

Connectathon Wrap-up/IHE-RO Technical Committee
 Conference Call
 March 18, 2021
 10:30 am – 12:30 pm EST

Technical Committee Chairs:
 Scott Hadley, PhD, University of Michigan
 Jon Treffert, RaySearch

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10 **Mission Statement:** *The American Association of Physicists in Medicine American Society for Radiology Oncology (AAPM) supports a multi-society Task Force to undertake an initiative to promote the Integration of the Healthcare Enterprise (IHE) – Radiation Oncology (RO), fostering seamless connectivity and integration of radiotherapy equipment and the patient health information systems. The Task Force will include members from ASTRO, RSNA, AAPM, the American College of Radiology (ACR) and the Medical Imaging and Technology Alliance (MITA). In addition, members of the International community have also been invited to participate in IHE-RO. The IHE-RO Task Force, in close collaboration with radiotherapy product manufacturers, will develop appropriate integration profiles for radiation therapy and setup a demonstration of seamless communication among the full array of radiotherapy products.*

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Attendees:

Name	Affiliation	Email	
Chris Pauer	Sun Nuclear	chrispauer@sunnuclear.com	20
Scott Hadley	U. Mich.	swhadley@umich.edu	
Jon Treffert	Raysearch Labs	Jon.treffert@raysearchlabs.com	
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Walter Bosch	Wash. Univ.	wbosch@wustl.edu	
Bruce Curran	AAPM / VCU	bhcurran@gmail.com	25
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Harold Beunk	Demcon	harold@beunk.eu	
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Bob Pekarek	Accuray	bpekarek@accuray.com	30
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Naveen Kumar	Philips		
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Christof Schadt	Brainlab	Christof.schadt@brainlab.com	
Alex Anghelescu	Varian		40
Anthony DiDonato			
Hansen Chen	Philips		
Michelle Casagni			

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Minutes:

I. Meeting was called to order at 10:35am ET. A quorum was present.

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II. Connectathon Wrap-up

Walter Bosch reported results of the 2021A Connectathon. (See Attachment: Connectathon Findings / Issues, below)

A. Motion to approve Connectathon Report: Jon Treffert. Second: Scott Hadley. Motion passed without objection or abstention.

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B. ACTION: Walter to report Connectathon results to IHE Testing & Tools, IHE International Board.

C. ACTION: Walter and Jill to draft and distribute a Connectathon feedback form to participants.

III. AAPM VPN

A. Access for Connectathon participants to the AAPM Virtual Private Network (VPN) is to continue beyond the Connectathon.

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B. Continuing use of the VPN is to be governed by the provisions of (an extension of) the Connectathon Participation agreement.

C. ACTION: Jill to draft a VPN Access and Data Use Agreement based on the Connectathon Participation Agreement.

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IV. 2021 Goals/Deliverables

A. Review

B. Potential new/revisited Profiles/Use Cases to work on

1. Sim Iso Use Case (Thomas) – a Clinical Impact Statement has been written.

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C. Issues to bring to Planning Committee – 3/23 presentation

1. ACTION: Jon to distribute a draft presentation to the TC for comments

V. Adjournment – Meeting was adjourned at 11:55am ET

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Attachment: Connectathon Findings / Issues

BRTO-II

1. Insufficient test partners for several options
 - a. Off-slice contours
 - b. Decubitus scan positions
 - c. DVH storage/retrieval
2. BRTO-II Dosimetric Planner
 - a. Dosimetric Planner must be able to reference retrieved RT Structure Sets.
 - b. Concern that Dose to Plan linkage is not sufficiently robust for some Actors.
3. Display of DVHs
 - a. Limited coverage of dose grid resulted in inconsistency between volume of structures and calculated volumes of DVHs.
 - b. Recommendation: strong concern that DVHs displayed by the application do not accurately represent the entire volume of some structures and that no indication of partial coverage is given.

MMRO-III

1. Limited participation; testing was complete as of 3/3/21
2. Differences in display: patient-relative vs gravity-relative. No incorrect labeling.

TPPC

1. The Beam Dose Specification Point (300A,0082) attribute has been retired in the 2020 Edition of the DICOM Standard.
 - a. Table C.8-49, Note #9: The Beam Dose Specification Point (300A,0082) was previously included in this module as a means to specify a single point at which dose contributions of different beams could be specified. **This attribute has been retired** as it no longer reflects clinical practice. Along with this, the semantics of the Beam Dose (300A,0084) and Alternate Beam Dose (300A,0091) have been adapted to reflect the absence of the Beam Dose Specification Point. In order to refer to an Item in the Dose Reference Sequence (300A,0010) it is recommended to utilize the Referenced Dose Reference UID (300A,0083) and the Dose Reference UID (300A,0013) respectively.
 - b. Content Requirements for the RT Fraction Scheme *in Planning State* are not entirely clear.
 - i. IHE-RO Usage for the RT Fraction Scheme Module is “R” but references Section 7.4.3.2.2 (“RT Fraction Scheme Module *for Delivery*”).
 1. RT Fraction Scheme Module for Delivery lists Beam Dose Specification Point (300A,0082) as a required (R+) attribute.
 2. There is no distinct section for RT Fraction Scheme Module for Planning State.
 - c. Review with the TC:
 - i. Errors reported by the Content Validator for this attribute have been scored as false positive for Connectathon 2021A.
 - ii. The TPPC Profile should be updated to reference DICOM 2020 Edition. Specifically, an update to TPPC Section 7.4.3.3 “RT Fraction Scheme Module” content requirements (for planning state).

TDW-II

1. UPS Validator tool reports error in the Command Data Set Type (0000,0800) in the N-SET response from a TMS Actor, when the TMS includes a copy of the Attributes whose values have been updated in the N-SET response. This is valid behavior for the TMS.
2. The reason for cancellation *may be reported* in N-Set in UPS Discontinuation Reason Code Sequence (0040,0281). *This is not a requirement.* Wording to be reviewed by the TC.
3. Beam de-selection after zero MU delivery:

- a. Should progress be reported at all?
- b. What beam number should be used for progress report?
- 4. Treatment after zero-MU cancellation: is this a Continuation?
 - a. At the beam level?
 - b. At the session level?
- 5. Clarification is needed regarding N-SET after N-ACTION Create. (David W.)
 - a. When can N-SET Zero Progress be sent?
 - b. Clarify: Is there ever a need to reference a beam before a beam is selected on the TDD?

Archive

- 1. Ability to prevent use of Explicit-VR Transfer Syntax *for RT objects SOP Classes* is needed to assure reliable retrieval of RT data.
- 2. Suggestion to use multiple, validated Archives, *one per Profile*, in future Connectathons:

Test Tools Usability Issues

- 1. UPS Validator
 - a. Permission issues with configuration file as installed, initially made saving state impossible.
- 2. Content Validator
 - a. Add control for presentation context (Implicit-VR only) for Q/R
 - b. Would be helpful to have a way to reset/clear query keys in Q/R screen.

Other Issues

- 1. ROI Interpreted Type semantics – inconsistent use of “Avoidance”
 - a. Proposed CP (DICOM WG-07) to clarify usage of Avoidance, OAR Interpreted Types
- 2. Improved instructions for labeling data from Producer Actors would be helpful.
 - a. Convention for Series Description would facilitate Q/R
 - b. Identifying the correct instance to retrieve is especially problematic for Spatial Registration and RT Dose.
 - c. Test Committee to consider options. Suggestions are welcome.
- 3. Testing Infrastructure
 - a. The Testing Committee to improve tools and procedures for documentation of test results.