

It takes a world to review a standard like ISSN!

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Abstract:

The revision of an ISO standard is a very specific process involving experts from various backgrounds and countries. ISO Central Secretariat regularly issues guidelines and recommendations to help the convener of the working group and experts to proceed with the revision. The ISSN standard was last revised in 2007. This paper describes the current revision process of ISO 3297 -ISSN. Updating a standard as widely-used as the ISSN cannot be done without taking into account the changes that have occurred in the cataloguing environment and the technical context. Although ISO experts can share their insights at regular meetings, it is sometimes useful to call upon the community of users to get their input. A survey was thus conducted in 2018 about the views of ISSN users on the future of the standard. ISO experts have since reviewed the survey findings and come forward with proposals for the development of the next ISSN standard.

Keywords: ISSN, ISO standards, continuing resources, standardization, ISSN network.

Introduction

ISO 3297 (ISO, 2017) is the widely-adopted international standard specifying the International Standard Serial Number (ISSN) that uniquely identifies and describes serials and other continuing resources. Like any other ISO standard, ISO 3297 can be reviewed every five years if member organisations belonging to *TC46/SC9 Identification and Description of information* committee vote for a revision. ISO 3297 was last reviewed in 2007. It underwent a minor editorial revision in 2017 leading to the publication of the fifth version of the standard. Further to the positive vote of TC46/SC9 member organisations, the 2017 version of ISO 3297 is currently under revision. The revision process started in September 2017 and is scheduled to last three years at most before the sixth version of ISO 3297 is eventually published by ISO.

ISO 3297 is supervised and implemented by the ISSN International Centre, an intergovernmental organisation based in Paris, France. The ISSN International Centre is considered by ISO as the Registration Authority for ISO 3297 and the two parties are bound by a Registration Authority Agreement whose latest version was signed in October 2018. Pursuant to this agreement, the ISSN International Centre can delegate the implementation of

ISO 3297 to Registration Agencies. The ISSN International Centre thus assigns ISSN to continuing resources issued by international organisations and delegates the implementation of ISO 3297 to ISSN National Centres which operate at national levels by registering continuing resources published within their respective territories. Since the ISSN network currently comprises 90 Member States, the ISSN International Centre also assigns ISSN to continuing resources issued to publishers located in countries without any ISSN national centre.

Since September 2017, the ISSN International Centre has thus been involved with the revision of ISO 3297. A working group was set up in 2017 whose convener is the Director of the ISSN International Centre. Monthly meetings have been organized with the experts appointed by their national standardization bodies. These experts represent various social and economic sectors such as government agencies, publishing companies, content vendors, and libraries. To date, their discussions have produced more than 100 documents (standard draft versions, meeting reports, comments) which have been posted on the dedicated ISO platform available to registered experts only (Romano Reynolds & Hanson, 2017).

This paper will go over the background of the current revision (section 1), touch upon some user expectations regarding the ISSN standard (section 2) and review ISO experts' proposals to update and expand the standard (section 3).

1/ Bibliographic background

The 2007 revision of ISO 3297 broadened the scope of the standard by including continuing resources, i.e. bibliographic resources that are issued over time without no predetermined conclusion. This move resulted from a project aiming at harmonizing the cataloguing practices regarding serials between bibliographic networks using AACR, ISBD and ISSN (Parent, 2003). An agreement was reached on a common definition of continuing resources, including serial publications and integrating publications. In 2007, ISO 3297 was therefore amended to update definitions and establish a principle of “differentiated identification” based on comprehensiveness for the identification of serials and selectiveness for the identification of integrating continuing resources (Pellé, 2006).

At that time, the ISO working group also discussed the desirability for the ISSN to assign different ISSNs to the print and digital formats of the same title in order to distinguish these two media formats for commercial purposes and to allow their collocation for better discoverability. This need could be addressed in two distinct ways. The first option was to add a suffix to the base ISSN to designate various media formats. This option was not preferred at that time because it involved substantial changes in the ISSN Register and it also appeared incompatible with the syntax of bar codes used by the European Article Number (now Global Trade Item Number).

