% range proposed by the SDARS would afford the SDARS income during the license term, SoundExchange's rate proposal would eliminate any such income, and add to the SDARS' accumulated deficit. By definition, a rate that would allow some income, is more fair than one that would allow none.

201. In analyzing SoundExchange's original fee proposal and Mr. Butson's model from the direct phase of the proceeding, Professor Noll demonstrated that for the SDARS merely to recover a reasonable return on their forward-looking cost of physical capital during the six-year license term, "the rates could not be more than 25 percent of what the SoundExchange rate proposal [is]." 8/16/07 Tr. 113:9-13 (Noll); Noll WRT at 36; *see generally* Parts V.I, VII.B.

202. Because Mr. Butson's adjusted model projects even less revenue for the SDARS over the license term than his original projections, the difference between the projected amount of return after SoundExchange's proposed royalties and the amount of income necessary to provide a reasonable return on the forward-looking cost of physical capital has increased. *See infra* Parts V.I.4.c, VII.B. As demonstrated in Appendix C, under SoundExchange's Third Amended Rate Proposal and existing projected conditions, Professor Noll's analysis demonstrates that the SDARS would not recover a reasonable return on their forward-looking cost of physical capital with a zero royalty, implying that the rate cannot be significantly above zero to be fair. Appendix

C; *see infra* Parts V.I.4.c., VII.B.; *see also* 8/16/07 Tr. 116:8-117:13 (Noll) (rate would need to be less than the 25% of SoundExchange's previous proposal given the new projections).

203. Professor Noll also demonstrated that once a competitive return on start-up investments is factored into the costs of the SDARS, there is no income, let alone a fair income, for either company. To the contrary, there is a significant deficit. Noll WRT at 36-37. Professor Noll used the SDARS' accumulated deficit of \$7.3 billion as a conservative estimate of the SDARS' invested capital as of December 31, 2006. He then calculated that the net income before depreciation that would be required to generate a competitive return on that investment was \$1.22 billion per year, plus approximately another \$80 million in depreciation. *Id.* Thus, he concluded, over the six years of the license term, the net income required to provide a competitive return on invested capital to the SDARS would be \$7.8 billion before depreciation. *Id.* As Professor Noll indicated, even if the license fee were zero, the net income of the SDARS operators would be far less than that (even under Mr. Butson's overly optimistic original projections). *Id.*

204. Professor Noll pointed out that his calculation was conservative, as it did not include the true opportunity-cost value of the SDARS' invested capital from the date of investment through December 31, 2006. Noll WRT at 36-37. In other words, the cumulated loss as of December 31, 2006 is an accounting number that does not include any return on invested capital between the time it was invested and the end of 2006. Moreover, the calculation does not include any losses in 2007 or the fact that the SDARS' income during the period is back-end loaded. *Id.* & n. 8. Indeed, as discussed

elsewhere, *see infra* Part V.I.4.c., the SDARS will not earn a reasonable return on even their physical capital on a forward-looking basis during the license period.

c. Potential for SDARS' Investors To Earn Risk-Adjusted Returns Within a Reasonable Time Frame Must be Preserved.

205. Professor Noll described 'fair return' as "the risk adjusted competitive return on investment." Noll WRT at 49. As noted, SoundExchange economist Professor Ordover, consistent with Professor Noll's assessment of fair return, strongly agreed that the sound recording fee should be set to permit the SDARS to obtain a reasonable risk-adjusted return on their start-up investments and on their past investments in building their businesses, as well as their future investments. Ordover WDT at 30. Although Dr. Pelcovits disagreed that historic losses should be treated the same as operating expenses going forward, he did testify that no matter when an investor invests, the investor "will consider the prospective future profits and losses of the company and that would include operating loss, the cost of building brand name through advertising, the cost of paying for content or acquiring customers." 7/9/07 Tr. 212:20-213:16 (Pelcovits). In sum, because investors in a business expect to receive a return on their investment, a fair income should afford the prospect of a return on that investment. *See* PCL Part IV.D.2.

(1) The SDARS' Investors Expect a Return on Their Investment and Will Not Continue To Invest Without the Prospect of a Return in the Near Term.

206. As David Frear testified, "Investors in my experience do expect a positive return on investment." 6/12/07 Tr. 53:14-17 (Frear). In addition to their legal obligation to pay back their debt, the SDARS have a fiduciary obligation to their

investors. 6/12/07 Tr. 53:20-53:22 (Frear). Even more practically, however, it is common sense that “[i]f you went to investors with the proposition that we’re going to blow three billion dollars of your money and we’re not going to give you a nickel back, I don’t think you would . . . raise the money.” 6/12/07 Tr. 54:10-54:17 (Frear).

207. Because of the risk involved in investing in a nascent venture, an SDARS investor in 1998 would have demanded a return of about 25% or higher on his investment. 6/13/08 Tr. 208:5-16 (Musey). Moreover, an SDARS investor who came on board in 2006 would expect a return on investment of approximately 12%. 6/13/07 Tr. 208:17-22 (Musey); Musey WDT ¶ 20. Because “it is unlikely that the cost of capital for the SDARS companies will decline materially in the near term unless the companies reach or exceed analyst projections and until cash flow breakeven is reached,” it is also unlikely that investors’ return requirements will be lowered in the near future. Musey WDT ¶ 20.

(2) A Sound Recording Royalty in the Range Proposed by the SDARS is Required for the SDARS To Generate a Return on Investments Already Made and To Attract Future Investment.

208. As Mr. Musey testified, “[e]quity investors as a whole[] have not yet received an appropriate return on their investment for the risk they assumed, [and] current Wall Street price targets [do not] suggest they will in the next 12 to 18 months.” Musey WDT ¶ 23. Because the royalty rate set in this proceeding could affect the SDARS’ stock prices, “[n]on-projected increases in royalty rates . . . pose a concern in the mind of investors regarding the value of these satellite radio companies. The concern is that these royalty payments are variable costs, and a percentage increase in

royalty payments reduces operating cash flow dollar-for-dollar without adding any new subscribers.” Musey WDT ¶ 51.

209. The business metric that most closely translates into return on investment for SDARS’ investors is free cash flow. 6/12/07 Tr. 82:6-14 (Frear). Because investors look for free cash flows, which is how they end up getting a return on the company, management is “very focused on driving the company to free cash flow for the purposes of enhancing investor returns.” 6/12/07 Tr. 82:6-14 (Frear). As discussed above (Part V.C.2.a), under the SoundExchange proposal, Sirius will have a cumulative negative cash flow of [[]] and XM will have cumulative negative cash flow of [[]]. In contrast, at a rate near that proposed by the SDARS, Sirius will become cash flow positive in [[]] and have cumulative positive cash flow for the term of the license. Under its existing cost structure, which allocates approximately 2% of revenues to the sound recording royalty, industry analysts project that XM will generate positive cash flow in 2009 and have cumulative positive cash flow for the term of the license. Thus, a rate in the range proposed by the SDARS is more likely to provide a return to investors during the license term.

210. Finally, the business metrics discussed above, specifically free cash flow and net profitability, all have an effect on investor psychology. “[A] delay in the break-even milestones would have a significant effect on the psychology of the investors as these types of delays raise doubts on the current management’s credibility and/or ability to project their results. . . . [I]nvestors have historically reacted negatively when such delays are several quarters or longer, especially for companies that have never produced positive EBITDA or cash flows.” Musey WDT ¶ 73. Therefore, under

the SoundExchange proposed rate, future investment in the SDARS would be greatly jeopardized. *Id.*

d. Fair Income to the SDARS Must Account for the Increased investment in Non-Music Content and Substantial Programming Investments that Provide Substantial Value in Comparison to the Value Attributable to Sound Recordings.

211. The SDARS also have established that a lower rate is necessary to account for the use of content other than sound recordings in their programming and to prevent over-charging the SDARS for value not obtained from copyrighted the sound recordings relative to that provided by non-music programming.

212. As discussed in greater detail above, the SDARS have substantially increased their use of non-music content as a means of attracting and retaining subscribers. *See supra* Part IV.A.2. (describing shift from focus solely on music programming to larger focus on unique and compelling non-music content); Part V.D.1. (describing the SDARS substantial creative contributions to airing non-music content). At the same time, the SDARS' subscriber bases and revenues have grown. *See supra* Part IV.A.2-4. (showing trend of subscriber growth correlated to increase in non-music programming). As a result, a substantial portion of the SDARS' subscriber revenue, "are being generated by the non-music component." 6/12/07 Tr. 283:2-283:4 (Woodbury); 6/12/07 Tr. 164:4-165:13 (Frear) (discussing how Sirius has made investments in non-music programming, unlike Music Choice, to entice individuals to pay for Sirius); Logan WDT ¶ 25 (noting that "[m]ost of XM's exclusive content deals are targeted to promote acquisitions of particular subscriber segments").

213. Similarly, the SDARS invest substantial amounts of money into the programming they air, both for licensing and for developing original content. 6/12/07 Tr. 282-83, 295 (Woodbury). “The substantial investments Sirius has made in bringing unique, compelling programming to subscribers in association with well-known brand names like the NFL, NHL, NBA, and Howard Stern is what drives subscriptions and subscription revenues.” Frear WDT ¶ 32; *see supra* Parts V.D.1a-b. & V.F.2.a. As a result, the sound recordings are just one piece of the SDARS overall programming in which the SDARS invest to attract and retain subscribers. Karmazin WRT ¶ 23.

214. In addition, while music programming, and therefore sound recordings, are an important feature of the SDARS’ services, SoundExchange has overstated the value of compensable sound recordings to the programming that the SDARS provide. *See supra* Parts VII.A (evidence that SoundExchange survey attempting to value “music” overstates the relative value of compensable sound recordings to the SDARS). Essentially, while the SDARS have substantially invested in their non-music programming, music is a commodity to which the public has widespread free access. *See* 6/5/07 Tr. 179:17-181:15 (“Music is predominantly widely available for free, mostly from AM and FM radio. As our business has continued to grow, more places and more outlets are offering music to get for free. AM/FM radios are in cars, they’re in hotels, and you can turn it on and you can receive music.”); *see also* Logan WDT ¶ 49 (discussing music as a commodity and how XM enhances that commodity’s value).

215. A rate that affords a fair income to the SDARS must take account of the SDARS’ revenues attributable to their non-music content and to their substantial

programming investments. 6/12/07 Tr. 294:6-295:17 (Woodbury) (noting that SoundExchange's payments should be lowered because of the revenues attributed to non-music programming); Karmazin WDT ¶ 54 ("The fee must recognize the relative value of the many programming inputs we use, for both our music and non-music channels, and properly account for those that attract and keep listeners.").

3. A Lower Royalty Rate Will Afford the Record Companies a Fair Return

a. The Record Companies Should Not Be Entitled to Returns From the SDARS that Cover Costs in Manufacturing and Distributing Physical Products (as Opposed to the Sound Recording Itself).

216. As discussed above, the concept of fair return should afford the labels a fair return on their investments commensurate with the value of their contribution to the SDARS' services. It does not entitle the record companies to fees from the SDARS intended to offset revenue declines in other business lines. Specifically, there is no fairness rationale for the record companies to seek to recover from the SDARS an increased royalty rate in order to subsidize costs associated with obsolete and failing business models (*e.g.*, the manufacture, packaging and distribution of physical CDs) as the recording industry belatedly transitions to a business model centered on more efficient digital distribution. *See, e.g.*, 6/20/07 Tr. 25: 17-19 (Bronfman) (Chairman and CEO of Warner Music Group testifying that "Our future is our ability to monetize the use of our sound recordings on digital platforms . . ."); Herscovici WRT ¶ 13 ("the recording industry will increasingly depend on receiving sufficient revenue from digital revenue sources"); *id.* ¶ 12 ("digital music has become an increasingly important source of revenue for record companies"); 8/27/07 Tr. 49:13-50:2 (Ordovery) (testifying that the

costs of digital distribution are lower than the costs of manufacturing and distributing CDs). Those costs, and the costs of artist touring and promotion, are not costs incurred in the creation of the copyrightable works being used by the SDARS.

217. SoundExchange's record-company and artist-representative witnesses presented evidence regarding costs unrelated to the creation of sound recordings for the SDARS, including costs of manufacture and distribution of physical products, touring, and promotion of artists and sound recordings in support of the argument that they are entitled to a return on those costs. *See* 6/25/07 Tr. 34:18-35:10, 35:17-37:11 (Navarro) (testifying that the expenses borne by artists to "creat[e] the cover, which is basically the package that the CD comes in," and to tour in support of an album should be taken into account); 6/25/07 Tr. 53:9-54:16 (Navarro) (acknowledging that money spent touring and promoting albums is not money spent to create sound recordings and is in fact spent after the record is already created). Costs not incurred in creating the copyrighted work are not appropriate for consideration in the analysis of what constitutes a fair return to the recording industry. *See infra* Part V.C.1.b.

218. For example, SoundExchange witness Charles Ciongoli, Executive Vice President and Chief Financial Officer for Universal Music Group ("UMG"), admitted that the "costs of creating the sound recording" are only the artists and repertoire costs, which include the cost of finding talent, making the recording, selling the recording, and paying royalties to the participants. 6/27/07 Tr. 135:5-17 (Ciongoli). Costs included in UMG's profit and loss statement other than the "costs of creating the sound recording," are manufacturing, distribution, and marketing costs.

219. UMG's manufacturing and other related costs were [[]], and distribution costs were [[]], for a total of [[]] in 2005. Ciongoli WDT at 4. UMG also spent approximately [[]] on selling and distribution overhead in 2005, which is part of UMG's total manufacturing and distribution costs. SX Ex. 106 DR; Ciongoli WRT at 10. In 2006, UMG manufacturing and related costs were [[]], distribution costs were [[]], and overhead for selling and distribution was [[]]. SDARS Ex. 61.

220. UMG's 2005 marketing costs were [[]], including [[]] for video production, [[]] for publicity and promotional tours, and [[]] for packaging. Ciongoli WDT at 5-6; SDARS Ex. 59. In 2006, the total marketing costs were [[]]. SDARS Ex. 59. Video production numbers were [[]], and publicity and promotional tour expenses were [[]]. SDARS Ex. 59. In addition, UMG spent [[]] in marketing overhead in 2005 and [[]] in 2006. SX Ex. 106 DR; SDARS Ex. 61.

221. UMG's 2005 total costs were [[]]. SDARS Ex. 58. But subtracting the 2005 costs unnecessary to the creation of sound recordings, including manufacturing, distribution and marketing costs, as well as overhead related to those areas, UMG's costs were only [[]]. Ciongoli WDT at 3-6; SDARS Ex. 59, 61. Thus, 59% of UMG's stated costs were unrelated to the creation of sound recordings.

222. In 2006, UMG's total costs were [[]], SDARS Ex. 61. Subtracting out the 2006 costs relating to manufacturing, distribution and marketing, as

well as overhead related to those areas, UMG's costs were only []].
SDARS Ex. 59, 61. Thus, for 2006, 62% of UMG's stated costs were unrelated to the creation of sound recordings.

223. SoundExchange's other record company witnesses also presented evidence of costs unrelated to the creation of sound recordings. In particular, Michael Kushner of Atlantic Records testified that Atlantic incurred [] in costs designing packaging for new releases, Kushner WDT at 9, [] in costs related to marketing new releases, Kushner WDT at 10, and [] in costs producing music videos. Kushner WDT at 11. Further, Kushner bemoaned the [] in overhead cost for the Marketing Department. Kushner WDT at 10. These amounts, totaling [] are not properly considered in determining the costs of the record companies that should be compensated with a fair return because they are not incurred in the creation of sound recordings.

224. Edward Chmelewski, representing Blind Pig Records, also testified extensively about the costs associated with manufacturing CDs. Chmelewski WDT at 8-9. (He even presented the court with costs relating to property rent and to his own salary. *Id.* at 6.) The contention that this rate-making proceeding is an appropriate vehicle for recovering costs incurred in connection with a failing business model driven by the sale of CDs has no merit, as it does not go to what constitutes a fair return to the recording industry from the SDARS. *See* 6/26/2007 Tr. 68:12-74:16 (Chmelewski) (Judge Sledge commenting that Chmelewski's testimony sounds like "a plea to save a business model based on CD sales . . . that's becoming obsolete").

225. Further, the costs involved in creating sound recordings are incurred independent of the existence of the SDARS, such that from a fairness perspective, it would be inappropriate for the SDARS to be required to subsidize any such costs. *See* 6/27/07 Tr. 82:20-83:5 (Kenswil) (conceding that these costs were incurred before satellite radio came into fruition, and that since satellite radio has become available, the company has continued to invest in these costs); 6/26/07 Tr. 35:9-36:3 (Chmelewski) (explaining that the costs and risks of creating the sound recording existed prior to the creation of the SDARS and would exist without the SDARS).

b. Returns Higher than Those Proposed by the SDARS Provide a Windfall to the Record Companies and Are Unnecessary To Induce the Creation of Sound Recordings.

(1) SoundExchange constituents make no incremental effort or sacrifice in connection with the SDARS.

226. There is no evidence of any incremental investment made or costs incurred by the record companies in connection with the creation of the SDARS satellite radio system or programming. Woodbury AWDT at 50; *see also* 6/12/07 318:1-320:15 (Woodbury) (discussing how the record companies have not invested in the technology or distribution methods of SDARS or incurred any additional expense as a result of promoting the SDARS service). Satellite radio has “created value to consumers” by the “contribution of the service, technological contribution and marketing, and the ability to obtain the music...,” 8/27/07 Tr. 47:6-14 (Ordoover), and SoundExchange has not contributed any investment to this “transmission infrastructure.” Frear WDT ¶ 32.

227. Because the copyright owners have made no incremental investment in the SDARS service offering, and there is no evidence of sacrifice or effort on their part

with respect to that service, there is no rational basis for affording the copyright owners a rate higher than that proposed by the SDARS. *See* Noll WDT at 51 (stating that “income is deserved, and therefore fair, if it arises from sacrifice”); Woodbury AWDT at 49-52 (analyzing the “substantial” technological contributions made by the SDARS as they expended “considerable sums” in creating an “entirely new music distribution scheme”). To do so would provide the copyright owners with an undeserved, and hence unfair, windfall.

(2) There Is No Evidence that Record Companies Are Not Already Earning a Competitive Return.

228. In contrast to the SDARS lack of any income, the evidence establishes that the record companies are earning a competitive return and that a lower royalty rate will have no inducement effect.

229. As an initial matter, the record companies’ overall financial health establishes that they are generally earning a fair return on their investments. For example, UMG has earned a profit each year from 1999-2006. 8/24/07 Tr. 229:3-229:9 (Ciongoli); 6/27/07 Tr. 152:2-5 (Ciongoli). Indeed, over that period, UMG had an average yearly EBITDA of []]. SX Ex. 106 DR; SDARS Ex. 61. UMG’s average yearly EBIT (earnings before interest and taxes), which Mr. Ciongoli considers to be a better measure of profitability than EBITDA and pure profit/loss, was [] for the same time period, SX Ex. 106 DR; SDARS Ex. 61.

230. Similarly, despite Mr. Bronfman’s contention that “record company revenue is falling like a stone,” 6/20/07 Tr. 74:20 (Bronfman), WMG’s revenues increased by \$14 million between 2005 and 2006. SDARS Ex. 35 (WMG 2006 10-K) at SE 0214074. In fact, WMG has experienced consistent revenue growth each year

since 2004. Revenues went from \$3.437 billion in 2004 to \$3.502 billion in 2005 and subsequently grew yet again to \$3.516 billion in 2006. *Id.* at SE 0214062. Moreover, similar increases in revenue have occurred each year for the Recorded Music division of WMG. *See id.* at SE 0214062 (noting that Recorded Music revenues have grown from \$2.859 billion in 2004 to \$3.005 billion in 2006). Not only is WMG's revenue not falling, but WMG had a profit of \$60 million in 2006 after suffering losses in 2005. *Id.* at SE 214074.

231. SonyBMG's financial outlook is similarly positive. In 2006, SonyBMG had a profit of \$10.3 million. SDARS Ex. 14 at SE 0203204. Moreover, SonyBMG is showing signs of overcoming the industry-wide drop in physical album sales because of the rapid growth in digital sales. In 2005, Sony BMG had revenues of [[]] from online music sources such as Rhapsody and iTunes. SDARS Ex. 16 at SE0090807. In 2006, this number jumped [[]] to [[]]. *Id.* A similar increase occurred in the mobile distribution market: in 2005 mobile revenues were [[]]; this number jumped to [[]] in 2006. *Id.*

232. These data indicate that the record companies are earning substantial returns on their investments. Moreover, because the record companies' revenues attributable to statutory royalties received from satellite radio are a fraction of the label's overall revenue, those revenues are immaterial to inducing the creation of new copyrighted works. As Professor Noll explained, the inducement effect "refers to the extent to which the rights for sound recordings would have an effect on the number of sound recordings that are available to consumers." 8/16/07 Tr. 28:7-21, 30:16-19 (Noll). "The significance of the inducement effect for the two parties depends on the

extent to which the creation of product by that entity hinges on satellite radio as a revenue source.” *Id.* at 30:1-5 (Noll). Professor Noll concluded that “now and for the course of the license that is at issue here, the fraction of the revenues of the record companies, that will be accounted for by satellite regardless of what the outcome of this proceeding is relatively low.” *Id.* at 30:11-16 (Noll)

233. The record company witnesses testified that satellite radio royalties have no impact on the strategic considerations of the record labels. *See* 6/27/07 Tr. 83:6-19 (Kenswil) (“The receipt of that money by Universal has not affected the strategy of the labels.”). For example, SoundExchange witness Lawrence Kenswil, Executive Vice President of Business Strategy, UMG admitted that the receipt of statutory royalties from the SDARS does not affect the labels’ resource planning, has no effect on the signing of contracts with artists, and has “[n]o material affect” on the current operation of the business. *Id.* at 83:20-84:13 (Kenswil).

234. Mr. Kenswil further indicated that record companies evaluate the revenue they expect an artist to generate from CDs and permanent digital downloads when deciding whether to sign an artist or to exercise an option for additional records. 6/27/07 Tr. 84:14-85:9 (Kenswil). He admitted that record companies do not consider royalties from satellite radio because “[t]hose royalties are so small that they give it no consideration.” *Id.* at 85:10-15 (Kenswil). The same is true of other companies. *See* 6/18/07 Tr. 228:10-22 (Eisenberg) (confirming deposition testimony that “I think at this point the amount of monies that are coming in from subscription services are probably too small to make an impact on [negotiating artist contracts]”).

235. Indeed, SoundExchange witness Edgar Bronfman, Jr., WMG Chairman and Chief Executive Officer, was unable to point to any data or evidence to support his conclusory assertion that the SDARS are affecting WMG's ability to hire new musicians and create new product. When pressed for substantiation by Judge Roberts, Mr. Bronfman responded that he did not have a "specific piece of data to answer that question directly." 6/20/07 Tr. 40:22-41:1 (Bronfman). Indeed, SoundExchange has presented no substantiation for of Mr. Bronfman's bald assertions. 6/20/07 Tr. 42:18-20 (Bronfman).

236. SoundExchange also has not provided any evidence that the current revenues of the record companies are insufficient to induce the creation of sound recordings. *See* SX Ex. 106 DR; SDARS Ex. 61. Indeed, Professor Ordover acknowledged that he had "done no empirical work" to determine whether an increased royalty rate would cause the record companies to increase their output of sound recordings and that he had done "no such calculation" to attain data supporting the notion that a low rate for sound recordings set by this proceeding would reduce the output of sound recordings. 6/21/07 Tr. 209:13-211:3 (Ordover).

(3) There is No Evidence of a Casual Effect of SDARS On Declines in CD Sales.

237. Although the record company and artist representative witnesses lamented the decline in CD sales in recent years, none of them provided any evidence that satellite radio is a contributing factor to the decline in record sales.

238. To the contrary, numerous SoundExchange witnesses presented by confirmed that there was no evidence that SDARS have caused the decline in CD sales:

- Simon Renshaw: indicating that he has “never seen a correlation whereby the Dixie Chicks appear on satellite radio and then their record sales go down.” 6/21/07 Tr. 40:3-7 (Renshaw);
- Dan Navarro: conceding that no one has ever told him that they stopped purchasing his CDs or stopped going to his concerts since getting satellite radio. 6/25/07 Tr. 55:10-17 (Navarro);
- Edgar Bronfman: acknowledging that he is not aware of any Warner Music Group studies regarding the alleged substitutional impact of the SDARS. 6/20/2007 Tr. 78:6-11 (Bronfman);
- Edward Chmelewski: admitting that he did not know if there is “a cause and effect relationship between decline of CD sales and satellite radio” but only knew that “CD sales are declining, period.” 6/20/2007 Tr. 78:9-11 (Chmelewski);
- Mark Eisenberg: admitting that he “ha[s] not looked at any survey data,” including any quantitative survey analysis that would support a causal connection between listening to satellite radio and a decline in the purchasing of music. 6/18/07 Tr. 300:4-303:2 (Eisenberg).

239. SoundExchange’s witnesses acknowledged that other factors – including piracy, single track downloads, and the record company’s own, outdated business model – have caused the decline in CD sales:

- Simon Renshaw: explaining that the condition of the record industry can be attributed to the “mistakes” of record companies, including “an antiquated business model.” 6/21/07 Tr. 63:12-64:17 (Renshaw);
- Lawrence Kenswil: “Digital piracy over the last few years has posed a serious threat to the industry, with physical sales declining in five of the last six years, at the same time that the economy has been growing.” Kenswil WDT at 3;
- Edgar Bronfman: acknowledging that piracy “is an important part of the decline” in CD sales. 6/20/07 Tr. 63:6-7 (Bronfman);
- Michael Kushner: stating that “[p]iracy is a primary cause of a lack of sales.” 6/26/07 Tr. 155:5-6 (Kushner);
- Steven Herscovici: agreeing that peer-to-peer downloading, the preference of singles over albums, the availability of digital albums,

DVDs, and video games have all contributed to the overall decline in CD sale revenues from 2000 to 2006. 8/30/2007 Tr. 60:1-61:17 (Herscovici).

Indeed, in its publicly filed Annual Report, WMG, confirms that “[t]he [music industry] began experiencing negative growth rates in 1999, on a global basis, primarily driven by an increase in digital piracy. Other drivers of this decline were and are the overall recessionary environment, bankruptcies of record retailers and wholesalers, growing competition for consumer discretionary spending and retail shelf space, and the maturation of the CD format, which has slowed the historical growth pattern of recorded music sales.” SDARS Ex. 35 at SE 0214037. There is no implication of the SDARS as a cause of the decline in CD sales.

240. Mr. Kenswil also testified at length as to the causes for the decline in sales of physical products. First, he indicated that “[o]ver the last seven years of decline, the number one factor has been piracy.” 6/27/07 Tr. 70:11-17 (Kenswil). Mr. Kenswil also identified the clear consumer preference to purchase single tracks, rather than more expensive full albums, as a factor contributing to the decrease in CD sales, as well as higher CD prices and the end of the CD replacement cycle. *Id.* at 70:21-72:14 (Kenswil); *see also* SDARS Ex. 51 at 8. Moreover, Mr. Kenswil testified about problems existing within the record industry itself that contributed to the industry’s financial straits, including spiraling talent and recording costs, marketing and radio promotion costs, and overhead costs. *Id.* at 73:16-74:15 (Kenswil); *see also* SDARS Ex. 51 at 9.

241. Mr. Chmelewski, co-founder and president of Blind Pig Records, stated several times that he does not know why his company’s CD sales have been declining, only that they have been declining since 1999. 6/26/07 Tr. 40:19-21; 42-21-8

(Chmelewski). He acknowledged that his company's sales began declining three to four years prior to Sirius and XM's launch of their satellite radio services. *See* 6/5/07 Tr. 17:6-13 (Parsons) (XM launched service in November 2001); 6/11/07 Tr. 285:12-16 (Moore) (Sirius launched service in 2002); *see also* 6/26/07 Tr. 42:6-8 (Chmelewski).

4. SoundExchange's Survey Evidence of Purported Substitution Is Not Sufficiently Reliable To Establish with Any Certainty that Listening to Music on Satellite Radio Causes a Decrease in Purchases of Sound Recordings.

242. SoundExchange presented survey evidence that purported to demonstrate a "substitution" effect, whereby time spent listening to music on satellite radio led to decreased purchases of recorded music. For the reasons below, the evidence presented was not sufficiently reliable to demonstrate the existence of any such effect with a reasonable degree of certainty, let alone the magnitude of such an effect. Accordingly, SoundExchange's survey evidence with respect to substitution should be given no weight.

a. Professor Wind's Survey Addressing Substitution Was Excluded.

243. SoundExchange attempted to introduce into evidence a survey designed by Professor Yoram Wind for the purpose of establishing whether the SDARS have a substitutional or promotional effect on the purchase of recorded music. However, the Judges excluded Professor Wind's survey from evidence as unreliable; his written and oral testimony about the survey also was precluded. 8/29/07 Tr. 101:11-102:4, 114:2-115:2 (Wind) (holding that Professor Wind's report and testimony were not based on sufficient facts or data and that Professor Wind did not apply his

methodology reliably to the facts of this case). Thus, Professor Wind's survey and his testimony concerning it are not part of the record.

b. There Is No Evidence that Would Support Reliance on the NARM Study.

244. In addition to his excluded survey, Professor Wind's testimony also refers to an internet survey apparently conducted by or on behalf of the National Association of Recording Merchandisers ("NARM"), which purports to find a substitution effect from listening to satellite radio. NARM, a trade association for music retailers, is hardly an unbiased source. *Id.* at 146:1-147:5. The underlying data from the NARM survey were not admitted into evidence and therefore are not before the Court. *Id.* at 101:11-102:4, 114:2-115:2. Moreover, Professor Wind's testimony was completely unilluminating regarding the basic methodology of the study and the analysis of the resultant data, leaving no basis on which the Court can critically assess the reliability of the study. In this regard:

- This survey was neither designed nor performed by Professor Wind. Professor Wind knew nothing about the circumstances surrounding NARM's commissioning of the study. *Id.* at 147:2-5.
- Professor Wind did not actually talk to anybody at NARM. *Id.* at 147:22, 148:1-5.
- He knew nothing about how the demographic characteristics of the respondent group were selected. *Id.* at 149:4-8.
- There is no evidence that the survey was ever published or peer reviewed. *Id.* at 149:18-150:1-2.
- Professor Wind was not aware of whether the survey employed a control group or any other methodology to establish causation. *Id.* at 152:4-9.
- Professor Wind had not performed any statistical analysis on, nor was he aware of the statistical significance of, any of the study's results. *Id.* at 150:3-151:13.

245. For all of these reasons, the fundamental information necessary to assess the reliability of the NARM study is absent from the record, and the study and Professor Wind's limited testimony regarding it should be given no weight. *See* PCL ¶ 170.

c. The Mantis Survey Is So Flawed That It Can Be Afforded No Weight.

246. SoundExchange also relies on a telephone survey offered by George Mantis, which purports to show a “substitution” effect. The design of the Mantis survey sought to compare the number of CDs and music downloads that a sample of satellite radio listeners recalled purchasing in an undefined “average” three month period before they began listening to satellite radio with an “average” three month period after they began listening to satellite radio. Mantis WRT at 1-2. According to Mr. Mantis, the survey results established that satellite radio listeners purchased 2.6 fewer CDs per year and 1 more download per year after subscribing. *Id.* As demonstrated below, however, Mr. Mantis' survey is wholly unreliable - for multiple reasons - and not probative of any relevant issue in this case.

(1) The Mantis Survey Offers No Evidence of Causation.

(a) The Mantis Survey Has No Control Group, Raising Fundamental Questions of its Utility.

247. In survey research, a controlled design—using a “control group” as a comparison to the group being tested—is generally favored, particularly where the purpose is to establish causality. A control group generally consists of a group of

subjects that is the same as the “target” in all significant respects except for the attribute being tested—in this case, satellite radio listening. *See* PCL ¶ 172.

248. A fundamental flaw in Mr. Mantis’ survey methodology is his failure to include an adequate “control,” thereby rendering it impossible to infer causation. *See* PCL ¶¶ 172, 173. Mr. Mantis conceded that his survey lacked a control group. 8/30/07 Tr. 210:2-4 (Mantis). Thus, there is no way to tell whether, or to what extent, the purported decline in music purchases by satellite radio subscribers is due to listening to satellite radio or to any other factor, such as the overall decline in CD purchases over the last several years. *See, e.g.*, Mantis WRT at 15 (acknowledging a “general background trend[] of declining CD sales.”).

(b) The Mantis Survey’s Question Attempting to Prove Causation Was Highly Leading, As Proven by the Responses.

249. In a poor attempt to substitute for a control group, Mr. Mantis asked his survey respondents why they purchased more or fewer CDs or downloads. *Id.* at 223:2-19. Thus, Mr. Mantis attempted to use the study’s respondents as their own control. The fatal problem with this methodology, however, was that the Mantis survey’s critical “causation” question was obviously leading and suggestive. It asked:

Why do you think you purchased fewer (more) CDs (music downloads) now compared to the number you purchased before you began listening to satellite radio?

Mantis WRT at 6; Appendix B, Question 5a (emphasis added). Thus, the question specifically identifies satellite radio as the point of differentiation between the respondent’s before and after purchasing behavior. 8/30/07 Tr. 228:17-20 (Mantis).

250. Mr. Mantis agreed that “open-ended questions should be neutral in form and purpose and not suggest a particular answer.” *Id.* at 227:20-228:22 (emphasis added). Neither of these criteria is satisfied here. Rather, the necessary inference from the language in this question is that the cause of the increase or decrease is satellite radio. Moreover, as if the “causation” question were not sufficiently leading on its own, it followed seven previous questions asked of respondents that all referred directly to satellite radio.⁷ Mr. Mantis agreed that the earlier questions in a survey can affect the responses to later questions. *Id.* at 224:10-22. Thus, the leading nature of the critical question was significantly reinforced by the repeated earlier references to satellite radio.

251. To the extent that there could be any conceivable doubt regarding the improperly leading nature of Question 5a, it is resolved by review of the responses. Subject after subject responded to the supposedly non-leading question by volunteering that it was not satellite radio that caused the change. *See* Mantis WRT, Figures 3, 5, 9, and 10 (“Category 4” in each). The following are examples of some of the answers given by respondents to the “non-leading” question:

From Appendix D to Mantis WRT:

Respondent 36 (p. 21): “It was not due to satellite radio”

Respondent 89 (p. 22): “It really had nothing to do with satellite radio. . . .”

Respondent 154 (p. 24): “It had nothing to do with satellite radio.”

Respondent 158 (p. 24): “It had nothing to do with satellite radio. . . .”

Respondent 169 (p. 24): “Satellite radio has nothing to do with it. . . .”

⁷ *See* Mantis WRT, Appendix A (screener questionnaire) Questions, S1, S2, S3, S4, and S7; *see also* Appendix B (main questionnaire), Questions 2, 3, and 4. 8/30/07 Tr. 225:1-14 (Mantis).

From Appendix F to Mantis WRT:

Respondent 34 (p. 6): “Well, I don’t think it has anything to do with satellite radio. . . .”

Respondent 170 (p. 6): “Not because of satellite radio. . . .”

Respondent 198 (p. 6): “We have a child and so I don’t get to sit and listen to music that much. It’s not the radio.”

Respondent 360 (p. 7): “I don’t know. It doesn’t have anything to do with satellite radio.”

252. As Mr. Mantis conceded at trial, well over thirty of the survey’s respondents found the question so leading that they felt the need to negate the implication that satellite radio was the cause of the change in their purchasing habits. 8/30/07 Tr. 230:12-18 (Mantis). Despite Mr. Mantis’ insistence to the contrary, these numerous respondents necessarily understood the question to be suggesting that satellite radio was the reason for the change; otherwise, they would have had no occasion to negate the suggestion. This is perhaps most evident from the answer to the question provided by Respondent 582:

I’m old and I have a large collection; [after probe] No, it’s not because I listen to the XM. I’m sure that’s what they are looking for.

See Mantis WRT App. D at 33 (emphasis added); 8/30/07 Tr. 238:11-15 (Mantis).

253. Mr. Mantis’ denial that the question implied or suggested that satellite radio was the cause of any change in purchasing behavior is belied by the inferences Mr. Mantis himself drew from the responses. When respondents simply referred to “it,” “that,” “radio,” or supplied other ambiguous references in their answers, Mr. Mantis repeatedly assumed that those responses referred to “satellite radio.” *Id.* at 233:18-236:22. Mr. Mantis explained that these assumptions were based on the “context of the question.” The following sample of responses were coded by Mr. Mantis as responses

indicating satellite radio as the cause of a change in purchasing behavior despite any reference to “satellite,” “satellite radio,” “XM” or “Sirius:”

From Appendix D to Mantis WRT

Respondent 3 (at 1) “a. I just listen to the radio so I just quit buying them. No.”

Respondent 32 (at 1) “Because there is always something new on it. No, that's it.”

Respondent 37 (at 2) “Just the variety of stations maybe. No, that's it.”

Respondent 256 (at 5) “Because it is easier to hear when I want to hear it. No.”

Respondent 477 (at 10) “Just cause I can pretty much listen to whatever I want. That's probably about it.”

Respondent 591 (at 13) “Well because of the radio I guess. Really nothing else. I haven't really found anything I really wanted to buy.”

Over fifty respondents in Appendix D to Mr. Mantis' report – reflecting individuals buying fewer CDs and coded by Mr. Mantis as purchasing fewer CDs for “Satellite Radio-Related Reasons Only” – make no mention of “satellite,” “satellite radio,” “XM” or “Sirius.” Mantis WDT App. D at 1-15 (*see* Respondent Nos. 3, 6, 14, 16, 20, 29, 32, 37, 55, 113, 118, 119, 136, 162, 172, 184, 212, 216, 225, 240, 256, 265, 268, 272, 275, 297, 302, 311, 312, 316, 323, 264, 385, 403, 413, 426, 452, 471, 477, 489, 494, 496, 519, 531, 569, 591, 600, 603, 615, 619, 637, 646, 649, 650).

254. Mr. Mantis explained that his assumptions regarding these ambiguous responses were based on the “context of the question.” 8/30/07 Tr. 233:18-234:3 (Mantis). As Mr. Mantis testified, “the question is given to the respondent, and the answer follows the question.” *Id.* at. 236:11-13. This testimony compels the conclusion that numerous respondents were so affected by the “context” of the question such that they felt “satellite radio” was the desired answer and therefore provided that answer, or

offered “satellite radio” as the answer because it was placed at the forefront of their thinking by the question (and previous questions). Mr. Mantis’ election to put these ambiguous responses into his “Satellite Radio-Related Reasons Only” category had a direct impact on his conclusions, as all of these responses were included in his CD substitution calculation.

255. Any attempt to infer causation solely on the basis of the answers to such a leading and suggestive question is futile. *See* PCL ¶¶ 165, 166. Accordingly, and in the conceded absence of a control group, the Mantis survey reveals nothing about the reason for the reported “decline” in purchasing. Mr. Mantis admitted at trial that if his “open-ended” questions were biased, his survey would fail to show causation. *Id.* at 223:11-19. Without any way to conclude causative effect of satellite radio, the survey is completely irrelevant to the question of whether satellite radio is promotional or substitutional, and, for this reason, it should be given no weight. *See* PCL ¶¶ 161-163.

(2) The Mantis Survey Does Not Establish that the Alleged Substitution Effect is a Consequence of Music Listening on Satellite Radio.

256. Mr. Mantis had no basis for concluding that respondents who referred to “satellite radio” as the reason for any decrease in music purchases were referring only, or even primarily, to listening to music on satellite radio. As described below, any displacement of music purchasing that might result from listening to non-music content would not properly be taken into account in any fee determination. *See supra* Part V.C.5.b.

257. The Mantis survey does not attempt to draw any distinction between listening to music and listening to the extensive non-music content that is available on

satellite radio. *See* Mantis WRT App. B (no reference in survey to music listening as opposed to other listening); 8/30/07 Tr. 188:1-192:6 (Mantis). Rather, Mr. Mantis presumed that any mention of “satellite radio” referred only to music on satellite radio. For example, Mr. Mantis made such a leap of faith for the following responses, despite the fact that they provide no hint of what programming the respondent actually listens to:

- Respondent 488 (Mantis WRT App. D at 10) - “Because we get what we like off of the satellite radio. [probe] There are no other reasons. We like what we listen to on satellite radio.”
- Respondent 451 (Mantis WRT App. D at 9) - “There is just much more of a variety with satellite. [probe] Nope.”
- Respondent 557 (Mantis WRT App. D at 11) – “Probably because you can get whatever you want on satellite radio. [probe] Not really.”

Answers such as these, and there are many included in Mr. Mantis’ “Satellite Radio-Related Reasons Only Category” – the category used to compute his substitutional result – show that no conclusion can be drawn that music listening (as opposed to other listening) is causing the purported decline. Mr. Mantis’ only stated basis for this “interpretation” was the “context” of the question, which did not mention listening to music. 8/30/07 Tr. 188:1-89:21 (Mantis).

(3) The Mantis Survey Has Other Important Flaws.

258. While the lack of any valid proof of causation is critical, the Mantis survey contained other serious flaws. Most significantly, the survey asked respondents to compare a “typical” three month period before and after they subscribed to satellite radio. Notably, the “before” question did not limit respondents to the period immediately or shortly before they became satellite radio subscribers. *Id.* at 219:12-16. Rather, that question essentially asked respondents to consider their entire life prior to satellite radio subscribership and somehow calculate an average or typical three month period. *Id.* at 210:17-212:11.

259. Because most of the respondents in the Mantis survey were 45 and older, this could, in many instances, involve the respondents going back over literally two decades of small purchase behavior from all different periods of their lives. *Id.* 212:12-17. Other than Mr. Mantis' assurance, there is no evidence in the record that this calculation could be performed accurately by respondents, and the survey did not inquire about certainty. *See* Mantis App. B. Moreover, the word "typical" was not defined, and was left to the respondent to define. 8/30/07 Tr. 218:3-7 (Mantis).

260. The respondent's self-selection of a "typical" time period for his or her "average" CD purchasing is fraught with potential error:

- Respondents could have selected a three month period that was not representative of their average purchasing.
- Alternatively, respondents, not knowing what "before" or "after" meant in the question, could have computed their "average" based on a limited period of time, rather than the whole "before" or "after" time period that Mr. Mantis testified was the time period he intended.
- Respondents could also have easily miscalculated their "average," especially when taking into account decades of purchases and the fact that purchasing a CD, compared with other purchasing events, is relatively insignificant.

This methodology cannot provide any reasonably certain estimate of the direct effect of satellite radio listenership on music purchases. *See* PCL ¶ 165.

261. Rather than ask the respondents to record their average purchasing behavior immediately prior to starting to listen to satellite radio, Mr. Mantis inexplicably asked them to consider all of their purchasing behavior prior to listening to satellite radio. There is no relevance to the purchasing behavior of the respondents twenty or ten or even five years ago. Further confusing the matter, CD purchases reached their peak in 2000, and have steadily declined since that time. *See* SDARS Ex.

99. If Mr. Mantis had chosen a more relevant time period, his results might have filtered out a large portion of the effect of the general decline in CD sales. Instead, his methodology exacerbated the problem.

262. Mr. Mantis' methodology is also improper because he not only established the coding scheme for the verbatim, he personally coded the individual responses from the surveys, and he drew conclusions from his own coding. 8/30/07 Tr. 186:21-187:2 (Mantis); *see also* PCL ¶ 167. Professor Wind, SoundExchange's other survey expert, testified unequivocally that an expert should not code the responses to his own survey. *See* 6/14/07 Tr. 81:19-82:8 (Wind) (stating that individuals working on a study should be double blind, including the "person who did the coding of the open-ended responses"); 123:22-124:10 (Professor Wind's coder was "independent" and did not "know the purpose of the study"); 228:22-229:12 (stating that the survey designer "should not" do the coding, rather it should be "someone who follows the double-blind principle and doesn't know the purpose of the study . . .").

263. The inherent problem with a biased and self-interested coder was established in Mr. Mantis' response to questions from the Judges. For example,

JUDGE WISNIEWSKI: Before we get to the Respondent 48, let me ask you about Respondent 30 here [who stated that satellite radio "provides everything I need"]. How do you come to the conclusion that there is no need to buy CDs? Maybe what satellite radio provides them with is non-music entertainment, and that's all he needs.

THE WITNESS: Within the context of the question, Your Honor, you have to take the response within that context. And the context of the question is: before you began listening to satellite radio, how many music CDs did you purchase in an average three-month period? And a corollary question corresponding to after.

So when the individual says, "Because satellite provides everything I need," my interpretation is that this individual is indicating that satellite radio is a substitute for the purchase of music CDs.

JUDGE WISNIEWSKI: Well, I don't *see* how you can come to that conclusion just from the question that you asked. The question that you asked talks about satellite radio in general, not to the music that's listened to on satellite radio.

THE WITNESS: You can't separate the response from the question, and the question is contextual in that it does –

JUDGE WISNIEWSKI: You just said the context was the question, but there is nothing in the question that talks about just satellite radio music listening. It just says satellite radio.

THE WITNESS: Well, my interpretation is within the context of the question, whether they purchased more –

JUDGE WISNIEWSKI: Yes, you've said that. I'm asking –

THE WITNESS: That's my interpretation.

8/30/07 Tr. 188:1-189:19 (Mantis). Similar examples abound, in which Mr. Mantis similarly used his "interpretation" to create and justify the desired result. Thus, the Mantis survey couples a biased and leading question with a biased coder.

d. Conclusion

264. The Mantis survey is unreliable in terms of gathering data with respect to purchasing behavior because the questions posed ask the respondent to consider time periods wholly irrelevant to this case and further allow the respondents to self-select their own responsive "average" time period. Moreover, the survey fails to establish causation in any way as there is no control group and the survey's only way to gather causation data is through a question that is so leading, respondents felt the need to negate its suggested response. For these and other reasons explained above, the Mantis survey and its results are not sufficiently credible to inform the decision in this

proceeding and should be, therefore, given no weight. *See* PCL Part VI. Further, no weight can be given to SoundExchange's other experts' claimed reliance on the SoundExchange substitution survey evidence. *See, e.g.*, Pelcovits WRT at 31-35; Herscovici WRT ¶¶ 26, 89.

5. There Is No Evidence of Lost Sales Attributable to SDARS; Thus, There Is No Rationale for a Royalty Significantly Above Zero.

a. Substitution/Promotion Must Be Viewed at the Firm, Not Industry, Level. To Rule Otherwise Would Be To Treat the Recording Industry as a Cartel.

265. Professor Noll testified to the importance of viewing any promotional or substitutional effects of airplay on the SDARS from the perspective of the individual record companies themselves ("firm" level) and not from the industry as a conglomerate. Noll WRT at 67; 8/16/07 Tr. 43:11-44:14 (Noll).

266. In arguing that the SDARS substitute for sales of sound recordings, SoundExchange purports to rely on evidence at an industry level. For example, Dr. Pelcovits ignores the inherent forces at play within the competitive marketplace by advocating an industry level analysis and consequently "proposes a rate that the record companies would not and could not achieve acting independently." Noll WRT at 66. However, a proper analysis of substitution would only consider the effect upon an individual firm when negotiating a license fee for use of its copyrights; analysis at an industry level is tantamount to treating the recording industry as a cartel. *See* 8/16/2007 Tr. 43:21-44:9 (Noll); Noll WRT at 66. Accordingly, purported evidence of substitution at an industry level is irrelevant to whether claimed substitution should be factored into whether the royalty rate will afford a record company a fair return.

b. Substitution, if Any, Caused by Listening to Programming Other than Compensable Sound Recordings on SDARS Is Irrelevant.

267. Any substitution that results from SDARS listeners' enjoyment of programming that does not contain copyrighted sound recordings is irrelevant to the calculation of a rate to determine compensation for the use of sound recordings because it is only the performance of the copyrighted work that requires payment of a royalty. The SDARS provide a wide variety of channels, and many of those provide non-music programming. As of October 2006, Sirius offered its subscribers 56 non-music channels and XM as many as 93. Woodbury AWDT ¶ 16. Those numbers have grown. *See* SIR Ex. 57 at 22 (65 non-music channels as of March 31, 2007 Form 10-Q); 6/5/07 Tr. 133:7-12, 137:18-138:1 (Logan) (testifying that 103 of XM's channels carry non-music content). Since the launch of SDARS, non-music programming has become a relatively larger percentage of the programming: in 2001 XM offered non-music programming on 27% of its channels; this number would jump to 46% by 2005. *Id.* Similarly, Sirius would *see* its non-music programming grow from 39% to 44% between 2002 and 2005. *Id.*

268. As the number of non-music programming channels on the SDARS has grown, the record companies have no cause to complain as such programming begins increasingly to substitute for revenue-generating compensable sound recordings, just as they had no cause to complain about the invention of the television. Noll WRT at 57. Recorded music is merely being replaced by content that consumers value more highly. *Id.* As Professor Noll stated at trial, it would not be appropriate to consider the

substitution effect of listening to programming that does not contain copyrighted sound recordings:

Q: “[I]f you were considering whether there was evidence of substitution, evidence of substitution or promotion by one of the services, would you consider it appropriate to consider the effect of listening to programming on the service that does not contain compensable sound recordings?”

A: “Of course not.”

8/16/2007 Tr. 49:20-50:6 (Noll).

269. When radio was introduced in the 1920s, there was a huge decline in the sale of records, not because radio was playing records, but because radio was playing live music. The quality of the records was so poor that the live music content substituted for sound recording sales. 8/16/2007 Tr. 50:6-21 (Noll). Similarly, the introduction of television harmed all other forms of entertainment because a new medium was substituting for an old one. 8/16/2007 Tr. 51:1-22 (Noll). “It is important to look at total creative content, rather than just the creative content of the particular industry because . . . when innovations come along, it is frequently the case that old technologies and established ways of providing entertainment get displaced by new (technologies and mediums).” *Id.*

270. Today, the Internet, like the SDARS, is a new medium that is substituting for older methods of entertainment. It would be a mistake, however, to argue that “regulated rates for some declining industry should be adjusted through regulation to take account of the fact that some other technology and other medium is taking away its business.” 8/16/2007 Tr. 51:21-52:5 (Noll). Simply put, “Non-music programming does not substitute for compensable sound recordings because it is a

different product, not a replacement for sound recordings.” 8/16/2007 Tr. 50:6-52:5 (Noll). As Mr. Karmazin pointed out, time spent listening to satellite radio certainly has no correlation to sound recording purchases when a person is listening to content that is not available for purchase on CD – like Howard Stern or NASCAR. *See* 8/22/07 Tr. 220:4-14 (Karmazin).

271. Even SoundExchange’s own economist, Dr. Pelcovits, admitted that substitution resulting from non-compensable programming was inappropriate for consideration under the 801(b)(1) analysis. 8/28/07 Tr. 229:12-231:3 (Pelcovits).

c. Displacement of Time Spent Listening to CDs Does Not Demonstrate Decreased CD or Digital Purchases.

272. There is also no evidence that listening to SDARS rather than CDs results in a decrease in purchases of sound recordings. Thus, the fact that time spent listening to CDs might decrease as satellite radio listening increases does not create a need to compensate the record companies with a higher royalty rate.

273. A consumer in his car, who may only have 15 minutes during a drive to chose from a multitude of listening options, is merely substituting one listening experience for another. *See* 8/22/07 225:19-226:15 (Karmazin). There is no evidence of any correlation between time spent listening to SDARS and numbers of CDs purchased. 6/11/07 Tr. 146:22-147:11 (Blatter). Indeed, with 20 years of experience in the radio industry, Mr. Blatter has “never seen any evidence” that listening to SDARS is substituting for sales of CDs. 6/11/07 Tr. 146:19-21 (Blatter).

274. Moreover, the differences in what consumers obtain from satellite radio and CDs suggests that displacement of CD listening in favor of satellite radio listening has no impact on purchasing of CDs. SDARS and CDs do different things. If

a satellite radio listener wanted to hear a particular artist, he would have to wait for the SDARS to play that artist. Purchasing a CD or MP3 player, however, provides access to that artist immediately. *Id.*; *see also* 8/22/07 Tr. 200:20-201:11 (Karmazin) (discussing how SDARS provides a different product that cannot provide some of the features that MP3s and CDs do—like on-demand song selection); 8/22/07 Tr. 219:9-13 (Karmazin) (discussing the on-demand capability of a CD compared to SDARS).

275. Since consumers can listen to music practically anywhere they want, the ability to listen to a desired song remains a huge selling point for the CD. Steven Blatter testified at trial that even with the availability of multiple stations on SDARS, an individual still would want the CD. *See* 6/11/07 Tr. 145:16-146:21 (Blatter). Indeed, consumers want to listen to music in a variety of places where they might not have access to satellite radio: the gym, while jogging, or on an airplane. 8/22/07 Tr. 227:12-15 (Karmazin).

d. Listening to SDARS Principally Displaces Listening to Terrestrial Radio, Which Directly Increases Label Revenues.

276. A calculation of fair return also must recognize effects that are driving traffic away from a medium that does not pay royalties (terrestrial radio) to a medium that does (the SDARS). Per statute, terrestrial radio does not pay royalties to the record companies for the use of sound recordings. *See* 17 U.S.C. § 114(d)(1)(A); 6/27/07 Tr. 95:20-96:12 (Kenswil) (“Q And every piece of music that [the record companies] license to satellite radio is available to terrestrial radio for free. Correct? A Yes.”).

277. It is indisputable that listening to the SDARS principally displaces listening to terrestrial radio, especially in automobiles. Sirius’ survey evidence provides

data regarding changes in in-vehicle listening before and after becoming a subscriber to the service. *See* SX Trial Ex. 35 at 26. In 2006, while [[]] of listeners listened to either FM or AM radio prior to their purchase of Sirius, only [[]] did so after becoming a subscriber. *Id.* The displacement away from listening to terrestrial radio in the vehicle represents the most significant and sizable shift across all media surveyed. *Id.*

278. Expert witnesses for SoundExchange confirmed that listening to the SDARS displaces listening to terrestrial radio. Dr. Pelcovits testified that the SDARS “absolutely” displaces listening to terrestrial radio, noting that “more than twice as much of the substitution was away from terrestrial radio.” 7/9/2007 Tr. 295:17-296:2 (Pelcovits). “The survey results cited by SoundExchange’s economic experts indicate that, in fact, most substitution is for terrestrial radio.” Noll WRT at 57.

279. For each person who switches his or her listening from terrestrial radio to satellite radio, the record companies receive royalty revenue they otherwise would not receive. 6/12/07 Tr. 196:8-197:2 (Frear) (testifying that new Sirius subscribers are “generating payments to SoundExchange that they do not enjoy from people who do not subscribe to satellite radio because terrestrial radio pays nothing”). Indeed, “the fees paid by [the SDARS] . . . represent fees that record companies would not otherwise accrue.” Woodbury AWDT at 43. Therefore, as Dr. Woodbury accurately states, the “conversion of over-the-air listeners to [the SDARS]” directly benefits the record companies by providing them with a stream of revenue that they do not receive from terrestrial radio. *Id.*

280. Dr. Pelcovits concedes that a “net flow of money to the copyright holders” naturally occurs when terrestrial radio listeners subscribe to the SDARS services. 7/9/2007 Tr. 296:4-18 (Pelcovits). Moreover, Dr. Pelcovits agrees that “the overall effect of listeners shifting from terrestrial radio to satellite radio under most schemes . . . would increase the revenues of the sound recording copyright holders for that increased use of their sound recording[s] and copyrights.” *Id.* at 296:19-297:14.

281. Even the record label witnesses themselves do not dispute the common-sense principle that every listener satellite radio attracts away from terrestrial radio increases the record companies’ revenue. 6/18/07 Tr. 257:22-258:6 (Eisenberg) (testifying that every listener that switches from listening to terrestrial radio to satellite radio is money that the record company otherwise would not have); 6/27/07 Tr. 96:13-97:7 (Kenswil) (declaring that every time a listener switches from listening to terrestrial radio and subscribes to satellite radio, that “should produce more money to us”).

e. Evidence of Promotional Effects Further Undermines Any Fairness Rationale for a Royalty Significantly Above Zero.

282. As discussed above, Professor Noll testified that the impact of any promotional or substitutional effects of airplay on the SDARS should be considered at the firm level, not from the industry level. *See supra* Part V.C.5.a.; Noll WRT at 67.

283. Although it argued that the SDARS had no promotional value and that, to the contrary, record companies were losing sales as a result of the SDARS, SoundExchange failed to present testimony from any individual responsible for promotions at a major record label to address this claim. Instead, SoundExchange proffered testimony from high-level executives who disclaimed knowledge of their

companies' promotional activities. *See* 6/18/07 Tr. 184:22-186:3, 187:1-4 (Eisenberg) (conceding that Sony BMG has promotional staff at the label level who actually engage in promotional efforts, that he has never worked at the label level where they make decisions on how much to invest in promotion, and that he is not involved in determining the budget for radio promotion); 6/27/07 Tr. 58:20-59:15, 97:8-98:5 (Kenswil) (explaining that marketing and promotion decisions, including how much to spend on radio promotion, are handled at the label level and that he is not personally responsible for these activities); 6/27/07 Tr. 98:2-5 (Ciongoli) (conceding that he is "not personally responsible for any [promotional activities]" in his position); 6/20/07 Tr. 94:8-13 ("I am not the head of promotion [at] either of [WMG's] major labels or at any of [WMG's] other labels"); 6/26/07 Tr. 158:8-15 (Kushner) (stating that he "is not in the promotions department" and is unaware of the promotional activities relating to the SDARS). As a result, testimony regarding a causal connection between lost sales and airplay on satellite radio from witnesses with no knowledge of their companies' efforts to seek airplay on satellite radio should be given no weight.

284. The fact that all of the record companies undertake promotional efforts directed toward the SDARS, suggest that they believe they obtain some benefit from airplay and exposure of their sound recordings on satellite radio. Accordingly, a lower rate still will afford the record companies a fair return.

(1) Record Companies Aggressively Seek Airplay on the SDARS Because of Its Promotional Value

285. Record companies and artist management routinely utilize satellite radio as an outlet for artist exposure and record promotion. *See* 6/21/07 Tr. 40:19-22 (Renshaw) (explaining that satellite radio is a regular part of his management

company's promotional programs). This is because the music industry understands that radio airplay is the number one driver of recording sales. Blatter WDT ¶ 31; *see also* 6/11/07 Tr. 109-113 (Blatter) (Blatter discussing how in 20 years in the radio he has yet to meet a radio programmer or record executive who does not think airplay translates into album sales). It is "almost conventional wisdom in radio and the record industry that the most effective way to sell recorded music to consumers is through receiving air play on the radio." 6/11/07 Tr. 72:1-5 (Blatter); *see also* 6/7/07 Tr. 316-5-15 (Karmazin) (discussing how record companies were "very anxious" to get music played on the radio).

286. The record evidence of promotional efforts by record companies, agents, and artists directed toward getting airplay on the SDARS reflects the important promotional value of such airplay. *See, e.g.*, 6/21/07 Tr. 40:8-41:9 (Renshaw); 6/25/07 Tr. 46:7-50:2 (Navarro); 6/20/07 Tr. 83:18-85:16 (Bronfman); 6/26/07 Tr. 36:4-40:4 (Chemelewski); 6/12/07 Tr. 329:8-331:1 (Woodbury); Noll WRT at 65; 6/5/07 Tr. 209:16-21 (Logan); Logan WDT ¶ 73; 6/11/07 Tr. 69-70 (Blatter).

287. First, record companies consistently provide music recordings for free, in the hope that airplay will promote the artist. Blatter WDT ¶ 35; Parson WDT ¶ 35; Logan WDT ¶ 65. Sirius, for example, often receives music weeks before the public release in the hope that Sirius airplay will generate interest and sales. Blatter ¶ 35. Indeed, part of the considerable monies record companies spend in promoting their artists and seeking airplay and exposure for their music covers the cost of sending free copies of these recordings to Sirius and XM seeking to have these songs played on the SDARS' programs. 6/26/07 Tr. 36:4-15 (Chmelewski).

288. The recording industry also routinely includes satellite radio as an aspect of its promotional plan for sound recordings. For example, marketing plans designed for Mr. Renshaw's prominent clients – the Dixie Chicks and Miranda Lambert – both include satellite radio as part of promotional activities for new album releases. SDARS Ex. 23 at SE 104907; SDARS Ex. 37; *see also* 6/21/07 Tr. 52:3-8, 60:4-12 (Renshaw). Emphasizing the SDARS' important role, the marketing plan for Miranda Lambert states that “[s]ince single terrestrial radio station airplay is tentative at best, it would be smart for Miranda to cover as much national syndicated and satellite radio outlets as possible prior to the album release.” SDARS Ex. 37 at SE 22300; *see also* 6/21/07 Tr. 60:13-21 (Renshaw) (agreeing that “absolutely,” it would be a smart thing for the artist to cover satellite radio outlets).

289. In addition, record industry promoters – both company employees and independent promoters – aggressively communicate with SDARS programmers to obtain radio airplay. *See* Blatter WDT ¶ 37. These promoters will promote particular songs for particular channels, and it is not unusual for promotional efforts to become contentious, “reflecting the high value the record companies place on radio airplay and the pressure their promoters are under to get music played on [the SDARS].” Blatter WDT ¶ 37.

290. For example, in a one week period, six Sirius channels received a total of 170 label promotional contacts (calls, e-mails and instant messages) and 108 mailings (mainly free CDs and singles). Blatter WDT ¶ 19-20. The amount of promotional contact between the record companies and Sirius has only increased. 6/11/07 Tr. 69:4-8 (Blatter) In making these contacts, record industry promoters typically seek “one thing

only”: air play on satellite radio. 6/11/07 Tr. 66:20-67:1 (Blatter). *See also* Parsons WDT ¶ 35 (“Artists, managers and record label promotional people contact and visit XM to help promote their records.”); Logan WDT ¶ 66 (stating that artists “want to be part of the XM experience,” as indicated by the fact that “most guest celebrity DJs program their shows for free or for a modest stipend to cover their expenses”); *id.* ¶ 67 (noting that “[v]irtually all of the[] artists [who participate in interviews and performances on XM programs] “came to XM for the freedom to discuss, perform and promote their music in the way they want to be portrayed, and received no monetary compensation from XM”).

291. If record companies and artists (rather than their lawyers and business affairs mouthpieces in this litigation) really believed that satellite radio airplay had more of a substitutional impact than a promotional impact, the logical action would be for record companies to halt their promotional efforts on satellite radio. This, however, has not happened. *See* 6/21/07 Tr. 38:18-22 (Renshaw) (testifying that his management company voluntarily continues to make its artists available for promotional opportunities on Sirius and XM); 6/25/07 Tr. 55:18-21 (Navarro) (Q And did you ever ask XM or Sirius to stop playing your music because it was hurting your sales? A No.”); 6/20/07 Tr. 83:18-85:16 (Bronfman) (testifying that he was neither “surprise[d]” nor “bother[ed]” by the fact that major WMG recording artist, Linkin Park, promoted their new album on Sirius before the release date, including an appearance by the band and repeated playing of the album’s tracks); 6/26/07 Tr. 159:9-13 (Kushner) (stating that he would not be surprised to learn that someone from Atlantic’s promotional department is in the Sirius offices at least several times per week).

(2) The SDARS Offer Exposure for Artists Through a Wider Variety of Programming as Well as Unique In-Studio and Live Performances.

292. Developing promotional opportunities for record companies, by taking advantage of economies of scale and national coverage, was an element of XM's original strategic plan. Woodbury AWDT at 45. Both XM and Sirius provide record companies with unique promotional opportunities as a result of their wider variety of musical programming and specific opportunities to feature and promote artists. *Id.*

293. The fact that increasingly narrow playlists are a feature of a rapidly consolidating terrestrial radio industry heightens the value to record companies of having the SDARS as additional outlets for the promotion of their records. Woodbury AWDT at 44. Record companies will often complain that terrestrial radio stations have very limited playlists because of the need to play popular music that obtains listeners, and in turn, advertising revenue. Blatter WDT ¶ 39. The specialized channels of XM and Sirius, therefore, are quite desirable to record companies looking to promote more unique music. *Id.*

294. The SDARS also offer artists a unique form of record promotion through in-studio concerts and live performances. *See supra* Parts V.B., V.D.1.c., V.D.2.b.; *see also* Renshaw WDT at 5 (“The satellite services can and do play in-studio concerts or live performances that are not typically played on terrestrial radio.”); 6/21/07 Tr. 20:17-21:3 (Renshaw) (describing the promotion of Dixie Chicks' latest record on satellite radio, including appearances on XM's “Artist Confidential,” Sirius' Howard Stern channel, and in-studio recording of “liners and drops for all of their shows”); Navarro WDT at 8 (“I enjoy playing the XM sessions and I hope that the

performances help maintain our presence in the marketplace.”); 6/25/07 Tr. 48:13-50:2 (Navarro) (“Q And the value of [live performances on XM] is that it exposes people who listen to XM to your music, right? A I would think, yes.”).

295. For example, XM’s special programming focusing on particular artists, such as “Artist Confidential,” “Offstage,” and “Then . . . Again . . . Live,” represents targeted promotional opportunities for the featured artists. Woodbury AWDT at 45. Sirius also arranges artist interviews and live performances from their studios, and “record companies regularly arrange for appearances by artists we are willing to play.” Blatter WDT ¶ 40. The ability to appear on SDARS is so attractive to performers today, that between January 1 and October 18 of 2006, over 800 record company artists visited the Sirius studios for interviews and/or performances. Id; 6/11/07 Tr. 68:1-22 (Blatter). *See also* Logan WDT ¶ 67 (stating that XM “has conducted and played literally thousands of interviews with artists”).

(3) The SDARS Provide an Enormous Promotional Opportunity for New and Emerging Artists

296. The SDARS can also be an important promotional vehicle for new music, and SDARS have established a reputation as being an outlet that has an ability to break new music. 6/11/07 Tr. 77:11-14 (Blatter). SDARS program directors regularly showcase new music and are knowledgeable and sophisticated enough to know the new releases in their particular genres. Logan WDT ¶ 55; Blatter WDT ¶¶ 11, 32.

297. Specialized channels also allow the services to play up and coming artists who are often not receiving airplay on terrestrial radio stations with broader formats. Blatter WDT ¶ 32. Both XM and Sirius have channels focusing prominently on exposing listeners to music by new artists.

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298. For example, on XM the XMU, Hear Music, XM Café, The Verge, Fine Tuning, 20 on 20, Raw, and Watercolors channels each include in their formats substantial amounts of new music by less established artists that fit well into the genre or philosophy of those channels. XM's The Village has added "Songs to Hang on Stars," a program that showcases new contemporary folk artists. Many other channels include new music by less established artists who benefit from the exposure on XM, and many XM channels play music by artists who otherwise receive little or no airplay on terrestrial radio. Logan WDT ¶ 60; Parsons WDT ¶ 33.

299. Sirius also carries a number of a channels that include specialized formats that allow Sirius to play new or emerging artists that are not yet popular enough to be included on terrestrial radio playlists. Blatter WDT ¶ 11. For example, Sirius' Left of Center plays "almost entirely" new alternative rock that in most cases the average listener has not heard. 6/11/07 Tr. 81:4-8 (Blatter). Record companies are also aware of these channels and seek to have their emerging artists played on them. Blatter WDT ¶ 11.

300. As it has become increasingly difficult for many musicians to get airplay on terrestrial commercial and college radio stations, they have turned to the SDARS. Indeed, the terrestrial radio landscape has changed over the last two or three decades, resulting in terrestrial radio playing "far less music by far fewer artists" and "less new music." 6/21/07 Tr. 18:9-19:9 (Renshaw); *see also* 6/27/07 Tr. 74:16-22 (Kenswil) (declaring that because of terrestrial radio consolidation, "[i]t becomes harder to get new artists to get recordings played on the radio"). Because of the increased difficulty in achieving artist exposure through terrestrial radio airplay, artists must

develop marketing campaigns that involve other media outlets, including the satellite radio companies. 6/21/07 Tr. 19:10-20:5 (Renshaw).

301. Billy Zero, program director of XM's XMU, receives hundreds of packages every week from musical artists and groups at various stages in their careers. He listens to each one personally and has the freedom to choose which ones to air. Because of his taste and dedication, XM has given substantial early play to bands who went on to broader commercial success, and XM's track record has given XM greater credibility with record labels. Unsigned bands who have gotten record deals within a year of exposure on XM include Morningwood (recently featured on David Letterman's show), Stellastarr, Antigone Rising, and Grammy award-winning rapper Rhymefest. XM also supports new music from artists like The Cardigans, who were popular years ago but recently have had less access to airplay. Logan WDT ¶ 77; 6/5/07 Tr. 207:12-209:6 (Logan). Logan WDT Exhibit 18 is a listing of XM channels known for their exposure of new artists.

302. Jennifer Nettles of the band Sugarland is one of XM's country music success stories. Within a year of exposure on XM, she had a record deal. Her duet with Bon Jovi went to the top of the Billboard Hot Country Songs chart. XM also participated in Bon Jovi's "Have A Nice Gig" challenge, where unsigned bands nationwide submitted their best single to XM for the chance to be Bon Jovi's opening act. The band selected to open for Bon Jovi at the Meadowlands was signed soon after by a record label. Logan WDT ¶ 77.

303. Sirius has had similar experience with emerging artists. The band Evans Blue, for example, was signed by a major record label after their self created

album received airplay on Sirius' Octane channel. Blatter at ¶ 32. It was the fact that the band had been provided airplay on Sirius and thereafter proved its success that led to a record deal. 6/11/07 Tr. 74:1-9 (Blatter).

(4) The Recording Industry Has Conceded That Satellite Radio Provides a Unique Promotional Venue for Niche Music Formats.

304. SoundExchange's artist representative witnesses resoundingly agree that the SDARS provide an exceptional alternative to terrestrial radio as a way to achieve exposure for artists that play music not traditionally found on terrestrial radio. 6/21/07 Tr. 42:5-43:12 (Renshaw) (testifying that, because the consolidation of the terrestrial radio industry led to homogenization of terrestrial radio playlists, the satellite radio services provide a much greater opportunity for new, unknown artists to be heard on the radio); 6/27/07 Tr. 99:6-9 (Kenswil) (stating that Sirius and XM play music that listeners do not normally hear on terrestrial radio).

305. Promoters, artists and record companies all have acknowledged the benefit of exposure on satellite radio.

306. For example, Mr. Renshaw acknowledged that a Sirius promotion of the Dixie Chicks on a Sirius' music channel resulted in listeners indicating that they thought the promotion was "awesome" and would buy multiple copies of the new Dixie Chicks CD. *See* 6/21/07 Tr. 71:7-72:5 (Renshaw)).

307. Mr. Renshaw described the satellite radio services as "a friendly vehicle for artists." Renshaw WDT at 5; *see also* 6/21/07 Tr. 20:7-12 (Renshaw) ("Both XM and Sirius are very artist friendly radio formats . . . They both play a lot of music. It's very easy to, you know, traditionally very easy to have artists engage with them.

We've done it with, I think, probably all of our clients.”). Similarly, recording artist Dan Navarro placed links to Sirius and XM on his band's website “because our people want to hear our music, and it's a good way for them to find it.” 6/25/07 Tr. 47:4-12 (Navarro). Moreover, representatives of Warner Music Group and Universal Music Group both acknowledged the promotional value of satellite radio. 6/20/07 Tr. 78:13-15 (Bronfman) (conceding that “[n]o doubt there are instances where we have cooperated with XM or Sirius to promote an artist”); 6/27/07 Tr. 99:2-5 (Kenswil) (agreeing that satellite radio “can play a role in promoting [U]niversal label artists”).

308. Michael Kushner, Executive Vice President, Business and Legal Affairs at Atlantic Records, testified that “it's important that listeners [be exposed] to as many different types of music as possible.” See 6/26/07 Tr. 148:16-18. The SDARS provide nationwide exposure for niche genres of music that have been disfavored by terrestrial radio. See 6/26/07 Tr. 153:10-22 (Kushner) (conceding that “[s]atellite radio is certainly a good way to be exposed to [bluegrass music], no question.”).

309. Exposure of recording artists through satellite radio is beneficial to the artists and has a positive, promotional effect on the sale of records. See 6/21/07 Tr. 41:5-9 (Renshaw) (acknowledging that he views satellite radio playing his artists' records “as a good thing”).

310. As the President of Blind Pig Records acknowledged, record labels “welcome any exposure [they] can get for [their] artist,” including “seeking exposure for [their] artists on Sirius and XM.” 6/26/07 Tr. 36:16-18, 37:5-7 (Chmelewski). The artists expect the labels to “promote the career of the artist, and a big part of that is trying to gain as much exposure for that artist, in as many outlets as [they] possibly

can.” 6/26/07 Tr. 38:3-12 (Chmelewski). In fact, as soon as Sirius launched in 2002, Blind Pig Records “immediately tried to get exposure on Sirius,” by “[contacting] them and [asking] them to play [Blind Pig artists’] albums.” *Id.* at 36:20-37:4 (Chmelewski). Blind Pig Records continues to solicit exposure for their artists on the SDARS today. *See id.* at. 37:5-8 (Chmelewski).

311. The promotional value provided by the SDARS is particularly evident for more niche formats of music such as Blues music. “Blues, like Jazz and other styles of music, is a purely indigenous American art form, and it should be preserved.” *Id.* at 34:9-11 (Chmelewski). This type of music, however, cannot be preserved if no one is exposed to the sound recordings of Blues artists. *See id.* at 38:13-39:7 (Chmelewski).

312. Dan Navarro, recording artist and member of SoundExchange testified as to the important promotional function of satellite radio in exposing his folk music, which he characterizes as “a niche genre”:

Q: Okay. And to the extent people can no longer hear folk music on a local station, satellite radio can actually expose them to that music where they might not otherwise hear it, right?

A: Yes, that’s correct.

Q: Okay. No matter where they live, correct?

A: That’s correct.

Q: Okay. And that’s a good thing for you, right?

A: Yes.

Q: Okay.

A: By and large, in terms of getting our name out there.

Q: And the folk channels on Sirius and XM expose artists in that genre to an audience that in some ways is actually already receptive to that genre, right?

A: I believe.

Q: Okay. And you've testified before the Senate on the performance right, is that right?

A: Yes, I did.

Q: Okay. And you testified before the Senate that you believe that fostering the growth of new outlets for your music is of the utmost importance to performers, isn't that right?

A: I agree.

Q: Okay. And you'd also agree, would you not, that as the breadth and diversity of what is played on over-the-air radio shrinks that satellite radio potentially offers a greater variety of music and a new way for you to reach an audience?

A: Yes.

6/25/07 Tr. 43:3-44:17 (Navarro).

313. Sirius and XM are a huge part of preserving Blues music by providing a "nationwide platform" that broadcasts Blues music "24 hours a day, seven days a week" allowing the "consuming public to know about [Blues] artists and [their] sound recordings." 6/26/07 Tr. 39:4-40:4 (Chmelewski). Outside of the several Blues stations broadcast by Sirius and XM, including Sirius Blues and XM Bluesville, Blues music labels "have a limited ability to get exposure." *Id.* at 39:9-11 (Chmelewski); *see* SIR Ex. 24 at 3; XM Ex. 3 at 1.

(5) The SDARS Offer Unique Opportunities for Even the Most Established Artists.

314. The diversity and depth of SDARS music programming helps even the most popular musical artists obtain exposure they otherwise would not have. Sirius has aired several channels co-produced with successful recording artists such as The Rolling Stones and The Who to provide promotion of those artists new releases or tours. 6/11/07 Tr. 100:4-10 (Blatter). XM is also providing a platform for established artists. Despite his fame, Billy Joel could not get terrestrial radio airplay for his CD of classical compositions "Fantasies and Delusions." XM not only played the CD but also carried an interview with Mr. Joel conducted by one of XM's classical music experts, Martin Goldsmith. The artist Sting recently was featured on an "Artist Confidential" performance of his new CD, "Labyrinth," of 16th century music for the lute and voice, which will receive very little exposure on any broadcast platform other than satellite radio. Parsons WDT ¶ 33.

(6) The Technology of the SDARS Promotes Artists and Albums in Ways That Terrestrial Radio Cannot.

315. The digital display on the XM or Sirius radio is another important way in which SDARS promotes awareness and the sale of music. People cannot buy music or learn about new artists without knowing what it is called and who is singing and playing. The screen on every satellite radio displays the name of the artist and the title of the song that the subscriber hears. This is information that XM and Sirius have to enter into its database and transmit separately to the receivers. Terrestrial radio stations rarely give this information to their listeners. Logan WDT ¶ 75; Blatter WDT ¶ 11.

Record companies have historically been frustrated with terrestrial radio's inability to identify the music being played. 6/11/07 Tr. 79:9-22 (Blatter).

(7) Subscribers Also Have Attested to the Promotional Value of The Services.

316. Subscriber reactions further confirm that promotional value of airplay on satellite radio. SDARS Ex. 43 at 3 (Amazon.com webpage selling Lowen & Navarro's album, Pendulum, with customer review declaring that "[t]his is my first Lowen and Navarro CD – heard them on XM radio's The Loft and had to investigate further. I've had it three days and have already ordered my next two, and have researched opportunities to hear them live in concert.").

317. XM has had similar subscriber reactions confirming the promotional value of airplay on satellite radio. Logan WDT Ex. 23 at 1 (customer commenting that even though the salesman said they would no longer need CDs, since purchasing XM they have increased their CD purchases because they hear old favorites and new music not available on "commercial radio"); *see also id.* Ex. 22 at 3 (Correspondence describing how exposure on XM resulted in a 50% sales increase).

6. Conclusion

318. The record as to the fair return/fair income objective reveals no justification for a sound recording performance fee above that proposed by the SDARS, as the recording industry currently is earning a competitive rate of return; is not entitled to compensation for costs incurred unrelated to satellite radio; cannot demonstrate any lost sales attributable to the SDARS; and both solicits and obtains valuable promotional

benefits from airplay and other exposure on the SDARS. Indeed, as Professor Noll has demonstrated, there is no “fair return” rationale for a rate significantly above zero.

319. With respect to the SDARS, fairness requires that they be permitted to earn a competitive rate of return on their investments in their services, which they expect to achieve within a reasonable time frame under their fee proposal but almost certainly would never achieve under that proposed by SoundExchange. Because the SoundExchange proposal would prevent the SDARS from generating returns on even their forward-looking costs, much less on their historical investments, and because it would postpone the realization of any net income for both services until after the license term while imposing massive additional cash flow losses during the license term, is not fair. Hence, this objective strongly favors the SDARS’ fee proposal.

D. The SDARS Have Made Significant Creative Contributions to Their Services.

320. Section 801(b)(1)(C) of the Act requires the Judges to set a royalty rate “[t]o reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution” 17 U.S.C. § 801(b)(1)(C). As discussed in Part IV.B of the SDARS’ Proposed Conclusions of Law, the statute’s directive to assess the parties’ relative creative contributions implicates their respective contributions to the SDARS’ services as a whole – the “product made available to the public” While the recording industry is responsible for creating the sound recordings played by the SDARS, as described below the SDARS have gone to great lengths to creatively enhance the presentation of those sound recordings and to create their own original music and non-music programming that should be credited under this factor. Moreover, the recording industry does not

create any sound recordings specifically for satellite radio; it makes no incremental creative contribution to the SDARS. *See* Woodbury AWDT at 43 (“the labels do not expend any incremental effort to provide music to XM and Sirius”). Accordingly, the creative contributions of the SDARS are entitled to substantial weight.)

1. Sirius

321. For over half a century, consumers have been able to get music and limited news, talk and entertainment programming for free on terrestrial radio. *See* Coleman WDT ¶ 6, Karmazin WDT ¶ 34, 6/12/07 Tr. 10:18-11:10 (Frear). In order to entice subscribers to pay for services that terrestrial radio offers at no charge, Sirius knew that it needed to provide content that the consumer could not get on terrestrial radio. *See* Karmazin WDT ¶ 11, 31 and 40; Frear WDT ¶ 7; 6/12/07 Tr. 14:10-16:21 (Frear) (describing low subscriber numbers as music service and transition of focus to exclusive, non-music programming).

322. A key element in both attracting and retaining subscribers “is highly attractive content that subscribers cannot get anywhere else.” Coleman WDT ¶ 10. For example, “Sirius originally attempted to market itself as the world’s best music service. The company discovered that was not and would not be a successful strategy. Simply put, programming music does not drive people to pay \$12.95 per month.” Karmazin WDT ¶ 40; Frear WDT ¶ 7 (“We learned early on that simply having the right to perform music and sound recordings did not mean that consumers would pay for our service.”)

323. In order to provide this highly attractive content, Sirius had to make substantial creative contributions to the programming provided on its service. That contribution is described below.

a. Sirius' Creative Contributions to News/Talk and Entertainment Programming

324. Sirius has undertaken enormous creative efforts in developing original news, talk and entertainment (“NT&E”) programming. Coleman WDT ¶ 10; *see also* Karmazin WDT ¶ 42; Frear WDT ¶ 2 (“describing the costs we incur to create compelling, exclusive and branded talk, entertainment and sports programming.”). Specifically, Sirius focused on: 1) offering a wide variety of news, NT&E talk and entertainment channels that appeal to a diverse listening audience including comedy, news, religious channels, and 24 hour traffic and weather that are unavailable in terrestrial radio’s limited line-up of such channels; 2) developing unique radio channels that would broadcast original programming or pass-through programming of established, easily recognized, non-radio news, talk and entertainment brands that the public already knew and trusted in a non-radio context; and 3) creating exclusive brands and on-air talent that the public could not get anywhere else.

325. The creative contributions made by Sirius in developing and airing its NT&E channels made it possible for millions of subscribers to be exposed to the music programming and sound recordings that are available on Sirius’ music channels. “Music only” was not a successful programming model for Sirius and it required the addition of unique and exclusive news talk and entertainment programming developed by Sirius to draw in the subscribers needed to allow the Sirius’ business to grow as it has. *See* Karmazin WDT ¶ 3; SIR Ex. 56.

326. At the time it launched its service, Sirius' NT&E programming consisted of mostly high-quality, well-branded, "pass-through" programming such as CNN, A&E, and ESPN.⁸ Coleman WDT ¶ 8; 6/7/07 Tr. 201:3-20, 202:5-10, 203:8-15 (Coleman). This limited programming was not unique to Sirius and was not sufficient to differentiate Sirius from either XM or terrestrial radio. *See* 6/7/07 Tr. 205:5-17 (Coleman), 6/6/07 Tr. 256:8-20 (Karmazin) (explaining that in his opinion when Sirius first launched, it did not have content people would pay for). In 2003, Sirius decided it needed to expand its NT&E programming in order "to further differentiate from terrestrial radio and to drive its subscriptions." 6/07/07 Tr. 201:7-12 (Coleman); *see also* 6/12/07 Tr. 16:5-14 (Frear); Karmazin WDT ¶ 42; 6/6/07 Tr. 307:20-309:1 (Karmazin).

327. Overall, Sirius now broadcasts 54 different NT&E channels including 16 news channels, 16 talk and entertainment channels, 4 comedy channels, 3 family and children channels, 3 religious channels and 13 traffic and weather channels separate from and in addition to its sports entertainment channels. *See* Coleman WDT ¶ 7; SIR Ex. 24. These channels are of "critical importance" to Sirius because the "wide variety of channels" "enhance[s] the appeal of Sirius' service and thereby attract[s] and keep[s] subscribers." Coleman WDT ¶ 5 and ¶ 7.

328. Sirius' efforts to provide this variety to consumers and to differentiate Sirius from its competitors require considerable creative contributions:

⁸ Pass through programming is programming in which "the originating source *e.g.* CNN provides the programming feed to Sirius for compensation and Sirius transmits that programming unaltered to subscribers (although Sirius inserts promotional announcements and commercials where the format dictates)." Coleman WDT ¶ 8.

To license and/or create programming that fulfills our business goals and satisfies consumer demand, Sirius must invest heavily in the recruitment, licensing, hiring, development, support and broadcast of our content, including a large number of non-music channels and shows to attract and satisfy various constituents among our larger target audience.

Coleman WDT ¶ 18; *see also* 6/7/07 Tr. 288:1-15 (Coleman) (noting that Sirius puts a lot of “effort into” its non-music channels, and adds “an awful lot of programming in the non-music radio stations.”).

329. As part of its more recent efforts to entice subscribers, Sirius has added significant brands and recruited on-air personalities that bring with them their own brand awareness, subscriber base or audience, advertising, and promotion, all of which “drives subscribers.” *See id.* at 213:20-214:22 (Coleman); Karmazin WRT ¶¶ 3-18, 24-26; 6/12/07 Tr. 15:4-17) 159:12-160:1 (Frear) (explaining the importance of partnering with well-known names, which “drive[s] subscription behavior.” These brands and on-air personalities include Howard Stern, Martha Stewart, Cosmopolitan and Maxim magazines, Fox News, Deepak Chopra, Richard Simmons, Barbara Walters, Jamie Foxx and others. Coleman WDT ¶ 24; SX Trial Ex. 74.

330. The development and launching of new branded channels and shows hosted by popular names in entertainment takes significant time, research and effort. Sirius begins the creative development process by researching and studying available brands and personalities and what part or parts of their previous experience and repertoires can be converted to a marketable radio identity. *See* 6/7/07 Tr. 211:5-212:15 (Coleman). Developing that identity then requires Sirius to invest countless hours:

Once [Sirius staff] develop a plan for content that works for this radio station, then comes the hiring of appropriate radio people. Those might be hosts. They might be producers. They might be people to run the

controls, to screen the phone calls. Then comes incorporating any existing people like [their] editors; training for a significant period of time . . .

6/7/07 Tr. 212:16-213:4 (Coleman), *see also* Coleman WDT ¶ 16, 21-23; 6/7/07 Tr. 210-212 (Coleman); Coleman WDT ¶ 29 (discussing recruitment and training of on-air talent).

331. Even when the concepts and hosts come from terrestrial radio backgrounds, they “still require substantial investment in content and talent development in order to succeed on Sirius.” Coleman WDT ¶ 26. *See* Coleman WDT ¶ 26; 6/7/07 Tr. 222:10-223:3 (Coleman) (discussing need to alter content to reach Sirius subscriber demographics).

332. After the branded channel or show has been developed, SIRIUS launches it in two phases, initially with a soft launch which tests the consumer’s reaction to the content and allows Sirius to make modifications and refinements to the content and staffing as necessary. 6/7/07 Tr. 213:2-11 (Coleman); *see also* Coleman WDT ¶ 22. Sirius next expands and develops the channel, for months and months until the concept builds an audience. *See* 6/7/07 Tr. 213:9-19 (Coleman).

(1) Branded Channels

(a) Martha Stewart

333. In late 2005, Sirius’ programming was primarily focused on men. Sirius recognized there was a lack of radio programming overall for women, and saw this as an opportunity to create programming to reach a demographic underserved by its radio competitors. 6/7/07 Tr. 209:18-210:4 (Coleman). Sirius therefore spent considerable time and effort to develop more programming that would appeal to women, including the Martha Stewart and Cosmo channels. Coleman WDT ¶ 20.

334. Although Martha Stewart, as a brand, and an individual, was well known before the Martha Stewart channel on Sirius, neither Ms. Stewart nor her branded product had ever been packaged into a full-blown radio station. 6/7/07 Tr. 210:5-211:4 (Coleman); *see also* Coleman WDT ¶ 23 (explains that Martha’s television program and magazine relied heavily on images to promote her message). Because many of Martha Stewart’s “existing assets,” such as her television show, magazines, properties on the internet, etc., were not useful in developing a radio channel,” (6/7/07 Tr. 211:5-11 (Coleman)), Sirius had to “develop from scratch [a] radio application that would be enticing to an audience.” *Id.* at 211:21-212:3 (Coleman). It took a substantial amount of effort to train Martha Stewart and her staff in the skills they would need on full-time radio and to convert the Martha Stewart product into what it is today – “a hosted interactive radio station that . . . uses tiny amounts of archival material, and is generally fresh material that [Sirius] created from scratch” *Id.* at 236:13-17 (Coleman); *see also* 6/7/07 Tr. 210:5-212:12 (Coleman); Coleman WDT ¶ 23.

(b) Howard Stern

335. Perhaps the most well known branded channel in Sirius news talk and entertainment programming comes from Sirius’ relationship with Howard Stern. 6/12/07 Tr. 158:20-159:11 (Frear) (declaring that the Howard Stern deal was a “spectacular investment” for Sirius); Karmazin WDT ¶ 45; SIR Ex. 6. Sirius has an exclusive contract with Howard Stern for the creation, programming and development of two channels on Sirius, Howard 100 and Howard 101. *See* SX Trial Ex. 27 at SIR00010470-72; SIR Ex. 24; Coleman WDT ¶ 14.

