

## **Release Notes for DICOM PS 3 – 2011.**

2011/08/10

The following changes have been made relative to the published PS 3 2009 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/>

### ***Changes to Parts***

#### **Part 1**

- Update properties to 2011
- Sup 118 – done
- Sup 135 – done
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- CP 1023 – done
- CP 1087 – done
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#### **Part 2**

- Update properties to 2011
- Sup 74 – done
- Sup 95 – done
- Sup 96 – done
- Sup 118 – done
- Sup 131 – done
- Sup 134 – done
- Sup 135 – done
- Sup 144 – done
- Sup 145 – done
- Sup 146 – done
- Sup 151 – done
- 
- CP 1020 – done
- CP 1023 – done
- CP 1087 – done
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#### **Part 3**

- Update properties to 2011
- Correct wrong SOP Class in Referenced Raw Data Sequence (0008,9121) in Table C.8.22-3
- Clean up any remaining inconsistencies in language of sequence number of items, including fixing up a few Type 2's that did not include zero, and a few Type 3's that included zero (to use the language and patterns of CP 1043)
- Specify number of items for Segment Surface Generation Algorithm Identification Sequence (0066,002D) to be one, since not specified
- Specify number of items for Icon Image Sequence (0088,0200) to be one when not specified
- Specify number of items for Ophthalmic Axial Length Selection Method Code Sequence (0022,1250) to be one, since not specified
- Specify Surface Processing Algorithm Identification Sequence (0066,0035) to be zero or one, since not specified
- Specify Implant Type Code Sequence (0068,63A8) to be one, since not specified
- Specify Component Type Code Sequence (0076,0034) to be one, since not specified
- Specify Implant Template Group Variation Dimension Rank Sequence (0078,00B4) to be one or more, since not specified
- In RT General Machine Verification Module specify Recorded Wedge Sequence (3008,00B0), Recorded Compensator Sequence (3008,00C0), Recorded Block Sequence (3008,00D0), Applicator Sequence (300A,0107), Fixation Device Sequence (300A,0190), Referenced Bolus Sequence (300C,00B0) to be zero or more, since not specified (and Type 2 in PS 3.4)
- In RT General Machine Verification Module specify Patient Setup Sequence (300A,0180) to be one or more permitted, since not specified (and Type 3 and so specified in PS 3.4).
- Specify General Machine Verification Sequence (0074,1042), Conventional Machine Verification Sequence (0074,1044), Ion Machine Verification Sequence (0074,1046) to be zero or one, since not specified (and Type 2 N-CREATE and Type 1 N-SET with a single item in PS 3.4)
- In RT Conventional Machine Verification Module specify Conventional Control Point Verification Sequence (0074,104C) to be one, since not specified (and exactly one in PS 3.4).
- In RT Conventional Machine Verification Module specify Wedge Position Sequence (300A,0116), Beam Limiting Device Position Sequence (300A,011A) to be one or more (since Type 1C and so specified in PS 3.4)
- In RT Ion Machine Verification Module specify Ion Control Point Verification Sequence (0074,104E) to be one, since not specified (and exactly one in PS 3.4).
- In RT Ion Machine Verification Module specify Beam Limiting Device Position Sequence (300A,011A), Range Shifter Settings Sequence (300A,0360), Lateral Spreading Device Settings Sequence (300A,0370), Range Modulator Settings Sequence (300A,0380), Ion Wedge Position Sequence (300A,03AC) to be one or more (since Type 1C and so specified in PS 3.4)
- In RT Ion Machine Verification Module specify Recorded Snout Sequence (3008,00F0) to be one (since Type 1C and so specified in PS 3.4)

