Integrating the Healthcare Enterprise

IHE Patient Care Device Domain
Technical Framework Supplement

Point-of-Care Identity Management
(PCIM)

Draft in preparation for Public Comment

Foreword

This is a supplement to the IHE Patient Care Device Domain Technical Framework <V5.0>.
Each supplement undergoes a process of public comment and trial implementation before being
25 incorporated into the volumes of the Technical Frameworks.

This supplement is published on<Month day, 2016> for Public Comment. Comments are invited
and may be submitted at http://www.ihe.net/<domain>/<domain>comments.cfm. In order to be
considered in development of the Trial Implementation version of the supplement, comments
must be received by <Month XX, 201X>.

30 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 **bold underline**. Where the amendment
35 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.

40 Information about the IHE Patient Care Device Domain domain can be found at:
http://www.ihe.net/Domains/index.cfm.

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/About/process.cfm and
http://www.ihe.net/profiles/index.cfm.

45 The current version of the IHE Patient Care Device DomainTechnical Framework can be found
at: http://www.ihe.net/Technical_Framework/index.cfm.

*<Comments may be submitted on IHE Technical Framework templates any time at
http://ihe.net/ihetemplates.cfm. Please enter comments/issues as soon as they are found. Do not
wait until a future review cycle is announced.*

50

CONTENTS

Introduction to this Supplement

This Supplement to the IHE Patient Care Device Technical Frameworks adds the rationale and
110   implementation details of the Point-of-Care Identity Management Profile to the Framework,
providing a means for standards-based exchange between systems of information collected and
confirmed at the point of care tracking the set of medical devices originating observations about
each patient.

Open Issues and Questions

115   1. The work group solicits feedback on workflow effects and problems found in analyzing
the profile and in trial implementation.

Closed Issues

*<List the closed issues/questions with their resolutions. These are particularly useful for
recording the rationale for closed issues to forestall unnecessary rehashing in the future and/or*
120   *to make it easier to identify when a closed issue should be re-opened due to new information.>*

1. Discuss differences from previous approaches based on ADT messages: will be faster,
closer to the actual events than ADT feeds, which have a different purpose and are often
not well synchronized with actual events at the point-of-care. Will enable devices, device
controllers and a variety of other hospital to flexibly exchange information, publish or
125   subscribe change notifications.

2. Include security information and recommendations in the profile.

General Introduction

Update the following Appendices to the General Introduction as indicated below. Note that these are not appendices to Volume 1.

130 ## Appendix A - Actor Summary Definitions

Add the following actors to the IHE Technical Frameworks General Introduction list of Actors:

Actor	Definition
Device-Patient Association Reporter	A system or person that asserts a device-patient association, disassociation, or attributes related to either.
Device-Patient Association Manager	A system that records, manages, and serves records of device-patient associations.
Device-Patient Association Consumer	A system or person that queries a Device-Patient Association Manager for device-patient association records
Device Registrant	A system (including the device itself) or person that identifies a device that may participate in device-patient associations.
Device Registration System	A system that registers devices and serves device identity information to a Device-Patient Association Manager. May be grouped with that Manager.
Patient Registration System	A system that identifies patients that may participate in device-patient associations, typically a master patient index (MPI) or other ADT system.

Appendix B - Transaction Summary Definitions

135 *Add the following transactions to the IHE Technical Frameworks General Introduction list of Transactions:*

Transaction	Definition
Assert Device-Patient Association	A Device-Patient Association Reporter asserts to a Device-Patient Association Manager that a device has been associated with a patient, or updates data concerning a reported assertion.
Assert Device-Patient Disassociation	A Device-Patient Association Reporter asserts to a Device-Patient Association Manager that the association between a device and a patient has been terminated..
Query Device-Patient Associations	A Device-Patient Association Consumer sends a query to a Device-Patient Association Manager concerning the devices associated with a patient or set of patients currently or at a stated past time.
Register Device	A Device Registrant sends, updates, or deletes a record of identifying information on a device instance for storage and use by the Device-Patient Association Manager.

Glossary

Add the following glossary terms to the IHE Technical Frameworks General Introduction Glossary:

140

Glossary Term	Definition
Assertion	A statement that a certain premise is true, for example that a device has been prepared to collect data about a patient.
Binding	A process of associating two related elements of information.
Biometrics	A measurable physical characteristic or personal behavioral trait used to recognize the identity, or verify the claimed identity of a person.
Direct Association	A patient association established by the observation and recording of a physical connection of a device to the patient.
Direct Device-Patient Association Assertion	A claim of direct device-patient association based on evidence.
Duplicate Patient Identification Record	Two records representing the same patient, with differing identifiers of the same type with the same assigning authority. For example, two different medical record numbers issued by the same hospital to the same patient. In the context of device-patient association, an unintentional duplicate patient record may result if device data is recorded without a permanent unique patient identifier being recorded, as in an emergency. A human-validated merge operation is necessary to associate the device data with the patient after the fact.
Entity	In the context of this Profile, an organizational unit within a healthcare enterprise, typically, but not necessarily, associated with a free-standing building, office, or sub-unit within a common hospital corporation. For example, a patient visit would occur within a specific entity.
False Negative	Patient algorithm matching error occurring when two different records for the same person are thought to represent different people (for example name, gender, date of birth, MRN…).
False Positive	Patient algorithm matching error occurring when information for two different people appears to be a match representing the same individual (for example name, gender, date of birth, MRN…).
Identity Assertion	A claim attributing a particular identity to a person or device.
Identity Management	Identity management (IdM) is composed of the set of business processes, and a supporting infrastructure, for the creation, maintenance, and use of digital identities within a legal and policy context.
Indirect Device-Patient Association	A patient association asserted on the basis of a common attribute shared by a device and patient, such as a location.
Location-based Assertion	An assertion of an association between two objects (e.g. a patient and a device, device-to-device, patient-to-caregiver), based solely upon the co-location (e.g. same room and bed) of these two objects.
Minimal Guarantee	The fewest promises the system makes to its stakeholders, particularly when the primary actor's goal cannot be delivered.
Multi-Entity	A healthcare enterprise consisting of two or more entities. For example, a hospital corporation which owns three hospitals.
Observation-Patient Association	The assignment of a device measurement/parameter to a specific patient. Observation - patient associations are established through the connection relationship of a unique patient to a unique device at the point in time that the measurement was recorded by the device.

