Minutes

Discrete Positioning and Delivery Workflow (DPDW)

Conference Call

March 24, 2015

11:00am – 12:30pm 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)

Thomas Schwere (Varian)

Sanjay Bari (Elekta)

Harold Beunk (ICT)

Martin Vonach (Brainlab)

Rickard Holmberg (RaySearch)

# Call to Order

The meeting was started at 11:00 EST.

# Face-to-Face Meeting

T. Schwere informed that the DPDW meeting takes place on June 15-19 2015 in Malaga (Spain). It runs together with the DICOM WG-07 PWF and is therefore called DICOM WG-07 PWF/IHE-RO DPDW Joint meeting.

So far only people who regularly attend the monthly DPDW TCons have signed up for the meeting.

T. Schwere will directly address other people from the DICOM WG-07-PWF roster.

# General Design Topics

## New Workflow Notification Service

Prior the meeting T. Schwere distributed a more detailed proposal on the new notification service along the initial memo from April 2014. The proposal already includes concrete Action Type IDs and Event Type IDs required for the transactions/notifications in DPDW.

H. Beunk still has concerns to introduce a complete new service. He in turn provided a new proposal by introducing some new attributes on the UPS but using the existing UPS N-ACTION/N-EVENT-REPORT mechanism. Key points:

* States "IDLE" and "SUSPENDED" (from application hosting service and needed by DPDW) can be seen as sub-states of the "IN PROGRESS" UPS state.
* Introduce new attribute within the Progress Information Sequence: Procedure Step Progress State (Type 3) representing the UPS sub state.
* The request to for example suspend a UPS could then be done by issuing an N-EVENT-REPORT reporting the SUSPENDED execution state in the Procedure Step Progress State.
* More dynamic information, such as "Radiation On" or "Patient Position out of Position", could be encoded in another new attribute within the Progress Information Sequence: Procedure Step Progress Parameter Sequence (Type 3) using the Content Item Macro. This is a very generic approach, thus requiring the specifics to be defined in the appropriate profile.

The group liked the approach regarding notifications of the dynamic information but on the other hand is concerned about the additional state attribute in the UPS. Most likely WG-06 won't support this idea.

T. Schwere to discuss with U. Busch and to decide on the next steps.

## State machine of TSM and components

The group prefers and actually decided to run two independent UPS state machines: One between TMS and TSM and the other one between TSM and the local actors. This should go along the following principles:

* At the very beginning of a session TSM sets all UPS to IN PROGRESS (on TMS) and creates local copies (new instance UIDs) of those UPS.
* Where in-session updates are needed on TMS, TSM updates the original UPS on TMS with information from the local copies. Otherwise original UPS are only updated at the very end of the session.
* TSM notifies TMS about changes in the UPS using the standard N-SET protocol.
* TSM might create additional instructions and act as a C-MOVE SCP (dedicated AE Title).

# Transactions

There was just a few minutes left to check on the status of the transactions.

M. Vonach asked why the RO-DPD-202 transaction in Figure 3.4-2 is outside of the completion of the Correction UPS. This indeed looks as an error and will be followed up in the next call.

# Other Business

## Next DPDW TCon

Tuesday, April 28, 2015: 12:00am – 1:30pm EST.

# Adjournment

The meeting was adjourned at 12:30 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 |