IHE-RO Technical Committee
Face-to-Face Meeting
April 17-20, 2012

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

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.*

AGENDA
(Times are in US Central Time)

- Goals, in proposed priority:
  - Follow up on outstanding action items.
  - QAPV Review with intent to move to Public Comment
  - Proposal on how to handle retired, deprecated profiles
  - ARTI
  - Structure Set Templates – Review, Assist
  - Patient Registration and Workflow with CT Sim
  - TDW 2 – Next steps
  - TDW Advanced Content

- Day 1 (Tuesday, Apr 17)
  - 8:30 - Attendance and Review Meeting Rules
  - 9:00 - Review and Revise Agenda and Goals
    - Taking on new profiles?
  - 10:00 - Updates on ASTRO, RT Stakeholders, Planning Committee
  - 11:00 - Update on DICOM WG-7
  - 12:00 - Lunch
  - 1:00 - Judges / Test Data topics / Test tools
  - 2:00 - QAPV Review
    - CP 1138
  - 5:30 - Take stock of QAPV state, action plan for further week activities and review.
  - 6:00 - Adjourn
- Day 2 (Wednesday, Apr 18)
  - 8:30 – Handling retired, legacy profiles: versioning, adherence
  - 9:30 – ARTI profiles
    - New Profile as extension

        - Photon_Square
        - Review / Changes
    - 11:30 – IPDW
        - Revision of Section 1.3 “Profile and Device Capabilities”
        - Review / Changes
    - 12:30 – Lunch
    - 1:30 – MMRO , MMRO-II to Trial Impl? / MMRO-III
    - 2:30 – Coordinating diverse groups in RO; RO Standards Conference?
    - 3:00 – Making IHE-RO more clinically relevant, clearer
    - 3:30 – Connectathon
    - 4:30 – BrachyTherapy sub group, questionaire.
    - 5:00 – Patient Registration and Workflow with CT Sim
    - 6:00 - Adjourn
- Day 3 (Thursday, Apr 19)
    - 8:30 – QAPV Review
    - 12:30 - Lunch
    - 1:30 - New Profile / TDW Advanced/ QPV Review if more time needed.
    - 5:30 – Take stock of next day’s agenda
    - 6:00 – Adjourn
- Day 4 (Friday, Apr 20)
    - 8:30 – DPDW Subgroup
    - 9:00 – TDW2 – Next Steps
    - 9:30 – ARTI Comment by Haken
    - 10:00 – MMRO Coments by Haken
    - 10:30 – QAPV Simulator
    - 11:00 – Review Action Items
    - 11:30 – Other Topics
    - 11:45 – Adjourn

ATTENDEES

Name	Company	Email	4/17	4/18	4/19	4/20
Chris Pauer	Accuray	cpauer@accuray.com	X	X	X	X
Bruce Curran	RI Hosp./ASTRO	bcurran1@lifespan.org	X	X	X	X
Christof Schadt	Brainlab	Christof.schadt@brainlab.com	X	X	X	X
Walter Bosch	ATC/ASTRO	bosch@wustl.edu	X	X	X	X
Harold Beunk	Elekta	harold.beunk@elekta.com	X	X	X	X
Daniel Lafontaine	Hermes Medical	Daniel.lafontaine@hermesmedical.com	X	X	X	
Koua Yang	Philips	koua.yang@philips.com	X	X	X	X
Ulrich Busch	Varian	ulrich.busch@varian.com	X	X	X	X
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Eli Stevens	Mobius Medical	elis@doselab.com	W			
Colin Sims	Accuray		W			
Richard Popple	UAB				W	
Alf Siochi	U Iowa				W	