336. In collaboration with Mr. Stern, Sirius has created programming for both of Howard Stern's 24/7 channels that include the live morning show, The Howard Stern Show, as well as "other programming developed to appeal to the same audience, including strategic re-airs of the morning show, new call-in shows, shows hosted by the supporting cast on the morning show, etc." Coleman WDT ¶ 16.

337. Sirius put significant effort into the programming and development of these shows:

We explored numerous programming options and invested substantially in the Howard Stern channels – both tried-and-true moves such as the hiring of other talk talent appropriate for Howard's channels based on their previous terrestrial radio ratings experience, and new ideas that had never been attempted before such as the creation of the Howard 100 News team, a team of experienced reporters assembled by a television news director with the singular goal of reporting the news of Howard Stern's activities.

Coleman WDT ¶ 17.

(c) Other Branded Channels

338. Sirius also has taken other traditionally non-radio brands and converted them into successful radio commodities, including Cosmopolitan magazine (6/7/07 Tr. 216:11-217:3 (Coleman); Karmazin WDT ¶ 46; SIR Exs. 7-E, 7-I), E! Entertainment Radio, Court TV Radio, and Playboy Radio (Karmazin WDT ¶ 46; SIR Ex. 7-G). Coleman WDT ¶ 14.

339. Many of the entertainment channels, such as Court TV, E! Entertainment, and Sirius' four comedy channels, among others, contained a mix of pass-through programming and original programming created by Sirius, including exclusive shows on these non-exclusive channels. Coleman WDT ¶¶ 15, 28, 33. "[P]articularly where the originating source is a television network, we attempt to work

with our established content providers to develop exclusive content or to create radio specific content in order to improve the experience for our subscribers.” *Id.* ¶ 15.

340. As with the Martha Stewart channel, other branded entertainment channels have required Sirius to develop the programming from the ground up, including Cosmo Radio. *See id.* ¶¶ 21-22.

341. For example, to create Cosmo Radio, Sirius staff had to work “closely with the staff at Cosmopolitan Magazine so [Sirius] could learn about their brand and they could learn about radio.” Coleman WDT ¶¶ 21-22 (typical of work done with brands expanding to radio). Sirius also developed original shows and sought out hosts that would fit the unique “Cosmo girl” demographic. 6/7/07 Tr. 217:18-218:3 (Coleman).

342. Because Cosmopolitan had been limited to print media, many of the “staples of the content” used by Cosmopolitan in its magazine, such as “lists of ‘25 ways to . . .,’” as well as “contributors to the magazine, such as columnists,” did not transition well to radio. Coleman WDT ¶ 22. Sirius had to take on the creative burden of converting the magazine’s concepts into an effective on-air format. *See* Coleman WDT ¶ 21. This required Sirius to develop the program from scratch.

343. Unlike the Martha Stewart or Howard Stern channels, Cosmopolitan magazine did not have a built in spokesperson or on-air talent. As a result, Sirius had to develop such personalities for Cosmo Radio, in addition to “training some of their editors, hiring hosts, hiring producers, [and] developing content.” 6/7/07 Tr. 217:4-17 (Coleman). Ultimately, Sirius “invested six months in off-air development, and later adjusted the format further based on listener response.” Coleman WDT ¶ 22. As with

all its channels, Sirius continues to “make adjustments to improve the quality of the programming.” *Id.*

(2) Other Unique Sirius News, Talk and Entertainment Channels

344. Sirius has also developed channels geared towards other niche audiences that had previously been underserved by the industry. In some instances, these channels included collaborative programming, such as the Catholic channel. *See* 6/7/07 Tr. 218:4-219:17 (Coleman); Karmazin WDT ¶¶ 44, 46; SIR Exs. 5-A, 7-J. Most of these niche channels, however, are brands Sirius developed and created independently, including the OutQ channel dedicated to issues specific to the gay and lesbian community (*see* Coleman WDT ¶ 25; 6/7/07 Tr. 220:1-12 (Coleman)), the political channels, Sirius Left and Sirius Patriot (*see id.* at 222:7-223:3 (Coleman); Karmazin WDT ¶¶ 42, 44, SIR Exs. 3-A, 5-C, 5-D), the trucking channel, Road Dog (*see* 6/7/07 Tr. 223:4-22:412 (Coleman)), and “Sirius Stars, which is a collection of celebrity hosts,” (*Id.* at 207:21-208:1 (Coleman) to name a few. *See* Coleman WDT ¶ 25; *see also* 6/7/07 Tr. 207:12-208:1 (Coleman).

345. These channels, many of which represent never before created genres of radio, were developed to meet the needs of audiences that Sirius is uniquely capable of reaching. *See* 6/7/07 Tr. 220:11-221:7, 223:4-18; 300:18-301:3 (Coleman). This is evidenced by Sirius’ OutQ (6/7/07 Tr. 220:6-12 (Coleman) (stating that “[n]o one in terrestrial radio had ever dedicated a radio station to targeting the gay and lesbian community”)), Sirius’ political stations Sirius Left and Sirius Patriot (*Id.* at 222:7-223:3 (“[w]e were looking at available political stations, and we found that if you wanted to talk about liberal issues, if you wanted to talk about conservative issues in a sort of

younger skewing way, generally there were no radio stations for you. So we developed Sirius Left and Sirius Patriot.”)), and Road Dog Trucking (*Id.* at 223:19-224:12 (“Truckers are a tremendous community. . . . bound together by their life style You spend your life in a truck, generally alone. So to create a radio station that built a community for them that allowed them to interact . . . calling into our radio station. . . . has been really rewarding”)).

346. As with the development of its collaborative channels, the development of these niche, “differentiating” and “ground breaking” channels “required the same sort of development,” including “developing the context, developing the premises, hiring the people, people who had never done this before, training them into it and ultimately launching the station.” *See* 6/7/07 Tr. 219:10-17 (Coleman). “Talent and hosts for these stations are developed much as our other entertainment creations – we generally hire people who have expressed talent in other media and develop them into radio hosts.” Coleman WDT ¶ 25.

(3) Individual Shows on Sirius

347. In addition to the many partner channels that Sirius has invested in and developed, Sirius has also created many individual shows, which has required searching for and training or grooming on-air talent or hosts. In particular, Sirius seeks out hosts who have been successful in their field, including those with experience in other forms of media or entertainment, sports, etc., and then trains them how to work in radio. Some of these hosts include “Judith Regan, Candace Bushnell, Senator Bill Bradley, Richard Simmons, Barbara Walters, Jane Pratt, Jim Breuer, Deepak Chopra, and a collection of actors from *The Sopranos*.” Coleman WDT ¶ 24; *see also* Karmazin WDT ¶ 50.

348. Just as with a partner channel, Sirius invests time and creativity into designing an appropriate radio format for these individuals that will draw in subscribers. Coleman WDT ¶ 24. In order to ensure that these shows will succeed, “[o]ften, [Sirius] produce[s] several ‘rehearsal’ shows to hone the concept before” launching the show on the air. *Id.*

349. All of these creative efforts are essential in bringing subscribers to the service. Indeed, although Sirius’ internal survey data show that, although subscribers spend somewhat more time listening to music channels, it is the news, talk, and entertainment channels that bring subscribers to Sirius. *See* SIR Ex. 20 at 17, 22. (indicating that [] say that NT&E channels that drove their interest in subscribing to satellite radio, versus only [] who cited music).

b. Sirius’ Creative Contributions to Sports Programming

350. Sirius also makes a substantial creative contribution to the sports channels that it airs, including an “enormous commitment of money, bandwidth, and creative resources.” Cohen WDT ¶ 15.

351. Sirius has eleven full-time dedicated sports channels. Eight of these channels are dedicated to specific sports programming 24 hours a day, 365 days a year, while the remaining three are dedicated to complete sports coverage and are associated with the leader in sports coverage – ESPN. *See* Cohen WDT ¶ 5; *see also* SIR Ex. 26-A (ESPN Radio webpage showing coverage and programming offered on Sirius).

352. Sirius has “created [sports] programming that’s not available anywhere else.” 6/7/07 Tr. 337:20-21 (Cohen). Sirius offers (1) sports coverage exclusive to its

service, including NFL, NASCAR and NBA channels that provide coverage of the games as well as original programming, shows hosted by well known athletes recruited by Sirius, and off-season continuing coverage (*see e.g.* SIR Ex. 26-B (Sirius NFL Radio webpage showing programming and content offered); and SIR Ex. 26-C (NBA Radio on Sirius webpage showing programming and content offered)); (2) in-depth coverage of college sports from over 100 universities and; (3) coverage of that are lesser known, but have dedicated followers, such as soccer, horse racing and poker.

353. In short, Sirius “is doing things that you can’t do anywhere else, whether it’s airing every single NFL game, airing every single game from the men’s basketball tournament, [or] airing every match from Wimbledon.” 6/7/07 Tr. 358:15-18 (Cohen). In 2006 alone, “between three and four thousand games aired on Sirius.” 6/7/07 Tr. 359:6-7 (Cohen).

(1) NFL Programming on Sirius

354. Sirius makes a substantial creative contribution to sports programming through its exclusive deal with the NFL. On December 16, 2003, Sirius announced a blockbuster, seven year, exclusive satellite radio agreement to broadcast all NFL games live, nationwide. *See* Karmazin WDT ¶ 43; SIR Ex. 4; *see also* SX Trial Ex. 36 (Sirius’ contract with the NFL) at SIR00040090 and SX Trial Ex. 36 at SIR00040096. Sirius also developed NFL Radio, which is a full-time radio station dedicated entirely to the National Football League. 6/7/07 Tr. 338:1-3 (Cohen).

355. “Sirius broadcasts every NFL game, typically (except for the Tennessee Titans) with a separate feed for each team.” Cohen WDT ¶ 8. In other words, Sirius is “making the visiting and home-team version of the games” available to

its subscribers. 6/6/07 Tr. 299:5-6 (Karmazin); *see also* SIR Ex. 26-B at 6; 6/7/07 Tr. 348:1-2 (Cohen); Cohen WDT ¶ 8 (“While local teams and a few national games may be available in some markets on terrestrial radio, Sirius is the only source where fans located anywhere in the country can listen to their favorite team play live on the radio.”). In addition, a fan who is driving through different terrestrial broadcasting areas, “can continue to listen to a game from beginning to end without having to change channels or losing the signal due to distance.” Cohen WDT ¶ 8.

356. At the season’s end, Sirius’ NFL programming provides in depth coverage of the Super Bowl in a unique way. 6/7/07 Tr. 344:1-17 (Cohen). Last year, Sirius had “10 broadcasts of Super Bowl XLI in seven different languages” including three in English which covered the “home and away broadcasts, and the national feed produced by Westwood One.” 6/7/07 Tr. 344:1-5 (Cohen); *see also* 6/6/07 Tr. 299:19-22 (Karmazin).

357. In addition to broadcasting live NFL games, Sirius created a “full time, year round” NFL channel that offers original and unique NFL related entertainment programming for football fans. Cohen WDT ¶ 9 (When Mr. Cohen was hired, it was his principal responsibility “to create that channel by hiring talent and producing shows that would draw fans on a year round basis”).

358. As part of that entertainment, Sirius has developed, and continues to develop “numerous talk and call-in shows for NFL fans. These include NFL Rewind, Late Hits, The Red Zone, [and] Moving the Chains.” Cohen WDT ¶ 9. These shows are “hosted by well known current players such as Ronde and Tiki Barber. . . , and

former players such as Jerry Rice,” who have been recruited by Sirius as on-air talent.

Id.

359. These talk shows offer its listeners a rare, interactive experience where [they] can call in and [they] can talk to experts, [they] can talk to future Hall of Famers like Jerry Rice, . . . and talk to former coaches and GMs, and really pick the brains of the experts.” 6/7/07 Tr. 350:12-16 (Cohen). Sirius and its staff have attempted to create an experience on Sirius NFL Radio that is “notches above sports talk radio, and create true expert radio” 6/7/07 Tr. 350:19-20 (Cohen).

360. During the off-season, Sirius' 24/7 NFL Channel continues to offer in-depth sports entertainment for the avid football fan (6/7/07 Tr. 349:6-15 (Cohen)) including coverage of “every pick and every round” of the NFL draft, the NFL combines, owner’s meetings, and training camp tours for all 32 teams. 6/7/07 Tr. 349:9-13 (Cohen); *see also* Cohen WDT ¶ 9. All of this programming is “coverage that has never been done before on the radio.” 6/7/07 Tr. 349:13-14 (Cohen).

(2) NASCAR Programming on Sirius

361. Sirius’ creative contribution to sports programming can also be seen in its in-depth NASCAR coverage. “On February 2, 2005, Sirius and NASCAR announced that Sirius would become the exclusive satellite radio home of NASCAR” from 2007 through 2011. Karmazin WDT ¶ 46; *see also* SIR Ex. 7-C; SX Trial Ex. 23 at SIR00041608.

362. “As with Sirius NFL Radio, live coverage of events [form] the backbone for [NASCAR’s] dedicated channel of related programming.” Cohen WDT ¶ 12. Sirius “dedicate[s] 11 channels” to NASCAR for “every Nextel Cup Race.”

6/7/07 Tr. 338:17-18 (Cohen). On the channels, Sirius offers the live race feed and “10 pit-to-driver communication channels” that “layers [the communication] over the race . . . so you’re not missing any action.” 6/11/07 Tr. 34:11-22 (Cohen); 6/6/07 Tr. 300:21-301:1 (Karmazin). This type of programming is “an enhancement of something that’s not available on terrestrial radio,” (6/6/07 Tr. 301:2-4 (Karmazin)), which only allows a fan to hear either pit communication or the race but doesn’t provide both. 6/11/07 Tr. 34:11-15 (Cohen) (With TrakPass, “80 percent of the time there’s nothing on the air because drivers and crew people don’t communicate as often as the listener would like.”). Sirius’ unique “flag to flag” coverage also includes “pre- and post-race analysis.” Cohen WDT ¶ 12.

363. In addition, Sirius has a “24-hour, seven day a week NASCAR channel.” 6/6/07 Tr. 300:11-12 (Karmazin). Although a fan “might be able to get the race [on terrestrial radio, he or she] can’t get the 24 hour, seven day a week channel” anywhere but Sirius. 6/6/07 Tr. 300:12-14 (Karmazin). As with the NFL, Sirius has created, through content development and on-air talent recruitment, additional unique and exclusive programming for racing fans in the “off season,” including a “live two-hour weekly program exclusively on Sirius,” hosted by “Tony Stewart, one of the most popular and controversial Nextel Cup drivers.” Cohen WDT ¶ 12.

364. Sirius even airs a “Fan Choice Channel” where “[e]very week fans get to go on line and vote for the driver that they would like to hear, who is not one of the nine drivers that [Sirius] selected” for a pit-to-driver channel. 6/7/07 Tr. 355:15-19 (Cohen).

(3) NBA Programming on Sirius

365. Sirius also has made a creative contribution through its offering of other professional sports programming such as the NBA. Karmazin WDT ¶ 42; *see also* SIR Exs. 3-B, 7-B (press releases announcing coverage of NBA games on Sirius); and SX Trial Ex. 26 (Sirius' contract for NBA coverage) at SIR00028031 (granting Sirius rights as exclusive satellite radio broadcaster of the NBA). As with the NFL, Sirius also has an NBA channel dedicated solely to coverage of NBA games and other original programming regarding the NBA league and associated issues. *See* Cohen WDT ¶ 11; Karmazin WDT ¶ 46; SIR Ex. 7-F.

(4) Other Sports Programming on Sirius

366. In addition to professional sports, Sirius also has created a substantial amount of college sports programming. For example, since 2004, Sirius has offered Sirius College Sports Radio, programming “a package of play-by-play programming from top[]-ranked colleges.” Karmazin WDT ¶ 44; *see also* SIR Exs. 5-E, 5-F. Sirius is also “the official satellite radio partner of numerous major universities,” (Cohen WDT ¶ 13) and broadcasts games for college basketball, college football, and . . . some college baseball,” for over a hundred universities. *See* 6/7/07 Tr. 357:4-7 (Cohen). In total this year, Sirius will “broadcast approximately 375 college football games” as well as “many of the biggest bowl games.” *Id.*

367. In addition, Sirius is also “the exclusive satellite broadcast partner of the Men’s NCAA College Basketball Tournament, one of the most popular sporting events of the year.” Cohen WDT ¶ 13; Karmazin WDT ¶ 46; *see also* SIR Ex. 7-A. In fact, three years ago, Sirius became “the first broadcast entity to air every single game

of the men's basketball tournament." 6/7/07 Tr. 358:9-12 (Cohen). To do this, Sirius dedicated four channels to cover the tournament games. 6/7/07 Tr. 358:12-13 (Cohen).

368. Sirius' dedication to developing unique, diverse and creative sports programming is exemplified by a commitment to the "smaller but equally dedicated fan base" for some of the other sports it airs. Cohen WDT ¶ 14. For example last year Sirius "did a deal with the National Lacrosse League." 6/7/07 Tr. 357:7-8 (Cohen). Sirius also provides coverage of the Championships at Wimbledon, and has developed programming that covers horse racing, scuba diving and poker. Cohen WDT ¶ 14. Likewise, Sirius airs "an Arena Football League game of the week," "[UEFA] Champions League Soccer," and "English Premier League Soccer." 6/7/07 Tr. 357:11-14 (Cohen); *see also* Cohen WDT ¶ 14.

c. Sirius' Creative Contributions to Music Channels

369. The SDARS also make a substantial creative contribution to the music channels that they air on their satellite radio service.

370. Sirius makes a significant creative contribution to the programming on its music channels. As Mel Karmazin indicated, "we just can't just play the music. . . . that's sort of what free gets you. We need to make it worth more than free." 6/6/07 Tr. 305:15-17 (Karmazin). As a result, sound recordings are "just one piece of what goes into each Sirius music channel." Karmazin WRT ¶ 23.

371. Early on, there was a conception at Sirius that there would be no program staff and that Sirius would simply play computerized music. 6/12/07 Tr. 18:1-6 (Frear). However, the founders of the company realized that "just computerized music playing wasn't really going to do it . . . [because] the way [music channels are]

programmed . . . can't be driven off of a computer, [and] that people who actually understand and have a feel for the music have to bring it to life for people." 6/12/07 Tr. 18:17-18 (Frear).

372. In order to "bring [music] to life for people," Sirius relies on some of the best on-air and programming talent in the radio industry to create a personality for each of its music channels. 6/11/07 Tr. 92:3-19 (Blatter) (describing "stationality" as the personality that Sirius seeks to create for each individual radio channel). According to Mel Karmazin, Sirius "enhance[s] all of [its] music programming." 6/6/07 Tr. 304:8-9 (Karmazin).

373. Sirius "hires top quality on-air personalities to present music and provide [its] listeners with additional information about each artist and song played in a passionate and engaging manner." Blatter WDT ¶ 27; *see also* 6/12/07 Tr. 20:1-21:12 (Frear) (describing creative contributions of on-air talent such as Jeff Lorber, Eminem and Little Steven Van Zandt); 6/6/07 Tr. 306:8-10 (Karmazin) (describing hiring Nancy Sinatra and others to be hosts in order to enhance music channels).

374. Sirius programmers make use of their skills and creativity to enhance the listening experience on Sirius music channels. Sirius' programmers "are deeply familiar with the universe of music [and] bring both scientific and artistic judgment to bear to create a musical flow and mood." Blatter WDT ¶ 26. Moreover, Sirius programmers "stay very close in touch with what their audiences want." 6/11/07 Tr. 96:21-22 (Blatter).

375. Once Sirius determines what type of channel it will air, its programmers "look at the total available body of music" and "populat[e] a library of

music for the channel.” 6/11/07 Tr. 93:19-20 (Blatter). “The music library for each channel is actively managed and modified by a music programmer on a daily basis.”

Blatter WDT ¶ 8. “Ultimately, that body of music . . . is . . . hand-coded by the individual programmers of a particular channel by different characteristics such as era, the gender of the person singing the song, and a number of other characteristics that might be specific to a particular genre of music” 6/11/07 Tr. 94:6-13 (Blatter).

376. After each song is fully sound-coded, “those songs are put into [the] music data base” which “takes a first swipe at sequencing the songs for a particular day’s worth of music.” 6/11/07 Tr. 94:14-95:2 (Blatter); Blatter WDT ¶ 26. However, the programming is still “far from done.” 6/11/07 Tr. 95:2 (Blatter). Sirius’ programmers then “identify the most familiar, popular and compatible songs within that body of music that they think [the] audience might want to hear.” 6/11/07 Tr. 93:22-94:3; (Blatter). “It typically takes the average programmer anywhere from . . . 45 minutes to upwards of a couple of hours to hand massage the music before it actually is then sent to the DJ’s.” 6/11/07 Tr. 95:3-7 (Blatter); *see also* Blatter WDT ¶ 26.

377. This process is necessary because “a recorded song is not just a recorded song.” 6/11/07 Tr. 96:19-20 (Blatter). As Mr. Blatter testified:

I found over the years as a terrestrial programmer, that when you go through and diligently code the songs as we do at Sirius and you go in and hand massage the music as we do at Sirius that you’re able to provide a much more satisfactory listening experience for the intended audience of that channel.

6/11/07 Tr. 97:1-7 (Blatter).

378. In addition to how they program the music played on Sirius music channels, Sirius’ programmers attempt to create a “personality” for each Sirius station

through other elements. 6/11/07 Tr. 92:3-19 (Blatter). For example, some “[c]hannels have their own station voice and slogans, while others also employ custom singing jingles that help enhance the mood of the channel.” Blatter WDT ¶ 25.

379. Sirius also “devotes resources to” creating “a short name that captures [the channel’s] format,” “a distinctive logo . . . that permits visual identification” and “additional catch phrases . . . that are used repeatedly and that become associated with the channel.” Blatter WDT ¶ 29. Such measures are taken in an effort to “satisf[y] listeners” and “shape how listeners perceive and respond to the music.” Blatter WDT ¶ 30.

380. Because offers 64 channels of music, Sirius can offer “numerous channels dedicated to styles of music that are typically not available on terrestrial radio” – classical, reggae, gospel and bluegrass, to name a few. Blatter WDT ¶ 24; *see also* 6/11/07 Tr. 87:9-20 (Blatter) (“Sirius does have a full time Bluegrass channel. That’s another. . . [niche] style of music that really isn’t supported by terrestrial radio. There might be . . . a few Bluegrass stations located around the country but for the most part, that’s a genre of music that just does not get air play on radio.”).

381. Sirius programmers are able to use their creative freedom to develop specific music channels and shows within particular genres to “new or emerging artists that are not yet popular enough to be included on the playlists of terrestrial radio stations that cover relatively broad formats.” Blatter WDT ¶ 11; 6/11/07 Tr. 80:21-81:18 (Blatter). In addition, Sirius is able to play a more diverse selection of catalog recordings than terrestrial radio. “With 64 channels of music, each channel can be more

specialized and dig down to music terrestrial radio would never use.” Blatter WDT ¶ 11.

382. Sirius has developed branded channels, such as Jimmy Buffet for Margaritaville and the estate of Elvis Presley for the Elvis channel. 6/12/07 Tr. 19:2-4 (Frear); *see also* 08/22/07 Tr. 162:13-19 (Karmazin) (regarding a deal with the Sinatra Estate); 6/12/07 Tr. 19:2 (Frear) (regarding a deal with Eminem for Shade45); Karmazin WDT ¶ 51, SIR Ex. 9-G (press release announcing debut of Shade45). Sirius also has programmed occasional channels that are more promotionally oriented, including channels with the Rolling Stones, the Who, Pink Floyd and the Grateful Dead. *See* 6/12/07 Tr. 19:5-8 (Frear); *see also* Blatter WDT ¶ 18 (Sirius “has developed channel and programs in conjunction with well known artists such as Jimmy Buffett, Eminem, 50 Cent, Steven Van Zandt, the Who, and the Rolling Stones, as well as the Metropolitan Opera.”). Such branded channels bring well-known music brands into the programming process and provide fans with music programming they can affiliate with. *See* 6/12/07 Tr. 19:8-11 (Frear).

383. These channels offer more than just sound recordings. For example, Sirius’ Metropolitan Opera Radio channel allows Sirius to “broadcast live performances (including opening nights), and archival performances from the Met’s 75 year history.” Karmazin WDT ¶ 51; *see also* SIR Ex. 9-N; Blatter WDT ¶ 18 (“Met Opera Radio broadcast about 12 hours per day of pieces that are live or recordings exclusive to radio on Sirius.”). Likewise, “the Who Channel [which is no longer available] feature[d] interviews with the band’s members, historic performances, behind the scenes tour access, fan based recordings, and broadcast[s] of the shows on their current tour.”

Karmazin WDT ¶ 51; *see also* SIR Ex. 9-M (press release regarding the launch of the Who Channel). These channels offer the artists “a way to promote the band’s music and kind of keep their music alive on the radio, whether it be their recorded music or live recordings that the band has accumulated over the years.” 6/11/07 Tr. 98:15-19 (Blatter). Moreover, a number of these artist branded channels are actually co-produced by the artist, enabling Sirius to provide listeners with creative content that they would be unable to obtain anywhere else. 6/11/07 Tr. 98:22-99:9 (Blatter); *see e.g.* SIR Ex. 9-A (“Eminem, Interscope Records Chairman, Jimmy Forte and Shady Records Vice President/Eminem Manager, Paul Rosenberg will serve as co-executive producers of the channel.”).

2. Creative Contributions by XM

a. Diversity of Content on XM

384. XM is far more than a service on which subscribers can listen to sound recordings. XM’s value proposition is based on innovative and diverse programming, including 69 commercial-free music channels, compelling exclusive programming such as live sports with a national reach and talk personalities, premium news and talk brands, and traffic and weather. Its success depends on appealing to a broad spectrum of passionate consumers – sports fans, news junkies, and talk radio listeners – as well as to music lovers whose interests are spread across a wide variety of genres. Parsons WDT ¶ 24; Logan WDT ¶¶ 2, 9, 23; XM Ex. 3.

385. XM emphasizes the diversity of programming on XM with the goal that potential subscribers should look at the program guide, *see* a variety of content and channels that appeal to their personal interests, and appreciate that they are unlikely ever

to feel that “there’s nothing on for me,” as consumers experience with broadcast radio. Logan WDT ¶ 23. XM thus provides a compelling offering that combines sports, talk, and music content with the goal of creating an “XM Experience” that consumers are willing to pay for on a monthly basis. Logan WDT ¶ 82.

b. XM’s Creative Contributions to Music Channels

(1) XM Expert Programming

386. XM understood from the beginning that its primary competition was free over-the-air radio and that it had to offer a clearly differentiated service in order to attract subscribers. This is the reason XM decided early on not to run a music jukebox service that only played sound recordings. 6/5/07 Tr. 17:20-20:11 (Parsons). Instead, XM created music channels with a special character and personality shaped by expert music programmers and on-air talent, and it also produces exclusive music programming, which adds value for XM subscribers, the performers, and the recording labels. Logan WDT ¶ 2. As XM’s Executive Chairman Gary Parsons put it: “XM is much more than a jukebox. The music on XM is selected by music experts employed by XM, not by the Billboard sales charts. Our on-air personalities talk about the music, the musicians, and our life and times.” Parsons WDT ¶ 31.

387. The aim of XM’s diverse music programming is to take people on “musical journeys.” 6/5/07 Tr. 169:11-20 (Logan); *see also* Logan WDT Ex. 8 (describing music programming).

388. Recorded music is a commodity in the sense that it is freely available to the SDARS’ competitors. *See* Joachimsthaler WRT ¶ 24 (explaining that because sound recordings are inputs equally available to terrestrial radio and other music

services, they do not, by themselves, constitute a reason to subscribe to XM); Parsons WDT ¶ 43 (“All of our competitors have equal access to the same library of music”); Noll WRT at 91 (testifying that “SDARS operators and radio stations have exactly the same performance rights.”). That commodity gains enhanced value through the context in which XM showcases it and in which XM’s subscribers experience it. As Mr. Parsons explained, XM’s employees and programmers “are the chefs that are creating the meal, even though they are all using the same basic ingredients that every other radio station has to do that.” 6/5/07 Tr. 19:9-16 (Parsons). The “art” of music programming on XM involves showcasing music and musicians in original ways. Logan WDT ¶ 40; Logan WDT, Exs. 11-16.

389. The expertise and creativity that XM brings to its music programming is essential to distinguishing XM from other music listening experiences. Logan WDT ¶ 35. As Gary Parsons testified, “We could not successfully define XM as a service worth paying for if XM merely replicated the same type of listening experience once can get from terrestrial radio or webcasting.” Parsons WDT ¶ 43.

390. What makes XM’s music channels unique is how XM uses the library, music programming staff, and special programming to create the personality of the XM service. XM special programming – including concerts, music specials, themed programming, music surveys, artists as disc jockeys, and so on – creates the sound of XM and the attraction for subscribers of XM’s music programming. XM dedicates substantial effort and expense to programming and production on its music channels in order to present the music in a proper context and character. It is the skill behind XM music programming that makes XM music programming attractive to its subscribers.

That value exists because of what XM contributes; it does not flow merely from a license to play sound recordings. Parsons WDT ¶ 44.

391. XM makes creative content decisions based on a combination of research, experience, and gut instinct. Logan WDT ¶ 19. XM has found that it will be more likely to succeed using a combination of diversity, experimentation, passion, and expertise for a particular genre than “programming by numbers.” Logan WDT ¶ 20; Parsons WDT ¶ 31.

392. XM’s programming staff includes five Senior Vice Presidents and Vice Presidents for news/sports/talk, original programming and content, program operations, and music. XM’s Chief Creative Officer, Lee Abrams, has been well known for decades as one of America’s leading FM radio consultants. Department and program directors work under each of the Senior Vice Presidents. Each music channel has a program director. There are [] people employed in the programming division of XM, [] of whom are dedicated to music programming. Logan WDT ¶ 10.

393. XM spends tens of millions of dollars annually to create and produce the music programming for XM’s 69 commercial-free music channels. To create the unique sound of XM, XM has attracted a highly skilled and dedicated staff of programmers and on-air talent. Collectively, XM’s staff has more than one thousand years of on-air broadcasting experience and holds more than 300 gold records awarded by the RIAA reflecting their contributions to the recording industry, 62 record industry awards, 2 Emmy awards, and 4 New York Festival Awards. Parsons WDT ¶ 21.

394. When hiring music channel program directors, XM looks for people with a deep knowledge of the genre of the channel they will be programming. Eric

Logan, XM's Executive Vice President of Programming since 2004, Logan WDT ¶ 1, testified as to his philosophy that the technical and managerial aspects of programming can be taught, but the art of selecting music cannot be. That is why he looks to hire true music experts, such as Robert Aubry Davis and Martin Goldsmith (classical), Maxx Myrick (jazz), Bill Wax (blues), Jonathan Schwartz (American standards), or disk jockeys such as George Taylor Morris, Earle Bailey, Mike Marrone, and Eddie Kilroy. These broadcast legends, each with more than thirty years of professional radio and music experience, offer XM subscribers thoughtful and unparalleled perspectives on music in the way that it is programmed and in the personal stories and information they can tell their audience. *Id.* ¶ 52; 6/5/07 Tr. 181:16-183:13 (Logan).

395. All of the more than 2.5 million songs in the XM music library are available to programmers on the XM computer system. Program directors determine the criteria important to creating the character of their respective channels. These include types of music and musical artists (such as era-based music for XM's Decades channels), rotation of songs and artists, the theme of the channel, and the particular themes and flows for each program segment. Logan WDT ¶ 50.

396. XM's on-air talent have full creative freedom to showcase the music in any way they *see fit*. 6/5/07 Tr. 167:5-169:1 (Logan).

397. XM's program directors are guided by their understanding of music, not by industry data or consultants. They are music people, not sales people. Indeed, many of XM's program directors drive listeners' tastes in music. In addition to Bill Wax, Mike Marrone, Maxx Myrick, and Robert Aubry Davis, these tastemakers include Jessie Scott (X Country), Billy Zero (XMU), Tobi (XMU), Bill Evans (XM Café), Seth

Neiman (Hear Music), Ben Smith (Fine Tuning), Erik Range (Ethel), Ward Cleaver (XMLM), Lou Brutus (Fungus), Lisa Ivery (The City), Leo G. (RAW), Skyy (BPM), and Trinity (Watercolors). Logan WDT ¶ 53.

398. XM's expert programmers create a unique music experience for the listener. For example, XM's most popular music channel is Willie's Place, produced by XM along with music legend/XM subscriber and enthusiast Willie Nelson. Willie's Place is an audio environment, where on-air personalities welcome the listener to an imaginary honky-tonk bar, with classic country music pouring out of the nickel jukebox. Parsons WDT ¶ 33.

(2) XM Original Special Music Programs

399. In addition to the programming of sound recordings, XM-created special original programming keeps the music channels sounding fresh. For example, XM's artist-led shows give performers free rein to play whatever music they want to play, to share and talk about what inspires them as artists and as fans, to talk about their favorite places to perform, or just tell stories about their experiences recording and touring. Logan WDT ¶ 41. XM "create[s] unique music programming that showcases artists and gives insight into their approach to music." Parsons WDT ¶ 32.

400. Some of XM's popular artist-led shows are Bob Dylan's "Theme Time Radio Hour," where each week he plays songs on a different theme; Tom Petty's "Buried Treasure," where he digs up vintage rock and roll tracks; Wynton Marsalis' "In the Swing Seat," where he talks about the style of particular jazz artists; Snoop Dogg's "Welcome to da Chuuch," programmed from his home with music and guests from the world of hip-hop and rap; and Quincy Jones' multi-series programs on jazz, rhythm and

blues, and soul music. “SongStories with Graham Nash” features Nash interviewing many of music’s most talented and successful songwriters about the stories behind their most classic songs, their overall creative process, and the art of songwriting itself. Folk favorite like Christine Lavin, hip-hop star Ludacris, and new country artist Jack Ingram are among the other artists who produce programs for XM. Artists of different generations and styles sometimes drop by to “take over” a channel station; they have complete freedom to talk about whatever they want, play what they want, and enjoy programming from XM’s extensive music library. *Id.* ¶ 42; Parsons WDT ¶ 32; 6/5/07 Tr. 188:13-191:11 (Logan); Logan WDT, Ex. 8.

401. Original XM-produced music programming also includes programming featuring performances by mainstream and up-and-coming musical artists. The XM-created series called “Artist Confidential,” for example, is an hour-long program that spotlights one major musical artist or group with interviews and at least twenty minutes of live performances, both audio- and video-recorded before a small audience in XM’s Performance Theater in XM’s studios in Washington, D.C. or occasionally in its New York “Jazz at Lincoln Center” studios. These performances cover every genre of music, including an offshoot program called “Classical Confidential” that airs on XM’s classical music channels. XM has done more than fifty “Artist Confidential” and more than ten “Classical Confidential” programs, with artists as diverse as Paul McCartney, Bonnie Raitt, Cecilia Bartoli, Leonard Slatkin, Clint Black, Herbie Hancock, and Odetta. *Id.* ¶ 43; 6/5/07 Tr. 196:17-198:2 (Logan); Logan WDT, Exs. 10, 11.

402. In addition to the “Artist Confidential” shows, XM has conducted and played literally thousands of interviews with artists. *Id.* ¶ 67.

403. XM Kids’ “Rumpus Room” concert series is an exclusive in-studio kids’ concert series featuring the best children’s recording artists. Like an “Artist Confidential” for the under ten set, it has featured artists such as Laurie Berkner, Dan Zanes, They Might Be Giants, and The Baha Men. Logan WDT ¶ 44.

404. XM’s “Then ... Again ... Live” series invites classic rock artists into the XM studio to recreate in live performance, track for track, some of their most famous recordings and to give their personal takes on some of their landmark works – how they were recorded, what the band was like at the time, and what they might do differently today. *Id.* ¶ 45; Logan WDT, Ex. 12.

405. XM also has created a series called “Artist 2 Artist,” where a young performer interviews an established artist who inspired him or her (such as the up-and-coming country performer Dierks Bentley interviewing country legend George Jones). *Id.* ¶ 45; Logan WDT, Ex. 13.

406. As noted, from time to time, artists drop in on one of XM’s channels and program their own radio show. Out of this concept XM developed its “Offstage” series, where XM visits different artists at their home or home studio and allows them to host and program a one-hour show that mines their personal collection of music. *Id.* ¶ 45; Logan WDT, Ex. 14.

407. All of these programs are created by XM, and some can be expensive to produce. [[

]]. These XM-created music

shows create ongoing value for the existing subscriber base, and they play an important role in subscriber retention. *Id.* ¶ 46.

(3) XM Concert Events

408. XM also broadcasts special concert events. In total, XM has broadcast more than 5,000 concert performances (in addition to the “Artist Confidential” series). XM’s “Mainstage” series includes concerts from established artists, often carried live (though at times recorded) from large multi-artist festivals such as Bonnaroo, Rock in Rio, Live 8, and Farm Aid. *Id.* ¶ 47; Logan WDT, Ex. 15.

409. In addition, XM often features small-venue concert recordings from emerging artists, particularly in its “SRO” series, which exposes new talent to XM’s music audience. These venues include the B.B. King Blues Club in New York City. *Id.* ¶ 47; 6/5/07 Tr. 195:9-196:16 (Logan); Logan WDT, Ex. 16.

(4) XM “Destination” Channels

410. The real power of XM music programming is showcased on channels that are programmed specifically to be unique audio “destinations” for XM’s listeners. Listeners strongly connect with how the content is presented on these channels and, as a result, develop a passion for XM programming. *Id.* ¶ 55.

411. For example, Deep Tracks regularly features sets that connect the music in ways that appeal to subscribers’ intellect and aesthetic sense over and above the appeal of the song itself. Songs often are connected by theme as well as by the style, tempo, or key. Every week, Earle Bailey takes the listener on a “Head Trip,” playing hours of songs built around a particular word or phrase or theme in the song titles. The “Undercover” program features versions of well-known songs covered by other artists.

The “Fresh Tracks” show features new music releases by long-established and well-loved artists, some of whom get little airplay on hit-driven terrestrial radio. *Id.* ¶ 56.

412. Other specially-programmed shows on Deep Tracks include a weekly show intended for headphone listening featuring tracks where record producers experimented with stereo effects; a Grateful Dead hour, featuring live performances from among hundreds of available recorded concerts; and author and music enthusiast Bill Fitzhugh’s weekly hand-mixed vinyl show, where he shows how recording artists picked up the musical riffs and themes from other records. *Id.*

413. Deep Tracks also features the weekly hour-long shows by Bob Dylan and Tom Petty, recordings from the “King Biscuit Flower Hour,” “Artist Confidential” interviews and concerts, “Then ... Again ... Live” shows, and more. Deep Tracks exemplifies the breadth, depth, and intensity of XM programming efforts and XM’s programming philosophy. *Id.*

414. When subscribers tune in an XM “destination” channel such as one of the Decades channels or Deep Tracks or Bluesville or Real Jazz (among many others), they get much more than a passive entertainment experience. Instead, they enter the minds of music experts who entertain, inform, stimulate, and surprise. Many of these channels recreate a certain location or time in words and music. *Id.* ¶ 57.

415. It is the thought, effort, expertise, and expense that XM brings to these channels that makes subscribers love listening to music on XM. *Id.*

(5) XM “Mini-Series” Programs

416. Within the framework of the music channel themes, XM also creates “mini-series” programs that showcase music and artists in creative ways. For example,

The 60s channel features a weekly show called “Sonic Sound Salutes,” which recreates the heyday of Top 40 radio. During this show, XM’s The 60s channel is transformed into one of the classic 1960s radio stations from around the country, with a mix of songs of the era with recordings that include original station jingles and on-air personalities. Recently, XM recreated Chicago’s WLS and Kansas City’s WHB. *Id.* ¶ 59; Logan WDT, Ex. 17.

417. XM also creates long-form specials of three to eight hours’ duration chronicling the history of a recording artist. These programs feature interviews, archival material, and the complete range of the artist’s music. This “Complete” series has, in the past, covered artists such as The Eagles, Chicago, Les Paul, Shania Twain, Toby Keith, Bobby Darin, and the Rolling Stones. *Id.* ¶ 72.

418. These are the kinds of compelling musical experiences that XM creates and that listeners cannot hear anywhere else but XM. *Id.* ¶ 61.

419. XM subscribers appreciate the differences in music programming between XM and terrestrial radio: the breadth and depth of XM’s music offerings, the special music programming produced by XM, the expertise and experience of XM’s on-air talent, the insights into the music from the minds of the musicians themselves, and the extraordinarily deep knowledge of XM’s music programmers. Parsons WDT ¶ 32.

c. XM’s Creative Contribution to Sports Channels

420. XM also makes substantial creative contributions to its extensive non-music programming. *See* XM Ex. 3. In the sports area, for example, in addition to carrying live broadcasts of sporting events and branded sports talk content, XM created its own channel, XM Sports Nation, which features exclusive programming from

Jimmie Johnson, Dale Earnhardt, Jr., Mike Kryzewski, and a show called “60/20 Sports” created with James Carville and Luke Russert, among other shows. 6/5/07 Tr. 149:15-21 (Logan); Logan WDT Ex. 3.

421. XM also created a 24-hour baseball talk channel, MLB Home Plate. *Id.* at 150:8-12 (Logan); XM Ex. 3.

d. XM’s Creative Contribution to Talk and Entertainment Channels

422. In addition, XM invested in the creation of a variety of original non-sports talk programming such as the Oprah & Friends channel, which features original programming on news, health, fitness, home design, spirituality, and lifestyles from Oprah Winfrey’s HARPO Productions, Logan WDT ¶ 30; the Take Five Channel, which focuses on women’s lifestyle issues and includes XM-exclusive programming such as interview shows led by women journalists and talk personalities, *Id.* ¶ 32; and other original talk channels such as The Power (African-American talk), Family Talk (Christian talk), and Open Road, a channel for truckers. 6/5/07 Tr. 153:19-154:16 (Logan); XM Ex. 3; Logan WDT Ex. 5, 6. XM’s “All-Star Talk and Entertainment” programming includes famous on-air personalities such as Opie and Anthony. *Id.* ¶ 17.

423. XM produces “Bob Edwards Weekend,” which is distributed by Public Radio International to 37 terrestrial public radio broadcast stations around the country. It features two hours of excerpts from The Bob Edwards Show, which is produced by and heard daily on XM. *Id.* ¶ 29.

424. XM also created its own brand of children’s entertainment called XM Kids, a channel that focuses on children between the ages of three and six. 6/5/07 Tr. 155:13-156:3 (Logan). XM Kids presents a morning show that is a radio cartoon

with running characters, sketches, and contests as well as radio theater, kids' concerts, science shows, and other content throughout the day. *Id.* ¶ 17; 6/5/07 Tr. 155:18-156:3 (Logan).

425. "Sonic Theater" is an XM exclusive channel that presents short stories, serialized readings from well-loved books, plays recorded live on stage, and radio drama. Logan WDT ¶ 17.

e. XM's Creative Contribution to Information Channels

426. XM also carries Instant Traffic & Weather on a 24-hour basis. Through Instant Traffic & Weather, XM broadcasts local road and weather conditions for 21 major metropolitan markets, each over its own dedicated channel (channels 210-230), as well as national emergency information on dedicated channel 247. Unlike commercial radio's 30-second updates, XM traffic and weather channels are broadcast nationally and give full reports on commuting and weather conditions. *Id.* ¶ 34; 6/5/07 Tr. 156:4-157:15 (Logan); Masiello WDT ¶ 45.

3. Conclusion

427. The SDARS have made significant creative contributions to both the music and non-music aspects of their services that must be credited under section 801(b)(1)(C). With respect to music, as detailed above, those contributions include but go far beyond the creative sequencing of sound recordings to include the production of a wide variety of original programs designed to enlighten and bring the music alive for subscribers. By contrast, the record companies, while responsible for creating sound recordings, do not expend any incremental effort to provide this input to the SDARS. Woodbury AWDT at 43, 48. Thus, evaluation of the relative creative contributions of

the parties to the SDARS' services – the “product made available to the public” – reveals that the SDARS' creative incorporation of sound recordings into a diverse array of original music and non-music program offerings outweighs the contribution of the recording industry and thus favors a lower rate.

E. The SDARS Designed and Developed New Technology and Created a New Medium To Provide Commercial-Free, Seamless Nationwide Competition To Terrestrial Radio.

428. The Copyright Royalty Judges must set a rate in this proceeding that reflects “the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to the relative . . . technological contribution” of the SDARS to the distribution of sound recordings. 17 U.S.C. § 801(b)(1)(C). The record evidence demonstrates overwhelmingly that the technological contributions made by the SDARS far outweigh those, if any, made by the record companies.

429. SoundExchange expert Bruce Elbert stated at trial that Sirius and XM's commercial systems for nationwide delivery of high-quality digital audio directly to automobiles constituted an advancement over prior commercially available systems. 8/27/07 Tr. 215:16-21 (Elbert). “Satellites had been used to deliver audio programming for decades, but these systems were directed toward fixed installations at radio stations and commercial buildings.” SDARS Ex. 92 at 251 (emphasis added). No commercial satellite company, before XM or Sirius, had ever developed a nationwide system that combined the elements of multiple satellites with simultaneous broadcasting from terrestrial repeaters to moderately priced mobile receivers that could receive all of those signals and produce a seamless listening experience in automobiles. 8/27/07 Tr. 210:1-9 (Elbert).

1. The Technological Contributions of Sirius

430. In developing the infrastructure necessary to create satellite radio, the SDARS made significant technological innovations and other creative or engineering contributions. *See* Smith WDT ¶¶ 4-6 (summarizing the technological innovations achieved by Sirius).

431. The SDARS' business plan was based upon "a new, untested technology that required development of a means of transmitting and receiving with reliability relatively low power satellite transmissions in vehicles, with an antenna small enough to be acceptable to consumers." Karmazin WDT ¶ 27. For a satellite radio service to be successful, the SDARS needed to "provide a very high quality digital audio experience to consumers in mobile vehicles across the entire nation with a system that provides coverage that is continuous and seamless and also importantly is affordable." 6/7/07 Tr. 44:2-16 (Smith).

432. Sirius has been recognized for its achievements in the business of commercial satellite services. In 2001, Popular Science magazine would crown Sirius the Grand Prize Winner of its "Best of What's New" award in the electronics category. Smith WDT ¶ 30. The technologies developed by Sirius would also eventually result in the granting of twelve United States Patents. *Id.* ¶ 31.

a. Sirius' Technological Contribution with Respect to Satellites and Satellite Operations.

433. The extent of technical challenges that faced Sirius can hardly be overstated. Smith WDT ¶ 4. When Sirius (then Satellite CD Radio, Inc.) was founded, the then-current technology allowed for a satellite to send a basic stream of audio data to a fixed point on the earth; no one had yet to develop a system for distribution of audio

content from satellites to moving vehicles that would provide a seamless listening experience. *Id.* ¶ 4; 6/7/07 Tr. 45:20-46:18 (Smith) (discussing the issue of delivering the Sirius signal to a moving target).

434. Sirius needed to create a system to deal with the fact that vehicles move—they would routinely vary in speed, and pass by trees and buildings that block the signal from the satellite. 6/7/07 Tr. 46:4-14 (Smith). Sirius created a system that would deliver the signal through three types of diversity. “Spatial diversity created a system of multiple satellites broadcasting the same content so that if one satellite was blocked the other could still transmit the signal.” 6/7/07 Tr. 47:2-10 (Smith). “Frequency diversity” separated the two satellite signals to extreme ends of the Sirius spectrum so that if there were any disruptions in certain frequencies, it might not affect the other frequencies. *Id.* at 47:11-20 (Smith). Finally, “time diversity” allows the Sirius receiver to be blocked temporarily from a view of both the satellites but still provide a seamless listening experience. *Id.* at 47:20-48:4 (Smith).

435. Because no one had yet to develop a truly mobile satellite radio system (*see infra* ¶ 1-4), Sirius needed to design satellites tailored to its specifications. “None of these satellites are satellites that you can buy off the shelf, so [Sirius] needed to design satellites.” 6/6/07 Tr. 270:2-4 (Karmazin).

436. Sirius uses a “constellation of three dedicated satellites owned and controlled exclusively by Sirius.” Smith WDT ¶ 7. These satellites are deployed in highly inclined, elliptical orbits, a unique configuration that ensures there will always be at least one satellite at a high elevation to minimize blockage and reliance on terrestrial repeaters. *Id.*; *see also* 6/7/06 Tr. 53:15-56:15 (Smith) (describing in detail the unique

and patented orbital path of Sirius' satellites). Before Sirius, commercial satellite broadcasts were transmitted from satellites in geostationary orbits. *Id.* at 51:17-52:4 (Smith). By changing to a geosynchronous system that emphasized higher orbits, Sirius "removed an extraordinary number of blockages." *Id.* at 53:10-13 (Smith); Smith WDT ¶ 7.

437. The three satellite geosynchronous system allows each satellite to spend sixteen hours north of the equator transmitting to Sirius customers, and eight hours below the equator at "rest." Smith WDT ¶ 8. Thus, at any given moment there are two satellites transmitting "the same signal at slightly different frequencies with a four second delay between them." *Id.* This innovative design permits the Sirius receiver, which also operates on a four-second delay, to allow the streams to be matched in time in order "to find the best signal at any given moment to create a seamless listening experience." *Id.*; *see also* 6/7/07 Tr. 47:20-48:4 (Smith) (discussing time diversity in satellite broadcasts).

438. While the geosynchronous orbit provided for a more seamless listening experience, unlike geostationary orbits, geosynchronous orbits are prone to much greater orbital disturbances from the sun and moon. Smith WDT ¶ 10. This problem required Sirius to engineer an "on board system to provide constant reference information to allow the satellites to compensate for their varying orbital rates and apparent variations in earth size." *Id.*; 6/7/07 Tr. 72:8-20 (Smith). This system constantly calculates sun and moon intrusions and "automatically disable[s] and re-enable[s] earth sensor scans as necessary to ensure that the satellite does not lose communications with earth." Smith WDT ¶ 11; 6/7/07 Tr. 74:3-76:13 (Smith).

439. Sirius' satellite technology innovations have been recognized by the satellite industry. In 2002, Sirius was inducted into the Space Foundation's Space Technology Hall of Fame. Smith WDT ¶ 29. This honor recognizes companies that have transformed space technology into a commercial product; and inductees are selected by an esteemed panel that contains the best and brightest of NASA, the Department of Defense, the Department of Commerce, the Department of Transportation, and several commercial aerospace and technology companies. *Id.* This is an elite group—fewer than forty technologies have been honored with this award. *Id.*; *see also* 6/7/07 Tr. 88:6-89:12 (Smith) (discussing awards given to Sirius and their prestige). Despite these achievements and public recognition of Sirius' innovations, Mr. Elbert refused to characterize any aspect of Sirius service as innovative. *See* 8/27/07 Tr. 198:7-200:1 (Elbert).

b. Sirius' Technological Contributions With Respect to the Use of a Terrestrial Network.

440. As discussed above, one of the more significant technical problems Sirius faced was the issue of signal blockage. Before Sirius and XM, satellites broadcast signals to fixed points on the earth which could have their line-of-sight cleared. Truly seamless mobile service, however, would have to deal with the density of urban areas, in which the Sirius satellite signal would be blocked by trees and buildings. *See* 6/7/07/ Tr. 43:9-46:18 (Smith).

441. While the use of a geosynchronous orbit was one method developed by Sirius to address the issue of blockage, Sirius also sought to reduce blockage issues by employing a network of approximately 140 terrestrial repeaters nationwide. Smith WDT ¶ 22-24. While the high orbit of the Sirius satellite system limits blockage,

repeaters may still be necessary due to the shadows cast by buildings in urban areas.

6/7/07 Tr. 62:1-8 (Smith).

442. These repeaters receive the Sirius satellite signal from a third party satellite on which Sirius has leased a transponder. Smith WDT ¶ 22. Because the signal relayed by the third-party satellite is not at a frequency within the range at which Sirius is licensed to transmit, Sirius had to design the repeaters to translate the signals received before rebroadcast. *Id.* This was not easy, as the Sirius repeaters must retransmit the frequency at a modulation that improves reception in urban areas, while not interfering with the signals from either Sirius' own satellites or XM's. *Id.*

443. While some companies had made use of terrestrial repeater networks to relay signals to mobile or portable devices and some broadcast companies had made use of repeaters to transmit satellite signals to large commercial-grade receivers (*see* Elbert WRT at 26-27, 30, 34), the SDARS were the first satellite businesses to utilize a repeater network to provide continuous satellite broadcast signals to mobile consumer devices. 6/7/07 Tr. 123:11-17 (Smith) (discussing how global positioning devices do not provide the continuous service that Sirius does).

c. Sirius' Technological Contributions with Respect to Chipset Development and Compression Technology.

444. In order to deliver compelling audio through a single satellite broadcast signal, Sirius had to pioneer substantial breakthroughs in the area of audio compression. Smith WDT ¶ 19. It was a tremendous challenge to fit 135 audio channels into a single broadcast signal. 6/7/07 Tr. 77:13-78:3 (Smith).

445. Sirius does not claim to have invented audio compression. The advances Sirius has made, however, have been remarkable: when Sirius began, it was

thought that satellite radio would only be able to squeeze thirty to forty channels into the signal. *Id.* at 78:4-15 (Smith). Sirius invested substantial amounts over the years to increase the number of channels to 135. *Id.*

446. Sirius broke new ground by applying the concept of statistical multiplexing to audio. This allows for the simultaneous analysis of multiple audio channels to determine where the more complex audio signals are, as opposed to silence, so more bits may be assigned to the complex sounds in order to increase the efficiency of the broadcast. *Id.* ¶ 20. Statistical multiplexing was used in video systems and DirecTV before Sirius. *Id.*; 6/7/07 Tr. 84:10-16 (Smith). The application to audio, however, was something new, and this was a “significant challenge.” *Id.* Tr. 85:1 (Smith).

447. Sirius then had to develop a device to “receive, decode, and decompress” the compressed signals described above. Smith WDT ¶ 24. The process of creating these chipsets, the “core component” of the radios, has been a difficult one. Frear WDT ¶ 6. In 2001 chipset problems delayed Sirius’ commercial launch. *Id.* ¶ 6. Sirius quickly learned “that if it wanted the work done right, it had to do it itself.” *Id.* ¶ 19.

448. “The chipset is the core technology in every Sirius radio, no matter what the interface looks like.” Smith WDT ¶ 24. The first-generation Sirius chipset technology was remarkable because it allowed the radio to choose the strongest signal from any of the transmitting satellites or repeaters. *Id.* ¶ 25. Even SoundExchange expert Bruce Elbert admits in his testimony that the WorldSpace chipset had an absence of circuitry to coordinate signals from two satellites and a repeater. Elbert WRT at 29.

449. Simultaneously, the chipset would also buffer all of the signals so that even if all signals were momentarily blocked, the listener would still hear seamless programming. Smith WDT ¶ 25. Something as common as a highway overpass could create a choppy listening experience, but the Sirius chipsets used memory to rectify this problem. 6/7/07 Tr. 64:19-66:8 (Smith); *see also* Smith WDT ¶ 25.

450. Mr. Elbert's statement that the time diversity employed by Sirius is no different than the anti-skip protection used on CD Players, *see* Elbert WRT at 31, is a faulty comparison. A CD player has the programming content housed within the device, a luxury not enjoyed by a Sirius receiver. Creating a seamless listening experience with Sirius requires the coordinating of two transmissions from space and one on the ground; one satellite will transmit the signal immediately, whereas the other satellite and repeater will delay the signal to create an echo. The memory in the receiver will then sort this out to create a seamless listening experience. 6/7/07 Tr. 65:8-66:12 (Smith).

451. In 2003, Sirius announced that it would begin shipping a second-generation chipset it had developed that would integrate all digital portions of the receiver circuitry into a single chip. Smith WDT ¶ 27. This continued innovation took the receiver design dimensions from the size of a videocassette in the first generation to the size of a credit card. *Id.* ¶ 27. The new-generation chipset reduces the size of the receiver and also reduces power consumption by fifty percent. *Id.* ¶ 27.

452. In 2004, Sirius developed and introduced a Generation 2.5 chipset that further reduced the size, cost and electrical requirements of the chipset. *Id.* ¶ 27. In 2005, Sirius introduced a Generation 3 chipset, "representing a significant further

advance in all major design parameters.” *Id.* SIR Ex. 12 shows a pictorial representation of the many advances made in Sirius’ chipset development. SIR Ex. 12.

d. Sirius’ Technological Contributions with Respect to Antenna Development and Design.

453. Prior to satellite radio, commercial satellite antennas were far too large to make the seamless mobility desired by Sirius a reality. These commercial satellite antennas capable of capturing the relatively weak signal from a satellite were generally large and expensive dishes, which would be far too unwieldy for use on a moving vehicle. Smith WDT ¶ 4; 6/7/07 Tr. 68:3-6 (Smith).

454. One of the greatest achievements of Sirius is the development of the extraordinarily small, omnidirectional antennae used with Sirius radios. Smith WDT ¶ 26. The original Sirius antenna measured a mere four inches by two inches by one inch and could operate in any direction. In contrast, DBS television services like DirecTV utilize a large antenna between 18 and 24 inches in diameter that must be in a fixed position aimed at the satellite to receive the service signal. *Id.* ¶ 26. Terrence Smith testified that a dish-type antenna is a preferable design for receiving satellite broadcast transmissions: “[M]uch like my voice dies away the further away you get from it, I often find myself cupping my ear to be able to hear a person as they catch more of the sound in my ear.” 6/7/07 Tr. 67:18-22 (Smith). Sirius could not take advantage of this simple principle, however, because a large dish antenna could not be affixed to a moving vehicle and would in fact be ripped off of a car traveling at highway speeds. *Id.* at 68:4-6 (Smith).

455. With further design innovations, the Sirius antennae have today been reduced in size to 47 mm by 40 mm by 12 mm. Smith WDT ¶ 26. This tear drop-

shaped antenna is not even comparable to the large dishes of other commercial satellite companies. In fact, before Sirius developed this small antenna, only the military used such low-powered S-band signals, which are just a few decibels above the cosmic background radiation, for mobile satellite receivers. *Id.* ¶ 26.

456. SoundExchange asserts that companies were sending signals from satellites to non-stationary antennas prior to the SDARS. The examples Bruce Elbert cites are very different, however. In the case of Iridium, that company originally produced an antenna that was too large and expensive to achieve a high degree of acceptance. 6/7/07 Tr. 122:3-123:3 (Smith). Moreover, other companies that tried to utilize omnidirectional antennas were not providing continuous transmission of content and their consumers were not expecting continuous reception, as a customer demands when listening to programming on Sirius or XM. 6/7/07 Tr. 124:5-18 (Smith); 8/27/07 Tr. 205:16-21 (Elbert) (discussing Worldspace's lack of SDARS like mobility).

e. Sirius' Technological Contributions with Respect to Consumer Electronics Development and Original Equipment Manufacturers.

457. In addition to the foregoing innovations, there was a substantial amount of creativity in the engineering required to develop the radios, receivers and subscriber management system employed in Sirius' service.

458. Unlike other audio services, subscribers must purchase special dedicated receiving equipment to listen to satellite radio. Wilsterman WDT ¶ 4. "AM/FM radios have been standard equipment in vehicles for decades. Consumers can receive webcast streams over normal home computers. Cable and satellite TV subscribers can receive the subscription cable audio services over the same system they

use to receive television, and can listen to those services on their existing television sets and home stereo equipment.” *Id.* ¶ 7.

459. Because unique equipment is necessary to receive the SDARS content, the SDARS have been obligated to make substantial efforts and investments relating to the design of radios and receivers for consumers. This equipment must be developed, manufactured and marketed before Sirius even tries to convince potential subscribers to acquire the equipment and install it in their vehicles. *Id.*

460. The third parties with which Sirius contracted to build its receivers “did not have experience in designing satellite radios and, given the relatively small impact satellite radio would have on their businesses, were not always motivated to devote adequate resources to the development tasks; hence Sirius was required to establish its own internal research and development program to develop radios and chipsets for its equipment.” Frear WDT ¶ 6.

461. Accordingly, Sirius’ efforts “are unique to satellite digital audio – AM/FM radio stations, music subscription services piggybacked on pre-existing infrastructure (such as cable or satellite TV services), and internet-based music services do not have the same need to invest in the development and marketing of user hardware.” Wilsterman WDT ¶ 23.

(1) Consumer Electronics

462. “Unlike terrestrial radio listening which simply requires a broadly available AM/FM radio, in order to listen to our service Sirius subscribers must purchase a new radio from a retailer or as a factory installed option in a new car.” Frear WDT ¶ 23. SoundExchange’s witnesses recognized that one of the successes of both

Sirius and XM is that the companies managed to develop receivers that were inexpensive enough to attract a substantial subscriber base. 8/27/07 Tr. 245:20-246:3 (Elbert).

463. Consumer electronics companies have worked with the aid of Sirius engineers (and Sirius money) to develop a wide variety of radios for both the automobile and home markets. Smith WDT ¶ 28. The user interface had to be a large improvement on the typical AM/FM radio, because Sirius subscribers would need an easy-to-use interface to help them navigate through 130 channels of programming. *Id.* ¶ 28.

464. Moreover, the consumer electronics business “is extremely competitive in every respect. Product design in the consumer electronics field is characterized by extremely rapid technological, functional and aesthetic advancement. When new products are introduced into the marketplace, they are already quickly on the way to becoming obsolete. Thus, constant product development is essential.” Law WDT ¶ 3. Sirius therefore must define the industrial design, features and price points so that the products are both functional and desirable. *Id.* ¶ 5.

465. The process is so intensive that Sirius employs a staff of over twenty employees and works with over two-hundred outside employees in the continuous design and development of Sirius products. *Id.* ¶ 6.

466. SoundExchange has attempted to characterize the Sirius receiver as essentially an evolution of the receiver used by Worldspace. However, the Sirius receiver greatly advances the number of sources from which a radio is able to obtain content. Sirius radios are capable of simultaneously receiving the signal from three

sources, two satellites and one terrestrial repeater, and determining which of these three signals is the strongest. 8/27/07 Tr. 204:6-20 (Elbert). SoundExchange expert Bruce Elbert admitted that Worldspace's receivers did not do this. *Id.* at 204:21-205:10 (Elbert). The ability of the Sirius receiver to use three signals to work around blockage is something that Mr. Elbert testified that even NASA was unable to do. *Id.* at 208:4-15 (Elbert).

467. Moreover, the Sirius receiver is a truly mobile receiver. Mr. Elbert admitted that the SDARS receivers provided a truly unique mobility that was not available before. Indeed, the Worldspace receiver did not permit the user to "move around with it in . . . the back of a pickup truck, other than very open areas, and expect it to work if you went into a city." *Id.* at 205:16-21 (Elbert); *see also* SDARS Ex. 92 at 256-257 (discussing how the Worldspace receiver is not as well suited for mobile reception as the XM or Sirius receivers).

(2) Automotive OEM

468. "OEM distribution . . . is critical to Sirius' business." Wilsterman WDT ¶ 7.

469. The OEM group at Sirius is responsible for engineering the integration of Sirius' receivers, antennas, headunit software and wiring into many different vehicles and models, which requires extensive software development, tooling, and testing, and is a formidable feat in and of itself. 6/7/07 Tr. 163:21-164:8 (Wilsterman). This brings Sirius' programming, including music programming, to a wider audience with better sound quality and a better overall listening experience. *Id.* at 159:7-160:9 (Wilsterman). The group also kept pace while in-vehicle audio systems transitioned analog to digital

format. *Id.* at 163:6-164:8 (Wilsterman) (“in the process of [switching from analog to digital], the interface between our receivers and their vehicle entertainment systems becomes quite complex. . . . [T]hey’re very proprietary systems with these protocols that they use. The software required to make the devices talk to each other . . . is quite extensive.”).

470. The process of integrating receivers into vehicles is complicated by the fact that each manufacturer and model is different. “Automotive engineers have to understand the Sirius technology and decide how best to integrate it into their vehicle. The solution for one manufacturer is almost certainly not the same for another manufacturer, because each OEM uses its own unique communications protocol within the vehicle with which the radios must be compatible. Even amongst different product lines made by the same OEM, the manufacturer will have varied engineering requirements.” Wilsterman WDT ¶ 11; 6/7/07 Tr. 163:21-166:7 (Wilsterman) (discussing difficulties encountered in engineering for many different vehicle types and discussing specifically the BMW iDrive system).

471. “[D]ifferent vehicles have different requirements for the so-called ‘head unit’ – the ‘radio’ through which the customer controls the operation of the Sirius system. In addition to Sirius’ exacting engineering requirements, OEM engineers must ensure that the device will work in harmony with the rest of the vehicle’s electrical and other systems.” Wilsterman WDT ¶ 11.

472. “In designing the head units, both Sirius and the manufacturers are concerned with ensuring that the end product will meet customer satisfaction standards.

If the interface is not logical, easy to use, and otherwise well-designed, consumers will balk at purchasing the Sirius system.” *Id.*

473. Sirius’ involvement with the BMW iDrive system is a case study in how Sirius has had to be innovative in order to get its receivers into cars.

BMW . . . uses what is known as the ‘I-Drive’ controller to govern a wide range of ancillary functions, including HVAC, audio, telephone, navigation, as well as certain vehicle functions. A major purpose of the I-Drive system was to relieve dashboard clutter and provide a cleaner, more austere interior look by combining the functions that had been performed by numerous buttons, knobs, rotary switches, etc. into a single controller that functions somewhat like a computer mouse in conjunction with a video screen. In view of this overriding stylistic and engineering goal, it would have been unacceptable to BMW for Sirius to require a head unit controlled by ordinary buttons; Sirius was required to integrate its unit with the I-Drive and accept control inputs from the I-Drive controller via vehicle electronics.

Id. ¶ 14.

474. Sirius’ engineering must be cutting-edge due to the notoriously long lead times involved in getting electronic devices included as standard or optional equipment in new vehicles. 6/7/07 Tr. 154:7-10 (Wilsterman). Typical lead time – the time period between beginning development and when devices are ready to be installed and sold – is 3 to 4 years. Wilsterman WDT ¶ 13. Lead times are so great because auto manufacturers will not put anything in their vehicles that does not meet stringent quality standards and does not have a good chance of becoming popular because of the risk of diluting the OEM’s own brand equity. 6/7/07 Tr. 155:6-156:1 (Wilsterman). Therefore, exhaustive testing of the devices is necessary. Wilsterman WDT ¶ 13; 6/7/07 Tr. 161:17-162:9 (Wilsterman).

f. Sirius' Technological Contributions with Respect to Subscriber Management System.

475. To facilitate the customer service experience, Sirius designed "its custom subscriber management system ("SMS") to integrate customer service, subscriber management and billing operations. . . . [T]he SMS establishes an electronic interface for information exchanged with automobile manufacturers, automobile dealers, consumer electronics retailers and radio manufactures and facilitates subscriber interaction through the Internet. It also permits remote activation and deactivation of Sirius radios as well as parental controls to block adult content. In addition, representatives of Sirius' customer care service provider are permitted online access to its billing and account system." Frear WDT ¶ 17; *see also* 6/11/07 Tr. 303:1-11 (Moore) ("The user interface, which is the piece that agents actually type into and use on a day-in/day-out basis, was designed by myself and my team and then developed by the Sirius IT department. . . . [W]e have taken a lot of time and energy to make sure that the way the screens flow is exactly the way the calls should go and that we're capturing data at the right time to ensure that we're having efficient interactions with our customers.").

476. Sirius also developed the user interface, document repositories that the operators use to assist customers, training materials, website, and quality controls. 6/11/07 Tr. 295:17-299:12; 303:1-5; 308:9-13 (Moore); *see also Id.* at 301:16-302:10 (describing the development of Sirius' document repository, which includes information on all versions of Sirius hardware and chipsets, the specifications on all of the various receivers installed in every model of vehicle, and other useful information).

477. Sirius maintains its website in-house, and regularly communicates with its subscribers to update them on programming and service changes. Moore WDT ¶ 13.

478. Because of the nature of Sirius' business, which still depends heavily on consumer electronics sales, activations are weighted heavily towards the fourth quarter of each year, resulting in inordinately high call volumes. *Id.* ¶ 9. Sirius must therefore deal each year with the problem of preparing for the busy period, and the systems Sirius designed must be capable of handling volumes as high as 176,000 calls in one day, which is the busiest day on record so far. 6/11/07 Tr. 295:6-14 (Moore). “[I]t is just an amazing feat to be able to ramp from . . . our current state of 1,500 people to approximately 2,500 people that we need on Christmas Day. And . . . the number of employees . . . in the call center component of our business is double what Sirius employs today.” *Id.* at 296:11-18 (Moore).

479. In 2006, Sirius received over 14 million contacts from subscribers requesting customer service, which was nearly twice as many contacts as in 2005. *Id.* at 293:2-21 (Moore).

2. The Technological Contributions of XM

a. XM Designed and Developed New Technology and Created a New Medium To Provide Commercial-Free, Seamless Nationwide Competition to Incumbent Terrestrial Radio.

480. XM developed out of a belief that emerging satellite technology presented an opportunity for a competing business model to terrestrial radio and its homogeneous programming and increasingly high commercial load. 6/4/07 Tr. 307:8-16 (Parsons). XM's founders sought to provide predominantly commercial-free

programming with ubiquitous nationwide capability affording a high-quality and seamless listening experience even as subscribers traveled about in their automobiles.

6/4/07 Tr. 307:20-22; 308:1-2 (Parsons).

481. To accomplish this objective, XM had to custom-design virtually every aspect of its systems – from the satellites to the receivers. Parsons WDT ¶ 12; Masiello WDT ¶ 2. “Indeed, more than five years of research and development” went into this process before the FCC even granted XM a license. Butson WDT at 4.

482. A number of innovations were needed to overcome the technological challenges posed by delivering the satellite signal to moving vehicles traveling through operating environments in which obstacles such as trees and buildings could block the satellite signal. 6/4/07 Tr. 313:5-13 (Parsons).

483. First, XM had to develop and launch its own satellites, as there were no existing “off-the-shelf” satellites capable of achieving XM’s objectives. Masiello WDT ¶ 24; 6/4/07 Tr. 318:1-9 (Parsons).

484. In designing its infrastructure XM had to reverse the traditional economic model followed by existing satellite companies. Historically, satellite companies invested as little money in “air” in their satellites and terrestrial networks and put all of the expense on the ground often using large dishes and charging consumers as much as \$3,000 to \$4,000 for a handset or device. In order to succeed as a mass market consumer product, XM had to put all of the expense in the satellites and the terrestrial repeater network and then try to drive down the price of the antennas and the chipsets so that they could sell relatively inexpensive radios to a much larger customer base. This meant the creation of custom-built satellites that could provide maximum power over a

very small amount of bandwidth and number of channels. 6/4/07 Tr. 317:7-22; 318:1-21 (Parsons).

485. XM required a higher output power from the payload than comparable satellites, which was extremely risky. 6/5/07 Tr. 51:15-22 (Parsons); 6/6/07 Tr. 207:12-22 (Masiello). XM's needs were right at the edge of available technology at the time. 6/5/07 Tr. 51:15-22 (Parsons); 6/6/07 Tr. 207:12-22 (Masiello).

486. The XM satellites developed by Boeing used a different frequency spectrum (in the S-band, 2.3 gigahertz frequency range) that had never before been used for such a purpose. 6/4/07 Tr. 318:1-9 (Parsons); 6/5/07 Tr. 98:11-22 (Parsons). In contrast to the existing low-power DBS satellites, the SDARS satellites were custom-built to provide the maximum amount of power over a very small bandwidth and number of channels. 6/4/07 Tr. 319:16-22; 320:1-5 (Parsons).

487. Designing the satellites presented special challenges. 6/6/2007 Tr. 232:21-22; 233:1 (Masiello). One of the challenges in designing a satellite that generated the greatest possible amount of electrical power was determining how to dissipate the heat generated by the large amount of radio frequency energy being generated by the tubes within the satellite. 6/6/07 Tr. 207:22-208:9 (Masiello).

488. Boeing had no experience designing such a high-powered, concentrated payload. Thus, XM had to commission Alcatel to specially design the payload for the satellite and encourage Boeing and Alcatel to work together. This effort marked the first time that Boeing and Alcatel had collaborated. 6/5/07 Tr. 98:22; 99:1-12 (Parsons).

489. Developing a seamless nationwide system required using two satellites – one over the west coast, the other over the east coast – both sending the same information, with overlapping footprints creating spatial diversity as a listener is driving. Thus, when the signal from one satellite is blocked, the signal from the second satellite may have a clear line of sight to the listener’s receiver, making the reception more robust. 6/4/2007 Tr. 314:3-16 (Parsons); Masiello WDT ¶ 25.

490. The next necessary innovation was to take the identical signals from the two satellites and scatter the bits differently through an algorithm creating a four- or five- second gap between the two signals in order to provide “time diversity” and eliminate “drop outs” when vehicles travel through a tunnel or underpass. 6/4/2007 Tr. 315:1-11 (Parsons); Masiello WDT ¶ 25. This level of complexity had not been achieved before. 6/4/2007 Tr. 315:12-16 (Parsons).

491. Neither time nor space diversity was sufficient, however, to solve the signal problems in urban environments where both signals could be blocked by large buildings for longer than four or five seconds. To address this problem, the next necessary innovation was the design and construction of a terrestrial-based urban repeater network that could receive a signal from one of the satellites and then boost the signal enough that it could go through, around and bounce off of buildings to reach the receiver. 6/4/2007 Tr. 315:22-316:10 (Parsons); Masiello WDT ¶ 25.

492. In contrast to typical cell sites, where the cells touch each other but do not overlap, XM’s satellite and repeater signals are overlapping, which created a daunting problem that had to be resolved with waveform design, lots of testing, and frequency management. 6/6/07 Tr. 209:5-22; 210:1-22 (Masiello); 6/4/07 Tr. 320:19-

22; 321:1-10 (Parsons). Although repeaters had been around for some time, the key innovation involved in the terrestrial repeater network was the development and engineering of new waveforms (using OFDM technology). New frequency allocation and spectrum allocation tables had to be developed in order to mitigate the self-generated interference created due to the repeaters and satellites operating within the same frequency band. XM and Sirius were the first satellite businesses to use this design. 6/6/07 Tr. 210:5-9 (Masiello).

493. Moreover, the development of XM's infrastructure marked the first time that a satellite company used a dual satellite system together with a terrestrial-based repeater network to deliver the signal. 6/5/07 Tr. 99:13-22; 100:1-2 (Parsons).

494. Given XM's unproven business model and skepticism as to whether customers would pay for radio when they could get it for free, most outside manufacturers were unwilling to undertake the development of the chipset. Thus, in order to combine the incoming signals from the satellites and repeaters, XM had to internally develop the chipset or "brains" of the radio. Masiello WDT ¶ 31. This entailed establishing an internal research and development group. 6/4/07 Tr. 321:11-22; 322:1-10 (Parsons).

495. The technology used in the XM chipsets is radically different from the technology used in cell phones where there is a handoff from one tower to the next often resulting in static, clicks, and dropouts. Such problems would have been unacceptable for an audio subscription service, so XM had to develop a system in the chipset that internally processed and combined all three of the incoming signals (from the two

satellites and from the repeaters) so that the system was never handing off from one to the other. 6/4/07 Tr. 316:17-22; 317:1-21 (Parsons).

496. Since its development, the XM chipset has evolved to be more capable, sophisticated, and complex as well as smaller and less expensive than the original chipset designs. Masiello WDT ¶ 31. The chipset continues to evolve as innovations in its design and technology resulting from XM's in-house R&D continue. For example, the XM chipset currently is too expensive to allow the company to turn a profit on its equipment. Therefore, newer, less expensive chipsets are being developed. 6/6/07 Tr. 287:4-17; (Karmazin) 218:1-10 (Masiello).

497. XM's receivers have evolved over time to provide additional functionality in a much smaller form while remaining compatible with the same signal as the original receivers. Masiello WDT ¶ 34; 6/6/07 Tr. 213:9-22; 214:1-22; 215:1-8 (Masiello). In less than five years XM not only designed and released the first satellite radio receivers but was able to shrink the size of the device to fit in the palm of a subscriber's hand. Masiello WDT ¶ 40; 6/6/07 Tr. 214:14-22; 215:1-8 (Masiello). The XM receivers have evolved from large after-market units available solely for use in vehicles to today's next generation XM2Go portable devices that can be used anywhere. Masiello WDT ¶¶ 35-41.

498. The reduction in the size of the antenna to allow for the development of portable devices was a major milestone for XM. Masiello WDT ¶ 33. The fingertip-sized antenna currently used by XM represents five to six years of design effort. 6/4/07 Tr. 320:9-12 (Parsons); 6/6/07 Tr. 217:15-17 (Masiello). Currently no other satellite service utilizes such a small antenna. 6/4/07 Tr. 320:12-18 (Parsons).

499. XM must continue to innovate with respect to its hardware in order to remain competitive in a rapidly evolving marketplace. For example, XM needs to integrate its receivers into devices such as cell phones in order to compete with streaming services offered by most major cellular carriers. Because the current XM antenna is not small enough to be integrated into a cell phone, XM must work to overcome this technological challenge to attain the subscriber growth it needs to survive. 6/5/07 Tr. 26:12-22; 27:1-5, 27:17-28:1 (Parsons); 6/6/07 Tr. 218:1-10 (Masiello); Masiello WDT ¶¶ 23, 43, 52.

500. Terrestrial broadcasters did not face these technological hurdles, as the consumer electronics industry decided to manufacture and sell AM/FM radios and includes them standard in CD players, alarm clocks, car stereos, and other devices. 6/6/07 Tr. 296:5-10 (Masiello); Masiello WDT ¶ 2.

501. In contrast, XM designed its own receivers and contracted with consumer electronic companies for their manufacture. Parsons WDT ¶ 18. XM had to pay incentives to equipment manufacturers and consumer electronics companies in order to convince them to produce the satellite radio receivers given the cost of manufacturing, the novel technology and the relatively small number of units produced each year. Parsons WDT ¶ 19.

502. XM has forged relationships with automobile manufacturers to include specially-designed satellite radio receivers as a factory-installed option in new cars. Masiello WDT ¶ 39. XM's in-house innovation center plays a key role in assisting automotive OEM partners in coming on-line with factory-activated units. Vendetti WDT ¶ 41.

503. In order to deliver sound quality superior to that of terrestrial radio, XM worked with Neural Audio and licensed compression technology customized to XM that would deliver high quality, optimized stereo sound while reducing the amount of data XM had to transmit per channel. Masiello WDT ¶ 18. The perceptual codec technology is used to compress the audio and also to hide the digital noise thus improving the sound quality. 6/5/07 Tr. 185: 8-14 (Parsons). This technology also allows XM to broadcast two channels in surround sound, an innovation unique to XM. 6/6/07 Tr. 219:14-22; 220:1-13 (Masiello).

b. XM Has Developed Technological Innovations in Data Services and Possesses Unique Capabilities in Disaster Situations.

504. In addition to its other offerings, XM has developed several data services. For example, XM's NavTraffic system provides real-time traffic updates in conjunction with a vehicle's on-board navigation system, allowing the driver to take a look at what is going on with traffic and plan his or her route accordingly. 6/6/07 Tr. 224:18-22, 225:1-13 (Masiello); Cook WDT ¶ 34. XM is also working with the parking industry to develop "ParkingLink" to provide real-time information on parking space availability. Cook WDT ¶ 34.

505. XM Weather is a service providing real-time graphical weather data to marine and aviation users and is now factory-installed in over eighty percent of general aviation aircraft manufactured today. 6/6/07 Tr. 223:13-22 (Masiello); Masiello WDT ¶ 46. XM also is developing a "WeatherLink" system to work with vehicle navigation systems in providing information on adverse road conditions, warnings, and advisories. Cook WDT ¶ 34.

506. In addition to these data services, XM provides scrolling digital stock quotes and sports scores on the face of its radios. 6/6/07 Tr. 225:17-22 (Masiello). XM continues to develop its data service offerings and is working now on providing the capability to access information such as stock quotes, sports scores, weather updates, and flight information via voice command. Cook WDT ¶ 34.

507. The technology developed by XM presents a unique advantage over terrestrial radio in disaster situations. When terrestrial broadcast towers are knocked out in a disaster, XM's satellite-based nationwide continuous coverage allows XM to provide vital emergency assistance to communities in need. Masiello WDT ¶ 50; 6/6/07 Tr. 226:22-227:7 (Masiello). During Hurricane Katrina, XM was able to broadcast to the affected areas while traditional radio and television stations were off the air, and cell towers were not functioning. This led to the creation of XM's Red Cross Radio Channel, a free service designed to reach workers and aid stations across the Gulf Coast region. Masiello WDT ¶ 50; 6/6/07 Tr. 226:22; 227:1-7 (Masiello). XM also provides a free Emergency Alert Channel 247 that is available on any XM receiver even if the listener is not a subscriber. 6/6/07 Tr. 228:10-16 (Masiello).

508. Recognizing XM's unique capability in disaster situations, XM was selected by FEMA to participate in the upgrade of the Emergency Alert System. To accomplish this, XM developed a special receiver to be used at the key radio stations that would be used to broadcast tests and the presidential message in the event of an emergency. 6/6/07 Tr. 227: 8-22; 228: 1-9 (Masiello). XM provides these special receivers at cost and provides the necessary channel space free of charge. 6/6/07 Tr. 228:17-22 (Masiello).

3. The Preexisting SDARS Have Made Far Greater Technological Contributions to the Distribution of Sound Recordings Via the SDARS Than Have the Record Companies.

509. The SDARS made numerous technological innovations through their on-going development of satellites, their unique transmission systems, including a network of terrestrial repeaters, and their continuous design and development efforts involving chipsets, antennas, and receivers.

510. The SDARS have compiled sizeable intellectual property portfolios consisting of numerous patents covering their technological innovations. As of October 2006, XM held 42 patents, with 8 more pending, and Sirius held 12 patents, with 2 more pending. Woodbury AWDT at 49:27-30; Masiello WDT ¶ 12. The patents received by the SDARS cover innovations in the areas of system architecture, the architecture of the orbital configuration, chipset and receiver design, and antenna characteristics. 8/27/07 Tr. 219:5-22; 220:1-22; 221:1-6 (Elbert).

511. It is beyond dispute that absent the efforts and expenses undertaken by the SDARS, the unique satellite radio systems would not exist today. As noted, in fact, SoundExchange's own technology expert, Bruce Elbert, acknowledged that the project undertaken by the SDARS had never before been completed before and that "no one before XM or Sirius had ever developed a commercial nationwide system that combined the elements of multiple satellites with simultaneous broadcasting and terrestrial repeaters and moderately priced receivers with the ability to combine those signals and produce real-time listening quality in automobiles." 8/27/07 Tr. 210:1-9 (Elbert). As noted above, the development of the SDARS infrastructure marked the first time that

dual satellites were integrated with a terrestrial-based repeater network in any satellite business. 6/5/07 Tr. 99:13-22; 100:1-2 (Parsons)

512. The SDARS took a leading role in determining how to overcome numerous formidable technical challenges and both built upon available resources and developed new technology in designing their systems. Masiello WDT ¶ 12. Other entities researched the transmission of radio programming to moving vehicles and portable receivers via satellite but found that signal blockages from various structures would cause interruption in reception and ultimately did not attempt to develop receivers to overcome such service interruption. 8/27/07 Tr. 207:3-22; 208:1-15 (Elbert).

513. Building the satellite radio infrastructure required detailed systems development the likes of which had never before occurred in a form suitable for a commercial nationwide system. 8/27/07 Tr. 211:4-9 (Elbert). Likewise, the particular mix of signaling protocols, waveforms, and transmission techniques that were used by the SDARS had to be customized for their systems. 8/27/07 Tr. 215:3-9 (Elbert). By SoundExchange's admission, the incremental development required to build the SDARS system was well executed and ultimately produced a successful system. 8/27/07 Tr. 218:10-13 (Elbert).

514. The cumulative result of the SDARS' many technological contributions is nationwide commercial subscription services delivering continuous broadcast to moving vehicles and other portable devices. 8/27/07 Tr. 209:18-22 (Elbert); Woodbury AWDT 5:10-11. Ultimately, and as recognized by SoundExchange's own technology expert, the SDARS' tireless efforts and massive

investments contributed to dual nationwide systems constituting an advancement over prior commercially-available systems. 8/27/07 Tr. 215:16-21 (Elbert).

515. In contrast to the SDARS' substantial technological contributions to their systems, the record labels have made no such contribution. The record companies have made no incremental effort or investment with respect to the performance of sound recordings via the SDARS. Further, the record companies have incurred no risk in the distribution of sound recordings through the SDARS systems. Woodbury AWDT at 50:30-51:2, 51:14-22. Notably, SoundExchange did not offer any testimony regarding any alleged technological contribution of the record labels to the distribution of sound recordings through the SDARS.

F. The SDARS Have Made Enormous Capital Investments and Incurred Tremendous Costs Launching and Growing Their Industry.

516. The statute directs the Court to calculate a rate that "reflect[s] the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative . . . capital investment [and] costs. . . ." 17 U.S.C. § 801(b)(1)(C). That the SDARS have by far made the greater capital investments and incurred the greater costs in developing their satellite radio services cannot be seriously questioned. As discussed above, the SDARS created an entirely new platform to provide all manner of programming to the public – a platform that has required enormous and ongoing investment. In sharp contrast, the record industry has expended no additional funding whatsoever with respect to satellite radio.

1. The SDARS Operate Many Businesses in Order To Deliver Audio Entertainment to Their Subscribers.

517. “In order to create an entirely new platform for the creation and transmission of audio programming, [the SDARS have] been required to operate as many businesses in one. Each of these businesses requires highly specific skills, and places its own call on [the SDARS’] financial and human resources and revenues.” Karmazin WDT ¶ 7.

518. Each of the SDARS engages in several distinct businesses, including a satellite business, as content providers, as consumer electronics businesses, as automotive businesses, and as customer service businesses. Each of these businesses has required the investment of capital and requires substantial amounts of capital on an ongoing basis.

2. Sirius’ Capital Investments and Costs

519. “The costs to authorize, design, deploy and operate a SDARS system are vastly different from, and many times greater than, those faced by a traditional radio broadcaster or programmer.” Frear WDT ¶ 12.

520. The nature of the business is such that Sirius had very high upfront costs with the possibility of large incremental returns in the future. 6/12/07 Tr. 55:13-56:1, 59:17-60:2 (Frear). The oral and written testimony of Sirius’ witnesses provides a glimpse into the enormous amounts of capital that were required to construct Sirius’ system and bring it to life for Sirius’ subscribers. *See generally* Frear WDT ¶¶ 13-17. Indeed, “Sirius has developed an innovative technology that permits the nationwide broadcast of digital quality radio services to fixed and mobile radios. The costs of bringing this new technology to the market are enormous.” Frear WDT ¶ 12.

521. To date, Sirius' capital investments and historic operating costs total over \$5 billion. 6/6/07 Tr. 274:13-16 (Karmazin). This total includes \$1.4 billion of capital expenditures required for the – design and build of a satellite digital audio radio service from the ground up, a feat that has never been accomplished before. 6/6/07 Tr. 272:6-20 (Karmazin). Those costs included designing and launching specialized satellites, engineering chipsets, antennas, and consumer electronics, designing and building a terrestrial repeater network, constructing broadcast studios, and obtaining a license to engage in the SDARS business from the FCC. *See infra* Part V.F.2.a. The remaining amount, approximately \$3.6 billion, is the result of Sirius' day-to-day basis business operations including, adding and keeping subscribers, developing exclusive content, working with retailers and OEMs to make Sirius products available and other standard overhead costs. *See infra* Part V.F.2.b.

522. Sirius' business has grown dramatically in the last few years, and although Sirius now has over 7 million subscribers, Sirius has yet to earn a single dollar of profit. Karmazin WDT ¶¶ 8, 13. Indeed, in 2006, Sirius' revenues were \$637,235,000, its operating expenses were \$1,704,959,000, and its total net losses were \$1,104,867,000. SIR Ex. 47 at F-4. In the first quarter of 2007 Sirius' revenues were \$204,037,000, its operating expenses were \$339,082,000, and its total net losses were \$144,745,000, or approximately \$1.6 million per day. SIR Ex. 57 at 1. Sirius could not have launched its business and could not continue to provide its innovative services, attracting new subscribers and retaining the ones it has, without these investments. Indeed, Sirius' future “depends on continued growth of customer demand,” its ability to maintain “competitive positioning vis-a-vis terrestrial radio,” its ability to continue to

develop new technologies, and its ability to address potential technical and operational problems with its novel technology as well as its satellites and repeater network. Frear WDT ¶ 11. Sirius projects that it will spend over [[]] over the course of the license term to meet these needs. *See* SIR Ex. 58.

