

**aap**

# **Numbering Standards for Ebooks**

**Version 1.0**

# Numbering Standards for Ebooks

**aap**

Association of American Publishers, Inc.

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### Acknowledgments

These standards have been developed by the Association of American Publishers, Inc. (AAP) in conjunction with numerous participants in the publishing and e-commerce industries in order to promote the use of ebooks and to facilitate the development of ebook-related technology. They are voluntary, open standards and will be updated as appropriate. The AAP would like to thank the many individuals from the publishing and e-commerce industries who participated in the development of these standards, including representatives from:

- Publishers
- Wholesalers
- Retailers
- Libraries
- Industry Associations
- Expert Bodies / Independent agencies
- Registration Agencies
- Hardware Vendors
- Software Vendors

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### 1.0 Status of Document

This first release was created by the AAP Open Ebook Standards project. This effort was led by the Association of American Publishers, several leading publishers, and Andersen Consulting. It is being made available simultaneously to AAP membership and to other interested parties for a review and comment period, beginning November 27, 2000, and ending December 31, 2000. Please send feedback to:

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### 2.0 Abstract

The transition from physical to electronic content distribution necessitates a set of common policies and procedures to uniquely identify individual pieces of content in an Internet based economy. As such, the proposed numbering standards are intended to provide publishers with a set of voluntary guidelines to uniquely identify ebooks and ebook components.

First, it is important to understand what is being identified. An “ebook”<sup>1</sup> is defined by AAP as follows:

“An ebook is a Literary Work in the form of a Digital Object consisting of one or more standard Unique Identifiers, Metadata, and a Monographic body of content, intended to be published and accessed electronically.”

An ebook may be composed of smaller digital objects, which the publisher and consumer may wish to publish, sell and access separately from the ebook as a whole.

Given this definition, the guidelines address:

- the role of the ISBN as an ebook identifier
- the role of the digital object identifier (DOI) as an ebook identifier
- the assignment of identifiers to saleable components of ebooks
- the creation of an ebook from existing digital objects
- the relationship of the assigned identifiers to the object’s metadata

In this context, it is recommended that publishers:

- implement a new numbering standard based on DOIs for all ebooks.
- use the DOI in conjunction with the ISBN (or EAN, U.P.C., ISSN) for legacy purposes.
- assign and register one ISBN and one DOI to cover **all** renderings of an ebook.
- include the ISBN and DOI in the ONIX metadata.
- indicate the ebooks available rendering (for example, .pdf, .lit, etc.) in the ONIX metadata.
- establish a policy for setting the syntactic maps for the DOI suffix.
- resolve the user to a metadata sheet or use ‘nested tagging’ and type request parameters to support resolution to specific renderings.
- assign DOIs to saleable pieces of ebooks by extending the ebook DOI via the use of nodes.

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<sup>1</sup> The reader is encouraged to refer to the Applicable Terms in Appendix A, as many terms, such as "Literary Work" and "digital object", are used with specific meanings in mind.

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*(Further details and an explanation of these recommendations are provided in the body of this document)*

To provide a basis for discussing the guidelines, the following items are included in the appendix:

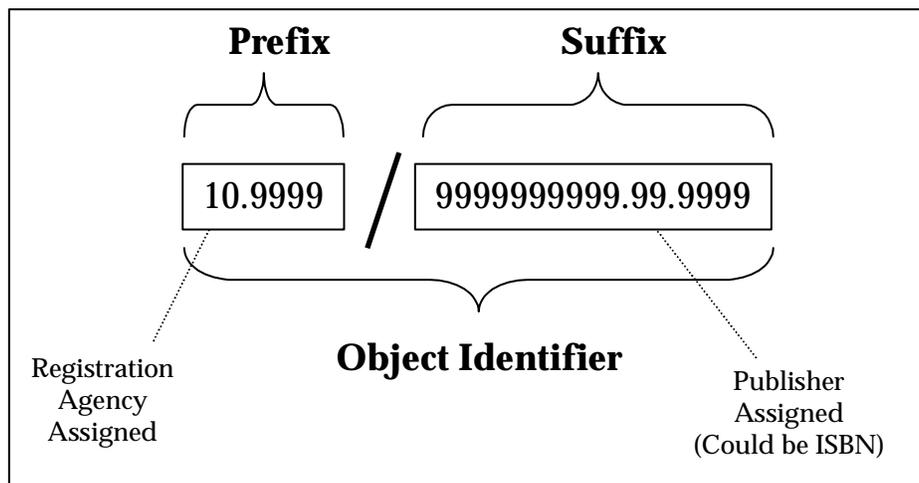
- a list of applicable terms
- a list of characteristics for an ebook identifier
- a list of characteristics for an ebook identification system

### 3.0 General DOI Structure<sup>2</sup>

The current DOI structure has evolved from what started as a research project initiated by AAP in 1996. In 1998, the International DOI Foundation was created to advance development of the DOI concept, establish the system, and manage and govern its promulgation not only for the publishing industry but for many others industries (for example, music).<sup>3</sup> This section introduces the basic structure of the DOI and provides a foundation for the AAP recommendations.

The general DOI structure has two components, a prefix and a suffix. These are separated by a forward slash. The combination of a prefix for the Registrant and unique suffix provided by the Registrant avoids any necessity for the centralized allocation of DOI numbers. The two components together form the DOI. (See Figure 1)

**Figure 1 – DOI Structure**



#### 3.1 The DOI Prefix

The DOI Prefix has two components:

- The first component for all DOIs starts with "10." This distinguishes a DOI from any other implementation of the Handle System.<sup>4</sup>
- The next component of the prefix is the number (string) that is assigned by a Registration Agency to an organization that wishes to register its digital object identifiers.

<sup>2</sup> For a detailed description of DOI syntax rules and restrictions see the DOI Handbook, v0.5.1 - Appendix 1 ANSI/NISO Z39.84-2000 Syntax for the Digital Object Identifier ([http://www.doi.org/handbook\\_2000/appendix\\_1.html](http://www.doi.org/handbook_2000/appendix_1.html)).

<sup>3</sup> Further information about the DOI can be found at <http://www.doi.org>.

<sup>4</sup> See section 6 of the 'DOI Handbook,' v0.5 for a detailed description of the Handle System.

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It is possible for an organization to have multiple prefixes assigned since the use of different prefixes within one organization may prove administratively convenient. It could help to ensure that unique numbers are allocated which is not always easy within a large organization unless numbers are centrally allocated. *Note: for the time being, only this simpler form of DOI prefix is used. In the future, the prefix may be further divided into sub-prefixes if necessary.*

### **3.2 The DOI Suffix**

The prefix is followed by a unique suffix (unique within a given prefix) which identifies the entity. The DOI suffix may be any alphanumeric string chosen by the Registrant (for example, sequential number, legacy identifier, etc.). However, AAP is recommending a more defined approach and syntax for the construction of the suffix. (See Section 4.3 DOI Construction Guidelines). The following illustrative examples would be valid DOIs:

**10.0011 / 0999999991**

**10.0011 / 0999999991.1**

**10.0011 / 0999999991.01.0001**

**10.0011 / 0999999991.0.1.01**

### **3.3 A Fundamental Assumption**

It is important to keep in mind that the DOI is an opaque string (dumb number). No definitive information can or should be interpreted from any individual number. Even though the DOI has a prefix issued by a particular organization (or another number, such as an ISBN, embedded within the DOI), it is not intended to be used to identify the owner of any given intellectual property. The DOI remains persistent through ownership changes, and the prefix remains unaltered.

### **3.4 DOI Resolution<sup>5</sup>**

A DOI on the Internet can be resolved, leading the user of a DOI to any piece of data that is Internet-accessible. This does not imply that the DOI will necessarily resolve to the entity that it identifies although that could be the case. It is very important to distinguish between what the DOI identifies and what the DOI resolves to.

The same DOI can resolve to different data depending on how the DOI System is queried. This enables the DOI and the associated metadata to serve as the basis for

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<sup>5</sup> A definition for “Resolution” is provided in the Key Terms section in the Appendix

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different services related to the management of the intellectual property in a networked environment.

