

HITSP Healthcare Document Management Service Collaboration

HITSP/SC112



Healthcare Information Technology Standards Panel

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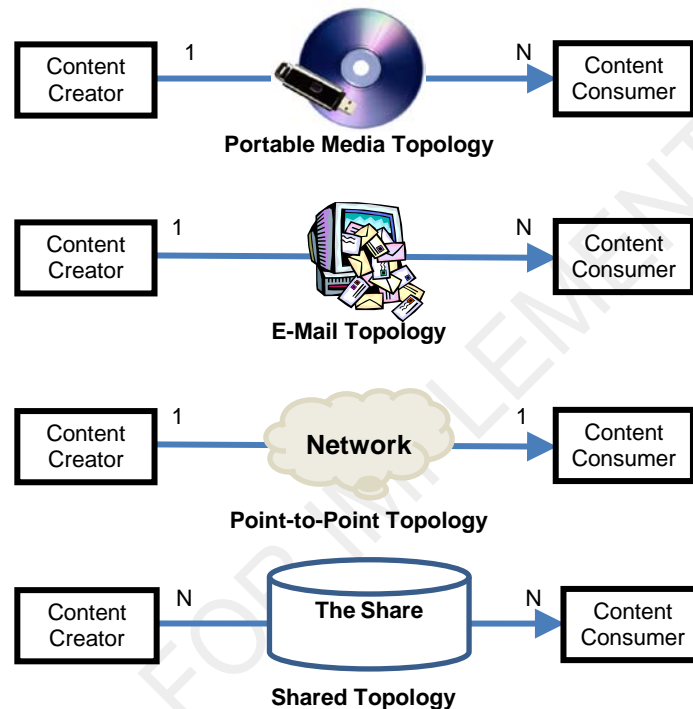


1.0 INTRODUCTION

1.1 SERVICE COLLABORATION OVERVIEW AND SCOPE

HITSP/SC112 Healthcare Document Management provides the ability to share healthcare documents using a set of topologies. The following Figure illustrates the basic topologies, such as Portable Media, e-Mail, Point-to-Point, and Shared within a Health Information Exchange (HIE).

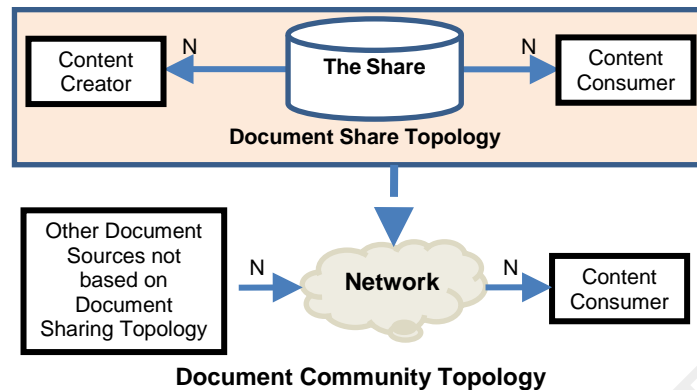
Figure 1-1 Examples of HITSP Healthcare Document Sharing Topology Alternatives



The following Figure 1-2 shows an advanced form of the Shared Topology (e.g., NHIN) that connects multiple Shared Topologies and extends access to larger organizations made up of diverse Health Information Exchanges not based on the HITSP selected Shared Topology. The Shared Topology and Community Topology are the technical basis for Health Information Exchanges (e.g., HIO, RHIO, NHIO, PHR, and HRB) that are based on sharing documents when paired with other infrastructural services such as patient identity management, user federation, or audit controls.



Figure 1-2 Document Community Topology



This Service Collaboration utilizes:

- HITSP/TP13 Manage Sharing of Documents
- HITSP/T31 Document Reliable Interchange
- HITSP/T33 Transfer Documents on Media
- HITSP/T29 Notification of Document Availability
- HITSP/SC108 Access Control
- HITSP/SC109 Security Audit
- HITSP/SC110 Patient Identification Management
- HITSP/T17 Secured Communication Channel
- HITSP/T64 Identify Communication Recipients
- HITSP/C26 Nonrepudiation of Origin

For more information about the underlying Capabilities, pre-conditions, post-conditions, data flows and other detailed information, please refer to the constructs that are used by this Service Collaboration.

This Service Collaboration document illustrates one internal view diagram and sequence table for each service interface. The diagrams are descriptive and the sequences are not mandatory. They may be affected by policy, chosen architecture, and implementation details. Conformance is measured against the underlying constructs.

This Service Collaboration offers two primary interfaces that include the ability to deliver healthcare documents via all possible transports recognized by HITSP. Ultimately the transport must be chosen before an implementation.

Send Documents (documents, architecture choice)

Receive Documents (documents, architecture choice)

There are additional secondary interfaces for special cases where the HITSP Interoperability Specification or HITSP Capability is constraining the transports to a smaller subset. These interfaces should be used only when there is clear evidence that this constraint is necessary.

HITSP/C26 Nonrepudiation of Origin may be applied to any document in accordance with the HITSP/C26 specification. The HITSP/C26 signature document is managed according to the underlying specification in collaboration with the topology-specific transport.

The Service Collaboration implements the following patterns:



- Send/Receive – In this pattern the receiver is coupled with the sender and is actively informed of the send event
- Publish/Consume – In this pattern the publication does not inform the consumer. The consumer is expected to discover the documents to consume through decoupled queries or other discovery methods
- Subscription/Notification – This is a receive side pattern only allowing a consuming system to subscribe for notification of new documents given a specified matching topic. Once notified the consuming system would use the Consume Documents through Share to query for the metadata and retrieve the document

The Service Collaboration additionally documents some Infrastructure Interfaces that are specific to a Health Information Exchange share and a Community Share such as NHIN.

1.2 SERVICE COLLABORATION INVOCATION

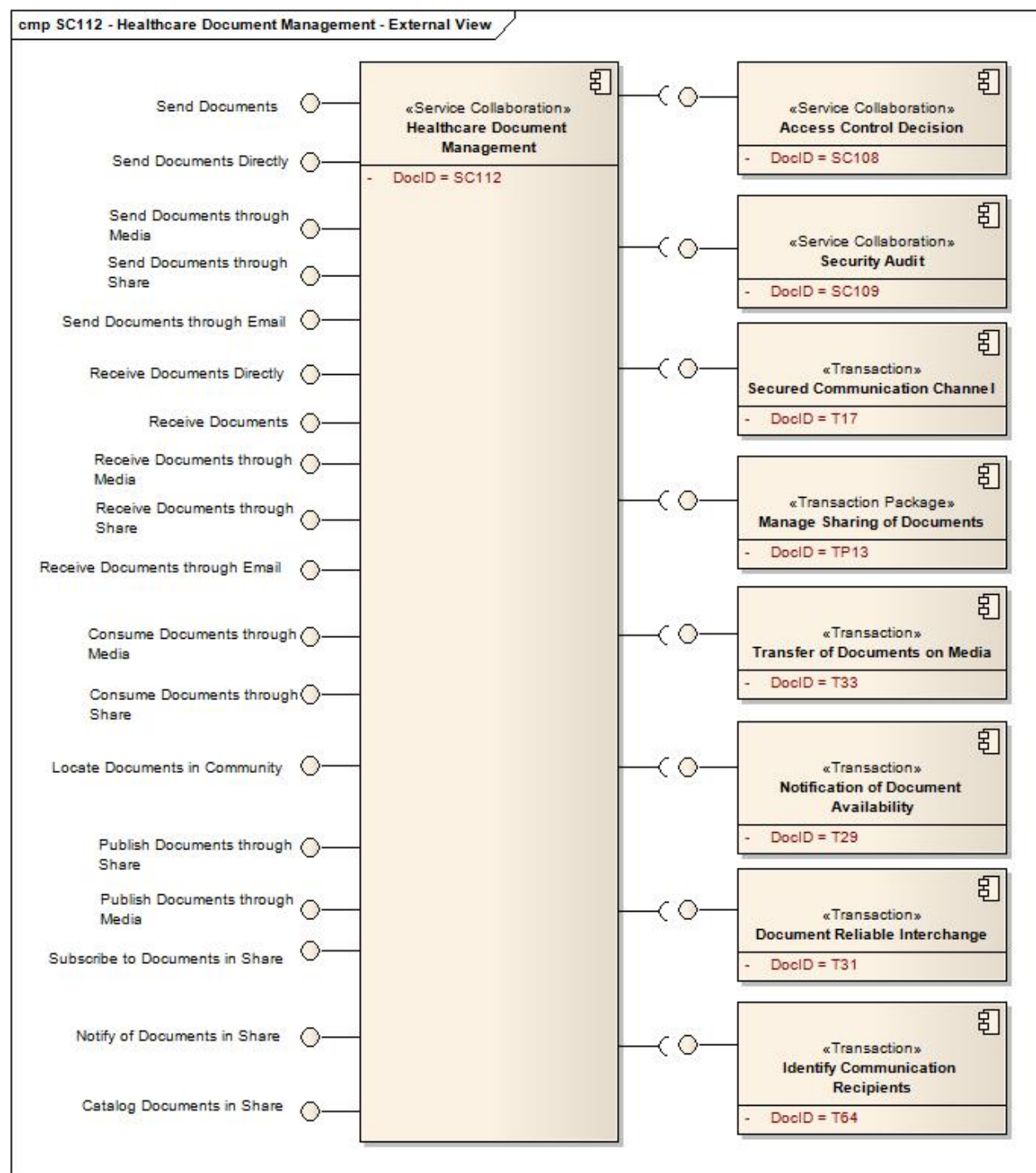
Table 1-1 Service Collaboration Transactions and Data