523. As of the time Sirius witnesses testified in the direct phase of this trial, Sirius' accumulated deficit was over \$4 billion. 6/6/07 Tr. 274:4-12 (Karmazin); *see also* 8/15/07 Tr. 118:6-8 (Frear). Based on the model presented by Sirius in rebuttal, Sirius will not become profitable until [[]]. *See* SIR Ex. 58. Thus, the accumulated deficit figure will continue to increase until that time. 8/15/07 Tr. 118:9-13 (Frear).

a. Sirius' Capital Investments

524. "No other audio entertainment service has had to invent and build its entire distribution platform." Karmazin WDT ¶ 7. Sirius' capital investments, which to date total over \$1.4 billion, include the costs of building that brand new, high-technology platform from scratch. "Sirius has built an entirely new audio service for the public. Sirius has been required to carve out and pay for space in a crowded regulated field, the company has created its own transmission network, from broadcast studio, to uplink, to satellite, to terrestrial repeater, to antennas, chip sets and radios designed specifically for Sirius, all at huge costs." Karmazin WDT ¶ 53. However, capital investments are not complete; the nature of Sirius' business requires constant updating of technology, property, and satellites, and Sirius expects to spend another \$1 billion on capital investments during the license term. Karmazin WDT ¶ 24; 6/6/07 Tr. 274:4-9 (Karmazin).

(1) License

525. After convincing the FCC that it should allocate spectrum in the S-Band for satellite radio, Sirius had to bid on a license, ultimately obtaining one in 1997 for \$83.3 million. Frear WDT ¶ 13.

(2) Technology

526. Once Sirius obtained the license, the SDARS were obligated to expend significant capital on the development, launch and monitoring of satellites. Sirius invested approximately \$1 billion in its first-generation satellite infrastructure, which included designing, constructing and launching three in-orbit satellites and designing and constructing a fourth satellite used as a ground spare. Frear WDT ¶ 14; Karmazin WDT ¶ 9; 6/11/07 Tr. 359:16-361:13 (Frear). Each satellite, including the costs associated with launching, ranged from approximately \$259 million to \$273 million each. Frear WDT ¶ 14. The fourth satellite, a ground spare, cost approximately \$130 million, with an additional \$15 million for long-lead time parts on a fifth satellite. Frear WDT ¶ 14.⁹

527. Additionally, as discussed above, Sirius has had to engage in other satellite-related engineering activities in order to launch and maintain their services, including the development, design and construction of a terrestrial repeater network, chipsets, antennas, and receivers to function in conjunction with the satellite system. All of this work was necessary to launch Sirius' system. *See supra* Part V.E.1.

⁹ In 2006, Sirius determined that the parts were obsolete and wrote off the net book value of these parts, which was \$11 million. Frear WDT ¶ 18.

528. As of year-end 2006, Sirius had invested approximately \$85 million in its terrestrial repeater network, 6/11/07 Tr. 362:1-4 (Frear), \$18 million in its tracking, telemetry and control system, Frear WDT ¶ 14, and in excess of \$100 million on chipset development, 6/11/07 Tr. 359:5-362:18.

529. Sirius' capital expenditures on technology are by no means complete. Sirius continues to invest in chipset development, its network of terrestrial repeaters, radio and receiver designs, and its satellite operations. 6/11/07 Tr. 361:19-362:10 (Frear).

530. Moreover, despite the fact that Sirius' first-generation satellites were designed with an intended useful life of 15 years, two of Sirius' in-orbit satellites are now expected to last only 13 years. Frear WDT ¶ 14. As a result, Sirius expects to replace its in orbit constellation by the end of 2012. *Id.* ¶ 15. At the time of the filing of its written rebuttal case, Sirius had already contracted with Space Systems/Loral for the design and construction of one of its three new next-generation satellites. The first satellite is expected to cost \$260 million from design through launch; total next-generation program costs are expected to be \$1 billion. Frear WDT ¶ 15; 6/11/07 Tr. 361:15-18 (Frear) (stating that the cost prediction in his written direct testimony had not changed). In addition, the cost of the two-year acceleration of the replacement cycle is approximately \$120 million. 6/12/07 Tr. 8:19-10:9 (Frear).

(3) Customer Service

531. Satisfying subscribers is a key concern of Sirius' business, so quality customer care functions are essential. 6/11/07 Tr. 290:19-291:5 (Moore); Moore WDT ¶ 4. In order to maximize its ability to keep in constant contact with its subscribers, to

respond to their questions, and to integrate all customer care functions, Sirius designed its Subscriber Management Service (“SMS”). “[T]he SMS establishes an electronic interface for information exchanged with automobile manufacturers, automobile dealers, consumer electronics retailers and radio manufactures and facilitates subscriber interaction through the Internet.” Frear WDT ¶ 17. Sirius has invested approximately \$35 million in this system. Frear WDT ¶ 17.

(4) Studio/Office

532. Other necessary capital expenses Sirius has incurred include \$32 million in leasehold improvements and \$36 million in equipment for its studios. Frear WDT ¶ 17. Sirius has also had to expend \$53 million in furniture, fixtures, vehicles, and other equipment. Frear WDT ¶ 17.

b. Sirius’ Operating Costs

533. Sirius must also invest substantial amounts in operating its satellite radio service, and there are significant costs incurred as a result of the provision of the service on a daily basis. Sirius’ total operating expenses, broken down more fully below, were \$1,704,959,000 in 2006. SIR Ex. 47 at F-4.

(1) Satellite Operation and Signal Transmission Costs

534. Total satellite operating expenses were \$41,800,000 in 2006. Frear WDT ¶ 18; 6/11/07 Tr. 357:1-7 (Frear). Satellite operating expenses include service transmission costs, personnel costs, broadcast engineering costs, and costs associated with the engineering, operation and maintenance of the satellites, repeaters and tracking system. Frear WDT ¶ 18; Karmazin WDT ¶ 9.

(2) Consumer Equipment Development and Engineering Costs

535. Because Sirius uses a new and previously untested technology, the company has substantial expenses related to all of the ongoing work that is done in designing chipsets, consumer electronics products and OEM products. Frear WDT ¶ 19. Sirius' consumer electronics group "continues to refine and improve the dedicated integrated circuits used in its radios," and therefore "has been required to incur substantial portions of the equipment design and manufacturing costs to ensure that compatible radios will be available to meet customer demand." Frear WDT ¶ 19.

536. Moreover, "[w]hen new products are introduced into the marketplace, they are already quickly on the way to becoming obsolete. Thus, constant product development is essential." Law WDT ¶ 3. Such design and development "requires a substantial staff." Law WDT ¶ 6. Sirius' consumer electronics staff includes at least 21 employees, including engineers, product managers, logistics managers, manufacturing specialists, and project managers, all of whom work on product development. Law WDT ¶ 6. Sirius also contracts with companies to assist in design and engineering, and those companies employ over 200 people who are involved in the design and development of Sirius products. Law WDT ¶ 6.

537. Sirius' automotive business includes an operational group, which handles data exchange between Sirius and OEMs, including VIN and receiver serials and customer information; and a product application group, which administers the program of incorporating the Sirius chipsets into finished products. 6/7/07 Tr. 152:18-22; 153:1-2, 15-22; 154:10 (Wilsterman).

538. Sirius must also employ engineers who are responsible for integrating the chipset and receiver unit with the vehicle's stereo and other electronic devices, such as a navigation system, or even an all-in-one system like BMW's iDrive. 6/7/07 Tr. 153:15-22; 154:1-22; 155:1-5 (Wilsterman); *see also supra* Part V.E.1.e. (describing Sirius' OEM engineering and creative contributions). Sirius' engineers are also "going through tooling exercises to make sure they have the right pieces being inserted," including the proper placement of the antenna and proper wiring for the vehicle. 6/7/07 Tr. 163:22-164:8 (Wilsterman).

539. "[I]n view of the difficult business environment for the automotive industry, and the intense pressure to cut costs, [automakers] have little incentive to expend their own engineering and monetary resources to create receivers specifically for a fledgling subscription service." Wilsterman WDT ¶ 9. Sirius must bear these costs. Wilsterman WDT ¶ 9; 6/7/07 Tr. 166:8-22;167:1-13 (Wilsterman) (stating that he has never seen an OEM that is willing to spend its own money to develop and test equipment because satellite radio is a risky venture, so Sirius had to pay for such development and testing); *see also* 6/7/07 Tr. 167:17-168:21 (Wilsterman) (discussing non-recoverable engineering expenses and related subsidies).

540. Examples of such expenditures include providing chipsets for free, non-recoverable engineering expenses, receiver costs, antennas and wiring. 6/7/07 Tr. 167:17-169:18 (Wilsterman). ¶

¶ 6/7/07 Tr. 181:5-182:12;

183:2-13; 184:12-13; 188:6-18; 189:2-10 (Wilsterman). [[

]] 6/7/07 Tr. 190:16-191:2 (Wilsterman).

541. Sirius' expenses for engineering design and development in 2006 totaled \$70.1 million. Frear WDT ¶ 19, 6/11/07 Tr. 357:8-16 (Frear). This figure includes approximately \$6.5 million for chipset development. 6/12/07 Tr. 8:3-18 (Frear).

(3) Customer Billing Costs

542. Sirius must also "bear the expenses of servicing and billing [its] subscribers." Frear WDT ¶ 12. "[I]t is essential that [Sirius'] subscribers' direct interactions with Sirius be positive. Continued growth depends, in part, upon subscribers renewing and extending their subscriptions. A bad experience while interacting with Sirius can easily cause a subscriber to cancel or not renew his or her subscription." Moore WDT ¶ 4.

543. Although Stream, Sirius' vendor, operates Sirius' nine call centers, which collectively employ 2,000 people, 6/11/07 Tr. 287:6-14 (Moore), Sirius is responsible for the call centers, which deal with activations, responses to customer inquiries, account management, billing, and renewal. Moore WDT ¶ 2; 6/11/07 Tr. 292:6-293:1 (Moore) (describing customer care functions).

544. Sirius must also create training programs and materials, monitor the quality of service its subscribers receive, and develop staffing plans for those times of year that experience higher than normal call volumes. Moore WDT ¶ 2; *see also* 6/11/07 Tr. 296:7-9 (Moore) *Id.* at 297:5-12; *Id.* at 6/11/07 Tr. 298:15-20. In addition, Sirius actively monitors the performance and operation of the call centers by personally

visiting them, 6/11/07 Tr. 296:21-297:4 (Moore), holding a “weekly calibration call” with Stream, 6/11/07 Tr. 297:13-21 (Moore), and surveying Sirius subscribers about their customer service experiences, 6/11/07 Tr. 297:22-298:10 (Moore).

545. Finally, Sirius’ customer service department makes substantial expenditures on efforts to retain subscribers whose subscriptions are expiring. *See* 6/11/07 Tr. 311:16-313:4 (Moore).

546. Total expenses included in customer care and billing in 2006 were \$68.9 million. Frear WDT ¶ 21; 6/11/07 Tr. 357:17-21 (Frear).

(4) Programming Costs

547. Sirius has “the unique challenge of convincing consumers not only to buy a radio, but also to convince them to pay for [its] service. . . . [T]o accomplish this, [Sirius] must do far more than provide programmed music. [Sirius] must provide exclusive, compelling content for which a subscriber is willing to shell out hard earned cash each month.” Karmazin WDT ¶ 11; Frear WDT ¶ 12; *see also supra* Part V.D. (description of SDARS ‘ creative contributions). As discussed extensively above, Sirius has entered into agreements with Howard Stern, Martha Stewart, the NFL, NASCAR, NBA, Fox News, and other content providers to provide talk, sports, and entertainment programming and drive subscriptions. *See supra* Part V.D.1.

548. Providing such content obviously comes at a price. When Sirius launches a new branded talk or entertainment channel, it builds that channel from scratch. While Sirius does have some channels (mainly news channels) on which it simply broadcasts pass-through programming, the majority of Sirius’ sports, talk and entertainment channels are not pass-through programming. 6/7/07 Tr. 201:3-206:15

(Coleman). Rather, Sirius needs to teach the new channel's personalities how to be interactive and deal with live phone calls, evaluate which aspects of the brand would interest a radio audience, develop a plan for content that works for the channel, hire appropriate personnel, including hosts, producers, screeners, and engineers. 6/7/07 Tr. 210:20-213:11 (Coleman) (describing process of launching Martha Stewart channel). In other instances, Sirius must take the additional step of having to create a personality for a channel that does not naturally have a lead personality, as in the case of Howard Stern or Martha Stewart. 6/7/07 Tr. 217:4-17 (Coleman) (describing Cosmo channel).

549. Programming content for Sirius' music stations is also a costly endeavor. Sirius must hire DJs and program directors, and perform research for on-air discussions and announcements, among other expenses. Frear WDT ¶ 22; 6/6/07 Tr. 305:21-306:3, 306:10-15 (Karmazin).

550. In addition to developing content itself, Sirius must also pay significant fees for the right to broadcast programming. For example, on its branded music channels, Sirius must not only pay SoundExchange, but also must pay for the right to use the artist's or band's name and image and for specific programming hosts. 6/6/07 Tr. 306:3-10 (Karmazin).

551. In all, Sirius' programming costs were \$552,000,000 in 2006. SIR Ex. 47 at 34.

552. Of that amount, [[]] was spent on non-music programming (Woodbury WRT Ex. 25) and \$321,774,000 on equity granted to employees and third parties (SIR Ex. 47 at 34), including equity grants to Howard Stern totaling \$307,700,000 (Frear WRT para 17).

(5) Revenue Share, Residuals and Royalties

553. “To get its radios into vehicles and into the hands of consumers, Sirius must operate a consumer electronics business and an automotive electronics business. [Sirius] must also sell the Sirius service directly to subscribers [and] pay subsidies and other costs to acquire those subscribers.” Frear WDT ¶¶ 12, 23. This involves substantial ongoing incentive payments to facilitate distribution in the OEM and retail channels, which are in addition to the SAC costs required to subsidize hardware and chipsets.

(a) Revenue Share, Residuals and Royalties

554. Sirius makes substantial revenue share payments to facilitate automotive and retail distribution as well as to compensate programming partners with respect to advertising revenue.

555. Revenue-sharing arrangements are a major component of Sirius’ contracts with its OEM partners. 8/15/07 Tr. 103:2-5 (Frear). The terms vary by automaker, but in 2006, Sirius paid approximately [] of its Chrysler group subscription revenues to Chrysler, and [] of its Ford group subscription revenues to Ford. 6/7/07 Tr. 189:2-10 (Wilsterman).

556. The necessity of paying revenue share relates to the fact that Sirius must incentivize its OEM manufacturers. Wilsterman WDT ¶ 20. “Automobile manufacturers are highly sophisticated and well aware of this leverage they have over both Sirius and XM.” Wilsterman WDT ¶ 20. “We don’t have any leverage with [OEMs]. These car companies are not required by contract to put satellite radio in their vehicles.” 6/7/2007 Tr. 192:9-192:12 (Wilsterman).

557. Another similar variable distribution expense are residuals, which are payments made to certain of Sirius' major retail partners, such as Best Buy, Circuit City, and Radio Shack. 8/15/07 Tr. 102:4-8 (Frear); *see also* SIR Ex. 58. These are sometimes called "loyalty payments" because they are paid to the retailers based on the radios sold that have active subscriptions that originated from that retailer. 8/15/07 Tr. 102:8-14 (Frear).

558. Additionally, Sirius makes ad revenue share payments when it has made "arrangements with certain of [its] programming partners wherein [it] share[s] the [ad] revenues generated on their channel." 8/15/07 Tr. 101:18-21 (Frear); *see also* SIR Ex. 58.

559. In 2006, Sirius spent [[]] on residuals, and [[]] on revenue share. SX Ex. 239 RR.

(b) SAC

560. Several important variable costs fall within the category of subscriber acquisition costs, or SAC.

561. The majority of Sirius' SAC relates to Sirius' expenses incurred in providing subsidies that keep the cost of consumer electronic or OEM equipment down. The development costs, combined with the expected profits at each stage in the distribution chain, would create a product that would be prohibitively expensive to the consumer. Law WDT ¶ 7. However, because consumers need such products to receive Sirius programming (and for Sirius to therefore sell a subscription), Sirius must subsidize the cost of the consumer electronics products in order to keep the cost to the consumer low. Law WDT ¶ 7. The same is true for OEMs. "In order to ensure that the

price of the final product is affordable to the consumer, and to provide the manufacturer with an incentive to invest in creating a Sirius radio incorporating the chipset, Sirius fully subsidizes the wholesale cost of chipsets to OEMs.” Wilsterman WDT ¶ 10.

562. Sirius incurred subscriber acquisition costs of \$452,000,000 in 2006. Frear WDT ¶ 23; 6/11/07 Tr. 358:11-16 (Frear). Out of the total subscriber acquisition costs from 2006, Sirius spent [[]] on chipset subsidies, [[]] on hardware subsidies, and [[]] on commissions. SX Ex. 239 RR.

(c) Sales and Marketing

563. Sirius must also address the “difficulties of convincing retailers to carry and sell Sirius radios and the Sirius service, [as well as] the costly incentives that Sirius has been required to provide to ensure that its radios will be available to potential buyers.” Karmazin WDT ¶ 10. “The competitive pressures in the retail sales arena are intense. In retail, the chains are competing head to head against each other, and are also pitting our service and product directly against other consumer electronics products and services.” Law WDT ¶ 8.

564. Therefore, Sirius spends significant amounts of money to ensure its products are readily available to consumers and that consumers are aware of where they can purchase Sirius products. *Id.* “Sirius must provide financial incentives to the retailers in order to be included in their direct-to-consumer marketing,” including paying for the privilege to advertise in stores’ Sunday circulars. Law WDT ¶ 9. Sirius must pay to train sales people, provide point-of-sale displays and kiosks, and provide radio service at each retail location. Law WDT ¶¶ 9-10.

565. On the OEM side, Sirius markets to and develops relationships with OEMs. Sirius also works directly with automobile dealerships to educate their managers and salespeople about how to order vehicles that include Sirius installed and how to market the Sirius service to a potential purchaser. 6/7/07 Tr. 149:1-10, 156:2-158:10 (Wilsterman).

566. OEMs “would not perform the end-consumer marketing activities that are essential to [Sirius’] ability to inform consumers about the availability and benefits of Sirius radios without additional subsidies and programs from Sirius.” Wilsterman WDT ¶ 9. “Sirius pays the companies to entice them to promote the Sirius service in their direct-to-consumer marketing. Sirius also subsidizes dealer training material, salesperson training materials, consumer ads, regional promotions, and even provides salesperson reward programs.” Wilsterman WDT ¶ 16; *see also* 6/7/2007 Tr. 156:16-159:6, 168:21-169:4 (Wilsterman) (discussing marketing expenses and subsidies).

567. Examples of payments Sirius makes to OEMs include advertising, marketing, and revenue sharing previously discussed. 6/7/07 Tr. 167:17-169:18 (Wilsterman). [[

]] 6/7/07 Tr. 181:5-182:12; 183:2-13; 183:21-184:13; 188:6-18; 189:2-10 (Wilsterman). Sirius paid Chrysler and Ford approximately [[]] each in 2006 for marketing activities, and is obligated by contract to provide at least [[]] annually. 6/7/07 Tr. 188:11-18 (Wilsterman).

568. In 2006, Sirius spent [[]] on consumer marketing, [[]] on retail marketing, and [[]] on OEM marketing. SX Ex. 239 RR. “Payment of these developmental and marketing expenses is critical to creating

a market for the Sirius service. Sirius faces a classic chicken-egg problem: without the broad availability of radios, it cannot sell subscriptions to its service, but without a strong subscription base to prove that the Sirius radio will provide added value to the car manufacturer, manufacturers have little incentive to direct resources toward creating and marketing radios.” Wilsterman WDT ¶ 17

569. Sirius incurred sales and marketing costs of \$242,000,000 in 2006. Frear WDT ¶ 23; 6/11/07 Tr. 358:5-10 (Frear).

(6) General and Administrative Costs

570. General and Administrative and “other” expenses also account for a sizeable portion of Sirius’ annual expenditures. These include rent and occupancy costs, information technology, corporate overhead, general and administrative personnel costs, and allowances for bad debts, all of which are expenses necessarily incurred as part of Sirius satellite radio business. Frear WDT ¶ 25. Sirius’ general and administrative expenses for 2006 totaled \$137.5 million. Frear WDT ¶ 25; 6/11/07 Tr. 358:17-22 (Frear).

(7) Depreciation

571. Depreciation is also a major accounting expense each year. Sirius’ terrestrial repeater network, tracking, telemetry and control system, fixtures, equipment, furniture, leasehold improvements, and broadcast studios all depreciate year-over-year, and generally have a useful life of 2-15 years. Frear WDT ¶¶ 14, 16, 17. Total depreciation costs for 2006 were \$105,749,000. SIR Ex. 47 at F-4.

3. The Capital Investments Made and Costs Incurred by XM

a. Overview of XM's Capital Investments and Costs

572. The record is replete with evidence of the enormous investment that was required to take XM's satellite radio service from concept to on-the-air commercial broadcast. XM designed and developed all aspects of its unique and technologically advanced satellite radio business, an undertaking that has required enormous infusions of capital and that will continue to require substantial investments to build the business even as losses continue to accumulate.

573. As of year-end 2006, XM has invested approximately \$6.3 billion in developing its business, including \$1.7 billion in capital expenditures and \$4.6 billion in operating expenditures. *See* Parsons WDT ¶ 2; Vendetti WDT ¶ 2; Vendetti WRT, Ex. 1 (SEC Form 10-K dated Dec. 31, 2006). To continue building its subscriber base in an effort to reach a sustainable financial condition, XM requires significant ongoing investments to maintain and improve its technology infrastructure and to effectively market XM's satellite radio service to consumers. Parsons WDT ¶ 2. As a result, the growth of XM's business in the future is dependent on continued investment that is estimated to total almost \$14 billion by 2010. Vendetti WDT ¶ 12 and Ex. 2.

574. XM's investments fueled the growth of a new medium for the distribution of creative works that to date has achieved some notable operational successes. Specifically, XM has added 7.9 million subscribers since launching commercial broadcast operations on November 12, 2001. *See* Vendetti WRT, Ex. 2 at 32; Parsons WDT ¶ 16. But building the first mobile satellite radio business from the ground up involved huge up-front infrastructure and other investments, such that to

eventually become a commercially viable business XM will have to achieve acceptance by a large segment of consumers nationwide. Cook WDT ¶ 13. *See also* Butson WDT at 17 (“[T]he basic cost structure of the SDARS industry is one of relatively high fixed costs Accordingly, over the long term, the profitability of the SDARS depends primarily on their ability to maintain revenue growth, which . . . is primarily a function of the growth to their subscriber bases.”). XM has yet to add a sufficient number of subscribers to cover its high fixed costs. Vendetti WDT ¶ 3.

**b. The Launch and Establishment of XM’s Business
Required Significant Early Capital Investment**

575. The creation of XM’s satellite radio service required substantial investment in spectrum licenses, infrastructure, technology, programming development, and distribution/marketing, including an upfront investment of \$1.5 billion expended before the service was even launched. Vendetti WDT ¶ 12 and Ex. 2.

(1) Acquisition of FCC Spectrum License

576. XM’s first significant capital investment was in the spectrum license awarded by the FCC. In October 1997, XM paid \$90 million for one of the two available satellite digital audio radio service licenses. Parsons WDT ¶ 8; 6/4/07 Tr. 327:12 (Parsons). Including the contracts for building the satellites and other expenses such as salaries for the initial personnel, XM invested [[]] million at this early stage. Parsons WDT ¶ 8. The initial funding for the license came from XM’s former parent company, American Mobile Satellite Corporation (“AMSC”) and WorldSpace, a non-mobile digital satellite radio network that currently broadcasts in Asia, Africa, and the Middle East, which became a 20 percent equity partner in the venture. *Id.*

(2) **Additional Early Investments Made To Reach XM's Initial Public Offering**

577. By early 1999, XM had exhausted its initial investment capital but, as it was still in its early development phase, XM's business and technology risks were too high to allow it access to the public capital markets on its own. 6/4/07 Tr. 327:18-328:7 (Parsons). Thus, in order to continue as a going concern, XM sought out strategic and private equity investors for additional capital, recognizing that this class of investor would demand a high rate of return for investing in an unproven and technologically innovative new radio business that was still under development. *Id.* In July 1999, three private equity firms and three strategic investors – XM's business partners General Motors, Clear Channel Communications, and DirecTV – joined AMSC as equity investors in XM, and AMSC bought out the WorldSpace ownership interest. Parsons WDT ¶ 9. In addition to investing \$250 million in the development of XM's business, these strategic investors provided expertise in various elements of business operations, such as billing, programming, and customer service. *Id.*

578. To minimize their investment risk, these early strategic investors also negotiated highly favorable contracts with XM for programming and bandwidth rights, in the case of Clear Channel, and distribution concessions, in the case of General Motors. *Id.* ¶ 9. In fact, XM's long-term distribution agreement with GM is a significant part of XM's ongoing cost structure. The agreement requires XM to make guaranteed contract payments to GM, "to subsidize the installation of XM radios in new GM vehicles, to make additional payments based on the subscription revenue attributable to GM vehicles with XM radios installed, and to make available a certain amount of bandwidth for GM audio and/or data transmission." *Id.* ¶ 9; 6/4/07 Tr.

330:16-331:15 (Parsons); Cook WDT ¶¶ 16-18. To date, these payments to GM exceed \$300 million. Parsons WDT ¶ 9. The size of the required investments, the risky nature of the investments, and the nature of the investment marketplace required [XM] to provide [its] business partners [with] lucrative agreements that gave these investors an added interest in the XM business. *Id.* ¶ 10.

579. XM had no real choice at the time but to enter into these and other expensive deals because XM was a very risky, unproven business venture that required the capital and credibility of parties like General Motors to move forward. 6/5/07 Tr. 7:5-9 (Parsons). XM needed the early infusions of capital and the marketing platform to reach consumers through factory installation of XM radios in new cars, both of which were absolutely crucial to the development of XM as a viable mass consumer service. Parsons WDT ¶ 10. At the time (the late 1990s), moreover, XM was competing for capital against high-tech “dot-com” companies that were expected to deliver extremely high rates of return within a very few years based on fairly modest capital investments and low infrastructure requirements. *Id.* By contrast, XM’s business required massive infusions of capital to build both the broadcast infrastructure and a new programming service, with no guarantee of success – indeed, with a certainty that it would be several years before the service could even be launched. *Id.* For these reasons, XM could not raise money simply by promising a high rate of return, nor could it raise sufficient risk capital through Wall Street alone. *Id.*

(3) Initial Public Offering and Launch.

580. The \$250 million capital infusion in July 1999 provided XM with the capital and credibility necessary to take the company public in September 1999.

Parsons WDT ¶ 11. At the time of the IPO, XM was still more than a year and a half away from launching the service. *Id.* ¶ 13. The company “anticipated additional pre-launch costs approaching one billion dollars.” *Id.* With the capital from its initial public offering, XM recruited personnel to create the technology and infrastructure for the XM satellites, transmission facilities, studios, and business. *Id.* ¶ 12. *See* Vendetti WDT, Ex. 5 at 22 (describing the capital raised through XM’s initial public offering). *See supra* Part V.E.2-3 (explaining in detail the development of XM’s technological infrastructure).

581. November 12, 2001, marked the official launch of full nationwide XM service. Parsons WDT ¶ 16. The launch and continued operation of XM’s satellite radio service was made possible by XM’s significant capital investment in the technology and physical assets described in the sections below.

c. XM’s Innovative Technology and Physical Assets Required Significant Capital Investments.

582. As of year-end 2006, XM has invested over \$1.2 billion in its spacecraft systems, terrestrial repeater network, and spacecraft control and uplink facilities. Vendetti WRT, Ex. 1 at F-20. As explained above in Part V.E.2-3, XM’s transmission system consists of satellite uplink dishes that send the XM signal from its state-of-the-art broadcast studio in Washington D.C. to several geostationary satellites, which in turn re-transmit the signals to the United States, and a network of approximately 800 terrestrial repeaters, located in the top broadcast markets, which receive and re-transmit the satellite signals in places where the direct satellite signal otherwise might be obstructed by tall buildings, mountains, or tunnels. Masiello WDT ¶ 20.

(1) Capital Investment in Satellites

583. XM has designed, launched and delivered in-orbit four Boeing 702 high-power satellites built by Boeing Satellite Systems at an approximate cost of \$250 million each. 6/5/07 Tr. 9:2-6 (Parsons). As explained in Part V.E.2-3, the satellites had to be designed to meet the demanding specifications XM required in order to offer a coast-to-coast seamless satellite radio signal to fixed and mobile receivers.

584. The first two satellites, XM-1 and XM-2 were launched on March 18, 2001 and May 8, 2001, respectively. Parsons WDT ¶ 15. These satellites had an expected useful life of 15 years. Vendetti WRT, Ex. 1 at F-14. But a manufacturing defect discovered shortly after launch led to the premature degradation of XM-1 and XM-2, which also has caused a decline in the useful life of XM's capital investment. Parsons WDT ¶ 23. Thus, XM had to launch two additional satellites, XM-3 and XM-4 on February 28, 2005 and October 30, 2006, respectively. Vendetti WRT, Ex. 1 at 7. Moreover, XM also is developing a new satellite, XM-5, during the next [[]], the estimated in-orbit capital expenditures associated with which could [[]]

]] Vendetti WDT ¶ 13.

585. Since launching and maintaining satellites in-orbit is inherently risky, XM invests in launch and in-orbit insurance from global space insurance underwriters. The cost of launch insurance on XM's four in-orbit satellites has varied from [[]]

]]. Masiello WDT ¶ 23; Vendetti WRT, Ex. 1 at 8.

(2) Capital Investment in Terrestrial Repeaters

586. XM has invested over \$264 million in the design, manufacture, and installation of a system of over 800 terrestrial repeaters located in approximately 60

markets across the country. Vendetti WRT, Ex. 1 at F-20; Masiello WDT ¶ 20; Parsons WDT ¶ 14; 6/5/07 Tr. 9:9-13 (Parsons). Since subscribers expect to hear XM in their cars without interference or interruption regardless of vehicle speed or terrain, XM's ongoing investment in the design, construction, and maintenance of its terrestrial repeater network is a critical component of XM's operations. Parsons WDT ¶ 14. Like all electronic equipment, XM's existing repeaters will eventually wear out. []

] Vendetti WDT ¶ 13.

(3) Capital Investment in Broadcast Facilities

587. In addition to the transmission system, XM invested millions in the construction of its Washington, D.C. broadcast studio complex, which is one of the largest radio studio complexes of any type, analog or digital. *Id.* ¶ 11. The Washington, D.C. facility houses XM's broadcast, network, and technical operations centers. Broadcast operations consist of the studio and technical facilities that enable XM to generate and air content. Network operations run the network and satellite "uplink," *i.e.*, the large (seven-meter wide) parabolic satellite dishes located at XM's facilities that transmit content to the in-orbit satellites. *Id.* ¶¶ 13-15, 27. The annual expenses associated with XM's broadcast operations are explained below.

588. "To accommodate on-air talent in other parts of the country, [XM] has three studios in New York City, including one at Jazz at Lincoln Center; one in Nashville, Tennessee; and one in Chicago." *Id.* at ¶ 12. In addition to the effort and expense involved in building these state-of-the art studios and facilities, XM must

maintain equipment, create the technological link to XM's broadcast center in Washington, D.C., and staff the facilities with skilled personnel. *Id.*

589. The total capital investment in XM's broadcast facilities exceeds \$65 million. Vendetti WRT, Ex. 1 at F-20.

(4) Capital Investment in Radio Receivers

590. XM has invested millions in the design and manufacture of the radios used to receive XM's broadcast signal. XM's ongoing investment in the improvement of its radio receivers is a significant part of XM's research and development budget. Masiello ¶ 43. In 2006, for example, XM spent \$37.5 million on research and development. Vendetti WRT, Ex. 1 at 46, F-4-F-9.

591. In addition to investing in the design of the radios, XM also subsidizes their manufacture. Because of the novel nature of the technology and the relatively small number of units produced annually, consumer electronics companies had little interest in producing XM radios. Parsons WDT ¶ 19. Thus, XM has paid and continues to pay subsidies to consumer electronics manufacturers to distribute and brand the radios. Cook WDT ¶ 19. XM similarly subsidizes mass retailers to promote and sell XM radios in order to stimulate consumer acceptance of the satellite radio concept and of the XM service in particular. *Id.* These annual costs are accounted for in the "Subsidies & distribution" line item in XM's income statement. Vendetti WRT, Ex. 1 at F-4 (showing that XM expended \$241.6 million on subsidies and distribution costs in 2006).

(5) Additional Capital Investments in Physical Assets

592. To support and house its operations, XM has invested \$254 million in computer systems, fixtures, and equipment, and approximately \$84 million in buildings and related infrastructure as of year end 2006. Vendetti WRT, Ex. 1 at F-20.

d. Growing and Operating XM's Business Involves Enormous Costs.

593. In addition to capital investments in technology and physical assets, XM invests billions each year in operating costs to maintain and grow its business. XM's fundamental business goal is to acquire and retain subscribers as cost-effectively as possible. Cook WDT ¶ 13. As noted, because of its cost structure, satellite radio is not viable as a niche product. *Id.* Rather, in order to survive long-term, XM must become a mass-market consumer electronics product. *Id.* XM's fixed and variable costs are integral to XM's ability to do so.

(1) XM's Annual Marketing and Sales Costs

594. XM's ongoing ability to market its service to a mass market of consumers is critical to XM's eventual financial success. XM's costs relating to marketing and sales activities were \$604.6 million in 2006 or, stated as a percentage of total revenues, 64.8 percent of 2006 total revenues. Vendetti WRT, Ex. 1 at F-4. "This is what XM must pay to distribute and sell its radios and subscription service in its automotive OEM, retail, and direct channels as well as handle customer service." Vendetti WDT ¶ 23. The individual line items that are included in XM's marketing and sales costs are described below.

e. Subsidies and Distribution

595. Costs of subsidies and distribution were \$241.6 million for 2006. Vendetti WRT, Ex. 1 at F-4. This is by far XM's largest variable-cost line item, which includes the "subsidization of radios manufactured, commissions for the sale and activation of radios, and certain promotional costs." Vendetti WDT ¶ 24. "These costs are primarily driven by the volume of XM-enabled vehicles and aftermarket radios manufactured, sold, and activated through [XM's] automotive OEM partners and retail channel. . . ." *Id.*

596. The company and industry analysts use this line item to calculate XM's subscriber acquisition costs or "SAC," which is a cost metric that divides XM's subsidy and distribution expenses by the number of gross subscriber additions during a given period. Vendetti WDT ¶ 24; Musey WDT ¶ 26. For 2006, the cost of acquiring new subscribers was \$64, as compared to \$64 in 2005 and \$62 in 2004. Vendetti WRT, Ex. 1 at 37.

597. Initially convincing XM's automotive partners that there was a demand for XM's service was a difficult and expensive proposition. Cook WDT ¶¶ 16-17. General Motors, for example, negotiated very favorable terms when it became XM's first automotive partner in 1999. *Id.* In exchange for a 12-year commitment, XM has, as noted, substantial payment obligations to GM. Reaching agreements with XM's other automotive partners required significant economic incentives from XM as well. Specifically, XM subsidizes the hardware installed in cars and in many cases gives its automotive partners an activation commission. *Id.* Some automakers also receive a share of the monthly fee paid by subscribers. *Id.* XM's current OEM partners include

General Motors, Honda/Acura, Toyota/Lexus/Scion, Hyundai, Nissan/Infiniti, Porsche, Subaru, Suzuki, Isuzu, Lotus, and Harley-Davidson. Vendetti WRT, Ex. 1 at 4.

598. XM also pays substantial fees and subsidies to electronics manufacturers and retailers. [[

]]. Cook

WDT ¶ 19. [[

”]]. *Id.* [[

]]. *Id.* [[“

”]]. *Id.* [[“

”]] *Id.*

599. [[

]]. *Id.* ¶ 19.

f. Advertising and Marketing

600. XM’s advertising and marketing costs for 2006 were \$147.6 million. Vendetti WRT, Ex. 1 at F-4. Advertising and marketing costs are driven by XM’s advertising needs and contractual obligations to XM’s content providers, retailers, and OEM partners. Vendetti WDT ¶ 25. Over the years “XM has featured advertising with popular figures such as Derek Jeter, Ellen DeGeneres, David Bowie, and Snoop Dogg.”

Id. “These activities build XM brand awareness, recognition, sales, and subscriber growth.” *Id.*

601. XM and the analysts covering the satellite radio industry include advertising and marketing expenses in measuring XM’s total cost per gross subscriber addition (referred to in the industry as “Cost Per Gross Add” or “CPGA”). Vendetti WRT ¶ 8. The CPGA is a function of the total money expended to acquire new subscribers (both OEM and aftermarket/retail) divided by the number of gross subscribers acquired during the period. The costs include subsidies and distribution expenses, as well as advertising and marketing costs, which are more fixed in that they do not necessarily vary with subscriber additions. *Id.* For 2006, the cost per gross subscriber addition was \$108, as compared to \$109 in 2005 and \$100 in 2004. Vendetti WRT, Ex. 1 at 37.

g. Customer Care and Billing

602. The cost of XM’s customer care and billing operations for 2006 was \$104.9 million. *Id.* at F-4. This “includes expenses from customer care functions as well as internal information technology costs associated with subscriber and billing applications.” Vendetti WDT ¶ 26. “These costs are primarily driven by the size and rate of growth of XM’s subscriber base.” *Id.* XM believes that “the quality of XM’s customer care operations significantly affects subscriber retention.” *Id.*

h. Costs of Merchandise Sold Directly by XM

603. The costs of merchandise/equipment sold directly by XM to future subscribers were \$48.9 million in 2006. Vendetti WRT, Ex. 1 at F-4. “Costs of merchandise” consist primarily of the costs of radios and accessories, including

hardware manufacturer subsidies, and related fulfillment costs associated with the direct sale of this merchandise through XM's online store. Vendetti WDT ¶ 27. "These costs were more than double the revenue of \$21.7 million XM earned from the sale of merchandise/equipment directly to consumers." Vendetti WRT, Ex. 1 at F-4. These costs are primarily driven by the volume of radio sales as well as the cost of promotional programs used to sell the radios. Vendetti WDT ¶ 27.

i. Amortization of GM Liability

604. XM makes substantial guaranteed payments to GM each year pursuant to the parties' distribution agreement. Costs associated with amortizing XM's liability to GM were \$29.7 million for 2006. Vendetti WRT, Ex. 1 at F-4.

j. Retention and Support Expenses

605. "Retention and support are the fixed costs associated with XM's Marketing Department, consisting primarily of headcount and related overhead expenses for the staff responsible for driving all of XM's consumer marketing activities." Vendetti WDT ¶ 29. Retention and support costs were \$31.8 million for 2006. Vendetti WRT, Ex. 1 at F-4

(1) XM's Annual Programming and Broadcast Costs

606. XM's costs relating to its programming and broadcasting totaled \$272.0 million in 2006 or, stated as a percentage of total revenues, 29.1 percent of 2006 total revenues. *Id.* Of that, the cost of programming and content (both music and non-music) for 2006 was \$165.2 million for 2006. *Id.*

k. Programming Costs

607. The costs of music programming associated with the 69 commercial-free music channels on XM totaled [[]] million in 2006. Benston WRT, Table 1B. “This includes the costs of programming staff, on-air talent, and payments for third party content.” Vendetti WDT ¶ 31. It also includes the costs of exclusive XM music programming such as the “Artist Confidential series.” It does not include copyright royalties or advertising revenue shares paid to content providers. *Id.*

608. The costs of non-music programming were [[]] million in 2006, which includes not only the cost of licensing the news, talk, and sports that XM broadcasts, but also the expert presentation, arrangement, commentary, and variety that make XM unique. Benston WRT, Table 1B; Vendetti WDT ¶ 31. “These line items include the creative, production, and licensing costs associated with the approximately 100 non-music channels of XM-original and third-party content.” *Id.* ¶ 31.

609. Industry analysts classify XM’s non-music programming expenses as fixed or semi-fixed costs, in that XM’s content agreements with sports, talk, and entertainment content providers are for fixed payments and terms, meaning they will decline as a percentage of XM’s revenues as XM’s revenues grow. Musey WDT ¶ 25; Butson WDT at 20; Benston WRT at 8. For example, XM’s contract with Major League Baseball, which has benefited XM greatly in terms of subscriber growth, will last through 2012 at the same rate of \$60 million per year, and MLB has the option on renewing the contract for the same rate through 2015. Vendetti WRT, Ex. 1 at 53. As XM’s subscribership grows, the cost of expensive content such as MLB will decline as a

percentage of XM's revenues and will be less burdensome, while still attracting subscribers.

610. Furthermore, the costs associated with XM's non-music programming are partially offset by revenue earned from advertising on non-music channels and promotional benefits, such as the value of associating with famous brands, publicity, and press exposure. Benston WRT at 9-10; Joachimsthaler WRT at ¶¶ 10-75. *See also* Vendetti WRT ¶ 17 (explaining that 54.5 percent of the costs of the Oprah Winfrey content agreement are offset by advertising). As more fully explained in Part VII. D.4-6, the amounts XM pays for exclusive sports, talk, and news content covers a bundle of rights that provide benefits to XM that far exceed the scope of the compulsory license at issue in this proceeding.

I. Satellite and Terrestrial Repeater Operations

611. The cost of keeping the satellites on course and maintaining XM's network of ground repeaters was \$49 million in 2006. Vendetti WRT, Ex. 1 at F-4; Vendetti WDT ¶ 32.

612. XM's costs of broadcast operations, which include such costs as getting content feeds to XM so they can be sent up to the satellites, amounted to \$57.7 million in 2006. *Id.*; Vendetti WDT ¶ 33.

(1) Depreciation and Amortization of XM's Capital Assets

613. While the capital expenditures made to acquire XM's physical assets occurred disproportionately as up-front expenditures, as an accounting matter, XM allocates these costs over time using depreciation and amortization, which amounted to

a total expense of \$168.9 million in 2006. Vendetti WRT, Ex. 1 at F-4; Vendetti WDT ¶ 34.

(2) XM's Annual General Corporate Costs

614. XM's costs relating to general corporate operations, which are necessary to run XM's operations, totaled \$142 million in 2006. *Id.*

m. General and Administrative

615. General and administrative costs, which grow as subscribership grows, were \$88.6 million in 2006. Vendetti WRT, Ex. 1 at F-4; Vendetti WDT ¶ 40.

n. Research and Development

616. Costs of research and development in 2006 were \$37.4 million. Vendetti WRT, Ex. 1 at F-4. Innovative hardware designs and applications are critical to attracting subscribers to XM's service. These initiatives drive R&D expenses going forward. *Id.* XM's in-house Innovation Center continues to develop and enhance new hardware devices and applications, such as NavTraffic, NavWeather, and XMWX (XM's weather service for maritime, air, and ground travel), to leverage XM service-delivery infrastructure. Vendetti WDT ¶ 41.

o. Advertising Sales Expense

617. XM's ad sales expenses, including the costs of generating current and future advertising sales on XM's talk, sports, and entertainment channels, were \$16.0 million for 2006. Vendetti WRT, Ex. 1 at F-4; Vendetti WDT ¶ 43.

(1) XM's Annual Revenue Share and Royalties

618. Revenue share and royalty costs were \$149 million for 2006. Vendetti WRT, Ex. 1 at F-4 (SEC Form 10-K dated Dec. 31, 2006). These expenses include: (i) shares of subscription fees that XM pays to some of its distribution partners as an

incentive to market XM radios and service to consumers – costs that will grow as XM’s subscriber base grows; (ii) content-provider advertising revenue share costs paid to content providers such as Fox News, which are driven by ad sales revenue generated on third-party channels; (iii) technology royalties paid to radio technology providers and revenue share expenses associated with the licensing of technology (for example, certain technologies contained in the chipsets); and (iv) copyright sound recording royalty fees as well as the fees payable to composers and music publishers for the public performance of musical works. Vendetti WDT ¶ 44.

619. Based on the historic cost of the sound recording performance royalty, “XM budgets approximately [] of total revenues for its anticipated sound recording performance royalty payments. Vendetti WRT ¶ 14; 6/6/07 Tr. 16:5-8 (Vendetti). The exact sound recording royalty payments XM has made in the past are not publicly available. But page 44 of XM’s 2006 SEC Form 10-K publicly discloses that XM incurred expenses of \$37.5 million for a combination of musical work and sound recording performance fees in 2006, which reflects approximately 4.0 percent of total revenues in 2006 split between musical works and sound recording fess. Vendetti WRT ¶ 14; Vendetti WRT, Ex. 1 at F-44.

(2) XM’s Annual Interest Expense

620. The most notable recurring non-operating expense incurred by XM is interest payable on its debt, which for 2006 was \$121.3 million based on XM’s 2006 year-end balance of \$1.3 billion in outstanding debt. *Id.* In the first quarter of 2007 XM assumed additional debt in connection with a sale-lease-back transaction related to the satellite XM-4, thus bringing XM’s total debt to \$1.5 billion. Vendetti WRT, Ex. 2 at

14-15. The size of XM's future debt burden is directly related to XM's ability to increase its subscriber base, control its costs, and reach profitability, as XM's future interest expenditures will vary with the size of the company's debt burden and the cost of future financings, which will be set by prevailing market conditions.

4. The SDARS Have Made Far Greater Investments and Incurred Far More Costs in Connection with Their Services Than Has the Recording Industry.

621. Dr. Woodbury testified that, by contrast with the SDARS, the record companies "have not incurred any incremental investment or any other costs with respect to the development and deployment of satellite radio service or programming on that service." Woodbury AWDT at 50. SoundExchange has presented no evidence to the contrary. The relative investment and cost factor therefore clearly weighs entirely in favor of the SDARS. *See supra*. Part V.C.1-3.

G. The SDARS Have Taken Tremendous Risks With Respect to the Product Made Available to the Public, While the Record Labels Have Taken None

622. To make a determination of reasonable rates, the statute directs the Court to calculate a rate that "reflect[s] the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative . . . risk" § 801(b)(1)(C). XM and Sirius have faced – and continue to face extensive technological, financial, and regulatory risks as they have developed innovative services that never before existed. On the other hand, as Dr. Woodbury testified, the "only possible risk" that the record labels incur in connection with satellite radio is that of displacement of CD or download sales. As shown above, however, there is no credible evidence of that. Woodbury AWDT at 51; *see supra* Part V.C.4-5. Indeed, if anything,

XM and Sirius have reduced the risks faced by the record industry by, for example, providing nationwide exposure for its sound recordings. Woodbury AWDT at 51.

1. Risks Taken by the SDARS

623. In conjunction with all of the contributions SDARS made in pioneering satellite radio services, the record evidence demonstrates the substantial and as-yet uncompensated technological and business risks that the SDARS have shouldered to date, and the ongoing risks they face on their path to profitability and financial stability. 6/6/07 Tr. 283:12-15 (Karmazin).

624. First and foremost, the SDARS faced substantial technical risks: before SDARS, commercial satellite broadcast companies had the good fortune of being able to broadcast to a stationary target. 6/7/07 Tr. 43:13-44:1 (Smith); Smith WDT ¶ 4. The SDARS had to develop a technology that provided seamless service to moving vehicles that vary their speeds, continually change direction and position relative to the satellites, and that also pass in and out of blockage continually. 6/7/07 Tr. 45:20-46:14 (Smith). There was a substantial risk that their systems would not work.

625. The SDARS' businesses were built using innovative, advanced communications technologies, many of which had not been tested in actual commercial service. The SDARS bore the risk of technology failure from the outset, and there was no room for error or technology failure. In October 1997, the SDARS' only significant business assets were their recently awarded FCC SDARS licenses. The SDARS had invested in obtaining those licenses on the assumption they could design and build the entire technology and operating infrastructure needed for the successful launch of the audio service. Masiello WDT ¶ 8. The satellites had to be built to the companies'

respective specifications, insured, and launched. *Id.* ¶¶ 17-29. Likewise, a network of terrestrial repeaters had to be constructed so that the signals could be heard coast to coast with little interference or interruption. *Id.* ¶ 20. Signaling protocols, integrated circuits, chipsets, radios, and specialized antenna had to be developed from scratch. *Id.* ¶¶ 17-43. An entire broadcast operations center needed to be created, including studios for production and transmission of programming. *Id.* ¶¶ 11-16. In order to begin commercial broadcasts, the SDARS had to do all of this correctly before launching the satellites and before earning any revenue. Parsons WDT ¶ 12; Masiello WDT ¶¶ 11-43; Karmazin WDT ¶¶ 3, 7-12.

626. The SDARS also faced risks associated with raising a substantial amount of capital in order to put the satellites into operation and start the service. As discussed above, Sirius has invested over \$5 billion in developing, designing and providing its service and has accumulated a deficit of over \$4 billion. 6/6/07 Tr. 274:10-16 (Karmazin). Sirius is proof of this ongoing risk, having yet to earn a profit. *Id.* at 274:17-18; 288:11-12.

627. In addition to these risks, the SDARS also faced a very serious problem of public acceptance in the face of a large entrenched competitor in the audio entertainment market: terrestrial radio. Radio had been free for decades and, as Mel Karmazin testified, “the idea that somebody would pay for radio was something that I was skeptical about. And as the content was being offered at the time, there was nothing that I believed, in my judgment, that somebody would, in large numbers, pay \$12.95...to hear.” 6/6/07 Tr. 256:5-16 (Karmazin); *see also* 6/12/07 Tr. 10:18-11:10 (Frear) (“[T]errestrial radio represents about 97 percent of radio listening in the country.

And they are a free service. . . . So we have to convince people to go out and buy something they don't normally buy which is this new radio. And then we have to convince them to pay for it once they turn it on.”).

628. Given terrestrial radio's dominance, the quality of this service also had to “exceed” that of free terrestrial radio, because the SDARS would be charging a fee for its radio service. 6/7/07 Tr. 45:10-19 (Smith).

a. Risk of the FCC Not Authorizing the Satellite Radio Services or Imposing Commercially Unworkable Conditions on the Services

629. The SDARS have faced many regulatory risks in launching their business. Before either company could get off the ground, they needed to convince the FCC to create an entirely new radio service that never before existed. Karmazin WDT ¶ 29. Even after filing a detailed application, it was five years before Sirius was able to bid with others for the right to broadcast a satellite radio service in the S-band. *Id.* ¶¶ 15-18, 29.

630. Even after the FCC announced it would grant satellite radio licenses, the SDARS faced the risk that they would not be awarded one of those licenses. In April 1997, the FCC put licenses for satellite digital audio radio services up for auction. 6/4/07 Tr. 304:11-20 (Parsons). XM, under its former corporate name American Mobile Radio Corporation (“AMRC”), and Sirius, under its former corporate name CD Radio, each bid for one of the licenses based on their assumptions that they could design and build the technology and operating infrastructure necessary to launch a satellite radio service and that people would be willing to pay for the audio service, which would

compete directly with free terrestrial radio. *Id.*; Parsons WDT ¶¶ 4-8; Karmazin WDT ¶¶ 3, 16-18.

631. As the owners of the two FCC licenses to operate commercial satellite radio services in the United States, Sirius and XM became subject to FCC rules and regulations and the requirement to adhere to the terms of their licenses and other authorizations. Vendetti WRT Ex. 1 at 22 (SEC Form 10-K dated December 31, 2006); SIR Ex. 47 at 13-14. At the time they won their license, the SDARS faced the substantial risk that the FCC could have imposed conditions on their operations that would have rendered the operation of a commercial satellite radio service unworkable, thus rendering their investments in obtaining those licenses worthless. *Id.*

632. The SDARS also needed to obtain regulatory approval for terrestrial repeaters and uplink facilities, as well as international coordination for the satellites in order to avoid interference. Karmazin WDT ¶ 29. Failure to obtain regulatory approval for these matters would have been the end of Sirius and XM. *Id.* Since each repeater is essentially a radio station regulated by the FCC, the potential for regulatory problems has loomed over both companies. 6/7/07 Tr. 132:22-133:10 (Smith).

633. The SDARS were met with strong opposition to their regulatory efforts by the terrestrial radio industry, which obviously then perceived the SDARS as a threat and now recognizes them as a chief competitor. Karmazin WDT ¶ 29; 6/6/07 Tr. 284:20-285:4 (Karmazin) (explaining regulatory hurdles related to developing and launching Sirius satellites, including opposition). From day one, the SDARS have faced intense competition from other services regulated by the FCC as well, including each other. Karmazin WDT ¶¶ 33-39.

634. Today, the SDARS remain subject to numerous regulations. The SDARS are required, among other things, to operate only within specified frequencies and other limitations and to meet other conditions, such as: the development of radios interoperable with their different systems; coordination of their respective satellite radio service with radio systems operating in the same range of frequencies in neighboring countries; and coordination of their communications links to their satellites with other systems that operate in the same frequency band. Vendetti WRT Ex. 1 at 22 (SEC Form 10-K dated December 31, 2006); SIR Ex. 47 at 13-14. *Id.*

635. Non-compliance with any FCC conditions could result in fines, additional license conditions, license revocation or other detrimental FCC actions. Vendetti WRT Ex. 1 at 22; SIR Ex. 1 at 21 (excerpts from Sirius' 2006 Form 10-K). The SDARS must both comply with the FCC in order to avoid licensing conditions and fines, as well as hope that the FCC adequately protects Sirius against interference from other carriers broadcasting nearby on the spectrum. *Id.*

636. Moreover, as a regulated communications business, there will always be a concern of increased regulation. 6/6/07 Tr. 284:20-285:7 (Karmazin). For example, Sirius' efforts to launch its new satellites requires Sirius to obtain a new license from the FCC. *Id.*

637. Sirius must not only avoid potential regulatory problems with the FCC, but must also deal with other jurisdictions like Mexico in order to avoid interference. *Id.* at Tr. 285:5-7. Because Sirius satellites do not operate at a fixed point in the sky, they must lower their signals when they enter the southern hemisphere to avoid interfering with services licensed to operate below the equator. Smith WDT ¶ 13.

638. In addition, the SDARS also face the risk that the FCC could issue detrimental rulings related to their terrestrial repeater systems. FCC rulings could result in the SDARS reducing the power of their repeaters or limiting the deployment of future repeaters. This would “have an adverse effect on the quality of our service in certain markets and/or cause us to alter our terrestrial repeater infrastructure at a substantial cost.” SIR Ex. 1 at 21.

639. As long as the SDARS continues to be regulated, the companies will face regulatory risks that could damage the business. 6/06/07 Tr. 285:16-20 (Karmazin).

b. Risks that the SDARS’ Satellites Would Experience Launch Failures

640. Launching commercial satellites is an inherently risky business. 8/27/07 Tr. 223:4-13 (Elbert). “Launch vehicles are extremely complex and fail on a regular basis.” Smith WDT ¶ 17. Some companies, like Sea Launch, have had a launch failure rate as high as 10%. 8/27/07 Tr. 236:15-237:8 (Elbert). In addition, SoundExchange expert Bruce Elbert has written that approximately 10% of satellites will not reach their specified orbit and provide service. SDARS Ex. 92 at 101 (excerpts from Elbert’s textbook on satellites, including satellite radio systems); *see also id.* at 106 (“The simple fact is that launching satellites is a risky business and demands every possible step to assure the financial and operational viability of the user and the satellite operator.”).

641. In addition to this inherent risk, the highly inclined elliptical orbits of the Sirius satellites required a heavy lift vehicle that could only be provided by two commercially available companies, limiting Sirius’ choices of commercial launch

companies. Smith WDT ¶ 16. The launch service Sirius used for its first generation satellites, Proton, has had a launch failure rate of more than 1 out of every 20 satellites launched since 1980. *Id.* at Tr. 100:21-101:9 (launch failure rate of 6%). Given that Sirius needed all three of its satellites in orbit before it could operate its system, there was a 1 in 6 chance that Sirius would suffer a launch failure that would prevent it from operating its service. 6/7/07 Tr. 134:7-135:10 (Smith) (approximately 18% chance that one of Sirius' three satellites could have suffered a launch failure).

642. As Bruce Elbert testified, satellite companies can mitigate the risk of launch failure through launch insurance and construction of a ground spare. Elbert WRT at 14-16. However, these mitigation strategies are very expensive and also require effective and costly strategies to mitigate the operation impact of a failure, such as Sirius' construction of a spare satellite and the purchase of long lead time satellite parts. Elbert testified that the cost of launch and in-orbit insurance could be as high as 20 percent of the cost of the satellite system. 8/27/07 Tr. 238:2-11 (Elbert).

643. This form of mitigation would cost Sirius up to \$200 million with respect to its next generation satellite constellation. *See* Frear WDT ¶ 15 (Sirius has contracted with Space Systems/Loral for the design and construction of one new next-generation satellite, which is expected to cost \$260 million from design through launch, and total next-generation program costs are expected to be \$1 billion).

644. XM purchased launch insurance in connection with its satellites, which has varied in cost from [[]] per satellite. Masiello WDT ¶ 23. But insurance proceeds may not fully cover losses. For example, XM's satellite insurance does not cover the full cost of constructing, launching, and insuring new satellites, nor

will it cover business interruption, loss of business or similar economic losses caused by satellite failure. Vendetti WRT Ex. 1, at 20 (SEC Form 10-K dated December 31, 2006).

645. Regardless of insurance, another satellite will need to replace the one that fails. When Sirius launched its satellites in 2000, Sirius did not have a spare that could minimize the risk of launch failure and Sirius' backup ground spare satellite was under construction. 6/7/07 Tr. 135:5-7 (Smith). As discussed above, Sirius' system is designed to operate with three satellites, and therefore Sirius needed a successful launch of every satellite in order to start its service. *Id.* at Tr. 134:7-9. If one of the original satellite launches had failed, Sirius would have needed to complete construction of the ground spare and then wait up to a year before being able to launch the replacement satellite and begin operating its service. Elbert WRT at 15-17 (estimating up to a year before another launch could be scheduled after launch failure). Moreover, Sirius' existing ground spare cost Sirius \$130 million in 2000, over 13% of the \$950 million cost of Sirius' first generation satellite system. Frear WDT ¶ 14.

646. While the SDARS both planned for and understood the risks associated with satellite launches, the fact remains that those plans did not minimize the high level of risk. 6/7/07 Tr. 137:4-10 (Smith).

647. There is an additional risk that the SDARS satellites will experience in-orbit failures that could affect their businesses. 6/5/07 Tr. 12:22-13:17 (Parsons); Vendetti WRT Ex. 1, at 20 (SEC Form 10-K dated December 31, 2006).

648. For example, if one Sirius satellite were to fail in orbit, service would be impaired until Sirius was able to successfully launch and commission a new satellite,

which even in light of the availability of a ground spare would take six months or more. SIR Ex. 1 at 17 (excerpts from 2006 Form 10-K). If two or more of the orbiting satellites failed, Sirius “service could be suspended for at least 24 months.” *Id.*

649. The risk of an in-orbit failure exists even if the problem is not catastrophic, but merely reduces the useful life of the satellite(s). A number of factors could decrease the useful lives of the SDARS satellites, including: defects in design or construction; loss of on board station-keeping system; degradation or durability of solar panels; amount of fuel consumed; failure of satellite components that are not protected by back-up units; electrostatic storms; and collisions with other objects in space. *Id.*

650. XM has already suffered the consequences of this risk. Due to a manufacturing defect in the solar panels of XM’s first two satellites, XM-1 and XM-2, the satellites are experiencing a progressive degradation of their solar power arrays, thus significantly shortening their useful lives. Parsons WDT ¶ 23; 6/5/07 Tr. 14:4-13 (Parsons). The insurance policies on the satellites only provided proceeds of \$144 million, which constitutes only partial recovery, since XM-1 and XM-2 cost XM approximately \$250 million each. *Id.*; Parsons WDT ¶ 15. The degradation of XM-1 and XM-2 compelled XM to accelerate its plan to launch the satellites XM-3 and XM-4 to maintain and improve its nationwide coverage.

651. Sirius faces similar risks as its “operating results would be materially adversely affected if the useful life of [its] satellites is significantly shorter than [it] expects whether as a result of a satellite failure or technical obsolescence, and we fail to launch replacement satellites in a timely manner.” SIR Ex. 1 at 17. Already, SIRIUS’ first generation of satellites have experienced circuit failures on their solar arrays,

reducing the useful life of two of its satellites from 15 to 13 years. SIR Ex. 1 at 17; Frear WDT ¶ 15. Because of this, Sirius now plans to have its next generation of three satellites flying in 2012. 6/7/07 Tr. 141:1-8 (Smith).

652. In addition, there is a constant risk of temporary failure. A few days prior to the commencement of the direct hearings in this proceeding, XM-3 experienced an outage that left a significant number of subscribers without service for almost two days. 6/5/07 Tr. 28:6-18 (Parsons). While XM was able to repair the damaged satellite, XM still received significant negative press due to the outage – a dangerous situation for a start-up company dependent on subscriber satisfaction and growth for financial success. *Id.*

c. Risk of Other Technological Failures, Including Terrestrial Repeaters, Chipsets and Antennae

653. The SDARS also faced risks with respect to the development of technology for consumers to receive the satellite signals, including the terrestrial repeaters, chipsets and antennae. *See generally* 6/6/07 Tr. 286:6-13 (Karmazin).

654. For example, for each repeater Sirius places, it must first determine the best location that will allow for maximal ground coverage while still receiving the signal from the third party satellite. Smith WDT ¶ 23. Typically the optimal location is on top of a building. In the past, Sirius has been forced to settle for a less-than-optimal location because of issues arising with local and state building permits, state communications permits, and FCC approval. Smith WDT ¶ 23. “Navigating this bureaucracy can take a year or more for each additional repeater, and requires the steady attention of a team of lawyers and engineers.” Smith WDT ¶ 23.

655. The process of creating chipsets, the “core component” of the radios, has also been a difficult one for Sirius. Frear WDT ¶ 6. In 2001 critical problems surfaced with the chipsets being developed and manufactured for Sirius by Agere Systems, Inc; the lack of working radios not only delayed Sirius’ commercial launch, but also delayed Sirius’ automotive programs by several years, enabled XM to get to market first, and ultimately forcing Sirius to exchange approximately 91% of its debt for equity, considerably diluting its existing shareholder base. Frear WDT ¶ 6.

656. Moreover, if the SDARS antennae did not work, customers would not be able to receive the service. The danger of this risk was made apparent in the past year: Sirius learned that one of its antennas did not function properly in the rain. 6/6/07 Tr. 286:18-22 (Karmazin).

657. XM’s business model likewise is dependent on innovative, untested technologies, and XM bore the risk of technology failure from the outset. As discussed above, a network of terrestrial repeaters had to be constructed so that the XM signal could be heard coast to coast with little interference or interruption. *Id.* ¶ 20. Signaling protocols, integrated circuits, chipsets, radios, and specialized antenna had to be developed from scratch. *Id.* ¶¶ 17-43. An entire broadcast operations center needed to be created, including studios for production and transmission of programming. *Id.* ¶¶ 11-16.

658. As explained in detail in Part V.E., the SDARS business was built using innovative, advanced communications technologies, many of which had not been tested in actual commercial service. There was no room for error or technology failure. In order to begin commercial broadcasts, the SDARS had to do all of this correctly

before launching the satellites and before earning any revenue. Parsons WDT ¶ 12; Masiello WDT ¶¶ 11-43; Frear WDT ¶ 6.

d. Risk of Not Obtaining Sufficient Financing To Initiate Service

659. The SDARS also faced the risk that they would be unable to find investors to fund their speculative and innovative venture.

660. For Sirius, the initial capital was raised by David Margolies, 6/11/07 Tr. 372:4-10 (Frear). Mr. Margolies essentially made it his task in life to convince others that it would be a good idea to invest in satellite radio without any guarantee of success. *Id.* Focusing almost entirely on this task from 1993 to 1997, Mr. Margolies eventually convinced enough people and financial institutions to provide funding to finance the service. *Id.* at 371:17-372:20 (Frear). Mr. Margolies had to tap into several different markets to get the needed capital in an attempt “to find different risk appetites to raise that capital.” *Id.* at 372:11-16 (Frear). All of this occurred even before the FCC licenses were awarded, making the capital-raising venture an extremely risky one. *Id.* at 372:18-20 (Frear).

661. Even after raising this initial capital, the delays resulting from the issues with Sirius’ chipset forced the company “to recapitalize its balance sheet and exchange approximately 91% of its debt for equity.” Frear WDT ¶ 6. In essence, Sirius flushed the paper of the equity investors that had funded its business in the earlier years to enable its business to survive. 8/15/07 Tr. 211:4-15 (Frear).

662. XM also bore the risk of obtaining the enormous investment capital necessary to build and launch its satellite radio service. Woodbury AWDT at 50-51. The creation of XM’s satellite radio service from scratch required substantial investment

in spectrum licenses, infrastructure, technology, programming, and distribution/marketing. “These costs include[d] an upfront investment of \$1.5 billion that was expended before the service was even launched as well as ongoing operational costs and additional capital expenditures subsequent to launch.” Vendetti WDT ¶ 12, Ex. 2.

663. A significant portion of XM’s pre-launch capital was obtained through three separate investment transactions at different stages of XM’s corporate development. In the late 1990’s XM obtained from its former parent company, AMSC, and from WorldSpace the [] in funding required to purchase the FCC spectrum license and to commence the design of XM’s satellite requirements. Parsons WDT ¶ 8. XM exhausted this initial seed capital and spent over a year pursuing additional investment capital from strategic investors and private equity firms. 6/4/07 Tr. 327:15-330:13 (Parsons). In July 1999, six investors, including three private equity firms and XM’s current business partners, General Motors, Clear Channel Communications, and DirecTV, invested \$250 million in XM. Parsons WDT ¶ 9.

664. In order to mitigate the risk of their investment, XM offered these investors lucrative commercial agreements, including free use of XM’s bandwidth in the case of Clear Channel and guaranteed subsidies for the installation of XM radios in the case of General Motors. *Id.* at ¶ 9. These capital infusions provided XM with sufficient financing to carry the company through to its initial public offering in September 1999. 6/5/07 Tr. 7:12-15 (Parsons).

665. The risk of XM’s early financial collapse did not end with its IPO however. In March 2000 the status of the economy and the capital markets changed

precipitously when the “dot-com” bubble burst. Parsons WDT ¶ 13. At that time, XM was in the midst of designing and developing its broadcast facilities and its transmission and radio receiver technology. *Id.* XM required an additional billion dollars in expenditures and many technical milestones still had to be achieved before XM could launch its service. *Id.* In spite of the capital markets’ declining appetite for risky, capital-intensive technology ventures, XM secured the additional financing necessary to launch its service in November 2001. *Id.* ¶¶ 13, 16. Without these early capital infusions, XM would not have been able to launch its service, and the business would have failed.

e. Risks Related To Gaining Acceptance With OEMs

666. Broad distribution of the SDARS satellite radio service through the new automobile market is a central element of their business strategy and has been essential to their success to date and future profitability, given the large percentage of radio listening that occurs in the car. Vendetti WRT, Ex. 1 (SEC Form 10-K dated December 31, 2006 at 4). For example, Sirius research shows that Nearly [] of Sirius subscribers listen to Sirius in their vehicle. SIR Ex. 20 at 8, 20.

667. As a result, “[a]ll of the technological and engineering challenges [the SDARS] [have] overcome in order to create [their] satellite services would be for naught if consumers could not actually receive the satellite signal in their vehicles.” Wilsterman WDT ¶ 4. Placing satellite radios in vehicles is of utmost importance to the SDARS because “[a]n installed radio has a good chance of generating a substantial revenue stream for many years to come, even as the vehicle in which the radio is installed changes hands over the years.” *Id.* at ¶ 20. Moreover, Sirius believes that

customers who are exposed to Sirius in their vehicles “are more likely to buy a Sirius radio for their home, and more likely to look for Sirius radio availability in their next car.” *Id.*

668. Because of this environment, the SDARS encountered a huge risk with regard to original equipment manufacturers. While the SDARS were in a position where it was essential to get their radios into vehicles, they have always been in a precarious position with regard to the OEMs.

669. For Sirius, an issue has been that the company does not “have any leverage with [OEMs]. These car companies are not required by contract to put satellite radio in their vehicles. It is very much an option in most cases.” 6/7/2007 Tr. 192:9-13 (Wilsterman); 8/22/07 Tr. 252:20-253:3 (Karmazin) (explaining that, before the pre-NFL OEM deals, OEMs had not announced an intention to put radios in any particular percentage of cars).

670. Sirius first started marketing to OEMs in 1999, well before Sirius had built and launched its service. This provided the first challenge: “The main challenges that we faced at that point were, first and foremost, to explain to them what satellite radio was, what the concept of satellite radio was, and in order to do that, . . . we were really talking about an idea on a piece of paper. We hadn’t built anything yet. We hadn’t launched any satellites. We had nothing to demonstrate to them how it worked. So that was one of the biggest challenges.” 6/7/07 Tr. 160:13-161:1 (Wilsterman).

671. Moreover, the auto manufacturers “were not going to put any satellite radios into cars, not in a factory basis and not into their dealer partners inventory, without being certain that the system worked with what they described as 99.9 percent

service availability in the 48 states and southern Canada.” *Id.* at 6/11/07 Tr. 374:12-18 (Frear). Sirius therefore had to show that the service was that reliable. 6/11/07 Tr. 374:19-375:6 (Frear). Sirius also had to try to convince companies that were losing literally billions of dollars per year and consequently doing everything they could to reduce costs that they should in effect be making their cars more expensive by putting satellite radios in them. 6/11/07 Tr. 376:3-14 (Frear) (“With the automotive companies, in particular, Ford lost, I think it was, a billion dollars in North American automotive operations in 2003. . . . And we wanted them to increase the cost of the car to put a radio in it that nobody really knew anything about at that point in time.”). Sirius accomplished this, in part, through a combination of assurances of desirability and quality, along with financial incentives. *See supra* Part V.E.1.e.

672. The risk of OEM acceptance was very real early in Sirius’ history and continues today. The OEMs were “very concerned” that the Sirius system would not work. 6/7/07 Tr. 161:17-19 (Wilsterman); *see also* 6/7/07 Tr. 162:2-16 (Wilsterman) (describing Chrysler requirements that Sirius perform a 10,000 mile test all over the country in all kinds of terrain and weather conditions to make sure that the system worked before agreeing to installation); 6/11/07 Tr. 374:5-11 (Frear). Because OEMs’ requirements are so high, it takes 3-4 years of development for a Sirius radio to be installed into a vehicle and sold. Wilsterman WDT ¶ 13. Moreover, a bad user experience with an audio system could lead to a poor report from J.D. Power and Associates, which could greatly affect sales. Wilsterman WDT ¶ 12. “Accordingly, OEMs are extremely concerned about the ease of use and the reliability of the Sirius radio and its integration with the overall design of the car.” *Id.* Sirius must therefore

constantly engineer its products to keep up with OEM and consumer demands, or risk being replaced by another device.

673. XM similarly bore the risk that automakers would not agree to install XM's novel audio entertainment system in their cars, which would have presented a significant threat to XM's business. Cook WDT ¶¶ 16-18. "Initially, convincing automakers that there was a demand for XM radio was a difficult and expensive proposition." Cook WDT ¶ 16. General Motors, one of the strategic investors to infuse desperately-needed capital in XM prior to launch, negotiated very favorable terms for itself when it became XM's first automotive partner in 1999. In exchange for a 12-year exclusive commitment to install XM radios, XM has substantial payment obligations to GM, which to date have exceeded \$300 million. Cook WDT ¶ 16; Parsons WDT ¶ 9. XM has agreed to subsidize the installation of radios with its other OEM partners, including Honda, Toyota, Nissan, and Hyundai, and to make other subsidy and promotional payments. Cook WDT ¶ 16. "Some automakers also get a revenue share from XM on the monthly service fee paid by subscribers." *Id.* ¶ 17.

674. These subsidization costs are ongoing and, along with subsidies to electronics manufacturers and retailers, constitute XM's largest variable cost. Given that XM is still losing hundreds of millions of dollars after six years of commercial operations, increasing subsidy payments to automakers and electronics manufacturers and retailers could significantly delay XM's becoming profitable. Vendetti WRT, Ex. 1 (SEC Form 10-K dated December 31, 2006 at 19).

f. Market Risk of Consumer Electronics Retailers Not Promoting Satellite Radios

675. The SDARS also faced a substantial risk associated with obtaining distribution at retail.

676. Major consumer electronics retailers can fill their space with whatever they choose, so the SDARS had to convince the Best Buys and Circuit Cities that the as-of-yet untested product would sell well and that their brands would not suffer through association with Sirius' product. 6/11/07 Tr. 372:21-373:22 (Frear); *see also* 6/11/07 Tr. 373:2-22 (Frear) ("Best Buy and Circuit City and Radio Shack and others of that ilk have plenty of things to do with the floor space in their stores. . . . [G]etting satellite radio shelf space in retail stores wasn't a guarantee. You had to go in and sell the retailers that it was worth them . . . devoting any of their floor space, either to your product or to the retail displays that go there or the ads we get in our Sunday circulars, . . . there's an opportunity cost to all of it. . . . And it took years to convince the retailers that there was [a] product here worth carrying."). This risk is demonstrated by recent developments at Wal-Mart. In order to make more space to market GPS hardware, those stores reduced their satellite radio display space from 8 feet by 4 feet to 4 feet by 4 feet, to be shared between Sirius and XM. SX Ex. 44 at SIR00047064.

677. In that vein, the Sirius consumer electronics group deals with the "difficulties of convincing retailers to carry and sell Sirius radios and the Sirius service, [as well as] the costly incentives that Sirius has been required to provide to ensure that its radios will be available to potential buyers." Karmazin WDT ¶ 10.

678. The only way that Sirius has been able to overcome this risk is through its ability to provide subsidies and/or profit sharing at the manufacturing, wholesale and

retail stages. Providing such subsidies has helped to quell the risk of retailers not selling Sirius products, as well as the risk of consumers not purchasing Sirius products because of a prohibitively expensive price. *See* Law WDT ¶ 7, 9; *see also supra* Part V.F.5.b.5. (describing costs of Sirius consumer electronics and retail business). Moreover, because the retail environment is so competitive, the retail price point decreases rapidly within months of a product's introduction, rather than over several years as consumer electronics manufacturers used to expect. "The rapid decline of retail pricing means that Sirius will have to pay even more in subsidies in the near future." Law WDT ¶ 11.

679. The sale of XM radios and subscriptions through the retail or "aftermarket" channel was and remains a critical factor in XM's business plan as well. Like XM's automotive partnerships, these retailers initially had to be aggressively pursued. Cook WDT ¶ 19. XM had to pay substantial fees to convince them to dedicate scarce shelf space in their stores to carry hardware for the XM service. *Id.* XM continues to subsidize retail sales of XM radio receivers in several ways. Over and above the margin they receive on the hardware, XM pays the retailers a commission for each radio sold through that retailer that subsequently is activated by the consumer. Certain retailers also receive a small portion of XM's subscription fee from radios sold through that retail outlet. With some retailers, this subscription fee payment is capped at four years, and with others it continues for the life of the subscription. Finally, XM also provides substantial market development funds to its retail partners, which pay the retailers to advertise XM's receivers and service in newspaper circulars, in-store displays, etc. XM develops and pays for in-store merchandising materials, including end-aisle displays for several retailers, and train the sales forces of all major retailers.

Id.; see Cook WDT Ex. 2 (Flow of Marketing Sales Costs of Retail Distribution Channels). Increases in XM's subsidy payments to automakers and electronics manufacturers and retailers could significantly delay XM's becoming profitable. Vendetti WRT, Ex. 1 (SEC Form 10-K dated December 31, 2006 at 19).

g. Market Risk of Electronics Manufacturers Not Building SDARS-Designed Radios

680. Another significant risk the SDARS confronted in the early years was convincing consumer electronics manufacturers to produce the radios SDARS designed to receive their respective broadcast signals.

681. The consumer electronics business "is extremely competitive in every respect. Product design in the consumer electronics field is characterized by extremely rapid technological, functional and aesthetic advancement. When new products are introduced into the marketplace, they are already quickly on the way to becoming obsolete. Thus, constant product development is essential." Law WDT ¶ 3.

682. As in the case of XM's automotive partners, electronic "equipment manufacturers demand subsidies because, given the cost of manufacturing, the novel nature of XM's technology and service, and the relatively small number of units produced annually, they had little interest in producing XM radios as opposed to a different product." Parsons WDT ¶ 19. Thus, XM has been heavily involved in the development, design, and manufacturing of the radios and has paid incentives to consumer electronics companies to distribute and brand the radios. *Id.* As stated above, increasing subsidy payments to automakers and electronics manufacturers and retailers could significantly delay XM's becoming profitable. Vendetti WRT, Ex. 1 (SEC Form 10-K dated December 31, 2006 at 19).

h. Risk of Not Obtaining Sufficient Financing To Survive Long Enough To Reach Profitability

683. The SDARS also face ongoing risks in connection with their efforts to obtain financing sufficient to survive and reach profitability.

684. As discussed in detail in Part V.I (disruption), Sirius has incurred debt in the form of 2 ½ percent convertible notes for \$300 million due in 2009 and 3 ½ percent convertible notes for \$230 million due in 2011. Part V.I.5.; *see also generally* 8/15/07 Tr. 106:11-111:4 (Frear). The conversion price at redemption for the 2009 notes is \$4.41, and the conversion price for the 2011 notes at redemption is \$5.30. *See infra* Part V.I.5.

685. Sirius' current financial plan assumes that the stock will recover from its current price and reach the conversion prices. 8/15/07 Tr. 106:11-111:4 (Frear). However, there is a risk that the value of Sirius' stock may not reach the conversion price and Sirius will have to pay off the \$300 million and \$230 million in cash. *Id.* Under the projection provided by Mr. Frear, Sirius would need to seek additional capital to refinance this debt. *Id.*

686. Seeking additional financing from the capital markets is also a substantial risk. For example, in May 2007, Sirius went to the capital markets to borrow \$250 million under conditions that it considers to be very favorable in light of the subsequent negative turn in the credit markets; however, to get that loan, Sirius "fundamentally gave up all the assets of the company as security." 8/15/07 Tr. 133:4-5 (Frear). "If the assumptions don't come through, if . . . free cash for losses exceed what we expect and capital becomes scarce, [the note holders] are in the controlling position in the event that things . . . go wrong." 8/15/07 Tr. 133:8-13 (Frear).

687. Although based on its current cost structure and business plan XM believes it has sufficient cash and credit facilities available to fund cash flow losses through when XM expects its business to generate positive cash flow on an ongoing basis, XM may need additional financing due to future developments, such as changes in its cost structure and business plan. Vendetti WRT Ex. 1 (SEC Form 10-K dated December 31, 2006 at 18). If additional funding is needed, XM may not be able to raise sufficient funds on favorable terms or at all. *Id.* XM currently carries \$1.5 billion in debt, \$400 million of which matures in 2009 and will have to be refinanced. Vendetti WRT ¶ 15. If XM secures refinancing of these notes, which are rated below investment grade, it will likely only be achieved at the cost of an interest rate of approximately 12%, the prevailing rate paid by similarly situated companies with junk credit ratings. *Id.* Higher interest payments will further delay XM's becoming profitable and financially stable. Failing to obtain any necessary financing on a timely basis could result in a number of adverse effects, including defaulting on XM's commitments to creditors. Vendetti WRT Ex. 1 (SEC Form 10-K dated December 31, 2006 at 18).

i. Risk of Lack of Sufficient Consumer Acceptance of the Service in Light of Free Terrestrial Radio and Other Audio Entertainment, Including Burgeoning HD Radio, To Attain Profitability

688. The SDARS also faces risks from the rapidly changing audio entertainment marketplace, particularly with respect to the delivery of sound recordings to the listening public.

689. Foremost, because terrestrial radio is free, the SDARS faced the risk of a lack of consumer acceptance of their subscription-based radio product. 6/12/07 Tr. 10:20-11:5 (Frear). The SDARS therefore had to overcome that notion by convincing

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consumers that they could not get what Sirius was offering anywhere else. 6/6/07 Tr. 291:5-22 (Karmazin). “[E]verybody sort of knows that you turn on the radio, and it’s there, and it’s free . . . so why on earth would somebody pay for radio?”)

690. Mr. Karmazin, before becoming Sirius’ CEO, himself once believed that satellite radio, and particularly Sirius, would not be successful: “I viewed the model of pay radio to be questionable. And I’ve been in radio a long time, and the idea that somebody would pay for radio was something that I was skeptical about. And as the content was being offered at the time, there was nothing that I believed, in my judgment, that somebody would, in large numbers, pay \$12.95, which was the price, to hear.” 6/6/07 Tr. 256:5-16 (Karmazin); *Id.* at 254:10-18.

691. The SDARS must therefore work to convince people that they should pay for radio. 6/12/07 Tr. 10:11-11:10 (Frear); 6/6/07 Tr. 291:11-292:9 (Karmazin) (“We have certainly not begun to penetrate the market in any serious way, and still have the risks of having to try to become a mass medium.”).

692. Terrestrial radio will be Sirius’ main competitor throughout the foreseeable future. “[T]he 600 pound gorilla . . . the industry that we compete with is terrestrial radio. It’s a \$21 billion industry. It has very successful companies, making billions of dollars in it, and they’re the ones that have the audience, they’re the ones that have the advertisers, and they’re the ones that we want to penetrate.” 6/6/07 Tr. 295:2-22 (Karmazin). Terrestrial radio’s economic model produces 50 percent profit margins at many companies, and have the benefit of not paying for sound recordings, as well as other legacy advantages. 6/6/07 Tr. 296:13-20 (Karmazin).

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693. The SDARS also face the risk that consumers will choose “HD” radio, a digital service designed to provide many of the same consumer advantages of satellite radio, but which does not pay sound recording royalty fees. Parsons WDT ¶ 45. HD Radio offers digital quality sound like satellite radio and has begun to broadcast commercial-free music, one of Sirius means of distinguishing its programming from free radio. Karmazin WDT ¶ 37; 6/6/07 Tr. 292:21-293:17 (Karmazin). HD radio technology also permits broadcasters to transmit as many as five stations per frequency. *Id.* In addition, there is no subscription fee for HD radio. 6/6/07 Tr. 293:17 (Karmazin).

694. As of year-end 2006, as many as 1,000 radio stations in the U.S. had commenced digital broadcasting and approximately 3,000 had committed to broadcasting in digital format. Vendetti WRT Ex. 1 (SEC Form 10-K dated December 31, 2006 at 21). Currently, there are over 1,300 HD Radio stations broadcasting around the country. Karmazin WRT ¶ 29. HD Radio broadcasters have invested a substantial amount of money to make consumers aware of their service and its distinction from satellite radio and the subscription fee. Karmazin WDT ¶¶ 36-37; 6/12/07 Tr. 11:11-12:13 (Frear) (explaining HD Radio’s \$250 million advertising campaign). As free HD radio becomes more available and more popular, the challenge to attract paying subscribers to satellite radio will become that much tougher. Parsons WDT ¶ 45.

695. In addition to HD Radio, with wireless Internet access, people can listen to Internet streams almost wherever they please. 6/6/07 Tr. 293:17-294:4 (Karmazin). “It’s not very difficult for you to be able to listen to any kind of content

that is out there, where you want it, when you want it. And we need to be competitive to those technologies.”

696. SDARS have experienced the impact of slowing retail demand for satellite radio during late 2006 and the first half of 2007.

697. “[N]et subscriber additions for the first quarter of 2007 were . . . lower than the second and third quarters of 2006, despite the fact that, in the past, Sirius’ first quarter retail subscriber net additions have always been higher than in the second and third quarters of the prior year. Certainly, the first quarter 2007 retail subscriber net additions were well below our expectations at the beginning of the year. These results suggest that the retail market for satellite radio is stagnating. The disappointing retail results also prove the difficulty of projecting Sirius’ performance during the balance of 2007 and beyond, casting doubts on the company’s long range plans.” Karmazin WRT ¶ 28; 8/15/07 Tr. 86:6-87:1 (Frear) (stating that Sirius believes the slowing of the retail business is “a sustained change in the operating environment,” and that “we are not seeing the kind of recovery in retail numbers . . . that we had been hoping for.”); Vendetti WRT ¶ 2 (Unexpected “softness in the retail sales market, have caused XM to conclude that it can reasonably expect more moderate growth for the foreseeable future than had been projected.”).

698. The risk of consumer acceptance is made more risky by the fact that Sirius is now competing with electronic entertainment devices for space in vehicles – space which may go to the highest bidder. While AM/FM radio has been in vehicles since before Sirius launched its service, more recent competitors for space in vehicles include HD Radio (which BMW has agreed to install in its vehicles) and iPod adapters,

which will be in about 70 percent of new vehicles in 2007. 6/7/07 Tr. 192:4-194:4 (Wilsterman). Other threats include Ford's planned Sync feature, which would allow the vehicle to connect with any Bluetooth-enabled device. 6/7/07 Tr. 194:5-195:9 (Wilsterman).

699. With the implementation of these devices in vehicles, consumers no longer "need to pay for satellite radio." 6/6/07 Tr. 294:9-14 (Karmazin). If OEMs "elect to put some other device in there instead of ours, iPod adapters, HD radio . . . We're left holding the bag. We don't have a subscriber. We don't have any business. We literally would not have a company unless we had these deals." 6/7/2007 Tr. 192:9-193:1 (Wilsterman).

700. Even if the SDARS continue to obtain OEM subscribers there is risk related to maintaining those subscribers. Sirius' OEM partners have decided to include trial subscriptions with their Sirius-enabled vehicles. Thus, a new car owner that becomes a subscriber, after often times does not go out specifically looking to purchase a satellite radio subscription, unlike a person who walked into a retail store to purchase a radio. 6/12/07 Tr. 115:2-116:2 (Frear). As a result, the mathematical rate at which OEM subscribers convert to paid subscribers is much lower than the rate at which retail subscribers choose to renew. 6/12/07 Tr. 116:3-117:7 (Frear). Thus, when asked by the Court why Sirius' churn rate is increasing, Mr. Frear responded that it has been expected because the churn rate increases with the increasing number of OEM subscribers joining the service. 6/12/07 Tr. 114:14-115:2 (Frear).

701. Launched less than 10 years ago, the SDARS offers a relatively new audio entertainment service as compared to their long-established and entrenched

competitor, free terrestrial radio. XM's cumulative losses since inception total \$3.5 billion, Sirius has accumulated a deficit of over \$4 billion. Despite substantial growth, neither service has yet to achieve the level of mass market consumer acceptance necessary for its operational and financial success. Vendetti WRT Ex. 1 (SEC Form 10-K dated December 31, 2006 at F-5); Parsons WDT ¶ 6; Frear WDT ¶ 35.

(1) Risk of Music Industry Seeking Excessive Royalties

702. The risk posed by the music industry seeking excessive royalties is real, and is recognized by the SDARS and SoundExchange. The disruptive impact of an increase in those royalties – particularly at the rates SoundExchange has proposed - is discussed in detail in Part V.I.

2. The Recording Industry Has Undertaken No Risk in Connection with the SDARS

703. With respect to the satellite radio industry the substantial technological and business risks the SDARS have undertaken in the past and those risks that they continue to confront greatly outweigh the risks assumed by the record labels, if any. The record labels have not incurred any incremental investment or other costs with respect to the development and deployment of their satellite radio services. Woodbury AWDT at 50-51. As noted, there is no reliable evidence in this proceeding of any sales displacement. *See* Part V.C.4-5. To the contrary, there is abundant evidence of the promotional benefits the SDARS provide to record companies and artists, which decreases the record labels' overall risk of recording and distributing sound recordings. *Id.* at 51. In addition, to the extent that the SDARS take listeners away from its principal competitor, free terrestrial radio, they further reduce any possible financial risk

to artists and the record labels by providing them with fees from public performances of sound recordings that they would not otherwise receive. *Id.* In sum, because they undertook all of the risk associated with satellite radio, this factor too clearly favors the SDARS.

H. The Preexisting SDARS Are a New Market for Creative Expression and a New Medium for Its Communication Within the Meaning of Section 801(b)(1).

704. Section 801(b)(1)(C) also requires consideration of the relative roles of the copyright owner and user with respect to “contribution to the opening of new markets for creative expression and media for their communication.” Like the services at issue in the 1998 PSS proceeding, the SDARS have “create[d] a new industry that expands the offerings of the types of music [and non-music] beyond that which one receives over the radio, through live performances, and other traditional means of public performance.” *Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings*, 63 Fed. Reg. 25,394, 25,408 (May 8, 1998). See generally Parts V.B & D.

705. The SDARS’ contributions that must be credited under this 801(b)(1)(C) subfactor include: (i) creating new “end-to-end” mobile radio services providing seamless nationwide coverage to cars, homes, and portable devices with high-quality stereophonic audio; (ii) offering greater depth and diversity of music and non-music programming than is available on terrestrial radio; and (iii) generating revenue stream for record companies and artists that they do not receive from terrestrial radio. As XM’s Executive Chairman Gary Parsons testified:

The fundamental value proposition of XM is built on diversity of programming, exclusive content and a unique and powerful delivery

platform to serve both the mobile (automotive and hand-held portable) and the home environment. This value proposition includes offering content that appeals to both mainstream and niche audiences across a broad demographic, particularly exclusive programming such as sports and talk, brand-name but limited availability content (such as CNN and Fox News), and XM's commercial-free music programming.