X = in persion W = via Webex

MINUTES

I. Call to Order 4/17/12 @ 8:40 am

II. Review and Revise Agenda and Goals

III. Business

A. Updates on ASTRO, RT Stakeholders, NROR, Planning Committee

1. RT Stakeholders – Bruce reported on activities in RT Stakeholders. The working group on errors is preparing to publish a report. The usability working group is working to develop consistent user interface / messages. The RT Stakeholders QA group is drafting document on manufacturer QA recommendations for products.
2. Planning Committee – Chris reported on the IHE-RO planning committee meeting held on Feb. 25th. Concern was expressed that the significance of IHE-RO profiles are not well understood in the community. A search is underway for appropriate venue(s) to publish articles and or white papers on IHE-RO Profiles (scope, significance, benefits, and clinical issues). Vendors should publicize IHE-RO related capabilities/benefits in adherent products.
3. Chris reviewed a "ForVendors.pdf" flyer (on BBS) created to invite vendor participation in IHE-RO.
4. An IHE-RO demonstration/presentation should be considered for AAPM and/or ASTRO: information booth with regular presentations.

B. Update on DICOM WG-7 (Uli Busch)

1. Uli reviewed WG-7 work on Supp 147. A few issues remain to be resolved before final reading by WG-6.
2. Christof reported on a meeting of patient positioning sub-group in Brussels at the end of February reviewed the DPDW Profile. The IPDW and DPDW Profiles are dependent on the content of the PWF Supplement, which is currently in development. It is expected that the PWF Supp will be approved for public comment in 2013.
3. The sub-group on Trial Implementation has been re-activated. Initial focus is on the Segmentation and Segmenation Properties IODs.
4. CP 1138 "Average Beam Dose Parameters" (in preparation) provides geometric parameters for beam dose verification QA checkers in the QAPV Profile.
5. Image dose reporting – It is unclear whether the IHE Radiation Exposure Monitoring Profile (Nov 2010) is adequate to address legal reporting requirements for image dose reporting. DICOM WG-28 is also investigating image dose monitoring. WG-7 is monitoring and will cooperate as appropriate.

B. Judges / Testing Discussion

1. Re-testing of ARTI actors for which there were inadequate number of test partners at the 2011 Connectathon. Actors from two vendors were tested.
2. The Test Committee is working to acquire compensator test data for TMS Actors.
3. Discussion of Dose Compositing Profile: Changes to the profile based on trial implementation experience to be discussed on Thurs: (optional) image retrieval, dose transformation (without compositing) use case, dose derivation codes.
4. MOTION: **Technical Committee approves the completion of connectathon testing of Varian Aria/Eclipse as a Consumer for the following ARTI actors: Arc Beam, MLC Arc Beam, Conformal Arc Beam, Static Electron Beam, Static**

Stereo Beam, Arc Stereo Beam, and Sliding Window IMRT Beam. Seconded. Approved unanimously.

5. Discussion of testing for MMRO-II Profile (public comments to be collated and reviewed for move to trial implementation later in this meeting). Do the Test Tools need to be updated for the new Profile prior to formal testing? Are test tools needed for all profiles? Proposal to use MMRO dataset(s) for limit testing with the MMRO-II Profile (consumers should reject with appropriate message).
6. ACTION: Bruce to investigate the potential for (a) updating test tools for MMRO-II (modify from MMRO) and (b) develop test tools for the Dose Compositing Profile.
7. Testing discussion
    a. A suggestion was made to improved documentation of testing procedure and reporting of test results to vendors.
    b. An ARTI evaluation checklist is being prepared (based on ARTI spreadsheet).
    c. Discussion of connectathon logistics. Judges should continue to maintain a table of what testing is needed. More frequent status updates would be helpful.
    d. Experienced judges should be paired with less-experienced judges.
    e. Improved communication of machine characterization. ACTION: Uli, Sanjay, and Koua to review and simplify machine characterizations.
    f. Concern expressed about the level and manner in which attributes are displayed to demonstrate adherence to the profile.

