IEEE PUBLISHING TECHNOLOGY

BOOKS METADATA DESCRIPTION AND XML DOCUMENTATION

Version 4.1

December 2022

IEEE Confidential

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DOCUMENT STATUS RECORD

Release Date	Status	Version	Amendment / Purpose
26 Nov 2010	New	1.0	Metadata provided in XML format; documentation of all XML elements and attributes
16 July 2012	Revision	2.0	DTD Change. Added copyright group and altered copyright element. Removed several attributes and elements- refer to DTD.
18 July 2017	Revision	3.0	DTD Change Added book title, ISBN and book AMS ID to the chapter XML.
29 May 2020	Revision	4.0	DTD Change. Added authhorgroup to chapters. Added isbnfiletype attribute to isbn.
12 December 2022	Revision	4.1	DTD Change. Added bookfreetoread and chapterfreetoread

1. Book Metadata Description

This document is a technical description of books content metadata records. It is intended for use by IEEE data customers. This includes customers who host IEEE content locally and those who link to IEEE Xplore via the metadata records.

1.1 Data format

Bibliographic data will be provided in XML format. For more details, please refer to 'Data distribution from IEEE' section under Data Delivery Book XML Documentation under https://www.ieee.org/publications/services/services-resources.html#Data-distribution-from-IEEE. In addition, you will also find the Data Delivery DTD (ieee_idams_exchange.dtd) under this section.

1.2 Backfiles

At the outset of a data license subscription, if the contract includes backfiles, customers will receive a shipment consisting of the full backfile of content. The initial content will contain records from the oldest content through the present. The backfiles will consist of XML metadata or PDFs + XML metadata, depending on the user's requirements. The initial shipment will be sent either via FTP site or thumb drive, depending on the file size. Below is how the directory structure looks like (for those hosting PDFs locally):
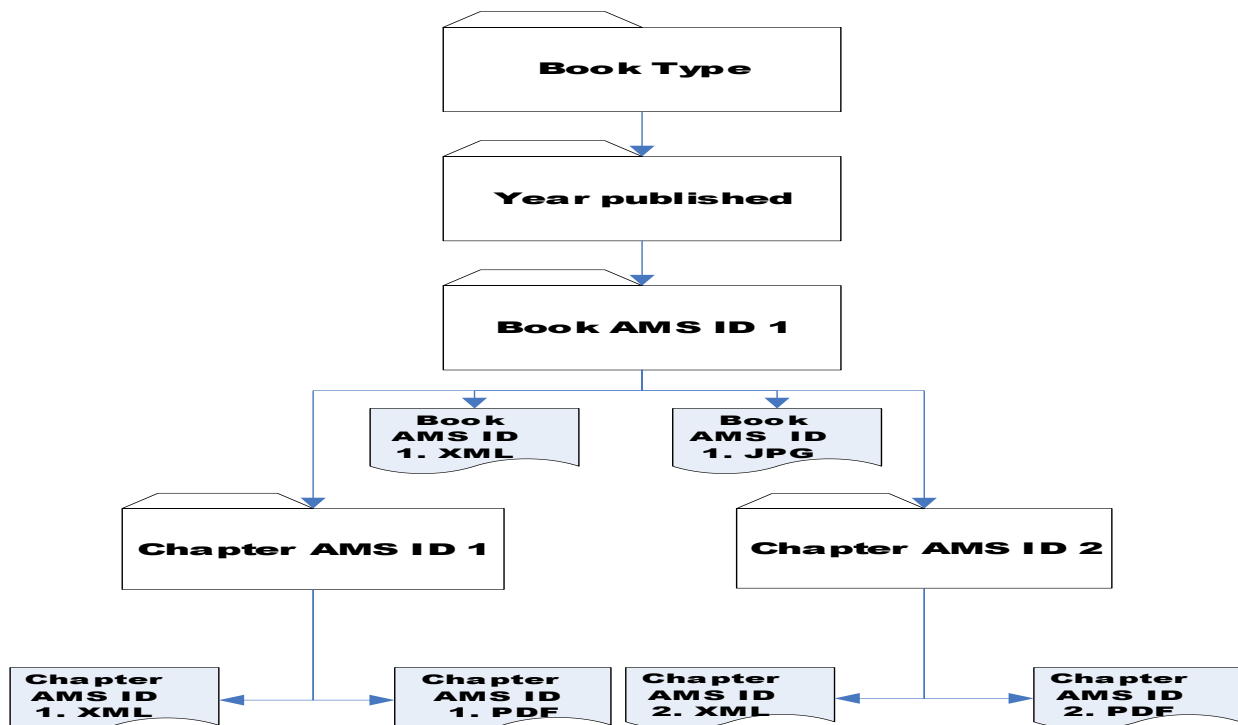
1.3 Data Delivery Procedure

Files are sent to data customers twice every week, if available, which coincides with the update to IEEE Xplore. Content will be available from a designated IEEE FTP site. Customer login and password information will be provided. An email is sent to customers notifying them that new update is ready for pickup at the FTP site. Folder structure of the update directory is included in this specification.

