



The Theragnostic Company™

# DICOM 3.0 Conformance Statement



## Aixplorer® Ultrasound System

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# 1. Conformance Statement Overview

Aixplorer implements the necessary services to:

- Support the Echo (Verification) service as SCU/SCP
- Support Image Storage as SCU
- Support Basic Printing Service as SCU
- Support Modality Worklist Service as SCU
- Support Storage Commitment Service as SCU
- Support Media Storage Service as FSC

This document is intended to describe Aixplorer's conformance to DICOM.

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
<b>Transfer</b>		
US Image Storage	Yes*	No
US Multi-Frame Image Storage	Yes*	No
Encapsulated PDF Storage	Yes*	No
<b>Workflow Management</b>		
Modality Worklist (C-FIND)	Yes*	No
Storage Commitment Push Model	Yes*	No
<b>Print Management</b>		
Basic Grayscale Print Management	Yes*	No
Basic Color Print Management	Yes*	No

Table 1-1: Network Services

\* *Purchasable option.*

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
<b>Compact Disk - Recordable</b>		
Ultra Sound application profile - Image Display STD-US-ID-MF-CDR	Yes/No	No
<b>120 mm DVD</b>		
Ultra Sound application profile - Image Display	Yes/No	No

Table 1-2: Media Services

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## 3. Introduction

### 3.1 Revision History

Document Version	Date	Author	Description
Version 01	April, 2 2009	Damien LERAT Arnaud PERRIN	Creation
Version 02	September, 3 2009	Damien LERAT	Correction in chapter 4.2.1.3.5, 4.2.1.4.2, 5.1.4 and annexes

Table 3.1 revision history

For any other information, or for the latest version of this document, please contact us:

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### 3.1 Audience

This document is intended for:

- Potential users
- System integrators of medical equipment
- Software designers implementing DICOM interfaces

It is assumed that the reader has a working understanding of DICOM.

### 3.2 Remarks

DICOM, by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same DICOM functionality.

This Conformance Statement is not intended to replace validation with other DICOM equipment to ensure proper exchange of information intended.

The scope of this Conformance Statement is to facilitate communication between Aixplorer V2.05 and other DICOM systems. The Conformance Statement should be read and understood in conjunction with the DICOM Standard (DICOM). However, by itself it is not guaranteed to ensure the desired interoperability and a successful interconnectivity.

The user should be aware of the following important issues:



- The comparison of different Conformance Statements is the first step towards assessing interconnectivity between Aixplorer and other DICOM conformant equipment
- Test procedures should be defined to validate the desired level of connectivity
- The DICOM standard will evolve to meet the users' future requirements. SuperSonic Imagine is actively involved in developing the standard further and therefore reserves the right to make changes to its products or to discontinue its delivery

### 3.3 Definitions, Terms and Abbreviations

Definitions, terms and abbreviations used in this document are defined within the different parts of the DICOM standard.

#### 3.3.1 Definitions

**Abstract Syntax:** Generally equivalent to an Information Object Definition (IOD), the specification used to define the information to exchange in a message; does not represent a specific instance of the data object, but rather a class of similar data objects that have the same properties. Examples: MR image object definition, CT image object definition, image query information model.

**Application Entity (AE):** An end point of a DICOM information exchange, including the DICOM network or media interface software; i.e., the software that sends or receives DICOM information objects or messages. A single device may have multiple Application Entities.

**Application Entity Title:** The externally known name of an Application Entity, used to identify a DICOM application to other DICOM applications on the network.

**Application Context:** The specification of the type of communication used between Application Entities. Example: DICOM network protocol.

**Association:** A network communication channel set up between Application Entities.

**Attribute:** A property of an Information Object. An Attribute has a name and a value which are independent of any encoding scheme.

**Command:** A request to operate on information across a network.

**Command Element:** An encoding of a parameter of a command which conveys this parameter's value.

**Command Stream:** The result of encoding a set of DICOM Command Elements using the DICOM encoding scheme.

**Conformance Statement:** A formal statement that describes a specific product implementation that uses the DICOM Standard. It specifies the Service Classes, Information Objects, and Communication Protocols supported by the implementation.

**Data Dictionary:** A registry of DICOM Data Elements which assigns a unique tag, a name, value characteristics, and semantics to each Data Element.

**Data Element:** A unit of information as defined by a single entry in the data dictionary.

**Data Set:** Exchanged information consisting of a structured set of Attributes. The value of each Attribute in a Data Set is expressed as a Data Element.

**Data Stream:** The result of encoding a Data Set using the DICOM encoding scheme (Data Element Numbers and representations as specified by the Data Dictionary).

**Information Object:** An abstraction of a real information entity (e.g., CT Image, Structured Report, etc.) which is acted upon by one or more DICOM Commands.

**Information Object Class:** A formal description of an Information Object which includes a description of its purpose and the Attributes it possesses. It does not include values for these attributes.

**Information Object Definition (IOD):** The specified set of Attributes that comprise a type of data object (see Abstract Syntax). The Attributes may be specified as Mandatory (Type 1), Required but possibly unknown (Type 2), or Optional (Type 3), and there may be conditions associated with the use of an Attribute (Types 1C and 2C).

**Information Object Instance:** A representation of an occurrence of a real-world entity, which includes values for the Attributes of the Information Object Class to which the entity belongs.

**Joint Photographic Experts Group (JPEG):** A set of standardized image compression techniques, available for use by DICOM applications.

**Media Application Profile:** The specification of DICOM information objects and encoding exchanged on removable media (e.g., CDs).

**Message:** A data unit of the Message Exchange Protocol exchanged between two cooperating DICOM Applications. A Message is composed of a Command Stream followed by an optional Data Stream.

**Module:** A set of Attributes within an Information Object Definition that are logically related to each other. Example: Patient Module includes Patient Name, Patient ID, Patient Birth Date, and Patient Sex.

**Negotiation:** First phase of Association establishment that allows Application Entities to agree on the types of data to be exchanged and how that data will be encoded.

**Presentation Context:** The set of DICOM network services used over an Association, as negotiated between Application Entities; includes Abstract Syntaxes and Transfer Syntaxes.

**Protocol Data Unit (PDU):** A packet (piece) of a DICOM message sent across the network. Devices must specify the maximum size packet they can receive for DICOM messages.

**Security Profile:** A set of mechanisms, such as encryption, user authentication, or digital signatures, used by an Application Entity to ensure confidentiality, integrity, and/or availability of exchanged DICOM data.

**Service Class:** A structured description of a service which is supported by cooperating DICOM Applications using specific DICOM Commands acting on a specific class of Information Object.

**Service Class Provider (SCP):** Role of an Application Entity that provides a DICOM network service; typically, a server that performs operations requested by another Application Entity (Service Class User). Examples: Picture Archiving and Communication System (image storage SCP, and image query/retrieve SCP), Radiology Information System (modality Worklist SCP).

**Service Class User (SCU):** Role of an Application Entity that uses a DICOM network service; typically, a client. Examples: imaging modality (image storage SCU, and modality Worklist SCU), imaging workstation (image query/retrieve SCU)

**Service/Object Pair (SOP) Class:** The specification of the network or media transfer (service) of a particular type of data (object); the fundamental unit of DICOM interoperability specification. Examples: Ultrasound Image Storage Service, Basic Grayscale Print Management.

**Service/Object Pair (SOP) Instance:** An information object; a specific occurrence of information exchanged in a SOP Class. Examples: a specific x-ray image.

**Transfer Syntax:** The encoding used for exchange of DICOM information objects and messages. Examples: JPEG compressed (images), little Endian explicit value representation.

**Unique Identifier (UID):** A globally unique “dotted decimal” string that identifies a specific object; an ISO-8824 Object Identifier. Examples: Study Instance UID, SOP Class UID, SOP Instance UID.

**Value Representation (VR):** The format type of an individual DICOM data element, such as text, an integer, a person’s name, or a code. DICOM information objects can be transmitted with either explicit identification of the type of each data element (Explicit VR), or without explicit identification (Implicit VR); with Implicit VR, the receiving application must use a DICOM data dictionary to look up the format of each data element.

### 3.3.2 Abbreviations and terms

ACR	American College of Radiology
AE	Application Entity
AET	Application Entity Title
CD-R	Compact Disk Recordable
DHCP	Dynamic Host Configuration Protocol
DICOM	Digital Imaging and Communications in Medicine
DNS	Domain Name System
FSC	File-Set Creator
FSU	File-Set Updater
FSR	File-Set Reader
HIS	Hospital Information System
HL7	Health Level 7 Standard
IHE	Integrating the Healthcare Enterprise
IOD	Information Object Definition
IPV4	Internet Protocol version 4
IPV6	Internet Protocol version 6
ISO	International Organization for Standards
JPEG	Joint Photographic Experts Group
MPEG	Moving Picture Experts Group
MPPS	Modality Performed Procedure Step
MTU	Maximum Transmission Unit (IP)
MWL	Modality Worklist
NEMA	National Electrical Manufacturers Association
OSI	Open Systems Interconnection
PACS	Picture Archiving and Communication System
PDU	Protocol Data Unit
RIS	Radiology Information System
SPS	Scheduled Procedure Step
SR	Structured Reporting
SCP	Service Class Provider

SCU	Service Class User
SOP	Service-Object Pair
SPS	Scheduled Procedure Step
SR	Structured Reporting
TCP/IP	Protocol Transmission Control Protocol/Internet
UID	Unique Identifier
US	Ultrasound
US MF	Ultrasound Multi-Frame

### 3.4 References

[DICOM]

The Digital Imaging and Communications in Medicine (DICOM) standard:

NEMA PS 3.1 - to 3.18 and Supplements

National Electrical Manufacturers Association (NEMA) - Publication Sales - 1300 N  
17th Street, Suite 1847 - Rosslyn, Va. 22209, United States of America.

