DEPARTMENT OF EDUCATION

34 CFR Part 300

RIN 1820–AB56

National Instructional Materials Accessibility Standard

AGENCY: Office of Special Education and Rehabilitative Services, Department of Education.

ACTION: Final regulations.

SUMMARY: The Secretary of Education establishes the National Instructional Materials Accessibility Standard (NIMAS or standard) as required under sections 612(a)(23)(A) and 674(e)(4) of the Individuals with Disabilities Education Act, as amended by the Individuals with Disabilities Education Improvement Act of 2004 (Act). The purpose of the NIMAS is to help increase the availability and timely delivery of print instructional materials in accessible formats to blind or other persons with print disabilities in elementary schools and secondary schools. The Secretary establishes the NIMAS by amending the regulations governing the Assistance to States for Education of Children with Disabilities Program in 34 CFR part 300 to include an appendix that sets forth the technical elements and specifications for the standard.

DATES: These regulations and the standard are effective August 18, 2006.

FOR FURTHER INFORMATION CONTACT: Alexa Posny, U.S. Department of Education, 400 Maryland Avenue, SW., Potomac Center Plaza, room 4109, Washington, DC 20202–2641. Telephone: (202) 245–7597.

If you use a telecommunications device for the deaf (TDD), you may call the Federal Relay System (FRS) at 1–800–877–8339.

Individuals with disabilities may obtain this document in an alternative format (e.g., Braille, large print, audiotape, or computer diskette) on request to the contact person listed under **FOR FURTHER INFORMATION CONTACT**.

SUPPLEMENTARY INFORMATION: Section 674(e)(3)(B) of the Act defines the NIMAS as the standard established by the Secretary to be used in the preparation of electronic files suitable and used solely for efficient conversion into specialized formats. On June 29, 2005, we published a notice of proposed rulemaking (NPRM) in the **Federal Register** (70 FR 37302) to establish the standard and to include it as an appendix to 34 CFR part 300. A description of the proposed standard

can be found on pages 37302 through 37303 of the NPRM and the text of the proposed NIMAS can be found on pages 37304 through 37306 of the NPRM.

On June 21, 2005, the Department published a notice of proposed rulemaking in the **Federal Register** (IDEA NPRM) to amend 34 CFR part 300 to implement other recently enacted changes made to the Individuals with Disabilities Education Act, as amended by the Individuals with Disabilities Education Improvement Act of 2004 (70 FR 35782). The Department intended to codify the final NIMAS as an appendix to the amended regulations in 34 CFR part 300. However, in an attempt to expedite the implementation of the NIMAS, the Department establishes the NIMAS through these final regulations and codifies the NIMAS as an appendix to the current regulations in 34 CFR part 300. The Department plans to re-publish the NIMAS as an appendix to the amended regulations in 34 CFR part 300 when it publishes final regulations in response to the IDEA NPRM.

In the preamble to the NPRM, the Secretary discussed the need for the NIMAS and the efforts of the Department that supported the establishment of the NIMAS. Specifically, the Secretary addressed the national need to increase the availability and timely delivery of print instructional materials in accessible formats to blind or other students with print disabilities in elementary and secondary schools. The Secretary also described the inception of the NIMAS, which was developed by the National File Format Technical Panel (NFF Technical Panel), a panel convened by the Department-funded National Center on Accessing the General Curriculum. The NFF Technical Panel developed the NIMAS as a standard for digital source files that can be used to accurately and reliably produce instructional materials in a variety of alternate formats using the same source file.

Changes in the NIMAS

As more fully explained in the *Analysis of Comments and Changes* section of this notice, the final standard contains a few changes from the standard proposed in the NPRM. Most significantly, the NIMAS Development and Technical Assistance Centers funded by the Department noted that inadvertent errors were made in the technical standards of the NIMAS when the NIMAS was posted on the NIMAS Web site at *http://nimas.cast.org/about/technical/index.html* and published in the NPRM on June 29, 2005. At the request of the Department, the NIMAS Development and Technical Assistance

Centers reported these errors and submitted their proposed corrections and updates to the Department through the formal public comment process established in the NPRM. The NIMAS Development and Technical Assistance Centers also posted their proposed corrections, additions, and deletions on the NIMAS Web site at *http://nimas.cast.org/about/proposal/changes.html.*

Analysis of Comments and Changes

In response to the Secretary's invitation in the NPRM, 17 parties, including the Department-funded NIMAS Development and Technical Assistance Centers, submitted comments on the NIMAS. An analysis of the comments and of the changes in the standard since publication of the NPRM follows.