1.4 Book Type

Book data will be offered by book type. Currently, files are delivered pertaining to the following book type:

Book Type
▪ Wiley-IEEE Press (IEEE)
▪ MIT Press
▪ Now Publishers
▪ SAE International
▪ Wiley Telecom
▪ Artech
▪ River
▪ Princeton University Press

1.5 Record Structure on FTP site

Content delivery will consist of three components:
(i) XML metadata
(ii) PDF data (if part of subscription)
(iii) JPEG files for covers (if part of subscription)

1.6 Record Structure – Book Models

We support two models for our Books:
(i) Book level PDF and metadata
(ii) Book and Chapter level PDF and metadata
This is because some of our Book providers do not support chapters and only provides us with the entire book PDF and metadata about the book. These are Now Publishers, Artech, MIT Press, River, and SAE. The other Book sources provide Book and Chapter level PDFs and metadata. These are Wiley-IEEE Press and Wiley Telecom.

1.7 Record Structure – XML Metadata and PDF data

Customers are provided with an FTP account based on what they are subscribed to. Once logged in, they will have access to the appropriate directories. Under the book type folder will be the week# directory. Under the week# directory will be the zip files.

Zip files are named as Book AMS ID.zip. Sample directory structure for IEEE Book is illustrated:

```
                    ┌─────────────────┐
                    │    IEEE Book    │
                    └────────┬────────┘
                             │
                    ┌────────▼────────┐
                    │     Week#       │
                    └────────┬────────┘
          ┌──────────────────┼──────────────────┐
          ▼                  ▼                  ▼
  ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
  │Book AMS ID    │   │Book AMS ID    │   │Book AMS ID    │
  │1.zip          │   │2.zip          │   │3.zip          │
  └──────────────┘   └──────────────┘   └──────────────┘
```
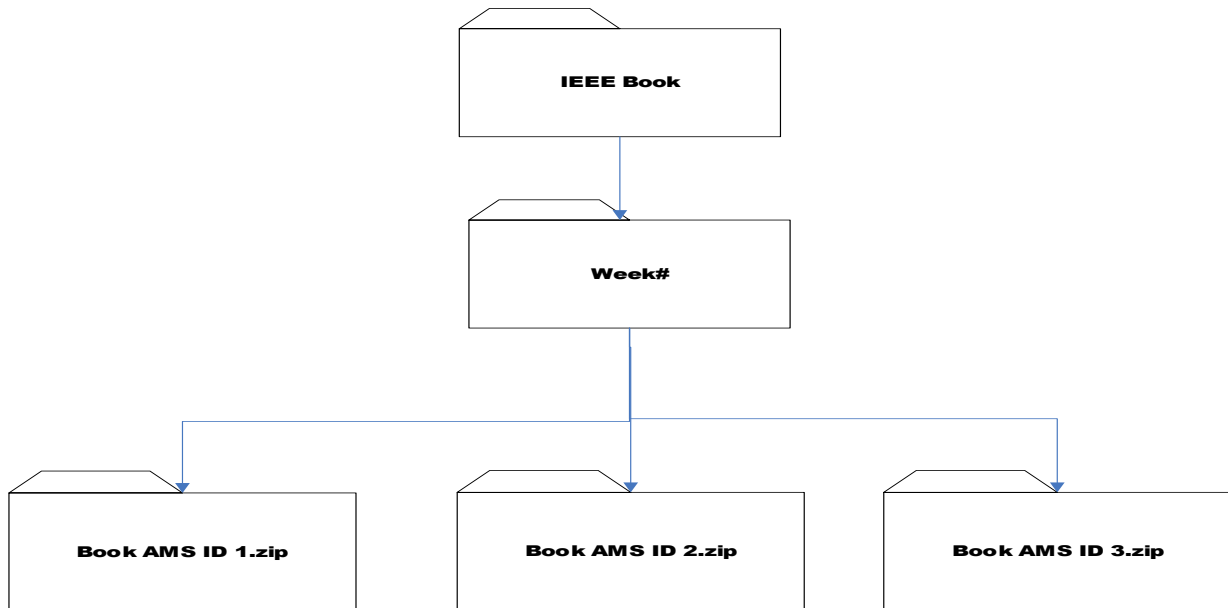
The Book AMS ID folders will contain the book XML and jpeg file for cover image, both with the same filename as the Book AMS ID. For example, Book AMS ID folder 5201423 will have a 5201423.jpg and 5201423.xml. Also under the Book AMS ID folder, there will also be multiple Chapter AMS ID folders, each containing the chapter XML and chapter PDFs. Both chapter PDF and chapter XML will also have the same filename as the Chapter AMS ID. AMS ID is a unique ID that IEEE generates for the chapter. Sample folder structure is shown below (for those hosting PDFs locally):

```
                        ┌─────────────────────┐
                        │   Book AMS ID 1     │
                        └──────────┬──────────┘
          ┌──────────────┬─────────┴────────┬──────────────┐
          │              ▼                  ▼              │
          │       ┌──────────────┐  ┌──────────────┐       │
          │       │Book          │  │Book          │       │
          │       │AMS ID1.XML   │  │AMS ID1.JPG   │       │
          │       └──────────────┘  └──────────────┘       │
          ▼                                                ▼
 ┌──────────────────────┐              ┌──────────────────────┐
 │  Chapter AMS ID 1    │              │  Chapter AMS ID 2    │
 └──────────┬───────────┘              └──────────┬───────────┘
   ┌────────┴────────┐                   ┌────────┴────────┐
   ▼                 ▼                   ▼                 ▼
┌────────┐      ┌────────┐          ┌────────┐      ┌────────┐
│Chapter │◄────►│Chapter │          │Chapter │◄────►│Chapter │
│AMS     │      │AMS     │          │AMS     │      │AMS     │
│ID1.XML │      │ID1.PDF │          │ID2.XML │      │ID2.PDF │
└────────┘      └────────┘          └────────┘      └────────┘
```

