**IHE-RO Technical Committee**
**Face-to-Face Meeting**
**February 6-10, 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.*

## ATTENDEES

| Name | Company | Email | 2/6 | 2/7 | 2/8 | 2/9 | 2/10 |
|---|---|---|---|---|---|---|---|
| Christof Schadt | Brainlab | Christof.schadt@brainlab.com | X | X | X | X | X |
| Norman Trapp | Siemens | Norman.Trapp@siemens.com | X | X | X | X | X |
| Walter Bosch | ATC/ASTRO | bosch@wustl.edu | X | X | X | X | X |
| Bruce Curran | RI Hosp./ASTRO | bcurran1@lifespan.org | X | X | X | X | X |
| Harold Beunk | Nucletron | harold.beunk@elekta.com | X | X | X | X | |
| Daniel Lafontaine | Hermes Medical | Daniel.lafontaine@hermesmedical.com | X | X | X | X | X |
| Rishabh Kapoor | U. Florida | rkapoor@ufl.edu | X | X | X | X | X |
| Chris Pauer | Accuray | cpauer@accuray.com | X | X | X | X | X |
| Stacy Loesch | Velocity Medical | Stacy.Loesch@velocitymedical.com | X | X | X | | |
| Koua Yang | Philips | koua.yang@philips.com | X | X | X | X | X |
| Olivier Vierlinck | IBA | Olivier.vierlinck@iba-group.com | X | X | X | X | X |
| David Wikler | IBA | david.wikler@iba_group.com | X | X | X | | |
| Eli Stevens | Mobius Medical | elis@doselab.com | X | X | X | X | X |
| Ulrich Busch | Varian | ulrich.busch@varian.com | X | X | X | X | X |
| Sanjay Bari | Elekta | sanjay.bari@elekta.com | | X | X | X | X |
| Sue Reilly | Elekta | sue.reilly@elekta.com | W | W | W | W | W |
| Colin Field | Cross Cancer Inst | cfield@phys.ualberta.ca | W | | | | |
| Jatinder Palta | U. Florida/PC | paltajr@ufl.edu | | | W | | |
| Bill Simon | Sun Nuclear | billsimon@sunnuclear.com | | | W | W | |
| Craig Laughton | Lifelink Software | craig@lifelinesoftware.com | | | | W | |

**X = in persion W = via Webex**

**TENTATIVE AGENDA**
**(Times are in US Eastern Time)**

- Goals, in proposed priority:
  - MMRO 2011 – Review for approval to Public Comment
  - QAPV - Review for approval to Public Comment
  - IPDW – Review for approval to Public Comment
  - Formulate Action Items based on updates on other group activities that affect IHE-RO
  - DPDW – Review specific topics
  - Parking lot:
    - TDW Advanced Content - Review
    - TDW 2 – Review for approval to Public Comment
    - ARTI – Review changes proposed at Miami Meeting
      - Cumulative Meterset
      - Integration of proton therapy
    - BRTO – Review change proposal
    - Structure Set Templates – Review any progress
    - Patient Registration and Workflow with CT Sim – Review
- Day 1 (Monday, Feb 6)
  - 8:00 - Review and Revise Agenda and Goals
  - 9:00 - Updates on ASTRO, RT Stakeholders, NROR, Planning Committee
  - 10:00 - Update on DICOM WG-7, Issues raised at last meeting that affect Profiles
  - 11:00 – Judges / Test Data topics
  - 11:30 – Lunch
  - 1:00 – IHE-RO Web Tool Demo
  - 1:30 - MMRO 2011
    - Final Review of Supplement
  - 5:00 – Take stock of MMRO state, action plan for further week activities and review.
  - 5:30 - Adjourn
- Day 2 (Tuesday, Feb 7)
  - 8:00 – IPDW Review
    - Review latest change in Version 17
    - Clarify handling of references to DICOM Patient Workflow and Positioning Supplement
    - When possible, move Version 17 ready for trial implementation
  - 12:00 – Lunch
  - 1:30 – IPDW Review
  - 4:30 - Take stock of IPDW state, action plan for further week activities and review.
  - 5:30 – Adjourn
- Day 3 (Wednesday, Feb 8)
  - 8:00 - QAPV Review
  - 12:00 - Lunch
  - 1:30 - QAPV Review
  - 4:30 – Take stock of QAPV state, action plan for further week activities and review.
  - 5:30 – Adjourn
  - 6:00 – Reserved time for extra group work on profiles.
  - 8:00 – End of Reserved time.
- Day 4 (Thursday, Feb 9)
  - 8:00 – Mita/Advamed Independent Channel Beam Images
  - 9:00 - QAPV Topics