C. QAPV Profile Review (4/17/12 @ 1:05pm)

1. Review of QAPV Profile draft (IHE-RO_QAPV_Supplement_0.14.doc)
    a. Change sense of QA outcome from "Check Passed" to "Critical Issues Found" (= Yes for plan veto)
    b. Make Mandatory: Datetime, Summary of Result, and Plan SOP Instance UID.
    c. If quality check is cancelled, i.e., could not be performed, should this be reported in the Structured Report? No. "Reason for Cancellation" and Cancellation Code in the UPS is adequate to convey the fact and reason for failure to complete the quality check.
    d. Include identification of Quality Check Requester in Structured Report? Yes.
    e. Store Quality Check Requester information in a Device Participant template? Get from Contributing Equipment Sequence (in UPS SOP Common)? Alternatively, could include in Quality Check Performer *configuration*. ACTION: Uli to clarify (with WG-6) what information about the QC SCU can be put into the UPS.
    f. Discussion of detailed assessment reporting in Radiotherapy Treatment Plan Check Request Result Structured Report. Proposal to define Assessment Code for each QA issue assessed by Quality Check Performer. At least one Assessment Code (may be non-specific) must be reported if Issues Found = Yes.
2. Review of DICOM CP 1138 "Average Beam Dose Parameters"
    a. CP defines average depth and average effective depth values for independent dose verification systems can compute dose values for arc plans. It defines Beam Dose Verification Control Point Sequence (linked to actual beam control point sequence via cumulative meterset weight).
    b. The decision about whether to deprecate or retire the "old" attributes, e.g., Beam Dose Point SSD (200A,008A), is pending, but the remainder of the CP is in near-final form. (Version 14 is expected to be final.)
3. Discussion of reference doses for dose QA checks

a. RT Plan Prescription Module dose (coordinate-based versus volume-based dose reference types) – useful prescription information may not be available or realistic.
b. Beam Dose (300A,0084) in Fraction Scheme – could Require this attribute (DICOM Type 3)
c. Absolute "sane" dose value – difficult to make global assertions about this value if calculation point is different for different beams

4. The information in RT Plan (Fraction Scheme, Beam, and control point level) can be used to compute dose at Beam Dose Specification Point(s) to within about 20%.
5. QA criteria must be defined with a knowledge of the expected range of dose values for a particular dose reference normalization scheme.
6. ACTION: Chris to survey QA vendors with a "straw man" set of RT Plan attributes for use in dose calculation to get their response. What attributes are commonly present in the RT Plan instances they process?
7. ACTION: Chris to make changes to Structured Report specification for review on Thurs. COMPLETED.

D. Handling retired, legacy profiles: versioning, adherence (4/18/12 @ 8:40am)
1. Currently there is no versioning of Profiles. New versions of a Profile have *new names*. Adherence of actors is tracked by year in which the Connectathon is passed.
2. Concern was expressed that a multiplicity of profile versions will (a) make it difficult to find sufficient test partners for any given version and (b) will increase the burden on testing bandwidth.
3. It is recognized that it may be difficult to retire old profiles due to the existence of old product versions in clinics. It should also be recognized by vendors that finding an adequate number of test partners for older profiles will become increasingly difficult, especially for workflow profiles.

E. ARTI profiles (4/18/12 @ 9:20am)
1. Current state of ARTI Profile Supplement
a. Volume 1 has been re-written using the general IHE supplement format. Transaction Options (beam modifiers) are expressed as Actor Options. Volume II has been re-written as a separate document, and still needs to be combined with Volume I.
b. DECISION: Information detailing attribute requirements for transactions are currently in an appendix. This information is to remain in the appendix.
c. ACTION: The spreadsheet detailing attribute requirements for various beam types is to be reformatted as a white paper to accompany the ARTI Profile.
2. ARTI tags for stereotactic applicator are those defined prior to CP 1010 (2009) – only defines Applicator Type (300A,0109) of STEREOTACTIC (not PHOTON_SQUARE)
a. ACTION: Christof to create new ARTI-II Profile with the following changes
i. Remove Stereotactic Beam and Stereo Arc Beam
ii. Add Photon Applicator Beam Type and Arc Photon Applicator Beam Type (with High Dose Rate option)
iii. Require inclusion of Primary Fluence Mode Sequence (3002,0050) to improve safety
iv. Clarify requirements for TMS Consumer Actor(s)

3. Review / Changes

a. ACTION: TC members to review the ARTI Beam Type Attributes spreadsheet (on BBS) and return comments before May IHE-RO TC Teleconference on May 17.

