IHE Change Proposal

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Best Practice for the Grouping of PDI with XDM	
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Volume(s) and Section(s) affected:	Vol. 1, Vol. 3

Rationale for Change:

Nowadays, most of the data exchange use cases for health professionals are based on a peer-to-peer communication. In a world with an increasing demand for the electronic exchange of patient record data there are more and more use cases which require to combine data from the DICOM as well as from the non-DICOM world (e.g. PDF, XML, CDA) on the same transport media (e.g. Patient CD, email).

For the peer-to-peer communication, IHE provides the profiles XDM and PDI enabling the standardized and automated exchange of DICOM data (PDI, XDM) and non-DICOM data (XDM). Both profiles even allow their coexistence on the same media (data carrier and email alike) but as the following use case illustrates, the profiles fail to describe a way how to give an XDM Portable Media Importer the possibility to display metadata of DICOM objects derived from an XDS registry.

Use Case

Hospital A runs an XDS/XDS-I environment. It cooperates with Hospital B for the rehabilitation of patients. Prior to the transferal of a patient, Hospital B requires a media (CD or email) with an agreed selection of documents (including DICOM images) from the patient record.

At Hospital B this media will be checked for containing all required information by an administrative person that reads the content by using an XDM Portable Media Importer which will display the content of the entire media described in the METADATA.XML file, XDM and PDI content alike. If the media contains all requested data, the non-DICOM data will be imported by the XDM Portable Media Importer. Subsequently, the media will be accessed by a PDI Portable Media Importer, which will import the DICOM content according to its usual behavior. If not all required data is present on the media, it is a user decision to import the data or to wait for the missing objects to be transferred.

In principle, both profiles XDM and PDI leave a wide corridor for addressing this demand. In order to narrow the possible solutions for a reasonable implementation, this CP proposes a best practice way by adding informative text to the existing text in the Technical Frameworks of IHE-ITI and IHE-RAD. This CP addresses the text for the PDI profile from IHE-RAD.

It is important to note that this informative text only improves the specification for a media, which results from a PDI/XDM grouping. The text leaves the character and the original intention of both profiles untouched.

ADD NEW section 15.6 after 15.5 Security and Privacy Aspects, line 3563, (RAD TF 1, Rev. 17.0 – Final Text 2018-07-27)

15.6 PDI Cross Profile Considerations

15.6.1 ITI Cross-Enterprise Document Media Interchange (XDM)

A Portable Media Creator in PDI might be grouped with a Portable Media Creator in the XDM Profile (IHE ITI TF) to enable it to include DICOM instances on the same media (see RAD TF-3: 4.47.4.1.2.2.3). To link the DICOM instances with the XDM metadata, a KOS instance should be used. This instance can be e.g. provided by an existing XDS-I infrastructure.

A Portable Media Importer in PDI might be grouped with a Portable Media Importer in the XDM Profile to process the combined PDI / XDM media, e.g. for the use in an XDS-I infrastructure (see RAD TF-3: 4.47.4.1.3.4).

ADD the following section after section 4.47.4.1.2.3.2 Web Content Option, after Line 2139, (RAD TF 3, Rev. 17.0 Final Text - 2018-07-27)

4.47.4.1.2 Message Semantics

…

4.47.4.1.2.2 Content Organization Overview

…

4.47.4.1.2.3 Content Organization Detail

…

4.47.4.1.2.3.1 DICOM Content

…

4.47.4.1.2.3.2 Web Content Option

…

4.47.4.1.2.3.3 Content when Grouping with XDM (IHE ITI TF)

A PDI Portable Media Creator that is grouped with an XDM Portable Media Creator, is able to create media with combined DICOM and XDM content – in this section the group actor will be referred to as the Portable Media Creator.