- 10:00 – Revisit IPDW
- 12:00 – Lunch
- 1:30 – Parking Lot topics…Priority given to follow up on MMRO, QAPV, IPDW.
- 2:00 – 3:00 Breakout for QAPV concurrent with QA Advisory teleconference
- 4:00 – MMRO revisit changes
- 5:00 – Domain Pre-Testing/Connectathon
  - New pre-testing/ Connectathon meeting scheme
  - Certification Rules
- 5:30 – Adjourn

- Day 5 (Friday, Feb 10)
  - 8:00 – MMRO voting
  - 9:00 – Parking Lot topics….Priority given to follow up on MMRO, QAPV, IPDW.
  - 11:00 - Review and Plan for Future Meetings
    - Vote on new TC t-con time based on Doodle Poll
  - 12:00 - Adjourn

**MINUTES**

I. Call to Order 9:10 am

II. Review and Revise Agenda and Goals
   A. Add ARTI (DICOM cumulative meterset weight, integration of proton therapy)
   B. DPDW discussion moved to 2/6 afternoon

III. Business
   A. Updates on ASTRO, RT Stakeholders, NROR, Planning Committee
      1. Bruce Curran presented an update on the RT Stakeholders group, which seeks to address various aspects of patient safety in radiation therapy and includes both vendors and clinicians. Several white papers on quality assurance, system usability, training, nomenclature/terminology, error message standardization, etc. have been/are being written. (See ftp://medical.nema.org/MEDICAL/MITAPublic/RT/RT-Stakeholders)
      2. The draft of an updated Blue Book (consensus document on recommended staffing levels) is being prepared by ACR/ASTRO/AAPM. Release is expected in 2012.
      3. An update on ROI National Radiation Oncology Registry was given by Walter Bosch.
      4. IHE-RO Planning Committee to meet Feb 25 to re-focus goals. A proposal to establish a permanent test lab will be presented.

   B. Update on DICOM WG-7 (Uli Busch)
      1. Emphasis of WG-7 is on completion of Supp 147. Several CPs are to be addressed at the March 2012 meeting.
         a. AAPM is now secretariat for WG on Physics
         b. An understanding of Frame of Reference has been established and is documented in a white paper (currently in preparation by representatives of Brainlab and Siemens). **Christof Schadt to circulate when available**

c. White paper on assignment of private elements for trial implementation is being prepared and will be presented at the March meeting of WG-7

C. Judges / Testing Discussion [2/6/12]

1. The IHE-RO Test Committee has considered alternatives for testing ARTI consumer actors for which there is insufficient input data. The goal is to compile a set of plan datasets to re-test actors that failed for lack of producer test partners during Domain Pre-Testing in St. Louis. Vendors have been contacted with requests for additional datasets. Machine specifications and names are needed for this.

2. Discussion of ARTI TMS Actor – Need to ballot the proposal (see TC minutes 10/8/11) to re-structure the TMS Actor to make optional 12 consumer beam techniques (except Basic Static) and variants (bolus, physical wedge, compensator). **Done**

**The required Basic Static Consumer transaction for the TMS will not work for brachy or proton; these would need a new profile. Also, we will need to add a new transaction to support FFF.**

3. Discussion of need for ARTI+ (was TDW+) profile to possibly address:
   a. Plan Review Tool
   b. TMS changes to make beam techniques optional
   c. Additional TMS Changes (TMS as plan producer for TDD consumer) and preservation of plan information in TMS [ARTI+]
4. The last posted version of the ARTI profile is 1.2.8 (posted 1/24/11 on the BBS).