<http://www.nema.org/medical/dicom.htm>

## 4. Networking

### 4.1 Implementation Model

Aixplorer is implemented in one Application entity.

Remark: Exam data are sent to all selected Store and Print destinations simultaneously in accordance with system configuration of "Send as you go" or at "End of Exam" or Manual.

#### 4.1.1 Application Data flow

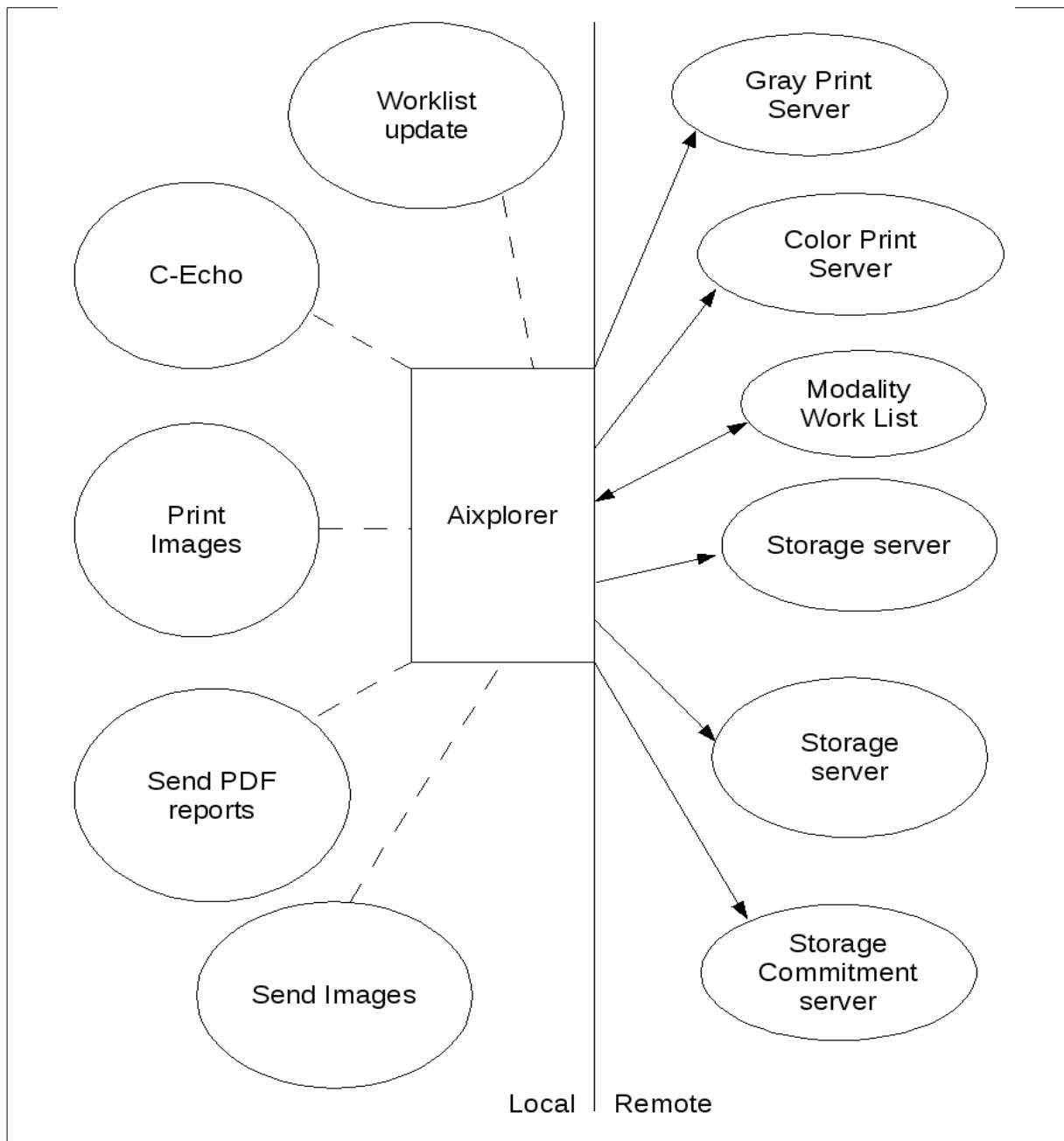


Figure 4.1-1: Application Data Flow

#### 4.1.1.1 Storage

Aixplorer sends single and multi-frame images and PDF reports to one or several remote AEs. Acquisition of images is associated with the local real-world activities "Save clip" for multi-frames images and "Save Image" for single frames images. Sending or exporting of images depends on user configuration, either "Send as you go" or "End of Exam" (when "End of Exam" button is pressed), or Manual. PDF reports creation are associated with the real world activities "Report". Sending or exporting of reports also depends on user configuration, either "End of Exam" (when "End of Exam" button is pressed), or Manual.

For either "Send as you go", "End of Exam", or manual mode, each remote AE can be individually configured to accept or reject single frame images, multi-frames images, or PDF report.

*Please refer to the user's guide for configuration and use of DICOM Storage.*

#### 4.1.1.2 Worklist

Aixplorer receives Worklist information from remote AE. It is associated with the local real-world activities "Refresh" or automatic refresh (at a user configured refresh rate). When either the "Refresh" or automatic refresh are performed, Aixplorer queries a remote AE for Worklist items that provides the set of Worklist items matching the query request.

*Please refer to the user's guide for configuration and use of DICOM Worklist.*

#### 4.1.1.3 Verification

Aixplorer initiates a connection with the DICOM SCP, posts a Verification request and closes the connection. It also responds to incoming Verification requests (for service use).

#### 4.1.1.4 Print Images

Aixplorer sends single images to one or several remote AEs (Printer or Print Server). Acquisition of images is associated with the local real-world activities "Save Image". Printing of images depends on user configuration, either "Send as you go" or "End of Exam" (when "End of Exam" button is pressed), or Manual.

For either "Send as you go" or "End of Exam, or manual mode, each remote AE can be individually configured to send fully rendered pages already containing the user's selected formatting choices.

*Please refer to the user's guide for configuration and use of DICOM Printing.*

#### 4.1.1.5 Storage commitment

Aixplorer sends single and multi-frame images and PDF reports to one or several remote AEs. Acquisition of images is associated with the local real-world activities "Save clip" for multi-frames images and "Save Image" for single frames images. Sending or exporting of images depends on user configuration, either "Send as you go" or "End of Exam" (when "End of Exam" button is pressed), or Manual. PDF reports creation are associated with the real world activities "Report". Sending or exporting of reports also depends on user configuration, either "End of Exam" (when "End of Exam" button is pressed), or Manual.

For either "Send as you go", "End of Exam", or manual mode, each remote AE can be individually configured to accept or reject single frame images, multi-frames images, and PDF report.

The Storage AE will request Storage Commitment and if a commitment is successfully obtained will record this information in the local database.

*Please refer to the user's guide for configuration and use of DICOM Storage Commitment.*

## **4.1.2 Functional Definitions of Aixplorer Application Entities**

As an SCU, Aixplorer connects to other DICOM applications.

### **4.1.2.1 Verification Service as SCU**

Aixplorer can initiate associations with Presentation Contexts for the Verification service SOP class. It will send a C-ECHO request to another DICOM application and wait for a response to complete the verification.

### **4.1.2.2 Basic Modality Worklist Management Service as SCU**

Aixplorer uses the Basic Worklist Management service to get required information to build its DICOM datasets.

It establishes one association with the remote Worklist SCP, performs a Find request, waits for responses, and then releases the association.

### **4.1.2.3 Image Storage Service as SCU**

To store images, Aixplorer establishes an association with a remote Storage SCP, negotiates its presentation contexts, and sends all images according to their related Image Storage SOP Class. It then releases the association.

### **4.1.2.4 Storage Commitment Service as SCU**

Aixplorer uses the Storage Commitment service to check that a commitment is taken by the server receiving the stored images. After a Storage operation, Aixplorer establish one association with the remote Storage Commitment SCP, performs a Store Commit request, and then releases the association.

The answer is waited for another association started by the Storage Commitment SCP.

### **4.1.2.5 Basic Print Service as SCU**

Aixplorer establishes an association with a remote Print SCP, gets printer information, creates a film session, film boxes, fills in images boxes, and asks for printing. It then releases the association.

