

HITSP Sharing Imaging Results Transaction Package

HITSP/TP89



Healthcare Information Technology Standards Panel

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1.0 INTRODUCTION

1.1 OVERVIEW

The HITSP Sharing Imaging Results Transaction Package supports the process of sharing medical imaging results data. Imaging results data are captured as part of the normal process of care performed by healthcare providers. This data can be made available through document sharing for both clinical care and public health purposes.

1.2 COPYRIGHT PERMISSIONS

COPYRIGHT NOTICE

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1.3 REFERENCE DOCUMENTS

This section provides a list of key reference documents and background material. If you are already familiar with this information, proceed to Section 2.0.

A list of key reference documents and background material is provided in the table below. These documents can be retrieved from www.hitsp.org.

Table 1-1 Reference Documents

Reference Document	Document Description
HITSP Acronyms List	Lists and defines the acronyms used in this document
HITSP Glossary	Provides definitions for relevant terms used by HITSP documents
TN900 - Security and Privacy	TN900 is a reference document that provides the overall context for use of the HITSP Security and Privacy constructs
TN901 - Clinical Documents	TN901 is a reference document that provides the overall context for use of the HITSP Care Management and Health Records constructs

1.4 CONFORMANCE

This section describes the conformance criteria, which are objective statements of requirements that can be used to determine if a specific behavior, function, interface, or code set has been implemented correctly.

1.4.1 CONFORMANCE CRITERIA

In order to claim conformance to this construct specification, an implementation must satisfy all the requirements and mandatory statements listed in this specification, the associated HITSP Interoperability Specification, its associated construct specifications, as well as conformance criteria from the selected base and composite standards. A conformant system must also implement all of the required interfaces within the scope, subset or implementation option that is selected from the associated Interoperability Specification.

Claims of conformance may only be made for the overall HITSP Interoperability Specification or Capability with which this construct is associated.



1.4.2 CONFORMANCE SCOPING, SUBSETTING AND OPTIONS

A HITSP Interoperability Specification must be implemented in its entirety for an implementation to claim conformance to the specification. HITSP may define the permissibility for interface scoping, subsetting or implementation options by which the specification may be implemented in a limited manner. Such scoping, subsetting and options may extend to associated constructs, such as this construct. This construct must implement all requirements within the selected scope, subset or options as defined in the associated Interoperability Specification to claim conformance.



2.0 TRANSACTION PACKAGE DEFINITION

2.1 CONTEXT OVERVIEW

Integrating Healthcare Enterprise (IHE) Radiology Technical Framework has released the Cross-Enterprise Document Sharing for Imaging (XDS-I) Integration Profile. It provides an integration solution to the problem of general purpose document image sharing in a broad healthcare environment.

This profile [XDS-I] specifies sharing of imaging documents such as radiology and cardiology images and reports. It presents a solution for sharing imaging documents based on XDS. XDS-I extends XDS by sharing, locating and accessing DICOM instances from its original local sources, e.g., for radiologists, oncologists or other medical imaging specialties.

2.1.1 TRANSACTION PACKAGE CONSTRAINTS

Table 2-1 Transaction Package Constraints

Constraint
No applicable implementation constraints

2.1.2 INTERFACES

All interfaces for this Transaction Package are described in Section 2.2 of IHE Radiology Technical Framework XDS-I Integration Profile and as follows.

Table 2-2 Interfaces

Interface	Description	Used in Component/ Standard	Transaction/Content	Optionality ¹
Document Consumer	Queries a Document Registry Interface for documents meeting certain criteria and retrieves selected documents from one or more Document Repository interfaces	IHE XDS-I	Registry Stored Query	C[203]
			Retrieve Document Set	C[203]
			Stored Query	C[203]
Document Registry	Maintains metadata about each registered document in a document entry. This includes a link to the Document in the Repository where it is stored. The Document Registry responds to queries from Document Consumer interfaces about documents meeting specific criteria. It also enforces some healthcare specific technical policies at the time of document registration	IHE XDS-I	Patient Identity Feed	R
			Registry Stored Query	C[205]
			Provide & Register Document Set-b	C[205]
			Stored Query	C[205]
			Provide & Register Document Set	C[205]
			Provide & Register Document Set (offline mode)	C[202]
Document Repository	Responsible for both the persistent storage of these documents as well as for their registration with the appropriate Document Registry. It assigns a Uniform Resource Identifier (URI) to documents for subsequent retrieval by a Document Consumer	IHE XDS-I	Provide & Register Document Set-b	C[204]
			Register Document Set-b	C[204]
			Retrieve Document Set	C[204]
			Register Document Set	C[204]
			Provide & Register Document Set	C[204]
			Retrieve Document	C[204]
Document	Producer and publisher of documents. It is	IHE XDS-I	Provide & Register Document Set-b	C[202]