F. IPDW (4/18/12 @ 10:35am)
1. Bruce reported that the IPDW Profile (Rev2.0_PC_2012-03-09) was distributed for public comment on or about 3/9/12. As of 4/18/12, no comments have been received via IHE, on the BBS, or by direct email. (Confirmed with Mary Jungers.)
2. MOTION: **Move IPDW Profile to Trial Implementation**. Seconded. Approved unanimously.
3. ACTION: Bruce to update IHE website.
4. Discussion of Test Tools for IPDW. Informal testing is possible in Sept 2013. Possible connectathon testing (optimistically) Spring 2014.
5. ACTION: Bruce and Uli to prepare draft RFP for IPDW Test Tools. Test data (plans) needed.

G. MMRO / MMRO-II / MMRO-III (4/18/12 @ 10:55am)
1. Changes (typos) corrected prior to release for PC.
2. Bruce reported that the MMRO-II Profile (Rev1.0_PC_2012-03-09) was distributed for public comment on or about 3/9/12. As of 4/18/12, no comments have been received via IHE, on the BBS, or by direct email
3. MOTION: **Move MMRO-II Profile to Trial Implementation**. Seconded. Approved unanimously.
4. ACTION: Bruce to update IHE website.
5. Testing of MMRO-II Profile is possible at 2012 Connectathon.
6. ACTION: Bruce to investigate whether MMRO Test Tools can be updated to MMRO-II.
7. MMRO-III
   a. Current MMRO, MMRO-II Profiles address registration for *treatment planning*.
   b. Motivations for creating a new MMRO-III Profile (changes from MMRO-II) include the following:
      i. Allow non-CT primary images for pre-planning (e.g., for stereotactic radiosurgery), MR-based treatment planning, and use of neurosurgical images/segmentations [unanimous agreement]
      ii. Support for Deformable Spatial Registration [proposed as an option to be evaluated]
      iii. Allow corrections (non-unity transformation) in shared Frame of Reference ("hybrid" scanner) datasets without creating new image instances. [low priority]
      iv. Allow daisy-changing multiple registration [suggested with some support]
      v. Support for Well-known Frames of Reference (e.g., Atlases) [suggested with some support]
      vi. Support for > 2 Frames of Reference in a single Spatial Registration instance.
      vii. Support for nD Presentation State
   c. Discussion topics
      i. Universal agreement that (a) non-CT images should be allowed as "primary" and (b) the concept of "primary" image should be abandoned.
      ii. Discussion of daisy-chaining, i.e., composing registrations between images A, B and B, C: $A \rightarrow B \circ B \rightarrow C \approx A \rightarrow C$

iii. Question was raised regarding references to non-image instances (dose, structure set) in the Referenced Image Sequence within the Registration Sequence of a SRO. MMRO-II refers to "instances" (e.g., images).
iv. Can the Profile be written in terms of Registration Producer and Registration Consumer Actors? I.e., are requirements for SRO storage and retrieval sufficiently general across clinical contexts?

d. ACTION: Christof Schadt to draft a MMRO-III Use Case for presentation to the IHE-RO Planning Committee.

