

# **MINUTES**

## **DICOM WG-06 Base Standard**

August 19-23, 2024

### **Hybrid (Face-to-Face & Remote) Meeting**

Location: NEMA HQ, 1300 17<sup>th</sup> Street N, Arlington, Virginia, USA

Presiding Officers: Björn Nolte, Siemens Healthineers, Chair  
David Clunie, PixelMed, DICOM Editor

DICOM Secretariat: Shayna Knazik, NEMA/MITA

#### **Summary of decisions from this meeting**

- CPack-127 was approved for Final Text amended as discussed (16 CPs).
- CP-2220 (from CPack-124) and CP-2380 (from CPack-126) were approved for Final Text.
- CPack-128 was approved for Letter Ballot (15 CPs).
- Supplement 228: DICOMweb API for Server Volumetric Rendering was approved for Final Text amended as discussed.
- Supplement 232: JPEG XL Transfer Syntax was approved for Final Text amended as discussed.
- Supplement 236: Waveform Presentation State was approved for Letter Ballot amended as discussed.
- Supplement 240: Heightmap Segmentation and Revised Ophthalmic OCT En Face Image was approved for Final Text amended as discussed.
- Supplement 242: Ultrasound Fetal Cardiac Structured Report Extensions was approved for Final Text amended as discussed.
- Supplement 243: Label Map Segmentation was approved for Final Text amended as discussed.
- Supplement 244: Frame Deflate Transfer Syntax was approved for Letter Ballot amended as discussed.
- A new Supplement on DICOMweb Modality Services was presented for First Read and assigned the number 246.
- Supplement 177: Second Generation Radiotherapy – Dose Objects, Supplement 178: Second Generation Radiotherapy – RT Course, Supplement 179: Second Generation

Radiotherapy – Part 17, Supplement 215: Second Generation Radiotherapy – 8 RT Ion Radiation Objects, and Supplement 216: Second Generation Radiotherapy – 8 Brachytherapy Radiation Objects were cancelled by WG-06 at the request of WG-07, and the DICOM Standards Committee will be notified in December 2024. It is not requested for the DSC to cancel Work Item 2007-06-B because it is still the basis of other Supplements.

- Supplement 238: Assertion Collection work has ceased in WG-07. WG-06 will monitor potential interest from other Working Groups and potentially consider cancellation in a year or two.

## 1. Administrative

- The WG-06 Hybrid Face-to-Face & Remote Meeting was called to order on Monday, August 19, 2024 at 8:30am US Eastern.
- Staff reminded members of the [DICOM Patent Disclosure Policy](#) and [guidelines for conducting NEMA meetings](#).
- The agenda was reviewed and approved.
- The minutes from the May 2024 WG-06 meeting were reviewed and approved without objection or abstention.

## 2. Report on Letter Ballots

DSC Ballot	Ballot Closed	Approve	Disapprove	Abstain	Comments
CPack-127	July 18, 2024	15	0	0	6

### a. CPack-127

- The official ballot was distributed to voting members of the DICOM Standard Committee on June 13, 2024 and closed on July 18, 2024.
- CPack-127 included the following Change Proposals (16 CPs):

CP #	Title
CP-2226	Add Breast Segmentation Types Context Group
CP-2295	KVP attribute in CT Image Module may also be filled in MultiEnergy case
CP-2315	Clarify Single Conformance Statement in PS3.2
CP-2337	Implementation Version Name will contain version information
CP-2338	Add Antral Follicle Counts to OB/GYN SR
CP-2343	Add Spacer and Device to RT ROI Interpreted Type
CP-2347	Clarify OPT Frame of Reference Coordinate System
CP-2349	Relax Multi-energy CT Rescale Type constraint
CP-2364	Update outdated Note on Type of VOI LUT Sequence and Window Center
CP-2373	Clarify Description related to Range Shifter Settings

CP-2381	Replace attributes by Referenced SOP Instance macro for Intravascular OCT Series Module
CP-2382	Add derived measures of similarity for ROIs
CP-2383	Value Set Constraint of row 8 to 10 within TID10001 has to be changed from CID 230 Yes-No to CID 231 Yes-No Only
CP-2384	Change name of Status Code 0107H to clarify it is a Warning
CP-2385	Fix inconsistent names of Transfer Syntaxes
CP-2387	New Context Group for Waveform Modalities

