

IHE-RO Technical Committee
Face-to-Face
Sep 28-30, 2016 at 8:30-5:30, Oct 1, 2016 8:30-12:00 ET
Renaissance Hotel, 606 Congress St.
Boston, MA

Technical Committee Chairs:
Scott Hadley, PhD
Chris Pauer

IHERO Task Force Co-Chairs
Dick Fraass, Ph.D., FAAPM, FASTRO, FACR
John Buatti, MD

Mission Statement: *The American Society for Radiation Oncology (ASTRO) has formed 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, American Association of Physicists in Medicine (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.*

Attendees:

Name	Affiliation	Email	9/28/16	9/29/16	9/30/16	10/1/16
Chris Pauer	Sun Nuclear	chrispauer@sunnuclear.com	X	X	X	X
Walter Bosch	Wash. Univ.	wbosch@wustl.edu	X	X	X	X
Bruce Curran	VCU	bcurren@mcvh-vcu.edu	X	X	X	
Thomas Schwere	Varian	Thomas.Schwere@varian.com	X	X	X	X
Christof Schadt	Brainlab	Christof.Schadt@brainlab.com	X	X	X	X
Jim Percy	Elekta	Jim.percy@elekta.com	X	X	X	X
Rickard Holmberg	Raysearch Labs	rickard.holmberg@raysearchlabs.com	X	X	X	X
Niklas Gunnarsson	Raysearch Labs	Niklas.gunnarsson@raysearchlabs.com	X	X	X	X
Bruce Rakes	Mevion	rbrakes@mevion.com	X	X	X	X
Michael Owens	Reflexion Medical	mowens@reflexionmedical.com	X	X	X	X
Koua Yang	Philips	Koua.yang@philips.com	X	X	X	X
Bob Pekarek	Accuray	bpekarek@accuray.com	X	X	X	
Keerthi Vishnudas	Viewray	kvishnudas@viewray.com	X			
Jennifer Clark	Sun Nuclear	jenniferclark@sunnuclear.com	X			
Benedick Fraass	Cedars-Sinai	Benedick.fraass@cshs.org	X			
Uli Busch	Varian	Ulrich.busch@varian.com	T			

Mikael Bertze	Raysearch Labs	Mikael.bertze@raysearchlabs.com		T	
Eli Stevens	Mobius Medical	elis@mobiusmed.com			T

30 X = In person T = via Teleconference

35 **Minutes:**

I. Call to Order (Sep 28, 2016 at 8:45 am EDT) – a quorum was declared.

- a. Review Agenda
- b. Other broad topics to add – Agenda was revised and approved without objection at 9:00am.

40 II. Business

a. Topic 1: Review of Prescription Profile (RXRO)

- i. DICOM Trial Implementation of Physician Intent - Christof Schadt reviewed the DICOM RT Physician Intent and RT Prescription IODs defined in DICOM Sup 147 (anticipated being prepared for Trial Implementation).
- ii. The TC discussed prescription workflow. The group discussed multiple layers of prescription used in the workflow. The final planning result must be reconciled with the original physician intent to document that the plan is what was intended to treat the patient. Four *prescription categories* were discussed:

- 1. **Physician Intent** – high-level specification covering ASTRO white paper prescription parameters (dose, fractionation, disease site, (treatment technique)
- 2. **Planning Directive** – additional technique-specific information used to create a treatment plan, may include motion-management, segmentation directives, margins, dose-volume constraints, etc.
- 3. **Planning Directive with dosimetric optimization** – dosimetrist updates/modifications added to planning directive to optimize plans and achieve objectives.
- 4. **Planning Result/plan summary** – This appears to be out of scope for Sup 147. It may be covered by a future Planning Record object.

Christof will add these prescription categories to the draft profile.

