

# Developing Guidelines for the Bath Profile

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A draft paper by Fraser Nicolaides and John Gilby, M25 Link Project Team, London School of Economics presented at the Z39.50 Implementors Group Meeting on 4-5 October 2001, British Library, Boston Spa, UK. This paper is intended for future publication.

### **Introduction and Background**

The M25 Consortium of Higher Education Libraries (hereafter referred to as the 'Consortium') was established in 1993 to foster cooperation between the member institutions. Its membership was originally contained within London's M25 orbital motorway (hence M25 in the name) but now covers a wider geographical region around the capital including Canterbury in the east, Hertfordshire in the north and Buckinghamshire in the west.

Activities undertaken by the Consortium include:-

- an access and borrowing scheme for specified categories of users covering most Consortium member institutions
- staff development – an annual programme of seminars and workshops
- mutual support and collaboration
- etc.

During 1997 the Consortium identified a need for easier resource discovery within the region and successfully obtained funding for the M25 Link Project.

### **The M25 Link Project**

The M25 Link Project began in January 1998 with the initial aim of producing a clump formed of six institutional members of the Consortium, each with a different library management system. The Project was funded by JISC as part of the Large Scale Resource Discovery strand of the eLib Phase 3 Programme.

Additional tasks were to investigate holdings issues with respect to Z39.50, searching for periodical titles and to look at interoperability issues.

Early in the Project's first year, a demonstrator service proved that a clump was feasible and that it could be expanded to include all the Consortium member library systems. During autumn 1999 detailed evaluation took place on user interface issues to look at such things as manageable results sets, screen 'look & feel' and what search types were deemed necessary.

The M25 Link Team received part funding during 2000/01 from the Consortium to "finish the job" i.e. to add the remaining library systems to the clump and prepare for a live service. Earlier this year, an open competition resulted in the name InforM25 being adopted to encompass the suite of services offered by the Consortium: library information; cross-catalogue searching; the University of London Union List of Serials (on which significant development has been done by the M25 Link Team); and, in the future, an access entitlement tool to guide users on what their access rights are.

InforM25 is to be launched in November 2001 and will actively be promoted by the Consortium both within its membership (its primary *raison d'être*) and throughout the UK.

The M25 Link Team are funded to maintain the service at least until July 2002 and also will provide cascade training for M25 library staff. Some carry-over funds are available to continue with technical work, particularly on interoperability.

It is worth noting that throughout the project's lifetime, the staffing has averaged at 2 FTE.

### **InforM25 Catalogues**

There are 29 Z39.50 servers associated with InforM25 (as of September 2001) representing 31 institutions from the Consortium membership of 39. The remaining 8 will be added to the service once they are available. Seven library systems (from six vendors) are currently included in the service. Institutions (and hence collections) represented are wide ranging, from large old and new universities such as Kings College London and Greenwich through to smaller specialist colleges such as St Georges Hospital Medical School. Together there are over 120 site libraries giving over 20% of the UK Higher Education provision.

### **System Blueprints and the Bath Profile**

The writing of system-specific 'Blueprint' documents had always formed part of the M25 Link Project Plan. The aim of these documents was to assist the systems administrators by introducing the detailed technical aims of the Project and to help with disseminating the knowledge and experience gained by the Team with the particular library systems and associated Z39.50 servers. Promotion of the blueprints has led to a degree of standardisation of Z39.50 server performance within each system type, including a common core of Use attribute settings. During late autumn 2000 a series of Z39.50 workshops were held by the M25 Link Team, which were well attended by systems personnel. In the majority of cases, representatives from the different vendors also attended to answer specific queries and gain further insights into what M25 Link was trying to achieve.

At an Open Concertation Meeting on the Bath Profile, held in London at the end of 1999, there was support for the idea of a 'best practice and implementation guidelines' type document for disparate library systems. Paul Miller of UKOLN's Interoperability Focus was supportive also, and the M25 Link Team received part funding from the UK's Joint Information Systems Committee to produce the documents.

The programme of document production has been restricted to the vendors supplying the library-services of the M25 Consortium:

<b>Vendor Company</b>	<b>Library Management System</b>	<b>No. of M25 Consortium customer institutions</b>
Endeavor	Voyager	2
epixtech	Horizon	2
Ex Libris	Aleph	6
Innovative Interfaces	Innopac	6
SIRSI	Unicorn	11
Talis	Talis	8

### **Guidelines: coverage and audience**

The main audience for the guidelines was anticipated to be local systems administrators. It would give them a brief introduction to Bib-1 and the development of profiles culminating in Bath. It would discuss also the current state of their system's compliance and how that system might be modified or reconfigured locally to effect greater compliance. Where appropriate, the vendor's intentions regarding anticipated future developments would also be recorded.

