



ISQ

INFORMATION STANDARDS QUARTERLY

WINTER 2012 | VOL 24 | ISSUE 1 | ISSN 1041-0031

SPECIAL EDITION: YEAR IN REVIEW AND STATE OF THE STANDARDS



NISO AND TC46
2011 YEAR IN REVIEW

FROM ISO 2788 TO ISO 25964:
THE EVOLUTION OF
THESAURUS STANDARDS

DEVELOPMENT OF RESOURCE
SYNCHRONIZATION STANDARD

STATE OF THE
STANDARDS

NISO

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2709;2008, FORMAT FOR INFORMATION EXCHANGE

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Join us each month for NISO's Open Teleconferences—an ongoing series of calls held on the second Monday of each month as a way to keep the community informed of NISO's activities. The calls also provide an opportunity for you to give feedback to NISO on our activities or make suggestions about new activities we should be engaging in. **The call is free and anyone is welcome to participate in the conversation.** All calls are held from 3:00 - 4:00 p.m. Eastern time.

JANUARY

- 11 Identify This! Identify That! New Identifiers and New Uses (*NISO Webinar*)
- 20 NISO Standards Update at ALA Midwinter 2012 (*Dallas, TX*)

FEBRUARY

- 8 Embracing the Cloud: Real Life Examples of Library Cloud Implementation (*NISO Webinar*)
- 22 Taking Library Data from Here to There (*NISO/DCMI Joint Webinar*)

MARCH

March Two-Part NISO Webinar: Understanding Critical Elements of E-books: Standards for Formatting and Metadata

- 14 EPUB3: Putting Electronic Books into a Package
- 21 Find That E-Book—or Not: How Metadata Matters

APRIL

- 11 What to Expect When You're Expecting a Platform Change (*NISO Webinar*)
- 25 Schema.org and Linked Data: Complementary Approaches to Publishing Data (*NISO/DCMI Joint Webinar*)

MAY

Two-Part NISO Webinar: Understanding Critical Elements of E-books: Acquiring, Sharing & Preserving

- 16 Can I Access the World? Involving Users in E-book Acquisition and Sharing
- 23 Heritage Lost? Ensuring the Preservation of E-books

JUNE

- 13 Making Better Decision with Usage Statistics (*NISO Webinar*)
- 21 NISO/BISG Forum: The Changing Standards Landscape (*Pre-conference workshop, Anaheim, CA*)
- 21-26 NISO at ALA Annual 2012 (*Anaheim, CA*)

AUGUST

- 8 Content on the Go: Mobile Access to E-Resources (*NISO Webinar*)
- 22 Metadata for Managing Scientific Research Data (*NISO/DCMI Joint Webinar*)

SEPTEMBER

- 12 Understanding Critical Elements of E-books: The Social Reading Experience of Sharing Bookmarks and Annotations (*NISO Webinar*)
- 24 Tracking it Back to the Source: Managing and Citing Research Data (*NISO Forum, Denver, CO*)
- 26 Discovery and Delivery: Innovations and Challenges (*NISO Webinar*)

OCTOBER

- 10 MARC and FRBR: Friends or Foes? (*NISO Webinar*)
- 18-19 The E-book Renaissance, Part II: Challenges and Opportunities (*NISO Forum, Boston, MA*)
- 24 Embedding Linked Data Invisibly into Webpages (*NISO/DCMI Joint Webinar*)

NOVEMBER

- 14 Beyond Publish or Perish: Alternative Metrics for Scholarship (*NISO Webinar*)

DECEMBER

- 12 Connecting the Dots: Constellations in the Linked Data Universe (*NISO Webinar*)

ISQ

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INFORMATION STANDARDS QUARTERLY (ISQ) is a publication by the National Information Standards Organization (NISO). ISQ is NISO's print and electronic magazine for communicating standards-based technology and best practices in library, publishing, and information technology, particularly where these three areas overlap. ISQ reports on the progress of active developments and also on implementations, case studies, and best practices that show potentially replicable efforts.

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CONNECT

TO HAVE AN IMPACT

WHY JOIN NISO



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■ As a NISO member, YOU shape the agenda.

Digital content is at the heart of your operations, so you want it organized, accessible, searchable, protected, and preserved. This is what NISO technical committees and working groups ensure. NISO employs a community approach to solve some of the most vexing issues in our community. As a voting member, you help determine the priorities of projects that NISO undertakes and ensure that consensus is reached on proposed standards.

■ Investment in NISO membership yields returns to YOUR bottom line.

Whether you define your bottom line in terms of profits or in service to library patrons, NISO gives you the opportunities and information you need to **gain a competitive advantage**. You gain it through shaping the work of technical committees and interacting with people who influence changes and trends in the community. You have access early in the development stage of upcoming national and international standards that can improve your services and make your operations more efficient. You can participate in draft trials of standards that allow you to be an early implementer.

■ Through NISO, you connect with the people who mean the most to YOUR BUSINESS.

NISO is the only organization that focuses on the intersection of libraries, publishers, and information services vendors. If you're a vendor, you can develop standards and best practices shoulder-to-shoulder with customers who tell you what they need. If you're a library, you work with service providers who learn from your expertise, respond to your challenges, and explore new solutions with you. If you're a publisher or content provider, you can work with both vendors and librarians to ensure your content can have the widest accessibility and use with appropriate intellectual property protection. **You connect with decision-makers who make your business better.** And it all happens in neutral settings where all the players are on equal footing. NISO members get discounts for attending educational forums and webinars where community members showcase their successes and you can network in small, informal settings.

■ NISO enhances your image in the community.

By crediting members who are integral to developing standards and best practices, highlighting members' expertise through webinars and forums, and providing writing opportunities in NISO publications, **NISO makes it clear that member organizations are leaders in our information community.**

Your organization needs to be a driver, not a follower, of information services and technology. Our members are **THERE**. They contribute their **VOICE**. They make a **DIFFERENCE**.



Todd
Carpenter

LETTER FROM THE PUBLISHER

Each year, ISQ features a year in review issue that covers the tremendous amount of work the organization and its community of volunteers have done in the previous year. The past year is possibly one of NISO's busiest as you can see from the stories included in this issue. However, it is important to reflect that milestones are simply points along a journey. While it is worthwhile to pause and consider the accomplishments we have made, the journey is far longer and far more involved than any one period of time.

While we've reduced the time from project launch to completion—on average to something short of 28 months—there is so much more that must be done. It's difficult, therefore, to pinpoint exactly when a particular project can be considered a success. NISO seldom considers projects "done" even after they are published. While publication is an important milestone, it probably isn't half-way along the journey. The post-publication activities of education, promotion, adoption, supporting documentation, extensions, and change management are critical elements of the process that are just as—if not more—important than development and publication. However, they frequently don't get the same recognition.

It is for this reason that, while we look back on our successes with this issue, it is equally filled with a variety of need-to-be-done items on the task list. We shouldn't view this as a negative, but as a positive forward-looking arc. We do have a lot to do, and the more projects we begin, the longer our list of things to do will become. Projects are almost never finished and then put on the shelf for posterity. Standards development is a process of improvement; something that doesn't end. We may cease heading down a particular path in favor of another approach, but we don't stop moving forward.

So please enjoy this quarter's issue. Reflect on our successes and accomplishments. Ponder the contributions of all of those who have brought us to this place, for we do owe them our gratitude. But also consider what the next steps are and try to envision where each of these initiatives will take us. Think of what we will need to do next and how the community will react. And finally, ask yourself what role you will play in advancing the work described in this issue. What will you do to bring these projects to fruition? Will you, can you, implement them in your organization? That is the purpose of milestones: to remind you of where you are going as much as to tell you where you have been.

Sincerely,

A handwritten signature in black ink, appearing to read 'Todd Carpenter'.

Todd Carpenter | *Publisher*



NISO

NETTIE LAGACE

2011 YEAR IN REVIEW

This report summarizing the previous year's standards development work appears in the first issue of the year of *ISQ* to keep you informed of the scope and status of NISO's programs on an annual basis.

If you would like to be involved with NISO standards development, contact the NISO office by phone (301.654.2512) or via e-mail (nisohq@niso.org).



New Initiatives



Progressing
Initiatives



Standing
Committees



Education &
Communications



Open Discovery Initiative

APPROVED: August 23, 2011

Discovery to Delivery Topic Committee

Chairs: **Marshall Breeding** (Vanderbilt University), **Jenny Walker** (Ex Libris)

Following an invitational meeting convened at the ALA Annual Conference in New Orleans on June 26, 2011, to gauge interest in developing standards or recommended practices for next generation library discovery services, the meeting convenors submitted a new work item proposal to NISO to launch an Open Discovery Initiative (ODI).

Newer discovery services based on indexed search have the ability to deliver more sophisticated services with instant performance, compared to the federated search techniques used previously. These discovery services depend on the cooperation of information providers to provide access to metadata, and increasingly also to the full-text of information resources, in order to create effective indexes. With these indexes built based on private agreements and ad hoc exchange methodologies between information providers and discovery service creators, it is often not clear to the subscribing libraries what content is indexed; what is indexed in full text, by citations only, or both; and whether the metadata derives from aggregated databases or directly from the full-text.

There was general agreement among the attendees present at the ALA meeting regarding the need for: a standard way for information providers to provide content to discovery service creators, a consistent vocabulary regarding all the elements involved, clarity in the business rules that apply to the content once indexed, and clear descriptors regarding the extent of indexing performed for each item or collection of content and the level of availability of the content.

The new ODI working group started its work in January 2012 to define best practices for the new generation of library discovery services that are based on indexed search. Goals for the working group include: creating ways for libraries to assess the level of participation by information providers in discovery services; identifying ways to streamline the process by which information providers work with discovery service vendors; defining models for fair linking from discovery services to publisher content; and determining what usage statistics should be collected. ■



Physical Delivery of Library Resources Working Group

APPROVED: September 1, 2009

Discovery to Delivery Topic Committee

Chairs: **Valerie Horton** (Colorado Library Consortium), **Diana Sachs-Silveira** (Novare Library Services)

NISO RP-12-2012, *Physical Delivery of Library Resources*

Following a public comment period in July–August 2011, this Working Group completed the recommended practice *Physical Delivery of Library Resources*, which was published in January 2012. It focuses on three key areas: the physical move, automation, and the management of physical delivery. While the scope of the document is limited to the external delivery of items between separately administered libraries, many of the recommendations could apply to delivery between branches of a single library system, as well. Ranging from labeling and containers to automation and contracting with courier services, this Recommended Practice addresses both

the lending and the borrowing libraries' activities related to delivering and returning a physical item.

The Working Group examined closely the workflow of resource sharing from patron to borrowing library to lending library and back. Best practices were identified at each step that would make services more efficient. The recommendations cover things as small as rubber banding and as large as automated material handling systems.

All libraries involved in resource sharing—as well as delivery, sorting, courier, and transportation service providers—are encouraged to adopt these recommendations. ■



Educational Programs

NISO continued its robust educational programs in 2011 with three in-person forums, including the fifth annual NISO/BISG forum at ALA Annual, as well as fourteen webinars (including two related parts for three events). Over 175 people attended NISO's forums, and an additional 1000 sites registered for NISO webinars. With an average of four people viewing the live webinars at each site, that's close to 5000 people benefiting from NISO's education events! Since registrants have access for a year to the webinar recorded versions, even more people were able to learn from these events.

The Dublin Core Metadata Initiative expanded its partnership with NISO to present three webinars that drew participants from over 200 sites. This partnership continues into 2012 with four joint webinars.

NISO also held free open teleconferences every month except July to keep the community apprised of activities and provide an opportunity for feedback.