### 4.0 Guidelines

In accordance with the objectives of the AAP Open Ebook Standards project, a set of voluntary guidelines for identifying ebooks and ebook components has been developed. The following statements need to be taken into consideration when reviewing the guidelines:

- The AAP standards and guidelines for ebook identifiers are intended to accommodate different practices among publishers (and needs among other participants) in the ebook market.
- The ebook identifiers discussed apply to the content which may be delivered on ebook devices, but do not apply to the devices themselves.
- The stated guidelines only apply to electronically delivered content. They do not apply to physically distributed books (for example, hard-cover, paperback, print-on-demand, etc.) that may or may not be sold over the Internet.
- The identifier standard accords with AAP's definition of an ebook and with the characteristics of a “good” identification system as outlined in the Appendix.
- The identifier standard accords with the INDECS principles and the ONIX (ONline Information eXchange) specification (including the changes proposed by the AAP Open Ebook Standards - Metadata working group).
- The digital object is the fundamental unit of transaction within the AAP Framework for Digital Rights Management.<sup>6</sup>

The remainder of this section will describe specific guidelines to follow when assigning ebooks and ebook components identifiers.

#### 4.1 General Ebook Guidelines

- 4.1.1 Each ebook should be assigned one of the existing standard identifiers used in the publishing community (separate from the identifier that may be associated with the print edition) and a DOI.

The existing standard identifier may be an ISBN, an ISSN, an EAN, or a U.P.C. (depending on the actual identifier used by the individual publisher to track and manage products within their systems). Where an ISBN is used, it must be the full ISBN<sup>7</sup>. For brevity, the remainder of this document will refer to this existing standard identifier as the ISBN.

- 4.1.2 The DOI should be composed of the publisher's DOI prefix (as described in section 4.1) and the assigned ISBN in the DOI suffix. For brevity, the remainder of this document

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<sup>6</sup> See the AAP document, *Digital Rights Management for Ebooks: Publisher Requirements, Version 1.0* for a more detailed discussion of the AAP Framework for Digital Rights Management.

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will refer to assignment and use of the DOI. *In each case, it is assumed that the DOI suffix includes an ISBN.*

- 4.1.3 Both the ISBN and the DOI must be included in the ONIX metadata.
- 4.1.4 The DOI is an extensible identifier. By using its syntax and rules, individual saleable components, (for example, sections, chapters, pictures, etc.) of an ebook may also be numbered with DOIs.
- 4.1.5 The DOI has the capability in an online environment to resolve to a single location or multiple locations. That location could contain metadata about the ebook or give the consumer an opportunity to transact the book or link to a free book.
- 4.1.6 Publishers may assign one ISBN and DOI to cover all ebook renderings (.pdf, .lit, Rocketbook, etc.) or a separate ISBN and DOI for each rendering. This approach has been recommended to the International DOI Foundation and the Corporation for National Research Initiatives (as the creator of the Handle Resolver) . Likewise, it has been recommended to EDItEUR, the Maintenance Agency for ONIX (ONline Information eXchange), that a system of nested tagging be incorporated into the ONIX ebook specification. Such a system creates a unique identifier by joining the rendered format (for example, pdf, .lit, etc.) to the identifier and allows the ability to identify specific ebook renderings separately without having to assign a new DOI. This would reduce the number of DOIs that would have to be registered and accommodate any volatility of format and/or DRM technologies. If implemented, this guideline will provide considerable flexibility to the publishers. Publishers will then be able to choose:

**Option A** - To assign an ISBN and corresponding DOI to cover all renderings of an ebook and use nested tagging with ONIX to transmit metadata. In addition, the DOIs assigned to the components of an ebook would cover all renderings of the components.

**Option B** - To assign an ISBN and DOI to each rendering of an ebook and to each rendering of each saleable ebook component.

**Option A is strongly recommended for the majority of publishers who wish to:**

- minimize the number of identifiers that need to be assigned and registered.
- minimize the number of metadata records that need to be created and maintained for each ebook and its components.
- simplify tracking sales, royalties, etc. for the ebook (across all formats) by having only one ISBN/DOI per ebook.

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<sup>7</sup> It is assumed that the ISBN proposal to move to a 13 digit ISBN will be approved.

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### ***4.2 How to Assign and Register an Identifier***

#### **4.2.1 ISBN**

Whenever an ISBN is assigned to an ebook, the assignment and registration should adhere to the current ISBN guidelines and standards.<sup>8</sup>

#### **4.2.2 DOI**

A DOI must be assigned to each ebook. The DOI Handbook details the procedures for obtaining, registering, and maintaining DOIs.<sup>9</sup>

- The DOI prefix will be provided by the registration agency and must be used each time a DOI is registered.
- The DOI suffix will be created by the publisher. The DOI suffix should contain the ISBN assigned. It is the primary responsibility of the DOI Registrant (the company or individual assigning the DOI) to name each object with a DOI uniquely. That uniqueness will be enforced by the DOI System when the identifier is registered.
- Once the DOI prefix and suffix are established, the DOI should be registered with a DOI registration agency. The specific DOI registration processes and procedures are documented by the IDF in the DOI Handbook.
- In order for the DOI to be resolved, the Registrant needs to maintain the data associated with that DOI in the DOI System. This data may be referred to as “state data,” the simplest form of which is a single URL.
- The DOI System supports multiple resolution. A DOI may have multiple data values of different types associated with it (for example, email addresses, URLs) and multiple data values of the same type (for example, URLs). Publishers will need to determine what information or objects they want users to be able to access via resolution and provide that information to the Registration Agency.

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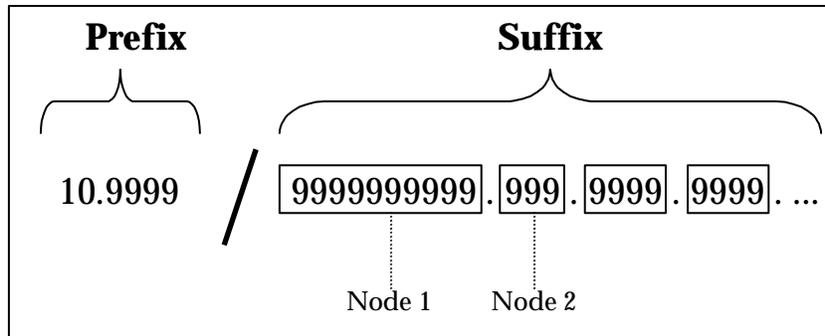
<sup>8</sup> See <http://www.bowker.com/standards/home/isbn/international/isbnmanual.html> for detailed guidelines.

<sup>9</sup> The general DOI guidelines can be found in the DOI Handbook at [http://www.doi.org/handbook\\_2000/index.html](http://www.doi.org/handbook_2000/index.html).

**4.3 DOI Construction Guidelines**

To support the publishers’ options, the following DOI standard structure for ebooks is provided. (See Figure 2). The prefix and suffix are separated by a forward slash (“/”) and where mentioned, nodes are separated by a period (“.”).

**Figure 2 – DOI Suffix Structure**



**4.3.1 DOI Prefix**

The DOI Prefix is provided to the Registrant by the Registration Agency as described in Section 4.1 of this document.

**4.3.2 DOI Suffix**

The DOI Suffix is comprised of multiple nodes. AAP recommends the following syntactical structure for the DOI suffix:

**/Whole work.Next granular level of the work.Next granular level.Etc.**

Node 1 – The whole work and legacy identifier node. This node applies to the work at its highest structural level. In reflecting that, the full ISBN or other standard identifier should be used in the first node of the DOI suffix.

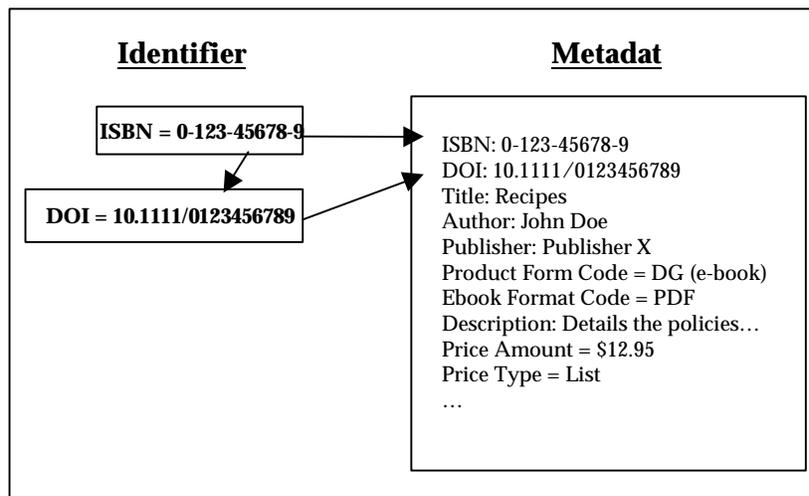
Nodes 2 and following – These are the component nodes. The addition of a node creates a new DOI, which will need to be registered. Node 2 and those following should be used to uniquely identify individual saleable components within an ebook (See Section 4.6 for the guidelines for assigning identifiers to ebook components; an illustrative example is also provided). By allowing the addition of nodes to create new DOIs, the DOI extends to support the boundless ways an ebook may be ‘broken up’ into additional saleable parts.