H. Coordinating diverse groups in RO; RO Standards Conference (4/18/12 @ 1:25pm)
1. Subgroups
   a. WG-7: Ion, Brachy, Positioning, Trial Implementation
   b. IHE-RO: DPDW
2. Current meetings
   a. WG-7 – Spring, AAPM, Late part of year
   b. IHE-RO – Early part of year, Connectathon, ASTRO, Domain Pre-Testing
   c. AAPM 2013 – Aug. 4-8, 2013, Indianapolis, IN
   d. ASTRO 2013 – Sep 22-25, 2013, Atlanta, GA
3. Objectives
   a. Allow for normal business of IHE-RO and WG-7
   b. Ease participation of smaller vendors
   c. Allow "drop-in" attendance based on interest

I. QAPV Simulator (4/18/12 @ 2:45pm)
1. Chris demonstrated a QAPV-simulator being developed with Koua Yang (see http://code.google.com/p/qapv-simulator/)
2. Java code is based on DCM4CHEE; objects are persisted as files.
3. Simulates both QC Requestor and QC Performer
4. The intent is to make this a downloadable (jar) package.

J. Connectathon (4/18/12 @ 3:15pm)
1. Preliminary schedule (3/15/12 teleconference) Connectathon 9/5-8,11-12; TC meeting 9/13-14
2. An alternative schedule was proposed to avoid a break in the testing schedule and minimize the number of days engineers will need to be present. Proposed schedule: Connectathon 9/10-15, TC meeting 9/17-18. ACTION: Bruce to contact Sidrah ASAP to check availability of ASTRO facilities. COMPLETED: new dates are finalized.

K. BrachyTherapy sub group, questionnaire (4/18/12 @ 3:55pm)
1. ESTRO Brachytherapy QA physics group questionnaire was discussed.
2. Issues related to exchange of brachytherapy plans were discussed. Consensus that an IHE-RO Brachytherapy Plan Profile could be developed to address the primary concerns of the BRAPHYQS group.
3. ACTION: Bruce to report to Clinical Trials QA Harmonization Group meeting at ESTRO, May 10, 2012 in Barcelona.
4. ACTION: An IHE-RO Brachytherapy sub-group (joint effort with DICOM WG-7) is to be created. Clinical input to be solicited.

L. Patient Registration and Workflow with CT Sim – no update at this time.

M. IEC Standards and Effects (4/18/12 @ 4:35pm)

1. Discussion of IEC Draft (Project 60601-2-68 Ed.1) to address basic safety concerns in X-ray based IGRT radiotherapy
2. ACTION: Uli to review the IEC 62C 538E document and report on any issues that affect delivery profiles.

N. QAPV Review (4/19/12 @ 8:30am)
1. The QAPV Profile has been in development since March 2011. The overall structure of the Profile is now well established. Details of the content of attributes and QA Structured Report are still being worked on.
2. There is a potential for coding (i) the Type of check to be performed, as well as (ii) the Clinical Context in which the check is to be performed:
   a. "Critical Check" for Plan Veto
   b. Simulated Treatment without patient on the table (same as (a)?)
   c. Routine Check (not in scope for this Profile)
3. New workitem code(s) are needed: "RT Treatment QA for Plan Veto", "RT Plan Difference Check for Plan Veto"
   a. The same workitem codes are expected to work for both RT Plan and RT Ion Plan
   b. Open questions: How many codes? Do we need to distinguish multiple QA checks? Separate codes for high dose techniques?
   c. If the QCP does not support all types of checks, it should at least support the behavior of rejecting an unsupported workitem in a clear manner.
4. For high doses, such as those used for SRS, the High Dose Technique (300A,00C7), Primary Fluence Mode Sequence (3002,0050), and Applicator Type (300A,0109) attributes of RT Plan could be an R+. This would provide an indication that the dose is planned to be higher than usual. For the first version of the Profile, this will likely not be required, but should not be ignored.
5. Review of QC Structured Report template. Changes include
   a. Removed top-level "Issues Found"
   b. QCP is not obligated to report results of checks that did not find critical errors.
   c. Remove "Check Label" (redundant with Assessment Code *meaning* string).
   d. Add "Maximum Issue Severity" {Critical, Informational} to indicate whether a Check could result in a Critical Issue Found.
   e. Add "Informational Issue Found"