1.8   Naming Convention for Chapter PDFs and Linking to IEEE Xplore

Chapter PDFs are named with the Chapter AMS ID. For example, <amsid>
5236988/amsid> has a corresponding PDF file name 5236988.pdf.
The filename can also be found in the <filename> element of the XML:
<filename docpartition="text" filetype="MainPDF">5236988.pdf</filename>

For subscribers linking to IEEE Xplore (with the proper credentials), the record syntax for constructing the URL is as follows:

Hostname/xpl/ebooks/bookPdfWithBanner.jsp?fileName=
<book><chapter><chapterinfo><amsid>.pdf& bkn=
<book>< bookinfo><amsid>&rpdfType=chapter
Example:
https://ieeexplore.ieee.org/xpl/ebooks/bookPdfWithBanner.jsp?fileName=7547484.pdf&bkn=7547468&pdfType=chapter

1.9   Sample Book Record

```xml
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE book PUBLIC "-//IEEE//IDAMS Exchange V1.0//EN" "ieee_idams_exchange.dtd">
<book>
 <title><![CDATA[Antenna-in-Package Technology and Applications]]></title>
 <bookinfo>
  <isbn isbnfiletype="ePub" isbntype="New-2005" mediatype="Electronic">9781119556657</isbn>
  <isbn isbnfiletype="hardcover" isbntype="New-2005" mediatype="Paper">9781119556633</isbn>
  <isbn isbnfiletype="PDF" isbntype="New-2005" mediatype="Online">9781119556671</isbn>
  <isbn isbnfiletype="ePub" isbntype="New-2005" mediatype="Electronic">9781119556640</isbn>
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   <pubtopicalbrowse><![CDATA[Components, Circuits, Devices and Systems]]></pubtopicalbrowse>
   <pubtopicalbrowse><![CDATA[Fields, Waves and Electromagnetics]]></pubtopicalbrowse>
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```

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integration, and packaging</b></p> <p><i>Antenna-in-Package Technology and Applications</i> contains an introduction
to the history of AiP technology. It explores antennas and packages, thermal analysis and design, as well as measurement
setups and methods for AiP technology. The authors—well-known experts on the topic—explain why microstrip patch
antennas are the most popular and describe the myriad constraints of packaging, such as electrical performance, thermo-
mechanical reliability, compactness, manufacturability, and cost. The book includes information on how the choice of
interconnects is governed by JEDEC for automatic assembly and describes low-temperature co-fired ceramic, high-density
interconnects, fan-out wafer level packaging–based AiP, and 3D-printing-based AiP. <br /> <br /> The book includes a
detailed discussion of the surface laminar circuit–based AiP designs for large-scale mm-wave phased arrays for 94-GHz
imagers and 28-GHz 5G New Radios. Additionally, the book includes information on 3D AiP for sensor nodes, near-field
wireless power transfer, and IoT applications. This important book:</p> <p>• Includes a brief history of antenna-in-
package technology <br /> • Describes package structures widely used in AiP, such as ball grid array (BGA) and quad flat
no-leads (QFN) <br /> • Explores the concepts, materials and processes, designs, and verifications with special
consideration for excellent electrical, mechanical, and thermal performance</p> <p>Written for students in electrical
engineering, professors, researchers, and RF engineers, <i>Antenna-in-Package Technology and Applications</i> offers a
guide to material selection for antennas and packages, antenna design with manufacturing processes and packaging
constraints, antenna integration, and packaging.</p>]]></description>
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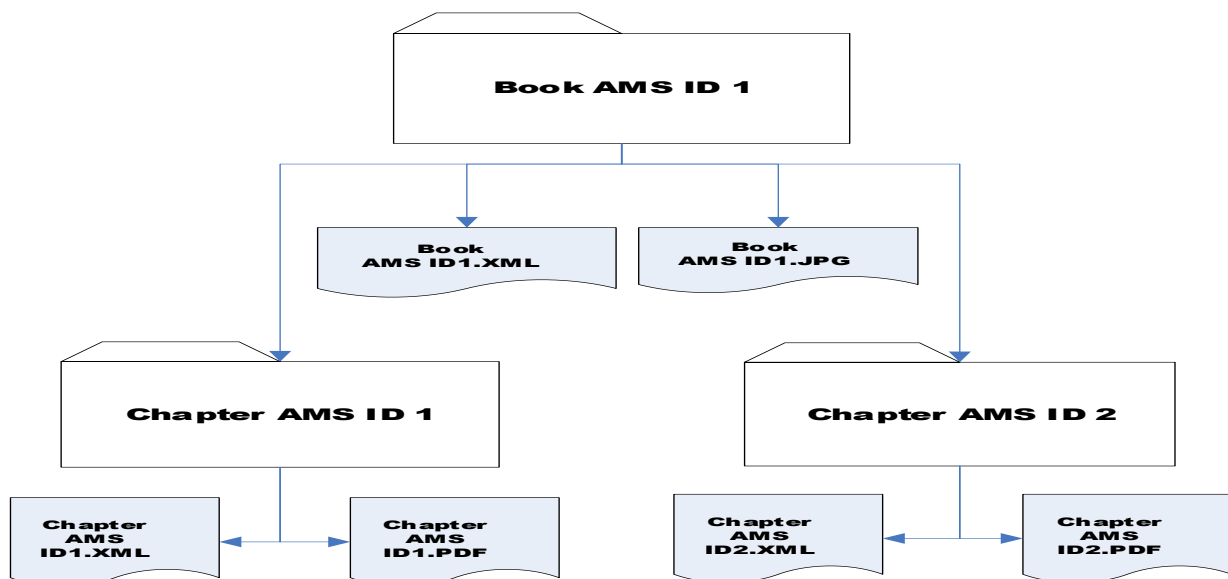
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1.10 Sample Chapter Record

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<!DOCTYPE book PUBLIC "-//IEEE//IDAMS Exchange V1.0//EN" "ieee_idams_exchange.dtd">
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  <isbn isbnfiletype="hardcover" isbntype="New-2005" mediatype="Paper">9781119556633</isbn>
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tackle both system&#x2010;in&#x2010;package integration and packaging of radio frequency (RF) and mmWave devices.
This chapter presents the embedded wafer&#x2010;level ball grid array (eWLB) technology, which was the first
fan&#x2010;out WLP technology. The eWLB is a modern assembly and packaging technology that offers attractive
possibilities for mmWave systems. The eWLB is based on a technology where the chips are embedded in a mold compound
