Minutes

Discrete Positioning and Delivery Workflow (DPDW)

Conference Call

July 28, 2015

12:00am – 1:30pm EST

DPDW Subgroup Chair:

Thomas Schwere, Varian Medical Systems  
([thomas.schwere@varian.com](mailto:thomas.schwere@varian.com))

IHERO Task Force Co-Chairs

Dick Fraass, Ph.D., FAAPM, FASTRO, FACR

John Buatti, MD

**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:**

Luiza Kowalczyk (Medical Imaging)

Nadia Harhen (QFix)

Thomas Schwere (Varian)

Sanjay Bari (Elekta)

Harold Beunk (ICT)

Martin Vonach (Brainlab)

Chris Pauer (Accuray)

# Call to Order

The meeting was started at 11:00 EST.

T. Schwere welcomed Nadia Harhen who will start attending the DPDW TCons for QFix.

# Malaga Meeting

T. Schwere gave a short summary on the Malaga meeting:

* Renamed PPCRS to PPDS (Patient Position Definition System).
* Object retrieval from an optimized local source instead of always retrieving from OST (multiple AE titles in the output sequence).
* Add sub-profiles for most common combination of actors (e.g. combination of positioning actors PPAS. PPRS, PPDS, PPD) into one black-box positioning actor.
* Various scenarios for monitoring not addressed in the current profile (e.g. monitoring already during initial patient positioning).
* Query worklist to be replaced by a notification (including the UID) and a subsequent N-GET.
* Workflow should be driven mainly by UPS. Instructions should only be read by the TSM when really needed.
* Long discussions about splitting up BDI to cover the in-between imaging vs. single BDI. The discussion was left in an open state.
* Notifications:
  + Agreed on the progress parameter sequence for dynamic information (e.g. radiation state change).
  + Agreed to use Input Readiness State as a trigger to start the execution of a UPS.
  + Still not clear how to do the resumption of a UPS.
* First proposal how to support 1st and 2nd gen DICOM in Supplement 160
* The meeting showed that there are still some basic concepts to be sorted out (such as orchestration of beam delivery, in-between imaging or notification protocols). During the next TCons these issues have to be sorted out with highest priority. Only then it's worth sending out a new version of the DPDW profile.

The official meeting notes of the Malaga meeting are currently being approved by the NEMA legal counsel. Once approved the notes will be distributed and posted on the DICOM web-site.

H. Beunk mentioned that the decision to only use absolute values for all positioning stuff was also a key decision. Furthermore he will make a proposal regarding the notification mechanism for resuming a UPS (see also above).

# General Design Topics

## Orchestration of Radiations

Together with the meeting agenda T. Schwere distributed a sequence diagram showing how the orchestration of the Radiations could look like when TSM is doing the orchestration instead of TDD. In the meeting T. Schwere walked the group through that diagram.

H. Beunk raised the concern about potential synchronization risks between TSM and TDD using this approach (in particular what radiations were already performed, which comes next, …). He still thinks having one BDI per patient position would be more appropriate. TSM would request TDD to perform all Tx for a particular patient position. TDD would loop through all radiations as requested in the BDI. This loop can be interrupted by TSM (or by PPMS in the monitoring scenarios) sending a pause request to TDD. Ad-hoc imaging added at TSM could use this interruption mechanism as well. H. Beunk will distribute some sequence diagrams of this approach prior the next TCon.

C. Pauer once again requested to change the name of the TMS actor. Every actor should be named according to its role. The role of the TMS in the DPDW profile is about creating the workflow. The group came up with the following proposals: Workflow Creator, Session Creator, Tx Session Workflow Creator. No final decision was made so far. The input to that actor is a protocol/list of UPS, the output would be a set of UPS (Imaging, Tx, …) per patient position.

# Other Business

## Next DPDW TCon

Tuesday, August 25, 2015: 12:00am – 1:30pm EST.

# Adjournment

The meeting was adjourned at 1:30pm EST.

Appendix A: Administration and Process Information

Documents are published at the following locations. If you have problems in accessing the document, please contact the Chair ([thomas.schwere@varian.com](mailto:thomas.schwere@varian.com)).

## Process of Authoring:

Steps:

1. Download a local copy of the document from locations below
2. Open this copy and remove all change bars
3. Ensure, that Changes Bars are switched on
4. **Make your changes**
5. Provide the updated version to the Chair

## Location of Documents:

DPDW Subgroup Minutes

<http://wiki.ihe.net/index.php?title=RO_DPDW_WorkingGroup>

DPDW Profile

The DPDW Profile is an IHE-RO document.

The current version is available in the IHE-RO Org Wiki:

<http://www.ihe-ro.org/>

Please find the current document under this page:

<http://www.ihe-ro.org/doku.php?id=doc:profiles>

Supp 160

DICOM Supplement 160 (Patient Positioning and Workflow) in s DICOM WG-07 document.

