IHE-RO Technical Committee
Meeting Minutes
September 25-26, 2010
8:30am – 6:00pm EDT

Technical Committee Chairs:
Bruce Curran, MS, ME
Stuart Swerdloff, PhD

IHERO Task Force Co-Chairs
Jatinder Palta, Ph.D.
Prabhakar Tripuraneni, M.D., F.A.C.R., F.A.S.T.R.O.

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	Sa	Su
Bruce Curran	Rhode Island Hosp.	Bcurran1@lifespan.org	X	X
Walter Bosch	Wash. Univ./ATC	bosch@wustl.edu	X	X
Sanjay Bari	Elekta	Sanjay.bari@elekta.com	X	X
Paul Snyder	Tomotherapy	PSnyder@TomoTherapy.com	X	X
Chris Pauer	Tomotherapy	CPauer@TomoTherapy.com	X	X
Annie Ju	Accuray	aju@accuray.com	X	X
Ulrich Busch	Varian	Ulrich.busch@varian.com	X	X
Ashutosh Shirsat	Siemens	Ashutosh.shirsat@siemens.com	X	X
Lakshmi Santanam	Washington Univ.	lsantanam@radonc.wustl.edu	X	
Koua Yang	Philips	Koua.yang@philips.com	X	X
Harold Beunk	Nucletron	Harold.beunk@nl.nucletron.com	X	X
Scott Mark	Third Way Software	sjm@pobox.com	X	X
Summer Mark	Third Way Software	sjm@pobox.com	X	X
Sue Reilly	Elekta	Sue.Reilly@elekta.com	X	X
Ulrich Beifuss	BrainLAB	Ulrich.beifuss@brainlab.com	X	X
Stuart Swerdloff	Elekta	Stuart.swerdloff@elekta.com	X	X
Rishabh Kapoor	U. Florida	rkapoor@ufl.edu	X	X
Norman Trapp	Siemens	Norman.trapp@siemens.com	X	X

Meeting Schedule

	9/25/2010	9/26/2010
Call to Order	8:30	8:30
Adjourn	18:00	

Meeting Notes

I. Call to Order – Sept. 25, 2010 @ 8:30

a. Approval of Agenda [9/25/2010 @ 9:00]

- Approval of minutes
- Review of Connectathon
- Judges meeting
- ARTI Profile change proposal
- New Profiles
- Connectathon results
- Planning Committee meeting summary
- 2011 Meeting Schedule

b. Approval of previous minutes

- Domain Pre-testing meeting (June 8-11, 2010) minutes – approved without objection
- Technical Committee T-con (July 29, 2010) minutes – approved without objection

II. Review of Connectathon

a. Review of observations from Connectathon

- ARTI
  1. Mass density v. electron density
  2. Bolus in Structure Set for ARTI
  3. Field size for Elekta motorized wedge
  4. Candelis archive – no instance level access to RT Plans
  5. Test tools do not check Plan Intent
  6. Physical wedge in combination with dynamic wedge (see Sue Reilly's ARTI spreadsheet)
  7. Changes in final control point, e.g., Dose Rate (legal in profile, but rejected by Consumer Actor)
- TDW
  1. Optional transaction with incorrect information (did not affect interoperability – to be corrected by vendor)
  2. ID Safety issues for "token plans"
  3. Limited testing for Delivery Instruction (
  4. Study Instance UID – use value in C-FIND response for instances created by TDD

5. No explicit 100% status update before completion required in TDW profile (make consistent with IPDW, DPDW?)

- General
    1. Limited number of test partners (some Actors failed or did not test)
        a. Success with at least two full test partners is needed for an Actor to pass
    2. Product versions - Tested versions versus released versions
        a. Rishabh to research how product versions are tracked in other IHE domains
        b. Reminder that vendors are to submit Integration Statements including profile, product, version, and date before connectathon