- In RT Ion Machine Verification Module within Recorded Snout Sequence (3008,00F0) specify Recorded Range Shifter Sequence (3008,00F2), Recorded Lateral Spreading Device Sequence (3008,00F4), Recorded Range Modulator Sequence (3008,00F6) to be zero or more (since Type 2C in PS 3.4 and description is plural).
- Correct section references (C.11.15.1.1.1 to C.11.15.1.1, C.8.5.6.10 to C.8.5.6.1.10) and remove references to non-existent sections (C.8.8.14.12)
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- Sup 74 – done
- Sup 96 – done
- Sup 118 – done
- Sup 120 – done (XA/XRF presentation state was NOT included in Sup 120)
- Sup 131 – done
- Sup 134 – done
- Sup 135 – done
- Sup 139 – done
- Sup 142 – done
- Sup 144 – done
- Sup 145 – done (also include Frame Extraction Module in IOD)
- Sup 146 – done – in Ophthalmic Patient Clinical Information and Test Lens Parameters Macro, specify Visual Acuity Measurement Sequence (0024,0110) to be one item, since unspecified; use 425x rather than 423x for CIDs to avoid conflict
- Sup 151 – done – specify Mode of Percutaneous Access Sequence (0052,0016) to be zero or one, since unspecified and Type 2
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- CP 650 – done
- CP 709 – done
- CP 890 – done
- CP 952 – done
- CP 970 – done
- CP 979 – done (need to update directory record figure with SURFACE)
- CP 981 – done
- CP 983 – done
- CP 984 – done
- CP 985 – done
- CP 986 – done
- CP 988 – done (also cleaned up language slightly and include Module reference)
- CP 989 – done
- CP 994 – done
- CP 999 – done
- CP 1003 – done
- CP 1007 – done
- CP 1008 – done
- CP 1009 – done

- CP 1010 – done
- CP 1011 – done
- CP 1012 – done
- CP 1015 – done
- CP 1016 – done
- CP 1017 – done
- CP 1021 – done
- CP 1023 – done
- CP 1024 – done
- CP 1029 – done
- CP 1034 – done
- CP 1035 – done
- CP 1036 – done
- CP 1037 – done (also added Units of CM2ML for SUVbsa since missing)
- CP 1038 – done
- CP 1039 – done
- CP 1040 – done
- CP 1043 – done
- CP 1044 – done
- CP 1048 – done
- CP 1049 – done
- CP 1053 – done
- CP 1054 – done
- CP 1055 – done
- CP 1056 – done (consistently with CP 1043)
- CP 1058 – done
- CP 1059 – done
- CP 1067 – done
- CP 1072 – done
- CP 1073 – done
- CP 1076 – done
- CP 1078 – done
- CP 1081 – done
- CP 1082 – done
- CP 1084 – done
- CP 1087 – done
- CP 1092 – done
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#### Part 4

- Update properties to 2011
- 
- Sup 74 – done
- Sup 96 – done

- Sup 118 – done
- Sup 120 – done
- Sup 131 – done
- Sup 134 – done
- Sup 135 – done
- Sup 144 – done
- Sup 145 – done
- Sup 146 – done
- Sup 151 – done
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- CP 1003 – done
- CP 1023 – done
- CP 1027 – done
- CP 1029 – done
- CP 1087 – done
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#### Part 5

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
- Sup 149 – done
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- CP 964 – done
- CP 966 – done
- CP 995 – done
- CP 1014 – done
- CP 1023 – done
- CP 1087 – done
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#### Part 6

- Update properties to 2011
- Add data elements and SOP Class UIDs from DICOS (pre-FT – need to check final VRs)
- Add UID for UTC as NTP Source Address (left out in error when CP 432 was incorporated)
- Add DICONDE data elements
- Add DICOS data elements
- Clean up funky characters and extra space
- Remove duplicate context group UID assignment for CID 3207 Stress Test Procedure Phases added in Sup 128

- Remove duplicate context group UID assignment for CID 3690 ECG Control Variables Numeric in CP 1079
- Remove duplicate context group UID assignment for CID 3691 ECG Control Variables Text in CP 1079
- Disambiguate context group name for 1.2.840.10008.6.1.243 3746 Percutaneous Entry Site
- Disambiguate context group name for 1.2.840.10008.6.1.586 12120 Blood Velocity Measurements by Ultrasound
- Disambiguate context group name for 1.2.840.10008.6.1.285 3835 Cardiac Volume Measurements
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- Sup 74 – done
- Sup 78 – done
- Sup 95 – done
- Sup 96 – done
- Sup 118 – done (using FT2 to fix duplicate CID UIDs)
- Sup 120 – done
- Sup 134 – done
- Sup 135 – done
- Sup 139 – done (!)
- Sup 142 – done
- Sup 144 – done
- Sup 145 – done
- Sup 146 – done (use 425x rather than 423x for CIDs to avoid conflict)
- Sup 149 – done
- Sup 151 – done
- 
- CP 650 – done
- CP 709 – done
- CP 729 – done
- CP 768 – done
- CP 890 – done
- CP 981 – done
- CP 988 – done
- CP 999 – done
- CP 1010 – done
- CP 1023 – done
- CP 1024 – done
- CP 1036 – done
- CP 1037 – done
- CP 1038 – done
- CP 1044 – done
- CP 1057 – done
- CP 1078 – done

