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# ISBN-13: New number on the block

[Ann Chapman](#) outlines the planned changes to the ISBN standard and its impact on the information community and the book trade.

## Introduction

The International Standard Book Number (ISBN) is a unique machine-readable identification number, defined in ISO Standard 2108, which is applied to books. As a result of electronic publishing and other changes in the publishing industry, the numbering capacity of the ISBN system is being consumed at a much faster rate than was originally anticipated when the standard was designed in the late 1960s. While we will not run out of ISBNs tomorrow, it will happen before too long and plans are already in hand to provide a solution before the crisis point is reached. However, since the solution is to re-structure the ISBN, this will have an impact – to varying degrees – on all users of ISBNs: publishers, distributors, booksellers, libraries, and suppliers of systems and software to the information community and the book trade.

## Changing the ISBN

The ISBN was first standardised in 1972 as ISO 2108 and last revised in 1992, using a 10-digit number structure. A 10-digit ISBN (now starting to be referred to as ISBN-10) has, in theory, the capacity to assign 1 billion numbers. However, the internal hierarchical structure of the ISBN governs the way the numbers are assigned. ISBNs have been assigned over almost 35 years in over 150 countries or territories. The ISBN-10 is divided into four parts of variable length: the group identifier, the publisher identifier, the title identifier and the check digit; for example, ISBN 1-85375-390-4. Blocks of ISBNs are allocated by the [International ISBN Agency](#) [1] to specific regional groups or countries (the group identifier). Within each regional group or country, blocks of ISBNs are allocated by the national ISBN agency to specific publishers according to their output (the publisher identifier or publisher prefix). Finally, publishers allocate ISBNs to specific titles. This hierarchical allocation reduces the total number of ISBNs available, and has resulted in over-allocation in some areas and under-allocation in others. It is these areas of under-allocation where the ISBNs will run out first.

## Revising the ISBN

The International Standards Organisation (ISO) Technical Committee 46 (TC 46) is responsible for information and documentation standards. Within TC 46, Subcommittee 9 (SC 9) [2] develops and maintains standards on the identification and description of information resources and Working Group 4 (WG 4) was established in January 2002 to revise the ISBN standard. The project leader is Michael Healy of Nielson BookData Ltd. When the revision is completed, it will be published as ISO 2108, 4<sup>th</sup> edition.

The revised standard will specify all changes to the ISBN system. The ISO process has several stages, several of which have now been completed:

1. project proposal
2. working draft
3. committee draft
4. draft international standard (comments at this stage may result in further changes)
5. final draft international standard (yes or no vote by ISO members) and
6. publication

The aim is to have the ISBN standard revised and approved by the third quarter of 2004. Voting on the draft international standard ended on 19 July 2004 with 100% approval from the 23 P-member countries that voted, with no negative votes and 4 abstentions. The ISO TC46 SC9 Web site [2] noted that:

*'Comments from ISO bodies for Australia, Canada, Columbia, Finland, France, Germany, Hungary, Norway, Sweden and the USA are being considered by the Working Group. Based on the Working Group's responses and the nature of its agreed modifications to the text, the SC9 Chairperson and Secretariat will decide, in consultation with the Project leader, whether to advance the agreed text of DIS 2108 directly to the Publication Stage or to issue it for a final two-month vote at the Approval Stage as FDIS 2108.'*

The target date for publishing the revised standard is January 2005. The latest draft of the revised standard specifies an implementation date of 1 January 2007. All users of ISBNs need to have made any necessary changes to systems before that point.

## ISBN-13

In looking for a revised numbering system for the ISBN, the Working Group took into account a number of other issues, such as the need for standardized metadata for ISBN assignments, and funding and support for administration of the ISBN system. The revision is also reviewing the criteria and conditions that are used to decide how the ISBN is assigned to certain types of monographic publications (e.g. digital files, print-on-demand materials, and discrete parts of monographic publications).

The present ISBN is used in its 10-digit form by a range of information community and book trade organisations. However, the bar code system (the bar code printed on the back cover of paperback books for example) used by retail systems throughout the supply chain is the 13-digit European Article Number (EAN) code. An ISBN can be transformed into an EAN by adding the 3-digit EAN product code for books (978) in front of the ISBN and recalculating the check digit. So ISBN 0-901690-54-6 becomes EAN 978-0-901690-54-8.

At the same time that the ISBN was being revised, the United States decided to migrate from its 12-digit Universal Product Code (UPC) to the EAN, which has now been renamed the EAN-UCC-13 international standard for product coding [3]. The Working Group proposed that the ISBN should also move to integrate with the EAN-UCC. This aligns the ISBN with all other product numbering, making trade with non-book retailers (e.g. supermarkets selling paperback books) much easier. It will also be

more efficient and cost-effective to introduce the new ISBN-13 while North American users are already adapting to an equivalent change in their UPC bar code system.