¹ Optionality = "R" for Required, "R2" for Required if known, "O" for Optional, or "C" for Conditional



Interface	Description	Used in Component/ Standard	Transaction/Content	Optionality ¹
Source	responsible for sending documents to a Document Repository Interface. It also supplies metadata to the Document Repository Interface for subsequent registration of the documents with the Document		Provide & Register Document Set	C[202]
Imaging Document Consumer	The Imaging Document Consumer interface parses an imaging manifest document that is retrieved by the Document Consumer interface from the Document Repository interface and retrieves DICOM SOP Instances referenced within that manifest from the Imaging Document Source interface	IHE XDS-I	Retrieve Images [RAD-16]	C[206]
			Retrieve Presentation States [RAD-17]	O
			Retrieve Reports [RAD-27]	C[206]
			Retrieve Key Image Note [RAD-31]	O
			Retrieve Evidence Documents [RAD-45]	C[206]
			WADO Retrieve [RAD-55]	C[206]
Imaging Document Source	The Imaging Document Source interface is the producer and publisher of imaging documents. It is responsible for providing imaging documents and metadata to the Document Repository interface, which subsequently registers the imaging documents with the Document Registry interface. It also supports the retrieval services for DICOM SOP Instances referenced in a published imaging manifest document	IHE XDS-I	Provide & Register Imaging Document Set [RAD-54]	C[201]
			Retrieve Images [RAD-16]	R
			Retrieve Presentation States [RAD-17]	R
			Retrieve Reports [RAD-27]	R
			Retrieve Key Image Note [RAD-31] R	R
			Retrieve Evidence Documents [RAD-45]	R
Patient Identity Source	Sends Patient Demographic Information when requested, assigns a unique identifier to each instance of a patient, and maintains a collection of identity traits	IHE XDS-I	PIX Identity Feed	R

Transaction/Content (T/C) Optionality Conditions

- C[201] – At least one of the optional retrieve transactions is required to be supported. Refer to Section 18.4 of IHE Radiology Technical Framework Part 1 for additional requirements on the Imaging Document Consumer
- C[202] – The Interface shall support at least one of these transactions
- C[203] – The Document Consumer shall support either XDS.a transactions, XDS.b transactions or both. Where Identity Assertion is required, the Document Consumer shall support XDS.b (Registry Stored Query, Retrieve Document Set)
- C[204] – The Document Repository shall support either XDS.a transactions, XDS.b transactions or both. Where Identity Assertion is required, the Document Repository shall support XDS.b (Provide & Register Document Set-b, Register Document Set-b, Retrieve Document Set)
- C[205] – The Document Registry shall support either XDS.a transactions, XDS.b transactions or both. Where Identity Assertion is required, the Document Repository shall support XDS.b to query the Registry (Registry Stored Query)
- C[206] – Support of at least one of the three document types described by the options in Section 18.2 of IHE Radiology Technical Framework Part 1 is required