The option eventually preferred was to create the ISSN-L or Linking-ISSN that identifies a serial resource at the title level. This ISSN-L is therefore associated with all media formats of a same resource. ISSN-Ls are centrally assigned by the ISSN International Centre, not by national centres (Romano Reynolds, 2006). For a given title, the ISSN-L is similar to the first ISSN assigned in the ISSN database.

In the ISSN portal (<https://portal.issn.org>), a search by ISSN-L allows users to display a cluster record containing digital and print versions of the same title. Thus the page <https://portal.issn.org/resource/ISSN-L/2331-8929> displays the metadata of the two medium versions of the serial entitled *Anthropology of work newsletter*. The release of ISSN metadata was achieved in 2018 with the opening of the linked data-based ISSN portal (Billey, Rendall, Wishnetsky, 2018). ISSN-Ls are now widely available in different linked data formats (RDF/XML, JSON, Turtle) and can be reused by all types of applications, notably by those using OpenURL access resolution.

The 2007 revision also updated the list of metadata required for ISSN allocation and defined the interoperability of ISSN with other identification systems such as the Digital Object Identifier (Roucolle, 2008). In particular, the 2007 standard provided that DOIs created by publishers should include the ISSN in their suffixes. This provision was also included in the ISO 26324:2012 standard on Digital Object Identifier system.

Since 2007, the bibliographic context has changed dramatically. IFLA's Library Reference Model has revisited the modelling of information regarding the various components of a resource by creating a model based on four levels of description or four entities, namely "work", "expression", "manifestation", "item". This model is now used as a basis for revising the cataloguing instructions established by the RDA and ISBD (Dunsire et al., 2018). A working group on aggregates has been set up by the RDA Steering Committee to address the description of continuing resources that are considered as "diachronic works" in contrast to "static works". Diachronic works can be determined, i.e. have a planned end of publication, or indeterminate, i.e. without a planned end of publication. They can also be consecutive or integrative. These four characteristics can be combined in pairs. For example, a journal can be identified as an indeterminate and consecutive diachronic work. RDA standard states that a diachronic work is both an expression and a manifestation ("WEM lock" principle) and that the relations between two diachronic works are work-to-work relations. RDA standard finally recognizes the possibility of grouping diachronic works into ensembles on the basis of criteria established by an organization wishing to group them for specific purposes.

The new concepts used in the Library Reference Model will have an impact on the International Standard for Bibliographic Description (ISBD) which is the source of inspiration for the *ISSN Manual*. The latter provides the ISSN network with instructions for the preparation of ISSN reference records. ISO 3297 often refers to the *ISSN Manual* when practicalities of serial cataloguing are concerned, notably for title changes which trigger or not the creation of a new serial work.

The current revision of ISO 3297 standard is therefore taking place in a very different bibliographic context and it is also influenced by the evolution of user needs.

2/ What ISSN Users are expecting from the next ISSN standard

To inform its debate, the ISO working group in charge of the revision of ISO 3297 decided in 2017 to undertake a global consultation of stakeholders using ISSN, i.e. libraries, publishers, intermediaries, agencies and end users. 1491 respondents from 78 countries participated in the survey (Béquet & Akeroyd, 2019).

In this survey, respondents specified notably how they made use of the ISSN. The highest scoring usage was its use in identification of products in the supply chain, followed by discovery of continuing resources, internal tracking, information exchange, long-term archiving, digitization, deduplication, OpenURL resolution, and e-legal deposit.

When asked about the future of the standard, respondents expressed conflicting views. Respondents could tick various non-exclusive options. Results show (28% of all replies) some support in favour of expanding the types of publications assigned ISSNs. There were also views (slightly lower at 18% and 13%) that ISSNs should be applied to different media or languages. The quality of continuing resources was also a recurring theme with many comments suggesting that the ISSN should guarantee it.