### 4.1.3 Sequencing of Real-Word Activities

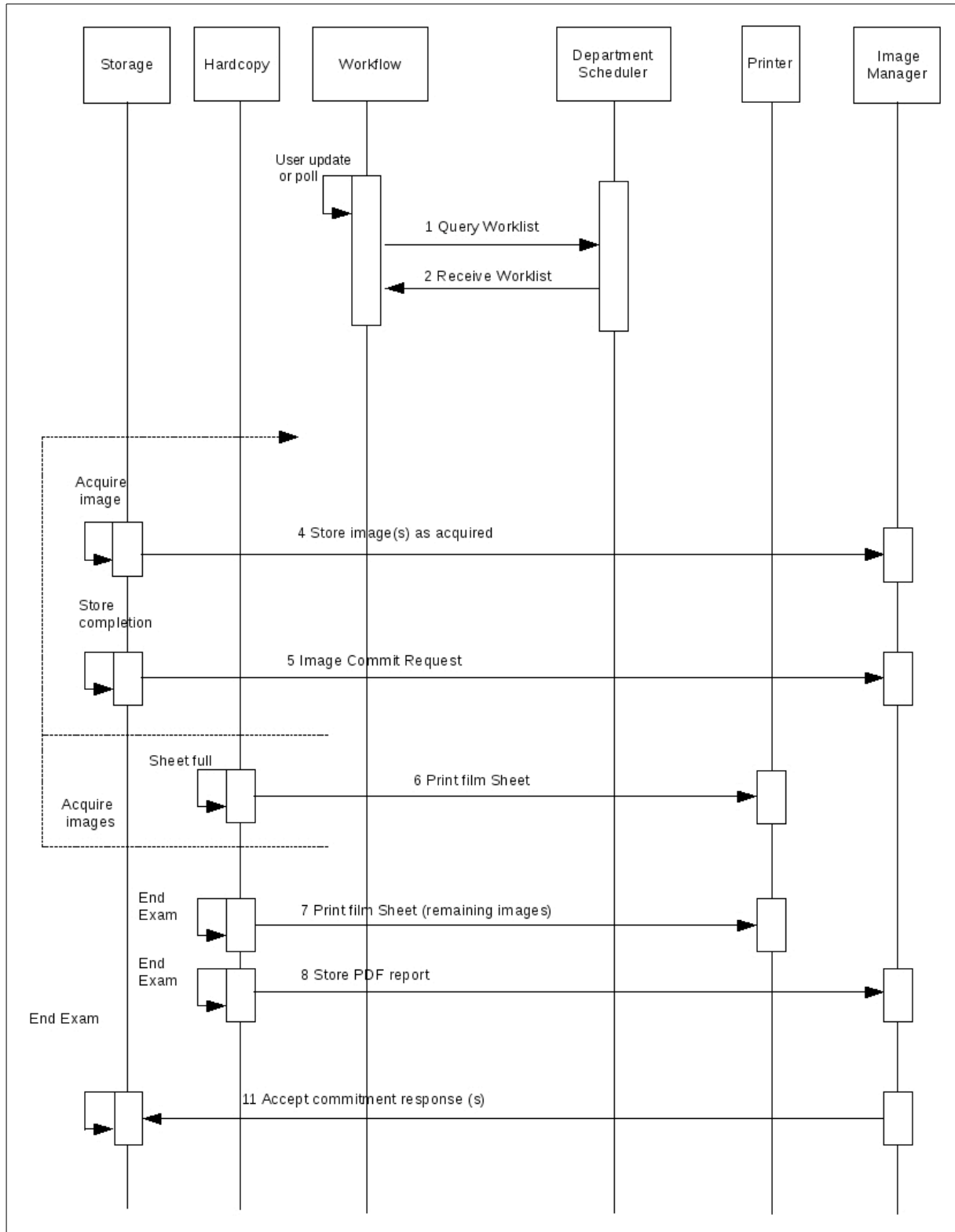


Figure 4.1-2: Sequencing Constraints - send as you go configuration



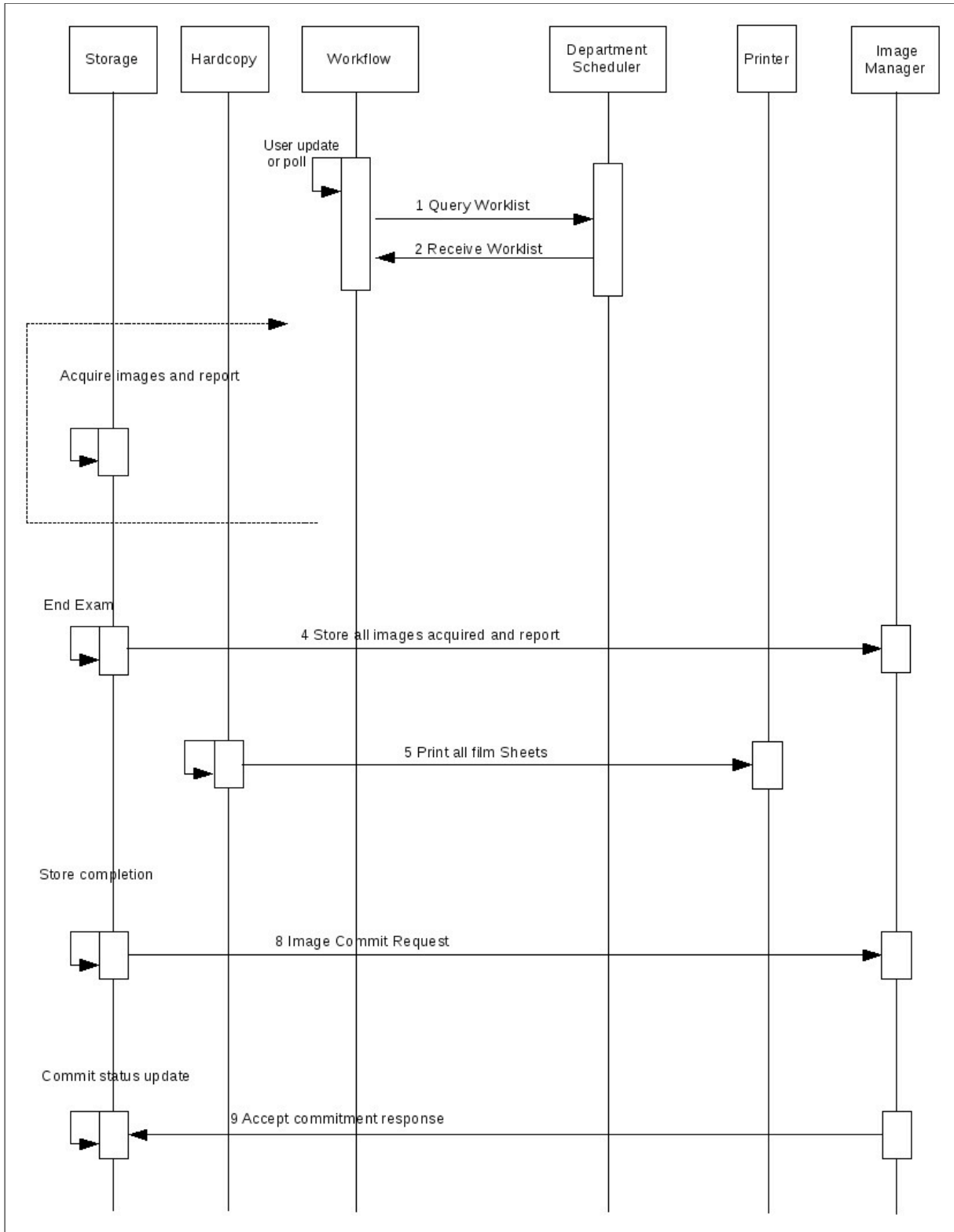


Figure 4.1-3: Sequencing Constraints - end exam configuration

## 4.2 Application Entity Specifications

### 4.2.1 Aixplorer Application Entity Specification

#### 4.2.1.1 SOP Classes

The Aixplorer AE provides Standard Conformance to the following DICOM V3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
<b>Supported SOP Classes for Verification SCU</b>			
Verification	1.2.840.10008.1.1	Yes	Yes
<b>Supported SOP Classes for Storage SCU</b>			
(Retired) US Image Storage	1.2.840.10008.5.1.4.1.1.6	Yes	No
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
(Retired) US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3	Yes	No
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
<b>Supported SOP Classes for Modality Worklist SCU</b>			
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	Yes	No
<b>Supported SOP Classes for Storage Commitment SCU</b>			
Storage Commitment Push Model	1.2.840.10008.1.20.1	Yes	No
<b>Supported Meta SOP Classes Basic Print SCU</b>			
Basic Grayscale Print Management	1.2.840.10008.5.1.1.9	Yes	No
Basic Color Print Management	1.2.840.10008.5.1.1.18	Yes	No
<b>Supported SOP Classes for Basic Grayscale Print SCU</b>			
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
<b>Supported SOP Classes for Basic Color Print SCU</b>			
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No
Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No

Table 4.2-1: SOP Classes for Aixplorer AE

#### 4.2.1.2 Association Policies

##### 4.2.1.2.1 General

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

Table 4.2-2: DICOM Application Context for Aixplorer AE

##### 4.2.1.2.2 Number of Associations

Aixplorer may initiate:

- One association at a time for a store or store commitment transfer request
- One Worklist request
- One association at a time for a print transfer request
- One verification

Several storage commitments may be selected simultaneously but only one transfer job will be active at a time. Other Jobs remain pending until the active one is completed.

Print transfer just works the same way.

Maximum number of simultaneous Associations	4 (1 Store, 1 Print, 1 Worklist, 1 Verification)
---	--

Table 4.2-3: Number of Associations as an Association Initiator for Aixplorer AE

Maximum number of simultaneous Associations	unlimited
---	-----------

Table 4.2-4: Number of Associations as an Association Acceptor for Aixplorer AE

#### 4.2.1.2.3 Asynchronous Nature

Aixplorer AE does not support asynchronous communication (multiple outstanding transactions over a single Association)

Maximum number of outstanding asynchronous transactions	0
---	---

Table 4.2-5: Asynchronous Nature as an Association Initiator for Aixplorer AE

#### 4.2.1.2.4 Implementation Identifying Information

The implementation information for the Application Entity is:

Implementation class UID	1.2.250.1.59.3.0.3.5.3
Implementation version name	ETIAM_DCMTK_353

Table 4.2-6: DICOM Implementation Class and Version for Aixplorer AE

#### 4.2.1.3 Association Initiation Policy

##### 4.2.1.3.1 Activity – Verification SCU

###### 4.2.1.3.1.1 Description and Sequencing of Activities

All verification SCU operations are performed synchronously, on user request.

