LDAC/IMAC URIs Guidance Subgroup Report to PCC PoCo
March 17, 2023

At the request of the PCC Policy Committee, this report of the URI Guidance Subgroup (UGS) aims to give guidance on how to proceed with URIs in MARC, both in bibliographic and authority records. The LDAC/IMAC URIs Guidance Subgroup prepared the report. The subgroup's charge is in Appendix A.

Recommendation 1: Officially end the URIs in MARC Pilot and take appropriate steps to enable catalogers to insert URIs in MARC records. This will include reviewing relevant documentation for any required edits; policy statements, metadata guidance documentation, the Descriptive Cataloging Manual, LC Guidelines Supplement, participants' manuals, and other documentation. In addition, core URIs-in-MARC documentation should be published and maintained by PCC giving guidance on inserting URIs in MARC. Fortunately, after years of effort, various groups have assembled copious documentation; we recommend that PCC collect, edit, publish and maintain the core documentation as an additional step toward enabling all catalogers to insert URIs in MARC records. A proposed core is assembled below in Appendix C.

Recommendation 2: Promulgate general principles for projects inserting URIs in MARC as well as for PCC groups offering guidance. Some general principles have been assembled by UGS in Appendix G below. One possibility: these can be reviewed, edited, and published by the same PCC group appointed to maintain the core documentation.

Recommendation 3: Organize the core documentation (see Appendix C) on adding URIs in MARC and publish them as a collection. This will likely require the formation of a group to process the documents for publication and maintain them after publication. The group could design this project and determine how it can be coordinated with the editing of MARC documentation described in Recommendation 1 above. Processes could include: check existing documents for accuracy and currency (several documents were written years ago); edit the documents to improve the collection as a collection; reformat in an easy-to-edit and update format and not as PDFs. The core documents should include maintenance of the URIs in MARC Cheat Sheet described below in Appendix F. It is further recommended that information guiding on-the-job catalogers be assembled as much as possible in a single document, perhaps as a best practices document along the lines of the [NACO 024 Best Practices Guidelines](#).

Recommendation 4: Document, in the same collection mentioned above, use cases for URIs in MARC.

Focusing on the range of use cases for adding URIs to MARC can help us to understand the variety of objectives that adding this data can serve and what impact it can have. Additionally, training programs (as recommended below in Recommendation 5) – if they are developed – can

incorporate the reasons why this effort matters, how the end result can be put to use, and how it impacts users. (Appendix E below is a start on documenting use cases.)

Recommendation 5: Charge the Standing Committee on Training to develop training programs for adding URIs in MARC in bibliographic and authority records.

Recommendation 6: Charge a body, new or existing, to provide policy and practice guidance in response to questions from PCC participants. This body can approach their charge in a number of ways; for example, they could expand, monitor and participate in communication channels; create and publish, in the same collection mentioned above, additional documentation on inserting URIs in MARC; etc.

Recommendation 7: Conduct a survey at an appropriate time of the PCC membership to measure the progress, developments, and attitudes among users of URIs in MARC, and to assess areas of need for future support.

Appendices

Appendix A: Subgroup Charge

Subgroup members:
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- Adam L. Schiff (Liaison, SCS)
- Theodore Gerontakos (Chair)
- Lauren Geiger
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The PCC URI Guidance Subgroup is charged to:
- Compile relevant PCC reports, guidelines, and resources, evaluate needs identified in [2021-11-05 URI Pilot participant survey results slides 10-27](), and determine what work needs to be done in order to meet PoCo's call for "clear guidance to PoCo regarding URIs in MARC for both bibs and NARs. These best practices need not be exhaustive, but should let PCC members know if we have guidance on how best to use URIs in MARC."
- Prepare a document providing guidance on the use of URIs in MARC bibliographic and authority records, addressing the needs of catalogers, policy makers, application developers, vendors and others. Given that most existing URIs-in-MARC documentation provides guidance for manual entry, the document should be mindful of automating the process.