| Service Collaboration | Service Collaboration Description | Interface |
|-----------------------|---|----------------------------------|
| HITSP/SC112 | Send documents to a receiver | Send Documents |
| HITSP/SC112 | Receive documents that were sent | Receive Documents |
| HITSP/SC112 | Send documents to a receiver using point-to-point delivery | Send Documents Directly |
| HITSP/SC112 | Send documents to a receiver using e-Mail transport | Send Documents through e-Mail |
| HITSP/SC112 | Publish documents onto removable media | Publish Documents through Media |
| HITSP/SC112 | Send documents through document sharing | Send Documents through Share |
| HITSP/SC112 | Publish documents through document sharing | Publish Documents through Share |
| HITSP/SC112 | Receive documents from a sender using point-to-point delivery | Receive Documents Directly |
| HITSP/SC112 | Receive documents from a sender using e-Mail transport | Receive Documents through e-Mail |
| HITSP/SC112 | Consume documents from removable media | Consume Documents through Media |
| HITSP/SC112 | Receive documents through document sharing | Receive Documents through Share |
| HITSP/SC112 | Discover and Consume documents through document sharing | Consume Documents through Share |
| HITSP/SC112 | Subscribe for Notice for documents through document sharing | Subscribe to Documents in Share |
| HITSP/SC112 | Notify that documents are available in document sharing | Notify of Documents in Share |
| HITSP/SC112 | Catalog documents in document sharing | Catalog Documents in Share |
| HITSP/SC112 | Locate documents in community document share | Locate Documents in Community |



1.3 EXTERNAL VIEW (i.e., “Black Box” Diagram)

Figure 1-3 Healthcare Document Management External View Diagram



1.3.1 SERVICE COLLABORATION SOURCE CONSTRUCTS

Table 1-2 List of Constructs

| Construct | Description |
|---|--|
| HITSP/TP13 - Manage Sharing of Documents | The HITSP 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/T31 - Document Reliable Interchange | The HITSP Document Reliable Interchange Transaction provides a standards-based mechanism for conveying a set of medical documents in a point-to-point network-based communication. This Transaction uses the IHE Cross-Enterprise Document Reliable Interchange (XDR) Integration Profile, a companion to the IHE Cross-Enterprise Document Sharing (XDS) Integration Profile. Cross-Enterprise Document Reliable Interchange (XDR) uses the XDS defined metadata formats in a simpler environment in which the communicating parties have agreed to a point-to-point interchange rather than communicating via document sharing |
| HITSP/T33 - Transfer of Documents on Media | The HITSP Transfer of Documents on Media Transaction describes both the type of media (CD-ROM, USB Memory, and e-Mail) that may be used to write the documents and provides a directory structure that must be followed in order for the contents to be successfully accessed and processed by systems. An example might be to transport data from one healthcare provider to another healthcare provider, or a healthcare consumer may wish to move the contents of a Personal Health Record (PHR) using physical media or e-Mail. This Transaction uses the IHE Cross-Enterprise Document Media Interchange Integration Profile developed by Integrating the Healthcare Enterprise (IHE), a companion to the IHE Cross-Enterprise Document Sharing (XDS) Integration Profile |
| HITSP/T29 - Notification of Document Availability | The HITSP Notification of Document Availability Transaction is based on the Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (TF) Supplement - Notification of Document Availability (NAV). The Notification of Document Availability Transaction defines a mechanism for a healthcare stakeholder (e.g. provider, public health, etc) to notify providers or the patient about information that is available for retrieval pertaining to an identified patient. This Transaction defines the format, content, encoding and transmission of notification messages and acknowledgements between IHE NAV interfaces and a known recipient (either a person or system) that participate in the same XDS Affinity Domain |
| HITSP/SC108 - Access Control | The HITSP Access Control Service Collaboration provides the mechanism for security authorizations which control the enforcement of security policies including: role-based access control, entity based access control, context based access control, and the execution of consent directives |
| HITSP/SC109 - Security Audit | The HITSP Security Audit Service Collaboration describes the mechanism to record security relevant events in support of policy, regulation, or risk analysis. It also provides the mechanism to determine the record format to support analytical reports that are needed |
| HITSP/SC110 - Patient Identification Management | The HITSP Patient Identification Management Service Collaboration provides the ability to lookup and/or cross-reference patient identities |
| HITSP/T17 - Secured Communication Channel | The HITSP Secured Communication Channel Transaction provides the mechanisms to ensure the authenticity, integrity, and confidentiality of transmissions, and the mutual trust between communicating parties. Its objectives include providing: mutual node authentication to assure each node of the others' identity; transmission integrity to guard against improper information modification or destruction while in transit; and transmission confidentiality to ensure that information in transit is not disclosed to unauthorized individuals, entities, or processes |



| Construct | Description |
|---|---|
| HITSP/T64 - Identify Communication Recipients | The HITSP Identify Communication Recipients Transaction is intended to serve the purpose of identification of communication recipients and the subsequent purpose of delivery of alerts and bi-directional communications (e.g., public health agencies notifying a specific group of service providers about an event.). The method and criteria by which individuals are added to a directory is a policy decision, which is out of scope for this construct. It uses the Integrating the Healthcare Enterprise (IHE) Personnel White Pages profile which provides access to basic directory information for identifying one or more recipients |
| HITSP/C26 – Nonrepudiation of Origin | The HITSP Nonrepudiation of Origin Component provides the mechanisms to support Nonrepudiation of Origin, which refers to both the proof of the integrity and origin of documents in a high-assurance manner, which can be verified by any party. This Component does not provide Nonrepudiation of Receipt |

1.4 INTERNAL VIEW DIAGRAM WITH SEQUENCING (i.e., “White Box” Diagram)

1.4.1 INTERFACE: SEND DOCUMENTS

This Service Collaboration Interface is a generalized Send Interface. There is no implementation given for this Interface, although we recognize that it is possible to implement. This interface expects that an implementation would choose which of the interfaces that would be included in the implementation. The Interface chosen will depend on implementation details including topology, physical limitations, policies, processes, and architectural choices. This Service Collaboration Interface is a collector for the underlying interfaces:

- SC112 Send Documents Directly
- SC112 Send Documents through e-Mail
- SC112 Publish Documents through Media
- SC112 Send Documents through Share
- SC112 Publish Documents through Share

When using Share, this Service Collaboration further specifies some Interfaces that describe the Infrastructural support services. Not all of these Infrastructural support services are necessary to support all implementations.

- SC112 Notify of Documents in Share
- SC112 Catalog Documents in Share
- SC112 Locate Documents in Community

1.4.2 INTERFACE: RECEIVE DOCUMENTS

This Service Collaboration Interface is a generalized Receive Interface. There is no implementation given for this Interface, although we recognize that it is possible to implement. This interface expects that an implementation would choose which of the interfaces that would be included in the implementation. The Interface chosen will depend on implementation details including topology, physical limitations, policies, processes, and architectural choices. This Service Collaboration Interface is a collector for the underlying Interfaces:

- SC112 Receive Documents Directly
- SC112 Receive Documents through e-Mail
- SC112 Consume Documents through Media
- SC112 Receive Documents through Share
- SC112 Consume Documents through Share
- SC112 Subscribe to Documents in Share