**ACTION: Bruce to post Vol 2 v1.2.9 (latest revision) and updated spreadsheet to the BBS; verify that delineation of which options are available with which transactions is clearly stated.**

**ACTION: Bruce to update Vol 1 to reflect Vol 2 changes**

5. Bruce, Chris, and Sidrah had a T-con last week with Mary Jungers (IHE International, Publications Manager) – Mary will assist IHE-RO in maintaining consistent formatting of profiles.
6. Test Tools – no additional development of test tools is anticipated at this time. (It has been difficult to evaluate test tools and provide meaningful feedback to the contractor within the support interval.) It is not possible to update test tools to incorporate changes in the ARTI profile before Domain Pre-Testing. It may be possible before the 2012 Connectathon, but this requires that the TI version of the profile be available and that required changes be identified.
7. ACTION: Set deadline for pre-testing participants to register: **March 1.**
8. QAPV Development and Testing
   a. Test datasets are needed for QAPV actor development.
   b. Significant doubt was expressed that there will be sufficient vendors (esp. on the Check Requestor side) to permit testing in 2012. This point needs further discussion once the profile is finalized.
   c. ACTION: IHE-RO TC (Bruce) to encourage ASTRO to request potential vendors to prioritize development of Check Requestor Actors.
   d. Discussion of TMS as Quality Check Requestor. It was suggested that the technology described in the profile could be used to perform checks at the TMS. However, there was concern that this would be inconsistent

with the intent of the (current) profile to perform the check as late as possible before treatment. The value of a generic mechanism for plan check was appreciated by the group. This mechanism would require development of a separate profile. The current focus of the TC remains on the QAPV profile.

e.

9. Discussion of Prescription Profile – teleconference at the Nov 2011 WG-7 meeting identified the need for consistent specification and display of physician intent.

D. IHE-RO Web Tool Demo [2/6/12]

1. Rishabh presented the IHE-RO Helper web tool which provides consumers a graphical display of successful Connectathon results and integration statements. The tool is the work of Rishabh Kapoor, Danny Young, and Jatinder Palta at UFlorida.
2. The IHE-RO Helper is complementary to IHE registry (http://product-registry.ihe.net) , which is based on validated IHE Integration Statements. It is intended that it will link integration statements.
3. ACTION: Bruce to fix profile names and actors in the IHE product registry to be consistent with IHE-RO documentation.

E. MMRO [2/6/12]

1. Review of Christof's document from BBS (IHE_RO_MMRO_2011.doc)
2. Proposed wording regarding the list of referenced objects in the Spatial Registration Object:
    a. The registration sequence references image instances, which were available to the user at the time of definition, and contributed to the definition of the Spatial Registration.
    b. Images not included in the list shall not be assumed to be consistent with the Spatial Registration recorded, e.g., registration of those images is undefined in this context.
3. Wording in part 1, section "X.3.2 Shared Frame of Reference" recommends verification of the consistency of a Frame of Reference shared by multiple image series.
4. Testing of MMRO-II actors should include a check of behavior in response to input SRO that does not include image references. E.g., warning that input SRO "does not reference the images from which it is derived" or that "there are images displayed whose registration cannot be verified".
5. ACTION: Retire MMRO-I Integration Profile (Norman's Supplement revision). Add CP after MMRO-II completes Public Comment.
6. ACTION: Christof to review Sue's comments, incorporate DICOM 2011 references (includes corrected Spatial Registration), and finish edits of MMRO-II Integration Profile. TC members to review and respond to ballot. Anticipate release for Public Comment 2/10/11. **Bruce has completed edits and sent document to IHE librarian.**

