IEEE PUBLISHING TECHNOLOGY

BOOKS METADATA DESCRIPTION
AND XML DOCUMENTATION

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### DOCUMENT STATUS RECORD

<table>
<thead>
<tr>
<th>Release Date</th>
<th>Status</th>
<th>Version</th>
<th>Amendment / Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 Nov 2010</td>
<td>New</td>
<td>1.0</td>
<td>Metadata provided in XML format; documentation of all XML elements and attributes</td>
</tr>
<tr>
<td>16 July 2012</td>
<td>Revision</td>
<td>2.0</td>
<td>DTD Change. Added copyright group and altered copyright element. Removed several attributes and elements- refer to DTD.</td>
</tr>
</tbody>
</table>

IEEE Confidential -2- 17 July 2017
1. Books 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. Please refer to Book XML Documentation (Section 2) for more details. For the Data Delivery DTD (ieee_idams_exchange.dtd), please visit www.ieee.org/data-customer-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 PDFs and XML metadata and the initial shipment will be sent via FTP site. Below is how the directory structure looks like:

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:

<table>
<thead>
<tr>
<th>Book Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE/Wiley Books</td>
</tr>
<tr>
<td>MIT Books</td>
</tr>
<tr>
<td>MNC (Morgan and Claypool)</td>
</tr>
</tbody>
</table>

1.5 Record Structure on FTP site

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

1.6 Record Structure – XML Metadata and PDF data

Customers are provided access to the appropriate directories once logged in to the FTP account. 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 below:

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:

1.7 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:

```xml```
<filename docpartition="text" filetype="MainPDF">
5236988.pdf</filename>
```
For subscribers linking to IEEE Xplore, 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:

1.8 Sample Book Record
```xml```
<book>
<title><![CDATA[Electromagnetic Bandgap (EBG) Structures]]></title>
<subtitle><![CDATA[Common Mode Filters for High Speed Digital Systems]]></subtitle>
<bookinfo>
<isbn isbntype="New-2005" mediatype="Online">9781119281559</isbn>
<pubtopicalbrowseset>
<pubtopicalbrowse>Components, Circuits, Devices and Systems</pubtopicalbrowse>
<pubtopicalbrowse>Fields, Waves and Electromagnetics</pubtopicalbrowse>
</pubtopicalbrowseset>
<bookdoi>10.1002/9781119281559</bookdoi>
<idamsid>0b00006485dab25a</idamsid>
```
```
The background, design, and application of common Electromagnetic Bandgap (EBG) Structures: Common Mode Filters for High electromagnetic analysis

Demonstrates techniques for use in practical real planar EBG structures

Offers detailed design methodology to create EBG filters without the need for repeated full mode filters for high proposed EBG filters' design approach. This important resource:

- Presents information on planar EBG removable. They also provide several comparisons between measurement and electromagnetic simulation of planar EBGs on the digital signal propagation of single ended and differential

The text also explores the fundamental electromagnetic mechanisms of the functioning of planar EBGs and considers the impact of planar EBGs on the digital signal propagation of single ended and differential interconnects routed on top or between EBGs. The authors examine the concept, design, and modeling of EBG common mode filters in their two forms: on-board and removable. They also provide several comparisons between measurement and electromagnetic simulations that validate the proposed EBG filters' design approach. This important resource: Presents information on planar EBG-based common mode filters for high-speed differential digital systems Provides systematic analysis of the fundamental mechanisms of planar EBG structures Demonstrates techniques for use in practical real-world designs Electromagnetic Bandgap (EBG) Structures: Common Mode Filters for High-Speed Digital Systems offers an introduction to the background, design, and application of common-mode filtering structures in modern high-speed differential communication links, a critical issue in high-speed and high-performance systems.
1.9 Sample Chapter Record

This chapter explores the adaptive dynamic programming (ADP) methods to handle affine nonlinear systems via neural network-based approximation. An online learning method with convergence analysis is provided and it achieves semi-global stabilization for nonlinear systems in that the domain of attraction can be made arbitrarily large, but bounded, by tuning the controller parameters or design functions. Two most frequently used techniques in reinforcement learning are value iteration and policy iteration. When the system dynamics are uncertain, the approximation can be realized using online information via reinforcement learning and ADP methods. Neural network-based ADP methods for nonlinear control systems are being actively developed by a good number of researchers. Some recent theoretical results include ADP for non-affine nonlinear systems, ADP for saturated control design, ADP for nonlinear games, and ADP for nonlinear tracking problems.
1.10 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. In these instances, only the existing metadata record will need to be replaced in your system with the updated record.

1.11 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.

2.2 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>

2.3 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>

2.4 Book Information <bookinfo>
Definition: Information about the book.

2.4.1 Book ISBN <isbn>
Data type: string
Length: 15
Attribute: isbn
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 isbn="New-2005" mediatype="Online">9780470007785</isbn>
2.4.2 Book Related ISBN <relatedisbn>


Data type: string
Length: 15

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 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: <relatedisbn isbnType="New-2005" mediatype="Paper">9780470229415</relatedisbn>

2.4.3 Book Topical Browse Set <pubtopicalbrowseset>

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

2.4.3.1 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


Example:

<pubtopicalbrowseset>
<pubtopicalbrowse>Components, Circuits, Devices and Systems</pubtopicalbrowse>
<pubtopicalbrowse>Aerospace</pubtopicalbrowse>
</pubtopicalbrowseset>

2.4.4 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>
2.4.5 Book IDAMS\textsuperscript{1} ID <idamsid>

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

\textit{Data type}: string

\textit{Length}: 16

\textit{Example}: <idamsid>0b000064810cc975</idamsid>

2.4.6 Book Status <bookstatus>

\textit{Definition}: The current status of a book.

\textit{Data type}: string

\textit{Length}: 20

\textit{Enumerated value list}: Active, Inactive

\textit{Example}: <bookstatus>Active</bookstatus>

2.4.7 Book Author Group <authorgroup>

\textit{Definition}: Information about book article author group.

2.4.7.1 Book Author <author>

\textit{Definition}: Information about the author of the book.

\textbf{Attribute}: role

\textit{Definition}: Code indicating the role played by a person in the creation of the product.

\textit{Data type}: string

\textit{Length}: 50

\textit{Enumerated value list}: See table below

\textit{Example}: <author role="A01">

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>By (author)</td>
</tr>
<tr>
<td>A02</td>
<td>With</td>
</tr>
<tr>
<td>A03</td>
<td>Screenplay by</td>
</tr>
<tr>
<td>A04</td>
<td>Libretto by</td>
</tr>
<tr>
<td>A05</td>
<td>Lyrics by</td>
</tr>
<tr>
<td>A06</td>
<td>By (composer)</td>
</tr>
<tr>
<td>A07</td>
<td>By (artist)</td>
</tr>
<tr>
<td>A08</td>
<td>By (photographer)</td>
</tr>
<tr>
<td>A09</td>
<td>Created by</td>
</tr>
<tr>
<td>A10</td>
<td>From an idea by</td>
</tr>
<tr>
<td>A11</td>
<td>Designed by</td>
</tr>
<tr>
<td>A12</td>
<td>Illustrated by</td>
</tr>
<tr>
<td>A13</td>
<td>Photographs by</td>
</tr>
</tbody>
</table>

\textsuperscript{1} IDAMS- IEEE Digital Asset Management System
<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A14</td>
<td>Text by</td>
</tr>
<tr>
<td>A15</td>
<td>Preface by</td>
</tr>
<tr>
<td>B01</td>
<td>Edited by</td>
</tr>
<tr>
<td>B02</td>
<td>Revised by</td>
</tr>
<tr>
<td>B03</td>
<td>Retold by</td>
</tr>
<tr>
<td>B04</td>
<td>Abridged by</td>
</tr>
<tr>
<td>B05</td>
<td>Adapted by</td>
</tr>
<tr>
<td>B06</td>
<td>Translated by</td>
</tr>
<tr>
<td>B07</td>
<td>As told by</td>
</tr>
<tr>
<td>B08</td>
<td>Translated with commentary by</td>
</tr>
<tr>
<td>B09</td>
<td>Series edited by</td>
</tr>
<tr>
<td>B10</td>
<td>Edited and translated by</td>
</tr>
<tr>
<td>B11</td>
<td>Editor-in-chief</td>
</tr>
<tr>
<td>B12</td>
<td>Guest editor</td>
</tr>
<tr>
<td>B13</td>
<td>Volume editor</td>
</tr>
<tr>
<td>B14</td>
<td>Editorial board member</td>
</tr>
<tr>
<td>B15</td>
<td>Editorial coordination by</td>
</tr>
<tr>
<td>C01</td>
<td>Compiled by</td>
</tr>
<tr>
<td>C02</td>
<td>Selected by</td>
</tr>
<tr>
<td>C99</td>
<td>Other compilation by</td>
</tr>
<tr>
<td>D01</td>
<td>Producer</td>
</tr>
<tr>
<td>D02</td>
<td>Director</td>
</tr>
<tr>
<td>D03</td>
<td>Conductor</td>
</tr>
<tr>
<td>D99</td>
<td>Other direction by</td>
</tr>
</tbody>
</table>

### 2.4.7.1.1 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 can't be determined.

**Data type:** string  
**Length:** 300  
**Example:** `<normname>Encinar, J.</normname>`

### 2.4.7.1.2 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>

2.4.7.1.3 Book 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>

2.4.7.1.4 Book Author First Name <firstname>
Definition: The first name of an author for the book.
Data type: string
Length: 50
Example: <firstname>Jose</firstname>

2.4.7.1.5 Book Author Middle Name <othername>
Definition: The middle name of an author for the book.
Data type: string
Length: 50
Example: <othername>Antonio</othername>

2.4.7.1.6 Book Author Last Name <surname>
Definition: The last name of an author for the book.
Data type: string
Length: 100
Example: <surname>Graham</surname>

2.4.7.1.7 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>

2.4.8 Book Copyright Group <copyrightgroup>
Definition: Information about the book copyright group.
2.4.8.1 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.

2.4.8.1.1 Book Copyright Year <copyright year>
Definition: The year or years that a book was copyrighted.
Data type: string
Length: 10
Example: <year>2005</year>

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

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

2.4.10 Book Publisher <publisher>
Definition: Information about the book publisher.

2.4.10.1 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 &amp; Sons</publishername>

2.4.10.2 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>

2.4.11 Book Notes Group <notegroup>
Definition: Information about the book notes group.
2.4.11.1 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>`

2.4.12 Book Publication Date <pubdate>

*Definition*: Information about the book publication date.

2.4.12.1 Book Publication Year <year>

*Definition*: The year the book was published.

*Data type*: integer

*Length*: 10

*Example*: `<year>2009</year>`

2.4.13 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>`

2.4.14 Book AMS Create Date <amscreatedate>

*Definition*: The date that a record was created.

*Example*: `<amscreatedate>12/21/2009 9:59:30 PM</amscreatedate>`

2.4.15 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>`

2.4.16 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

2.4.17 Book Description <description>

*Definition*: Description of the book.

*Data type*: string
Length: No limit

Example: 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.

2.4.18 Book Number of Pages <numpages>

Definition: Number of pages of the book.
Data type: integer
Example: <numpages>700</numpages>

2.4.19 Book Price <price>

Definition: Price of the book.
Data type: string
Length: 10
Example: <price>150.00</price>

2.4.20 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.
Example: <productcode>DH</productcode>

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB</td>
<td>Hardback</td>
</tr>
<tr>
<td>BC</td>
<td>Paperback/softback</td>
</tr>
<tr>
<td>DG</td>
<td>Electronic book text</td>
</tr>
<tr>
<td>DH</td>
<td>Online resource</td>
</tr>
</tbody>
</table>

2.4.21 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>

2.4.22 Book Series Number <seriesnum>

Definition: The distinct enumeration of a book within a series.
Data type: integer
Example: <seriesnum>47</seriesnum>
2.4.23 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[
<b>PREFACE.</b>  
<p> <b>CONTRIBUTORS.</b>  
<p> <b>1 A FRAMEWORK FOR INTERDISCIPLINARY RESEARCH AND EDUCATION</b><b> (James Momoh).</b>  
<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&#8212;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.  
</b></tableofcontents>
```
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>
Data type: string
Length: 15
Attribute: isbn
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 isbntype="New-2005" mediatype="Online">9780470007785</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>