Aixplorer may initiate an association with a Verification SCP within its configuration panel to check remote SCP availability.

###### 4.2.1.3.1.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	Transfer Syntax	Role	

Name	UID	Name	UID		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

Table 4.2-7: Presentation Context Table for Verification SCU

4.2.1.3.1.3 SOP Specific Conformance for Storage SOP Class

None

4.2.1.3.2 Activity - Storage SCU

4.2.1.3.2.1 Description and Sequencing of Activities

As described in 4.1.1.1 images can be sent either manually or automatically to a store SCP. Each of these requests are routed to a job queue and processed individually. If “group exportation” is selected, the system opens one association, sends all the images and report, and closes association. If not, for each selected element, the system opens one association, sends this element, and closes the association.

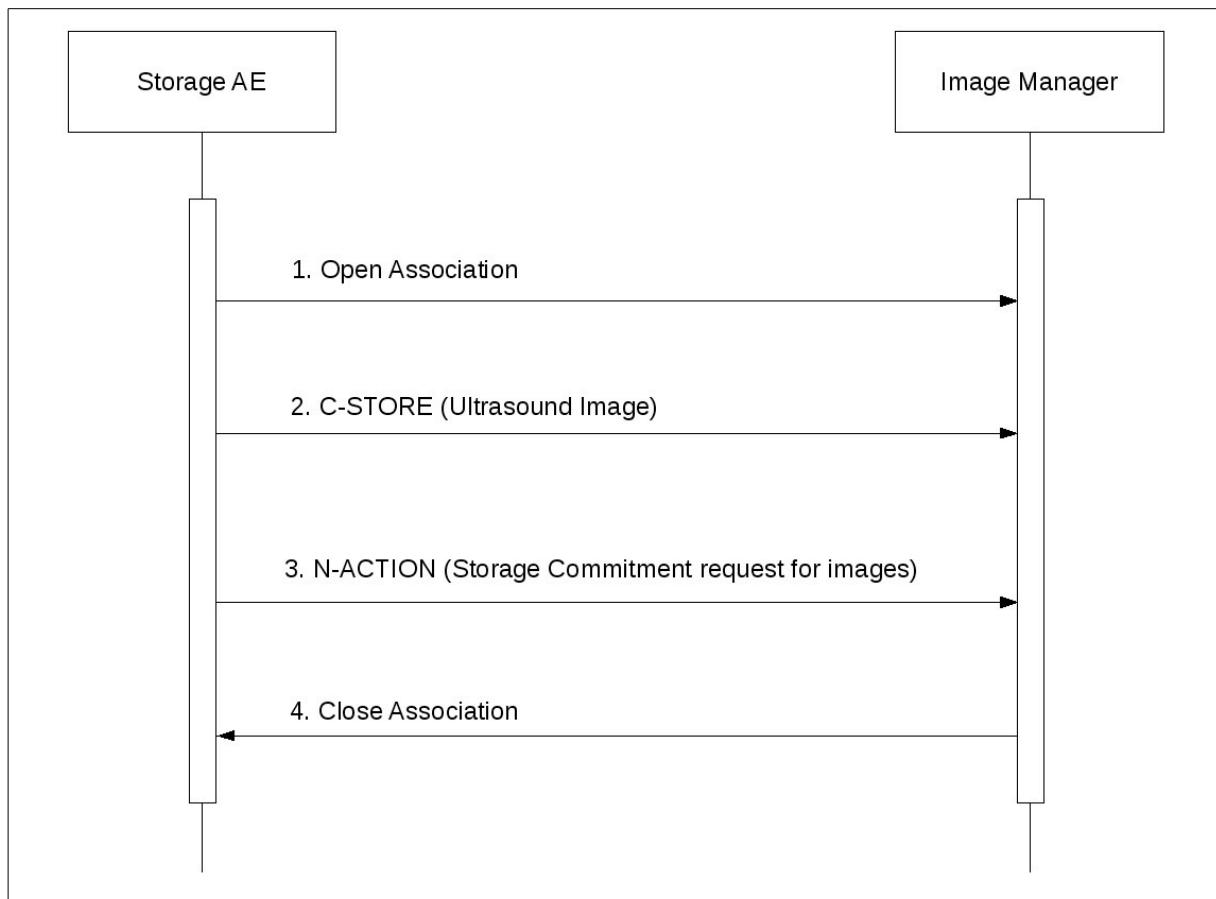


Figure 4.2-8: Sequencing of Activity - Storage SCU

## 4.2.1.3.2.2 Proposed Presentation Contexts

<b>Presentation Context Table</b>					
<b>Abstract Syntax</b>		<b>Transfer</b>		<b>Role</b>	<b>Extended Negotiation</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		JPEG Baseline : Default Transfer Syntax for Lossy JPEG 8 Bit Image Compression	1.2.840.10008.1.2.4.50	SCU	None
Ultrasound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		JPEG Baseline : Default Transfer Syntax for Lossy JPEG 8 Bit Image Compression	1.2.840.10008.1.2.4.50	SCU	None
(Retired) Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		JPEG Baseline : Default Transfer Syntax for Lossy JPEG 8 Bit Image Compression	1.2.840.10008.1.2.4.50	SCU	None
(Retired) Ultrasound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		JPEG Baseline : Default Transfer Syntax for Lossy JPEG 8 Bit Image Compression	1.2.840.10008.1.2.4.50	SCU	None

Table 4.2-9: Proposed Presentation Contexts for Aixplorer AE and Storage SCU Activity

#### 4.2.1.3.2.3 SOP Specific Conformance for Storage SOP Class

Aixplorer applies the following rules for its proposed presentation contexts:

- All uncompressed transfer syntaxes are proposed for Storage operations
- If an image is encoded, its corresponding native transfer syntax is also proposed, and will be preferred by the SCU if both compressed and uncompressed transfer syntaxes are accepted by the SCP
- If the SCP does not accept encoded transfer syntaxes, Aixplorer will uncompress the related images on the fly

*Structure of created instances is described in Annex 1.*

#### 4.2.1.3.3 Activity – Worklist SCU

##### 4.2.1.3.3.1 Description and Sequencing of Activities

All modality Worklist operations are performed synchronously, automatically or on user request.

For each basic query of a remote application entity for a modality Worklist list of items, Aixplorer will initiate an association, send a C-FIND request command, wait in blocking mode for all C-FIND responses, and then release the association.

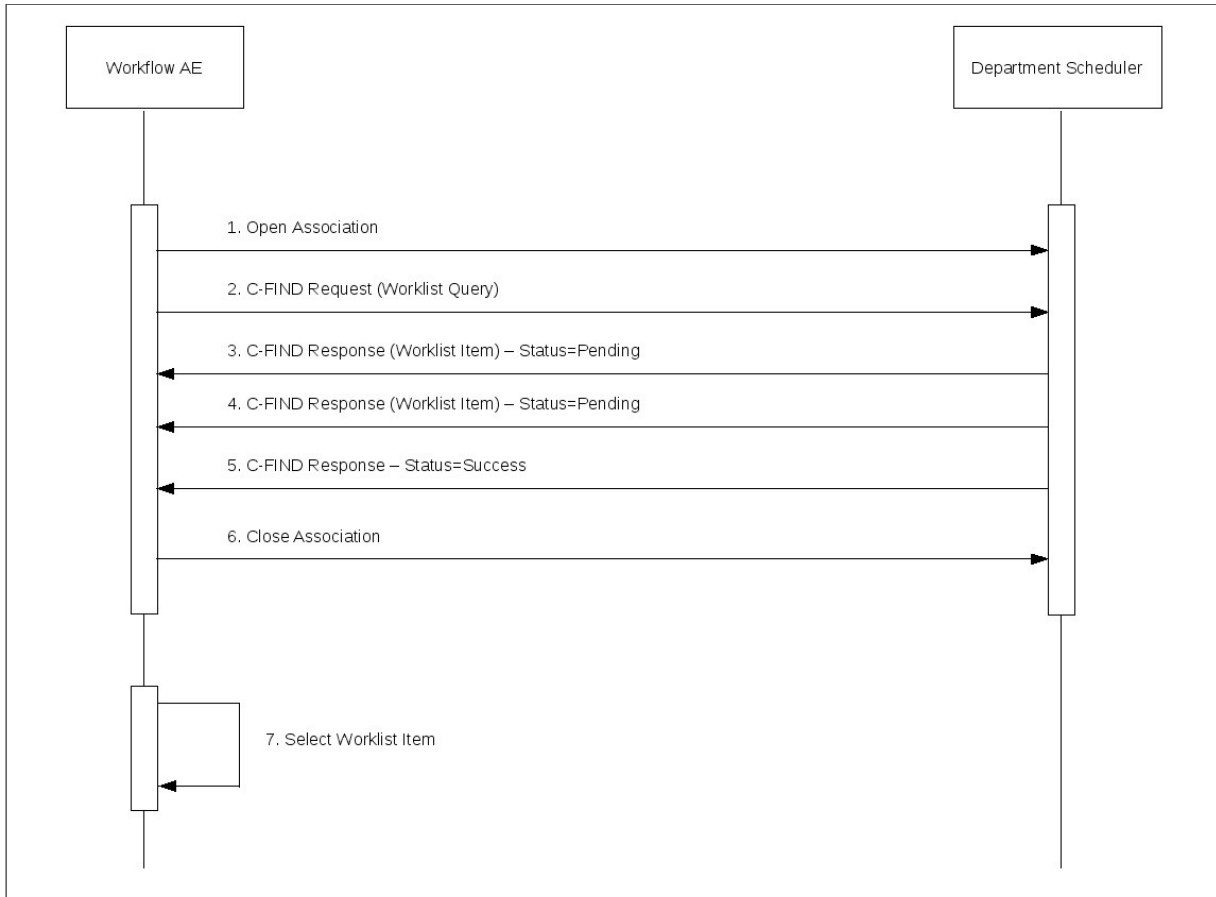


Figure 4.2-10: Sequencing of Activity - Worklist SCU

4.2.1.3.3.2 Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Worklist Information Model	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