7. ACTION: TC members to review Creator Images Stored [RAD 4.18] Transaction (used for storing resampled images). Should we keep this transaction in the profile? How can it be tested? **Consensus that this transaction should be retained (and tested).** **Limited to CT/MR portions only in RAD 4.18. Testing will involve the ability for the actor to create and export a resampled CT, MR and/or PET image set and have it imported and displayed correctly in another vendor's system.**

8. Review of modality-specific limitations/assumptions in the MMRO-I profile
    a. Primary image ("Registered FoR" in SRO) is restricted to CT. (Implicit in the requirement to "make ROIs available to the downstream planning process or to the 2007 Contourer actor…" [TF vers. 2.2, section 3.14.1.1.2 Message Semantics]
    b. Profile only handles HFS, HFP, FFS, FFP (excludes decubitus positions). Testing has found problems with FFP with several systems.
9. ACTION: Bruce to edit original MMRO-I as a supplement (text as is, no update to DICOM 2011) and MMRO-II supplement (includes updates to DICOM 2011 and safety requirements – 2 new transactions). Explicit restriction to CT as primary and restriction to HFS, HFP, FFS, FFP patient positions to be added to both profiles. Review/vote to final text/retired (MMRO-I) and public comment (MMRO-II) by TC on Friday 2/10. **Done.**

**There will eventually be an MMRO III to allow MR based planning, include patient positioning, add a Registered Dose Producer/Planner actor, etc.**

F. DPDW [2/7/12]
1. Uli reviewed the status of the supplement (*IHE-RO_DPDW_Supplement_1.8post.doc*, 5/24/11 on BBS), which includes four related profiles: (a) Treatment Session Workflow Frame Integration Profile, (b) Discrete Positioning Workflow Integration Profile, (c) Discrete Delivery Integration Profile, and (d) Discrete Delivery and Monitoring (with interruption handling). It is expected that (a) is mandatory, (b) is optional, and that either (c) or (d) will be required. The supplement currently defines 22 transactions.
2. DPDW allows imaging, positioning, monitoring, and delivery to be managed by a single, standard (Treatment Session Manager) device. The interface to the TMS is the same as for IPDW and TDW (same UPS, worklist is used). IPDW extends TDW to **???** . DPDW adds a Treatment Session Manager (TSM).
3. Testing of the DPDW Profile was identified as a concern, given the limited number of potential test partners for this profile. Also, testing will need to include emulators for delivery systems.
4. A DICOM WG-7 sub-group meeting is scheduled Feb 28th in Brussels to work on a DICOM supplement on treatment delivery/positioning workflow.
5. ACTION: The DPDW Subgroup is to be reactivated in May 2012 to include the following individuals: Uli Busch, Christof Schadt, Sanjay Bari, David Wikler, Harold Beunk, and Andrea Morgan. Others are welcome to participate.
6.

G. IPDW [2/7/12]

1. Uli presented the IPDW profile (*IHE-RO_IPDW_Supplement_1.7.doc*), last modified 2012-01-27. Sue Reilly and Harold Beunk have reviewed the document and it appears to be nearly ready for public comment.
2. PDS options are specified by configuration and exposed by the DICOM conformance statement. Uli has produced a conformance statement template as guidance for PDS manufacturers.
3. The profile makes use of Patient Positioning Instruction and Result SOPs, which are defined a proposed Patient Positioning and Delivery supplement (not yet in trial implementation).
4. A clarification to profile wording, "Dynamic Treatment Delivery Input Objects," was added to indicate that this refers to transient instances, e.g., delivery requests created "on-the-fly" by the TMS, rather than to "dynamic therapy".
5. Review of Table 3.17-1 Worklist Query for Positioning and Delivery
    a. Reference DICOM 2011.
    b. The profile requires support for the ISO IR-100 character set. However, support for the IR-100 (Latin-1) character set has not yet been tested.
    c. Review of SCU, SCP query keys matching and return requirements.
6. Discussion of exception handling: if the PDS is not able to set all of the Procedure Steps of a transaction IN PROGRESS, the PDS shall issue an N-ACTION request for all Procedure Steps to request a status change to CANCELLED.
7. OPEN ISSUES: to be revisited Thurs morning
    a. Minor items: check for consistency with Supp 96
    b. Check for consistent work item/procedure step nomenclature
    c. Handling spontaneous (unscheduled) procedures, e.g., imaging
    d. Crash recovery – how to recover un-saved PDS state after abort?
    e. Are (c) and (d) in scope for the current profile?
8. ACTION: Sue/Uli to revise text in Section 1.3 "Profile and Device Capabilities" and forward to Bruce
9. **ACTION: Uli to look for transaction overlaps between IPDW and TDW II**