- iii. Review of Prescription Survey results – discussion of parameters used by various clinical stakeholders
- iv. Dick Fraass reviewed prescription issues for the TC
 - 1. ASTRO white paper specifies a very high level prescription (dose/fxn, #fxns, total dose, disease site, treatment technique). The prescription group is to analyze prescription-related incidents in the RO-ILS (RO Incident Learning System) database. Results of that analysis will provide guidance for next steps.
 - 2. Plan and delivery adaption must be possible without invalidating the high-level prescription documents. The challenge is to incorporate flexibility without making everything optional.
 - 3. Sup 147 allows references to external objects (with purpose codes) to permit extension and evolution of structured prescriptions. Could be used to specify details for imaging, plan adaptation, ...
- v. Content discussion and editing requirements for DICOM attribute values – Christof reviewed the RT Physician Intent Module Attributes in Sup 147.
 - 1. RT Physician Intent Narrative (30xx,0915), Reason for Superseding (30xx,0917) were marked as R+. Requirements for the presence of other attributes was unchanged. More discussion is needed regarding display requirements in consumer Actors.
 - 2. Sven will work through other Use Cases.
- vi. RO-SSI Survey – Michael Owens presented a survey to be sent to clinicians to evaluate how prescriptions are used. This information is to be incorporated in a RO-SSI “good practices” document.

- 85
1. How are prescriptions used? As prospective planning directive? As a realized plan summary?
 2. Examples? What data elements are included in the prescription?
- vii. Implementation of the RXRO Profile could be added to the AdvaMed RT2 standard. AdvaMed contracts to AAMI (American Assn. for Medical Instrumentation) to create / endorse medical standards.
- 90
- b. Topic 3: Level Set
- i. Updates on IHE-RO activities
 1. Planning – Colin Field has retired as PC co-chair. Alf Siochi was elected to serve as new co-chair.
 2. Oversight, Steering Committees
 - 95 3. Domain Coordination Committee
 - a. Emphasis on HL7 vs FHIR issues
 - b. IHE-RO has filed an annual Domain Report with section from TC and updates on Profile development schedule
 - 100 4. IHE Workflow Based Profiles
 - a. An educational session on Workflow Profiles from IHE Domains is planned for a Teleconference to be held Oct 12-13, 2016. Most of the profiles to be discussed are based on DICOM Modality Worklist or HL7.
 - ii. ASTRO – transition of IHE-RO Domain sponsorship is proceeding. AAPM is hiring a program support person for IHE-RO, IT support to be jobbed to AAPM IT staff.
 1. Report to Corporate Advisory Council to be reinstated.
 - 105 iii. ROSSI (RO Safety Stakeholders Initiative)
 1. Prescription Survey (see above) was discussed.
 2. A Training Good Practices document is in development.
 3. RO-SSI is eager to promote IHE-RO Safety initiatives.
 - 110 iv. DICOM WG-7 Update
 1. Last WG-7 F2F meeting was in August in Washington, DC.
 2. Sup 147 Trial Implementation is anticipated in Jan 2017.
 3. Sup 175 (C-arm Linacs) is currently in Public Comment through the end of Oct 2016. Vendors are encouraged to submit comments.
 - 115 4. Sup 176 (other Radiations) includes changes for Tomotherapeutic Radiations. Review with WG-6 is basically complete.
 5. Sup 177 (Dose) is in development.
 6. Two CPs (1658, 1659) affect TPPC, one retires parts of Fraction Group Sequence.
 - v. AdvaMed and Standards Efforts
 1. RT2 - Radiation Therapy Readiness check (in review)
 - a. Has become an AAMI document. 112 comments have been received and addressed.
 - 120 2. RT3 - Beam Model Standard
 - a. Development continues. Data elements are being identified. It is expected to be encoded as XML.
 - 125 3. RT4 - (potential) Standard for Machine, Patient QA
- c. Topic 4: Profile Status Update as of Sept 28, 2016.
- 130 i. ARTI – FT, consider retirement for testing purposes
 - ii. BRTO – FT, published in TF
 - iii. BRTO-II – passed PC, need discussion on patient orientation
 - iv. CDEB – PC ended, review for TI
 - v. CPRO – work in progress in HIS workgroup, discussion of Modality Worklist vs UPS, no update (**ACTION 160901**: Bruce to request CPRO update from Rishabh – Done.)
 - 135 vi. DRRO – no update, TG-132 has process and test objects for deformable reg.
 - vii. DPDW – sub-group work in progress
 - viii. DCOM – limited testing, promote to FT?, needs vendor support
 - ix. IPDW – on hold pending TF DICOM Content and TDW-II goes to TI