Overlap Record	One person with two or more unique enterprise identifiers. Without the two records being linked, information not available for point of care and clinical decisions are made in the absence of data. There is an increase in costs associated with repeat test, clinical procedures, etc., as well as rework in clinical and business processes.
Overlay Record	Records of two different people are "combined" into one record in error. Person A is treated with Person B's clinical information. This has huge implications for quality of care and patient safety.
Device-Patient Association Conflict Notification	A message from a particular clinical IT system that it detects an inconsistency between different identity assertions. For example, a device and an intermediary system may be simultaneously asserting that a single data stream represents two different patients.
Device-Patient Record Linkage	The process of binding and/or associating a discrete patient record to a discrete device record.
Patient Identity Management	Patient identity management (PIM) has been defined as the "ability to ascertain a distinct, unique identity for an individual (a patient), as expressed by an identifier that is unique within the scope of the exchange network, given characteristics about that individual such as his or her name, date of birth, gender [etc.]." The scope of this definition can be expanded to refer to PIM as the process of accurately and appropriately identifying, tracking, managing, and linking individual patients and their digitized health care information, often within and across multiple electronic systems.
Patient Index (Master Patient Index)	A system, typically centralized for a provider institution or organization, which is authoritative for patient demographic information including identity data, for patients under care. Typically can respond to queries and give a unique identity or a set of candidate identities that are consistent with a set of identity factors.
Patient Linkage	The general problem of determining whether two existing records pertain to the same patient. This is distinct from device-patient association and uses different methods.
Patient Matching	Record linkage is the task of identifying pieces of scattered information that refer to the same thing. Patient matching is a specific application, in which we try to identify records that belong to the same patient among different data sources.
Precondition	"What the system under analysis will ensure is true before letting the use case start."
Proofing (Identity Proofing)	The process of collecting and verifying sufficient information (e.g. identity history, credentials, documents) from an applicant to a service provider for the purpose of proving that a person or object is the same person or object it claims to be.
Receiving System	In the context of PCIM, any system which is a consumer of device-patient association or observation messages, such as an electronic medical record system, device gateway, or a device at the point of care.
Record	The discrete representation of a specific and unique patient or the device in either the reporting or consuming system's database.
Strong Identity Assertion	A presumption of patient or device unique recognition using multiple factors that provides a high degree of accuracy and certainty (e.g., barcode, biometric).
Strong Identity Factors	An identifier designed to be unique (applies to only one person) and consistent over the appropriate domain for at least throughout the visit or encounter, for example, Medical Record Number or National ID number.
Success Guarantee	A success guarantee is a statement of what interests of the stakeholders are satisfied after a successful conclusion of the use case.

Unique Device Identifier	In the US, a unique identifier for a medical device that is recognized by the US FDA and which has a part that identifies the maker and model of the device (DI) and a part that identifies the particular instance of the device. More generally, any identifier which allows a particular device to be uniquely identified.
Weak Identity Assertion	A presumption of patient or device unique recognition using factors that provides a low degree of accuracy and certainty (e.g., name, location).
Weak Identity Factors	Factors which can contribute to identification, but typically are not unique to patient; for example, name, sex, date of birth.

Volume 1 – Profiles

Add to Section …

7 Point-of-Care Identity Management (PCIM)> Profile

145

The Point-of-Care Identity Management (PCIM) Profile is a Transport Profile specifying HL7 v2 standard messaging for devices and IT systems at an acute-care point-of-care to exchange and synchronize information about the identity of specific devices collecting clinical information about a specific patient, to:

150 Assist in the the reliable association of the collected data to the proper patient record, based on first-hand observation and data entry by a person at the point of care, specifically designed to avoid wrong attribution of data from before or after the period of actual measurement on the patient.

Assist in maintaining a correct "census" of devices that frequently move between patients such 155 as infusion pumps, mechanical ventilators

The messaging defined provides for capable devices to originate messages asserting association and disassociation to a particular patient, for human interface software components to afford users the opportunity to originate or confirm association or disassociation assertions, for one or more systems to receive and persist device-patient association information, to distribute reporting 160 messages or receive and respond to queries about such associations.

7.1 PCIM Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at 165 http://www.ihe.net/Technical Framework/index.cfm.

Figure 7.1-1 shows the actors directly involved in the Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines.