The analysis generally does not address minor changes, including the specific technical changes made to the language published in the NPRM or comments that express concerns of a general nature about the Department or other matters that are not directly relevant to the technical specifications of the NIMAS.

Comment: The NIMAS Development and Technical Assistance Centers funded by the Department noted that inadvertent technical errors were made in the version of the NIMAS that was published by the Department in the NPRM and posted on the NIMAS Web site at *http://nimas.cast.org/about/technical/index.html.* The centers provided the Department with proposed updates to correct these technical errors. The centers also posted their proposed updates on the NIMAS Web site at *http://nimas.cast.org/about/proposal/changes.html.*

A significant number (16 of 17) of commenters expressed support for the NIMAS. Of these commenters, nine commenters expressed support and approval of the updates to the NIMAS that were proposed by the NIMAS Development and Technical Assistance Centers, approved by the NIMAS Development Center's Technical Group, and posted on the NIMAS Web site. No negative comments were received regarding the updates. One commenter stated that errors occurred during a file conversion using the NIMAS and that corrections are needed in order to ensure that the NIMAS results in valid files. The commenter recommended that the NIMAS Development and Technical Assistance Centers' proposed corrections become part of the NIMAS.

Discussion: We agree that the version of the NIMAS that was posted on the NIMAS Web site and published in the

NPRM contained technical errors. We believe that the updates proposed by the NIMAS Development and Technical Assistance Centers should be made to the NIMAS in order to correct these errors.

Changes: We have revised the NIMAS to incorporate the corrections, deletions, and additions proposed by the NIMAS Development and Technical Assistance Centers and posted on the NIMAS Web site.

Comment: Many commenters recommended continual maintenance and improvement of the NIMAS. These commenters suggested that the Department establish a method for updating the NIMAS so that it will remain current with technological advances and be consistent with the ANSI/NISO Z39.86 standard [renamed DAISY/NISO Z39.86 2005 as of April 2005]. One commenter suggested that the Department accept new reports from the NIMAS Development Center's Technical Group at regular intervals so that the standard will continue to expand to meet the needs of students with disabilities. One commenter recommended requiring that the NIMAS be updated at least every three years to ensure that it reflects improvements in technology and best industry practice. One commenter expressed concern that the technical specifications of the NIMAS are a minimum set of requirements and that, over time, the bar should be raised through proposed changes or additions to the NIMAS.

Discussion: The Department's Office of Special Education Programs (OSEP) funded the NIMAS Development Center in fiscal year (FY) 2004. One of the main responsibilities of the NIMAS Development Center is to engage in an ongoing process to ensure that the NIMAS is maintained and remains current with technological advances, and is aligned and consistent with the DAISY/NISO Z39.86 standard. When technological advances suggest the need for a new version of the NIMAS, the NIMAS Development Center, with the concurrence of its Technical Group, will submit recommendations for revised NIMAS specifications to the Department. The NIMAS Development Center is required to report on the need for changes at least once at the end of its 5-year project period, but may make recommendations regarding revisions more often, if it deems necessary. The Department will propose any revisions to the NIMAS and seek public comment on the proposed changes through a notice of proposed rulemaking published in the **Federal Register**.

OSEP also funded the NIMAS Technical Assistance (TA) Center in FY 2004. After the NIMAS has been adopted by State educational agencies (SEAs) and local educational agencies (LEAs) (coordinating agencies), the NIMAS TA Center will maintain an errata Web page for use by publishers, coordinating agencies, and other entities. The errata Web page will be available at *http://nimas.cast.org* and will contain notifications of errors and omissions in the NIMAS that are detected through the implementation process.

Changes: None.

Comment: A few commenters stated that NIMAS PDF file requirements for images need better definition.