- x. MMRO – retired
- xi. MMRO-II – FT
- xii. MMRO-III – TI
- xiii. RXRO – in draft
- xiv. QAW – in draft
- xv. QAPV – PC passed, review for TI
- xvi. QRRO – in draft
- xvii. ROIT – in draft
- xviii. TDIC – review draft for PC
- xix. TPIC – review draft for PC
- xx. TDPC – in PC
- xxi. TPPC – TI
- xxii. TPIC – TI
- xxiii. TDW – retired, pending deprecation
- xxiv. TDW-II – review for TI this meeting, needs vendor support and implementation for testing
- xxv. TDRC – in draft

d. Topic 5: Profile Priorities for the Year

- i. QA Checker: QAPV, QAW
- ii. DPDW, RXRO, TDW-II, TPPC, TPIC
- iii. ASTRO Meeting – EMR
 - 1. ARIA-EPIC Workgroup – Per Halvorsen (see <https://varian.force.com/apex/CpWebSummary?id=a0OE000000gh1aNMAQ> for PDF of webinar)
 - 2. ASTRO Health Informatics Cmte
- iv. ROIT – AAPM has requested IHE-Rad to develop a Profile for exchange of CT Protocols (non-patient related DICOM instances)

e. Topic 6: Discussion of SAMs Session for IHE-RO at AAPM

- i. Scott Hadley, Chris Pauer, Walter Bosch, and Tony Seibert presented an IHE-RO educational session at the AAPM annual meeting in August 2016. Attendance was less than hoped for, but elicited some suggestions for future Use Cases.
- ii. Proposed IHE-RO Profiles
 - 1. ARRO (Archive of Radiation Oncology Plan and Treatment Data) Profile
 - a. The profile seeks to support capture of patient treatment planning data and the *context* in which was produced.
 - b. The Clinical Impact Statement states that the data are to be accessible by future planning systems. What does this mean? What metadata are expected to be included?
 - c. **ACTION 160902**: Chris to forward ARRO Profile to Scott Hadley to request clarification of scope, i.e., what does it mean to archive and consume historic data? What is the Use Case? What is expected: Robust review/analysis of data? Re-calculation/re-planning?
 - 2. TxHist – Treatment History Exchange
 - a. The standards needed to implement this Profile are still in development. Capabilities described are largely those to be included in the DICOM 2nd Gen RT Course IOD.
 - 3. TPPC updates for RT Ion Plan
 - 4. TPPC updates for Brachytherapy

f. Topic 7: HIS Workgroup

- i. Liaison to IHE-ITI? Rob Horn? Michael Owens is a member of IHE-ITI TC will act as liaison.

g. Topic 8.5: Fraction Group DICOM CP – related to TPPC

- i. CP 1658 – Dose Reference Beam Dose Verification

- 195
1. CP deals with beam dose depth, equivalent depth and SSD
 2. Beam Dose Verification Sequence was introduced inside the Beam Sequence the Fraction Group Sequence, but this does not work for multiple targets.
 3. This CP needs Correction: an additional reference to the Dose Reference Point Index is needed to identify the intended Dose Reference Point.
- 200
- ii. CP 1659 – Add Dose Reference to Fraction Scheme
 1. Adds a Dose Reference UID in the Referenced Beam Sequence of the Fraction Scheme Module.
 - iii. **ACTION 160903**: Sven to update TPPC Profile when CP 1658 and 1659 are approved.
- 205
- h. Topic 9: Actions for Connectathon
 - i. Head count for Philips Security? – Vendors representatives were asked to send an updated list of individuals who plan to attend the Connectathon to Mark Pepelea or Koua Yang.