Slide presentations from all of the events and the webinars, and audio recordings of the open teleconferences, are available on the NISO website in the 2011 events area. ■



SUSHI (Standardized Usage Statistics Harvesting Initiative) Standing Committee

Business Information Topic Committee

Chairs: **Bob McQuillan** (Innovate Interfaces, Inc.), **Oliver Pesch** (EBSCO Information Services)

ANSI/NISO Z39.93-2007, *The Standardized Usage Statistics Harvesting Initiative (SUSHI) Protocol*

To address feedback from some SUSHI client implementers who had difficulty in testing their implementation, a SUSHI Server subcommittee of the Standing Committee drafted *Providing a Test Mode for SUSHI Servers* (NISO RP-13-201x) and issued it for trial use, ending in early 2012.

The full Standing Committee developed a new draft recommended practice, *COUNTER-SUSHI Implementation Profile* (NISO RP-14-201x), which provides a practical implementation structure to be used in the creation of reports and services related to harvesting of COUNTER Release 4 reports using the NISO SUSHI Protocol. While SUSHI compliance was introduced in Release 3 of COUNTER, the draft Release 4—which has an implementation deadline of December 31, 2013—now includes demonstration of SUSHI compliance as part of the audit. The draft COUNTER-SUSHI

recommended practice was issued for a public comment period, also ending in early 2012.

The committee's support for implementers continued in 2011 with new sample COUNTER reports added to the SUSHI Reports Registry, new organizations joining the SUSHI Server Registry, and an active SUSHI Developers e-mail list to answer inquiries. Several SUSHI implementers shared their experiences in articles in *Information Standards Quarterly* in the Winter 2011 and the Fall 2011 issues.

As part of NISO's Memorandum of Understanding with Project COUNTER, the NISO SUSHI Standing Committee has responsibility for maintaining both the COUNTER and the SUSHI schemas. Both the *counter-sushi* and the *counter* schemas were updated to support COUNTER Release 4. ■



SERU (Shared Electronic Resource Understanding) Standing Committee



Business Information Topic Committee

Chairs: **Judy Luther** (Informed Strategies), **Selden Lamoureux** (retired, formerly University of North Carolina, Chapel Hill)

NISO RP-7-2008, *SERU: A Shared Electronic Resource Understanding*

A revision of the SERU Recommended Practice was undertaken to address feedback from SERU implementers who wanted to use the guidelines with a variety of resources, not just e-journals—in particular for e-books. The revision primarily entailed adjusting the language that specifically references subscriptions to allow for broader application of SERU, and including a new paragraph around ILL. The draft revision was issued for public comment through February 19, 2012.

The SERU Standing Committee also conducted a brief online survey to obtain feedback from people who had indicated an interest in using SERU. Of the 80 respondents, 40.7% had not yet used SERU, 45.7% had used SERU between 1-5 times, 7.4% 5-10 times, 2.5% 10-15 times, and 3.7% more than 15 times. A number of the comments recommended more publicity about SERU and addressed the need for more publishers to be on board.

As a first step in publicizing SERU, a new SERU logo was developed that those in the SERU Registry can use to announce and promote their SERU participation. Publishers and content providers can use the logo to identify products that are available via SERU as described in the Recommended Practice. Libraries and consortia can use the logo to identify that they are SERU participants. Refer to the *SERU Logo Guidelines for Use* on the SERU workroom website for information on allowable use of the logo.

Work on updates to the SERU website continues, with a plan to create a “How To” section with examples, suggestions, and cheat sheets to help publishers and libraries develop their SERU workflows. Greater promotion of SERU to publishers was a frequent request in the survey that went out this past winter, and the group plans more aggressive efforts to expand registration. ■



I² (Institutional Identifiers) Working Group

APPROVED: January 10, 2008

Business Information Topic Committee

Chairs: **Grace Agnew** (Rutgers, The State University of New Jersey), **Oliver Pesch** (EBSCO Information Services)

I² and ISNI: Improving the Information Supply Chain with Standard Institutional Identifiers. Information Standards Quarterly, 2011 Summer 23(3):26-29.

The I² Working Group held a number of discussions in 2011 with the International Standard Name Identifier International Agency (ISNI-IA), who will be the registration authority for the international standard ISO 27729, *Information and documentation – International standard name identifier (ISNI)*. The ISNI standard was developed to provide a unique identifier for “public identities of parties” throughout the media content industries. The I² Working Group saw an opportunity to extend the use of the ISNI to institutional identification, rather than creating yet another identifier for this purpose.

ISNI-IA was very receptive to the proposal and the two groups worked together to harmonize their metadata schemes and ensure that the necessary metadata for institutional identification could be collected. I² is also working with the ISNI-IA to identify organizations within the information supply chain who would be willing to be a regional registration agency for institutional use of the ISNI identifier.

The I² Working Group will be finishing up its project with a report to summarize its work and the successful conclusion of the implementation of a workable institutional identifier, under ISNI, to make the information supply chain work better. ■





Information Standards Quarterly (ISQ)

Four themed issues of ISQ were published in 2011:

Winter 2011: *2010 Year in Review*

Spring 2011: *Views of the E-book Renaissance*

Summer 2011: *Organization and People Identifiers*

Fall 2011: *Standards Implementation Benefits*

For the first time, NISO published the electronic version of the *Information Standards Quarterly* magazine in open access. Full issues and individual articles can be downloaded in PDF format from www.niso.org/publications/isq/. The print edition continued to be available to subscribers and members who opted in. A print-on-demand capability was made available to others who wish to purchase individual print issues.

The popularity of the open access was clear from the hundreds, even thousands, of downloads of individual articles and of the full issues.

Back issues of the magazine and its predecessor newsletters will be posted online in open access in 2012. ■

JATS: Journal Article Tag Suite Working Group

APPROVED: September 2, 2009

Content and Collection Management Topic Committee

Chairs: **Jeff Beck** (National Center for Biotechnology Information, U.S. National Library of Medicine), **B. Tommie Usdin** (Mulberry Technologies, Inc.)

NISO Z39.96-201x, *JATS: Journal Article Tag Suite*

The JATS working group has revised version 3.0 of the National Library of Medicine (NLM) *Journal Archiving and Interchange Tag Suite* to handle outstanding requests related to the earlier version and to make it an ANSI/NISO standard. The revision, which merged the three parts of the suite—Archiving and Interchange, Journal Publishing, and Article Authoring—was issued as a draft standard for trial use (NISO Z39.96-201x) from March 30 - September 30, 2011. Supporting documentation, including schemas in DTD, RELAX NG, and W3C schema formats, was also made available during the trial.

The Working Group has spent considerable time since the trial ended responding to the many content- and schema-related comments and suggestions. A final version is expected to be ready for ballot by NISO Voting Members in the second quarter of 2012.

The draft for trial use was marked as version 4.0 to follow the previous NLM 3.0 version. However, the final published standard will be balloted as version 1.0 of NISO Z39.96. ■

CORE (Cost of Resource Exchange) Standing Committee



Business Information Topic Committee

Chair: **Kathy Klemperer** (Harrassowitz)

NISO RP -10-2010, *Cost of Resource Exchange (CORE) Protocol*

The CORE Standing Committee developed a logo (shown above) to assist in outreach efforts to encourage the adoption of the CORE Recommended Practice, which defines an XML schema to facilitate the exchange of cost data and other financial information related to the acquisition of library resources between two automated systems.

A set of FAQs was posted to the CORE webpage including: *General Questions*, *Librarian Questions*, and *Systems Developers & Subscription Vendors*. The group is developing scenarios to illustrate applications of the CORE protocol. The ERM group (see separate box) included in its white paper a recommendation to system vendors to add CORE implementation to their development plans. ■





E-book Special Interest Group

APPROVED: May 4, 2011

Architecture Committee

Chairs: **Todd Carpenter** (NISO), **Nettie Lagace** (NISO)

Due to the wide-ranging interest in e-books and the many standards-related issues involved, the Architecture Committee launched an E-book Special Interest Group (SIG) to identify and prioritize where NISO should engage. The E-book SIG is charged with exploring a range of industry best practices and standards related to the creation, distribution, discovery, delivery, and preservation of digital book content. Following a May call for participation, a Core group was formed that identified and formed the following subgroups:

- » Accessibility
- » Discovery Tools and Linking
- » Distribution
- » Metadata

Each subgroup generated a number of possible project areas for NISO to pursue, which the Core E-Book SIG members reviewed for prioritization. Several new work items for 2012 are expected from this first phase of work from the E-Book SIG. ■



KBART Phase II Working Group

A Joint NISO/UKSG Initiative

APPROVED: March 17, 2010

Discovery to Delivery Topic Committee

Chairs: **Andreas Biedenbach** (independent information professional), **Sarah Pearson** (University of Birmingham)

NISO RP-9-2010, *KBART: Knowledge Bases and Related Tools*

In addition to providing support for the Phase I Recommended Practice, KBART Phase II is building on the 2010 document and focusing on the more advanced, complex issues that cause problems related to OpenURL Knowledge Bases, including accessibility of e-books, conference proceedings, hosting services, and open access content.

The group is working on metadata changes or additions to the original recommended practice that are needed to address the broadened content types. To obtain additional input on open access content and consortial needs, a survey was developed to send to the community via mailing lists in early 2012. The group is also starting to give thought to the topic of sustainability of metadata testing and long-term adoption within the national and international landscape.

The Working Group made substantial progress in 2011 in advancing the adoption of the Phase I Recommended Practice. A KBART Registry of knowledge base supply chain contacts is available, as well as a list of organizations that have officially endorsed KBART. Endorsers must supply a sample file, which the Working Group reviews; following approval that it meets the KBART recommendations and the provider making the sample file publicly available, the provider is added to the KBART endorsers list. Over 75 providers were on the endorsers list at the end of 2011. The RP is also gaining traction within consortial licenses, most notably within the UK with the JISC/NESLI2 model license, which is including KBART for 2012. ■





DAISY Standard Revision Working Group

APPROVED: August 29, 2008

Content and Collection Management Topic Committee

Chairs: **George Kerscher** (DAISY), **Markus Gylling** (DAISY)

ANSI/NISO Z39.86-2005, *Specifications for the Digital Talking Book*

NISO Z39.98-201x, *Authoring and Interchange Framework for Adaptive XML Publishing Specification*

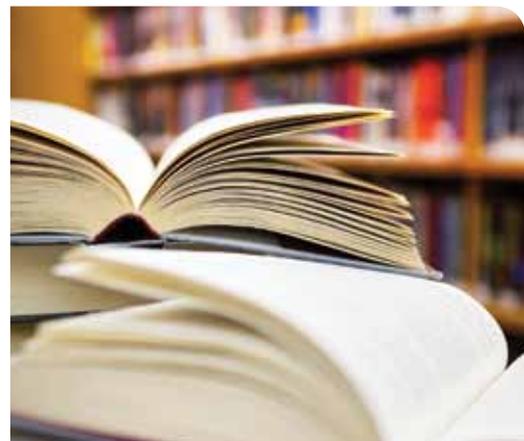
The revision to the 2005 Digital Talking Book (DTB) standard, commonly known as the DAISY standard, was envisioned to be in two parts, one on the authoring and interchange framework and one on distribution. Part A, *Authoring and Interchange Framework for Adaptive XML Publishing Specification*, was issued as a draft for trial use from March 28–September 28, 2011.

Some members of the NISO revision working group were also participants on the International Digital Publishing Forum (IDFP) committee to revise the EPUB standard. Through their efforts and those of the DAISY Consortium—the maintenance agency for the EPUB standard as well as for the NISO DTB standard—version 3 of the EPUB standard contained sufficient support for the needed accessibility capabilities for the DAISY Revision Working Group to recommend use of EPUB 3 in lieu of developing the planned distribution part of the revision.