170
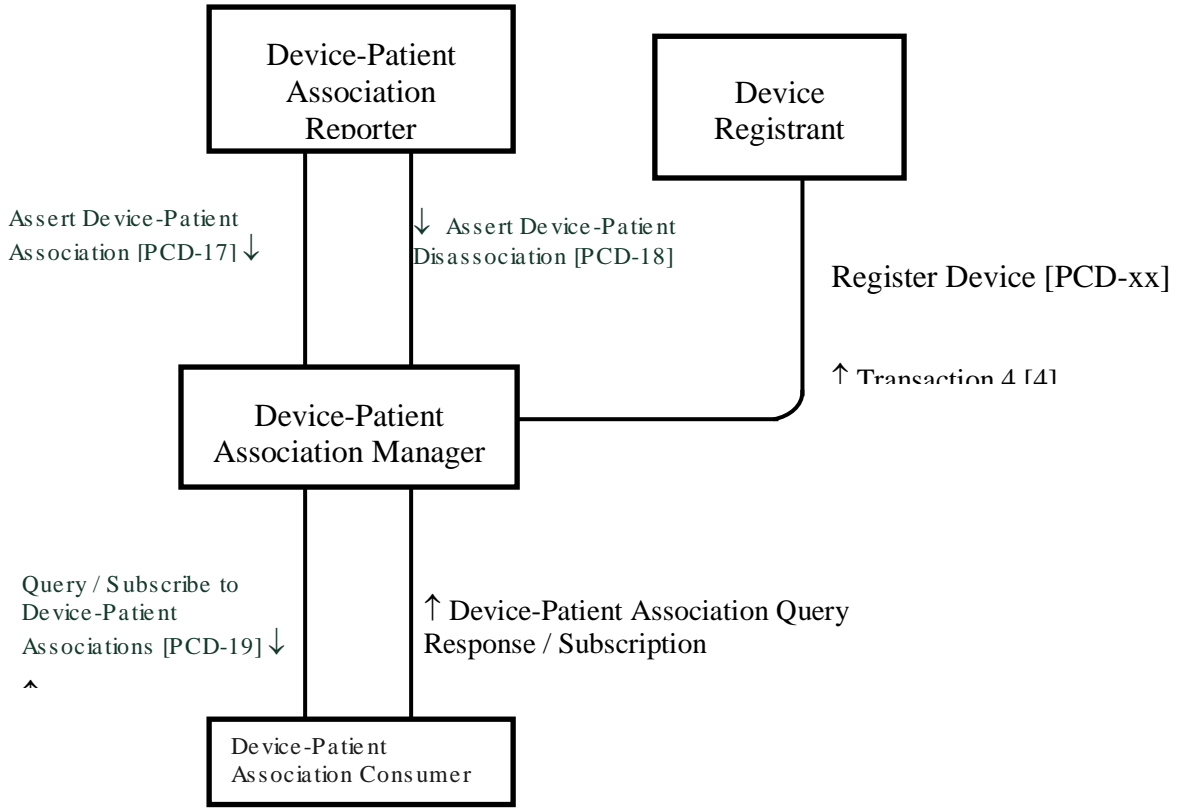
Figure X.1-1: Actor Diagram

Table 7.1-1 lists the transactions for each actor directly involved in the Profile. To claim
175 compliance with this Profile, an actor shall support all required transactions (labeled "R") and
may support the optional transactions (labeled "O").

Table 7.1-1: Profile - Actors and Transactions

Actors	Transactions	Optionality	Reference
Device-Patient Association Reporter	Transaction 1	R	<Domain Acronym> TF-2: 3.Y1
	Transaction 2	R	<Domain Acronym> TF-2: 3.Y2
Device-Patient Association Manager	Transaction 1	R	<Domain Acronym> TF-2: 3.Y1
	Transaction 2	R	<Domain Acronym> TF-2: 3.Y2
	Transaction 1	R	<Domain Acronym> TF-2: 3.Y1

Actors	Transactions	Optionality	Reference
Device-Patient Association Consumer	Transaction 2	O (See note 1)	<Domain Acronym> TF-2: 3.Y2
	Transaction 3	O (See note 1)	<Domain Acronym> TF-2: 3.Y3
	Transaction 4	O (See note 1)	<Domain Acronym> TF-2: 3.Y4
Device Registrant	Transaction 3	R	<Domain Acronym> TF-2: 3.Y3
	Transaction 4	R	<Domain Acronym> TF-2: 3.Y4

Note 1: *<For example, a note could describe that one of two possible transactions could be supported by an Actor or other variations. For example: Note: Either Transaction Y2 or Transaction Y3 shall be implemented for Actor D/Actor E. – or- Note: At least one of Transaction Y2, Transaction Y3, or Transaction Y4 shall be implemented for Actor D/Actor E.>*

7.1.1 Actor Descriptions and Actor Profile Requirements

Most requirements are documented in Transactions (Volume 2) and Content Modules (Volume 3). This section documents any additional requirements on profile's actors.

<Do not repeat the definitions of the Actors that are maintained in the TF General Introduction Appendix A (Actor Definitions). Include text in this section to describe the Actor in the context of this Profile.>

<This section is empty unless there is a need for specific descriptions or requirements. Actors without additional requirements or elaborate descriptions need not be listed here.>

<If this is a Workflow Profile the sequence of transactions often require data from an inbound transaction to be carried forward to subsequent transactions . Individual transactions, which are designed to be reusable, do not define this data mapping and it must be documented here. If this is a long technical mapping, consider including this material in an appendix to Volume 2. For an example, see Radiology Scheduled Workflow RAD TF-2: Appendix A.>

<This section may also define system behavior. For example, in the PIX Profile, an ADT message is first received by the PIX Manager. The PIX manager should then use this data to respond to subsequent queries. Although this may be implied, it should be explicitly documented in this section.>

<Note that for content modules, bindings to other transport or workflow modules are referenced in the Required Actor Groupings section below. >

7.1.1.1 Device-Patient Association Reporter

<If the summary description of the actor in Appendix A is insufficient to understand its role in this Profile, elaborate here.>

*<Requirements on actors are predominantly contained inside Transactions in Volume 2. The
main requirement on actors contained in Volume 1 is to support the transactions identified in*
210 *Table X.1-1 and the content modules identified in Table Z. Requirements that do not fit in those
locations may be placed here.>*

7.1.1.2 Device-Patient Association Consumer

7.2 Actor Options

215 *<Modify the following Table listing the actors in this profile, the options available for each, and
references to sections that state requirements for compliance to each Option. For actors with no
options, state "No options defined" in the Options column.>*

*<Note: Options are directly carried over to the Integration Statements which are published by
vendors for review by buyers. Too many options can be confusing for readers.>*

220 *< Try to **minimize** options for Actors and only use if necessary.>*

Options that may be selected for each actor in this profile, if any, are listed in the table X.2-1.
Dependencies between options when applicable are specified in notes.

Table 7.2-1: Point-of-Care Identity Management - Actors and Options

Actor	Option Name	Reference *<either reference TF-3 or the applicable X.2.x subsection below table>*
Actor A	No options defined	--
Actor B	No options defined	--
Actor C/Actor D	No options defined	--
	No options defined	--
Actor E *<e.g., Content Consumer>*	View Option (see section X.2.1)	PCC TF-2: 3.1.1
	Document Import Option	PCC TF-2: 3.1.2
	Section Import Option	PCC TF-2: 3.1.3
	Discrete Data Import Option	PCC TF-2: 3.1.4

225 Note: *<Conditional or required options must be described in this SHORT note, for longer notes use section X.2.1.>,*

X.2.1 <Option Name>

There are no options specified in the Point-of-Care Identity Management (PCIM) profile.