- Submit draft guidance to the chairs of LDAC and IMAC, as well as the PCCURISMARC@LISTSERV.LOC.GOV for review; collect, consider, and incorporate, as needed, suggested revisions and feedback from those groups.
- Send LDAC and IMAC chairs recommendations concerning:
  - How PoCo might maintain this documentation going forward in a way that is responsive to comments and questions from the community;
  - How to proactively raise awareness of the guidelines and communication mechanisms.

Appendix B: Relevant PCC and Other Reports, Guidelines, and Resources

- Folsom, Steven. (2015). "URIs in MARC: A Call for Best Practices." In Google Drive.
- "LDAC Feedback on the use of MARC Authority 024 Field." (2019). In Google Drive.
- MARC Advisory Committee. (2017). "Marc Proposal No. 2017-08: Use of Subfields $0 and $1 to Capture Uniform Resource Identifiers (URIs) in the MARC 21 Formats." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2017/2017-08.html
- MARC Advisory Committee. (2017). "MARC Proposal No. 2017-09: Defining Field 758 (Resource Identifier) in the MARC 21 Bibliographic Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2017/2017-09.html
- MARC Advisory Committee. (2019). "MARC Proposal No. 2019-03: Defining Subfields $0 and $1 to Capture URIs in Field 024 of the MARC 21 Authority Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2019/2019-03.html
- MARC Advisory Committee. (2020). "MARC Proposal No. 2020-02: Adding Subfield $0 to Fields 310 and 321 in the MARC 21 Bibliographic Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2020/2020-02.html
- MARC Advisory Committee. (2020). "MARC Proposal No. 2020-FT02: Adding Subfields $0 and $1 to Field 375 of the MARC 21 Authority Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2020/2020-ft02.html
- MARC Advisory Committee. (2020). "MARC Proposal No. 2020-FT03: Adding Subfields $0 and $1 to Field 384 of the MARC 21 Bibliographic and Authority Formats." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2020/2020-ft03.html
- MARC Advisory Committee. (2021). "MARC Proposal No. 2021-04: Adding Subfields $0 and $1 to Field 022 in the MARC Bibliographic and Authority Formats." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2021/2021-04.html
- MARC Advisory Committee. (2022). "MARC Proposal No. 2022-FT01: Adding Subfields $i and $4 to Field 373 of the MARC 21 Authority Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2022/2022-ft01.html
- MARC Advisory Committee. (2023). "MARC Discussion Paper No. 2023-DP02: Adding Subfields $0 and $1 to Field 658 of the MARC 21 Bibliographic Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2023/2023-dp02.html