and a fan&#x2010;out area for redistribution is generated. The mold compound used in the eWLB shows very low loss,
which in combination with the high metal&#x2010;pattern resolution of the thin&#x2010;film redistribution layer, allows
the realization of all basic toolbox elements required for antenna&#x2010;in&#x2010;package (AiP) integration. Integration
of AiP can increase system efficiency and lower cost. The chapter also presents three examples of eWLB AiP modules for
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```

1.11 FTP Updates

Updates and additions to the initial shipment are issued on a twice weekly basis via FTP with accompanying email alerts. Updates to existing metadata records are sent when maintenance have been done on the record.

1.12 Contact Information

Contact IEEE Customer Service as follows:

Email: onlinesupport@ieee.org

Telephone:

+1 800 678 4333 (U.S. and Canada)

+1 732 981 0060 (worldwide)

2. Book XML Documentation

This section contains a full description of the sub-field tags within the books data. Note that not all sub-fields will be present in every record.

2.1 Book <book>

Definition: This section contains all the book level attributes.

2.1.1 Book Full Title <title>

Definition: Full (original) title of a book.
Data Type: string
Length: 500
Example: <title>Contamination and ESD Control in High Technology Manufacturing</title>

2.1.2 Book Subtitle <subtitle>

Definition: Subtitle of a book derived from the original title.
Data type: string
Length: 150
Example: <subtitle><![CDATA[A Comprehensive Guide to Understanding and Using Flash Memory Devices]]></subtitle>

2.2 Book Information <bookinfo>

Definition: Information about the book.

2.2.1 Book ISBN <isbn>

Definition: The standard ISBN (International Standard Book Number) for a book.
Data type: string
Length: 15
Attribute: isbnfiletype
   Definition: The type of file of the ISBN number.
   Enumerated value list: paperback, hardcover, ePub, PDF
Attribute: isbntype
   Definition: This value describes which version of the ISBN number the ISBN record contains. A book may be issued both with a 10-digit number and a 13-digit ISBN number.
   Enumerated value list: New-2005, Historical
Attribute: mediatype
   Definition: Type of book media that the ISBN number grouped with the media type applies to.
   Enumerated value list: Paper, CD, Online, Electronic
Example: <isbn isbnfiletype="PDF" isbntype="New-2005" mediatype="Online">9781119515326</isbn>

2.2.2 Book Topical Browse Set <pubtopicalbrowseset>

Definition: Information about the set of topical browse for the book.

2.2.2.1 Book Topical Browse <pubtopicalbrowse>

Definition: Subject terms assigned to each book used by Xplore for topical browsing. There are 16 values currently.

Data type: string

Length: 500

Enumerated value list: Aerospace, Bioengineering, Communication, Networking, and Broadcast Technologies, Components, Circuits, Devices and Systems, Computing and Processing, Engineered Materials, Dielectrics and Plasmas, Engineering Profession, Fields, Waves and Electromagnetics, General Topics for Engineers, Geoscience, Nuclear Engineering, Photonics and Electrooptics, Power, Industry and Industry Applications, Robotics and Control Systems, Signal Processing and Analysis, Transportation

Example:
```
<pubtopicalbrowseset>
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        <pubtopicalbrowse>Aerospace</pubtopicalbrowse>
        </pubtopicalbrowseset>
```

2.2.3 Book Digital Object Identifier <bookdoi>

Definition: The Digital Object Identifier (DOI) number assigned to the book. The DOI is registered with Crossref to provide a single unique global identifier for the book.

Data type: string

Length: 32

Example: `<bookdoi>10.1109/9780470544266</bookdoi>`

2.2.4 Book IDAMS[1] ID <idamsid>

Definition: System generated unique ID automatically assigned at the book level when import is run.

Data type: string

Length: 16

Example: `<idamsid>0b000064810cc975</idamsid>`

2.2.5 Book Status <bookstatus>

Definition: The current status of a book.

Data type: string

Length: 20

Enumerated value list: Active, Inactive

Example: `<bookstatus>Active</bookstatus>`

---

[1] IDAMS- IEEE Digital Asset Management System

2.2.6   Book Free To Read <bookfreetoread>

Definition: This is present when a book (with all the chapters) is available for free on IEEE Xplore.

Attribute: PROMO_TYPE

   Definition: Describes the type of promotion of the book.

Attribute: end_date

   Definition: The date when the book is no longer free to read.