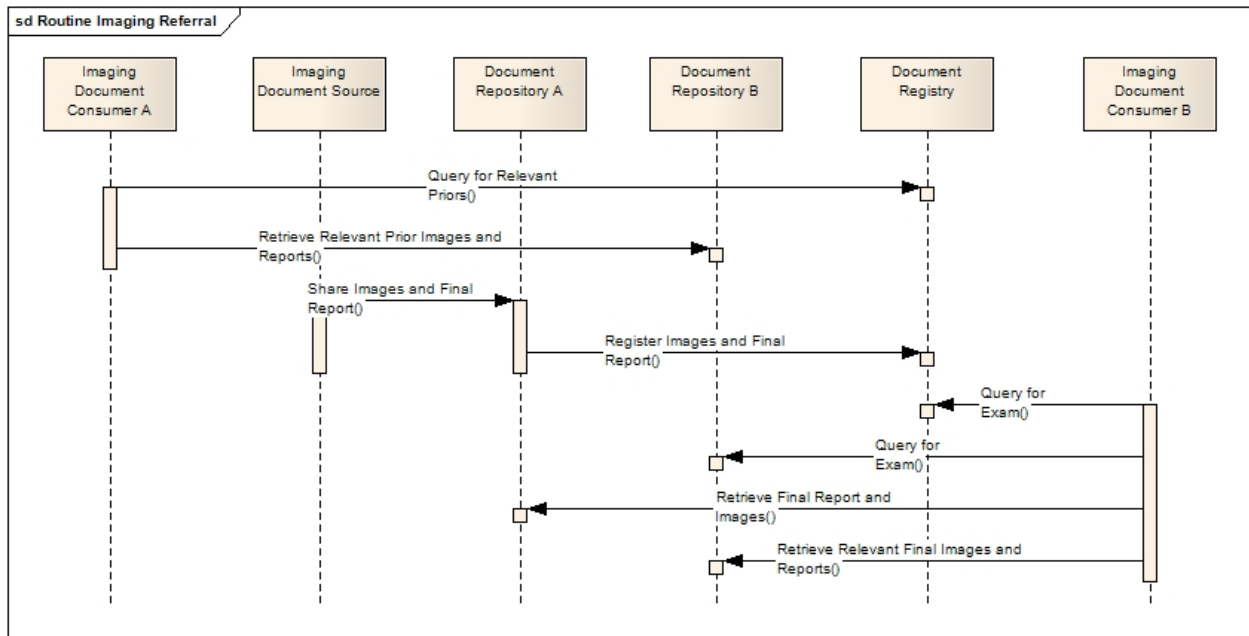
2.1.3 INTERFACE INTERACTIONS

All interactions associated with this Transaction Package can be found in Section 18 of the IHE Radiology Technical Framework XDS-I Integration Profile and are reproduced below.

The following diagram shows the interactions involved in a routine imaging referral.

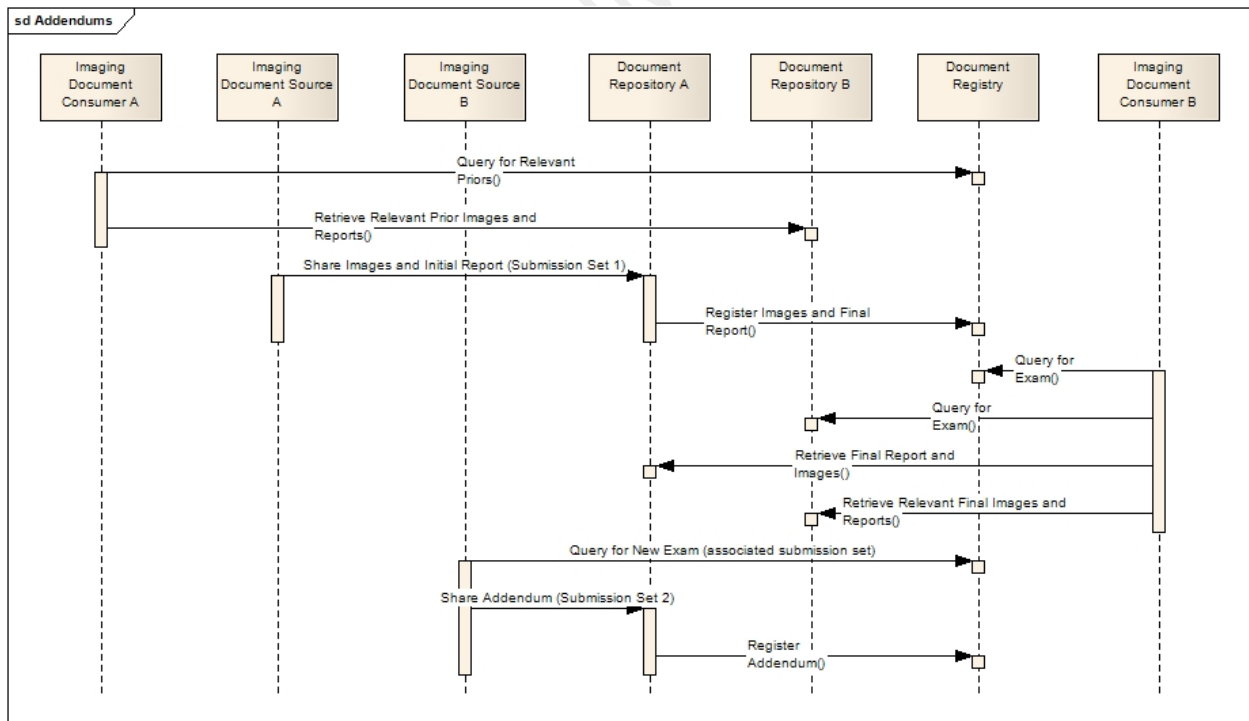


Figure 2-1 Interface Interactions – Routine Imaging Referral



The following diagram shows the interactions involved in the case where an addendum is provided during the course of treatment.