Table 4.2-11: Proposed Presentation Contexts for AE and Worklist SCU Activity

4.2.1.3.3.3 SOP Specific Conformance for Worklist Management SOP Class

Aixplorer provides standard conformance to the DICOM Basic Worklist Management Service Class. Aixplorer requests the following matching key types:

**Key Type Matching**

SV	Single value matching
WC	Wildcard matching
RM	Range matching
	No matching. Returns value when available

Table 4.2-12: Modality Worklist Matching Key Type

Module	Attribute Name	Tag	Match	
<b>Scheduled Procedure Step</b>	Scheduled Procedure Step Sequence	(0040, 0100)		
	>Scheduled Station AETitle	(0040, 0001)	SV	
	>Scheduled Procedure Step Start Date	(0040, 0002)		
	>Scheduled Procedure Step Start Time	(0040, 0003)		
	>Modality	(0008, 0060)	SV	
	>Scheduled Performing Physician's Name	(0040, 0006)		
	>Scheduled Station Name	(0040, 0010)		
	>Scheduled Procedure Step Location	(0040, 0011)		
	>Pre Medication	(0040, 0012)		
	>Scheduled Procedure Step ID	(0040, 0009)		
	>Requested Contrast Agent	(0032, 1070)		
	<b>Requested Procedure</b>	Requested Procedure ID	(0040, 1001)	
		Study Instance UID	(0020, 000D)	
Requested Procedure Priority		(0040, 1003)		
Patient Transport Arrangements		(0040, 1004)		
<b>Imaging Service Request</b>	Accession Number	(0008, 0050)		
	Requesting Physician	(0032, 1032)		
	Referring Physician's Name	(0008, 0090)		
<b>Visit Identification</b>	Admission ID	(0038, 0010)		
<b>Visit Status</b>	Current Patient Location	(0038, 0300)		
<b>Patient Identification</b>	Patient's Name	(0010, 0010)		
	Patient ID	(0010, 0020)		
<b>Patient Demographic</b>	Patient's Birth Date	(0010, 0030)		
	Patient's Sex	(0010, 0040)		
	Patient's Weight	(0010, 1030)		
<b>Patient Medical</b>	Patient State	(0038, 0500)		
	Medical Alerts	(0010, 2000)		
	Contrast Allergies	(0010, 2110)		
	Special Needs	(0038, 0050)		

Table 4.2-13: Modality Worklist Supported Attributes



#### 4.2.1.3.4 Activity - Print SCU

##### 4.2.1.3.4.1 Description and Sequencing of Activities

Aixplorer will initiate a separate association with a Print SCP for each print session. After an association has been accepted and is established, Aixplorer will send a print job to the Print Server. Each print job includes the following steps:

- Aixplorer first performs a N-GET request to get Printer information
- Aixplorer requests the server to a N-CREATE a film session SOP instance

For each film to be printed:

- a N-CREATE request is performed to get a Film Box SOP instance
- N-SET requests are made to change some film box instance attributes and to fill image boxes with image pixel data
- if no print collation is needed, an N-ACTION is requested for the Film Box instance
- This causes the film to be printed
- If print collation is requested, an N-ACTION is performed on the film session

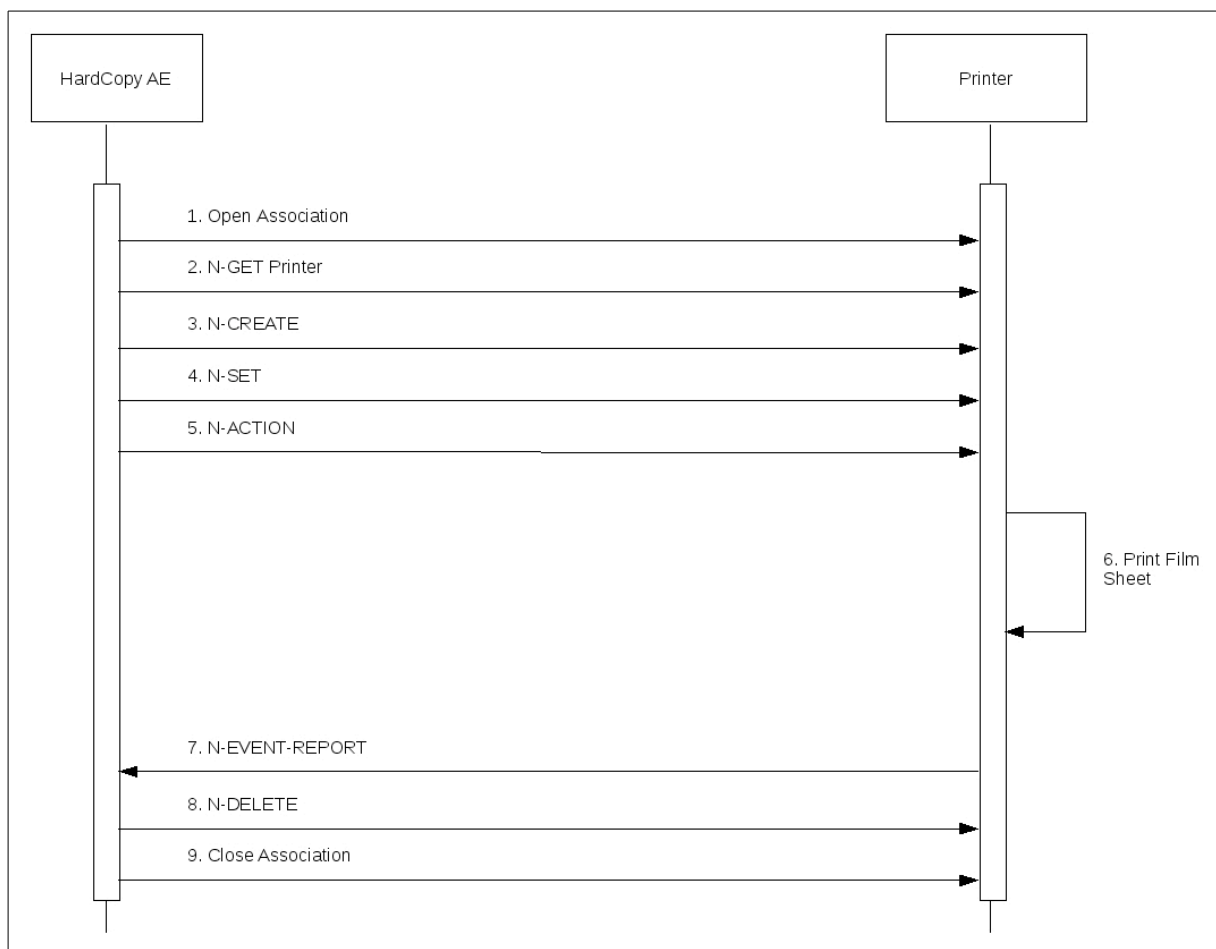


Figure 4.2-14: Sequencing of Activity - Print SCU

#### 4.2.1.3.4.2 Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

Table 4.2-15: Proposed Presentation Contexts for Aixplorer AE and Print SCU Activity

#### 4.2.1.3.4.3 SOP Specific Conformance for Print SOP Class

If the DICOM Print software is unable to open an association with the selected destination AE, an error message displays in Aixplorer. No message is displayed when successful printing operation responses are received.

After an association has been accepted and is established, Aixplorer will send a print job to the Print Server.

Each print job includes the following steps:

- Aixplorer first performs a N-GET request to get Printer information
- Aixplorer requests the server to a N-CREATE a film session SOP instance

For each film to be printed:

- a N-CREATE request is performed to get a Film Box SOP instance
- N-SET requests are made to change some film box instance attributes and to fill image boxes with image pixel data
- if no print collation is needed, a N-ACTION is requested for the Film Box instance. This causes the film to be printed
- If print collation is requested, an N-ACTION is performed on the film session

##### 4.2.1.3.4.3.1 Basic Printer SOP Class

Aixplorer can send the following DIMSE commands to a Film Box: N-GET.

- N-GET is issued by Aixplorer to get Print information. However, this information is not used

#### 4.2.1.3.4.3.2 Basic Film Session SOP Class

Aixplorer can send the following DIMSE commands to a Film Session: N-CREATE, N-SET, N-ACTION, N-DELETE.

