

**IHE-RO Technical Committee
Face-to-Face Meeting
September 17-18, 2012
Fairfax, VA**

**Technical Committee Chairs:
Bruce Curran, MS, ME
Chris Pauer, Accuray**

**IHERO Task Force Co-Chairs
Dick Fraass, Ph.D., FAAPM, FASTRO, FACR**

Mission Statement: *The American Society for Radiology 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.*

In attendance

Name	Affiliation	Email	Mon 9/17	Tue 9/18
Bruce Curran	RI Hosp.	bcurran1@lifespan.org	X	X
Chris Pauer	Accuray	cpauer@accuray.com	X	X
Walter Bosch	ATC/Wash. U.	bosch@wustl.edu	X	X
Stacy Loesch	Velocity Medical	stacy.loesch@velocitymedical.com	X	
Koua Yang	Philips	koua.yang@philips.com	X	X
Stefan Boman	Raysearch Labs	stefan.p.boman@raysearchlabs.com	X	X
Hakan Maclean	Raysearch Labs	haken.maclean@raysearchlabs.com	X	X
Sue Reilly	Elekta	sue.reilly@elekta.com	X	X
Kellie Russell	Elekta	kellie.russell@elekta.com	X	X
Christof Schadt	Brainlab AG	christof.schadt@brainlab.com	X	X
Martin von Siebenthal	Varian	martin.vonsiebenthal@varian.com	X	X
Rishabh Kapoor	Morgridge Inst.	rkapoor@morgridgeinstitute.org	X	X
Lakshmi Santanam	Washington Univ.	lsantanam@radonc.wustl.edu	X	
Sanjay Bari	Elekta	sanjay.bari@elekta.com	X	X
Bill Simon	Sun Nuclear	billsimon@sunnuclear.com	X	X

X = in person, W = via Webex

TENTATIVE AGENDA

(Times are in US Eastern Time)

- Goals, in proposed priority:
 - Communicate Testing Results from Connectathon
 - Discuss Testing Challenges and Changes
 - Profile Statuses and Discussion
 - Update on Industry and Standards work
- Day 1 (Monday, Sep 17)
 - 8:00 - Attendance and Review Meeting Rules
 - 8:30 - Review and Revise Agenda and Goals
 - 9:00 - Updates on ASTRO, RT Stakeholders, Planning Committee
 - 9:30 - Update on DICOM WG-7
 - 10:00 – Testing Process, Challenges and Changes
 - MMRO II – Frames of Reference
 - Dose Compositing
 - 12:00 - Lunch
 - 1:00 – Testing Results
 - 2:00 – ARTI and DCOM topics -Hakan
 - 2:30 – IHE-RO Helper - Rishabh
 - 3:00 – MMRO Registration Annotation - Christof
 - 3:30 – Machine Characterization – Koua
 - 4:00 – Wiki Display / Discussion – Christof / Chris
 - 4:30 – Profile Status Review and Work Planning / Elections
 - 5:00 - Adjourn
- Day 2 (Tuesday, Sep 18)
 - 8:00 – Agenda Review, Changes
 - 8:30 – Meeting Dates / Locations for 2012 -2013
 - 9:00 – QAPV Review – Use Cases for Difference Check
 - 10:00 – QAPV Status
 - 11:00 – Other Profile Work / Topics
 - 12:00 – Adjourn

Minutes

- A. Call to Order 9/17 @ 8:30 ET
- B. Attendance and Meeting Rules
- C. Setting of Agenda – Approved without objection
- D. Business
 - a. 9:00 - Updates on ASTRO, RT Stakeholders, Planning Committee (Bruce)
 - i. IHE-RO Task Force – nominations for co-chair
 - ii. IHE-RO Planning Committee – restructuring to emphasize clinical physicist / industry (marketing) involvement
 - iii. Tiered fee structure for industry membership in IHE-RO was presented – to be presented to ASTRO Board and go into effect Jan 2013. Fees are to be based on oncology revenue. Members have unlimited testing of IHE-RO Profile Actors at connectathons.
 - iv. New ASTRO Research Director, proposed RFP for IHE-RO Support

