

2014/09/18

The following changes have been made relative to the published PS 3 2014a 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 large sections with navigation elements. 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 exists 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, and to achieve quality rendering the use of some commercial tools was required to supplement the many open source tools that were also used. Oxygen (commercial) was used as the XML editor since it supports a WYSIWYG 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 created 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.

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

### PS3.1

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## PS3.2

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## PS3.3

- CP 1032
- CP 1278
- CP 1324
- CP 1342
- CP 1354
- CP 1356
- CP 1359
- CP 1360
- CP 1365
- Figure corrections:
  - Replace Sup 165 Breast Projection X-Ray (incorporated in earlier release) figures with SVG versions
  - Figure C.7.6.16-6: changed "Display" source pixel from circular to square

## PS3.4

- Figure corrections:
  - Figure D-5: corrected odd/even byte addressing in Example 2 Little Endian Machine

## PS3.5

- CP 1324

## PS3.6

- CP 1365

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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**

- Sup 170

**PS3.16**

- CP 1355

**PS3.17**

- Sup 170
- Figure corrections:
  - Figure FFF.1.2-6: Z axis label missing
  - Figure FFF.1.2-7: needs a tan background; new figure
  - Figure FFF.2.1-16: new figure
  - Figure FFF.2.1-17: new figure
  - Figure JJJ.2-1: new figure, replacing boxed red 'x'
  - Figure I.6-1: missing arrowhead

**PS3.18**

- Sup 170

**PS3.19**

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**PS3.20**

- Figure corrections:
  - Replaced all figures with SVG versions

**Supplements Incorporated**

**Sup 170** Service Capabilities for RESTful Services

**Correction Items Incorporated**

**CP 1032** Fix Position Angle sign inconsistency in Mammography Image

**CP 1278** Additional cardiac image types for enhanced CT

**CP 1324** Add a new Value Representation for URI/URLs

**CP 1342** Extend Image Type for Breast X-Ray Image IODs

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- CP 1354** Move requirement use isocenter 3D-Xray
  - CP 1355** Make X-Ray RDSR event level device conditional
  - CP 1356** Add Content Qualification to all Composite IODs
  - CP 1359** Clarify restrictions on icon images inside image IODs
  - CP 1360** Add Performed Procedure Step Comment to Module Definition
  - CP 1365** Support of more than 16 bit in point index lists