

2015/04/16

The following changes have been made relative to the previously published PS 3 2015a release of the standard, by incorporating the changes specified in the supplements and correction items.

The Final Text of all applied Supplements and Correction Proposals is available at <ftp://medical.nema.org/medical/dicom/final/>

Production Notes

The DocBook XML files are the source format, and all other formats are rendered from it.

The PDF format is rendered from the DocBook XML, and remains the "official" (authoritative) form of the standard. The PDF contains hyperlinks to sections, figures and tables both within and between parts (which in the latter case work if you are reading the PDF in a tool that supports linking to other parts).

The two HTML formats are provided for the convenience of those who find them easier to navigate within a browser, and though the appearance and organization is different, the content is the same. One form consists of entire parts in one very large HTML page, and the other consist of chunks of sections with navigation elements. The granularity of the chunking has been increased compared to previous releases (as of the 2014c release), so that individual pages are smaller (this has a significant impact on PS3.3 in particular). Both forms are hyper-linked within and between parts. The figures in the HTML are SVG, so a browser that supports SVG is required (most contemporary browsers do).

The DOCX (for Word) and ODT (for OpenOffice or LibreOffice) formats are provided for the convenience of future Supplement and CP editors. Their main claim to fame is that they exist at all, and though they are viewable and editable, they are lacking many features of the Word source of previous release, for example the use of styles for section headings. They do contain embedded hyperlinks, and these are also present in the table of contents, even though the page numbers rendered in the table of contents may be meaningless. To reiterate, the intent of these files is to provide a source to cut and past into new Word documents, and not to be functional documents in their own right. Since Word does not support SVG, all figures embedded in the DOCX files have been rasterized to a fixed resolution and are adequate for position only and are not editable and are not intended to be a substitute for the SVG figures.

The rendering pipeline used to produce these files is available but requires some expertise to use it. It is not supported. To achieve quality rendering, the use of some commercial tools was necessary, to supplement the many open source tools that were also used. Oxygen (commercial) was used as the XML editor since it supports a WYSIWG authoring mode. OpenOffice (open source) was used as the equation editor. The DocBook (open source, version docbook-xsl-ns-1.78.1) style sheets were used to create the HTML and intermediate FO form used to create the PDF and DOCX. MathML equations were converted to SVG using pMML2SVG (open source, version pMML2SVG-0.8.5). RenderX XEP (commercial) was used to produce the PDF, and XMLmind FO-Converter (commercial) was used to produce the DOCX. The difference files were produced using DeltaXML DocBook Compare (commercial).

Some characteristics of the DocBook XML may be of interest to those performing automated processing or extraction:

- Zero width spaces (U+200B) are used in some places to allow long words (such as PS3.6 keywords) to break within table columns and avoid tables becoming too wide to fit on a page. These need to be filtered out before using these words literally.
- Enumerated values and defined terms are formalized in PS3.3 as DocBook variablelist elements with a title identifying them as such, to facilitate their automated detection and extraction.
- Template and context group tables in PS 3.16 are preceded by variablelist elements defining whether or not they are extensible, etc., again to enable automated extraction.
- Hyperlinks (xref and link elements) are used extensively but may obscure the identifier of what is being linked to from the perspective of automated extraction. It may be useful to consult the olink targetdb files that are included in the package to "look up" the target of such links, rather than reinventing this mechanism, which is used by the DocBook stylesheets for cross-document linking. E.g., one can look up "sect_TID_300" in "output/html/targetdb/PS3_16_target.db" to determine that it has a "number" of "TID 300" and a "ttl" of "Measurement", etc.

Changes to Parts

General Changes

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PS3.1

- Sup 155

PS3.2

- Sup 155
- Sup 173

PS3.3

- Fix typo in code sequence examples that had UC rather than SH VR for Code Value
- Correct coordinates in Figure C.23.2-1, restoring them to values in original figure in PS3.3 2011 before SVG conversion.
- Correct reference to Figure 7-2a that should be to Figure 7-1a in Section 7.5 (related to CP 1424).
- Consistently use digit 1 rather than one in index descriptions.
- Improve module name usage and consistency between IOD tables and definitions.
- Hyperlink module name occurrences in text to sections that define them.
- Consistently hyphenate and not capitalize "single-frame image" (to be consistent with "multi-frame image").
- Sup 173
- CP 375
- CP 1420
- CP 1421
- CP 1424
- CP 1426
- CP 1427
- CP 1428
- CP 1429
- CP 1430 (and made the terms Enumerated Values, since not specified in CP)
- CP 1434

PS3.4

- Sup 173

PS3.5

- Correct "Frame" to "Basic" Offset Table
- Include TAB in Annex E DICOM Default Character Repertoire
- CP 1425

PS3.6

- Sup 155

- Sup 173
- CP 375
- CP 1420
- CP 1430
- CP 1434
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PS3.7

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PS3.8

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PS3.10

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PS3.11

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PS3.12

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PS3.14

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PS3.15

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PS3.16

- Apply CP 1388 Real World Value Map Reference to Measurements to TID 1419 ROI Measurements, which was omitted from previous releases
- Clean up inconsistencies between CID section titles and table captions (mostly capitalization and punctuation)
- Correct SNOMED code for coronary sinus (of left atrial septum) (change T-32320 to T-32330) (cf. T-48410)
- Remove unused "Caudal-cranial" with incorrect meaning for code (G-A107) in French translations
- Correct misplaced RADIUS and RADIUSULNA body part rows that were in CID 12107 rather than Annex L table L-1
- Corrected digit-transposed or single digit error codes G-A245 to G-A425, C-B1700 to C-B7100, C-22989 to C-22898, G-7306 to G-7406)
- Sup 155
- Sup 173
- CP 375

- CP 1430 (FT2 version)

PS3.17

- Corrected duplicated code G-A1F8
- Sup 173

PS3.18

- Correct Modality data element tag

PS3.19

- CP 1435

PS3.20

- Sup 155

Supplements Incorporated

Sup 155 Imaging Reports using HL7 Clinical Document Architecture

Sup 173 Wide Field Ophthalmic Photography Image Storage SOP Classes

Correction Items Incorporated

CP 375 Correct Context Groups for Intra-oral anatomy

CP 1420 Support for Multi Slab Block in Ion Plan

CP 1421 Support for Mean Excitation Energy In Structure Physical Properties

CP 1424 Add Series entity present in Real-World Model but missing in Information Model figure

CP 1425 Tab character should be permitted be in text VRs (ST, LT, UT)

CP 1426 Correct condition in Pixel Measures, Plane Position and Orientation Functional Groups for Segmentation

CP 1427 Make Defined Term for 3D Dimension Organization Type used for US Volume mean equally spaced as well as parallel slices, and add Spacing Between Slices

CP 1428 Use Pixel Measures in Enhanced US Volume

CP 1429 Tiled Image Box in Structured Display

CP 1430 Add Motion Mode Definition Module

CP 1434 Additional SSD Information

CP 1435 Correct errors in State Diagram of Hosted Applications