Parsons WDT ¶ 2. *See also* Woodbury AWDT at 43.

706. Satellite radio is, literally, a new means of communicating creative expression. With respect to XM, its founders envisioned a new form of radio that had never before been attempted; their effort to turn that vision into reality was unprecedented in the radio industry. XM “was not just starting another station or acquiring and managing a group of radio stations”; rather, it was creating a new type of service from the ground up – a different kind of audio service and a different kind of satellite business, with national reach in the home, office, and automobile. *Id.*

707. Like XM, “Sirius was required to create an entirely new means of providing audio programming.” Karmazin WDT ¶ 3; *see also* Frear WDT ¶ 2 (noting that Sirius brought “the public a new and improved way to obtain programmed audio entertainment”). Sirius was a “wholly new consumer service utilizing innovative technologies” (Frear WDT ¶ 6) and faced the daunting challenge of creating original, creative, and compelling audio programming that would convince consumers to subscribe to the service. Frear WDT ¶ 7.

708. In doing so, the SDARS sought to meet a perceived demand. XM and Sirius also recognized that a national service would appeal to professional truckers and drivers who lose the signal of favorite local stations as they drive long distances. Karmazin WDT ¶ 17; Parsons WDT ¶ 6. With the consolidation of terrestrial radio stations, escalating commercial minutes, and narrowing formats, moreover, the SDARS

perceived an unmet consumer need for their concept in the urban and suburban populace as well. Parsons WDT ¶ 6.

709. The SDARS could not rely on a preexisting distribution system, as no such satellite-based system existed. Instead, unlike Music Choice or webcasters, they created new end-to-end services comprising both the production of the content and its delivery to consumers, which required the design and manufacturing of complex technology. *See* Woodbury AWDT at 52 (“XM and Sirius went substantially beyond the efforts of the PSS by providing an end-to-end mobile service” which “required the development of complex technology required to support that service” and which provides an “increased opportunity for subscriber exposure to new artists and different music genres”).

710. As Mr. Parsons testified: “The challenge of taking XM from an on-paper concept to an on-the-air broadcast service was virtually unprecedented in the radio industry. We built the new satellite radio industry and the XM business from scratch from technological, business, and programming perspectives.” Parsons WDT ¶ 2. XM had to “invent, design and build all aspects of the business needed to create and distribute this service.” *Id.* ¶ 12. As Anthony J. Masiello, XM’s Senior Vice President of Operations, put it: “Not since the introduction of FM broadcasting has an audio broadcasting service had to design, build and launch, virtually from scratch, all aspects of its service infrastructure from signal to receiver,” Masiello WDT ¶ 2 – a process that involved overcoming “a number of obstacles and risks not previously encountered or surmounted by other satellite-based businesses.” Parsons WDT ¶ 5. Terrence Smith, Sirius’ Senior Vice President, Engineering, explained that while “the technology existed

to send a basic stream of audio data to a fixed point on the earth via satellite . . . no one had ever succeeded in developing – or, to my knowledge, had even attempted to develop – a satellite system for distribution of audio content on a seamless nationwide basis to moving vehicles.” Smith WDT ¶ 4. *See also* 6/4/07 Tr. 313:7-13 (Parsons).

711. The many technological innovations necessary to launch and operate the SDARS’ pioneering services are described in detail in the written direct testimony of XM’s Mr. Masiello and Sirius’ Mr. Smith, and in Part V.E.

712. As shown above, *supra* Parts V.B and V.D., the SDARS also have brought to consumers a wide range of content not available on terrestrial radio. In this regard, the SDARS anticipated that a nationwide service offering programming diversity and choice, coupled with high-quality audio, and limited or no commercials on the music channels, would appeal to enough different demographic sectors to create a prospect of future success. Parsons WDT ¶ 6; Frear WDT ¶ 7. XM’s Mr. Logan testified that “[p]resenting a diverse line-up of programming to potential and current XM subscribers, including news, sports, talk, comedy, and commercial-free music channels, promotes subscriber acquisition and retention, and grows subscriber satisfaction.” Logan WDT ¶ 2. A diversity of programming far greater than that available on terrestrial radio, as described in Parts V.B and V.D, reflects the fact that, in order to be a viable mass-market service, the SDARS “must appeal to a broad range of demographics across different age groups and interests, and various cultural and political spectrums.” Parsons WDT ¶¶ 25, 26; XM Ex. 3; 6/12/07 Tr. 16:14-16 (Frear) (explaining that “in order to sort of galvanize the attention of the listening public, we felt we needed to diversify [Sirius’] program offering”); Coleman WDT ¶¶ 6-10

(describing diversity of news, talk and entertainment programming necessary to attract subscribers); Cohen WDT ¶ 4 (sports programming attracts subscribers); Blatter WDT ¶¶ 6, 12 (need for diverse music and other programming to drive subscriptions).

713. In addition to the manner in which the SDARS dramatically enhance the availability of sound recordings both popular and obscure as well as other musical content, such as live performances, *see supra* Part V.B and V.D, which has the effect of promoting record sales, *see supra* Part V.C.5.e., the SDARS also represent a new revenue stream from the standpoint of the record companies and artists in that performances on XM and Sirius generate royalties for SoundExchange that terrestrial radio does not. As Dr. Woodbury testified: “[M]ost of the listening to Sirius is diverted from over-the-air radio which pays performers and the holders of the SRPR nothing for airplay. SoundExchange benefits directly from this conversion of over-the-air radio listeners to XM and Sirius subscribers because terrestrial radio does not pay a SRPR fee.” Woodbury AWDT at 43.

714. By contrast, the record companies incurred no expenses, made no financial investments, and undertook no incremental effort in connection with the creation or operation of satellite radio. Woodbury AWDT 48 (“I am unaware of any evidence that the labels expend any incremental effort to create new music for XM and Sirius. This is not surprising since as previously noted, any fees paid by XM and Sirius for the SRPR would be a very small fraction of their overall revenues.”); *id.* at 50 (“[T]he recording companies have not incurred any incremental investment or any other costs with respect to the development and deployment of satellite radio service or programming on that service.”).

715. Accordingly, this factor – which implicates everything the SDARS have done to create first-of-their kind new services that bring an unprecedented depth and diversity of music and other content to a nationwide audience – weighs heavily in favor of the SDARS.

I. The Sound Recording Fee Must Minimize Disruption of the Structure of the Industry and on Prevailing Industry Practices.

1. Overview

716. The parties' experts agree that any rate that threatens the SDARS' viability or liquidity going forward would be disruptive. *See* Noll WRT at 9 (“Disruption to an industry is best measured by asking whether a proposed rate affects its long-term viability.”); 6/13/07 Tr. 185:4-13 (Musey) (explaining that a significant increase in rates would cause a liquidity crisis and call into question the SDARS' viability); Butson WRT at 11 (conceding that a rate that would affect the SDARS' liquidity or viability going forward would be disruptive); Herscovici WRT ¶ 92 (framing issue as whether rate “will threaten the [SDARS'] longer-term ability to operate profitably”).

717. Likewise, as Professor Noll testified, a rate would threaten viability and be disruptive to the extent that it diminished cash flow to such an extent that a company could no longer recover its forward-looking costs. Noll WRT at 72-73; 8/16/07 Tr. 84:2-84:20 (Noll). A rate that did not permit copyright users to recover a reasonable return on start-up investments also would be disruptive because it would remove the incentive to invest. 8/16/07 Tr. 76:8-77:19 (Noll). *See also* 6/13/07 Tr. 210:6-210:11 (Musey) (“If the goal is to encourage additional investment in the industry, it's going to be very hard to get additional investment in the industry if

investor expectations have been consistently frustrated.”). In addition, there is no dispute that a rate that would cause one or both of the SDARS to fundamentally change their business, such as by dramatically cutting back on the use of sound recordings, would be disruptive. Herscovici WRT ¶¶ 92, 111; 8/16/07 Tr. 72:1-13 (Noll); *see also* PCL V.C. In all instances, the inquiry is properly focused on the SDARS, because disruption is “much more likely to occur in satellite radio than in sound recordings.” Noll WRT at 72.

718. Through massive investments to date, the SDARS have created what they believe to be commercially viable subscription satellite radio businesses. Notwithstanding current challenges, both companies are expected to achieve net positive cash flow across the license term and to generate positive net incomes for the first time by the end of the term, assuming the companies’ existing cost and debt structures are not significantly altered. SIR Ex. 58; Vendetti WRT, Ex. 4. These remain, however, relatively young companies involved in a capital-intensive, high-risk, and still developing industry. They have accumulated billions of dollars of as-yet-unrecouped investment, carry significant debt loads, and continue to lose hundreds of millions of dollars each year as they attempt to reach critical subscriber mass that will enable them to become financially stable enterprises over time.

719. The SDARS have submitted a rate proposal that would provide a fair return to the record industry for XM and Sirius’ public performances of sound recordings. Indeed, it is estimated that over the six-year term of the license, SoundExchange would receive royalties from these entities in excess of 250 million dollars. *See* Part VIII. At the same time, the SDARS’ rate proposal would, consistent

with section 801(b)'s intent to minimize disruption to this emerging industry, allow Sirius and XM to continue to sustain a trend towards profitability during the current license term and financial stability over the longer term.

720. By contrast, SoundExchange's proposed royalty rate structure, which, using SoundExchange's projections, would extract more than a billion additional dollars in royalties from each of XM and Sirius over the license term, (*See* Butson WRT, Apps. A & B)¹⁰ would not merely reverse this positive momentum; it would jeopardize the very future viability of the SDARS. The financial projection models offered on the record labels' behalf by former equity analyst Sean Butson, which incorporate SoundExchange's proposed rates, facially demonstrate their disruptive force: they would delay the SDARS' generation of net positive free cash flow until after the license term, erase any chance of profits for any year during the license term, and tax to the breaking point the companies' respective abilities to service or refinance their significant debt obligations. *Id.* In addition to facial evidence of their disruptive effects, Mr. Butson's models are based on dubious assumptions concerning the SDARS' liquidity and debt structures, and contain numerous errors and omissions. The testimony of knowledgeable financial officers of Sirius and XM put the lie to the SoundExchange expert's facile claim that the SDARS "can afford to pay" billions more in sound recording fees over the course of the next six years, Butson WRT at 2, and

¹⁰ This calculation totals the royalty payments for XM and Sirius projected in SoundExchange's models for the years 2007-2012 and subtracts fees that would be payable under the SDARS' fee proposal.

instead demonstrated the destructive nature of the SoundExchange fee proposal. *See infra* V.I.5.

721. Even a one percent of revenue increase in the sound recording rate will add in excess of \$100 million in additional costs to each of XM and Sirius across the license term. 6/11/07 Tr. 28:19-29:9 (Frear); 8/15/07 Tr. 64:7-65:3 (Vendetti). The hearing record demonstrated that any sound recording performance royalty at or equivalent to a rate above approximately four percent of the SDARS' revenues would cause serious disruption to the SDARS' businesses. *See infra* Part V.I.6. An increase in rates beyond this four percent-level would eliminate the SDARS' ability to generate free cash flow and profits during the license term and would severely weaken the SDARS' liquidity positions in light of imminent and significant debt maturities. A rate set beyond this level would accordingly be disruptive to the SDARS' viability and liquidity, and would force them to make substantial changes to their businesses in order to attempt to survive. *See infra* Part V.I.6.

2. Current Financial Condition of the SDARS

722. The financial condition of the SDARS today is fragile but improving. As explained in the company-specific parts below, neither company has ever been, or currently is, profitable. In the course of building this new medium for the distribution of creative expression, both companies have sustained billions of dollars in operating losses and have assumed billions of dollars in debt obligations. They are projecting to turn the corner over the course of the current license term, provided they are not confronted with massive additional costs in the form of greatly increased sound recording performance royalties.

a. Sirius' Current Financial Condition

723. Sirius has grown rapidly since the service launched nationwide on July 1, 2002. *See* Karmazin WDT ¶ 22. Nevertheless, at present, Sirius is not generating free cash flow, and it has not generated any net income or EBITDA. *See, e.g.,* Karmazin WDT ¶ 13; 6/6/07 Tr. 288:6-13 (Karmazin) (Sirius has not yet generated any net income); 6/7/07 Tr. 35:11-21 (Karmazin) (acknowledging that Sirius has not yet become EBITDA or net profitable); 6/12/07 Tr. 153:3-7 (Frear) (stating that Sirius has not been free-cash-flow positive); SIR Ex. 47 (2006 10-K) at F-4. Sirius remains, as described by Dr. Woodbury, “financially fragile.” 6/12/07 Tr. 320:7-320:15 (Woodbury) (discussing disruption).

724. Sirius' full-year 2006 revenues were \$637 million. 6/11/07 Tr. 368:18-369:16 (Frear); SIR Ex. 47 at F-4. Sirius ended the year with 6.0 million subscribers, up from 3.3 million at the end of 2005. SIR Ex. 47 at 31. The results at the end of the year were affected to some extent by an unexpected softening of the retail channel. Frear WRT ¶ 5; 6/12/07 Tr. 107:9-108:2 (Frear). Sirius' total operating costs for 2006 were approximately \$1.7 billion. SIR Ex. 47 at F-4. In all, Sirius lost approximately \$1.1 billion in 2006. SIR Ex. 47 at F-4. These losses raised the accumulated deficit since inception to approximately \$3.8 billion. *Id.* at F-5.

725. Despite these enormous losses, Sirius is currently on a path to achieve profitability. 8/22/07 Tr. 185:1-187:1 (Karmazin). 2007 generally has been characterized by improving overall results, albeit with some continuing softness in the retail channel and with respect to advertising revenue. Sirius added approximately 556,000 net subscribers in the first quarter of 2007. SIR Ex. 57 at 24. Sirius' revenues

for the first quarter of 2007 were \$204 million, while operating expenses for the quarter were \$339 million. SIR Ex. 57 at 1. Thus, Sirius' net loss for the quarter was approximately \$144 million. SIR Ex. 57 at 1.

726. Sirius added more than 560,000 net subscribers in the second quarter of 2007, bringing the total for the first half of 2007 to approximately 1.1 million net new subscribers. See SX Trial Ex. 74 at 1, 3. Sirius remains on track to reach its target of 8 million subscribers by year-end 2007. *Id.* at 2. Sirius reported \$226 million in second quarter 2007 revenue, with approximately \$430 million in revenue in the first six months of 2007. *Id.*

b. XM's Current Financial Condition

727. Since launching its service in November 2001, XM has steadily added subscribers by investing in, and improving, its technological infrastructure and by acquiring exclusive, diverse, and innovative programming. However, XM has yet to generate positive earnings and free cash flow as it continues to build the critical subscriber mass necessary to overcome its large fixed costs. Vendetti WDT ¶¶ 3, 7, 15 (stating that XM has not generated any profits since inception).

728. XM ended 2006 with 7.6 million subscribers, up from 5.9 million in 2005. Vendetti WRT, Ex. 1 at 37. During 2006, XM generated total revenues of \$933.4 million, with subscription fees accounting for \$825.6 million or 88.5 percent of its total revenues. Vendetti WRT, Ex. 1 at F-4 to F-5. But XM recorded a loss of \$718.6 million because of \$1.3 billion in operating expenses and \$315.8 million in interest and other net non-operating expenses. *Id.* XM's 2006 loss increased its accumulated deficit since inception to \$3.5 billion. *Id.* at 18.

729. XM is on track to meeting its public guidance of between 9.0 and 9.2 million 2007 year-end subscriber additions. Vendetti WRT ¶ 8. While XM's aftermarket sales growth has slowed somewhat, the company's OEM sales continue to grow consistently with XM's business plan. *See id.* ¶¶ 5-10 (explaining in detail recent financial trends). In the first quarter of 2007, XM had total net subscriber additions of 285,176. Vendetti WRT, Ex. 2 at 32. XM's revenues in the first quarter were \$264.1 million and its operating expenses were \$352.2 million, which, in addition to XM's non-operating expenses, contributed to a net loss of \$122.4 million for the quarter. *Id.* at 4; *see id.* at 5 (raising XM's accumulated deficit to \$3.6 billion as of the end of the first quarter of 2007).

730. Like Sirius, XM, absent a disruptive increase in the sound recording royalty, is on track to achieve profitability in spite of its past losses. *See* Vendetti WRT, Ex. 4 ("XM remains in a financially challenging 'start-up' phase and is still several years from profitability."). Key to XM's eventual profitability is subscriber growth, which is the central driver of XM's revenues, Musey WDT ¶ 41, and cost containment. Cook WDT ¶ 13.

3. The SDARS' Profitability Projections Under Current Cost Structures

731. The financial projections submitted by Sirius and XM demonstrate that, based on their current cost structures, the companies should achieve the significant financial milestones of profitability and positive free cash flow generation during the license term.

a. Sirius' Projected Profitability and Cash Flow Generation

732. As noted in the testimony, any projections – particularly in this relatively new industry – are subject to substantial uncertainty, particularly in later years. Frear WRT ¶ 14; 8/15/07 Tr. 91:16-92:18 (Frear); 8/16/07 Tr. 66:4-68:19 (Noll). Thus, Sirius is not presently providing any formal guidance beyond 2007. Frear WRT ¶ 8. However, Sirius Exhibit 58 provides the most realistic available projections for Sirius for the 2007-2012 license term. Frear WRT ¶ 11; *see also* 8/15/07 Tr. 213:4-215:15 (Frear).

733. As described in the testimony of David Frear, Exhibit 58 was developed using a consensus of nineteen analysts to estimate demand for satellite radio in the form of “gross additions” or incoming subscribers. Gross additions are the purest indicator of demand for satellite radio. 8/15/07 Tr. 88:13-89:1 (Frear). This starting point is both objective and provides a much broader consensus than the seven analysts considered by Sean Butson in preparing most of his model. *See* Butson WRT App. C. The detailed process used in developing the demand-side consensus that is the starting point for Exhibit 58 is described in detail in Woodbury WRT Ex. 25.

734. Apart from subscriber gross additions, Exhibit 58 is based on Sirius' internal financial model. 8/15/07 Tr. 93:1-93:16 (Frear). This internal modeling is substantially more detailed and sophisticated than the forecasts analysts could prepare. Among other reasons, this is because the company has greater knowledge concerning historical behavior of incoming subscribers from particular channels and of the company's contractual arrangements with its distribution partners. 8/15/07 Tr. 214:12-215:15 (Frear). Sean Butson conceded that the SDARS' internal modeling was based

on information to which he as an analyst would not be privy. 8/27/07 Tr. 287:19 (Butson) (“internal . . . company models actually have a significant amount of additional data that is not made public. And so analysts wouldn’t know it”).¹¹

735. Exhibit 58 assumes a sound recording royalty rate of 4.2 percent as opposed to the 2.5 percent rate that is recorded for accounting purposes. *See* 6/12/07 Tr. 192:15-193:14 (Frear). The 4.2 percent is a conservative figure used in budgeting to “build in some room” to deal with uncertainties. 6/12/07 Tr. 193:15-194:4 (Frear). The 4.2 percent rate has also been used to show the disruptive effect of high rate. *See* Frear WRT ¶ 24, SIR Ex. 59. For the reasons discussed in these proposed findings, and as stated in the testimony (Frear WRT ¶ 24 n.6), Sirius does not consider a rate as high as 4.2 percent to be a reasonable rate under the Section 801(b)(1) factors.

736. As shown by Exhibit 58, Sirius has made and will continue to make substantial progress in growing the business and moving toward profitability. In every respect, anticipated results for 2007 are significantly better than reported for 2006. *Compare* SIR Ex. 58 with SIR Ex. 47 (2006 10-K), at F-4. For example, Sirius Exhibit 58 indicates that the net loss will be cut from over \$1.1 billion in 2006 to less than

¹¹ SoundExchange attempted to criticize Sirius Exhibit 58 as a mixture of analyst and internal data (*see, e.g.*, 8/15/07 Tr. 149:12-150:8 (Frear)), but SoundExchange failed to identify a single error or inaccuracy in the model. While Sean Butson criticized the absence of a price increase, the record supports this assumption and refutes Butson’s proffered justifications for his contrary assertion. Moreover, the reasons for the use of particular data were explained in detail in the testimony, and support the view that the best available data were used, recognizing the inherent limitations of long-term projections in the industry. *See* 8/15/07 Tr. 88:13-89:1 (Frear); *id.* at 93:1-93:16; *id.* at 214:12-215:15.

[[]] in 2007. Likewise, Exhibit 58 contemplates that Sirius will generate free cash flow in [[]] and net income in [[]].

737. Exhibit 58 projects a consistent trend toward profitability and achievement of free cash flow. Key metrics are as follows (subscribers in thousands; dollars in millions):

	2007	2008	2009	2010	2011	2012
Ending Subscribers	[[]]					
Revenue						
Net Profit/(Loss)						
Free Cash Flow]]

738. As voluminous testimony has pointed out, however, projections of the earlier years of the license term (for which losses are highly likely) are more likely to be accurate. *See, e.g.*, 8/15/07 Tr. 91:16-92:18 (Frear); 8/16/07 Tr. 66:4-68:19 (Noll); 8/27/07 Tr. 313:11-20 (Butson). Thus, while the later years of the term appear favorable, those projections necessarily are surrounded by a significant degree of uncertainty.

b. XM’s Projected Profitability and Cash Flow Generation

739. As part of its rebuttal case, XM submitted an updated average of analyst forecasts, for the period 2007-2012, issued between March and July 2007 by nineteen analysts who cover XM (the “analyst consensus projections”). Vendetti WRT, Ex. 4; Vendetti WRT ¶¶ 11-12; 8/15/07 Tr. 34:2-44:9 (Vendetti); Woodbury WRT Ex. 27 (XM memorandum explaining the compilation of the analyst consensus projections). The projections represent the market’s view of XM’s current financial growth trajectory

given its current cost and debt structure as well as challenges presented by the current marketplace.

740. Like Sirius, the analyst consensus projections show that XM will make steady progress towards profitability over the license term, based on XM's current cost structure. Vendetti WRT, Ex. 4. Key metrics are as follows (subscribers in thousands; dollars in millions):

	2007	2008	2009	2010	2011	2012
Ending Subscribers	9,084	10,764	12,543	14,279	16,146	17,400
Revenue	\$1,131	\$1,406	\$1,698	\$2,020	\$2,318	\$2,584
Net Profit/(Loss)	(\$561)	(\$389)	(\$228)	(\$41)	\$138	\$234
Free Cash Flow	(\$276)	(\$61)	\$47	\$269	\$436	\$532

Id. The analyst consensus for 2007 is consistent with XM's 2007 annual budget and XM's public guidance of 9.0 to 9.2 million year-end subscribers and subscription revenue in the billion dollar range. Vendetti WRT ¶ 12. Mr. Vendetti confirmed that the analyst consensus projections are reasonable for the years thereafter given prevailing market conditions and XM's recent growth trends. 8/15/07 Tr. 34:2-36:2 (Vendetti). According to the analyst consensus projections, XM will generate cumulative positive cash flow over the course of the license term and will begin to reduce its projected accumulated deficit with positive earnings starting in 2011. Vendetti WRT, Ex. 4.

741. Analyst estimates of XM's future costs necessarily include an estimate of the future cost of the sound recording royalty. Based on the historic cost of the sound recording performance royalty, XM budgets approximately two percent of total revenues for its anticipated sound recording performance royalty payments. 6/5/07 Tr. 300:15-17

(Vendetti); 6/6/07 Tr. 16:5-8 (Vendetti). This internal estimate is not publicly disclosed. However, XM disclosed in its 2006 SEC Form 10-K that XM incurred expenses of \$37.5 million for a combination of musical work and sound recording performance fees, which is approximately four percent of XM's total revenues in 2006. Vendetti WRT, Ex. 1 at F-44. Based on the foregoing, the analyst consensus projections likely anticipate an estimated sound recording royalty rate that ranges between two and four percent of total revenues. See Musey WDT ¶ 50 (stating that analysts estimate the SDARS' licensing fees for sound recordings and musical works to be between 6 and 8 percent of total revenues); 6/5/07 Tr. 300:5-8 (Vendetti) (speculating that the industry analysts estimate the SDARS' sound recording royalties to be approximately 4 percent of total revenues).

4. The Dramatic Increase in SoundExchange's Rate Proposal Would Be Disruptive on Its Face

a. The Butson Models Show the Devastating Effect That the SoundExchange Rate Proposal Would Have on the SDARS' Net Income and Free Cash Flow.

742. In its now-operative Third Amended Rate proposal, SoundExchange seeks an immediate royalty rate increase up to 8 percent of revenue, with possible further increases up to as much as 23 percent of the SDARS' revenues. According to SoundExchange's projections, rates at this level will extract more than a billion additional dollars (over and above the amounts included in the companies' financial plans) in royalties from each of XM and Sirius over the license term – total royalties of more than \$2.5 billion over the term. See SoundExchange Third Amended Rate Proposal at 1-3; Butson WRT, Apps. A & B. SoundExchange therefore is seeking an immediate, more than three-fold increase in the current royalty rate, and up to a ten-fold increase during the license term. See 6/21/07 Tr. 227:6-17 (Ordoover) (stating that the

rate increase in the first year under SoundExchange’s Amended Rate Proposal would be “substantial” and “may be abrupt”). SoundExchange posits that its proposed rate structure is not disruptive under section 801(b)(1)(D) because it “does not jeopardize the SDARS’ liquidity or long-term profitability” or “ability to generate significant amounts of free cash flow.” Butson WRT at 1, 7. This conclusion rests entirely on the financial projection models prepared by SoundExchange’s “expert,” Sean Butson, a former equity analyst who only covered the SDARS from June 2004 through October 2005. 6/19/07 Tr. 126:15-127:5 (Butson);¹² Butson WRT, Apps. A & B. However, the devastating and disruptive effects of SoundExchange’s proposed rate structure are facially evident in Mr. Butson’s models.

743. As noted above, both Sirius and XM anticipate that they will begin to earn net income during the term of the license. *See* SIR Ex. 58; Vendetti WRT, Ex. 4. However, as Mr. Butson’s models confirm, the transition to profitability will not occur—even by the end of the license term—if SoundExchange’s rate proposal is adopted:

¹² The only substantive work Mr. Butson has done concerning the satellite radio industry since ending his career as an equity analyst has been his work for SoundExchange in this proceeding. 6/19/07 Tr. 132:16-133:1. Mr. Butson admitted that after leaving his former employment, he did not follow XM and Sirius “as closely as [he] did when [he] was an analyst.” *Id.* at 133:6-10.

Annual Net Loss (in millions)

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>Totals</u>
Sirius	(\$609.2)	(\$470.9)	(\$378.4)	(\$223.8)	(\$102.6)	(\$20.7)	(\$1,805.6)
XM	(\$615.5)	(\$525.2)	(\$508.1)	(\$378.5)	(\$263.3)	(\$230.7)	(\$2,521.3)

744. Butson WRT Apps. A & B at 1. Mr. Butson's models show that the SDARS combined would lose over \$4.3 billion during the license term, while SoundExchange would collect over \$2.5 billion from them in royalties.

745. Despite his recognition of the critical importance of generating free cash flow, Mr. Butson's own model confirms the effect that SoundExchange's proposed royalty would have on the SDARS' attempts to do so over the course of the license term. In particular, Mr. Butson's model incorporating the SoundExchange royalty shows both companies generating free cash flow losses in excess of \$500 million over the license term. Butson WRT Apps. A and B at 2 ("free cash flow" line); *see also* 8/27/07 Tr. 320:3-321:2 (Butson). Mr. Butson's model shows free cash flow losses for 2007, 2008, and 2009 for both companies, and also for 2010 for XM. *Id.*; Butson WRT, Apps. A & B at 2. Even after the free cash flow turns positive in the later years of the license term, the amount generated would not nearly make up for the free cash flow losses incurred in the earlier years. *Id.*

746. Mr. Butson's Written Rebuttal Testimony itself establishes that these massive free cash flow losses during the upcoming license term are not inherent to the SDARS' business models, but rather are a direct consequence of the extraordinary sound recording royalty sought by SoundExchange. Appendix E to Mr. Butson's

Written Rebuttal Testimony is a “royalty sensitivity” chart showing the effects within his model of various royalty levels. At a four percent royalty rate (the lowest that Mr. Butson apparently modeled), Sirius and XM show positive free cash flow beginning in 2009 and 2010, respectively, and overall positive free cash flow for the entire license period. *See* Butson WRT App. E; 8/27/07 Tr. 321:6-323:6 (Butson).

747. Notwithstanding the dire numbers contained in his own models, Mr. Butson makes confident pronouncements concerning the SDARS’ business prospects. For example, in his rebuttal testimony, Mr. Butson repeatedly discusses the SDARS’ “long term profitability” and the fact that the SoundExchange proposed royalty rate should not impair that “long term” profitability. He also suggests that the SDARS “can afford to pay” SoundExchange’s proposed rates based on these long term prospects. However, Mr. Butson conceded on cross-examination that, by using the phrase “long term,” he generally was referring to periods extending beyond the license term, and his models extend even beyond the end of the next license term. 8/27/07 Tr. 307:9-308:13 (Butson); Butson WRT App. A and B. As Professor Noll pointed out, the next rate proceeding will provide an appropriate opportunity to consider the SDARS’ business prospect in 2013 and beyond. 8/16/07 Tr. 87:9-88:7 (Noll). Mr. Butson also conceded that such long term projections were subject to even greater inaccuracy than his short term projections. 8/27/07 Tr. 313:17-313:20 (Butson). Thus, Mr. Butson’s conclusions with respect to what he defines as the “long term” are inherently unreliable and speculative, as well as being largely immaterial to the license term for this rate-setting.

b. Growing Accumulated Deficits Under SoundExchange's Proposal Also Show Disruption.

748. SoundExchange's disruption analysis was expressly limited to going-forward viability; Mr. Butson did not consider how a failure to achieve any return on initial investment would be disruptive. *See* Butson WRT at 1 (rejecting consideration of return on investment or recoupment of start-up costs in context of disruption). Thus, Mr. Butson failed to consider disruption in the broader context. As Professor Noll testified, this was an error:

Q: As you read the fourth criterion, would it be disruption if a copyright user were not permitted to recover a reasonable return on start-up investments?

A: Yes.

Q: Why would that be disruptive?

A: The reason it would be disruptive is not with respect to this particular product, because you can have a circumstance where it would have enough revenue to continue in business, but it doesn't get a return on its start-up cost. But the reason that is disruptive is because future technologies that make use of sound recordings would be dissuaded – they would never enter, because they would know that on the one hand, in order to enter, you're going to have lots of start-up costs before you can collect your first dollar of revenue, just like any other business.

Particularly this one, where you've got [to] go through a regulatory proceeding. You've got to get a license, right, so you've got build your system, develop your marketing strategy and get a license before you make your first sale. And if you know that you'll never be allowed to recover those because the nature of the rate setting process for the sound recording rights is such you'll never be able to recover your start-up costs, then in fact, there will never be another technology introduced that makes use of sound recordings involving digital technology.

8/16/07 Tr. 76:8-77:9 (Noll).

749. As David Frear testified, “[i]f you went to investors with the proposition that we’re going to blow three billion dollars of your money and we’re not going to give you a nickel back, I don’t think you would get any.” 6/12/07 Tr. 54:10-16 (Frear). Armand Musey similarly testified that “[i]f the goal is to encourage additional investment in the industry, it’s going to be very hard to get additional investment in the industry if investor expectations have been consistently frustrated.” 6/13/07 Tr. 210:6-210:11 (Musey).

750. The impact of the SoundExchange proposed royalty rates is reflected in the accumulated deficits calculated by Mr. Butson. According to Mr. Butson, the accumulated deficit “adds all of the annual losses that the company has incurred into one cumulative number.” 8/27/07 Tr. 328:3-5 (Butson). At the end of 2006, he shows an accumulated deficit for XM of about \$3.5 billion and for Sirius of approximately \$3.8 billion. Butson WRT Apps. A at 2, B at 3 (“accumulated deficit” line). Under Mr. Butson’s model, however, those accumulated deficits continue to climb every single year during the license term, reaching a total of more than \$11.6 billion in 2012 (more than \$4 billion more than at the beginning of the license term). Further, because of the damage inflicted by the SoundExchange royalty rates, Mr. Butson does not project that the accumulated deficit for Sirius would return to its 2006 year-end starting point until sometime in 2018, six years after the end of the license term. *Id.*; see also 8/27/07 Tr. 328:22-329:12 (Butson). For XM, the accumulated deficit would still exceed its 2006 year-end starting point until past the end of the Butson model in 2020. Butson WRT App. B.

751. Mr. Butson's model contemplates no return whatsoever on investment, for the license term and many years thereafter. *See, e.g.*, Butson WRT App. A at 2 (accumulated deficit for Sirius still in excess of \$1.6 billion in 2020), App. B at 3 (accumulated deficit for XM of \$4.2 billion in 2020). Armand Musey has detailed the insufficient returns to date. *See* Musey WDT ¶¶ 21-23. There is no contrary evidence in the record. Under SoundExchange's proposed rate, there will be no return to investors in XM and Sirius during the license term or for many years thereafter.

c. SoundExchange's Proposed Rates Are Disruptive Because They Do Not Even Permit Recovery of Forward-Looking Costs.

752. A sound recording royalty would also be disruptive to the extent that it diminished cash flow to such an extent that a company can no longer recover its correctly-determined forward-looking costs. Noll WRT 72-73; 8/16/07 Tr. 84:2-20 (Noll).

753. As Professor Noll testified, the "industry is viable as long as the satellite radio industry believes that in the long run, the revenues will exceed the costs, looking on a correctly estimated forward-looking basis." 8/16/07 Tr. 84:3-84:7 (Noll).

754. On the other hand, there is no incentive to continue the business in its existing form if forward-looking costs will not be fully recovered. In that event, the business "will adopt another model, which is to minimize its costs to milk as much revenue as it can for as long as it can and then go out of business." *Id.* at 84:10-15. In the particular context of the SDARS, if the costs (including depreciation and a competitive return) of replacement satellites could not be recovered, "the adoption of the [SoundExchange] proposed rates would cause the SDARS not to launch [the

replacement] satellite and to withdraw from the industry when the current satellites fail.” Noll WRT at 73. This result “is far more disruptive than the effect even of a zero percent rate on the record industry.” *Id.*

755. Professor Noll conservatively calculated the SDARS’ forward looking opportunity cost of physical capital based on the definition of physical capital presented by Dr. Pelcovits in his “surplus” analysis. As Professor Noll demonstrated, this calculation dramatically under-stated the SDARS’ true forward-looking costs, because it was limited to the book value of physical capital and ignored intangible assets and other expenses incurred during the period. *See infra* Part VII.B.

756. Based on the original Butson models and the then operative SoundExchange rate proposal, the SDARS’ net income would be \$3 billion less than necessary to cover even the properly-defined forward-looking costs of just their physical capital over the course of the license term. 8/16/07 Tr. 109:12-112:20 (Noll). In this same time period, the SDARS would have been paying some \$4 billion to SoundExchange under SoundExchange’s original rate proposal according to its then operative projection models. Butson WDT, Apps. A & B. Thus, a 75% reduction in the rate proposal would have been necessary to maintain the incentive for the businesses to continue and thereby avoid disruption. *See infra* Part VII.B.

757. Although the numbers have changed somewhat, the same argument applies to an even greater extent with the revised Butson model. As Professor Noll noted, “the new Butson analysis causes the net losses of the companies to be larger than they were in the old analysis.” 8/16/07 Tr. 116:8-116:17 (Noll). As a consequence, “the short-fall of actual returns in relationship to forward looking investment costs is

even greater.” *Id.* at 116:18-117:2. Thus, the percentage reduction in SoundExchange’s rate proposal that would be necessary to avoid disruption could exceed 75 percent. *Id.* at 117:11-13.

758. In fact, as Appendix C demonstrates, performing Professor Noll’s analysis using the new Butson projections and SoundExchange’s Third Amended Fee Proposal leads to the conclusion that the SDARS will not cover their forward-looking opportunity costs of physical capital in this period, even with a zero sound recording fee. Thus, the sound recording license fee must be near zero and certainly no greater than the fee proposed by the SDARS.

5. SoundExchange’s Rate Proposal Would Have Further Disruptive Effects Beyond Those Demonstrated by Mr. Butson’s Model.

a. The Disruptive Effects of the SoundExchange Rate on Sirius Would Be Even Worse than Shown by Mr. Butson’s Model.

759. Although the negative effects on cash flow, EBITDA, net income and accumulated deficit are apparent on the face of the document, Mr. Butson’s model contained in Appendix A of his Written Rebuttal Testimony actually understates the effects that SoundExchange’s proposed royalty rates would have on Sirius due to various errors and oversights in that model.¹³ In particular, as described below, Mr.

¹³ In addition to Appendix A, his primary rebuttal model for Sirius, Mr. Butson also attached to his rebuttal testimony a model that he claimed was based on internal modeling produced in discovery by Sirius. *See* Butson WRT App. F. However, Mr. Butson himself placed little reliance on this model. *See* Butson WRT at 9 (“[i]n the analysis that follows, I make use of the data and results generated by the more conservative analyst consensus models, rather than the company guidance models”). This lack of reliance was justified in the circumstances. As David Frear testified, the models produced by Sirius in discovery contained a number of dated assumptions

Butson has created a lower subscriber count/higher revenue model that reduces royalty rate escalations under SoundExchange's subscriber-based escalator. Mr. Butson also has ignored and/or understated certain significant costs, and failed to properly assess certain maturing convertible bonds.

(1) Unsupported Assumption of Price Increases

760. Mr. Butson's model assumes a three percent price increase every year. Butson WRT App. A; 8/28/07 Tr. at 7:16-7:21 (Butson). In contrast, Sirius Exhibit 58 does not include such a price increase. Mr. Butson attacked Exhibit 58 by claiming that the absence of a price increase was "completely unrealistic" and that "[t]he companies have increased prices historically." 8/27/07 Tr. 297:3-12 (Butson). However, it is undisputed that Sirius has never increased its prices. *Cf.* 8/28/07 Tr. 8:18-10:4 (Butson) (Mr. Butson concedes that Sirius has never raised its price to his knowledge). Thus, Mr. Butson's claim that the "companies" (plural) have "historically" raised prices is false. In addition, the evidence is also undisputed that XM has only raised its price a single time during the entire period of its existence, and only then while including content that previously was sold at a premium. 6/5/07 Tr. 162:16-20 (Logan); 8/22/07 Tr. 238:12-240:14 (Karmazin). Thus, the assumption of an annual price increase in Mr. Butson's model, which he claims is justified by the historical facts, is directly contradicted by the undisputed historical facts. Mr. Butson's assumption of a future price increase also is

(including subscriber projections and a price increase) that are no longer operative based on specific developments in the industry, including the retail slowdown and the cancellation of a planned price increase. Frear WRT ¶ 9; 8/15/07 Tr. 90:11-91:15 (Frear). Accordingly, there is no basis for reliance on Appendix F, and Mr. Butson, in his testimony, did not seek to establish any such basis.

contradicted by the testimony of Sirius management. 8/22/07 Tr. 247:10-22 (Karmazin) (stating that increasing prices make it harder to convert people from listening to free radio to subscription radio); *see also* 6/12/07 Tr. 31:10-32:1 (Frear) (decision not to increase prices due to softening demand). Absent the price increase, the revenue, EBITDA, operating income, net income, and accumulated deficit figures all would be materially worse than they appear in the Butson model.

(2) Understated Subscriber Growth

761. As compared to Sirius Exhibit 58, Mr. Butson's model for Sirius contained in his Appendix A suggests slower subscriber growth, but much higher average revenue per subscriber or "ARPU." *Compare* SIR Exhibit 58 at 1 *with* Butson WRT App. 1 at 1; *see also* 8/28/07 Tr. 6:7-15 (Butson). With respect to overall anticipated gross revenues, these differences essentially offset each other. However, there are significant differences when compared to Sirius Exhibit 58 with respect to profitability, EBITDA, free cash flow, and other metrics.

762. By choosing a low subscriber count/high revenue per subscriber model, Mr. Butson understated the impact of the SoundExchange royalty, because the royalty rate increases are based on the number of subscribers. For example, using the 2012 year-end subscriber numbers in Butson's revised model, the SoundExchange royalty rate would be 17 percent; using the Sirius subscriber figures in Exhibit 58, it would be 20 percent. Using Mr. Butson's estimated revenues for that year of approximately \$2.5 billion, the 3 percent rate difference would result in an increased cost to Sirius of approximately \$75 million.

(3) Understated Costs

763. Mr. Butson's model also understates Sirius' expenses because it undercounts or fails to recognize at all certain significant cost categories. These differences are apparent by comparing Sirius Exhibit 58 with Butson's rebuttal model. For example, Mr. Butson properly includes a line item for revenue share with Sirius' OEM partners. However, presumably as a result of his admitted failure to review the OEM contracts at issue (*see* 8/28/07 Tr. 12:7-13:1 (Butson)), Mr. Butson understates the amount of the revenue share for every year of the license term, and particularly in the outer years. *Compare* Sirius Exhibit 58 "revenue share" line item (cumulatively over the course of the license term) *with* Butson WRT, App. A at 1 (revenue share line item cumulatively during license term, or \$55 million less); *see also* 8/15/07 Tr. 101:11-103:10 (Frear).

764. Mr. Butson's model also omits line items for advertising revenue share (over the course of the license term, per Sirius Exhibit 58), and "residuals" paid to retail marketers such as Circuit City and Best Buy (cumulatively over the term of the license agreement, per the same exhibit). When questioned on cross-examination concerning these line items, Mr. Butson admitted that he "couldn't tell you" where they were; he dismissively suggested that "these are very small numbers." 8/28/07 Tr. 13:2-22 (Butson). However, even as to these three items alone (OEM revenue share, advertising revenue share, and residuals), the difference between Exhibit 58 and Mr. Butson's model omitting the latter two items and understating OEM revenue share amounts to over over the term of the license. *See also* 8/15/07 Tr. 125:13-126:3 (Frear).

(4) The SoundExchange Rate Would Threaten Sirius' Liquidity.

765. Mr. Butson's models in general, as well as his specific claim that Sirius is "fully funded," depend on the unsubstantiated assumption that Sirius will be able to refinance its convertible notes when they become due in 2009 and 2011 (as well as all other maturing debt) at a rate no higher than 10%. *See* Butson WRT at 17 ("I have conservatively assumed that all maturing SDARS' bonds will be refinanced at 10 percent"). Sirius has 2-1/2 percent convertible notes due in 2009 in the amount of \$300 million, with a conversion price of \$4.41 per share. SIR Exhibit 57 at 14. Additional convertible notes in the amount of \$230 million are due in 2011, with a conversion price of \$5.30 per share. *Id.* At the time of trial, and continuing today, Sirius' stock price has been well below the conversion price for the 2009 and 2011 notes. *See, e.g.,* 8/15/07 Tr. 108:22-109:4 (Frear) (stock price approximately \$2.80) 8/27/07 Tr. 336:16-337:7 (Butson) (stock price approximately \$3.00). Thus, this \$530 million of convertible debt presently is not in a position to convert, and will not be unless the stock rises significantly before the debt matures in 2009 and 2011.

766. There are "no analysts out there who are projecting a significant rate increase ... anywhere near the magnitude that SoundExchange is proposing ... if a rate like that is imposed, you'll see a dramatic drop in the price target ... and at that point, there's going to be a real problem." 6/13/07 Tr. 227:22-228:8 (Musey). Notably, notwithstanding his statements regarding the likelihood of future conversion, Mr. Butson failed to calculate a target stock price from his discounted cash flow model applying the SoundExchange rate proposal (Appendix A), even though he routinely did so as an analyst and could have done so here. 8/27/07 Tr. 340:15-341:7 (Butson).

767. The poor financial metrics that would result from adoption of the SoundExchange proposed rates (or anything close to them), and the effect that this would have on attempting to refinance debt, were explained by David Frear in uncontradicted testimony:

[Mr. Butson] makes the assumptions that we will have ready access to the capital markets to simply refinance \$780,000,000.00 of debt that's coming due within the license term, and yet when you look at the SoundExchange proposal run through our model, I'm hard pressed to figure out what capital market would accept it, if there's no[t] [a] point in the six year term of the license where our EBITDA, which in the debt markets is a commonly used measure that people like to compare to your interest expense to *see* if you generate enough pre-tax earnings to pay your interest and ... our EBITDA will barely get to covering half of the interest burden of the company by the end of the license term.

And another important measure that the – the capital markets look at is a leverage ratio which is the total debt to the EBITDA and, ... that number ... in the last year of the license term will finally break 20 times.

... a very highly leveraged deal ... Clear Channel for instance, ... is maybe in the seven to nine times range.

And so that I'm looking at credit statistics that after 25 years of raising money in a lot of different capital markets, up markets, down markets, big deals, small deals, public and private, I don't know where you'd go to get money with those kinds of statistics.

8/15/07 Tr. 127:21-129:11 (Frear) (emphasis added). Mr. Butson's report discloses no analysis of the pertinent ratios to support his assumption that the debt could be easily refinanced.

768. Other testimony confirms that SoundExchange's proposed rates would cause a significant decline in the Services' debt coverage ratios:

Q: So looking at these tables, can you tell us what the effect would be if SoundExchange's proposed rates on the service's debt cover[age] ratios?

A: The debt cover[age] ratios would deteriorate dramatically in my view.

Q: And what effect would that have on the company?

A: The company is significantly challenged in borrowing money as it is. With that kind of a increase in their cost structure, I think it would be extraordinarily difficult for them to raise money. I would actually suggest that not only the ability to raise money but just it would deteriorate their operating results to the point where I would think that their viability would be severely challenged.

6/13/07 Tr. 184:18-185:13 (Musey).

769. Even without the hindrance of a significant rate increase, both Sirius and XM already have credit ratings below investment grade:

Q: On that note, how are the SDARS currently perceived by creditors in the major credit ratings agencies?

A: The debt of both companies is rated below investment grade by the major debt rating agencies, Standard and Poors, in particular. That's commonly known as a junk rating which essentially implies that there's very high risk that the company will not be able to pay back their debt, particularly unless there's a substantial improvement in the operating performance of the companies.

Q: Are there any restrictions in the secondary debt markets on investors buying into – investing?

A: Sure, the other issue is when an investment rating falls below investment grade, there's a number of financial institutions, a very significant chunk of financial institutions who are not allowed to buy that security of that company. Essentially they have internal prohibitions against buying debt securities that are rated below investment grade and that makes it harder to raise debt. It also increases the cost because your pool of potential investors has been significantly narrowed.

6/13/07 Tr. 145:10-146:14 (Musey).

770. Mr. Butson's claim with respect to liquidity also depends on his assumption (not supported by any specific analysis) that an end-of-year cash low point of less than \$41 million is sufficient for a company with revenue and costs each exceeding \$1 billion. *See* Butson WRT, App. A at 2 ("liquidity" reaching \$40,482,000

in 2009). This assertion has been specifically refuted by David Frear. *See* Frear WRT ¶ 23 (explaining necessity of a larger cash reserve, given volatility of industry and cash needs of company).

771. Mr. Butson's previous claim that Sirius was "fully funded" has already proven to be misguided. In his Written Direct Testimony, Mr. Butson claimed that Sirius was sufficiently liquid because it would have \$9 million in available cash after covering the free cash flow losses anticipated in his model. Butson WDT at 23. However, he conceded during his testimony in the rebuttal case that, because revenue was so much less than anticipated due to slower subscriber growth, that \$9 million would not have sufficed to maintain Sirius' liquidity if the SoundExchange rates were adopted. 8/27/07 Tr. 330:7-331:19 (Butson). In addition, it is undisputed that, notwithstanding Mr. Butson's claims that Sirius was fully funded, Sirius, in fact, recently obtained \$250 million in additional cash from Morgan Stanley. *See* 8/27/07 Tr. 271:1-3 (Butson); 8/15/07 Tr. 132:3-134:2 (Frear). However, in order to do so, Sirius was required to provide a security interest in essentially all of the assets of the company. *See* 8/15/07 Tr. 133:1-134:2 (Frear).

b. The Disruptive Effects of the SoundExchange Rate on XM Would Be Even Worse than Shown by Mr. Butson's Model.

772. As with Sirius, although Mr. Butson's model itself demonstrates the disruptive effect of SoundExchange's proposed rates, his model actually understates the disruptive effect on XM because of Mr. Butson's many unreliable assumptions and omissions concerning XM's debt and liquidity.

773. Today XM already is a highly leveraged company, carrying \$1.5 billion in debt that it must extend or refinance. Vendetti WRT ¶ 15. XM's debt constitutes approximately 77 percent of the value of XM's total assets. Vendetti WRT, Ex. 2 at 5, 14. During the license term, XM must repay or refinance \$428 million in debt obligations and make at least \$189 million in payments under the capital lease related to the XM-4 satellite. Vendetti WRT, Ex. 1 at F-25 and F-26 (describing XM's \$400 million 1.75 percent Senior Convertible Notes due in 2009 and \$28.4 million 10 percent Senior Discounted Convertible Notes also due in 2009); Vendetti WRT, Ex. 2 at 14-15 (describing XM's obligations under the XM-4 capital lease). In addition to its existing debt, XM also has available \$400 million in revolving credit facilities that were put in place as temporary liquidity back-stops, which will terminate in 2009. 8/15/07 Tr. 49:20-50:3 (Vendetti); Vendetti WRT, Ex. 1 at F-26 and F-27 (setting forth the key terms governing these facilities).

774. XM's outstanding bonds and its revolving credit facility bear a below investment grade or "junk" credit rating by the leading credit rating agencies. Vendetti WRT ¶ 15; 6/6/07 Tr. 36:3-7 (Vendetti). See 6/13/07 Tr. 145:13-21 (Armand Musey testifying that a junk rating "essentially implies that there's very high risk that the company will not be able to pay back their debt, particularly unless there's a substantial improvement in the operating performance of the companies."). The 2009 maturities of XM's existing debt and the forthcoming payments under the XM-4 satellite capital lease exert enormous pressure on XM to demonstrate to the market that it can control its costs and eventually reach profitability so that XM might obtain new debt facilities to refinance the \$428 million in maturing bonds. Vendetti WDT ¶ 7; Vendetti WRT ¶ 15.

775. As a result of adding over \$1 billion in additional costs to XM's cost structure during the license period, Mr. Butson adds an additional \$400 million in debt to XM's capital structure, without which, Mr. Butson admits, XM would be broke. 8/28/07 Tr. 25:13-26:21 (Butson). In other words, in order to support SoundExchange's exorbitant rate proposal, Mr. Butson would have XM increase its total debt burden from \$1.5 billion in 2006 to \$1.9 billion in 2009. *Id.*

776. Mr. Butson accomplishes this in a fashion that misapprehends the nature of the credit facilities available to XM. He draws the full \$150 million available under XM's revolving credit facility with General Motors and the \$250 million available under XM's revolving credit facility with a syndicate of banks, both of which expire in 2009. Butson WRT, App. B at 2-3. Although these revolving credit facilities were meant to serve as liquidity back-stops and were not intended to be translated into long-term debt, Mr. Butson has XM maintaining the \$150 million revolver with GM on its books from 2008 through 2012 and the \$250 million bank revolver from 2009 through 2011. Butson WRT, App. B at 2-3.

777. Mr. Butson makes the dubious assertion that XM's maturing debt facilities are guaranteed to be refinanced. Butson WRT at 17. Under Mr. Butson's projections, XM must refinance in 2009 its existing \$428 million in bonds in addition to the \$400 million in new debt Mr. Butson has XM borrow under its two revolving credit facilities to pay for SoundExchange's rate proposal. Butson WRT, App. B; 8/28/07 Tr. 34:16-22 (Butson). Thus, Mr. Butson assumes that in 2009 XM will be able to refinance \$828 million in debt – including \$400 million in newly acquired debt – while

accruing net losses exceeding \$1.1 billion and free cash flow losses of \$593 million in the preceding two-year period (2007-2008). *See* Butson WRT, App. B.

778. Mr. Butson's assumption that XM's worsening credit profile would not present a refinancing risk is not realistic. As Mr. Vendetti explained in his rebuttal testimony, Mr. Butson's model has XM assuming an additional \$400 million in debt because of a dramatically higher sound recording royalty fee that would push out XM's ability to even begin turning a profit to 2015 at the earliest. 8/15/07 Tr. 45:18-47:18 (Vendetti). Under this worsening credit scenario, it is not realistic to assume that XM would be able to refinance its existing and projected debt obligations in 2009, let alone survive as a going concern. *Id.*

779. Aside from ignoring XM's credit risk, Mr. Butson assumes that XM's maturing debt obligations will be refinanced irrespective of prevailing market conditions in 2009. Butson WRT at 17. This is an assumption that Mr. Butson recognized as having been proven false as recently as the weeks preceding his oral rebuttal testimony due to the crisis in the credit markets caused by the collapse of the subprime-mortgage market. 8/28/07 Tr. 38:7-16 (Butson); SDARS Ex. 93.

780. Mr. Butson's glib assumptions cannot mask the fact that XM's ability to refinance its current debts and the availability of additional capital are contingent on unknowable future market conditions as well as on the company's ability to demonstrate that its costs can be controlled and that XM is on a reasonable path to profitability. Vendetti WRT ¶ 15; 6/5/07 Tr. 355:11-21 (Vendetti); 6/6/07 Tr. 17:18-18:7 (Vendetti). The financial posture that would result from imposition of SoundExchange's proposed royalty structure would demonstrate exactly the opposite: a company laden with billions

of dollars in net losses and hundreds of millions in free cash flow losses with no prospect of turning the corner until 2015. 8/15/07 Tr. 45:18-47:18 (Vendetti).

781. Further, Mr. Butson inflates his XM free cash flow projections by making certain erroneous assumptions concerning XM's interest payments on its revolving credit facility with General Motors and XM's payment obligations under its capital lease agreement related to the XM-4 satellite. Specifically, he has XM drawing down in full its \$150 million revolving credit facility with General Motors from 2008 through 2012, but he does not have XM paying any interest on the loan. Butson WRT, App. B. However, all draws under the revolving credit facility bear interest at a per annum rate of LIBOR plus 8 percent or approximately 13.5 percent. Vendetti WRT, Ex. 1 at F-27. This would equate to approximately \$20 million in interest expense per year. Under the terms of the revolving credit facility, which expires in 2009, XM has the option of making interest payments in shares of common stock having a fair market value at the time of payment equal to the interest due. *Id.* When informed on cross-examination that his model does not indicate any interest payments on the GM revolver, Mr. Butson testified that in his model XM is paying the interest expense in common stock. 8/28/07 Tr. 40:17-41:6 (Butson). But there is no indication anywhere in his XM rebuttal projection model that the interest payment is being made in common stock.¹⁴

¹⁴ When questioned by Judge Wisniewski as to where the stock payment is reflected in his model, Mr. Butson explained “[w]ell, there’s paid in capital increases which makes me think that the share count is in there by I’m sorry, I’m not positive about that.” 8/28/07 Tr. 43:6-21. Examination of the electronic version of Mr. Butson’s XM rebuttal model, however, reveals that the “Additional paid-in capital” account increases as a result of XM’s stock based compensation, not the stock-based interest payments on the GM revolver.

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Moreover, he assumes that the revolving credit facility will be extended under the same terms in 2009, thus allowing XM to make interest payments in stock through 2012 as well. *Id.* at 41:7-14. In other words, his assumptions inflate XM's free cash flow by failing to account for \$20 million in interest payments per year for the period 2008 through 2012.

782. Mr. Butson also assumes that XM's full payment obligations under the capital lease agreement related to the XM-4 satellite do not have to be satisfied. 8/28/07 Tr. 45:21-46:22 (Butson). He has XM paying only the 10 percent interest due per annum on the \$230.8 million debt facility related to the larger capital lease. *See* Butson WRT, App. B at (showing on the balance sheet a \$230.8 million "debt of variable interest entity" that accrues interest at a rate of 10 percent per annum). But XM's capital lease obligations involve more than, and are distinct from, the related debt facility. Under the terms of the lease, XM is obligated to make payments totaling approximately \$437.4 million, of which \$126.6 million is interest, over the nine-year base lease term as follows: \$27.9 million in 2007, \$33.2 million in 2008, \$28.9 million in 2009, \$28.4 million in 2010, \$71.0 in 2011, and \$248.0 million thereafter. Vendetti WRT, Ex. 2 at 14-15 (setting forth the key terms governing the XM-4 capital lease). On cross-examination, Mr. Butson agreed that if these capital lease obligations had to be paid in the manner XM describes in its publicly disclosed SEC documents, then his free cash flow projections would have to decrease. 8/28/07 Tr. 46:16-22 (Butson).

6. A Sound Recording Rate Above Approximately Four Percent Would Threaten the SDARS' Viability and Liquidity.

783. As demonstrated above, the exorbitant rates proposed by SoundExchange are obviously disruptive, indeed disastrously so, for the SDARS. But even rates significantly below SoundExchange's proposal would be disruptive.

a. A Significant Increase in the Sound Recording Royalty, Which Would Diminish Anticipated Free Cash Flow and Delay Profitability Beyond Current Projections, Would Be Disruptive to the Companies in Their Present Fragile Financial Condition.

784. As the SDARS' financial expert, Armand Musey, explained in his direct testimony, it is essential for the companies to begin showing an improved financial performance in the very near term (*i.e.*, within the next two or three years):

Chief Judge Sledge: With your testimony about the valuation of the current situation on SDARS, and that an investor would only invest with expecting a brighter future, would an investor – would there be investments if the current ratio of revenue and expenses remains the same over the next five years?

The Witness: Probably not. Right now, there are losses. If those losses don't narrow in the next couple of years, I think you'll see – in fact, if losses were to stay the same for the next five years, the companies would have to raise, ball park here, they'd probably have to raise \$5 billion. I don't think there's that much appetite to invest in these companies at all. That's a calculation off the top of my head but it's not too far from the truth.

Their losses are going to have to narrow. Right now, they're expected to narrow and [reach cash flow] break even in you know, sort of the 2009 time frame sort of. But if you get to 2009 and they're still losing the kind of money they are now, that would be just an absolute disaster. I think you would be looking at liquidation in that scenario.

6/13/07 Tr. 228:10-229:14 (Musey).

785. Sean Butson confirmed the fundamental importance of the SDARS reaching a point where they generate positive free cash flow:

[F]or a company to remain liquid and provide a return to its investors, it is essential that the company generate free cash flow over the longer term. Free cash flow ultimately rewards investors for their investment in the business and it is what makes possible the return on equity built into the company's stock price.

Butson WRT at 14 (emphasis added). *See also* 8/27/07 Tr. 305:17-20 (Butson)

(reiterating in his oral testimony that generating free cash flow is essential to a company's success and survival).

786. Based on revenue projections submitted by the SDARS, it is apparent that each percentage increase in the sound recording royalty rate would add in excess of \$100 million in costs to each company over the course of the license term. 8/15/07 Tr. 64:7-65:3 (Vendetti); 6/11/07 Tr. 28:19-29:9 (Frear). Moreover, while the sound recording license provides a benefit to the companies, there is no additional benefit from the increased cost associated with a rate increase. *See, e.g.*, Musey WDT ¶ 10. There is no suggestion in the record that increasing the cost of the sound recording royalty would either increase the SDARS' subscribers and revenues or decrease expenses elsewhere. Indeed, the evidence shows that the companies are operating efficiently and could not offset a rate increase by making non-disruptive changes to the business. As Armand Musey testified:

Q: Now, Mr. Musey, in your expert opinion, can the services sustain an increase in the sound recording rate as a percentage of total revenue by offsetting the cost of the increase by improving any of these key business drivers?

A: I think it would be very hard if not impossible. These companies are losing a substantial amount of money. They're under enormous pressure to get to break even as fast as possible. Everything I've seen and heard suggests that they're operating as efficiently as they possibly can. I don't think there's an obvious place that they could improve their financial performance to offset an increase in

expense. An increase in expense would have to come out of the pockets of the company and the shareholders.

6/13/07 Tr. 178:22-179:17 (Musey); *see also* 8/22/07 Tr. 188:9-188:16 (Karmazin) (noting efforts to control expenses). Therefore, any increase in the sound recording royalty rate will increase expenses and decrease cash flow on at least a dollar-for-dollar basis.

787. Because of the magnitude of each percentage point increase, a significant increase in the sound recording royalty rate would significantly delay, if not jeopardize altogether, the companies' achieving financial profitability and long-term viability. *See* Musey WDT ¶ 9 ("If either Sirius or XM's royalty rates are increased and as a result, their EBITDA and cash flow break even points are delayed, their perceived growth rates, momentum and progress toward maturity will decrease. This would put further short and immediate term downward pressure on the stocks"); ¶ 72 ("[A]ny change in the cost structure for these firms that pushes out the time in which their breakeven milestone is reached could be expected to increase investors' risk perception. This, in turn, would raise the cost of capital for the firms and could destroy value for current investors, potentially far in excess of the actual dollar amounts that increased costs would extract").

b. An Increase in the Sound Recording Royalty Rates Above Four Percent Would Cut Sirius' Cash Reserves Below Required Levels and Further Impair Sirius' Liquidity Due to the Imminent Maturity of \$530 Million of Convertible Debt.

788. The effects of a potential rate increase on Sirius' liquidity are demonstrated most specifically by Sirius Exhibit 59, which shows sensitivities to changes in the SoundExchange royalty rate, particularly with respect to available cash to

finance ongoing operations. As noted in the third scenario (SoundExchange royalties at 0.88 percent of subscriber revenue, per the SDARS' original proposal), Sirius would reach its lowest level of cash in May 2009 at []. Under this scenario, Sirius would also have positive net income in [] and the following years.

789. If SoundExchange royalties are assumed to be 4.2 percent of revenue, the cash nadir of [] would be reached in November 2009. As David Frear testified, this is the minimum level at which Sirius could be considered fully funded as a public company of this size with substantial cash needs. Frear WRT ¶ 23; 8/15/07 Tr. 129:21-131:9 (Frear). He explained the reasons as follows:

Assumptions can change very rapidly ... you can be wrong on demand side, ... vendors can come in with different – different costs, the timing of working capital flows can change on you and ... capital markets may not be open to you on the day that you want to go.

So you've got to retain a highly liquid position with the business that's in these conditions, otherwise you end up in a place where you never want to be, in a speculative business who absolutely has to have the money which are the circumstances under which you are least likely to get it.

8/15/07 Tr. 131:11-132:2 (Frear) (emphasis added). Any smaller cushion would require Sirius to attempt once again to access the debt markets, a matter that has become much more difficult in recent months. See 8/15/07 Tr. 132:3-132:14 (Frear); *id.* at 137:18-135:5.

790. The available cash figures in Exhibit 59 (and also Exhibit 58) include the benefit of the \$250 million recently borrowed through Morgan Stanley. 8/15/07 Tr. 134:14;135:5 (Frear). In return for that \$250 million, Sirius was required to provide a security interest in virtually all of the assets of the company. *Id.* at 132:5-134:2. Sirius had not previously provided such a security interest to any creditor. *Id.*

791. The available cash figures on Exhibits 58 and 59 also assume that Sirius' maturing convertible debt will convert to equity and will not have to be refinanced when it comes due. 8/15/07 Tr. 109:5-111:4 (Frear). This is a critical assumption that, as discussed below, depends significantly on the rate set in this proceeding. In particular, the convertible debt creates a direct link between Sirius' stock price (which, as shown below, could be influenced significantly by the outcome of this proceeding) and Sirius' liquidity, which is integral to its survival as a going concern.

792. As reflected in Sirius Exhibit 57 at 14, a substantial portion of Sirius' debt that will come due during the license term is in the form of convertible notes. Most imminently, Sirius has 2.5 percent convertible notes due in 2009 in the amount of \$300 million. The conversion price on those notes is \$4.41 per share; Sirius' stock is presently well below that level and has been for some time. 8/15/07 Tr. 108:22-109:4 (Frear). If Sirius' stock price does not reach \$4.41 by February 2009 – sixteen months from now – these notes will fail to convert. In that event, Sirius would need an additional \$300 million in cash when these notes matured on February 15, 2009. 8/15/07 Tr. 110:15-111:4 (Frear). As reflected in Exhibit 59, that \$300 million would not be available.

793. An additional \$230 million in 3.25 percent convertible notes is due in 2011; these notes have an even higher conversion price of \$5.30 per share. SIR Ex. 57 at 14. If these notes likewise do not convert, it would also be necessary to find funding to repay that debt when it comes due. 8/15/07 Tr. 110:20-111:4 (Frear).

794. The rate set in this proceeding will have a direct impact on the prospects for conversion of these notes. It is undisputed that a significant rate increase

would cause industry analysts to rework their models, which would depress the target price of Sirius' stock and thereby decrease the likelihood that the notes would convert. 6/13/07 Tr. 139:7-139:17 (Musey) (rate increase would "lower the value of the stocks significantly. It would make it harder for the companies to raise additional capital"); *id.* at 218:22-219:12; Butson WRT at 10 ("no dispute about this point – any material increase in the SDARS' expenses not anticipated by the analysts will cause them to recalculate their target prices"); 8/27/07 Tr. 269:6-269:16 (Butson) (change in analysts' target stock price would affect companies if they needed to raise money). Thus, a rate increase above the level in the model would have direct and material effect on Sirius' liquidity, and could cause a significant liquidity problem.

795. Particularly in view of the slowdown in demand, Sirius is not in a position to offset the effect of a SoundExchange rate increase through a price increase, at least without a precipitous drop in demand that would likely cause overall revenue to fall. 6/12/07 Tr. 29:21-32:13 (Frear). Earlier this year, Sirius management was required to cancel a planned price increase – which would have been the first price increase in company history – in view of the unanticipated softening demand. 8/15/07 Tr. 90:15-90:20 (Frear); Frear WRT ¶ 13.

c. A Significant Increase in the Sound Recording Rate Could Cause Sirius To Fundamentally Change Its Business By Limiting Its Use of Sound Recordings.

796. As Professor Noll testified, another test of disruption is whether the rate would cause the SDARS to alter the nature of the product significantly. 8/16/07 Tr. 72:1-76:7 (Noll). As he explained:

What I'm saying is if in response to a very high rating, suppose that the rate were set so high that a satellite radio company simply couldn't survive

relying on recorded music for 45 percent or 40 percent or whatever of its content, alright? The only way it could survive would be vastly to cut back on its use of sound recordings for the purpose of reducing licensing costs. So it went from 65 to 70 channels of recorded music to 10 and increasing other kinds of content. That would fundamentally change the business practices of the satellite radio industry, even if it retained financial viability.

So putting it out of business is not the only test. The second test is does it change fundamentally its business model in a way that has an effect on consumers that is detrimental.

Id. at 75:4-76:7 (emphasis added).

797. Mr. Butson conceded that effects on consumers would be indicative of disruption. Butson WRT at 11 (“if the proposed royalty rate resulted in the SDARS reducing the quality of their services by cutting expenses this could be considered disruptive to users depending on the nature of the reductions”).

798. If, in fact, the rate were set at a level that would hinder the future profitability of the business, Sirius would be required to cut back its use of sound recordings in order to mitigate the resulting financial distress. As Mel Karmazin testified regarding the impact of a high rate:

Well, I think it would be unbelievably disruptive for us to do this, but I think what would happen, would be that we would just have to dramatically scale back on the music programming that we offer. And that we would replace the music with content that would not be as easily available anywhere else, and that, though it would be disruptive for us, we would – I would feel at Sirius that I would have to make those changes.

6/6/07 Tr. 311:3-311:12 (Karmazin). *See also* 6/12/07 Tr. 30:21-32:13 (Frear). If Sirius were to cut-back dramatically on the performance of sound recordings due to the setting of a rate higher than four percent, this would constitute a “disruptive impact . . . on generally prevailing industry practices.” 17 U.S.C. § 801(b)(1)(D).

d. A Significant Increase in the Sound Recording Royalty Would Impede, If Not Derail Altogether, XM's Positive Momentum Towards Financial Stability and Liquidity.

799. XM's nascent, start-up business is currently growing in the right direction. Industry analysts project that with its existing cost and debt structure, XM will post its first positive earnings in 2011 and its first positive free cash flows in 2009, while paying the record labels in excess of one hundred million dollars in sound recording royalty fees over the course of the license term.¹⁵ Despite this forward momentum, however, XM still faces enormous financial challenges over the next several years. In addition to projected losses in excess of \$1 billion prior to 2011, Vendetti WRT, Ex. 4, XM must repay or refinance \$428 million in bonds maturing in 2009 and make \$189 million in capital lease payments through 2011. Vendetti WRT, Ex. 1 at 14; Vendetti WRT, Ex. 2 at 15. If in 2009 market conditions permit a company with XM's credit rating to refinance its maturing debt obligations,¹⁶ the refinancing will likely only be achieved at the cost of an interest rate of 12 percent or more, the prevailing rate paid by similarly situated companies with junk credit ratings. Vendetti WRT ¶ 15.

800. Given the financial challenges XM faces even at current levels of sound recording performance royalty payments, were a royalty rate significantly higher

¹⁵ The SDARS' fee proposal estimates that over the license term SoundExchange will earn \$251 million from XM and Sirius. *See* SDARS' Second Amended Rate Proposal.

¹⁶ *See* SDARS Trial Exhibit 93 (Wall Street Journal article dated August 7, 2007 that market conditions can even foreclose refinancing options to companies with investment grade credit ratings, let alone companies with below investment grade ratings, such as XM).

than the two percent figure budgeted by XM to be imposed, it could impede, if not permanently derail, XM's prospects for achieving economic viability. Vendetti WRT ¶ 15; 6/5/07 Tr. 355:11-356:5 (Vendetti). Looking at revenues over the license period from the analyst consensus projections reveals that every one percentage-point increase in the sound recording rate beyond that incorporated in the estimates would generate \$111.6 million in additional sound recording fees over the six-year license term.

Vendetti WRT ¶ 15; 8/15/07 Tr. 44:17-45:12 (Vendetti). These costs would have to be absorbed by XM in an environment in which XM is under considerable pressure to demonstrate to the market that it can control its costs and eventually reach profitability and cash flow breakeven. *See* 6/13/07 Tr. 179:7-10 (Musey) (explaining that XM "is losing a substantial amount of money" and "is under enormous pressure to get to [cash flow] breakeven as fast as possible"). Rates double those that have prevailed to date – *i.e.*, at around four percent of revenue – would begin to push the limits beyond which XM's viability would be endangered. As Mr. Vendetti explained:

Again, if the royalty rate in this proceeding is set much higher than the rates we have talked about, it will clearly impact XM's path to profitability at a time where . . . XM lost 700 million dollars in 2006. It will continue to incur losses in the short-term. At the same time it starts to have significant debt repayments due. And you put all of those together and it just creates a risky situation for the company.

6/5/07 Tr. 355:11-355:21 (Vendetti); *id.* 357:12-358:21 (explaining that XM could absorb a four percent rate if it meets the other elements of its business plan, even though it would be a significant increase over XM's budget). Moreover, of the several royalty rate sensitivity cases SoundExchange's expert, Mr. Butson, ran in his XM projection model, only the lowest sensitivity case, a flat rate of four percent for the license term, yielded net positive free cash flows over the six-year license period as a whole. Butson WRT at 18,

Apps. B, E. Thus, the record evidence demonstrates that a sound recording rate of approximately four percent is a ceiling, above which XM would not be able to generate the cash flows and profitability necessary for its economic viability.

7. The Structure of SoundExchange's Fee Proposal Would Destroy Any Incentive To Attract New Subscribers.

801. Although dwarfed in significance by the rates themselves, disruption is also caused by the subscriber-based escalation clause in the SoundExchange rate proposal, which increases the royalty rate applicable to all revenue (not just incremental revenue), when each threshold is met. As Professor Noll explained in his Written Rebuttal Testimony:

[T]he amended rate proposal from SoundExchange has a peculiar feature that will reduce availability. The proposed schedule increases the rate as satellite radio achieves higher penetration. The peculiar feature is that each new rate at each step in the schedule applies to all prior subscribers, not just incremental subscribers. Thus, as an SDARS operator crosses each threshold, its total payments jump dramatically.

Noll WRT at 42-43 (emphasis in original). The disruptive, disincentivizing effects of this feature of the SoundExchange proposal were quantified by Professor Noll in his written testimony. *See id.* at 43; *see also* 8/16/07 Tr. 158:8-159:3 (Noll) (correcting typographical error in chart).

802. Professor Noll further explained the disruptive effect of the SoundExchange proposal:

The proposal by SoundExchange has a starker version of the proposal by the satellite radio company of basing the fee on subscribers. It has instead of this sort of smooth linear function that the satellite radio companies [propose,] it's a step function and the property of the step function is when you go from like 10,999,999 to 11 million, you increase the price on the entire 11 million and that creates a one-time loss per month. And you keep experiencing losses per month until your further expansion of subscribers multiplied by the net revenue per subscriber gets to be enough

for the incremental subscribers that it offsets the hit you took on the previous 11 million.

And what this table [Noll WRT at 43] does is calculate where in the interval you sort of break even. As long as your number of subscribers is lower than the number in the table in this last column, your monthly impact from hitting the step exceeds the benefit you're getting from having more subscribers and the property that this thing has according to the old rates, right, is that once you get close to 15 million all increments to subscribers until you get in the range of 21.5 to 22 million, all right, go to the record company. That is to say the satellite radio companies derive no net financial, no significant net financial benefit, from any range of subscribers between 14,999,999 until they get way past 20 million. That entire range for each company, the incremental subscribers, all the revenue from them is absorbed by – all the net revenue over variable cost is absorbed by the record companies.

And, of course, this is terrible for both sides I might add because it just ends the incentive. If you're getting a significant royalty from satellite radio, you want it to want to grow subscribers. Having a fee schedule that doesn't give it any incentive to have more subscribers is actually harmful to both sides and it would, of course, provide complete disincentive for the satellite radio company to improve its product, add new content, whatever.

8/16/07 Tr. 159:4–161:8 (Noll).

803. SoundExchange's Third Amended Rate Proposal provides the same disincentive and disruption.

VI. DESCRIPTION, CALCULATION, AND RATIONALE FOR THE SDARS' FEE PROPOSAL

804. The SDARS propose a royalty rate of \$1.60 per Play for 2007. For 2008 and each subsequent year of the license period, the royalty rate would be adjusted by a percentage equal to the percentage change in combined SDARS subscribers during the preceding year. For example, if the number of combined SDARS subscribers at the end of 2007 will have increased twenty percent from year-end 2006, the royalty fee for 2008 would increase by twenty percent, to \$1.92 per Play.

805. The SDARS' rate proposal and supporting terms were developed in the direct- and rebuttal-phase testimony of Dr. Woodbury and are corroborated by a variety of other evidence. As described in more detail in the following sections, Dr. Woodbury calculated his per-Play proposal based on the combined 2006 revenues of the SDARS, arriving at a recommended fee of \$1.20 per Play for the first year of the license period. The SDARS have further amended their rate proposal (a copy of which is provided in Appendix A to take account of their projected 2007 revenues; applying Dr. Woodbury's exact methodology to this higher revenue base results in a fee of \$1.60 for 2007, rising in subsequent years based on subscriber increases as described above.

A. Key Terms And Definitions

806. "Play" Defined. Under the SDARS' proposal, "Play" is defined as "each instance in which any portion of a sound recording is transmitted by a preexisting satellite digital audio radio service, regardless of the number of listeners who tune in or listen to the transmission, but excluding the following:

- (1) A transmission of a sound recording that does not require a license (e.g., a sound recording that is not copyrighted);
- (2) A transmission of a sound recording for which the service has previously obtained a public performance license from the copyright owner of such recording; and
- (3) An incidental performance that both:
 - (i) makes no more than incidental use of sound recordings including, but not limited to, brief musical transitions in and out of commercials or program segments, brief performances during news, talk and sports programming, brief background performances during disk jockey announcements, brief performances during commercials of sixty seconds or less in duration, or brief performances during sporting or public events; and
 - (ii) other than ambient music that is background at a public event, does not contain an entire sound recording and does not feature a

particular sound recording of more than thirty seconds (as in the case of sound recording used as a theme song).”

807. The definition of “Play” in the SDARS’ proposal tracks, word-for-word, the definition of “performance” adopted by the Copyright Royalty Judges in the recent webcasting proceeding, except that it defines a Play as a single transmission of a sound recording by XM or Sirius without regard to the number of listeners. *See* Copyright Royalty Board, Digital Performance Right in Sound Recordings and Ephemeral Recordings: Final Rule, Docket No. 2005-1 CRB DTRA, 72 Fed. Reg. 24,084, 24,111 (May 1, 2007) (hereinafter “Webcasting II”) (codified at 37 C.F.R. § 380.2(i)); 8/23/07 Tr. 74:19-75:19 (Woodbury). The SDARS’ definition of “Play” is also consistent with the interim reporting regulations that have governed section 114 statutory licenses since April 2004, which recognize that services unable to track “Actual Total Performances” (performances to individual listeners) instead could report “Play Frequency” data to SoundExchange. *See* Library of Congress, Notice and Recordkeeping for Use of Sound Recordings Under Statutory License, 69 Fed. Reg. 11,515, 11,525, 11,529-30 (Mar. 11, 2004) (codified at 37 C.F.R. § 270.3(c)(2)(vi)) (distinguishing “plays” from “performances”),¹⁷ *see also id.* at 11,528-29 (codifying, at 37 C.F.R.

¹⁷ The Notice read as follows: “[I]t is necessary for services that elect not to report Actual Total Performances to report the number of times each sound recording is played during the two week reporting period. Play Frequency is different than performance data. According to the definition of “performance” in 37 CFR 262.2, a sound recording is performed each time a listener receives at least some portion of the sound recording. A sound recording that is received in some part by 10 listeners constitutes 10 performances of that sound recording. In contrast, “played” simply means the overall number of times a sound recording is offered, regardless of the number of listeners receiving the sound recording. If a particular sound recording is offered to listeners on a particular channel or program only once during the two-week reporting period, then it is only “played” once and the Play Frequency is one. Likewise, if the

270.2(e), the requirement that preexisting subscription services report only “intended playlists” with each sound recording to be transmitted, regardless of number of listeners); Copyright Royalty Board, Notice and Recordkeeping for Use of Sound Recordings Under Statutory License, 79 Fed. Reg. 59,010 (Oct. 6, 2006) (electing to have interim reporting regulations remain in effect); 8/23/07 Tr. 79:5-80:9 (Woodbury) (describing the current practice of SoundExchange to distribute SDARS royalties to record companies and artists based on “plays” independent of the number of listeners). Because the satellite radio is a one-way transmission system, the SDARS are unable precisely to track the number of people listening to each transmission of a sound recording, this definition should be adopted by the Judges in this proceeding as well. 8/23/07 Tr. 75:7-19 (Woodbury); Woodbury WRT ¶ 51.¹⁸

808. The exclusion of incidental performances within the definition of “Play” is likewise consistent with longstanding practice and has governed the measurement of performances made under section 114 statutory licenses since 1998. It was the definition adopted by the CARP and affirmed by the Librarian in the first webcasting proceeding. *See* Library of Congress, Determination of Reasonable Rates

sound recording is offered 10 times during the two-week reporting period, then it is “played” ten times and the Play Frequency is 10.” 69 Fed. Reg. 11,525.

¹⁸ Should the Judges nonetheless determine that a fee keyed to performances to individual listeners is warranted, Sirius and XM will, of course, take the steps necessary to develop a practical means (necessarily somewhat imprecise) for tracking (and reporting) such data. Developing a protocol for such tracking, however, is a process that would likely take significant time and resources.

and Terms for the Digital Performance of Sound Recordings and Ephemeral Recordings, 67 Fed. Reg. 45,240, 45,273 (July 8, 2002) (codified at 37 C.F.R. § 261.2). It was then adopted by the webcasters and RIAA/SoundExchange as part of the 2003 settlements between those parties. *See* Library of Congress, In the Matter of Digital Performance of Sound Recordings and Ephemeral Recordings, 69 Fed. Reg. 5693, 5696 (Feb. 6, 2004) (codified at 37 C.F.R. § 262.2(j)). As mentioned above, most recently, the exclusion of incidental performances was part of the regulations adopted by the Copyright Royalty Judges in Webcasting II to govern webcasters through 2010, *see* 37 C.F.R. § 380.2(i). Moreover, as described in more detail below, *see infra n.8*, SoundExchange has presented no evidence that incidental performances have any independent economic value that would justify a departure from the established definition.

B. The Analytic Framework For Rate-Setting In This Proceeding

809. As described by Dr. Woodbury, the task before this Court is to establish reasonable rates for the SDARS' transmissions of sound recordings for the period 2007-2012 that comport with the statutory prescriptions set forth in 17 U.S.C. §§ 114(f)(1)(A) and (B). Those provisions of law (i) require that the Judges set royalty rates that reflect the policy objectives contained in section 801(b)(1) of the Act, and (ii) identify as especially probative the rates that have been arrived at in voluntary license agreements for comparable types of subscription digital audio transmissions similarly subject to section 114(f)(1)(A) ratemaking.

810. Both sides' economists adopted a benchmarking approach to rate-setting here – identifying one or more benchmark rates said to form a suitable starting point for comparison to the rates to be established here, and then suggesting what

adjustments, if any, were warranted to such benchmarks to account for distinct factual, economic or legal circumstances presented here. *See, e.g.*, Woodbury AWDT at 3-4; Pelcovits WDT at 9-14; Pelcovits AWDT at 4-11; Ordoover WDT at 34-52.

SoundExchange's own expert, Dr. Pelcovits, identified as an ideal benchmark a service that features transmissions of music and a similar listening experience for end users; rates resulting from bargaining between the same buyers and the same sellers for the same copyright rights in both the benchmark and target services; and rights valued pursuant to the same legal standard for both the benchmark and target services. *See* 7/9/07 Tr. 113:6-122:17 (Pelcovits) (discussing his written testimony and choice of benchmarks in Webcasting II). He also agreed that the Judges should have "sufficient data about the benchmark market," that it is "important that a benchmark market be a stable market with abundant and robust pricing data," and that "one needs to be careful not to construct a benchmark rate from what might constitute an outlier." *Id.* at 122:18-124:12; *see also* Noll WRT at 90-91 (suggesting similar benchmark criteria).

811. Dr. Woodbury and Professor Noll additionally observed that for a benchmark to be viable, it must be adjusted to account for the potentially different cost structures of the licensed entities. In a competitive market, prices charged by music services will converge to average cost of service, and price differentials among the services will be due to differences in average cost. Noll WRT at 110. If one fails to consider differences in cost between the benchmark and target services – including whether distribution and reception device costs are borne by the music service as opposed to existing telecommunications channels – one risks overestimating the appropriate royalty fee for the target service. *Id.* at 93. Any procedure for establishing an SDARS

rate that is based on the assumption that the SDARS' performance rights fees can stand in the same proportion to total revenues or total costs as benchmark rates for services not providing distribution infrastructure or end-to-end service is sure to overestimate the appropriate rate. *Id.* at 111; *see also* Woodbury WRT ¶¶ 65-66 (explaining how the economic relationship between input costs and demand elasticity requires a lesser royalty payment for the SDARS, as a percentage of revenue, than for other services with much lower costs of delivery).

C. The Prior Agreement Between SoundExchange And The SDARS

812. As described in more detail in the SDARS' Conclusions of Law at Part V, 17 U.S.C. § 114(f)(1)(B) states that the Judges "may consider the rates and terms for comparable types of subscription digital audio transmission services and comparable circumstances under voluntary license agreements described in subparagraph (A)." The "voluntary license agreements" described in subparagraph (A) are licenses for the performance of sound recordings negotiated by preexisting subscription services like Music Choice and by the SDARS themselves. *Id.* § 114(f)(1)(A). It is only logical that the statute would so prescribe. The most likely source of useful benchmarking data is likely to be found in agreements entered into between the same seller (SoundExchange) and either the same user as is before the Judges or other users similarly subject to the policy determinants of the section 801(b)(1) standard.

813. Here, there does in fact exist a prior negotiated agreement between the SDARS and SoundExchange, entered into in 2003. Notwithstanding that the terms of that agreement stipulated that the negotiated rates would not be used as evidence in a subsequent proceeding such as this, SoundExchange, evidently believing it to be

probative and perhaps to its litigation advantage, elicited the core economic terms of that agreement during the trial of this proceeding. *See* 6/6/07 Tr. 16:5-8 (Vendetti); *see also* 6/12/07 Tr. 192:6-22 (Frear) (eliciting testimony on redirect without objection); 8/15/07 Tr. 80:13-17 (admitting, over SoundExchange's objection, testimony revealing prior SDARS royalty rate). The resulting testimony revealed a rate equivalent to approximately 2.0% to 2.5% of the SDARS' revenues. 6/6/07 Tr. 16:5-8 (Vendetti); Frear WRT ¶ 24; *see also* 6/12/07 Tr. 192:6-22 (Frear). As later discussed, this rate, if the Court determines to consider it, is one of a series of benchmarks that establish a range of reasonable rates within which the outcome of this proceeding should fall. Given section 114(f)(1)(B)'s invitation to the Copyright Royalty Judges to favorably consider comparable agreements voluntarily arrived at – here, by the very same parties – the probative value of the 2003 agreement and the unreasonableness of the SoundExchange rate proposals becomes all the more manifest.

D. Apart From The Parties' Own Prior Dealings, The PSS Rate Is The Best Benchmark For Rate Setting In This Proceeding.

814. Beyond the SDARS' own prior agreement, there is only one other "voluntary license agreement" falling within the ambit of comparable license agreements entered into by preexisting subscription services: the 2003 agreement between the RIAA and DMX, Muzak, and Music Choice that forms the basis for Dr. Woodbury's principal ratemaking benchmark. *See* Woodbury AWDT at 12-13; 6/12/07 Tr. 243:3-244:2 (Woodbury). The starting point for the SDARS' rate proposal is the rate of 7.25% of gross revenues paid by the preexisting subscription services (PSS) as a result of that agreement. *See* Woodbury AWDT at 12-13; 37 C.F.R. § 260.2(b) (hereinafter the "PSS

rate”). This rate has a number of benefits that make it the best benchmark for rate-setting in this proceeding outside of the parties’ own prior dealings.

1. The PSS Benchmark Is Favored by the Governing Statute.

815. Apart from the SDARS’ own prior 2003 agreement with SoundExchange, the PSS rate, as noted, is the only voluntary license agreement of the type singled out by section 114(f)(1)(B) of the Act as of potentially probative value here. This fact in and of itself lends prima facie significance to the PSS rate as the appropriate benchmark.

2. The PSS Benchmark Agreement Involves a Similar Service, the Same Works, Same Copyrights, and Same Sellers as the SDARS Statutory License.

816. The PSS benchmark is the only benchmark offered in the proceeding for a comparable multi-channel noninteractive music service with the same seller, same limited scope of rights, same works, and the same 801(b)(1) rate-setting standard as the statutory license at issue here.¹⁹ 6/12/07 Tr. 240:20-241:9; 243:3-17 (Woodbury); 8/23/07 Tr. 45:5-12, 137:2-139:9 (Woodbury). Like the SDARS, the PSS package a large number of commercial-free, pre-programmed, genre-based, noninteractive music channels in a subscription service that they uplink via satellite for distribution. Woodbury AWDT at 12; 6/12/07 Tr. 250:19-251:18 (Woodbury). These similarities alone distinguish the PSS benchmark from other programs and services offered as benchmarks by SoundExchange in this proceeding, such as Howard Stern and direct

¹⁹ Set forth as Appendix B to this filing is a chart comparing the various benchmarks proposed by the parties against a listing of criteria for what constitutes good benchmarks as testified to by Dr. Woodbury. See 8/23/07 Tr. 135:17-139:12 (Woodbury).

broadcast satellite television (DBS), neither of which involves payments for music, much less sound recordings. *See* Pelcovits WDT at 9-14; Pelcovits AWDT at 4-11; Ordoover WDT at 38-43. Likewise, the PSS services are more akin to the SDARS than are interactive subscription music services, which, as their name suggests, allow users to stream individual tracks repeatedly and on-demand and provide additional rights necessary to conditionally download tracks to the users' computers or portable device – functionality akin to owning copies of the tracks.²⁰ *See* 8/23/07 Tr. 137:2-139:9 (Woodbury); Woodbury WRT at 33 n.51.

