DICOM Conformance Statement

syngo Dynamics VA50 (Standalone)

Product Name

syngo Dynamics VA50 Standalone

May 2026

SIEMENS Healthineers

DICOM Conformance Statement

The *syngo*® Dynamics Workplace provides diagnostic display of DICOM Images conforming to the Ultrasound Image Storage, Ultrasound Multi-frame Image Storage, X-ray Angiographic Image Storage, Nuclear Medicine Image Storage, Positron Emission Tomography Image Storage and Secondary Capture Image Storage SOP Classes. Images are reviewed through the DICOM Image Review component which displays DICOM images without any additional compression. The *syngo*® Dynamics Workplace Standalone is part of the Siemens *syngo*® Suite and is designed to operate in conjunction with the *syngo*® Dynamics Server standalone.

The *syngo*® Dynamics Workplace uses DICOM as an external interface standard. Non-DICOM internal communication mechanisms between the *syngo*® Dynamics Workplace and the *syngo*® Dynamics Server are used for the transfer and display of images.

The *syngo*® Dynamics Workplace provides support for the DICOM US Region Calibration Module. When ultrasound images contain this module, the *syngo*® Dynamics Workplace can interpret the region calibration data provided by the Ultrasound acquisition unit. Standard pixel spacing attributes are also supported if provided with Ultrasound captures. The *syngo*® Dynamics Workplace provides support for the DICOM Imager Pixel Spacing and Estimated Radiographic Magnification Factor attributes often sent with X-Ray Angiographic captures. When XA captures contain this data the *syngo*® Dynamics Workplace can interpret them. In the case where no calibration data is provided by the acquisition device, captures may be manually calibrated using the *syngo*® Dynamics Workplace.

This conformance statement describes the DICOM Interface of the *syngo*® Dynamics implementation of a Medical Imaging Storage and Archive System (*syngo*® Dynamics DICOM Server. From this point forward, *syngo*® Dynamics DICOM Server will be referred to as *syngo* Dynamics Server.

The *syngo* Dynamics Server DICOM Interface acts as a service class provider (SCP) for Storage, Storage Commitment, MPPS, Verification and Query/Retrieve Service Classes.

The *syngo* Dynamics Server DICOM Interface acts as a service class user (SCU) for Storage, Storage Commitment, Verification, Query/Retrieve, MPPS, Patient Management, Study Management, Results Management and Basic Worklist Management Service Classes.

Table 1: Network Services

SOP Classes	SOP Class UID	User of Service (SCU)		Provider of Service (SCP)	
		Create	Send	Store	Display
Verification	1.2.840.10008.1.1	No	Yes	Yes	No
Basic Study Content Notification (Retired)	1.2.840.10008.1.9	No	Yes	No	No
Detached Patient Management (Retired)	1.2.840.10008.3.1.2.1.1	No	No	No	No
Detached Visit Management (Retired)	1.2.840.10008.3.1.2.2.1	No	No	No	No
Detached Study Management (Retired)	1.2.840.10008.3.1.2.3.1	No	No	No	No
Study Component Management (Retired)	1.2.840.10008.3.1.2.3.2	No	No	No	No
Detached Interpretation Management (Retired)	1.2.840.10008.3.1.2.6.1	No	No	No	No

Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes	Yes	Yes
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes	Yes	Yes
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes	Yes	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	No	Yes	Yes	No
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	No	Yes	Yes	Yes
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes	Yes	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes	Yes	No
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	No	Yes	Yes	No
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	No	Yes	Yes	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes	Yes	Yes
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	No	Yes	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	No	Yes	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	No	Yes	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	No	Yes	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes	Yes	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes	Yes	No
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes	Yes	No
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes	Yes	No
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	No	Yes	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes	Yes	No

Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	No	Yes	Yes	No
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	No	Yes	Yes	No
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	No	Yes	Yes	No
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	No	Yes	Yes	No
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes	Yes	No
X-ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes	Yes	Yes
X-Ray Radio fluoroscopic Image	1.2.840.10008.5.1.4.1.1.12.2	No	Yes	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes	Yes	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	No	Yes	Yes	No
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	No	Yes	Yes	No
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	No	Yes	Yes	No
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	No	Yes	Yes	No
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes	Yes	No
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	No	Yes	Yes	No
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes	Yes	Yes
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	No	Yes	Yes	No
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	No	Yes	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes	Yes	No
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	No	Yes	Yes	No
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	No	Yes	Yes	No
Transfer (Private SOP Class)					
Siemens CSA Non-Image Storage	1.3.12.2.1107.5.9.1	Yes		Yes	
Storage Commitment					
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Yes		Yes	
Worklist Management					
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	Yes		No	

Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Yes	Yes
Query/Retrieve			
Patient Root Query/Retrieve Information Model Find	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes
Patient Root Query/Retrieve Information Model Move	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes
Study Root Query/Retrieve Information Model Find	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model Move	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
Patient/Study Only Query/Retrieve Information Model Find (Retired)	1.2.840.10008.5.1.4.1.2.3.1	Yes	Yes
Patient/Study Only Query/Retrieve Information Model Move (Retired)	1.2.840.10008.5.1.4.1.2.3.2	Yes	Yes

Table 2: Media Services

Supported APs	Real-World Activity	Roles	SC Option
STD-US-ID-MF- CDR	Display Directory	FSR	Interchange
STD-US-SC-MF-CDR			
STD-US-ID-SF- CDR			
STD-US-SC-SF-CDR			
STD-US-ID-SF-DVD			
STD-US-SC-SF- DVD			
STD-XABC-CD			
STD-XABC-DVD-RAM			
STD-XA1K-CD			
STD-XA1K-DVD			
STD-CTMR-CD			
STD-CTMR-DVD			
STD-GEN-DVD-JPEG			
STD-GEN-USB-JPEG			
STD-US-ID-MF- CDR			

STD-US-SC-MF-CDR	View Images	FSR	Interchange
STD-US-ID-SF- CDR			
STD-US-SC-SF-CDR			
STD-US-ID-SF-DVD			
STD-US-SC-SF- DVD			
STD-XABC-CD			
STD-XABC-DVD-RAM			
STD-XA1K-CD			
STD-XA1K-DVD			
STD-CTMR-CD			
STD-CTMR-DVD			
STD-GEN-DVD-JPEG			
STD-GEN-USB-JPEG			
STD-US-ID-MF- CDR	Copy to Local Storage	FSR	Interchange
STD-US-SC-MF-CDR			
STD-US-ID-SF- CDR			
STD-US-SC-SF-CDR			
STD-US-ID-SF-DVD			
STD-US-SC-SF- DVD			
STD-XABC-CD			
STD-XABC-DVD-RAM			
STD-XA1K-CD			
STD-XA1K-DVD			
STD-CTMR-CD			
STD-CTMR-DVD			
STD-GEN-DVD-JPEG			
STD-GEN-USB-JPEG			
STD-US-ID-MF- CDR	Update Studies	FSU	Interchange
STD-US-SC-MF-CDR			
STD-US-ID-SF- CDR			
STD-US-SC-SF-CDR			
STD-US-ID-SF-DVD			
STD-US-SC-SF- DVD			
STD-XABC-CD			

STD-XABC-DVD-RAM			
STD-XA1K-CD			
STD-XA1K-DVD			
STD-CTMR-CD			
STD-CTMR-DVD			
STD-GEN-DVD-JPEG			
STD-GEN-USB-JPEG			
STD-US-SC-MF-CDR	Create CD-R	FSC	Interchange
STD-US-SC-SF-CDR			
STD-XABC-CD			
STD-XA1K-CD			
STD-US-SC-MF-DVD	Create DVD	FSC	Interchange
STD-US-SC-SF-DVD			
STD-XA1K-DVD			
STD-CTMR-DVD			
STD-GEN-DVD-JPEG			

Table 3: Implementation Identifying Information (Client)

Name	Value
Application Context Name	1.2.840.10008.3.1.1.1
Implementation Class UID	1.3.12.2.1107.5.8.11.105
Implementation Version Name	MergeCOM3_5_5_0

Table 4: Implementation Identifying Information (Server)