7.3 Required Actor Groupings

230   There are no required actor groupings specified in the Point-of-Care Identity Management (PCIM) profile.

7.4 Overview

235   *<Volume 2 documents each transaction/content module in isolation. This section shows how the transactions/content modules of the profile are combined to address the use cases.>*

<Use Cases are informative, not normative, and "SHALL" language is not allowed in use cases.>

7.4.1 Concepts

240   *<If needed, this section provides an overview of the concepts that provide necessary background for understanding the profile. If not needed, state "Not applicable." For an example of why/how this section may be needed, please see ITI Cross Enterprise Workflow (XDW).>*

<It may be useful in this section, but is not necessary, to provide a short list of the use cases described below and explain why they are different.>

7.4.2 Use Cases

245

7.4.2.1 Use Case #1: Associating Device With Patient and Verifying

<One or two sentence simple description of this particular use case.>

<Note that Section X.4.2.1 repeats in its entirety for additional Use Cases (replicate as section X.4.2.2, X.4.2.3, etc.).>

7.4.2.1.1 Associating Device With Patient and Verifying Use Case Description

250

<Describe the key use cases addressed by the Profile. Limit to a maximum of one page of text or consider an appendix.>

7.4.2.1.2 Associating Device With Patient and Verifying Process Flow

255   *<Diagram and describe the process flow(s) covered by this profile in order to satisfy the use cases. Demonstrate how the profile transactions are combined/sequenced. To provide context and demonstrate how the profile interacts with other profiles, feel free to include transactions and events that are "external" to this profile (using appropriate notation.)*
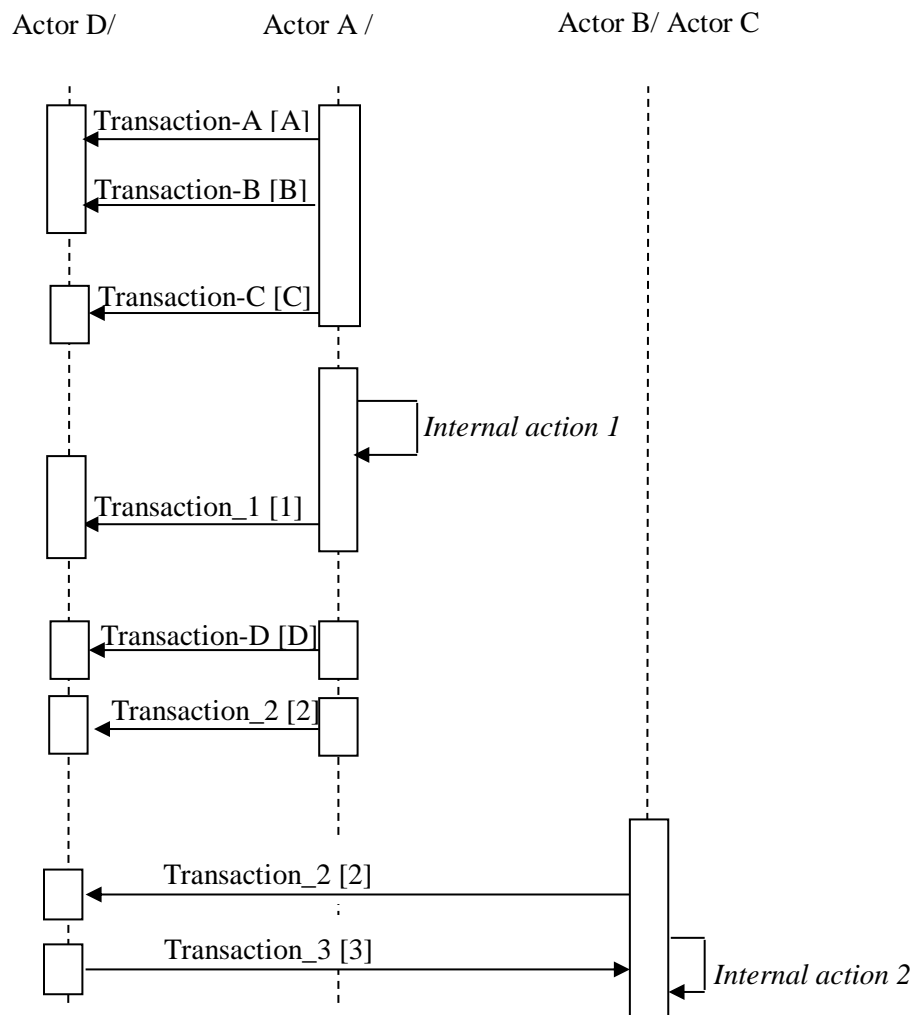*The set of process flows will typically be exemplary, not exhaustive (i.e., it will address all the*
260   *use cases, but will not show all possible combinations of actors, or all possible sequencing of*

transactions).
*If there are detailed behavioral rules that apply to a specific process flow or multiple process
flows, an appendix may be added as needed.>*

265 *<The roles at the top of the swimlane diagram should correspond to actor names, include the
profile acronym:actor name if referencing an actor from a different profile.>*

<Modify the following "Swimlane Diagram".>

270 **Figure 7.4.2.2-1: Basic Process Flow in Profile**

*<If process flow "swimlane" diagrams require additional explanation to clarify conditional
flows, or flow variations need to be described where alternate systems may be playing different
actor roles, document those conditional flows here.>*

275 *<Delete the material below if this is a workflow or transport profile. Delete the material above if this profile is a content module only profile.>*

Pre-conditions:

<Very briefly (typically one sentence) describe the conditions or timing when this content module would be used.>

280

Main Flow:

<Typically in an enumerated list, describe the clinical workflow when, where, and how this content module would be used.>

285 Post-conditions:

<Very briefly (typically one sentence) describe the state of the clinical scenario after this content module has been created including examples of potential next steps.>

7.5 Security Considerations

<Describe Profile-specific security considerations. This should include the outcomes of a risk
290 *assessment. This likely will include profile groupings, and residual risks that need to be assigned to the product design, system administration, or policy. See the ITI document titled 'Cookbook: Preparing the IHE Profile Security Section' at*
http://www.ihe.net/Technical_Framework/index.cfm for suggestions on risk assessment, risk mitigation, and IT and security profiles.>

295 *<If this is not a content module, delete the sentence below. If this is a content module profile, you may want to expound upon the security considerations provided by grouped actors.>*

The security considerations for a content module are dependent upon the security provisions defined by the grouped actor(s).