Discussion: The NIMAS Development Center, through its Technical Group, has had extensive discussions on the issue of NIMAS PDF file requirements since the publication of the NIMAS in the NPRM on June 29, 2005. The Technical Group members agreed that PDF file requirements in the NIMAS were in need of greater clarification due, in part, to current limitations of transcription and conversion practices, hardware, and software. As a result, the Technical Group's recommendations on changes in the baseline elements related to PDF image files have been added into NIMAS and are also publicly available on the NIMAS Web site at *http://nimas.cast.org*.

Changes: We have revised the NIMAS to clarify the requirements for PDF image files, as recommended by the NIMAS Development Center's Technical Group and posted on the NIMAS Web site.

Comment: One commenter expressed concern that the standard does not include a statement of the metadata that needs to be included in the package file.

Discussion: The metadata elements are defined in the NIMAS package file section. We agree that certain metadata elements may need to be clarified. However, we believe that it would be premature to attempt to clarify the metadata elements without first evaluating how they are implemented in practice. Accordingly, the NIMAS Development Center and its Technical Group will determine whether the metadata elements require clarification after the NIMAS is adopted and actually used, and then will provide technical assistance, as necessary, to clarify those metadata elements on the NIMAS Web site at *http://nimas.cast.org/*. To the extent the NIMAS Development Center and its Technical Group determine that changes should be made to the metadata requirements in the NIMAS itself, they will submit their recommendations to the Department. The Department will then propose any revisions to the NIMAS and seek public comment on the proposed changes through a notice of proposed rulemaking published in the **Federal Register**.

Changes: None.

Comment: Two commenters expressed concern that there is nothing preventing publishers from preparing NIMAS files that contain only partial books, rather than entire books. They stated that NIMAS files will not be helpful if publishers omit important information. Accordingly, they recommended that the Department establish standards requiring publishers to use the NIMAS to convert entire books.

Discussion: The purpose of the NIMAS is to provide access to print instructional materials in a timely manner. Delivery of partial books would unduly delay the delivery of instructional materials in specialized formats in a timely manner and would be contrary to the intent of the Act. Accordingly, SEA and LEA contracts with publishers should clearly specify that entire books must be converted into NIMAS files. In addition, we expect that the procedures established by the National Instructional Materials Access Center (NIMAC) will specify that publishers must use NIMAS to convert entire books (and not partial books) into NIMAS files. The Department expects to make NIMAC procedures available on the NIMAC Web site at *http://www.nimac.us*.

Changes: None.

Comment: Two commenters expressed concern that optional elements are not mandatory in the NIMAS. These commenters recommended that the NIMAS should require the full DAISY markup, that is, both baseline and optional elements.

Discussion: Although the NFF Technical Panel's report, which is available on the NIMAS Web site at *http://nimas.cast.org/*, encouraged publishers to use both baseline and optional elements, only baseline elements are required in the NIMAS. The NFF Technical Panel reported that requiring both baseline and optional elements would be too costly for publishers. Optional elements are typically added by coordinating agencies and other entities. In any case, SEAs and LEAs contract with publishers for their instructional material needs and can specify whether they need files beyond the baseline elements.

Changes: None.

Comment: Two commenters made recommendations about two elements in the NIMAS. The commenters recommended that the NIMAS tag, which specifies that all pages must be

numbered in a consistent manner, be placed at the beginning of each print page before all print text. The commenters also expressed concern that more information in the present tag set is needed to adequately identify a specific book. The commenters recommended that the NIMAS include a well-defined method of identifying multiple versions of the same book. The two commenters stated that publishers are best suited to make this identification because they produced the textbooks and have access to all versions of the textbooks.

Discussion: The Department views the issues raised by the commenters as relating to the implementation of the NIMAS and not the NIMAS itself. Due to the fact that these issues are the result of limitations in transcription and conversion practices, hardware, and software, the Department believes that these issues are best addressed through technical assistance. Thus, the NIMAS TA Center will provide technical assistance regarding these and other issues. In the case of implementation issues pertaining to Braille transcription, the NIMAS Development and Technical Assistance Centers have already conducted a series of discussions during January 2006 with Braille transcribers, which led to a set of clarifying recommendations on the implementation of NIMAS that will be incorporated into the NIMAS TA Center's Best Practices Web page at *http://nimas.cast.org*.