- N-CREATE is issued by Aixplorer to create a Film Session where film boxes will be created

Attribute Name	Tag ID	Value / Comment
Number of Copies	(2000, 0010)	Default is 1

Table 4.2-16: Number of Copies for Basic Film Session

- N-SET is issued by Aixplorer to change Film Session attributes

Attribute Name	Tag ID	Value / Comment
Number of Copies	(2000,0010)	Default is 1
Print Priority	(2000,0020)	HIGH, MED, LOW. Default is MED
Medium Type	(2000,0030)	PAPER, BLUE FILM, CLEAR FILM or empty string Default is paper
Film Destination	(2000,0040)	PROCESSOR or MAGAZINE. Default is MAGAZINE
Film Session Label	(2000,0050)	Configurable

Table 4.2-17: Basic Film Session SOP Class N-CREATE request attributes

- N-ACTION is issued by Aixplorer to request printing of all Film Boxes in the Film Session
- N-DELETE is issued by Aixplorer to request a Film Session deletion

#### 4.2.1.3.4.3.3 Basic Film Box SOP Class

Aixplorer can send the following DIMSE commands to a Film Box: N-CREATE, N-SET, N-ACTION, N-DELETE.

- N-CREATE is issued by Aixplorer to create a Film Box in a Film Session, where image boxes will be created

Attribute Name	Tag ID	Value / Comment
Image Display Format	(2010,0010)	STANDARD
Film Orientation	(2010,0030)	PORTRAIT or LANDSCAPE. Default is PORTRAIT.

Table 4.2-18: Basic Film Box SOP Class N-CREATE attributes

- N-SET is issued by Aixplorer to create change Film Box attributes

<b>Attribute Name</b>	<b>Tag ID</b>	<b>Value / Comment</b>
Image Display Format	(2010, 0010)	STANDARD
Film Orientation	(2010, 0030)	PORTRAIT or LANDSCAPE. Default is PORTRAIT.
Film Size ID	(2010, 0050)	8INX10IN, 8_5INX11IN, 10INX12IN, 10INX14IN, 11INX14IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM, A4 or A3. Not set if default.
Magnification Type	(2010, 0060)	NONE, REPLICATE, BILINEAR or CUBIC Not set if default.
Smoothing Type	(2010, 0080)	Not set if default.
Border Density	(2010, 0100)	BLACK, WHITE, Grayscale Not set if default
Empty Image Density	(2010, 0110)	BLACK, WHITE, Grayscale Not set if default
Min Density	(2010, 0120)	Not set
Max Density	(2010, 0130)	Not set
Trim	(2010, 0140)	Not set
Referenced Film Session Sequence	(2010, 0500)	
>Referenced SOP Class UID	(0008, 1150)	
>Referenced SOP Instance UID	(0008, 1155)	

Table 4.2-19: Basic Film Box SOP Class N-SET attributes

- N-ACTION is issued by Aixplorer to request printing of a Film Boxes
- N-DELETE is issued by Aixplorer to request a Film Box deletion

#### 4.2.1.3.4.3.4 Basic Grayscale Image Box SOP Class

Basic Grayscale Image Box instances are created at the time the Basic Film Box SOP instance is created. The Basic Image Box contains the presentation parameters and image pixel data that apply to a single image of a film sheet.

Aixplorer can send the following DIMSE commands to an Image Box: N-SET.

- N-SET is issued by Aixplorer to set change Image Box attributes.

Attribute Name	Tag ID	Value / Comment
Image Position	(2020, 0010)	1 to <number of images in film box>
Polarity	(2020, 0020)	NORMAL or REVERSE. Not set if default
Basic Grayscale Image Sequence	(2020, 0110)	
>Samples Per Pixel	(0028, 0002)	1
>Photometric Interpretation	(0028, 0004)	MONOCHROME2
>Rows	(0028, 0010)	
>Columns	(0028, 0011)	
>Pixel Aspect Ratio	(0028, 0034)	1\1
>Bits Allocated	(0028, 0100)	16
>Bits Stored	(0028, 0101)	12
>High Bit	(0028, 0102)	11
>Pixel Representation	(0028, 0103)	0
>Pixel Data	(7FE0, 0010)	

Table 4.2-20: Basic Grayscale Image Box SOP Class Request attributes

#### 4.2.1.3.4.3.5 Basic Color Image Box SOP Class

Basic Color Image Box instances are created at the time the Basic Film Box SOP instance is created. The Basic Image Box contains the presentation parameters and image pixel data that apply to a single image of a film sheet.

Aixplorer can send the following DIMSE commands to an Image Box: N-SET.

- N-SET is issued by Aixplorer to set change Image Box attributes

Attribute Name	Tag ID	Value / Comment
Image Position	(2020, 0010)	1 to <number of images in film box>
Polarity	(2020, 0020)	NORMAL or REVERSE. Not set if default.
Basic Color Image Sequence	(2020, 0110)	
>Samples Per Pixel	(0028, 0002)	3
>Photometric Interpretation	(0028, 0004)	RGB
>Planar Configuration	(0028, 0006)	0
>Rows	(0028, 0010)	
>Columns	(0028, 0011)	
>Pixel Aspect Ratio	(0028, 0034)	1\1
>Bits Allocated	(0028, 0100)	8
>Bits Stored	(0028, 0101)	8
>High Bit	(0028, 0102)	7
>Pixel Representation	(0028, 0103)	0
>Pixel Data	(7FE0, 0010)	

Table 4.2-21: Basic Color Image Box SOP Class Request attributes

#### 4.2.1.3.5 Activity – Storage Commitment SCU

##### 4.2.1.3.5.1 Description and Sequencing of Activities

When images are sent using the store commit service to a remote DICOM Server, a Storage Commitment request is issued when transfer is successfully done. This Storage Commitment request will be sent over a separate association.

Aixplorer will open a separate association for this, send a N-ACTION request to the server and wait for the N-ACTION response on this association. Aixplorer then releases this association, without expecting any N-EVENT-REPORT message.

Aixplorer expects N-EVENT-REPORTS messages to be sent over a separate association initiated by the Storage Commitment SCP server.

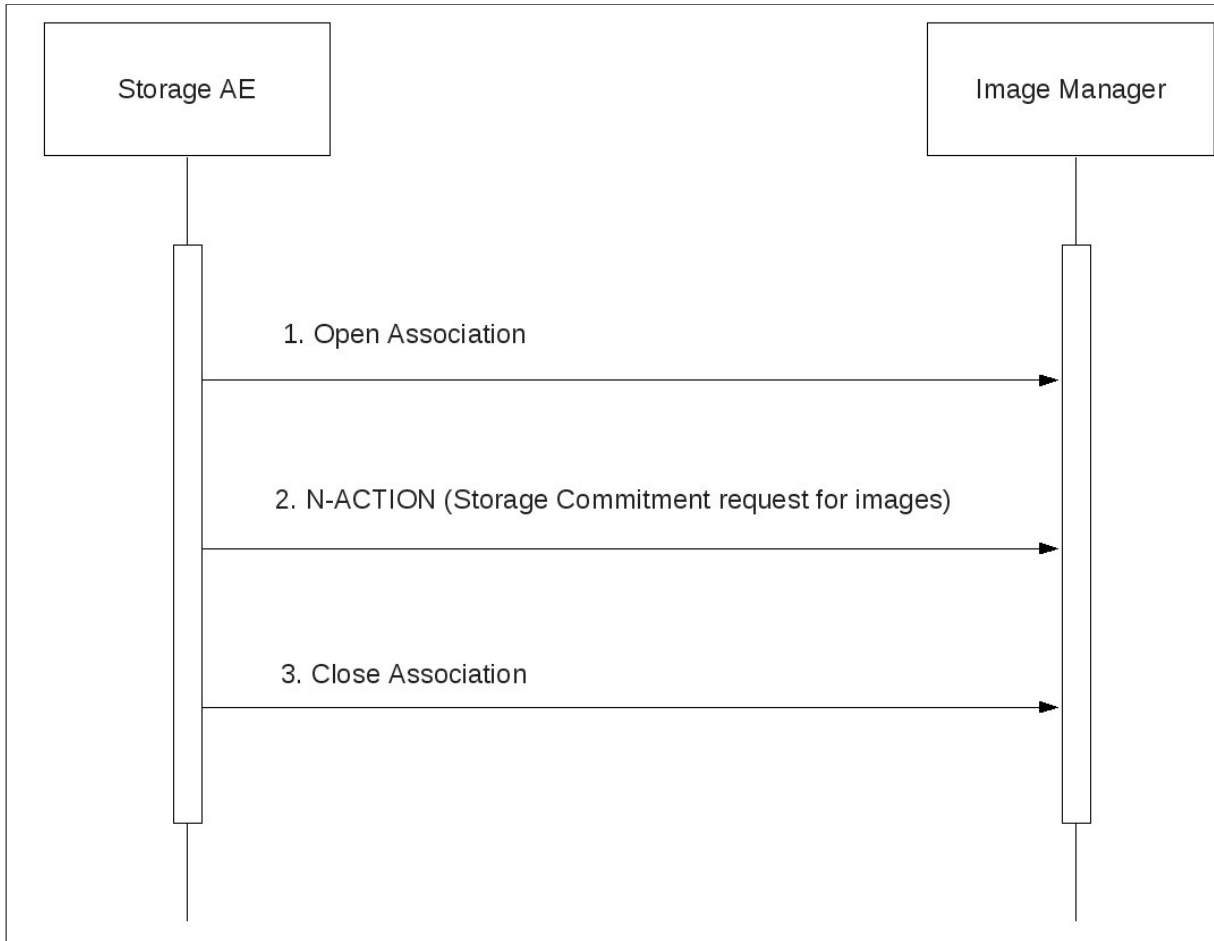


Table 4.2.22: Sequencing of Activity – Storage Commitment SCU

#### 4.2.1.3.5.2 Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Table 4.2.23: Proposed Presentation Contexts for AE and Storage Commitment SCU Activity

#### 4.2.1.3.5.3 SOP Specific Conformance for Storage Commitment SOP Class

##### 4.2.1.3.5.3.1 Storage Commitment Operations (N-ACTION)

The Storage AE will request storage commitment for encapsulated PDF, US single and multi frame images if the Remote AE is configured as an archive device with storage commitment facilities and a presentation context for the Storage Commitment Push Model has been accepted.