[Adjourn for the day 9/28/16 at 5:25 pm]

210 [Resume meeting 9/29/16 at 8:40 am]

- i. Topic 8: TomoTherapeutic Beam Change Proposal for TPPC – Bob Pekarek reviewed a draft CP to the TPPC Profile to add TomoTherapeutic Beam Producer and Consumer Actors.
 - 215 i. The TC discussed the use of DICOM RT Plan to describe tomotherapy beams.
 - ii. A strong concern was expressed regarding the use of the RT Plan IOD, which is based on the IEC 61217 (C-arm) coordinate system, for helical tomotherapy machine geometry.
 - iii. Other issues discussed include
 - 220 1. (Binary) MLC with alternating leaves (MLC-Y, Y or ASYMY) – one leaf of each MLC jaw pair remains fixed at or behind the primary Y jaw.
 2. Bolus – conditions are the same as other beam types
 3. DICOM Gantry Angle is not limited to one rotation (IEC); some TMS may limit the range of this attribute. This value is required to continue past the nominal 360 degrees to express a multiplicity of rotations.
 - 225 4. Gantry Rotation Direction – specified (only) at first control point.
 5. BLD angle shall be constant; BLD rotation direction shall be NONE, if present.
 - iv. Questions raised:
 1. What safety issues are created by this use of the standard?
 2. Availability of TMS and other Consumer Actor support for this beam type?
 3. What alternative approaches exist using private attributes?
 - 230 v. Possible solutions discussed:
 1. Take no action.
 2. DICOM 1st Generation
 - 235 a. Re-use RT Plan with IHE-RO constraints – determine whether technical issues represent barriers.
 - b. Develop White Paper describing how private attributes can be used to achieve interoperable exchange – this may or may not work in an IHE-RO Profile.
 3. DICOM 2nd Generation – Accelerate implementation of Sups 147, 175, 176 (Radiation Set, Tomotherapy Radiation, Segment Annotation) IODs – this could be included in a revised TPPC Profile.
 - 240 vi. Next steps to proceed in parallel:
 1. **ACTION 160904**: Michael Owens to draft TPPC-II Profile using DICOM 2nd Gen RT Radiation Set and Tomotherapy Radiation IODs.
 2. **ACTION 160905**: Bob Pekarek to draft a white paper using private attributes for Tomotherapy Beam Type in TPPC to assess feasibility and help assess buy-in from TMS vendors.
- 245 j. Topic 9: Test Tools and Webinar Review / Update / Actions for Connectathon
 - 250 i. **ACTION 160906**: Chris to check with ICT regarding availability of legacy Test Tools on DVTK.org website.
 - ii. Poll on Testing of Profiles/Actors – TDW-II, ARTI/TPPC?

iii. Connectathon Testing

1. BRTO – likely the last Connectathon, test as written; Walter to review TC minutes
 - a. Continue to test multi-series CT in Contourer?
 - b. Continue to test Geometric Planner? Yes – for this Connectathon.
 - c. Must a Dosimetric Planner accept Geometric plans? (Dosimetric Plans)?
2. MMRO-II / MMRO-III
3. ARTI (formal), TPPC (informal) – only one dataset
4. DCOM ??
5. TDW / TDW-II (informal)

iv. Discussion of test requirements for MMRO-III. This profile relaxes the requirement to use CT as *primary* Series, but does this require support for non-CT images?

1. MMRO-III will be tested as an extension to MMRO-II (non-CT Image as primary).
2. **ACTION 160907**: Chris to draft a CP for MMRO-III to add a “Single Modality Registrator” Actor.

k. Topic 9.1: CDEB review for Trial Implementation

- i. Public comment period ended on August 28 – no comments were received.
- ii. A related CP 1659 is pending in WG-7 to add a Dose Reference UID in the Fraction Group Module’s Reference Beam Sequence. This attribute should be added to the CDEB Profile.

l. Topic 10: TDW-II to Trial Implementation

- i. Public comment period ended on August 28 – no comments were received.
- ii. **DECISION**: The TDW-II Profile (version 1.0) was promoted to Trial Implementation status without objection or abstention.