Existing ISBNs can be transformed into ISBN-13 by the addition of the book code prefix 978 and another product code prefix – 979 – has been made available, which will open up a new range of numbers. Numbers in the new range will only be allocated once numbers from the old range have been exhausted.

The Working Group considered using an alphanumeric or hexadecimal ISBN within the 10-digit format, but rejected these options as they would be incompatible with most bar code systems. They also rejected the idea of changing the ISBN into a 'dumb' number (eliminating the region/country and publisher identifiers) and culling all unassigned numbers for use elsewhere: because of the need for a strong central database to administer assignment and prevent duplication, this would be a costly and complex solution.

## **Impact**

How will this change affect users of ISBNs? The major changes to be aware of include the following:

1. The ISBN will change from 10 to 13 digits on 1 January 2007
2. Existing ISBNs will be prefixed by 978
3. The resulting 13-digit number will be identical with the EAN-13 number that is currently encoded in the bar code
4. The 979 prefix will be introduced when the current stock of numbers is exhausted
5. Publishers' identifier prefixes are not likely to remain the same for ISBNs using the 979 prefix
6. Bar codes will carry the 13-digit ISBN with hyphenation above the bar code and the EAN-13, the identical number without hyphens or spaces, below the bar code.

## **Publishers, Distributors, Booksellers**

All publishers, distributors and booksellers need to review all of their processes as the ISBN is embedded in a variety of ways. They need to be aware of the changes and how it impacts on both internal and external processes.

Publishers are advised to include the ISBN-13 on the copyright pages of published items, on marketing and sales material and on bibliographic data, as soon as possible. The ISBN printed above the bar code on items must be in the ISBN-13 format from January 2007. All internal systems have to be changed to support both ISBN and ISBN-13. This is a big task and should not be under-estimated. There are two options that could be used to modify existing systems: these are to set up an intermediate key file, or to translate the number each time you read and write.

Any ISBN that has already been assigned will not be replaced by a new ISBN for the same product. The change will be in how those 10-digit ISBNs are displayed or written; these should in the future be displayed in the 13-digit format. All existing

ISBNs can be transformed to ISBN-13 by prefixing the ISBN with 978 and recalculating the check digit. Publishers with stocks of unused ISBNs can continue using them until they are used up, but should use the ISBN-13 version of the number. When publishers have used up existing ISBN allocations, new blocks of ISBNs from the 979 range will be allocated; however these will not have the same publisher prefix as in current allocations. Any reference to a publisher's prefix will have to include the EAN prefix as well. So a publisher prefix currently cited as '0-671' should be referred to as '978-0671'.

Distributors will need to be able to use the ISBN-13 from January 2007. The transition from ISBN to ISBN-13 is planned to take place during 2006. Electronic Data Interchange (EDI) messages will need to show EAN-13 and ISBN from January 2006. All internal systems have to be changed to support both ISBN and ISBN-13; the scale of the problem and the possible solutions are the same as for publishers.

For booksellers the transition from ISBN to ISBN-13 will take place during 2006. From January 2007 all orders sent out on paper or by electronic ordering systems will need to use the ISBN-13 system. EDI messages will need to show EAN-13 and ISBN from January 2006. All internal systems have to be changed to support both ISBN and ISBN-13; the scale of the problem and the possible solutions are the same as for publishers and distributors.

## Libraries

Libraries find the ISBN a valuable, efficient access point for procurement, resource discovery and auto-record matching. The change to ISBN-13 will therefore affect various processes: acquisitions, cataloguing, information retrieval, inter-library loans (ILL), circulation, serials and binding, and past practice in use of the ISBN will also have an effect. ISBN assignment rules and cataloguing rules differ, with the result that a bibliographic record may carry two or more ISBNs (e.g. for hardback, paperback, and multipart set) and a further complication is that some serials have ISBNs. Some library systems use the ISBN as a control number; this is now recognised as bad practice but systems designed in this way still exist. Libraries have to cope with the misuse of ISBNs by publishers and errors in their assignment; e.g. reprints mistakenly assigned a new ISBN, new editions issued under an old ISBN, etc. And while for the book trade the 10-digit ISBN will at some point become a thing of the past, books with 10-digit ISBNs will exist in libraries indefinitely.

## Acquisitions

In acquisitions, the ISBN is a crucial identifier in EDI messages. All trading must use ISBN-13 from 1 January 2007, even where the MARC record has ISBN-10. BIC (Book Industry Communication) guidelines advise using both ISBN-10 and EAN during the transition year, 2006, and to adapt systems to use only EAN from 1 January 2007, at which point there will be a need for procedures to cope with any incomplete orders.

## Cataloguing

For cataloguing, the issue is how the cataloguing system is set up and not the bibliographic format. The MARC 21 format does not limit the length of the ISBN in field 020 and either ISBN-10 or ISBN-13 can be entered. Field 020 is repeatable so a

bibliographic record can hold both versions of the ISBN for an item. However, since some cataloguing systems do limit the length of this field to 10 characters, libraries will need to check with their system supplier. Many libraries now import records from library suppliers and bibliographic agencies; such records will increasingly contain ISBN-13 and library systems must be able to cope with this. This will happen in the near future as US publishers are planning to start using ISBN-13 from October 2005, and both the Library of Congress and the British Library will be including ISBN-13 in their bibliographic records once these appear on books.