O. DCOMP (4/19/12 @ 1:55pm)

1. Issues identified during Domain Pre-Testing:
   a. The Profile does not explicitly reference images associated with Spatial Registrations.
   b. Spatial Registration requires Image References (Spatial Registration Retrieval [MMRO-II-2] Transaction)
   c. Proposal to amend the Profile to support a related Use Case allowing spatial transformation of doses.
2. Discussion of methods for referencing Spatial Registrations used for dose compositing or transformation.
   a. Can the Referenced Image Sequence (0008,1140) in the General Image Module be used to reference a Spatial Registration object used to create a Composite Dose instance?
3. Proposed Modifications to the Dose Compositing Profile

a. Create a new Registered Dose Producer Actor to support dose transformation. Transactions to include General Dose Retrieval, Utilize Spatial Registrations, and (new) Registered Dose Storage.
b. Add optional transactions to Store Deformable Spatial Registration (new) and Utilize Deformable Spatial Registration (new)
c. Add Modality Images Stored [RAD 4.8] to the three compositor actors. Should this be optional or mandatory? Alternatively, create new Actors with this transaction.
d. Update the Profile to reference MMRO-II transactions consistently.
e. Use the following attributes to annotate composited/transformed doses for Composite Dose Storage and (new) Registered Dose Storage Transactions with derivation codes and instance references:
    i. Derivation Description (0008,2111)
    ii. Derivation Code Sequence (0008,9215) with Codes for Spatial Resampling and Compositing
    iii. Source Image Sequence (0008,2112) to reference RT Dose, Registration, and possibly images.
f. Update the Profile to the new Supplement template.
g. Consider inclusion of a (new) Simple Plan Retrieval Transaction to provide linkage to dose instances.

4. ACTION: Bruce and Walter to draft a proposal for changes to the Dose Compositing Profile; Survey vendors' requirements for data management (Plan-to-Dose linkage). See proposed modifications above.

P. QAPV (continued) (4/19/12 @ 3:50pm)
1. Discussion of "Sample Questionnaire on Attributes Required for Critical Dose Calculation" draft document (see BBS Safety Subgroup Thread) to be sent to QA vendors.
2. Review of QAPV Profile, Volume 2 – Transactions – Changes recorded in "IHE-RO_QAPV_Supplement_0.14.pdf.doc" document.
3. ACTION: Chris to clean up document and post to BBS.

Q. DPDW Subgroup (4/20/12 @ 8:35am)
1. Uli reported that the DPDW subgroup is to be reactivated. A call for participation is to be issued.
2. DICOM WG-7 Positioning and Workflow Sub-group meeting was held in Brussels in Feb 10-13 2012 – interest expressed by some vendors, but with concerns that the Profile may impose too strong an influence on the architecture of their products. Several patient positioning products do not expose internal interfaces.
3. Open issues include:
    a. Inclusion of imaging between beams
    b. Actor combinations – some applications implement combinations of Profile Actors and may not expose Transactions between those Actors
    c. "Delegation" of positioning sub-tasks to applications.

R. TDW-II – Next Steps (4/20/12 @ 9:00am)
1. The TDW Profile is in Final Text. Several products using the Profile are on the market.

2. TDW-II includes changes to reflect incorporation of Supps 74 and 96 in to the DICOM Standard. The current version is to be reviewed in preparation for Public Comment.
3. Updated Test Tools will be needed for TDW-II.
4. ACTION: Sue to post current version of Supplement on BBS. COMPLETED Sanjay and Uli to review.