Changes: None.

Comment: We received a number of comments relating to the adoption and implementation of the NIMAS and the purchase of instructional materials in accessible formats.

Discussion: Requirements regarding the adoption and implementation of the NIMAS and the purchase of instructional materials in accessible formats will be addressed in subparts B and C of the Department's final regulations governing the Assistance to States for Education of Children with Disabilities Program.

Accordingly, the Department will respond to all comments relating to the adoption and implementation of the NIMAS and the purchase of instructional materials in accessible formats in the preamble to the final regulations for 34 CFR part 300 that it issues in response to the IDEA NPRM.

Changes: None.

Executive Order 12866

Under Executive Order 12866, we have assessed the potential costs and benefits of this regulatory action.

The potential costs associated with establishing the standard are those resulting from statutory requirements and those we have determined to be necessary for administering this program effectively and efficiently.

In assessing the potential costs and benefits of this regulatory action, we have determined that the benefits justify the costs.

We have also determined that this regulatory action does not unduly interfere with State, local, and tribal government in the exercise or their governmental functions.

Summary of Potential Costs and Benefits

We summarized the potential costs and benefits of establishing the standard in the preamble to the NPRM (70 FR 37303).

Paperwork Reduction Act 1995

The NIMAS does not contain any information collection requirements.

Electronic Access to This Document

You may view this document, as well as all other Department of Education documents published in the **Federal Register**, in text or Adobe Portable Document Format (PDF) on the Internet at the following site: *http://www.ed.gov/news/fedregister*.

To use PDF you must have Adobe Acrobat Reader, which is available free at this site. If you have questions about using PDF, call the U.S. Government Printing Office (GPO), toll free, at 1–888–293–6498; or in the Washington, DC area at (202) 512–1530.

Note: The official version of the document is the document published in the **Federal Register**. Free Internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is available on GPO Access at: *http://www.gpoaccess.gov/nara/index.html*.

(Catalog of Federal Domestic Assistance Number does not apply.)

List of Subjects in 34 CFR Part 300

National Instructional Materials Accessibility Standard (NIMAS), Special education, Grant programs—accessible instructional materials, Technology.

Dated: July 13, 2006.
John H. Hager,
Assistant Secretary for Special Education and Rehabilitative Services.

■ For the reasons discussed in the preamble, the Secretary amends part 300 of title 34 of the Code of Federal Regulations as follows:

PART 300—ASSISTANCE TO STATES FOR THE EDUCATION OF CHILDREN WITH DISABILITIES

■ 1. The authority citation for part 300 continues to read as follows:

Authority: 20 U.S.C. 1411–1420, unless otherwise noted.

■ 2. Part 300 is amended by adding an appendix D to part 300 to read as follows:

Appendix D to Part 300—National Instructional Materials Accessibility Standard (NIMAS)

Under sections 612(a)(23)(A) and 674(e)(4) of the Individuals with Disabilities Education Act, as amended by the Individuals with Disabilities Education Improvement Act of 2004, the Secretary of Education establishes the NIMAS. Under section 674(e)(4) of the Act, the NIMAS applies to print instructional materials published after August 18, 2006. The purpose of the NIMAS is to help increase the availability and timely delivery of print instructional materials in accessible formats to blind or other persons with print disabilities in elementary and secondary schools.

Technical Specifications—The Baseline Element Set

The Baseline Element Set details the minimum requirement that must be delivered to fulfill the NIMAS. It is the responsibility of publishers to provide this NIMAS-conformant XML content file, a package file (OPF), a PDF-format copy of the title page (or whichever page(s) contain(s) ISBN and copyright information), and a full set of the content's images. All of the images included within a work must be provided in a folder and placeholders entered in the relevant XML document indicating their location (all images must be included). The preferred image type is SVG, next is either PNG or JPG format. Images should be rendered in the same size/proportion as their originals at 300 dpi. Images should be named with relative path filenames in XML files (example:).