Attribute: specific_use

   Definition: Describes the specific use of the book promotion.

   Enumerated Value List: PROMO, DOA

Attribute: start_date

   Definition: The date when the article is available free to read.

Example: <bookfreetoread PROMO_TYPE="Promo Story: Have all data" end_date="11/23/2024 12:00:00 PM" specific_use="PROMO" start_date="08/01/2026 12:00:00 PM"/>

2.2.7   Book Author Group <authorgroup>

Definition: Information about the group of book authors.

2.2.7.1   Book Author <author>

Definition: Information about the author of the book.

Attribute: role

   Definition: Code indicating the role played by a person in the creation of the product.

   Data type: string

   Length: 50

   Enumerated value list: See table below

Example: <author role="A01">

Value	Description
A01	By (author)
A02	With
A03	Screenplay by
A04	Libretto by
A05	Lyrics by
A06	By (composer)
A07	By (artist)
A08	By (photographer)
A09	Created by
A10	From an idea by
A11	Designed by
A12	Illustrated by
A13	Photographs by
A14	Text by

Value	Description
A15	Preface by
B01	Edited by
B02	Revised by
B03	Retold by
B04	Abridged by
B05	Adapted by
B06	Translated by
B07	As told by
B08	Translated with commentary by
B09	Series edited by
B10	Edited and translated by
B11	Editor-in-chief
B12	Guest editor
B13	Volume editor
B14	Editorial board member
B15	Editorial coordination by
C01	Compiled by
C02	Selected by
C99	Other compilation by
D01	Producer
D02	Director
D03	Conductor
D99	Other direction by

2.2.7.1.1 Book Author Normalized Name <normname>

Definition: The normalized name of an author of the book. A 'normalized' author name means that the name is in a specific format: surname, initials, suffix (if any) for non-Asian names, exactly as published for Asian names where the family name cannot be determined.
Data type: string
Length: 300
Example: <normname>Encinar, J.</normname>

2.2.7.1.2 Book Author Non-Normalized Name <nonnormname>

Definition: The non-normalized name of an author of the book. The non-normalized name is the original format of the name captured from metadata prior to any attempt at normalization. A 'non-normalized'

author name means that the name is in the format: first name, middle initial, surname.

Data type: string

Length: 300

Example: <nonnormname>Jose Antonio Encinar</nonnormname>

2.2.7.1.3 Book Author First Name <firstname>

Definition: The first name of an author for the book.

Data type: string

Length: 50

Example: <firstname> Jose</firstname>

2.2.7.1.4 Book Author Middle Name <othername>

Definition: The middle name of an author for the book.

Data type: string

Length: 50

Example: <othername>Antonio</othername>

2.2.7.1.5 Book Author Last Name <surname>

Definition: The last name of an author for the book.

Data type: string

Length: 100

Example: <surname>Graham</surname>

2.2.7.1.6 Book Author Affiliation <affiliation>

Definition: The institutional affiliation for the author for the book.

Data type: string

Length: 500

Example: <affiliation>Northeastern Univ., Hebei, China</affiliation>

2.2.7.1.7 Book Author Type <authortype>

Definition: The role that the author contributed towards the chapter.

Data type: string

Length: 50

Enumerated value list: Author, Editor, Series Editor

Example: <authortype>Author</authortype>

2.2.8   Book Copyright Group <copyrightgroup>

Definition: Information about the book copyright group.

2.2.8.1   Book Copyright <copyright>

Definition: This consists of the pairs of values for the copyright holder and copyright year. Books may have multiple copyright value pairs.

2.2.8.1.1 Book Copyright Year <copyright year>

Definition: The year or years that a book was copyrighted.
Data type: string
Length: 4
Example: <year>2005</year>

2.2.8.1.2 Book Copyright Holder <holder>

Definition: The copyright holder for a book.
Data type: string
Length: 300
Example: <holder>Wiley-IEEE Press </holder>

2.2.9   Book Edition Number <edition>

Definition: The number of a numbered edition of a book.
Data type: integer
Length: 10
Example: <edition>2 </edition>

2.2.10 Book Publisher <publisher>

Definition: Information about the book publisher.

2.2.10.1 Book Publisher Name <publishername>

Definition: The name of the publisher of a book. Used in conjunction with the publisher's location and address.
Data type: string
Length: 100
Example: <publishername>John Wiley & Sons</publishername>

2.2.10.2 Book Publisher Location <publisherloc>

Definition: The location of the publisher of a book. Used in conjunction with the publisher's name and address.
