Integrating the Healthcare Enterprise

IHE

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IHE Radiology
Technical Framework Supplement

10
Imaging Object Change Management Extension (IOCM Extension)

15
Trial Implementation

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25 | **Please verify you have the most recent version of this document.** See here for Trial Implementation and Final Text versions and here for Public Comment versions.

Foreword

This is a supplement to the IHE Radiology Technical Framework 13.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on April 21, 2015 for trial implementation and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the Radiology Technical Framework. Comments are invited and may be submitted at http://www.ihe.net/Radiology_Public_Comments.

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend Section X.X by the following:

Where the amendment adds text, make the added text **<u>bold underline</u>**. Where the amendment removes text, make the removed text **~~bold strikethrough~~**. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at: www.ihe.net.

Information about the IHE Radiology domain can be found at: http://www.ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at: http://www.ihe.net/IHE_Process and http://www.ihe.net/Profiles.

The current version of the IHE Radiology Technical Framework can be found at: http://www.ihe.net/Technical_Frameworks.

CONTENTS

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Introduction

125 In healthcare and Imaging centers, where images need to be shared among different systems, it is a common practice to distribute copies of imaging instances. At the same time, it is also common to modify studies or instances as follows:

- Correcting/updating demographics

- Splitting/combining studies due to incorrect Modality Worklist item selection

130 - Removing "bad" instances from circulation

- Permanently deleting old imaging instances or entire studies as may be required by institutional record retention policies

The combination of needing to distribute copies of instances and needing to modify instances leads to copies which are inconsistent, which in turn creates the potential for confusion, error or 135 loss of data.

This supplement extends the Imaging Object Change Management Profile to support media interchange (PDI), study import (IRWF) and cross-enterprise document sharing for imaging (XDS-I.b).

Profile Abstract

140 The Imaging Object Change Management Extension (IOCM Extension) specifies how the mechanism defined in IOCM can be extended to support media interchange (PDI), study import (IRWF) and cross-enterprise document sharing for imaging (XDS-I.b).

This supplement is not a standalone Integration Profile.

Open Issues and Questions

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Closed Issues

#	Issue/ (Answer)
1	**Is the Confirmation of Instances Availability Option necessary? If yes, then should it be an option or should it be required?**
	Response: Notification is a pro-active mechanism. Use case to notify the Requester could be accomplished with some other mechanisms (e.g., Requester could query at the instance level to find out if the receiving Image Manager / Archive has handled the object deletion / replacement properly). The second use case is for the receiving Image Manager / Archive to notify other systems about changes in the study. In fact, this second use case is a generalization of the first one in which one of the destinations is the Requester.

#	Issue/ (Answer)
	Decided to make this transaction Required. Make sure the text handles one or more destinations. **After public comment, we decided to remove the requirements of IAN completely except for the existing IAN requirement between IM/IA and DSS/OF that already exist in SWF.**
2	**How do you find the latest information (i.e., 'the Gold copy')?** Response: You can't. Out of scope for this profile. In practice, there is not necessarily any authoritative reference for any instance.
3	**Does MAWF change as a result of IOCM?** Response: No. Leave MAWF as is. IOCM introduces no incompatibilities.
4	**Inconsistency about content of IAN compared to Administrative Query and Clinical Query. i.e., IAN listed all instances (available and unavailable) but Administrative Query returns all while Clinical Query returns only available.** Response: All available instances have status 'available'. All obsolete instances have status 'unavailable'. KOS with the four specific document titles defined in IOCM have status 'unavailable'.
5	**Should this profile discuss PIR across multiple enterprises?** MIMA requires the forwarding of HL7® messages to multiple destinations (e.g., local IM/IA and enterprise IM/IA) which will trigger the external IM/IA to update the patient and procedure information, for example. In these cases, there is no requirement to create new instances and no requirement to push instances out to another IM/IA. Response: Call out that existing PIR use cases remain and as the preferred mechanisms. Add to Volume 1.
6	**How does an item get back on the Worklist after it has been incorrectly selected?** For the use case of Correction of Modality Worklist Selection, when the study is fixed to the correct MWL entry, new MPPS N-Create and N-Set will be sent for the corrected images. This allows the DSS/OF to update the scheduled procedure status of the correct MWL entry accordingly. However, since the incorrectly selected scheduled procedure has already been marked as 'completed', how does it get back on the worklist? Is it necessary to have an automated mechanism to reset the status of this scheduled procedure step in the DSS/OF? If yes, then how? The challenge is that according to DICOM, it is invalid to set another N-Set for the MPPS SOP Instance once its status is set to COMPLETED or DISCONTINUED. There does not seem to be any available mechanism that can reset a SPS status in the DSS/OF.

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#	Issue/ (Answer)
	Response: Use Keep the IAN notification to DSS/OF as a trigger for DSS/OF to re-open the wrong worklist item. (same as MAWF) (NOTE: This overlaps with open issue #9)
7	**Should the KOS be persisted?** Response: Sometimes. The KOS should not be persisted for data retention use case because the KOS contains patient and procedure information. The KOS should be persisted for other rejection reasons. The KOS should only be accessible for the case of quality reasons, but not the case for patient safety or incorrect worklist selection.
8	**Which destinations should the Image Manager send IAN to?** Response: There is no publish-subscribe mechanism. IAN destinations are configurable as defined in RAD-49, but how to configure the destinations is not defined in IHE. Also specific consumer behavior is out of scope, although there is some informative text defined in this profile in Volume 1 suggesting how to use IAN to correct evidence documents. No more requirements related to IAN besides the existing transaction between Image Manager / Archive and DSS/OF. So this question is not an issue anymore.
9	**Should a new instance contain a reference to the instance that it replaces?** We could put the replacement relationship in the Referenced Image Sequence of the new instances. However, this Sequence is only available in the General Image module. That means only image objects can have this relationship defined. Therefore non-image objects such as GSPS will not have this relationship defined. It is important to note that it is still possible to replace a new GSPS object, for example, by deleting the existing one via a DICOM Key Object Selection Document (KOS) and then creating a new one. The only difference is that the new one will not have an explicit reference to the existing instance that it replaced. Committee Response: Yes. The reference would improve traceability which can be especially important in the data modification cases this profile addresses. The current text includes this mechanism for images. A CP will be submitted to DICOM requesting a general attribute (e.g., Referenced Instance Sequence (0008, 114A) with a Purpose code that can be applied to all instances). See Section 4.74.4.1.2. Committee Updates: The CP is rejected by DICOM. Committee agreed and there is no longer any references to the original SOP instances in the replacement instances.
10	**What "hiding behavior" is appropriate for instances that are rejected for quality reason?**

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#	Issue/ (Answer)
	"Hiding Behavior" means that for instances that have been flagged with KOS for rejection, the Image Manager omits them from query results and refuses retrieval.
	Such hiding behavior is required for instances that are rejected due to patient safety reason.
	This specification proposes that for instances that are rejected for quality reasons, (inherited from MAWF) (but not for other reasons), there are two modes of behavior for both query and retrieve. The Image Manager / Archive must be able to support: (1) returning the KOS and the rejected instances, and (2) hiding the KOS and the rejected instances. However, there is no explicit mechanism defined in MAWF for how this should be done.
	Two possibilities were discussed:
	(1) Consumer AE Title driven server behavior, or
	(2) Server provides different AEs, one that returns all (correct and obsolete), one that returns only the latest view
	That means Image Manager / Archive has to support two AEs for Query and two AEs for Retrieve; one for administrative query/retrieve (i.e., return all), one for clinical query/retrieve (i.e., return latest, or hide rejected instances).
	Committee Response:
	- Current text in MAWF only requires the IM to configure which mode to present, but does not specify a particular mechanism.
	- IOCM specifies the query/retrieve behavior is configurable based on the Called AE Title in the DICOM query/retrieve request
	- Restriction of which mode to use is best handled by the IM, rather than always letting the consumer choose. Therefore the profile specifies that the IM shall provide a configurable mechanism to control which systems have access to which behavior. No specific mechanism is defined though. See 4.66.4.1.3.1.
11	**What should be the behavior if the Image Manager supports MIMA? E.g., Can the rejected images due to quality reason allow to be sent.**
	Committee Response:
	- For images rejected due to quality reasons, these images should continue to be sent to the Receiving IM
	- For images rejected due to other reasons, these images should not be sent to the