### 4.3.3 An Illustrative Example

Figure 3 illustrates how to assign identifiers to an ebook. In this example, an ebook titled “Recipes” is assigned an ISBN of 0-123-45678-9. The prefix of 10.1111 is provided by the Registration Agency. The suffix begins with the ISBN. The DOI (10.1111/ 0123456789) would be registered with the registration agency, and both the ISBN and the DOI would be included in the ebook’s ONIX record.

*Note: Since the identifier is assigned to the whole work, only the first node is used within the suffix.*

**Figure 3 – Illustrative example of identifying an ebook**



### 4.3.4 Publishers’ Decisions Required Prior to Constructing DOIs

Before beginning to assign DOIs to ebooks and ebook components, each publisher or publishing unit should establish a policy for setting the syntactic maps for the DOI suffix in accordance with the following guidelines:

- 4.3.4.1 Decide for a given work what the smallest piece of content is that you will likely want to sell. Based on the DOI/indecs principle of functional granularity, each publisher should determine at the outset what will likely be the lowest level of granularity at which a given ebook (for example, tables, figures, photos, MP3 clips, complete chapters, or the entire book) will be sold.
- 4.3.4.2 Understand the structure of the work and translate that into a syntactical map for the DOI suffix. The publisher should decide on a syntactical map for the work that will accommodate the structure of the work down to the smallest type of "granule" intended to be sold. Each level of granularity is assigned a node in the DOI suffix. If the smallest component to be sold is the book itself, the syntactical map for the DOI is 10.1111/ISBN, where the ISBN is occupying the first node of the suffix. See the examples in 4.3.4.9 for the mapping of additional nodes.

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- 4.3.4.3 Estimate per node the likely number of saleable components. This can be generalized by performing an inventory cast-off of the saleable components within the nodes for a representative sample of ebooks in the publisher's list. This estimate will indicate the number of characters or digits needed within each node. Without doing this estimate, publishers risk setting a one-digit node for the chapter level when they have, in fact, 11 saleable chapters in the book. In general, it is a good idea to allow for one more digit or character in the node than is suggested by the cast-off. Although useful for other purposes, there is no "DOI-need" to categorize the pieces (tables vs. photos vs. figures, etc.)
- 4.3.4.4 Decide on the approach to handling format identification: a) the AAP primary recommendation of nested tagging or b) the AAP alternative recommendation for assigning a DOI and ISBN to every rendering of every saleable component. If Option A is followed, the decision on the formats (pdf, lit, etc.,) in which the content will be rendered can be dealt with by updating the metadata records associated with the work and its components. If Option B is followed, the editor/publisher would be advised to know in advance all the rendered formats that will be used and to create metadata records for each rendering of each component. With Option B, if additional formats are chosen, a new set of metadata records for each component in that format will be required.
- 4.3.4.5 Decide to what the DOI is expected to resolve; ensure that the metadata records are prepared accordingly; and be prepared to inform the Registration Agency accordingly. Do you want the users to be able to resolve directly to a specific rendered digital object or to something else which would provide them information about the ebook, a place where they can buy the ebook or support for another user need?
- 4.3.4.6 Assign a DOI to each piece as it goes into the digital asset management (DAM) system or production, and note that component's place in the work's sequential structure. Assuming that the work is modular, the publisher can introduce each piece in any order into the Production or DAM system. If one is assigning DOIs sequentially as the pieces enter, the outcome would be dumb numbers assigned to each piece.
- 4.3.4.7 Publishers need to determine where DOI assignment fits into their workflow. As each piece goes into the DAM system or Production and the DOI is assigned, they must create the core ONIX metadata record for that piece. That core metadata record will be needed when the DOI is registered with a Registration Agency. Registration should take place only when the publisher is ready to announce the whole work or its components as forthcoming for sale or as published. See AAP's *Metadata Standards for Ebooks, Version 1.0* and the ONIX Guidelines.
- 4.3.4.8 Do not assign a DOI to a component owned by another rightsholder -- whether or not it has a DOI assigned by that rightsholder. If the rightsholder has assigned a DOI, ensure that the DOI appears with any in-line source reference or

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permissions acknowledgment as required by the rightsholder, and ensure that the DOI will be activated if the rightsholder requires that.

- 4.3.4.9 General illustrative examples: (for brevity, ISBN represents 1234567890)
- a) 10.1111/ISBN - This reflects the simplest situation: a whole ebook, intended to be sold only as the whole.
  - b) 10.1111/ISBN.1 - This reflects one of the simplest situations: one saleable chapter in a 10-chapter book (0-9), where the publisher does not intend to sell any element smaller than a chapter.
  - c) 10.1111/ISBN.01.0001 - This reflects something with more levels of granularity: a work with up to 100 "Part" divisions (00-99), any one of which the publisher would be hoping to sell as a whole, and with as many as 10,000 individually saleable chapters (0000-9999).
  - d) 10.1111/ISBN.0.1.01 - This reflects yet a further level of granularity: a work with up to 10 "Part" divisions, across up to 100 chapters (0-9 Parts x 0-9 Chapters), with each chapter containing up to 100 saleable subunits (such as tables, figures, photos, MP3 files, Quicktime video clips, etc.).

## 4.4 Guidelines for Assigning a Single Identifier to Multiple Formats (OPTION A)

### 4.4.1 Identifier Assignment

An ebook can be rendered in multiple file formats. Publishers may assign a single ISBN and a single DOI, containing the ISBN in the suffix, to cover all ebook renderings (Option A from Section 4.1.5). A significant assumption behind this guideline is that if all aspects of the ebook (for example, the content, rights, suggested price, etc.) are the same from one format to the next, then one identifier will suffice.

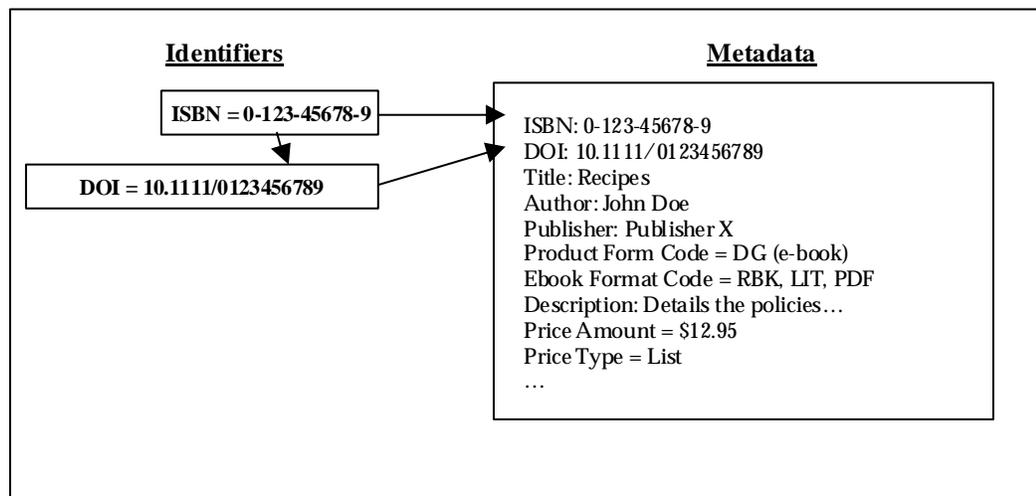
If, however, the content varies substantially from one rendered format to another (omitted tables, figures, etc.), it is likely that the author, publisher and consumer would view the two formats as two different works, which invites assigning each of the different versions its own ISBN and DOI (see Section 4.5 Guidelines for Assigning Separate ISBNs and DOIs to Each Format).

### 4.4.2 Resolution

As part of the DOI registration process, the publisher must prepare the DOI and ONIX metadata records for the ebook.<sup>10</sup> The metadata record should indicate the formats in which the ebook is available. The recommended changes to the ONIX system include a metadata field for this purpose (Ebook Software). See Figure 4.

As such, ONIX will facilitate the identification of formats via nested tagging -- including all available formats -- in the XML transmitted.

**Figure 4 – Illustrative example of assigning 1 ISBN and 1 DOI for all formats**



<sup>10</sup> It is important to note that the ONIX record should be created from the existing system or by using a workflow similar to which metadata is currently created.