The Portable Media Creator shall assemble the necessary PDI content according to the specification in ITI TF-2b: 3.32.4.1 with the following additional requirements:

- **The content of the INDEX.HTM and README.TXT files of PDI and XDM shall be merged to one INDEX.HTM and one README.TXT file. The resulting files shall meet all requirements of both profiles (PDI and XDM).**
- **All DICOM instances shall be referenced by a Key Object Selection (KOS) instance with a document title of (113030, DCM, "Manifest"). This helps the Portable Media Importer to recognize such a KOS instance (see Section 4.47.4.1.3.4) during the import process. If such a KOS instance is not provided, it shall be created by the Portable Media Creator. Although there will typically be only one Manifest KOS instance, in cases where multiple patients/ studies are stored on the media, there may be multiple Manifest KOS instances in order to distinguish the patients/ studies during import.**

  Note: The KOS Document Title also allows for distinguishing the "Manifest" KOS instance from any other KOS instance that might be part of a DICOM study on the media, e.g. Key Image Notes (KIN) or KOS instances from the Teaching File and Clinical Trial Export Profile (TCE).

- **Each Manifest KOS instance shall be referenced in the METADATA.XML file as defined in the XDM Profile.**
- **The Manifest KOS instance(s) shall be stored in the DICOM sub-directory of the PDI media structure and referenced in the DICOMDIR file as specified in Section 4.47.4.1.2.2.1.**

Note: Although it is not prohibited to reference in the METADATA.XML all of the DICOM instances, this is not recommended since it is redundant with the content of the KOS instance, it increases the bulk of the METADATA.XML, and it raises the risk of inconsistency between the two lists.

Figure 4.47.4.1.2.3.3-1 illustrates the processing chain for the Portable Media Creator.

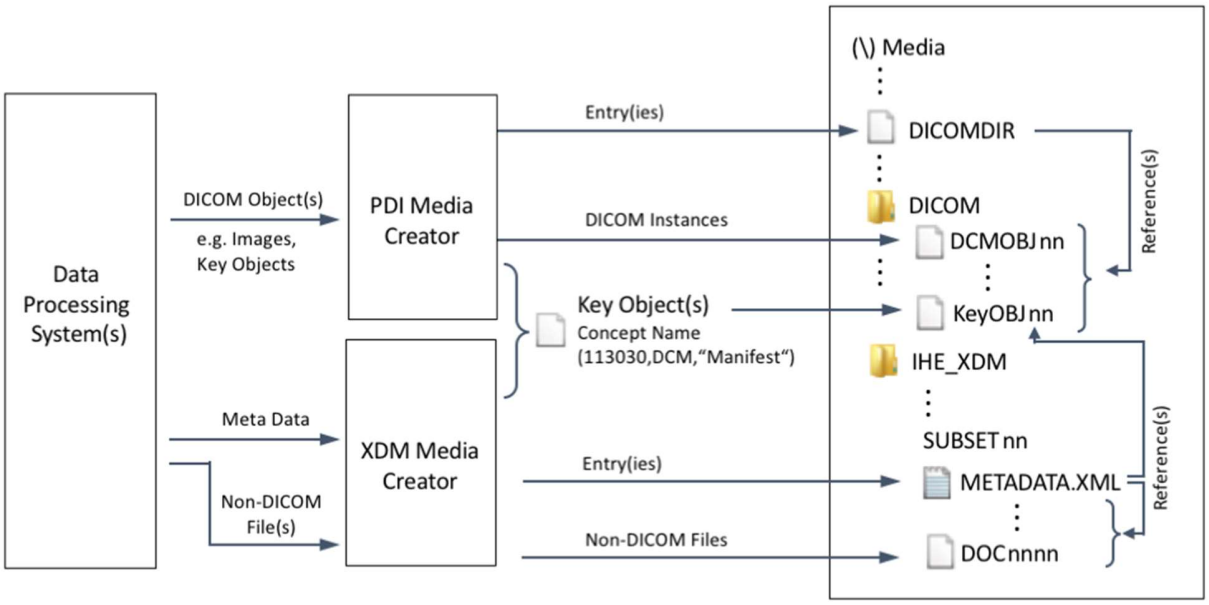

Figure 4.47.4.1.2.3.3-1: Processing Chain - Portable Media Creator

ADD the following section after section 4.47.4.1.3.4 Portable Media Importer, after Line 2185, (RAD TF 3, Rev. 17.0 Final Text - 2018-07-27)

4.47.4.1.3 Expected Actions

…

4.47.4.1.3.1 Expected Actions Common to All Actors

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4.47.4.1.3.4 Portable Media Importer

…

4.47.4.1.3.4.1 Grouping with XDM (IHE ITI TF)

A PDI Portable Media Importer that is grouped with an XDM Portable Media Importer, is able to import media with combined DICOM and XDM content – in this section the grouped actor will be referred to as the Portable Media Importer.