ISSN users were also asked to give their opinion on the singular “eISSN” which covers all digital formats of a publication e.g. HTML, PDF, ePub, etc. The question sought views as to whether the current implementation of the “eISSN” met user requirements. There was an overwhelming view (over 71%) that the current policy was appropriate. A subsequent question dealt with the granularity of the ISSN. The largest vote was for the continuation of having one ISSN for the print version and one for the digital version (34%), though there was a large block of votes (30%) in support of a base e-ISSN to which a suffix could be added to identify the specific digital format. Few respondents (7%) supported the idea of different ISSNs for each digital format.

In 2018, the ISO Working Group was also investigating the idea of grouping related titles by creating a specific identifier informally labelled “Family ISSN”. Users were asked to rate the priority of different options for a “Family ISSN”.

Groupings could include “parent” titles where:

- previous titles of the same continuing publication could be brought together,
- geographic families linking serials comprising local, national and international editions of the same title and,
- language families where the same title appears in multiple languages.

The survey findings suggested that overall there was support for the notion of “family ISSN” with a total of almost 77% respondents registering either high or medium interest. There was even high interest in title history, reaching 89% and slightly less interest in either geographic families or language families but still reporting a high and medium interest of 63% and 67% respectively.

ISO experts involved with the revision of the standard have reviewed and discussed the findings of the survey. Since consensus is needed to make progress, experts have decided to retain certain proposals and dismiss others.

3/ Updating and expanding ISO 3297 - ISSN

All ISO standards use the same ISO template starting with a general introduction and the presentation of the scope. The latter has been updated to clarify that ISSNs are applicable to serials and other continuing resources, whatever their medium of production (print or digital) and irrespective of whether the resources are ceased, currently in publication or planned for the foreseeable future.

Continuing resources thus include:

- serials, e.g. such as newspapers, periodicals, journals, magazines, conference proceedings, blogs, continuing monographic series with no predetermined conclusion, annual reports, and,
- ongoing integrating resources that are continually updated, e.g. loose-leaf publications, updating websites, institutional repositories, directories and databases.

The standard section comprising definitions has also been reviewed to better explain important notions such as the key title and the abbreviated key title. Several definitions have been taken from the recently-revised standard ISO 5127:2017 Information and documentation -- Foundation and vocabulary. These definitions are available for free on the ISO online browsing platform (<https://tbs.isolutions.iso.org>).

The ISSN network-specific definition of the key title has been updated. The key title is the unique name for a continuing resource which is established by the ISSN network and it is inseparably linked with its ISSN. The key title can be the same as the title of the resource or, in order to achieve uniqueness, it can be constructed by the addition of identifying and/or qualifying elements such as name of issuing body, place of publication, edition statement. A key title is necessary when several continuing resources bear the same title proper like The Times (Lafayette, LA) assigned ISSN 1524-4016 and The Times (Richmond, VA) assigned ISSN 1941-2959. Many other examples can be found on the ISSN portal (<https://portal.issn.org>).

The abbreviated key title is just as important. It is the specific title established by the ISSN network by replacing each significant word of a key title by the corresponding abbreviation from the List of Title Word Abbreviations managed by the ISSN International Centre which maintains standard ISO 4 Documentation--Rules for the Abbreviation of Title Words and Titles of Publications. The abbreviated key title is widespread in citations related to scientific, technical, engineering and medical publications. The title of the **International journal of biochemistry & cell biology** (ISSN 1357-2725) is thus abbreviated as **Int. j. biochem. cell biol.** The ISSN International Centre is currently leading a project to enhance the quality of abbreviations in ISSN records.

Another definition has been coined by WG5 experts to describe the concept of an edition of a continuing resource which groups separate complete continuing resources that are issued simultaneously. They usually bear the same title and are intended for a specific audience. These continuing resources may be published in various languages or specialised in geographic areas such as for example the journal **GIGA-Focus** published in Hamburg by the German Institute of Global and Area Studies which has two international editions, one in Chinese (ISSN 2196-3959) and another one in English (ISSN 2196-3940).

The section about the construction of the ISSN has been refined by adding a reference to UNICODE (ISO/IEC 10646:2017) expressions of the ten digits (0 to 9) and the character (X) which are necessary to fully express an ISSN. The standard also states that the hyphen may or may not be included in the expression of an ISSN: It is present when the ISSN is displayed for human perception but it can be omitted if needed when database systems process bibliographic metadata.