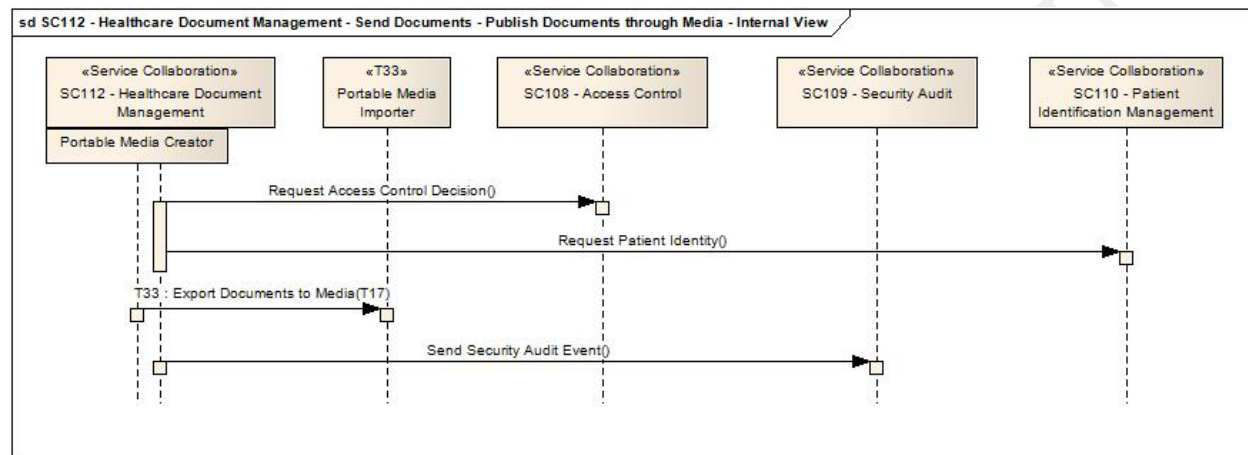


When using Share, this Service Collaboration further specifies some Interfaces that describe the Infrastructural support services. Not all of these Infrastructural support services are necessary to support all implementations.

- SC112 Notify of Documents in Share
- SC112 Catalog Documents in Share
- SC112 Locate Documents in Community

1.4.3 INTERFACE: PUBLISH DOCUMENTS THROUGH MEDIA

Figure 1-4 Publish Documents Through Media Internal View



1.4.3.1 SEQUENCE DETAILS

Table 1-3 Publish Documents Through Media – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-4 Publish Documents Through Media – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to export the documents onto the media |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the share |
| 3 | HITSP/T33 - Transfer of Documents on Media | Portable Media Creator | To export the documents and metadata onto the media |
| 4 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to media operation |

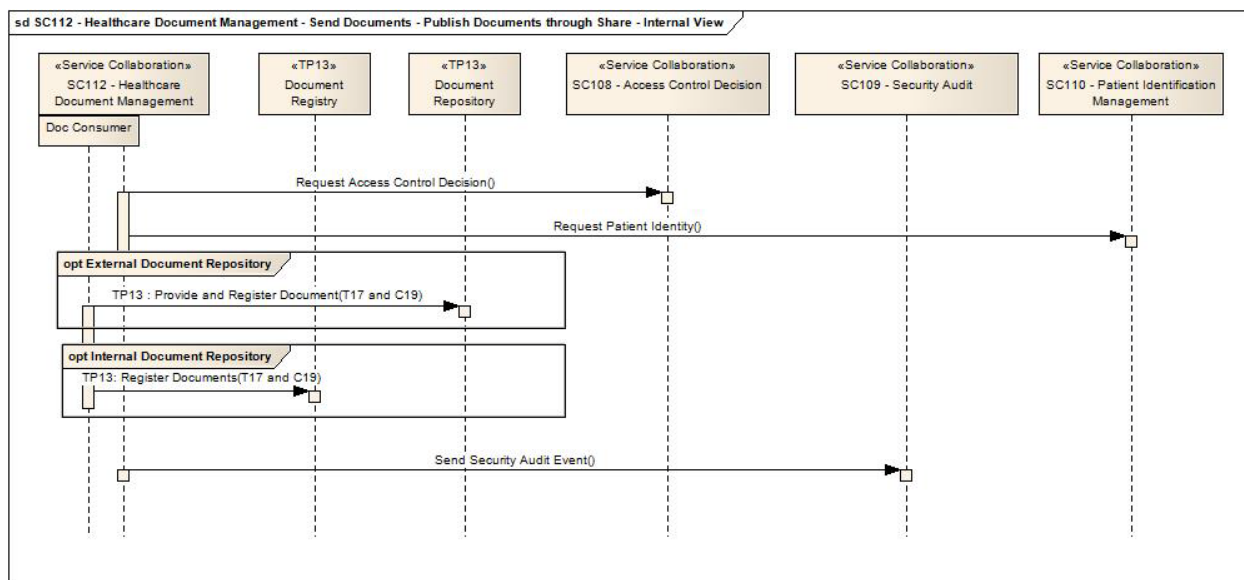
Table 1-5 Publish Documents Through Media – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.4 INTERFACE: PUBLISH DOCUMENTS THROUGH SHARE

Figure 1-5 Publish Documents Through Share Internal View



1.4.4.1 SEQUENCE DETAILS

Table 1-6 Publish Documents Through – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-7 Publish Documents Through Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to export the documents onto the share |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the share |
| 3 | HITSP/C19 - Entity Identity Assertion | | Generate the Entity Identity Assertion for the following transaction |
| 4 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 5 | HITSP/TP13 - Manage Sharing of Documents | Document Source | If NOT grouping with Document Repository then will export the documents and metadata to the external Document Repository using the Provide and Register Document Set transaction |
| 6 | HITSP/TP13 - Manage Sharing of Documents | Document Repository | If grouped with a Document Repository then the storage of the document is assumed and the Document Repository Interface is used to Register Document Set |
| 7 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |

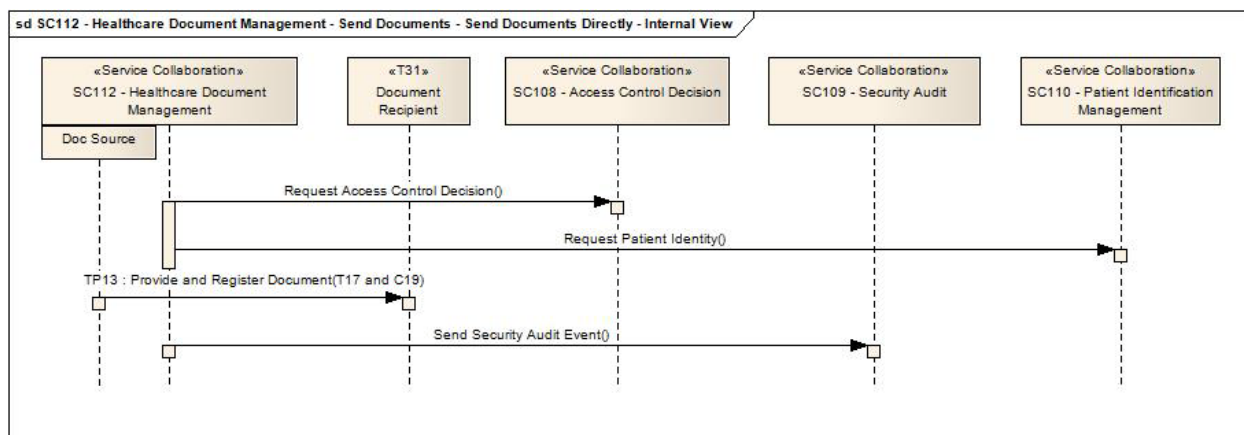
Table 1-8 Publish Documents Through Share – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.5 INTERFACE: SEND DOCUMENTS DIRECTLY

Figure 1-6 Send Documents Directly Internal View



1.4.5.1 SEQUENCE DETAILS

Table 1-9 Send Documents Directly – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-10 Send Documents Directly – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|---|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to export the documents to the target |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the target if known |
| 3 | HITSP/C19 - Entity Identity Assertion | | Generate the HITSP Entity Identity Assertion Component |
| 4 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 5 | HITSP/T31 - Document Reliable Interchange | Document Source | To export the documents and metadata and send them to the target |
| 6 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the target operation |

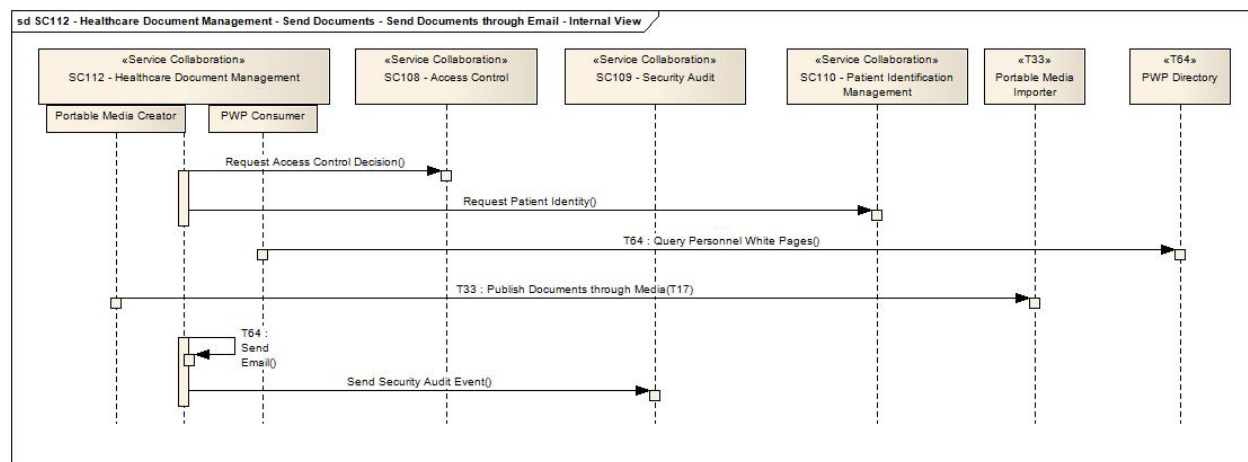
Table 1-11 Send Documents Directly – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.6 INTERFACE: SEND DOCUMENTS THROUGH E-MAIL