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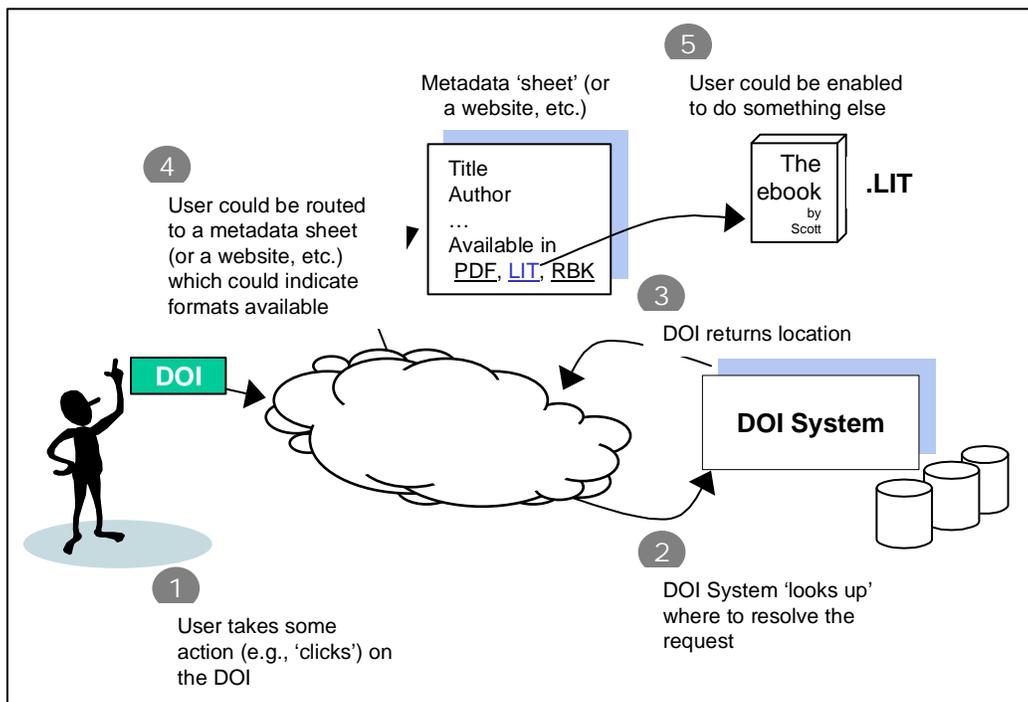
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The publisher must choose to what the displayed and activated DOI will resolve. An activated DOI may be displayed in various locations and ways, including: in an online catalog, on the copyright page, as part of a reference in another electronic work, behind an icon or the title of the ebook, etc.

### Resolving to a Metadata Record

Given a single DOI to cover the whole work and metadata tags to distinguish one ebook rendering from another, the DOI *without the addition of a metadata tag* should resolve to its metadata (ONIX) record which could be stored in the Registration Agency's database. The ONIX record will indicate by the Ebook Software field the various file formats in which the ebook is available. If the Registration Agency (or whoever stores the metadata record) provides the relevant service, the user might select the file format and proceed to a location where that rendering of the ebook is offered. See Figure 5.

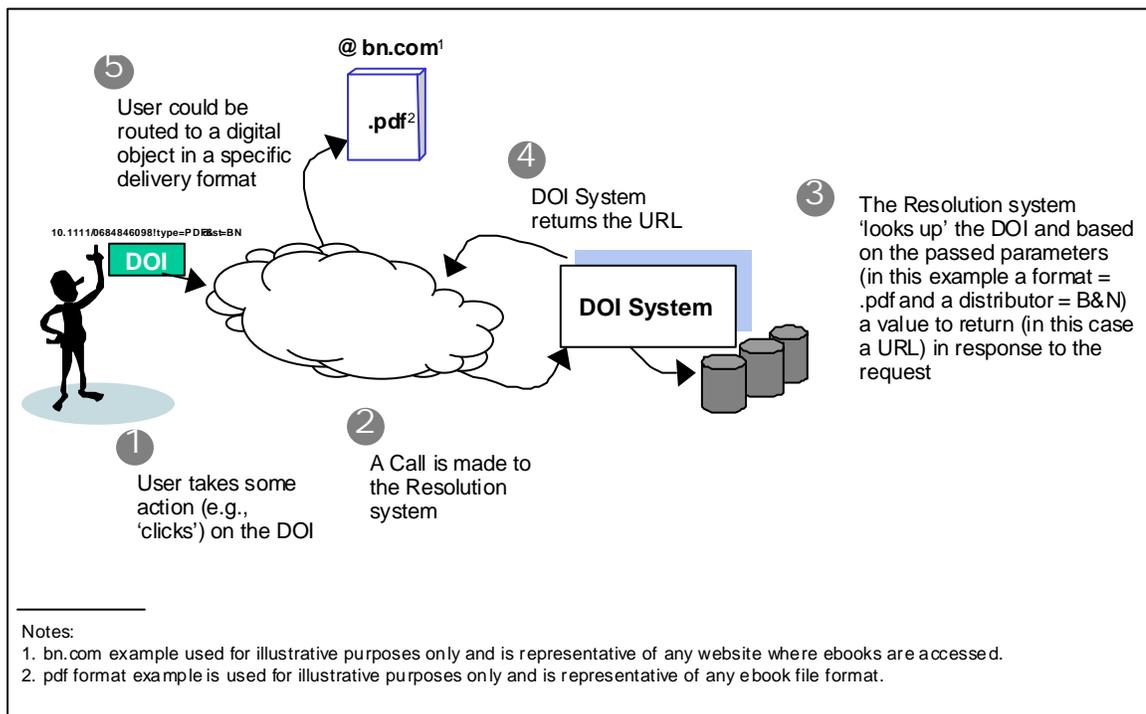
**Figure 5 – Illustrative example of resolving to the metadata record**



## Resolving to an Ebook in a Specific Format

With today's technology, it is possible to assign one ISBN and one DOI to an ebook to cover all renderings of that ebook, but still point a user to a specific rendering (or support some other action) with one 'click'. The following is an illustrative example. The strings, parameters, and type codes used are for discussion purposes only. They are not intended to represent existing standards. See Figure 6.

**Figure 6 – Illustrative example of resolving to a specific file format rendering**



In this case, the publisher wishes to enable the user to click on the DOI for an ebook (for example, *Nothing Like It In The World*, DOI [10.1111/0684846098](https://doi.org/10.1111/0684846098)) and resolve to a specific distributor's webpage (for example, B&N) to purchase a specific rendering of the ebook, (for example, .pdf) or to find out information about the book, or to allow whatever action the publisher wants to allow. Here is how the publisher can do this.

As with all hyperlinked objects, there is a string behind the highlighted item which enables the connection over the Internet to somewhere/something else. This string includes the Internet address to call, the object id and one or more parameters. In this ebook scenario there would be a parameter of 'type code' to allow requests to be made for specific formats of an ebook and a parameter of

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'distributor' to indicate the correct distributor. A simplified illustrative example of this string in this scenario could be:

**<http://dx.doi.org/10.1111/0446603589?type=PDF&dist=BN>**

*Notes:*

- *The syntax and parameters still need to be established. It is expected that the parameter code sets established will match the associated ONIX code sets. These code sets include, but are not limited to, codes sets for format and/or distributors.*
- *These code sets will be maintained by the AAP Enabling Technologies Committee*
- *The code values will be numeric*

Essentially in this example, a call is made to the Handle System (for example, through the DOI proxy at dx.doi.org) and the string of characters, including the DOI and the parameters, are passed so that the server so can determine where to resolve the user.

Effectively, the Handle System (or other resolution system) examines the parameter(s), interprets the type specific resolution request and thereby determines where to resolve the user. In this scenario the URL is returned and the user taken to the .pdf version of the ebook on the B&N website.

### 4.4.3 Implications

- The application of parameters in the string allows each publisher to support many business models. For each unique set of parameters associated with any given DOI, publishers can assign a unique action to be supported. In the case of multiple locations (for example, several vendors of that rendering), the publisher may:
  - create a metadata record to which the DOI and tag resolve, and then have that metadata record provide the links to the multiple locationsOR
  - resolve directly to a specific location based on the passed parameters.
- Publishers will have to determine their parameter set for each ebook, and register it with a DOI Registration Agency. They must include how the resolution system will handle each specific type of resolution request.
- To transmit an ONIX record to a distributor or customer interested in only one particular file format, the publisher must construct the record by selecting the DOI and nesting the relevant Ebook Software (TBD) in the identifier string that heads the record.