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#	Issue/ (Answer)
	Receiving IM provided that they have not been sent prior to receiving the KOS
12	**Report related actors defined in SINR are currently excluded from this profile. Is this acceptable?** Committee Response: Decision has been made to defer this to a future Supplement or Change Proposal, as we may want to address some of the larger issues, such as whether it still makes sense to have separate Image Manager and Report Manager actors. Affected actors: Report Creator, Report Manager, Report Repository, Enterprise Report Repository, Enterprise Report Repository Access
13	**Is the recipient responsible for updating other instances that reference a deleted instance?** Committee Response: No. It's too much to expect. For example, when an image is replaced a GSPS instance that references this image becomes useless because it references an image instance that is now gone/hidden. It would be challenging for a recipient to understand all the different SOP classes and all the possible reference attributes. The recipient would also need to judge if the reference is still valid to know if it *should* be updated. The creator of the objects that reference a deleted instance is encouraged (but not required) to maintain the referential integrity. IAN may be a useful tool for creators to be aware of deletions so they can make appropriate changes.
14	**Shall the use case Evidence Document Correction (X.3.5) be a named option?** Committee Response: The Evidence Document Correction Use Case was removed because it is no longer mandatory for a Change Requester to support IAN (and take certain actions based on these notifications).
15	**Would be it cleaner to use UPS rather than IAN to drive the DSS/OF behavior?** In case of modality worklist selection correction, after the images are corrected, the Image Manager should update the DSS/OF so that DSS/OF can reset the procedure step back to Scheduled. Committee Response:

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#	Issue/ (Answer)
	The DICOM Unified Worklist and Procedure Step Service has not yet been incorporated into the IHE Profiles whereas IAN has. For now then, IAN is the best mechanism.
16	**Would this profile be better as an option in SWF and PIR instead of a separate profile?** The current profile uses grouping with the SWF and PIR for the required workflow related transactions. It may be difficult for the reader to understand the dependencies and what transactions are required. If this profile is an option in SWF and PIR, then it becomes more explicit which transactions are in scope. Committee Response: Decision has been made to keep IOCM as a separate profile in order to increase its visibility as separate, but complementary, functionality to SWF and PIR.
17	**How to differentiate between new original instances and replacement instances in the audit record?** Committee Response: There does not appear to be a clear need to be able to distinguish between original and replacement instances for the purposes of audit logging.
18	**For Table 4.74.4.1.2.1-1, should the Performed Procedure Step Start Date/Time of the replacement instances correspond to the time replacement instances are created, or should they be copied from the original instances?** Committee Response: The replacement instances are still a result of the original Performed Procedure Step so they shall have the Start Date/Time of the original Performed Procedure Step.
19	**On the Rejection Note Stored transaction, for the Patient Safety Reason and Worklist Correction, the expected action stated that the Rejection Note itself should not be provided in query/retrieve or store. However, for the media export case, The Portable Media Creator is required to include the Rejection Note but not the rejected instances. Is it inconsistent behavior? For example, what if an Image Manager/Archive is also a Portable Media Creator?** Committee Response: The required behavior can still be supported because the Image Manager / Archive can still keep the rejected note to itself so that it can be made available on the exported media. However, for the Data Retention Expired case, the expected action explicitly stated that

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#	Issue/ (Answer)
	the rejection note should be deleted, not just forbidden to be returned. Therefore the rejection note cannot be made available in the media. Furthermore, for all three use cases, the idea of making the rejection note available is to allow an Image Display which has obtained the prior copy of the study the ability to hide rejected instances if it receives the same study at a later time. So should IOCM be different from MAWF regarding the handling of the rejection note so that the KOS should still be available? This may make 'dumb' Image Displays unhappy if they receive a KOS with references to non-existing instances.

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Volume 1 – Integration Profiles

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> *Modify TF Vol. 1, Section 3 Scheduled Workflow (SWF) as defined in the Multiple Image Manager Archive (MIMA) Supplement. The modified text new for IOCM is in red.*

3 Scheduled Workflow (SWF)

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Table 3.2-1: Scheduled Workflow - Actors and Options

Actor	Option	Transaction	Vol. & Section
Image Manager/ Image Archive	Availability of PPS-Referenced Instances	**Instance Availability Notification [RAD-49]**	RAD TF-3: 4.49
	PPS Exception Management	**Modality Procedure Step Completed [RAD-7]**	RAD TF-2: 4.7
	Performed Work Status Update - Receive	**Performed Work Status Update [RAD-42] (as the Receiver)**	RAD TF-2: 4.42
	Multiple Identity Resolution (see Section 3.2.1)	**Procedure Scheduled [RAD-4]**	**RAD TF-2: 4.4**
		Modality Procedure Step In Progress [RAD-6]	**RAD TF-2: 4.6**
		Modality Procedure Step Completed [RAD-7]	**RAD TF-2: 4.7**
		Creator Procedure Step in Progress [RAD-20]	**RAD TF-2: 4.20**
		Creator Procedure Step Completed [RAD-21]	**RAD TF-2: 4.21**
		Procedure Updated [RAD-13]	**RAD TF-2: 4.13**
		Image Manager Instances Stored [RAD-70]	**RAD TF-3: 4.70**
		Image Manager Storage Commitment [RAD-71]	**RAD TF-3: 4.71**
		Image Manager Instances Query [RAD-72]	**RAD TF-3: 4.72**
		Image Manager Instances Retrieval [RAD-73]	**RAD TF-3: 4.73**
		Modality Images Stored [RAD-8]	**RAD TF-2: 4.8**
		Query Images [RAD-14]	**RAD TF-2: 4.14**
		Retrieve Images [RAD-16]	**RAD TF-2: 4.16**

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Actor	Option	Transaction	Vol. & Section
		Creator Images Stored [RAD-18]	**RAD TF-2:4.18**
		Rejection Note Stored [RAD-66] (see note 4)	**RAD TF-3: 4.66**
		Replacement Instances Stored [RAD-74] (see note 5)	**RAD TF-3: 4.74**

Note 1: At least one of these two options is required. Both may be supported.

Note 2: When a modality claims support for the Modality Group Case Option, it is required to support all three grouping scenarios described in RAD TF-2: 4.6.4.1.2.3.4.

Note 3: An Evidence Creator claiming the PPS Exception Management Option shall also support the Creator Performed Procedure Step Option.

Note 4: An Image Manager/Archive claiming to support the Multiple Identity Resolution Option plus the Imaging Object Change Management Profile shall support the expected actions defined for the Rejection Note Stored [RAD-66] transaction. An Image Manager/Archive claiming to support the Multiple Identity Resolution Option plus the Imaging Object Change Management Profile as a Change Requester shall also support the message semantics defined for the Rejection Note Stored [RAD-66] transaction.

Note 5: An Image Manager/Archive claiming to support the Multiple Identity Resolution Option plus the Imaging Object Change Management Profile shall support the expected actions defined for the Replacement Instances Stored [RAD-74] transaction. An Image Manager/Archive claiming to support the Multiple Identity Resolution Option plus the Imaging Object Change Management Profile as a Change Requester shall also support the message semantics defined for the Replacement Instances Stored [RAD-74] transaction.

