Minutes

Discrete Positioning and Delivery Workflow (DPDW)

Conference Call

January 22, 2019
10:30am – 11:30am EST

DPDW Subgroup Chair:
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IHERO Task Force Co-Chairs
Bruce Curran, MEng, FAAPM, FACMP, FACR
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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:
    Thomas Schwere (Varian)
    Harold Beunk (ICT)
    Gergely Parditka (Brainlab)

1   Call to Order

The meeting was started at 10:30am EST.

2   Update from IHE-RO TC Meeting January 2019

The chair gave a quick update on the TC meeting in Melbourne. There is big interest in IPDW. The concepts used in IPDW and DPDW are very similar, therefore the DPDW subgroup should move the focus from DPDW to IPDW. Furthermore, it was also confirmed that using a protocol based approach (instead of using detailed instruction objects from DICOM supplement 160) is

the way to go in a first version of IPDW. It was also agreed to de-scope monitoring use cases in a first version of DPDW.

3 Design Topics

3.1. Granularity of UPS

The group discussed that there should be a group of UPS for every treatment position consisting of Acquisition, Registration, Correction and Delivery (see also old presentation from 2016). The BDI for the Delivery UPS only contains the beams for this particular treatment position. This allows (but not limits) to specify independent patient positioning per treatment position. A treatment position can be characterized by the treatment isocenter and patient support angle of the beam. When doing the scheduling in TMS, the user is specifying the scope of a patient positioning task by selecting the appropriate beams of the plan. The scope can be individual beams, group of beams (e.g. sharing a certain isocenter) or whole plan.

3.2. Grouping of UPS into Tasks

The four UPS for a certain treatment position shall be grouped into a task. The identifier of such a task could be a UID or a simple number. The advantage of a number is that it could also be used to specify the order of the tasks within the treatment session. Otherwise the ordering would be based on the Scheduled Procedure Step Start DateTime. The "problem" with the latter approach is that the tasks had to be evenly distributed (artificially) over the whole timeslot of the treatment session.

The task identifier shall be encoded in the Scheduled Processing Parameters Sequence.

The dependency of the UPS regarding their execution order within a task can always be determined by the type of UPS. Therefore, there is no need to relate the UPS along DICOM CP 1345. Furthermore, the task ID can also be used to specify the execution order of the tasks which is not possible using the mechanism introduced with DICOM CP 1345.

3.3. Grouping of UPS into Treatment Sessions

The UPS scheduled for one and the same treatment session shall be grouped together using a treatment session UID. The treatment session UID shall be encoded in the Scheduled Processing Parameters Sequence. Once DICOM 2nd gen objects are available, the very same treatment session UID could be annotated in the resulting Tx artifacts (like images or Tx records).

3.4. Protocols

The protocols should be identified by a standard coding scheme instead of free text, i.e. consisting of designator, code value and code meaning. Protocol codes have to be shared between TMS and PDS.

The mechanism for specifying a protocol shall be available for types of UPS. The protocol code shall be specified using the Scheduled Processing Parameters Sequence.

3.5. Deviation to the initially Scheduled Procedures

Topic deferred to the next call.

4 Adjournment

The meeting was adjourned at 11:30am 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:

2018.iherodpdw@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

No	TX / Area	Old Number	Title	Group	Owner
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