



The International DOI Foundation

From: Norman Paskin, Managing Agent, International DOI Foundation
To: Todd Carpenter, Secretariat ISO TC46/SC9
Date: 30 April 2015
Re: **Report of the Convenor for ad hoc ID interoperability group,**
for TC46/SC9 Beijing meeting, June 2015

Summary

The current position is that the Ad Hoc Identifiers Interoperability group is aligned with the LCC Specifications, specifically the Principles of Identification, and not carrying out any independent work. Last year I noted that “It is hoped that the SC9 RAs will accept the invitations currently being distributed to participate in the LCC itself”: it is pleasing to note that there has been progress along these lines.

I believe it is still appropriate to continue our stance that the ISO Ad Hoc group should remain aligned with LCC, especially now that most of the SC9 identifier bodies are part of LCC. LCC has funding and can do work, whereas the SC9 meets infrequently and cannot engage in such a wide cross-sector activity; in addition, there is a strong case to be made for not re-inventing what is being done elsewhere.

It remains an option for ISO SC9 to formally adopt or endorse the LCC Principles of Identification (without appendices) and possibly Appendix 1 (but not Appendix 2) also.

I regret that I am unable to attend the SC9 Beijing meeting; however I have asked Paul Jessop to respond to any discussion on this issue and I remain available to answer any queries by e mail.

1. LCC progress

LCC has (as intended) been relatively inactive since the SC9 Washington meeting while the two major visible implementations of the work (the Copyright Hub and the RDI project) work their way through and notify us of any issues or requirements arising for LCC. It's taken longer than expected but the testing has proved successful; the Hub has now produced a request to LCC (discussed below) for support. A revised LCC web site <http://www.linkedcontentcoalition.org/> has just gone live, updating the older “LCC project” web site which remains archived .

It has been agreed to widen the LCC remit for membership from simply “standards development bodies” to include key LCC standards implementers too. This was prompted by an approach from the Copyright Hub Ltd. with a formal request that LCC should take responsible for management of the LCC specifications which are key to the Hub operations*.

The current membership of LCC is thirteen bodies, as follows, and includes the majority of the SC9 identifiers authorities. Members as at 30 April 2015 are: **International DOI Foundation; NISO; Movielabs (EIDR); PLUS; IPTC; EDItEUR; CISAC (including ISWC-IA); IFPI (including ISRC-IA); ISBN; ISSN; ISNI; ISMN; Copyright Hub**; and invited pending decisions **ISAN** and **ISLI**. It is open to other standards development bodies and key LCC implementers. It safeguards the LCC specifications – which are being implemented in the Copyright Hub and the Rights Data Integration project, and potentially other applications), to ensure they are in line with the fundamental indecs/CONTECS etc. derived model.

2. Current LCC uses

Rights Data Integration project <http://www.rdi-project.org/> . The bulk of the technical development work on RDI has been completed. The system can now demonstrate a range of user queries (discover content, discover status, discover licensor, discover terms, request/grant license and discover usable content) on sources of rights data. Sources in RDI are drawn from a range of media types (images, music, audiovisual and text) and include rights owners, managers and CMOs who express their data in a range of proprietary and standard formats. All communication is undertaken in RDI through a central hub where queries and responses are transformed into a single format using the LCC Rights Reference Model. The RDI project will continue until the end of 2016 but much of the core technology developed during the project, and in particular the LCC-based ontology, has been incorporated into the Copyright Hub.

Copyright Hub: <http://www.copyrighthub.co.uk/home>. The Copyright Hub has now been launched: see <http://www.copyrighthub.co.uk/Documents/Copyright-Hub-alpha.aspx> . (Visit the Copyright Hub site to subscribe to the newsletter and get future updates.). The Copyright Hub Governance Group, formed to advise the Copyright Hub Executive Board on the full range of matters relating to governance, recommended that the Hub engage with LCC, and subsequently this was approved by the Hub Board. LCC has now received from the Hub “a request formally that the Linked Content Coalition will provide governance and oversight for two things: (1) The mappings necessary for member bodies to participate in the Copyright Hub Ecosystem; (2) The underlying RRM Ontology necessary to support these mappings. LCC will make these available to the Copyright Hub. In order to achieve these points, the Copyright Hub is happy to make available such resource as is possible to provide facilities to make these available online.” The text of the full recommendation is appended for information at the end of this report, and will be of interest to SC9 members as it covers the relationship of a major implementation to Standards Bodies in general, not just LCC.

Copyright Hub International project. The Hub is also part of a bid for EU funding for a Copyright Hub International project under Horizon 2020 ICT19, which has been endorsed by some LCC membership bodies and which, if successful, would provide funding for significant interoperability work. The proposed project builds on the LCC and other work performed both in the UK with the Copyright Hub and at EU level with the Rights Data Integration Project. In this new project proposal relevant points on identifier interoperability include the definition and development of solutions to integrate into the rights data network a range of content identification technologies:

- IDs embedded in content as metadata
- IDs embedded in content as "watermarks" (steganography)
- Web "resolvable" content IDs
- "content recognition" by digital pattern matching
- and possibly Digital Rights Management and Lightweight Content Protection Measures

News of this bid will be available in the second half of the year.