Name	Value
Application Context Name	1.2.840.10008.3.1.1.1
Implementation Class UID	1.2.124.113532.3510.82858
Implementation Version Name	AGFAOCT2007

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1 Introduction

1.1 Revision History

Version	Date	Change
0.1	16/04/2026	Initial version for *syngo* Dynamics VA50 Standalone
1.0	06/05/2026	Final version for *syngo* Dynamics VA50 Standalone

1.2 Audience

This document is intended for hospital staff, health system integrators, software designers or implementers. It is assumed that the reader has a working understanding of DICOM.
This document is a DICOM Conformance Statement for *syngo*® Dynamics Standalone.

1.3 Remarks

The scope of this DICOM Conformance Statement is to facilitate integration between *syngo* Dynamics and other DICOM products. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [1]. DICOM by itself does not guarantee interoperability.
The Conformance Statement does, however, facilitate a first-level comparison for interoperability between different applications supporting compatible DICOM functionality.
This Conformance Statement is not supposed to replace validation with other DICOM equipment to ensure proper exchange of intended information. In fact, the user should be aware of the following important issues:

- The comparison of conformance statements is the first step towards assessing interconnectivity and interoperability between *syngo* Dynamics and other DICOM conformant equipment.
- Test procedures should be defined and executed to validate the required level of interoperability with specific compatible DICOM equipment, as established by the healthcare facility. Siemens Healthineers reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens Healthineers representative for the most recent product information.

1.4 Definitions, Terms and Abbreviations

Definitions, terms, and abbreviations used in this document are defined within the different parts of the DICOM standard.
Additional Abbreviations and terms are as follows:

AE	DICOM Application Entity
DICOM	Digital Imaging and Communications in Medicine
FSC	File Set Creator
FSR	File Set Reader
FSU	File Set Updater
IM	Information Model
n. a.	not applicable
SOP	DICOM Service-Object Pair
SR	Structured Report

1.5 References

[1] NEMA PS3 / ISO 12052, Digital Imaging and Communications in Medicine (DICOM) Standard, National Electrical Manufacturers Association, Rosslyn, VA, USA (available free at http://www.dicomstandard.org/)

2 Networking

2.1 Implementation Model

The *syngo* Dynamics supports storing DICOM images to remote nodes like workstations or Archiving Systems. Using the Storage Commitment Service, it can request safe keeping of previously stored instances from an Archiving system. Additionally, *syngo* Dynamics can query remodel notes, retrieve and store selected instances from that node. Using the Modality Worklist service, *syngo* Dynamics can query a HIS/RIS for scheduled procedures. Performed procedure status and other procedure data can be returned to the HIS/RIS using the Modality Performed Procedure Step (MPPS) Service. Furthermore, printing of color and grayscale images is supported.
The implementation of the *syngo* Dynamics Server DICOM interface has been tested to assure correspondence with this Conformance Statement. But the Conformance Statement and the DICOM standard does not guarantee interoperability.

The user must compare the relevant Conformance Statements and if a successful interconnection should be possible, the user is responsible for specifying an appropriate test suite and to validate the interoperability, which is required. A network environment may need additional functions out of the scope of DICOM.

2.1.1 Application Data Flow

Figure 2.1-1 provides a functional overview of the *syngo* Dynamics server Application Entities (AE). Relationships are shown between user-invoked activities (in the circles at the left of the AEs) and the associated real-world activities provided by DICOM service providers (in the circles at the right of the AEs)