Feedback from the trial of Part A indicated that while the significant nature of the changes was welcome, there would be a continued need to use the existing DTB standard until accessible reader technology could make the transition to the new formats, which could take a number of years. As a result, the Working Group proposed, and the Content & Collection Management Topic Committee approved, the issuance of the “revision” as a wholly new standard (Z39.98) and a reaffirmation ballot for the old DTB standard to support its continued use.

While the scope of the 2005 standard was print books, over time it was used for a wide variety of content. The new framework addresses this need for more content types by replacing a single XML language with an XML-based framework that allows the creation of custom “languages” (referred to as profiles) that can be tailored for particular content types. Built on established standards from the W3C and ISO, the new framework utilizes smaller, specialized modules that can be reused and combined in different ways. The standard does not impose any limitations on what kinds of distribution formats can be created from it, including DAISY DTBs, e-text, Braille, and large print. This extends the audience for the standard beyond just accessible publishing to any content creators who want to distribute their material to a variety of users or in multiple formats.

Both the new Framework standard approval ballot and the reaffirmation ballot for the 2005 DTB standard will take place in early 2012. ■



Z39.7 Data Dictionary Standing Committee

Business Information Topic Committee

Chair: **Martha Kyrrilidou** (Association of Research Libraries)

ANSI/NISO Z39.7, *Information Services and Use: Metrics & statistics for libraries and information providers – Data Dictionary* (www.niso.org/dictionary)

The Standing Committee identified and summarized in 2011 all the approved changes from the continuous maintenance process for updating the Z39.7 standard. This includes integration of the content from the original appendices *Methods of Measurement* and *Measuring the Use of Electronic Library Services* into the main body of the standard. The online standard is currently being edited to incorporate those changes.

A ballot by NISO voting members for a new revision of the standard is planned for 2012.

In the latter part of 2011, the Standing Committee also began discussing additional topics related to definitions of the library, value of performance indicators, and maintenance of liaisons with related efforts, some international. ■

IOTA (Improving OpenURLs Through Analytics) Working Group

APPROVED: December 8, 2009

Discovery to Delivery Topic Committee

Chair: Adam Chandler (Cornell University)



Oversight of the IOTA Working Group was moved from the Business Information Topic Committee to Discovery to Delivery to provide better linkage with other groups, such as KBART, that are working on streamlining access through link resolvers. IOTA and the NISO/UKSG KBART Phase II Working Group have already had discussions about potential collaboration on link-to syntax that couples link resolvers to content providers. Link-to syntax issues are estimated to be the cause of one-third of OpenURL failures.

Over 21.5 million OpenURLs had been analyzed by year-end 2011 from log files supplied by various sources. Available IOTA reports show—for a particular source vendor or database—the element or string pattern variations, core element frequency, and string pattern frequency. Such variations and patterns can illustrate potential problems

that will be encountered when responding to OpenURL queries. The working group has also developed an algorithm to compute a new “completeness” score that tests the assumption that more information makes for a better OpenURL and that particular elements are more important than others (addressed through element weighting).

Work continues on improving the data loading and the user interface, updating the IOTA website for better readability and access, new and updated documentation, new support examples, and general bug fixes and outreach support through meeting presentations. Published articles on IOTA appeared in the February issue of *Against the Grain* and in the March/April 2011 issue of *D-Lib*.

Both vendors and participating libraries continue to be encouraged to provide data to help with analysis. ■

NCIP (NISO Circulation Interchange Protocol) Standing Committee

Discovery to Delivery Topic Committee

Chair: Mike Dicus (Ex Libris), Rob Walsh (EnvisionWare)

Maintenance Agency: EnvisionWare

ANSI/NISO Z39.83-1-2008, *NISO Circulation Interchange Part 1: Protocol (NCIP)*

ANSI/NISO Z39.83-2-2008, *NISO Circulation Interchange Protocol (NCIP) Part 2: Implementation Profile 1*

An *Introduction to NCIP*, which provides a basic introduction to NCIP for libraries and implementers and links to sources of additional information about the standard, was published on the NCIP website in April 2011.

The NCIP Implementers Registry continues to grow and is available to libraries as an assessment tool for evaluation of a system's use of NCIP for interoperability with other applications. In addition to full profiles for each vendor listed, the registry information can be filtered by NCIP version, role (initiator vs. responder), and by service (resource sharing vs. self-service).

The Standing Committee completed in 2011 a revision to both parts of the standard, identified as version 2.02, that incorporates real-world feedback and experience into the standard with changes that improve the usefulness and practicality of the various services. In addition to the earlier changes from a maintenance release (2.01), the revision adds:

a repeatable, optional Bibliographic Id to Loaned Item and Requested Item; optional Date Due to Item Optional Fields; UPC and GTIN to Bibliographic Item Identifier Code scheme; and DVD and Blu-Ray to Medium Type scheme. One of the larger changes is the addition of a Lookup Item Set service that allows an initiator to query a set of items that may share some kind of relationship with a single request. The revision will be presented to NISO Voting Members for approval in the first quarter of 2012.

The NCIP Standing Committee reviews status of implementations and other general business on monthly calls. Twice a year, in-person meetings are held to review ongoing updates to the NCIP protocol. The next in-person meeting will be April 25-26, 2012 in Winchester, Virginia, hosted by TLC. The closing date for updates to be submitted for discussion at this meeting is March 1, 2012. ■



Supplemental Journal Article Materials Project

A Joint NISO/NFAIS Initiative

APPROVED: April 16, 2010

Content and Collection Management Topic Committee

Business Working Group Chairs: **Linda Beebe** (American Psychological Association), **Marie McVeigh** (Thomson Reuters)

Technical Working Group Chairs: **Dave Martinsen** (American Chemical Society), **Sasha Schwartzman** (American Geophysical Union)

This goal of this joint project with the National Federation of Advanced Information Services (NFAIS) is to create a Recommended Practice for publisher inclusion, handling, display, and preservation of supplemental journal article materials. The Business Working Group is addressing the semantic and policy issues related to delivering materials that are supplemental to scholarly journal articles, and the Technical Working Group is focusing on syntactic and structural issues.

Three types of supplemental material have been defined:

- » **Integral content** critical to understanding the work reported, but where technical, business, or logistical issues prevent inclusion in the core article
- » **Additional content** that expands on the core article with added details and context
- » **Other related content** that the author wishes to make the reader aware of but which the publisher does not host and has no responsibility or authority for

The Business Working Group has issued a draft for public comment, through February 29, 2012, of its recommendations across a wide spectrum of processes from selecting and editing supplemental material to hosting, referencing, metadata, and preservation.

The Technical Working Group is drafting recommendations for persistent identification, archiving and preservation, and metadata. The metadata covers what is needed for the supplemental materials, how the journal article indicates the existence of supplemental material, and the journal article package. The group continues to work on metadata issues related to the heterogeneity of supplemental materials (i.e., both integral and additional content in the same archive or file), relationships between objects, hierarchies and recurrence of materials, and granularity levels. While a supplemental materials metadata schema is in development, the group is closely looking at integration with existing tag sets such as JATS (see separate box).

The completed Technical Working Group draft will also be issued for public comment. When comments on both parts have been addressed, the recommendations will be integrated for publication. ■



Digital Bookmarking and Annotation Sharing

APPROVED: October 2, 2011

Content and Collection Management Topic Committee

Chairs: TBA

NISO and the Internet Archive

Following an invitational planning meeting in May 2011 to discuss issues surrounding e-book bookmarking, annotation sharing, and social reading, NISO and the Internet Archive submitted a grant proposal to The Andrew W. Mellon Foundation to support two pre-standardization workshops on the topic. The grant was received and the workshops held in October 2011 in conjunction with the Frankfurt Book Fair and the Books in Browsers meetings. The workshops were highly interactive with reviews of related projects, identification of issues that could benefit from standards development, and a discussion of requirements and technical issues for a standard bookmark and note syntax.

A new work item to develop a standard for how bookmarks and notes should be located in a digital text, especially in online environments that might be continually updated or mutable, was presented to the NISO Voting Members and approved on October 2, 2012. The output from the two workshops held later that same month will be inputs to the new working group's work.

At year's end, the working group was in the process of being formed from experts, workshop participants, and other interested stakeholders. ■



PIE-J (Presentation and Identification of E-Journals) Working Group

APPROVED: February 8, 2010

Business Information Topic Committee

Chairs: **Cindy Hepfer** (University of Buffalo, SUNY),
Bob Boissy (Springer)

The PIE-J Working Group is in the final stages of completing its Recommended Practice to provide guidance on the presentation and identification of e-journals, particularly in the area of title presentation and bibliographic history, accurate use of the ISSN, and citation practice.

Recommended practices have been developed for journal title and citation information, title changes and title history, use of the ISSN, the enumeration system, publication information, access to content, and preservation of content digitized from print. The group has compiled appendices with a number of real-life examples of best practice, resources for determining the title/ISSN history of a journal, and discussions of the use of ISSN and DOI.

Following completion, expected in 1st quarter of 2012, the draft Recommended Practice will be issued for a public comment period. ■

PIE-J

the presentation
& identification
of e-journals





Architecture Committee

Chair: **Barbara Preece** (California State University)

One outcome of the NISO Architecture Committee (AC) meeting at the 2011 ALA Midwinter Meeting was the identification of e-books as an important topic area for NISO's active support, even beyond its current activities. Because this topic cuts across all of the existing Topic Committees, the AC created an E-books Special Interest Group (SIG) (see separate box).

The AC organized a joint meeting with the Library Information Technology Association (LITA) at ALA Midwinter 2012 to discuss improved methods for obtaining input and ideas for new standards and an incubation process for ideas that aren't yet well-formed.

A new role of liaison was defined where someone from the relevant Topic Committee (TC) will be identified as a liaison for each active NISO working group to act as an observer, ensure the work is progressing, address any issues, and provide progress reports to the AC. ■



ESPreSSO (Establishing Suggested Practices Regarding Single Sign-On) Working Group

APPROVED: April 22, 2009

Discovery to Delivery Topic Committee

Chairs: **Harry Kaplanian** (Serials Solutions), **Steven Carmody** (Brown University)

NISO RP-11-2011, *ESPreSSO: Establishing Suggested Practices Regarding Single Sign-On*

Following a public comment period in May and June, 2011, the ESPReSSO Working Group's recommended practice on *Establishing Suggested Practices Regarding Single Sign-On* was published in November.

The recommendations identify practical solutions for improving the use of single sign-on authentication technologies to ensure a seamless experience for the user. Currently a hybrid environment of authentication practices exists, including older methods of userid/password, IP authentication, and/or proxy servers along with newer federated authentication protocols such as Athens and Shibboleth. The ESPReSSO recommended practice identifies changes that can be made immediately to improve the authentication experience for the user, even in this hybrid situation, while encouraging both publishers, service providers, and libraries to transition to the newer Security Assertion Markup Language (SAML)-based authentication, such as Shibboleth.

Specifically, ESPReSSO recommends best practices related to selection of authentication method and transparent flow between the service provider (SP) site and the identity provider (IdP) site during authentication. Recommendations to service providers include the preferred location for login links and input boxes, standard approaches for guiding users to a desired authentication method, where local branding information could be inserted on a webpage, as well as approaches for handling automatic logins. Recommendations to libraries/institutions include display of the login page, branding of the login page, use of a menu page with all available content listed that transfers with automatic login to the selected service provider, and appropriate passing of parameters to the service provider that authenticates the user.

The ESPReSSO Working Group is now in the process of forming a Standing Committee, to help with promotion and uptake of the Recommended Practice. ■



ERM Data Review Working Group

APPROVED: June 30, 2009

Business Information Topic Committee

Chairs: Ivy Anderson (California Digital Library), Tim Jewell (University of Washington)

Making Good on the Promise of ERM: A Standards and Best Practices Discussion Paper

Charged with undertaking a “gap analysis” regarding electronic resource management (ERM)-related data, standards, and best practices, the ERM Data Review Working Group completed its report, *Making Good on the Promise of ERM*, which was published in January 2012.