7.6 Cross Profile Considerations

300

<Consider using a format such as the following:>

<other profile acronym> - <other profile name>
305 A <other profile actor name> in <other profile name> might be grouped with a <this profile actor name> to <describe benefit/what is accomplished by grouping>.

Appendices

<Add Appendices to this Profile here. Examples of an appendix include HITSP mapping to IHE Use Cases or long use case definitions.>

310 *<Volume 1 Appendices are informational only. No "SHALL" language is allowed in a Volume 1 appendix.>*

Appendix A – <Appendix A Title>

Appendix A text goes here.

315 ### A.1   <Add Title>

Appendix A.1 text goes here

Appendix B – <Appendix B Title>

Appendix B text goes here.

B.1   <Add Title>

320 Appendix B.1 text goes here.

Volume 2 – Transactions

3.17 Assert Device-Patient Association [PCD-17]>

3.17.1 Scope

325 This transaction is used to *<...describe what is accomplished by using the transaction.
Remember that by keeping transactions general/abstract, they can be re-used in a variety of
profiles>*

3.17.2 Actor Roles

<Optional: if desired, in addition to the table, add a diagram as shown below to illustrate the
330 *actors included in this transaction, or delete the diagram altogether.>*

Figure 3.17.2-1: Use Case Diagram

Table 3.17.2-1: Actor Roles

Actor:	<Official actor name; list every actor in this transaction.>
Role:	<Very brief, one phrase, description of the role that this actor plays in this transaction.>
Actor:	
Role:	
Actor:	
Role:	

<The assignment and use of Role Names in transaction specifications has proved to be very
335 *effective/efficient in Radiology, especially when existing transactions are re-used by additional*
actors. Following is an alternative example of the Role section. Delete which ever form of the
role section you choose not to use.>

The Roles in this transaction are defined in the following table and may be played by the actors
340 shown here:

Table 3.17.2-1 Actor Roles

Role:	*<Role Name:><Only unique within this transaction. Typically one word. The Role Name is analogous to SCU or SCP in DICOM Services.>*

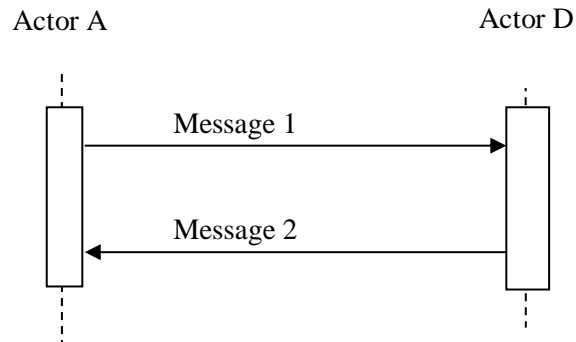|	
Actor(s):	The following actors may play the role of *<Role Name>*: *<Actor Name>: <optionally, the situation where the Actor would play this Role if needed for clarity.>"*
Role:	*<e.g., Requestor:* *Submits the relevant details and requests the creation of a new workitem.>*

Actor(s):	*<e.g., The following actors may play the role of Requestor:*
	
	      Workitem Creator: when requesting workitems
	
	      Workitem Performer: when performing unscheduled workitems>

Role:	*<e.g., Manager:*
	
	      Creates and manages a Unified Procedure Step instance for the requested
	
	      workitem.>

Actor(s):	*<e.g., The following actors may play the role of Manager:* *Workitem Manager: when receiving a new workitem for its worklist.>*

Transaction text specifies behavior for each Role. The behavior of specific Actors may also be specified when it goes beyond that of the general Role.

3.17.3 Referenced Standards

345   HL7 2.6 Chapters 2, 3, 5 and 7

3.17.4 Interaction Diagram

<The interaction diagram shows the detailed standards-based message exchange that makes up the IHE transaction.>

3.17.4.1 <Message 1 Name>

350

<One or two sentence summary of what Message 1 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>

355

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

3.17.4.1.1 Trigger Events

<Description of the real world events that cause the sender (Actor A) to send Message 1 (e.g., an operator or an automated function determines that a new workitem is needed).>

360

3.17.4.1.2 Message Semantics

<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>

<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the

365 *SCP.").>*

<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>

3.17.4.1.3 Expected Actions

370

<Description of the actions expected to be taken as a result of sending or receiving this message.>

<Describe what the receiver is expected/required to do upon receiving this message. >

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as
375 *expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>*

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

3.17.4.2 <Message 2 Name>

<One or two sentence summary of what Message 2 accomplishes typically relating the message
380 *to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>*

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

385 *<Repeat this section as necessary based on the number of messages in the interaction diagram.>*

3.17.4.2.1 Trigger Events

<Description of the real world events that cause the sender (Actor A) to send Message 1(e.g., an operator or an automated function determines that a new workitem is needed).>

3.17.4.2.2 Message Semantics

390 *<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>*

<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>

395 *<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>*

3.17.4.2.3 Expected Actions

400 *<Description of the actions expected to be taken as a result of sending or receiving this message.>*

<Describe what the receiver is expected/required to do upon receiving this message. >

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>

405

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

1   3.17.5 Security Considerations

<Description of the transaction specific security consideration; such as use of security profiles.>

3.17.5.1 Security Audit Considerations

410   *<This section should identify any specific ATNA security audit event that is associated with this
transaction and requirements on the encoding of that audit event. >*