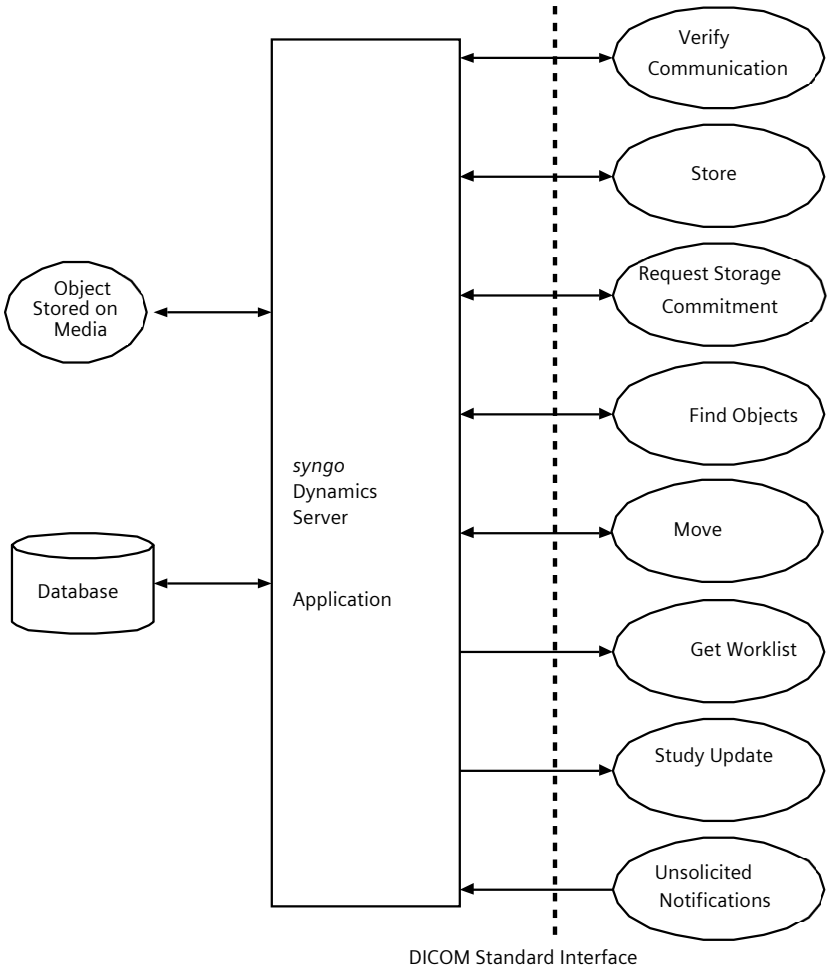

Figure 2.1-1 syngo Dynamics Server Implementation Model

2.1.2 Functional Definitions of Verify Communication:

In the remote real-world activity labeled "Verify Communication", a remote application entity (AE) initiates an association and requests verification from *syngo* Dynamics Server. Assuming *syngo* Dynamics Server receives the request, it responds to the remote AE and communication between the two AE's has been verified. *syngo* Dynamics Server can also initiate an association and request verification to a remote AE.

2.1.3 Functional Definitions of Store Objects:

In the remote real-world activity "Store Objects", a remote AE initiates an association with *syngo* Dynamics Server and sends one or more objects to *syngo* Dynamics Server. When *syngo* Dynamics Server receives an object, it stores that object in Part 10 format on some media and registers that object in the database. *syngo* Dynamics Server can also initiate an association and send one or more objects to a remote AE.

2.1.4 Functional Definitions of Request Storage Commitment:

In the remote real-world activity "Request Storage Commitment", a remote AE initiates an association with *syngo* Dynamics Server and requests commitment for the safekeeping of one or more composite SOP instances on *syngo* Dynamics Server. *syngo* Dynamics Server will open a new association with the remote AE to indicate success or failure. *syngo* Dynamics Server can also initiate an association and request commitment for the safekeeping of one or more composite SOP instances to a remote AE.

2.1.5 Functional Definitions of Find Objects

In the remote real-world activity "Find Objects", a remote AE initiates an association with *syngo* Dynamics Server and sends a query. *syngo* Dynamics Server will search the database for possible matches with composite SOP instances. The results of the query are returned to the remote AE using the same association. *syngo* Dynamics Server can also initiate an association and send a query to a remote AE.

2.1.6 Functional Definitions of Move Objects

In the remote real-world activity "Move Objects", a remote AE initiates an association with *syngo* Dynamics Server and requests some composite SOP instances be retrieved. *syngo* Dynamics Server will search the database for possible matches with composite SOP instances. The resulting composite SOP instances are transferred to either the same AE that requested the retrieval or to another AE over a new association. *syngo* Dynamics Server can also initiate an association and request some composite SOP instances be retrieved from a remote AE.