817. The PSS benchmark license used by Dr. Woodbury also involves the exact same types of works and copyrights as the license at issue in this proceeding – namely, the non-exclusive rights to publicly perform a sound recording by digital audio transmission under the limitations of the section 114 statutory license and to make ephemeral recordings in furtherance of such performances – and the same seller of the rights (the record companies). 6/12/07 Tr. 243:3-244:2 (Woodbury). Again, this combination of features distinguishes the PSS benchmark from SoundExchange's proffered benchmarks, all of which involve either different sellers (Howard Stern and other non-music content providers), different or additional rights that inflate the value of the license (such as reproduction of a track on a user's computer or portable device, exclusivity, and branding rights), or works other than sound recordings (videos and other audiovisual programs, live non-music programming, etc.). *See* 8/23/07 Tr. 128:17-135:15 (Woodbury).

²⁰ The shortcomings of these SoundExchange benchmarks are discussed in more detail below, *infra* Part VII.F.

3. The PSS Benchmark Incorporates the Applicable 801(b)(1) Factors.

818. Dr. Woodbury's PSS benchmark boasts the added benefit of being the only benchmark (other than the 2003 SDARS/SoundExchange agreement discussed above) offered by a party to the proceeding that involves a license entitled to the protections of section 114(f) as well as of section 801(b)(1). 6/12/07 Tr. 244:11-245:6 (Woodbury). The negotiated rate thus presumably reflects the parties' expectations of the value of the 801(b)(1) factors and what the CARP would have decided (and how it would have applied the 801(b)(1) statutory factors) had the parties litigated. *Id.* at 245:7-246:8; Woodbury AWDT at 13; 8/23/07 Tr. 47:8-55:2 (Woodbury).

819. Both of SoundExchange's economic witnesses corroborated Dr. Woodbury's assumptions in this regard. Professor Ordover testified repeatedly to this aspect of the 2003 PSS agreement, writing that "it is plausible that the parties would, in their negotiations, factor in their expectations about how the CARP would have applied the 801(b) factors to arrive at a licensing rate." Ordover WRT ¶ 9. When pressed at trial, he repeated – over and over – his belief that the negotiated PSS rate "reflects the parties' understanding of what it might end up being if the negotiations failed and the parties were to be in a hearing like this and the court would then decide on the rate." 8/23/07 Tr. 280:21-282:4 (Ordover); *id.* at 284:17-285:3 (same). Professor Ordover also engaged in the following colloquy with the Court:

JUDGE ROBERTS: But what I just heard you just say, this last point, is that it is an 801(b) rate because the parties had to look at the 801(b) factors when they were negotiating, make their own internal determination as to how it might come out, that's what I heard you to say, and that informed how they arrived at the 7.25 rate. To me, that means it is an 801(b) rate.

THE WITNESS: I would make a -- I'm perfectly happy to accept that as being an 801(b) rate.

Id. at 285:10-22; *see also* 285:13-288:1 (same). Dr. Pelcovits also agreed the parties to the 2003 agreement would have predicted “how the court might have applied the 801(b) factors to the PSS in 2003.” 8/28/07 Tr. 130:3-14, 132:5-14 (Pelcovits).

E. Dr. Woodbury Adjusts The PSS Rate To Account For Important Differences between The PSS And The SDARS.

820. Recognizing that the PSS and SDARS are not identical services, Dr. Woodbury calculated two critical adjustments to the PSS benchmark rate necessary to account for differences between the PSS services and the SDARS:

- a functionality adjustment, which recognizes and accounts for the enormous costs incurred by the SDARS (and resulting need to earn revenues to offset those costs) arising out of the invention, development, and continued offer to their users of a mobile, satellite-delivered, “end-to-end” service (as opposed to the PSS, which “hand off” their music service to cable companies for delivery to television sets); and
- a non-music programming adjustment, which recognizes and accounts for the fact that the SDARS offer a significant amount of talk, news, sports and other non-music programming, much of it exclusive, in addition to music programming.

See generally Woodbury AWDT at 13-14, 27-30 (functionality adjustment); 16-20, 31-34 (non-music programming adjustment); 6/12/07 Tr. 252:2-253:18 (Woodbury); Woodbury WRT ¶¶ 2-4. The purpose of Dr. Woodbury’s adjustments is simple: to separate the SDARS’ revenues solely attributable to the public performance of sound recordings (which are relevant to this proceeding) from those generated by the performance of other types of content on the SDARS and from revenues generated by (and covering the costs of) the delivery of recordings and other content through the SDARS’ revolutionary

satellite distribution system (which are not attributable to the effort or inputs of the record companies). Woodbury AWDT at 23; 8/23/07 Tr. 45:13-47:2 (Woodbury). *See also* Webcasting II at 24,090 (noting that a percent-of-revenue metric “could result in a situation where the Services would be forced to share revenues that are not attributable to music use, but rather to other creative and managerial inputs”).

821. Dr. Woodbury’s adjustments to the PSS benchmark and his ultimate calculation of the SDARS per-play rate, can be summarized as follows:

$$\begin{aligned} & 7.25 \% \text{ PSS Rate Benchmark} \\ & \times \text{ functionality adjustment (ratio of hand-off to end-to-end revenue)} \\ & \times \text{ non-music programming adjustment} \\ & = 1.20\% \text{ recommended SDARS royalty rate (as percentage of} \\ & \text{revenue)} \\ & \div \text{ compensable Plays} \\ & = \$1.60 \text{ Recommended SDARS Rate per Play for 2007} \end{aligned}$$

See Woodbury AWDT at 25-26 and Ex. 16; 6/12/07 Tr. 290:1-293:6 (Woodbury) (initial calculation based on 2005-2006 data); Woodbury WRT 14-19 (updating with 2007-2012 functionality adjustment). Each of these steps is discussed in detail in the following sections.

1. The Functionality Adjustment

822. In order to adjust the PSS rate, which applies to the gross revenues of the PSS, so that it can be applied to the gross revenues of the SDARS, Dr. Woodbury first adjusted for the different functionality of the services. Specifically, Music Choice and the other PSS providers and produce a multi-channel music service that they uplink (or “hand off”) to a cable company for distribution to subscribers. *See* Woodbury AWDT at

21-22 and Ex. 12; 6/12/07 Tr. 249:15-250:18, 255:2-18 (Woodbury). In this arrangement, the production and delivery of the service (including marketing, billing, and customer relations) are divided between two different businesses. Woodbury AWDT at 22; 6/12/07 Tr. 252:4-18, 255:2-18 (Woodbury). Importantly, the record companies receive as a royalty a percentage only of the revenues of the PSS – revenues reflecting the value of the audio music service – and not a percentage of the revenue earned by the cable companies for distribution of cable television service (including the PSS) to subscribers. Woodbury AWDT at 23; 6/12/07 Tr. at 257:1-10 (Woodbury).

823. The SDARS also produce a multi-channel music service, along with a variety of other content. However, rather than handing off that service to a separate distributor, the SDARS have themselves created the satellite distribution system used to deliver the service to subscribers. *See* Woodbury AWDT at 22; 6/12/07 Tr. 255:15-256:17 (Woodbury). Indeed, they have invested literally billions of dollars to do so. *See supra* Part V.E. What is divided between two companies in the PSS setting (the “hand-off” music service and the multi-channel distribution service) is, in the SDARS setting, combined into a single enterprise. Woodbury AWDT at 22, 27; 6/12/07 Tr. 252:4-18 (Woodbury). Like the cable company, the SDARS pay the distribution and acquisition costs of the service, including the design, building, and launch of a customized satellite system and terrestrial repeater network to provide a mobile service as well as the radios that receive and decode the XM and Sirius transmissions; the cost of marketing the services directly to subscribers; the cost of subscriber acquisition and retention; and the cost of billing and collection of fees from their subscribers. Woodbury AWDT at 22; 6/12/07 Tr. 255:15-256:17 (Woodbury).

824. As a result, the fees the SDARS charge, and the revenues they earn, are in large part devoted to covering these additional distribution infrastructure and retail provider costs. Woodbury AWDT at 23-24, 27; 6/12/07 Tr. 257:11-258:1 (Woodbury). As Professor Noll's written rebuttal testimony discusses at length, price differentials among music services in competitive markets are due to differences in their average costs: the SDARS' revenues reflect (and must go towards paying) their distribution costs (which Internet-distributed services do not incur), as well as costs spent subsidizing the design and manufacture of customer receivers (also not incurred by services distributed to consumer computers). Noll WRT at 110-112; *see also* Woodbury WRT ¶ 66 and nn.41-42 (“[Since] the SDARS have a much larger share of costs going to inputs other than music . . . the payment to music as a percentage of revenues for the SDARS would be considerably smaller than it is for other services that do not have nearly the level of other costs in delivering a final product”).

825. Dr. Woodbury's functionality adjustment reflects the fundamental recognition that, just because the SDARS combine in one company both the music service and the delivery service, it is no more appropriate to apply the 7.25% royalty to the entire gross revenues of the SDARS than it would be to apply the 7.25% to the revenue of the cable company in the PSS setting. Woodbury AWDT at 23-24; 6/12/07 Tr. 258:8-261:8 (Woodbury); 8/23/07 Tr. 45:13-47-2, 59:18-62:3 (Woodbury). Such an approach would provide a windfall to the record companies, as they would reap a percentage of revenues earned only to cover the higher costs invested by the SDARS to provide an end-to-end mobile service (costs borne, in other settings, by the distribution enterprise) as opposed to any higher consumer valuation of the music itself. Woodbury

AWDT at 23-24; Webcasting II at 24,090; Noll WRT at 110-112 (explaining that applying to the SDARS an unadjusted facial percentage rate from services providing only a small part of an end-to-end system, with dramatically lower costs would be the equivalent of “confiscating” the investments of the SDARS in their distribution network).

826. SoundExchange expert Professor Ordover acknowledged Dr. Woodbury’s fundamental premise. Professor Ordover testified that he understood Dr. Woodbury to be making “an adjustment for the fact that the distribution channel has its own costs,” and agreed “that one has to account for that somehow” and that he does “believe that the differences in distribution costs will be accounted for in the market place.” 8/27/07 Tr. 18:1-7 (Ordover). He likewise acknowledged that rights owners in the market will collect “different amounts and . . . those different amounts are in some way consistent [] with the value of the music and with the structure of the costs in a distribution channel.” *Id.* at 20:14-18. Dr. Pelcovits, for his part, acknowledged that a hypothetical digital music service that also offers Internet connectivity should pay the same royalty amount (in dollars) as an identical stand-alone webcaster, even if its per-subscriber rate is twice as much because of the added Internet service; if the stand-alone service paid 10% of its \$15 fee (\$1.50), he testified, the end-to-end service should pay 5% of its \$30 fee (\$1.50). 8/28/07 Tr. 185:21-188:22 (Pelcovits).

827. Either of two approaches can be adopted to perform the necessary adjustment in setting a royalty rate for the SDARS based on the rate of the PSS (or the rate of any music service that distributes its programming through a separate distribution network or provider): (i) identify the SDARS’ revenues attributable solely to the “hand off” music portion of their service and apply the 7.25% benchmark rate to that lesser

revenue base (as opposed to their total revenues); or (ii) reduce the benchmark percentage rate itself and then apply that reduced rate to the total revenues of the SDARS. *See* Woodbury AWDT at 25; 6/12/07 Tr. 261:8-263:8, 278:9-279:22 (Woodbury). If the benchmark rate is adjusted properly, the two approaches will be mathematically equivalent. *See* Woodbury AWDT at 24; 6/12/07 Tr. 258:8-262:5 (Woodbury) (using simple example to show how 7.25% of \$1000 in “hand off” revenues equals 2.42% of \$3,000 in “end-to-end” revenues); *id.* at 338:7-339:3.

828. Dr. Woodbury chose the second methodology—reduction of the PSS benchmark rate to calculate a rate applicable to the gross revenues of the SDARS. To do so, he simply multiplied the PSS rate by the estimated ratio of the SDARS’ “hand-off revenues” to the SDARS’ end-to-end revenues. Woodbury AWDT at 23-25; 6/12/07 Tr. 278:9-279:8 (Woodbury).

829. Adjusting the benchmark PSS rate to one that can be applied to the gross revenues of the SDARS (as opposed to applying the unadjusted PSS rate to the appropriate subset of SDARS revenues) avoids the need to calculate and identify the appropriate “hand-off” revenue ratio for every payment period; instead, the adjusted rate can simply be applied to the SDARS’ gross revenues. This both relieves the court of the task of codifying the appropriate revenue base, and avoids the need for potential audits of what would be a complicated revenue definition. *See* Webcasting II at 24,089-90 (discussing the difficulty of defining an “unambiguous” revenue base and the auditing complications that such definitions introduce).

830. The functionality ratio for 2005 and the first half of 2006 was 25.7% for Sirius, and 18.8% for XM. Woodbury AWDT at 27-30, 58-75 (Appendix) and Exs. 13-14; *see also* 6/12/07 Tr. 277:20-278:8 (Woodbury).

831. In response to questions from the Judges about the stability of the functionality ratio during the license period, Dr. Woodbury also calculated the ratio going forward. For 2007-2012, it ranges from 27.6% to 30.1% for Sirius, and 25.9% to 28.5% for XM. Woodbury WRT at 14-19 and Exs. 25-28 (describing the methodology for and results of the forward-looking projections); 8/23/07 Tr. 63:7-20, 67:9-69:6, 69:20-72:13 (Woodbury).

832. The functionality-adjusted SDARS royalty rate alone – that is, prior to the further, necessary non-music programming adjustment described next – would be 2.0% to 2.18% for Sirius, and 1.88% to 2.06% for XM.

833. Put simply, over 70% of the SDARS' revenues are attributable to their provision of a delivery and distribution mechanism for content as opposed to the value of the programming that is delivered. Put another way, the 7.25% benchmark rate must first be reduced by over 70% before it can be applied to the SDARS' gross revenues so as not to provide the record companies with a cut of revenues unrelated to the value of their content.

834. Dr. Pelcovits deliberately misses the point in his written rebuttal testimony when he portrays the royalty rate resulting from Dr. Woodbury's adjustments as too low. *See* Pelcovits WRT at 3. The facial rate alone is meaningless without an understanding of the revenue base against which it is to be applied and the actual royalties that will be generated by a formula that accounts for the distinct functionality

and revenues of the respective services. In light of the SDARS' substantial gross revenues, their rate proposal (as noted above) will provide for royalties of over \$25 million in the first year alone, and, if their subscriber goals are realized, over \$250 million over the entire license period.

a. Hand-Off Costs Are a Reasonable Proxy for Hand-Off Revenues when Calculating the Functionality Adjustment.

835. In order to calculate the functionality adjustment – the ratio of the SDARS' "hand-off" revenues to their total (end-to-end) revenues – Dr. Woodbury used as a proxy the SDARS' costs: more specifically, the ratio of the SDARS' costs for the hand-off functionality (*e.g.*, programming and content costs, royalties, etc.) to their total "end-to-end" costs. Woodbury AWDT at 25-27, 29-30, n.60 (describing use and rationale of cost ratio as proxy for revenue ratio); 6/12/07 Tr. 264:17-267:21, 271:16-272:19 (Woodbury) (same). Dr. Woodbury worked line-item-by-line-item through the costs of the SDARS to categorize and allocate them to the hand-off or end-to-end functionality of the SDARS. This methodology, including the specific line-by-line allocations, is described in detail at Woodbury AWDT at 28-29, 58-75 (Appendix), and Exs. 13 and 14. *See also* 6/12/07 Tr. 272:20-277:19 (Woodbury); 8/16/07 Tr. 239:17-240:12 (Noll) (describing the need to adjust for cost differences between benchmark and target services and noting that only Dr. Woodbury actually did so).

836. As Dr. Woodbury testified, the use of cost ratio as a proxy for hand-off revenue ratio is justified. Woodbury AWDT at 29-31; 6/12/07 Tr. 264:16-267:11 (Woodbury); Woodbury WRT at 10-12; 8/23/07 Tr. 62:9-63:4 (Woodbury). As a matter of economics, expected revenues must at least cover expected costs (including a return on

investment) as a firm decides whether or not to undertake the investment necessary to enter. Over the longer run, earned revenues must at least cover costs incurred or the firm will exit the market; and in a competitive or monopolistically competitive market (*i.e.*, one with differentiated products), revenues will just equal costs. Woodbury WRT at 10-11. Furthermore – and more importantly – even if the SDARS’ revenues depart from their costs, what is crucial to Dr. Woodbury’s analysis is not that revenues exactly equal costs, but that the ratio of hand-off to total costs equals the ratio of hand-off to total revenues. *Id.* at ¶ 26; 6/13/07 Tr. 37:10-20 (Woodbury). Revenues at the hand-off provider and end-to-end levels can diverge from their respective costs substantially as long as the percentage divergence between revenues and costs for the hand-off provider and between revenues and costs of the end-to-end provider is approximately the same. Woodbury WRT ¶ 26; *see also id.* at 12-13 (demonstrating that the Music Choice per-subscriber fee, when adjusted for listening time using Dr. Pelcovits’ own methodology, supports the reasonableness of the SDARS’ rate derived from the functionality adjustment); 8/23/07 Tr. 64:4-67:8 (Woodbury).

837. If anything, Dr. Woodbury’s functionality adjustment based on costs rather than revenues is not large enough (or, put another way, the functionality-adjusted rate he arrives at is potentially overstated). As Dr. Woodbury testified, he did not account in his allocation for the cost of equity capital necessary to launch the SDARS’ high-risk ventures; accounting for such costs would have increased the end-to-end cost substantially relative to the handoff provider costs and resulted in a lower functionality adjusted rate for the SDARS. 6/12/07 Tr. 281:7-282:11 (Woodbury).

2. The Non-Music Programming Adjustment

838. The second adjustment Dr. Woodbury makes is to adjust the PSS rate to reflect the fact that the PSS offer a pure music service whose revenues therefore derive solely from music listening. The SDARS, by contrast, offer a broad array of sports, talk, entertainment, and other non-music programming. *See* Woodbury AWDT at 16 (describing the increase and importance of non-music programming on SDARS, including exclusive programming); *see also* Parts IV.B. and IV.D. A significant percentage of the revenues earned by the SDARS is attributable not to the performance of sound recordings, but to these other types of content, including exclusive programming and programming that generates advertising revenue. Woodbury AWDT at 31-32; 6/12/07 Tr. 282:12-283:11 (Woodbury). The PSS rate must be adjusted so as not to charge the SDARS a royalty based upon such activities that have nothing to do with the statutory license. Woodbury AWDT at 20, 31-32 (discussing advertising revenues on non-music channels); Webcasting II at 24,089 (explaining that revenue for “features unrelated to music” and “non-music programming” are not “relevant” revenues for the percentage-of-revenue computation, and suggesting that the “impact” on revenue of “on-air talent, programming director contributions and marketing skills” is not “related to the use of the [sound recording] rights provided to the licensees”).

839. SoundExchange itself recognizes the propriety of such a non-music adjustment. Dr. Pelcovits made a similar adjustment as part of his Howard Stern analysis when he reduced that 50% benchmark (defined as 50% of Stern-attributable revenues only) to 28% to account for the fact that just over half of the SDARS’ revenues (according to Professor Wind) are attributable to music programming. *See* Pelcovits

WDT at 13-15; *see also* 8/23/07 Tr. 302:3-9 (Ordoover) (agreeing that “not all of [SDARS revenue] is attributable to music”). Dr. Pelcovits’ methodology also demonstrates his implicit recognition that rather than applying an unadjusted benchmark rate to a revenue base limited to SDARS revenues attributable only to music content, one can instead reduce the benchmark revenue percentage itself (by the ratio of music to non-music programming) and apply it to the SDARS’ gross revenues.

840. In order to determine the magnitude of the non-music programming adjustment, Dr. Woodbury created a “channel-attachment” index based on a 2006 Sirius listener survey. Woodbury AWDT at 19-20, 33 and Ex. 10. This index calculated a weighted cancellation rate for all the channels on the Sirius service (the number of listeners in the last week multiplied by the percentage of those users who said they would cancel their service if Sirius stopped offering that channel). 6/12/07 Tr. 284:21-289:4 (Woodbury). The music channels (including kids and comedy channels that also play sound recordings) accounted for 48% of the weighted cancellation rates for Sirius, and 68% for XM. *Id.* at 288:22-289:22 (Woodbury).

841. Given these calculations, the methodology for the non-music programming adjustment is similar to the functionality adjustment: the functionality-adjusted benchmark PSS rate, which would apply to a service playing nothing but music, must be further multiplied by the non-music programming ratio so as not to unfairly extract revenues earned by the SDARS for non-music programming. *See* Woodbury AWDT at Ex. 16; Woodbury WRT at 19.

842. Before describing this final calculation, it is worth noting several additional considerations suggesting that Dr. Woodbury’s non-music programming

adjustment is, if anything, conservative. First, the importance of non-music programming on the SDARS continues to increase. *See* Woodbury AWDT at 16-17 (detailing the increase in the percentage of non-music programming on the SDARS from 2001 to 2005, as well as increases in expenditures on such programming); Woodbury WRT ¶ 46 (citing Karmazin WDT 14-17 and 6/5/07 Tr. 133:18-134:12 (Logan)); 8/23/07 Tr. 73:4-18 (Woodbury). Ideally, one would need to adjust Dr. Woodbury's recommended SDARS rate (which is based on the 2006 mix of music and non-music programming) downward as the SDARS revenues attributable to non-music programming increase relative to music-generated revenues during the license period. Dr. Woodbury did not do so because of the difficulty of projecting such changes with specificity. *Id.* at 73:4-18 (Woodbury). Thus, Dr. Woodbury's figures likely overestimated the revenues attributable to music throughout the course of the license period.

843. Second, the SDARS have invested in significant enhancements to the channels that play sound recordings – including celebrity DJs, expert programmers, and improvements in sound quality, among others – that exceed what is available on the PSS and which ideally should result in a lower rate to the extent consumers pay a higher price than they would otherwise pay because of these enhancements. *See* Woodbury AWDT at 20-21, 36 (summarizing enhancements); Hauser WRT at Ex. M (providing data from Internet survey in which respondents consisting of satellite radio subscribers and considering subscribers assigned a relative importance of over 63% to features including commercial free channels, display of artist names and song titles, selection and sequencing of songs, celebrity DJs and hosts, and live performances as opposed to a

value of only 15.8% to the feature “I can hear music from the 70’s, 80’s, 90’s, and today”).

3. Calculation of the Proposed Rate

844. Having adjusted the PSS rate for the differing functionality and non-music programming on the SDARS as described above (including projections of the functionality adjustment for 2007-2012), Dr. Woodbury arrived at a recommended percentage-of-revenue rate of 1.38% of gross revenues for XM and 1.00% for Sirius. He then averaged these rates, weighted by the services’ respective revenues, to reach a final recommended rate of 1.20%. Woodbury WRT ¶ 46 and Exs. 26, 28; 8/23/07 Tr. 69:7-69:19 (Woodbury). This rate, when applied to the gross revenues of the SDARS, would result in a royalty payment that is the equivalent of applying the 7.25% PSS benchmark rate to the SDARS revenues that are attributable solely to the public performance of sound recordings.

F. Translating the PSS Rate Into a Per-Play Rate Permits the Fairest Determination of Compensation to SoundExchange.

1. The Per-Play Calculation

845. For reasons discussed below, Dr. Woodbury’s final step was to translate his recommended percentage of revenue royalty of 1.20% into a per-play rate. To do so, he first calculated the total dollar amount that would be generated in 2006 based on the recommended 1.20% rate calculated above. This payment would be \$18.85 million. Woodbury WRT ¶ 53; 8/23/07 Tr. 83:15-84:6 (Woodbury). Next, he received from Sirius and XM counts of the total number of compensable sound recordings played on the two services during 2006 – *i.e.*, all featured plays of post-1971 sound recordings. Woodbury WRT at Ex. 29-30; 8/23/07 Tr. 85:17-21 (Woodbury) (describing

“compensable” plays of 15.66 million).²¹ Then he simply divided the total royalty payment for 2006 by the total compensable performances during that year to reach the effective per-play rate of \$1.20.²² Woodbury WRT ¶ 53; 8/23/07 Tr. 84:7-18 (Woodbury).

846. The SDARS have taken the additional step of recalculating the per-play rate based on their projected 2007 revenues, rather than their 2006 revenues, and amended their rate proposal accordingly. This calculation is a matter of basic arithmetic based exactly on Dr. Woodbury’s methodology described in the previous paragraph. The SDARS’ projected combined 2007 revenues are \$2.091 billion. Frear WRT at SIR Ex.58

²¹ To the extent XM or Sirius undercounted compensable post-1971 sound recordings in the numbers they reported to Dr. Woodbury (by, say, failing to count post-71 remixes or re-recordings of pre-72 recordings), it would have the effect of understating the number of compensable performances in the denominator of his calculation and thus overstating the resulting per-play rate – a result in SoundExchange’s favor. *See* 8/23/07 Tr. 157:20-159:8 (Woodbury).

²² As mentioned above, this figure excludes incidental performances. *See* 8/23/07 Tr. 85:22-89:1 (Woodbury). SoundExchange has failed to demonstrate that any payment for incidental performances is warranted or that there is any value for such performances. *See* 8/29/07 Tr. 37:22-38:6 (Kessler) (testifying that she does not have evidence that the value of background music is equal to the value of a full feature performance). Although Dr. Herscovici observes that the SDARS use incidental music, *see* Herscovici WRT, App. K, he has not shown that such uses are valued in the marketplace in such a way that the Judges should depart from the longstanding practice of excluding these performances in calculating payments under the section 114 licenses. *See supra* Part A. Furthermore, “Option B” of SoundExchange’s own rate proposal is a per-performance option adopting the SDARS’ method of counting performances, which excluded incidental performances. *See* Third Amended Rate Proposal for SoundExchange, Inc. at 5 n.1; Pelcovits WRT at 19-26. In any case, if the Judges were to decide that incidental performances should be compensable, Dr. Woodbury’s methodology could be used to arrive at a per play rate that encompassed such performances. Such a rate, however, would need to be significantly lower than that proposed by the SDARS, since that proposed fee applies to feature performances only and was calculated based solely on the number of SDARS’ compensable feature-length sound recording performances.

(projecting 2007 Sirius revenues of \$960 million); Vendetti WRT at XM Ex. 4 (projecting 2007 XM revenues of \$1.131 billion). 1.20% of this combined figure is \$25.09 million. When this figure is divided by the estimated total number of compensable performances for 2007 (which is assumed to remain similar to the 2006 number of 15.66 million used by Dr. Woodbury), the result is a per-Play rate of \$1.60.

847. To account for the fact that listenership to each song played likely will increase as subscriber levels of the SDARS increase during the license period – although likely, not on a linear basis – Dr. Woodbury advocated annual percentage increases to the derived per-play rate equal to the percentage increase in subscribers at the end of each year. Woodbury WRT ¶¶ 53-55; 8/23/07 Tr. 84:19-85:12 (Woodbury). Assuming the SDARS hit the subscriber targets presented in the projections supplied by Mr. Frear and Mr. Vendetti in their rebuttal testimony, and continue to offer roughly the same number of sound-recording Plays each year during the license term, the total payments by Sirius and XM to SoundExchange over the 2007-2012 period would be over \$250 million. See generally Frear WRT ¶¶ 10-14 and SIR. Ex. 58 (providing Sirius 2007-2012 projections); Vendetti WRT ¶¶ 11-12 and Ex. 4 (same for XM).²³

²³ This total can be calculated in a straightforward manner: according to the estimate provided by Messrs. Frear and Vendetti, the SDARS' combined year-end subscribers will increase from 13.653 million in 2006 to 17.276 million in 2007, 20.996 million in 2008, 24.469 million in 2009, 28.157 million in 2010, 31.822 million in 2011, and 34.666 million in 2012. Frear WRT Ex. 58 (Sirius Trial Exhibit 61); Vendetti WRT Ex. 4 (XM Trial Exhibit 10). The SDARS per-play rate thus would rise from \$1.60/Play in 2007 to \$2.03, \$2.46, \$2.87, \$3.30, and \$3.73 in each succeeding year. Assuming the number of Plays on the SDARS remain fairly constant, the total royalties would rise from approximately \$25 million in 2007 to \$58.5 million in 2012, or \$251 million total.

2. The Rationale For A Usage-Based Fee

848. As Dr. Woodbury, among others, testified, a usage-based fee allows the services to adjust their music usage, and thus their royalty payment, in response to the fee set by the Judges, and thus is economically efficient. Woodbury WRT ¶ 49; 8/23/07 Tr. 76:8-21 (Woodbury); Noll WRT at 74-76; 8/16/07 Tr. 152:3-20 (Noll); Karmazin WRT ¶¶ 31-32; 8/22/07 Tr. 193:12-20 (Karmazin); 6/21/07 Tr. 235:12-236:2, 243:7-18 (Ordoover) (agreeing that “responsiveness” to rate changes “is a desirable feature to an economist” and that the inability to cut back on use would be “inefficient”). It also would allow the SDARS to pursue direct-licensing opportunities from sound recording owners, whereas under a percentage-of-revenue metric, the SDARS would have no incentive to do so (since the percent-of-revenue payment would not be affected or lessened by any direct licenses). Woodbury WRT ¶ 49.

849. A per-Play fee also would preserve the incentive of the SDARS to invest in new revenue-enhancing activities – in particular, activities not related to music programming – without fear that the record companies would expropriate an undeserved share of the new revenues to which they made no contribution. Woodbury WRT ¶¶ 50-51; 8/23/07 Tr. 76:18-77:12 (Woodbury); Karmazin WRT ¶¶ 31-32; 8/22/07 Tr. 193:6-11 (Karmazin); 8/16/07 Tr. 152:3-153:20 (Noll) (“[I]f an innovation comes along that causes that input to generate a lot more revenues or a lot more subscribers in a world in which the fees are based on subscribers or revenues, part of the increment in revenues that are caused by that improvement go to the other supplier of content when they've done nothing and that is both inefficient and unfair.”). A percentage of revenue fee that taxed such innovations, by contrast, would violate the statutory goals of maximizing

availability of creative works (by discouraging such innovations), ensuring fairness, and rewarding relative contribution (by rewarding record companies for income to which they did not contribute). Noll WRT at 77 (describing how the per-subscriber fee and tiered structure of SoundExchange's amended rate proposal could result in millions of dollars of additional fees to SoundExchange from subscriber-enhancing programming having nothing to do with music); Webcasting II at 24089-90 (noting lack of relevance of revenues from "non-music programming" and observing that a percent-of-revenue metric "could result in a situation where the Services would be forced to share revenues that are not attributable to music use, but rather to other creative and managerial inputs.").

G. Other Evidence Corroborates Dr. Woodbury's PSS-Derived Rate.

850. The SDARS have proposed a rate of \$1.60 per Play for 2007, escalating in subsequent years by a percentage equal to the percentage increase in combined SDARS subscribers. The base rate, as explained, is the equivalent of (and calculated from) 1.20% of the SDARS' 2007 revenues. While SoundExchange's economic experts have characterized the SDARS' proposal as an "outlier," *see, e.g.*, Pelcovits WRT at 17-18, the SDARS' rate (which would produce over \$250 million in royalty payments by the SDARS during the license period) is in fact buttressed by an array of corroborating evidence – including one of SoundExchange's own benchmarks, corrected to address its most glaring flaws and biases. These other data points yield rates ranging from 2% to 4.2% – or (applying Dr. Woodbury's per-Play arithmetic) \$2.67 to \$5.61 per Play.²⁴ As described below, these agreements and analyses – albeit taken from

²⁴ The SDARS' proposed per-Play rate is reached by multiplying the benchmark 1.20% rate times 2007 revenues of \$2.091 billion and then dividing by the

services not similarly subject to the section 801(b)(1) rate-making standard, and in cases embodying significant biases that overstate the sound recording fee – nonetheless confirm the reasonableness of the rate range in which Dr. Woodbury’s PSS-generated rate falls.

1. The Prior SDARS-RIAA Agreement

851. As described above, SoundExchange elicited the core economic terms of the 2003 agreement between XM, Sirius, and SoundExchange on the record during the trial. *See* Part VI.C; 6/6/07 Tr. 16:5-8 (Vendetti); 6/12/07 Tr. 192:6-22 (Frear); *see also* 8/15/07 Tr. 80:13-17 (Frear). The resulting testimony revealed a rate in the range of 2.0% to 2.5% of the SDARS’ revenues over the term of that agreement. 6/6/07 Tr. 16:5-8 (Vendetti); 6/12/07 Tr. 192:6-22 (Frear); Frear WRT ¶ 24. This would equate to a rate of \$2.67 and \$3.34 per Play for 2007, with increases in subsequent years scaled to the percentage increase in combined SDARS subscribers.

2. The SDARS’ Musical Works Agreements

852. Dr. Woodbury also analyzed the licenses the SDARS have negotiated with the performance rights organizations (PROs) – ASCAP, BMI, and SESAC – for the public performance of the musical works underlying the sound recordings performed on the SDARS. *See generally* Woodbury AWDT at 36-40. Taken together, these agreements suggest a benchmark rate of 2.35% of revenue, or \$3.14 per Play for 2007. Woodbury AWDT at 38 (calculating musical works rate based on XM payments to

SDARS’ total number of compensable plays of 15.66 million. For the benchmarks discussed here, the comparable figure would range from (2% x \$2.091 billion/15.66 million Plays) = \$2.67/Play to (4.2% x \$2.091 billion/15.66 million Plays) = \$5.61/Play.

ASCAP and implied payments to BMI and SESAC); 6/12/07 Tr. 307:09-309:6 (Woodbury) (same). These musical works license agreements involve the same purchaser (the SDARS) and a similar right (public performance only) as the statutory license in this proceeding, albeit under section 106(4), as opposed to 106(6), of the Act. 6/12/07 Tr. 246:9-247:7, 306:10-17, 307:3-8 (Woodbury). Like the section 114 license, the musical works licenses also are subject to court supervision to ensure their reasonableness. *Id.* at 247:21-248:17, 306:18-307:2 (describing antitrust consent decree governing ASCAP and BMI); Woodbury AWDT at 38 (same).

853. The musical works PRO benchmark is an appropriate benchmark for the section 114 sound recording performance license for a number of reasons. As Dr. Woodbury explained,

a buyer of the sound recording performance rights needs both rights in order to render a public performance of the sound recording. Thus, the buyer is in exactly the same position with regard to the two broadcast rights: Both are needed to broadcast sound recordings, and the benefit received by the buyer applies to both rights jointly. In addition, each seller of the sound recording performance right is in the same position as the seller of the musical works performance right for that sound recording. From the seller's perspective, the direct cost of using either right for additional performances of a sound recording is the same (zero).

Woodbury AWDT at 37 (providing further empirical corroboration for the fact that the incremental cost of extending the sound recording performance right to the SDARS is zero).

854. Indeed, the musical works rate is likely to be an upper bound on the sound recording right for at least three reasons. First, the music services that license musical works performance rights, and the PROs that license those rights, face asymmetrical litigation incentives: because a successful litigation can serve as a

precedent for other ratemaking negotiations and proceedings involving other uses, the PRO will be prepared to bargain harder with the user for a higher rate and pursue litigation if necessary. Woodbury AWDT at 38-39; 6/12/07 Tr. 315:6-316:3 (Woodbury). Second, the payments to the PROs do not reflect consideration of the 801(b)(1) factors, or take into account the fact that a sound recording owner receives higher revenue relative to the publisher when an SDARS user purchases a CD or song heard on the service. Woodbury AWDT at 39; 6/12/07 Tr. 312:22-314:1, 316:4-11 (Woodbury). Third, the PRO performance license covers a greater range of works and rights than the sound recording performance rights at issue here, including (i) all performances – including live performances and those on sound recordings recorded after February 15, 1972 and (ii) programming without the limitations (such as the sound recording performance complement) of section 114. *See* Woodbury AWDT at 39-40; 6/12/07 Tr. 314:9-315:5 (Woodbury).

3. Custom Radio Agreements

855. The record reveals another set of marketplace agreements with rates that corroborate the SDARS' rate proposal: so-called "custom radio" services which, like the SDARS, offer noninteractive, radio-like stations, albeit "customized" to a particular user's tastes rather than pre-programmed by the service or genre-based. For example, Yahoo!'s custom-radio agreement with Sony BMG pays [[
]] for its subscription Launchcast service. 6/18/07 Tr. 289:20-291:13 (Eisenberg); *see also* Woodbury WRT ¶¶ 78-79, nn.53-55 (describing other Yahoo! custom radio rates, including the [[
]] paid to EMI). As Dr. Woodbury demonstrated in his rebuttal testimony,

when adjusted for the differing functionality and non-music programming of the SDARS – which one must do for a rate from a service provider that uses the Internet for distribution – the Yahoo!-Sony deal equates to an SDARS rate of 2.57% of revenue, or \$3.43 per Play. Woodbury WRT ¶¶ 69-71; *see also* Noll WRT at 115-116. Although the rates from these custom radio services like Yahoo! would still need to be adjusted to account for the fact that the customized radio service is much more personalized than the SDARS, and not subject to the 801(b)(1) rate standard, they nonetheless represent a rate from a service closer in functionality to the SDARS than the interactive services relied upon by Professor Ordover.

4. Dr. Pelcovits' Non-Music Programming Benchmark

856. Dr. Pelcovits offered as a benchmark for the SDARS the percentage of revenue that the SDARS pay for non-music programming. *See generally* Pelcovits AWDT at 8-11. Dr. Pelcovits' non-music benchmark and its many conceptual and empirical flaws are discussed in a separate section of these Proposed Findings. *See infra* Part VII.D. However, were certain errors with Dr. Pelcovits' analysis corrected – for example, by calculating the non-music royalty percentages using the SDARS' revenues during the license period (2007-2012) rather than 2006 revenues, and by accounting for the directly offsetting advertising revenues planned for and obtained by the SDARS' from their non-music expenditures – it would point to an SDARS rate much closer to that proposed by Dr. Woodbury than by SoundExchange. Indeed, as Professor Benston testified, making just the two simple adjustments mentioned above reduces the non-music programming fee to 3.51% of revenue – or \$4.69 per Play. Benston WRT at 10-11 and Tbls. 1, 1A, 1B. That result still overstates the appropriate implied sound recording

license fee, however, because, among other things, (i) it does not adjust for the many additional rights and benefits bargained and paid for by the SDARS in their non-music programming deals that are not similarly obtained under the sound recording statutory license, and (ii) it is not based on the section 801(b)(1) factors.

5. Other Supporting Testimony

857. Two other pieces bear mention. First, the testimony of Professor Noll clearly demonstrates how, even under SoundExchange's questionable forward-looking cost standard, a royalty rate that allows the SDARS to receive a competitive return on depreciation and accumulated deficit would be in the range of that proposed by Dr. Woodbury, if not close to zero. *See* Noll WRT at 26-38. Second, the testimony also clearly shows that a rate above 4.0% or 4.2% of revenue – that is, approximately double the level at which XM and Sirius have booked sound recording royalties in their financial records – would be disruptive of the SDARS businesses and thus directly in contravention of the fourth 801(b)(1) factor.

858. The confluence of the foregoing benchmarks presents a body of evidence revealing a range of reasonable rates from 1.2% to, at the very most, 4.2% of revenue (or \$1.60 - \$5.61/Play). For all the reasons described in the sections of these Proposed Findings addressing the 801(b)(1) factors, the SDARS have offered a rate proposal at the lower end of that range.

H. The Statutory Objectives Favor the SDARS' Proposed Rate.

859. A full and detailed discussion of the 801(b)(1) factors, including a factor-by-factor comparison of the SDARS to the record companies, is contained in Part V of these Proposed Findings. However, it is important, in the context of presenting the

SDARS' rate proposal, to consider how the SDARS fare in relation to the preexisting subscription services. As Dr. Woodbury testifies, the PSS benchmark rate reflects the influence of the 801(b)(1) policy factors as those factors applied to the PSS at the time of their 2003 negotiation, and not necessarily to XM and Sirius today. Woodbury AWDT at 41. One must consider how the PSS rate, even if reflective of section 801(b)(1) considerations, would apply to the SDARS. Stated differently, it is important to determine the degree to which their contributions outweigh the contributions of the record labels by a greater degree than the contributions of the PSS outweigh the contributions of the record labels. *See, e.g.,* Ordover WRT ¶ 11; Pelcovits WRT at 3-4; *infra* Part VI.G.2.

860. Dr. Woodbury's analysis addresses this issue by undertaking the appropriate comparative analysis. That analysis, summarized below, demonstrates that the SDARS outperform the PSS on each factor. As Dr. Woodbury explained, while he did not adjust his recommendation downward based on his analysis of the section 801(b)(1) factors, the fact that the SDARS outperformed the PSS on the factors provided confidence that the PSS rate (as adjusted for functionality and non-music programming) represents an upper bound for the SDARS' rate. *See* 6/12/07 Tr. 305:3-15 (Woodbury).

1. Maximizing Availability of Creative Works to the Public

861. For full analysis of this factor as it relates to the comparison between the SDARS and the record labels, *see supra* Part V.B and PCL Part IV.A. As that analysis reveals, the SDARS, which have literally invented an entirely new distribution network for sound recordings, do a tremendous amount to increase the availability of creative works to the public. Most important in this context, however, is the fact that the

SDARS do more to encourage the widespread availability of sound recordings than the PSS, including Music Choice. Sirius has 71 music channels and XM has 80, while Music Choice has only around 50. Woodbury AWDT at 42-43 and Ex. 6. Similarly, the breadth of the SDARS offerings, particularly in niche genres, exceeds that of the PSS. *Id*; see also 6/12/07 Tr. 301:18-302:9 (Woodbury).

862. On a related note, the SDARS have created many opportunities for the record companies to feature and promote artists, including the Artist Confidential, “Then... Again... Live” and “Offstage” series, as well as numerous shows anchored by celebrity hosts on both Sirius and XM, which provide opportunities to expose devotees of particular music formats to new or less well known artists. See Woodbury AWDT at 45. These efforts go beyond anything undertaken by the PSS audio services, which simply stream sound recordings on their genre-based channels without DJs or other enhancements. *Id*.

2. Relative Creative and Technological Contributions, Capital Investment, Cost, Risk and Contributions to the Opening of New Markets

863. For full analysis of this section 801(b)(1) factor, see *supra* Parts V.D. – H and PCL IV.B. As that analysis reveals, the SDARS’ contributions dramatically outweigh those of the record labels on at least five of the six sub-factors mentioned by the statute: relative technological contribution, capital investment, costs, risks, and contribution to the opening of new markets for creative expression. What is more, the SDARS outperform the PSS on these factors. As Dr. Woodbury testified, the SDARS have invested extraordinary resources in creative contributions in the form of non-music programming and in substantial enhancements, including celebrity DJs, to its music

programming – features that the PSS do not have (hence the second adjustment reported above). Woodbury AWDT at 48. To the extent this programming attracts subscribers to the SDARS who would not otherwise have subscribed, the record labels will receive a net benefit. *Id.* The PSS do not draw new listeners in the same way or provide a similar creative contribution. *See* 6/12/07 Tr. 302:10-19 (Woodbury).

864. Nor can the PSS match the extraordinary technological contribution, capital investment, costs, and risks of the SDARS. Whereas the SDARS have developed their own satellite transmission systems, subsidized the creation of radios and chipsets to allow users to receive their signal, received numerous patents, and invested (and risked) billions, Music Choice has relied on conventional distribution schemes: transponder leases on conventional satellites and use of the existing cable infrastructure to deliver its signal to consumers television sets. *See* Woodbury AWDT at 49-51 and Exs. 19-22.

865. The key contrast between the SDARS and the contributions of Music Choice and other PSS with respect to opening new markets is the development of the mobile satellite radio service. The PSS introduced cable operators and their subscribers to a new way of receiving in-home music without commercials. Woodbury AWDT at 52. XM and Sirius went substantially beyond the efforts of the PSS by providing an end-to-end mobile service. This effort, unlike the efforts of the PSS, required the development of complex technology required to support that service. *See* 6/12/07 Tr. 302:20-303:20 (Woodbury). It also required the SDARS to invest in an entirely new distribution chain – the automotive, or “OEM” chain – and to develop the relationships and pay the subsidies necessary to market and distribute SDARS radios and service in that channel. *See* Part V.E.2.e.; 8/16/07 Tr. 79:16-20 (Noll) (describing how innovation includes marketing and

bringing a product to the consumer). In addition, XM and Sirius both offer subscribers more channels of music and more music diversity than the PSS, providing an increased opportunity for subscriber exposure to new artists and different music genres. This suggests that the contribution of XM and Sirius to opening new markets is more substantial than that of the PSS, particularly in light of the required new technology development by XM and Sirius.

3. Minimizing Disruptive Impact

866. For full analysis of this factor, minimizing the disruptive impact to the respective industries, *see supra* Part V.I. and PCL IV.C. As that analysis reveals, the SDARS would encounter a very real risk of disruption to their businesses if the SoundExchange rate proposal were adopted. Unlike the previous two factors, it is not necessary to know whether the parties to the 2003 negotiation considered the benchmark rate to be “disruptive” under economic conditions as they existed at the time (although presumably, since they agreed to the rate, they did not). The Judges are merely instructed to select a non-disruptive rate for the industries today. *Cf.* Pelcovits WRT at 9-10 (making similar point with respect to 1998 PSS decision). Nonetheless, it bears noting that XM and Sirius are very likely more financially fragile, and hence more at risk of disruption, than Music Choice, and the financial stake in success or failure is certainly much greater for XM and Sirius than for Music Choice. *See* Woodbury AWDT at 54; 6/12/07 Tr. 303:21-304:8 (Woodbury). Moreover, as discussed in detail in Part V.I. there is no reason to believe that the SDARS’ proposed rate would prove disruptive to the record industry.

4. Fair Return/Fair Income

867. For full analysis of this factor, *see supra* Part V.C. and PCL Part IV.D. As discussed there, the SDARS' proposed rate is "fair" in all important senses, whereas SoundExchange's confiscatory rate is dramatically unfair to the SDARS. As with the "disruption" factor, this factor does not necessarily require a comparison of the fairness of a rate to the benchmark service (the PSS) versus its fairness to the target service (the SDARS); the Judges are merely instructed to select a rate that provides a fair return to the copyright owners and a fair income to the copyright users in this proceeding. That being said, it is likely that the recording companies would not have agreed to a rate with the PSS that they considered unfair, *see* 6/12/07 Tr. 304:9-18 (Woodbury).

868. As the preceding discussion makes clear, the SDARS outperform the PSS vis-à-vis the record labels on the factors that invite comparison of the parties' respective or relative contributions. Thus, even if we do not know how the parties weighed each individual factor in negotiating the 2003 agreement, we can be confident that the PSS rate, as properly adjusted, reflects an effective upper bound on the SDARS' rate.

I. SoundExchange's Objections to The SDARS' Proposed Rate Are Unfounded.

1. Music Choice Is Not a Failing Service With Weak Demand or Low Value.

869. SoundExchange has suggested that the preexisting subscription service benchmark is flawed for several reasons: because two of the three PSS have exited the residential music market; because the remaining PSS, Music Choice, is (SoundExchange claims) essentially a failing firm that was unable to offer its service on an a la carte basis;

and because XM and Sirius both essentially give a similar television music service away to the DBS providers. *See* 6/13/07 Tr. 52:14-59:10 (Woodbury); Ordover WRT ¶¶ 12-14; Pelcovits WRT at 9-14. In addition, questions were raised about the value of the Music Choice service itself and therefore the relevance of the PSS rate to the SDARS. *See, e.g.*, Ordover WRT ¶¶ 12. None of these criticisms has merit.

870. First, residential music services (the PSS) are not a declining industry. Music Choice has around 40 million subscribers. 8/23/07 Tr. 89:16-90:12 (Woodbury). (By contrast, the interactive services cited as a benchmark by SoundExchange have just over 2 million combined portable and non-portable subscribers.). *See* 6/18/07 Tr. 281:4-22 (Eisenberg).

871. Second, the proper time frame for consideration of the health of the PSS industry is not now, but 2003, when SoundExchange negotiated the industry-wide deal with the preexisting services. 8/23/07 Tr. 91:14-92:1 (Woodbury); 8/27/07 Tr. 128:17-131:6 (Ordover) (agreeing that 2003 is the proper time period for comparison, and testifying that he had no knowledge of Music Choice's revenues, profits, cost structure, subscriber numbers in 2003).²⁵ During those negotiations, RIAA Senior Vice President Steve Marks went out of his way to highlight the economic well-being of Music

²⁵ In his rebuttal testimony, Dr. Pelcovits criticized Dr. Woodbury for failing to undertake analysis of how the 801(b)(1) factors would have applied to the 1998 circumstances of the PSS. Pelcovits WRT at 11. However, that criticism is wide of the mark since the PSS rate that serves as Dr. Woodbury's benchmark derives from a 2003 agreement and hence, the PSS' circumstances as of that time period. Dr. Pelcovits' effort to tie back to 1998 by the facile contention that the 2003 agreement simply reflected an agreement by the parties to carry forward the rates established by the Docket 96-5 PSS CARP proceeding was exposed on cross-examination to constitute rank speculation on Dr. Pelcovits' part. 8/28/07 Tr. 126:1-132:14 (Pelcovits).

Choice, noting that “[r]egardless of what economic yardstick one chooses to use, it is clear that Music Choice is succeeding, and that it continues to do so even in today’s difficult economic climate.” Woodbury WRT ¶ 15, Ex. 24 (letter from Steve Marks to Fernando LaGuarda dated Oct. 25, 2002); Mr. Marks went on to describe Music Choice’s “significantly improved economic position,” including its actual and expected increase in subscribers, in revenues, and in cable system affiliates, and claimed that the company had “flourished” since 1998. Woodbury WRT at Ex. 24. SoundExchange cannot credibly claim now that its deal with the PSS was somehow deflated due to their “financial fragility,” see Ordover WRT ¶ 12, in the face of irrefutable record evidence of its view to the contrary. 8/23/07 Tr. 90:12-91:10 (Woodbury).

872. Nor is it the case that the PSS benchmark is somehow compromised merely because the subscription fee paid by cable companies to Music Choice is low relative to the SDARS subscription fee, or because the Music Choice fee is not paid directly to Music Choice by consumers. Woodbury WRT ¶¶ 16-18. The record industry obviously views Music Choice as a legitimate service – and an attractive promotional outlet for its recordings. *Id.*; 8/23/07 Tr. 99:1-11 (Woodbury). Moreover, the demand for Music Choice by cable companies is derived demand and does reflect the value that consumers place on the service, a concept that SoundExchange’s own economists recognize. Woodbury WRT ¶¶ 16-19; *see also* 6/21/07 Tr. 120:2-19 (Ordover) (stating that “the demand for music through the channels of distribution is a derived demand, and how these distributors will be willing to pay depends on . . . the willingness to pay of their customers”). The fact that Music Choice was unable to offer its service on an a la carte basis directly to consumers (as opposed to as part of a bundle of cable channels)

only serves to highlight the innovative contribution that the SDARS (and not the record companies) made when they added mobility, a nationwide distribution system of their own, and substantial non-music offerings to a multi-channel music service of the kind previously available only on a non-mobile basis. Woodbury WRT ¶ 21.

873. Finally, the fact that the SDARS provide music channels to DirecTV and Echostar for little compensation is irrelevant. As Professor Ordover himself notes, XM and Sirius provide these services to the DBS services because they believe them to be good promotional vehicles for their core satellite radio business. Ordover WRT ¶ 14. Music Choice has no such other business – its televised music channels are its “core” business – and thus has no incentive to offer a similar low rate to cable companies. Moreover, neither XM nor Sirius offers its discount-rate television service to Music Choice’s cable company customers, so there can be no argument (and indeed SoundExchange has adduced no evidence) that Music Choice has had to lower the rate it charges cable companies to compete with XM and Sirius. In any case, XM and Sirius were not on the DBS systems in 2003 when the PSS signed their agreement with SoundExchange. 8/23/07 Tr. 99:12-22 (Woodbury).²⁶

²⁶ It should be noted that even if the Music Choice benchmark were deemed by the Judges to be an improper starting point for determining the SDARS’ rate, rejection of the PSS benchmark rate would not invalidate the entire SDARS rate proposal or – more importantly – its rationale. Indeed, Dr. Woodbury’s functionality and non-music programming adjustments could (and in fact should) be applied just as easily to other benchmark “starting points” that feature only music and use existing distribution mechanisms (such as the Internet) and thus avoid the massive costs incurred by the SDARS in creating their satellite delivery network. Woodbury WRT ¶ 70, n.45. In his written rebuttal testimony, Dr. Woodbury demonstrated how his methodology would apply, for example, to the royalty rates paid by the custom radio services like Yahoo! – services much more similar to the SDARS than the interactive services. *Id.* ¶¶ 69-70. As Dr. Woodbury demonstrates, the [] rate, when “translated” to account for the

2. **The “Shadow of Regulation” Argument Has No Basis in Fact or Theory.**

874. SoundExchange’s witnesses also suggest that the 2003 PSS agreement – a voluntarily negotiated agreement – cannot be used as a benchmark because it was negotiated “in the shadow” of a CARP proceeding. *See, e.g.*, Ordover WRT ¶¶ 8-10. These witnesses suggest, without proffering any hard evidence, that the possibility that a CARP would issue a ruling based on the 801(b)(1) standard if the parties failed to negotiate an agreement somehow tainted the negotiation in a way that renders the resulting rate unreliable – presumably because it is lower than or not a true “market” rate. *Id.*

875. As an initial matter, this critique only makes sense if one believes, as the SoundExchange witnesses claim to, the counterintuitive (and inconsistent-with-precedent) notion that the various policy objectives embedded in the 801(b)(1) standard are simply designed to mimic a “market rate.” *See* PCL Part III.B. Indeed, Professor Ordover’s chief criticism of the PSS benchmark appears to be merely that the rate is not a market rate – as if that is all one need establish. *See* Ordover WRT ¶¶ 8-10. *See also* Pelcovits WRT at 9-10. Professor Ordover thus elevates his initial contention – that a market rate is sufficient to satisfy the 801(b)(1) factors, *see* Ordover WDT at 21-34 – into the unsupportable contention that a market rate is necessary to satisfy the 801(b)(1) factors. Indeed, he goes so far as to claim that the PSS rate is a bad benchmark merely

enhanced functionality and non-music aspects of the SDARS (as compared to the Internet-distributed and all-music custom radio), would result in an SDARS rate of 2.57%. *Id.* at 30. This not only demonstrates the usefulness of Dr. Woodbury’s methodology, but also provides strong corroboration for his recommended fee range.

because it does not “mimic” a market-based rate or “reflect marketplace dynamics” and that Dr. Woodbury's approach must be inconsistent with 801(b)(1) because it is inconsistent with marketplace outcomes. *See* Ordover WRT ¶¶ 8-10, 19. By this logic, a prior agreement voluntarily negotiated between SoundExchange and the SDARS themselves would be rejected by SoundExchange’s economists as a bad benchmark merely because the CARP or CRJs otherwise would have set the rate had such an agreement not been signed.

876. Moreover, as Dr. Woodbury testified, the fact that the PSS agreement was negotiated “in the shadow of” a rate proceeding in which the CARP would have applied the 801(b)(1) factors is exactly what recommends its use here. Numerous reasons for this conclusion have heretofore been cited, including: that the statute itself contemplates consideration of precisely such an agreement; that it represents the closest analogy to the SDARS license in terms of rights, works, sellers, and the like; and that undoubtedly the parties took account of how the CARP likely would conduct the 801(b)(1) analysis and factored that into their negotiation. *See supra* Part VI.D.; Ordover WRT ¶ 9; 8/23/07 Tr. 280:21-282:4, 284:17-285:3, 285:10-22 (Ordover); 8/28/07 Tr. 130:3-14, 132:5-14 (Pelcovits).

877. Professor Ordover’s subsidiary contention that one does not know exactly how the parties to the 2003 PSS negotiation weighed each individual 801(b)(1) factor, *see* Ordover WRT ¶¶ 9, 11, applies equally to any of the so-called “marketplace” benchmarks offered by SoundExchange. To the extent the relied-upon marketplace agreements with other services are claimed to incorporate or account for the 801(b)(1) factors, as Professor Ordover contends, one similarly has no idea how they do so, or how

the weighing and valuing of such factors with respect to the benchmark service would apply to the distinct economic, factual, technological and legal posture in which the SDARS find themselves. As Dr. Herscovici acknowledged, parties other than the SDARS would have no reason to take account, in their own negotiations with the record companies, of the investments, risks, or contributions of the SDARS. 8/30/07 Tr. 77:1-78:12 (Herscovici).

878. Moreover, SoundExchange has adduced no evidence whatsoever that SoundExchange offered an artificially low rate to the PSS to settle the 2003 matter in order to avoid the costs of a CARP proceeding. Intuitively, the incentive would have run the other way: SoundExchange, as the common licensing agent across all manner of statutory licensees, would have had greater incentive to demand a higher rate from Music Choice, and to litigate if necessary to achieve that rate, precisely because it would want to avoid acceding to a rate that later parties, like the SDARS here, would cite as precedential in rate setting. *See, e.g.*, 8/23/07 Tr. 52:9-17 (Woodbury) (discussing the asymmetric litigation incentives of SoundExchange and the PSS); Noll WRT at 116-17; 8/16/07 Tr. 144:2-145:11 (Noll) (“[T]he standard result from all the economics research on the impact of regulation since the late 1950s, is that on average over the long run, the regulatory process ends up over-rewarding suppliers. The prices tend to be too high. And why [Professor Ordoover] concludes that under the shadow of the regulatory price the process is prices that are too low, I don't know but there's no basis in economics for concluding that.”). Not only has no such evidence been presented (even though it would be readily available to SoundExchange, who was a party to the negotiation); the only

evidence that has been adduced demonstrates that Sound Exchange regarded the PSS as economically robust and able to afford a fair royalty fee. *See supra* Part VI.I.1.

3. SoundExchange’s “Inherent Value of Music” Critique Is Unfounded.

879. Professor Ordovery and Dr. Pelcovits critique Dr. Woodbury for claiming that sound recordings have an “inherent” value, such that the higher price consumers pay to the SDARS for providing a mobile, end-to-end service should not lead to a higher payment to the sound recording owners. Ordovery WRT at ¶ 16. They claim that marketplace evidence reveals that where a service is able to charge consumers a higher price, the sound recording copyright owners are able to extract a portion of that higher valuation for themselves. Ordovery WRT ¶¶ 16-18; Pelcovits WRT at 3, 4-5. To support this assertion, they point to interactive services, where certain record companies charge twice as much for portable as non-portable plays. Ordovery WRT ¶¶ 17-18; Pelcovits WRT at 5-7. This criticism is misguided for many reasons.

a. SoundExchange Caricatures Dr. Woodbury’s Position and Elides Key Distinctions.

880. To begin, SoundExchange’s witnesses theatrically misstate Dr. Woodbury’s position. The discussion from which they extrapolate Dr. Woodbury’s views addressed the limited circumstance of the relative valuation to be given public performances of sound recordings on, respectively, the PSS and SDARS. Dr. Woodbury merely suggested that copyright owners should receive the same compensation for the same quantum of public performances under the section 114 license, whether those performances are non-mobile (as on Music Choice) or mobile (as on the SDARS). 8/23/07 Tr. 132:3-8 (Woodbury). To the extent consumers may be seen as effectively

paying more for an end-to-end mobile service, it is because of the value added by innovations and investments of the mobile service provider, not by the record company. *See id.* at 132:3-134:7; *see also supra* Part VI.E.1 (describing rationale of functionality adjustment).

881. Despite SoundExchange’s protestations, Dr. Woodbury does not make a blanket claim that “music” more generally has an inherent value across “all other channels that distribute sound recordings,” Ordover WRT ¶ 16, regardless of what copyright right (performance, reproduction, distribution, *etc.*) is implicated; nor does he claim, as alleged, that pricing should be “uniform” across all channels, *see Pelcovits WRT at 4-5, Ordover WRT ¶ 28.*²⁷ Indeed, Dr. Woodbury explicitly acknowledges that the record labels do receive greater compensation where users receive copies, where reproduction or other additional rights are implicated, or where the service cannibalizes CD sales. *See, e.g., Woodbury WRT at 33-34; 8/23/07 Tr. 162:1-163:21 (Woodbury).*

882. Professor Ordover’s unremarkable observation that record labels are able to obtain significant fees from “attractive distribution media,” *see Ordover WRT ¶ 16 and Tbl. 1*, as well as his effort to hold up as exemplary the royalty rates that the record labels receive from various other “distribution channels,” *see Ordover WRT ¶ 18*, overlooks or conflates crucial distinctions between the rights and functionality offered by those various channels and the limited performance rights and true end-to-end distribution of the SDARS. In short, the royalty rates found in these other channels –

²⁷ Indeed, it is SoundExchange that argues for a form of “uniform” pricing when it suggests that the SDARS should pay the same percentage of its revenues for all content inputs – *i.e.*, that the SDARS should pay the same for sound recordings as they pay for Howard Stern, or the same as the DBS pay for premium content, and the like.

particularly channels that provide for copies of sound recordings, or those that are distributed through the Internet or existing telecommunications networks – lend no support to the notion that the record labels should earn more from the SDARS than from the preexisting subscription services simply because the SDARS earn additional revenues for providing the music on a mobile basis thanks to the billions of dollars they have invested in a satellite distribution network. Professor Ordover’s logic suggests perversely that the more a service invests in technologies that increase consumer demand and payments for the service, the higher the royalty rate the service should pay the record companies – a result surely at odds with the dictates of an 801(b)(1) standard intended to reward rather than punish services for their technological investments and contributions. *See* 8/27/07 Tr. 45:9-20 (Ordover).

883. At one point in his testimony, Professor Ordover actually admitted that Dr. Woodbury’s distinction between the SDARS’ and PSS’ functionalities “correctly characteriz[es] the structure of these two different distribution channels, vertically integrated end-to-end in [the] satellite radio case and vertically unintegrated in the PSS case.” 8/27/07 Tr. 12:3-14:2 (Ordover). Professor Ordover nonetheless maintained that Dr. Woodbury’s adjustments to carve out the revenues earned by the “downstream” distribution component of the SDARS are incorrect: in the vertically nonintegrated situation, according to Professor Ordover, the music supplier would see the “profit” or “surplus” of the downstream retailer/distributor and bargain with the upstream wholesaler to extract a much higher price to capture a share of that surplus. *Id.* at 14:4-16:8, 20:19-21:10, 26:20-27:19.

884. Despite this assertion, Professor Ordover provided no evidence whatsoever of this upstream bargaining phenomenon, offering only the non sequitur that “in the interactive versus noninteractive subscription service, for example, this could be also broken up by wholesale or retail, if one chooses. The prices are quite different.” *Id.* at 15:6-11. Professor Ordover failed to explain how subscription services distributed for free through the Internet (as opposed to a delivery system of their own creation) could be broken up into wholesale and retail levels, or how prices would be affected by such an organizational shift. Nor did he explain why, if his view is correct, the labels have not been able to increase the allegedly low royalty they charge the upstream PSS to capture a greater portion of the high fees consumers pay for cable television.

885. More importantly, when pressed by the Court on how the record companies would be able to demand from an upstream hand-off service a share of revenues earned by a downstream retailer to cover the costs of distribution, Professor Ordover could only say that the copyright sellers would bargain with the upstream service to split the surplus (“revenue per sub minus all the costs”) of the retailer/distributor. *Id.* at 23:10-17. He could not specify (absent a mention of monkeys bargaining for bananas) how such bargaining would result, how it would be passed along to the downstream retailer, or whether the SDARS themselves in fact have any surplus or profit to split. *Id.* at 21:20-25:12. He did admit, however, that “[i]f all of the downstream is pure cost other than the music, then of course there is nothing left” – another implicit acknowledgement of the legitimacy of Dr. Woodbury’s approach. *Id.* at 27:16-19.

b. The Example of Portable Interactive Services Does Not Support SoundExchange's Position.

886. The SoundExchange witnesses suggest that it is the natural outcome of any negotiation that the copyright owners are able to extract a piece of any enhanced consumer valuation where the service creates an innovation that provides for an increased consumer payment. However, SoundExchange's fixation on the differential per-play rate certain labels receive for portable versus non-portable plays on interactive subscription services as supposed evidence supporting the notion that the labels should receive a higher royalty rate for the mobile SDARS service than for the non-mobile PSS services provides an apt illustration of the fallacious reasoning underlying its (and its economists') position. See Ordoover WRT ¶¶ 17-18, Pelcovits WRT at 5-7.

887. To start, the portability premium received by Sony BMG and UMG from interactive subscription services implicates a totally different copyright right than that at issue with the SDARS and PSS – namely, the right to make copies of the sound recording on a portable device and to listen to those copies whenever and wherever the user wishes. See 8/23/07 Tr. 129:9-131:9 (Woodbury) (describing temporary ownership involved in interactive service downloads); 6/18/07 Tr. 161:2-10 (Eisenberg). SoundExchange has been unable to offer into evidence a single instance where the record companies receive a premium from a noninteractive service offering mobile performances of sound recordings (*i.e.*, the type of right licensed under the section 114 statutory license) above and beyond what it charges the service for non-mobile performances of the same sound recordings. See 8/28/07 Tr. 152:14-20 (Pelcovits).

888. To the contrary, the evidence reveals that the interactive subscription services relied upon by SoundExchange to critique Dr. Woodbury are not only different

from the SDARS with respect to the rights they grant, but in fact the only example found in the record where certain labels have been able to extract a higher payment from services that offer sound recordings on portable devices as well as on fixed-location computers. The testimony shows, for example, that the standard price charged for permanent downloads from Apple's market-leading iTunes service allows for copies to be made on portable device without any premium whatsoever on top of the price for listening only on one's computer. *See* 6/18/07 Tr. 166:2-12, 272:13-20 (Eisenberg). Similarly, as Professor Ordover has admitted, the distinction between computer-delivered and over-the-air downloads (the source of his aborted "immediacy" adjustment and another potential benchmark) has largely evaporated. *See* 6/21/07 Tr. 186:7-187:2 (Ordover); 8/27/07 Tr. 96:13-98:8 (Ordover); Part VII.F.4.c.

889. The testimony also reveals that the interactive subscription services themselves have only two million total national subscribers across all services – only 350,000 of whom pay for portability – and both Mssrs. Eisenberg and Kenswil have highlighted the degree to which these upstart services are struggling to find an audience. *See* 6/18/07 Tr. 280:16-281:22 (Eisenberg); 6/27/07 Tr. 116:10-14 (Kenswil); Part VII.F.3. What is more, [[

]] *See, e.g.*, SDARS Ex. 85 (February 7, 2007 agreement between

[[

]]; SDARS Ex. 86 (April 26, 2007 agreement

between [[

]].

890. Indeed, by SoundExchange’s own admission, the digital music services marketplace is too much in flux to draw any conclusions from its pricing – particularly for such new, untested, and seemingly unpopular services as the interactive subscription services. *See* Ordover WRT ¶ 33 and n.20 (describing “highly dynamic and still evolving” marketplace with royalty rates that are “fluid”); *see also* 8/23/07 Tr. 126:9-127:8 (Woodbury) (describing pricing volatility in the digital services marketplace). That Dr. Pelcovits believes that there is “no reason why the record companies should not be able to charge a premium to use the music in a portable service” like the SDARS, *see* Pelcovits WRT at 7, is irrelevant absent solid evidence that they are able to do so.

891. SoundExchange faced the same difficulty in the Webcasting II, where Dr. Pelcovits attempted to establish a “mobility” premium for wireless webcasting based on the alleged price differential between over-the-air downloads to mobile phones and “tethered” downloads delivered to fixed-location computers. *See* 8/28/07 Tr. 143:18-144:16 (Pelcovits). The Judges rightly rejected the proposal for a mobility premium, citing the “absence of any data on mobile interactive services” and finding Dr. Pelcovits’ “alternative data” on mobile downloads to be “not persuasive.” *See* Webcasting II at 24,096. Testimony from SoundExchange’s own witnesses suggests that the Judges were correct in their estimation: the differential in “to-the-computer” and “over-the-air” download rates – to the degree it ever existed – essentially has evaporated in the marketplace. *See* 6/21/07 Tr. 186:7-187:2 (Ordover); 8/27/07 Tr. 96:13-98:8 (Ordover); 6/27/07 Tr. 108:20-110:15 (Kenswil); *infra* Part VII.F.4.c. The market for over-the-air

downloads, by Mr. Eisenberg's admission, remains "a very, very small business."

6/18/07 Tr. 269:18-270:8 (Eisenberg).

892. In light of the Judges' rejection of the "mobility" premium in the Webcasting II and the evaporation of any evidence to support it, SoundExchange and its witnesses now embrace a new set of agreements – portable interactive subscription-service agreements – which they claim provide evidence of a marketplace premium for the SDARS' mobile functionality. This leads to at least two glaring inconsistencies in SoundExchange's position. First, in Webcasting II, Dr. Pelcovits himself explicitly rejected the portable interactive service agreements as useful benchmarks in establishing the premium he believed should be awarded to noninteractive webcasting transmitted wirelessly to mobile devices. *See* 8/28/07 Tr. 137:6-138:15, 143:8-17 (Pelcovits) (discussing Dr. Pelcovits' written direct testimony in Webcasting II). Dr. Pelcovits' stated reason for shunning these agreements was the unique functionality of the portable interactive services as compared to wireless webcasting – namely, the ability "to transfer such conditional downloads to portable devices such as certain MP3 players." *Id.* In reaching this conclusion, he clearly distinguished between the concepts of "portability," which he recognized as providing for copies of MP3's on a portable player, and "mobility," which he recognized as wireless noninteractive streaming straight to a handheld device. *See* 8/28/07 Tr. 137:6-138:15, 143:8-17, 143:18-144:16 (Pelcovits).

893. This distinction between "portability" and "mobility" points to the second inconsistency in SoundExchange's embrace of the portable interactive subscription service benchmark: Dr. Pelcovits and other SoundExchange witnesses repeatedly have testified that the SDARS are mobile, not portable. Dr. Pelcovits, for

example, admitted on the stand that the added functionality provided by the SDARS beyond that afforded by the PSS is more akin to his conception of “mobility” than it is to his conception of “portability”:

Q: Now when you criticize Dr. Woodbury in your present testimony for failing to account for the premium that the marketplace has attached to portability, I take that the sense in which you're using that term here is the one you ascribe to the term "mobility" in the Webcasting testimony. That is the making of streamed as opposed to downloaded content available on portable devices. Correct?

A: Yes.

8/28/07 Tr. 149:2-12 (Pelcovits). Professor Ordover likewise repeatedly testified that “music-only satellite radio is not fully portable,” and that “most people use it really in their cars or at home, so it’s mobile, but it’s not fully portable.” 6/21/07 Tr. 170:12-19 (Ordover). *Compare id.* at 176:11 (“satellite radio is mobile”) *with id.* at 176:14-20 (noting that with the “portability feature” of an interactive service “you can actually download your music from Rhapsody to your device, portable device, and walk around with it”). *See also* 8/27/07 Tr. 64:7-65:1 (Ordover) (same); 8/30/07 Tr. 78:19-79:18 (Herscovici).

894. To hold up portable-service contracts as marketplace precedent for a functionality admittedly more akin to mobility (wireless delivery of sound recording performances on the SDARS), SoundExchange and its witnesses must conflate (if not ignore) the salient distinction drawn by Dr. Pelcovits in the webcasting proceeding between the concepts of “portability” and “mobility” and the marketplace evidence reflecting the distinct valuations placed on those concepts. Dr. Pelcovits is reduced to now suggesting that both terms really just mean “the ability to listen to the music on the go rather than having it at a fixed location” and that he simply used “different words” in

the webcasting case to refer to what he views as the same functionality. 8/28/07 Tr. 149:12-22 (Pelcovits). Apart from the plainly contrary import of the prior testimony, Dr. Pelcovits fails to explain why, if he truly believes that mobility and portability are the same concept, he failed to use the same portable-service contracts as evidence of the “mobility” premium he sought in Webcasting II.

895. By contrast, the fact that Dr. Woodbury argues that the record companies should not receive a “mobility premium” from the SDARS but acknowledges that the labels do charge more for interactivity is not inconsistent, as Professor Ordover and Dr. Pelcovits suggest. See Ordover WRT at ¶¶ 22-23; Pelcovits WRT at 7. Interactivity and portability are not just interchangeable “attribute[s] provided by the distributor” that similarly enhance consumer value, Ordover WRT at ¶ 22, or a “distinction without [a] difference,” as both Ordover and Pelcovits argue. 8/27/07 Tr. 11:10-12 (Ordover). They are in fact easily distinguishable traits that command different prices in the marketplace. Interactive services, as the record company executives testified, are close to 100% substitutional for CD sales and implicate an entirely different copyright right than non-interactive services (the reproduction right); this difference changes the fundamental nature and value of the service.

896. Mobility, by contrast, just provides for a noninteractive performance – implicating the same copyright right as the non-mobile service – in another location. Despite Dr. Pelcovits’ critique of Dr. Woodbury, “music plus when” (*i.e.*, on-demand or not) clearly does matter much more in terms of market prices than “music plus where,” all theorizing aside. Pelcovits WRT at 7-8. In short, marketplace precedent overwhelmingly supports an interactivity premium, but not a mobility premium. In

Webcasting II this Court clearly ruled that “music plus where” has no added value for copyright holders in the context of rejecting a premium for mobile performances under section 114. Indeed, one need look no further than terrestrial radio to see an example of “music plus where” being not only free, but subsidized by the record labels. *See* Noll WRT at 65 (discussing FCC settlements by four radio networks for accepting “payola”).

897. Indeed, Professor Ordovery’s own views of the interactivity premium underscore this distinction between marketplace rewards for interactivity and portability. Professor Ordovery suggests in his rebuttal testimony that one must take intensity of usage (and thus total revenue to the record company) into account before comparing effective rates for interactive and noninteractive streams. *See* Ordovery WRT ¶ 33 n.20. If it is also the case that interactivity and portability are not distinguishable (as Professor Ordovery also suggests), presumably one must, under his view, also consider intensity of use with respect to the fees charged for portable and non-portable services as well. As Mr. Eisenberg testified, there are about five times as many non-portable interactive subscribers as portable subscribers (approximately 1.65 million versus 350,000). 6/18/07 Tr. 281:12-16 (Eisenberg). Thus, even if the interactive services do in fact pay the record labels twice as much per portable subscriber, the total income to the labels is over twice as much for nonportable subscribers. Professor Ordovery’s own logic about “intensity of usage” undercuts his claims about the existence of a portability premium..

J. Ephemeral Copies

898. In this proceeding, the Judges will be setting a royalty rate for both the section 114 statutory license for public performance and the section 112(e)(1) statutory license for the making of ephemeral copies. Ephemeral copies are made solely for the

purpose of effectuating public performances, and have no economic value separate or distinct from the value of the public performances that they effectuate. *See* Webcasting II, 72 Fed. Reg. at 24,102 (May 1, 2007) (“The [section 112] license is merely an add-on to the securing of the performance right granted by the section 114 license.”).

899. Because the SDARS believe that the license for making ephemeral copies does not have any independent value apart from the value of the section 114 statutory license, the SDARS propose folding in the royalty for the section 112(e)(1) statutory license as part of the royalty for the section 114 license. *See* SDARS Second Amended Proposed Rates and Terms at §3__3(a).

900. SoundExchange’s rate proposal adopts a similar posture on the ephemeral recording, at least in its absence of a separate fee. Both of the alternative fees proposed by SoundExchange are intended “to cover both the 17 U.S.C. § 114 performance license and the § 112(e)(1) license for making ephemeral copies.” Third Amended Rate Proposal for SoundExchange, Inc. at 1, 5. Later in its proposal, however, SoundExchange states that 8.8% of both of its proposed alternative fee structures should be attributable to ephemeral recordings. *Id.* at 4, 8.

901. The SDARS’ position that there should be no independent value assigned to the section 112(e)(1) license is supported by the Judges’ decision in Webcasting II. There, the Judges declined SoundExchange’s similar proposal to assign 8.8% of the total value of the total fee owed by the services to the section 112 license and did not assign any specific value to it at all. Webcasting II. Instead, the Judges pointedly noted that it was “evident that the parties consider the section 112 license to be of little value at this point in time” and folded in the value of the section 112 license with the

section 114 license in the final regulations. *See id.* at 24,101; 37 C.F.R. § 380.3 (setting out “royalty rates and fees for eligible digital transmissions of sound recordings made pursuant to 17 U.S.C. 114, and the making of ephemeral recordings pursuant to 17 U.S.C. 112”).

902. The Copyright Office likewise is on the record as stating that the section 112 license has no value. In the Copyright Office’s 2001 DMCA Section 104 Report, it concluded that the section 112(e) statutory license is best viewed as “an aberration” and expressly observed that it did not see “any justification for the imposition of a royalty obligation under a statutory license to make copies that have no independent economic value and are made solely to enable another use that is permitted under a separate compulsory license.” DMCA Section 104 Report at 144 n. 434 (Aug. 2001), *available* at <http://www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf>.

903. The Judges should reject SoundExchange’s proposal to explicitly assign 8.8% of the total fee to the section 112 license. SoundExchange presented no evidence whatsoever in support of its proposal. Indeed, no party presented any evidence at all as to any independent value arising from the section 112(e) license.

904. Based on a similarly sparse record in the webcasting case, the Judges found that the “less than twenty pages” of testimony and exhibits “devoted to any discussion of the section 112 license and ephemeral copies” led to the conclusion that “the parties consider the section 112 license to be of little value at this time.” *See* Webcasting II at 24,101. The Judges concluded that “SoundExchange’s valuation of 8.8% is not a rate. . . . Rather, [it] is nothing more than an effort to preserve a litigation position for future negotiations that the section 112 license has some independent value,

as it did in Webcaster I.” Webcasting II at 24,101. The Judges should reach the same conclusion here and accept the SDARS’ proposal that the section 112 license be included within the total royalty payable, without any separate valuation.

VII. SOUNDEXCHANGE’S RATE PROPOSAL RESTS UPON FLAWED BENCHMARKS AND ECONOMIC THEORY AND DOES NOT FURTHER THE STATUTORY OBJECTIVES.

A. SoundExchange’s Attempt To Value Sound Recording Performances Through Professor Wind’s Survey Is Flawed.

1. Because Virtually All of SoundExchange’s Fee Models Rely upon Professor Wind’s Flawed Survey Concerning the Value of Music, the Fee Models Are Flawed as Well.

905. Virtually all of the fee models presented by SoundExchange rely upon, to a greater or lesser extent, a survey conducted by Professor Yoram J. Wind. Both Dr. Pelcovits and Professor Ordover use Professor Wind’s music “valuation” data in their testimony and determinations of appropriate rates. Dr. Pelcovits uses the value of music to Sirius’ subscribers in his Stern analysis and the overall value of music in his Shapley analysis. Professor Ordover consistently uses a music valuation of 55%, ultimately drawn from Professor Wind’s report, in his DBS, Retail Rate and Percentage of Revenue Analyses. More specifically, SoundExchange’s experts use Professor Wind’s data as follows:

Dr. Pelcovits’ Analyses

- a. Stern Benchmark Rate Analysis. In his Stern benchmark analysis, Dr. Pelcovits used data drawn from Professor Wind’s critically flawed Question No. 9 (the “willingness-to-pay” question). Pelcovits WDT at 13. In Professor Wind’s written direct testimony, he reported that 56% of Sirius’ respondents would cancel or pay no more than \$7.27 if there were no music programming available. Pelcovits WDT at 13; Wind WDT App. K at 1-2 (41% of the Sirius subscribers would cancel their subscriptions if there were no music available and 15% would be willing to pay at most (on average) \$7.27 if there were no music available). Dr. Pelcovits used this 56% as a key input to his Stern royalty rate calculation. Indeed, the

56% was a direct adjustment to Dr. Pelcovits' assignment of 50% of revenue to music programming, allowing him to arrive at his base benchmark rate of 28% (50% x 56%) for the Stern analysis. Pelcovits WDT at 14.

- b. Shapley Surplus Analysis. Dr. Pelcovits also used Professor Wind's survey as part of his Shapley "surplus analysis." In essence, Dr. Pelcovits used the Wind survey data to make certain assumptions and assign "values" to each player in his proposed "game." Pelcovits WDT at 24-25. Specifically, he used Professor Wind's survey to assign incremental revenues associated with adding "sound recordings" (although he should say "music programming") (53.3%), news (22.6%), sports (23.3%) and talk/entertainment (23.4%). *Id.* at 25-26. Because Dr. Pelcovits also assumed that the SDARS would need at least 50% of total content value to be viable (otherwise the Shapley game, under his assumptions, would fail), sound recordings automatically became "essential" based on Professor Wind's reported value for sound recordings of over 53%, while no other content was deemed essential by Dr. Pelcovits. *Id.* at 26-27.

Professor Ordover's Analyses

- c. Satellite Television (DBS). Professor Ordover borrows from Dr. Pelcovits, establishing a “55%”²⁸ “value of music” in his report. The 55% is a direct adjustment to Professor Ordover’s two DBS benchmarks of revenue shares (40% and 49%). Ordover WDT at 41.
- d. Percentage of Revenue Analysis. Professor Ordover makes a direct adjustment to his percentage of revenue findings for sound recording copyright holders and distributors using the 55% figure. *Id.* at 46.
- e. Retail Rate Analysis. Professor Ordover uses the 55% as an input to his calculation of the retail per subscriber per month rate. *Id.* at 51.

906. As demonstrated below, the Wind survey suffers from numerous and significant flaws, which render it wholly unreliable as any evidence of the so-called “value of music.” The SDARS have presented surveys designed by Professor John R. Hauser, the Kirin Professor of Marketing and Head of the Management Science Area at the MIT Sloan School of Management at the Massachusetts Institute of Technology (“MIT”), that correct for some of the Wind survey deficiencies and Professor Hauser’s surveys show dramatically different results. Not only do Professor Hauser’s results reflect a far lower “value of music,” when those results are, in turn, applied to

²⁸ Dr. Pelcovits cited Professor Wind’s study, using the “value” of music for just Sirius, which is 56% in Professor Wind’s report (adding together the percentages of respondents that would cancel and those that would be willing to pay at most (on average) \$7.27 if there were no music available). Pelcovits WDT at 13 n.14. The alleged “value” of music for both services from the Wind report is actually 59%. Wind WDT at 22. Professor Ordover then cited to Dr. Pelcovits’ and Professors Wind’s analyses, but used 55% instead of either 56% or 59%.

SoundExchange's fee models, starkly lower fees result (putting aside the numerous other problems with those fee models described herein, as well as the other problems with the Wind survey that could not be corrected by Professor Hauser). Therefore, to the extent that SoundExchange's fee models rely upon Professor Wind's flawed findings, as summarized above, those fee models are not probative of an appropriate sound recording performance fee.

2. The Wind Survey Methodology Was Flawed in Numerous Ways.

907. The Wind survey involved 428 individuals – either current subscribers to XM or Sirius, or individuals considering subscribing within 30 days – who were asked a series of questions pertaining to how they valued satellite radio's music programming as well as other features of the service. Wind WDT at 1-2. In attempting to determine the value of music, Professor Wind used a number of methodologies, including “willingness-to-pay” questions, “conjoint” analysis, “constant sum” questions and open-ended questions. *Id.* at 6.

908. As set forth in the written and oral testimony of Professor Hauser, and in the testimony of Professor Noll, the Wind survey contains numerous flaws and limitations that render it unreliable and irrelevant. *See, e.g.*, Hauser WRT ¶¶ 11-20 (summary); Noll WRT at 69-72.

909. To illustrate how these flaws inflated Professor Wind's findings regarding the “value of music,” Professor Hauser performed two surveys (one of which replicated key elements of Professor Wind's mall survey) that corrected some of the flaws in Professor Wind's survey. Professor Hauser's surveys establish a far lower, and more accurate, value for the sound recording rights at issue in this case (even putting

aside the numerous other flaws in SoundExchange's fee models and the other flaws in the Wind study). Hauser WRT ¶ 14.

a. Professor Wind's Lack of Oversight Creates Reliability Concerns.

910. As a preliminary matter, serious issues were raised at trial about the reliability of Professor Wind's conduct of the survey itself. On cross-examination, counsel for the SDARS establishes numerous examples of errors in the "coding," or categorizing, of responses to open-ended questions, in each case favoring SoundExchange. *See* 6/14/07 Tr. 238:3-267:20 (Wind). Professor Wind was completely unaware of any such errors until they were raised at trial. He conceded that he looked at a sample of the coding but did not perform a complete check. *Id.* at 230:16-231:7, 269:16-270:9 (Wind).

911. In addition, the testimony showed that forms relating to the "validation" of the survey results by Professor Wind's contractor apparently disappeared at some point after they were allegedly completed. 6/18/07 Tr. 5:10-6:20 (Wind). The absence of this evidence gives rise to still further concern about the procedures and controls in place to ensure the reliability of the Wind results.

912. As discussed elsewhere, Professor Wind also performed a survey designed to test the promotional and substitutional effects of the SDARS on compact disc and download purchases. *See infra* Part V.C.4. After submitting his report, Professor Wind changed his findings multiple times and failed to provide the final changes until the eve of his oral testimony. In the end, the report and related testimony were excluded. *See* 8/29/07 Tr. 113:22-115:2 (Wind) (holding that Professor Wind's report and testimony was not based on sufficient facts or data and that Professor Wind did not apply

his methodology reliably to the facts of this case). Although that is a different report, this troubling pattern of carelessness reinforces concerns raised regarding the accuracy and supervision of Professor Wind's survey regarding the value of music.

913. In past cases, Professor Wind has been criticized for being insufficiently involved in the design, implementation, and analysis of surveys he was retained to conduct. *See* PCL ¶ 168. This lack of oversight and involvement infected Professor Wind's survey and testimony in this case as well, substantially diluting their value. *See* PCL ¶ 168.

b. The Wind Survey "Universe" Is Not a Reliable Model for Predicting Future Content Preferences.

914. Professor Wind's survey applies to a specific point in time (October 2006) and involves a group of consumers (shoppers at a mall) who are not necessarily representative of the population of SDARS subscribers during the license term. Noll WRT at 10. As Professor Noll explained:

By 2012, [the end of the license period,] nearly all SDARS subscribers will not be current subscribers (the average duration of a subscription is 42 months compared to a license period of 72 months), and most of these subscribers will have become subscribers through obtaining a satellite radio as original equipment in a new car, whereas most subscribers in 2006 had a satellite radio retrofitted in their cars.

Id. Professor Noll further found that the results systematically overstated the value of music because they focused on consumers who subscribed early on, when music was a much more prominent feature on the SDARS than it is now, or is likely to be in the future:

[T]he survey results reflect decisions to subscribe early in the history of the industry, not the decisions that will be made by future subscribers who already have decided not to subscribe on the basis of the content that was offered in 2006. Because music content was extensively available on the

SDARS before any other form of content, music is more likely to be the primary reason that initial subscribers decided to acquire the service. As other forms of content are added, the fraction of subscribers who are attracted by this content is likely to grow. Estimating the relative contributions of different forms of content at a moment in time ignores this likely scenario, and in so doing overestimates the proportion of future subscribers who are likely to subscribe due to music.

Noll WRT at 70-71.

915. Professor Wind also made no attempt to match the demographics of XM or Sirius in his survey pool of respondents (or “universe”). 6/14/07 Tr. 299:5-301:21 (Wind). Although according to Professor Wind “you ought to have a representative sample,” (see 6/14/07 Tr. 297:2-3 (Wind), there is no evidence in the record that the Wind survey universe is in alignment with that of either of XM or Sirius with respect to age, gender, education, income, or other potentially relevant demographic.

916. A survey employing an invalid universe of survey respondents offers no reliable insights and should be given no weight. See PCL ¶¶ 161-164.

c. Professor Wind’s Use of the Terms “Music” and “Music Programming” Is Vastly Overinclusive, Incorporating Non-Compensable Sound Recordings and the SDARS’ Valuable Additions to Music Programming.

917. As conceded by Professor Wind, the value of “music” that is derived from the survey responses does not distinguish between sound recordings that are subject to the license being valued in this proceeding (e.g., recorded music from February 15, 1972, or after) and music that is not (e.g., recorded music before that date or live performances broadcast by the SDARS). 6/14/07 Tr: 319:13-320:10 (Wind).

918. Music that is not a part of the license is an important part of the SDARS’ service. Blatter WDT ¶¶ 14-16 (Sirius uses pre-1972 recordings and live performances frequently on its music channels); 6/5/07 Tr. 139:3-19, 194:22-198:2

(Logan) (same for XM); SX Trial Ex. 15 at XMCRB 00016253-54; Noll WRT at 70 (“The surveys undertaken for the SDARS operators show that ‘oldies’ channels featuring music that was recorded before 1972 are among the most popular music channels, yet the content of these channels is not covered by the license.”).

919. Furthermore, Professor Wind’s survey asked respondents about “music” or “music programming” without distinguishing between aspects of that programming. Thus, for example, in his various “open-ended” questions, any mention of the word “music” by a respondent was coded as “music” regardless of the aspect of music that was being discussed. 6/14/07 Tr. 225:3-21 (Wind). In the willingness-to-pay question specifically relied upon by Dr. Pelcovits and Professor Ordovery, respondents were simply asked about “music programming.” Wind WDT Appendix C, Question 9. Professor Wind conceded that his survey was not discriminating enough to distinguish between the value of the music itself, as opposed to features such as superior variety of music or the fidelity of the music. 6/14/07 Tr. 288:2-292:5 (Wind).