Figure 1-7 Send Documents Through e-Mail Internal View



1.4.6.1 SEQUENCE DETAILS

Table 1-12 Send Document Through e-Mail – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-13 Send Document Through e-Mail – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|---|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to export the documents to the target |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the target if known |
| 3 | HITSP/T64 - Identify Communication Recipients | Query Personnel White pages | To resolve a target identity into an e-Mail address |
| 4 | HITSP/T33 - Transfer of Documents on Media | Portable Media Creator | To export the documents and metadata into an e-Mail message friendly content made up of the directory and file structure as an ordinary ZIP file and attaches that ZIP file to an email message |
| 5 | HITSP/T17 - Secured Communication Channel | Secure Node | The use of S/MIME must be used in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 6 | n/a (loopback) | Internal Processing | Use common e-Mail infrastructure to deliver the message created by HITSP/T33 to the addressed recipient |
| 7 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the target operation |

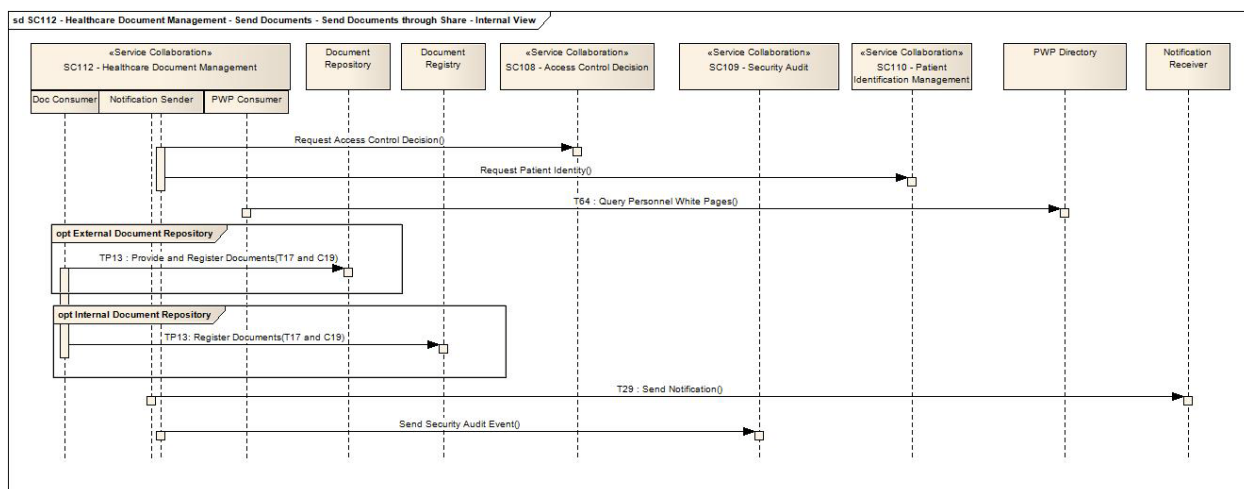
Table 1-14 Send Document Through e-Mail – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.7 INTERFACE: SEND DOCUMENTS THROUGH SHARE

Figure 1-8 Send Documents Through Share Internal View



1.4.7.1 SEQUENCE DETAILS

Table 1-15 Send Documents Through Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-16 Send Documents Through Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to export the documents onto the share |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the share |
| 3 | HITSP/T64 - Identify Communication Recipients | Query Personnel White pages | To resolve a target identity into an e-mail address |
| 4 | HITSP/C19 - Entity Identity Assertion | | Generate the HITSP Entity Identity Assertion Component |
| 5 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 6 | HITSP/TP13 - Manage Sharing of Documents | Document Source | If NOT grouping with Document Repository then will export the documents and metadata to the external Document Repository using the Provide and Register Document Set transaction |
| 7 | HITSP/TP13 - Manage Sharing of Documents | Document Repository | If grouped with a Document Repository then the storage of the document is assumed and the Document Repository Interface is used to Register Document Set |
| 8 | HITSP/T28 - Notification of Document Availability | Notification Sender | To inform the target of the Documents that have been placed on the share |
| 9 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |

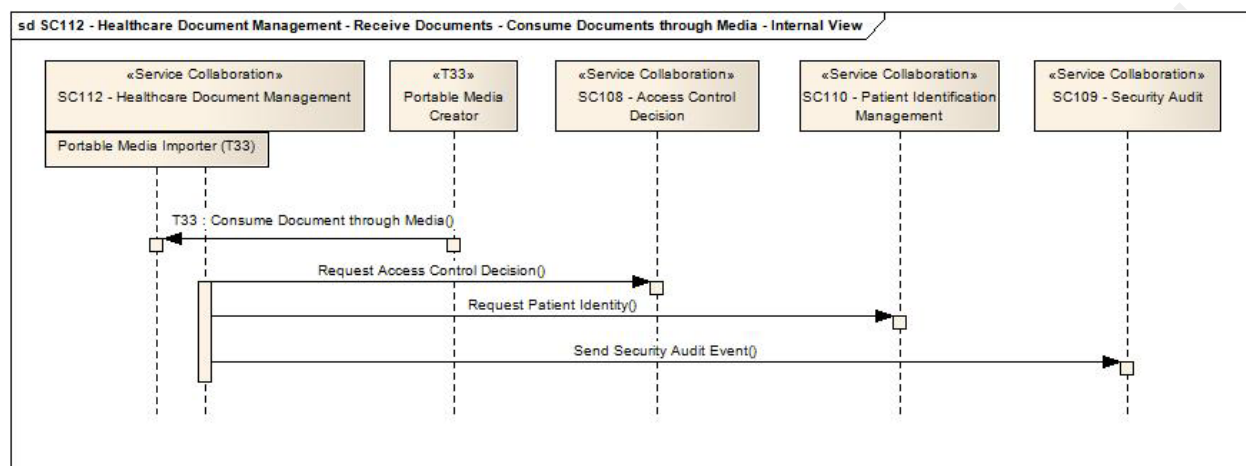


Table 1-17 Send Documents Through Share – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.8 INTERFACE: CONSUME DOCUMENTS THROUGH MEDIA

Figure 1-9 Consume Documents Through Media Internal View



1.4.8.1 SEQUENCE DETAILS

Table 1-18 Consume Documents Through Media – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-19 Consume Documents Through Media – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | HITSP/T33 - Transfer of Documents on Media | Portable Media Importer | To import (read) the documents and metadata from the media |
| 2 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to import the documents onto the media |
| 3 | HITSP/SC110 – Patient Identification Management | Request Patient Identity | If necessary to resolve the patient identifiers into the patient identifier domain of the receiver |
| 4 | HITSP/SC109 – Security Audit | Record Security Audit Event | To record the success/failure of the export to media operation |

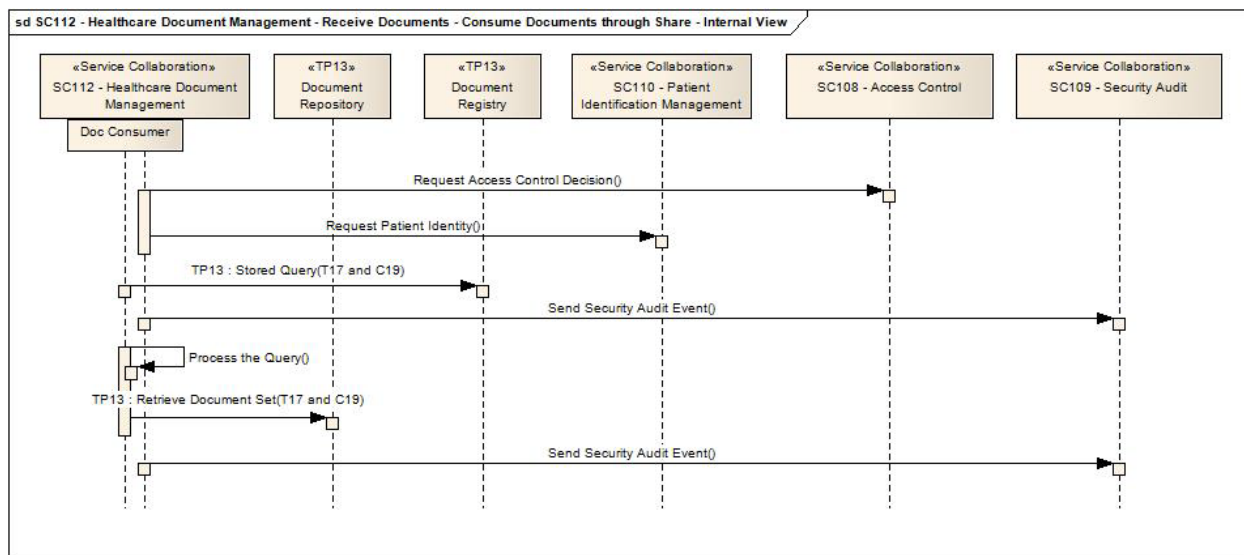
Table 1-20 Consume Documents Through Media – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.9 INTERFACE: CONSUME DOCUMENTS THROUGH SHARE