2.1.7 Functional Definitions of Get Worklist

In the remote real-world activity "Get Worklist", *syngo* Dynamics Server initiates an association with a remote AE and sends a query for information about a patient or study. *syngo* Dynamics Server will update Composite SOP instances with information obtained from the query.

2.1.7 Functional Definitions of Unsolicited Notifications

In the remote real-world activity "Unsolicited Notifications", a remote AE initiates an association with *syngo* Dynamics Server and sends an unsolicited notification event containing changes in the state of a patient, study, visit, or interpretation. If the particular notification event is recognized, then *syngo* Dynamics Server updates its database or performs events based on configuration settings.

2.1.8 Functional Definitions of Study Update

In the remote real-world activity "Study Update", a remote AE initiates an association with *syngo* Dynamics Server and sends an MPPS message indicating the status of a study being performed. *syngo* Dynamics Server will reflect the status changes accordingly. *syngo* Dynamics Server can also initiate an association with a remote AE and provide status information.

2.1.2 Functional Definitions of AEs

2.1.2.1 Functional Definitions of *syngo* Dynamics

syngo Dynamics Server operates as a single AE whose title is configurable. Its functions are described in section 2.1.

2.1.3 Sequencing of Activities

- *syngo* Dynamics Server must store objects to a remote AE before a storage commitment request for those objects is sent.
- *syngo* Dynamics Server must receive objects from a remote AE before a study update is sent outbound.
- If configured to archive objects to PACS, *syngo* Dynamics Server may request objects be moved from a remote AE to local media to service an object move request from another remote AE.

2.2 AE Specifications

syngo Dynamics Server operates as a single application entity.

2.2.1 *syngo* Dynamics Server AE Specification

2.2.1.1 SOP Classes

Refer to Table 1.

2.2.1.2 Association Policy

The following Application Context Name will be proposed and recognized by *syngo* Dynamics Server:

Application Context Name	1.2.840.10008.3.1.1.1

syngo Dynamics Server defaults to a PDU Size of 100000 as an SCU and SCP. It will send the value of 100000 in DICOM Association Negotiations. It uses port 104 for communication. The maximum PDU size is configurable.

2.2.1.2.1 Asynchronous Nature

The maximum number of simultaneous associations accepted by *syngo* Dynamics Server is configurable at run time based on system resources available. By default, the maximum number of associations is set at 64. There is no inherent limit to the number of associations other than limits imposed by the computer operating system.

2.2.1.2.2 Implementation Identifying Information

syngo Dynamics Server uses the following implementation identifying parameters:

Implementation Class UID	1.2.124.113532.3510.82858
Implementation Version Name	AGFAOCT2007

2.2.1.3 Association Initiation Policy

syngo Dynamics Server only initiates associations for the following real-world activities:

- Verify Communication
- Store Objects
- Request Storage Commitment
- Find Object
- Move Object
- Get Patient/Study Information
- Notification of Study Status Change

2.2.1.4 Real-World Activity - Verify Communication

Associated Real-World Activity – Verify Communication

syngo Dynamics Server will verify DICOM connections. An association is established when the user initiates a station test operation from the graphical user interface.

2.2.1.4.1 Proposed Presentation Contexts – Verify Communication

syngo Dynamics Server will propose the Presentation Contexts shown in Table 2.2-1.

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name**	**UID**		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Table 2.2-1 Proposed Presentation Contexts - Verify Communication

2.2.1.4.2 SOP Specific Conformance – Verify Communication

syngo Dynamics Server provides standard conformance to the DICOM Verification Service Class as an SCU.

2.2.1.5 Real-World Activity – Store Objects

2.2.1.5.1 Associated Real World-Activity – Store Objects

The *syngo* Dynamics Server can retransmit previously received objects to a remote AE for storage. An association is established when the user initiates a transmit request. *syngo* Dynamics Server will establish an association automatically in response to a C-MOVE request, archive to PACS autopilot notification or configured study routing rules.

2.2.1.5.2 Proposed Presentation Contexts – Store Objects

syngo Dynamics Server may propose any of the Presentation Contexts shown in Table 2.2-2.

syngo Dynamics Server will propose the transfer syntax used when the object was initially accepted by the server and Implicit VR Little Endian.