3.17.5.1.(z) <Actor> Specific Security Considerations

<This section should specify any specific security considerations on an Actor by Actor basis.>

3.18 Assert Device-Patient Disassociation [PCD-18]>

415   ## 3.18.1 Scope

This transaction is used to *<...describe what is accomplished by using the transaction.
Remember that by keeping transactions general/abstract, they can be re-used in a variety of
profiles>*

3.18.2 Actor Roles

420   *<Optional: if desired, in addition to the table, add a diagram as shown below to illustrate the
actors included in this transaction, or delete the diagram altogether.>*

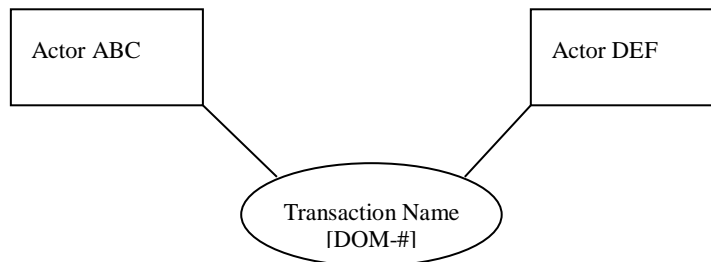**Figure 3.Y.2-1: Use Case Diagram**

425   **Table 3.Y.2-1: Actor Roles**

Actor:	<Official actor name; list every actor in this transaction.>
Role:	<Very brief, one phrase, description of the role that this actor plays in this transaction.>
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Role:	

Actor:	
Role:	

<The assignment and use of Role Names in transaction specifications has proved to be very effective/efficient in Radiology, especially when existing transactions are re-used by additional actors. Following is an alternative example of the Role section. Delete which ever form of the role section you choose not to use.>

430

The Roles in this transaction are defined in the following table and may be played by the actors shown here:

Table 3.18.2-1 Actor Roles

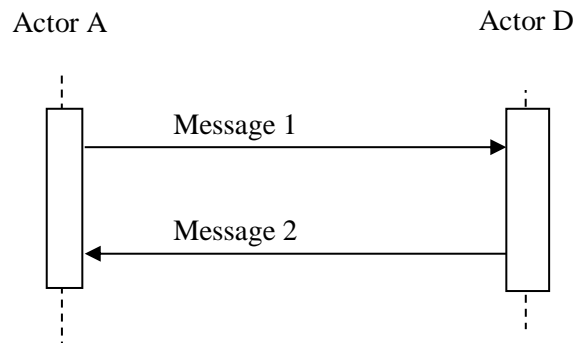| **Role:**	*<Role Name:><Only unique within this transaction. Typically one word. The Role Name is analogous to SCU or SCP in DICOM Services.>*
Actor(s):	The following actors may play the role of *<Role Name>*: *<Actor Name>: <optionally, the situation where the Actor would play this Role if needed for clarity.>*"
Role:	*<e.g., Requestor:* *Submits the relevant details and requests the creation of a new workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Requestor:* *Workitem Creator: when requesting workitems* *Workitem Performer: when performing unscheduled workitems>*
Role:	*<e.g., Manager:* *Creates and manages a Unified Procedure Step instance for the requested* *workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Manager:* *Workitem Manager: when receiving a new workitem for its worklist.>*

Transaction text specifies behavior for each Role. The behavior of specific Actors may also be
435   specified when it goes beyond that of the general Role.

3.18.3 Referenced Standards

HL7 2.6 Chapters 2, 3, 5 and 7

3.18.4 Interaction Diagram

<The interaction diagram shows the detailed standards-based message exchange that makes up the IHE transaction.>

440

3.18.4.1 <Message 1 Name>

<One or two sentence summary of what Message 1 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>

445

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

3.18.4.1.1 Trigger Events

450 *<Description of the real world events that cause the sender (Actor A) to send Message 1 (e.g., an operator or an automated function determines that a new workitem is needed).>*

3.17.4.1.2 Message Semantics

<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>

455 *<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>*

<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what

460   *the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>*

3.17.4.1.3 Expected Actions

<Description of the actions expected to be taken as a result of sending or receiving this message.>

465   *<Describe what the receiver is expected/required to do upon receiving this message. >*

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

470   ### 3.17.4.2 <Message 2 Name>

<One or two sentence summary of what Message 2 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>

475   *<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>*

<Repeat this section as necessary based on the number of messages in the interaction diagram.>

3.17.4.2.1 Trigger Events

<Description of the real world events that cause the sender (Actor A) to send Message 1(e.g., an
480   *operator or an automated function determines that a new workitem is needed).>*

3.17.4.2.2 Message Semantics

<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>

<Start by describing the standard underlying the message and how the participating actors are
485   *mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>*

<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the
490   *message and the receiver to interpret the message.>*

3.17.4.2.3 Expected Actions

<Description of the actions expected to be taken as a result of sending or receiving this message.>

<Describe what the receiver is expected/required to do upon receiving this message. >

495 *<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>*

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

3.17.5 Security Considerations

500 *<Description of the transaction specific security consideration; such as use of security profiles.>*

3.17.5.1 Security Audit Considerations

<This section should identify any specific ATNA security audit event that is associated with this transaction and requirements on the encoding of that audit event. >

3.17.5.1.(z) <Actor> Specific Security Considerations

505 *<This section should specify any specific security considerations on an Actor by Actor basis.>*

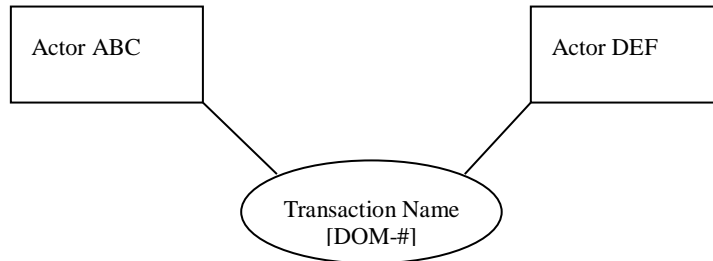### 3.19 Query Device-Patient Associations [PCD-19]>