III. **New Profiles Discussion: Radiation Oncology schedule and Treatment summary** (ROIS/HIS integration) 9/25 @ 11:00 [Discussion notes provided by Stuart Swerdloff]

a. Patient Demographics, Scheduling, Billing.
b. Patient Demographics between HIS and TMS, and between TMS and RO Department (Imaging, Planning, other activities). Understood.
c. Outbound Billing Information. Understood.
d. Scheduling and Treatment Summary. Need details on what information is needed for Treatment Summary (who are the users of the Treatment Summary, to what purpose will it be used). "Clinic's staff to be aware of any radiation related issue" (what level of detail is needed?, what is the role of the information, what decisions will be made based on this information).
e. All aspects of patient's medical history?
f. Is the intent that a patient who is undergoing RT ends up at the ER (for other reasons besides the primary diagnosis of Cancer?) to address the information requirements for the ER to properly diagnose and then treat the patient? What is the information about their treatment schedule that is important?
g. Integral Dose to date (to which treatment sites), Integral Dose for current course of therapy to which Treatment Site.
h. Patient Appointment schedule information (primarily appointment time for RT treatment back to the HIS so it won't double schedule the patient).
i. Intent to "archive" schedule has to do with keeping a history of what appointments were made, completed, missed, rescheduling?
j. Appointment aspects of patient having completed their RO appointmentn (time and place).
k. Medical (dose, adverse effects, inability to complete due to illness) aspects of patient having received treatment during an appointment. Who gets this information outside of the RO department? What data is likely that they will be able to read (documents? HL7 messages? DICOM Structured Report?)
l. Need a separate Use Case for Reconciliation (Patient Demographics changes on HIS, needs to go to TMS, needs to go to individual systems).

Recommendation: This use case should be compared to the existing ESI use case and draft Supplement proposal. Differences should be identified as well as any gaps.

IV. **IHE-RO 2010 Connectathon Results** 9/25 @ 13:15

a. Test Committee Report presented to the IHE-RO Technical Committee by Bruce Curran. No objections to these results were raised.

b. Discussion of requirements for ARTI Actors
   - An ARTI Producer need *not* be an ARTI Consumer.
   - ARTI Consumers must make *meaningful use* of the RT Plans they consume. *Meaningful use* must be interpreted in the context of the intended use of the application and must include semantic (clinically appropriate) use of data.
   - Is an ARTI Consumer *required* to be a Treatment Planning System? I.e., does an ARTI Consumer also need to be plan producer? E.g., could a Plan Reviewer (without dose calculation) function as an ARTI Consumer? Answer: Yes, as long as the Actor makes clinically meaningful, non-trivial use of the entire RT Plan. (This position was not unanimous. A second opinion is that Actors must be constrained to explicit consistency with the Use Case.)
   - Action: we must pay more careful attention to semantic description of *Actors* and their consistency with Use Case and Profile.

c. Actors that could not be approved due to insufficient number of test partners (fan-in/fan-out) can be re-tested in 2011 at a reduced fee.

d. Kudu tools to be used for scheduling and workflow management in 2011 Connectathon.

V. **Future Technical Committee Meetings**

a. IHE-RO Technical Committee Face-to-Face Meetings
   - **ASTRO 2010** Oct 31 – Nov 4, 2010 at San Diego Hilton
     1. Joint PC/TC meeting Nov 2
     2. TC meeting Nov 4-6 (8:30 am – 6:00 pm each day)
   - January 24-28, 2011 in Mountain View, CA
   - **Domain Pre-testing** May 3-12, 2011 (TC meeting May 3-6, Testing May 7, 9-11, Half-day wrap-up meeting May 12)
     1. Possible venues: Siemens (Heidelberg), Varian (Zurich/PSI), or Elekta (Stockholm) → **TBD 11/6/2010**
     2. Profiles: Dose Compositing, IPDW, new actors on old profiles
   - **Connectathon 2011** – ASTRO HQ, Fairfax, VA, Sept. 13-19, 2011 (check availability)
     1. Setup Sept 13
     2. Testing Sept. 14-17
     3. TC meeting Sept 19-20 (noon)
   - **ASTRO 2011** - Tentatively Thurs 10/6/11 – Noon Sat 10/8/10

b. Related meetings
   - ESTRO
     1. ESTRO Physics Conf. May 8-12, 2011, London