3.3 Chapter <chapter>
Definition: This section contains all the chapter level attributes.

² We added book level information in order to enable some of our discovery partners to index chapter level data.
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.
Data type: string
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 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>

3.3.2.5 Chapter Number <chaptternum>
Definition: Contains chapter number.
Data type: integer
Length: 50
Example: `<chapternum>ch12</chapternum>`

### 3.3.2.6 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"/>`

### 3.3.2.7 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>`

### 3.3.2.8 Chapter Abstract `<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: `<abstract abstracttype="Regular"><![CDATA[<P>This chapter contains sections titled: <L ID="l1" TYPE="LABELLED"> <LI>Introduction</LI> <LI>Pursuit of Low-Cost Memory</LI> <LI>Multibit Storage Breakthrough</LI> <LI>View of MLC Today</LI> <LI>Low-Cost Design Implementation</LI> <LI>Low-Cost Process Manufacturing</LI> <LI>Standard Product Feature Set</LI> <LI>Further Reading: Multilevel Flash Memory and Technology Scaling</LI> <LI>Conclusion</LI> <LI>References</LI> ]]></abstract>`

### 3.3.2.9 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>`
3.3.2.10 Chapter PDF Size <size>
Definition: The size of a PDF chapter in bytes.
Data type: integer
Length: 10
Example: <size>1379703</size>

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

3.3.2.12 Chapter Page Numbers <artpagenums>
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: <artpagenums endpage="62" startpage="19"/>

3.3.2.13 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>

3.3.2.14 Chapter AMS Create Date <audituser>
Definition: The date that a record was created.
Example: <audituser>10/8/2010 12:17:31 PM</audituser>
3.3.2.15 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>