<The "Y" in the heading should be the same as the # in the [Domain Acronym -#] title>

3.19.1 Scope

This transaction is used to *<...describe what is accomplished by using the transaction.*
510 *Remember that by keeping transactions general/abstract, they can be re-used in a variety of profiles>*

3.19.2 Actor Roles

<Optional: if desired, in addition to the table, add a diagram as shown below to illustrate the actors included in this transaction, or delete the diagram altogether.>

Figure 3.Y.2-1: Use Case Diagram

Table 3.Y.2-1: Actor Roles

Actor:	<Official actor name; list every actor in this transaction.>
Role:	<Very brief, one phrase, description of the role that this actor plays in this transaction.>
Actor:	
Role:	
Actor:	
Role:	

<The assignment and use of Role Names in transaction specifications has proved to be very effective/efficient in Radiology, especially when existing transactions are re-used by additional actors. Following is an alternative example of the Role section. Delete which ever form of the role section you choose not to use.>

The Roles in this transaction are defined in the following table and may be played by the actors shown here:

Table 3.19.2-1 Actor Roles

Role:	*<Role Name:><Only unique within this transaction. Typically one word. The Role Name is analogous to SCU or SCP in DICOM Services.>*
Actor(s):	The following actors may play the role of *<Role Name>*: *<Actor Name>: <optionally, the situation where the Actor would play this Role if needed for clarity.>"*
Role:	*<e.g., Requestor:* *Submits the relevant details and requests the creation of a new workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Requestor:*

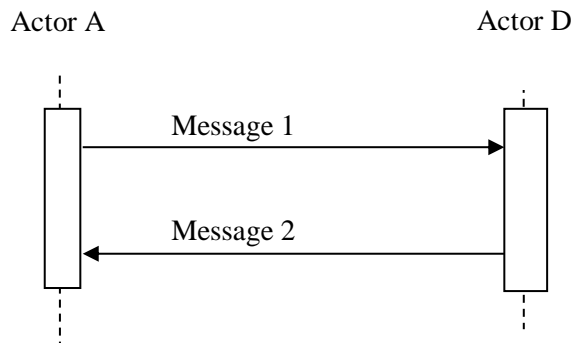|	
	Workitem Creator: when requesting workitems *Workitem Performer: when performing unscheduled workitems>*
Role:	*<e.g., Manager:* *Creates and manages a Unified Procedure Step instance for the requested* *workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Manager:* *Workitem Manager: when receiving a new workitem for its worklist.>*

Transaction text specifies behavior for each Role. The behavior of specific Actors may also be specified when it goes beyond that of the general Role.

3.19.3 Referenced Standards

530 HL7 2.6 Chapters 2, 3, 5 and 7

3.19.4 Interaction Diagram

<The interaction diagram shows the detailed standards-based message exchange that makes up the IHE transaction.>

3.19.4.1 <Message 1 Name>

535

<One or two sentence summary of what Message 1 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>

540   *<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>*

3.19.4.1.1 Trigger Events

<Description of the real world events that cause the sender (Actor A) to send Message 1 (e.g., an operator or an automated function determines that a new workitem is needed).>

545   ### 3.19.4.1.2 Message Semantics

<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>

<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the
550   *SCP.").>*

<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>

555   ### 3.19.4.1.3 Expected Actions

<Description of the actions expected to be taken as a result of sending or receiving this message.>

<Describe what the receiver is expected/required to do upon receiving this message. >

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as
560   *expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>*

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

3.19.4.2 <Message 2 Name>

<One or two sentence summary of what Message 2 accomplishes typically relating the message
565   *to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>*

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

570   *<Repeat this section as necessary based on the number of messages in the interaction diagram.>*

3.19.4.2.1 Trigger Events

<Description of the real world events that cause the sender (Actor A) to send Message 1(e.g., an operator or an automated function determines that a new workitem is needed).>

3.19.4.2.2 Message Semantics

575 *<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>*

<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>

580 *<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>*

3.19.4.2.3 Expected Actions

585 *<Description of the actions expected to be taken as a result of sending or receiving this message.>*

<Describe what the receiver is expected/required to do upon receiving this message. >

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in
590 *other contexts.>*

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

3.19.5 Security Considerations

<Description of the transaction specific security consideration; such as use of security profiles.>

3.19.5.1 Security Audit Considerations

595 *<This section should identify any specific ATNA security audit event that is associated with this transaction and requirements on the encoding of that audit event. >*

3.19.5.1.(z) <Actor> Specific Security Considerations

<This section should specify any specific security considerations on an Actor by Actor basis.>
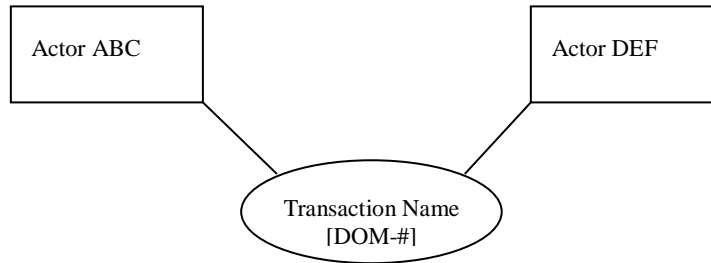
3.20 Register Device [PCD-20]>

600 *<The "Y" in the heading should be the same as the # in the [Domain Acronym -#] title>*

3.20.1 Scope

This transaction is used to *<...describe what is accomplished by using the transaction. Remember that by keeping transactions general/abstract, they can be re-used in a variety of profiles>*

605 ## 3.20.2 Actor Roles

<Optional: if desired, in addition to the table, add a diagram as shown below to illustrate the actors included in this transaction, or delete the diagram altogether.>

Figure 3.Y.2-1: Use Case Diagram

610

Table 3.Y.2-1: Actor Roles

Actor:	<Official actor name; list every actor in this transaction.>
Role:	<Very brief, one phrase, description of the role that this actor plays in this transaction.>
Actor:	
Role:	
Actor:	
Role:	