2. ESTRO Ann Mtg. Sept 23-27, 2011, Stockholm, SW

- AAPM Annual Meeting
  - July 31-Aug 4, 2011, Vancouver, BC
- ASTRO Annual Meeting
  - Oct 31 – Nov 4, 2010 in San Diego, CA
  - Oct 2-6, 2011, Miami, FL

- PTCOG, May 8-15, 2011 in Philadelphia
- WG-7
  - Dec 7-10, 2010 (MITA, Washington, DC)
  - Mar 29-Apr 1, 2011 (Munich)

VI. **New Profiles Discussion: Anonymization** 9/25 @ 16:20

a. Related documents
   - slides from Charles Able under Use Case on IHE wiki
   - IHE-RAD Teaching File and Clinical Trial Export (TCE) Section 17

b. Use cases:
   - De-identification for vendor support, data sharing among clinics, clinical trials, registries, MOC, …
   - Encrypted data transport,…

c. Questions
   - Is this an interoperability issue or is it an *operability* issue?
   - What are Actors? Anonymizer? Re-identifier? What *other* actors? Existing IHE-RO actors?
   - What is intended scope of use? What activities are to be performed on anonymized data? How do we test?

d. Technical Committee Response:
   - Problem statement needs to be more clearly defined.
   - This appears to be a *consistent functionality* problem, not actually an interoperability problem.
   - The problem of encrypted, secure transport using a standardized method of public key encryption is an interoperability issue. This is a problem that has been addressed by others. Not a DICOM problem. Perhaps ITI has addressed this problem.
   - Could define standardized rules for anonymization (this is application functionality, not interoperability (RT addendum to DICOM Supp 142?)

Adjourn for the day 9/25 @ 18:00

VII. **New Profiles Discussion: Patient Safety** 9/26 @ 8:40

a. Related documents:
   - slides under Patient Safety Use Case on IHE wiki
   - AAPM TG-201 QA of Data Transfer – report in preparation, release expected in the next month

- AAPM TG-100 – to recommend FMEA analysis at clinic level, expected release end 2010

b. Discussion
   - Interoperable communication enables the procedures and practices that are needed to assure the quality of data transfer.
   - Round-trip checks of plan information to assure safety of import, export, transformations
   - Archive/database fidelity issues: safety implications of Level 0, 1, 2
   - Data transfer safety involves both (a) transport and (b) transformation
   - Independent, redundant checks are needed to compare plan *to be delivered* with plan that was *approved*. Possible methods include
     1. pre-fetch test
     2. treatment record comparison
     3. independent abstract of plan parameters
     4. comparison of planned dose with re-calculated or measured dose

   - Possible IHE-RO roles include
     1. Improve semantic interoperability for communication of plans in workflow
     2. Enable transactions that support redundant checks / round-trip comparisons

   - Clinical scenario: Plans are created and approved; transferred to TMS; second check performed on plan; approved plan checked by physicist (may involved both unstructured and structured plan representations); plan verified by comparing planned and delivered dose (method varies); plan delivered
   - Second channel is needed for communicating approval of procedures and associated content
   - Not just about "happy path" – need capability to catch unforeseen failures

c. Recommendations
   - Use case is desirable, but there is insufficient information at present to proceed. We need a more complete conceptual framework before we can develop a technical framework.
     1. What needs to be enforced?
     2. What processes need to be automated?
     3. What interoperable communications are needed to support patient safety processes?
   - The most useful and appropriate source for this conceptual framework is expected to come from AAPM TG-201 and TG-100 reports and the Radiation Oncology industry-led RT Readiness Check Initiative
   - The IHE-RO Technical Committee will identify its role once the conceptual framework is developed.

VIII. Action Items

a. Evaluate use cases

- Anonymization Use Case – Walter to lead effort
- Patient Safety Use Case – Bruce to lead effort
- RO Workflow/HIS Integration Use Case – Stuart to lead effort

b. Integration Statements are due to Bruce by Oct 15, 2010
c. Bruce to formally inform TC and PC vendor reps of positive results from 2010 Connectathon by Oct. 4. Notification of "rain checks" to be sent out within two weeks.

IX. Adjourn 9/26 @ 11:15