The Evidence Creator, Acquisition Modality and Image Manager/ Image Archive will likely support a variety of DICOM SOP Classes. It is expected that this level of optionality will be documented by a reference in the IHE Integration Statement (see Appendix D).

Modify Section 28 to add the PDI, XDS-I.b and IRWF related actors.

28 Imaging Object Change Management (IOCM)

The Imaging Object Change Management Integration Profile (IOCM) specifies how the mechanism defined in IOCM can be extended to support media interchange (PDI), study import (IRWF) and cross-enterprise document sharing for imaging (XDS-I.b).

28.1 Actors/ Transactions

Figures 28.1-1**, 28.1-2 and 28.1-3** show the actors directly involved in the Imaging Object Change Management Integration Profile and the relevant transactions between them. Other actors that may be indirectly involved due to their participation in Scheduled Workflow, Consistent Presentation of Images, etc. are not necessarily shown.
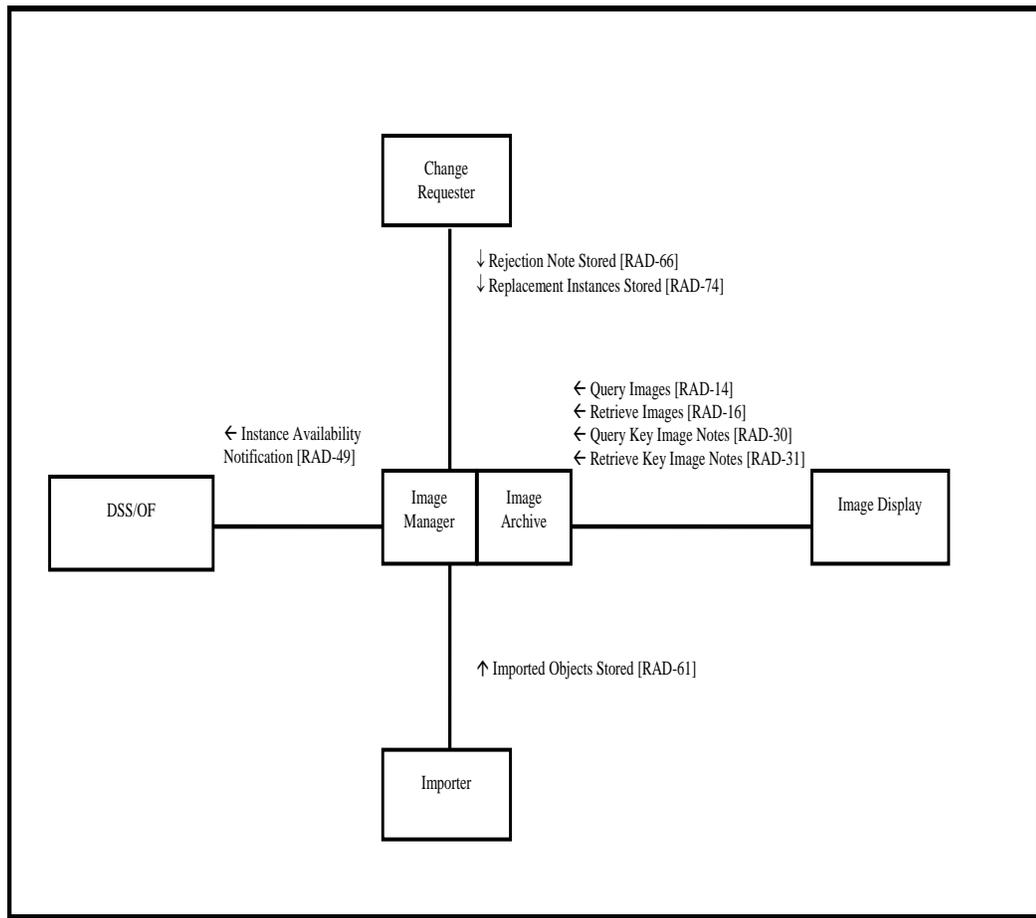
**Figure 28.1-1: Imaging Object Change Management Actor Diagram related to SWF and
IRWF**

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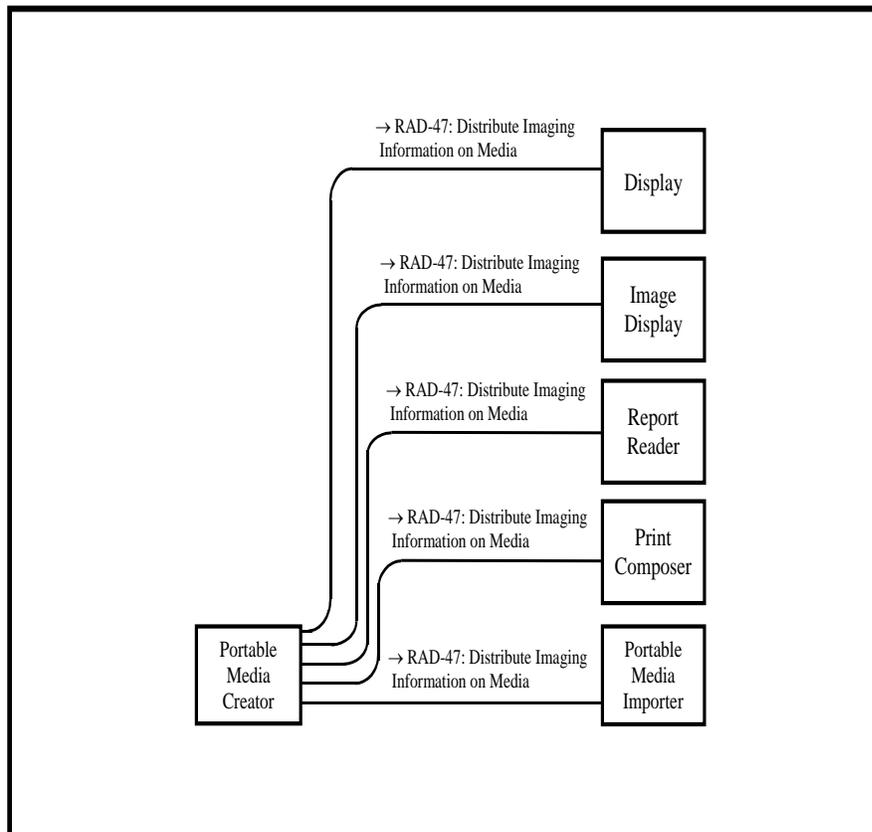
Figure 28.1-2: Imaging Object Change Management Actor Diagram related to PDI