Although the other audience was JISC and UKOLN Interoperability Focus, we were not looking abstractly at implementation, but rather concentrated on those aspects of the Bath Profile that most concerned the M25 Link. To date, therefore, we have looked only at the primary features of Functional Areas A and B: the range of search types that might be supported; adoption of the Holdings Schema; and the range of record-transfer syntaxes.

### **Methodology**

Rather than test the capabilities of each individual server within the Consortium, M25 Link sought to speak directly to vendors. With two notable exceptions, this approach was largely highly successful.

The main advantage of this approach was that it allowed us to gather information on the *potential* capability of each production server to support the Bath Profile. (Any individual server can, of course, have a highly particularistic configuration that is representative neither of the common nor of the potential functionality of the server.)

The disadvantage of this method concerns the possibly considerable gulf between the projected and the eventual actual performance of a server. There is always the possibility that exuberant vendors will overstate the capabilities of their product. The need to do actual testing is therefore absolutely crucial. We have performed some tests as modifications occurred to the various systems, but this has been quite limited. We need now to undertake detailed compliance testing of the type performed by Slavko Manojlovich in January of last year.<sup>1</sup>

### **Outcomes: Common Initial Problems**

#### **Search types**

Each of the Z-servers supported (at least theoretically) quite widely differing sets of attributes and attribute combinations. It is evident that this relates to the complexity of Bib-1 in terms of the enormous array of attribute combinations that potentially might be supported. It is also a historical consequence of the lack of any reasonably developed core profile for bibliographic applications. The notable exception was Talis, which implemented the MODELS Profile. (This accounts for the initial definition of that system's Use, Relation and Structure attributes, and the restriction of Position, Truncation and Completeness to single default values.)

Without here presenting our findings in detail, we can report some common initial problems experienced by the vendors:

- Of the five systems for which information was available, none was able to support the normalized author search type at Levels 0 and 1 of Area A. This was due to the non-implementation of the relevant Structure attribute, 101 – Name (normalized). While some vendors have given a verbal commitment to rectify this omission, to our knowledge only SIRSI has yet succeeded.
- Standard-Identifier was unsupported by three systems. In this case, it has been the consequence of the alternative support for the ISBN and ISSN attributes.
- Date-of-Publication was similarly supported by only three vendors. This was due to the common restriction of Relation to the 'Equal' attribute.

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<sup>1</sup> Slavko Manojlovich, 'Bath Profile Z39.50 server compliance test results: preliminary findings', 67<sup>th</sup> IFLA Council and General Conference, Boston, 16-25<sup>th</sup> August 2001.

## Indexes

Give our concern with the practical implementation of the Bath Profile, it has been necessary also to consider any significant difficulties that might occur in the translation from potential to practical capabilities. One of the most notable possible problems relates to the provision of suitably configured indexes to support each required search type. In essence, this appears to be more of a financial than a technical problem; i.e. vendors commonly charge for the creation of certain types of index. Such charging might inhibit, for example, the creation of a Standard-Identifier index where separate ISBN and ISSN indexes exist already. Another example concerns a particular vendor who enables system administrators to create keyword-type indexes locally, but would charge for indexes that define first-in-field matching (which affects several search types at Level 1 of Area A).

## Default behaviours

A very common feature of the Z servers has been the use of default values to *replace* any unsupported attributes that may be included in a query. (It should be noted that we are not here concerned with the *addition* of attribute values to incompletely specified queries.) It is arguable that this type of behaviour results from the absence of a widely supported core profile; in consequence of which any Z server may have to respond to a potentially enormous range of queries (defined using any conceivable combination of attributes). By enabling the default replacement of unsupported attributes, servers could at least execute some form of search; the alternative being the probably very frequent return of diagnostic non-compliance messages.

This default behaviour should be regarded as an initially pragmatic response to an operational environment in which there existed no primary model for semantic interoperability. Nevertheless, given that such behaviour is explicitly precluded by the Bath Profile, vendors should be actively encouraged now to effect an appropriate amendment to their server software.

## Record syntaxes

The systems under review are enabled to return records in a wide variety of national MARC and other formats. The following table indicates current and possible future adoption of the required syntaxes for Area A.