The Storage AE will consider that encapsulated PDF, or US single and multi frame images are not committed until a N-EVENT-REPORT is received for the Transaction

UID. The number of committed files per exam is available in “patient directory” window.

The Storage AE does not send the optional Storage Media FileSet ID & UID attributes or the Referenced Study Component Sequence Attribute in the N-ACTION.

#### 4.2.1.3.5.3.2 Storage Commitment Notifications (N-EVENT-REPORT)

Aixplorer is capable of receiving an N-EVENT-REPORT notification if it has successfully negotiated a Presentation Context for the Storage Commitment Push Model. However, such notifications are never expected on the same association as the one used to convey the N-ACTION request.

### 4.2.1.4 Association Acceptance Policy

#### 4.2.1.4.1 Activity: Verification SCP

##### 4.2.1.4.1.1 Description and sequencing of activities

Aixplorer will accept any incoming association for a verification (C-ECHO) request and will always issue C-ECHO responses with a status SUCCESS.

##### 4.2.1.4.1.2 Accepted Presentation Contexts

Aixplorer will accept the following different Presentation Contexts for Verification SCP:

<b>Presentation Context Table</b>					
<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Extended Negotiation</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 4.2.24: Acceptable Presentation Contexts for Verification SCP



4.2.1.4.1.3 SOP Specific Conformance for Verification SOP Class

Aixplorer provides standard conformance to the DICOM Verification Service Class as SCP.

4.2.1.4.2 Activity: Storage Commitment SCU

4.2.1.4.2.1 Description and sequencing of activities

When Aixplorer has sent its storage commitment N-ACTION messages to a server, it expects to be notified of responses by N-EVENT-REPORT messages on separate association.

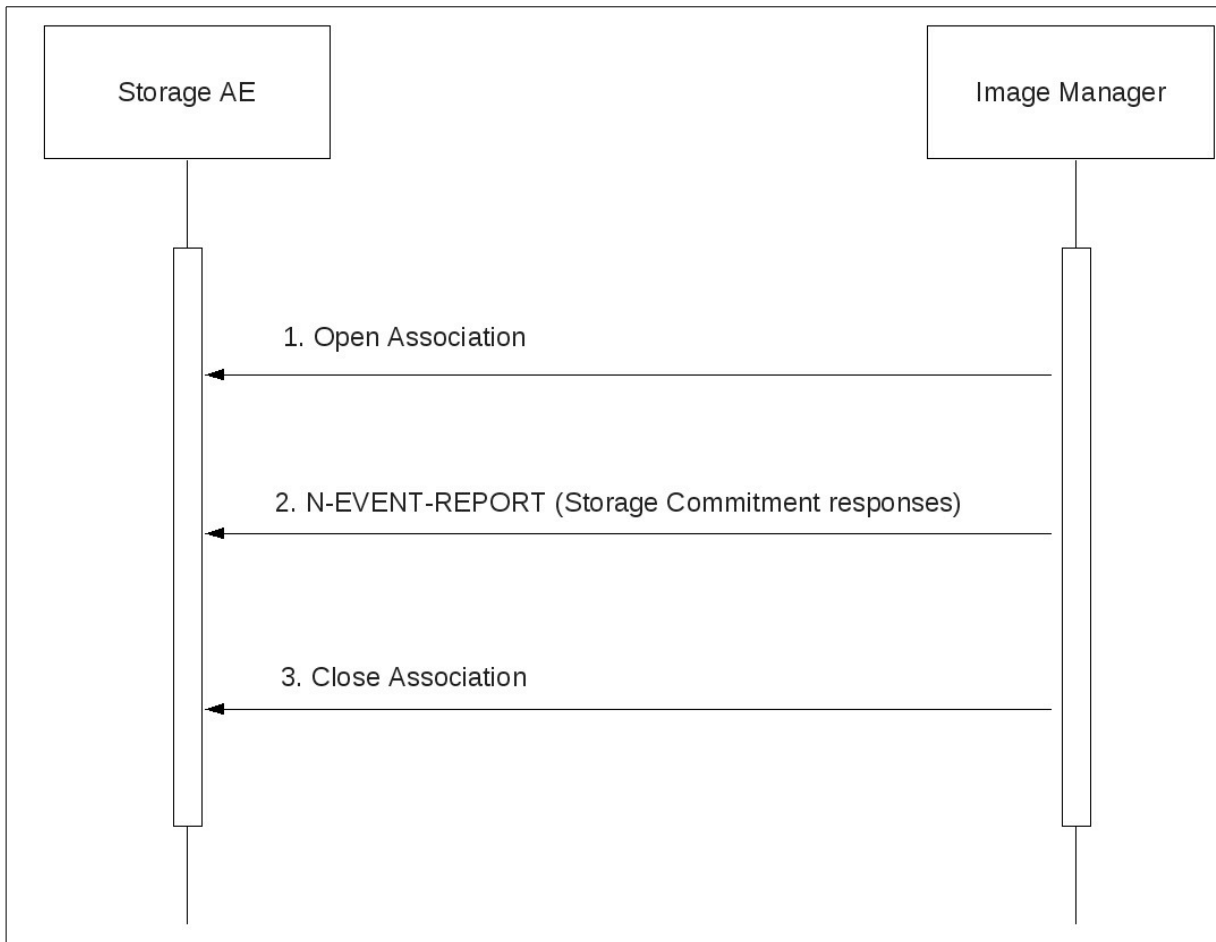


Table 4.2.25: Description and sequencing of activities for Storage Commitment SCU

#### 4.2.1.4.2.2 Accepted Presentation Contexts

Aixplorer will accept the following different Presentation Contexts for Storage Commitment N-EVENT-REPORT operations:

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Table 4.2.26: Acceptable Presentation Contexts for Storage Commitment SCU

#### 4.2.1.4.2.3 SOP Specific Conformance for Storage Commitment SCU

Upon receipt of a N-EVENT-REPORT the data's status associated with the Transaction UID will be updated.

The behavior of Storage AE when receiving Event Types within the N-EVENT-REPORT is the following:

- If Storage Commitment Request is successful, then the concerned exam will be updated in the "patient directory" window, with the number of committed files
- If Aixplorer is configured to delete data on commitment reception, then the data that have been committed will be deleted
- If Storage Commitment Request is failed, then the number of committed file for the concerned exam won't be updated, neither data deleted

## 4.3 Network Interfaces

### 4.3.1 Physical Network Interface

Aixplorer supports a single network interface. The following physical network interfaces are supported: Ethernet 10baseT, Ethernet 100baseT, and Ethernet 1000baseT.

### 4.3.2 Additional Protocols

Aixplorer conforms to the System Management Profiles listed in the Table below. All requested transactions for the listed profiles and actors are supported. Support for optional transactions is listed in the Table below:

Profile Name	Actor	Protocols Used	Optional Transactions	Security Support
Network address management	DHCP Client	DHCP	N/A	
	DNS Client	DNS	N/A	

Table 4.3-1: Supported System Management profiles

#### 4.3.2.1 DHCP

DHCP can be used to obtain TCP/IP network configuration information.

#### 4.3.2.2 DNS

DNS can be used for address resolution.

### 4.4 Configuration

Aixplorer configuration is detailed in Aixplorer's user's guide.

#### 4.4.1 AE Titles / Presentation Address Mapping

AE Titles, host names and port numbers for remote applications are configured through the "System Configuration"-> "Administration"-> "Devices" tab of Aixplorer, where remote Worklist, Store, Store Commit and Print SCPs can be defined.

#### 4.4.2 Parameters

Aixplorer configurable parameters can be defined on the "System Configuration"-> "Devices Settings"-> "System DICOM Options" tab of Aixplorer. They are the following:

- AE Title: default is Aixplorer
- Debug and Verbose mode: default is disabled
- Verification port and store commit port: default is 8013

The Aixplorer User must set the AE Title, port-number, host-name for an unlimited number of remote Storage SCP, remote Storage Commitment SCP, and Print SCP enabling one or more of them.

The Aixplorer User must set the AE Title, port-number, host-name for an unlimited number of remote MWL SCPs, enabling only one of them at a given time.

## 5. Media Interchange

### 5.1 Implementation Model

#### 5.1.1 Application Data flow

Aixplorer may export images to a CD-R or a DVD Storage medium. It is performed upon user request for selected patients, studies, series or instances.

#### 5.1.2 Functional Definitions of Application Entities

##### 5.1.2.1 Functional Definition of Media Creation Application Entity

Activation of the “export to media” icon or menu entry will pass the currently selected patients, studies, series or instances to the media creation service. The SOP Instances associated with the selection will be collected into one or more export jobs. The contents of each export job will be written to a single (CD-R or DVD) media.