195 **If the Image Manager/Image Archive supporting IOCM is also grouped with an XDS-I.b Imaging Document Source then the Imaging Document Source shall support the IOCM functionality defined for the following transactions in Figure 28.1-3.**
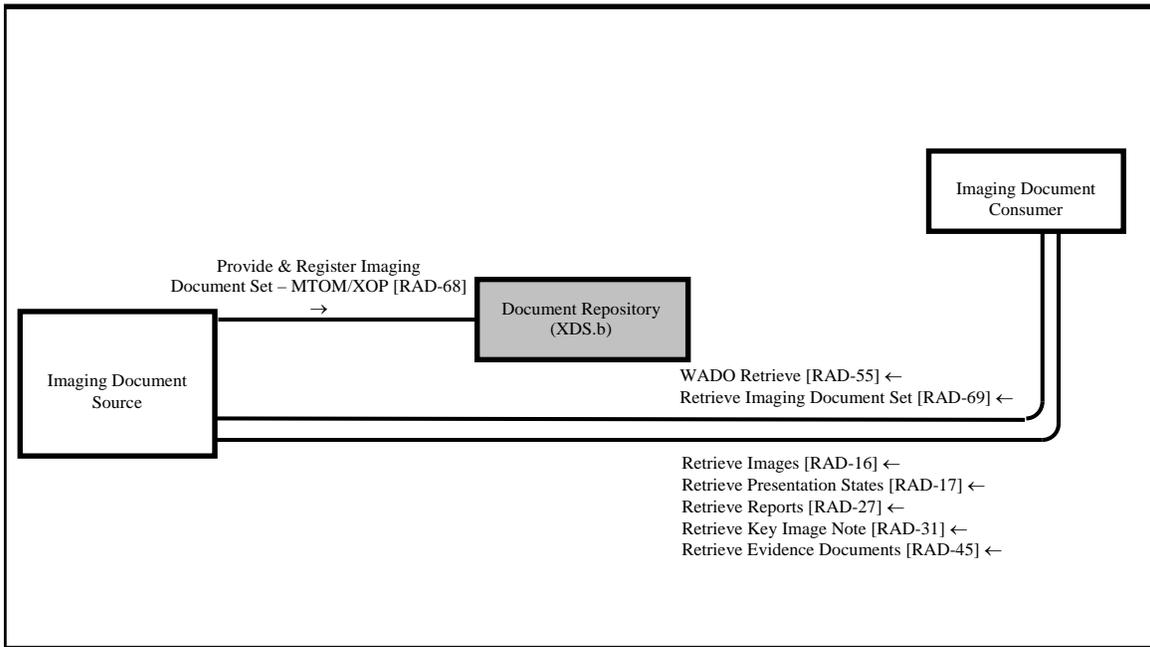
Figure 28.1-3: Imaging Object Change Management Actor Diagram related to XDS-I.b

200   Table 28.1-1 lists the transactions for each actor directly involved in the Imaging Object Change
Management Profile. In order to claim support of this Integration Profile, an implementation
must perform the required transactions (labeled "R"). Transactions labeled "O" are optional. A
complete list of options defined by this Integration Profile and that implementations may choose
to support is listed in Section 28.2.

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**Table 28.1-1: Imaging Object Change Management Integration Profile - Actors and
Transactions**

Actors	Transactions	Optionality	Section in Vol. 2/3
Image Manager / Archive	Instance Availability Notification	R	4.49
DSS/OF	Instance Availability Notification	R	4.49
Image Display	Distribute Imaging Information on Media	R	4.47 (Note 1)
Portable Media Creator	Distribute Imaging Information on Media	R	4.47
Display	Distribute Imaging Information on Media	R	4.47
Report Reader	Distribute Imaging Information on Media	R	4.47

Actors	Transactions	Optionality	Section in Vol. 2/3
Print Composer	Distribute Imaging Information on Media	R	4.47
Portable Media Importer	Distribute Imaging Information on Media	R	4.47
Importer	Imported Objects Stored	R	4.61
Imaging Document Source	Provide & Register Imaging Document Set – MTOM/XOP	R	4.68
	Retrieve Images	R	4.16
	Retrieve Presentation States	R	4.17
	Retrieve Reports	R	4.27
	Retrieve Key Image Note	R	4.31
	Retrieve Evidence Documents	R	4.45
	WADO Retrieve	R	4.55
	Retrieve Imaging Document Set	R	4.69
Imaging Document Consumer	Retrieve Images	R	4.16
	Retrieve Presentation States	R	4.17
	Retrieve Reports	R	4.27
	Retrieve Key Image Note	R	4.31
	Retrieve Evidence Documents	R	4.45
	WADO Retrieve	R	4.55
	Retrieve Imaging Document Set	R	4.69

Note 1:   Distribute Imaging Information on Media transaction is required only if the Image Display Actor supports the Portable Data for Imaging (PDI) Integration Profile.

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28.2 Imaging Object Change Management Integration Profile Options

Options that may be selected for this Integration Profile are listed in the Table 28.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

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Table 28.2-1: Imaging Object Change Management - Actors and Options

Actor	Options	Vol. & Section
Change Requester	*No option defined*	-
Image Manager / Archive	*No option defined*	-
DSS/OF	***No option defined***	**-**
Image Display	*No option defined*	-
Portable Media Creator	***No option defined***	**-**
Display	***No option defined***	**-**

Actor	Options	Vol. & Section
Report Reader	*No option defined*	**-**
Print Composer	*No option defined*	**-**
Portable Media Importer	*No option defined*	**-**
Importer	*No option defined*	**-**
Imaging Document Source	*No option defined*	**-**
Imaging Document Consumer	*No option defined*	**-**

28.3 Imaging Object Change Management Integration Profile Actor Groupings and Profile Interactions

220   Imaging Object Change Management builds upon the underlying actor transactions defined in other Profiles. For this reason, certain IOCM Profile actors shall be grouped with actors from other Profiles as defined in Table 28.3-1.

Table 28.3-1: Imaging Object Change Management Integration Profile - Actors and
225   **Transactions**

Integration Profile	Actor	Grouped With		Comments
		Profile	**Actor**	
Imaging Object Change Management	Change Requester (see note 1)	Scheduled Workflow	Acquisition Modality	Support communication of procedure steps and storage commitment when Change Requester is grouped with Acquisition Modality, Image Manager/Image Archive or Evidence Creator.
		Scheduled Workflow	Evidence Creator	
		Scheduled Workflow	Image Manager/ Image Archive	Defines how Image Manager/Image Archive can obtain scheduled worklist in order to correct the modality worklist selection of the acquired instances.
	Image Manager/ Image Archive	Scheduled Workflow	Image Manager/ Image Archive	Support Image Manager to Image Manager change management if Multiple Patient Identity Resolution Option is supported.

Integration Profile	Actor	Grouped With		Comments
		Profile	Actor	
	Department System Scheduler/ Order Filler	Scheduled Workflow	**Department System Scheduler/ Order Filler**	SWF defines how the Department System Scheduler/Order Filler provides scheduling information and receives updates from performed procedure steps and instance availability notification.
	Image Display	Scheduled Workflow	Image Display	SWF defines message semantics for query-retrieval
	Change Requester (see note 1)	Patient Information Reconciliation	Acquisition Modality	PIR defines the patient information reconciliation mechanisms that shall be supported by these actors. IOCM shall not be used as an alternative mechanism for handling patient information reconciliation use cases.
		Patient Information Reconciliation	Image Manager/ Image Archive	
	Image Manager/ Image Archive	Patient Information Reconciliation	Image Manager/ Image Archive	
	Department System Scheduler/ Order Filler	Patient Information Reconciliation	**Department System Scheduler/ Order Filler**	
	Image Manager/ Image Archive	**Import Reconciliation Workflow**	**Image Manager/ Image Archive**	**IRWF defines the import reconciliation workflow mechanisms that shall be supported by these actors. IOCM specializes their behavior for handling change management use cases.**
	Department System Scheduler/ Order Filler	**Import Reconciliation Workflow**	**Department System Scheduler/ Order Filler**	
	Importer	**Import Reconciliation Workflow**	**Importer**	
	Portable Media Creator	Portable Data for Imaging	**Portable Media Creator**	PDI defines the transactions that shall be supported by these actors to distribute imaging related information on interchange media. IOCM specializes their behavior for handling change management use
	Portable Media Importer	Portable Data for Imaging	**Portable Media Importer**	
	Image Display	Portable Data for Imaging	**Image Display**	
	Report Reader	Portable Data for Imaging	**Report Reader**	
	Print Composer	Portable Data for Imaging	**Print Composer**	

Integration Profile	Actor	Grouped With		Comments
		Profile	**Actor**	
	Display (ITI TF)	Portable Data for Imaging	**Display (ITI TF)**	cases.
	Imaging Document Source	Cross-Enterprise Document Sharing for Imaging	**Imaging Document Source**	XDS-I defines the transactions that shall be supported by these actors to share imaging information across enterprises. IOCM specializes their behavior for handling change management use cases.
	Imaging Document Consumer	Cross-Enterprise Document Sharing for Imaging	**Imaging Document Consumer**	

Note 1: At least one of the optional retrieve transactions is required to be supported. Refer to Section 18.4 for additional requirements on the Imaging Document Consumer.