The standards review and findings focused on five categories: link resolvers and knowledge bases; the work, manifestations, and access points; cost and usage-related data; license terms; and data exchange using institutional identifiers. A more extensive review was completed for fourteen of the most relevant standards and the data

elements for each were mapped to the elements defined in the Digital Library Federation ERMI report. Also discussed was how ERM systems could improve their workflow support—a shortcoming in most existing systems—and a detailed workflow best practices bibliography and a list of illustrative workflow diagrams were included.

A number of recommendations were made for NISO consideration that would improve the use and interoperability of ERM. The Business Information Topic Committee will be working with the ERM group to identify specific new work items for NISO. ■



RFID in Libraries Revision Working Group

APPROVED: February 12, 2010

Content and Collection Management Topic Committee

Chairs: Vinod Chachra (VTLS, Inc.), Paul Sevcik (3M Library Systems)

NISO RP-6-2008, *RFID in U.S. Libraries*

A revision to the 2008 recommended practice was undertaken to address new technology developments and to eliminate any ambiguities with the three-part ISO *RFID in Libraries* standard (ISO 28560) that was published in March 2011.

The draft revision, designed to be a U.S. profile to the ISO standard, was issued for public comment from May 10–June 9, 2011. The Working Group made some further revisions to

address the comments and the final recommended practice is expected to be published in the 1st quarter of 2012.

The RP is expected to be used by RFID hardware manufacturers, solution providers (software and integration), library RFID users, book jobbers and processors, and related organizations in the United States. ■

I FE I doi: 10.3789/isqv24n1.2012.02



 The workroom webpages for each of the initiatives discussed are available at: www.niso.org/workrooms/.

 The free monthly *Newsline* and the quarterly *Working Group Connection* e-newsletters also provide regular updates on NISO activities; to sign up send an e-mail to newsline-subscribe@list.niso.org.

 Most initiatives have an interest group e-mail list that you can sign up for to receive periodic updates; visit: www.niso.org/lists.

TC46

SC4

SC8

SC9

SC11

CYNTHIA HODGSON

TC46

YEAR IN REVIEW

NISO has been the U.S. liaison group for the International Organization for Standardization (ISO) Technical Committee 46 (TC46) on Information and Documentation for decades. Officially designated by ANSI as the U.S. Technical Advisory Group (TAG) for TC46, NISO submits the U.S. votes and comments on all TC46 standards, based on the ballot results from the U.S. TC46 TAG members.

(NISO voting members that are incorporated (or otherwise legally registered) in the U.S. are members of the TAG.) In 2011, NISO submitted U.S. votes and comments on 13 draft standards, 12 systematic reviews, and 4 new work items. Additionally, comments were provided on 11 standards from other ISO committees that are in a liaison relationship with TC46. NISO responded, with input from U.S. SC11 members, to a national activity survey regarding use of SC11 standards and voted on 4 administrative items, such as committee chairs. This article summarizes the work of TC46 and its four subcommittees during 2011.

TC46

TC46 INFORMATION AND DOCUMENTATION

Secretariat: Association Française de Normalisation (AFNOR)

The TC46 plenary meeting was held on May 6, 2011 in Sydney Australia.

Country codes (ISO 3166)

This three-part standard undergoes continuous updating through the ISO 3166 Maintenance Agency, with participation from the United Nations. Changes are published in newsletters and incorporated into the formal standard when the different parts undergo their systematic reviews.

- » Three updates were published for Part 1 (countries). These included changes in the full, long names of Fiji and Myanmar; a second Romanized name of Bulgarie for Bulgaria; assignment of new codes (SS and SSD) for South Sudan; and an official name change to Libya (from Libyan Jamahiriya Arabe).
- » One update was published for Part 2 (subdivisions). Changes were made to 50 countries' information, including administrative areas, languages, and source lists.

Standards confirmed:

- » ISO 3166-2:2007, Codes for the representation of names of countries and their subdivisions – Part 2: Country subdivision code
- » ISO 3602:1989, Information and documentation – Romanization of Japanese (kana script) [In early 2012, DIN proposed a revision to this standard.]
- » ISO 11940-2:2007 Information and documentation – Transliteration of Thai characters into Latin characters – Part 2: Simplified

Systematic review completed; standard confirmation pending:

- » ISO 9:1995, Transliteration of Cyrillic characters into Latin characters – Slavic and non-Slavic languages
- » ISO 233:1984, Transliteration of Arabic characters into Latin characters
- » ISO 233-2:1993, Transliteration of Arabic characters into Latin characters – Part 2: Arabic language – Simplified transliteration
- » ISO 259:1984, Transliteration of Hebrew characters into Latin characters
- » ISO 259-2:1994, Transliteration of Hebrew characters into Latin characters – Part 2: Simplified transliteration
- » ISO 9985:1996, Transliteration of Armenian characters into Latin characters
- » ISO 11940-2:2007, Transliteration of Thai characters into Latin characters – Part 2: Simplified transcription of Thai language
- » ISO 15919:2001, Transliteration of Devanagari and related Indic scripts into Latin characters

Projects underway:

- » Revision of ISO 8, Presentation of periodicals
- » Revision of ISO 5127, Information and documentation – Terminology
- » Revision of ISO 11799, Document storage requirements for archive and library materials

Country codes (ISO 3166)

This three-part standard undergoes continuous updating through the ISO 3166 Maintenance Agency, with participation from the United Nations.



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SC4

SC4 TECHNICAL INTEROPERABILITY

Secretariat: Standards of New Zealand

The SC4 plenary meeting was held May 2, 2011 in Sydney, Australia.

At the end of 2011, Standards of New Zealand relinquished the Secretariat. The Finnish Standards Association (SFS) was approved in early 2012 as the new Secretariat.

Standards published:

- » Revision of ISO 15511, International standard identifier for libraries and related organizations (ISIL)
- » ISO 28560, RFID in Libraries (in 3 parts)

Standards confirmed:

- » ISO 2709:2008, Format for information exchange

Projects underway:

- » Revision of ISO 21127, A reference ontology for the interchange of cultural heritage information

ISO 9707:2008

Statistics on the production and distribution of books, newspapers, periodicals and electronic publications

SC8

SC8 QUALITY – STATISTICS AND PERFORMANCE EVALUATION

Secretariat: Deutsches Institut für Normung (DIN)

SC8 plenary meetings were held May 2, 2011 in Sydney, Australia, and September 9, 2011 in Helsinki, Finland.

Systematic review completed; standard confirmation pending:

- » ISO 9707:2008, Statistics on the production and distribution of books, newspapers, periodicals and electronic publications

Projects underway:

- » Revision of ISO 2789, International library statistics
- » Revision of ISO 11620, Library performance indicators
- » ISO 16439, Methods and procedures for assessing the impact of libraries
- » ISO/ TR 11219, Qualitative conditions and basic statistics for library buildings – Space, function and design
- » ISO/TR 14873, Statistics and quality issues for web archiving

ISO 16175-2

ISO 16175-2, Principles and functional requirements for records in electronic office environments— Part 2: Guidelines and functional requirements for digital records management systems

SC9

SC9 IDENTIFICATION AND DESCRIPTION

Secretariat: ANSI/NISO

The SC9 plenary meeting was held May 4, 2011 in Sydney, Australia.

Standards published:

- » ISO 25964-1, Thesauri and interoperability with other vocabularies – Part 1: Thesauri for information retrieval

Approved, publication pending:

- » ISO 26324, Digital object identifier system
- » ISO 27729, International standard name identifier (ISNI)

Standards confirmed:

- » ISO 3297:2007, International standard serial number (ISSN)

Projects underway:

- » ISO 17316, International standard document link
- » Revision of ISO 3901, International Standard Recording Code (ISRC)
- » ISO 25964-2, Thesauri and interoperability with other vocabularies – Part 2: Interoperability with other vocabularies
- » ISO 27730, International standard collection identifier (ISCI)

The TC46 Secretary participated in several meetings to resolve issues on the Registration Authority agreement template. Finalization of this agreement template had delayed the publication of two SC9 standards that require a registration authority.

SC11

SC11 ARCHIVES AND RECORDS MANAGEMENT

Secretariat: Standards Australia

SC11 plenary meetings were held May 5, 2011 in Sydney, Australia and October 3, 2011 in London.

Standards published:

- » ISO 16175-2, Principles and functional requirements for records in electronic office environments – Part 2: Guidelines and functional requirements for digital records management systems
- » ISO 30300, Management systems for records – Fundamentals and vocabulary
- » ISO 30301, Management systems for records – Requirements
- » ISO/TR 23081-3, Managing metadata for records – Part 3: Self-assessment method

Guideline documents made freely available:

- » Digital Records preservation – Where to start guide
- » ISO 15489: Management Statement
- » Short Statement for Management [re: the way their organizations create and control records]
- » Where to start: Advice on creating a metadata schema or application profile (ver.8)

Projects underway:

- » ISO 13008, Digital records conversion and migration process
- » ISO/TR 17068, Trusted third party repository for digital records
- » ISO/TR 18128, Risk identification and assessment for records systems

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From ISO 2788 to ISO 25964: The Evolution of Thesaurus Standards towards Interoperability and Data Modeling

STANDARD SPOTLIGHT

The information retrieval thesaurus emerged from pioneering work in the 1960s, and by 1974 the principles and practical guidance for constructing thesauri were enshrined in the international standard ISO 2788 as well as national standards such as ANSI/NISO Z39.19. Successive updates since then have led most recently to the publication of ISO 25964-1, Thesauri and interoperability with other vocabularies. Part 1: Thesauri for information retrieval. So what has changed over the years?

In answer to that question, the principles have hardly changed at all. But round about us the world has changed. Technology has changed, and with it the opportunity for extending information retrieval over the whole world's inter-networked resources. The new opportunities have led us to re-examine the principles, and discover that in the 1970s we did not articulate them in the clear logical way that is needed for today's computer applications. In particular, we did not then clarify the difference between the *concepts* of a search for information and the *terms* in which we express the query. If this distinction is fudged, human users may not be put out at all, but computers are at risk of floundering. To perform on the Semantic Web, computer software needs an explicit data model that distinguishes between terms and concepts.

In this article we trace the development of the thesaurus standards over the years, looking in particular at how the concept/term distinction is handled and more generally at the changes needed to facilitate interoperability and ease of handling thesaurus data by computers.

Raison d'être of the thesaurus

What is a thesaurus all about? The thesaurus is a tool to support subject access to information. Many other tools and approaches have been tried, from classification at one end of

the spectrum to full text search at the other, and the thesaurus approach sits somewhere in between.

The classification approach relies on prior development of a scheme of the knowledge in a particular domain (usually reflecting one of the ways a domain carries and passes knowledge from generation to generation) in which each subject or combination of subjects is assigned a unique code. The theory is that if each document in a collection is given the right code according to the rules of the scheme, then anyone searching for a particular subject will find all the relevant documents, just by using the code.

Since conversion of subjects to codes requires some skill, it adds to retrieval costs and is not popular with users who like to express their search needs in ordinary words. This is the argument for full text search, in which users can simply look for occurrences of their search words anywhere in a document collection. The pitfalls of this approach are well known, in particular that a subject may be expressed using many different words and word combinations. An exhaustive search for just one topic typically needs multiple formulations of the query, and even then can fail if the searcher has no insight into the language of the original relevant documents.

This is the rationale for the thesaurus approach: if you can guide people always to use the same terms for the same

BOX 1: The following syllogism will be familiar to students of Aristotelian logic



'man' is a 3-lettered word.

Socrates is a man.

Therefore, Socrates is a 3-lettered word.