- *David Clunie made a motion to approve CPack-127 for Final Text as amended. Kevin O'Donnell seconded the motion. The motion was approved without objection or abstention.*
- **DECISION:** CPack-127 was approved for Final Text amended as discussed.
- **DECISION:** CP-2220 (Differentiate acquisition techniques for RT 3D CBCT imaging) was approved for Final Text. It was balloted as part of CPack-124 but required additional work.
- **DECISION:** CP-2380 (Clarify single row or column or pixel data PixelSpacing value is zero) was approved for Final Text. It was balloted as part of CPack-126 but required additional work.

**b. CPack-128 Letter Ballot**

CP #	Title
CP-2319	Enable multiple dose reference points in TIDs 10004 and 10007 & clarify conditions in TID 10007
CP-2342	Add Clinical Fraction Number to 1st Generation RT Objects
CP-2346	Ocular Region Imaged Module in Ophthalmic Tomography
CP-2370	Orientation guidance for vertical CT gantries
CP-2388	Extended Offset Table clarification
CP-2389	Define Fragment and Frame
CP-2393	Update CT Scanning Length Definition
CP-2396	Describe case where '¥' is a delimiter with a disclaimer
CP-2398	Correct inconsistent time point concepts
CP-2399	Correct Audit Message Schema Conflict
CP-2400	Add Mixed Ion Radiation Type and add Ion species information in control points
CP-2401	Ion Range Surface Compensator
CP-2402	Isodose levels for RT Dose visualization
CP-2404	Rephrase Reference Description
CP-2405	Add note clarifying DIMSE JWT and DICOMweb access token can be the same

- David Clunie made a motion to approve CPack-128 for Letter Ballot. Steve Nichols seconded the motion. The motion was approved without objection or abstention.
- **DECISION:** CPack-128 was approved for Letter Ballot (15 CPs).

### 3. Report on Change Proposals (CPs)

#### a. New CPs

Submitted file	Title	New CP #
cp_3Dvectorgrid	Correct PS 3.3 section C.20.3.1.3 Vector Grid Data memory layout	CP-2433
Cp_AddMore	Add new IOL calculation formulas to Part16 CID 4236	CP-2434
cp_dac652	Add concepts for WSI QC to segmentation properties	CP-2435
cp_dac653	Inconsistency in reference to RT Structure Sets for Planar ROI in TID 1410	CP-2436
cp_dac654	Various Context Group corrections	CP-2437
cp_dac655	Update DICOM to reflect changes in IHTSDO SNOMED CT-DICOM Subset for JUL 2024 INT Release	CP-2438
cp_dac656	Update DICOM to reflect changes in SNOMED Imaging Procedures	CP-2439
cp_dac657	Add means of signalling multi-frame image is a regularly sampled 3D volume	CP-2440
cp_Eyecare	Eyecare measurements templates	<i>Rejected – better suited as a Supplement</i>
cp_jm20	Inconsistencies in section texts	<i>Rejected – Editorial fix</i>
cp_jm21	<i>Inconsistencies in section headings</i>	<i>Rejected – Editorial fix</i>
cp_jm22	Remove the word 'codes' from diagrams	CP-2441
cp_jr50	Harmonize the meaning of Failure Reasons	CP-2442
cp_jr51	Add missing details to the definition of Template tables	CP-2443
cp_kod_Main	Add code for Main Pulmonary Artery Vmax	CP-2444
cp_RT257	Add State of Definition to RT Structure Set	CP-2445
cp_RT260	Add Segment Characteristics Precedence to Structure Set	CP-2446