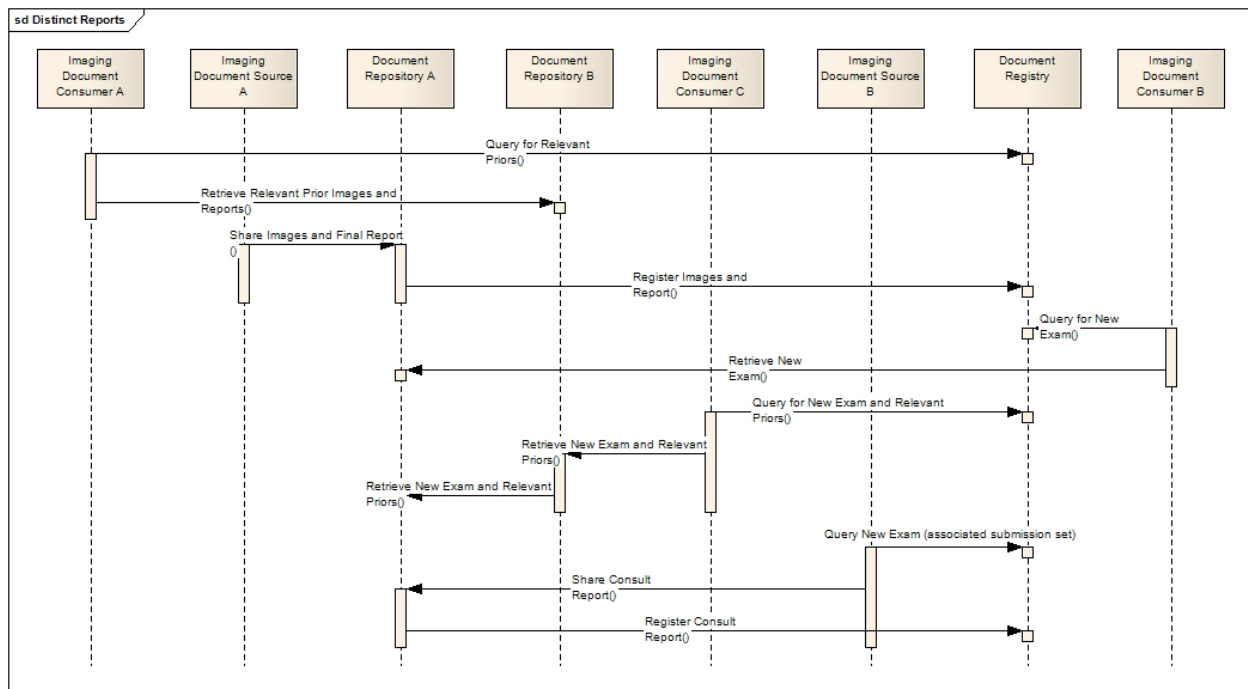
Figure 2-2 Interface Interactions – Addenda



The following diagram shows the interactions involved when separate and distinct reports are provided for the same imaging exam.



Figure 2-3 Interface Interactions – Distinct Reports



2.1.4 PRE-CONDITIONS

Table 2-3 Pre-conditions

Pre-condition
IHE ATNA Integration Profile is assumed as a Pre-condition to this Transaction Package (see HITSP/T15 Collect and Communicate Security Audit Trail)
IHE Consistent Time Integration Profile is assumed as a Pre-condition to this Transaction Package (see HITSP/T16 Consistent Time)
IHE Patient Identifier Cross-Referencing Integration Profile is assumed as a Pre-condition to this Transaction Package (see HITSP/TP22 Patient ID Cross-Referencing)
It is expected that the security framework under which this Transaction Package operates is in accordance with the Interoperability Specification that references this construct. Therefore all applicable HITSP Security and Privacy constructs are implemented as required