The logical flaw is very obvious to a human reader, but a computer can easily be fooled if statements about a term are presented looking like statements about the concept represented by the term.

concepts, and if any particular term can apply to only one concept, then users can search reliably with words, not codes. That's the theory, at any rate. And everything in the thesaurus standards is designed to make the thesaurus work reliably as a guide for choosing the right term for the concept sought. The introduction to the first (1974) edition of the international standard ISO 2788, *Guidelines for the establishment and development of monolingual thesauri*, states this objective: "there is a need for practical methods of representing concepts simply and clearly and of ordering them by clarifying their interrelationships."

Concepts versus terms: the dilemma and the confusion

So if the thesaurus is a guide to help a user choose the right term for a given concept, what are the basic units of its content? Does the thesaurus hold terms or does it hold concepts? This seems a crazy question, for terms and concepts are inextricably linked. All the while a concept is inside our heads, it can be independent of words or language. But as soon as we try to communicate it to another person or to a search system, we have to represent it in some way—usually by words or codes or pictures. The only way a thesaurus can list concepts in alphabetical order is by representing them as terms. Inevitably, the thesaurus contains terms *as well as* the concepts behind the terms. And sometimes, it is hard to tell which is which, as illustrated in Box 1.

Thus although ISO 2788 had a clear objective of organizing *concepts* and their interrelationships, the 1974 edition goes on to recommend: "the hierarchical relation is represented by the references BROADER TERM (BT), representing the relation of a concept being superordinated,

and NARROWER TERM (NT), indicating the reciprocal relation." The tags BT, NT, and RT (RELATED TERM) were not invented by ISO 2788 (nor by the contemporaneous American national standard ANSI Z39.19-1974). No, these tags had been used in thesauri throughout the 1960s, especially in the influential *Thesaurus of Engineering and Scientific Terms (TEST)*. However, by perpetuating a convention that signposted relationships between *concepts* with abbreviations suggesting *terms*, the standard allowed confusion to creep in. The most recent (1986) edition of the same standard acknowledges this confusion and explicitly warns the reader "For practical purposes, 'term' and 'concept' are sometimes used interchangeably." This note was an admission that the BT/NT/RT convention was too heavily embedded in practice to change, and so the tags have been retained in standards and continue in widespread use to the present day.

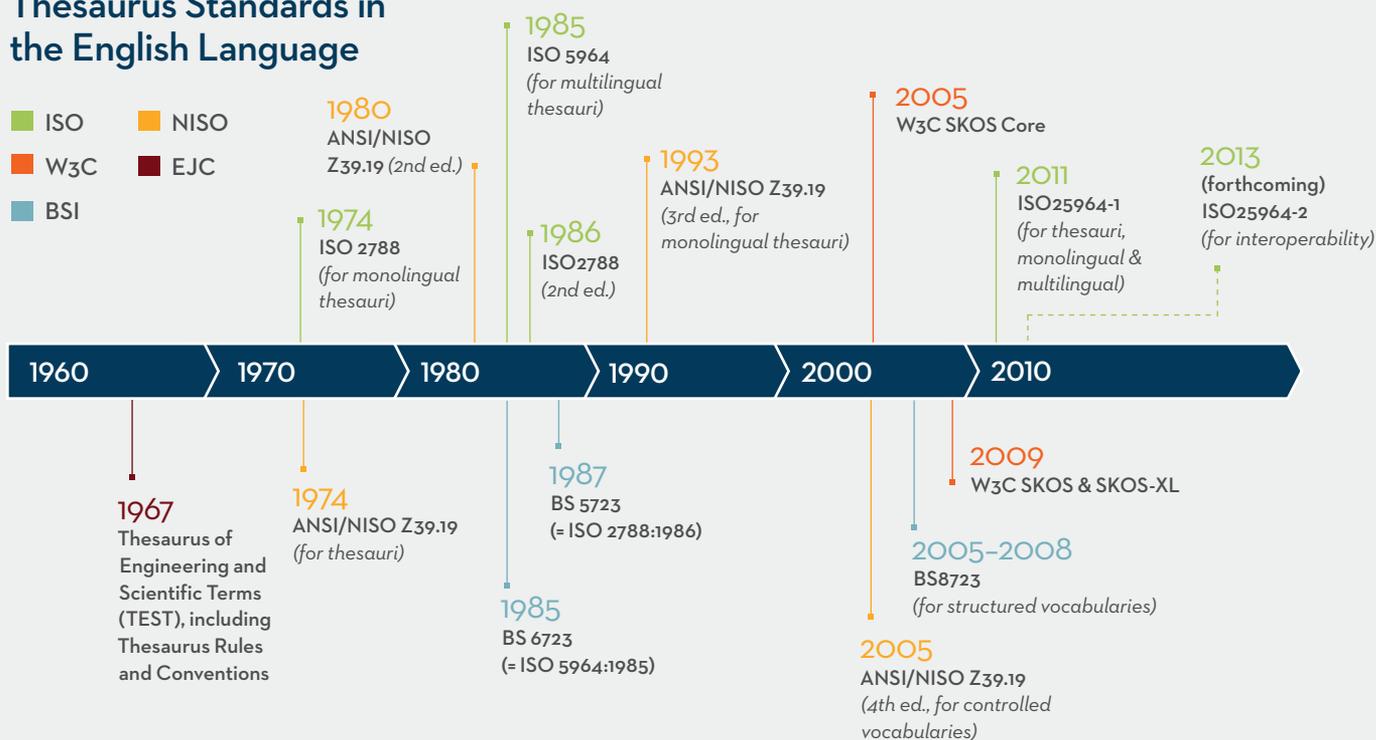
The pressure for clarification and a broader scope

The confusion regarding concepts vs. terms in ISO 2788 could have been dispelled by including a data model. (This same confusion existed in the sister standards ISO 5964, BS 5723, BS 6723, and ANSI/NISO Z39.19. See Box 2 and Figure 1 for brief details of these superseded standards, and page 23 for a description of Z39.19.) But the need for such a model was not fully recognized until the end of the twentieth century. Until then, thesauri had been used mostly in contexts where humans controlled or mediated the search process. Intuitively a human user grasps the difference between a term and a concept, and can interpret search results without confusion. A data model becomes necessary only when a machine needs instruction in how to handle and interpret the data.

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FIGURE 1.

Timeline of Landmark Thesaurus Standards in the English Language



BOX 2

Landmark Thesaurus Standards, now superseded

TEST AND OTHER PRECURSORS

Pioneering work in the 1960s led to publication of a number of influential thesauri as well as guidelines for thesaurus development, as described in Krooks & Lancaster and Aitchison & Dextre Clarke. Of these, the most influential was the *Thesaurus of Engineering and Scientific Terms (TEST)* in 1967, with its Appendix *Thesaurus Rules and Conventions*. Among the *TEST* conventions still prevalent today is the use of tags BT, NT, and RT to identify relationships between concepts.

ISO 5964

Guidelines for the Establishment and Development of Multilingual Thesauri

First published in 1985, it has now been withdrawn, superseded by ISO 25964-1. ISO 5964 was based on the same tacit model as ISO 2788, and suffered from the same lack of clarity in distinguishing between terms and concepts.

ISO 2788

Guidelines for the Establishment and Development of Monolingual Thesauri

First edition was published in 1974; the most recent edition (1986) was withdrawn in 2011 when superseded by ISO 25964-1. The intention of ISO 2788 was to deal with concepts, providing guidelines for representing them unambiguously by means of terms. However, there was no explicit data model and the difference between terms and concepts was not articulated clearly.

BS 5723 AND BS 6723

The most recent editions of these British Standards were identical to ISO 2788-1986 and ISO 5964-1985 respectively. They were withdrawn in 2005-2007 when superseded by the first four parts of BS 8723.

CONTINUED »

That need is much more evident in the twenty-first century. The success of the Semantic Web, for example, will depend on computers acting in coordination with each other so that intelligent agents can retrieve and manipulate information from multiple networked resources. If the difference between a term and a concept is not made clear, a computer can easily draw a false inference (see Box 1). The need for machine-to-machine communication and reasoning capability has provided much of the incentive for including a data model in the most recent thesaurus standards.

Semantic manipulation is not the only pressing need. The digital age has encouraged the emergence of many different vocabularies and vocabulary types, often working alongside traditional thesauri. It has also brought a demand for interoperability to underpin activities such as web services; the publishing, aggregation, and exchange of thesaurus data via multiple media and formats; and behind-the-scenes exploitation of controlled vocabularies in navigation, filtering, and expansion of searches across networked repositories. Many of the interoperability needs appear in the recommendations of a Workshop on Electronic Thesauri, organized by NISO on November 4-5, 1999. Following this influential workshop, not only was ANSI/NISO Z39.19 revised, but the new standards BS 8723, SKOS, and ISO 25964 have emerged. Figure 1 shows a chronology of the emergence of the key English-language standards for thesauri.

Towards interoperability: revision of national standards

As a direct outcome of NISO's 1999 Workshop, the 4th revision of the ANSI/NISO standard came out in 2005. Whereas previous editions had dealt only with thesauri, the scope of the revision was expanded to cover various types of controlled vocabularies that may share the same approaches or structures when dealing with common problems (including lists of controlled terms, synonym rings, taxonomies, and thesauri). The new Z39.19 has a section on interoperability, and a revised title: *Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies* (emphasis added by authors; previous title referred to "Thesauri").

Like ISO 2788, this version of the standard is fundamentally concept-centered, but still describes the relationships as between "terms". No formal data model is given to clarify the distinction. See for example, "The relationships among terms in a controlled vocabulary are indicated by semantic linking. Semantic linking encompasses various techniques and conventions for indicating the relationships among terms." (ANSI/NISO Z39.19-2005, Section 8.1, Semantic Linking)

Addressing many of the same issues as Z39.19-2005, BS 8723, *Structured vocabularies for information retrieval – Guide*, has five parts, published between 2005 and 2008. As well as covering mono- and multilingual thesauri in depth, it deals more briefly with other vocabulary types (classification schemes, taxonomies, subject heading schemes, ontologies, and name authority lists). And in Part 4 it provides guidance on mapping between vocabularies. The call for a data model is explicitly met in Part 5 (also known as DD 8723-5), together with an XML schema for exchange of whole thesauri or subsets thereof.

The BS 8723 data model does much to dispel the concept/term confusion by establishing separate classes for "concept" and "term". The model clearly shows that hierarchical and associative relationships apply between concepts, whereas equivalence relationships apply between terms. However, the text in other parts of the standard is not always rigorous in articulating the distinction and, like all the forerunner standards, it could not break away from the BT/NT/RT tagging convention.

SKOS data models and the thesaurus standards

While the national and international standards described so far have all dealt fundamentally with the construction of thesauri, the standards of the World Wide Web Consortium (W3C) are concerned instead with Web functions, and in particular those of the Semantic Web. Thus the W3C Recommendation *SKOS (Simple Knowledge Organization Systems)* is designed to support publication of vocabularies such as thesauri on the Web. And at its heart is a data model that explicitly distinguishes between concepts and the labels used to represent concepts.

The SKOS Core data model was released in 2005 as a W3C Working Draft (*SKOS Core Vocabulary Specification*). It clearly emphasized a concept-centric view of vocabulary, where primitive objects are not labels; rather, they are concepts represented by labels. In SKOS the semantic relationships between concepts correspond very closely to the hierarchical and associative relationships recommended in the thesaurus standards. They take the form of three standard "properties": `skos:broader` and `skos:narrower` for hierarchical links and `skos:related` for associative (non-hierarchical) links between concepts. The SKOS Core specification was superseded in 2009 by the official W3C Recommendation *SKOS Simple Knowledge Organization System Reference*. In this approved version, the basic SKOS Core data model is supplemented in its Appendix by an extension for Labels (SKOS-XL). In addition to all that is conveyed by SKOS Core for relationships between concepts, the extension provides additional support for identifying, describing, and linking lexical entities.