S. ARTI Comments from Haken Maclean and others (4/20/12 @ 9:25am)
1. ARTI Block Thickness and Material ID - the ARTI Profile requires blocks to have Block Thickness and Material ID. DICOM allows Block Transmission to be used. Suggested change to allow either Block Thickness and Material ID *or* Block Transmission.
   RESPONSE: The selection of Block Thickness and Material ID was chosen by consensus of vendors in the TC. The requirement that these attributes be present was based on support for block cutters. At this late date, the TC does not believe it is viable to create an alternate path for the ARTI profile. (This issue may be re-visited for ARTI-II.)
2. ART Source-Wedge Tray Distance - Suggestion that Source to Wedge Tray Distance (300A,00DA) R+ should only be required if Wedge Type (300A,00D3) is not DYNAMIC or MOTORIZED. Responses discussed
   (A) Wedge Tray Distance (300A,00DA) remains R+ for PHYSICAL wedges and changes to O+* for DYNAMIC and MOTORIZED wedges.
   (B) No change to ARTI: Wedge Tray Distance (300A,00DA) remains R+ for all wedges
   RESPONSE: There is no consensus for change to the profile at this time. (This issue may be re-visited for ARTI-II.)
3. ARTI Dose Rate for non-arc plans - Dose Rate is required for all RT Plans. Suggestion that this should only be required for arc/vmat plans.
   RESPONSE: The Dose Rate is a nominal. Consensus that no change is needed to the ARTI profile.
4. ARTI Define SSD - The definition of SSD is inconsistent for plans that include a bolus.
   RESPONSE: No consistent definition exists in clinical practice. This question to be forwarded to DICOM WG-7 for clarification (possible addition of normative note in the standard).
5. Export of setup beams
   RESPONSE: Setup beams are out of band for the ARTI profile.
6. It was noted that the Patient Setup Module is listed as Optional (U) in the DICOM Standard, but there are ARTI-required data elements from this Module.
   RESPONSE: The (implicit) requirement to include the Module will be clarified in the ARTI Appendix.

T. MMRO (4/20/12 @ 10:30am)
1. Comments/Questions from Haken Maclean Question regarding the need for image references. ACTION: Christof to reply with clarifications
2. ACTION: Bruce to review Christof's response and address any clarifications suggested by his response in the MMRO-II Supplement. Revised Supplement to be posted to BBS.

U. Testing Comments (4/20/12 @ 10:45am)

1. How to do Limit Testing – Suggestion that test data be synthesized from connectathon datasets.

V. Structure Set Templates (4/20/12 @ 10:50am)
   1. Walter has drafted white paper (reviewed in Stockholm) to outline the content
   2. ACTION: Walter to review example XML schema /DTD for IHE-ITI ATNA Profile and draft Profile Supplement. (See also www.w3schools.com for info writing XML Schemas)

IV. Face-to-face Meetings

A. Connectathon 2012 – Sept 10-18, 2012, ASTRO HQ – NOTE CHANGE IN DATES (as of 4/18/12):

Monday, 9/10/2012: Arrival & Setup, hours 9:00am – 6:00pm
Tuesday, 9/11/2012 –
Friday 9/14/2012: Connectathon, hours 8:30am – 6:00pm
Saturday, 9/15/2012: Connectathon, hours 8:30am – 5:00 pm
All of the above will be held at ASTRO HQ, Basement Training Room, Fairfax, VA

Monday, 9/17/2012: Technical Committee Meeting, hours 8:30am – 6:00pm
Tuesday, 9/18/2012: Technical Committee Meeting, hours 8:30am – 12:00pm
TC Meeting will be held at the Marriott Residence Inn, Fairfax, VA (tentative location)

B. TC Meeting following ASTRO 2012 – Boston, MA (TC meeting tentatively Oct 31 – Nov 3, 2012)
C. Connectathon 2013 tentatively May 2013, ASTRO HQ, TC Meeting following

V. IHE-RO Future Teleconferences

A. IHE-RO TC Teleconferences – New schedule (consensus from doodle poll): 3rd Thursday of each month at 1:00 pm ET
B. ACTION: Chris to poll for alternate days (other Thursdays?)
C. ACTION: Schedule 2013 meetings, especially Connectathon.

VI. Adjourn 4/20/12 @ 11:20am