3. LCC documents on identifier interoperability

The LCC Principle of Identification documents have been assigned persistent identifiers (following the LCC Principles!) as follows:

- The Linked Content Coalition Principles of Identification (without appendices): DOI 10.1000/287 (= dx.doi.org/10.1000/287)
- Appendix 1: Identification in the digital content network: 10.1000/288
- Appendix 2: Identifier implementations in the digital content network: 10.1000/289
- The Linked Content Coalition Principles of Identification (with appendices): 10.1000/283

Last year a suggestion was made that SC9 consider whether to endorse in some form the core Principles of Identification document only (i.e. without the appendices) . This remains a possibility, if it is felt that this would add value to either LCC or ISO or both. For the purposes of the LCC specification, only the core Principles of ID are necessary, as this provides the key logical elements which are likely to remain unchanged. It is possible that Appendix 1, but I suggest not Appendix 2, might be considered also:

- *Appendix 1 (Identification in the digital content network)* provides the logical underpinning of the LCC Principles of Identification document and elaborates the recommendations made there. It therefore contains some useful fundamental material on the often discussed questions of identifier application (sameness and difference etc.), which is recommended for consideration and has been found useful. It is open to discussion by the ad hoc interoperability group whether this material should be formally adopted also, in addition to the Principles document.
- *Appendix 2 (Identifier implementations in the digital content network)* provides an overview of the main current implementations of identifiers relevant to linked content. As this is a status report on current implementations it would require constant updating to maintain this as a current working document; it is already out of date. LCC do not currently plan to do this. Therefore I do not recommend that this be a subject for ISO activity, unless the group feels that (a) an update would have any use ; and (b) there is willingness to provide the hands-on effort required to support the editing which would be needed.

4. Possible additional steps

Streamlining LCC with other efforts

The LCC activity lies directly on the family tree of activities which took the original indecs project (1998-2000) and from this developed CONTECS and thence the ISO MPEG RDD (ISO 21000-6: www.iso21000-6.net/) ; the Vocabulary Mapping Framework (VMF: www.doi.org/VMF/) ; and now the LCC data model being used in the Copyright Hub and the EU Rights Data Integration project. All these use fundamentally the same approach, and are “backward compatible”, so it seems to make sense to fold all the remaining vestiges of VMF, RDD, and CONTECS into LCC, as far as we can and the DOI Foundation is currently investigating how it can assist in making proposals; suggestions and advice from other participants in these projects are welcome.

Developing interoperability technical tools

The Hub, RDI and DOI are collaborating in the preparation of a proposal for data type semantics, in the form of recommendations for rights-based types which could be used by all projects. This may well prove to be useful as the start of a type ontology which might be backed by LCC (or some LCC members). It is expected that this paper will be available in the second half of this year.

5. Extract (Section 7) from Governance Recommendations of the Copyright Hub

“The Copyright Hub and Standards Bodies

The Copyright Hub is not itself a standards development and maintenance body, but it is a consumer and implementer of standards. Specifically, the Hub has adopted a data architecture built on the Linked Content Coalition (LCC) specifications, in particular the Rights Reference Model (RRM), Principles of Identification, and Principles of Messaging. The Hub has a strong interest in ensuring that these underlying specifications are stable; are managed and developed to take account of market changes and requirements in a broad spread of usages; and are widely adopted by others.

The Hub will also need to interact with other standards bodies. Hub activities will be reliant on stable and properly managed mappings from whichever standard is used in an Ecosystem participant’s source repository and the format used by the Hub. It will need to engage with whichever standards user communities wish to use to input to the Hub. The same is true of the ontology which underpins these mappings; central governance and overview of all the mappings and transformations which are required for the effective operation of the Hub is essential.

We recommend:

- The Hub should become a member of The Linked Content Coalition Ltd (LCC Ltd), the body which manages the LCC specifications and which makes them are freely available, in order to engage with governance of Hub/LCC ontology and mappings. LCC Ltd has invited the Hub to become a Member. The purpose of LCC is to facilitate and expand the legitimate use of content in the digital network through the effective use of interoperable identifiers and metadata from multiple sources: it is therefore evident that the Hub and LCC share many fundamental aims. Current members

include many of the standards of most significance to the Hub, including EDItEUR (publishing industry) standards); IPTC (newspaper industry); NISO (libraries and publishers, particularly in the academic space); DOI (all media types); Movielabs (a specific DOI implementation for film and broadcast); PLUS (photography); CISAC (music) and several of the ISO standard identifiers for specific types of content (ISBN, ISSN, ISRC, ISMN, ISNI). Equally, LCC views the Hub as a key implementation of its principles and is keen to have Hub participation in its activities. LCC members have participated in both the Hub Technical Working Group and Hub Governance Working Group to date, and are willing to participate in further advisory roles as needed.

- Standards development and maintenance is not and should not become a core competence of the Hub. The LCC specifications should remain the responsibility of LCC Ltd, so as to incorporate any other non-Hub developments which may add value to the underlying core specifications (e.g. incorporating the RDI work). LCC should be requested to take responsibility for governance of both the necessary mappings and the underlying RRM Ontology (and have indicated they are willing to do so) and make these available to the Hub. The Copyright Hub should provide support for this with some limited technical resource.
- The Hub should engage in detailed discussions with LCC Ltd on specifying a point of contact to enable input and output of mappings and other standards requests, so as to facilitate efficient processing and mutual benefit, and to define which activities are clearly “Hub” and which are “common to all LCC uses”.
- The Copyright Hub should also maintain close relationships with appropriate individual standards bodies. This will include other members of LCC Ltd., where specific sector issues are to be discussed; and other standards organisations outside LCC. This should be achieved through regular contact and updates, stakeholder meetings, and continuing engagement in the Hub’s Technical Working Group and Partners Board.”