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The data model sets out five basic classes

- 1 Thesaurus
- 2 ThesaurusArray
- 3 ThesaurusConcept
- 4 ThesaurusTerm
- 5 Note

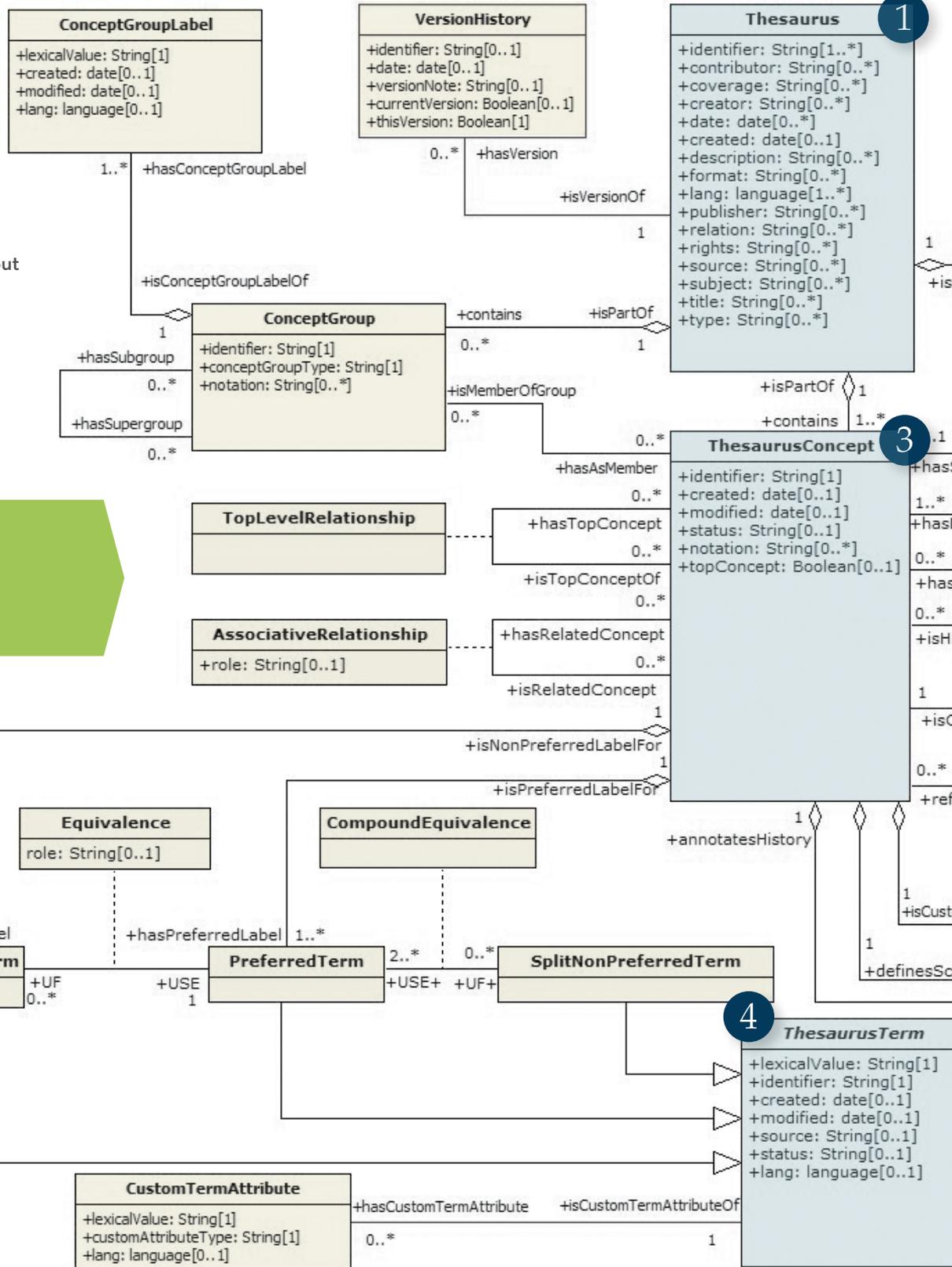
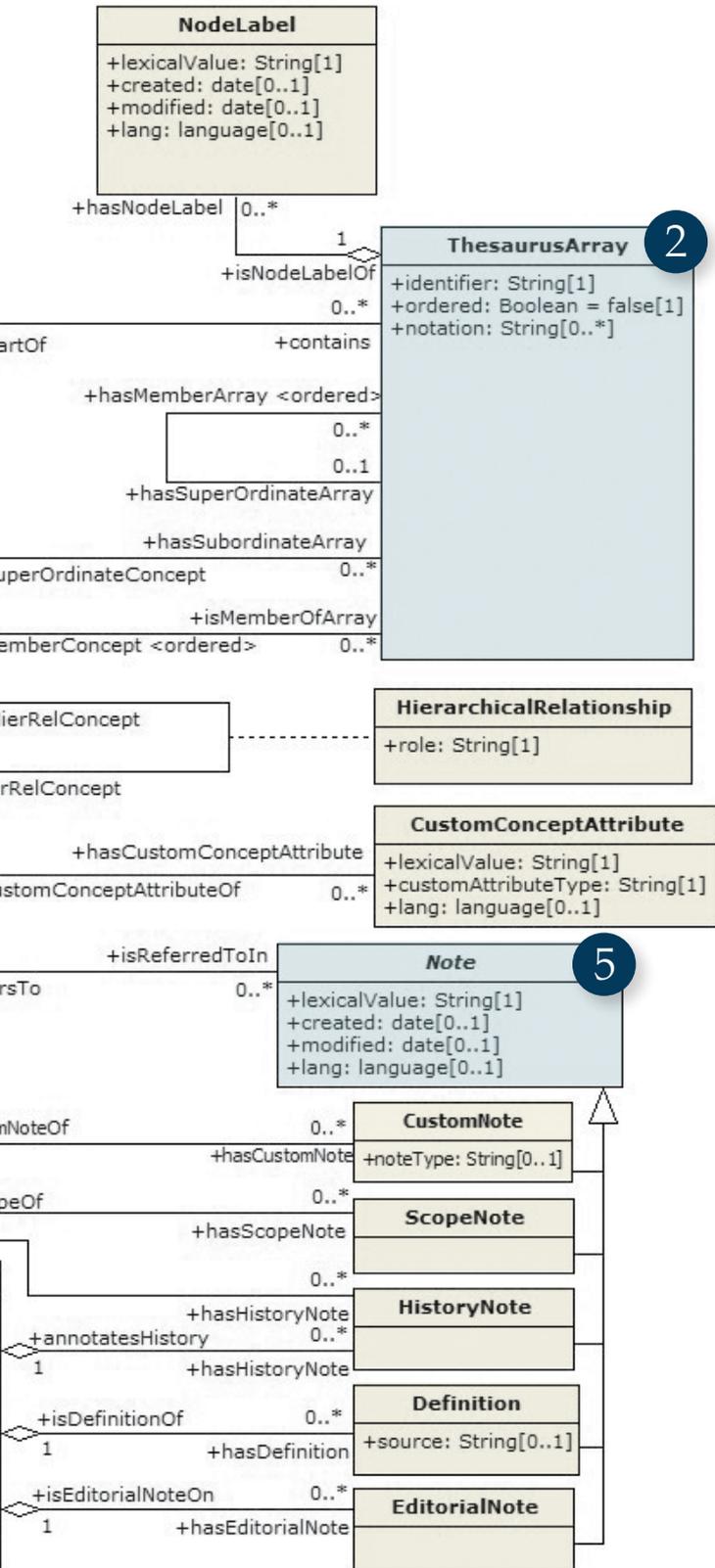


FIGURE 2.
Data Model in
ISO 25964-1

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ISO 25964: Thesauri and interoperability with other vocabularies

The new, two-part international standard has been developed by a working group with members from 15 countries, a chairman from the UK, and a Secretariat run by NISO in the US. The first part, known as ISO 25964-1, *Thesauri for information retrieval*, came out in August 2011. It updates, revises, and replaces ISO 2788 and ISO 5964, as well as some parts of BS 8723. This latest publication has been able to draw on all the previous work, for example the conclusions of NISO’s 1999 Workshop and the data model and schema developed in BS 8723.

The scope of ISO 25964-1 includes:

- » Thesaurus content and construction, mono- or multi-lingual
- » Guidance on applying facet analysis to thesauri
- » Guidance on managing thesaurus development and maintenance
- » Functional requirements for software to manage thesauri
- » A data model and derived XML schema, available free of charge on a site hosted by NISO.

Additional aspects of interoperability (especially guidance on mapping concepts across thesauri and other vocabularies) will soon be covered in Part 2 of the standard.

ISO 25964 is much more rigorous than any of its precursors in distinguishing clearly between terms and concepts. It retains the tags BT, NT and RT (because these have been widely used in thousands of existing thesauri) but clarifies that the relationships they indicate are between concepts, not terms. The text explanation is explicitly confirmed in the data model, shown in Figure 2.

The data model sets out five basic classes, *Thesaurus*, *ThesaurusArray*, *ThesaurusConcept*, *ThesaurusTerm*, and *Note*. Attributes for each class and associations of classes reflect all of the features of thesauri that are recommended in the text. The model is accompanied by clear explanatory notes, for example in Section 15.2.3: “Each concept in the thesaurus is represented by one preferred term per language, and by any number of non-preferred terms. The notation, scope note and broader/narrower/related term relationships apply to the concept as a whole, rather than to its preferred term. A unique identifier can be assigned to each concept.” Benefits of adopting the model include easier implementation by computers, consistency enforced in thesaurus construction and mapping, greater interoperability between thesauri and with other vocabularies, and enhanced performance at all stages from design of the thesaurus through development, management, and exchange.

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With the Web and its uses still expanding dramatically, standards like these cannot afford to stand still.

Continuous and further work

With the Web and its uses still expanding dramatically, standards like these cannot afford to stand still. Part 2 of ISO 25964, covering interoperability between thesauri and other vocabularies, has reached the stage of Draft International Standard, and is the subject of public review and comment through mid-May 2012. The principles and practice of mapping are its prime focus. The scope includes interoperability with classification schemes, taxonomies, subject heading schemes, ontologies, terminologies, name authority lists, and synonym rings. After the feedback is accommodated, an approved standard is expected to emerge later in 2012.

There is more good news. During the past decade, in which the data models for SKOS and ISO 25964-1 were both under development, the teams responsible for them kept up good communication. Both teams drew liberally from the best of the concept-centered intentions of ISO 2788. As a result, the data models are largely compatible, particularly when the SKOS-XL extension is taken into account. At the time of writing, the ISO 25964-1 model has some optional features, not present in SKOS, to allow for capabilities (such as compound equivalence) that are not currently supported by SKOS. However, work is already under way to develop another SKOS extension to provide for these extra features. Alignment is the watchword, avoiding divergence. Already SKOS (supplemented when necessary by SKOS-XL) enables a great many thesauri compliant with ISO 25964 to be published on the World Wide Web, and others will follow. As the Semantic Web evolves, it will be fascinating to see what developments come next. | SP | doi: 10.3789/isqv24n1.2012.04

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Sloan Grant Supports Development of Resource Synchronization Standard

The Alfred P. Sloan Foundation has awarded a grant to NISO and the Open Archives Initiative to develop a new open standard on the real-time synchronization of Web resources.



PROBLEM

Increasingly, large-scale digital collections are available from multiple hosting locations and are cached at multiple servers. Examples of such collections include the Internet Archive's WayBack Machine, Twitter's collection of tweets, and Linked Data collections such as Freebase or DBpedia. In addition, high profile portals rely on resources originating in many distributed repositories. Examples include the Europeana portal, CiteSeer, HathiTrust, and OAIster. This proliferation of replicated copies of works or data on the Internet has created an increasingly challenging problem of keeping the repositories' holdings and the services that leverage them up-to-date and accurate. As we move from a Web of documents to a Web of data, synchronization becomes even more important: decisions made based on unsynchronized or incoherent scientific or economic data can have serious deleterious impact.