- MARC Advisory Committee. (2023). "MARC Proposal No. 2023-03: Adding Subfields $0, $1, $2, and $5 to Fields 720 and 653 in the MARC 21 Bibliographic Format." MARC Development. Library of Congress, https://www.loc.gov/marc/mac/2023/2023-03.html
- "MARC object table: a field-by-field analysis of the bibliographic format." (2019). In Google Drive.
- PCC Identity Management Advisory Committee, Program for Cooperative Cataloging. (2019-2021). "URIs in MARC Pilot." PCC Identity Management. https://wiki.lyrasis.org/display/pccidmgt/URIs+in+MARC+Pilot
- "PCC Learning Objectives for the URIs in MARC Pilot."(2019-2020). In Google Drive.
- Program for Cooperative Cataloging. (2018-2021). "PCC (Program for Cooperative Cataloging) Strategic Directions January 2018-December 2021 (Extended to December 2022)." Library of Congress, https://www.loc.gov/aba/pcc/about/PCC-Strategic-Directions-2018-2022.pdf
- Program for Cooperative Cataloging. (2019-2023). "NACO 024 Best Practices Guidelines." Library of Congress, https://www.loc.gov/aba/pcc/naco/documents/NACO-024-Best-Practices.pdf
- Program for Cooperative Cataloging. (n.d.). "PCC Task Group on URIs in MARC." Library of Congress, https://www.loc.gov/aba/pcc/bibframe/TaskGroups/URI-TaskGroup.html
- "SACO Wikidata Funnel Use Cases." (2021). In Google Drive.
- Shieh, Jackie. (2020) "PCC's Work on URIs in MARC." *Cataloging & Classification Quarterly*, 58(3-4), 418-427. https://doi.org/10.1080/01639374.2019.1705951
- Task Group on Enhancing Metadata and Practices in MARC Bibliographic Records, Standing Committee on Applications, Program for Cooperative Cataloging. (2022). "Preliminary Report of the SCA Task Group on Enhancing Metadata and Practices in MARC Bibliographic Records." Library of Congress, https://loc.gov/aba/pcc/sca/documents/SCA-TG-Enhancing-Metadata-in-MARC-Bibs-preliminary-report.pdf
- Task Group on Enhancing Metadata and Practices in MARC Bibliographic Records, Standing Committee on Applications, Program for Cooperative Cataloging. (2023). "Final Report of the SCA Task Group on Enhancing Metadata and Practices in MARC Bibliographic Records." Unpublished report.
- Task Group on Identity Management in NACO, Program for Cooperative Cataloging. (2021). "PoCo Updates on 3 PCC Pilots." In Google Drive.
- Task Group on Linked Data Best Practices, Program for Cooperative Cataloging. (2019). "PCC Task Group on Linked Data Best Practices Final Report submitted to PCC Policy Committee." Library of Congress, https://www.loc.gov/aba/pcc/taskgroup/linked-data-best-practices-final-report.pdf
- Task Group on MARC Simplification for BIBFRAME Conversion, Program for Cooperative Cataloging. (2022). "Interim Report of the PCC Task Group on MARC Simplification for BIBFRAME Conversion." Library of Congress,

https://www.loc.gov/aba/pcc/taskgroup/MARC-Simplification-for-BF-Conversion-interim-report.pdf
- Task Group on URIs in MARC, Program for Cooperative Cataloging. (2018). "URI FAQs." Library of Congress, https://www.loc.gov/aba/pcc/bibframe/TaskGroups/URI%20FAQs.pdf
- Task Group on URIs in MARC, Program for Cooperative Cataloging. (2020). "Formulating and Obtaining URIs: A Guide to Commonly Used Vocabularies and Reference Sources." Library of Congress, https://www.loc.gov/aba/pcc/bibframe/TaskGroups/formulate_obtain_URI_guide.pdf
- URIs Guidance Subgroup, Linked Data Advisory Committee, Program for Cooperative Cataloging. (2023). "URIs in MARC Cheat Sheet." In Google Docs.
- "Use Cases for URIs in MARC: Toward Native Linked Data." (2018). In Google Drive.
- "Wikidata:WikiProject URIs in MARC." (202-2023). Wikidata, https://www.wikidata.org/wiki/Wikidata:WikiProject_URIs_in_MARC

Appendix C: Core Documentation

- "MARC object table: a field-by-field analysis of the bibliographic format." (2019). In Google Drive.
- Program for Cooperative Cataloging. (2019-2023). "NACO 024 Best Practices Guidelines." Library of Congress, https://www.loc.gov/aba/pcc/naco/documents/NACO-024-Best-Practices.pdf
- Task Group on Linked Data Best Practices, Program for Cooperative Cataloging. (2019). "PCC Task Group on Linked Data Best Practices Final Report." Library of Congress, https://www.loc.gov/aba/pcc/taskgroup/linked-data-best-practices-final-report.pdf
- Task Group on URIs in MARC, Program for Cooperative Cataloging. (2018). "URI FAQs." Library of Congress, https://www.loc.gov/aba/pcc/bibframe/TaskGroups/URI%20FAQs.pdf
- Task Group on URIs in MARC, Program for Cooperative Cataloging. (2020). "Formulating and Obtaining URIs: A Guide to Commonly Used Vocabularies and Reference Sources." Library of Congress, https://www.loc.gov/aba/pcc/bibframe/TaskGroups/formulate_obtain_URI_guide.pdf
- URIs Guidance Subgroup, Linked Data Advisory Committee, Program for Cooperative Cataloging. (2023). "URIs in MARC Cheat Sheet." In Google Docs.