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- It is anticipated that future services from retailers, distributors, registration agencies, publishers, etc., will enable a user to enter sophisticated and resolve to the relevant location.

## 4.4.4 Registration

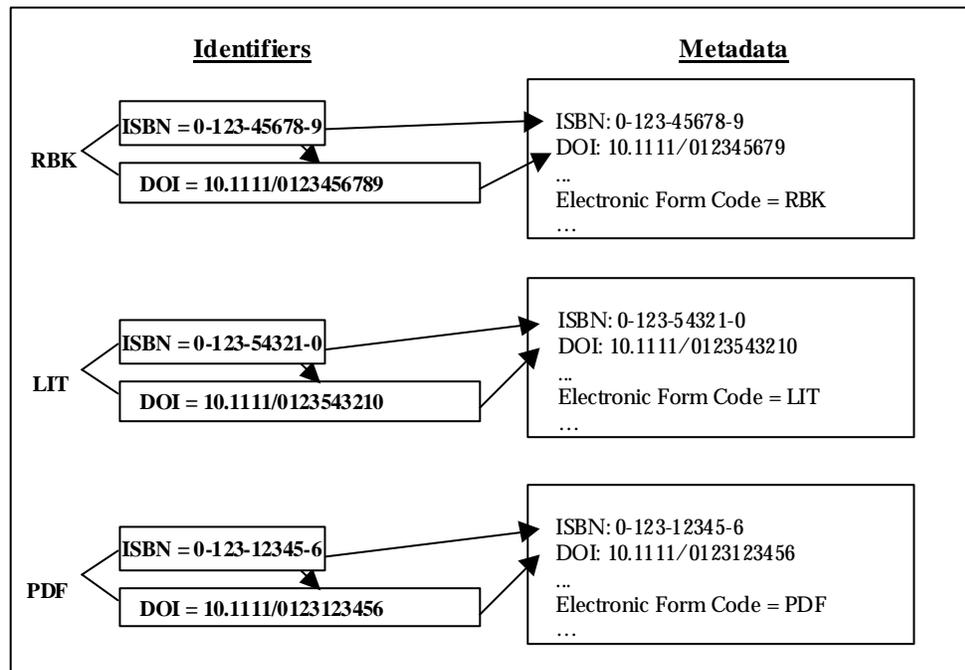
The ISBN and DOI should be assigned and registered as documented in section “4.2 How to Assign and Register an Identifier.”

## 4.5 Guidelines for Assigning Separate ISBNs and DOIs to Each Format (OPTION B)

### 4.5.1 Identifier Assignment

Assign a unique ISBN and, therefore, a unique DOI for individual ebook renderings when some aspect of the ebook differs among the rendered formats or when publishers determine that this is necessary for their information systems (see Section 4.5.4). For example, if there are two versions of an ebook, one with pictures and one without, the content is significantly different. The different renderings should therefore be considered different entities and each be given unique ISBNs and DOIs. Figure 7 provides an illustrative example of a case where some aspect of the ebook differs between renderings significantly enough to justify considering each rendering its own literary work.

**Figure 7 – Illustrative example of different identifiers for each format**



### 4.5.2 Resolution

As part of the DOI registration process, the publisher must prepare the DOI and ONIX metadata records for the ebook. Only one Ebook Software is used in this instance (the code relevant to the format to which the ISBN and DOI have been assigned).

The publisher must choose to what the displayed and activated DOI will resolve. An activated DOI may be displayed in various locations and ways, including: in the online catalog, on the copyright page, as part of a reference in another electronic work, behind an icon or the title of the ebook, etc.

If the publisher wants the DOI to resolve to the metadata record, the Registration Agency must be directed accordingly. If the publisher wants the DOI to resolve directly to an actual instance of an ebook rendered in a specific format, the Registration Agency must be informed of the location's Internet address.

In the case of multiple locations, the publisher should create a metadata record to which the DOI resolves, and that metadata record should provide the links to the multiple locations.

To transmit an ONIX record to a distributor or customer interested in only one particular file format, the publisher need select only the DOI and need not include the Ebook Software in the record (i.e., no tag need be nested in the identifier string).

### 4.5.3 Registration

Each ISBN and DOI should be assigned and registered as documented in section 4.2: "How to Assign and Register an Identifier."

### 4.5.4 Publisher Policy on Identifying Formats

Even if there is no difference in content between two or more renderings of an ebook, a publisher may nevertheless choose to assign each rendering of that ebook its own separate ISBN and, therefore, separate DOI. This will require a separate ONIX record for each rendering that receives a separate ISBN. Likewise, as saleable components of each separately numbered ebook are designated for identification, a separate ONIX record for each component rendered in each format is required.

### **4.6 Guidelines for Assigning a DOI at the component level**

#### **4.6.1 Identifier Assignment**

A DOI should be assigned to each ebook component (part, chapter, section, subsection, figure, table, etc.) *intended for sale*. As stated in section 4.3.4, before beginning to assign DOIs to ebook components, each publisher or publishing unit should establish a policy for setting the syntactic maps for the DOI suffix. This policy-setting process includes deciding at the outset the proper level of granularity. It should be noted that this recommendation does not preclude publishers from making granularity decisions at a later point in time. Given the DOI structure publishers can add granularity later in the ebook processes.

As presented in section 4.3.2, the second and subsequent nodes in the suffix should be used to identify components of an ebook. A significant assumption behind this guideline is that a component would be numbered/identified because the author/publisher consider it an entity worth transaction or rights-tracking in and of itself.

***It is recommended that in such cases, the component be assigned a "dumb" number or identifier***, not one with significance such as "chapt1." Otherwise one might wind up at a later date with a newly compiled cookbook (DOI 10.1111/9876543210) consisting of a first chapter whose component DOI is 10.1111/0123456789.ch3. The choice of dumb vs. significant component node, however, is a matter for each publisher.

Do not assign a DOI to a component owned by another rightsholder -- whether it has a DOI assigned by that rightsholder or not. If the rightsholder has assigned a DOI, ensure that the DOI appears with any in-line source reference or permissions acknowledgment, and ensure that the DOI will be activated if the rightsholder requires that.

#### **4.6.2 Resolution**

Resolution of ebook components is subject to the same guidelines as outlined for ebooks in Section 4.4.2.

#### **4.6.3 Registration**

Each component DOI should be assigned and registered as documented in section 4.2: "How to Assign and Register an Identifier."

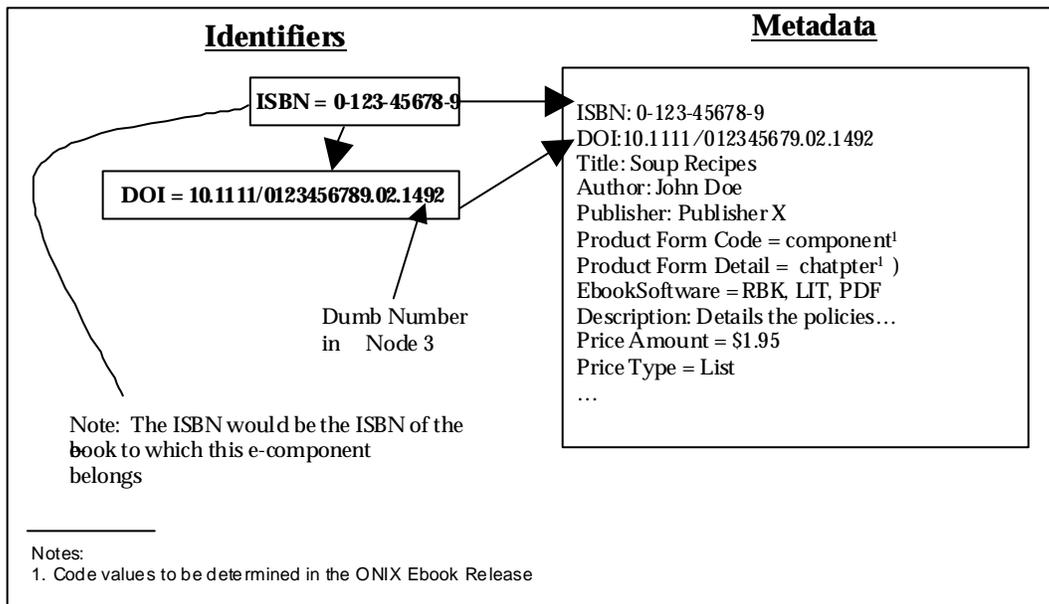
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### 4.6.4 Publisher Option – One ISBN and one DOI for all formats of a saleable component

If a publisher chooses to assign an ebook a single ISBN and DOI to cover all renderings (pdf, lit, Rocketbook, etc.), then each designated ebook item/component contained within would receive one DOI to be registered along with its own ONIX record. That DOI would cover all renderings of the ebook item as well. See Figure 8.