NIMAS-conformant content must be valid to the NIMAS 1.1 [see ANSI/NISO Z39.86 2005 or subsequent revisions]. In addition, files are required to use the tags from the Baseline Element Set when such tags are appropriate. Publishers are encouraged to augment the required Baseline Element Set with tags from the Optional Element Set (elements not included in the Standard) as applicable. For the purposes of NIMAS,

appropriate usage of elements, both baseline and optional, is defined by the DAISY Structure Guidelines. Files that do not follow these guidelines in the selection and application of tags are not conformant to this Standard. Both optional elements and appropriate structure guidelines may be located within Z39.86–2002 and Z39.86–2005 available from *http://www.daisy.org/ z3986/*. Use of the most current standard is recommended.

The Baseline Element Set

a. Document-Level Tags

Element	Description
dtbook	The root element in the Digital Talking Book DTD. <dtbook> contains metadata in <head> and the contents itself in <book>.
head	Contains metainformation about the book but no actual content of the book itself, which is placed in <book>.
book	Surrounds the actual content of the document, which is divided into <frontmatter>, <bodymatter>, and <rearmatter>. <head>, which contains metadata, precedes <book>.
meta	Indicates metadata about the book. It is an empty element that may appear repeatedly only in <head>.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

b. Structure and Hierarchy

Element	Description
frontmatter	Usually contains <doctitle> and <docauthor>, as well as preliminary material that is often enclosed in appropriate <level> or <level1> etc. Content may include a copyright notice, a foreword, an acknowledgements section, a table of contents, etc. <frontmatter> serves as a guide to the content and nature of a <book>.
bodymatter	Consists of the text proper of a book, as contrasted with preliminary material <frontmatter> or supplementary information in rearmatter <rearmatter>.
rearmatter	Contains supplementary material such as appendices, glossaries, bibliographies, and indices. It follows <bodymater> the of the book.
level1	The highest-level container of major divisions of a book. Used in <frontmatter>, <bodymater>, and <rearmatter> to mark the largest divisions of the book (usually parts or chapters), inside which <level2> subdivisions (often sections) may nest. The class attribute identifies the actual name (*e.g.*, part, chapter) of the structure it marks. Contrast with <level>.
level2	Contains subdivisions that nest within <level1> divisions. The class attribute identifies the actual name (*e.g.*, subpart, chapter, subsection) of the structure it marks.
level3	Contains sub-subdivisions that nest within <level2> subdivisions (*e.g.*, sub-subsections within subsections). The class attribute identifies the actual name (*e.g.*, section, subpart, subsubsection) of the subordinate structure it marks.
level4	Contains further subdivisions that nest within <level3> subdivisions. The class attribute identifies the actual name of the subordinate structure it marks.
level5	Contains further subdivisions that nest within <level4> subdivisions. The class attribute identifies the actual name of the subordinate structure it marks.
level6	Contains further subdivisions that nest within <level5> subdivisions. The class attribute identifies the actual name of the subordinate structure it marks.
h1	Contains the text of the heading for a <level1> structure.
h2	Contains the text of the heading for a <level2> structure.
h3	Contains the text of the heading for a <level3> structure.
h4	Contains the text of the heading for a <level4> structure.
h5	Contains the text of the heading for a <level5> structure.
h6	Contains the text of the heading for a <level6> structure.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

c. Block Elements

Element	Description
author	Identifies the writer of a work other than this one. Contrast with <docauthor>, which identifies the author of this work. <author> typically occurs within <blockquote> and <cite>.
blockquote	Indicates a block of quoted content that is set off from the surrounding text by paragraph breaks. Compare with <q>, which marks short, inline quotations.
list	Contains some form of list, ordered or unordered. The list may have an intermixed heading <hd> (generally only one, possibly with <prodnote>), and an intermixture of list items and <pagenum>. If bullets and outline enumerations are part of the print content, they are expected to prefix those list items in content, rather than be implicitly generated.
li	Marks each list item in a <list>. content may be either inline or block and may include other nested lists. Alternatively it may contain a sequence of list item components, <lic>, that identify regularly occurring content, such as the heading and page number of each entry in a table of contents.
hd	Marks the text of a heading in a <list> or \ <sidebar>.
note	Marks a footnote, endnote, etc. Any local reference to <note id="yyy"> is by <noteref idref="#yyy"">. [Attribute id].
p	Contains a paragraph, which may contain subsidiary <list> or <dl>.