cp_NN_bj	Pregnancy Status correct mismatch of VR and defined terms	CP-2447
CPnnnn-sw	Adapt SR Template Properties	CP-2448
cpxxx_fs_Add	Add Description to TID 10002 Row 18	CP-2449
cpxxx_fs_Remove	Remove Table 10.41-1 from X-Ray Image Modules	CP-2450
cpxxx_sn_add_attending	Add Attending Physician to Visit Admission Module	CP-2451
cpxxx_sn_add_EDD	Add Estimated Delivery Date to TID 5008	CP-2452
cpxxx_sn_add_FHIR	Add FHIR canonical for DICOM UID Registry	CP-2453
cpxxx_sn_correct	Correct Studies Service tables in PS3.2 and PS3.18	CP-2454
cp_WS	The data type SH of tag (0010;2160) Ethnic group sometimes truncates data when official reference data is used.	CP-2455
cp_dac658	General handling of known safe private data elements within private sequences	CP-2456

- **Action:** WG-01/WG-02 will try to get some interventional cardiologists to review CP-2438.

**b. Assigned CPs**

The following CPs were reviewed and decisions reached as shown. Note: Please upload the VP version (candidates for the November 2024 Voting Packet/CPack-129) to the [November 2024 meeting folder](#).

CP #	Title	Decision
CP-2406	Clarify Series and Frame of Reference relationship for Whole Slide Microscopy Images	Moved to November 2024 Voting Packet
CP-2408	CID Entries which are inconsistent or incomplete	Moved to November 2024 Voting Packet
CP-2409	Multiple Inconsistencies of DCM CodeMeanings in PS3.16 table D-1 versus CIDs	Moved to November 2024 Voting Packet
CP-2410	Formally define Attribute Value	Moved to November 2024 Voting Packet
CP-2411	Clarify Point Coordinates origin in Microscopy Bulk Simple Annotations	Moved to November 2024 Voting Packet

CP-2412	Add flag to whole slide microscopy images indicating tiles are nonoverlapping	Moved to November 2024 Voting Packet
CP-2413	Clarify Admitting Diagnosis meaning and add other types of diagnosis	Moved to November 2024 Voting Packet
CP-2414	Clarify location of ICC Profile when Optical Path Sequence present	Moved to November 2024 Voting Packet
CP-2415	Add PAXgene fixation system	Moved to November 2024 Voting Packet
CP-2416	FLIO Ophthalmic Photography	Moved to November 2024 Voting Packet
CP-2417	Note for ordering tags in XML representation	Moved to November 2024 Voting Packet
CP-2418	Remove Partial Content status code from some Responses	Moved to November 2024 Voting Packet
CP-2419	Clarify some aspects of UPS	Moved to November 2024 Voting Packet
CP-2420	Add missing Status Codes to DIMSE Services and further improve consistency	Moved to November 2024 Voting Packet
CP-2421	<i>Fix inconsistent spelling and use of terms in Part 4</i>	<i>Remains assigned</i>
CP-2423	Add missing abbreviation "MPPS" to various Parts	Moved to November 2024 Voting Packet
CP-2424	Correct the Relax NG Compact Schema for the Native DICOM Model	Moved to November 2024 Voting Packet
CP-2425	<i>Generalize CTDI phantom options</i>	<i>Remains assigned</i>
CP-2426	<i>Fix inconsistent CFIND documentation</i>	<i>Remains assigned</i>
CP-2427	<i>Add RT specific plan approvals</i>	<i>Remains assigned</i>
CP-2429	Update ROI DateTime and ROI Observation DateTime	Moved to November 2024 Voting Packet

CP-2430	Add Examples of Ion Control Point Sequence for Arc Treatment Techniques	Moved to November 2024 Voting Packet
CP-2431	Remove LUT restrictions for Ophthalmic Tomography Images	Moved to November 2024 Voting Packet
CP-2432	Clarify Support of Mandatory Query Parameters in DICOMweb	Moved to November 2024 Voting Packet

- c. **Proposed changes to the CP template:** The group reviewed the proposed changes to the CP template. These were previously circulated to the DICOM Executive Committee, and the only comment received was from Björn Nolte who made some minor suggestions which Rob incorporated. **Action:** Shayna will upload this version to the website.