**Figure 8 – Illustrative example of a DOI assigned to an ebook component**



### 4.6.5 Publisher Option – ISBN and DOI per formats per component

If a publisher choose to assign an ebook a unique ISBN and DOI to each rendering (pdf, lit, Rocketbook, etc.), then each designated ebook item/component contained within would need to be assigned a unique ISBN and DOI per rendering and registered along with its own ONIX record.

### ***4.7 Guidelines for Creating an Ebook from Existing Components***

This section addresses the scenario where a publisher assembles a set of previously unrelated saleable ebook components into a new ebook and makes it available for distribution and sale as a unique entity (for example, a course pack or anthology). It does not address the scenario where a consumer purchases a set of unrelated saleable ebook components on their his from a specific industry participant (i.e., seller) with the intent of reading them as though they were one ebook. In the second scenario, the consumer has purchased individual saleable objects, not an ebook and therefore one ISBN and/or DOI is not required to represent the group of individual objects.

#### **4.7.1 Identifier Assignment**

Ebooks may be created by assembling a group of previously existing ebook component digital objects. This ebook would be assigned a unique ISBN and, therefore, unique DOI, with the ISBN in the suffix.

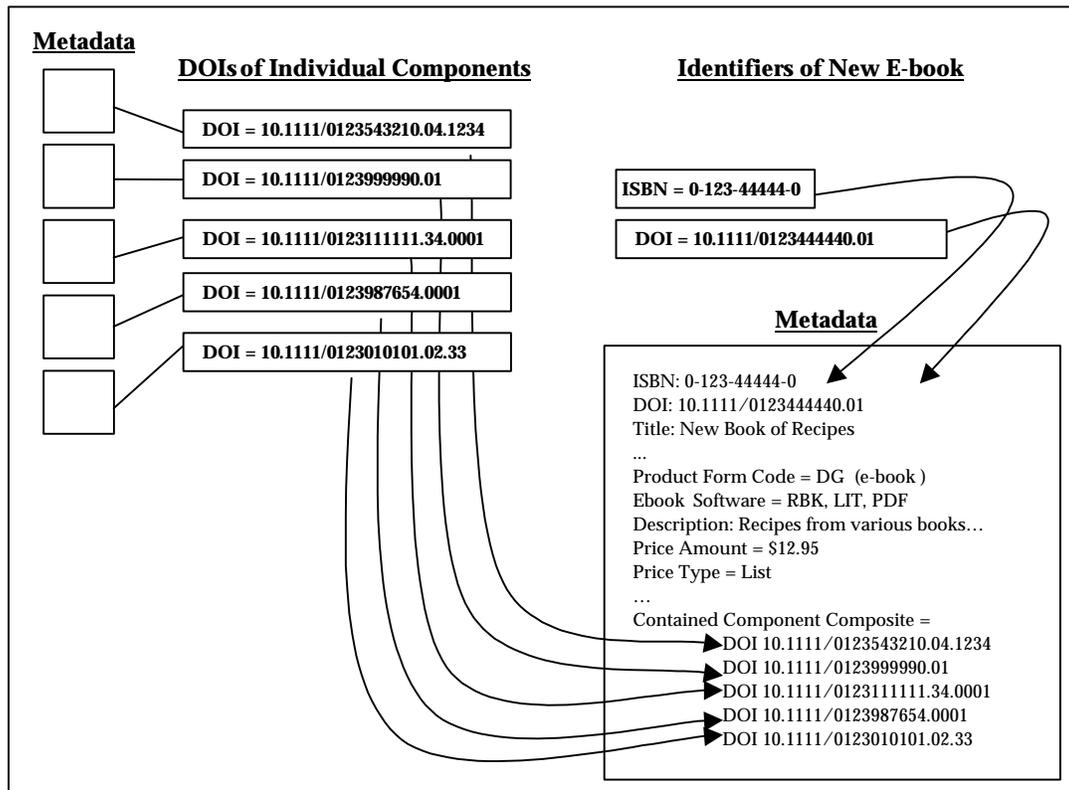
The decision regarding whether or not the compiled ebook would need an ISBN and DOI per rendering would be based on the guidelines set forth in Sections 4.1 through 4.5. The decision regarding whether any new ebook components would need an ISBN and DOI per rendering would be based on the guidelines set forth in Section 4.6.

Each previously existing ebook component included in the new ebook would have a previously existing DOI, including the ISBN of the ebook from which the component originated, and an existing metadata record. The DOI and metadata will not change even though the object is being included in a new ebook. See Figure 9. (*Note: there may be one exception for the 'contained with-in' metadata field*)

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**Figure 9 – Illustrative example of an ebook created from existing digital objects**



## 4.7.2 Associated Metadata

The metadata record for the new ebook may include a manifest of all the objects included within (referred to as the 'Contained Component Composite').

## 4.7.3 Consideration

It is recommended that the DOI of the component be shown and activated within the newly created ebook either where the component appears, in the references, or on the copyright page. This will enable users to access the metadata relevant to that component.

## 4.8 Guidelines for Creating Metadata for each Digital Object

- 4.8.1 The metadata for an ebook (or ebook component) must follow the standards outlined by the AAP Metadata Working Group. As such, the DOI will be included in the ONIX metadata for each ebook (and ebook component). The metadata record to be submitted on registration of the DOI must be drawn from the ONIX record and conform to DOI metadata requirements.

### 5.0 Governance

#### 5.1 ISBN

ISBNs are administered by the Internationale ISBN-Agentur at the Staatsbibliothek. Use and maintenance of the ISBN as outlined in the guidelines will continue to follow the established policies and procedures (see <http://www.bowker.com/standards/home/isbn/international/administration.html> for further details).

#### 5.2 DOI

The International DOI Foundation (IDF) provides governance for the DOI System as a whole and acts as the maintenance agency for the technical standards that are essential to the operation of the DOI system (see <http://www.doi.org/DOI-Found-Recruit.html> for further details).

#### 5.3 ONIX

ONIX is published, developed and maintained by EDItEUR, through the ONIX International Steering Committee, which is made up of representatives of participating national groups - currently Book Industry Study Group (BISG) for the U.S. and Book Industry Communication (BIC) for the UK, with other countries expected to join in 2001 (see <http://www.editeur.org>).

#### 5.4 Ebook numbering

The AAP Enabling Technologies Committee will address ebook numbering guidelines on an ongoing basis and liaise with the ISBN agencies, IDF and EDItEUR to represent the needs of ebook publishers. The AAP Enabling Technologies numbering responsibilities will include standards maintenance and policy formulation.

### 6.0 Appendix A: Applicable Terms

These definitions are provided solely for use in connection with this document and the related AAP documents: *Digital Rights Management for Ebooks: Publisher Requirements, Version 1.0* and *Metadata Standards for Ebooks, Version 1.0*. They are not intended to affect the rights of private parties, or to provide definitions for terms used in contracts between private parties, including but not limited to the members of the Association of American Publishers, Inc.

#### Copyright<sup>11</sup>

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“Copyright” is used herein to refer to the bundle of exclusive rights provided under Section 106 of the United States Copyright Act of 1976 to authors of creative works of expression (as those terms are defined in the Copyright Act), including the exclusive rights to do and to authorize:

- the reproduction of the copyrighted work;
- the preparation of derivative works based upon copyrighted work;
- the distribution of copies of the copyrighted work to the public;
- the public display or performance of the copyrighted work.

#### Creation

---

A Creation is a product of human imagination and/or endeavor by one or more Parties in which Rights may exist. A creation may be one or more of several types: 1) an abstraction, where the creation is a concept, whose existence and nature are inferred from one or more expressions or manifestations; 2) an expression, which is an event (for example, a performance); 3) an artifact, which is a thing. A manifestation is a particular type of artifact in which expressions and/or abstractions are recognized which may be underlying intellectual property.