m. Topic 11: BRTO-II and Patient Orientation Sequence

- i. A Patient Orientation Code Sequence has been added to the DICOM Standard. From PS3.3 Chapter 10.12: “The Patient Orientation Code Sequence (0054,0410) allows a more precise and comprehensive positioning than Patient Position (0018,5100). If this sequence is present Patient Position (0018,5100) is not used.”
- ii. **ACTION 160908**: Jim Percy to draft a clarification of the Patient Position (0018,5100) values and corresponding Patient Orientation Codes supported by the MMRO-III Profile.
- iii. Review of BRTO-II for Trial Implementation. Recent changes require further review.
 1. Structure Set Retrieval [RO-7] changed to Optional.
 2. Automated Contourer Actor was removed from Profile.
 3. Update based on DICOM CP 1656 (adds Content Date and Content Time to RT Dose Module for RT Dose instances that have only DVH content). Move Content Date and Time to RT Dose Module.
 4. Removed General Image Module from the Profile document (reference TDIC).
 5. Changed “Axial” to “Transverse” in profile text.
 6. Retain Content Date and Time for Derived\Secondary (Resampled) images.

[Adjourn for the day 9/29/16 @ 5:30pm]

[Resume meeting 9/30/16 at 8:30am]

iv. Continued reviewed of changes to BRTO-II

1. Continued discussion of Content Date and Time for DERIVED\SECONDARY (Resampled) images for BRTO-II, TDIC, and TPIC Profiles. These Profiles have similar requirements for these attributes. (Requirements in TDIC sections to be referenced from TPIC and BRTO-II.)
 2. Require (RC+*) Derivation Code Sequence (0008,9215) and Source Image Sequence (0008,2112) for DERIVED CT images.
- v. Christof will edit Profile for further discussion by the TC on 10/1.

n. Topic 11.5: Future Meetings

- 310
- i. IHE-RO TC Meetings
 1. Winter Meeting – Jan 23-27, 2017 – Melbourne or Alexandria
 2. Virtual Domain Pre-Testing – Mar 13-17, 2017
 3. Post-AAPM – Aug 2, 2017 at 2pm through Aug 5, 2017 at noon, Denver
 4. Fall Connectathon - Oct 9-14, 2017 in Europe
 - ii. IHE-RO Connectathon scheduling for 2017
 - 315 1. Concern was expressed by several vendors that they would not be able to participate in two Connectathons in 2017. The consensus of the TC was that a Fall Connectathon would work best for most vendors.
 2. Dates: Oct 9-14, 2017
 3. Preference was expressed for a European venue: Brainlab, Munich or Elekta, Stockholm. Sun Nuclear in Melbourne, FL is an alternative.
 - 320 4. **ACTION 160913**: Chris to put confirmation of venue for 2017 Connectathon on TC agenda
 5. **ACTION 160909**: Walter to submit Application for 2017 Connectathon to IHE Testing and Tools Committee on or before April 9, 2017.
 - iii. Virtual pre-testing – Mar 13-17, 2017
 - 325 1. Use AAPM GoToMeeting facilities to support discussions
 2. Infrastructure for exchange of data
 - a. Exchange DICOM media files via AAPM fileshare (dropbox, etc.)
 - b. Whiteboard for dataset meta-information? Templated notes?
 - c. Should a data use agreement be required for access? This could be adapted from the Connectathon document.
 - 330 3. Details to be worked out in Jan 2017 F2F meeting.
- o. Topic 11.7: TPPC for Ion Beam Progress – Bruce Rakes updated the TC on Ion Subgroup work to add Ion Beam Producer and Consumer Actors to the TPPC Profile
- 335 i. Document reviewed was IHERO_TPPC_ION_v0.5.docx
 - ii. Ion beam types are Scattered and Scanned.
 - iii. The TC discussed DICOM Content requirements for simple scanned beams for Chapter 7 of the TF. Results were captured by Bruce Rakes in the document (version 0.6).
- p. Topic 14: QAPV – Review for Promotion to Trial Implementation
- 340 i. Chris Pauer reviewed the progress and current status of the QAPV Profile. This Profile has undergone Public Comment, starting in May 2016. No responses were received.
 - ii. The Profile text has been updated to reflect changes in the DICOM Standard.
 - 345 iii. Christof Schadt reported on a proposed requirement of the AdvaMed RT2 standard that “any system should be able to retrieve the QA check status of a plan”. This statement has been removed from the RT2 standard, but may be added back in the future. Such capability could be enabled by retrieval of Content Assessment Results instance(s).
 - iv. **DECISION**: The QAPV Profile (version 2.1) was promoted to Trial Implementation status without objection.
 - v. Changes in the Dose Reference in the Beam Dose will require updates to this Profile.
- 350 q. Topic 19: Treatment Delivery–Record Content – Chris Pauer reviewed progress on this Profile
- i. The RT Beams Treatment Record contains many attributes of interest for automated QA, etc., however, many attributes are Type 3. Additional (context-specific) requirements are needed to ensure meaningful collection of treatment record data. Work continues.
- 355 r. Topic 16: Quality Assurance Workflow Review – Chris Pauer reviewed QA workflow review profiles
- i. QAPA – QA Planning Analysis Profile – (Dosimetric) analysis of treatment plans and related artifacts
 - 360 1. QAPanning Analysis Performer evaluates planning images, structure set, doses. It may require prescription-related information as input.
 2. Planning Data Supplier – Stores input data objects (via C-STORE or C-MOVE) to QAPA Performer