Data type: string
Length: 200
Example: <publisherloc>Piscataway, NJ, USA</publisherloc>

2.2.11 Book Notes Group <notegroup>

Definition: Information about the group of book notes.

2.2.11.1 Book Notes <notegroup>

Definition: A general note about the book. More than one note record can be present. For internal use only.
Data type: string
Length: 2000
Example: <note>*to Apex 9/28/05; *SCAN - Xplore cd no good; *Xplore cd only in 8/2/05 - Debbie checking; vendor cd rom in</note>

2.2.12 Book Publication Date <pubdate>

Definition: Information about the book publication date.

2.2.12.1 Book Publication Year <year>

Definition: The year the book was published.
Data type: integer
Length: 4
Example: <year>2009</year>

2.2.13 Book AMS ID <amsid>

Definition: The unique key for the book's record in the data. Used for constructing the url to Xplore PDFs.
Data type: string
Length: 50
Example: <amsid>5361039</amsid>

2.2.14 Book AMS Create Date <amscreatedate>

Definition: The date that a record was created.
Example: <amscreatedate>12/21/2009 9:59:30 PM</amscreatedate>

2.2.15 Book Brand Name <brandname>

Definition: The full name of the imprint or brand under which the book is issued, as it appears in the title page of the book.
Data type: string
Length: 100
Example: <brandname>Wiley-IEEE Press</brandname>

2.2.16 Book Class of Trade <classoftrade>

Definition: Text indicating the class of trade, which is assumed for prices given in the message.
Data type: string
Length: 100

2.2.17 Book Description <description>

Definition: Description of the book.
Data type: string

Length: no limit

Example: <description>Presented here is an all-inclusive treatment of Flash technology, including Flash memory chips, Flash embedded in logic, binary cell Flash, and multilevel cell Flash. The book begins with a tutorial of elementary concepts to orient readers who are less familiar with the subject. Next, it covers all aspects and variations of Flash technology at a mature engineering level: basic device structures, principles of operation, related process technologies, circuit design, overall design tradeoffs, device testing, reliability, and applications. </description>

2.2.18 Book Number of Pages <numpages>

Definition: Number of pages of the book.

Data type: integer

Example: <numpages>700</numpages>

2.2.19 Book Price <price>

Definition: Price of the book.

Data type: string

Length: 10

Example: <price>150.00</price>

2.2.20 Book Product Code <productcode>

Definition: Code that indicates the primary form of the book.

Data type: string

Length: 10

Enumerated value list: See table below.

Value	Description
BB	Hardback
BC	Paperback/softback
DG	Electronic book text
DH	Online resource

Example: <productcode>DH</productcode>

2.2.21 Book Series Title <seriestitle>

Definition: The series title of the book.

Data type: string

Length: 100

Example: <seriestitle>IEEE Press Series on Power Engineering</seriestitle>

2.2.22 Book Series Number <seriesnum>

Definition: The distinct enumeration of a book within a series.

Data type: integer

Example: <seriesnum>47</seriesnum>

2.2.23 Book Table of Contents <tableofcontents>

Definition: A list of the parts of a book in the order in which the parts appear.

Data type: string

Length: no limit

Example: <tableofcontents><![CDATA[PREFACE. <p> CONTRIBUTORS. <p> 1 A FRAMEWORK FOR INTERDISCIPLINARY RESEARCH AND EDUCATION< (<i>James Momoh</i>). <p> 1.1 Introduction. <p> 1.2 Power System Challenges. <p> 1.2.1 The Power System Modeling and Computational Challenge. <p> 1.2.2 Modeling and Computational Techniques. <p> 1.2.3 New Interdisciplinary Curriculum for the Electric Power Network. <p> 1.3 Solution of the EPNES Architecture. <p> 1.3.1 Modular Description of the EPNES Architecture. <p> 1.3.2 Some Expectations of Studies Using EPNES Benchmark Test Beds. <p> 1.4 Test Beds for EPNES. <p> 1.4.1 Power System Model for the Navy. <p> 1.4.2 Civil Test Bed—179-Bus WSCC Benchmark Power System. <p> 1.5 Examples of Funded Research Work in Response to the EPNES Solicitation. <p> 1.5.1 Funded Research by Topical Areas/Groups under the EPNES Award. <p> 1.5.2 EPNES Award Distribution. <p> 1.6 Future Directions of EPNES. <p> 1.7 Conclusions. <p> 2]]></tableofcontents>

2.2.24 Book Keyword Set <keywordset>

Definition: Information about the set of book keywords.

Attribute: keywordtype

    Enumerated value list: AuthorFree

    Data type: string

    Length: 500

Example:

```
<keywordset keywordtype="AuthorFree">
   <keyword>
    <keywordterm><![CDATA[guide to selecting materials for antennas and packages]]></keywordterm>
   </keyword>
   <keyword>
    <keywordterm><![CDATA[guide to antenna design]]></keywordterm>
   </keyword>
   <keyword>
    <keywordterm><![CDATA[guide to antenna technology]]></keywordterm>
   </keyword>
   <keyword>
    <keywordterm><![CDATA[applications of antenna design]]></keywordterm>
   </keyword>
   <keyword>
    <keywordterm><![CDATA[antenna concepts]]></keywordterm>
   </keyword>
   <keyword>
   <keyword>
</keywordset>
```

2.2.25 Chapter Reference <chapterref>

Definition: The chapter XMLs that belongs to the book.

Attribute: href

    Data type: string

    Length: 500

Example:

```
<chapterref href="10017917.xml"/>
<chapterref href="10017920.xml"/>
<chapterref href="10017922.xml"/>
```

3. Chapter XML Documentation

This section contains a full description of the sub-field tags within the IEEE chapter data. Not all sub-fields will be present in every record.[2]

3.1 Book Full Title <title>

Definition: Full (original) title of a book. This is repeated from the book XML.
Data Type: string
Length: 500
Example: <title>Contamination and ESD Control in High Technology Manufacturing</title>

3.2 Book Information <bookinfo>

Definition: This section contains book level attributes. These are repeated from the book XML.

3.2.1 Book ISBN <isbn>

Definition: The standard ISBN (International Standard Book Number) for a book.
Data type: string
Length: 15
Attribute: isbnfiletype
  Definition: The type of file of the ISBN number.
  Enumerated value list: paperback, hardcover, ePub, PDF
Attribute: isbntype
  Definition: This value describes which version of the ISBN number the ISBN record contains. A book may be issued both with a 10-digit number and a 13-digit ISBN number.
  Enumerated value list: New-2005, Historical
Attribute: mediatype
  Definition: Type of book media that the ISBN number grouped with the media type applies to.
  Enumerated value list: Paper, CD, Online, Electronic
Example: <isbn isbnfiletype="PDF" isbntype="New-2005" mediatype="Online">9781119515326</isbn>

3.2.2 Book AMS ID <amsid>

Definition: The unique key for the book's record in the data. Used for constructing the url to Xplore PDFs.
Data type: string
Length: 50
Example: <amsid>5361039</amsid>

---

[2] We added book level information in order to enable some of our discovery partners to index chapter level data.

3.3   Chapter <chapter>

Definition: This section contains all the chapter level attributes.

3.3.1   Chapter Full Title <title>

Definition: Full (original) title of a chapter.
Data Type: string
Length: 2000
Example: <title>Multilevel Cell Digital Memories</title>

3.3.2   Chapter Information <chapterinfo>

Definition: Information about the chapter.

3.3.2.1   Chapter Sequence Number in Book <chapterseqnum>

Definition: Contains the sequence number of the chapter relative to the other chapters abstracted in a particular book.
Data type: integer
Attribute: chapterseqtype
　　Enumerated value list: Book
Example: <chapterseqnum chapterseqtype="Book">130</chapterseqnum>

3.3.2.2   Chapter Digital Object Identifier <chapterdoi>

Definition: The Digital Object Identifier (DOI) number assigned to the chapter. The DOI is registered with Crossref to provide a single unique global identifier for the chapter.
Length: 100
Example: <chapterabstractdoi>10.1002/9780470181355.ch12 </chapterabstractdoi>

3.3.2.3   Chapter Status <chapterstatus>

Definition: The current status of a chapter.
Data type: string
Length: 20
Enumerated value list: Active, Inactive
Example: <articlestatus>Active</articlestatus>

3.3.2.4   Chapter Free To Read <chapterfreetoread>

Definition: This is present when a chapter is available for free on IEEE Xplore.
Attribute: PROMO_TYPE
　　Definition: Describes the type of promotion of the chapter.
Attribute: end_date
　　Definition: The date when the chapter is no longer free to read.
Attribute: specific_use
　　Definition: Describes the specific use of the chapter promotion.
　　Enumerated Value List: PROMO, DOA

Attribute: start_date

    Definition: The date when the chapter is available free to read.

Example: <chapterfreetoread PROMO_TYPE="Promo Story: Have Greater Values" end_date="10/05/2022 12:00:00 PM" specific_use="PROMO" start_date="11/01/2023 12:00:00 PM"/>

3.3.2.5   Chapter Content Type \<chaptercontenttype\>

Definition: Identifies the editorial content of a chapter.

Data type: string

Length: 20

Enumerated value list: Back matter, Chapter, Erratum, Front matter, Miscellaneous, Part Introduction

Example: <chaptercontenttype>Chapter</chaptercontenttype>

3.3.2.6   Chapter Hold Status \<holdstatus\>

Definition: A flag that indicates whether the chapter should be withheld from being published to data clients.

Data type: string

Length: 20

Enumerated value list: Hold, Publish

Example: <holdstatus>Publish</holdstatus>

3.3.2.7   Chapter Number \<chapternum\>

Definition: Contains chapter number.

Data type: integer

Length: 50

Example: <chapternum>ch12</chapternum>

3.3.2.8   Chapter Copyright \<chaptercopyright\>

Definition: Copyright for the chapter.

Data type: string

Length: 300

Attribute: holderisieee

    Definition: Specifies whether or not the IEEE is the copyright holder for this article.

    Enumerated value List: Yes, No

Example: <articlecopyright holderisieee="Yes"/>

3.3.2.9   Chapter Date \<date\>

Definition: Information about the chapter date.

Attribute: datetype

    Enumerated value list: ePub

    Definition: The date that the article was first published in Xplore.

Example: <date datetype="ePub">
      <year>2007</year>
      <month>1</month>