#### 5.1.3 Sequencing of Real-Word Activities

At least one image must exist and be selected before the media creation service can be invoked. The operator can insert a new media at any time before or after invocation of the service. It will wait indefinitely for a media to be inserted before starting to write to the media device. If no media is available the media creation job can be canceled from the job queue.

#### 5.1.4 File Meta Information for Implementation Class and Version

Implementation Class UID	1.2.250.1.59.453.280
Implementation version name	ACC_ETIAM_280

Table 5.1-1: DICOM Implementation Class and Version for DICOMDIR creation

## 5.2 Application Entity Specifications

### 5.2.1 Offline-Media Application Entity Specification

The Application Entity provides standard conformance to the Media Storage Service Class. The Application Profiles and roles are listed below:

Application Profile supported	Real World Activity	Role
Ultra Sound application profile - Image Display STD-US-ID-MF-CDR	Export to CD-R	FSC
Ultra Sound application profile - Image Display STD-US-ID-MF-DVD	Export to DVD	FSC

Table 5.2-1: Application Profiles, activities, and roles for Offline Media

Note: Aixplorer may also produce reports as Encapsulated PDF DICOM objects.

User may choose to add or not such objects when exporting data on CD-R or DVD media, and if so, force the media to be compatible with one of the above application profiles.

If such objects are present on the media and if user selected to remain compatible with one of the profiles above, Encapsulated PDF DICOM will be written on the media but not referenced in the DICOMDIR.

If user decides to overrun the media profile and Encapsulated PDF DICOM objects are present, they will be referenced in the DICOMDIR file.

#### 5.2.1.1 File Meta Information for the Application Entity

##### 5.2.1.1.1 Real-World Activities

##### 5.2.1.1.2 Activity - Export to media

Aixplorer acts as an FSC when requested to export SOP Instances from the local database to a CD-R or DVD medium.

A dialogue will be presented allowing the user to modify the suggested media label and provides control over the available media capacity. If the contents of the current selection do not fit on a single media an automatic separation into multiple export jobs will be suggested which can be adapted by the user.

The user will be prompted to insert an empty media for each export job. The contents of the export job will be written together with a corresponding DICOMDIR to the medium. The user can cancel an export job in the job queue.

## 5.3 Augmented and Private Application Profiles

None

## **6. Support of Extended Character Sets**

Aixplorer supports the “ISO\_IR 100” Latin Alphabet No. 1 Extended Character Set, supplementary set.

## **7. Security**

Aixplorer does not support any specific security measures.

## 8. Annexes

### 8.1 Annex 1 IOD contents

#### 8.1.1 Created SOP instances

The following tables use a number of abbreviations. The abbreviations used in the "Presence of ..." column are:

- VNAP : Value Not Always Present (attribute sent zero length if no value is present)
- ANAP : Attribute Not Always Present
- ALWAYS : Always Present
- EMPTY: Attribute is sent without a value

The abbreviations used in the "Source" column:

- USER : the attribute value source is from User input
- MWL : the attribute value source is from DICOM Modality Worklist Service
- AUTO : the attribute value is generated automatically
- CONFIG : the attribute value source is a configurable parameter

Note: All dates and times are encoded in the local configured calendar and time. Date, Time and Time zone are configured using the "system configuration" / "system display" / "Regional" tab.

### 8.1.1.1 US and US MF image IOD

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-3	ALWAYS
Study	General Study	Table 8.1-4	ALWAYS
	Patient Study	Table 8.1-5	ALWAYS
Series	General Series	Table 8.1-6	ALWAYS
Equipment	General Equipment	Table 8.1-7	ALWAYS
Image	General Image	Table 8.1-8	ALWAYS
	Image Pixel	Table 8.1-9	ALWAYS
	Cine	Table 8.1-10	ALWAYS
	Multi-Frame	Table 8.1-11	ANAP
	SOP Common	Table 8.1-12	ALWAYS

Table 8.1-1: US and US MF IOD Modules

### 8.1.1.2 Encapsulated PDF IOD

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-3	ALWAYS
Study	General Study	Table 8.1-4	ALWAYS
	Patient Study	Table 8.1-5	ALWAYS
Series	General Series	Table 8.1-6	ALWAYS
Equipment	General Equipment	Table 8.1-7	ALWAYS

Table 8.1-2: encapsulated PDF IOD Modules

### 8.1.1.3 Common Modules

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	(0010,0010)	PN	From Modality Worklist or user input	VNAP	MWL / USER
Patient ID	(0010,0020)	LO	From Modality Worklist or user input	VNAP	MWL / USER
Patient's Birth Date	(0010,0030)	DA	From Modality Worklist or user input	VNAP	MWL / USER
Patient's Sex	(0010,0040)	CS	From Modality Worklist or user input	VNAP	MWL / USER

Table 8.1-3: Patient Module of created SOP Instances

### 8.1.1.4 General study module

Attribute	Tag	VR	Value	Presence of	Source
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Name				Value	
Study Instance UID	(0020,000D)	UI	From Modality Worklist or generated by the device.	ALWAYS	MWL / USER
Study Date	(0008,0020)	DA	<yyyymmdd>	ALWAYS	AUTO
Study Time	(0008,0030)	TM	<hhmm>	ALWAYS	
Accession Number	(0008,0050)	SH	From Modality Worklist or user input.	VNAP	AUTO
Referring Physician's Name	(0008,0090)	PN	From Modality Worklist or user input.	VNAP	MWL / USER
Study ID	(0020,0010)	SH	Generated by the device	ALWAYS	MWL / AUTO
Study Description	(0008,1030)	LO	user input	VNAP	USER

Table 8.1-4: General Study Module of created SOP Instances

### 8.1.1.5 Patient study module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Age	(0010,1010)	AS	Generated from Patient's Birth Date	VNAP	AUTO
Patient's Size	(0010,1020)	DS	user input	VNAP	USER
Patient's Weight	(0010,1030)	DS	user input	VNAP	USER

Table 8.1-5: Patient Study Module of created SOP Instances

### 8.1.1.6 General series module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	US	ALWAYS	AUTO
Presentation Intent Type	(0008,0068)	CS	FOR PRESENTATION	ALWAYS	AUTO
Series Instance UID	(0020,000E)	UI	Generated by device.	ALWAYS	AUTO
Series Number	(0020,0011)	IS	Generated by device.	ALWAYS	AUTO
Series Date	(0008,0021)	DA	<yyyymmdd>	ALWAYS	AUTO
Series Time	(0008,0031)	TM	<hhmm>	ALWAYS	AUTO
Series Description	(0008,103E)	LO	User input	VNAP	USER
Performing Physician's Name	(0008,1050)	PN	User input	VNAP	USER

Table 8.1-6: General series Module of created SOP Instances

### 8.1.1.7 General Equipment module

<b>Attribute Name</b>	<b>Tag</b>	<b>VR</b>	<b>Value</b>	<b>Presence of Value</b>	<b>Source</b>
Manufacturer	(0008,0070)	LO	SuperSonic Imagine SA	ALWAYS	AUTO
Institution Name	(0008,0080)	LO	Configuration	ALWAYS	AUTO
Station Name	(0008,1010)	SH	Configuration	ALWAYS	AUTO
Manufacturer's Model Name	(0008,1090)	LO	Aixplorer.	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO	Generated by device.	ALWAYS	AUTO

Table 8.1-7: General Equipment Module of created SOP Instances

### 8.1.1.8 General Image module

<b>Attribute Name</b>	<b>Tag</b>	<b>VR</b>	<b>Value</b>	<b>Presence of Value</b>	<b>Source</b>
Instance Number	(0020,0013)	IS	Generated by the device	ALWAYS	AUTO
Patient Orientation	(0020,0020)	CS	Always empty.	EMPTY	AUTO

Table 8.1-8: General Image Module of created SOP Instances

### 8.1.1.9 Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	3	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	RGB	ALWAYS	AUTO
Planar Configuration	(0028,0006)	US	0	ALWAYS	AUTO
Rows	(0028,0010)	US	Configuration (max 1500)	ALWAYS	AUTO
Columns	0028,0011)	US	Configuration (max 1400)	ALWAYS	AUTO
Bits Allocated	(0028,0100)	US	8	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	8	ALWAYS	AUTO
High Bit	(0028,0102)	US	7	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0000H	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OW		ALWAYS	AUTO

Table 8.1-8: Image Pixel Module of created SOP Instances

### 8.1.1.10 Cine Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Frame Time	(0018,1063)	DS	Only for US-MF image	ANAP	AUTO

Table 8.1-10: Cine Module of created US Multi-frame SOP Instances

### 8.1.1.11 Multi-Frale Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	(0028,0008)	IS	Only for US-MF image	ANAP	AUTO

Table 8.1-11: Multi-Frame Module of created US Multi-frame SOP Instances

### 8.1.1.12 SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0005)	CS	ISO_IR 100	ALWAYS	AUTO
SOP Class UID	(0008,0016)	UI	Configuration (US-SF, US-MF, Retired US-SF, Retired US-MF, encapsulated PDF)	ALWAYS	AUTO
SOP Instance	(0008,0018)	UI		ALWAYS	AUTO

Table 8.1-1: SOP Common Module of created SOP Instances

## 8.2 Private Transfer Syntaxes

No private transfer syntaxes are supported