2.1.4.1 PROCESS TRIGGERS

Table 2-4 Process Triggers

Process Trigger
Radiology images are ready for sharing

2.1.5 POST-CONDITIONS

Table 2-5 Post-conditions

Post-condition
Submitted imaging documents are successfully filed in the repository and their metadata are retrievable from the registry

2.1.5.1 REQUIRED OUTPUT

Table 2-6 Required Output

Required Output	Format/Usage
No applicable required outputs	

2.1.6 DATA FLOWS

All process and data flows associated with this Transaction Package can be found in Section 18 of the IHE Radiology Technical Framework XDS-I Integration Profile.

2.2 LIST OF HITSP CONSTRUCTS

Table 2-7 List of Constructs

Construct Name	Description	Content
HITSP/TP13	HITSP Manage Sharing of Documents Transaction Package	The Manage Sharing of Documents Transaction Package supports the sharing of patient records in the form of source attested objects called documents. A healthcare document is a composite of structured and coded health information, both narrative and tabular, that describes acts, observations and services for the purpose of exchange. No assumption is made by this construct in terms of the format and structure of the content of documents shared
HITSP/TP22	HITSP Patient ID Cross-Referencing Transaction Package	The Patient ID Cross-Referencing Transaction Package is used for identifying and cross-referencing different attributes for the same patient. It contains a query for cross-reference and patient identity feed transactions. These transactions are used to identify patients from a list of potentials, and/or to communicate patient demographic data



2.2.1 CONSTRUCT DEPENDENCIES

Table 2-8 Construct Dependencies

Construct	Depends On (Name of Component that it depends on)	Dependency Type (Pre-condition, post-condition, general)	Purpose
Provide and Register Imaging Document Set	Patient Identity Feed	Pre-condition	Permit association of image documents with appropriate real or pseudo patient identifiers
<ul style="list-style-type: none">WADO RetrieveQuery RegistryRetrieve DocumentRetrieve ImagesRetrieve Presentation StatesRetrieve ReportsRetrieve Key Image NotesRetrieve Evidence Documents	Provide and Register Imaging Document Set <i>or</i> Register Document Set	Pre-condition	Define and populate domains containing imaging documents that may be queried and from which documents may be retrieved

All constraints associated with this Transaction Package are specified in the IHE Radiology Technical Framework XDS-I Integration Profile.

2.2.2 ADDITIONAL CONSTRAINTS ON REQUIRED CONSTRUCTS

Table 2-9 Additional Constraints on Required Constructs

Data Element	Construct	Constraint	Constraint Type (Pre-condition, post-condition, general)	Purpose (Reason for this constraint)
No applicable constraints				

2.3 STANDARDS

2.3.1 REGULATORY GUIDANCE

Table 2-10 Regulatory Guidance

Standard	Description
No applicable regulatory guidance	

2.3.2 SELECTED STANDARDS

Table 2-11 Selected Standards

Standard	Description
Integrating the Healthcare Enterprise (IHE) Radiology Technical Framework Revision 8.0	The IHE Radiology Technical Framework specifies the Cross-Enterprise Document Sharing for Imaging (XDS-I) Integration Profile which enables sharing of imaging documents such as radiology images and reports across healthcare enterprises. XDS-I extends XDS by sharing, locating and accessing DICOM Instances from its original local sources, e.g., for radiologists or oncologists. For more information visit www.ihe.net

2.3.3 INFORMATIVE REFERENCE STANDARDS

Table 2-12 Informative Reference Standards

Standard	Description
No applicable informative reference standards	



3.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

No additional information at this time.

RELEASED FOR IMPLEMENTATION



4.0 DOCUMENT UPDATES

The following sections provide the details of updates made to this document.

4.1 DECEMBER 10, 2008

The changes in this construct address the following comments received during the Public Comment and Inspection Testing period (September 29 – October 24, 2008).

No comments received.

Minor editorial changes were made to this construct.

4.2 DECEMBER 18, 2008

Upon approval by the HITSP Panel on December 18, 2008, this document is now Released for Implementation.

4.3 JUNE 30, 2009

Minor editorial changes were made to this document. Removed boilerplate text for simplification. The term “actor” was replaced with “interface”.

4.4 JULY 8, 2009

Upon approval by the HITSP Panel on July 8, 2009, this document is now Released for Implementation.