#### 4. Report on Supplements

*NOTE: All documents are uploaded to the meeting folder on the FTP server in the WG-06 directory. Please refer to those documents for more technical details. Contact the Secretariat for help accessing the FTP.*

##### a. New Supplement on DICOMweb Modality Services (WG-27)

- Jeroen Medema and Diter Krotz led the group through a First Read of a new Supplement on DICOMweb Modality Services, pursuant to Work Item 2023-10-C. The draft document and accompanying PowerPoint were reviewed.
- *Kevin O'Donnell moved to assign this Supplement a number and Wim Corbijn seconded the motion. The motion was approved without objection or abstention.*
- **DECISION:** A new Supplement on DICOMweb Modality Services was presented for First Read and assigned the number 246.

##### b. Supplement 228: DICOMweb API for Server Volumetric Rendering (WG-27)

- Steve Nichols presented Supplement 228: DICOMweb API for Server Volumetric Rendering in preparation for Final Text. The Supplement Checklist was reviewed.
- *Steve Nichols moved to approve for Supplement 228 for Final Text amended as discussed. The motion was seconded by Björn Nolte. The motion was approved without objection or abstention.*

- **DECISION:** Supplement 228: DICOMweb API for Server Volumetric Rendering was approved for Final Text amended as discussed.
- c. **Supplement 232: JPEG XL Transfer Syntax (WG-04)**
- Bill Wallace presented the draft document and PowerPoint presentation for Supplement 232: JPEG XL Transfer Syntax in preparation for Final Text. All Letter Ballot comments were reviewed.
  - *Kevin O'Donnell moved to approve Supplement 232 for Final Text amended as discussed. The motion was seconded by Björn Nolte. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 232: JPEG XL Transfer Syntax was approved for Final Text amended as discussed.
- d. **Supplement 236: Waveform Presentation State (WG-32)**
- Silvia Winkler presented Supplement 236: Waveform Presentation State in preparation for Letter Ballot. The group reviewed all Public Comments as well as the Supplement Checklist.
  - *Wim Corbijn moved to approve Supplement 236 for Letter Ballot amended as discussed. The motion was seconded by Björn Nolte. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 236: Waveform Presentation State was approved for Letter Ballot amended as discussed.
- e. **Supplement 240: Heightmap Segmentation and Revised Ophthalmic OCT En Face Image (WG-09)**
- Harry Solomon presented Supplement 240 on Heightmap Segmentation and Revised Ophthalmic OCT En Face Image in preparation for Final Text. The group reviewed all Letter Ballot comments as well as the Supplement Checklist.
  - *Kevin O'Donnell moved to approve for Supplement 240 for Final Text as amended. The motion was seconded by Björn Nolte. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 240: Heightmap Segmentation and Revised Ophthalmic OCT En Face Image was approved for Final Text amended as discussed.
- f. **Supplement 241: Structural Heart Procedural SR Template (WG-01/WG-12)**

- Steve Nichols presented Supplement 241: Structural Heart SR Template for in preparation for Public Comment. It will return to WG-06 at the November 2024 meeting.
- g. **Supplement 242: Ultrasound Fetal Cardiac Structured Report Extensions (WG-01/12)**
- Kevin O'Donnell presented Supplement 242: Ultrasound Fetal Cardiac Structured Report Extensions in preparation for Final Text. The group reviewed all Letter Ballot comments as well as the Supplement Checklist.
  - *Kevin O'Donnell moved to approve Supplement 242 for Final Text as amended and Björn Nolte seconded the motion. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 242: Ultrasound Fetal Cardiac Structured Report Extensions was approved for Final Text amended as discussed.
- h. **Supplement 243: Label Map Segmentation (WG-06)**
- David Clunie presented Supplement 243 on Label Map Segmentation in preparation for Final Text. All Letter Ballot comments were reviewed.
  - *David Clunie moved to approve the Supplement for Final Text as amended and Björn Nolte seconded the motion. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 243: Label Map Segmentation was approved for Final Text amended as discussed.
- i. **Supplement 244: Frame Deflate Transfer Syntax (WG-04)**
- David Clunie presented Supplement 244: Frame Deflate Transfer Syntax in preparation for Letter Ballot. The PowerPoint, draft document, Public Comments and Supplement Checklist were reviewed.
  - *David Clunie moved to approve Supplement 244 for Letter Ballot as amended and Björn Nolte seconded the motion. The motion was approved without objection or abstention.*
  - **DECISION:** Supplement 244: Frame Deflate Transfer Syntax was approved for Letter Ballot amended as discussed.
- j. **Supplement 245: RDSR Informative Annex (WG-28)**
- Francisco Sureda and Nick Bevins presented Supplement 245: RDSR Informative Annex in preparation for Public Comment. The group reviewed changes since their last visit in May 2024.