Appendix D: Needs Identified in Survey Described in PoCo Updates on 3 PCC Pilots, November 5, 2021, slides 10-27.

- Survey had 20 responses
- Why were they interested in URIs in MARC Pilot?

- - 67%: support existing workflows
  - 19%: develop a workflow
  - 14%: something else.
- In 2021, did they want more pilot time?
  - 39%: no, they're done
  - 11%: yes, like 4 more months
  - 6%: yes, like 5-8 months
  - 17%: work is open-ended
- Obstacles encountered
  - 59%: time pressure
  - 30%: lack of data on user impact
  - 30%: ILS functionality
  - 18%: lack of tools
  - 18%: lack of best practices
- MARC fields populated
  - Authority 024
  - Bib 1XX, 7XX, 3XX, 6XX, 758
- Almost all contributed records to WorldCat
- Almost half have a workflow that includes minting URIs
- Alternative vocabularies were considered mostly for:
  - Names 70%
  - Subjects 70%
  - Genre/form 70%
  - Demographic data 60%
  - [the rest is below 50%]
- Most frequently used source vocabularies (excluding id.loc.gov):
  - Wikidata 91%
  - VIAF 86%
  - ISNI 67%
  - ORCID 57%
  - AAT 33%
- URIs Guidance Subgroup observations
  - It looks like most people had pretty clear ideas on what they wanted to do, even had workflows in place.
    - Suggestion: those who participate in the URIs in MARC project have a pretty good idea why they're participating
  - Almost half the participants finished their projects; however, almost 20% have ongoing work.
    - Suggestion: URIs in MARC projects tend to be finite; however, a there are considerable efforts that will be ongoing
  - A general feeling of "time pressure" suggests that this is probably not considered a high priority goal; this is confirmed by the 30% who would like to see more data

on user impact. In addition, the concern that the URIs are not supported by the local ILS will discourage further efforts.
- ○ It appears alternative vocabularies (alternative, that is, to the sources listed in the core URIs-in-MARC documentation – see Appendix C) are sought mostly for names and demographic data, and also for subjects and genre/form.

Appendix E: Use Cases

Derived from "Use Cases for URIs in MARC: Toward Native Linked Data." (2018). In Google Drive.

Discovery
1. Improve user experience in discovery environments:
   a. Use the graph/authority referenced by the URI to enrich the display of inadequate Authorized Access Points
   b. Use URIs on-the-fly to display information about entities
2. Collate and disambiguate:
   a. Use repeated URIs in 024, $0, and $1's rather than Authorized Access Points.
3. Enable browse features:
   a. Use related URIs, e.g. 4XX, 5XX, etc.
4. Update local data for discovery indexing:
   a. Use URIs to go to graphs
5. Collate entities described in article indexes with "traditional" ILS monograph descriptions:
   a. Use shared and/or sameAs URIs.

ILS
1. Enhance the display of inadequate Literals in cataloging modules:
   a. Use information on-the-fly from the graph/authority referenced by the URI
   b. Could even do this for Authorized Access Points
   c. Catalogers would no longer need to make unique strings or worry about display.
2. Collate and disambiguate:
   a. Use Repeated URIs in 024, $0, and $1's in indexing rather than Authorized Access Points.
3. Enable browse features:
   a. Use related URIs, e.g. 4XX, 5XX, etc.
4. Update local data:
   a. Use URIs to go to graphs.
5. Link bibliographic records to the authority within the ILS.