- CP 1087 – done
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#### Part 7

- Update properties to 2011
- 
- Sup 96 – done
- Sup 118 – done
- Sup 135 – done
- 
- CP 995 – done
- CP 1023 – done
- CP 1057 – done
- CP 1087 – done
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#### Part 8

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
- 
- CP 995 – done
- CP 1023 – done
- CP 1087 – done
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#### Part 10

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
- CP 1023 – done
- CP 1087 – done
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#### Part 11

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
- Sup 153 – done
- CP 1023 – done
- CP 1087 – done

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#### Part 12

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
- Sup 153 – done
- CP 1023 – done
- CP 1087 – done
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#### Part 14

- Update properties to 2011
- 
- Sup 118 – done (actually not, since didn't have list of parts in the first place)
- Sup 135 – done (actually not, since didn't have list of parts in the first place)
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- CP 1023 – done
- CP 1087 – done
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#### Part 15

- Update properties to 2011
- 
- Sup 95 – done
- Sup 118 – done
- Sup 131 – done
- Sup 135 – done
- Sup 142 – done
- 
- CP 1023 – done
- CP 1059 – done
- CP 1087 – done
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#### Part 16

- Update properties to 2011
- Disambiguate context group name for 3746 Percutaneous Entry Site
- Disambiguate context group name for 12120 Blood Velocity Measurements by Ultrasound
- Disambiguate context group name for 13835 Cardiac Volume Measurements
- 
- Sup 74 – done

- Sup 78 – done
- Sup 95 – done
- Sup 96 – done
- Sup 118 – done
- Sup 131 – done (did not include definitions of non-DICOM codes)
- Sup 134 – done
- Sup 135 – done
- Sup 142 – done
- Sup 144 – done
- Sup 145 – done
- Sup 146 – done (use 425x rather than 423x for CIDs to avoid conflict)
- Sup 151 – done
- 
- CP 463 – done
- CP 650 – done
- CP 709 – done
- CP 729 – done
- CP 768 – done
- CP 797 – done
- CP 990 – done
- CP 996 – done
- CP 997 – done
- CP 998 – done
- CP 1001 – done
- CP 1002 – done
- CP 1004 – done (duplicate translations rather than replace, since codes still used for mammo)
- CP 1018 – done
- CP 1023 – done
- CP 1024 – done
- CP 1025 – done
- CP 1026 – done
- CP 1028 – done
- CP 1033 – done
- CP 1047 – done
- CP 1050 – done
- CP 1051 – done
- CP 1052 – done
- CP 1060 – done
- CP 1061 – done
- CP 1062 – done (using FT2 with corrected code for <sup>90</sup>Yttrium)
- CP 1063 – done
- CP 1065 – done

- CP 1068 – done (using FT2 with corrected codes that do not conflict with CP 1024)
- CP 1069 – done
- CP 1070 – done
- CP 1074 – done
- CP 1079 – done
- CP 1080 – done
- CP 1087 – done
- CP 1093 – done
- CP 1114 – done
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#### Part 17

- Update properties to 2011
- 
- Sup 74 – done
- Sup 78 – done
- Sup 95 – done
- Sup 96 – done
- Sup 118 – done
- Sup 120 – done
- Sup 131 – done
- Sup 134 – done
- Sup 135 – done
- Sup 139 – done
- Sup 144 – done
- Sup 145 – done
- Sup 146 – done
- Sup 151 – done
- 
- CP 990 – done
- CP 1003 – done
- CP 1087 – done
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#### Part 18

- Update properties to 2011
- 
- Sup 118 – done
- Sup 135 – done
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- CP 1087 – done
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#### Part 19