The OAI Protocol for Metadata Harvesting (PMH) 2.0 specification can be used to effectively synchronize the metadata about the resources, but synchronizing the resources themselves was never specified. Although some resource synchronization methods exist, they are generally ad hoc, arranged by the individuals involved, and cannot be universally deployed.

This proliferation of replicated copies of works or data on the Internet has created an increasingly challenging problem of keeping the repositories' holdings and the services that leverage them up-to-date and accurate.



PROPOSED SOLUTION

A standard will be developed for an interoperable, efficient, and lightweight mechanism to support synchronizing Web resources at scale. The standard will save time, effort, and resources by repository managers by automating the replication and updating process. It will increase the general availability of content from these repositories and will alleviate the variety of problems created by outdated, inaccurate, superseded content that exists on the Internet.

USE CASES

- Synchronization of Linked Data content
- Recurrently collecting Memento metadata from IIPC web archives to central aggregator
- arXiv mirroring

CORE TEAM

Cornell University & OAI:

Berhard Haslhofer, Carl Lagoze, Simeon Warner

Old Dominion University & OAI:

Michael L. Nelson

Los Alamos National Laboratory & OAI:

Martin Klein, Robert Sanderson, Herbert Van de Sompel

NISO:

Todd Carpenter, Nettie Lagace, Peter Murray

LINKS

Resource Sync Workroom

www.niso.org/workrooms/resourcesync/

| NR | doi: 10.3789/isqv24n1.2012.05

NW

[NOTEWORTHY]

The new BISG policy statement, when broadly adopted, will standardize the rules for applying ISBNs to e-books and alleviate today's confusion.

ISBN 978-1-880124-35-2



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BISG Issues Policy on the Use of ISBNs for E-books

The Book Industry Study Group (BISG) has published a new Policy Statement detailing best practices for assigning ISBNs to digital products. Developed over the past 18 months within BISG's Identification Committee, *Best Practices for Identifying Digital Products* addresses the critical need to reduce product identification confusion in the marketplace and provide the best possible consumer-level purchasing experience.

The BISG Identification of E-books Working Group, led by Phil Madans, Director of Publishing Standards and Practices at Hachette Book Group, spent 18 months discussing the myriad ways in which e-books are produced, distributed, and need to be identified in the publishing, distribution, and library marketplaces. The rules for assigning International Standard Book Numbers (ISBN) have been inconsistently applied to electronic books and this variability has created problems with distribution systems based upon ISBN. The new BISG policy statement, when broadly adopted, will standardize the rules for applying ISBNs to e-books and alleviate today's confusion.

Among the policy recommendations are that the prefix eISBN should not be used, digital books with the same title but different file format should receive different ISBNs, and that identical e-books (i.e., the same format) sold or made accessible by different vendors should use the same ISBN unless there are differentiating factors that justify assignment of a unique ISBN.

Some of the organizations which have indicated support of the BISG policy statement include:

- » Book Industry Communications (BIC)
- » BookNet Canada
- » IBPA, the Independent Book Publishers Association
- » National Information Standards Organization (NISO)
- » U.S. ISBN Agency ■

 POL-1101: Best Practices for Identifying Digital Products: www.bisg.org/what-we-do-4-150-pol-1101-best-practices-for-identifying-digital-products.php

O'Reilly Offers Free Publications on EPUB 3 and HTML 5

EPUB is on its way to becoming the defacto format for e-books and the newly released EPUB 3 provides greater support for multimedia and interactive books (if they can still even be called that), which are expected to be increasingly available for the newer tablet readers.

Matt Garrish, an independent consultant who has done work for both the DAISY Consortium and the International Digital Publishing Forum (IDPF)—and a member of the EPUB 3 development team—has authored two short books to aid in understanding the new standard. Both books are available for free download from O'Reilly™.

 *What Is EPUB 3? An Introduction to the EPUB Specification for Multimedia Publishing* explains “in a nutshell” what the standard is all about. It describes the underlying web standards and technologies that are used in creating an EPUB e-publication and highlights the changes and improvements that were made in the new version 3 including multimedia, media overlays, scripting, graphic content, globalization, and accessibility.

 The second title, *Accessible EPUB 3: Best Practices for Creating Universally Usable Content*, not only explains how to use the EPUB 3 features to create an “accessible” publication

(i.e. one that is usable by people with all types of visual handicaps), but also addresses “why you need to pay attention to the quality of your data, and how accessible data and general good data practices are more tightly entwined than you might think....Currently only about 5 percent of the books produced in any year are ever made available in an accessible format.”

 Both of the EPUB 3 publications make it clear how heavily the specification depends on HTML 5. Although the HTML 5 standard is still a work-in-progress working draft, it is already being used. Sanders Kleinfeld, a Publishing Technologies Specialist at O-Reilly, discusses the use of HTML 5 in the EPUB standard in his publication *HTML 5 for Publishers* and explains how it can help publishers add audio, video, mathematics, geolocation, and interactivity to electronic publications. ■

 **Download these publications in multiple electronic formats from O-Reilly:**
What is EPUB 3?: shop.oreilly.com/product/0636920022442.do
Accessible EPUB 3: shop.oreilly.com/product/0636920025283.do
HTML5 for Publishers: shop.oreilly.com/product/0636920022473.do

NFAIS Issues Draft Code of Practice: Discovery Services for Public Comment

The National Federation of Advanced Information Services (NFAIS™) released a draft *Discovery Service Code of Practice* for review and comment that ended on March 16, 2012. NFAIS believes that discovery services have the potential to provide ease of information discovery, access, and use, benefiting not only its member organizations, but also the global community of information seekers. However, the relative newness of these services has generated questions and concerns among information providers and librarians as to how these services meet expectations with regard to issues related to traditional search and retrieval services; e.g., usage reports, ranking algorithms, content coverage, updates, product identification, etc.

In early 2010 NFAIS was requested to gather information on the experiences and perceptions of its member organizations regarding discovery services—specifically those services that offer an alternative to the simple search capability provided by Google. A survey was conducted, but the results were inconclusive. However, the survey did raise questions and further information gathering showed that each of the existing service providers had their own proprietary system and unique approach to information discovery. As a result, NFAIS members agreed that “it would

serve the community to develop a code of practice that would outline the rights and obligations of all participants in a discovery service relationship in order to move forward with an understanding of mutual expectations.”

The code has several objectives:

- » Create an awareness of the issues surrounding discovery service relationships and foster an understanding of how these issues can affect each participant in the relationship
- » Ensure full disclosure of key information so that all participants in a discovery service relationship will be aware of the complex relationships that exist amongst themselves and the limitations, if any, of the services being offered;
- » Provide a set of guiding principles from which contractual terms can be negotiated
- » Avoid the disruption of the delicate balance of the interests of all parties involved in the relationship ■

 **The code is meant to be a set of guidelines for business practices, not a prescriptive standard. It can be accessed at: info.nfaiss.org/info/codedraft1312012.pdf.**

New ONIX Specification Supports Exchange of Rights Information

EDItEUR has issued a new message suite in the ONline Information eXchange family called *ONIX for Rights Information Services (ONIX-RS)*. The suite of XML messages is designed to communicate information about rights, primarily for books.

Many libraries, repositories, and information service providers are digitizing print materials to make them accessible to patrons in electronic format. A critical part of this process involves due diligence searches for the rights holders of the materials and obtaining and documenting any terms for use of the digitized version. Service agencies have or are being established to aid libraries conducting such searches. In Europe, the EC-funded ARROW (Accessible Registries of Rights Information and Orphan Works towards Europeana) project is providing tools and infrastructure to facilitate rights information management. The use of the ONIX-RS message suite can simplify the process of requesting and receiving the rights information.

To date, ONIX-RS messages have been defined for seven XML-formatted request-response pairs of interchanges (14 messages in total) between partners in the rights discovery chain. An accompanying XML schema and related documentation are maintained by EDItEUR.

ONIX-RS is a member of the wider ONIX family of standard formats, particularly ONIX for Books and ONIX-PL. Many of the structures and data elements that it contains have been derived or adapted from other ONIX formats, and it utilizes the same underlying data dictionary. The development of ONIX-RS has drawn heavily upon the work of the EC-funded ARROW (Accessible Registries of Rights Information and Orphan Works towards Europeana) Project and the inputs of ARROW partner organizations. ■

🔗 ONIX-RS is available at: www.editeur.org/124/ONIX-RS/
ARROW project: www.arrow-net.eu/

International Standard Name Identifier (ISNI) Agency Up and Running

The new standard ISO 27729:2012, *International Standard Name Identifier (ISNI)*, was published in March and a new registration authority, the ISNI International Agency has been established to manage the assignment of identifiers and the associated metadata. By identifying public identities across multiple fields of creative activities, the ISNI unique 16-digit code streamlines content distribution chains, disambiguating natural, legal, and fictional parties that might otherwise be confused.

Libraries have invested enormous efforts over decades in disambiguating creators and sorting their works. Equally important, especially to the creators themselves, is the ability for organizations administering rights to correctly identify who gets what royalty. Now, the ISNI International Agency has a system that will connect the right information with the right person—no matter which name is being used—the same way books with similar or even identical titles have been uniquely identified throughout the publishing and distribution supply chain.

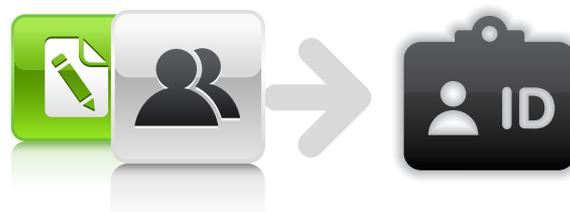
The ISNI system was launched this month with an initial database of more than a million names, created by consolidating data from VIAF (the Virtual International Authority File maintained by 19 major world libraries) and data from 15 other groups, including rights management organizations, professional societies, government grant organizations, and the supply trade.

ISNI's simplicity is powered by worldwide cooperation among information-laden organizations. The ISNI International Agency was founded by the International Confederation of Societies of Authors and Composers

(CISAC), the International Federation of Reproduction Rights Organisations (IFRRO), the International Performers' Database Association (IPDA), ProQuest, OCLC, and the Conference of European National Librarians (represented by the Bibliothèque Nationale de France and the British Library). The founding organizations include consortia representing more than 26,000 major world libraries, 300 rights management societies, and the research information giants OCLC and ProQuest. They have already begun integrating the new code into their search systems and are taking ISNI to a larger audience by getting researchers involved. Bowker, an affiliated business of ProQuest, is the official U.S. ISBN assignment agency. ■

INW | doi: 10.3789/isqv24n1.2012.06

🔗 ISNI's free enquiry interface: <http://isni.oclc.nl/>
ISNI International Agency: www.isni.org.



Now, the ISNI International Agency has a system that will connect the right information with the right person—no matter which name is being used.

[SPECIAL EDITION]

STATE OF THE STANDARDS

JANUARY 31, 2012

This comprehensive report on NISO's standards and initiatives appears in the first issue of the year of *ISQ* to keep readers informed of the scope and status of NISO's program on an annual basis. If you have questions about any of the standards or development programs, contact the NISO office by phone (301-654-2512), via e-mail (nisoHQ@niso.org), or visit the Standards section of the NISO website (www.niso.org/standards).

In Development

Listed below are the NISO working groups that are currently developing new or revised standards, recommended practices, or reports. Refer to the NISO website (www.niso.org/workrooms/) and the *Newline* quarterly supplements, *Working Group Connection* (www.niso.org/publications/newline/), for updates on the working group activities.

Note: DSFTU stands for Draft Standard for Trial Use.