<The assignment and use of Role Names in transaction specifications has proved to be very effective/efficient in Radiology, especially when existing transactions are re-used by additional actors. Following is an alternative example of the Role section. Delete which ever form of the
615 *role section you choose not to use.>*

The Roles in this transaction are defined in the following table and may be played by the actors shown here:

Table 3.20.2-1 Actor Roles

Role:	*<Role Name:><Only unique within this transaction. Typically one word. The Role Name is analogous to SCU or SCP in DICOM Services.>*
Actor(s):	The following actors may play the role of *<Role Name>*: *<Actor Name>: <optionally, the situation where the Actor would play this Role if needed for clarity.>"*
Role:	*<e.g., Requestor:* *Submits the relevant details and requests the creation of a new workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Requestor:* *Workitem Creator: when requesting workitems* *Workitem Performer: when performing unscheduled workitems>*
Role:	*<e.g., Manager:* *Creates and manages a Unified Procedure Step instance for the requested* *workitem.>*
Actor(s):	*<e.g., The following actors may play the role of Manager:* *Workitem Manager: when receiving a new workitem for its worklist.>*

620   Transaction text specifies behavior for each Role. The behavior of specific Actors may also be
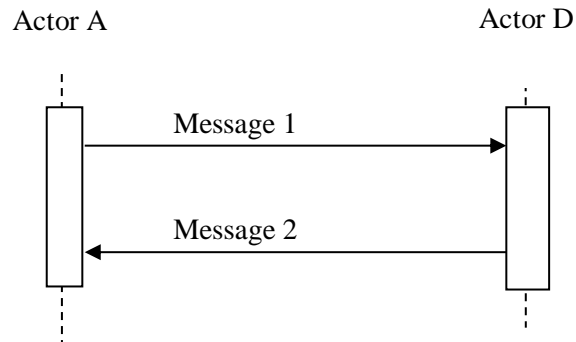specified when it goes beyond that of the general Role.

3.20.3 Referenced Standards

HL7 2.6 Chapters 2, 3, 5 and 7

3.20.4 Interaction Diagram

625   *<The interaction diagram shows the detailed standards-based message exchange that makes up
the IHE transaction.>*

3.20.4.1 <Message 1 Name>

630 *<One or two sentence summary of what Message 1 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following sections.>*

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

3.20.4.1.1 Trigger Events
635

<Description of the real world events that cause the sender (Actor A) to send Message 1 (e.g., an operator or an automated function determines that a new workitem is needed).>

3.20.4.1.2 Message Semantics

640 *<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>*

<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>

<Continue profiling the message by providing guidance or constraints on how the message
645 *parameters are populated, how the payload is encoded, how the message is structured and what the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>*

3.20.4.1.3 Expected Actions

<Description of the actions expected to be taken as a result of sending or receiving this
650   *message.>*

<Describe what the receiver is expected/required to do upon receiving this message. >

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>

655   *<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>*

3.20.4.2 <Message 2 Name>

<One or two sentence summary of what Message 2 accomplishes typically relating the message to the relevant standard. Avoid shall language in this upper level section. Do not duplicate the triggers, encoding, semantics, standards used, or expected actions. Those belong in the following
660   *sections.>*

<Explicitly state if the multiplicity of an actor may be greater than one; i.e., if an actor (whether it is a client or server) can expect this message from a single source or multiple sources.>

<Repeat this section as necessary based on the number of messages in the interaction diagram.>

3.20.4.2.1 Trigger Events

665   *<Description of the real world events that cause the sender (Actor A) to send Message 1(e.g., an operator or an automated function determines that a new workitem is needed).>*

3.20.4.2.2 Message Semantics

<Detailed description of the meaning, structure and contents of the message, including any IHE specific clarifications of the message format, attributes, etc.>

670   *<Start by describing the standard underlying the message and how the participating actors are mapped (e.g., "This message is a DICOM C-FIND Request. Actor A is the SCU. Actor D is the SCP.").>*

<Continue profiling the message by providing guidance or constraints on how the message parameters are populated, how the payload is encoded, how the message is structured and what
675   *the contents mean. These message semantics should both help the sender to construct the message and the receiver to interpret the message.>*

3.20.4.2.3 Expected Actions

<Description of the actions expected to be taken as a result of sending or receiving this message.>

680   *<Describe what the receiver is expected/required to do upon receiving this message. >*

<Avoid re-iterating the transaction sequencing specified in the Profile Process Flows as expected actions internal to the transaction. Doing so prevents this transaction being re-used in other contexts.>

<Explicitly define any expected action based on the multiplicity of an actor(s), if applicable.>

685 3.20.5 Security Considerations

<Description of the transaction specific security consideration; such as use of security profiles.>

3.20.5.1 Security Audit Considerations

<This section should identify any specific ATNA security audit event that is associated with this transaction and requirements on the encoding of that audit event. >

690 3.20.5.1.(z) <Actor> Specific Security Considerations

<This section should specify any specific security considerations on an Actor by Actor basis.>

Appendices

<Detailed cross transaction relationships or mapping details are described in an appendix in Volume 2x. Volume 2 appendices may be informational or normative. Immediately after the title

695 *of a Volume 2 appendix, provide a very explicit statement defining whether this new appendix is informative or normative.>*

Appendix A – <Appendix A Title>

Appendix A text goes here.

700 ### C.1   <Add Title>

Appendix A.1 text goes here

Appendix B – <Appendix B Title>

Appendix B text goes here.

B.1   <Add Title>

705 Appendix B.1 text goes here.

Volume 2 Namespace Additions

Add the following terms to the IHE General Introduction Appendix G:

<Please explicitly identify all new OIDs, UIDs, URNs, etc., defined specifically for this profile.
710 *These will be added to the IHE TF General Introduction namespace appendix when it becomes available. These items should be collected from the sections above, and listed here as additions when this document is published for Trial Implementation. This section will be deleted prior to inclusion into the Technical Framework as Final Text, but should be present for publication of Public Comment and Trial Implementation.>*

715