- Supplement 245 will return to WG-06 in November 2024.

k. **Old Supplements**

- WG-07 Radiotherapy notified Björn Nolte that they will no longer be pursuing 2<sup>nd</sup> Gen RT, and will no longer work on Supplement 177: Second Generation Radiotherapy – Dose Objects, Supplement 178: Second Generation Radiotherapy – RT Course, Supplement 179: Second Generation Radiotherapy – Part 17, Supplement 215: Second Generation Radiotherapy – 8 RT Ion Radiation Objects, Supplement 216: Second Generation Radiotherapy – 8 Brachytherapy Radiation Objects, and Supplement 238: Assertion Collection. WG-06 recognizes that Sup238 has broader applicability than just RT (protocol management, AI result validation, etc.) and might be picked up by a different Working Group, whereas the other Supplements are RT-specific.
- *Björn Nolte moved to cancel five Supplements stemming from Work Item 2007-06-B, Sup177, Sup178, Sup179, Sup215, and Sup216, and to monitor interest in Sup238 for review and possible cancellation in the next couple of years. Rob Horn seconded the motion. The motion was approved without objection or abstention.*
- **DECISION:** Supplement 177, Supplement 178, Supplement 179, Supplement 215, and Supplement 216 were cancelled by WG-06 and the DICOM Standards Committee will be notified, including the monitoring of Supplement 238. It is not requested for the DSC to cancel Work Item 2007-06-B because it is still the basis of other Supplements.
- **Action:** Björn Nolte will notify the DSC at their next meeting on December 5, 2024.

5. **WG-20/HL7 Report**

- a. Brian Bialecki and Jonathan Whitby presented updates from the DICOM WG-20/HL7 II group. For details on this report, their PowerPoint can be accessed in this meeting's folder on the FTP.
- b. Confluence Page: <https://confluence.hl7.org/display/IMIN/>
- c. Meeting cadence: January (virtual only), May (in-person only) and September (in-person only). They also hold biweekly teleconferences. At their next in-person meeting on September 24-26, 2024 in Atlanta, Georgia, there will also be a joint imaging/FHIRcast Connectathon track:  
<https://confluence.hl7.org/display/FHIR/2024+-+09+FHIRcast+and+Imaging>

- d. FHIR Release 6 is now aiming for 2026. The intent is for almost all resources to be normative in this release. WG-20/HL7 II is working to get the ImagingStudy and ImagingSelection IGs ready.
- e. Radiation Dose Report Summary IG Update: All requested AAPM changes have been agreed upon and applied. They are currently working with AAPM to confirm changes and withdraw negative votes.
- f. The DICOM SR to FHIR Observation Mapping IG is now complete so the group reviewed the draft.
  - It was tested during the September 2022, January 2023 and September 2023 FHIR Connectathons.
  - It will be balloted in Sep 2024 ballot as Standard for Trial Use: <http://hl7.org/fhir/uv/dicom-sr/2024SEP>
  - The final text version is likely to wait on FHIR R6 to include ImagingSelection improvements.
- g. Imaging ServiceRequest Profile
  - The Project Scope Statement (<https://jira.hl7.org/browse/PSS-2135>) was reviewed by II and Orders and Observations WG, and is still awaiting FMG approval.
- h. Administrative item: Brian Bialecki is up for re-election as Co-Chair in September 2024. He is running unopposed. The new term would extend until the end of 2026.