920. Professor Hauser’s Internet goes to the very heart of this issue. That survey included a constant sum question (Question No. 4b) in which respondents were asked to allocate 100 points among eight music programming features. Hauser WRT, Ex. G. Constant sum questions are an effective survey tool that, as Professor Wind testified, “excel at showing how a respondent values options relative to each other beyond a mere ranking.” Wind WDT at 11 (also noting that constant sum questions have been a “fixture of surveys” presented at CRT and CARP proceedings).

921. Professor Hauser’s Internet survey demonstrated that respondents (both existing subscribers and those considering subscribing) placed a high level of

importance on the SDARS' contribution to music programming. *See* Hauser WDT, Ex. M. In response to the constant sum question, respondents gave an average importance of 12.5% to "The selection and sequencing of the songs on the channels I listen to," 6.7% to "DJ's and celebrity hosts provide commentary and personality," and 6.6% to "I can hear live studio performance and live concerts," for a total of 25.8%. *Id.* The importance given to these music programming features was substantially more than the importance respondents assigned to "I can hear music from the 70's, 80's, 90's, and today" (i.e., the sound recordings at issue in this proceeding), which was only 15.8%. *Id.* When the value of "I can hear music from the 40's, 50's, 60's and earlier" (10.2%) was added, the total value of programming elements not contributed by copyrighted sound recordings exceeded the value contributed by copyrighted sound recordings by more than 2-1. *Id.*

922. Similarly, when additional features contributed by the SDARS are considered, such as "Most channels are commercial free" (which could not be accomplished without a subscription based service), valued at 24.1% by respondents, "The artist and song title are displayed on my screen," valued at 13.7%, and "The music is uncensored" (also only possible through a subscription service), valued at 10.5%, the total contribution of the SDARS rises to 74.1% of the total value of the features tested, compared to 15.8% for the value of copyrighted sound recordings. *Id.* In other words, respondents valued the total contribution of the SDARS almost five times more than the sound recordings at issue in this case.

923. Professor Wind's survey also does not measure the effect of most of the technological features of satellite radio. Noll WRT at 70. The signal quality and ubiquitous availability of satellite radio broadcasts is given a zero share of value

contribution, whereas in reality subscribers would have little reason to subscribe to SDARS for music alone if the quality and availability of its signals were no different than that of terrestrial radio. Noll WDT at 11. Professor Wind conceded that the survey does offer any insight about music programming as it is on satellite radio versus music programming as it is on terrestrial radio. 6/14/07 Tr. 281:6-9 (Wind). As Professor Noll testified:

If subscribers prefer listening to satellite radio rather than terrestrial radio because the former has better quality and is more ubiquitous, the cause of this preference is the innovation of the SDARS, not sound recordings. The surveys designed by Professor Wind and used in marketing research by the SDARS operators assume that the technology exists and do not seek to determine the amount that subscribers are willing to pay for high quality, ubiquitous service, as contrasted to a hypothetical service that featured the same content but had lower quality. By failing to attribute any subscriptions to satellite radio technology, the survey results as used by the SoundExchange experts systematically overstate the contribution of licensed audio content to SDARS revenues

Noll WRT at 70.

924. Therefore, in his “valuation” of music, Professor Wind conflates the value of the sound recordings at issue in this case with sound recordings not subject to the license fee, live music performances, and the substantial value of the SDARS’ music programming contribution (such as DJs, celebrity personalities, the selection and sequencing of songs, the signal quality and ubiquitous availability of the broadcast) and the technological aspects of the service. In sum, Professor Wind has failed to formulate and ask clear and precisely drawn questions of his respondents tailored to the relevant issue in this case, and his resulting data and opinions are, therefore, not reliable proof as to the matters at issue. *See* PCL ¶¶ 161-165.

d. Professor Wind's Critical Question (the Willingness-To-Pay Question) Is Leading.

925. Professor Wind's "willingness-to-pay" question (Question No. 9) begins by informing respondents that the "single subscription price per month for satellite radio is \$12.95."²⁹ Wind WDT, App. C, Question 9. It then asks respondents how much they would be willing to pay for satellite radio if each of four types of programming – music, news, sports or talk and entertainment – were not offered at all. *Id.*

926. The question also instructed respondents: "furthermore, if you think that not having this type of programming would lead you to cancel your subscription please say so." *Id.* (emphasis added). This question is leading, as it invites the respondent to answer that he or she would "cancel." *See* 6/14/07 Tr. 280:10-16 (Wind) (Professor Wind conceded that question was "possibly" leading); Hauser WRT ¶ 43; *see also* 8/21/07 Tr. 133:21-135:15 (Hauser) (testifying that Question No. 9 is phrased in a one-sided and, therefore, leading manner). In fact, Professor Hauser testified that leading questions can substantially increase responses in the direction of the bias. *See* Hauser WRT ¶ 43. This inflates the cancellation percentages reported by Professor Wind, which in turn inflates both of Dr. Pelcovits' fee models and almost all of Professor Ordovery's fee models.

927. Data and conclusions flowing from a leading question cannot be viewed as reliable evidence. *See* PCL ¶¶ 166. This is especially true in this case, as this

²⁹ Professor Wind testified that he was not aware that not all satellite radio customers actually paid \$12.95. 6/14/07 Tr. 279:4-15 (Wind).

leading question forms the basis of Professor Wind's "value" of music findings, which are relied upon in the vast majority of SoundExchange's fee models, as discussed above.

e. Professor Hauser Identified Additional Flaws in Professor Wind's Key "Willingness-To-Pay" Question.

(1) Professor Wind's Methodology Only Considers the Value of a Feature When It Is Removed First from the Satellite Radio Service.

928. As Professor Hauser explained, the willingness-to-pay question in the Wind survey and analyses in the Wind report is biased by the method in which the features tested are removed from satellite radio service. *See* Hauser WRT ¶ 11; 8/21/07 Tr. 116:8-121:19 (Hauser). Professor Wind tested the "value" of each feature – music, news, sports or talk and entertainment – by removing each, but keeping all other aspects of the hypothetical satellite radio service the same. Wind WDT, App. C at 7. This, in effect, removed each feature "first" without testing the effect of removing other features. Hauser WRT ¶¶ 11, 26-29.

929. As Professor Hauser explains in his "tires on the car" analogy, this biased method strongly favors SoundExchange, because the value of the feature removed first is inflated. Hauser WRT ¶¶ 23-29. The results for each feature cannot be used on a standalone basis because they insufficiently account for the value provided by other features. *Id.* ¶ 11.

930. Based on this order-biased method, the Wind Report estimates that respondents are willing to pay \$6.80 for music. *Id.* However, when these questions are re-asked cumulatively – the more appropriate method, as explained by Professor Hauser – in an order that favors XM and Sirius, the results show that respondents would be willing to pay only \$0.92 for music. *Id.* ¶¶ 11, 99. If the questions are asked

cumulatively, in an unbiased, random order, respondents are willing to pay \$2.93 for music in general, a number that is reduced to \$1.78 when music is limited to music of the 70's, 80's, 90's and today. Hauser WRT ¶¶ 29, 99-100.³⁰

(2) Professor Wind Used a Limited Set of Satellite Radio Features To Test the Consumer's Willingness-To-Pay, Which Were Provided by SoundExchange's Counsel.

931. The features of satellite radio that Professor Wind used in his willingness-to-pay (and constant-sum) questions were obtained from counsel for SoundExchange and were not modified by Professor Wind. 6/14/07 Tr. 278:5-22 (Wind); Hauser WRT ¶ 36. Professor Wind testified that he relied on SoundExchange's lawyers as his "substantive experts." 6/14/07 Tr. 175:20-176:1 (Wind). Thus, the four categories of programming tested by Professor Wind were provided by SoundExchange's lawyers. *Id.* 278:5-22 (Wind). The features tested by Professor Wind's "constant sum" questions and conjoint questions were also provided by counsel. 6/18/07 Tr. 26:6-10 (Wind). Professor Wind, therefore, exercised no independent expert judgment on what features should be included in his survey. Indeed, Professor Wind admitted to having only "superficial" knowledge regarding satellite radio content or service. 6/14/07 Tr. 174:22-175:19 (Wind). Such heavy reliance on counsel is a violation of a crucial survey principle intended to maintain the objectivity of surveys prepared for litigation. *See* PCL ¶ 169.

³⁰ Professor Hauser reported both "weighted" and "unweighted" figures, based on the inclusion or exclusion of a filter question. Hauser WRT ¶ 97. Only the "weighted" figures are reported herein (although they are all available in Professor Hauser's written testimony) as Professor Hauser believes that they represent the more appropriate figures. *Id.*

932. As Professor Hauser testified, it is scientifically more appropriate to select salient features based on the “voice of the customer,” i.e. through pre-survey qualitative interviews with consumers. Hauser WRT ¶¶ 12, 22, 34. Because Professor Wind relied on counsel exclusively, he did not ask respondents or consumers about various key aspects of satellite radio. *Id.* ¶ 37.

933. Based on this limited set of features and an analysis that favors SoundExchange, Professor Wind’s report estimates that 74% of the respondents allocate the most points to music in his constant sum questions (Question 4). Wind WDT at 3, 37. As discussed below, when features identified based on the voice of the customer are tested and ties are broken fairly, as in Professor Hauser’s surveys, far fewer respondents, 5.4%, allocate the most points to music of the 70’s, 80’s, 90’s, and today. Hauser WRT ¶¶ 12, 103; Ex. L.

f. Professor Noll Identified Another Significant Flaw in the Wind Survey – Professor Wind’s “All or Nothing” Option for Music Programming Presents the Wrong Question.

934. In Professor Wind’s willingness-to-pay question, he presents respondents with an “all or nothing” choice – a service with music or a service with “no music programming.” Wind WDT, App. C at 6 (Question 9). As described by Professor Noll,

[t]he appropriate measure of the contribution of sound recordings to satellite radio is the *incremental* contribution of content from each distributor, assuming that product from other distributors already is available. The incremental contribution of a single record company is the upper bound on the price that would emerge from a competitive market. Because sound recording rights are not sold by a monopoly, in a market transaction the sellers cannot make a collective take-it or leave-it offer for all sound recordings. If record companies could make one all-or-nothing offer for all content, which they cannot because such an offer would be

collusion, they would receive a much larger rights fee than if they bargain individually. To the extent that Professor Wind's survey answers any question, it pertains to identifying the collusive monopoly rate for sound recordings, not the competitive rate.

Noll WRT at 10-11; *see also* 8/16/07 Tr. 56:12-59:7 (Noll).

935. Professor Noll further criticized Professor Wind's survey and the reliance upon its results by SoundExchange's experts, stating:

The survey methods for determining the importance of music to SDARS penetration are not designed to answer the pertinent question, which is the incremental value of music, holding constant the features of the service, including the quantity of music that is now available. In a competitive market, the price of an input is equal to the incremental value that is created by the last unit of output, which is less than the average value of all output. The surveys developed by Professor Wind ask vague questions about the willingness to subscribe if substantially more or less music were offered, but they do not attempt to determine the incremental value of music, let alone the music that is offered by a single record company.

Noll WRT at 69.

936. The "all or nothing" design also results in a systematic overstatement of the importance of music relative to other content, because non-music content is broken down into a number of sub-categories, while music content is not. Noll WRT at 70. Thus, Professor Wind asks consumers to value "music" not relative to all "non-music" programming, but rather to compare music to each of news, sports and talk and entertainment programming separately. 6/14/07 Tr. 286:19-287:5 (Wind) Had the choice been "all-or-nothing" for all other content, the proportion answering that they would not subscribe very likely would have been higher than the sum of the proportions for the subcategories. Noll WRT at 10.

937. Professor Hauser's mall survey was designed to replicate Professor Wind's mall survey for comparison purposes, while correcting for certain flaws.

Professor Hauser did not, by design, correct the “all-or-nothing” flaw identified by Professor Noll. Therefore, Professor Hauser’s mall survey results and his willingness-to-pay determinations similarly overvalue “music” relative to other content.

3. Professor Hauser’s Surveys Provide More Accurate and Reliable Data Regarding the Value of the Sound Recordings at Issue in this Case.

938. Professor Hauser designed and executed two surveys to illustrate the impact of some of the critical flaws in the Wind survey. Hauser WRT ¶ 14. The first survey Professor Hauser conducted replicates the mall-intercept methodology used by the Wind survey, but corrects for the order bias – the “tires-on-the-car” flaw (Hauser WRT ¶¶ 23-29)) – and the failure by Professor Wind to test a sufficient number of features relevant to the consumer – the “voice of counsel” flaw (Hauser WRT ¶¶ 30-38) – thereby providing a more accurate estimate of willingness-to-pay (WTP) for the sound recording rights at issue in this case. Hauser WRT ¶¶ 54-55, 57-58. Professor Hauser’s mall survey, however, did not correct for all of Professor Wind’s survey flaws.

939. Professor Hauser corrected the “tires-on-the-car” flaw by asking willingness-to-pay questions in which features are cumulatively removed in a random order and the results are averaged. Hauser WRT ¶¶ 29, 58, 95-100. This provides for a much more realistic “value” of a feature because the removal of that feature is tested in many different positions, relative to the removal of other features. 8/21/07 Tr. 116:19-121:19 (Hauser).

940. Professor Hauser corrected the “voice of counsel” flaw by performing qualitative research in the form of experiential interviews with consumers to identify customer needs and, ultimately, the key features of satellite radio that are of interest

customers. Hauser WRT ¶¶ 56, 62-65, 101-103. Professor Hauser used a more comprehensive and relevant list of features in his surveys to arrive at a value of the sound recording rights at issue in this case. Hauser WRT ¶ 56, Exs. L, M. As Professor Hauser testified, this correction is important because a question attempting to measure the importance of a feature is very sensitive to the number and types of features provided in the question. 8/21/07 Tr. 126:4-128:8 (Hauser).

941. Professor Hauser found, based on the willingness-to-pay questions in the mall survey he conducted, that the consumers' willingness-to-pay for music programming is significantly lower than that asserted by Professor Wind. *See, e.g.*, Hauser WRT ¶ 99. Professor Hauser found that the average of all the possible results he obtained for his willingness-to-pay question was \$2.93. *Id.* This is a more reasonable estimate than the Wind Report's value of \$6.80 because it corrects the "order bias" discussed above.³¹ *Id.* ¶ 16. The \$2.93 is still, however, a value of "music" and must be parsed further to obtain an estimate of the value of the sound recordings at issue in this case, as discussed further below. *Id.* ¶ 107.

942. The second survey was an Internet survey, which also corrects for the "voice of counsel" flaw and which used constant-sum methodology to measure the relative importance of various features of music programming, including features not included by Professor Wind. *Id.* ¶¶ 54, 56. These features were derived from the

³¹ Professor Wind's WTP value is derived from Figure 8, on page 24 of the Wind Report. It is equal to \$12.95 – \$6.15, the latter being the price on average that respondents are said to be willing to pay for a satellite radio service without music. Therefore, the Wind Report concludes, the balance of the purchase price of \$12.95 must be equal to the value of music programming.

consumer interviews performed at Professor Hauser's direction prior to the survey, as opposed to the "voice of counsel" features tested by Professor Wind. Hauser WRT ¶¶ 64, 94.

943. Based on the Internet survey, respondents assigned an average of 15.8 points out of 100 to music programming "from the 70's, 80's, 90's and today," which is generally reflective of the post-1972 rights at issue in this case. *Id.* at ¶¶ 12, 19, 47; Ex. M (also citing that a similar number, 16.0%, gave the most points to this same category of music programming). This finding is buttressed by the results of Professor Hauser's mall survey, which employed an "anchored importance" and a comprehensive set of features (29). Hauser WRT ¶¶ 101-02. The mall survey revealed that only 5.4% of respondents assigned the most points to music programming "from the 70's, 80's, 90's and today." *Id.* at ¶ 103.

944. Based on the results of his Internet survey, Professor Hauser estimated a range (15.8%-60.8%) for the importance consumer's place on music "from the 70's, 80's, 90's and today," which can be used to further clarify the willingness-to-pay figures derived from the mall survey. Hauser WRT ¶ 106. In a measure favorable to SoundExchange, Professor Hauser used the comparative importance of "music from the 70's, 80's, 90's, and today" versus "music from the 40's, 50's, 60's, and earlier" from the mall survey. In a measure that takes into account more of the features that consumers found to be important, Professor Hauser used the relative importance of "music of the 70's, 80's, 90's, and today" versus all other features included in the Internet survey. The former gives a weight of 60.8% for the importance of music from the 70s, 80s, 90s and

today; the latter, more thorough parsing, gives a weight of 15.8% for music from the 70s, 80s, 90s and today. Hauser WRT ¶ 106.

945. Combining the results of his two surveys, Professor Hauser conservatively (most favorable to SoundExchange) estimated the consumer's willingness-to-pay, for the sound recording rights at issue here, at \$2.93 multiplied by the 60.8% importance of music from the 70s, 80s, 90s and today, resulting in a value of \$1.78. Hauser WRT ¶ 106-07. Using the 15.8% importance of music from the 70s, 80s, 90s and today, which is more favorable to the SDARS, the result is \$0.46. *Id.* This range, \$0.46 – \$1.78, is dramatically lower, and more accurate, than Professor Wind's flawed valuation of \$6.80.

946. Importantly, Professor Hauser's mall-intercept survey also establishes that only 12.2% of the respondents would cancel their service if it lacked music programming and that an additional 9.6% of respondents would pay less than \$7.27 for their service. Hauser WRT ¶¶ 109-10. The impact of these findings on Dr. Pelcovits' calculations is also dramatic. At most, and putting aside all of the other flaws in the Wind survey, the estimate of the percent of subscriber revenue lost if music were not available that Dr. Pelcovits purports to derive from the Wind survey would be 21.8% – much smaller than the 56% in the Wind Report. Hauser WRT ¶¶ 17, 110.

947. Taking this analysis a step further, Dr. Pelcovits' Stern benchmark calculations can be re-performed (accounting for Professor Wind's failure to parse the

importance of sound recordings at issue in this case).³² Dr. Pelcovits' calculations then become: (50% Stern revenue figure, as in the Pelcovits Report) x (21.8% (replacing Dr. Pelcovits' 56% from the Wind survey)) x (adjustment for music 1972 and later as opposed to music before 1972 at 60.8%, as most favorable to SoundExchange [or 15.8% as most favorable to the SDARS]) Hauser WRT ¶ 118. In the end, the revised Pelcovits' calculations result in a value that is 2.8% of revenue, using assumptions that are most favorable to SoundExchange (and incorporating Dr. Pelcovits' adjustments 3.5% (for the publishers' royalties from these figures) and 1.5% (to account for the SDARS' internal production costs). Using assumptions that are most favorable to XM and Sirius, the calculations in the Pelcovits Report result in an estimated royalty of 0%. *Id.*

4. Professor Wind's Testimony Contains Additional Inconsistencies and Errors.

948. Although the Wind survey was biased in favor of SoundExchange, the survey itself contains results inconsistent with Professor Wind's interpretation. For example, in Professor Wind's most open-ended question, Question 1, which simply asked: "why did you decide to subscribe/why are you considering subscribing to satellite radio?" 82% did not mention music as the top reason and 61% did not mention music at all, even after a subsequent probe question asking "Any other reason?" *See* Wind WDT at 29, Figure 11; 6/14/07 Tr. 217:5-18, 218:1-13 (Wind).³³ When Professor Wind asked

³² The SDARS dispute the relevance and applicability of Dr. Pelcovits' benchmarks and analyses and changes to the inputs to Dr. Pelcovits' calculations are suggested only in the context of establishing the serious flaws in Dr. Pelcovits' reports.

³³ Figures 9 and 10 in Professor Wind's written direct testimony are misleadingly based on figures that improperly conflate the responses to open-ended questions addressing primarily programming features (Questions 2 and 3 of the Wind

people what they would do if there were no music programming whatsoever, the majority of people (57%) said that they would not cancel the service. *See* 6/14/07 Tr. 282:10-22 (Wind); *see also* Wind WDT at 22 (Figure 6). These findings are not consistent with the conclusion that “music” (let alone post-1972 sound recordings) accounts for more than 50% of the value of the SDARS.

5. Conclusion

949. For all of the reasons above, the Wind survey and its results are not sufficiently credible to inform the decisions in this proceeding and therefore should be given no weight. *See* PCL Part VI. Because each of SoundExchange’s fee models relies on Professor Wind’s survey, each of those fee models are unreliable and unpersuasive for this reason alone (before the numerous other flaws are taken into account). Professor Hauser’s surveys and results are far more reliable and they demonstrate clearly that Professor Wind has vastly overstated the value of music. When those results are applied to SoundExchange’s fee models, those models lead to far more modest (although still grossly excessive for other reasons stated below) fee levels than the confiscatory rates sought by SoundExchange.

survey) with the responses to less restrictive questions (Questions 1 and 11 of the Wind survey). Wind WDT at 26, 27.

B. Dr. Pelcovits' Surplus/Shapley Value Analysis Is Unreliable and Inappropriate.

1. Background of Dr. Pelcovits' Surplus/Shapley Theory

950. One of Dr. Pelcovits' analyses in his Written Direct Testimony is based on a calculation of a theoretical "surplus" that he derives from Mr. Butson's analysis. *See* Pelcovits WDT at 14-22. Dr. Pelcovits claims that this theory is "based on the financial situation of the SDARS" (Pelcovits WDT at 14), although it actually is based on a purely hypothetical "surplus" for 2012, not any actual financial results.

951. Properly viewed, there is no surplus to divide. As Professor Noll put it, in a simple, common sense way: "How can an industry with a cumulated deficit of \$7.3 billion, and forecasts of an increase of \$1.1 billion in its cumulative deficit by the end of the license period in 2012, be regarded as having a surplus?" Noll WRT at 25.

952. Dr. Pelcovits then calculates a proposed rate by dividing the theoretical surplus using a highly stylized conceptual "game" – the "Shapley" value model developed from cooperative game theory. *Id.* As demonstrated below, the Shapley model is not an appropriate tool for allocation of surplus in this case, is based on assumptions that do not relate to the establishment of a sound recording fee, bears no relationship to the section 801(b) factors, and, in any event, is applied in a biased manner that ignores reality and favors SoundExchange by, among other things, granting the record companies with monopoly returns that are antithetical to both section 801(b) and competitive market pricing.

953. The result reached by Dr. Pelcovits demonstrates the absurdity of his use of the Shapley value model – the SDARS, which made the billions of dollars of investment, created the new technologies and systems, and bore all of the risks and

expenses, are rewarded with just 10% of the “surplus.” The record companies, which have made no investment in SDARS, did not develop the technologies and systems, and have borne no risks or costs related to the new service, are rewarded with 62% of the “surplus.” *See* Pelcovits WRT at 29-30.

954. The Surplus/Shapley theory as articulated by Dr. Pelcovits has had three separate iterations, each with different results (although the Shapley aspect of the calculation is unchanged). The initial version appears in Dr. Pelcovits’ Written Direct Testimony. *See* Pelcovits WDT at 14-22. In his Amended Written Testimony, Dr. Pelcovits changes the treatment of music programming costs, paying them out of the portion of the surplus allocated by Shapley to “music.” *See* Pelcovits Amended Written Direct Testimony (“AWDT”) at 3-4. Finally, following Mr. Butson’s admission at trial that the 2012 projections on which the “surplus” calculation was based were no longer valid, Dr. Pelcovits’ Written Rebuttal Testimony reworked the analysis again using Mr. Butson’s heavily-revised projections. *See* Pelcovits WRT at 37-39.

2. A Theory Premised Entirely on Projections of the SDARS’ 2012 Finances Is Inherently Unreliable.

955. Dr. Pelcovits expressly asserted that “reliable projections” provided the underlying basis for his surplus calculation. Dr. Pelcovits claimed that:

Reliable projections of the SDARS’ expected revenues in 2012 at the end of the license term, and reliable projections of [their] expected costs over the same period, allow me to identify the pool of surplus revenue that will be divided among the various content providers and the SDARS’ shareholders at a point when the SDARS themselves claim they will be profitable, self-sustaining, businesses.

Pelcovits WDT at 3; 7/9/07 Tr. 170:2-170:9 (Pelcovits) (emphasis added).

956. The “reliable projections” of the SDARS’ revenues and costs as of 2012 used by Dr. Pelcovits were the projections of Mr. Butson. Pelcovits WDT at 17; 7/9/07 Tr. 170:10-170:20 (Pelcovits); *id.* 172:3-172:10.

957. Notwithstanding Dr. Pelcovits’ expressed confidence, the unreliability of Mr. Butson’s projections – for every year, but particularly for the later years of the license term – has been demonstrated and admitted in the record. The unreliability of Mr. Butson’s projections is apparent, *inter alia*, from a comparison of Mr. Butson’s original projections cited by Dr. Pelcovits (and expressly vouched for as “reliable” by him) in his Written Direct Testimony, and what Dr. Pelcovits benignly characterizes as the “updated” projections used in his Written Rebuttal Testimony:

Subscribers

	<u>Original</u>	<u>Updated</u>	<u>Difference</u>
Sirius	19,113,777	15,459,960	3,653,817
XM	<u>19,221,032</u>	<u>15,407,971</u>	<u>3,813,061</u>
Total	38,334,809	30,867,931	7,466,878

Revenue (in thousands)

	<u>Original</u>	<u>Updated</u>	<u>Difference</u>
Sirius	\$3,152,784	\$2,555,099	\$ 597,685
XM	<u>\$3,243,201</u>	<u>\$2,550,118</u>	<u>\$ 687,083</u>
Total	\$6,395,985	\$5,111,217	\$1,284,768

Pelcovits WDT at 19; Pelcovits WRT at 38.

958. As shown in the table above, the discrepancies between the original “reliable” projection and the new projection are vast – approximately 19-20% for both

subscribers and revenues – despite the fact the revised projection was prepared less than nine months later. Mr. Butson has cut the number of projected end-of-term subscribers for the SDARS by almost 7.5 million, and has cut the estimate of 2012 revenues by almost \$1.3 billion. The vast change in these “reliable” projections over a period of only nine months is particularly significant in view of the fact that the ending point for the period being projected (2012) is still more than five years away.

959. The fact that Mr. Butson’s projections have changed so drastically is not surprising in view of his testimony. Mr. Butson testified that his projections “by definition” were subject to change on a daily basis. 6/19/07 Tr. 215:1-215:9 (Butson). Mr. Butson also testified that Dr. Pelcovits should have been aware of this fact. *Id.* At 216:19-217:10. There is no suggestion in the record that Mr. Butson’s latest projections are any more reliable than his previous, now-discredited projections.

960. Dr. Pelcovits chose to calculate the purported surplus only from 2012 projections, the year during the term for which such projections are inherently the least reliable. *See* 6/19/07 Tr. 214:13-215:9 (Butson admitting that, the farther out one goes, the greater the uncertainty in the projections). Dr. Pelcovits himself admitted that “the farther out you go the greater the likely deviation between a projection and what actually will come about.” 7/9/07 Tr. 184:12-17 (Pelcovits).

961. In addition to being the year of the license term for which projections necessarily are least reliable, 2012 is also the year for which any “surplus” would be highest, as Dr. Pelcovits admitted. 7/9/07 Tr. 204:11–204:16 (Pelcovits).

962. Apart from conclusorily stating that 2012 was the last year of the license year, Dr. Pelcovits’ only stated justification for using 2012, as opposed to some

other year during the license term (or a blended rate of multiple years during the term) is that “by their own account [the SDARS] will be mature and profitable businesses” by this time. Pelcovits WDT at 14.

963. When questioned at trial, Dr. Pelcovits was unable to provide any source or citation for this supposed statement by the SDARS that they will be mature businesses in 2012. 7/9/07 Tr. 175:16-177:7 (Pelcovits). Moreover, Mr. Butson specifically cited the lack of maturity in 2012 as a rationale for extending his model beyond 2012. 6/19/07 Tr. 162:1-163:2 (Butson).

964. Whether the SDARS will be “profitable businesses” in 2012 (the other reason cited by Dr. Pelcovits) is one of the matters that hangs in the balance in this proceeding. If the rates advocated by Dr. Pelcovits were adopted, Mr. Butson’s revised analysis demonstrates that neither of the SDARS would be profitable in 2012 or in any other year in the entire license term. *See* Butson WRT App. A (Sirius) and B (XM) (showing net losses for both companies in 2012).

965. The Alice-in-Wonderland character of Dr. Pelcovits’ alleged “surplus” is shown by SoundExchange’s own experts. Under the SoundExchange fee proposal, Mr. Butson’s projections (which, as discussed *supra* Part V.I would understate the loss) show that the SDARS will have a net loss in excess of \$250 million in 2012. Dr. Pelcovits, however, waves this deficit away, and declares that, for purposes of his analysis, the SDARS will have a “surplus” in excess of \$1.7 billion in 2012. *Compare* Butson WRT App. A&B at 1 (showing net losses of \$20.7 million for Sirius and \$230.7 million for XM) *with* Pelcovits WRT at 38 (“Surplus” of \$898.0 million for Sirius and \$743.5 million for XM).

966. Despite the fact that a rate is being set for the entire 2007-2012 license period, Dr. Pelcovits only presents calculations for 2012. *See* Pelcovits WDT at 19; Pelcovits WRT at 38; 7/9/07 Tr. 234:4–234:8 (Pelcovits). At trial, he claimed to have run an alternative “analysis for 2007-2011.” 7/9/07 Tr. 233:18–234:4. However, Dr. Pelcovits failed to present any such analysis to the Court. *Id.* at 234:9–234:18. Thus, despite purporting to justify rates for the entire 2007-2012 license period, the only year actually considered by Dr. Pelcovits in his analysis is 2012, the year for which it is undisputed that projections are both (i) most favorable to SoundExchange, and (ii) least reliable.

3. Properly Viewed, There Is No “Surplus.”

967. Dr. Pelcovits claimed that, in calculating the “surplus,” the “critical thing is that I included for each company all of their costs.” Pelcovits WDT at 18. He also claimed that the “analysis accounts for all of the SDARS’ costs, including the fixed and sunk costs of launching the satellite system, and a risk-adjusted return on that investment.” *Id.* at 17.

a. Dr. Pelcovits Fails To Consider the SDARS’ Sunk Investments in Building their Businesses.

968. In fact, Dr. Pelcovits did not include all costs as claimed. Dr. Pelcovits ignored all costs incurred in building the business prior to 2012, except for a derived rental rate on depreciated property, plant and equipment based on Sirius depreciated book value as of the end of 2005, plus the cost of one new satellite. *See* 7/9/07 Tr. 214:3–215:10 (Pelcovits). Dr. Pelcovits used the exact same capital cost figure for XM as for Sirius, despite XM’s different capital cost structure. *See* 7/9/07 Tr. 215:11–215:17 (Pelcovits).

969. Dr. Pelcovits drew this distinction among costs in his model despite recognizing that the investments that he ignores and for which he proposes no compensation were needed to build the business generating the supposed “surplus”:

Q: Now you would agree, would you not, that the investors of capital in the business that was used to fund building brand equity, gaining subscribers and covering operating losses would have invested that capital expecting a return on that capital? Correct?

A: It’s hard to tie it to a particular point in time because investors don’t always get what they expect. But, yes, I think an investor in the company, somebody who is going to own the company, will consider the prospective future profits and losses of the company and that would include operating loss, the cost of building a brand name through advertising, the cost of paying for content or acquiring customers just as they then own the company and get all the future benefits of owning the company.

Q: And you would agree that the investment needed to finance that building of the business including financing the accumulated losses, is no different than the investment needed to buy satellites from the standpoint of those providing the capital, is it?

A: I think that’s correct.

7/9/07 Tr. 212:20–214:2 (Pelcovits) (emphasis added). Dr. Pelcovits defended this admitted exclusion of billions of dollars of past investments from his analysis only by stating that “[t]his particular analysis looking at 2012 is a going-forward analysis.” *Id.* at 212:17-212:19. As Professor Noll stated, ignoring the bulk of the investments in building the business was improper. Noll WRT at 13, 25-29; *see supra* Part V.C.1-3.; PCL Part III.D.3.

b. Dr. Pelcovits Fails To Count All of the SDARS’ True “Forward-Looking Costs.”

970. Even if the correct inquiry were limited to forward-looking costs, which it is not, Dr. Pelcovits “underestimates true forward-looking costs.” Noll WRT at

13. This is for multiple reasons, as discussed in the testimony of Professor Noll. Noll WRT at 29-34; 8/16/07 Tr. 103:20-117:13.

971. First, in assessing the forward-looking opportunity cost to the SDARS of continuing to operate their businesses, it is essential to consider the market value of all existing assets. By using fully-depreciated book value of just the physical assets, rather than the market value, and by ignoring other assets that have been expensed, Dr. Pelcovits undercounts the assets of the companies that are entitled to generate a return. Professor Noll specifically identified, as examples, the SDARS FCC licenses, intangible assets generally, and intellectual property resulting from research and development. As explained by Professor Noll:

[T]he reason that's inadequate is that many of the assets of the firm are carried at zero book value but they have market value. Like for example, the license to operate, the FCC license, that is an investment in the sense that the [firm] spent money long before it existed as an entity selling satellite radio service. It spent money in the regulatory process to get a license.

The way that accounting works is that you count those expenditures as a current expense. You don't count them as an investment. So there – that's effectively depreciated them 100 percent in the first year. So therefore, the book value of those assets is counted at zero. But if anybody on the planet, including a record company, could operate a satellite radio company, in a way that recovered all of its forward looking costs, then some, the market value of that license to operate would be positive even though its book value is zero.

So it's not correct for intangible assets in general to say that because their book value is zero, their market value must be zero. Another example of that is technology. That here were R&D expenditures and research and development expenditures on the whole infrastructure of the satellite radio system. Again, research and development expenditures, engineering expenditures, are in accounting treated as a current expense. So they're carried at zero book value. But, in fact, to the extent that technology is valuable, it can be licensed, it has a positive book value, all right.

And so to say that everything that's carried at zero book value has a zero market value is simply a mistake.

8/16/07 Tr. 105:11-107:6 (Noll); Noll WRT 29-34.

972. Dr. Pelcovits' forward-looking investment analysis also fails properly to treat cash flow losses during the period. Dr. Pelcovits simply adds up cash flow losses in 2012 and ignores the losses for 2007-2011 (as well as all losses prior to 2007). However, this is error, as Professor Noll explains, the correct way to deal with "short-term, cash flow losses which in part are investments in intangible assets that are not carried at positive book value" is "you carry forward those cash flow losses at the opportunity cost of capital. He doesn't do that. He just adds up the actual cash flow losses." 8/16/07 Tr. 108:17-109:1. As Professor Noll testified,

That also underestimates the forward looking costs. If we adopt the standard financial economics model of how we do forward looking costs, we have to evaluate the negative cash flows going forward at the opportunity cost of capital, not just simply the actual amount lost.

8/16/07 Tr. 108:17-109:1 (Noll).

973. Professor Noll also testified that Dr. Pelcovits was wrong not to "count the content costs of satellite radio for non-music as a forward-looking costs, even it's contractually committed." 8/16/07 Tr. 107:10-108:2. As Professor Noll described,

[F]rom the standpoint of an operating business, the contractual commitments to undertake expenditures in the future are a forward looking cost. The reason he does this is because later on he wants to use his Shapley values method to allocate what would be a fair income, quote, unquote to the non-music content but that is a fairy tale, because you know, if it comes out that Dr. Pelcovits says that [Shapley] value for Oprah Winfrey is half of what she's contractually supposed to get, you know, the forward looking cost is what she's actually contracted to get not what his estimate of her Shapley value is.

So that reality is he also systematically underestimates the forward looking costs by failing to take account of contractual obligations.

8/16/07 Tr. 107:10-108:2 (Noll); Noll WRT at 33.

974. Dr. Pelcovits did, however, inconsistently count his understanding of the real contractual content cost paid by the SDARS to the music publishers for the music work public performance right, rather than allowing the publishers to share in the Shapley model. Pelcovits AWDT at 4. Had Dr. Pelcovits treated music publishers like he treated the other content costs, the publishers' rights would have been precisely as necessary to the game "coalition" as the sound recording rights, which necessarily would have significantly reduced SoundExchange's alleged 62% Shapley share.

c. Dr. Pelcovits Significantly Undercounts the Forward-Looking Cost of Even the Investments in Physical Capital that He Did Consider, by Failing To Provide an Appropriate Return on that Investment.

975. Professor Noll demonstrated that, even within Dr. Pelcovits' own, cramped, concept of "forward-looking" investment, Dr. Pelcovits significantly undercounted the forward looking costs that the SDARS need to recover during the license period in order to justify staying in business. Noll WRT at 34-38; 8/16/07 Tr. 109:4-11 (Noll) ("He doesn't do that right either because of this failure to take into account the opportunity cost of capital.").

976. As Professor Noll explained, Dr. Pelcovits failed to provide a return on that investment during the license period. Noll WRT at 34-38; 8/16/07 Tr. 109:4-113:13 (Noll); *id.* 188:19-189:4 ("The whole point of this exercise is to demonstrate the importance of taking into account the opportunity cost of financial capital over the period as opposed to the steady state analysis which only asks the question for 2012.").

977. Dr. Pelcovits demonstrated, using the original, overly optimistic, Butson projections and the original SoundExchange fee proposal, that "in order for the

physical forward looking cost of capital to be recovered in the next six year period, just that part, the rates could not be more than 25 percent of what the SoundExchange rate proposal was.” 8/16/07 Tr. 113:9-12 (Noll);³⁴ *id.* 109:4-11:9 (describing the calculation in detail).

978. This calculation was limited to physical capital. If properly adjusted for the other forward-looking costs of the SDARS, this calculation would have led to an even lower SoundExchange fee consistent with forward looking costs. *See* 8/16/07 Tr. 103:20-107:3 (Noll).

979. Professor Noll also described the effect of the revised Butson projections on the analysis of the forward looking cost of physical capital. He concluded that because “the new Butson analysis causes the net losses of the companies to be larger than they were in the old analysis The discount off the SoundExchange proposals that I was working with would be more than 75 percent.” 8/16/07 Tr. 116:8–117:13 (Noll) (emphasis added).

980. In fact, as Appendix C demonstrates, performing Professor Noll’s analysis using the new Butson projections and SoundExchange’s Third Amended Fee Proposal, leads to the conclusion that the SDARS will not cover their forward-looking opportunity costs of physical capital (as that capital is defined by Dr. Pelcovits) in this

³⁴ It was clear from the calculation performed by Professor Noll, that this 25% reduction applied to the aggregate of fees proposed by SoundExchange for the entire license period. *See* Noll WRT 35-36 (comparing aggregate required return “over the license period,” and growth of cumulated deficit “by the end of the license period” with estimated royalty payments “for the license period”). Thus, the 25% reduction would apply not only to the fee proposed in the last year, but the fees proposed in each of the prior years.

period, even with a zero sound recording fee. Thus, the sound recording license fee must be near zero and certainly no greater than the fee proposed by the SDARS.

981. In short, whether applying the correct reasonable return on all investment standard or Dr. Pelcovits' forward-looking cost standard, there is no surplus.

4. Shapley Value Is Not an Appropriate Tool for Allocation of Surplus in this Case.

982. As Professor Noll testifies, "the Shapley Value is not a useful approach to determining the rates in this proceeding," because, among other reasons, it "is derived from a model in game theory that is based on assumptions that are not satisfied by the problem of determining performance rates." Noll WRT at 78. The use of Shapley value "is inappropriate to begin with because it actually doesn't represent anything real. It doesn't even produce market prices." 8/16/07 Tr. 125:8-11 (Noll).

983. Shapley value is based on the theory of a cooperative joint venture. *See* Noll WRT at 81. It does not operate on the basis of the policy factors identified in section 801(b). It does not represent how a market determines prices – market prices are not set by cooperative allocation. 8/16/07 Tr. 117:14-119:22 (Noll).³⁵

³⁵ It was clear from the calculation performed by Professor Noll, that this 25% reduction applied to the aggregate of fees proposed by SoundExchange for the entire license period. *See* Noll WRT 35-36 (comparing aggregate required return "over the license period," and growth of cumulated deficit "by the end of the license period" with estimated royalty payments "for the license period"). Thus, the 25% reduction would apply not only to the fee proposed in the last year, but the fees proposed in each of the prior years.

a. The Shapley Value Model Is Based on Assumptions that Do Not Relate to Establishment of a Sound Recording Performance Fee.

984. One “underlying premise” of Shapley value is that the output of a coalition is fixed and that the mechanism for dividing the output among the members has no effect on the effort and efficiency they will devote to production. That premise is “exactly inconsistent with the whole issue of what should copyright rates be.” Section 801(b) looks, in part, at “the incentive structure for people who create products . . . if you just simply ignore how the allocation of revenue among parties is going to [a]ffect their technological contribution and their creative contribution and their willingness to take risk, you’ve assumed away the problem.” 8/16/07 Tr. 118:11-119:22 (Noll)

985. Nor is the Shapley value model relevant to ascertaining the price that would prevail in a competitive market. As Professor Noll explained, the Shapley value model “was not developed for the purpose of creating a market price or an estimate about a market price. That’s not what it’s about. And it bears no relationship, actually, to a market price.” 8/16/07 Tr. 117:14-118:4 (Noll); *id.* 125:10-11. “[I]t’s inappropriate for any market process but it’s especially inappropriate for this one.” *Id.* 119:20-22.

986. Among other reasons, markets price at the margins, while an “important feature of Shapley Values is that they are the product of ‘all or nothing’ effects of each member of the group.” Noll WRT at 85. Conversely, “[a]n important component of the economics of production is the Law of Diminishing Returns, which states that, if the use of one factor of production is held constant, additional units of another factor of production produce declining amounts of additional output. A firm then acquires an input up to the point at which its price equals the incremental output from the

last unit that was acquired. Consequently, in market equilibrium the value that is created by prior units of input exceeds the input price.” Noll WRT at 85-86. As discussed below, Dr. Pelcovits’ application of the Shapley Value model exacerbated this effect.

987. Dr. Pelcovits admitted that he was not “aware of literature discussing the use of Shapley value to determine prices that would be established in the market” or “to predict what markets would do.” 7/9/07 Tr. 162:18-164:7. He was not aware of Shapley value ever having been used as a tool for setting rates in a rate making proceeding. *Id.* 165:14-22 (“I’m not aware of it being used for rate setting purposes.”).

988. Before this case, Dr. Pelcovits had not used the Shapley value in any work he had done over the past ten years. *Id.* 219:8-12. He did not recall ever using Shapley value to present a rate recommendation. *Id.* 219:13-16.

989. The Shapley value model operates from the assumption “that every sequence of adding members to the group is equally likely” and that “the order in which members will be added is unknown in advance and is selected randomly.” Noll WRT at 79. Of course, in the real world, even if the sound recording performance fee were determined in a cooperative manner, the order would not be random. The SDARS came first, and made all of the investments necessary to operate their services.

990. Another reason that the Shapley value model is inapplicable here is that it permits monopoly profit. 8/16/07 Tr. 123:7-8 (Noll); *Id.* 125:11-14 (observing that Shapley value “does produce monopoly rents or monopsony rents if that is the way the market is structured and that’s not what this is all about.”). Noll WRT at 82-83. Thus, it should not be used to estimate competitive market prices, or prices to be determined under section 801(b), which are necessarily no greater than those that would exist in a

competitive market. As discussed below, Dr. Pelcovits' implementation of the Shapley value was designed to credit the record companies with the returns of a price discriminating monopoly.

991. As Professor Noll also testified, another

important departure of Shapley Values from the reality of performance licenses is the assumption that the allocation has no effect on production and the value of output. In implementing the Shapley allocation, Dr. Pelcovits assumes that the "surplus" from satellite radio in each year of the license period is fixed. This assumption means that the nature of satellite radio, its prices, and its numbers of subscribers are unaffected by the prices that satellite radio pays for its inputs. The necessary implication is that the rate for sound recordings will have no effect on either prices or subscribers of satellite radio.

Noll WRT at 84-85. This assumption is inconsistent with profit-maximizing behavior by SDARS operators. Noll WRT at 85.

992. As Professor Noll further observed:

By assuming a fixed "surplus," to begin calculating Shapley values, Dr. Pelcovits implicitly assumes that the quantity and quality of output and the proportions of each input are predetermined. In making this assumption, Dr. Pelcovits also implicitly assumes that SDARS operators will not make program innovations over the course of the sound recording license and will not vary the content of the channels.

Noll WRT at 85. "There's no strategic response to the [Shapley] reward, all right. That is to say I can't respond to a higher price for one input by buying less of it." 8/16/07 Tr. 130:21-131:5 (Noll).

993. That attribute of the Shapley value is inconsistent with the way competitive markets work "because they create an incentive structure to behave in sort of a proper way. . . . And that whole concept of prices as incentives is not present. It's just ignored in the whole Shapley procedure." 8/16/07 Tr. 131:5-15 (Noll).

b. The Shapley Value Model Does Not Lead to Results that Are “Fair,” as that Term Is Used in Section 801(b).

994. The Shapley value model also does not bear any relation to the relevant aspects of fairness as that term is understood in economics. Noll WRT at 79-84.

As Professor Noll testified:

the only sense in which Shapley values have a fairness element is in the way its put within the literature about fairness is that it removes the effect of privilege – that is to say the label on you, your name, the sequence in which you joined a group, your identity in some sense, doesn’t have any effect on your reward . . . But the main issue of fairness in economics has never been privilege that’s more in the domain of lawyers. The domain of economists are whether the income is fair in the sense of is it competitive? Does it reward effort? Does it induce supply? And in that sense, the Shapley value has no fairness implications at all.

8/16/07 Tr. 52:15-54:5 (Noll). Rather, “allocations are based solely on average contributions, without distinguishing between effort or sacrifice and rents (violating just-desserts).”³⁶ *Id.*

995. Moreover, Shapley Values “reward market power.” *Id.*

If you construct a Shapley value problem in which a monopoly faces its consumers, you get monopoly prices, so the “fair outcome,” from a Shapley allocation is one in which a monopoly supplier earns more than the competitive return. That has nothing to do with the most important component of fairness which has to do with your income being determined in the first instance by the competitive process and in the second instance by excluding windfall gains and income that is not the result of effort.

8/16/07 Tr. 52:15-54:5 (Noll).

996. For example, in a game consisting of an employer and a number of employees where the employees alone generate no output but the employees each

³⁶ Further, “Shapley Values are not connected to the most prominent aspect of fairness, which pertains to income distribution.” Noll WRT at 82. “Shapley Values need not provide a minimum standard of individual welfare (violating egalitarianism),” and “[s]ome group members can receive nothing (violating the difference principle).” *Id.*

generate one unit of output if the employer is added, the Shapley Value Model allocates fully half of the total output value to the employer alone and the other half to the employees, giving them each one-half a unit of output for one unit of production. *Id.* In other words, employees would receive only one-half of the competitive wage, which is equal to the marginal value of their labor. Noll WRT at 82-83. Translated to a market context with a monopoly seller, Shapley values would reward that seller with fully one-half of the consumer surplus that would be generated by a competitive price. *Id.*

997. “Shapley Values also normally allocate net benefits in a way that requires price discrimination.” *Id.* at 83. To illustrate, if two consumers value a product at, respectively, \$20 above the average total production cost C (including a competitive return on investment) and \$10 above that cost C , and if this product cannot be produced by consumers alone but can be by a firm if consumers join a coalition with the firm, the consumer surplus would be \$30. The Shapley Values would be \$10 to the first consumer, \$5 to the second consumer, and \$15 to the firm, which suggest discriminatory pricing of $C + \$10$ to the first consumer and $C + \$5$ to the second, with the manufacturer retaining \$15 of the consumer surplus. *See id.*

998. In addition, Shapley Values “bear[] no relationship to either production efficiency (using inputs in the best proportions) or allocative efficiency (maximizing the total economic welfare of society, given the distribution of income). *Id.* at 81. Instead, the Shapley Value Model simply assumes production efficiency and “does not inquire into whether the surplus created by a coalition represents the maximum total economic welfare that this group can produce for society.” *Id.* at 81-82.

999. Given the stark disconnect between Shapley values and the economic concept of fairness and given that “fairness” is a critical ingredient to the Court’s section 801(b) policy analysis, this is yet another reason why the Shapley value model is a fundamentally inappropriate method of deriving a section 801(b) rate in this case.

5. Even If It Were an Appropriate Tool, Dr. Pelcovits Applied the Shapley Value Model in a Biased Manner that Ignores Reality and Favors SoundExchange.

1000. Even if Shapley value were an appropriate tool, there are numerous ways in which Dr. Pelcovits misapplied the model or applied it to generate a result biased in favor of SoundExchange.

a. Dr. Pelcovits Defines His Model in a Fundamentally Unfair Way that Allows the Record Companies and Artists To Share in an Alleged Surplus, but Does Not Require Them To Share in any of the Losses that Were Essential To Generate that Surplus.

1001. The Shapley value model is sensitive to when the analysis is run. In presenting the concept to the Court, Dr. Pelcovits described the relevant time as the time when the business is being formed. “The idea of the Shapley model is really to think of it in terms of coalition formation. In other words, all of the participants in this activity, let it be a business activity, let it be building a bridge, are going to sit in a room together and you’re going to try to find an outcome that’s acceptable.” 7/9/07 Tr. 99:13-18 (Pelcovits). Then, by analogy: “So essentially, the bridge wouldn’t be built if you only had 50 percent of the content as part of the coalition.” *Id.* 103:13-16.

1002. But Dr. Pelcovits did not run his Shapley value analysis when the business was being formed. Rather, he ran it after the SDARS had made massive

investments in their businesses. He then ignores those sunk costs or any return on those sunk investments.

- Dr. Pelcovits does not consider the SDARS sunk investments in building their businesses or their subscriber base or in developing content. 7/9/07 Tr. 207:10-208:3 (Pelcovits) (did not include financial capital borrowed or invested in SDARS); *id.* 208:17-19 (“did not include operating losses or other measures of financial loss prior to 2012”).
- Dr. Pelcovits does not subtract from his projected 2012 surplus any of the deficits incurred by the satellite radio companies prior to 2012. 7/9/07 Tr. 227:11-22 (Pelcovits).
- Asked if the “the dollars invested in the business to build brand equity, to cover operating losses, to build subscribers,” should have been treated as capital invested in the business, Dr. Pelcovits responded that, in his view, “in conducting a going-forward analysis . . . those costs are not and should not be included in the cost of the SDARS.” *Id.* 212:1-13.
- Dr. Pelcovits further explained: “I am only looking at this period in isolation.” *Id.* 210:11-12. “This particular analysis looking at 2012 is a going-forward analysis.” *Id.* 212:14-19.

1003. Dr. Pelcovits actually admits that if he ran his “analysis before the SDARS built their system and invested billions of dollars to build their brand and build up subscribers, the SDARS would need to expect to receive a risk adjusted return on all of their invested capital in order to be better off playing or participating in the so-called coalition than taking their capital and doing something else.” 7/9/07 Tr. 232:22-233:17 (Pelcovits).

1004. In short, Dr. Pelcovits’ analysis seeks to allow the record companies and artists to share in any surplus, once that it exists, but fails to require the same participants in “the coalition” to share in the losses that were necessary to generate that

surplus. That is fundamentally unfair. It is not how a joint venture or coalition would work and it is not how a market works.

b. Dr. Pelcovits' Application of the Shapley Value Model Is Rigged To Ignore the Law of Diminishing Returns and Confer Monopoly Power on the Record Companies.

1005. “Dr. Pelcovits implements the Shapley Value by allocating 41.3 percent of the ‘surplus’ to sound recordings, dividing this surplus among the record companies, and assuming that only coalitions involving 75 percent of all sound recordings can produce surplus. In following this procedure, Dr. Pelcovits repeals the law of diminishing returns – that the incremental revenue arising from adding more sound recordings falls as more records are used. In his analysis, the contribution of each record label to the surplus is its proportionate share of the surplus, regardless of whether it is the first or last source of music. In a real market, price formation is determined by a process in which each source of supply is rewarded as if it were the last. Dr. Pelcovits avoids this feature of how markets actually work by assuming that in this particular example, an SDARS operator is financially unviable unless it can access the entire catalog of either all major record companies or any six of the seven record companies. Dr. Pelcovits also assumes that the value added by each label is the total value of all of its records, not the incremental value of one more record, given that the rights to several million records already have been obtained.” Noll WRT at 86; 8/16/07 Tr. 127:12-128:2 (Noll).

1006. This assumption, coupled with the failure to credit the value of many other participants, is tantamount to “saying that all of the value, literally all of the value of satellite radio hinges on 75 percent of the record companies joining. And so that

guarantees you'll attribute a very large fraction of the value to the record companies." 8/16/07 Tr. 128:3-15 (Noll). Dr. Pelcovits' assumptions "basically put[] us back in the world of perfectly discriminating monopoly as, [the record companies] get a huge allocation of the value, not just because their individual contributions are high but because of this implicit assumption that they have to join as a group in order for any value to accrue to anybody." *Id.* 128:16-129:7.

1007. "This procedure leads to an overestimation of the value of the vast majority of sound recordings. Each record company holds the rights to a very large number of sound recordings, ranging from Elvis and the Beatles through the long list of one-hit wonders down to artists who have little or no following." Noll WRT at 87.

1008. "In a real market, in which the price of rights was related to usage, the SDARS could respond to this price by buying only the company's handful of superstars and forgoing the rest. This behavior, in turn, would force down rights fees as record companies, acting independently, competed to induce the SDARS operators to play recordings by artists other than superstars. The procedure that Dr. Pelcovits uses to calculate Shapley values simply assumes this possibility away by allowing only all-or-nothing, take-it-or-leave-it deals for the entire catalog of recordings by all the record labels. The term that is used to describe this in economics is perfectly discriminating monopoly." Noll WRT at 87.

1009. "Dr. Pelcovits treatment of other content is not symmetric to his treatment of music. Whereas he assumes that 75 percent of all recorded music must be available to cause the SDARS to have any surplus, he makes no such assumption regarding other content. Instead, he breaks other content into three categories, and

assumes that each makes a separate contribution that is proportional to the fraction of the SDARS subscribers who would cancel the service or demand a large price reduction if all of that content were eliminated. Even though collectively this content would lead to more cancellations if all of it were eliminated than the number of subscribers who would cancel if music were eliminated, other content receives a much smaller share of the surplus because he assumes that its contributions are separable and that its contribution is zero unless 75 percent of music content is already present in the coalition.” Noll WRT at 87-88.

1010. “These assumptions confer monopoly power on record companies and enable them to capture most of the surplus, even though collectively sound recordings account for fewer subscribers than other content. Thus, this assumption is rigged to maximize the value of sound recordings.” Noll WRT at 88 (emphasis added).

c. Dr. Pelcovits’ Shapley Value Model Ignores Many Important Contributors of Value to the SDARS.

1011. To produce appropriate Shapley values, the analysis “should include the net benefits of satellite radio that accrue to every supplier and customer.” Noll at WRT 88. “It is an essential feature of Shapley for it to satisfy all of its properties about efficiency and all the rest that all conceivable ways of forming the coalition are part of the process. 8/16/07 Tr. 121:13-17 (Noll).

1012. Dr. Pelcovits acknowledged that his Shapley value calculation “is sensitive to the number of players and how frequently those players contribute value after [the] coalition has reached [his] thresholds of 50 percent of content and 75 percent of sound recordings.” 7/9/07 Tr. 224:21-225:6.

1013. Rather than consider the contributions of all suppliers and customers, “Dr. Pelcovits assumes that the surplus created by the SDARS consists only of the revenues of the SDARS and content providers such as record labels, Howard Stern, and sports leagues. He accepts other input costs as fixed at a projection of their current levels.” Noll WRT at 88. This means “he leaves out a whole bunch of people who bring value to the coalition and in so doing, he assumes they are the first people to join. So they don’t get the opportunity of being the last people to join which are the ones that actually add most of the value the way he structured the problem.” 8/16/07 Tr. 121:18-122:2 (Noll)

1014. “One group that is left out of his calculation is the automobile companies, who have agreed to install satellite radios as original equipment in return for a share of future revenues if, after a free trial, consumers decide to continue their subscriptions. The basis for the prediction that satellite radio penetration will grow substantially during the next few years is the belief that the contracts with auto manufacturers will prove to be very successful, which means that auto makers add value to the ‘coalition’ that includes the SDARS and record companies. Because the contracts with auto makers reward them on the basis of the future revenues of the SDARS, they should be included in the calculation of Shapley Values. Their Shapley values are likely to be large (collectively their contributions are comparable to record companies) because they account for a substantial proportion of the estimated future subscriptions by Mr. Butson. Of course, to the extent that they receive shares of the surplus, the shares of the record companies are reduced.” Noll WRT at 88; 8/16/07 Tr. 123:22-124:1 (Noll).

1015. Dr. Pelcovits acknowledged that it would have been worthwhile to include OEMs in the model “if [he] could have assigned some value to the OEM participation. . . . but [he] did not have enough comfort with the ability to specify it that way.” 7/9/07 Tr. 223:9-224:1.

1016. “Another excluded group is consumers. One benefit of the SDARS is ‘consumers’ surplus’ – the difference between the maximum amount that all customers would pay to prevent the SDARS from going out of business and the amount that they currently pay. The correct definition of the surplus includes welfare to consumers as well as suppliers. Moreover, to generate any surplus for the SDARS or record companies, consumers must subscribe, which means that in all coalitions that already contain some record companies and at least one SDARS, adding consumers to the coalition creates all of the value of that coalition. Thus, consumers would have positive Shapley Values if they were included in the calculation.” Noll WRT at 88-89; 8/16/07 Tr. 122:3-123:21 (“[T]he most obvious [omission] is consumers. In Dr. Pelcovits’ method he does not allow consumers to join late [and be credited with adding value]. The source of value to any industry is ultimately consumers. . . by ignoring all those, he assigns no value to consumers and that is just a mistake.”)

1017. Further, Dr. Pelcovits did not attribute surplus to celebrity DJs or hosts of music channels, such as Bob Dylan, or to music publishers in his Shapley value analysis. *Id.* at 224:11-20.

1018. “By ignoring these participants, Dr. Pelcovits violates a basic assumption of cooperative game theory: that every sequence in which members join the group is considered and given equal weight. By taking existing contractual arrangements

with other input suppliers as given and by assuming that SDARS output prices are fixed, Dr. Pelcovits accepts a sequencing of bargains in which other input suppliers have no choice whether to join (they are assumed to be part of the coalition) and the record labels always join near the end. This eliminates sequences of coalition formation in which the record companies add no value at all (as when consumers have not yet joined) or much less value (as when auto companies have not yet joined). To the extent that the SDARS cannot create significant value without including all group members in the coalition (equipment manufactures, auto companies, other content suppliers, customers, etc.), the last member in the sequence always will create a large share of the value. In this way, Dr. Pelcovits biases the Shapley Values in favor of the record labels.” Noll WRT at 89.

1019. Moreover, in his game model, Dr. Pelcovits relied upon Professor Wind’s survey to assign values to each of his four types of programming (music, news, sports and talk and entertainment). Pelcovits WDT 25-26; 7/9/07 Tr. 102:2-15 (Pelcovits). Due to numerous flaws in the Wind survey, especially those regarding the "willingness-to-pay" question, from which Dr. Pelcovits' game values are drawn, Dr. Pelcovits’ reliance on the Wind survey and its results is entirely misplaced. Indeed, Professor Wind’s willingness-to-pay question was leading, suffered from an order-bias, tested an incomplete set of features that were provided by SoundExchange’s counsel, and failed to parse “music” down to the relevant programming element (the value of the sound recordings at issue in this case). *See supra* Part VII.A.

d. Dr. Pelcovits Fails To Account for the Opportunity Costs of the Providers of Exclusive Content.

1020. Dr. Pelcovits did not properly account for the opportunity costs of participation in the SDARS “coalition.” 8/16/07 120:1-121:1 (Noll). Dr. Pelcovits

admitted that he did not take opportunity costs into account in performing his Shapley value analysis, 7/9/07 Tr. 229:22-230:3 (Pelcovits), and that if any content provider had an opportunity cost in providing its content to satellite radio, that would alter the Shapley value analysis and “you would need to run that and get a different outcome.” 7/9/07 Tr. 229:13-21.

1021. The record is clear that non-music content providers, such as Howard Stern, who granted exclusive rights to the SDARS, had a significant opportunity cost in providing their content to Sirius. Benston WRT at 4; 8/20/07 Tr. 70:7-72:2 (Benston); Woodbury WRT ¶¶ 97-100; 8/23/07 Tr. 111:21-112:21 (Woodbury); Martin/Parr WRT at 13-14.

e. **Dr. Woodbury’s Analysis Demonstrates the Bias of Dr. Pelcovits’ Model and that the Shapley Value Bears No Relationship to Real-World Outcomes.**

1022. Dr. Woodbury’s rebuttal testimony demonstrated the sensitivity of the Shapley value model to changes in the way the game is defined, and showed how the model as defined by Dr. Pelcovits bears no relationship to real-world outcomes. In Dr. Woodbury’s words, “[t]he implementation of Dr. Pelcovits’ version of the Shapley model is highly sensitive to the input assumptions used and Dr. Pelcovits adopted assumptions to inflate the surplus share due SoundExchange.” Changing just two assumptions Dr. Woodbury showed how “the surplus share due to music according to the model falls dramatically.” Woodbury WRT ¶ 114.

1023. Dr. Woodbury demonstrated how the treatment of the two SDARS by Dr. Pelcovits led to anomalous results. Woodbury WRT ¶¶ 109-113. He showed how Dr. Pelcovits failed to account for exclusive content. *Id.* ¶ 110. Dr. Woodbury also

showed that although one SDARS would not operate with 48% of all content, the addition of the second SDARS would cause them both to begin operating. *Id.* ¶ 112. Then, “as an illustration of the sensitivity of the Shapley game to Dr. Pelcovits’ *ad hoc* assumptions,” Dr. Woodbury showed how “running the model with a single SDARS changes the music share of the surplus from 62% to 55%.” *Id.* ¶ 113. In Dr. Woodbury’s words, “none of these implications make any sense, and they do not contribute to the understanding of how a second SDARS changes real world interactions of satellite radio companies and the content providers.” *Id.*

1024. Dr. Woodbury also ran several variations of the Pelcovits model that changed only the Dr. Pelcovits’ assumptions about music content. He demonstrated how simply changing Dr. Pelcovits’ assumption of seven record companies that must contribute 75% of all recordings to a single monopoly seller of 100% of all recordings would reduce the record companies’ Shapley value from 62% to 37%. As Dr. Woodbury observes, in the real world, “[o]ne would normally expect that the bargaining power of labels would increase if they negotiate as a single monopolist rather than separately.” Woodbury WRT ¶¶ 106-107. This result, which demonstrates the sensitivity of the Shapley value model to input assumptions and cannot be reconciled with the real world operation of markets, demonstrates the fallacy of using the Shapley value to estimate market prices.

1025. Dr. Woodbury also eliminated Dr. Pelcovits’ assumption that there was a minimum share of sound recordings that were required in order to operate a viable SDARS. That analysis resulted in a Shapley value of 36% to the record companies, again far less than the 62% value attributed by the model selected by Dr. Pelcovits. Woodbury

WRT ¶ 108. This result further confirms the sensitivity of the Shapley value model to input assumptions.

1026. Confronted with the result of the single-seller outcome, and asked if the outcome would have anything to do with what he would expect to see in a competitive market, Dr. Pelcovits conceded: “I would have to say I don’t really know what it would represent other than what you put into the model and the model is a cooperative game model and if that’s the result of the model, it’s telling something about a cooperative game model. It’s not necessarily telling you what would happen in a particular market outcome with this hypothetical situation.” 7/9/07 Tr. 226:11-227:10 (Pelcovits).

1027. That is the best that can be said for Dr. Pelcovits’ application of the Shapley value to allocate a non-existent surplus: it does not represent anything “other than what you put into the model and the model is a cooperative game model and if that’s the result of the model, it’s telling something about a cooperative game model.” 7/9/07 Tr. 227:3-7 (Pelcovits). This Court is not charged with determining the outcome of a cooperative game model.

C. Sirius’ Howard Stern Deal Should Not Be Used As a Benchmark.

1028. Dr. Pelcovits presents, as another theory upon which SoundExchange bases its rate proposal, a benchmark analysis which derives a proposed percentage of revenue rate for the rights at issue here from the deal between Sirius and Howard Stern. Pelcovits WDT at 9-14; Pelcovits AWDT at 4-8. This analysis does not meet the criteria that define a good benchmark, is based on an improper methodology, relies on flawed and inaccurate inputs and figures, and ignores the substantial promotional value Sirius

received as part of the deal. *See, e.g.*, 8/16/07 Tr. 137:13-14 (Noll) (“[I]t’s a terrible benchmark for a number of reasons”).

1. The Stern Deal Fails the Essential Requirements of a Valid Benchmark for the Rights at Issue Here.

1029. As Dr. Woodbury testified, the best benchmark for this proceeding “would be a competitively-negotiated arms-length rate for a right perfectly analogous to the [sound recording performance right] by a service that is perfectly analogous to XM and Sirius and reflects the application of 801(b) factors.” Woodbury AWDT at 11; *accord* Noll WRT at 90 (the benchmark “should arise from the market conditions that reflect the statutory factors” and the product of the rights users should be “among those that are covered by section 801(b)”). Indeed, the statute governing this proceeding specifically authorizes the use as benchmarks of voluntary license agreements set under the 801(b)(1) standard; it contains no similar express authorization for consideration of other agreements. 17 U.S.C. § 114(f)(1)(B).³⁷ The Stern benchmark is not that type of benchmark.

1030. Moreover, Dr. Pelcovits’ Stern analysis violates his own criteria for a valid benchmark. A good benchmark should involve similar buyers, similar sellers, “very similar products being exchanged between the buyer and the seller, the same music, the same ability to use the music for commercial purposes of various sorts.” 7/9/07 Tr. 119:20-122:17 (Pelcovits); *accord* Woodbury AWDT at 11; Noll WRT at 90 (sellers and products “should be largely overlapping or very similar,” the buyers and the

³⁷ The appropriateness of using the type of benchmark described in the statute is discussed in greater detail in Part VI. D.1.

product they produce using the rights as an input “should be largely overlapping or very similar, if not the same”); 8/16/07 Tr. 137:17-19 (Noll) (the Stern deal is “not ... the same buyers and the same sellers exchanging the same right”).

1031. Dr. Pelcovits also testified that a benchmark rate should come from a market with abundant and robust pricing data so as to ensure its consistency and reliability. 7/9/07 Tr. 123:2-8 (Pelcovits); *accord* Noll WRT at 90-91 (a benchmark should include multiple transactions for essentially the same right).

1032. The Stern deal cannot serve as a reliable means to arrive at an appropriate rate for the rights at issue in this proceeding because the benchmark and the target are too dissimilar. Furthermore, the Howard Stern deal is a single, atypical data point, negotiated under extraordinary circumstances, that does not provide reliable guidance for the statutory license at issue here.

a. The Stern Deal Is a Marketplace Deal that Does Not Reflect the Governing Section 801(b)(1) Factors.

1033. Dr. Pelcovits’ Stern benchmark, like all of SoundExchange’s benchmarks, is a marketplace benchmark that does not reflect the 801(b)(1) factors that govern this case. *See* Pelcovits WDT at 9 (characterizing the Stern benchmark as an attempt to determine “[t]he market price the SDARS would pay for sound recordings”); *id.* at 11 (describing the Stern deal as “the best and most complete” “market information”).

1034. As described in Part V.A, SoundExchange has taken the erroneous position in this case that the policy factors included in Section 801(b)(1) lead to a rate that is indistinguishable from a willing buyer-willing seller rate, save that it can be phased in to avoid disruption. *See, e.g.*, 7/9/07 Tr. 131:4-17 (Pelcovits); Ordoover WDT at

4; 6/21/07 Tr. 110:16-111:4 (Ordoover); Herscovici WRT ¶ 8. The Stern benchmark reflects and embodies that flawed approach. It is a marketplace deal entered into between Sirius and Howard Stern; it was not negotiated under section 801(b)(1), and does not necessarily reflect the application of any of the 801(b)(1) factors. *See* Woodbury WRT ¶ 92; Noll WRT at 4; PCL ¶ II.C. (Congress gave the SDARS the benefit of section 801(b)(1)). Therefore, it is inappropriate to use a marketplace agreement such as the Stern deal for a benchmark in this proceeding.

1035. Even Mr. Bronfman, the most senior record company executive presented by SoundExchange, provided testimony that implicitly recognized the flawed premise of using a marketplace deal such as Howard Stern for a benchmark: “we’re not at a willing buyer/willing seller standard and under the compulsory license So I was not suggesting that we necessarily should be compensated the same as Major League Baseball or Howard Stern.” 6/20/07 Tr. 114:7-115:3 (Bronfman).

1036. Indeed, when it served his client’s interest, Dr. Pelcovits testified that there is enough difference between an 801(b) rate and a willing buyer-willing seller rate that one cannot make a good benchmark for the other. 7/9/07 Tr. 127:17-18, 128:2-5 (Pelcovits) (testifying that an 801(b) rate would be “very far in my mind from the nature of how a free market would function,” and that “the [801(b)] statutory standard . . . is different than the willing buyer/willing seller standard”). This alone makes the Stern benchmark an inappropriate place to look for information about the rates that should be set here.

1037. As Dr. Pelcovits testified, the compensation that Howard Stern can seek from Sirius or XM is not regulated in any manner by statute, is not subject to any

form of judicial supervision, is not subject to externally-imposed constraints related to disruption in the industries involved, and does not reflect any requirement of fairness other than a marketplace-based standard of fairness. 7/9/07 Tr. 158:6-159:12 (Pelcovits).

b. The Buyers and Sellers Are Different and the Incentives and Opportunity Costs Facing Them Are Different.

1038. The sellers – Howard Stern on the one hand, and SoundExchange (or the record companies) on the other – are very different sellers acting under very different circumstances, with very different incentives and business models. Mr. Stern is an individual who has limited time and ability to work. 8/23/07 Tr. 112:5-10 (Woodbury) (“When Howard signed up with Sirius as I understand it, Howard agreed to forego revenues that he otherwise would have earned on terrestrial radio, on the Internet, and on XM or any combination of those”). The record companies are mostly large corporations selling a supplemental license to content they create for other purposes. 6/27/07 Tr. 13:10-12 (Kenswil) (UMG’s “main business is to obtain and exploit copyrights”); Woodbury AWDT at 48 (there is no “evidence that the labels expend any incremental effort to create new music for XM and Sirius”).

1039. The sellers’ interests and incentives in dealing with the SDARS also are fundamentally different. In comparing agreements struck by different parties, it is essential to consider the opportunity costs faced by each party in making the deal. See Woodbury AWRW ¶¶ 97-98. “Howard Stern’s opportunity cost was giving up his job in terrestrial radio and television, for which he was highly paid.” Noll WRT at 101. “[T]he payments to Howard Stern must be sufficient to recoup the payments he could have earned on cable, XM or other outlets had Stern not accepted the offer to be broadcast exclusively on Sirius.” Woodbury WRT ¶ 97. Further, “[t]o sign Howard Stern Sirius

had to outbid terrestrial radio and its SDARS competitor, XM.” Noll WRT at 101. By contrast, “[t]he opportunity cost for making recorded music available to satellite radio is very close to zero.” *Id.*; 8/16/07 Tr. 138:1-3 (Noll); Woodbury AWR ¶ 97. (“There are no such opportunity costs associated with music – the playing of music on XM and Sirius does not preclude it from being played at the same time on terrestrial radio.”)

1040. Dr. Pelcovits makes no adjustment for this opportunity cost difference, which, even if everything else were correct, would significantly affect the Sirius-Stern agreement in ways that would not affect a negotiation for sound recording performance rights. 8/23/07 Tr. 111:21-112:21 (Woodbury).

1041. Although Sirius is a buyer both in the Howard Stern transaction and in the license at issue here, the incentives facing Sirius at the time of the Stern deal were exceptional, and say nothing about the company’s ongoing willingness to pay for sound recording performance rights. *See infra* Part C.1.d; *supra* Part V.D.3.b. Moreover, the fee Sirius was prepared to pay Stern under the circumstances facing it said little if anything about the way XM valued Howard Stern or other non-music content. *See* 7/9/07 154:19-155:6 (Pelcovits) (“There is [*sic*] zero data points on Stern with respect to XM”); *id.* at 167:10-168:3 (Dr. Pelcovits does not know how XM valued Stern or to what degree XM studied that issue). Moreover, as discussed *infra* Part C.1.d, Sirius made the Stern deal under extraordinary circumstances.

c. The Rights at Issue in this Proceeding Are Different from Those at Issue in the Stern Deal.

1042. The rights involved in the Stern agreement are very different from the sound recording performance right at issue here. Even Dr. Pelcovits admits as much: “It’s not music. It’s a different type of content. . . . [I]t is, in my opinion, not as good as

the benchmark I used in the previous case.” 7/9/07 Tr. 157:21-158:4 (Pelcovits); *see also id.* at 157:11-14 (testifying that the Stern deal does not involve “the same music” as is involved in the target market). Stern is not selling any sort of sound recording right or any sort of performance right, and (as discussed below *infra* Part C.2), the sound recording right does not include other benefits such as branding and endorsement rights. This is particularly important since Howard Stern is the “single biggest radio personality probably in history in prime time.” 6/6/07 Tr. 258:21-259:1 (Karmazin).

1043. Howard Stern’s contract, moreover, is exclusive against all other media (including XM) – Sirius is the only place where consumers can hear Howard Stern programs (apart from limited cable television shows). Noll WRT at 102; SX Trial Ex. 27 at SIR 00010470. As stated by Professor Noll, “The value of rights to the buyer depends on whether the right is exclusive or non-exclusive. Non-exclusive rights convey value to the market as a whole by contributing to overall demand for the product. Exclusive rights also can shift market demand, but they also confer competitive advantage on the rights holder, shifting business from competitors. Exclusivity also gives the rights user a stronger incentive to promote content, for only then will the rights holder be the only beneficiary of promotion. If rights users are more effective than rights holders at identifying the potential customers of a service, exclusive rights will lead to more effective promotion and hence greater overall sales of content to consumers.” Noll WRT at 91. Such exclusive programming commands premium pricing. *See* 8/22/07 Tr. 177:10-17 (Karmazin).

1044. Indeed, and as discussed below *infra* Part D.4, other non-music programming contracts quantify the importance of exclusivity. *See* SIR Ex. 43 at

SIR00048957-59 (Sirius-NFL contract allowing [[

]); Karmazin WRT ¶ 5. *See also* SX Ex. 133 DR ([[

II).

1045. SoundExchange's experts agree that exclusivity imparts additional value that people are willing to pay for in the marketplace. 6/21/07 Tr. 247:18-22, 248:6-8 (Ordoover). Dr. Pelcovits also recognized the value of exclusivity, admitting that, in the context of his own analysis, exclusive content might attract more customers than non-exclusive content. 7/9/07 Tr. 57:4-7 (Pelcovits). Yet he failed to take into account the value of that exclusivity. 7/9/07 Tr. 56:11-57:3 (Pelcovits) (testifying that exclusivity was considered only in context of attracting subscribers).

1046. The right to perform sound recordings, of course, is not exclusive. 17 U.S.C. § 114(f) (establishing a non-exclusive statutory license for the performance of sound recordings); 8/22/07 Tr. 171:1-4 (Karmazin). All of the SDARS' competitors, including each other, have equal access to the same library of music. Any broadcaster or webcaster may play the same CDs that the SDARS play. Parsons WDT ¶ 43. Even if Sirius had a channel featuring a genre of music that, in actual practice, no terrestrial radio station played, there is no legal guarantee that a terrestrial radio station will not start playing music of that genre. 8/22/07 Tr. 172:14-173:18 (Karmazin). What is more, XM actually is likely to have such a channel. *Compare* XM Ex. 8 at SDARS Ex. 3 (XM Radio channels by format) *with* XM Ex. 8 at SDARS Ex. 4 (Sirius Radio channels by format); 6/21/07 Tr. 248:9-12 (Ordoover). An exclusive contract, like Howard Stern's,

will include additional compensation for the guarantee that no other entity is legally able to feature the same content. *See* 8/22/07 Tr. 158:2-21 (Karmazin).

1047. As conceded by Mark Eisenberg of Sony BMG: “We do not have a sound recording performance right in analog broadcasts in the United States, so there’s no right to remuneration, nor is there any exclusivity by virtue of that.” 6/18/07 Tr. 251:11-15 (Eisenberg). Indeed, the record companies would not even consider granting exclusive rights to their catalogues of music for any price. 6/27/07 Tr. 88:1-5 (Kenswil).

1048. The non-exclusive sound recordings licensed by SoundExchange do not differentiate the SDARS from terrestrial radio or from each other. Music, by itself, is not a “source of competitive advantage. Rather, sound recordings are ubiquitous – freely and widely available on a myriad of terrestrial radio stations and from numerous other sources – and thus do not constitute a reason for consumers to subscribe to the SDARS.” Joachimsthaler WRT ¶ 24.

1049. The ubiquity of sound recordings licensed under the compulsory license – often available to consumers without the need for payment – renders them less valuable than the exclusive non-music content because the public “generally is not willing to pay substantial subscription fees for programming it can obtain for free.” Karmazin WDT ¶ 41; *see* 8/16/07 Tr. 298:16-299:16 (Joachimsthaler). As stated by Dr. Joachimsthaler, non-exclusive rights do not command the same level of fees, as “one does not pay a premium for a point of parity.” Joachimsthaler WRT ¶¶ 24-25; *accord* Parsons WDT ¶ 29 (“Talk radio personalities such as Glenn Beck and Art Bell are carried on XM because of their popularity, even though their programs are available in various markets from other outlets as well; but because of this non-exclusive availability through

other outlets, XM carries these programs for relatively modest fees.”); 8/22/07 Tr. 166:11-168:2 (Karmazin) (explaining that non-exclusive content such as music will not command fees as high as exclusive content).

1050. The Stern deal also granted certain content license rights beyond those granted by the statutory sound recording license. For example, [[

]]. SX Ex. 27 at

SE00010472.

1051. The Stern deal also granted certain contract license rights beyond those granted by the statutory sound recording license. For example, [[

]]

1052. In addition, Sirius was paying Stern to create and program its Howard Stern channels in their entirety – a service that the record labels do not provide under the statutory license. As Professor Noll testified, whereas “[s]ound recording rights are for an input to channels that include sound recordings as well as other content,” the Stern agreement “is a payment to create all of the programming on the Stern channel.” Noll WRT at 102. Sirius is not paying Stern only for the right for Sirius to be able to make a Howard Stern channel; Sirius is also paying Stern actually to create that programming on its behalf: he is obligated by his contract to do so. Karmazin WRT ¶ 23; SX Trial Ex. 27 at SIR 00010470-71 (“You will develop additional on air talent and shows at your discretion to air exclusively on the Channels.”).

1053. This differs from the production of music channels using music licensed under the statutory license. To create a music channel, a satellite radio service must incur additional “production costs” after acquiring the sound recording performance

right, but those costs are included in the Stern deal. 8/16/07 Tr. 138:8-12 (Noll). When the statutory license is used to create a music channel, the decision of what content will be broadcast at any moment is made by employees of Sirius, not the record labels. Noll WRT at 102. But it is, in fact, Howard Stern who is responsible for the programming decisions on his channels. Karmazin WRT ¶ 23; SX Trial Ex. 27 at SIR 00010470-71.

d. The Stern Deal Is a Single, Atypical Data Point Negotiated Under Extraordinary Circumstances.

1054. The Stern agreement is also a poor benchmark because it is a single data point, and one that is not representative of other content deals made by the SDARS. Far from being the “abundant and robust pricing data” that Dr. Pelcovits testified makes for “a good benchmark,” 7/9/07 Tr. 123:2-8 (Pelcovits), the Stern deal is a lone contract. The Howard Stern contract is the only evidence he presents in support of this benchmark. 7/9/07 Tr. 154:15-18 (Pelcovits). Dr. Pelcovits himself testified that “it makes it more difficult and it requires more care in using the data if you’re working with a limited amount of data.” 7/9/07 Tr. 124:5-7 (Pelcovits). But the Stern contract is even less than a limited amount of data: it is a singular, unique datum negotiated under extraordinary circumstances.

1055. Dr. Pelcovits introduces his Howard Stern analysis by claiming that “[t]he market price the SDARS would pay for sound recordings should be consistent with the market prices already paid for other content.” Pelcovits WDT at 9. He states that his approach “relies on data [plural] concerning the amounts [plural] the SDARS paid in competitive market transactions [plural] for non-music content available on their services.” Pelcovits WDT at 2-3. Yet, Dr. Pelcovits testified that “in terms of developing a numerical result” – the only kind of result that can be of any use in making

a determination in this case – “I relied only on Stern. . . . I do not cite to any other data to get my numerical result.” 7/9/07 Tr. 141:17-19, 143:3-4, 144:5-11 (Pelcovits).

1056. As discussed in Part IV.A.2, Sirius entered into the Howard Stern deal at a critical time in the history of the company. Sirius executives believed the future of the company was at stake. *See* Frear WRT ¶ 21 (“Given the relatively tenuous state of Sirius’ business at that time, and our weakness as compared to XM, we were concerned that the loss of Howard Stern to XM could prove fatal to Sirius’ future business prospects”) (emphasis added); 6/6/07 Tr. 327:22-328:14 (Karmazin) (“It was important to have that marquis talent when we got it”); Karmazin WDT ¶ 45 (the Stern deal “ensure[d] that Sirius became the leader in satellite radio”); 6/12/07 Tr. 16:22-17:3 (Frear) (the Stern deal was “far and away” the most significant programming change made at Sirius); SDARS Ex. 67 at SE 0202985 (“At the time of the announcement, Sirius was trailing XM in every key category and was looked upon as the weaker of the two satellite services by Wall Street. The Stern deal changed that”). Mr. Frear testified that “Howard . . . was a truly unique event for you know, this company, the unprecedented publicity that went along, you know, with it.” 8/15/07 Tr. 139:7-10 (Frear). The single data point that Dr. Pelcovits relies upon as a proxy for “data concerning the amounts the SDARS paid in competitive market transactions for non-music content,” Pelcovits WDT at 2-3, is therefore not representative of the other possible data points.

1057. Dr. Pelcovits testified that he looked at other non-music content deals, but he did not amend his testimony to present any data from these agreements as part of his benchmark, allegedly because the data were not reliable enough. 7/9/07 Tr. 149:10-12 (Pelcovits) (“I . . . did not put in other analysis because the data did not have the same

degree of reliability”); Pelcovits AWDT at 9 (“I was unable to reliably perform similar analyses of other individual deals”). He chose instead to simply update his analysis of the Stern deal.³⁸ See Pelcovits AWDT at 4-8.

1058. Although he did not mention it in his written testimony, Dr. Pelcovits did conduct an analysis of XM’s Oprah Winfrey deal comparable to his Howard Stern analysis. He testified at trial that he had analyzed the Oprah deal and determined that “the payment to Oprah was lower on a per expected subscriber revenue basis than Stern or baseball. It was closer to something in the – I think mid to high 20 percent rather than 50 percent.” 7/9/07 Tr. 76:7-11 (Pelcovits); see also *id.* at 148:11-12 (“It was lower in the case of Oprah.”). In other words, although Dr. Pelcovits had the data and performed the analysis for the Oprah deal, he withheld that information from the Court in his written testimony. The Oprah deal would have led to a result roughly half of SoundExchange’s goal.³⁹

³⁸ Although Dr. Pelcovits presented a new benchmark in his amended written direct statement that was based on his calculations of total non-music payments by the SDARS, this non-music benchmark was in no way intended to replace or substitute for the Stern benchmark. Pelcovits AWDT at 8-11; 7/9/07 Tr. 154:9-14 (Pelcovits) (describing the non-music benchmark, in relation to the Howard Stern benchmark, as “a separate number and a separate estimate”). Rather than augment the Stern benchmark with data from additional contracts, Dr. Pelcovits chose to continue to rely on nothing but the Stern contract for this particular benchmark. See Pelcovits AWDT at 4-8. A discussion of Dr. Pelcovits’ separate non-music benchmark appears in Part D, *infra*.

³⁹ Dr. Pelcovits testified that he received some data about XM’s contract with Major League Baseball, but that he “did not calculate an exact number from that.” 7/9/07 Tr. 75:2-5 (Pelcovits). Thus, although Dr. Pelcovits offered a conjecture as to the value offered to MLB, the only figures he presents are for Stern and Oprah.

1059. Finally, the Stern deal was signed in October 2004. SX Ex. 27 at SIR 00010466, 475. There is no evidence that this three-year-old deal is relevant to the decisions the SDARS would make today or at any point during the 2007-2012 license term. In fact, Mr. Karmazin testified that “if Rush Limbaugh were available today, and wanted the kind of money that Howard Stern had, . . . I would not pay it, because I don’t think we need it today.” 6/6/07 Tr. 328:6-11 (Karmazin).

2. The Stern Deal Provided Sirius with Important Rights and Enormous Value Not Provided by the Sound Recording Performance License at Issue Here, for Which Sirius Paid.

1060. The rights and benefits obtained by Sirius from the Stern deal extended well beyond programming content. First, Sirius expected to earn substantial advertising revenues from the sale of advertising on the Stern channels. Second, Sirius obtained the right to associate itself with the Howard Stern brand, obtaining direct endorsements of its service by Mr. Stern and ongoing promotional benefits through the use of Mr. Stern’s name, likeness, and logo in its advertising and other materials. Third, Sirius received enormous value through the exclusive nature of its agreement with Stern. Fourth, the agreement brought Sirius enormous immediate publicity and name recognition. Fifth, the agreement brought Sirius immediate credibility with key business partners, including the automakers and retail outlets.

1061. Sirius either paid directly for these rights and benefits, or they influenced the amount Sirius was willing to pay for the Stern deal. As Mr. Karmazin testified, “more rights gets you more money. Less rights gets you less money.” 8/22/07 Tr. 176:2-4 (Karmazin).

1062. As discussed in greater detail below, Sirius does not obtain these rights and benefits from the statutory sound recording performance license at issue in this proceeding. For that reason, even if the Stern deal were otherwise a valid benchmark, which it is not, an apples-to-apples comparison with the license at issue in this case would require allocation of the total amount paid by Sirius under the Stern deal between these added benefits and the right to air Mr. Stern's content, which is the only analogous right granted by the statutory license at issue in this proceeding.

a. The Benefit to Sirius from Advertising Sales

1063. Sirius entered into the Stern agreement with the expectation that it would earn substantial advertising revenues from the sale of advertising on the Stern channels. Karmazin WRT ¶ 20. Indeed, “[a]dvertising is a second stream of revenue” for Sirius. 8/22/07 Tr. 139:21-22 (Karmazin). This revenue was viewed by Sirius as a direct off-set for the cost of the Stern agreement. *Id.* at 141:18-142:13. Mr. Stern also brought a number of advertisers with him from terrestrial radio. Karmazin WRT ¶ 20.

1064. Sirius' advertising revenues have skyrocketed since the addition of Howard Stern. *See* Karmazin WRT at 9-10 (stating that Sirius advertising revenue went from \$906,000 before Stern to \$6.131 million in 2005, and grew again by 406% to \$31.044 million in 2006). As Professor Benston testified, Dr. Pelcovits' analysis does not take this offset into account. Benston WRT at 9-10.

1065. Unlike its Stern channels, Sirius does not earn any advertising revenue from its music channels because these channels remain free of advertisements as a means of differentiation from terrestrial radio. *See* 8/22/07 Tr. 141:14-17 (Karmazin) (“[T]he music that we play is available on free radio . . . [i]n order for us to distinguish ourselves

and for us to be able to charge the \$12.95, we believe that we need to have [the music channels] be commercial free.”). Accordingly, the advertising revenues earned by Sirius should have been treated by Dr. Pelcovits as an offset reducing the cost to Sirius of the Stern contact. *See infra* Part D.3.b. They were not.

b. The Benefit to Sirius from Association with the Howard Stern Brand and the Endorsement from Mr. Stern

1066. The Sirius agreement with Howard Stern provided Sirius with valuable rights to utilize the Howard Stern brand, including using his name and likeness to promote Sirius. SX Ex. 27 at SIR00010472; Karmazin WRT ¶ 9. In addition to the right to utilize the Howard Stern brand, Sirius acquired substantial endorsement value through its agreement with Howard Stern. Howard Stern is “providing an endorsement of the satellite radio service, essentially stating that [he] believe[s] in the quality, effectiveness and value of the service.” Martin/Parr WRT at 11-12; 8/20/07 Tr. 312:16-20 (Martin) (Howard Stern “has been of major endorsement value to the service.”)