- 3. Data Store – stores Check Results
- 4. Planning Session Manager – manages planning workflow and initiates QA Check
- 365 ii. QADA – QA Delivery Analysis Profile – analysis of treatment record and related artifacts, including treatment plans, images, structure sets, doses (and possibly dynamic logs).
 - 1. Treatment Session Manager
 - 2. Delivery Analysis Performer
 - 3. Treatment Data Supplier
 - 370 4. Data Store – stores Check Results
 - 5. Planning Data Supplier – Stores input data objects (via C-STORE or C-MOVE) to QAPA Performer

- s. Topic 15: Query/Retrieve Profile Review – Koua Yang reviewed a draft of the QRRO Profile
 - 375 i. The profile supports queries at the Study Root Level, since this level is most broadly supported by Q/R SCPs.
 - ii. DICOM Query provides a means to *identify* the DICOM instances a user wants to retrieve.
 - iii. The TC reviewed a Q/R Use Case involving queries for an RT Plan, RT Structure Set, RT Dose and planning images. Koua will incorporate this framework in the QRRO draft.

- 380 t. Topic 15.2: Common Instance Reference Module
 - i. The TC discussed the DICOM Common Instance Reference Module and considered a proposal to make this module mandatory for all IODs. Adding this Module to all IODs listed in Chapter 7 would affect Instances created by Producer Actors in the following Profiles:
 - 385 1. BRTO-II – passed PC, need discussion on patient orientation
 - 2. CDEB – PC ended, review for TI
 - 3. MMRO-III – TI
 - 4. RXRO – in draft
 - 5. QAW – in draft
 - 390 6. QAPV – PC passed, review for TI
 - 7. QRRO – in draft
 - 8. TDIC – review draft for PC
 - 9. TPIC – review draft for PC
 - 10. TDPC – in PC
 - 11. TPPC – TI
 - 395 12. TPIC – TI
 - 13. TDRC – in draft
 - ii. **DECISION:** The IHE-RO TC voted to make the Common Instance Reference Module Mandatory (M) for all IODs created by Producer Actors in all IHE-RO Content Profiles currently in Trial Implementation, Public Comment, or Draft status (see list above).
 - 400 1. Real-World Exclusion: if the Study and Series UIDs for referenced instances are known, they shall be preserved in the Common Instance Reference Module.
 - 2. This requirement will be enforced for all IHE-RO Profiles listed above when they are promoted to Final Text.
 - 405 3. Approved without objection or abstention.
 - iii. This decision has implications for revising Test Tools and Test Procedures prior to the 2017 Connectathon.

[Adjourn for the day 9/30/16 @ 5:30pm]
 [Resume meeting 10/1/16 @ 8:35am]

- 410 u. Topic 11: BRTO-II (continued)
 - i. Christof reviewed a revised version (v1.3) of the BRTO-II Profile with changes
 - 415 1. Content Date and Time
 - 2. Removed General Image Module requirement
 - 3. Added ref to TDIC for General Image Module
 - 4. Removed Automated Contourer Actor

5. Common Instance Reference Module – required if reference information is available (all or nothing)

ii. Decubitus setup remains an option of this Profile.