Figure 1-10 Consume Documents Through Share Internal View



1.4.9.1 SEQUENCE DETAILS

Table 1-21 Consume Documents Through Internal Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-22 Consume Documents Through Internal Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|---|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to access the share |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the share |
| 3 | HITSP/C19 - Entity Identity Assertion | | Generate the HITSP Entity Identity Assertion Component |
| 4 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 5 | HITSP/TP13 - Manage Sharing of Documents | Document Consumer | To query for the metadata in the share. Note that the same query is done regardless of if the share is represented by a share or a community |
| 6 | HITSP/SC109 – Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |
| 7 | n/a (loopback) | Internal Processing | Some logic is used to determine which documents are of interest. This is not specified in the Service Collaboration |
| 8 | HITSP/C19 - Entity Identity Assertion | | Generate the Entity Identity Assertion for the following Transaction: HITSP/T17 (but is subsequently used in the other Transactions, such as HITSP/TP13...) |
| 9 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |



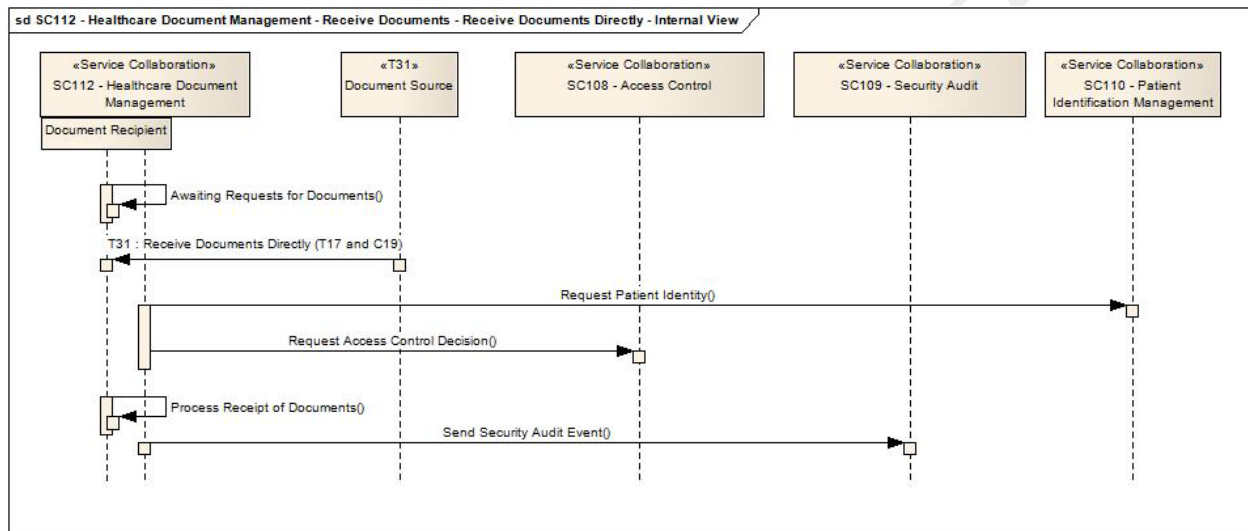
| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|--|-----------------------------|--|
| 10 | HITSP/TP13 - Manage Sharing of Documents | Document Consumer | To Retrieve the documents from the share. Note that the same query is done regardless of if the share is represented by a share or a community |
| 11 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |

Table 1-23 Consume Documents Through Internal Share – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.10 INTERFACE: RECEIVE DOCUMENTS DIRECTLY

Figure 1-11 Receive Documents Directly Internal View



1.4.10.1 SEQUENCE DETAILS

Table 1-24 Receive Documents Directly – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-25 Receive Documents Directly – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|--------------------------|---|
| 1 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Document Source |
| 2 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 3 | HITSP/T31 - Document Reliable Interchange | Document Recipient | To receive the documents and metadata |
| 4 | HITSP/C19 - Entity Identity Assertion | | Extract the Entity Identity Assertion from HITSP/T31-Document Reliable Interchange |
| 5 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the target if known |



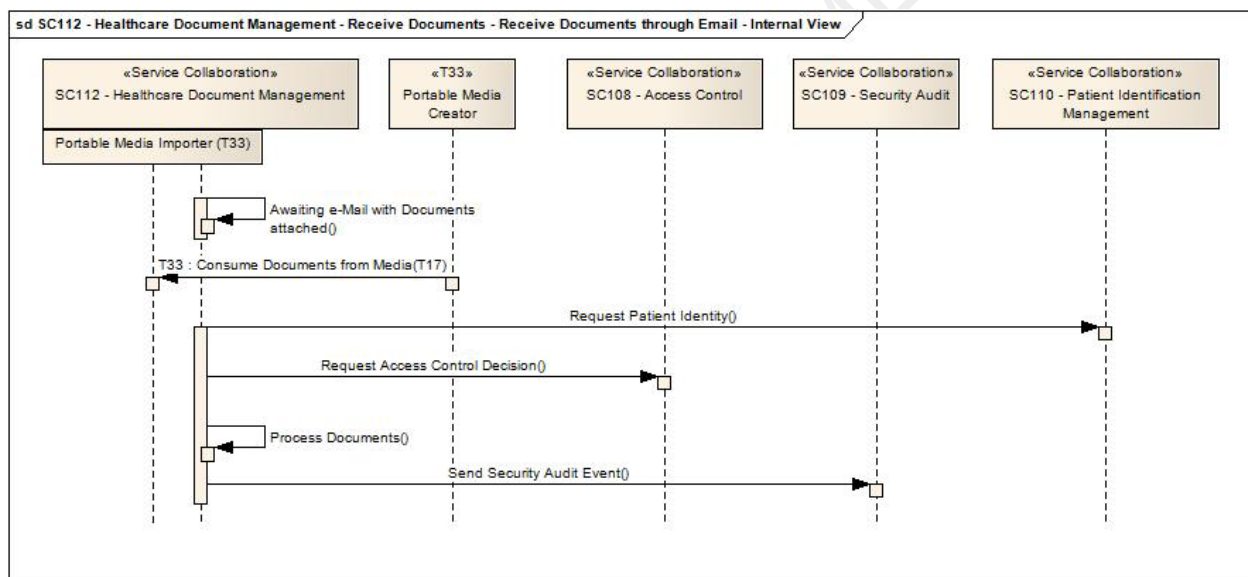
| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|------------------------------|---------------------------------|--|
| 6 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the system requesting has the rights to make requests: Including the Document metadata (including confidentialityCode), any consent documents, patient identity (from step 5), system identity (from step 2), entity identity (from step 4) |
| 7 | n/a (loopback) | Internal Processing | If authorized, then import the documents as necessary and defined by the HITSP Capability or Interoperability Specification |
| 8 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the import to the target operation |

Table 1-26 Receive Documents Directly – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.11 INTERFACE: RECEIVE DOCUMENTS THROUGH E-MAIL

Figure 1-12 Receive Document Through e-Mail Internal View



1.4.11.1 SEQUENCE DETAILS

Table 1-27 Receive Documents Through e-Mail – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-28 Receive Documents Through e-Mail – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|----------------|--|
| 1 | n/a (loopback) | n/a (Internal) | The Service Collaboration needs to be awaiting connections from the Document Source |
| 2 | HITSP/T17 - Secured Communication Channel | Secure Node | The use of S/MIME is used in order to protect the authenticity, confidentiality and integrity of the information being transmitted |



