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Meeting Minutes

DICOM WORKING GROUP SEVEN (RADIOTHERAPY)

Meeting Location	Online Meeting	
Dates and Times	Sept. 14-15 and 23-24	
	Monday – Tuesday, Wednesday - Thursday	9:00 – 13:00 EDT
Presiding Officers	Christof Schadt, Co-Chair Jim Percy, Co-Chair	
Secretary	Shayna Knazik, MITA	

Participants

Name	Affiliation	Mon	Tue	Wed	Thur
Jim Percy	Elekta	X	X	X	X
Walter Bosch	AAPM	X	X	X	X
Yulong Yan	AAPM	X	X	X	X
Bruce Curran	AAPM	X	X	X	X
Bruce Rakes	Mevion	X	X	X	X
Bob Pekarek	Accuray				X
Kari Jyrkkälä	Varian	X	X	X	X
Ulrich Busch	Varian			X	X
David Wikler	IBA	X	X	X	X
Christof Schadt	Brainlab	X	X	X	X
Harold Beunk	ICT				
Stefan Pall Boman	RaySearch	X	X		X
Chris Pauer	Sun Nuclear	X	X		
Thomas Schwere	Varian				
Hansen Chen	Philips	X		X	X
Rickard Holmberg	RaySearch	X	X	X	X
Jon Treffert	RaySearch	X	X	X	X
James Beck	Accuray		X	X	
Shayna Knazik	NEMA				X

Actual Week Schedule

	Monday	Tuesday	Wednesday	Thursday
Session 1 09:00-09:55	Setup, Administrative, Opening Group Status	Sup 177	Sup 177	Sup 213 CP RT160
Session 2 10:00-10:50	New CP	Sup 177	Sup 177	CP RT164
Session 3 11:10-12:00	Assigned CPs	Sup 177	Sup 177	Sup 177
Session 4 12:05-13:00	Other Topics	Sup 177	Sup 177	Sup 177

Topics

- Meeting was called to order at 9:15am ET, 9/14/20.
- The agenda for the meeting was reviewed and adjusted.
- Anti-trust rules were reviewed by Walter Bosch (acting Secretariat).
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- Jim Percy reviewed DICOM subgroup activities.
- Chris Pauer provided an IHE-RO update. Topics in discussion include use of C-GET to replace C-MOVE/C-STORE, Secure DICOM transport (TLS), HIS connectivity via HL7/FHIR. The IHE-RO Test Committee is preparing VPN infrastructure and procedures for an informal pre-test session in Nov. 2020.
- AAMI/AdvaMed - no activity to report.
- IEC - no update
- WG-28 – no update
- Teams Usage – some problems were noted in accessing/modifying files. This may be result from multiple (NEMA, company) logins. All users appear to have the same permissions (NEMA guest).

General Discussions

- IEC 61217, Ed. 3 (K. Jyrkkälä) - Updates to the standard discussed in Shanghai.
    - Coordinates of isocenter change with pitch/roll. This is an issue for users.
    - New (edition 3) of 61217 places the origin at the radiation source, rather than the isocenter. This is not backwards compatible: It breaks existing applications. Also, it is not clear how this is used with multiple sources and ion therapy.
    - It is unclear what the relationship is to edition 2 of the IEC standard. DICOM references edition 2 of IEC 61217.
    - It would work to expand the standard with a new coordinate system, but replacing edition 2 with edition 3 is problematic.
    - ACTION: Jim Percy and Christof Schadt to draft a response and communicate WG-07 concerns to Geoff Ibbott, Alan Cohen, and chairs of the German, Belgian, and Swedish TAGs. Kari to contact the Finnish national committee.
- CBCT Indicator (C. Schadt)
    - Direct indication of CBCT vs fan-beam CT. What is the role of such an indicator?
    - Currently, the type of CT must be inferred from equipment tags, but this is imprecise and unreliable.
    - ACTION: Yulong Yan to draft a CP to add a Type 3 attribute to directly indicate CT acquisition geometry.
- Multiple Revisions of an RT Physician Intent (T. Schwere)
    - Add Prescription UID to group revisions of the same Prescription? It is not clear how the “same prescription” is defined.
    - ACTION: Kari Jyrkkala and Thomas Schwere to draft a straw man CP for further discussion
- De-identification (C. Schadt)

    - De-identification of Instance Creation Date and Time was discussed. These values reflect the date/time of the assignment of an Instance UID.
    - Consensus (in WG-07) that Instance Creation Date and Time should not be treated like other dates when the Preserve Longitudinal Date/Time option is used for anonymization.
- Device Serial Number (S. Boman)
    - This attribute is Type 1 in the Enhanced Equipment Module. It is a required valued, but it is only useful in a local context. There is no risk to use whatever is desired/handy. Could use (hashed) license string or MAC ID.
- RT Accessory definitions (C. Schadt)
    - Definitions of RT Accessory Device Slot ID (300A,0615) and RT Accessory Holder Slot ID (300A,0611) need clarification.
    - ACTION: Christof to draft, Jim Percy to proof-read a CP to clarify descriptions of these attributes and distance references for discussion next week (with Uli).

Correction Proposals

CPs 2057, 2058 are in the voting packet for Nov. 2020.

CPs new to WG-07

cp RT161 Brachy Applicator Referenced ROI

Add a Referenced ROI to the Brachy Application Setup.