- v. Discussion of IHE-RO productivity and market appeal of profiles
- b. 9:30 - Update on DICOM WG-7
- i. Primary emphasis of WG-7 is preparation of Supplement 147 for Public Comment.
 - ii. Experimental Implementation sub-group has been formed to review and give feedback on Supp 147 and is expected to provide input (attribute requirements) for a future IHE-RO Profile
 - iii. A brachytherapy sub-group has been formed in WG-7
 - iv. A joint DICOM/IHE-RO subgroup on patient positioning has met. Parallel work on the DPDW Profile and DICOM Supp 160 is ongoing. The next meeting of this subgroup is anticipated in 2013.
- c. 10:00 – Testing Process, Challenges and Changes
- i. Review of Judges final results – presented for approval by Technical Committee.
 - 1. MOTION to approve results of 2012 Connectathon was APPROVED without objection.
 - 2. ACTION: Bruce to report results to vendors.
 - 3. Appreciation expressed to vendors who supported testing of profiles by others.
 - ii. Review of test process
 - 1. Suggestions for more efficient testing
 - a. Strict cut-off of deadlines for commitment to test
 - b. Test data be provided in advance to supporting Actors
 - c. Test data to Actors under test before connectathon (at least the first day)
 - d. Validated test data to be available at start of connectathon.
 - e. Rotating support for Archive
 - f. Guidelines for making best use of the connectathon document.
 - g. Test data to
 - iii. Review of Profiles Issues
 - 1. MMRO-II – Order of Frames of Reference in Registration Sequence (0007,0308) – ACTION: Sue to draft Change Proposal clarify MMRO-II Profile with respect to the order of Frames of Reference in Registration Sequence.
 - 2. Discussion of the meaning of R, R+, R*, R+* Type of DICOM attributes.
 - a. ACTION: Bruce to take to IHE Testing and Tools Committee for clarification
 - b. Review of Attribute Types and Requirements in DCOMP Profile:
 - i. Semantics of Tissue Heterogeneity Correction (3004,0014) values (VM: 1-3).
 - ii. All RT Dose attributes in DCOMP Profile have type R+, but not all would seem to need display.
 - iii. Dose Type – is PHYSICAL and EFFECTIVE sufficient?
 - iv. Dose Summation Type – Semantics of MULTI_PLAN appear to be overloaded – reference to multiple *plans* as well as multiple *doses*.
 - v. ACTION: Walter to clarify display behavior in “Required” or “Expected” Attributes Tables in DCOMP

Profile with assistance from Bruce. Tissue Heterogeneity Correction and Dose Type should be displayed – all others should be R+*.

- d. Nomination for Technical Committee Co-chair
 - i. **ACTION:** Sidrah to solicit nominations for Technical Committee co-chair.
- e. ARTI-II and DCOMP topics (Haken)
 - i. Source to Wedge Tray Distance (300A,00DA) (DICOM Type 3) – should remain R+ for physical wedges, but be changed to “Shall not be present” (O+* ?) for motorized wedges and for dynamic wedges.
 - ii. Discussion of Block Thickness (300A, 0100) and Block Material ID (300A,00E1) vs. Block Transmission – no changes suggested at present.
 - iii. Cumulative Dose Reference Coefficients and Dose Rate (300A,0115) – no changes suggested at present.
 - iv. Plan reference in DCOMP profile: referenced plans may not share Frame of Reference of Dose.
 - v. The DCOMP Registered Dose Compositor currently does not retrieve or use images. Most of the applications that act as Registered Dose Compositors use images. Should image retrieval be included for this Actor as an optional transaction? Consensus: Yes. Also add image retrieval as a required transaction to Registered Compositing Planner. **ACTION:** Walter, Bruce to add RAD-4.8 Modality Images Stored transaction to Registered Compositing Planner (Required) and Registered Dose Compositor (Optional).
- f. Meeting Dates / Locations for 2012 -2013
 - i. TC meeting following ASTRO 2012 – Nov. 1-3, 2012, Boston, MA
 - ii. WG-7 Meeting Dec. 3-7, 2012, San Diego, CA
 - iii. TC Meeting – Jan 14-18, 2013, location TBD (Florida?)
 - iv. WG-6 Meeting – Feb 4-6, 2013
 - v. WG-7 Meeting – March 1, 2013
 - vi. DICOM International Conf – March 14-16, 2013
 - vii. Connectathon 2013 – tentatively May 2013, ASTRO HQ, TC Meeting following (May 6 to 11 available at ASTRO HQ)
 - viii. Ion Subgroup – June 2-5, 2013
 - ix. WG-6 Meeting – Jun 17-21, 2013
 - x. WG-7 Meeting – Aug 8-10, 2013, Indianapolis / AAPM
 - xi. WG-6 Meeting – Aug 8-16, 2013
 - xii. ASTRO – Sept. 22-25, 2013 (TC meeting Sept. 26-28?)
 - xiii. WG-6 Meeting – Oct. 14-18, 2013
 - xiv. Domain Pre-Testing – Oct. 21-29, 2013 in Baden or Munich ??
 - xv. WG-7 Meeting – Nov. 18-22, 2013
- g. Wiki Display / Discussion – Christof / Chris
 - i. Christof and Chris have created an IHE-RO wiki as an alternative to the BBS for exchange of documents, support for testing, host for IHE-RO Helper (<http://www.ihe-ro.org/wiki>)
 - ii. **ACTION:** Hakan Maclean to maintain wiki content, pending approval of Raysearch management. Wiki subgroup to consist of Christof, Chris, Rishabh, Bruce, Haken, Sanjay.