28.4 Imaging Object Change Management Process Flow

Add the following new use cases

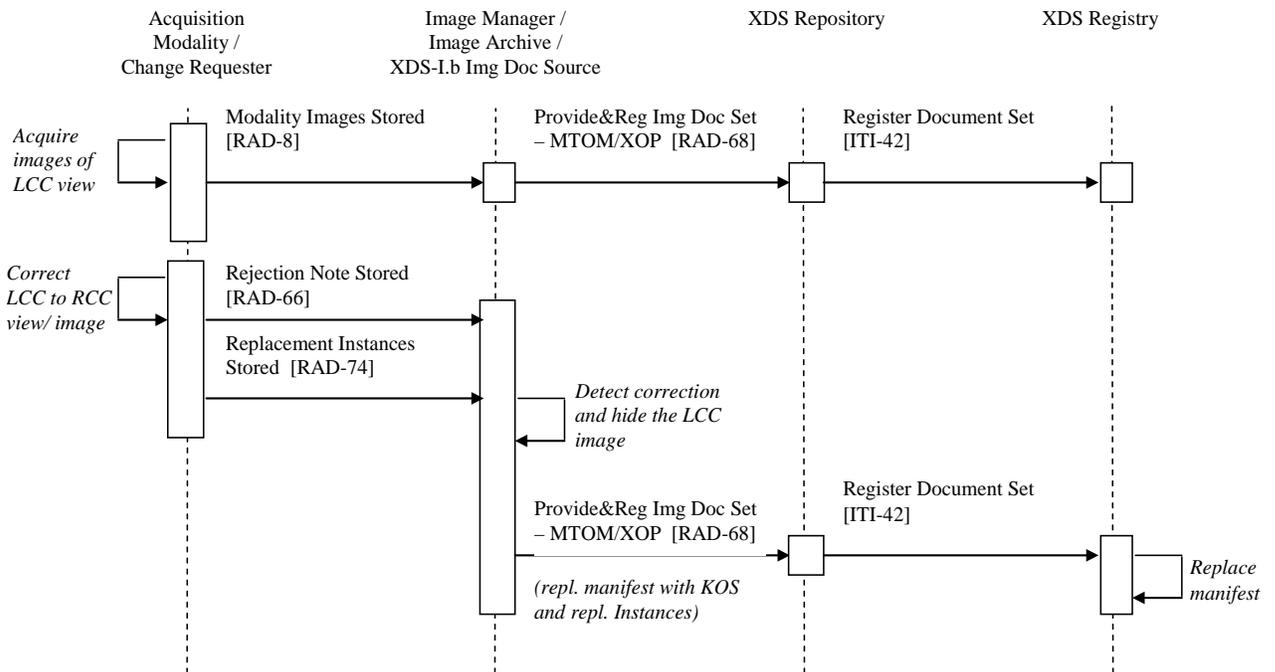### 28.4.5 Image Correction of Exported Study

Figure 28.4.5-1: Image Correction of Exported Study

Note: The interaction between Acquisition Modality and Image Manager/Archive is a simplified version of Figure 28.4.3-1 for illustration purpose only.

This section shows how the synchronization mechanisms described in the previous use cases can be adapted to systems across the enterprise. Use Case: Image Correction for Patient Safety Reason (Section 28.4.3) is used as an example for illustration.

240 The Acquisition Modality sends left breast cranial caudal view (LCC) images that are incorrectly labeled as right breast (RCC) view images to the Image Manager/Archive. The Image Manager/Archive is also acting as an XDS-I Imaging Document Source and publishes the manifest that references these incorrect images to the XDS Repository [RAD-68]. The XDS Repository then registers the manifest to the XDS Registry [ITI-42].

245 Later, as described in Section 28.4.3, the Acquisition Modality corrects the study and sends a Rejection Note and Replacement Instances to the Image Manager / Archive ([RAD-66], [RAD-74]). The Image Manager / Archive hides the incorrect images. Furthermore, the Image Manager/Archive acting as an XDS-I Imaging Document Source replaces the original submitted manifest that references the incorrect images by submitting a new replacement manifest that references the replacement instances. The replacement manifest also includes a reference to the
250 KOS with a Selection Document Title of "Rejected for Patient Safety Reasons".

Since the manifest no longer references the rejected instances, XDS Imaging Document Consumer that retrieves the replacement manifest will not be aware of the rejected instances. For an XDS Imaging Document Consumer that has already retrieved the original incorrect instances, the rejection note in the replacement manifest allows the consumer to hide the incorrect instances
255 accordingly.

Variant: Instead of publishing a study using XDS-I.b, a Portable Media Creator exports the corrected study to an interchange media. The media includes the KOS with a Selection Document Title of "Rejected for Patient Safety Reasons" and the replacement instances.

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Volume 2 - Transactions

4.30 Query Key Image Notes

> *EDITOR: These changes are applied to RAD TF-2 in the RAD-30 transaction*

265 This section corresponds to Transaction RAD-30 of the IHE Technical Framework. Transaction RAD-30 is used by the Image Archive**, Imaging Document Source, Imaging Document Consumer,** and Image Display actors.

4.30.1   Scope

This section describes the sequence of Transactions required for the Image Display **or Imaging Document Consumer** to query the Image Archive **or Imaging Document Source** for instances
270 of Key Image Notes. The Image Display **or Imaging Document Consumer** will query (in order to later retrieve) for Key Image Note objects together with the image objects referenced in the return keys supplied in the response from the Image Archive **or Imaging Document Source**.

Multiple Key Image Notes may exist that reference the same image data.

4.30.2   Use Case Roles
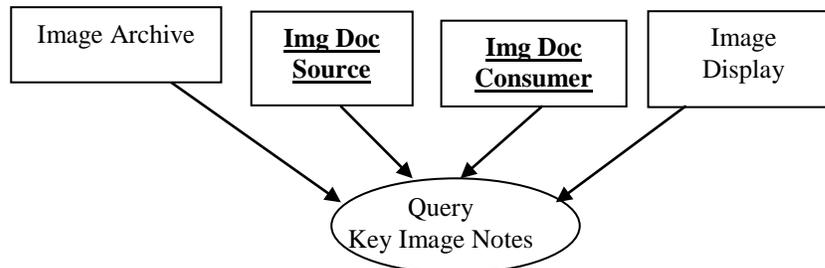
275

Actor: Image Display**, Imaging Document Consumer**

Role: Query for Key Image Notes objects together with the referenced image data and provides a means to indicate that images are flagged as significant. This device will implement the Query/Retrieve SOP Classes in the role of SCU.

280 **Actor:** Image Archive**, Imaging Document Source**

Role: Respond to queries from the Image Display **or Imaging Document Consumer** for Key Image Notes objects. This device will implement the Query/Retrieve SOP Classes in the role of SCP.

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> *Modify 4.30.4.1.1 by the following text:*

4.30.4.1.1 Trigger Events

The user at the Image Display **or Imaging Document Consumer** wishes to view Key Image Notes to use as a guide to find significant images. An Image Display **or Imaging Document**
290 **Consumer** may query for Key Image Notes when a new patient is loaded in order to perform internal logic.

4.30.4.1.2 Message Semantics

The message semantics are defined by the DICOM Query/Retrieve SOP Classes.

A C-FIND Request from the DICOM Study Root Query/Retrieve Information Model – FIND
295 SOP Class or the DICOM Patient Root Query/Retrieve Information Model – FIND SOP Class shall be sent from the Image Display **or Imaging Document Consumer** to the Image Archive **or Imaging Document Source**.