	UNIMARC	MARC21	SUTRS	XML
<b>Talis</b>		Under development	✓	
<b>Horizon</b>				
<b>Voyager</b>		✓	Under development	Under development
<b>Innopac</b>		✓	Under consideration	Under consideration
<b>Unicorn</b>		New implementations only	✓	New implementations only
<b>Aleph</b>			Used on other product	Used on other product

As the table suggests, while there is comparatively little application of the preferred syntaxes, vendors are actively engaged in extending the range that they will support. We therefore have deliberately not indicated that any given vendor is unprepared to adopt a particular syntax. (epixtech (Horizon) and Ex Libris (Aleph) may well be planning some further implementation.)

## Holdings information

It is evident that vendors have monitored the development of the Holdings Schema and its associated objects, but that, at the early behest of projects like the M25 Link, have developed

other strategies for delivering the required information. There thus exist a wide range of variously ingenious solutions for embedding summary holdings and location data in the returned record (all of which are consistent with the deliberately loose definition of requirements at Level 0 of Functional Area B).

Given the sometimes considerable programming effort that has been required to achieve this, there is some expressed reluctance thence to migrate to Level 1. Some vendors have stated that a sound 'business case' would need first to be defined. This, we might speculate, would be provided by customer demand or the general adoption of the Schema by competitor vendors.

(It is perhaps noteworthy that where the OPAC record syntax is in use, as with the Voyager and Innopac Z servers, there is a greater expressed willingness to adopt the Holdings Schema. This evidently is because of the structural similarities of the two methods, and the identification of the Schema as a legitimate successor to the deprecated OPAC syntax.)

**General Statements of Support**

It is arguable that vendors' current level of compliance with the Bath Profile is less important than their attitude and approach to its future adoption.

It is possible to identify two broad types of vendor strategy. Firstly, are the efforts to achieve fuller compliance; this being for the benefit of existing customers and to create a marketable product aimed at prospective customers. It may also reflect vendors' increasing confidence in the usefulness and usability of the Bath Profile. Thus we have the following specific commitments from epixtech, Endeavor, Innovative and SIRSI:

epixtech: Horizon	To become compliant with next release of the Z server module [no specific details obtained].
Endeavor: Voyager	To become compliant by summer 2002 [probably to Level 1; precise details not yet available].
Innovative: Innopac	"...committed to conformance...in all three functional areas" – at least to Level 0 by 2002.
SIRSI: Unicorn	Substantially attained to Level 1 of Areas A and C, and Level 0 of Area B [currently applies primarily to <i>new</i> implementations; information on reconfiguring existing servers not available].

Secondly is the more restrained, conditional approach, in which vendors are willing to support the specific requirements of particular established services or projects. This would include the M25 Link, for which some vendors have, for example, implemented certain required Bib-1 attributes (most notably the 'Key Title' Use attribute). This more cautious approach has been evinced by Ex Libris and Talis.

These strategies are themselves dependent upon other significant motivational factors. These may be described as the forces of 'push' and 'pull'.

The former is constituted by customer demand. This has been expressed in a variety of ways with a variety of significant outcomes. For example, epixtech have reported that adoption of the Bath Profile is one of the most frequently stated demands of their Horizon customers, and that the company intends now to effect some measure of formal compliance. The role of certain individual customer organisations has also been important. An unnamed Voyager customer has contractually obliged Endeavor to attain compliance by summer 2002. Similarly, Texas State has had a considerable influence on SIRSI in rendering the Unicorn Z server progressively more compliant.

The most important 'pull' factor arguably concerns vendors' commercial development of Z39.50-client products that enable users to search simultaneously the bibliographic resources of multiple third-party organisations. Numerous examples of such nascent services exist even within our small cohort of vendors: Ex Libris's MetaLib (which is stated to be compliant with Functional Area A at Level 0); Talis's UnityWeb (compliant to Level 1); SIRSI's iLink and iBistro; and Endeavor's ENCompass. The need to effect semantic interoperability is soon realised in such operational environments.

### **Concluding Remarks**

We should not over-emphasise current levels of non-compliance with the Bath Profile. As we have sought to demonstrate, this reflects the historical development of the systems and the pragmatic approaches adopted by system suppliers to render them usable. The situation is changing rapidly, with some vendors making significant advances towards fuller, if not complete compliance with the Profile.

The issue of perceived stability of the Profile is extremely important. Talis's apparently lone commitment to the MODELS profile suggests that initial wariness to a new generic profile *is* commercially justified. While there may be concerns about the seemingly constant adjustment and extension of the Bath Profile, this appears now to be regarded as evidence of its continuing practical relevance.

Finally, the role of an increasingly knowledgeable customer community in defining Bath as *the* core profile for bibliographic applications should also be recognised. To advance further the comprehensive adoption of Bath, it is recommended that promotional activities that explicitly target this community should be given consideration.

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