1067. Introducing new brands in the broader market and competing against rivals for consumer attention are expensive endeavors that typically require several years of intense marketing expense and public relations efforts. One way of reducing the time and resources necessary to build a new brand such as Sirius or XM is to associate the new brand with established brands that have strong appeal among the targeted audiences. Martin/Parr WRT at 6; *accord* Joachimsthaler WRT at ¶ 30 (“When a celebrity such as Howard Stern . . . is associated with another brand, the awareness of that brand tends to increase more rapidly.”).

1068. The concept of a brand is not limited to corporations, products, or services. “Brands can consist of countries, cities, fictional characters, sports teams, rock

bands, universities, and people – essentially, any entity with specific associations existing in consumers’ minds.” Joachimsthaler WRT ¶ 14. Strong brands “provide a means of differentiating one product from another and a basis for generating preference, choice, and loyalty among consumers.” Joachimsthaler WRT ¶ 15. Brands are valuable because “[c]onsumers rely on brands to help them make purchase decisions so that they do not have to conduct exhaustive search and evaluation processes.” Joachimsthaler WRT ¶ 16.

1069. In the realm of radio personalities, the Howard Stern brand and endorsement stands on its own. Stern is the “single biggest radio personality probably in history in prime time.” 6/6/07 Tr. 258:21-259:1 (Karmazin). Stern’s “brand strength is typified, at the outset, by the widespread awareness of him.” Joachimsthaler WRT ¶ 37.

1070. Although the Stern deal was expensive, it proved to be the single most important action taken by Sirius to attract and maintain subscribers and to ensure that Sirius became the leader in satellite radio. The announcement that Howard Stern would join Sirius created a significant increase in brand awareness for Sirius. Karmazin WDT ¶ 45; 6/6/07 Tr. 303:21-22 (Karmazin). As Mr. Martin testified, after interviewing Sirius executives:

Prior to Stern, Sirius was evaluating marketing alternatives to accelerate subscriber acquisition. Their initial unique selling proposition was centered around the distribution of commercial-free music. Although the signing of the NFL contract predates the Stern contract and was the first significant acquisition for Sirius, the program offering did not possess the breadth and full “Star Power” needed to capture the attention of a larger audience. Management recognized this deficiency and sought to remedy the situation by associating with marquee performers and properties in order to bring credibility to the Sirius brand and platform. The acquisition of Howard Stern, along with other key properties, brought enhanced credibility and cachet to the full spectrum of Sirius program offerings. The value of that enhanced credibility and status is a significant part of the overall compensation paid to Mr. Stern.

Martin/Parr WRT at 12.

1071. The association with the Howard Stern brand and his endorsement of Sirius had the effect of increasing brand awareness, virtually overnight. 6/12/2007 Tr. 195:11-22 (Frear) (“the month before we announced Howard, we had about 15 percent of the people you might interview on the street would be able to come up with our name on an unaided basis and that was 10 points below where XM was. But by the time you got to the end of 2006, more than 50 percent of the people could name us on an unaided basis and I believe that was roughly a 15-point premium to where XM is at the same time.”).

1072. Sirius’ ability to utilize the Howard Stern brand also “played an important role in advancing Sirius’ relationships with automakers and retailers” by “creating an incentive for automakers to include Sirius radios in their vehicles.” Karmazin WRT ¶ 12. Consequently, multiple major automakers either entered into agreements with Sirius or renewed their agreements with Sirius and expanded their installation of Sirius radios following the announcement of Sirius’ exclusive relationship with Howard Stern. *See* Karmazin WRT ¶ 13. (“Less than two weeks after Sirius announced its deal with Howard Stern . . . Ford Motor Company announced that it would be expanding its availability of Sirius a dealer-installed option and would be targeting up to 20 vehicle lines for factory installation beginning in 2005”); *see also* SIR Ex. 47 at 36 (Sirius 2006 10-K reporting a 138% increase in the OEM subscriber base).

1073. Mr. Martin testified about the cost paid by Sirius for these brand and endorsement rights by analyzing comparable market-based royalty rate transactions. Martin/Parr WRT at 10-13. Based upon a comparable adjusted royalty rate range, Mr. Martin valued the cost of the brand rights under the Stern agreement at approximately

\$50.3 to \$67.0 million in net present value terms, and the endorsement rights at \$16.3 to 19.9 million. *See* Martin/Parr WRT at 11, 13; SDARS-Consor Ex. 7; 8/20/07 Tr. 270:20-271:22 (noting need for promotional increase in dollar amounts without significant effect on percentages to include agency fees in Stern contract cost). That said, “[t]he one thing about Howard Stern is he is a unique property. And there are no truly comparable endorsement contracts . . . that reflect the dynamic personality that he brings as a marketing personality.” 8/20/07 Tr. 312:10-15 (Martin)

1074. In contrast, the sound recording license at issue in this proceeding does not confer similar benefits on the SDARS. If Sirius or XM desires to use the likeness or logo of any performing artist or record label, they must negotiate and pay additional compensation for such rights directly to the performer, outside of the statutory license administered by SoundExchange. Karmazin WRT ¶ 21; 8/22/07 Tr. 159:17-160:21 (Karmazin).

1075. Branding is so important to the SDARS that they have found ways outside of the compulsory license at issue here to brand certain of their music channels by striking deals with the musicians themselves for use of their names and likenesses. For example, as Sirius’ CFO David Frear testified, “we found that in order to sell music that we had to do some brand affiliations along the way and so the deals that we did with Steven Van Zandt, you know, to bring Underground Garage to Sirius with Eminem, to bring Shade 45 to Sirius. The channel affiliations that we’ve done with Jimmy Buffett for Margaritaville or Elvis or the occasional channels are more promotionally oriented, whether it’s with the Stones or with The Who or with Pink Floyd and the new one we’re launching with the Grateful Dead, have all been ways to bring actually brands into the

programming process and something that fans affiliate with.” 6/12/07 Tr. 18:1-19:11 (Frear); Karmazin WRT ¶ 21 (mentioning deals for Elvis Radio, Siriusly Sinatra, The Rolling Stones Channel, The Who Channel, Jimmy Buffet’s Margaritaville Channel, Eminem’s Shade 45, and the Grateful Dead Channel, and special programs such as 50 Cent’s program on Shade 45, Little Steven Van Zandt’s Underground Garage, and Tony Hawk’s and Lance Armstrong’s programs on Faction).

1076. The SDARS must pay extra for these brand use rights on their music channels, over and above the fees to be set in this proceeding. 8/22/07 Tr. 155:18-156:22, 159:17-160:21, 161:20-162:19; 165:1-14 (Karmazin); Karmazin WRT ¶ 21; 8/20/07 Tr. 114:4-9, 115:6-17 (Benston) (testifying that if the SDARS want recording artists to promote their services either through branding or endorsement, it must be paid for separately).

1077. Dr. Pelcovits makes no attempt to adjust the value of the Stern contract “for the Sirius investment in brand equity that are not likely matched by any of the music channels,” Woodbury AWRW ¶ 98. “In addition to drawing new subscribers, the exclusive contract with Stern will enable Sirius to increase advertising sales on other non-music channels, to reduce churn . . . and to . . . secure more talent for its music and non-music channels as well as to more easily retain the talent it does have.” *Id.* ¶ 99; 8/23/07 Tr. 113:8-22 (Woodbury). Therefore, Stern’s compensation must be “adjusted downward to exclude the brand equity portion of the Stern payments.” Woodbury AWRW ¶ 98.

c. Dr. Pelcovits Failed To Consider The Value Of Exclusivity of Stern to Sirius.

1078. As discussed above, *supra* Part C.1.c, the agreement between Sirius and Howard Stern also provides Sirius with the exclusive right to broadcast his radio

programming. Indeed, “[o]ne of the most valuable aspects of Sirius’ non-music content is programming exclusivity.” Karmazin WRT ¶ 4.

1079. The exclusivity provision within the Stern agreement “is one of the key drivers in the determination of fair market compensation, as it prevents Stern from earning income from other operators in the broadcast space.” Martin/Parr WRT at 13. Mr. Martin valued the exclusivity component of the Stern deal to range between 51% and 54% of the contract value, or from [[]] in net present value terms. *Id.* at 15; *see* 8/20/07 Tr. 270:20-271:22 (Martin).

1080. In short, the payments made by Sirius to Stern include the costs of brand, endorsement, and exclusivity rights that Sirius purchased from Howard Stern but which it cannot obtain from sound recordings. *See* Martin/Parr WRT at 9-10. As Mr. Martin testified, when the costs that Sirius paid to acquire these non-content license rights are taken into account, the price paid by Sirius under the Stern agreement for non-exclusive rights to the programming was only [[]] of the total cost of the Stern contract. *See* Martin/Parr WRT at 15-16; SDARS Consor Ex. 7. There is no question that a strong downward adjust of the Stern benchmark would be required in order for it to even begin to approach an apples-to-apples comparison.

d. The Stern Agreement Provided Enormous Immediate Publicity and Promotion to Sirius.

1081. The agreement between Sirius and Howard Stern generated an “enormous level of publicity.” 8/22/07 Tr. 93:3-4 (Silverman). Mr. Silverman testified at length about this publicity:

Howard Stern, like him or not, is a gigantic media figure. He describes himself as the king of all media. He isn’t shy. But he has been a huge force on radio. He has had a hit movie. He has had a best-selling book.

He is a big figure. And so, therefore, he is newsworthy, he is covered. He is also not shy about publicizing himself, so the starting point for all of his publicity was on his own radio show on October 6, 2004, when he announced the deal right on the show and . . . talked and talked about it for the next few hours. But then, it was picked up by the press, it was a page 1 story in newspapers in many markets, especially in New York, made page 1 in Los Angeles . . . and then he started making appearances on very important television shows, The David Letterman Show, he was on 60 Minutes, The Today Show, and it was treated as a news item, amazingly, that is our culture. It was treated as a major news item and got huge coverage across the country.

8/22/07 Tr. 93:4-94:6 (Silverman).

1082. The announcement that Howard Stern was coming exclusively to Sirius “made satellite radio, and Sirius, in particular, the company that stands out.” 6/6/07 Tr. 302:13-15 (Karmazin). *See also* Karmazin WDT ¶ 45 (“On October 6, 2004, Sirius shocked the radio world when it announced “The Most Important Deal in Radio History,” bringing the leading personality in radio, Howard Stern, exclusively to satellite radio, beginning January 1, 2006.); 6/6/07 Tr. 301:18-302:6 (Karmazin) (“[W]hen Howard announced that he was coming to Sirius, that sent a shockwave. I mean, that was front page news in most papers across the country. There was a tremendous amount of awareness that was created for Sirius as a result of that. Howard continued on his CBS radio stations after he announced it for another 15 months, and during that 15-month period was talking and promoting Sirius.”).

1083. The power and value of Howard Stern is demonstrated by the adverse effect of the deal claimed by Stern’s former employer, CBS Radio. CBS “estimated that the impact of [Howard’s departure] on them was well over \$100 million.” 6/6/07 Tr. 303:3-4 (Karmazin). In fact, “CBS sued [Sirius] for a little over \$100 million claiming that they gave [Sirius] over \$100 million of publicity.” *Id.* at 302:6-8.

1084. As Professor Benston testified, “[m]any of the non-music content deals have led, and were expected to lead, to significant publicity and press exposure,” Benston WRT at 10, and affected what Sirius paid for the contract.

1085. Sirius gained significant advertising value from all of the media exposure surrounding the Stern deal and Howard Stern’s association with Sirius. In a very conservative estimate, Mr. Silverman calculated this advertising value to amount to \$33 million for mentions in television media and \$11 million for mentions in print media. 8/22/07 Tr. 106:8-13 (Silverman).

1086. In addition, Sirius received a significant amount of promotion from on-air mentions by Howard Stern during the final months of his terrestrial radio program on CBS. Referencing detailed summaries of these radio programs, Mr. Silverman testified that Howard Stern “spoke about [Sirius and his deal with Sirius] all the time, to the point that he was instructed by CBS not to use the word “Sirius,” at which point he started referring to Sirius as ‘eh-eh.’” 8/22/07 Tr. 97:5-9 (Silverman). Mr. Silverman performed a valuation analysis on these on-air, in-program mentions by Stern in order to calculate their advertising value to Sirius. *See* 8/22/07 Tr. 96:12-19 (Silverman) Mr. Silverman’s analysis concluded that Sirius obtained at least an advertising value to of \$55 million from Stern’s on-air, in-program mentions of his deal with Sirius. 8/22/07 Tr. 106:6-13 (Silverman).

1087. Under no circumstances could sound recordings alone generate this type of publicity for Sirius. *See* 8/22/07 Tr. 261: 11-15 (Silverman) (“[I]t would be very hard to imagine that there would be many articles about music as compared to articles about major media personalities”). As Professor Benston testified, “[t]he amounts paid

by the SDARS for these inputs, then, reflect promotional benefits to the SDARS that are not obtained from the sound recording performance right.” Benston WRT at 10.

e. The Stern Agreement Brought Sirius Significant Additional Benefits.

1088. In addition to the quantifiable benefits discussed above, Sirius obtained many other benefits as a result of its relationship with Howard Stern. For example, the Stern programming is attractive to 25-54 year old men, who are the primary automobile and electronics purchasers. *See supra* Part IV.A.4. The Stern deal brought immediate credibility with car makers and retailers. Even the Kagan Report, relied on by Dr. Pelcovits, discusses the positive effect that the Stern deal had on automobile and retail partnerships. *See* SDARS Ex. 67 (Kagan Research Report); 7/9/07 Tr. 26:6-10 (Pelcovits).

1089. In addition, the Stern deal was expected to have, and did have, an impact on Sirius in financial markets. As testified by Mr. Karmazin, “Wall Street may not have had a bunch of credibility in Sirius and they might not have known Sirius but they certainly knew of the success that Howard Stern had. You know, I was part of Howard Stern’s company when we took Infinity public in 1986 and Howard was a big driver of that in the capital markets.” 8/22/07 Tr. 150:18-151:4 (Karmazin). The relationship enhanced Sirius’ market value. When Mr. Stern’s equity compensation was paid to Mr. Stern and his agent in January 2006, the value of the Sirius stock had increased over \$114 million during the time in which Mr. Stern was promoting Sirius and before he ever aired a single minute of programming on Sirius. During this time, Sirius’ stock price increased by 95%, adding over \$4 billion in market capitalization. In

addition, Sirius' market capitalization increased by approximately \$1 billion in the days immediately surrounding the Stern announcement. Karmazin WRT ¶ 11.

3. Dr. Pelcovits' Stern Analysis Is Based on Fundamentally Flawed Economic Theory.

1090. Even if it were appropriate for Dr. Pelcovits to use as a benchmark a single, unique, market-based deal with significant differences from the license at issue here, he goes about it in the wrong way.

1091. Drs. Noll, Woodbury and Benston all agreed that the "the equation of Howard Stern to all music content is an erroneous application of the theory of efficient factor use." 8/16/07 Tr. 135:19 (Noll); Noll WRT at 98; 8/23/07 Tr. 110:21-111:2 (Woodbury) ("the fundamental problem with the theory is that it's misapplied completely with respect to this case."); Benston WRT at 6 (Dr. Pelcovits "use of Howard Stern's contract . . . as [a] meaningful indicator[] of the value of sound recording performance right to the SDARS, [is] contrary to basic economic reasoning.").

1092. Dr. Pelcovits' theory posits that a "firm engag[es] in production where it faces prices of all of its inputs. And it adjusts its relative input to the point where the marginal revenue product or the value of the marginal product of an input equals its price." 8/16/07 Tr. 135:2-9 (Noll); *see also* 8/23/07 Tr. 108:8-19 (Woodbury).

1093. But while this theory will say how an efficient firm will use substitute inputs given the price of the inputs, it is worthless as a basis for setting the price of an input where that price is unknown. For example, Professor Noll observed that a firm will engage in this behavior "regardless of whether the [input] price is high or low." 8/16/07 Tr. 135:9-11 (Noll). Moreover, "[i]f a given input has its price go up, both before and after the price equals the marginal revenue product, it provides no guidance at all about

how to set the price to begin with.” 8/16/07 Tr. 135:11-15 (Noll) (emphasis added).

According to Professor Noll, “this optimizing behavior has no effect on the market price of the input unless the firm has buyer power in the input market, which clearly is not the case for the SDARS.” Noll WRT at 98.

1094. Dr. Woodbury agreed. As he explained the problem with Dr. Pelcovits’ theory as applied to Howard Stern, Dr. Pelcovits begins by asking what the “incremental revenues are that are generated by Howard Stern and what fraction of the cost [Sirius paid] to Howard Stern those account for.” 8/23/07 Tr. 109:13-16 (Woodbury). Dr. Pelcovits then determines that “that percentage ought to be equalized,” in other words, “ever[y] service ought to get the same percentage as Howard Stern gets on the incremental revenues that it generates.” 8/23/07 Tr. 109:22-110:3 (Woodbury). But, Dr. Woodbury testified, “[t]he fundamental problem with the theory is that it’s misapplied completely with respect to this case.” 8/23/07 Tr. 110:22-111:2 (Woodbury). “[T]he theory begins with saying that the input prices are given” where the task in this case was “to figure out, in fact, what [a sound recording’s] input price ought to be.” 8/23/07 Tr. 111:8-14 (Woodbury).

1095. Dr. Woodbury identified a second problem with the theory. Dr. Pelcovits’ theory “requires that the firm (in this case, the SDARS) be able to adjust the usage of the inputs” so that the value of the marginal product of an input equals its price. Woodbury WRT ¶ 93. This is not possible in Howard Stern’s case because “Sirius has contracted with Stern for a set amount of time . . . that prevents such incremental adjustments.” *Id.* ¶ 94. As a result “the cost per unit of incremental output for Stern may be higher than that for other inputs.” *Id.*

1096. Finally, Professor Benston testified at length that Dr. Pelcovits' theory is flawed because "the market price for goods depends on the extent to which those goods have close substitutes and the competitiveness of the suppliers of those goods." Benston WRT at 7. "The price that Howard Stern can get for his service is higher than the price that a performer who is similar to other performers can get, because Stern has few, if any, substitutes." *Id.* In contrast, "although some music recordings have few substitutes, much (perhaps most) recorded music is similar to other recorded music." *Id.*

4. Even on its Own Terms, Dr. Pelcovits' Analysis Is Based on Unreliable and Inaccurate Inputs that Lead to Unreliable and Inaccurate Results.

1097. Dr. Pelcovits' Stern analysis relies on inaccurate numbers in its calculations, including the number of subscribers Sirius expected to generate with the Howard Stern deal, the total cost to Sirius of the Howard Stern deal, and the percentage of the SDARS' total revenue that should be attributable to music, among others. Therefore, his use of the Stern benchmark to calculate a proposed royalty rate becomes a case of "garbage in, garbage out." Noll WRT at 97.

1098. The math behind Dr. Pelcovits' original Stern analysis is relatively straightforward. Dr. Pelcovits presents numbers that he claims represent the amount of money paid by Sirius to Stern according to the deal (\$415 million) and the number of subscribers Sirius expected to obtain as a result of the deal (1.75 million). Pelcovits WDT at 12. He then divides the cost by the subscribers to arrive at a figure representing cost per subscriber: \$237. *Id.* at 13. After using an estimate of the average life of a subscription (42 months) to translate the total cost per subscriber into a cost per month per subscriber (\$5.64), he compares that number to Mr. Butson's projection for monthly

revenue per subscriber (\$10.25 in 2006 and \$11.65 in 2012) and concludes that about 50% of the revenue generated by a Stern subscriber would go back to Stern. *Id.* Finally, he cites the study by Professor Wind to assert that 56% of the SDARS' revenue is attributable to music, and calculates that if Howard Stern receives 50% of the revenue he generates, then music should also receive 50% of the 56% of total revenue it generates. *Id.* at 13-14. He therefore concludes that music should receive 28% of the SDARS' total revenues. In his amended written direct testimony, Dr. Pelcovits acknowledges that the record labels and performing artists are not the only contributors to the music on the SDARS' music channels, so he subtracts an additional 3.5% for the publishers' royalty and [[]] for the SDARS' internal production costs, leaving a final proposed sound recording performance royalty of 23% of the SDARS' total revenue. Pelcovits AWDT at 8.

a. Dr. Pelcovits' Estimate of Subscriber Additions Attributable to the Stern Deal Is Greatly Understated, Leading to Inaccurate Results.

1099. The number Dr. Pelcovits uses for the subscribers Sirius expected to be generated by the Stern deal is inaccurate. In his original testimony, Dr. Pelcovits uses 1.75 million as the number of Stern-generated subscribers. Pelcovits WDT at 12; 7/9/07 Tr. 249:7-11 (Pelcovits). Although his amended written direct testimony advocates the use of a slightly higher estimate of 2.0 million subscribers, the amended testimony simply serves as a reaffirmation of the flawed calculations Dr. Pelcovits made in his original testimony. *See* Pelcovits AWDT at 7, 8 ("I reaffirm my previous calculation that 50% is a reasonable revenue percentage to use in calculating a comparable music royalty"). The figures used in the amended testimony are discussed later in this subsection.

1100. To arrive at the figure of 1.75 million expected subscribers in his original testimony, Dr. Pelcovits relies specifically on only two sources: a Kagan Research report from 2005 and a Bridge Ratings report from 2006. *See* 7/9/07 Tr. 249:20-250:2 (Pelcovits); SDARS Ex. 67; SDARS Ex. 68. Although Dr. Pelcovits asserts that “[a]nalysts concluded that Sirius believed that Stern would bring 1.6 million or fewer new customers to its network,”⁴⁰ Pelcovits WDT at 12, n. 10, neither document relied upon by Dr. Pelcovits supports either the 1.6 million subscriber number or any statement concerning Sirius’ belief.

1101. The Kagan report on which he allegedly relies, in Dr. Pelcovits’ own words, “does not say that.” 7/9/07 Tr. 251:22 (Pelcovits). In fact, it cites another study saying that 30% of Stern’s terrestrial radio fans indicated they would be “very likely” to sign up for Sirius, and states that Sirius estimated Stern’s terrestrial radio fan base to be about 12 million people. SDARS Ex. 67 at SE 0202985. Thirty percent of 12 million people is 3.6 million people. The figure of 1.6 million that is cited in the Kagan report is actually a much more conservative estimate using much more conservative numbers (a fan base of “just 8 million,” of whom “only 20 percent” move to Sirius) – Dr. Pelcovits admitted that the words used probably do not indicate that this is the best guess of what will actually happen. SDARS Ex. 67 at SE 0202985; 7/9/07 Tr. 252:20-22 (Pelcovits). And at any rate, Dr. Pelcovits’ assertion that Sirius expected “1.6 million or fewer”

⁴⁰ Dr. Pelcovits apparently rounds up from 1.6 million to 1.75 million to account for any subscribers who left XM to subscribe to Sirius because of Stern. Pelcovits WDT at 12, n.10.

subscribers from Stern is wholly unsupported. Nothing in that document indicates that Sirius expected as few as 1.6 million additional subscribers, let alone fewer.

1102. The Bridge Ratings report likewise does not state that Sirius expected to obtain 1.6 million or fewer subscribers because of Stern. 7/9/07 Tr. 255:7-17 (Pelcovits) (testifying that “[t]here’s nothing I can point to” in SDARS Ex. 68 “that supports the proposition that Sirius believed that Stern would bring 1.6 million or fewer new customers to its network”). It estimates that the increase in Stern-motivated subscribers by the end of the first quarter of 2007 “should bring the number of Stern’s former terrestrial listeners who listen via satellite or Internet subscription to close to 2.4 million or approximately 20% of his reported former terrestrial audience.” SDARS Ex. 68 at 2.

1103. The two sources upon which Dr. Pelcovits relies actually provide estimates of between 2.4 and 3.6 million subscribers drawn from Stern’s former terrestrial listeners – up to 2 million subscribers higher than the figure he cites. He admitted that “there’s nothing I can point to in these two documents [SDARS Exs. 67 and 68]” to support the number he uses and that “I didn’t cite to anything else.” 7/9/07 Tr. 256:2-4 (Pelcovits). Thus, there is no support in the record for the subscriber estimate Dr. Pelcovits uses in his direct testimony to calculate a percentage of Stern-attributable revenue that went to Stern.

1104. In addition, both of these documents’ numerical estimates are explicitly limited to Sirius subscribers who are among Stern’s already-existing terrestrial radio fan base. SDARS Ex. 67 at SE 0202985 (stating that Kagan’s estimate of 1.6 million listeners is based upon the assumption that Stern has 8 million fans and 20

percent of this fan base moved); 7/9/07 Tr. 256:14-257:1 (Pelcovits) (“That’s correct with respect to Kagan”); SDARS Ex. 68 at 2 (stating that Bridge Ratings’ reported estimate of 2.4 million subscribers consists of Stern’s “reported former terrestrial audience”); 7/9/07 Tr. 257:21-258:4 (Pelcovits) (agreeing that “the Stern-motivated listeners that Bridge [Ratings] is talking about, just as the Stern-motivated listeners that Kagan is talking about, are former Stern terrestrial listeners or fans”).

1105. As discussed above, the benefits of the Stern deal extended far beyond Stern’s terrestrial fan base, and included overall publicity and brand awareness of the Sirius service and satellite radio generally, expanded retail exposure and excitement among the retail sales force, and inclusion of Sirius radios in many more new cars, all of which would lead to a greatly expanded subscriber base among members of the public who were not previously Stern listeners. *See supra* Part C.2. To the extent that Sirius gained Stern-motivated subscribers who were not previously listeners to Stern’s terrestrial radio program, they were not accounted for in the estimates upon which Dr. Pelcovits relies. 7/9/07 Tr. 258:10-11 (Pelcovits) (“I would suspect that’s what they use as the basis for making the calculations.”).

1106. The Kagan report, on which Dr. Pelcovits primarily relied, expressly recognized that there were advantages to Sirius beyond the increase in subscribers due to Stern fans or Stern listeners signing up. *See* 7/9/07 Tr. 259:11-260:1 (Pelcovits); SDARS Ex. 67 at SE 0202985 (“This does not include intangibles such as the advertising value the Stern deal brought to Sirius and the satellite radio industry prior to his joining the company”). It even specifically mentions that the deal “positively impacted [Sirius’] automotive and retail partnerships.” SDARS Ex. 67 at SE 0202985; 7/9/07 Tr. 260:6-10

(Pelcovits). Dr. Pelcovits claimed that, in determining the subscriber number to use in his calculations, he did not make any adjustment for these intangible benefits and improved business relationships because “[t]here was no way to quantify that.” 7/9/07 Tr. 261:14-15 (Pelcovits). In short, Dr. Pelcovits chose to ignore factors that affected the number of subscribers properly attributed to Stern. The result, of course, is that the number on which he does rely is substantially understated and does not reflect reality.

1107. In fact, Dr. Pelcovits himself, in his amended written direct testimony, cited to evidence that Sirius believed it could acquire as many as 4.5 million new subscribers from the Stern deal. *See* SX Ex. 144 DR (attached to SX Ex. 70) at SIR 00028531 (“4.5 million adults would want to do something about it if he was off the air”); *see also id.* at SIR 00028532 (Sirius’ then-CEO stating that figures drawn from Sirius’ research “equate[] to nearly 4 million fans [subscribing] before any marketing”). Although Dr. Pelcovits claimed he considered Sirius’ estimate, 7/9/07 Tr. 263:15-264:8 (Pelcovits), the number he cites for Sirius’ expectation of subscriber increase bears no relation to this evidence.

1108. In his amended written direct testimony, Dr. Pelcovits attempted to reinforce his Stern analysis with evidence he obtained in discovery. He relied on the Sirius conference call transcript cited above (SX Ex. 144 DR) and the Stern contract itself (SX Ex. 27) to assert that Sirius contemplated three possible scenarios: an increase of 1.0 million, 2.0 million, or 4.0 million subscribers. Pelcovits AWDT at 6-7. Dr. Pelcovits’ claim that Sirius contemplated a scenario in which it would gain no more than 1.0 million Stern-motivated subscribers is rebutted by the very document he purports to rely on: the transcript from which Dr. Pelcovits cites merely states that Sirius recoups its investment

at 1.0 million additional subscribers. SX Ex. 144 DR (attached to SX Ex. 70) at SIR 00028531. The transcript then indicates that getting 1.0 million additional subscribers will not be a problem, given that the research supports an increase of “nearly 4 million” subscribers. SX Ex. 144 DR (attached to SX Ex. 70) at SIR 00028531-32.

1109. Dr. Pelcovits also looked to the Stern contract to support his claim that Sirius also contemplated an increase of 2.0 million or 4.0 million subscribers because
[[

]]. Pelcovits AWDT at 7. Dr. Pelcovits ignores the fact that [[

]] SX Ex. 27 at SIR 00010467-68. The language in these additional provisions is exactly the same as the language upon which Dr. Pelcovits relies, and it constitutes the three paragraphs immediately following the paragraphs upon which Dr. Pelcovits relies. *Id.* Indeed, Dr. Pelcovits testified that the points identified in the contract are “very useful” in determining how many Stern-motivated subscribers Sirius expected it would obtain. 7/9/07 Tr. 291:7-16 (Pelcovits).

1110. Dr. Pelcovits chose to rely more specifically on the 2.0 million subscriber scenario in his amended written direct testimony for three reasons: because that figure “reflects more accurately what has happened,” because Sirius’ surveys indicate that [[
]], and because “2.0 million subscribers is closest to analysts’ projections of 1.75 million.” Pelcovits AWDT at 7-8. As to the first two reasons, the relevant metric for this

calculation is not what actually happened, but rather what Sirius expected at the time of the deal, because Dr. Pelcovits is attempting to determine how much Sirius would be willing to pay Howard Stern for each subscriber it anticipates he will bring to the company. *See* Noll WRT at 96 (“The relevant basis for a benchmark is the revenue Sirius expected to receive, not what it actually received”). Moreover, Mr. Frear testified that he “expect[s] Howard will continue to draw subscribers to [Sirius]” into the future. 6/12/07 Tr. 196:1-7 (Frear). The third reason he gives is essentially circular, and therefore, meaningless – Dr. Pelcovits chose to rely on the 2.0 million subscriber number to support the estimate he had previously made because it more closely corroborated that previous estimate. *See* 7/9/07 Tr. 298:22-299:7 (Pelcovits) (testifying that “one of the reasons [Dr. Pelcovits] reaffirmed [his] previous calculation was because the number two million subscribers was closest to the projection [he] used in [his] original calculation”). Because Dr. Pelcovits’ original calculation of 1.75 million subscribers anticipated by analysts was substantially understated and wrong, reliance on the 2.0 million subscriber case simply because it is close to that number adds nothing.

b. The Figures Dr. Pelcovits Uses for the Cost of the Stern Deal to Sirius Cannot Be Relied Upon.

1111. Dr. Pelcovits compared the increase in subscriber revenue with the cost of the contract to Sirius in order to calculate how much of the revenue generated by the Stern deal is paid back to Stern. Pelcovits WDT at 12-13. Together with revenue (which is based on subscriber numbers, described in the previous subsection), the cost of the deal to Sirius was one of the crucial figures in Dr. Pelcovits’ analysis.

1112. In his original testimony, Dr. Pelcovits presented a single number – \$415 million – as the cost of the deal to Sirius. Pelcovits WDT at 12. In his amended

testimony, he made calculations based on three scenarios: if Sirius generates 1.0, 2.0, or 4.0 million Stern-motivated subscribers. Pelcovits AWDT at 7.

1113. The Stern contract does not lend itself well to a determination of a precise number representing the cost to Sirius of the deal. Because much of the payment to Stern was to be made in shares of common stock, rather than cash, *see* SX Ex. 27 at SIR 00010466-69; Noll WRT at 96, the relevant figure to estimate how Sirius valued the deal is the value of the contract at the time the contract was signed, not at the time the stock was paid to Stern. Noll WRT at 96. Given the many forward-looking stock-based payment provisions in the contract, it would be very difficult, if not impossible, to arrive at a specific dollar figure for how much Sirius was committing to pay Stern at the time of the signing of the contract. *See* Noll WRT at 96.

1114. Dr. Pelcovits' amended testimony attempted to address the difference in the cost of the contract to Sirius based upon different levels of Stern-motivated subscribers who might sign up from the Stern contract itself. However, he limited his analysis to a subset of those provisions. As described above, the Stern contract provides

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|| SX Ex. 27 at SIR 00010467-68.

1115. In addition, Dr. Pelcovits mishandled Sirius' advertising revenue attributable to the Stern deal. As discussed above, *see supra* Part C.2.a, the ad revenue to Sirius was a benefit that should have been treated as an off-set against the contract costs paid to Stern. In entering the contract, Sirius was counting on increased advertising revenue. Karmazin WRT ¶¶ 4, 22; 8/22/07 Tr. 140:12-18 (Karmazin). Rather than

subtracting Sirius' share of the ad revenues from the cost of the contract, Dr. Pelcovits added Stern's share of the ad revenue to the cost of the contract to Sirius. Pelcovits AWDT at 6. But this ad revenue share was not a cost to Sirius – it was the payment to Stern of money Sirius would not have otherwise had. In other words, Dr. Pelcovits doubly inflated the cost of the agreement to Sirius with respect to the advertising revenues.

1116. As described above, the Stern contract included specific benefits to Sirius other than the provision of content. For example, Stern was required by the contract to produce the complete package of programming for both of his channels, and the contract gave Sirius the right to use Stern's likeness, name, and logo in promotional and other materials. *See supra* Part C.2. Sirius, of course, agreed to pay consideration to Stern in exchange for these benefits, and that consideration is included in the total cost of the deal to Sirius that Dr. Pelcovits uses in his calculations. Martin/Parr WRT, Ex. 7 (brand and endorsement value worth 27-35% of the contract price). Because the sound recording performance right at issue in this proceeding does not provide the benefits of a complete programming package or publicity rights, Dr. Pelcovits should have made downward adjustments to the value he used for the cost of the deal to Sirius. Noll WRT at 102. But no such adjustment was made, and consequently, the cost per expected subscriber used by Dr. Pelcovits is substantially too high.

c. The Percentage of Total Revenue Attributable to Music Used by Dr. Pelcovits Is Based on an Unreliable Survey and Leads to Implausible Results.

1117. Another one of the inputs to Dr. Pelcovits' Stern analysis is the figure he uses for the percentage of the SDARS' revenue that is attributable to music. Dr.

Pelcovits asserts that 56% of the SDARS' revenue can be traced to music, and he applies to that his figure of 50%, representing the percentage of revenue generated by Stern that goes to Stern, in order to arrive at a final proposal for the rate that should go to music of 28%. Pelcovits WDT at 13; Pelcovits AWDT at 8; 7/9/07 Tr. 68:14-69:12 (Pelcovits). The 56% figure "came from the results of one of the questions in Professor Wind's survey with respect to the Sirius subscribers." 7/9/07 Tr. 69:15-17 (Pelcovits).

1118. As demonstrated more fully in VII.A, the results of the Wind survey are flawed. Dr. Pelcovits' reliance on the Wind study makes the whole of Dr. Pelcovits' Stern analysis defective as well. The final result of the Stern analysis is very sensitive to this input: assuming all other inputs are correct, for every percentage point by which the Wind number is off, the final result of Dr. Pelcovits' analysis is off by half a percent.

1119. Dr. Pelcovits states that the 56% figure is derived from the total percentage of respondents who indicated that they would either cancel or reduce the amount they are willing to pay if music were eliminated from Sirius. Pelcovits WDT at 13, n.14. The analogous figure from the Wind survey for talk and entertainment programming is 37%, for sports the number is also 37%, and for news programming the number is 36%. Wind WDT at App. K, p. 1. If, as Dr. Pelcovits asserts, the SDARS should pay to all content providers 50% of the revenue attributable to that content (the percentage that he calculates Sirius pays to Howard Stern), then not only should music receive 28% of the SDARS' total revenue, but talk and entertainment should receive 18.5%, news should also receive 18.5%, and sports should receive 18%. Woodbury WRT ¶ 103. Adding those percentages together means that, according to Dr. Pelcovits'

Stern analysis, the SDARS should be paying a full 83% of their total revenue to content providers. Woodbury WRT ¶ 103.

1120. Even according to Mr. Butson's updated projections for Sirius that were included in his written rebuttal testimony, Sirius' fixed costs associated with satellite and transmission, general and administrative, research and development, and depreciation expense are about 15 percent of Sirius' projected revenues for 2012, the year in which Dr. Pelcovits asserts the industry will be more "stable and profitable."⁴¹ Pelcovits WDT at 3. Butson WRT at App. A; Pelcovits WDT at 17; *see also* Woodbury WRT ¶103. Likewise, Mr. Butson projects that a single category of variable costs, subscriber acquisition costs, will come to about 13% of Sirius' total revenues in 2012. Butson WRT at App. A. If the SDARS are to pay 83% of their revenues to content, 15% to these fixed costs, and 13% to only one category of variable costs, that comes to a total of 111 percent of total revenue, without accounting for other fixed and variable costs and return to equity and debt holders. Such a result is divorced from reality. *See* Woodbury WRT ¶ 103.

1121. Also, while Dr. Pelcovits' analysis would project that the SDARS pay 83% of total revenue to content providers, Mr. Butson projects a "total programming and content" expense equal to only 13.4% of revenue for Sirius in 2012. *See* Butson WRT at App. A. If Dr. Pelcovits' Stern analysis is taken to its logical conclusion, it leads to

⁴¹ Mr. Butson projects the following for Sirius in 2012: \$36,625,000 for satellite and transmission; \$116,936,000 for general and administrative; \$56,986,000 for engineering, design, and development; and \$165,558,000 for depreciation expense. Butson WRT at App. A. These expenses total \$376,105,000, which represents 14.7 percent of the \$2,555,099,000 he projects for total revenue in that year. *Id.*

highly implausible and unreliable results, further suggesting that the benchmark is not appropriate. 8/23/07 Tr. 118:3-10 (Woodbury).

1122. Professor Hauser's survey developed a valuation of music programming that corrects many, but by no means all, of the errors in the Wind study that caused it to over-value the programming. First, the Wind study gave SoundExchange credit for all "music programming" including pre-1972 recordings and live performances not subject to copyright. By using a more appropriate set of features for consumers to consider, Professor Hauser demonstrated a substantial percentage of the overall value of music programming on the SDARS is attributable to pre-1972 sound recordings and other features of the music programming (including live performances). *See* Hauser WRT ¶¶ 103-107. Therefore, the percentage value of music programming attributable to post-1971 sound recordings is much lower than reported by Professor Wind. *See id.* Professor Hauser calculated a range of 15.8% (the response provided by the respondents to Professor Hauser's Internet survey for "music from the 70's, 80's, 90's, and today"), to the Services, to 60.8% (calculated by comparing the importance of "music from the 70's, 80's, 90's, and today" versus "music from the 40's, 50's, 60's, and earlier," from Professor Hauser's Internet survey. *See id.* ¶ 106.

1123. Professor Hauser also demonstrated that if the order bias in Professor Wind's survey were corrected, Dr. Pelcovits' 56% subscriber revenue loss, drawn from Professor Wind's determination that 56% of the Services' subscribers would either cancel or reduce the amount they are willing to pay to an average of \$7.27, must also be revised. Professor Hauser's survey revealed that the percentage of respondents who would pay something less than \$7.27 if all music were eliminated from the SDARS (including those

who would cancel) is 21.8% (25.8% unweighted). See Hauser WRT ¶ 109; see also *supra* Part VII.A.3. Therefore, at most, 21.8% (25.8% unweighted) should be used in place of 56% in Dr. Pelcovits' calculation. This revision, coupled with the pre-1971 sound recording adjustment discussed above, would reduce resulting sound rewarding fee Dr. Pelcovits' results dramatically. Using Professor Hauser's findings and Dr. Pelcovits' calculation, the most favorable calculation for SoundExchange would reduce Pelcovits' to 2.8% (taking into account Dr. Pelcovits' 3.5% and 1.5% adjustments) and the most favorable calculation for the Services would reduce Dr. Pelcovits' 21.5% conclusion to 0%. Hauser WRT ¶118.

D. The SDARS' Non-Music Programming Expenses Are Not an Appropriate Benchmark for Valuing Post-1972 Sound Recording Performances.

1124. Dr. Pelcovits asserted in his Amended Written Direct Testimony that the total amount paid by the SDARS for "non-music content" (excluding amounts paid by Sirius to Howard Stern) provides another benchmark for the sound recording rights here at issue.⁴² Pelcovits AWDT at 2, 8-11. Dr. Pelcovits reiterates his reliance on this benchmark in his rebuttal testimony. Pelcovits WRT at 13-14.⁴³

⁴² As Mr. Frear testified, Dr. Pelcovits was correct to exclude the Stern deal, which was "one of a kind and was made at a critical time in the company's development." Frear WRT ¶ 20. The details of this deal, and the unique benefits Sirius obtained, are discussed in detail in Part VIII.C.2, *supra*.

⁴³ Dr. Pelcovits concludes that XM paid [[]] and Sirius paid [[]] of their revenues to non-music, non-Stern content providers in 2006 for a "simple average" of [[]], or a ratio of the sum of non-music content payments divided by sum of revenues of [[]] of revenues. Pelcovits AWDT at 10. He deducts estimated amounts paid by the SDARS for musical works royalties of [[]] and music programming costs based on analyst reports and Mr. Butson's report of [[]]. *Id.* at 10-11; 7/9/07 Tr. 71:11-72:1 (Pelcovits); Pelcovits AWDT at 11. Dr. Pelcovits concludes

1125. As the SDARS demonstrated in their rebuttal testimony, Dr. Pelcovits' use of this aggregate non-music content benchmark is conceptually misguided. It does not meet the criteria that define a good benchmark, because (a) the underlying agreements do not reflect the policy-based section 801(b)(1) factors that the Judges are required to apply, (b) the sellers, as well as the incentives and opportunity costs facing the sellers, are different, and (c) the rights at issue here are fundamentally different from the rights granted in the non-music programming agreements. Moreover, it relies on invalid and misapplied economic theory for the reasons discussed in *supra* Part VII.C.3. In Professor Benston's words, Dr. Pelcovits' approach is "totally inappropriate" and "doesn't make any economic sense." In other words: "It's just nonsense." 8/20/07 Tr. 80:6-15 (Benston); *id.* 106:15-107:4.

1126. Even if the benchmark were conceptually valid, Dr. Pelcovits implemented it incorrectly and in a biased manner that dramatically inflates the resulting implied sound recording license fee. Specifically, he (a) relied on a biased year not even in the relevant license period (2006) to construct his percentage of revenue represented by non-music programming costs and (b) failed to take account of the advertising revenues earned by the SDARS on non-music channels, which offset the fees paid for non-music programming and are not generated by the SDARS' music channels.

1127. Simply applying Dr. Pelcovits' analysis to the license years at issue in this proceeding (2007-12) and properly taking account of offsetting revenues from

that royalties for sound recordings would be equal to this amount, at [[]] of total SDARS revenues. Pelcovits AWDT at 10-11. As discussed in Part VII.D.3.d, below, Dr. Pelcovits does not even get this calculation correct, as he erroneously includes nearly \$83 million of stock incentives paid to Howard Stern in 2006.

advertising on the non-music channels would result in an implied sound recording license fee in the range of [[]] of revenue – far less than the fee Dr. Pelcovits calculates in his analysis. Even including Sirius’ Howard Stern programming expenses net of offsetting ad revenues for the applicable years does not yield a result close to the result claimed by Dr. Pelcovits.

1128. Moreover, Dr. Pelcovits compares apples and oranges by failing to take account of the fact that the fees paid by the SDARS under their non-music content deals (and used in Dr. Pelcovits’ analysis) include considerable payments for valuable benefits received by the SDARS in addition to the rights to program content (which are the only rights at issue here). In particular, the key non-music content deals that form the basis of Dr. Pelcovits’ analysis include large expenditures for: (i) trademark and brand exploitation rights; (ii) the endorsement of the SDARS by well-known celebrities and sports leagues; and (iii) exclusivity. *See e.g.*, Benston WRT at 5, 9-10. In other words, Dr. Pelcovits does not liken music content to non-music content; instead, his analysis is tantamount to:

$$\begin{array}{rcl}
 \text{Music Content} = & & \text{Non-Music Content} \\
 & + & \text{Brand Exploitation Rights} \\
 & + & \text{Endorsement Fees} \\
 & + & \text{Exclusivity}
 \end{array}$$

1129. That comparison is invalid. In addition, Dr. Pelcovits fails to take into account the value of publicity expected and received by the SDARS in connection with the non-music contracts.

1. The Non-Music Programming Benchmark Fails the Essential Requirements of a Valid Benchmark for the Rights at Issue Here.

a. The Underlying Agreements Do Not Reflect the Section 801(b)(1) Factors.

1130. As discussed in greater detail above, the best benchmark for this proceeding would be a competitively negotiated arms-length rate for a right perfectly analogous to the sound recording performance right by a service that is perfectly analogous to XM and Sirius and reflects the application of the section 801(b)(1) factors. Further, the statute governing this proceeding specifically authorizes the use as benchmarks of voluntary license agreements set under the section 801(b)(1) standard; it contains no similar express authorization for consideration of other agreements. *See supra* Part VI.B; PCL Part IV.A.; Woodbury AWDT at 11; Noll WRT at 90; 17 U.S.C. § 114(f)(1)(B). The Pelcovits non-music programming analysis is not that type of benchmark.

1131. Dr. Pelcovits' non-music programming analysis, like all of SoundExchange's benchmarks, is based on a competitive market analysis rather than section 801(b)(1). 7/9/07 Tr. 57:11-21 (Pelcovits) (“[T]he approach that I have used is to look at marketplace evidence as really the foundation and the basis for setting rate.”). It is equally clear that “the 801(b) factors require more than simply a willing buyer/a willing seller criteria.” 8/20/07 Tr. 69:13-15 (Benston). In other words, marketplace evidence does not shed light on the correct fee under the policy objectives set forth in section 801(b)(1). *See, e.g., supra* Part V.A; PCL Part III.B.

b. The Sellers Are Different, and the Incentives and Opportunity Costs Facing Them Are Different.

1132. Dr. Pelcovits' non-music programming analysis violates his own criteria for a valid benchmark. According to him, a good benchmark should involve similar buyers and sellers and "very similar products being exchanged between the buyer and the seller, the same music, the same ability to use the music for commercial purposes of various sorts." 7/9/07 Tr. 119:20-122:17 (Pelcovits); *accord* Woodbury AWDT at 11; Noll WRT at 90 (observing that sellers and products should be largely overlapping or very similar, if not identical); 8/16/07 Tr. 137:17-19 (Noll) (testifying that the Stern deal is "not ... the same buyers and the same sellers exchanging the same right").

1133. Here, Dr. Pelcovits' benchmark amounts from the non-music content deals and the target market of music content cannot be equated. The sellers indisputably are different. This affects the prices paid for the content in two ways: (1) the sellers have very different opportunity costs in the supply of the content; and (2) the sellers have different supply curves and face different demand for their products. Benston WRT at 4; 8/20/07 Tr. 70:7-72:2 (Benston); *id.* 73:21-77:15. Dr. Pelcovits does nothing to examine or adjust for any effects caused by these differences. Because the supply and demand conditions differ so radically, the price that is paid to producers of non-music is not appropriate or useful as a means of determining what should be paid for music rights. *Id.* 98:12-99:6 (Benston).

1134. First, as discussed above with the respect to Howard Stern benchmark, Part VII.C.1.b, the sellers of non-music content face very different opportunity costs of selling their content to satellite radio than do record companies, which, in turn, is a significant determinant of what the seller will accept for the product. 8/10/07 Tr. 39:21-

40:22 (Benston); *id.* at 70:7-71:14. For example, many of the content deals for non-music programming include significant restrictions on how the sellers of the content may market such content to other media outlets (such as terrestrial radio) or to the other satellite operator. *See infra* Part VII.D.4.c (discussing exclusivity clauses in contracts). Accordingly, sellers of content who grant exclusive rights to the satellite radio category, or to one or the other of the SDARS, are foregoing the opportunity cost of revenue from another source and must be compensated for that loss. By contrast, suppliers of music, for which the opportunity cost for making recorded music available to satellite radio is zero or near zero, Woodbury WRT at 42; Noll WRT at 66-67, 102, should not be compensated equally with such exclusive content.

1135. Second, the availability of substitutes will affect the price paid for the content. 8/20/07 Tr. 107:6-108:9 (Benston) (observing that music and non-music “will be worth different things to people who might buy the final product”). If there are a large number of substitutes for a particular content input, then the content will sell at a lower price. Conversely, if few substitutes exist, the input sells at a higher price. *Id.* at 76:2-77:15. Thus, the seller of an exclusive input can command a higher price than for a non-exclusive input, and the person buying the input is willing to pay that higher price. 8/20/07 Tr. 74:10-76:1 (explaining concepts of supply and demand of input and how they affect price); Benston WRT at 7, 8 (same).

1136. Third, Dr. Pelcovits does nothing to adjust for differences in the supply of non-music programming and sound recordings. Professor Benston demonstrated the importance of considering supply with his example of water and diamonds. Water is essential for life but commands a relatively low price because it is

typically in abundant supply. Diamonds are scarce, and so command a higher price. *Id.* at 6-8.

1137. Accordingly, suppliers of content for which there are few, if any substitutes – such as Howard Stern, Oprah Winfrey, Martha Stewart, the NFL, and Major League Baseball – are more like rare diamonds. Sound recordings, which are in abundant supply, are more like abundant water. These inputs will command different prices based upon differences in supply. Buyers will pay more to have something that is uncommon and has few substitutes. 8/20/07 Tr. 76:2-80:15 (Bentson); *id.* at 107:6-108:9.

1138. Dr. Pelcovits fails to take account of the differences in sellers, the differences in opportunity costs and differences in supply between the non-music programming that forms his benchmark and sound recordings. These failures render his benchmark meaningless.

c. The Rights at Issue in this Proceeding Are Different from Those at Issue in the Non-Music Programming Deals.

1139. The non-music benchmark also fails the requirements of a valid benchmark because the rights involved in the non-music programming agreements are very different from the sound recording rights at issue here. The non-music programming deals relied upon by Dr. Pelcovits do not concern any sort of sound recording right, or even any sort of performance right. Even Dr. Pelcovits admits as much (in connection with the Stern deal): “It’s not music. It’s a different type of content. . . . [I]t is, in my opinion, not as good as the benchmark I used in the previous case.” 7/9/07 Tr. 157:21-158:4 (Pelcovits); *see also id.* at 157:11-14 (testifying that the Stern deal does not involve “the same music” as is involved in the target market). These

differences are likely to be particularly relevant given what even Dr. Pelcovits admits is the complexity of the marketplace: “prices in this market are a function of very complex strategic interactions among a number of different and differentiated providers of content, both music and non-music.” *Id.* at 138:9-15 (Pelcovits). As a result, “different types of content can demand different rates in the marketplace.” 6/21/07 Tr. 248:13-16 (Ordoover).

1140. Moreover, the sound recording right is non-exclusive. As discussed below, much of the non-music programming for which the SDARS pay has some degree (and in many of the most important cases, great degrees) of exclusivity. *See infra* Part VII.D.4.c.

2. Dr. Pelcovits’ Non-Music Programming Analysis Is Based on Fundamentally Flawed Economic Theory.

1141. Dr. Pelcovits’ non-music programming analysis relies upon the same premise as his Howard Stern analysis: economic theory says that the SDARS should be willing to pay the same marginal price for inputs that generate the same marginal revenue product. Benston WRT at 4. As discussed in greater detail in Part *infra* Part VII.C.3, application of this theory to determine input prices “is simply wrong as a matter of elementary economics.” *Id.* at 4. Moreover, the relationship asserted by Dr. Pelcovits “does not hold for average costs, which, at best, are the numbers he presents.” *Id.*; *see infra* Part [VI.C.1.c] (discussing the effect of differences in sellers and supply).

1142. In short, there is no reason to believe that, even using a competitive market analysis, the SDARS would pay the same for music programming as they would pay for non-music programming that drew the same number of subscribers. *See supra* Part VII.C.3.

3. Dr. Pelcovits Applies a Flawed and Biased Methodology To Overstate the Implied Sound Recording License Fee Resulting from His Analysis.

a. Dr. Pelcovits Uses a Year Prior to the Statutory License Term, which Greatly Biases His Result.

1143. The record reveals that Dr. Pelcovits cherry-picks the years he analyzes in order to reach the fee sought by his client.

1144. In presenting his surplus/Shapley analysis, discussed in *infra* Part VII.B, Dr. Pelcovits goes to great lengths to justify his use of 2012 as the proper year to examine. He touts such advantages as the existence of “reliable projections of the SDARS expected revenues,” “reliable projections of its expected costs,” Pelcovits WDT at 7, and that the SDARS will have a “greater level of maturity” by being “closer to a longer run equilibrium.” 7/9/07 Tr. 86:7-18 (Pelcovits). He further states that, during the license period, the SDARS would be investing in their businesses, which affects the expenditures they make. *Id.* at 108:16-21 (“[D]uring those years there’s a tremendous amount of expenditure that’s being done not for that year but to acquire customers who are then beneficial to the company later on.”). In sum, he testified that by focusing his analysis on 2012, it would capture a “stable and mature business.” *Id.* at 177:15-16.

1145. Despite these alleged benefits of 2012, Dr. Pelcovits inexplicably, and without any justification, ignores 2012 for his non-music programming analysis. He instead relies entirely on 2006 – a year that is not even in the license term.

1146. The only consistency between the two choices is a consistent bias to select the year that results in the highest resulting sound recording license fee. Neither resulting fee is credible.

1147. Dr. Pelcovits' use of 2006 data poisons his non-music programming analysis with a wholly unrealistic and significant bias. *See* Benston WRT at 8-9 (concluding that the use of 2006 "introduces serious bias into his results and leads to a dramatic overstatement of the proposed sound recording performance rights fee that results from his analysis").

1148. This bias is introduced because it is undisputed that non-music programming costs form a higher percentage of the SDARS revenue in 2006 than they will at any time during the relevant license term. Non-music programming costs do not increase proportionally with increasing revenues. *Id.* at 8-9; 8/20/07 Tr. 108:10-109:20 (Benston); Frear WRT ¶¶ 15, 16, 18 (stating that Dr. Pelcovits' use of 2006 data "reflects a fundamental lack of knowledge of the satellite radio business" and that Dr. Pelcovits "analyzed a year that will bear no resemblance to the license period at issue in this case"); 8/15/07 Tr. 141:20-22 (Frear). Even SoundExchange's expert witness Mr. Butson testified that the SDARS' non-music programming costs are "related to major sports and personality deals" and are a "fixed cost." Butson WDT at 20 (emphasis added); *cf.* Pelcovits AWDT at 3 n.7 (recognizing that non-royalty music programming costs do not scale with revenue). As Mr. Frear testified, "It is well known in the industry, and by those who purport to follow the industry, that programming costs will not increase in proportion to revenue." Frear WRT ¶ 16; *id.* ¶ 18 (discussing projections in SIR Ex. 58 showing non-music programming costs do not increase linearly with revenues).

1149. The use of 2006 data leads to a greatly overstated result for the percentage of their revenue that the SDARS will pay for non-music programming over the license term. Professor Benston recognizes that "it is clear from analyst consensus

projections that the revenues of the SDARS are expected to grow substantially and consistently over the license period. Thus, the non-music programming costs, as a percentage of revenue, will decline substantially over the license period.” Benston WRT at 8-9; *accord* 8/15/07 Tr. 141:20-22 (Frear) (costs will be better absorbed by the growing subscriber base and growing revenues of the company going forward).

1150. For example, Sirius’ revenues will be lower in 2006 than in any of the years during the license period; therefore, its non-music programming costs as a percentage of that revenue will be higher in 2006 than at any time during the 2007-2012 license term. Sirius projects its non-Stern, non-music programming costs will be [] of revenue in 2007. By mid-way through the license term, 2010, the percentage will have dropped to approximately [] of revenue. Frear WRT ¶ 18; Benston WRT Table 1A. XM’s revenues and costs follow a similar downward path. In 2007, its non-music programming costs will be approximately [] of its revenue. In 2010, the percentage drops to []. When the effect of increasing, offsetting advertising revenues from non-music programming is factored in, the decrease is even more pronounced. *See infra* Part VII.D.3.b.

b. Dr. Pelcovits Ignores Offsetting Revenues from the Sale of Advertising on Non-Music Channels.

1151. Dr. Pelcovits also failed to account for the benefits to the SDARS from the sale of advertising revenues on non-music programming.⁴⁴ Advertising is an important second stream of revenue to the SDARS that will continue to grow as the

⁴⁴ As discussed below, this is not the only offsetting benefit that Dr. Pelcovits ignores. *See infra* Part VII.D.4.

number of subscribers grows. 8/22/07 Tr. 139:21-140:3 (Karmazin); Coleman WDT ¶ 18; Frear WRT ¶ 19.

1152. The advertising revenues from the non-music programming (net of the cost of selling the advertising and any revenue shares paid as a result of the advertising) serve as a direct offset to the cost of obtaining the non-music content. Frear WRT ¶ 19 (“Sirius also enters into its non-music programming deals with the expectation that it will earn advertising revenues that help defray the cost of those deals.”); 8/15/07 Tr. 142:1-16 (Frear) (“[U]nlike the music programming, we – we actually expect to sell commercials on our non-music programming so we consider the benefit we get from the advertising revenue for those channels. . . .”); *accord* Vendetti WRT ¶ 17. The SDARS do not obtain a corresponding benefit from their music programming, which remains commercial-free in order to preserve a differentiation from terrestrial radio. Frear WRT ¶ 19.

1153. This direct benefit requires an adjustment to the non-music programming benchmark which has not been made by Dr. Pelcovits. Benston WRT at 9; 8/20/07 Tr. 111:9-112:4 (Benston).

1154. The error of Dr. Pelcovits’ failure to recognize these offsetting benefits is worsened by his choice of 2006 as the “snapshot” year for assessing programming costs. The trend of growth in advertising revenues attributable to the non-music content deals already is apparent, and growth will continue. 8/22/07 Tr. 139:21-140:3 (Karmazin). For example, revenue from advertising has increased significantly for Sirius over the past three years as Sirius has added more well-known brands to its programming line-up. In 2004, Sirius generated approximately \$906,000 of revenues from advertising net of agency fees. In 2005, the year after Sirius announced its deal with Howard Stern

and after its first season with NFL programming, Sirius' revenues from advertising net of agency fees increased to \$6.131 million. In 2006, after adding Howard Stern and Martha Stewart programming and announcing that NASCAR programming would begin in 2007, "Sirius' revenues from advertising net of agency fees totaled \$31.044 million, a 406% increase over 2005 advertising revenues." Karmazin WRT ¶ 22 (citing SIR Ex. 47 at F-4); *see also* Vendetti WRT Ex. 4 (analyst projections showing projected growth in XM advertising revenues from \$44.0 million in 2007 to \$170.0 million in 2012).

c. Just Correcting for the Biased Year and the Failure To Account for Offsetting Advertising Revenues Leads to the Range of Fees Proposed by the SDARS.

1155. Even assuming, for the sake of demonstration, that the concept behind Dr. Pelcovits' non-music programming analysis methodology is correct, simply (1) correcting for Dr. Pelcovits' use of 2006 rather than the relevant license term and (2) offsetting advertising revenues generated by the non-music content, yields a substantially different result for the sound recording license fees at issue.

1156. Professor Benston replicated Dr. Pelcovits' non-music, non-Stern analysis, correcting just those two errors, and using the companies' more accurate projections for musical work royalties and other music programming expenses. As Professor Benston testified, Dr. Pelcovits' corrected methodology yields a weighted average net non-music programming expense benchmark over the entire license period of [[]. Benston WRT at 11, Table 1.⁴⁵ The result is even more dramatic if the analysis is limited to 2012, the year Dr. Pelcovits preferred in his "surplus" analysis –

⁴⁵ This analysis also includes an adjustment for the SDARS' projections of the musical work royalty over the license period. Benston WRT at 10.

resulting in an implied sound recording license fee of []]. *Id.* This range, not surprisingly, is more in line with the sound recording fees proposed by the SDARS than with the fees proposed by SoundExchange.

1157. Professor Benston's analysis does not take into account the many other benefits the SDARS receive from their branded non-music content agreements. These are discussed below. As a result, this re-analysis still dramatically overvalues the sound recording performance right when viewed on an apples-to-apples basis with non-music programming. 8/15/07 Tr. 143:12-19 (Frear) ("If you were to further adjust this weighted rate of 1.57 percent that's calculated pursuant to this schedule for the components that the experts see as being related to the endorsement value, the promotional value, the exclusivity value of these other deals, you would end up with a number that is dramatically smaller than this."); 8/20/07 Tr. 116:18-117:8 (Benston) (did not adjust for branding and promotional values in adjusted calculation).

d. Dr. Pelcovits Does Not Even Analyze 2006 Correctly.

1158. In addition to all of his other errors, Dr. Pelcovits made a significant error in his calculation of the SDARS' 2006 non-music, non-Stern programming costs that caused him to overstate the resulting sound recording license fee from his 2006 analysis. Although Dr. Pelcovits admitted that he intended to remove all Stern costs, he failed to subtract the \$82.9 million programming expense that Sirius recognized at the end of 2006 for an incentive stock grant to Mr. Stern. Frear AWRT ¶ 17; SIR Ex. 47 at 34 and F-30 (Sirius 2006 10-K); 8/15/07 Tr. 140:4-19 (Frear) (describing \$82.9 million error). Dr. Pelcovits admitted that he erred in including this cost. 7/9/07 Tr. 273:20-

274:4 (Pelcovits) (“It was not my intention to include it [\$82.9 million to Stern] in that number.”).

1159. Removing just this cost from the already overstated 2006 benchmark leaves a total Sirius 2006 non-music programming cost of [[]], which equals [[]] of Sirius’ 2006 revenues rather than the [[]] stated by Dr. Pelcovits. Frear WRT ¶ 17. Dr. Pelcovits further admits that re-calculation of his benchmark results in approximately [[]] of total revenues rather than the [[]] of revenues to which he testified. 7/9/07 Tr. 276:21-279:13 (Pelcovits) (agreeing with re-calculation).

4. Dr. Pelcovits Fails To Account for Valuable Benefits for Which the SDARS Paid Significant Sums in Connection with Their Major Non-Music Programming Contracts.

1160. Dr. Pelcovits’ analysis fails to recognize that the SDARS obtain substantial value from their non-music programming contracts that they do not receive from the sound recording performance right, “that would not and could not be achieved from the music programming.” 8/20/07 Tr. 109:21-110:6 (Benston).

1161. As part of deciding how much to pay for that content, the SDARS consider numerous benefits in addition to the value of a license to the content alone (and apart from offsetting advertising revenue, discussed above): (i) whether the content provides differentiation from terrestrial radio and the other SDARS through exclusivity; (ii) whether the content deal provides rights to exploit a valuable brand (iii) whether the deal includes celebrity or other endorsements or promotional benefits; and (iv) whether the content provides credibility to the service that could be used with automobile manufacturers and retailers or in the financial markets. 6/5/07 Tr. 18:15-20:11 (Parsons);

8/22/07 Tr. 138:22-139:6 (Karmazin). *See* Part VII.C.2 (discussing benefits of Stern contract).

1162. The fourth listed benefit highlights the significance of Dr. Pelcovits' error in relying on surveys that consider what listeners say as the basis for assessing the value of the non-music programming deals. Although subscriber revenue is the ultimate primary goal for both SDARS, "before subscribers are in place, a platform has to be built, credibility has to be generated in the marketplace. The OEMs and the retailers have to be convinced that you have a service that is stable, that is secure, that has the wherewithal to compete in the marketplace to justify them putting radios as standard options in cars."

8/20/07 Tr. 285:19-286:15 (Martin). The extent to which the non-music content deals encouraged car makers to include satellite radios in their cars will not necessarily be reflected in listener-stated preferences. A listener interested in music programming may have never subscribed to Sirius or XM if the car maker had not, as a result of the Stern or NFL deal, included the satellite radio in the car.

1163. For example, Sirius' exclusive arrangement to offer home-and-away broadcasts of every NFL game was important in expanding Sirius' relationship with automakers because it was the first concrete means of distinguishing Sirius' satellite radio service from the terrestrial radios that are standard in all cars and trucks. Several months after announcing the NFL deal, Chrysler agreed to a factory-installation program with Sirius. Karmazin WRT ¶ 6. Similarly, as Mr. Karmazin testified, "our relationship with the Ford Motor Company and our relationship with the Chrysler Corporation were due for renewals and the fact that we were able to come to them with content like NASCAR, Howard Stern and the NFL was very important insofar as providing us with the

credibility that we were prepared to bring to them these important brands.” 8/22/07 Tr. 148:19-150:1 (Karmazin).

1164. The non-music content deals also provided the SDARS with credibility in the financial marketplace. Joachimsthaler WRT ¶ 68 (“[T]he associations also undoubtedly enhanced the SDARS financing options.”); *accord* 8/16/07 Tr. 292:11-22 (Joachimsthaler). Mr. Karmazin confirmed that the non-music content deals assisted Sirius in gaining initial credibility in the financial markets: “Certainly Wall Street knows about the popularity and appeal of the NFL and how successful it is. They know the same thing about NASCAR. So those were obviously important benefits as well.” 8/22/07 Tr. 150:14-151-8 (Karmazin).

1165. The benefits expected by the SDARS from the non-music content deals actually were considered in negotiating the fees paid under those deals. For example, Mr. Karmazin testified that brand and promotional benefits factor into the amount that Sirius is willing to pay and does pay in its non-music content deals. 8/22/07 Tr. 158:2-21 (Karmazin). Mr. Vendetti testified similarly as to the anticipated marketing benefits of the Oprah Winfrey deal. Vendetti WRT ¶ 17 (stating that Vendetti Rebuttal Ex. 6 reflects XM’s assignment of [] of the total Oprah Winfrey deal expense to sales and marketing).

1166. Mr. Martin testified at length regarding three rights above and beyond content rights that are embedded in seven of the SDARS’ most important non-music contracts:

The key assets that were embedded were the rights to use the brand for each of the properties, the endorsement value of – that the branded property would provide an endorsement of the Sirius or XM platform service. And one of the third major elements was the exclusive value, the

right to preclude anyone else from offering any similar content. And left over was the residual, the residual element after the adjustments for the brand endorsement and exclusivity, which, among other factors, that's where the content itself is domiciled.

8/20/07 Tr. 235:17-236:11 (Martin).

1167. As shown below, Dr. Pelcovits neither takes into account any of these offsetting benefits of the benchmark market, nor does he recognize that similar benefits are not included in the price paid for the sound recording licenses at issue here. Therefore, he erroneously attributes the entirety of the aggregated non-music, non-Stern content costs to the value of a license to the content.

a. Dr. Pelcovits Failed To Consider the Value of the Use of Content Providers' Brands to the SDARS.

1168. Dr. Pelcovits failed to recognize that the SDARS' non-music programming contracts permit the SDARS to use powerful, popular brands that differentiate Sirius and XM from each other and from terrestrial radio and provide significant dimensions of value – beyond that of the content itself – that the sound recording rights at issue here do not provide. Joachimsthaler WRT ¶ 22; *see supra* Part VII.C.2.b.

1169. Mr. Cook testified that XM “realizes tremendous benefits from adding well-established major brands to its programming. Our entire channel line-up, particularly on the news, talk and sports side, is replete with brands that are well-known to consumers, thanks to the extensive marketing efforts of other companies. . . . Our ability to market the new XM brand is greatly helped by aligning with established programming sources.” Cook WDT ¶ 28.

1170. The key non-music content deals entered into by the SDARS are with well-known and well-respected brands, such as the NFL, NASCAR, MLB, Oprah Winfrey and Martha Stewart. Joachimsthaler WRT ¶ 27; 8/16/07 Tr. 284:13-18 (Joachimsthaler) (analyzing strength of brands). The SDARS are permitted to use these brands in their naming channels (such as “Martha Stewart” on Sirius or “Oprah & Friends” on XM) and in their advertising and promotion efforts. SX Trial Ex. 20 at 34932 (Harpo, Radio Oprah Winfrey Contract); SX Ex. 128 DR at SIR27584, 27591 (HARPO Radio (Martha Stewart contract)).

1171. The use of the brands was contemplated and relied upon in entering into the non-music content deals. Joachimsthaler WRT ¶ 31. For example, it was very important for the SDARS to sign deals with well-known brands, particularly in the nascent years when the public did not know what satellite radio was or who XM and Sirius were. As described by Mel Karmazin, “the opportunity for us to partner with these well-established brands were very, very important for us to be able to show our credibility to the consumers that you know, we had the NFL. So they didn’t know about Sirius, but they certainly new [sic] about the NFL.” 8/22/07 Tr. 146:15-148:1 (Karmazin).

1172. The SDARS’ major non-music content deals include express rights to use the content provider’s brand for promotional and marketing purposes. For example:

1173. **Major League Baseball:** XM’s agreement with Major League Baseball (“MLB”) []

]]

SX Ex.133 DR at XM CRB 00034959.

1174. **Martha Stewart**: In entering an agreement with Martha Stewart, Sirius acquired the valuable rights to utilize Martha Stewart's image and "brand" for promotion of the service. SX Ex. 32 at SIR00027591.

1175. **NASCAR**: Sirius' agreement with NASCAR Digital Entertainment and NASCAR, Inc. (collectively, "NASCAR") grants Sirius extensive and category-exclusive rights to the NASCAR brand, including a [[

]]. SX Ex. 23 at SIR00041616.

1176. **National Football League**: In its agreement with the NFL, Sirius obtained a category-exclusive license to use the brand for promotion of its service. SX Ex. 36 at SIR00040096. Further, the agreement provides that the NFL will encourage local clubs to provide Sirius with the [[

]] *Id.*

at SIR 00040095.

1177. **Opie & Anthony**: XM's agreement with Opie and Anthony Radio Services grants to XM the exclusive rights to exploit the Opie & Anthony brand on

satellite radio, cable television, satellite television, terrestrial radio and the Internet.

Martin/Parr WRT ¶ 75.

1178. **Oprah Winfrey**: Harpo Radio, Inc. granted XM [[

]]. SX Ex. 132

DR at XMCRB 00034932.

1179. The importance of these brand licenses is evident from the ways in which the SDARS actually use them. As described by Steve Cohen, Vice President of Sports of Sirius, “The importance of the NFL to Sirius is reflected in our advertising, where the NFL logo and shield frequently appear on our advertising and the first page of our website.” Cohen WDT ¶ 10. Sirius also is able to place the NFL on some of its radios “so that when a consumer is going into Best Buy or Circuit City to buy a radio, they will see the NFL brand attached to our product.” 8/22/07 Tr. 152:6-17 (Karmazin).

1180. The SDARS’ deals with non-exclusive, non-music content providers also highlight the importance of brand association. Although certain non-music programming, such as that from ESPN or Fox News, is available elsewhere – and indeed, may be available on both SDARS services – the availability of these channels is important because of the brand value. Coleman WDT ¶ 8 (discussing pass-through channels); Karmazin WRT ¶ 18 (“Even non-exclusive content brands provide value beyond the programming alone.”).

1181. For example, “Fox News is a well-known brand, and one that is popular with a significant portion of Sirius’ audience.” Karmazin WRT ¶ 18. Similarly, “ESPN is the best known brand in sports broadcasting. . . . The presence of ESPN is also consistent with our strategy of having the best known brands in sports available to our

subscribers.” Cohen WDT ¶ 6. XM’s Eric Logan agreed that the brand recognition of non-exclusive properties such as CNN, Fox News, Air America, Bloomberg Radio, CNBC, BBC World Service, Radio Disney, ESPN and C-SPAN Radio “is particularly valuable to us as an acquisition tool.” Logan WDT ¶ 31.

1182. “The sound recording performance right does not provide similar brand value, as it grants no right to the SDARS to use famous consumer brands.” Benston WRT at 9. *See supra* Part VII.C.2.b (discussing additional payments for branding of music channels).

b. Dr. Pelcovits Failed To Consider the Value of Endorsements by Content Providers to the SDARS.

1183. An additional element of value not taken into account by Dr. Pelcovits is the value of explicit and implicit endorsements of the SDARS by the non-music content providers. Endorsement value is separate and distinct from brand value. As opposed to brand value, which is the right to use a brand to market and promote that branded property, the endorsement value is the reciprocal relationship where that branded person or enterprise (e.g., a sports league) is marketing and promoting the credibility of the Sirius or XM brand. 8/20/07 Tr. 247:12-248:4, 311:4-11 (Martin).

1184. The major non-music content deals include vehicles for explicit endorsement by the content owners of the SDARS’ services. For example:

1185. **Major League Baseball:** As part of its deal with MLB, XM receives significant marketing and promotional benefits from MLB, including such benefits as mentions of the relationship during broadcasts and in signage at games and the inclusion of XM in its hospitality efforts. Martin/Parr WRT at 17; SX Ex. 133 DR at XM CRB00034959.

1186. **Martha Stewart**: This agreement explicitly lays out promotional obligations, requiring Ms. Stewart to promote the Sirius Martha Stewart Channel on her television shows, magazines, websites and other media outlets and through quarterly e-mails to her fans. SX Ex. 32 at SIR00027591. Ms. Stewart in fact endorses and promotes Sirius through her existing media empire such as her monthly magazine, her daily television show on NBC (including an episode where she demonstrated how to install a Sirius radio in an automobile), personal appearances, and on her website. 8/22/07 Tr. 157:6-157:1, (Karmazin); Karmazin WRT ¶ 17; SIR Ex. 55.

1187. **NASCAR**: As the exclusive satellite radio partner for NASCAR, NASCAR agreed to allow Sirius to promote its “NASCAR Official” status, and NASCAR agreed to give Sirius access as a participant to the NASCAR Member Program to offer products and services to affinity club members; facilitate co-promotional opportunities; coordinated meetings with NASCAR partners to discuss cross promotional opportunities (e.g., Best Buy, Circuit City, Radio Shack, Home Depot, UPS, MBNA); and display the Sirius logo in or on NASCAR offices, and on NEXTEL Cup competition trailers. SX Ex. 23 at SIR 00041616; Martin/Parr WRT at 25.

1188. **National Football League**: The NFL agreed to provide Sirius with substantial media exposure, including in-game exposure on televised NFL game broadcasts, exposure on team scoreboard displays during NFL games and in-stadium advertising, sponsorship of major televised league events (such as the Super Bowl and NFL draft), and prominent exposure on the NFL and team websites. SIR Ex. 52; Martin/Parr WRT at 21.

1189. **Opie & Anthony**: Opie and Anthony are obligated under their contract with XM to take active steps to promote the relationship with XM, including promotional appearances at consumer electronics stores, appearances on reality television programs, video testimonials and a publicity tour prior to the launch of the program. Martin/Parr WRT at 34-35.

1190. **Oprah Winfrey**: Harpo Radio, Inc. provides XM with [[

]]. SX Ex. 20 at XMCRB 00034933.

1191. No similar rights or benefits are provided by the licenses being priced in this proceeding. 8/22/07 Tr. 159:17-160:21, 161:20-162:19; 165:1-14 (Karmazin); Karmazin WRT ¶ 21; 8/20/07 Tr. 114:4-9, 115:6-17 (Benston) (testifying that if the SDARS want recording artists to promote their services either through branding or endorsement, it must be paid for separately).

c. Dr. Pelcovits Failed to Consider the Value of Exclusive Content to the SDARS.

1192. A significant element of value ignored by Dr. Pelcovits in his non-music programming analysis is that of exclusive rights to non-music content. The SDARS both recognize that exclusive non-music programming is essential to promoting their differentiation from terrestrial radio and from each other. Joachimsthaler WRT ¶ 26 (“The Non-Music Content Providers provide the compelling and exclusive content that serves as clear category points of difference for Sirius and XM. First, they provide Sirius and XM with exclusive content that can be heard neither on the other satellite radio service nor on terrestrial radio.”). See Part VII.C.2.c.

1193. As explained by XM's Mr. Parsons, "To attract and acquire subscribers XM needs to feature exclusive programming that consumers can only receive by subscribing to XM. This means that XM programming has to be differentiated from both AM and FM radio, and from Sirius Satellite Radio, as well as other audio entertainment services." Parsons WDT ¶ 27.

1194. Sirius' Mr. Karmazin agrees, testifying that "Sirius recognized that, to be successful, it needed to develop compelling programming that people were willing to pay for, programming that in many cases they could not get anywhere else. Thus, Sirius began to expand its focus on non-music programming, including important deals for sports, talk and entertainment, and channels produced by Sirius exclusively for Sirius." Karmazin WDT ¶ 42.

1195. For example, both SDARS view exclusive sports programming as a point of differentiation. Sirius views the exclusive availability of major sports programming (play-by-play coverage of premiere sporting events nationwide, as well as related call-in shows and other programming) on Sirius as a fundamental point of differentiation between both Sirius and terrestrial radio and Sirius and XM, and sees it as "a unique opportunity that sports fans are willing to pay for." Cohen WDT ¶¶ 4, 7; *See also id.* at ¶ 7. XM regards its acquisition of broadcast rights to all Major League Baseball games, World Cup soccer and college sports as important to XM by appealing to new and existing subscribers with exclusive play-by-play content not available nationally on broadcast radio, which "helps XM compete effectively against Sirius, which acquired broadcast rights to National Football League and National Basketball Association games." Parsons WDT ¶ 27.

1196. The contracts that Sirius and XM have entered into grant various exclusive rights against each other and/or other media outlets. For example:

1197. **Major League Baseball**: XM's agreement with MLB contemplates that XM will be the sole satellite provider of MLB games during the license period. The agreement provides for stiff penalties in compensation in the event MLB breaks such terms of exclusivity – if MLB grants rights to Sirius, the payments by XM to MLB are reduced by [[]. SX Ex. 133 at XM CRB 00034959; Martin/Parr WRT at 18.

1198. **Martha Stewart**: Martha Stewart and the Martha Stewart Channel are exclusive to Sirius on satellite radio. SX Ex. 32 at SIR00027593; Martin/Parr WRT at 29.

1199. **NASCAR**: The contract provides that Sirius is the sole satellite radio/subscription radio/pay radio broadcaster of NASCAR Channel Live Broadcasts of all competitions sanctioned by NASCAR. SX Trial Ex. 23 at SIR00041608, 41611; Martin/Parr WRT at 26. The 24/7 NASCAR channel includes broadcast of all races with pit-to-driver communication – an enhancement that is not available on terrestrial radio. 6/7/07 Tr. 338:17-339:1 (Cohen); Martin/Parr WRT at 26.

1200. **National Football League**: Sirius is NFL's exclusive satellite radio broadcaster of NFL games and the NFL Radio Network. SX Ex. 36 at SIR00040090, 96. [[

[[reduction in compensation. SX Ex. 36 at SIR00040091; Martin/Parr WRT at 21.

1201. **Opie & Anthony**: XM's agreement with Opie and Anthony Radio Services, grants to XM the exclusive rights to exploit the Opie & Anthony program

content and brand on satellite radio, cable television, satellite television, terrestrial radio and the Internet. Martin/Parr WRT at 36. Uncensored Opie & Anthony programming is available only on XM. Joachimsthaler WRT ¶ 26.

1202. **Oprah Winfrey**: Harpo Radio granted XM the exclusive right to develop and air a block of programming based on the themes and personalities identified with HARPO Productions and The Oprah Winfrey Show. SX Ex. 20 at XMORB00034928-29; Martin/Parr WRT at 32.

1203. The SDARS gain substantial benefits from providing exclusive content to their subscribers. In terms of subscriber revenue, if a consumer can obtain desired programming from only one outlet, then the consumer is more likely to pay to receive that and other programming from that outlet. As explained by Jeremy Coleman, “First, we must convince potential subscribers to pay for satellite radio when they can always receive terrestrial radio for free.” Coleman WDT ¶ 10. Second, content differentiates Sirius from XM and convinces potential subscribers to choose one over the other. *Id.* (“In both instances, the key is highly attractive content that subscribers cannot get anywhere else.”).

1204. The SDARS both seek exclusive content that is targeted to appeal to particular subscriber segments. For example, as Mr. Karmazin testified, Sirius entered into a non-exclusive content deal for Fox News because “it was our judgment at the time that we were covering the blue states pretty well with Howard [Stern] and hadn’t done quite as good in amassing content that would appeal to the more conservative side and some of the red states.” 8/22/07 Tr. 153:14-22 (Karmazin).

1205. Similarly, both Sirius and XM purposefully sought out content – namely, Oprah Winfrey, Martha Stewart, and Cosmo Magazine – that would appeal to women “since terrestrial radio does not have significant talk programming for women.” 8/22/07 6/7/07 Tr. 209:18-210:4 (Coleman); see *id.* 65:3-9, 216:14-21 (discussing Cosmo Magazine); 6/5/07 Tr. 20:15-21:15 (Parsons) (discussing Oprah); Coleman WDT ¶ 23 (discussing Martha Stewart).

1206. In fact, both of the SDARS generate substantial subscriber revenue by offering non-music programming that is exclusively available on their service. Coleman WDT ¶ 18 (“Sirius generates substantial subscriber revenue by offering non-music programming, particularly non-music programming from extremely popular brands, and non-music programming that is exclusively available on Sirius.”); Logan WDT ¶ 25 (“A major driver of subscriber acquisition is programming that a consumer only can get nationwide or in the car by subscribing to XM.”).

1207. The added benefits paid for by the SDARS in their non-music content deals render these deals poor benchmarks for the sound recording licenses at issue here. In essence: “More rights gets you more money. Less rights gets you less money.” 8/22/07 Tr. 175:20-176:4 (Karmazin).

d. An “Apples-to-Apples” Comparison Limited to the Content License Value of the Non-Music Content Deals with the Cost of Music Programming Results in a Substantially Lower Implied Sound Recording Fee.

1208. Mr. Martin testified at length about the value of the embedded branding, endorsement and exclusivity benefits of seven key non-music programming content agreements, as well as the residual non-exclusive content license value

represented by those contracts. The price paid for those agreements includes (but does not equal) the license value of the programming content. 8/21/07 Tr. 61:10-19 (Martin).

1209. The goal of Mr. Martin's analysis "was to identify and value the key intangible elements that were embedded in each of [the] non-music programming contracts." 8/20/07 Tr. 235:11-236:3 (Martin). As such, whether revenue or subscribers actually were recognized is irrelevant to the analysis: "I did an as-of valuation as of the date of the execution of the contract, which assumes this is what [the SDARS] were willing to pay to bring these properties in." *Id.* at 286:21-287:2 (Martin).

1210. The values for the exclusive brand association (trademark license) component of the six analyzed non-music, non-Stern contracts ranged from an average of 17.09 to an average of 23.28% of the net present value of the contract costs. *See* Martin/Parr WRT Exs. 8-14; 8/20/07 Tr. 271:3-272:1 (Martin) (testifying that "an adjustment for a small error in calculating the discounting in the Martha Stewart contract cost did not significantly impact either the relative values or the absolute values as the discounting changed the absolute net present value of the contract by less than one percent of the value" and that the ranges "still hold pretty clear").

1211. The averaged values for the celebrity or association endorsement component of the six analyzed non-music, non-Stern contracts ranged from 28.65 to 38.58% of the net present value of the contract costs. Martin/Parr WRT at 37.

1212. The averaged values for the exclusivity component of the six analyzed non-music, non-Stern contracts ranged from 24.98 to 32.74% of the net present value of the contract costs. *Id.*

1213. In sum, the content license value of the programming content provided by the non-Stern, non-music contracts Mr. Martin examined is typically a small proportion of the total contract cost. In the aggregate of the Martin analysis, a range from approximately 78.48 to 86.84% of the non-Stern, non-music contract compensation represents the value of the brand, endorsement and exclusivity components identified in the analysis. Thus, the average economic value of the underlying content of the analyzed contracts represents at most approximately 13.16 to 21.52% of the non-Stern, non-music programming contract costs incurred by the SDARS. *See* Martin/Parr WRT at 8, 38, Exs. 8-14.

1214. Based on these six key contracts, if Dr. Pelcovits were to use the aggregated non-music programming content as a benchmark, the appropriate percentage of the contract costs that would flow through his analysis should be no more than 21.52% of the total contract costs, rather than 100%. 8/20/07 Tr. 272:14-274:3 (Martin).

1215. In sum, Mr. Martin's analysis shows that a substantial downward adjustment of Dr. Pelcovits' non-music costs would be required to arrive at the content license value of the non-music "content" before it can be compared with the fees paid for music content by the SDARS. Even adjusting for the correct years and advertising revenue offsets, and even assuming for the sake of discussion that the analysis is conceptually sound, which it is not, Dr. Pelcovits' analysis would dramatically overstate the implied sound recording license fee. It is, therefore, entitled to no weight.

5. Dr. Pelcovits Also Failed To Consider the Enormous Amount of Publicity and Advertising Value the Non-Music Content Agreements Generated for the SDARS.

1216. In addition to the valuable rights acquired by the SDARS, the agreements with the non-music content providers led, and were expected to lead, to “significant publicity and press exposure” that are not obtained from the sound recording rights at issue here. Benston WRT at 10. As Mr. Silverman testified, “publicity has huge value in marketing, in marketing communications because it’s basically advertising you don’t have to pay for.” 8/22/07 Tr. 43:4-10 (Silverman); *id.* at 261:11-15 (“[I]t would be very hard to imagine that there would be many articles about music as compared to articles about major media personalities [or] sports [leagues].”).

1217. This publicity is an important consideration contemplated by SDARS management in entering into non-music content deals. 8/22/07 Tr. 155:14-17 (Karmazin) (“[G]etting promotion is an important consideration that we give when we’re making a decision on what content to add.”).

1218. The value of this promotion can be measured based on the cost to purchase an equivalent amount of advertising space. 8/22/07 Tr. 44:13-45:2 (Silverman) (“[A]dvertising cost is always identified based on what’s paid. It’s really pretty simply. In television, advertising is based on 30-second units and there’s a cost attendant to each 30-second unit. And you can identify the cost of a unit. In magazine and newspaper advertising, there are rate cards published and you can look at a full page ad and if space is less than a full page, generally speaking it’s valued at a pro rata basis on a full-page ad, depending on its size.”). The value of this publicity, however, is understated because it is more trustworthy to the consumer than a paid advertisement; “anything that appears

in content, that appears in context, that appears as a news story, is inherently more valuable to the marketer than an equivalent ad would be.” 8/22/07 Tr. 66:6-67:1 (Silverman).

1219. Mr. Silverman calculated the value of this publicity for each of the same seven major non-music content deals as analyzed by Mr. Martin. In sum, he estimates that the contracts generated at least the following benefits to the SDARS in television and print promotion:

- Oprah Winfrey: \$6,400,000. 8/22/07 Tr. 118:20-119:1.
- Martha Stewart: \$6,641,445. *Id.* at 117:2-8.
- NFL: \$587,000. *Id.* at 116:3-11.
- MLB: \$459,000. *Id.* at 118:8-11.
- NASCAR: \$508,000. *Id.* at 117:18-21.
- Opie & Anthony: \$7,300,000. *Id.* at 119:10-13.

1220. Mr. Silverman’s calculations significantly under-estimated the value of the publicity generated by the major non-music content deals. He did not, for example, examine all of the television stations in the country, instead focusing only on the top twenty television markets and national television. Silverman WRT ¶ 35, n.15. His print media search encompassed a very limited set of publications. *Id.* ¶¶ 38, 40. He only examined one radio show – the Howard Stern Show on CBS. *Id.* ¶ 48. He did not examine the internet media at all. *Id.* ¶ 49. Thus, Mr. Silverman’s estimate of the news and publicity value obtained by the SDARS from the major deals is understated, further exacerbating the apples-to-watermelons character of Dr. Pelcovits’ analysis.

6. Properly Executed, Dr. Pelcovits' Non-Music Programming Benchmark Is More Consistent With the SDARS' Fee Proposal.

1221. In sum, Dr. Pelcovits' non-music programming analysis fails the red-face test. Even if the benchmark were somehow valid (despite important differences in sellers and rights and theoretical flaws in the applicable economics), using the license years at issue in this case (2007-12) and properly taking account of offsetting revenues from advertising on the non-music channels would result in an implied sound recording license fee in the range of [[]] of revenue.

1222. But even those numbers are dramatically over-stated, as they do not properly account for (by deducting) the value of the other bargained-for and anticipated benefits for which the SDARS paid in their non-music content deals, including brand association and trademark rights, celebrity and association endorsements, exclusivity and publicity, which are paid for by the SDARS and which are not included in the sound recording rights granted by SoundExchange, nor do they take into account the section 801(b)(1) factors.

1223. Accordingly, properly executing the analysis with the correct data and proper deductions leads to a result that is far more consistent with the SDARS' fee proposal than the proposal by SoundExchange.