**H.** QAPV [2/8/12] **- ASTRO is showing very strong interest in this profile**

1. Chris Pauer reviewed development of the Quality Assurance with Plan Veto (QAPV) Integration Profile. This profile defines a generic framework with several specialized cases including a real-time (just prior to delivery) plan checks, as well as comparison of a plan to a copy that was previously checked.
2. The scope of the profile was discussed. The current working assumption is that there is one profile with multiple options ("Specialized Cases"). Concern was expressed that splitting QAPV into multiple profiles may make testing with a sufficient number of partners very difficult. Further discussion of whether the profile is sufficiently well specified and stable to support development on the part of vendors.
3. Specialized cases (critical checks) identified in the current draft:
    a. Data Modification Critical Check
    b. Egregious Dose Critical Check
    c. Patient Positioning Critical Check
4. Specification of check criteria/thresholds is outside the scope of the profile. Testing of Quality Check Performer (QCP) actors must take into account vendor configurable critical values. Testing may also include checks against known

(egregiously) bad plans. Concern was expressed that QCP actors that pass egregiously bad plans should not be deemed adherent to the profile.

a. ACTION: TC to request guidance regarding check criteria from IHE-RO PC. **Bruce to put this item on Feb 25 PC meeting agenda**.
b. ACTION: Add wording to the *Testing* section of the profile to require that QCP actors be able to detect bad plans using *clinically meaningful* criteria. **Done.**

5. A quality check *fail* result will prevent, i.e., *veto*, the delivery of the plan. An auditable override of the veto may be performed by an authorized operator, but it shall not be possible to *automatically* override a veto.
6. Discussion of UPS status semantics: the UPS return status encodes the progress description of QC work item, *not* the content of the QC results. Thus, the pass/fail status of QC results must be communicated via a persistent object, i.e., a Structured Report.
7. The Structured Report containing QCP results is retrieved from (a C-Move SCP on) the QCP. The output information sequence of the UPS contains the QCP's AE Title and the SOP Instance of the SR. The QCP makes sure that the results SR is ready for retrieval before performing a final update on the UPS. (Storing the SR in a third-party Storage location introduces a race condition, i.e., the SR may not be immediately available for retrieval after successful storage by the QCP.)
8. Cancellation conditions for QCP were discussed: (a) Unable to retrieve input objects, (b) Data inconsistency in retrieved objects, (c) Prior measurement not found (measured-array type QCP), (d) other? It is importand to distinguish cancellation and QC failure.
9. Support for a multiplicity of QC performers was discussed. Any given QCP may be unable to check all plans for all patients. The profile could support multiple performers, but the logic of QC requester response to pass/fail/cancel of all QCPs needs to be specifed in the profile.
10. ACTION: The specialized cases will be combined into the main body of the QAPV profile with one transaction being optional to differentiate the two cases. Define QCR and QCP actors, with and without specific plan content requirements needed for on-demand quality checks:
    a. Plan comparison quality check (baseline)
    b. Plan analysis quality check (on-demand MU-check).

    **Done with changes**
11. Final state update of UPS must not occur until a UPS subscription request is received from UPS creator.
12. Review of QAPV profile through sections 1 and 2 completed 2/8/12.