- iii. **ACTION:** Lock down access to appropriate people in preparation for going live by end of calendar 2012. TC to review hosting for IHE-RO wiki by end of 2012.
 - iv. **ACTION:** Bruce to report on wiki to IHE Testing and Tools committee
- h. IHE-RO Helper – Rishabh
 - i. The IHE-RO Helper Web application (<http://www.ihe-ro.org>) was developed to provide information on interconnectivity and interoperability of RT applications.
 - 1. Rishabh
 - ii. Discussion of the request for a display of the entire RT workflow with an indication of the portions covered by IHE-RO Profiles to date.
 - iii. **ACTION:** Rishabh to incorporate clinically meaningful descriptions for Actors.
 - iv. **ACTION:** Rishabh to work on improved graphics for describing profiles
 - v. **ACTION:** Rishabh to provide mapping of IHE-RO Helper Connectivity Check names to IHE-RO Use Case and Profile names
- i. MMRO Registration Annotation – Christof
 - i. Discussion of using a segmentation property type code for defining a “Bounding region for registration” from Segmentation
 - ii. **ACTION:** Christof to send CP to include “Bounding region for registration” code to DICOM WG-6 and to DPDW Subgroup
- j. Machine Characterization – Koua
 - i. Koua Yang (Philips) is leading the development of a Machine Characterization exchange format in the MITA RT Section (Rajinder Dhada, chair). Working group includes Uli Busch and Sanjay Bari.
 - ii. Several vendors already have an internal representation for machine capabilities (available on BBS).
 - 1. Need to make it generic and extensible.
 - 2. Can this be a single XML DTD for all machines or a family of DTDs?
 - iii. **ACTION:** Koua to contact Rajinder
- k. Profile Status Review and Work Planning
 - i. Review of spreadsheet with status of IHE-RO Profiles **ACTION:** Rishabh to update status spreadsheet with Connectivity Titles and Use Case Titles
 - ii. Discussion of productivity issues
 - 1. Better use of subgroups?
 - 2. More use of teleconferences?
 - 3. Do we need a base maintenance group?
 - 4. More milestones to track progress?
 - 5. Develop a way to get public recognition for IHE-RO volunteer work.
 - 6. **ACTION:** Chris to develop ideas for ASTRO 2013, send emails by Oct 10, 2012
- l. Adjourn for the day - 4:35pm ET
- m. Agenda Review, Changes – 9/18/12 @ 8:35am ET
- n. QAPV Review – Use Cases for Difference Check – 9:00am ET
 - i. Review of “IHE-RO Use Case 2012 Quality Assurance with Plan Veto – Difference Check” document.

1. Discussion of terminology for plans: “intended”, “pending”, “draft”, “approved”, “delivery candidate”, “cleared for delivery”, ...
 2. Two modes of operation:
 - a. Dose Check – stateless evaluation of dose expected to be delivered from plan
 - b. Measurement / Difference Check – compares plan to be delivered (A) with a previously checked version of the plan (B)
 - i. Note that the plan A may or may not have the same instance UID as the previously checked plan B.
 - ii. If plans A and B do *not* have the same instance UID, how do we link
 3. The QAPV profile does *not* currently address the question of whether the plan to be delivered the *correct plan for today*.
 4. What are the criteria for how a QCP decides whether a candidate plan A matches a previously checked plan B?
 - a. Minimum requirements for candidate plan A
 - i. Patient name, MRN, DOB match
 - ii. Plan has been approved.
 - b. The basis for comparing plan *dosimetry* is out of scope for this profile.
- ii. Review of QAPV Profile v. 1.4
1. **ACTION:** Add definition of performance implied by Transaction Requirements (e.g., “R*”, etc.) to Header (Volume 1) of all Profiles.
 2. What additional requirements for DICOM RT Plan attributes would facilitate QCP comparison or analysis? None identified.
- iii. QAPV Timeline
1. Next target to move QAPV to Public Comment is TC meeting at ASTRO Nov. 2012.
 2. Two more teleconferences remain before the November face-to-face TC meeting. (Try to schedule Oct Tcon no earlier than 3rd week of October)
 3. **ACTION:** Chris to finish straw man of Difference Check Use case.
 4. **ACTION:** Chris to finish other version of QAPV Profile.
- o. Other Profile Work / Topics
- i. None at this time.

E. Adjourn – 11:25 am ET