The Image Display **or Imaging Document Consumer** uses one or more matching keys as search criteria to obtain the list of matching entries in the Image Archive **or Imaging Document**
300 **Source** at the selected level (Patient & Study/Series/Instance).

In addition to the required and unique keys defined by the DICOM Standard, the IHE Technical Framework has defined matching and return keys to be supported by query SCUs and SCPs. The keys are defined in Section 4.14.4.1.2 and Table 4.14-1. The conventions for key usage are defined in Section 2.2. For the Image Display **or Imaging Document Consumer** (SCU) and the
305 Image Archive **or Imaging Document Source** (SCP) the additional Key Image Note Instances specific keys are defined in Table 4.30-1.

…

> *Replace 4.30.4.1.3 with the following text. This text is extracted from MAWF with the additional*
310 > *text for IOCM in red.*

4.30.4.1.3 Expected Actions

The Image Archive **or Imaging Document Source** receives the C-FIND request, performs the matching on the provided keys and sends the list of matching records back to the Image Display **or Imaging Document Consumer** via C-FIND responses.

315 ## 4.31 Retrieve Key Image Notes

> *Modify Section 4.31.4.2.3.2 as follow:*

4.31.4.2.3.2 Presentation of rejected or incorrect images in Imaging Object Change Management

320 An Image Display **or Imaging Document Consumer** participating in the Imaging Object Change Management Integration Profile may receive Key Image Notes.

When an Image Display **or Imaging Document Consumer** receives a Key Image Note with Key Object Selection (KOS) Document Title valued (113001, DCM, "Rejected for Quality Reasons"). The Image Display **or Imaging Document Consumer** shall support the three

325 behaviors listed below. The behavior shall be configurable as one of the following:

- Suppress from presentation the rejected instances referenced in this KOS and this KOS itself

- Present the rejected instances referenced in this KOS and this KOS itself

- Ignore this KOS and present the rejected instances.

330 - When an Image Display **or Imaging Document Consumer** receives a Key Image Note with the Key Object Selection (KOS) Document Title valued (113037, DCM, "Rejected for Patient Safety Reasons"), (113038, DCM, "Incorrect Modality Worklist Entry"), or (113039, DCM, "Data Retention Policy Expired"), it shall suppress the KOS and its referenced rejected instances from presentation.

335

Volume 3 – Transactions (continued)

4.47 Distribute Imaging Information on Media

> *Add Section 4.47.4.1.2.1 after Message Semantics*

4.47.4.1.2.1 Access to Rejected Instances

340 The contents of this section are required for Portable Media Creator actors in the Imaging Object
Change Management Profile.

For Key Object Selection instances with one of the following Document Titles, the Portable
Media Creator shall include the KOS instance on the media and exclude from the media all
instances referenced by the KOS.

345 • (113001, DCM, "Rejected for Quality Reasons")

• (113037, DCM, "Rejected for Patient Safety Reasons")

• (113038, DCM, "Incorrect Modality Worklist Entry")

• (113039, DCM, "Data Retention Policy Expired")

350 > *Modified the following section with reference to IOCM*

4.47.4.1.3.2 Image Display

The Image Display reads the DICOM image data from the media and provides the user with the
ability to view all studies (that it supports) contained on the media. GSPS objects and Key Image
Notes are read from the media and applied if the Consistent Presentation of Images and the Key
355 Image Notes IHE Integration Profiles are supported. The Image Display Actor may optionally be
grouped with other actors that view other evidence objects.

**An Image Display Actor in the Imaging Object Change Management Profile shall support
presentation of rejected or corrected instances as defined in RAD TF-3: 4.47.4.1.4.**

360 > *Modified the following section with reference to IOCM*

4.47.4.1.3.3 Report Reader

The Report Reader reads the DICOM SR Reports from the media and may process them (based
on the SR object classes it supports). At a minimum, it provides the user with the ability to view
all reports per the DICOM SR SCP requirements.

365 **A Report Reader Actor in the Imaging Object Change Management Profile shall support
presentation of rejected or corrected instances as defined in RAD TF-3: 4.47.4.1.4.**

_____

Modified the following section and adding Section 4.47.4.1.3.4.1 for IOCM

4.47.4.1.3.4 Portable Media Importer

370   The Portable Media Importer reads DICOM data from the media. Together with the actor with
which it is grouped (see **RAD TF-1: 28.3** ~~vol. 1~~), it shall be able to perform key attribute
reconciliation. Reconciliation may not be required in all cases (e.g., within the same importing
institution/enterprise). Refer to Table 4.47.4-2 for key attributes to be reconciled. The Import
Reconciliation Workflow **Profile** provides a workflow to reconcile key attributes (See ~~Section~~
RAD

375   **RAD** TF**-1:21** ~~3.59~~). Note that the Referenced Study Sequence and Requested Attributes
Sequence are removed for consistency with behavior of the unscheduled cases in SWF and PIR.

The grouped actors provide the capability of storing the supported DICOM objects to an Image
Manager/ Image Archive (for image objects like Images, Presentation States, Key Image Notes,
Evidence Documents), or to a Report Repository (for Diagnostic Reports).

380

Table 4.47.4-2: Media instances - Key attributes to be reconciled

Attribute from Media	Updating action
Patient Name	Replace with value from ADT (See note 1)
Patient ID	Replace with value from ADT (See note 1)
Patient's Birth Date	Replace with value from ADT (See note 1)
Patient's Sex	Replace with value from ADT (See note 1)
Study Instance UID	Remains unchanged
Series Instance UID	Remains unchanged
SOP Instance UID	Remains unchanged
Workflow-related Identifying Attributes (e.g., Order, Requested Procedure, Scheduled and Performed IDs and UIDs).	Values from such identifying attributes of media information • remain unchanged, • are replaced with a value from the local environment, or • are removed (zero length value). The exact method of reconciliation depends on the importing institution's procedures, and goes beyond the IHE scope.
Descriptive performed procedure information (this is information that pertains to the manner in which the information was created (e.g., acquisition context) or it may be payload of the instance (e.g., image structure, document content))	Remains unchanged (see Note 2)

Note 1: The manner in which the Portable Media Importer receives the ADT value is beyond the scope of this profile.

Note 2: Handling of Coded information is beyond the scope of this Integration Profile.

_____

_____

385   *Add Section 4.47.4.1.3.4.1*

4.47.4.1.3.4.1   Access to Rejected Instances

**The contents of this section are required for Portable Media Importer actors in the
Imaging Object Change Management Profile**.

For Key Object Selection instances with one of the following Document Titles, the Portable
390   **Media Importer shall include the KOS instance on the media and exclude from the media
all instances referenced by the KOS.**

- **(113001, DCM, "Rejected for Quality Reasons")**
- **(113037, DCM, "Rejected for Patient Safety Reasons")**
- **(113038, DCM, "Incorrect Modality Worklist Entry")**
395   - **(113039, DCM, "Data Retention Policy Expired")**

Modified the following section with reference to IOCM

4.47.4.1.3.5 Print Composer

The Print Composer reads the DICOM image data from the media and provides a means to print
400   it.

**A Print Composer Actor in the Imaging Object Change Management Profile shall support
presentation of rejected or corrected instances as defined in RAD TF-3: 4.47.4.1.4.**

Modified the following section with reference to IOCM

405   ### 4.47.4.1.3.6 Display

The Display Actor (defined in the IT Infrastructure TF) reads the web-viewable information
from the media and displays it. Note that the web-viewable content will only be present if the
Portable Media Creator involved supports the Web Content Option.