- Set properties to 2011
- 
- Sup 118 – created new part
- Sup 135 – done
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- CP 1087 – done
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#### Part 20

- Set properties to 2011
- 
- Sup 135 – created new part
- 
- CP 1087 – done
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#### ***Supplements Incorporated***

- Sup 74 – Utilization of Worklist in Radiotherapy Treatment Delivery (done)
- Sup 78 – Fetal, Pediatric and Congenital Cardiac Ultrasound Reports (done)
- Sup 95 – Audit Trail Messages (done)
- Sup 96 – Unified Worklist and Procedure Step (done)
- Sup 118 – Application Hosting (done)
- Sup 120 – Extended Presentation States (done)
- Sup 131 – Bone Mounted Implant Description (done)
- Sup 134 – Implantation Plan SR Document (done)
- Sup 135 – SR Diagnostic Imaging Report Transformation Guide (done)
- Sup 139 – Enhanced XA/XRF IOD Informative Annex (done)
- Sup 142 – Clinical Trial De-identification Profiles (done)
- Sup 144 – Ophthalmic Axial Measurements (done)
- Sup 145 – Whole Slide Imaging in Pathology (done)
- Sup 146 – Ophthalmic Visual Field (OPV) - Static Perimetry Measurements (done)
- Sup 149 – MPEG-4 AVC/H.264 Transfer Syntax (done)
- Sup 151 – Intravascular OCT Image Storage SOP Class (done)
- Sup 153 – Blu-ray Disc Media Application Profiles (done)

#### ***Correction Items Incorporated***

- CP 463 – Clarify that order of template rows is significant (done)
- CP 650 – Add Pediatric Patient Size to Patient Demographics Module (done)
- CP 709 – Acquisition Context for Digital X-Ray (done)
- CP 729 – Change SCP-ECG nomenclature to ISO/IEEE 11073 or SNOMED (done)
- CP 768 – More Vascular Ultrasound Report Terms (done)
- CP 797 – Measurement References to Segments (done)

CP 890 – Cardiac Trigger Before R Peak (done)  
CP 952 – Correct Filter Type Value Multiplicity (done)  
CP 964 – Correct alphabetic name encoding for Unicode (done)  
CP 966 – Specify other Asian name encoding (done)  
CP 970 – Improving Compatibility Between Segmentation And Surface Segmentation (done)  
CP 979 – Add directory record for surface segmentation (done)  
CP 981 – ASL Arterial Spin Labeling attributes for Enhanced MR Images (done)  
CP 983 – Add definition to attribute Pupil Dilated (done)  
CP 984 – Diffusion changes and additional Defined Term for Enhanced MR and Diffusion Gradient Direction sequence correction (done)  
CP 985 – Reference to Number of Frames Fix (done)  
CP 986 – Cleanup section locations Enhanced MR Image (done)  
CP 988 – Velocity Encoding directions for Enhanced MR (done)  
CP 989 – Clarify Breast Implant Present description (done)  
CP 990 – Clarify Individual Impression/Recommendation in TID 4001 and Annex E (done)  
CP 994 – Clarify Per-Frame Functional Groups (done)  
CP 995 – ISO 9834 references (done)  
CP 996 – Wrong Relations in TID 3250 (done)  
CP 997 – Add Image Purpose of Reference – ROI (done)  
CP 998 – Clarify LOINC 18043-0 has method US (done)  
CP 999 – Add Angle of View and Acquisition Context Module to Ophthalmic Photography IODs (done)  
CP 1001 – Addition of Pupillographer device (done)  
CP 1002 – Incorrect references in TID 3215 and TID 3218 (done)  
CP 1003 – Inconsistencies examples Supp 122 (done)  
CP 1004 – Use general radiologic findings in CID 6133 (done)  
CP 1007 – Beam Record Type (done)  
CP 1008 – Image Orientation in Coordinate Calculation on deformable registrations (done)  
CP 1009 – Multiple RT Plans in RT Plan Relationship (done)  
CP 1010 – RT Applicator Enhancements (done)  
CP 1011 – RT Beams Recording Clarifications (done)  
CP 1012 – Exposure Tag Availability for PORTAL image type (done)  
CP 1014 – Clarify Allowed Element ranges for Private Attributes (done)  
CP 1015 – Allow Positioner Motion to be present if not Multi-frame data (done)  
CP 1016 – Correct attribute type in Device Module (done)  
CP 1017 – Add ICC module to all color image IODs (done)  
CP 1018 – Sup 66 terms not in Part 16 Annex D (done)  
CP 1020 – Fix arrow in Figure A.4.1-1 (done)  
CP 1021 – Wrong tag in Ophthalmic Tomo Image Module (done)  
CP 1023 – Replacement of the organization name for acronym JIRA (done)  
CP 1024 – Support IEC 62494 Exposure Index of Digital X-ray Imaging Systems (done)  
CP 1025 – Add Administration Route Code for Cath to CID11 (done)  
CP 1026 – Duplicate term Equipment failure (done)