#### Digital Object

---

A sequence of bits that incorporates unique numbering, metadata, and digital content. A Digital Object is the lowest level transactional unit in a digital publishing environment. Each ebook can be described as a collection of one or more digital objects. Digital objects can be arranged in a hierarchy, where some digital objects are the “children” of “parent” objects. Child objects may inherit some of the attribute of their parent object. This entity is the fundamental unit of transaction within the ebook market model<sup>12</sup>.

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<sup>11</sup> We recognize that U.S. copyright law differs in certain respects from copyright laws in other countries. The guidelines and standards recommended here are not constrained by this document’s reference to U.S. copyright law.

<sup>12</sup> For a more detailed discussion of the ebook market model and how DRM supports the model see AAP’s *Digital Rights Management for Ebooks: Publisher Requirements*.

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### **DOI (Digital Object Identifier)**

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The opaque string used as an identifier by the DOI System. It is a unique identifier for an item of intellectual property, digital or otherwise, intended to be used to identify the item in an electronic trading environment.

### **DOI System**

---

The integrated system – comprising enumeration, description, resolution, and policymaking – managed by the International DOI Foundation (IDF).

### **Ebook<sup>13</sup>**

---

An ebook is a Literary Work in the form of a Digital Object consisting of one or more standard Unique Identifiers, Metadata, and a Monographic body of content, intended to be published and accessed electronically.

### **Ebook Rendering**

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An ebook rendering refers to the file format, which is designated by a file extension such as .pdf or .lit and processed by the Electronic Book Reader to display the ebook electronically.

### **Electronic Book Reading Device**

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An Electronic Book Reading Device is a hardware device, usually (but not necessarily) portable, and possibly purpose-built for accessing an ebook, for example, computer, PDA, REB 1100 (formerly RocketBook), REB 1200 (formerly Softbook), or Franklin eBookman.

### **Electronic Book Reader**

---

An Electronic Book Reader is a software program (such as Glassbook Reader, MS Reader or PeanutPress Reader) used on an Electronic Book Reading Device to access an ebook.

### **Intellectual Property**

---

Something owned or possessed that is a product of the human mind (for example, works protected under copyright law and inventions protected by patent law).

### **Literary Work**

---

Literary Work as used herein is based on that term as defined in Section 101 of the U.S. Copyright Act of 1976: “‘Literary works’ are works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.” Literary Work, as used herein, incorporates multimedia (including audiovisual) elements of an ebook, such as embedded MP3 or Quicktime files, however, not to the extent that it includes strictly audiovisual works.

---

<sup>13</sup> The term “ebook” is sometimes used to refer to the hardware devices created for the purpose of reading ebooks (vide Rocketbook, Softbook, Franklin ebookman); however, for the purposes of these standards, we use the term “Electronic Book Reader” to refer to such devices. The numbering guidelines presented in this document are not intended to be applied to hardware devices.

## Numbering Standards for Ebooks

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### **Metadata**

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Metadata is data about data. Metadata can describe such elements as the creator (e.g., author bio) and the content (e.g., # of pages, chapter titles). Metadata can be the business rules that have been assigned to govern a transaction (e.g., royalty rates from an author's contract or the "allow Print" rule in the setting of digital rights.)

### **Monograph**

---

Monograph describes a nonserial item. A monograph can be a one-part item or one that is complete, or intended to be completed, in a finite number of separate parts

### **Party**

---

A Party is defined as one (as a person, group or organization) constituting alone or with others one of the sides of an agreement and capable of holding or acting on Rights or entitlements to Creations.

### **Registrant**

---

A Registrant is an organization that obtains and registers an identifier.

### **Registration Agency**

---

A Registration Agency is an organization that offers services to Registrants, which could include prefix allocation, registration services, and maintenance of metadata and/or state data.

### **Resolution**

---

Resolution is the process of submitting an identifier to a network service and receiving in return one or more pieces of current information related to the identifier.

### **Right**

---

A Right is defined as the interest that one has in property; also the authority originating in law or by international convention for a Party to do or to authorize another Party to do a defined act to a Creation. (Findlaw Dictionary)

### **State Data**

---

State Data is the data associated with a DOI in the Handle System (to which the DOI resolves).

### **Unique Identifier**

---

A Unique Identifier is a title or code that designates one and only one thing.

### 7.0 Appendix B: Characteristics for an Ebook Identifier

#### **Unique**

It must identify any given digital object uniquely and unambiguously.

#### **Persistent**

It must be permanent regardless of its location or the information (i.e., metadata) associated with it.

It is intended that the lifetime of the identifier be permanent. That is, the identifier will be globally unique forever, and it may well be used as a reference to a resource well beyond the lifetime of the resource it identifies or of any naming authority involved in the assignment of its name.

#### **Transparent**

Although the identifier is not intended for human use, the rules for its construction should be clear, easily understood and able to be applied programmatically.

#### **Granular**

Syntactically, it must represent a digital object where the digital object may be an ebook or any component within an ebook (part, chapter, section, sub-section, figure, table, etc.).

#### **Encodable**

It should adhere to the character set defined by Unicode v2.0, thus allowing any printable characters from the Universal Character Set (UCS-2) of ISO/IEC 10646.

### 8.0 Appendix C: Characteristics for an Ebook Identification System

#### **Open**

It must be possible for any user anywhere to obtain or assign identifiers easily and at a cost which will not be a barrier to use. (see Normative)

#### **Transparent**

It should generate identifiers which can be validated by external parties upon receipt. That is, that an entity (for example, library) can receive the identifier and determine that it conforms to its principle of construction, i.e., is valid in type (for example, correct type of characters, correct syntax, etc.)

#### **Infinite**

It must be capable of generating an unlimited number of identifiers. In the ebook world this implies that an unlimited number of unique identifiers will be available to be assigned to ebooks (and all other ebook-related digital objects).

#### **Granular**

It must allow for the identification of objects within an object to the  $n^{\text{th}}$  degree. Digital materials are frequently related to other materials by relationships such as part/whole, sequence, etc. (for example, a digitized text may consist of pages, chapters, an index, illustrations, etc.)

This characteristic preserves the ability to combine digital objects with other digital objects.

#### **Automatable**

It should be machine-interpretable to support specific business functions (for example, accounting, royalties, etc.) and to facilitate actionability.

#### **Compatible**

It must be able to exist harmoniously and/or function with existing identification systems and with processes. For example, it should be usable with legacy numbering systems such as ISBN, ISSN, EAN and U.P.C. Individuals should be able to use one or more unique identifiers found in the discovery metadata to support existing business processes (for example, performing searches or locating the user to the intended object or information.)

#### **Actionable**

Individuals should be able to use the identifier in specific activities. For example, a user should be able to type a number to initiate a search for the metadata and be connected to a network service; or they should be able to use the identifier as a hyperlinked reference. See also, Resolvable.

#### **Resolvable**

It must provide a mechanism by which an identifier is submitted to a network service and generates one or more pieces of current information related to the digital object identified. It must have the ability to resolve to one or more of the following:

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- the object
- the metadata
- the state data

### **Normative**

It must follow clearly defined and published guidelines. This implies that there is an authoritative body (maintenance agency) to create and maintain the guidelines associated with assigning identifiers to objects in a consistent manner. It does not imply that this body be the issuer of the identifiers.

### **Extensible**

It should allow for the addition of new features (or uses) at a later date.

### **Scalable**

It should provide expanding capacity to support a greater spectrum of products and users without necessarily changing schemes. It should be scalable to allow increasing demands on the system. That is, as the ebook industry grows it should be capable of assigning and maintaining numbers consistently.

Speed of resolution should be maintained or improved as the number of identifiers and products increases.

### **Global**

The identifier protocol is accepted internationally by the ebook industry and ultimately recognized as a standard by international bodies. It should not be dependent or exclusively applicable to a specific publishing industry segment (for example, trade vs. educational or professional).

### **Encoding Capable**

It should be able to employ any printable characters from the Universal Character Set (UCS-2), of ISO/IEC 10646, which is the character set defined by Unicode v2.0.

### 9.0 Appendix D: References

*The DOI Handbook, v 0.5*, International DOI Foundation, Oxford, 2000.

[http://www.doi.org/handbook\\_2000/index.html](http://www.doi.org/handbook_2000/index.html)

*ISBN Users Manual*, International ISBN Agency, Berlin, 1999.

<http://www.bowker.com/standards/home/isbn/international/isbmanual.html>

“Administration of the ISBN System “,

<http://www.bowker.com/standards/home/isbn/international/administration.html>

*Digital Rights Management for Ebooks: Publisher Requirements, Version 1.0*, Association of American Publishers, New York, 2000. <http://www.publishers.org>

*Metadata Standards for Ebooks, Version 1.0*, Association of American Publishers, New York, 2000. <http://www.publishers.org>

### 10.0 Appendix E: FAQs

Q: Why should I assign a DOI?