I. Mita/Advamed Independent Channel Beam Images [2/9/12]

1. Christof reported on a potential Use Case suggested by Mita/Advamed to provide a visual representation of patient position and orientation with respect to treatment equipment to allow operator to confirm that the patient is correctly set up. The intent is to independently verify that a patient is setup correctly. The operator would compare this visual representation to actual patient and confirm correct setup.
2. Is this a simple "cartoon" of the patient in treatment position? Does the image include immobilization aid(s)? Treatment aids, e.g., bolus (may be beam-specific)?

3. Current practice includes use of setup photo(s) of the patient in the simulator or first-day setup on the treatment machine.
4. Setup images (and DRRs) are beam-specific. Associating the correct image with the current beam can be confusing.
5. Many TPS display an iconic view of patient orientation and the TDD. It should be possible to display this iconic view along with a patient setup photo in the treatment room.
    a. Confirmation / QA review of setup views?
    b. Confirmation for non-HFS setups?
6. Summary:
    a. Current capability includes display of patient setup photos or icons *without acknowledgement.*
    b. Some delivery systems can display the DRR and MLC shape at the console.
    c. TPS can display setup icons, but there is no *automated* means to annotate them and associate them with corresponding beams at the delivery console.
    d. Extending these capabilities would involve substantial development time.
    e. Representation of beam setup images could be considered by DICOM WG-7.

J. QAPV Topics [2/9/12 @ 9:20am]
1. Chris reviewed a revised draft of the QAPV supplement. There is now *one* QC Requester and *one* QC Provide with optional (*alternative*) transactions for retrieving input data from the Object Store:
    a. RO-Q3A Workitem Input Objects Retrieval for Difference Check
    b. RO-Q3B Workitem Input Objects Retrieval for Dose Check
2. Suggested changes to support Ion Plan:
    a. Add RT Ion Plan Storage SOP class to Table 3.1
    b. Create two additional transactions for retrieval of RT Ion Plan instances for Difference Check and for Dose Check
    c. Include "or RT Ion Plan" wherever "RT Plan" is referenced.
3.

K. Revisit IPDW [2/9/12 @ 10:20am]
1. Uli reviewed a revised draft (v. 1.8) of the IPDW supplement incorporating changes from 2/7 discussions
    a. Use of consistent terminology "Procedure Step" (*vs.* "Workitem")
    b. Replaced Supp 96 references with references to DICOM 2011
    c. Dynamic objects retrieval from the TMS (clarification of "dynamic")
    d. PDS to request cancellation of all PS if any PS cannot be set IN PROGRESS. (Remove requirement for TMS to remain in current state.)
    e.
2. MOTION: Move IPDW Profile v. 1.9 to Public Comment; Seconded; Approved without objection.
3. ACTION: Uli to format document with changes from 2/9 review and forward to Bruce by 2/17
4. ACTION: Bruce to check format and forward to IHE Librarian by 2/24.

L. Structured Report for QAPV [2/9/12 @ 11:25am]
1. Uli and Eli presented suggestions for Structured Report content for QCP reports.

a. The Output Information Sequence identifies the SOP instance of a SR.
b. The SR contains two *required* items:
    i. Check result ("PASS" or "FAIL")
    ii. Check result details (SOP instance, URI, URL, for a vendor-specific report details)
c. The following items are required for each reported critical value:
    i. Critical value name
    ii. Critical value units
    iii. Critical value
    iv. Critical value comparison
    v. Corresponding attribute value
    vi. Critical value comparison result ("PASS", "FAIL")
d. All *detected* FAILURES must be reported.
e. Open question: Must a QCP perform all checks, even after a FAILURE is detected?