Element	Description
sidebar	Contains information supplementary to the main text and/or narrative flow and is often boxed and printed apart from the main text block on a page. It may have a heading <hd>.
cite	Marks a reference (or citation) to another document.
dd	Marks a definition of the preceding term <dt> within a definition list <dl>. A definition without a preceding <dt> has no semantic interpretation, but is visually presented aligned with other <dd>.
dl	Contains a definition list, usually consisting of pairs of terms <dt> and definitions <dd>. Any definition can contain another definition list.
dt	Marks a term in a definition list <dl> for which a definition <dd> follows.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

d. Inline Elements

Element	Description
em	Indicates emphasis. Usually <em> is rendered in italics. Compare with <strong>.
q	Contains a short, inline quotation. Compare with <blockquote>, which marks a longer quotation set off from the surrounding text.
strong	Marks stronger emphasis than <em>. Visually <strong> is usually rendered bold.
sub	Indicates a subscript character (printed below a character's normal baseline). Can be used recursively and/or intermixed with <sup>.
sup	Marks a superscript character (printed above a character's normal baseline). Can be used recursively and/or intermixed with <sub>.
br	Marks a forced line break.
line	Marks a single logical line of text. Often used in conjunction with <linenum> in documents with numbered lines. [Use only when line breaks must be preserved to capture meaning (*e.g.*, poems, legal texts).]
linenum	Contains a line number, for example in legal text. [Use only when <line> is used, and only for lines numbered in print book.]
pagenum	Contains one page number as it appears from the print document, usually inserted at the point within the file immediately preceding the first item of content on a new page. [NB: Only valid when it includes an id attribute].
noteref	Marks one or more characters that reference a footnote or endnote <note>. Contrast with <annoref>. <noteref> and <note> are independently skippable.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

e. Tables

Element	Description
table	Contains cells of tabular data arranged in rows and columns. A <table> may have a <caption>. It may have descriptions of the columns in <col>s or groupings of several <col> in <colgroup>. A simple <table> may be made up of just rows <tr>. A long table crossing several pages of the print book should have separate <pagenum> values for each of the pages containing that <table> indicated on the page where it starts. Note the logical order of optional <thead>, optional <tfoot>, then one or more of either <tbody> or just rows <tr>. This order accommodates simple or large, complex tables. The <thead> and <tfoot> information usually helps identify content of the <tbody> rows. For a multiple-page print <table> the <thead> and <tfoot> are repeated on each page, but not redundantly tagged.
td	Indicates a table cell containing data.
tr	Marks one row of a <table> containing <th> or <td> cells.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

f. Images

Element	Description
imggroup	Provides a container for one or more <img> and associated <caption>(s) and <prodnote>(s). A <prodnote> may contain a description of the image. The content model allows: (1) multiple <img> if they share a caption, with the ids of each <img> in the <caption imgref="id1 id2 . . .">, (2) multiple <caption> if several captions refer to a single <img id="xxx"> where each caption has the same <caption imgref="xxx">, (3) multiple <prodnote> if different versions are needed for different media (*e.g.*, large print, braille, or print). If several <prodnote> refer to a single <img id="xxx">, each prodnote has the same <prodnote imgref="xxx">.
img	Points to the image to be rendered. An <img> may stand alone or be grouped using <imggroup>. Note that providing extracted images is not a requirement of the NIMAS. If they are included, it is best to refer to them using <img> within the <imggroup> container.
caption	Describes a <table> or <img>. If used with <table> it must follow immediately after the <table> start tag. If used with <imggroup> it is not so constrained.
	For the most current usage guidelines, please refer to *http://www.daisy.org/z3986/*.