WORKING GROUP	STATUS
AI Framework (was DAISY Revision) Co-chairs: Markus Gylling, George Kerscher	NISO Z39.98-201x, Authoring and Interchange Framework for Adaptive XML Publishing Specification Finalizing for publication following the DSFTU period.
Digital Bookmarking and Annotation Sharing Co-chairs: TBD	NISO Z39.97-201x Digital Bookmarking and Annotation Standard in development.
E-book Special Interest Group Co-chairs: Nettie Lagace, Todd Carpenter	Pre-standardization work underway in four sub-groups: Accessibility, Discovery Tools and Linking, Distribution, and Metadata
Institutional Identifiers (I²) Co-chairs: Grace Agnew, Oliver Pesch	Recommended practice regarding the use of the International Standard Name Identifier (ISNI) for institutional identifiers in development.
Improving OpenURLs Through Analytics (IOTA) Chair: Adam Chandler	Technical Report in development.
Knowledge Base and Related Tools (KBART) Phase II <i>Joint project with UKSG</i> Co-chairs: Andreas Biedenbach, Sarah Pearson	Phase II Recommended Practice in development.

CONTINUED »

IN DEVELOPMENT CONTINUED »

WORKING GROUP	STATUS
Open Discovery Initiative Co-chairs: Marshall Breeding, Jenny Walker	Recommended Practice in development.
Presentation and Identification of E-Journals (PIE-J) Co-chairs: Bob Boissy, Cindy Hepfer	Recommended Practice in development.
Resource Synchronization Co-chairs: Herbert Van de Sompel, Todd Carpenter	NISO Z39.99-201x, Specification for Web Resource Synchronization
RFID for Library Applications Revision Co-chairs: Vinod Chachra, Paul Sevcik	NISO-RP-6-201x, RFID in U.S. Libraries Finalizing for publication following the public comment period.
Shared Electronic Resource Understanding (SERU) Co-chairs: Judy Luther, Selden Lamoureux, Karla Strieb	NISO RP-7-201x, Shared Electronic Resource Understanding (SERU) Revision to Recommended Practice issued for public comment through February 19, 2012.
Standardized Markup for Journal Articles Co-chairs: Jeff Beck, B. Tommie Usdin	Z39.96-201x, Standardized Markup for Journal Articles Finalizing for publication following the DSFTU period.
Supplemental Journal Article Materials <i>Joint project with NFAIS</i> Co-chairs Business Working Group: Linda Beebe, Marie McVeigh Co-chairs Technical Working Group: Dave Martinsen, Alexander (Sasha) Schwarzman	NISO RP-15-201x, Recommended Practices for Online Supplemental Journal Article Materials Part A: Business Working Group Recommendations issued for public comment through February 29, 2012. Part B: Technical Working Group Recommendations in development.
SUSHI Server Working Group Chair: Oliver Pesch	NISO RP-13-201x, Providing a Test Mode for SUSHI Servers Finalizing for publication following a draft for trial use.
SUSHI (Z39.93) Standing Committee Co-chairs: Bob McQuillan, Oliver Pesch	NISO RP-14-201x, NISO SUSHI Protocol: COUNTER-SUSHI Implementation Profile Finalizing for publication following a public comment period.

In Revision

The following are published and approved NISO standards or recommended practices that are in the process of being revised.

DESIGNATION	TITLE
ANSI/NISO Z39.7-2004	Information Services and Use: Metrics & Statistics for Libraries and Information Providers Data Dictionary
ANSI/NISO Z39.83-1-2008	NISO Circulation Interchange Part 1: Protocol (NCIP)
ANSI/NISO Z39.83-2-2008	NISO Circulation Interchange Protocol (NCIP) Part 2: Implementation Profile 1
NISO RP-6-2008	RFID in U.S. Libraries
NISO RP-7-2008	Shared Electronic Resource Understanding (SERU)

Five Year Review

The following published and approved NISO standards are either currently undergoing or will begin the five-year review process in 2012. Voting pools for these standards will open shortly; if fifteen percent (15%) or more of the membership joins the Voting Pool and balance requirements are met, reviews will be conducted in order to provide a recommendation for action to accompany the review ballots in November 2011. If less than 15% of the membership joins the Voting Pool, the Board may initiate procedures for an administrative withdrawal. See Section 7.5 of the NISO Procedures for more information (www.niso.org/about/documents).

DESIGNATION	TITLE
ANSI/NISO Z39.93-2007	The Standardized Usage Statistics Harvesting Initiative (SUSHI) Protocol
ANSI/NISO Z39.85-2007	The Dublin Core Metadata Element Set

Published and Approved NISO Standards

The following NISO standards are approved and published. The notation R, e.g. R2002, indicates that the standard was reaffirmed in the specified year. Free downloadable copies of the standards are available from: www.niso.org/standards/

DESIGNATION	TITLE
ANSI/NISO Z39.2-1994 (R2009)	Information Interchange Format
ANSI/NISO Z39.7-2004	Information Services and Use: Metrics and statistics for libraries and information providers – Data Dictionary
ANSI/NISO Z39.9-1992 (R2001)	International Standard Serial Numbering (ISSN)
ANSI/NISO Z39.14-1997 (R2009)	Guidelines for Abstracts
ANSI/NISO Z39.18-2005 (R2010)	Scientific and Technical Reports – Preparation, Presentation, and Preservation
ANSI/NISO Z39.19-2005 (R2010)	Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies
ANSI/NISO Z39.23-1997 (R2009)	Standard Technical Report Number Format and Creation
ANSI/NISO Z39.26-1997 (R2002)	Micropublishing Product Information
ANSI/NISO Z39.29-2005 (R2010)	Bibliographic References
ANSI/NISO Z39.32-1996 (R2002)	Information on Microfiche Headers
ANSI/NISO Z39.41-1997 (R2009)	Printed Information on Spines

CONTINUED »

DESIGNATION	TITLE
ANSI/NISO Z39.43-1993 (R2011)	Standard Address Number (SAN) for the Publishing Industry
ANSI/NISO Z39.47-1993 (R2003)	Extended Latin Alphabet Coded Character Set for Bibliographic Use (ANSEL)
ANSI/NISO Z39.48-1992 (R2009)	Permanence of Paper for Publications and Documents in Libraries and Archives
ANSI/NISO Z39.50-2003 (R2009)	Information Retrieval: Application Service Definition & Protocol Specification
ANSI/NISO Z39.56-1996 (R2002)	Serial Item and Contribution Identifier (SICI)
ANSI/NISO Z39.64-1989 (R2002)	East Asian Character Code (EACC) for Bibliographic Use
ANSI/NISO Z39.71-2006 (R2011)	Holdings Statements for Bibliographic Items
ANSI/NISO Z39.73-1994 (R2001)	Single-Tier Steel Bracket Library Shelving
ANSI/NISO Z39.74-1996 (R2002)	Guides to Accompany Microform Sets
ANSI/NISO Z39.76-1996 (R2002)	Data Elements for Binding Library Materials
ANSI/NISO Z39.78-2000 (R2010)	Library Binding
ANSI/NISO Z39.79-2001	Environmental Conditions for Exhibiting Library and Archival Materials
ANSI/NISO Z39.82-2001	Title Pages for Conference Publications
ANSI/NISO Z39.83-1-2008	NISO Circulation Interchange, Part 1: Protocol (NCIP)
ANSI/NISO Z39.83-2-2008	NISO Circulation Interchange Protocol (NCIP), Part 2: Protocol Implementation Profile 1
ANSI/NISO Z39.84-2005 (R2010)	Syntax for the Digital Object Identifier
ANSI/NISO Z39.85-2007	Dublin Core Metadata Element Set
ANSI/NISO Z39.86-2005	Specifications for the Digital Talking Book
ANSI/NISO Z39.87-2006 (R2011)	Data Dictionary - Technical Metadata for Still Images
ANSI/NISO Z39.88-2004 (R2010)	The OpenURL Framework for Context-Sensitive Services
ANSI/NISO Z39.89-2003 (R2009)	The U.S. National Z39.50 Profile for Library Applications
ANSI/NISO Z39.93-2007	The Standardized Usage Statistics Harvesting Initiative (SUSHI) Protocol
ANSI/NISO/ISO 12083-1995 (R2009)	Electronic Manuscript Preparation and Markup U.S. adoption of ISO 12083

NISO Recommended Practices

NISO Recommended Practices are “best practices” or “guidelines” for methods, materials, or practices in order to give guidance to the user. These documents usually represent a leading edge, exceptional model, or proven industry practice. All elements of Recommended Practices are discretionary and may be used as stated or modified by the user to meet specific needs. Free downloadable copies of these documents are available from: [/www.niso.org/publications/rp/](http://www.niso.org/publications/rp/)

TITLE	DESIGNATION
Framework of Guidance for Building Good Digital Collections 3rd edition, 2007	
Ranking of Authentication and Access Methods Available to the Metasearch Environment	NISO RP-2005-01
Search and Retrieval Results Set Metadata, version 1.0	NISO-RP-2005-02
Search and Retrieval Citation Level Data Elements, version 1.0	NISO RP-2005-03
Best Practices for Designing Web Services in the Library Context	NISO RP-2006-01
NISO Metasearch XML Gateway Implementers Guide, version 1.0	NISO RP-2006-02
RFID in U.S. Libraries	NISO RP-6-2008
SERU: A Shared Electronic Resource Understanding	NISO RP-7-2008
Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group	NISO RP-8-2008
KBART: Knowledge Bases and Related Tools	NISO RP-9-2010
Cost of Resource Exchange (CORE) Protocol	NISO RP-10-2010
ESPreSSO: Establishing Suggested Practices Regarding Single Sign-On	NISO RP-11-2011
Physical Delivery of Library Resources	NISO RP-12-2012

Withdrawn NISO Standards

In accordance with NISO procedures, standards may be withdrawn because they are superseded by a newer standard, a national version is withdrawn in favor of an international equivalent, or the content is deemed to be obsolete. In accordance with ANSI procedure, all American National Standards that are not revised or reaffirmed within ten years following ANSI approval are automatically administratively withdrawn. A list of withdrawn NISO standards is available on the NISO website (www.niso.org/standards/). Copies of these standards are available online or from the NISO office.

NISO Technical Reports

NISO Technical Reports provide useful information about a particular topic, but do not make specific recommendations about practices to follow. They are thus “descriptive” rather than “prescriptive” in nature. Proposed standards that do not result in consensus are often published as technical reports. Free downloadable copies of these documents are available from: www.niso.org/publications/tr/

TITLE	DESIGNATION
Environmental Guidelines for the Storage of Paper Records by William K. Wilson	NISO TR01-1995
Guidelines for Indexes and Related Information Retrieval Devices by James D. Anderson	NISO TR02-1997
Guidelines for Alphabetical Arrangement of Letters & Sorting of Numerals & Other Symbols by Hans H. Wellisch	NISO TR03-1997
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Making Good on the Promise of ERM: A Standards and Best Practices Discussion Paper

*by the ERM Data Standards and Best Practices
Review Steering Committee*

This white paper is the outcome of the NISO Electronic Resource Management (ERM) Data Standards and Best Practices Project, a successor to the Digital Library Federation's Electronic Resources Management Initiative (ERMI). The project's primary goals were to perform a "gap analysis" of standards and best practices and make recommendations on the future of the ERMI Data Dictionary.

The standards review and findings focused on five categories: link resolvers and knowledge bases; the work, manifestations, and access points; cost and usage-related data; license terms; and data exchange using institutional identifiers. A more extensive review of fourteen of the most relevant standards was done and the data elements for each were mapped to the elements defined in the ERMI report.

Also included is an evaluation of how ERM systems could improve their workflow support—a shortcoming in most existing systems—and a detailed workflow best practices bibliography along with a list of illustrative workflow diagrams.

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