2. Chris surveyed existing SR templates. One referencing the device used (TID 300) and one the procedure used (TID 3100).
3. ACTION: Uli to draft a SR template. **Chris to continue.**

M. QA Advisory Group Teleconference [2/9/12 @ 2:00pm]

1. Chris updated the QA Advisory Group on changes in the QAPV draft supplement.
    a. Discussion of issues for comparison of QA and Treatment plan instances for Plan Comparison option. The plan to be delivered must be compared to a treatment plan, not a DQA plan.
    b. Concern was expressed regarding the difficulty of detecting meaningful differences between TPS plans and plans to be delivered. It was suggested to avoid specifying requirements for plan comparison in the profile.
    c. Suggestion to require population of the plan predecessor list in plans to be checked to facilitate association with versions that have undergone DQA checks.

N. MMRO Review [2/9/12 @ 3:10pm]

1. Bruce reviewed the updated *IHE-RO_MMRO_Supplement_2012-0209.docx* document (version for Final Text Ballot)
    a. Reformatted as a Supplement
    b. Open issues: (1) a structure set may reference only a single image set, (2) references DICOM 2007, (3) safety issue related to possible spatial inconsistency of image sets that share a Frame of Reference.
    c. Implicit Limitations of the MMRO Profile:
        i. Base image set is CT (Registered Frame of Reference is associated with a CT image set)
        ii. RT Dose shall be in the Registered Frame of Reference
        iii. Only HFS, HFP, FFS, and FFP patient orientations are in scope.
    d. MOTION: Move the MMRO Supplement (Rev. 2.3a) to Final Text; Seconded; Approved with objection
    e. ACTION: Bruce to release Final Text for Ballot. **Done pending procedural clarification.**

f. ACTION: Bruce to draft a Change Proposal to MMRO to reference DICOM 2011. **Done and approved by members present.**

2. Bruce reviewed the updated IHE-RO_MMRO-II_Supplement_2012-0209.docx document (version being prepared for Public Comment)
   a. Multimodality Image Registration for Radiation Oncology 2012 references DICOM 2011.
   b. MMRO-II changes: Update to 2011, Inclusion of requirement for list of image instances in Spatial Registration Object Image Reference Sequence.
   c. ACTION: MMRO-II Profile to be simplified to remove (all but two) transactions, which are defined in the MMRO profile. **Done.**
   d. Suggestion was made to move the attribute restrictions (currently in an Appendix) into the Transaction sections. This will be done in future versions of ARTI and MMRO-* profiles.

O. Domain Pre-Testing/Connectathon [2/9/12 @ 4:10pm]
   1. New Pre-Testing/connectathon meeting scheme
      a. For 2013, the Connectathon has been moved to May, with Pre-Testing in September.
      b. The suggestion was made to rotate the Archive support role among vendors. Alternatives (open-source, other vendors, etc.) to be explored.

**ACTION: Sue to send Bruce a list of activities/resources required to get MOSAIQ Data Director to Domain PreTesting/Connectathon**

      c. Pre-testing of QAPV actors in Sept 2012 is encouraged.
      d. A QAPV Simulator (QCR, QCP) is under development.
      e. Request for internet access for testing a cloud-based actor.
   2. Certification Rules
      a. Bruce reviewed plan for using validated Connectathon data to certify Actors that have not passed because of insufficient number of test partners. Machine configurations to match those used in the connectathon.

P. "Parking Lot" [2/9/12 @ 4:40pm]
   1. TDW-II
      a. ACTION: Sue and Uli to contact Harold to get the current state of the TDW-II profile. Uli to review and decide if he can take it on. **Done, awaiting reply.**
   2. ARTI
      a. A question was raised regarding testing ARTI Stereo beams with "PHOTON_SQUARE" applicators, which are not clinically relevant and are not supported by some TPSs (beam consumer actors).
      b. ACTION: Update the ARTI Profile (version 1.2.10) to limit values for the Applicator Type (300A,0109) to PHOTON_CIRC. Use of STEREOTATIC is discouraged.
      c. Suggestion to require inclusion of Applicator Geometry Sequence in future revisions of ARTI.