CP 1027 – Timezone Attribute in Query (done)  
CP 1028 – Add Body Surface Area Equation for Asia (done)  
CP 1029 – Add Retrieve Location UID, Wado URL, Web Services End Point to Instance Availability notification (done)  
CP 1033 – Echo Procedure Protocol Description (done)  
CP 1034 – Integrated RT Image Parameters (done)  
CP 1035 – RT Ion Beams Beam Limiting Device Correction (done)  
CP 1036 – Correct Image and Frame Type Enhanced XA/XRF (done)  
CP 1037 – Add type of SUV to PET IOD (done)  
CP 1038 – Hanging protocol reference to color palette instances (done)  
CP 1039 – Add Document Laterality to Encapsulated Document and Raw Data Module (done)  
CP 1040 – Mammo Figure and Table numbers (done)  
CP 1043 – Clarification on the multiplicity of Items – 2 (done)  
CP 1044 – FOV clarifications for XA Derived images (done)  
CP 1047 – Dose Check support in DICOM CT Radiation Dose Report (done)  
CP 1048 – Correct Overlay Activation Module Condition in Presentation States (done)  
CP 1049 – Typo correction following CP-750 (done)  
CP 1050 – Wrong reference of Context Group Extension in PS 3.16 (done)  
CP 1051 – Typo's in various templates (done)  
CP 1052 – Corrections for CID 21110 (done)  
CP 1053 – Correction nesting level Mask Visibility Percentage (done)  
CP 1054 – Correct Figure C.7.6.16-2 in PS 3.3 (done)  
CP 1055 – PS 3.3 Section C.11.15 is used twice (done)  
CP 1056 – Series Description Code Sequence number of items (done)  
CP 1057 – Correct retired ACR-NEMA Value Representations (done)  
CP 1058 – Make Patient Size and Weight relative to Study start (done)  
CP 1059 – Add SHA2 hash algorithms for digital signatures (done)  
CP 1060 – Clarify UCUM does not require version (done)  
CP 1061 – Clarify SNOMED retired codes (done)  
CP 1062 – Addition of more isotopes and radiopharmaceuticals for NM (done)  
CP 1063 – Clean up radiation dose reports (done)  
CP 1065 – Device information in radiation dose reports (done)  
CP 1067 – Fix Reference to Derived Image Section (done)  
CP 1068 – Scan location in CT dose reports (done)  
CP 1069 – Inconsistent capitalization of X-Ray code meaning in radiation dose reports (done)  
CP 1070 – Additional sources of information in radiation dose reports (done)  
CP 1072 – Correct description Contrast Agent Number in FG (done)  
CP 1073 – Disconnect Dimension Organization from Frame of Reference (done)  
CP 1074 – TID 4006 Clarify Image & Image Region reference (done)  
CP 1076 – Bad person participant relationship in TID 1020 in Dose SR (done)  
CP 1078 – Add Document Class Code Sequence (done)  
CP 1079 – Update ECG Report TID 3700 (done)  
CP 1080 – Update CID 4204 to use SNOMED (done)  
CP 1081 – Distance Source to Detector in NM TOMO modes (done)

- CP 1082 – Add term for IEEE 1588 Precision Time Protocol (done)
- CP 1084 – Clarify Spatial Registration Description (done)
- CP 1087 – Update Foreword of all Parts (done)
- CP 1092 – Clarify condition on Content date-time (done)
- CP 1093 – Correct LOINC code typo (done)
- CP 1114 – Correct UCUM multiplication (done)