The Portable Media Importer shall process the PDI content according to the specification in ITI TF-2b: 3.32.4.1.4 with the following additional requirements:

- **The Manifest KOS instances (as described in Section 4.47.4.1.2.3.3) shall not be imported as they are only meant to provide an overview of the DICOM instances present on the media to the Portable Media Importer.**

Figure 4.47.4.1.3.4.1-1 illustrates the processing chain for the Portable Media Importer.

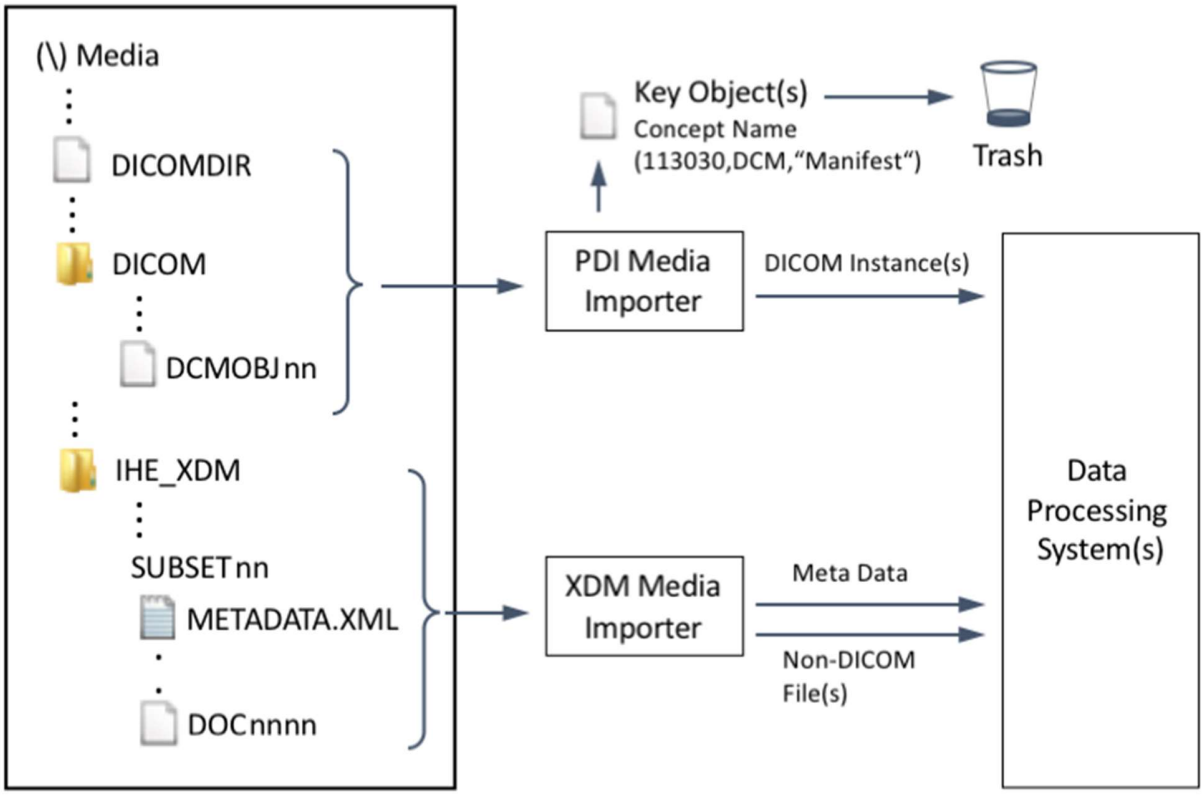

Figure 4.47.4.1.3.4.1-1: Processing Chain - Portable Media Importer