Authority Vendors
1. Improve conditions for entering URIs in MARC:

a. Monitor needs at various organizations
b. Encourage the addition of URIs
c. Implement standards for adding URIs in MARC and other schema.
2. Follow W3C specifications when publishing linked data for library clients.

Towards Native Linked Data
1. Favor the use of URIs over literals when deriving RDF data from the original MARC.
2. Use URIs to make better MARC-to-RDF converters (from all types of MARC data: bibliographic, holdings, item, and authority):
    a. Enrich the output of the converters using data from the graph/authority referenced by the URI
3. Provide vendors with actual instances of URIs that reference graph/authority data:
    a. May help vendors develop linked data tools:
        ■ Converters
        ■ Native linked data editors
        ■ Reconciliation services
        ■ Other services

Appendix F: Formatting and Obtaining URIs

We propose this [Reformatted document](#) as the PCC document derived from the [Wikidata document](#) currently maintained by Adam Schiff, University of Washington. We would expect this document to be published as part of the core URIs in MARC document collection and maintained by PCC. It is cited above as follows:
   ➔ URIs Guidance Subgroup, Linked Data Advisory Committee, Program for Cooperative Cataloging. (2023). "[URIs in MARC Cheat Sheet](#)." In Google Docs.

Appendix G: General Principles
Derived primarily from reports by the PCC Task Group on URIs in MARC and the PCC Standing Committee on Applications Task Group on Enhancing Metadata and Practices in MARC Bibliographic Records.

General principles for catalogers entering URIs in MARC:
   ● Recommendations/guidelines for embedding URIs in MARC must be cost-effective for the existing MARC environment.
   ● Literal values in MARC are sometimes easy to convert to URIs without $0 or $1, thus, in those cases, negating the need to enter those URIs in MARC records.
   ● Avoid adding URIs manually wherever the task can be easily automated. For example, some software, like the Authority Toolkit, feature services that ease the entry of URIs. Reconciliation tools, such as OpenRefine, allow you to find and match a URI from an external

database to an entity that exists in your data. On the other hand, sometimes less-frequently-used vocabularies, or sources using labels that may not be stable or unique, are excluded from services or are difficult to reconcile, justifying the use of manual entry.
- Care should be taken to use canonical and dereferenceable URIs and not simply any http link that presents itself.
- MARC is not in itself a linked data format. URIs are inserted into MARC records primarily to improve outputs of MARC-to-RDF conversions.
- Be mindful of catalogers' time.

General principles for PCC groups offering guidance on URIs in MARC:
- As the initiative broadens, respect and affirm previous Task Group recommendations.
- Any group that is formed in the URIs in MARC initiative should stay in scope of their charge.
- URIs-in-MARC is not a "destination" but a path to something else, primarily conversion to RDF following linked data best practices.

Appendix H: Timeline

2007:	$0 added to MARC
2009:	$0 added to OCLC (See Technical Bulletin 257)
2010:	$0 redefined
2015:	"URIs in MARC: a call for best practices"
2015-2020:	PCC Task Group on URIs in MARC
2016:	Parenthetical prefix "(uri)" no longer required in MARC $0
2016-2022:	PCC Task Group on Identity Management in NACO
2017:	$1 added to MARC
2017:	758 field added to MARC
2018:	$1 added in OCLC (See Technical Bulletin 268)
2018:	PCC Linked Data Advisory Committee charged (still active, 2023)
2018-2019:	PCC Task Group on Linked Data Best Practices
2019-2021:	PCC URIs in MARC Pilot
2020-2021	PCC Wikidata Pilot
2022:	PCC Task Group on MARC Simplification for BIBFRAME Conversion
2022:	PCC Identity Management Advisory Committee charged (still active, 2023)
2022-2023:	PCC SCA TG on Enhancing Metadata and Practices in MARC Bib Records
2022-2023:	LDAC/IMAC URIs Guidance Subgroup