The current version is available at the DICOM ftp server:

<ftp://d9-workgrps:goimagego@medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG07/Sup/Sup160_PatientPositioningAndWorkflow>

## Mailing List:

The mailing list for the DPDW subgroup is:

[iherodpdw2015@aapm.org](mailto:iherodpdw2015@aapm.org)

Appendix B: Task Assignments

Per end this TCon (2015-01-27).

| **No** | **TX / Area** | **Old Number** | **Title** | **Group** | **Owner** |
| --- | --- | --- | --- | --- | --- |
| 1 | ./. | ./. | Use Case Delivery-Device Independent Imaging |  | David Wikler |
| 2 | RO-DPD-200 | RO-DPD-01 | Worklist Query for Positioning Acquisition | Acquisition | Martin Vonach |
| 3 | RO-DPD-201 | RO-DPD-02 | Retrieve Device Position Information | Acquisition | Martin Vonach |
| 4 | RO-DPD-202 | RO-DPD-03 | Request RT Patient Position Correction | Correction | Martin Vonach |
| 5 | RO-DPD-203 | RO-DPD-04 | Store RT Patient Position Modification Instruction | Correction | Martin Vonach |
| 6 | RO-DPD-204 | RO-DPD-05 | Store RT Repositioning Results to Object Storage | Correction | Martin Vonach |
| 7 | RO-DPD-205 | RO-DPD-06 | Worklist Query for Repositioning | Correction | Martin Vonach |
| 8 | RO-DPD-206 | RO-DPD-07 | Notify on Radiation Delivery Status Change | Delivery | Thomas Schwere, Sanjay Bari |
| 9 | RO-DPD-207 | RO-DPD-08 | Retrieve RT Patient Position Correction Instruction | Correction | Martin Vonach |
| 10 | RO-DPD-208 | RO-DPD-09 | Subscribe/Unsubscribe to Treat UPS Status | UPS Notification | Thomas Schwere |
| 11 | RO-DPD-209 | RO-DPD-10 | Notify on Radiation State | Delivery | Thomas Schwere, Sanjay Bari |
| 12 | RO-DPD-210 | RO-DPD-11 | Retrieve Positioning Acquisition Results | Registration | Chris Pauers |
| 13 | RO-DPD-211 | RO-DPD-12 | Worklist Query for Positioning Registration | Registration | Chris Pauers |
| 14 | RO-DPD-212 | RO-DPD-13 | Worklist Query for Position Monitoring | Monitoring | Stephen Phillips |
| 15 | RO-DPD-213 | RO-DPD-16 | Store Monitoring Results to Object Storage | Monitoring | Stephen Phillips |
| 16 | RO-DPD-214 | RO-DPD-17 | UPS Final Update at Session Termination | Framework | Thomas Schwere, Sanjay Bari |
| 17 | RO-DPD-215 | RO-DPD-18 | UPS Completed / Cancelled at Session Termination | Framework | Thomas Schwere, Sanjay Bari |
| 18 | RO-DPD-216 | RO-DPD-19 | Indicate Ready for Monitoring | Monitoring | Stephen Phillips |
| 19 | RO-DPD-217 | RO-DPD-20 | Notify Device to start UPS | UPS Notification | Thomas Schwere, Sanjay Bari |
| 20 | RO-DPD-218 | RO-DPD-21 | Create Positioning Acquisition and Positioning Registration UPS | Workflow | Thomas Schwere |
| 21 | RO-DPD-219 | RO-DPD-22 | Create Treat UPS and Radiation Delivery Instruction for Continuation | Workflow | Thomas Schwere |
| 22 | RO-DPD-220 | RO-DPD-23 | Notify Treatment Session Actors on Starting Session | UPS Notification | Thomas Schwere, Sanjay Bari |
| 23 | RO-DPD-221 | RO-DPD-24 | Notify Device to stop UPS | UPS Notification | Thomas Schwere, Sanjay Bari |
| 24 | RO-DPD-222 | RO-DPD-25 | UPS Progress Update for Discrete non-Treatment Steps | UPS Notification | Thomas Schwere, Sanjay Bari |
| 25 | RO-DPD-223 | RO-DPD-26 | Worklist Query for Positioning Correction Reconciliation | Registration | Chris Pauers |
| 26 | RO-DPD-224 | RO-DPD-27 | External Verification | External Verification | Sanjay Bari |
| 27 | RO-DPD-225 | ./. | Notify Device to resume UPS | Monitoring | Stephen Phillips |
| 28 | RO-DPD-226 | ./. | Create new Positioning UPS | Monitoring | Stephen Phillips |
| 29 | RO-DPD-227 | ./. | UPS Final Update after Positioning Information Acquisition | Workflow |  |
| 30 | RO-DPD-228 | ./. | UPS Final Update after Treatment Interruption | Workflow | Thomas Schwere |