Minutes

Discrete Positioning and Delivery Workflow (DPDW)

Conference Call

February 28, 2017

10:30am – 12:00pm EST

DPDW Subgroup Chair:

Thomas Schwere, Varian Medical Systems
(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:**

Carla Hull (AAPM)

Thomas Schwere (Varian)

Ulrich Busch (Varian)

Chris Pauer (Sun Nuclear)

Istvan Matyas (Siemens)

Gergely Parditka (Brainlab)

Sanjay Bari (Elekta)

# Call to Order

The meeting was started at 10:30am EST.

# Process / TCons / Meetings

## Maling List

The 2017 version of the IHE-RO DPDW mailing list is active and shall be used (iherodpdw2017@aapm.org).

## Next TCon

The monthly DPDW TCons will take place on the last Tuesday every month. Carla is going to schedule the TCons for the full year.

The minutes of the TCons should be distributed one week prior to the next TCon.

The next TCon is scheduled for March 28, 2017 10:30am-12:00pm EST.

# Review Last Meeting Minutes

The chair walked through the minutes of TCon 2016-11-22 to sync up the group on the latest discussions.

Uli mentioned that the TSM should use C-ECHO to verify the aliveness of the actors prior to starting a session. The notification about the start of a treatment session (RO-DPD-220) actually also checks the aliveness of the actors. Nevertheless to prevent from unnecessarily opening a session the group agreed on the C-ECHO approach. Thomas will add this to the DPDW profile.

# Design Topics

## RO-DPD-201 (Retrieve Device Position Information)

The chair iterated over the current proposals about how to retrieve the device position information (RO-DPD-201):

* Include the Device Position in the Acquisition UPS:
The group decided that this approach is not flexible enough as it would prevent from any device position adjustments after the acquisition UPS was claimed by the PPAS.
* Use RT Device State IOD from Supplement 160:
This approach would require 1) PPAS to issue a C-FIND, 2) PPD to ad-hoc create an RT Device State IOD and 3) PPD to issue a C-MOVE to actually retrieve the RT Device State IOD from the PPD. The group decided that this approach is way too complex for simply getting a few numbers representing the device state.
* Treatment Session-related Normalized Service:
Uli quickly re-introduced the group to the basic ideas of this approach. It's basically a very light-weight N-GET on a well-known SOP Instance UID to retrieve information about a treatment session (including the device position for example) described by newly introduced DICOM modules. The main hurdle of this approach is to get the approval of WG-06. Furthermore that new service should be defined very open to easily allow adding new information w/o requiring re-approval by WG-06.
* Unify the "Request Couch Change" and "Retrieve Device Position" transactions by introducing a Request Couch Change with zero/no correction and reporting the actual device position as a result to the Request Couch Change:
This stretches the semantics of a UPS to its limit. Nevertheless, if all other options fail, this could be used.
* Introduce a "Report Couch Status" (or more general "Report Device Position Status") UPS:
Same as previous option.

Uli tries to informally discuss the concept of the "Treatment Session-related Normalized Service" in one of the upcoming WG-06 meetings.

## Actor Combinations

The chair introduced a first set of actor combinations for the main-stream treatment environments currently available in the field:



A discrete implementation of every single functionality in a single actor/vendor as described by DPDW will probably never be seen in the field. Thus it's indicated to reduce the complexity of the DPDW profile by focusing on the main configurations only (at least in a first version of the profile).

There was no time left to discuss this in more detail (e.g. what transactions will be exposed in case a component combines multiple actors). This will be discussed in the next TCon.

## DICOM Supplement 160

Deferred to next TCon.

# Adjournment

The meeting was adjourned at 12:00pm 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).

## 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:

iherodpdw2017@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 |