A: DOIs support resolution using currently existing technology and can be applied to any digital object regardless of whether it is an ebook or a component of an ebook.

- The transition from physical to electronic content distribution AND consumption requires a numbering system that is Internet-friendly and Internet-resilient.
  - Ebooks are distributed and sold in an electronic supply chain, not a traditional supply chain, where there are no printing presses, no warehouses, no delivery trucks, no bookshelves. Instead, one single ebook can be housed in a digital repository and purchased by consumers over the Internet with just a few clicks.
  - Publishers are selling access rights to digital content, not purchasing rights for a physical product. Ebook consumers purchase the rights to access content electronically. This is fundamentally different from the print world where consumers access a book by simply opening the cover.
  - Different types of security are required to protect digital content as opposed to physical products. In the physical world, security devices can be placed at the door of a retail location to prevent book theft. In a networked environment, each digital object needs to be protected individually.
  - In an electronic environment, consumers must be able to discover, purchase and receive ebooks over the Internet. This requires a unique and persistent identifier that can be used to take the viewer through the Internet to persistent metadata about the e-book or a location where the e-book can be found.
- Ebooks live and breathe on the Web - they are digital, not physical. They may be whole products. They may be composites. Either way, the numbering system must:
  - be flexible enough to be applicable to any type of ebook object
  - provide an infinite number of identifiers to support the unbounded number of options
- The ISBN on its own is inadequate to deal with the need for the combination of capabilities of persistence, resolution, and granularity. Hence, the need for the DOI system

For further details see the “AAP’s Recommendations for Numbering Standards”  
(.doc)

## Numbering Standards for Ebooks

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Q: When should an ebook have more than one DOI?

A: If all aspects of the ebook (for example, the content and DRM rules) are substantially the same from one format to the next, then only one DOI would be needed. If content varies substantially from one format to another (omitted tables, figures, etc.), it is likely that the author, publisher and consumer would view the two formats as two different works, which suggests assigning each of the two versions its own ISBN and core DOI (per the following option).

It is also important to understand that there is a difference between what the identifier identifies and what it resolves to. The publisher may want the DOI to resolve to a specific digital object or to some information about the digital object (i.e., metadata) or to a website where the object could be purchased or to a related webpage, or something else to support a specific business function. There are numerous options for the publisher.

If the publisher does wish for the identifier to resolve to a specific digital object in a specific format, see the Guidelines sections 4.4.2 and 4.6.

Q: What are the key decisions that a publisher has to make to determine how to assign identifiers to each ebook?

A: Each publisher or publishing unit should establish its own policy for setting the syntactic maps for the DOI suffix and:

1. Decide -- for a given work -- what the smallest piece of content it is you are likely to want to sell.

Based on the DOI/indecs principle of functional granularity, the editor/publisher must or should decide at the outset what will be the likely lowest granularity at which the selling/transaction will occur for a given ebook. Is it the tables, figures, photos, MP3 clips, complete chapters, or the entire book?

2. Know the structure of the work and translate that into a syntactical map for the DOI suffix.

The editor must/should decide on a syntactical map for the work that will accommodate the structure of the work down to the smallest type of "granule" intended to be sold. Each level of granularity is assigned a node in the DOI suffix. If the smallest component to be sold is the book itself, the syntactical map for the DOI is 10.1111/ISBN, where the ISBN is occupying

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the first node of the suffix. See the examples below for the mapping of additional nodes.

3. Perform an inventory cast-off of the saleable components within the nodes.

The editor must/should make a "cast-off" inventory of the elements likely to be assigned DOIs, which will tell him the number of characters or digits needed within each node. Without doing this, the editor and publisher will run the risk of setting a one-digit node for the chapter level when he or she has, in fact, 11 saleable chapters in the book. In general, it is a good idea to allow for one more digit or character in the node than suggested by the cast-off. Although useful for other purposes, there is no "DOI-need" to categorize the pieces (tables vs. photos vs. figures, etc.).

4. As each piece goes into the DAM system or Production, assign a DOI to it and note that component's place in the work's sequential structure.

This act is akin to the paging and parts-checking exercise of pre-editorial and production work that every editor and copyeditor knows is essential. Assuming that the work is truly modular, one could introduce each piece in any order into the Production or DAM system, and if one is assigning DOIs sequentially as the pieces enter, the outcome would be dumb numbers assigned to each piece. Because this latter scenario would require assignment of sequencing numbers to put the work into its proper, intended sequence, it is not offered here as an ideal or preferred way of working with DOIs at the editorial/production stage.

5. Decide on the approach to handling format identification: a) the AAP primary recommendation of nested tagging or b) the AAP alternative recommendation for assigning a DOI and ISBN to every rendering of every saleable component.

If Option A is followed, the decision regarding the formats (pdf, lit, etc.,) in which the content will be rendered can be dealt with by updating the metadata records associated with the work and its components. If Option B is followed, the editor/publisher is best advised to know in advance all the formats that will be used and to create metadata records for each rendering of each component. With Option B, if additional formats are chosen, a new set of metadata records for each component in that format will be required. (Caveat: Of concern to editors and publishers is whether their legacy systems support DOIs and/or one ISBN for multiple formats of an ebook (or ebook object). If they can, then only one DOI and one ISBN will be required. If they cannot, then a unique ISBN and, therefore a unique DOI per file format will be

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needed as will separate metadata records per rendering and per component per rendering.)

6. Decide to what you expect the DOI to resolve; ensure that the metadata records are prepared accordingly; and be prepared to inform the Registration Agency accordingly.

Publishers must also consider whether or not they want the users to be able to resolve directly to a specific formatted digital object or to something else which would either provide them information about the ebook, direct them to a place to buy the ebook or support some other user need. If they want the user to be able to click on the DOI in cyberspace and go directly to a specific formatted object, they should see the Guidelines in sections 7.4.2 or 7.5.5.

7. As each piece goes into the DAM system or Production and the DOI is assigned, create the core ONIX metadata record for that piece.

That core metadata record is the same record one will need when the DOI is registered with a Registration Agency. Actual registration should take place only at the point the publisher is ready to announce the whole work or its components as forthcoming for sale or as published. See the AAP's *Ebook Standards for Metadata, Version 1.0* and the ONIX Guidelines.

8. Do not assign a DOI to a component owned by another rightsholder -- whether it has a DOI assigned by that rightsholder or not.

If the rightsholder has assigned a DOI, ensure that the DOI appears with any in-line source reference or permissions acknowledgment, and ensure that the DOI will be activated if the rightsholder requires that.

9. General Examples: (for brevity, using ISBN to stand for 1234567890)

- a) 10.1111/ISBN - This reflects the simplest situation: a whole ebook, intended to be sold only as the whole.

- b) 10.1111/ISBN.1 - This reflects one of the simplest situations: one saleable chapter in a 10-chapter book (0-9), where the publisher does not intend to sell any element smaller than a chapter.

- c) 10.1111/ISBN.01.0001 - this reflects something with more levels of granularity: a work with up to 100 "Part" divisions (00-99), any one of which the publisher would be hoping to sell as a whole, and with as many as 10,000 individually saleable chapters (0000-9999).

## Numbering Standards for Ebooks

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d) 10.1111/ISBN.0.1.01 - this reflects yet a further level of granularity: a work with up to 10 "Part" divisions, across up to 100 chapters (0-9 Parts x 0-9 Chapters), with each chapter containing up to 100 saleable subunits (such as tables, figures, photos, MP3 files, Quicktime video clips, etc.).

These are merely examples, and one could extend the first example beyond the time of publication if certain components of the chapters were viewed as separately saleable digital objects. The point is that the ebook and the DOI demand an editorial/production understanding of digital asset management as well as a sales/marketing understanding of DRM.

Q: Why should a publisher use a 'dumb' number in the second and subsequent nodes of the suffix instead of an intelligent number when assigning identifiers to ebook components?

A: One benefit of using the DOI is its applicability to ebooks AND saleable ebook components. Ebook components can either be sold individually or combined with other ebook components to create new composite ebooks. Using intelligent syntax in the ebook component nodes could prove confusing when the ebook component is used in the creation of a new composite ebook because an object arranged as chapter 1 in one book may become chapter 10 in another. It is furthermore possible that the ebook component will no longer assume chapter form in a different composite ebook.