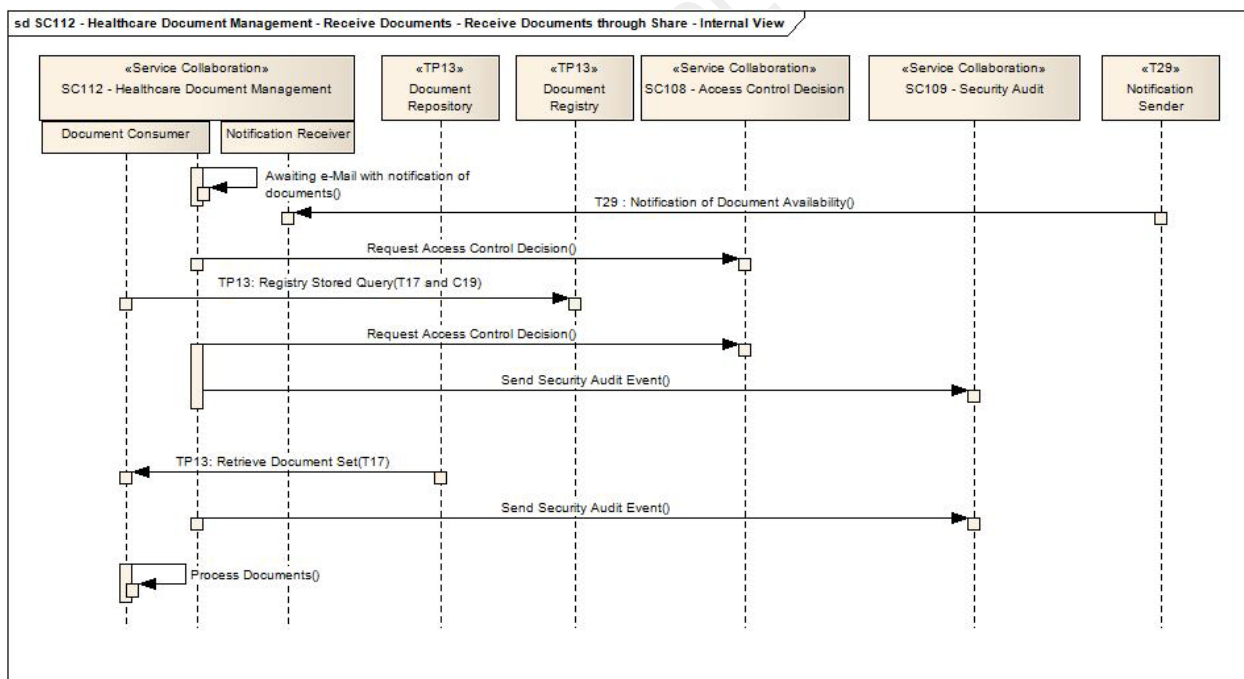
| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 3 | HITSP/T33 - Transfer of Documents on Media | Portable Media Importer | The documents and metadata in the e-Mail message is an ordinary ZIP file made up of the directory and file structure as defined by HITSP/T33 |
| 4 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the target if known |
| 5 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to import or use the documents: Including the Document metadata (including confidentialityCode), any consent documents, patient identity (from Step 4), system identity (from Step 2) |
| 6 | n/a (loopback) | n/a (Internal) | If authorized, then import or use of the documents as necessary and defined by the HITSP Capability or Interoperability Specification |
| 7 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the import or use to the target operation |

Table 1-29 Receive Documents Through e-Mail – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.12 INTERFACE: RECEIVE DOCUMENTS THROUGH SHARE

Figure 1-13 Receive Documents Through Share Internal View



1.4.12.1 SEQUENCE DETAILS

Table 1-30 Receive Documents Through Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |



Table 1-31 Receive Documents Through Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|---|
| 1 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Notification Sender |
| 2 | HITSP/T28 - Notification of Document Availability | Notification Receiver | To receive the target of the Documents that have been placed on the share |
| 3 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to access the share |
| 4 | HITSP/C19 - Entity Identity Assertion | | Generate the Entity Identity Assertion for the following Transaction |
| 5 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 6 | HITSP/TP13 - Manage Sharing of Documents | Document Consumer | To query with the document identifier provided in the HITSP/T28 notification to receive the metadata in the share. Note that the same query is done regardless of if the share is represented by a share or a community |
| 7 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to import or use the documents: Including the Document metadata from step 6 (including confidentialityCode), any consent documents, patient identity, system identity |
| 8 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |
| 9 | HITSP/C19 - Entity Identity Assertion | | Generate the Entity Identity Assertion for the following Transaction |
| 10 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 11 | HITSP/TP13 - Manage Sharing of Documents | Document Consumer | To Retrieve the documents from the share. Note that the same query is done regardless of if the share is represented by a share or a community |
| 12 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |
| 13 | n/a (loopback) | Internal Processing | If authorized, then import or use of the documents as necessary and defined by the HITSP Capability or Interoperability Specification |

Table 1-32 Receive Documents Through Share – Post-conditions

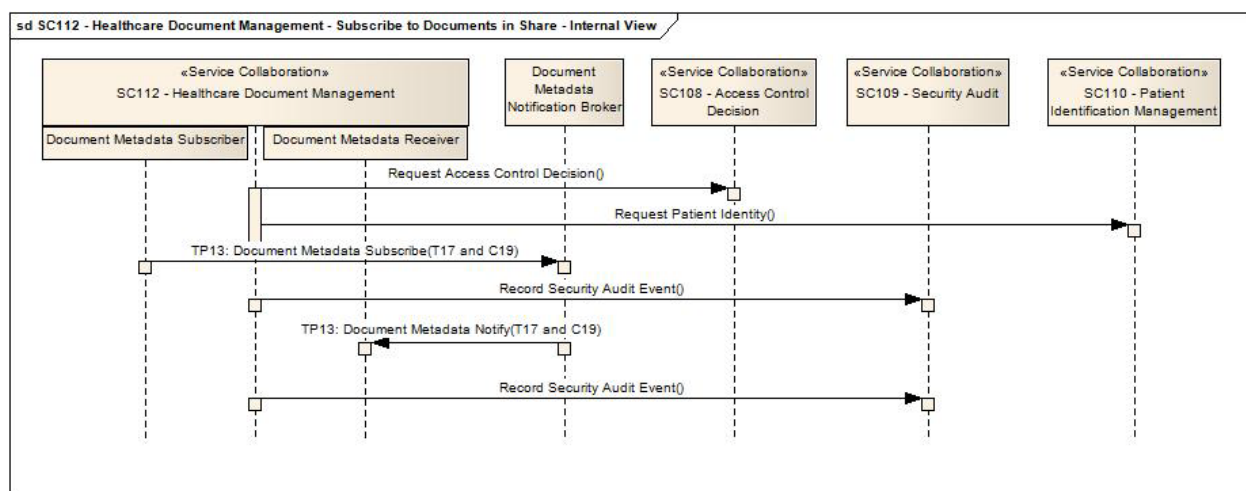
| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.13 INTERFACE: SUBSCRIBE TO DOCUMENTS IN SHARE

This Interface groups the underlying Document Metadata Subscriber and Document Metadata Notification Recipient. This grouping is done for simplification and is not required by the HITSP/TP13 construct.



Figure 1-14 Subscribe to Documents in Share Internal View



1.4.13.1 SEQUENCE DETAILS

Table 1-33 Subscribe to Documents in Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-34 Subscribe to Documents in Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|--|---|
| 1 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to access the share |
| 2 | HITSP/SC110 - Patient Identification Management | Request Patient Identity | If necessary to update the patient identifiers into the patient identifier domain of the share |
| 3 | HITSP/C19 - Entity Identity Assertion | | Generate the HITSP Entity Identity Assertion Component |
| 4 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 5 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Subscriber | To subscribe for notifications on a topic in the share. |
| 6 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the Subscription into the share operation |
| 7 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Document Metadata Notification Broker |
| 8 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 9 | HITSP/C19 - Entity Identity Assertion | | The Transaction may include the Entity Identity Assertion for the following Transaction (It is unlikely given the Subscription/Notification pattern) |
| 10 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Notification Recipient | To Retrieve the notification of new documents from the share |



| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|------------------------------|-----------------------------|--|
| 11 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the export to the share operation |
| 12 | n/a (loopback) | Internal Processing | Process the Notification which likely results in using the Receive Documents through Share interface |