- The current Standard provides ROI definition of the channel geometry or the applicator geometry, but not both. Proposal to add a second ROI definition needed at the channel level.
- ACTION: Jim Percy to add a second ROI reference at the channel level.

cp RT162 Correct RT Accessory Holder Drawing

Based on the discussions in Teams regarding the Accessory Holder, this CP corrects an error in the example drawing. Decision to keep the correction of graphics for this drawing separate from wording changes (slot clarification). Forward to WG-06 for Nov. 2020 meeting.

CPs in Work

cp RT159 KOS Extension

This CP was rejected by WG-06 (as expected). Kevin O'Donnel (Canon) mentioned similar interest in a new IOD.

- Christof reviewed use cases and outline of a Data Baseline IOD.
- Can represent Item states
- Reference to predecessor to track updates
- Purpose of reference – coded semantics
- Item States – who defined and when, addition to baseline, approval status

- Development of this work item is beyond the scope and bandwidth of WG-07. Kevin O'Donnel is continuing to work on this IOD. Christof (and other RT stakeholders) can contribute.
- Several RT Use Cases could be addressed with such an IOD.

CPs with WG-06

Final Text for CPs 2004, 2005, 2007, and 2008.

Note: 2004: Frame Anatomy is now optional in Parametric Map.

Adjourned for the day 9/14 at 13:10pm EDT.
Resumed meeting 9/15 at 9:30am EDT.

Supplements

Supplement 177 (rev 36)

- Christof added support for Radiation Record Set as a dose constituent. No further limiting parameters are included for Dose Constituent Type of RECORD_SET.
- Removed Dose Combination Type – all dose combinations are LINEAR. Jim will clean up remaining non-linear attributes and text.
- Item 48: predicted upstream, predicted downstream – calculated from measurement
- Item 101: Clean up Dose Content Property Type CIDs SUP177020, 021, 022, 023, 024.
- Item 102: Dose Reporting Material (Defined Term) was replaced by a Sequence containing a Code Sequence Macro with codes (CID SUP177042) for Dose Reporting Material
- Removed SUP177043 Dose Algorithm Parameter Codes
- TID SUP177101: Jim to work on definitions for codes.
- Material Property Mapping Identification UID (Type 2) identifies the mapping (table or algorithm) used to calculate dose.
- Material Composition Information Source (aka Radiation Transport Override Type) is Type 2 – a separate Dose Content Category is not needed for this (orthogonal concept).
- Item 78: dose from CBCT – unclear what "represent" means in this context.
- Reviewed/revised description of Dose Context UID and Dose Representative Value.
- Source Image Reference Presence Flag was removed – Christof will rework this section.
- Continue with item #89.

Christof reviewed discussion topics for 9/23 and 9/24.

Discussion of RT Physician Intent and identifying ("sticky") UIDs.

- What are semantics of "sticky" UIDs? Does the UID identify the individual Intent or RT Physician Intent instance? How to reference predecessors?

- This topic is related to the design of RT Course. To be discussed at the next WG-07 meeting in October.

Supplement 177 (rev 36)

- Item 48 / Item 102: EPID calibration:
  - Label and UID to identify conversion model for EPID data
  - combined with Material Property calibration as Calibration Identification Sequence (Type 2); add Calibration Type Code Sequence; CID defines various calibration types.
- Item 78: Dose Constitutent Type:
  - clarify IMAGE_ACQ defined term (dose of a single planned or performed acquisition of images);
  - dose for MV cone beam acquisitions can be identified as either RADIATION (if defined) or IMAGE_ACQ;
  - Referenced Image Acquistion Procedure Protocol Sequence is Type 2C; Instance Reference Descriptions Code Sequence is not needed (removed).
- Item 86: NaN dose values in Parametric Map
  - Producer/Consumer trade-off in handling unspecified values was discussed.
  - Decision tabled until 9/24.
- Item 47 was marked as resolved
- Item 88: Dose Content Category Code Sequence is not needed (specialized sections removed); resolved.
- Item 89: Is reference to TID SUP177100 correct?
- Items 85, 86 – Uli to review overnight.

Supplement 213 (Uli)

- Continuous RT Image (high frame rate) is the only major question remaining for this Supplement.
- Discussion of the naming of “RT Patient Position Acquisition Instruction IOD”. Agreement that this name is acceptable.

CP RT164 – (rev 01) RT Accessory Device Clarifications (Christof)

- Confusion between Accessory Slot ID and Accessory Holder Slot ID.
- Revised attribute description and clarified wording in section C.36.2.2.3.1 to clarify the use of slot IDs and indices.

Supplement 177 (rev 36)

- Item 86 (revisited): Allow NaN in dose values?
  - The section on Floating Point values was removed from the Supplement. This item was left as an Open Issue for Public Comment:
    - “The Parametric Map IOD provides an IEEE floating point representation for unspecified values (NaN). Is it desirable to allow this value in the scope of the RT Dose Map Annotation IOD?”
- Item 94 (64-bit integers) was closed.

- Item 85 (Frame of Reference) was closed.
- Item 87 (Referenced Series Sequence)
    - Referencing of images and non-image instances related to dose calculation, display, etc. Does not include Study references (as these are present in the Common Instance Reference Module). Item was closed.
- Item 48 (revisited):
    - "Material Property Mapping" has been replaced by "Calibration Identification"
    - CID SUP177007 Calibration Types changed to RT Value Conversion Types – Jim will continue working on these codes.
- Item 89 (revisited): Baseline changed to Defined TID SUP177100. Item was closed.
- Purpose of Reference Codes – Jim will continue working on definitions.

Next Meetings

- Oct 12-13 and 19-20
- Nov 30, Dec 1 and 7-8

Prepared by Walter Bosch
Submitted by Shayna Knazik
Reviewed by Counsel Peter Tolsdorf