## Searching

The use of the ISBN as a search key is widespread. Library catalogues and portals support searching by ISBN, including the use of the ISBN in non-specific search fields, e.g. keyword. ISBNs are displayed in brief and full records – this may be linked to the way they are stored, and again this may need modification. Links to and from external content and services may be affected – open URL (Z39.88), institutional portals, enrichments, booksellers, Whichbook.net, reading list systems, ebooks, etc., as may be metasearching and merging and de-duplication of results, and using Z39.50 targets.

## Inter-Library Loans

Libraries use ISBNs for other purposes. The ISBN is used as an identifier in ILL systems, and changes need to be co-ordinated with ILL partners. Not only will individual libraries have to address this problem, but so will union catalogues. They will have to be able to accept ISBN-13 contributed records, so holdings notification systems need to be checked – they may well be using fixed field length for ISBN data – as well as search and display processes. The ISBN is also used as the NCIP (NISO Circulation Interchange Protocol)(Z39.83) bib item identifier and in the LookUpItem service. It may also be used as an identifier for binding control systems.

## Other Considerations

ISBNs may also appear in other bibliographic metadata: digital content management systems, learning object management systems, and the 'Identifier' element in Dublin Core and other formats. In each of these areas, the metadata structure may have been set up with a fixed length, which will need to be changed. ISBNs can also be incorporated into other systems that make use of existing identifiers. For example, ISBN-13 could be incorporated into the Digital Object Identifier (DOI) as the suffix portion of a DOI [4].

Libraries will also need to review their bar code scanners. When used for searching, these will need to be re-programmed to output ISBN-13 when indexes are modified. If used for data entry, they will need to be able to deal with both ISBN-10 and ISBN-13 indefinitely.

So libraries need to plan for change and talk to system supplier(s) – a key issue if a library is about to change or upgrade a system, stock suppliers, bibliographic record suppliers, consortial and ILL partners, and linked content and service providers and users.

## Systems and software suppliers

System and software vendors are also affected. Each vendor will need to assess the impact of the change on each of its products. This is important as this change will have international impact – in every country using ISBNs the same changes will happen. For vendors there are the added complications that the various trading partners will have different timetables. Publishers will vary in exactly when they start using ISBN but it appears that libraries will be faced with at least a few ISBN-13 in bibliographic records in late 2005. Changes to products will also vary: libraries will require catalogues to accept both ISBN-10 and ISBN-13 indefinitely while the majority of the book trade (apart perhaps from second-hand dealers) will only require the dual capacity for a limited period.

The change to the ISBN will affect EDI in all its forms, warehouse management systems, Web-based systems, financial systems, printing and forms systems, data warehouse systems, and interfaces to other trading partners such as carrier services and print-on-demand services, etc. Not only does the change have an impact on internal functioning, but also on report layouts, screen displays and business forms (invoices, credits, etc.). All of this has to be implemented by IT and tested by the users.

## ISBN and EDI

EDI messages are used in TRADACOMS and EDIFACT. Both systems can already handle both ISBN-10 and the EAN (ISBN-13). In every context where an ISBN is used, an EAN number can also be used, so there is no problem in carrying the new format.

- All senders of TRADACOMS and EDIFACT messages should include both ISBN and EAN by January 2006
- All receivers of TRADACOMS and EDIFACT messages should modify systems to use EAN and ignore 10-digit ISBNs during 2006.
- All senders of TRADACOMS and EDIFACT messages should cease including 10-digit ISBNs on 1 January 2007.

BIC guidelines for the transition process, and supporting technical detail, are available on the [BIC Web site](#) [5].

## Conclusion

1 January 2007 may seem a long way ahead, but there is much to be done by a wide variety of organisations. During the transition year of 2006, both versions of the ISBN will be in use, and organisations may find themselves using one or other with each of their trading and service partners. 2007 will see the use of ISBN-13 only for trading purposes, although libraries will continue to use ISBN-10 indefinitely. BIC have produced guidelines to assist organisations through the process, but each organisation will need to review the impact on their systems, how the changes can be made and what it will cost, as well as disseminate the news of the change throughout their organisation.

## References

1. International ISBN Agency Web site <http://www.isbn-international.org/>
2. ISO Technical Committee 46 Subcommittee 9 Web site <http://www.nlc-bnc.ca/iso/tc46sc9/isbn.htm>
3. Information on the EAN-UCC-13 is available from the Uniform Code Council Web site <http://www.uc-council.org/2005sunrise/>
4. DOI Handbook: Numbering [http://www.doi.org/handbook\\_2000/enumeration.html](http://www.doi.org/handbook_2000/enumeration.html)
5. BIC Web site <http://www.bic.org.uk/>

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