A Display Actor in the Imaging Object Change Management Profile shall support
410   **presentation of rejected or corrected instances as defined in RAD TF-3: 4.47.4.1.4.**

Add the following section

_____

_____

4.47.4.1.4 Presentation of rejected or corrected instances in Imaging Object Change Management

415 An Image Display, Report Reader, Portable Media Importer, Print Composer or Display Actor in the Imaging Object Change Management Integration Profile may receive Key Image Notes with the Key Object Selection (KOS) Document Title valued (113001, DCM, "Rejected for Quality Reasons"). It shall support the three behaviors listed below. The behavior chosen shall be configurable as one of the following:

420 • Suppress from presentation the rejected instances referenced in this KOS and this KOS itself

• Present the rejected instances referenced in this KOS and this KOS itself

• Ignore this KOS and present the rejected instances

If it receives a Key Image Note with the Key Object Selection (KOS) Document Title valued
425 (113037, DCM, "Rejected for Patient Safety Reasons"), (113038, DCM, "Incorrect Modality Worklist Entry"), or (113039, DCM, "Data Retention Policy Expired"), it shall suppress the KOS and its referenced rejected instances from presentation.

4.49 Instance Availability Notification

Add a new Section 4.49.4.1.2.1

430 **4.49.4.1.2.1 Critical attributes in Imaging Object Change Management**

The content of this section is required for Image Manager / Archives in the Imaging Object Change Management Integration Profile.

The Image Manager / Archive receives the Key Image Note with the Key Object Selection Document Title valued (113001, DCM, "Rejected for Quality Reasons"), (113037, DCM,
435 "Rejected for Patient Safety Reasons"), (113038, DCM, "Incorrect Modality Worklist Entry) or (113039, DCM, "Data Retention Policy Expired"). According to the behavior configured (see Section 4.66.4.1.3), it shall send one of the following availability status values for all the rejected instances according to the received KOS:

• "UNAVAILABLE" when it is configured to hide rejected instances.

440 • "ONLINE", "NEARLINE" or "OFFLINE" when regular use of rejected instances is configured, depending on the actual availability of the individual instances.

It shall also send one of the following availability status values for all remaining instances in the same notification:

• "ONLINE", "NEARLINE" or "OFFLINE".

445 If the trigger event is receiving a Key Image Note with the Key Object Selection Document Title valued (113038, DCM, "Incorrect Modality Worklist Entry"), then the Image Manager / Archive shall populate the Referenced SOP Instance UID in the Referenced Performed Procedure Step

_____

_____

Sequence with the corresponding MPPS Instance UID of the referenced rejected instances. For all other trigger events, the Image Manager / Archive shall populate the Referenced SOP
450   Instance UID in the Referenced Performed Procedure Step Sequence with the corresponding MPPS Instance UID of the received instances.

Add the following new section.

4.49.4.1.3.1 Procedure Step Status Management in Imaging Object Change
455   **Management**

The content of this section is required for DSS/OF in the Imaging Object Change Management Integration Profile.
If a completed procedure step has no more associated available instances, then the DSS/OF shall reset the status for this procedure step to Scheduled.

460   *Modify 4.55, WADO Retrieve to define the behavior for an Image Manager/Archive that supports either MAWF or IOCM.*

4.55 WADO Retrieve

Replace 4.55.4.1.3 with the following text:

4.55.4.1.3 Expected Actions

465   Upon reception of the WADO HTTP Request, the Imaging Document Source shall parse the request and if there are no errors, shall construct an HTTP Get Response with the requested DICOM instance content and return the response as specified by the DICOM WADO standard, with HTTP response code 200 (OK).

The Imaging Document Source shall return HTTP response code 406 (Not Acceptable), if it
470   cannot serve the requested response MIME type(s) in parameter contentType and/or Accept Field.

The Imaging Document Source shall return HTTP response code 404 (Not Found) if it cannot locate the requested DICOM SOP Instance or cannot recognize the UID values specified in the received HTTP Request-URI.

475   The Imaging Document Source shall return HTTP response code 400 (Bad Request) if any required HTTP field or required WADO HTTP parameters are missing in the received HTTP Request-URI, or any other syntactic error is detected in the HTTP Request-URI (e.g., media type in contentType parameter conflicts with media types in Accept field).

The Imaging Document Source in the Imaging Object Change Management Integration
480   **Profile shall not return the rejected DICOM SOP Instance(s) referenced by the specific KOS instances with the Document Title valued (113001, DCM, "Rejected for Quality Reasons"), (113037, DCM, "Rejected for Patient Safety Reasons"), (113038, DCM,**

_____

_____

"Incorrect Modality Worklist Entry) or (113039, DCM, "Data Retention Policy Expired").
The Imaging Document Source shall return HTTP response code 404 (Not Found) if the
485 **Imaging Document Consumer requested retrieval of such rejected DICOM SOP**
Instance(s) referenced in that KOS.

4.61 Imported Objects Stored

Add Section 4.61.4.1.2.1 after Message Semantics

4.61.4.1.2.1 Access to Rejected Instances

490 The contents of this section are required for Importer Actors in the Imaging Object Change
Management Profile.

For Key Object Selection instances with one of the following Document Titles, the Importer
shall include the KOS instance on the media and exclude from the media all instances referenced
by the KOS.

495 • (113001, DCM, "Rejected for Quality Reasons")

• (113037, DCM, "Rejected for Patient Safety Reasons")

• (113038, DCM, "Incorrect Modality Worklist Entry")

• (113039, DCM, "Data Retention Policy Expired")

500 *Modify 4.66 defined in MAWF to include new rejection reason and respective semantics. The*
following text is extracted from the MAWF Trial Implementation Supplement.

4.66 Rejection Note Stored

Add the following messages in Section 4.66.4.1.2.1

505 **4.66.4.1 Rejection Note Stored (for Quality Reasons)**

…

4.66.4.1.2.1 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Change Requester actors grouped with Image
Manager / Archive actors claiming the Imaging Object Change Management Profile that
510 **also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.**

The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple
Identity Resolution Option. Specific to this transaction, it shall support:

_____

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

515
- **Message Semantics when Sending SOP Instances (RAD TF-3: J.2.4.1)**

Add the following new Section 4.66.4.1.3.2.

4.66.4.1.3.2 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Image Manager / Archive actors claiming the
520 **Imaging Object Change Management Profile that also support the Multiple Identity
Resolution Option in the Scheduled Workflow Profile.**

**The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple
Identity Resolution Option. Specific to this transaction, it shall support:**

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

525
- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Expected Actions when Receiving SOP Instances (RAD TF-3: J.2.4.1)**

Add the following messages in Section 4.66.4.1.2.1

4.66.4.2 Rejection Note Stored (for Patient Safety Reasons)

530 …

4.66.4.2.2.1 Multiple Identity Resolution Option in Scheduled Workflow

**The contents of this section are required for Change Requester actors grouped with Image
Manager / Archive actors claiming the Imaging Object Change Management Profile that
also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.**

535 **The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple
Identity Resolution Option. Specific to this transaction, it shall support:**

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Message Semantics when Sending SOP Instances (RAD TF-3: J.2.4.1)**

540 *Add the following section*

4.66.4.2.3.1.1 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Image Manager / Archive actors claiming the Imaging Object Change Management Profile that also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.