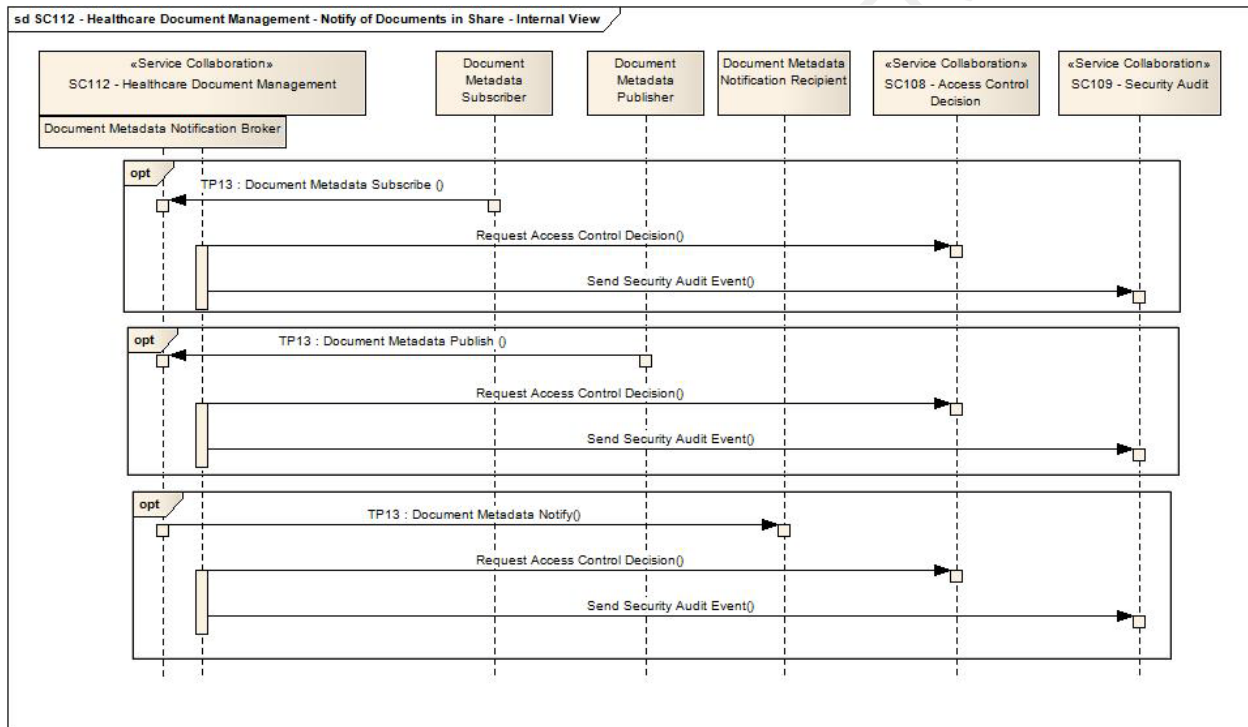
Table 1-35 Subscribe to Documents in Share – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.14 INTERFACE: NOTIFY OF DOCUMENTS IN SHARE

This Interface groups the underlying Document Metadata Publisher and Document Metadata Notification Broker. This grouping is done for simplification and is not required by the HITSP/TP13 construct.

Figure 1-15 Notify of Documents in Share Internal View



1.4.14.1 SEQUENCE DETAILS

Table 1-36 Notify of Documents in Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |



Table 1-37 Notify of Documents in Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------------|--|
| 1 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Document Metadata Subscriber (see step 2) or Document Metadata Publisher (see step 7) |
| 2 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 3 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 4 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Notification Broker | To receive the Document Metadata Subscribe transaction with the requested topic of interest |
| 5 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to submit a subscription on this topic |
| 6 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Document Metadata Publish |
| 7 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 8 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 9 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Notification Broker | To receive the Document Metadata Publish transaction from the Document Metadata Publisher with new metadata just newly published |
| 10 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the system has the rights to submit a publish |
| 11 | n/a (loopback) | Internal Processing | The Service Collaboration needs to determine if this new publish metadata matches any subscriptions, if none match than returns to awaiting Publication and/or Subscriptions. Otherwise carries on to Notify those that do match |
| 12 | HITSP/C19 - Entity Identity Assertion | | Generate the Entity Identity Assertion for the following Transaction |
| 13 | HITSP/T17 - Secured Communication Channel | Secure Node | A secured communication channel must be open in order to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 14 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Notification Broker | To notify about the document using the Document Metadata Notify transaction |
| 15 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the notify |

Table 1-38 Notify of Documents in Share – Post-conditions

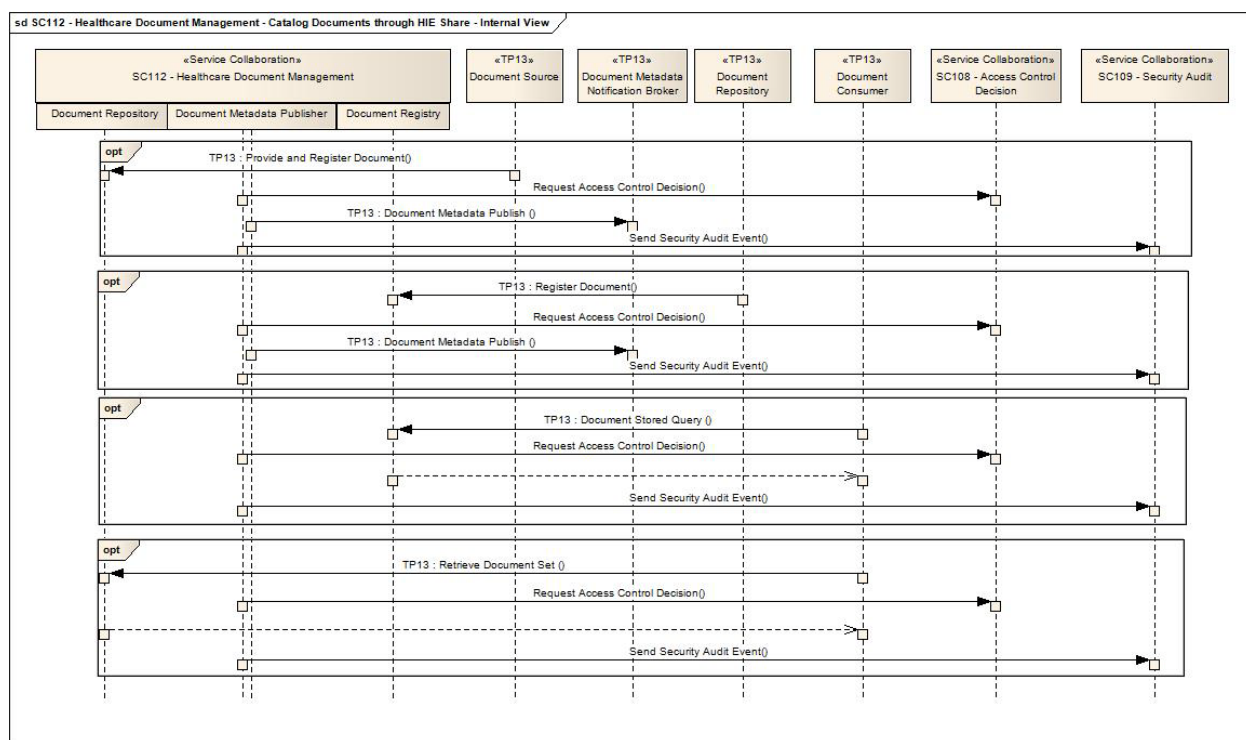
| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |

1.4.15 INTERFACE: CATALOG DOCUMENTS IN SHARE

This Interface informatively documents the Catalog portion of a healthcare document share (e.g. HIE). This interface diagrams the grouping of the Document Registry, Document Repository, and Document Metadata Publisher. This grouping is not mandatory. A healthcare document share will likely host other services not shown here such as Patient Management, Audit Record Repository, and Access Control services.



Figure 1-16 Catalog Documents in Share Internal View



1.4.15.1 SEQUENCE DETAILS

Table 1-39 Catalog Documents in Share – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |

Table 1-40 Catalog Documents in Share – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Document Source (see step 2), Document Repository (see step 9), and Document Consumer for a Registry Stored Query (see step 17) or a Retrieve Document Set (see step 25) |
| 2 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 3 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 4 | HITSP/TP13 - Manage Sharing of Documents | Document Repository | To receive the Provide and Registry transaction with the documents and metadata |
| 5 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to submit a document given this metadata |



| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 6 | n/a (loopback) | Internal Processing | The document is stored and metadata are registered. (There is no need for a grouped Document Repository and Document Registry to execute the Document Register transaction externally as long as the Registration happens) |
| 7 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Publisher | To provide the new metadata to the Document Metadata Notification Broker using the Document Metadata Publish transaction |
| 8 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the registration |
| 9 | n/a (loopback) | Internal Processing | The Service Collaboration awaiting connections from the Document Repository (in the case where there are external Document Repositories) |
| 10 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 11 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 12 | HITSP/TP13 - Manage Sharing of Documents | Document Registry | To receive the Register transaction with the metadata |
| 13 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to submit a document given this metadata |
| 14 | n/a (loopback) | Internal Processing | The document metadata are registered |
| 15 | HITSP/TP13 - Manage Sharing of Documents | Document Metadata Publisher | To provide the new metadata to the Document Metadata Notification Broker using the Document Metadata Publish transaction |
| 16 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the registration |
| 17 | n/a (loopback) | Internal Processing | The Service Collaboration awaiting connections from the Document Consumer for the Registry Stored Query |
| 18 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secure communications channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 19 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 20 | HITSP/TP13 - Manage Sharing of Documents | Document Registry | To receive the Document Stored Query transaction |
| 21 | n/a (loopback) | Internal Processing | Execute the query |
| 22 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to make the specific query request that results in the document metadata |
| 23 | HITSP/TP13 - Manage Sharing of Documents | Document Registry | Return back the results of the query |
| 24 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the query |
| 25 | n/a (loopback) | Internal Processing | The Service Collaboration awaiting connections from the Document Consumer for the Document Retrieve transaction |
| 26 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secure communications channel to protect the authenticity, confidentiality and integrity of the information being transmitted |



| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|--|---------------------------------|---|
| 27 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 28 | HITSP/TP13 - Manage Sharing of Documents | Document Registry | To receive the Retrieve Document Set transaction |
| 29 | n/a (loopback) | Internal Processing | Find the document(s) requested |
| 30 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to make the specific retrieve request |
| 31 | HITSP/TP13 - Manage Sharing of Documents | Document Registry | Return back the results of the retrieve |
| 32 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the retrieve |

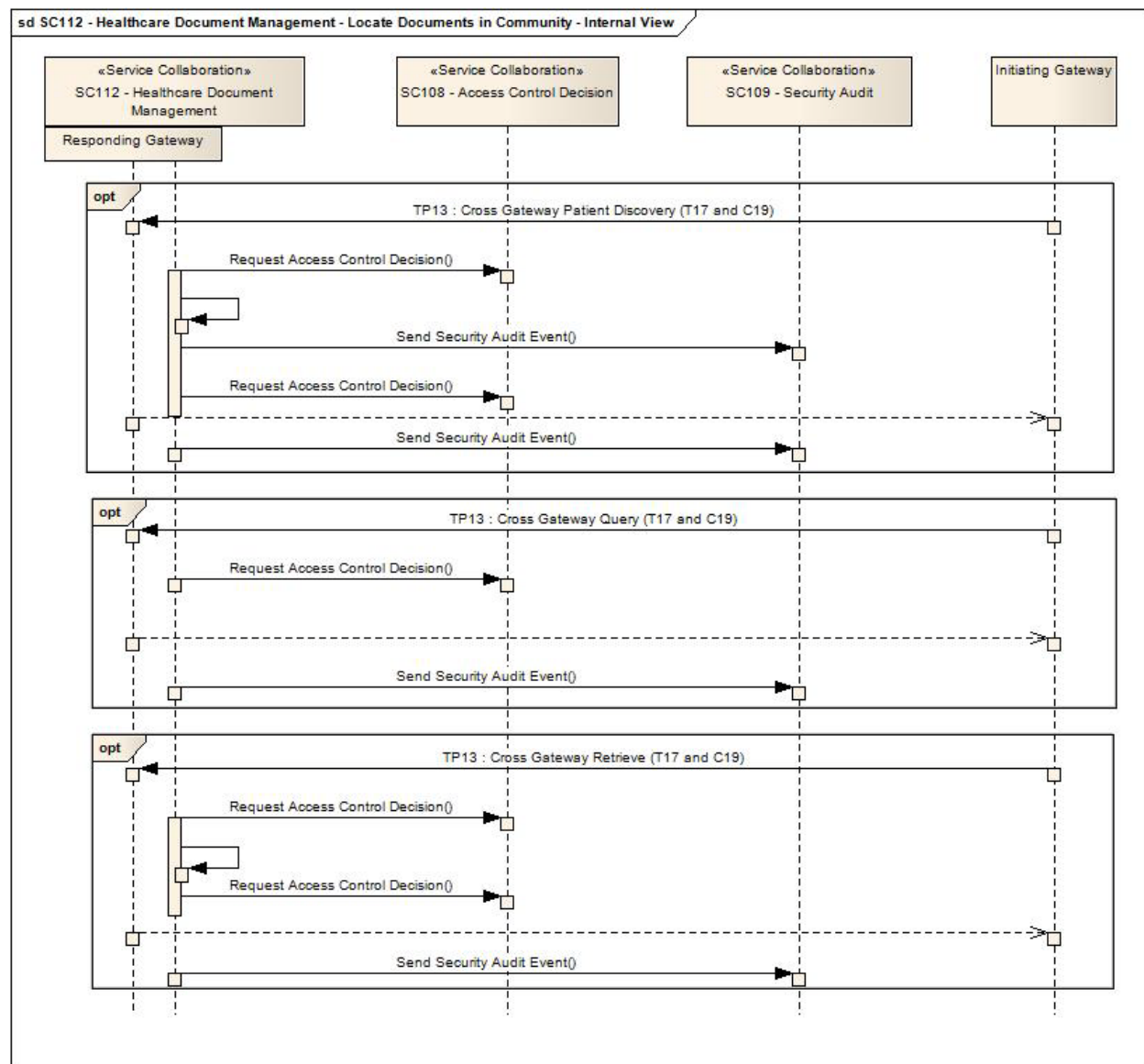
Table 1-41 Catalog Documents in Share – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



1.4.16 INTERFACE: LOCATE DOCUMENTS IN COMMUNITY

Figure 1-17 Locate Documents in Community Internal View



1.4.16.1 SEQUENCE DETAILS

Table 1-42 Locate Documents in Community – Pre-conditions

| Pre-condition | Uses SC, T, TP or C | Interface | Purpose |
|---------------|---------------------|-----------|---------|
| None | | | |



Table 1-43 Locate Documents in Community – Sequence of Constructs

| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|---|---------------------------------|--|
| 1 | n/a (loopback) | Internal Processing | The Service Collaboration needs to be awaiting connections from the Initiating Gateway for a Cross Gateway Patient Discovery (see step 2), Cross Gateway Query (see step 10) or a Cross Gateway Retrieve (see step 18) |
| 2 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 3 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 4 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | To receive the Cross Gateway Patient Discovery transaction with the demographics of a patient |
| 5 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to run this query |
| 6 | n/a (loopback) | Internal Processing | The demographics of the request are matched with demographics of local patients |
| 7 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to the patients that were found by the match |
| 8 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | Return back the results of the match |
| 9 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the request |
| 10 | n/a (loopback) | Internal Processing | The Service Collaboration awaiting connections from the Initiating Gateway for the Cross Gateway Query |
| 11 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 12 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 13 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | To receive the Cross Gateway Query Transaction |
| 14 | n/a (loopback) | Internal Processing | Execute the query |
| 15 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to make the specific query request that results in the document metadata |
| 16 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | Return back the results of the query |
| 17 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the query |
| 18 | n/a (loopback) | Internal Processing | The Service Collaboration awaiting connections from the Initiating Gateway for the Cross Gateway Retrieve Transaction |
| 19 | HITSP/T17 - Secured Communication Channel | Secure Node | To receive a secured communication channel to protect the authenticity, confidentiality and integrity of the information being transmitted |
| 20 | HITSP/C19 - Entity Identity Assertion | | The transaction may include the Entity Identity Assertion for the following Transaction |
| 21 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | To receive the Cross Gateway Retrieve transaction |
| 22 | n/a (loopback) | Internal Processing | Find the document(s) requested |



| Step Number | Uses SC, T, TP or C | Interface | Purpose |
|-------------|--|---------------------------------|--|
| 23 | HITSP/SC108 - Access Control | Request Access Control Decision | To assure that the user has the rights to make the specific retrieve request |
| 24 | HITSP/TP13 - Manage Sharing of Documents | Responding Gateway | Return back the results of the retrieve |
| 25 | HITSP/SC109 - Security Audit | Record Security Audit Event | To record the success/failure of the retrieve |

Table 1-44 Locate Documents in Community – Post-conditions

| Post-condition | Uses SC, T, TP or C | Interface | Purpose |
|----------------|---------------------|-----------|---------|
| None | | | |



2.0 DOCUMENT UPDATES

The following sections provide the history of all changes made to this document.

2.1 JUNE 30, 2009

No changes. This is the first published version of the document.

2.2 JULY 8, 2009

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

2.3 JANUARY 18, 2010

Updated document to HITSP Service Collaboration Template Version 1.0.

Added the following Interfaces:

- Subscribe to Documents in Share
- Notify of Documents in Share
- Catalog Documents in Share
- Locate Documents in Community

Minor editorial corrections and clarification text

Updated Topology Diagram (Figure 1-2) and added Figure 1-3.

Updated Sequence Diagrams and Tables where needed

2.4 JANUARY 25, 2010

Upon approval by the HITSP Panel on January 25, 2010, this document is now Released for Implementation.