## 6. Deadlines for action items from this meeting

- a. For any supplements going out for comment/ballot that are also on the agenda for next meeting, the comment/ballot window of 5 weeks results in the following deadlines. Note to authors: please submit earlier if you want any time to resolve comments prior to the next WG-06 meeting.
  - Submit **Letter Ballot** drafts to Shayna by **September 9, 2024**.
  - Submit **Public Comment** drafts to Shayna by **September 16, 2024**.

## 7. WG-06 Meeting Schedule

- a. Next meeting:
  - November 4-8, 2024
- b. **2024 meetings**:
  - January 8-12, 2024
  - March 18-22, 2024
  - May 27-31, 2024

- August 19-23, 2024
- November 4-8, 2024

**c. 2025 meetings:**

- January 13-17, 2025
  - Due to the Presidential Inauguration, the January WG-06 meeting will not be held at NEMA HQ. **Action:** Shayna will begin looking into alternate locations.
- March 24-28, 2025
- June 16-20, 2025
- September 1-5, 2025
- November 3-7, 2025
- **Action:** Shayna will circulate calendar appointments for all 2025 meetings

**8. Old/New Business**

- On August 23, 2024 from 8:30-9:00am, Akira Sato and Akihiro Yomoda discussed plans for the upcoming DICOM Standards Committee meeting in Tokyo, Japan. Thank you to JIRA and JAHIS for their kind hospitality!

**9. Adjournment**

- The meeting was adjourned at 12:50pm on Friday, August 23, 2024.

**10. Meeting Participants**

Voting Members Present							
Company/ Organization	Represented by		Mon	Tue	Wed	Thu	Fri
Canon Medical Systems USA	Kevin O'Donnell	Voting	X	X	X	X	X
Cincinnati Children's Hospital	Stephen Clark	Voting	X		X		X
Fairhaven Technologies	Rob Horn	Voting	X	X	X	X	X
GE HealthCare	Steve Nichols	Voting	X	X	X	X	X
JIRA	Akihiro Yomoda	Alt. Voting	X	X	X	X	X
NEMA/MITA	Shayna Knazik	Voting	X	X	X	X	X

Philips	Wim Corbijn	Voting	X	X	X	X	X
PixelMed Publishing	David Clunie	Voting	X		X		X
Siemens Healthineers	Björn Nolte	Voting	X	X	X	X	X
<b>Voting Members Absent</b>							
Company/ Organization	Represented by		Mon	Tue	Wed	Thu	Fri
ACR	Brian Bialecki	Voting	X	X	X	X	X
Agfa HealthCare	Laura Peters	Voting	X	X	X	X	X
Carl Zeiss Meditec	Detlev Hohmeier	Voting	X	X	X	X	X
Cincinnati Children's Hospital	Stephen Clark	Obs.		X		X	
PixelMed Publishing	David Clunie	Voting		X		X	
<b>Observers and Alternate Voting Members Present</b>							
Company/ Organization	Represented by		Mon	Tue	Wed	Thu	Fri
AAPM	Nick Bevins	Obs.		X	X		
American Academy of Ophthalmology	Harry Solomon	Obs.	X				X
Canon Medical Systems USA	Jonathan Whitby	Obs.		X		X	
Carl Zeiss Meditec	Patrick Nast	Obs.	X		X		
CSImed	Uwe Tronnier	Obs.	X	X		X	X
DICOM Usergroup Austria	Silvia Winkler	Obs.	X	X			X
Elekta	Jim Percy	Obs.	X		X		X
GE HealthCare	Francisco Sureda	Obs.		X	X		

JIRA	Go Kinoshita	Obs.	X	X	X		X
JIRA	Akira Sato	Obs.					X
Laitek	Fred Behlen	Obs.					X
National Cancer Institute	Chris Bridge	Obs.			X		
Philips	Jeroen Medema	Obs.				X	
Radical Imaging	Bill Wallace	Obs.				X	
Responsable des Systèmes d'Information Groupe	Fabien Wilhelm	Obs.	X				
Self	Ulrich Busch	Obs.			X	X	X
Siemens Healthineers	Dieter Krotz	Obs.				X	

Prepared and submitted by Shayna Knazik

Reviewed by counsel Karin Moore