545 **The Image Manager / Archive shall:**

- **Not provide the incorrect instances referenced in this KOS in responses to an instance query/retrieve transaction ([RAD-72], [RAD-73]).**

In addition, the Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple Identity Resolution Option. Specific to this transaction, it shall support:

550 - **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Expected Actions when Receiving SOP Instances (RAD TF-3: J.2.4.1)**

Add the following new sections in Section 4.66.4.3

555 **4.66.4.3 Rejection Note Stored (for Incorrect Modality Worklist)**

…

4.66.4.3.2.1 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Change Requester actors grouped with Image Manager / Archive actors claiming the Imaging Object Change Management Profile that
560 **also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.**

The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple Identity Resolution Option. Specific to this transaction, it shall support:

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

565 - **Message Semantics when Sending SOP Instances (RAD TF-3: J.2.4.1)**

…

4.66.4.3.3.1 Multiple Identity Resolution Option in Scheduled Workflow Profile

The contents of this section are required for Image Manager / Archive actors claiming the Imaging Object Change Management Profile that also support the Multiple Identity
570 **Resolution Option in the Scheduled Workflow Profile.**

The Image Manager / Archive shall:

- **Not provide the incorrect instances referenced in this KOS in responses to an instance query/retrieve transaction ([RAD-72], [RAD-73]).**

In addition, the Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple Identity Resolution Option. Specific to this transaction, it shall support:

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Expected Actions when Receiving SOP Instances (RAD TF-3: J.2.4.1)**

Add the following new sections in Section 4.66.4.4

4.66.4.4 Rejection Note Stored (for Data Retention Expiry)

…

4.66.4.4.2.1 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Change Requester actors grouped with Image Manager / Archive actors claiming the Imaging Object Change Management Profile that also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.

The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple Identity Resolution Option. Specific to this transaction, it shall support:

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Message Semantics when Sending SOP Instances (RAD TF-3: J.2.4.1)**

…

4.66.4.4.3.1 Multiple Identity Resolution Option in Scheduled Workflow Profile

The contents of this section are required for Image Manager / Archive actors claiming the Imaging Object Change Management Profile that also support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.

In addition, the Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple Identity Resolution Option. Specific to this transaction, it shall support:

- **Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)**

- **Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)**

- **Expected Actions when Receiving SOP Instances (RAD TF-3: J.2.4.1)**

---

*Modify 4.68 Provide and Register Imaging Document Set – MTOM/XOP to specify the behavior
for an Imaging Document Source supporting MAWF or IOCM*

605 ## 4.68 Provide and Register Imaging Document Set – MTOM/XOP

Replace 4.68.4.1.3 Expected Actions with the following text:

4.68.4.1.3   Expected Actions

The Document Repository Actor will receive this message and will process it according to the
requirements specified in ITI TF-2b: 3.41.4.1.3.

610

The Imaging Document Source in Imaging Object Change Management Integration Profile shall include references in a manifest to DICOM KOS SOP instances with the Document Title valued (113001, DCM, "Rejected for Quality Reasons"), (113037, DCM, "Rejected for Patient Safety Reasons"), (113038, DCM, "Incorrect Modality Worklist Entry) or (113039,
615 **DCM, "Data Retention Policy Expired") that mark rejected instances. The Imaging Document Source shall not include the rejected instance(s) that such a KOS references. If a previously submitted manifest includes references to rejected DICOM SOP Instances, then the Imaging Document Source shall submit an update to replace this manifest.**

620 *Modify 4.69 Retrieve Imaging Document Set to specify the behavior for an Imaging Document Source supporting MAWF or IOCM*

4.69 Retrieve Imaging Document Set

Replace 4.69.4.2.3 Expected Actions with the following text:

4.69.4.2.3 Expected Actions

625 An Imaging Document Source shall provide the document(s) indicated in the request. The Imaging Document Source shall return the document(s) or an error code in case the document could not be returned. The pixel data shall be encoded using one of the DICOM transfer syntaxes included in the Retrieve Imaging Document Set Request Message. If the Imaging Document Source cannot encode the pixel data using any of the provided transfer syntaxes then an error
630 status shall be returned.

If the Imaging Document Consumer specifies a transfer syntax field of 1.2.840.10008.1.2.4.94 (DICOM JPIP Referenced Transfer Syntax) or 1.2.840.10008.1.2.4.95 (DICOM JPIP Referenced Deflate Transfer Syntax), the following behavior is expected:

- If the DICOM Image Object(s) have a transfer syntax(es) that match the requested
635 transfer syntax, the Retrieve Imaging Document Set Response shall include the DICOM Image Objects unchanged.

- If the DICOM Image Object(s) have a transfer syntax that differs from that of the request, the Retrieve Imaging Document Set Response shall include the DICOM image with the transfer syntax changed to the requested transfer syntax. In addition, the pixel data
640 Attribute (7Fe0,0010 tag) will have been removed and replaced with a Pixel Data Provider URL (0028,7FE0 tag). The URL represents the JPIP request and will include the specific target information.

- Upon receipt of this Retrieve Imaging Document Set Response, the Imaging Document Consumer may request the pixel data from the pixel data provider using the supplied
645 URL. Additional parameters required by the application may be appended to the URL when accessing the pixel data provider.

35

- For example, a JPIP request for a 200 by 200 pixel rendition of the entire image can be constructed from the Pixel Data Provider URL as follows:

- Pixel Data Provider URL (0028,7FE0) =
650   https://server.xxx/jpipserver.cgi?target=imgxyz.jp2,

- URL Generated by the application =
https://server.xxx/jpipserver.cgi?target=imgxyz.jp2&fsiz=200,200

The conditions of failure and possible error messages are given in the ebRS standard and detailed in ITI TF-3: 4.2.4 "Error Reporting".

655

> *Add Section 4.69.4.2.3.1*

4.69.4.2.3.1 Access to Rejected Instances

The contents of this section are required for Imaging Document Source and Imaging Document Consumer actors in the Imaging Object Change Management Profile.

660 For Key Object Selection instances with Document Titles (113001, DCM, "Rejected for Quality Reasons"), (113037, DCM, "Rejected for Patient Safety Reasons"), (113038, DCM, "Incorrect Modality Worklist Entry"), or (113038, DCM, "Data Retention Policy Expired"),

- The Imaging Document Source shall not return the rejected instances referenced by this specific KOS.

665 When an Imaging Document Consumer receives a Key Image Note with Key Object Selection (KOS) Document Title valued (113001, DCM, "Rejected for Quality Reasons"), the Imaging Document Consumer shall support the three behaviors listed below. The behavior shall be configurable as one of the following:

- Suppress from presentation the rejected instances referenced in this KOS and this KOS
670   itself

- Present the rejected instances referenced in this KOS and this KOS itself

- Ignore this KOS and present the rejected instances.

When an Imaging Document Consumer receives a Key Image Note with the Key Object Selection (KOS) Document Title valued (113037, DCM, "Rejected for Patient Safety Reasons"),
675 (113038, DCM, "Incorrect Modality Worklist Entry"), or (113039, DCM, "Data Retention Policy Expired"), it shall suppress the KOS and its referenced rejected instances from presentation.

> *Add the following new sections in Section 4.74*

680 ## 4.74 Replacement Instances Stored

…

4.74.4.1.2.3 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Change Requester actors grouped with Image
Manager / Archive actors claiming the Imaging Object Change Management Profile that also
685 support the Multiple Identity Resolution Option in the Scheduled Workflow Profile.

The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple
Identity Resolution Option. Specific to this transaction, it shall support:

- Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)

- Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)

690 - Message Semantics when Sending SOP Instances (RAD TF-3: J.2.4.1)

…

4.74.4.1.3.1 Multiple Identity Resolution Option in Scheduled Workflow

The contents of this section are required for Image Manager / Archive actors claiming the
Imaging Object Change Management Profile that also support the Multiple Identity Resolution
695 Option in the Scheduled Workflow Profile.

The Image Manager / Archive shall meet the requirements defined in Appendix J: Multiple
Identity Resolution Option. Specific to this transaction, it shall support:

- Cross-Referencing of Patient Identifiers (RAD TF-3: J.2.1)

- Configurable Mapping to Default Assigning Authorities (RAD TF-3: J.2.2)

700 - Expected Actions when Receiving SOP Instances (RAD TF-3: J.2.4.1)