```
<day>12</day>
</date>
```

3.3.2.10 Chapter Abstract

Definition: Contains the abstract for the chapter.

Data type: string

Length: no limit

Attribute: abstracttype

> *Definition:* Type of chapter abstract.
>
> *Enumerated value list:* Regular
>
> *Definition:* Contains the standard abstract for the chapter.

Example: <![CDATA[Satellite Communications can be defined as the use of artificial satellites to establish communication links between various points on the Earth's surface, i.e., a telecommunication system encompassing at least one communication satellite. The combination of the New Space era with the exploitation of low‐altitude nodes led to a broadening in the family of communications from the sky: Non‐Terrestrial Networks (NTN), which include the use of airborne and spaceborne nodes to establish communication links between various points on the Earth's surface. The International Telecommunication Union Radiocommunication (ITU‐R) sector follows a well‐established procedure to define requirements, request submissions by external organizations, and evaluate radio interface technologies for the definition of International Mobile Telecommunications‐2020 (IMT‐2020). Such principles and procedures are reported in ITU‐R Resolution 65, and they are applicable to both the terrestrial and NTN components of IMT‐2020.>]]>

3.3.2.11 Chapter Author Group <authorgroup>

Definition: Information about the book author group.

3.3.2.11.1 Chapter Author <author>

Definition: Information about the author of the book.

Attribute: role

> *Definition:* Code indicating the role played by a person in the creation of the product.
>
> *Data type:* string
>
> *Length:* 50
>
> *Enumerated value list:* See table below

Example: <author role="A01">

Value	Description
A01	By (author)
A02	With
A03	Screenplay by
A04	Libretto by
A05	Lyrics by
A06	By (composer)
A07	By (artist)
A08	By (photographer)
A09	Created by

Value	Description
A10	From an idea by
A11	Designed by
A12	Illustrated by
A13	Photographs by
A14	Text by
A15	Preface by
B01	Edited by
B02	Revised by
B03	Retold by
B04	Abridged by
B05	Adapted by
B06	Translated by
B07	As told by
B08	Translated with commentary by
B09	Series edited by
B10	Edited and translated by
B11	Editor-in-chief
B12	Guest editor
B13	Volume editor
B14	Editorial board member
B15	Editorial coordination by
C01	Compiled by
C02	Selected by
C99	Other compilation by
D01	Producer
D02	Director
D03	Conductor
D99	Other direction by

3.3.2.11.2 Chapter Author Normalized Name <normname>

Definition: The normalized name of an author of the book. A 'normalized' author name means that the name is in a specific format: surname, initials, suffix (if any) for non-Asian names, exactly as published for Asian names where the family name can't be determined.

Data type: string

Length: 300

Example: <normname>Encinar, J.</normname>

3.3.2.11.3 Chapter Author Non-Normalized Name <nonnormname>

Definition: The non-normalized name of an author of the book. The non-normalized name is the original format of the name captured from metadata prior to any attempt at normalization. A 'non-normalized' author name means that the name is in the format: first name, middle initial, surname.

Data type: string

Length: 300

Example: <nonnormname>Jose Antonio Encinar</nonnormname>

3.3.2.11.4 Chapter Author Reference Number <authorrefid>

Definition: The primary key of the record in the IEEE master author database for the author.

Data type: string

Length: 30

Example: <authorrefid>3 </authorrefid>

3.3.2.11.5 Chapter Author First Name <firstname>

Definition: The first name of an author for the book.

Data type: string

Length: 50

Example: <firstname> Jose</firstname>

3.3.2.11.6 Chapter Author Last Name <surname>

Definition: The last name of an author for the book.

Data type: string

Length: 100

Example: <surname>Graham</surname>

3.3.2.11.7 Chapter Author Affiliation Group <affgrp>

Definition: Information about the group of author affiliation.

3.3.2.11.7.1 Chapter Author Affiliation <affn>

Definition: Affiliation for the author.

3.3.2.11.7.1.1 Chapter Author Affliation Organization <orgname>

Definition: Name of the organization of the author affiliation.

Data type: string

Length: 50

Example: <orgname>< <![CDATA[Infineon Technologies AG]]></orgname>

3.3.2.11.7.1.2 Chapter Author Affiliation Address <address>

Definition: The address of the article author affliation. If available, this includes the following:
<street> street
<country> country
<postcode> zipcode

3.3.2.11.8 Chapter Author Type <authortype>

Definition: The role that the author contributed towards the chapter.
Data type: string
Length: 50
Enumerated value list: Author, Editor
Example: <authortype>Editor</authortype>

3.3.2.12 Chapter Number of Page Images <numpages>

Definition: The number of page images contained in the PDF file for the chapter. May or may not have a value. Only present for older date.
Data type: integer
Length: 10
Example: <numpages>1</numpages>

3.3.2.13 Chapter PDF Size <size>

Definition: The size of a PDF chapter in bytes.
Data type: integer
Length: 10
Example: <size>1379703</size>

3.3.2.14 Chapter Filename <filename>

Definition: The current name of the chapter PDF in our IDAMS repository.
Data type: integer
Length: 300
Attribute: docpartition
    Definition: The location of the PDF in our IDAMS repository.
 Attribute: filetype
    Definition: The type of file in our IDAMS repository.
Example: <filename docpartition="book" filetype="MainPDF">5236924.pdf</filename>

3.3.2.15 Chapter Page Numbers <chapterpagenums>

Definition: The page numbers or designators of a chapter.
Data type: string

Length: 40
Attribute: endpage
> *Definition:* The page number or designator for the end page of a chapter if there is a single end page. Page numbers provided in metadata and by Inspec may need to be parsed in order to obtain the end page value to use.

Attribute: startpage
> *Definition:* The page number or designator for the start page of a chapter if there is a single start page. Page numbers provided in metadata and by Inspec may need to be parsed in order to obtain the first page value to use.

Example: `<chapterpagenums endpage="62" startpage="19"/>`

3.3.2.16 Chapter AMS ID <amsid>

Definition: The unique key for the chapter's record in the data. Used for constructing the url to Xplore PDFs.
Data type: string
Length: 30
Example: `<amsid>5599430</amsid>`

3.3.2.17 Chapter AMS Create Date <audituser>

Definition: The date that a record was created in the IDAMS repository.
Example: `<amscreatedate>10/8/2010 12:17:31 PM</amscreatedate>`

3.3.2.18 Chapter Keywordset <keywordset>

Definition: Information about the set of chapter keywords.
Attribute: keywordtype
> *Enumerated value list:* IEEE
> *Definition:* Contains indexing terms assigned to the chapter by IEEE indexers.
> *Data type:* string
> *Length:* 500

Example:
```
<keywordset keywordtype="IEEE">
        <keyword>
            <keywordterm>Active model initialization</keywordterm>
        </keyword>
        <keyword>
            <keywordterm>phase congruence</keywordterm>
        </keyword>
        <keyword>
            <keywordterm>multiresolution analysis</keywordterm>
        </keyword>
        <keyword>
            <keywordterm>low level representation</keywordterm>
        </keyword>
    </keywordset>
```