E. Professor Ordovery's DBS Benchmark Deserves No Weight.

1224. Professor Ordovery's reliance on the fees paid for content by direct broadcast satellite television services ("DBS") as a benchmark for the sound recording rights at issue here is misplaced. That benchmark suffers from numerous flaws that render it useless as a basis for fee setting in this case, or as corroboration for any other

analysis: (i) the DBS rights fees lack any of the attributes of a meaningful benchmark identified by SoundExchange itself for the SDARS sound recording licenses; (ii) Professor Ordover makes no adjustment to account for the myriad differences between his DBS benchmark and the SDARS sound recording licenses; (iii) Professor Ordover's use of premium channels and total programming costs ignores the more comparable benchmark of non-exclusive broadcast retransmission fees; (iv) the DBS rights fees for premium programming do not reflect any of the section 801(b)(1) factors; and (v) Professor Ordover misuses the discredited Wind study to attribute the value of music programming to the SDARS.

1225. Professor Noll and Dr. Woodbury both examined the proposed DBS benchmark and concluded, correctly, it was not useful in this case. Noll WRT at 15, 102-09; 8/16/07 Tr. 145:12-151:5 (Noll); Woodbury WRT ¶¶ 56-61.

1226. Even Professor Ordover does not really attribute any weight to the DBS benchmark. He acknowledges that “the satellite television deals do not directly tell us anything about the SDARS’ willingness to pay for music content” and that the DBS analysis offers “only limited insight into the pricing of music in particular to satellite radio service providers.” Ordover WDT at 37; 6/21/07 Tr. 273:16-274:9. Professor Ordover further denigrated the DBS benchmark in his oral testimony, describing it as “for really illustrative purposes” and merely “a sanity check.” 6/21/07 Tr. 192:2-3; 191:16-17 (Ordover); *see id.* 138:9-14 (describing DBS as an “illustrative approach” rather than a “benchmark”).

1. **The DBS Benchmark Fails To Meet SoundExchange's Own Criteria for a Meaningful Benchmark.**

1227. The DBS benchmark fails to meet the criteria that SoundExchange's own economist has defined as relevant to evaluating a benchmark. Dr. Pelcovits testified that a "good benchmark" "start[s] with similar buyers and similar sellers and by its very nature then [involves] very similar products being exchanged between the buyer and the seller." 7/9/07 Tr. 120:8-14; 120:19 (Pelcovits).

1228. In Professor Noll's words, "all of the factors we normally think of as making for a good benchmark are missing" with respect to the DBS benchmark. 8/16/07 Tr. 146:17-19 (Noll). "The buyers aren't the same, the sellers aren't the same, the costs aren't the same, the nature of competition in the market is not the same. There's literally nothing about satellite television and satellite radio that's similar other than they use satellites, and that's like saying you know, we can make house building be analogous to building a box, because they both use nails or they both use wood." *Id.* 146:6-16.

1229. Dr. Woodbury agreed, testifying that DBS and SDARS involve different buyers, different sellers and substantially different rights, and provide a substantially different experience for subscribers. "In short, there is a general lack of comparability in the demand for and cost of DBS services and SDARS services." Woodbury WRT ¶ 57.

1230. In considering the difference in the buyers, it is necessary to consider, among other things, the buyers' cost structures. Although Professor Ordover speculated that the cost structures of providing the two types of services are likely to be similar (because both are capital intensive and involve satellites), he provided no analysis or facts to support his supposition. Ordover WDT at 37 (asserting that DBS and SDARS

“presumably have similar cost structures” (emphasis added)). In fact, he admitted that he did not compare the cost structures of the DBS business and the satellite radio business. 6/21/07 Tr. 272:18-273:2 (Ordover).

1231. The costs of providing the program services to DBS subscribers are likely to be substantially different relative to revenues than the costs of providing music to SDARS subscribers. Woodbury WRT ¶¶ 58; 8/23/07 Tr. 141:9-10 (Woodbury).

1232. The SDARS incurred substantial costs to make their services mobile and to market and distribute in the automotive channel, which the DBS services do not incur. Woodbury WRT ¶ 59, n. 35 (citing 6/7/07 Tr. 43:9-44:1, 45:20-50:7, 51:13-53:13, 66:17-68:12, 70:7-72:20 (Smith); Masiello WDT ¶ 24); 6/4/07 Tr. 313:1-316:10 (Parsons) (contrasting fixed-location DBS dishes versus SDARS’ mobile, omni-directional antennas); *id.* at 319:22-320:5 (comparing power of DBS and SDARS satellites).

1233. Without analyzing the respective costs of the SDARS and DBS operators, Professor Ordover has no basis whatsoever – even as a “sanity check” – for suggesting that the SDARS should be able to afford to pay close to 50% of their revenues for content costs simply because the DBS do.

1234. In considering the differences in buyers, the relative maturity of the industry also is relevant. “[S]atellite television broadcasting is a more mature industry that reaches about 25 percent of all households, compared to the SDARS as start-ups with a penetration of four percent.” Noll WRT at 103.

1235. Professor Ordover did not consider the elasticity of demand for DBS services or compare the demand elasticities of the DBS services to satellite radio. 6/21/07 Tr. 273:3-15.

1236. In considering differences in sellers, it is necessary to account for the different ways in which program providers to television services recover their costs, compared to the way that the owners of sound recording copyrights recover their costs.

As Dr. Woodbury testified:

On the programming side, the prices charged by HBO, ESPN and MTV include (among others) the costs of exclusivity and the production cost of original programming in addition to the talent used on the program services. The primary means for recovering these costs are the revenues received from DBS and cable providers. In contrast, the [record] labels recover their costs primarily through the sale of CDs and increasingly through digital downloads, not payments for sound recording performances on SDARS. Consequently, the payments made by DBS providers to content suppliers are not analogous to those made by the SDARS to SoundExchange.

Woodbury WRT ¶ 58.

1237. Moreover, in discussing DBS television, Professor Ordover ignored its more mature, closest competitor, cable television, which reaches a larger market share and pays a substantially smaller share of revenues for content. Noll WRT at 15, 103-04.

1238. In considering the differences in rights between the SDARS and DBS providers, it is necessary to account for the exclusivity of the programming provided to DBS operators. Most DBS programming, like HBO, ESPN, etc. is not available for free on broadcast television. *See* Woodbury AWR ¶ 58; Noll WRT at 15 (“[M]ost of the rights acquired by satellite television are not available to terrestrial television (unlike music, which is available to both SDARS and terrestrial radio).” Content providers typically would charge significantly more for exclusive or partially exclusive rights than

for nonexclusive rights due to the higher opportunity cost of granting exclusive rights.

See Noll WRT at 102; *supra* Part VIII.D.4.c.

1239. Further, sound recordings are inputs to SDARS channels that the SDARS pay additional fees to develop and program, whereas the premium services like HBO provide a fully compiled channel or group of channels to the DBS operators. Noll WRT at 102-103. All else equal, fully developed programming will cost more than an input that must be developed into programming; an unadjusted benchmark based on fully developed programming will over-state the value of the input. *See supra* Part V.D.

2. Professor Ordover Makes No Adjustment To Account for the Myriad Differences Between His DBS Benchmark and the SDARS Sound Recording Licenses.

1240. Professor Ordover acknowledges that “[o]f course, the benchmark rates must be adjusted for any material differences between the benchmark rates based on market transactions and the compulsory license [target].” Ordover WDT at 36. Yet, he makes no adjustment whatsoever for any of the myriad differences between DBS television premium programming and SDARS. Woodbury WRT ¶ 60. *See generally* Ordover WDT at 38-43 (making no adjustments). This alone completely invalidates his use of this benchmark.

3. Professor Ordover’s Use of Premium Channels and Total Programming Costs Compounds the Inapplicability of His DBS Analysis.

1241. Professor Ordover argues that the costs paid by DBS for premium channels as a percentage of revenue and the costs paid by DBS for all programming as a percentage of revenue are the two most relevant numbers. Ordover WDT at 38-43.

Neither is a valid comparison.

1242. Professor Ordovery's use of the percentage of premium channel revenue paid to the premium channel content providers ignores the fact that the percentage of premium revenues paid to the content providers (49%) represents the percentage of incremental revenues paid by consumers specifically for that premium programming – not a percentage of the DBS providers' total revenues. The payments received by the DBS operators for premium channels are incremental to the revenues received for the basic programming tier. The incremental revenues received, for example, from providing HBO as a premium service, are paid by consumers entirely for receipt of HBO. Noll WRT at 104. As Professor Noll describes:

The price for extended basic covers the costs of the pay-TV service that are not incremental to the premium tier, including infrastructure, non-premium content, marketing and administration. The decision to offer a premium channel is based on whether the cost of premium content plus metering and billing are less than the price. For other channels, the price must be sufficient to recover the satellite reception system (or, in the case of cable, the connection between the customer and the external cable) and all other non-content costs.

Id. “Because these other cost are not trivial, [Professor Noll] conclude[s] that premium channel costs on pay-TV are irrelevant as a benchmark.” *Id.* 104-05.

1243. Further, because satellite and cable television systems “pay very different rights fees for different channels; the average price per channel has little practical meaning.” Noll WRT at 105.

1244. If there is any satellite television analogue at all to the sound recording performance right, it is the rights fees paid by DBS operators for satellite retransmission of terrestrial television broadcasts. Just as sound recordings are not exclusive to SDARS, terrestrial television programming is not exclusive to cable and satellite television systems – and is in fact widely available for free (with advertising) via terrestrial

broadcasts, just like radio. Moreover, just as the main source of revenue for record companies is not performance rights on SDARS, the main source of revenue from terrestrial television broadcasters is not rights fees from cable and satellite systems. Both record companies and terrestrial television broadcasters derive benefits from being included on satellite systems. Noll WRT at 15, 105; 8/16/07 Tr. 148:13-19 (Noll).

1245. The rights fees paid for retransmission of terrestrial television by DBS operators are “a tiny fraction of the total rights fees” they pay, with estimates ranging from about one percent to “a few percent of all payments for content.” 8/16/07 Tr. 149:16-19 (Noll); Noll WRT at 15, 108.

1246. “If pay-TV is a benchmark, the retransmission analogy implies that fees for sound recordings should be more like one percent of revenues than 18.5 percent (Professor Ordovery’s estimate for satellite content). Indeed, the fraction should be lower than this because licensed sound recordings are an input to music channels, not the entire content.” Noll WRT at 108.

4. The DBS Benchmark Is Irrelevant for Other Reasons as Well.

1247. The DBS benchmark rates quoted by Professor Ordovery do not reflect any of the section 801(b)(1) factors, which must be considered in this case. Woodbury WRT ¶ 57.

1248. Professor Ordovery also incorrectly used the Wind study as the basis for converting the DBS payments to an SDARS sound recording fee. As demonstrated by Professor Hauser, that study significantly over-stated the value of music programming to the SDARS and failed to account for the value contributed by elements of the music programming other than post-1971 sound recording performances. *See supra* Part VII.A.

1249. Moreover, the Wind study did not consider the marginal value of music – rather, it considered only the value of an all-or-nothing decision to eliminate music, which is not the right question. *Id.*

1250. The Wind study overstated the value of music programming relative to other programming by offering an all-or-nothing choice for music, but not for all non-music programming. *Id.*

1251. Finally, even if it were appropriate to use the Wind study, Professor Ordover misused the results of that study. According to Professor Ordover, the Wind study demonstrated “that music accounts for approximately 55% of the value of all programming content distributed by the SDARS.” Ordover WDT at 41 (borrowing the 55% “value” from Dr. Pelcovits’ testimony (Pelcovits WDT at 13 n.14); however, Dr. Pelcovits was citing 56% for Sirius subscribers only and the music “value” from Professor Wind’s testimony for both services was 59% (Wind WDT at 22)). However, as Dr. Woodbury points out, that 55% (actually 59% for both services), viewed in light of the same answers given for the three other types of programming, about which Professor Wind inquired, is actually 59% of 163%, or 36% of 100%. Woodbury WRT at 25 n.36

1252. Professor Ordover’s failure to undertake the simple, well-known step of normalizing the relative results from the Wind study highlights the lack of rigor with which this “illustrative approach” was presented.

1253. In sum, Professor Ordover’s DBS benchmark deserves no weight.

F. SoundExchange's Record Company Benchmark Agreements, Including Interactive Subscription Service Agreements, Are Inappropriate Benchmarks.

1. The Agreements Provide for Different Rights Sold to Different Types of Services with Different Costs and Functionalities, and Do Not Reflect the 801(b)(1) Factors.

1254. As described in the following sections, the digital music service benchmarks presented by Professor Ordover are flawed because they do not meet the basic criteria for a good benchmark. The experts testifying in this case agree that in order for a benchmark to have any merit, it must, among other things, involve the same rights, and the same buyers. 7/9/07 Tr. 119:20-122:17 (Pelcovits); *accord* Woodbury AWDT at 11; Noll WRT at 90. Professor Ordover's digital music service benchmarks, however, involve different rights and very different buyers that offer service with different functionalities than the SDARS. Unlike Dr. Woodbury's PSS benchmark, none of them are subject to or reflect the policy considerations inherent in the governing 801(b)(1) rate-setting standard.

1255. Professor Ordover's benchmark music services also have dramatically different cost structures than the SDARS – most notably in the fact that they use the Internet to distribute their content to personal computers already in the possession of consumers. This stands in sharp contrast to the SDARS, which have spent billions on proprietary satellite distribution networks, and collect revenues that reflect those underlying costs. Unlike Dr. Woodbury, Professor Ordover fails to make necessary adjustments to his benchmark rates to reflect these cost differences. Unlike Dr. Woodbury, he also fails to account for the fact that his benchmark services are pure

music services, whereas the SDARS offer (and earn revenues based upon) significant non-music programming.

1256. These flaws alone infect each and every one of the record company benchmarks relied upon by Professor Ordover, who does not attempt to make any adjustments for them. The analysis therefore provides no insights into the value of the rights at issue in this proceeding.

a. Different Rights and Different Works

1257. The services Professor Ordover analyzes do not make for good benchmarks for the SDARS, because they involve different rights and, in some cases, different copyrighted works. The permanent audio download service, over-the-air download service, ringtone service, and portable and non-portable interactive subscription service agreements discussed by Professor Ordover convey a totally different copyright right than that provided by the section 114 statutory performance license for the SDARS and PSS – namely, the right to reproduce and distribute copies of the sound recording to users’ computers and/or devices which users can listen to on demand, whenever and wherever the user wishes. *Compare* 17 U.S.C. § 106(1) and 106(3) (rights of reproduction and distribution) *with* § 106(6) (right of sound recording performance). *See* 6/21/07 Tr. 277:18-278:1 (Ordover); 8/27/07 Tr. 55:22-56:20 (Ordover) (acknowledging licensing of the reproduction right to interactive services); 8/28/07 Tr. 296:19-297:5 (Eisenberg); 8/23/07 Tr. 129:9-131:9 (Woodbury) (describing temporary ownership involved in interactive service downloads). The record-company agreements with these services may include mechanical (reproduction) rights to the

underlying musical compositions as well – also rights that the section 114 license does not convey. 8/28/07 Tr. 296:19-298:4 (Eisenberg).

1258. As Mr. Eisenberg admitted, license agreements with video services (for both on-demand and noninteractive functionality) are also different than the sound recording performance license at issue in this proceeding in that they (i) involve a different copyrighted work altogether – an audiovisual work instead of a sound recording; (ii) include payments by the video services to cover the reproduction and distribution rights as well as the performance right for the audiovisual work; and (iii) involve payments for the synchronization (reproduction) right for the underlying musical work as well. 8/28/07 Tr. 289:9-293:5 (Eisenberg).

1259. The section 114 license for the SDARS, by contrast, pertains only to the sound recording, does not allow copying or distribution, and conveys solely the section 106(6) public performance right. As Mr. Kenswil testified, with interactive services “you can get any song from any artist anytime you want,” whereas satellite service “is definitely a different user experience from these on-demand subscription services” where “you can’t order up a particular song for a particular artist at a particular time.” 6/27/07 Tr. 92:16-93:10 (Eisenberg); *see also* 6/18/07 Tr. 255:19-256:4 (Eisenberg) (same).

1260. Professor Ordoover failed to make an effort to address, let alone adjust for, these fundamentally different rights grants involved in the benchmark and target markets.

b. Different Functionalities

1261. The music services Professor Ordoover relied upon are poor benchmarks for the SDARS' services because they offer different functionalities that provide different experiences for users and distinctly different opportunity costs for the sellers. Even where an interactive subscription service provides on-demand streaming without an actual downloaded copy, Mr. Kenswil admitted that having such on-demand access to any song whenever one wants and as many times as one wants nonetheless is functionally equivalent to owning a copy: "Essentially, a portable subscription service [that] allows someone to listen to any recording any time they want is a perfect replacement if implemented perfectly of ownership of the music, so there would be no need to buy a CD or a download if one had that service." 6/27/07 Tr. 29:6-12 (Kenswil); *see also id.* at 91:14-92:8 (explaining that interactive services provide "the exact same listening experience" as "buying either a CD or a digital download"); Woodbury WRT at 33 n.51.

1262. Interactive on-demand services sit at the far end of what Sony BMG has described in its internal discussions as a "continuum" or "spectrum" of substitutability. *See* 6/18/07 Tr. 237:1-15 (Eisenberg) ("What we've seen over the years, it's really a spectrum of substitutability."). One Sony BMG "licensing strategy" memorandum, for example, describes the practice of pricing products differently based on where they sit on a "continuum, ranging from 'promotional' to 'substitutional.'" SDARS Ex. 18 at SE 0090822. This continuum ranges from AM/FM simulcasts on one end to "full 'on demand' access to catalog" – i.e., what interactive services offer – on the other. *Id.* (Notably, the memo does not even mention portability as a consideration in

devising licensing fees.) Another Sony BMG memo written by Mr. Eisenberg, entitled “Overview of Internet and ‘Streaming Radio’ Deals,” actually depicts such a continuum graphically. *See* SDARS Ex. 19 at SE 0090817. Again, the functionality described as “‘on-demand’ access to a full catalog, on a track-by-track basis,” sits at the “far right pole.” *Id.*; *see also* 6/18/07 Tr. 277:7-279:18 (Eisenberg) (describing on-demand, interactive functionality of subscription services).

1263. This “far right pole” in Mr. Eisenberg’s memo describes well the functionality of the interactive services involved in Professor Ordover’s benchmark agreements. The functionality of the SDARS, by comparison, provides no more interaction and no more substitutional effect than the service found at the opposite pole: terrestrial broadcasts simulcast over the Internet. SDARS Ex. 19 at SE 0090817. As Professor Noll testified, the import of this distinction is that the opportunity costs to the record labels of licensing to the benchmark interactive services are dramatically higher than the opportunity costs of licensing to the SDARS, which are at or close to zero – a difference for which Professor Ordover does not and cannot account. Noll WRT at 55-57, 101; 8/16/07 Tr. 39:1-42:17, 137:22-138:18, 165:18-166:6 (Noll); Woodbury WRT at 42.

1264. In short, none of the benchmark services discussed by Professor Ordover is remotely analogous to the non-interactive use of sound recordings on the SDARS. Three of the service categories – interactive video streaming, interactive portable subscriptions, and interactive non-portable subscriptions – have an interactive functionality that is totally different than the noninteractive SDARS and is more akin to owning a copy of a track. *See* 6/21/07 Tr. 279:1-11 (Ordover); 6/18/07 Tr. 285:15-286:3

(Eisenberg) (describing on-demand, interactive component of Sony BMG video-streaming licenses). Three others – permanent audio downloads, over-the-air downloads, and ringtones – actually provide for fully interactive ownership of a copy (or partial copy) of a sound recording. *See id.* at 264:22-265:4, 267:4-21 (agreeing that downloads are “fully interactive”). Indeed, Professor Ordover himself rejects permanent download services as a useful benchmark. Ordover WDT at 46. The only category which provides noninteractive streaming of content, the noninteractive video services, is not a helpful benchmark because, as discussed above, it involves a totally different copyrighted work.

c. Different Costs

1265. Professor Ordover’s benchmark music services and the SDARS have dramatically different cost structures. The services relied upon by Professor Ordover are incremental to services and equipment that consumers already have subscribed to or purchased: they are distributed through existing telecommunications networks to which consumers separately subscribe (high-speed Internet access or cellular phone networks) to devices that the consumer has separately purchased for other reasons and without subsidization (personal computers and cell phones). Noll WRT at 110-112 (detailing cost differences between Professor Ordover’s benchmark services and the SDARS). As a result, the benchmark suppliers do not pay for important inputs to their services’ infrastructure. *Id.*; *see also*, e.g., 8/27/07 Tr. 62:18-63:2 (Ordover) (acknowledging that interactive subscription services did not build a delivery system because they “utilize the internet”).

1266. The SDARS, by contrast, have spent billions of dollars to create dedicated distribution systems with proprietary satellites and terrestrial repeaters that

deliver programming to receivers that were developed by the SDARS and are heavily subsidized by the SDARS; they have also spent millions to induce auto makers to put those receivers in their cars and to induce retailers to sell those receivers. *See generally supra* Parts V.E-F. They thus have massive costs not incurred by Professor Ordovery's benchmark services. *See* Noll WRT at 110-112; *cf. supra* Part VI.E.1 (adjusting for differences based on functionality).

1267. As Professor Noll testified, in light of these differences in cost structure it is “fantasy to pretend that the content as a fraction of total costs would be the same” for the SDARS as for interactive subscription services. Noll WRT at 112. If the markets for music services are competitive (such that revenues just cover average costs), adopting a rate for the SDARS that caused their content costs to account for the same percentage of their total revenues as the percentage found in services with dramatically lower costs would be the equivalent of confiscating the investments of the SDARS in their distribution network. *Id.*; *see also* Woodbury WRT at 27 and n.40 (noting Dr. Pelcovits' apparent agreement with this notion in Webcasting II). Dr. Woodbury used formal economic theory – theory referenced by both Dr. Pelcovits and Professor Ordovery – to make a similar point, namely, that since “the SDARS have a much larger share of costs going to inputs other than music . . . the payment to music as a percentage of revenues for the SDARS would be considerably smaller than it is for other services that do not have nearly the level of other costs in delivering a final product.” Woodbury WRT at 28-29 and nn.41-42.⁴⁶

⁴⁶ The same point would hold for benchmark royalty rates expressed as a per-subscriber fee rather than as a percentage of revenue; because per-subscriber are set

1268. Professor Ordover (who has never testified with respect to valuation or pricing of musical rights, or published an article dealing specifically with the music industry, *see* 6/21/2007 Tr. 198:16-200:1 (Ordover)) admits that he did no analysis of the respective cost structures of interactive subscription services and SDARS or of their respective sunk investments. 6/21/07 Tr. 304:18-305:16 (Ordover); 8/27/07 Tr. 62:11-17 (Ordover). Nor did he examine the costs borne directly by consumers to receive these services. *See* Noll WRT at 111.⁴⁷ When given the chance to explain why he did not believe the different cost structures of the benchmark and target industries would impact the value of the benchmark, he provided no explanation, except to say that one must consider whether the benchmark rates would be feasible under the fourth 801(b)(1) factor. 6/21/07 Tr. 190:2-22 (Ordover).

1269. Dr. Woodbury, by contrast, recognized that one cannot use a benchmark from another music service without first adjusting for cost differences between the benchmark and target services. Woodbury WRT at 27-29; Noll WRT at 115. The functionality and non-music adjustments that make up part of his benchmark analysis recognized that much of the revenues earned by the SDARS are not earned for sound recording performances or because consumers necessarily value the SDARS mobile music performances more than the PSS non-mobile performances; rather, those revenues

as a fixed monthly amount that is not sensitive to usage, they effectively are equivalent to a percentage of revenue rate equal to the monthly per-subscriber fee divided by the monthly per-subscriber retail rate for the service. It would also hold for a per-play rate derived from a percentage of revenue or per-subscriber benchmark.

⁴⁷ Nor did he compare their demand elasticities or conduct any analysis of the average revenue for an interactive service; 8/27/07 Tr. 58:9-14, 59:19-22, 60:21-61:15 (Ordover).

reflect the higher costs necessary to deliver the performances to consumers through the SDARS satellite distribution network. *See supra* Part VI.E.1; 8/16/07 Tr. 240:7-12 (Noll) (noting that Dr. Woodbury alone accounted for cost differences between his benchmark service and the SDARS).

d. Failure To Reflect the 801(b)(1) Factors

1270. Finally, unlike Dr. Woodbury's PSS benchmark, none of the music-industry agreements selected by Professor Ordover reflect the governing section 801(b) factors. Indeed, much of Professor Ordover's written direct testimony was devoted to arguing the erroneous notion that marketplace agreements will somehow implicitly account for the 801(b) factors, *see generally* Ordover WDT at 21-34, and Professor Ordover admitted that his analysis made no separate adjustment to account for them (apart from the phase-in of rates in SoundExchange's rate proposal more generally). 6/21/07 Tr. 203:10-17 (Ordover).

1271. As explained at length elsewhere, such marketplace agreements simply do not shed light on the correct fee under the policy objectives set forth in section 801(b)(1). *See* Woodbury AWDT at 11; *accord* Noll WRT at 90; *see* Parts VII.c.1.a, VII.D.1.a; PCL Part III.B. As SoundExchange' own witness, Dr. Hersovici, admitted, there is no way the parties to Professor Ordover's benchmark agreements took account of the SDARS' unique mix of capital investment, cost, risk, and creative contribution when negotiating those agreements, or considered whether the royalty rate from the agreements would provide for a fair return to the SDARS. 8/30/07 Tr. 77:1-78:12 (Herscovici).

2. The Rates Forming the Basis of Professor Ordover's Benchmark Analysis Do Not Represent the Industry Norm.

1272. There is no evidence in the record of this proceeding to indicate that the agreements that form the basis of Professor Ordover's digital music service benchmark are consistent or representative of such agreements industry-wide, or even that there are enough of them to form a reliable benchmark. *See* 7/9/07 Tr. 123:2-124:12 (Pelcovits) (testifying that good benchmarks must be based on abundant and robust pricing data, and that good benchmarks are not based on outlier data points).

1273. Professor Ordover based his written direct testimony on a very limited set of data – information provided to his staff by Mr. Kenswil of UMG and Mr. Eisenberg of Sony BMG – that he never personally reviewed. 6/21/07 Tr. 148:13-22, 156:7-11, 277:11-14 (Ordover) (“We have these rates from Messrs. Eisenberg and Kenswil. I am not developing any independent analysis of the rates.”); 8/27/07 Tr. 52:1-4 (Ordover). When asked, he was unable to name a single agreement within the various service categories laid out in his testimony, with the exception of Rhapsody To Go and possibly Napster. 6/21/07 Tr. 276:19-277:10, 286:9-19 (Ordover) (“I think there is a Napster service and – I don't know); *id.* at 287:5-9. He also admitted that he personally hadn't reviewed a single interactive service contract in preparing his testimony. 6/21/07 Tr. 314:5-11 (Ordover). When asked months later on rebuttal, he still was unable to identify any specific contracts included in the interactive subscription services category. 8/27/07 Tr. 53:1-4, 65:20-66:3 (Ordover).

1274. Mr. Kenswil, in turn, simply presented a single example of a recent contract in the interactive services category, which he claimed was representative of UMG's “most recent” agreements. *See* Kenswil WDT at 9-10 and SX Ex. 105 DR. Mr.

Eisenberg did not identify the specific terms of even one Sony BMG interactive subscription services agreement, instead merely summarizing the rates from “recent deals” that he claimed were “representative.” Eisenberg WDT at 17.

1275. The other two major labels, EMI and Warner Music Group, were excluded from Professor Ordover’s analysis altogether. 6/21/07 Tr. 148:13-22, 156:7-11, 277:11-14 (Ordover) (testifying that the analysis altogether was based only on information received from Mr. Eisenberg and Mr. Kenswil). As it turns out, those companies have negotiated rates in recent agreements quite different than those reported by Professor Ordover. For example, in the February 7, 2007 agreement between Warner Music and [REDACTED] (SDARS Ex. 85), the service fee for the “non-portable tier” is [REDACTED]

[REDACTED], SDARS Ex. 85 at SE-REB 0027786, in comparison to the [REDACTED] [REDACTED] listed in Professor Ordover’s testimony. Ordover WDT at 44. Warner’s recent agreement with [REDACTED] [REDACTED] likewise charges [REDACTED] [REDACTED] for the on-demand interactive subscription service. See SDARS Ex. 87 at SE-REB 0028156-57; *id.* at SE-REB 0028165 ([REDACTED] [REDACTED]).

1276. The same is true even of Sony BMG, which was included in Professor Ordover’s analysis. According to its May 2007 agreement with [REDACTED] [REDACTED], Sony BMG charges [REDACTED] [REDACTED]. SDARS Ex. 88 at SE-REB 0025906-07; *id.* at SE REB 0025931 (Ex. A-3, describing [REDACTED] [REDACTED]).

1277. Professor Ordover made representations that his staff conducted an analysis that computed industry-wide averages – as opposed to the essentially anecdotal evidence from Mssrs. Kenswil and Eisenberg. But he failed to amend his testimony to provide that additional data, and the Court upheld objections to his attempt to present it for the first time during his oral testimony. *See* 6/21/07 Tr. 149:1-150:6 (Ordover). He then presented similar data prepared by his staff on rebuttal, identifying royalty rates for different categories of service *See* Ordover WRT ¶ 17 and Tbl. 1, 8/27/07 Tr. 52:5-19 (Ordover). This analysis, identified only as “Compass contract analyses,” provided no indication of how many contracts were reviewed to provide the data in each category, what specific service contracts were included in the analysis, the most recent contract included, or whether the averages were weighted in any way to account for rates for more popular services. Ordover WRT ¶ 17 and Tbl. 1; 8/27/07 Tr. 52:20-54:21 (Ordover). Thus there is no way to know how reliable or representative is the data behind the benchmark.

1278. The discussion above is not meant to suggest that Professor Ordover’s chosen benchmarks would become the basis for rate-making here had he included a more representative cross-section of industry agreements. For all of the reasons addressed throughout this Part, the very nature of the agreements involved renders them unsuitable as benchmarks for the SDARS’ section 114 public performance license. The point instead is that in selecting the benchmarks he did, Professor Ordover made no serious effort to determine their representativeness.

3. The Interactive Subscription Services Benchmark Is Based on an Unstable Market with Pricing in Flux.

1279. What is more, Professor Ordover's chosen interactive subscription services market displays a variance and instability that makes it unreliable as a benchmark. As Mr. Eisenberg testified, after nearly seven years in the market, the interactive services have only two million total subscribers, with only 350,000 choosing portable subscriptions. 6/18/07 Tr. 280:16-281:16 (Eisenberg); *see also id.* at 281:17-22 (admitting that interactive services "haven't garnered a lot of subscribers"); 6/27/07 Tr. 116:10-14 (Kenswil) ("they have not reached the success we would have hoped.").

1280. Professor Ordover, who used these services as a benchmark, admitted he was not aware of their financial condition or number of subscribers, 8/27/07 Tr. 132:18-133:11, 139:15-19 (Ordover), although he was aware that "we are looking at price information in markets that are still changing to some extent. How far and how much they are changing, that I cannot tell you" 6/21/07 Tr. 308:22-309:10 (Ordover). Dr. Woodbury also documented the many significant price changes and service closings that have occurred in the interactive-service market in the past two years. *See* Woodbury WRT ¶ 63 and n.39 ("In such a rapidly evolving marketplace, these changes highlight the fragility of Professor Ordover's webcasting-based fee estimates.").

1281. Use of such an unstable benchmark is thus at odds with Professor Ordover's and Dr. Pelcovits' own warnings about relying on such unreliable and unstable benchmarks. *See* Ordover WRT at 18 n.20 (cautioning about relying on data from markets that are "highly dynamic and still evolving," with rates remaining "fluid"); 7/9/07 Tr. 122:18-124:12 (Pelcovits) (agreeing that the Judges should have "sufficient data about the benchmark market," that it is "important that a benchmark market be a

stable market with abundant and robust pricing data,” and that “one needs to be careful not to construct a benchmark rate from what might constitute an outlier”).

4. Professor Ordover’s Per-Subscriber Benchmark Is Dramatically Overstated and Admittedly Inaccurate.

1282. At pages 46-50 of his written direct testimony, Professor Ordover conducted an analysis based on the “per subscriber” rates found in certain interactive subscription music service agreements. Professor Ordover’s starting point for this analysis was the [[]] fee presented in his testimony for record-company agreements with certain portable, interactive (on-demand) subscription services. Ordover WDT at 50. He then adjusted that rate to account for the fact that the SDARS are (i) not interactive and (ii) “immediately accessible.” *Id.* at 49-50.

1283. To adjust for interactivity, Professor Ordover used the rates found in certain UMG streaming video agreements, which charge [[]]. *Id.* at 49-50. Reducing the [[]] benchmark rate by the resulting “interactivity ratio” of [[]] resulted in a rate of \$1.40 per subscriber per month. 6/21/07 Tr. 288:3-14 (Ordover); Woodbury WRT ¶ 72 and n.49.

1284. Having adjusted for interactivity, Professor Ordover then purported to account for what he calls the “immediate” access of the SDARS as compared to the interactive service benchmarks: whereas the portable services require one to download copies to a computer and transfer them to a portable device, the SDARS beam sound recordings directly to the user’s receiver. Ordover WDT at 49-50. As evidence of the premium the market places on “immediacy,” Ordover pointed to the [[]] royalty charge for permanent downloads (i.e., those purchased online from a service like iTunes)

and the [] royalty charged for over-the-air (or “OTA”) downloads delivered directly to a cell phone. *Id.*; 6/21/07 Tr. 184:22-185:5 (Ordover). He thus adjusted the \$1.40 upwards by the value of immediacy [] to reach a final recommended rate of \$2.51 per subscriber per month. Ordover WDT at 50.

1285. Professor Ordover’s adjustments are inaccurate, redundant, and belied by more recent marketplace developments. By combining these errors with an improper benchmark as his starting point, Professor Ordover ends up with a recommended per-subscriber fee (\$2.51) that is dramatically overstated. Calculated with certain corrections based on the most recent record evidence, this rate would be in the range of \$.25 to \$.40 per subscriber – and that is without any further (but necessary) adjustments for the different costs borne by the SDARS, the programming differences between the SDARS and the “pure” music services invoked by Professor Ordover, and the 801(b)(1) factors.

a. The Interactivity Adjustment Relies on Non-Analogous Video Services and Is Admittedly Inaccurate.

1286. As noted, Professor Ordover relies upon a difference in the per-play rate between certain UMG interactive and non-interactive video streaming agreements for his [] interactivity adjustment ratio. Ordover WDT at 49-50. To begin with, video services are not an appropriate analogue to audio services for a variety of reasons. The product being licensed (an audiovisual work) is different than a sound recording. *See* 6/21/07 Tr. 278:2-20 (Ordover). There is no reason to think that the value of interactivity for a product that requires close attention even in a noninteractive setting (watching a video) is the same as for an audio-only product that often involves passive, background entertainment. Noll WRT at 109; Woodbury WRT ¶¶ 64-66; Woodbury WRT at 33-34 (noting that Professor Ordover fails to explain “why the value of

interactivity on a music video service should reflect the value of interactivity on a music service”). In addition, the buyers (Internet-distributed digital video services) are different than the SDARS and have dramatically different cost structures, *see* Noll WRT at 113, which introduces the host of concerns discussed above. Finally, the video rates do not reflect any of the section 801(b)(1) policy considerations. *See* Woodbury WRT at 33-34.

1287. Second, Professor Ordover presented evidence of his interactivity ratio from a single company, UMG, a practice at odds with Dr. Pelcovits’ warning that a benchmark rate should come from a market with abundant and robust pricing data so as to ensure its consistency and reliability. 7/9/07 Tr. 123:2-8 (Pelcovits); *accord* Noll WRT at 90-91 (a benchmark should include multiple transactions for essentially the same right). Indeed, the record reveals that there are more recent video streaming agreements in which the interactivity ratio is larger. In the agreement between Sony BMG and
[[]], for example, Sony BMG charges

]]. SDARS Ex. 89 at SE-REB 0025849.

1288. Third, Professor Ordover’s video-based interactivity adjustment is, by his and his counsel’s own admission, inaccurate. Professor Ordover attempted during the direct-phase hearing to introduce, for the first time, an “intensity of usage” adjustment, under the theory that if there is more use at the lower, noninteractive level (the denominator of his ratio) then the effective ratio between interactive and noninteractive plays, based on actual revenue to the record company rather than the facial royalty rate, would be smaller. 6/21/07 Tr. 178:9-179:4 (Ordover). Counsel for SoundExchange explained that without a “real critical” adjustment for usage, the ratio as stated in Professor Ordover’s written testimony would be marred by “inaccuracy.” *Id.* at 182:2-8.

The Judges sustained the SDARS' objections to this tactic on the grounds that Professor Ordover could have amended his written direct testimony to present evidence on the matter and adjust as appropriate but failed to do so. *Id.* at 178:18-182:13. The "inaccurate" testimony was all that was admitted.

1289. In rebuttal, Professor Ordover once again passed on the opportunity to present actual evidence or analysis of interactive versus noninteractive video usage, or to offer any specific change to his benchmark rates based on a revised interactivity adjustment, choosing instead merely to include an oblique reference in a footnote to the effect that he had come to "understand" that users of noninteractive video services listen twice as intensively as users of interactive services and that his interactivity adjustment should therefore be halved. Ordover WRT at 18 n.20. He went on to caution about relying on data from markets that are "highly dynamic and still evolving," with rates remaining "fluid." *Id.*

1290. The only source of Professor Ordover's purported knowledge concerning usage intensity was unsubstantiated representations "imparted by counsel" that the direct-phase testimony of a record company witness, Mr. Eisenberg (which was available to Professor Ordover) contained such usage data. 8/27/07 Tr. 101:6-8, 102:5-103:11 (Ordover) (acknowledging that he never saw the data personally). Given that he did not present (or even see) actual empirical evidence as to usage or actually adjust his benchmark rate to account for it, one can only assume the actual data did not support his claims. *Id.* at 107:4-14, 108:20-109:22 (acknowledging, in response to a question from the court, that he had not proposed "any new rates" based on intensity of usage).

1291. The record is left with Professor Ordover claiming to stand by his original testimony on the matter, which his own counsel admits is inaccurate, and a suggestion that usage should be considered as part of the interactivity adjustment, but no data on usage to consider. Thus, Professor Ordover's benchmark fails to adjust properly for interactivity, is hopelessly compromised, and must be rejected.

b. Professor Ordover's Video-Service Interactivity Adjustment Has Been Mooted by Recent Audio Agreements Covering Both Interactive and Noninteractive Services.

1292. More recent marketplace evidence between record companies and audio services that offer both interactive and noninteractive streaming reveal the many shortcomings of Professor Ordover's video-based interactivity adjustment. The agreement between Warner Music and [[]] dated February 1, 2007, is especially useful because it includes voluntarily negotiated rates for both interactive and noninteractive audio offerings. *See* SDARS Ex. 87. [[]]

[[]] *Id.* at SE-REB 0028156-57. In other words, Warner itself has put a value on interactivity of [[]] the value of non-interactivity.

1293. The agreement between Sony BMG and [[]] dated May 25, 2007, provides similar insight. *See* SDARS Ex. 88. [[]]

]]

Again, the ratio [[]] is much greater than that reported by Professor Ordover in the UMG video deal. This greater differential makes sense in light of fact that on-demand services, as described above, are viewed by the recording companies as being totally substitutional.

c. Professor Ordover's Premium for "Immediacy" Is Nonexistent.

1294. Professor Ordover's "immediacy" premium – the basis for his second adjustment to his per-subscriber analysis – simply does not exist. This adjustment was based, as noted above, on the differential royalty for downloads delivered to a computer and over-the-air downloads delivered directly to a cell phone. *See* Ordover WRT at 49-50. However, as Professor Ordover himself admitted, by the time he got to trial the differential described in his written direct testimony had all but evaporated in the marketplace – the “‘immediacy premium’ appears to have shrunk, and shrunk to the extent that maybe that ratio is now getting close to one, as opposed to being 1.79.”

6/21/07 Tr. 186:7-187:2 (reporting that UMG, the world's largest record company, [[

]]). So

unsure of the data was Professor Ordover that, when preparing his trial demonstratives, he replaced the number he used in his written testimony with a question mark, explaining to the Judges that “the contracts are changing” and that he was “not 100 percent sure as I

sit here” as to what the adjustment should be. *Id.* at 187:8-14; 287:10-288:2. Two months later, when he appeared in the rebuttal hearing, Professor Ordover clarified the matter by admitting that the immediacy adjustment had in fact gone away. 8/27/07 Tr. 96:13-98:8 (Ordover).

1295. Mr. Kenswil and Mr. Eisenberg confirmed the implosion of Professor Ordover’s immediacy premium. Each testified that Sprint is selling single-track mobile downloads for the same price – \$.99 – as Apple iTunes. *See* 6/27/07 Tr. 108:20-110:15 (Kenswil); 6/18/07 Tr. 272:9-12 (Eisenberg). Mr. Kenswil testified that UMG is now charging Sprint [[

]] while Mr. Eisenberg testified that Sony BMG [[

]] 6/27/07 Tr. 108:20-110:15 (Kenswil); 6/18/07 Tr. 272:9-12 (Eisenberg).

d. Professor Ordover’s Use of a Portable Interactive Service Benchmark is Internally Inconsistent and Redundant.

1296. In Professor Ordover’s “per subscriber” analysis, he used as his starting point the monthly per-subscriber royalty paid to certain record companies from certain portable interactive subscription services (which he then adjusted for interactivity and “immediacy”). He suggested that this starting point was appropriate because the SDARS are portable – that is, “the service is available wherever the satellite radio is located.” Ordover WRT at 47. He then explained that the SDARS are also “immediate” because they “deliver content wherever and whenever the consumer wants to hear it on the receiver,” *id.* at 47-48 – a definition not unlike that which he used for portability.

1297. In his oral testimony, however, Professor Ordover changed his tune; he claimed (correctly) that the SDARS are not portable. *See* Woodbury WRT ¶ 74 and n.50. Instead, he explained, the SDARS are mobile, drawing a clear distinction between portability and mobility. “[M]usic-only satellite radio is not fully portable,” he testified, pointing out that “most people use it really in their cars or at home, so it’s mobile, but it’s not fully portable.” 6/21/07 Tr. 170:12-19 (Ordover). He later reiterated that “satellite radio is mobile,” and contrasted it with the “portability feature” of an interactive service, where “you can actually download your music from Rhapsody to your device, portable device, and walk around with it.” *Id.* at 176:11-20 ; *see also* 8/27/07 Tr. 63:15-18 (Ordover) (“Satellite radio has the feature which one call might mobility in the sense that I can listen to music while in my automobile going from home to work”).

1298. Professor Ordover, however, ignored the import of his own analysis and used the portable interactive per-subscriber rate as the starting point for his benchmark analysis. Although it still widely misses the mark as a benchmark for the reasons discussed in this Part, the non-portable interactive per subscriber rate is at least one step closer as a benchmark than the inappropriate portable interactive rate, as Professor Ordover himself recognized in his “retail rate” analysis, *see* Ordover WDT at 50-51. As Dr. Woodbury pointed out, Professor Ordover’s benchmark based on portable interactive services arbitrarily inflates his estimate of the reasonable monthly per-subscriber fee for the non-portable SDARS. Woodbury WRT ¶ 74.

e. The Per-Subscriber Rate, with Certain Corrections, Would Be Dramatically Lower than Professor Ordover Claims.

1299. If one used the non-portable interactive service benchmark and more recent audio interactivity information, Professor Ordover's analysis would result in a very different per-subscriber recommendation, even before accounting for the SDARS' substantial costs differences and the 801(b)(1) factors. The evaporation of the immediacy premium alone (even accepting the incorrect portable-service benchmark and the video-based interactivity adjustment) drops the rate from \$2.51 to \$1.40 per subscriber. Noll WRT at 114; Woodbury WRT at 31-32 and n.49. Moreover, if one started with the \$4.00 non-portable interactive fee (rather than the \$7.50 portable fee), reduced that figure by the more recent audio interactivity adjustment of 10:1 (rather than the 5:1 video-based ratio), and eliminated the nonexistent immediacy premium, the result is a fee of \$.40/subscriber/month. If one started with the [] per-subscriber fee found in the recent [], or the interactive-service agreements [] that rate would drop even further, to \$.25/subscriber/month, one-tenth the rate offered by Professor Ordover.

5. Professor Ordover Ignores Relevant Benchmark Agreements that Undercut His Claims of Marketplace Regularity.

1300. As described in the section addressing the SDARS' fee proposal, *see* Part VI.D, the PSS agreement is the superior benchmark for many reasons. But Professor Ordover's testimony completely ignores another category of possible benchmark services that are much closer in functionality to the SDARS: custom radio. Woodbury WRT at 29-31; Noll WRT at 115. Yahoo!'s custom radio agreement with Sony, for example, pays [] []. 6/18/07 Tr.

289:20-291:13 (Eisenberg); *see also* Woodbury WRT ¶¶ 78-79 and nn.53-55 (describing Yahoo! custom radio rates, including the [

] paid to EMI). As Dr. Woodbury demonstrated in his rebuttal testimony, when adjusted for functionality and non-music programming on the SDARS – which one must do for a rate from a service provider that uses the existing Internet for distribution to existing personal computers – the result is a rate of 2.57% of revenue. Woodbury WRT at 29-31; *see also* Noll WRT at 115-116 (describing why one would need to adjust such benchmarks, which are Internet-distributed to user computers, to account for cost differences between them and the SDARS, as Dr. Woodbury does). This rate, applied against the SDARS’ average monthly per-subscriber revenue of \$11.25 described by Professor Ordover, *see* Ordover WDT at 51, results in a per-subscriber fee of \$.29/subscriber/month. *See* Woodbury WRT ¶ 84.

1301. The point, again, is not that the SDARS are recommending custom radio as a benchmark – it would still need to be adjusted to account for (among other things) the fact that the customized radio service is more personalized than the SDARS and not subject to the section 801(b)(1) rate standard – but rather that (i) SoundExchange’s rate recommendation is extraordinarily sensitive to which benchmark agreements are selected and which are ignored and (ii) the marketplace does not display the “regularity” that Professor Ordover claims unless one ignores entire categories of agreements, such as those for custom radio. *See* Woodbury WRT ¶¶ 71, 78-79.

6. Professor Ordover’s Retail Rate Analysis Provides No Additional Insight.

1302. Professor Ordover’s final music benchmark analysis purports to identify the per-subscriber royalty the SDARS should pay based on the ratio of their retail

rate (adjusted to reflect a music-only service) to the retail rate for non-portable interactive subscription services. Ordover WDT at 50-51. According to Professor Ordover, if the retail rate of the SDARS' "music only" service is 77% of the retail rate for an interactive service, then its royalty should also be 77% of the royalty rate paid by the interactive service, or \$3.09/subscription/month. *Id.*; Woodbury WRT ¶¶ 80-81. This analysis suffers from a number of critical flaws.

1303. First, the calculation of the retail rate for a hypothetical "music only" SDARS (calculated by Professor Ordover as 55% of the total retail rate of the SDARS) is predicated on the survey of Professor Wind. For reasons detailed elsewhere – including the fact that the 55% percent figure is not normalized to 36%, and that Professor Wind presented consumers with an all-or-nothing choice for music that captured its cartel rather than its marginal value – Professor Wind's survey does not merit Professor Ordover's reliance on it. *See* Part VII.A; Woodbury WRT at ¶ 61 n.36, ¶ 81; Noll WRT at 69-72.

1304. Second, retail prices have changed for the non-portable interactive services that Professor Ordover used as his benchmark for this section of analysis, but he admitted that he does not know how that affects the average listed for the category, or even what other services are included. 6/21/07 Tr. 305:17-308:8 (Ordover). Nor could he identify how the retail prices (or royalties) will change during the statutory license period. *Id.* at 309:11-22. Professor Ordover also admitted that the figure he provides in his table on page 51 is a straight average and that he did not weight it to account for the popularity of Rhapsody, where the retail price for the non-portable service is now \$12.99, not \$8.00. 8/27/07 Tr. 92:1-93:6 (Ordover).

1305. Third, as Judge Wisniewski suggested, the retail rate analysis is really just another way of pointing out that the interactive subscription services pay [[]] of revenue to the record labels. 6/21/07 Tr. 303:19-304:17 (Ordovery); Woodbury WRT ¶ 82. As Dr. Woodbury pointed out, “Professor Ordovery has simply ‘found’ another retail rate to which the [[]] can be applied (the SDARS ‘music only’ price) and then translated that percentage into a per-subscriber rate.” *Id.* ¶ 85. All the above critiques leveled against the interactive-service benchmark – different rights, different buyers, failure to account for cost differences, overstated adjustments for interactivity and immediacy, etc. – apply equally here, and are not in any way answered by this essentially redundant analysis by Professor Ordovery. *Id.* ¶¶ 83, 85.

VIII. THE SDARS’ PROPOSED TERMS SHOULD BE ADOPTED AND SOUNDEXCHANGE’S SHOULD BE REJECTED.⁴⁸

1306. The statutory provisions applicable to the Judges’ task of setting a royalty rate in this proceeding apply equally to the task of establishing terms. In particular, section 114(f)(2)(B) directs the Copyright Royalty Judges to set “reasonable rates and terms,” and to look to “the objectives set forth in section 801(b)(1)” when “establishing . . . terms for . . . preexisting satellite digital audio radio services.” 17 U.S.C. § 114(f)(2)(B). As discussed below, a number of SoundExchange’s proposed terms do not satisfy these criteria. They instead are overreaching, unduly harsh, and not

⁴⁸ The SDARS and SoundExchange have begun a dialogue in an attempt to reach agreement on the terms applicable to the license at issue in this proceeding. While the parties have not yet reached formal agreement on terms, the SDARS anticipate continuing the dialogue in the hopes of presenting the Judges with a set of stipulated terms. In fact, several terms proposed by the SDARS appear similar or identical to the terms proposed by SoundExchange, and to the extent the parties’ proposals do not differ, the Judges should adopt the proposed terms.

supported by record evidence. By contrast, the proposals advanced by the SDARS are supported by the evidence and comply with the Judges' statutory responsibility to set "reasonable" terms. *See id.* Accordingly, the terms proposed by the SDARS should be adopted, and the terms proposed by SoundExchange, to the extent they differ, should be rejected.

A. The SDARS' Late Fee Provisions Should Be Adopted Because They Are Supported by the Evidence.

1307. The proposals of the SDARS and SoundExchange differ significantly with respect to late fees that the SDARS should be compelled to pay to SoundExchange. The respective proposals are different in both kind and degree. Namely, Sirius and XM propose – in keeping with the record evidence – that late fees should be assessed against late payments (but not statements of account or reports of use) and that a "reasonable" fee is 0.5% per month – that is, a 6% annual interest rate. SoundExchange, by contrast, proposes that late fees be assessed at triple that rate – *i.e.*, 1.5% per month, or 18% per year – despite a long history of prompt payments by the SDARS. SoundExchange further overreaches by seeking to apply late fees not only to payments, but also to statements of account and reports of use. It even goes so far as to propose that these late fees accrue separately for these three submissions, which results in an annual interest rate of as much as 54% per year. As discussed below, SoundExchange's extortionate late fee proposal should be rejected, and the SDARS' proposal should be adopted.

1. The Late Fee Provisions Proposed by the SDARS Are Supported by the Evidence, Whereas SoundExchange's Proposal Is Exorbitant and Baseless.

1308. XM and Sirius propose late fees of 0.5% per month – that is, a 6% annual interest rate – on royalty payments made after the due date. *See* SDARS' Second

Amended Rates and Terms § 3__3(c) (“SDARS’ Proposed Terms”).⁴⁹ The evidence clearly supports the SDARS’ proposal.

1309. First, SoundExchange itself concedes that the SDARS have paid in a timely manner. As Barrie Kessler, SoundExchange’s Chief Operating Officer and the sponsor of its terms proposal, testified, “XM and Sirius are typically timely with their payments. . . . XM and Sirius are typically compliant, and when they’ve been late, it has not been that long.” 6/19/07 Tr. 94:14-95:4 (Kessler). Ms. Kessler acknowledged that no payment from Sirius or XM ever has been more than a week late. 6/19/07 Tr. 94:17-95:5 (Kessler); *see also* SDARS Ex. 24 (showing payment history of XM and Sirius).

1310. Second, even in cases where SoundExchange has recorded payments as somewhat late, the delay was due in at least some instances to the payment being unexpectedly held up in the mail or not logged by SoundExchange in a timely manner. For example, Ms. Kessler testified as to a payment from Sirius that was due on July 1, 2004, which was postmarked ahead of the deadline, on June 30, 2004. *See* 6/19/07 Tr. 97:22-98:4 (Kessler). SoundExchange did not mark this payment as received until July 6, 2004. *See* 6/19/07 Tr. 98:5-8 (Kessler). More than a year later, it charged Sirius a late fee for that payment because, according to SoundExchange, it was five days late. *See* SDARS Ex. 24 at SE 0203612; SDARS Ex. 28 at SE 0022415; *see also* 6/19/07 97:12-98:13 (Kessler).

1311. Third, the SDARS’ late fee proposal is supported by numerous agreements in the record. Sirius’ Mr. Frear testified that most of Sirius’ “commercial

⁴⁹ The SDARS are submitting their Second Amended Rates and Terms simultaneously with their Proposed Findings of Fact.

agreements have no late payment charges at all. If there are late payment charges, they tend to be in the half of one percent to one percent per month range.” 6/12/07 Tr. 24:4-8 (Frear). The SDARS’ proposed late fee falls squarely within this 0-1% range.

1312. The specific agreements confirm Mr. Frear’s testimony. ||

||. See SIR Exs. 43, 52-53, 126-35 DR. In addition, a clear majority of the record company license agreements and amendments with digital music services that are in the record ||

||. See

SDARS Ex. 85 at SE-REB 0027789 (||

||); SDARS Ex. 87 at SE-REB 0028157 (||

||); SX Ex. 104 DR at 23 (

||); SX Ex. 256 RR at SE 0000626 (

||); SX Ex. 257 RR at SE 000148 (); SX Ex. 258

RR at SE 0005331-32 (|| ||); SX Ex. 253 RR (||

||); SX Ex. 254 RR (||

||).

1313. Against this evidentiary record, SoundExchange has proposed a late fee that is triple the rate of the SDARS’ proposal (even before factoring in SoundExchange’s “accrual” provision, discussed below). Specifically, SoundExchange proposes a late fee of 1.5% per month – that is, 18% per year – which would accrue separately for the submission of royalty payments, statements of account, and reports of use. See 8/29/07 Tr. 29:11-15 (Kessler); Third Amended Rate Proposal for

SoundExchange, Inc., Regulatory Language Implementing SoundExchange's Proposed Rates and Terms §§ 38_.4(c), 38_.4(e), 38_.9(b) ("SoundExchange's Proposed Terms").

1314. SoundExchange's proposal is unwarranted and unsupported by the evidence. The fact that Sirius and XM routinely have made payments on time directly undercuts SoundExchange's claimed need for an unduly high late payment fee. In addition, as Ms. Kessler testified, SoundExchange did not submit any agreements of any kind to justify the reasonableness of SoundExchange's proposed late fee or any of its other terms. *See* 6/19/07 Tr. 48:15-51:9 (Kessler); 8/29/07 Tr. 30:12-21 (Kessler). Ms. Kessler in fact admitted that she had never seen any record label license agreements and did not submit or review any agreements entered into by ASCAP, BMI, or SESAC to support SoundExchange's terms proposal. 6/19/07 Tr. 49:22-51:9 (Kessler). During her rebuttal testimony, Ms. Kessler conceded that "I don't think there were any documents specifically pointing to our proposal." 8/29/07 Tr. 30:16-18 (Kessler).

1315. It is irrelevant that SoundExchange's proposed 1.5% late fee is the same as the percentage adopted in the recent webcasting proceeding. *See* Kessler WRT at 2-3. The rate adopted in the webcasting proceeding was based on evidence in that proceeding that differed markedly from that presented here. In particular, SoundExchange in the webcasting proceeding was confronted with virtually hundreds of different webcasters, including some with an established poor or unknown payment history. *See* SX Trial Ex. 56 at 27 (Kessler designated testimony from 2005-1 CRB DTRA) (testifying that some webcasters paid several days, several months, or several years late, and others attempted to use bankruptcy proceedings to avoid payment altogether). Here, by contrast, the SDARS have proven that they do not need to be

“motivat[ed] . . . to actually comply with the provisions of the license” by an unduly severe late fee. SX Trial Ex. 56 at 27.⁵⁰

2. SoundExchange’s Proposal That Late Fees Accrue Separately for Payments, Statements of Account, and Reports of Use Is an Unjustified Attempt To Triple the Operative Late Fee.

1316. As if an interest rate of 18% per year were not enough, SoundExchange has proposed further late fee provisions that inflate this number even higher. Specifically, SoundExchange has proposed that late fees be assessed not only against payments but also against statements of account and reports of use and that late fees accrue separately for each of these submissions. These proposed provisions are wholly unreasonable and unsupported by any evidence.

1317. If the Judges were to adopt SoundExchange’s position, XM and Sirius would be subject to late fees of as high as 54% per year. Because SoundExchange has proposed that royalty payments, statements of account, and reports of use all be due at the same time, these submissions likely would be included in the same mailing as a practical matter. See 8/29/07 Tr. 29:11-15 (Kessler); SoundExchange’s Proposed Terms §§ 38_.4(c), 38_.4(e), 38_.9(b). Thus, if one item arrives late, the other two items would arrive late as well. Under that scenario, SoundExchange would assess 1.5% per month in interest against each of these items, yielding a 4.5% per month interest rate – *i.e.*, fully

⁵⁰ For similar reasons, Ms. Kessler’s reference with respect to the webcasting proceeding to “marketplace agreements entered into by various services in that proceeding” is off the mark. Kessler WRT at 3. The payment history of the services at issue in this proceeding is drastically different from the history of the services in the webcasting proceeding.

54% per year – charged against the amount due in royalties. SoundExchange’s Proposed Terms § 38_.4(d); 8/29/07 Tr. 29:16-30:11 (Kessler).

1318. There is no basis for SoundExchange’s proposal. First, the commonsense purpose of a late fee is to reimburse the payee for the lost time value of money. Imposing late fees when a licensee has paid to SoundExchange the monetary amount due in full and on time but merely because statements of account or reports of use may not have been completed or were incomplete in some respect would convert the late fee provision from an interest rate on money owed to an inappropriate penalty provision. Such a provision is not only commercially unreasonable but, as explained below, unsupported by the record and unjustified in light of the SDARS’ prompt payment and reporting history.

1319. Second, SoundExchange’s proposal that late fees apply not only to late payments but also separately to late statements of account and late reports of use lacks record support. [[]] of the nine agreements between record labels and digital music distribution services that are in evidence and that include a provision requiring the submission of forms analogous to reports of use or statements of account [[]]

]]. See SDARS Ex. 85 at SE-REB 0027789; SDARS Ex. 86 at SE-REB 0025070; SDARS Ex. 87 at SE-REB 0028157; SDARS Ex. 88 at SE-REB 0025912; SX Ex. 104 DR at 23; SX Ex. 105 DR at A-6 of 7/1/04 agreement; SX Ex. 107 DR at 9; SX Ex. 256 RR at SE 0000626; SX Ex. 257 RR at SE 000148. Accordingly, there is no record evidence supporting the application of a late fee to statements of account or reports of use.

1320. Nor is there any support in the record for SoundExchange's contention that application of late fees to statements of account and reports of use is necessary to ensure prompt reporting by XM or Sirius. *See* 8/29/07 Tr. 20:9-21, 21:7-15 (Kessler). SoundExchange did not present any evidence that the SDARS have failed to make such submissions on time in the absence of a late fee. To the contrary, when pressed by Judge Roberts about the timeliness of Sirius and XM in providing required reports to SoundExchange, Ms. Kessler testified: "XM and Sirius are typically compliant with regard to their reporting obligations under the agreement. They are typically on time." 6/19/07 Tr. 118:4-7 (Kessler).

1321. The only allegation – a wholly conclusory one, at that – made by Ms. Kessler about the SDARS' submission of statements of account and reports of use was that some unspecified number of reports of use included missing or inaccurate release years for the sound recordings they reported. *See* Kessler WRT at 4. Ms. Kessler, however, failed to note that (a) release year has never had any relation to the amount of royalties that the SDARS owe to SoundExchange and (b) release year is not a required reporting element under the regulations that currently govern the SDARS' notice and recordkeeping obligations. *See* 37 C.F.R. § 370.3(c)(2) (listing elements required to be included in reports of use but omitting release year). Indeed, the Copyright Office previously held that the reporting of release year "would be unduly burdensome." *Notice and Recordkeeping for Use of Sound Recordings Under Statutory License*, 69 Fed. Reg. 11515, 11522 (Mar. 11, 2004). Therefore, to the extent that the SDARS provide release year information at all, they are providing more information to SoundExchange than they currently are required to provide.

1322. SoundExchange may point to the webcasting decision in Docket No. 2005-1 CRB DTRA, where the Judges applied late fees to the submission of statements of account. The evidentiary record in the webcasting proceeding, however, was dramatically different. In that proceeding, Ms. Kessler testified as to the licenses there at issue that “it is not uncommon for SoundExchange to receive late and incomplete statements of account from Services.” *Digital Performance Right in Sound Recordings and Ephemeral Recordings: Final Rule and Order*, 72 Fed. Reg. 24,084, 24,107 (May 1, 2007) (discussing Ms. Kessler’s oral testimony in that proceeding); SX Trial Ex. 56 (Ms. Kessler’s designated testimony from Docket No. 2005-1 CRB DTRA) at 6/6/06 Tr. 137:12-19 (Kessler) (testifying that problems with statements of account are from “webcasters”). As noted above, the record as to XM and Sirius is directly to the contrary.

1323. Moreover, the Judges in the webcasting proceeding did not apply late fees to reports of use – a fact that Ms. Kessler concedes. *See* Kessler WRT at 4.⁵¹

1324. In sum, the SDARS’ proposal specifies that late fees be applicable only to payments, not to statements of account or reports of use. *See* SDARS’ Proposed Terms § 3__3(c). Contrary to SoundExchange’s proposal, this proposal is fully supported by the evidence in the record. It also is in keeping with the Judges’ conclusion in the webcasting proceeding that “[a]dopting a set of terms whose operation . . . creates

⁵¹ Ms. Kessler, in her rebuttal testimony, made much of an alleged need for “consistency of terms across licenses.” Kessler WRT at 1. That contention appears to be a straw man – an argument that SoundExchange invokes when it seeks to obtain terms more favorable to it, and an argument that it ignores when that position would result in terms less favorable. Clearly, for example, were the Judges to adopt late fees for reports of use in this proceeding, there would be an inconsistency between those terms and the terms adopted in the webcasting proceeding.

additional unjustified costs . . . is inconsistent with the precepts of statutory licensing, and we must avoid such circumstances.” *Digital Performance Right in Sound Recordings and Ephemeral Recordings: Final Rule and Order*, 72 Fed. Reg. at 24,102 (emphasis added).

B. The SDARS’ Confidentiality Provisions Are Consistent with the Evidentiary Record.

1325. SoundExchange and the SDARS continue to disagree over who should have access to information contained in the SDARS’ statements of account. While the parties agree to some extent with respect to confidentiality provisions, SoundExchange seeks to allow copyright owners and performers to view information in statements of accounts – a proposal that the SDARS oppose. *Compare* SoundExchange’s Proposed Terms § 38_.5(d) *with* SDARS’ Proposed Terms § 3___.5(d).

1326. The basis for SoundExchange’s proposal is that, according to Ms. Kessler, “access to this information is necessary for copyright owners and performers to make informed judgments about whether licensees are complying with their statutory obligations and making accurate payments and in making auditing and enforcement decisions.” Kessler WRT at 5.

1327. The fallacy in Ms. Kessler’s position is that it assumes that the services at issue are not complying with their obligations or making accurate payments. That may have been the case in the webcasting proceeding, on which SoundExchange relies for this proposal, *see* Kessler WRT at 5, but in this proceeding, the opposite is true. Ms. Kessler herself has testified that XM and Sirius largely have been compliant with all of their obligations, including payment and reporting requirements. Where there is no

basis for the premise underlying SoundExchange’s confidentiality proposal, there can be no justification for adopting that proposal.

C. The SDARS’ Reporting Requirements Should Include Certain Commercially Reasonable Exceptions.

1328. SoundExchange proposes a requirement that, without exception, the SDARS report each and every sound recording performed on their services, no matter, for example, how brief or how ancillary it may be to the main programming nor whether it is subject to the license here at issue – that is, “a consecutive listing of every recording actually transmitted, including musical, spoken word and comedy recordings . . . including sound recordings played on news, talk, sports or other non-music channels, and including sound recording played in programming provided to a Licensee by a third party.” SoundExchange’s Proposed Terms § 38_.9(c)(1). That proposal is unreasonable, unworkable, and inconsistent with the current governing notice and recordkeeping regulations. It accordingly should be rejected.

1. The SDARS Should Not Be Required To Report Non-Copyrighted Performances, Directly Licensed Performances, or Incidental Performances on Non-Music Channels.

1329. The notice and recordkeeping regulations that govern the SDARS include certain pragmatic exceptions to the requirements that the SDARS report to SoundExchange performances of sound recordings on their services. Specifically, the regulations exempt from reporting: any sound recording that is not copyrighted, 37 C.F.R. § 370.3(b)(8)(i), any sound recording whose performance is subject to a direct license from the copyright owner, *id.* § 370.3(b)(8)(ii), and, as spelled out in the regulatory language:

- (iii) An incidental performance that both:

- A. Makes no more than incidental use of sound recordings including, but not limited to, brief musical transitions in and out of commercials or program segments, brief performances during news, talk and sports programming, brief background performances during disk jockey announcements, brief performances during commercials of sixty seconds or less in duration, or brief performances during sporting or other public events and
- B. Other than ambient music that is background at a public event, does not contain an entire sound recording and does not feature a particular sound recording of more than thirty seconds (as in the case of a sound recording used as a theme song).

37 C.F.R. § 370.3(b)(8)(iii).

1330. SoundExchange's proposal does not include exceptions in these instances – a point that Ms. Kessler acknowledged during her testimony. *See* 8/29/07 Tr. 31:19-32:15; 35:16-22 (Kessler) (admitting that current regulations include these exceptions and that SoundExchange's proposal does not). SoundExchange has presented no evidence of any kind establishing that the foregoing reporting regulations should be significantly altered.

1331. Under the SDARS' rate and terms proposal, by contrast, performances of recordings that are not copyrighted, performances subject to a direct license, and incidental performances are exempted from the reporting requirements. *See* SDARS' Proposed Terms § 3__.6(d)(2).⁵²

1332. The SDARS propose to report their intended or actual playlist for each channel and each day of the reported month. *See* SDARS' Proposed Terms § 3__.6(d)(1). Aside from the exceptions identified above, the SDARS propose only a

⁵² The SDARS' proposed definition of "Play" in the per play fee metric likewise excludes such performances from payment obligations. *See* SDARS' Proposed Terms § 3__.2(d). Under this rubric, there is no need for the SDARS to report such performances because the performances do not give rise to the payment of any royalty.

few exclusions from the general reporting requirements. First, the SDARS propose that the reporting requirement not apply to programming reasonably classified as news, talk, or sports programming. As is the case with incidental performances, performances during news, talk, and sports programming have substantially less value than a feature performance on a music channel, and SoundExchange witness Barrie Kessler freely admitted when pressed by Judge Roberts that she had no evidence to the contrary. *See* 8/29/07 Tr. 37:22-38:5 (Kessler).

2. The SDARS Should Not Be Required To Report Performances on Grandfathered Third-Party Programming or on Third-Party Programming Where the Third Party Has Not Provided that Information to the SDARS Despite Commercially Reasonable Efforts To Obtain It.

1333. The SDARS also have made the commonsense proposal that there be no reporting requirement for third-party programming that is provided pursuant to a contract that was entered into prior to the effective date of the new terms. *See* SDARS Proposed Terms § 3 __.6(d)(2). For new or amended contracts entered into after the terms go into effect, the SDARS propose to use commercially reasonable efforts to include in the new contracts a requirement that the provider of the third-party programming supply the SDARS with the required reporting information. *See* SDARS' Proposed Terms § 3 __.6(d)(2).

1334. It is not commercially reasonable to require the SDARS to report information that they do not have. None of the agreements in evidence require parties to report information that is in the sole possession of another party. Accordingly, the Judges should adopt the SDARS' proposal described above, which strikes a proper balance between the benefits to SoundExchange in having this information and the burdens to the

SDARS of obtaining this information in cases where it is not commercially reasonable to do so.

D. SoundExchange’s Proposal To Require the SDARS To Obtain Records from Third Parties for SoundExchange’s Auditing Purposes Is Burdensome and Commercially Unreasonable.

1335. The Judges should reject SoundExchange’s proposed term requiring licensees to “use commercially reasonable efforts to obtain or to provide access to any relevant books and records maintained by third parties for the purpose of the [royalty verification] audit.” SoundExchange’s Proposed Terms § 38_.6(d). SoundExchange has presented no evidence demonstrating that it would be either reasonable or necessary to require the SDARS to obtain access to third parties’ records for the purpose of a SoundExchange audit.

1336. To require that the SDARS somehow get third parties to allow their books to be inspected by SoundExchange – an entity with which the third parties have no formal relationship – would interfere with the SDARS’ private contractual relationships with third parties, requiring them to make demands of third parties in excess of those provided for in the contractual arrangements. The record is replete with evidence demonstrating that such a term is unheard of in marketplace contracts between record labels and digital distribution services. []

]]. See

SDARS Exs. 85-89; SIR Exs. 43, 52-53; SX Exs. 104-05, 107, 126-35 DR; SX Exs. 253-

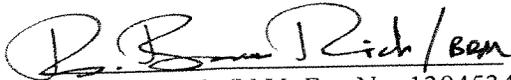
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54, 256-58 RR. Thus, there is no basis for a term allowing SoundExchange auditors access to the books and records of third parties other than the SDARS.

* * *

1337. In sum, those of SoundExchange's proposed terms addressed above fail to satisfy this Court's mandate to set terms that are "reasonable" and that are supported by record evidence. By contrast, the SDARS' proposed terms are commercially reasonable and supported by the record and should therefore be adopted.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that the foregoing Public Version of the Proposed Findings of Fact and Conclusions of Law Jointly Submitted by Sirius Satellite Radio Inc. and XM Satellite Radio Inc. were served on October 4, 2007 by overnight mail on the following party:

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A handwritten signature in black ink, appearing to read "tperrelli", is written over a horizontal line. The signature is stylized and cursive.

APPENDIX A

SDARS' Second Amended Rates and Terms

PART 3__ -- RATES AND TERMS FOR SUBSCRIPTION TRANSMISSIONS AND THE REPRODUCTION OF EPHEMERAL RECORDINGS BY PREEXISTING SATELLITE DIGITAL AUDIO RADIO SERVICES

Sec.

3__1 General.

3__2 Definitions.

3__3 Royalty fees for public performance of sound recordings and the making of ephemeral recordings.

3__4 Administrative provisions.

3__5 Confidential information and statements of account.

3__6 Notice and Recordkeeping.

§ 3__1 General.

(a) Scope. This part 3__ establishes rates and terms of royalty payments for the public performance of sound recordings and the reproduction of multiple ephemeral recordings by preexisting satellite digital audio radio services in accordance with the provisions of 17 U.S.C. §§ 112(e) and 114 for the period from January 1, 2007 through December 31, 2012.

(b) Relationship to voluntary agreements. Notwithstanding the royalty rates and terms established in this part, the rates and terms of any license agreements entered into by Copyright Owners and Licensees shall apply in lieu of the rates and terms of this part to transmissions within the scope of such agreements.

§ 3__2 Definitions.

For purposes of this part, the following definitions shall apply:

(a) “Copyright Owner” is a sound recording copyright owner who is entitled to receive royalty payments under 17 U.S.C. § 112(e) or 114(g).

(b) A “Designated Agent” is any agent designated by the Librarian of Congress for the receipt and distribution of royalty payments made pursuant to this part.

(c) “Licensee” means an owner or operator of a preexisting satellite digital audio radio service (as defined in 17 U.S.C. § 114(j)(10)) and its parent, subsidiaries and divisions.

(d) “Play” is each instance in which any portion of a sound recording is transmitted by a preexisting satellite digital audio radio service, regardless of the number of listeners

who tune in or listen to the transmission, but excluding the following:

(1) A transmission of a sound recording that does not require a license (e.g., a sound recording that is not copyrighted);

(2) A transmission of a sound recording for which the service has previously obtained a public performance license from the copyright owner of such recording; and

(3) An incidental performance that both:

(i) makes no more than incidental use of sound recordings including, but not limited to, brief musical transitions in and out of commercials or program segments, brief performances during news, talk and sports programming, brief background performances during disk jockey announcements, brief performances during commercials of sixty seconds or less in duration, or brief performances during sporting or public events; and

(ii) other than ambient music that is background at a public event, does not contain an entire sound recording and does not feature a particular sound recording of more than thirty seconds (as in the case of sound recording used as a theme song).

(e) "SDARS" means the preexisting satellite digital audio radio services as defined in 17 U.S.C. § 114(j)(10).

(f) "Term" means the period commencing January 1, 2007, and continuing through December 31, 2012.

§ 3__3 Royalty fees for public performances of sound recordings and the making of ephemeral recordings.

(a) Royalty. Commencing January 1, 2007 and continuing through December 31, 2007, the royalty fee to be paid by a Licensee for the public performance of sound recordings pursuant to 17 U.S.C. § 114(d)(2) and the making of any number of ephemeral phonorecords to facilitate such performances pursuant to 17 U.S.C. § 112(e) shall be \$1.60 per Play of a copyrighted sound recording. The royalty rate to be paid for Plays in 2008 and subsequent years of the license period shall be adjusted each year by a percentage equal to the percentage change in combined SDARS subscribers during the preceding year. (For example, if the number of subscribers to both SDARS at the end of 2007 has increased twenty percent from year-end 2006, the royalty fee for 2008 will increase by twenty percent, to \$1.92 per Play.)

(b) Payments. Payments made by a Licensee shall be due 60 days after the close of each calendar quarter for all Plays during that calendar quarter.

(c) Late Fee. If a Licensee fails to make any payment under this part when due and following ten days after receipt of written notice from a Designated Agent, the Licensee

shall pay a late fee on any overdue amount of 0.50% per month, or the highest lawful rate, whichever is lower, from the date of receipt of written notice until the date full payment is received by a Designated Agent.

(d) Weekends and Holidays. In the event the deadline for any payment due under this part falls on a day which is not a business day, payment shall be due on the next business day.

§ 3 __.4 Administrative provisions.

(a) Audit.

(i) A Designated Agent may audit compliance by the Licensee with the royalty payment provisions of these regulations. If there is more than one Designated Agent, all Designated Agents shall mutually retain a single auditor to perform a single audit on a Licensee.

(ii) The Designated Agent may conduct a single audit of a Licensee during any given calendar year, for any or all of the 36 months prior to the commencement of the audit. No calendar year shall be subject to audit more than once. Audits shall be conducted during regular business hours, at a mutually agreeable time; provided that an audit shall commence no later than 90 days following a written request for audit.

(iii) Audits shall be performed by an independent auditor according to generally accepted auditing standards.

(iv) If as a result of the audit the parties agree or, in the absence of such agreement there is a final determination, that a Licensee has underpaid royalties by 10 or more percent, within 60 days of such determination the Licensee shall pay the amount of the underpayment with interest at the rate provided in 28 U.S.C. § 1961, plus reasonable out-of-pocket costs incurred by the auditor.

(v) If as a result of the audit the auditor determines that a Licensee has overpaid royalties, the Licensee may credit against future royalty payments the amount of such overpayment plus interest accrued at the rate provided in 28 U.S.C. § 1961, and shall pay the Licensee's reasonable out-of-pocket costs incurred from the audit.

§ 3 __.5 Confidential information and statements of account.

(a) For purposes of this part, confidential information shall include statements of account and any information pertaining to the statements of account designated as confidential by the Licensee filing the statement. Confidential information shall also include any information so designated in a confidentiality agreement which has been duly executed between a Licensee and an interested party, or between one or more interested parties; *provided* that all such information shall be made available, for the verification proceedings provided for in §§3 __.4 of this part.

(b) Licensees shall submit quarterly statements of account on a form provided by the agent designated to collect such forms and the royalty payments.

(c) A statement of account shall include only such information as is necessary to compute the accompanying royalty payment. Additional information beyond that which is sufficient to verify the calculation of the royalty shall not be required or included on the statement of account.

(d) Access to the confidential information pertaining to the royalty payments shall be limited to:

(i) Those employees, agents, consultants and independent contractors of the Designated Agent, subject to an appropriate confidentiality agreement, who are engaged in the collection and distribution of royalty payments hereunder and activities directly related hereto, who are not also employees or officers of a sound recording copyright owner or performing artist, and who, for the purpose of performing such duties during the ordinary course of employment, require access to the records; and

(ii) An independent and qualified auditor who is not an employee or officer of a sound recording copyright owner or performing artist, but is authorized to act on behalf of the interested copyright owners with respect to the verification of the royalty payments.

(e) The Designated Agent or any person identified in paragraph (d) of this section shall implement procedures to safeguard all confidential financial and business information, including, but not limited to royalty payments, submitted as part of the statements of account, using a reasonable standard of care, but no less than the same degree of security used to protect confidential financial and business information or similarly sensitive information belonging to the Designated Agent or such person.

(f) Books and records relating to the payment of the license fees shall be kept in accordance with generally accepted accounting principles for a period of three years after submission of the statement of account pertaining to that payment. These records shall include, but are not limited to, the statements of account, records documenting an interested party's share of the royalty fees, and the records pertaining to the administration of the collection process and the further distribution of the royalty fees to those interested parties entitled to receive such fees.

§ 3__6 Notice and Recordkeeping.

(a) General. This section prescribes the rules under which Licensees shall serve copyright owners with notice of use of their sound recordings, what the content of that notice should be, and under which records of such use shall be kept and made available.

(b) Definition. A “*Report of Use of Sound Recordings Under Statutory License*” (sometimes referred to as a “*Report of Use*”) is the sole report of use required to be provided by a Licensee under this Agreement.

(c) Service. Reports of Use shall be served upon SoundExchange. Licensees shall have no obligation to provide Reports of Use for any period prior to January 1, 2006. Licensees shall serve Reports of Use on SoundExchange by no later than the ninetieth day after the close of each month. Reports of Use shall be served, by certified or registered mail, or by other means provided in SoundExchange's "File and Reports of Use Delivery Specifications" filed in the Copyright Office in Docket No. RM 2002-1B or agreed upon by a Licensee and SoundExchange.

(d) Content.

(1) A "Report of Use of Sound Recordings under Statutory License" shall be identified as such by prominent caption or heading, and shall include a Licensee's intended or actual playlist for each channel and each day of the reported month, except that no reporting requirement shall apply to programming reasonably classified as news, talk or sports. Subject to subsection (d)(2), each intended or actual playlist shall include a consecutive listing of every recording scheduled to be or actually transmitted, as the case may be, and shall contain the following information in the following order:

- (A) The name of the service or entity;
- (B) The channel;
- (C) The sound recording title;
- (D) The featured recording artist, group, or orchestra;
- (E) The retail album title;
- (F) The marketing label of the commercially released and available album or other product on which the sound recording is found;
- (G) The catalog number for albums or other products commercially released;
- (H) The International Standard Recording Code (ISRC) embedded in the sound recording, where available and feasible, for albums or other products commercially released after 1998;
- (I) Where available, the copyright owner information provided in the copyright notice on the retail album or other product (e.g., following the symbol © (the letter P in a circle) or, in the case of compilation albums created for commercial purposes, in the copyright notice for the individual sound recording, for commercially released albums or other products;

- (J) The date of transmission;
 - (K) The time of transmission; and
 - (L) The release year of the retail album or other product (as opposed to the individual sound recording), as provided in the copyright notice on the retail album or other product (e.g., following the symbol © (the letter C in a circle), if present, or otherwise following the symbol ® (the letter P in a circle)), for commercially released albums or other products.
- (2) Notwithstanding subsection (d)(1) –
- (A) In the case of programming provided to a Licensee by a third party programmer –
 - (i) if such programming is provided to the Licensee under a contract entered into before the Execution Date and not thereafter amended or renewed, then the Licensee shall have no obligation to provide Reports of Use with respect to that programming; and
 - (ii) the Licensee shall use commercially reasonable efforts to include in any new contract for programming, or any amendment or renewal of such a contract, a requirement that the provider of programming provide the Licensee the information required by subsection (d)(1), or in the case of programming consisting of simultaneous retransmission of an over-the-air terrestrial AM or FM radio broadcast by a broadcaster that also transmits such programming over the Internet, such information as may from time to time be required by Copyright Office regulations relating to the broadcaster's transmissions over the Internet, and the Licensee shall provide SoundExchange Reports of Use containing the information provided by the third party programmer.
- In any case in which a Licensee does not provide Reports of Use for programming provided to a Licensee by a third party programmer, the Licensee shall report to SoundExchange the relevant channel and the reason it is unable to provide such Reports of Use.
- (B) Licensees only shall be required to provide the information identified in subsections (d)(1)(C) through (I) and (L) to the extent that such information can be provided using commercially reasonable efforts.
 - (C) Licensees shall not be required to provide information with respect to a performance of a sound recording that does not require a license (e.g., the sound recording is not copyrighted)

(D) Licensees shall not be required to provide information with respect to a performance of a sound recording for which the service has previously obtained a license from the Copyright Owner of such sound recording; and

(E) Licensees shall not be required to provide information with respect to an incidental performance that both: (i) makes no more than incidental use of sound recordings including, but not limited to, brief musical transitions in and out of commercials or program segments, brief performances during news, talk and sports programming, brief background performances during disk jockey announcements, brief performances during commercials of sixty seconds or less in duration, or brief performances during sporting or other public events, and (ii) other than ambient music that is background at a public event, does not contain an entire sound recording and does not feature a particular sound recording of more than thirty seconds (as in the case of a sound recording used as a theme song).

(e) Signature. Reports of Use shall include a signed statement by the appropriate officer or representative of the Licensee attesting that the information contained in the Report is believed to be accurate and is maintained by the Licensee in its ordinary course of business. The signature shall be accompanied by the printed or typewritten name and title of the person signing the Report, and by the date of signature.

(f) Other Media. If a Licensee makes digital audio transmissions of sound recordings in any medium other than through its SDARS, reports containing the elements set forth in subsection (d) shall be deemed to satisfy the Licensee's obligations to identify the sound recordings used in such transmissions (in contrast to any obligations the Licensee may have under applicable regulations to provide information concerning matters other than the identity of such sound recordings).

(g) Format. Reports of Use shall be provided in accordance with SoundExchange's "File and Reports of Use Delivery Specifications" filed in the Copyright Office in Docket No. RM 2002-1B.

(h) Confidentiality.

(1) Definition. "Confidential Information" means information submitted by a Licensee to SoundExchange in a Report of Use that is uniquely specific to Licensee, including without limitation, the number of performances made by the Licensee and the identification of particular sound recordings as having been performed by the Licensee, but not any information that at the time of delivery to Sound Exchange is generally known to the public or subsequently becomes generally known to the public through no fault of SoundExchange, including without limitation, information identifying sound recordings themselves.

(2) Use of Confidential Information. SoundExchange shall not use any Confidential Information for any purpose other than royalty collection and distribution, determining and enforcing compliance with statutory license requirements and the requirements of this Agreement, and activities directly related to the foregoing; provided that SoundExchange may report Confidential Information to its members in a form in which information pertaining to both Licensees is aggregated with information pertaining to other statutory licensees such that Confidential Information pertaining to Licensees, either individually or collectively, cannot readily be identified.

(3) Disclosure of Confidential Information. Access to Confidential Information shall be limited to those employees, agents, attorneys, consultants and independent contractors of SoundExchange, subject to an appropriate confidentiality agreement, who are not also employees or officers of a Copyright Owner or Performer, and who, for the purpose of performing such duties during the ordinary course of their work, require access to Confidential Information. SoundExchange also may disclose Confidential Information to a successor or assignee permitted by this Agreement.

(i) Documentation. Licensees shall, for a period of at least three years from the date of service of the Report of Use, keep and retain a copy of the Report of Use.

Appendix B: Benchmark Comparison to SDARS¹

Proposed Benchmark	Same Buyers (SDARS)	Same Sellers (Record Cos.)	Same Copyright Right & Work (Sound Recording Performance Only)	Includes Radio-like Music Channels	Same Rate Std. (801(b)(1))	Accounts for Cost/ Functionality Differences from Target
Music Choice		✓	✓	✓	✓	✓
Musical works	✓			✓		✓
Interactive music services		✓				
Interactive video		✓				
Noninteractive video		✓				
DBS content						?
Howard Stern	✓					✓
Non-Music Programming	✓					✓

1. See 8/23/07 Tr. 123:16-127:8, 128:17-131:9, 134:6-135:15, 138:3-14 (Woodbury) (interactive music and video service benchmarks); *id.* at 44:16-50:2, 138:3-7, (Music Choice); *id.* at 135:17-137:14 (qualities of proposed benchmarks); *id.* at 138:15-21 (DBS benchmark); *id.* at 138:22-139:6 (musical works benchmark); *id.* at 108:5-114:20 (Stern benchmark); see also Woodbury WRT at ¶ 64 (qualities of benchmarks); *id.* ¶¶ 56-61 (DBS benchmark); *id.* ¶¶ 65-66 (cost/functionality differences); *id.* ¶¶ 73-85 (interactive music service and video benchmarks); *id.* at ¶ 88-100 (Stern benchmark); Benston WRT at 3-11 (non-music programming benchmark); Noll WRT at 90-94, 115-116 (standards for a good benchmark); *id.* at 94-102 (Stern benchmark); *id.* at 102-105 (DBS benchmark); *id.* at 109-115 (interactive music and video services benchmarks, including need to adjust for costs).

APPENDIX C

Update of the Noll Analysis on Pages 35-36, Noll Written Rebuttal Testimony

Professor Noll demonstrated, at pages 34-38 of his Written Rebuttal Testimony, how Dr. Pelcovits' concept of the "rental rate" for the SDARS' physical capital failed to take account of a reasonable return on the SDARS' forward looking cost of its investment in physical capital, even adopting Dr. Pelcovits' decision to start from depreciated book value. *See* PFF, Part VII.B.3.

This Appendix uses record evidence to update Professor Noll's calculations using Mr. Butson's updated financial projections and the current SoundExchange Fee proposal.¹

Professor Noll used a combined 27% gross return (depreciation plus competitive return), Noll WRT at 34, and applied it to the SDARS' book value of physical investments.² He found that the required net income before depreciation to cover depreciation plus competitive return on the physical assets was about \$200 million in 2007 and \$182 million in 2008. Following the addition of a new satellite in 2009, he found that the required income before depreciation to cover depreciation plus competitive return would be \$232 million. In the remaining three years, the required gross return would fall 10.5 percent due to depreciation, resulting in required net income before depreciation of approximately: \$208 million in 2010; \$186 million in 2011; and \$166 million in 2012. He thus found that the total minimum net income before depreciation per SDARS operator over the license period was about \$1.2 billion, or about \$2.4 billion for the SDARS industry. Noll WRT at 35.

Mr. Butson's rebuttal models for Sirius and XM using the SoundExchange rate proposal show that the SDARS' accumulated deficit grows by a total of \$4.3 Billion by the end of the period— \$1.8 billion for Sirius and \$2.5 billion for XM. Butson WRT Apps. A (Sirius) and B (XM).

The Noll analysis included approximately \$450 million in depreciation for each firm, or a total of about \$900 million.

Thus, the increase in accumulated deficit after depreciation is added back is about \$3.4 billion.

Adding that to the "net income before depreciation of \$2.4 Billion that is needed to recover Dr. Pelcovits' version of forward looking investment," Noll WRT at 36, leaves a shortfall of \$5.8 billion.

¹ As Mr. Butson's projections contain several errors and unrealistic assumptions that overstate the projections and understate the effects of the SoundExchange fee proposal, *see* PFF Part V.I.5.a, a similar analysis run with the SDARS' rebuttal models would result in an even more pronounced effect.

² Following the lead of Dr. Pelcovits, and without opining on its validity, Professor Noll used Sirius' book value of physical assets and doubled it to account for both Sirius and XM.

In Professor Noll's words, with the new numbers, "[T]hus, the net income of the SDARS under the proposed rate will fall [\$5.8] billion short of recovering even Dr. Pelcovits' version of a minimum forward-looking competitive return." Noll WRT at 36.

The total SoundExchange fee under the Mr. Butson's rebuttal models is approximately \$2.6 Billion (\$1.28 Billion for Sirius and \$1.33 Billion for XM). Butson WRT Apps. A&B.

In other words, even with a license fee of zero, the SDARS would still have a shortfall of \$2.2 billion on the recovery of a forward looking return on physical capital.