Q. MMRO-II Review [2/10/12 @ 8:10am]

1. Bruce reviewed the updated *IHE-RO_MMRO-II_Supplement_2012-0209.docx* document (version for Public Comment)
    a. Incorporates changes from 2/9 review of MMRO/MMRO-II profiles.
    b. No new actors
    c. References DICOM 2011; requires both FoR and image references in the Spatial Registration.
    d. Two transactions defined in MMRO-II (others are carried over from MMRO): Spatial Registration-II Storage [MMRO-II-1] and Spatial Registration-II Retrieval [MMRO-II-2]
    e. Include in Section 3.17.4.1.2, Message Semantics: "The MMRO-II Profile has implicit limitations imposed by its dependency on the IHE-RO BRTO profile. These limitations are described in the MMRO-II Profile description in Volume 1 of the IHE-RO Technical Framework." ACTION: a similar statement to be added to MMRO (Final Text) **Done.**
2. Discussion regarding application of Spatial Registrations to objects for which the relationship to the registered images is not known.
    a. Currently the RT Dose does not provide the rationale for its existence in a FoR. The Common Instance Reference could be used to reference images used to create the dose. These instances can be tied to other images through the Referenced Image Sequence of an SRO.
    b. It is believed that the Referenced Image Sequence of an SRO can be use to reference non-image instances. ACTION: Uli to clarify with WG-6 in March.
    c. The Chain of Trust for spatial registrations must rely on relationships between image instances. Ultimately, no FoR can be trusted by itself.
    d. The scope of validity of Frames of Reference which are not established by image acquisition is not well defined.
3. MOTION: Release MMRO-II profile to Public Comment; Seconded; Approved without objection

R. QAPV Review [2/10/12 @ 10:00am]

1. Chris reviewed changes in QAPV profile document.
    a. Updated names of transactions and added transactions for retrieval of Ion Plan objects
    b. Added the requirement that the QCR should ONLY supply the full deliverable plan for comparison in difference check. With this restriction, the QCP must have assessed and stored locally the deliverable plan for the check to be successful.
    c. ACTION: Chris to modify QAPV: Object Store actor to be eliminated. The plan to be checked should be the one that is stored on the Quality Check Requestor itself. Thus, both the QCR and QCP will be C-Move SCPs, the QCR for Input Objects and the QCP for the Quality Check Structured Report.
2. Review of Attribute requirements for Input Object Retrieval Transactions
    a. Prescription information in the RT Plan appears to be inadequate as a bases for Dose Checking
    b. Discussion of DICOM Beam Dose information to be used for Dose Checking:
        i. The Fraction Scheme Module specifies the (proportion of the) dose to be delivered per fraction.

ii. The Beam Dose specifies the Dose (Gy) to be delivered to a Beam Dose Specification Point due to current beam.
iii. The Dose Reference Point Sequence includes Control Point level information that allows reconstruction of beam dose delivered at a given CP of the current beam

S. DCOMP [2/10/12 @ 11:30am]
1. Revised DCOMP document with references to DICOM 2011 and updated MMRO, MMRO-II transactions has been posted to BBS.

IV. Face-to-face Meetings

A. **Domain Pre-Testing & TC Meeting**
1. April 12-20, 2012, Washington University, St. Louis, MO (start 8:30am on April 12, finish 12:00pm on Apr. 20, 2012)
2. Testing April 12 (setup), 13, 14, 16 and TC meeting April 17-20.
3. **Deadline for submitting actors expected to be tested: March 1, 2012**
4. **Deadline for hotel reservations: March 11, 2012**

**B. Connectathon 2012 tentatively Sept 2012, ASTRO HQ, 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**
a. Feb T-con is cancelled.
b. March 15th Agenda: Feb Meeting Action Item Follow-up
c. ACTION: Chris to expand QA Advisory T-cons to include IHE-RO TC and focus on finishing the profile

VI. Adjourn 2/10/12 @ 11:55am