The section about the principles of ISSN assignment has also been reviewed. The standard now states that an ISSN should be assigned within the ISSN network upon request from an applicant (organisation or individual) that needs to identify a resource but it can also be requested as part of an internal library processing such as for example legal deposit or digitization projects. In any case, the request for an ISSN needs to be accompanied by specific metadata provided by the applicant and a copy of or access to the continuing resource itself for verification purposes. The role of the ISSN network is to check and validate the information submitted by the applicant, assign the ISSN and define the key title, complete the description by including specific metadata and inform the applicant and the wider community via the ISSN portal. The entire process of ISSN assignment is further described in the *ISSN Manual* available on the website of the ISSN International Centre.

The standard also clearly indicates that each distinct continuing resource in a particular medium should be assigned only one ISSN. This is the reason why people usually refer in common parlance to the “pISSN” assigned to the print edition and the “eISSN” assigned to the digital edition. However, these terms are not acknowledged in the standard as approved terminology. The standard emphasizes the importance of displaying all ISSN for distinct media version on the title page of each media edition of a given resource. The journal *Anthropology Today* has a print edition (ISSN 0268-540X) and an online edition (ISSN 1467-8322) and both editions should display the two ISSN each with the appropriate qualifier. The assignment of distinct ISSN for distinct media editions is particularly relevant for content providers that give access to their digital continuing resources via the OpenURL protocol. Unfortunately, there is still some confusion between the ISSN assigned to distinct media edition and the ISSN network is confident that the release of ISSN data in the ISSN portal will help solve this issue and allow linking to correct ISSN and key titles.

The standard offers another new feature based on the ISSN-L which was first defined in the 2007 version of the ISSN standard. In a nutshell, the linking ISSN (ISSN-L) is the specific ISSN designated by the ISSN International Centre to enable collocation among the different media versions of a continuing resource. Its 8-character string is identical to the first ISSN validated in the ISSN Register to any medium version of a continuing resource. Building on this experiment and on the findings of the user survey, ISO experts have suggested to create new clusters of continuing resources. The ISSN International Centre will be responsible for setting up these clusters of continuing resources and for assigning a new ISSN and a prefix. This prefix will be labelled ISSN-X where X identifies the type of cluster.

Last but not least, the new ISSN standard will provide an overview of how the ISSN interoperates with technical formats and standards. For example, the linked data expression of the ISSN consists in the URI template for ISSN resources which is http://issn.org/resource/identifier_type/resource_identifier.

For the time being, the {identifier_type} URI component has the following values:

- ISSN for resources identified by an ISSN; (e.g. <http://issn.org/resource/ISSN/1683-4135>);
- ISSN-L for resources identified by an ISSN-L (e.g. <http://issn.org/resource/ISSN-L/1683-3775>).

The standard also refers to ISO 26324:2012 defining the Digital object identifier system which specifies that “where the referent of a DOI name also has an existing identifier within a commonly recognized identifier scheme or schemes, at least one of the following methods is used to express the relationship.

a) The other existing identifier(s) is (are) indicated in the DOI metadata field “referentIdentifier(s) (...) irrespective of whether the identifier (s) is (are) incorporated into the syntax of the DOI name.

b) An existing identifier can be incorporated as an explicit part of the DOI name for the referent.”

An example of option b) is 10.1038/issn.1476-4687 where 1476-4687 is the ISSN assigned to the online edition of the journal *Nature*.

Conclusion

A first draft ISSN standard was submitted to ballot by ISO throughout the first quarter of 2019. National standardisation organisations voted by a majority in support of the new version of the standard. They also shared numerous comments and useful requests for clarification that have been addressed by the working group.

The deadline to submit feedback as well as the amended draft standard to ISO Central Secretariat is set to July 2019. ISO will subsequently launch a second ballot that will hopefully lead to the final validation of the standard. ISO will then proceed with the publication of the sixth version of ISO 3297 that should be available to the library community by the end of this year.

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