420 iii. **DECISION**: The BRTO-II Profile (v. 1.3) was promoted to Trial Implementation without objections or abstentions.

iv. **ACTION 160910**: Christof to clean up BRTO-II Profile text and publish as v 1.4.

425 v. Topic 12: TDIC Progress – Thomas Schwere reviewed version 1.3 of the TDIC Profile.

i. Recent changes include: RT Image *in* Delivery State has been renamed as RT Image *from* Delivery State.

430 ii. Reorganized Content Modules for RT Image modules: separated base, from delivery, from delivery single-frame, and from delivery multi-frame cases. TDIC Profile requirements for attributes in these modules were discussed. Changes were recorded in version 1.3 of the profile document.

iii. The TDIC has already undergone a first round of Public Comment.

iv. **DECISION**: The TDIC Profile (v. 1.3) was approved for a second round of Public Comment without objections or abstentions.

435 v. **ACTION 160911**: Chris to prepare TDIC for Public Comment and forward to Mary Jungers.

w. Topic 13: TPIC Progress – Thomas Schwere reviewed version 1.2 of the TPIC Profile (July 2016).

i. Recent changes include renaming “RT Image in Planning *State*” to “RT Image in Planning”

440 ii. The TC discussed content requirements in RT Image Base Content and RT Image in Planning modules.

iii. The requirement that Block Sequence (300A,00F0) be absent for DRRs was removed.

445 iv. **DECISION**: The TPIC Profile (v. 1.3) was approved for a second round of Public Comment without objections or abstentions.

v. **ACTION 160912**: Chris to prepare TPIC for Public Comment and forward to Mary Jungers.

x. Topic 18: ROI Template – Walter Bosch reviewed a first draft of the ROIT Profile.

i. DICOM WG-6 has approved a work item to create Sup 196 Segmentation Creation Templates.

450 ii. Consider changing the

y. Topic 20: Review Minutes – August 16, 2016 TC Teleconference minutes were approved by the TC without objection or abstention.

z. Topic 21: Review Action Items (copied from minutes above)

455 i. **ACTION 160901**: Bruce to request CPRO update from Rishabh – Done

ii. **ACTION 160902**: Chris to forward ARRO Profile to Scott Hadley to request clarification of scope, i.e., what does it mean to archive and consume historic data? What is the Use Case? What is expected: Robust review/analysis of data? Re-calculation/re-planning?

460 iii. **ACTION 160903**: Sven to update TPPC Profile when CP 1658 and 1659 are approved

iv. **ACTION 160904**: Michael Owens to draft TPPC-II Profile using DICOM 2nd Gen RT Radiation Set and Tomotherapeutic Radiation IODs.

v. **ACTION 160905**: Bob Pekarek to draft a white paper using private attributes for Tomotherapeutic Beam Type in TPPC to assess feasibility and help assess buy-in from TMS vendors

465 vi. **ACTION 160906**: Chris to check with ICT regarding availability of legacy Test Tools on DVTK.org website

vii. **ACTION 160907**: Chris to draft a CP for MMRO-III to add a “Single Modality Registrator” Actor

470 viii. **ACTION 160908**: Jim Percy to draft a clarification of the Patient Position (0018,5100) values and corresponding Patient Orientation Codes supported by the MMRO-III Profile

ix. **ACTION 160909**: Walter to submit Application for 2017 Connectathon to IHE Testing and Tools Committee on or before April 9, 2017

x. **ACTION 160910**: Christof to clean up BRTO-II Profile text and publish as v 1.4.

475

- xi. **ACTION 160911:** Chris to prepare TDIC for Public Comment and forward to Mary Jungers
- xii. **ACTION 160912:** Chris to prepare TPIC for Public Comment and forward to Mary Jungers
- xiii. **ACTION 160913:** Chris to put confirmation of venue for 2017 Connectathon on TC agenda

III. Adjournment

480

- a. Meeting was adjourned at 11:44am on Oct. 1, 2016.