1. The Optional Elements and Guidelines for Use

Publishers are encouraged to apply markup beyond the baseline (required) elements. The complete DTBook Element Set reflects the tags necessary to create the six types of Digital Talking Books and Braille output. Because of the present necessity to subdivide the creation of alternate format materials into distinct phases, the Panel determined that baseline elements would be provided by publishers, and optional elements would be added to the NIMAS-conformant files by third party conversion entities. In both circumstances the protocols for tagging digital files should conform to the most current ANSI/NISO Z39.86 specification. Content converters are directed to the most current DAISY Structure Guidelines (*http://www.daisy.org/z3986/*) for guidance on their use.

Since the publication of the original National File Format report from which the NIMAS technical specifications were derived, ANSI/NISO Z39.86–2002 was updated and is now ANSI/NISO Z39.86–2005. It may be best to avoid using the following optional elements which are no longer included in ANSI/NISO Z39.86–2005: style, notice, hr, and levelhd.

Also, the following new elements were introduced by ANSI/NISO Z39.86–2005 and should be considered optional elements for the NIMAS: bridgehead, byline, covertitle, dateline, epigraph, linegroup, and poem. Please refer to ANSI/NISO Z39.86–2005 for additional information regarding these elements. To access the ANSI/NISO Z39.86–2005 specification, go to *http://www.daisy.org/z3986/.*

2. Package File

A package file describes a publication. It identifies all other files in the publication and provides descriptive and access information about them. A publication must include a package file conforming to the NIMAS. The package file is based on the Open eBook Publication Structure 1.2 package file specification (For most recent detail please see*http://www.openebook.org/oebps/oebps1.2/download/oeb12-xhtml.htm#sec2*). A NIMAS package file must be an XML-valid OeB PS 1.2 package file instance and must meet the following additional standards:

The NIMAS Package File must include the following Dublin Core (dc:)metadata:

- dc:Title.
- dc:Creator (if applicable).
- dc:Publisher.
- dc:Date (Date of NIMAS-compliant file creation—yyyy-mm-dd).
- dc:Format (=''NIMAS 1.0'').
- dc:Identifier (a unique identifier for the NIMAS-compliant digital publication, e.g., print ISBN + ''NIMAS''—exact format to be determined).
- dc:Language (one instance, or multiple in the case of a foreign language textbook, etc.).
- dc:Rights (details to be determined).
- dc:Source (ISBN of print version of textbook).

And the following x-metadata items:

- nimas-SourceEdition (the edition of the print textbook).
- nimas-SourceDate (date of publication of the print textbook).

The following metadata were proposed also as a means of facilitating recordkeeping, storage and file retrieval:

- dc:Subject (Lang Arts, Soc Studies, etc.).
- nimas-grade (specific grade level of the print textbook, e.g.; Grade 6).
- nimas gradeRange (specific grade range of the print textbook, e.g.; Grades 4–5).

An additional suggestion references the use of:

- dc:audience:educationLevel (for the grade and gradeRange identifiers, noting that Dublin Core recommends using educationLevel with an appropriate controlled vocabulary for context, and recommends the U.S. Department of Education's Level of Education vocabulary online at *http://www.ed.gov/admin/reference/index.jsp.* Using educationLevel obviates the need for a separate field for gradeRange since dc elements can repeat more than once. A book used in more than one grade would therefore have two elements, one with value ''Grade 4'' and another with value ''Grade 5.''

A final determination as to which of these specific metadata elements to use needs to be clarified in practice. The package manifest must list all provided files (text, images, etc.). (Note: For purposes of continuity and to minimize errors in transformation and processing, the NIMAS-compliant digital text should be provided as a single document.)

3. Modular Extensions

The most current DAISY/NISO standard, formally the ANSI/NISO Z39.86, Specifications for the Digital Talking Book defines a comprehensive system for creating Digital Talking Books. A part of this standard is DTBook, an XML vocabulary that provides a core set of elements needed to produce most types of books. However, DTBook is not intended to be an exhaustive vocabulary for all types of books.

Guidelines for the correct approach to extend the DAISY/NISO standard have been established. Mathematics, video support, testing, workbooks, music, dictionaries, chemistry, and searching are some of the extensions that have been discussed. Visit *http://www.daisy.org/z3986/* to learn more about modular extensions.

End