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Ultrasound Multi-frame Image Storage (Retired)	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		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
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		
		RLE Lossless 1.2.840.10008.1.2.5		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		
		JPEG Lossless (Process 14)		

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
		1.2.840.10008.1.2.4.70		
Ultrasound Image Storage (Retired)	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		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
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		
		RLE Lossless 1.2.840.10008.1.2.5		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1) 1.2.840.10008.1.2.4.50		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57		

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
		JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
	1.2.840.10008.5.1.4.1.1.9.6.1	Implicit VR Little Endian	SCU	None

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
Respiratory Waveform Storage		1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1		
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1	SCU	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1 JPEG Lossless Baseline (Process 1) 1.2.840.10008.1.50 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70	SCU	None
X-Ray Radio fluoroscopic Image	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.57 JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70	SCU	None

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		RLE Lossless 1.2.840.10008.1.2.5		
		JPEG Lossless, Process 14 1.2.840.10008.1.2.4.70		
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian 1.2.840.10008.1.2.1		
		JPEG Lossless, Non-Hierarchical (Process 14)		

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
		1.2.840.10008.1.2.4.57 JPEG Lossless, Process 14 1.2.840.10008.1.2.4.70		
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1	SCU	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1	SCU	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1	SCU	None
Standalone Modality LUT (Retired)	1.2.840.10008.5.1.4.1.1.10	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1	SCU	None
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Implicit VR Little Endian 1.2.840.10008.1.2 Explicit VR Little Endian 1.2.840.10008.1.2.1- JPEG Lossless (Process 14) 1.2.840.10008.1.2.4.70	SCU	None

Table 2.2-2 Proposed Presentation Contexts – Store Objects

SOP Specific Conformance – Store Objects

syngo Dynamics Server provides Standard conformance to the DICOM Storage Service Class as an SCU.

Depending on the *syngo* Dynamics Server Storage Commitment configuration, a successful C-Store response status may generate a corresponding Storage Commitment request per object stored or not generate any actions until all objects of the study have been stored.

An unsuccessful C-Store response will generate a warning dialog, and the operation will remain in the Job Queue. The number of automated retry attempts and the time interval between each is configurable for each remote AE. The user is notified of storage failures. Studies are not removed from the system until successfully archived.

A warning status received in response to a C-Store operation will be treated in the same manner as an unsuccessful C-Store response.

2.2.1.6 Real-World Activity – Request Storage Commitment

2.2.1.6.1 Associated Real-World Activity – Request Storage Commitment

syngo Dynamics Server can send images to another SCP for permanent storage and request safe keeping of a set of SOP instances. *syngo* Dynamics Server expects a notification response from the SCP.

2.2.1.6.2 Proposed Presentation Contexts – Request Storage Commitment

syngo Dynamics Server will propose the Presentation Contexts shown in Table **2.2-3**.

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name**	**UID**		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Table 2.2-3 Proposed Presentation Contexts – Request Storage Commitment

SOP Specific Conformance – Request Storage Commitment

syngo Dynamics Server provides conformance to the DICOM Storage Commitment Service Class as an SCU. The Action Type and Action Information specified in Table 2.2-4 are supported.

Action Type Name	**Action Type ID**	**Attribute Name**	**Tag**
Request Storage Commitment	1	Transaction UID	(0008,1195)
		Referenced SOP Sequence	(0008,1199)
		>Referenced SOP Class UID	(0008,1150)
		>Referenced SOP Instance UID	(0008,1155)
		Referenced Study Component Sequence (Retired)	(0008,1111)
		> Referenced SOP Class UID	(0008,1150)
		>Referenced SOP Instance UID	(0008,1155)

Table 2.2-4 Storage Commitment Request - Action Information

Operations

syngo Dynamics Server will generate an N-ACTION primitive if the local configuration setting for the remote AE is enabled for storage commitment. *syngo* Dynamics Server only supports the Storage AE as the destination for the storage commitment N-Action.

- *syngo* Dynamics Server supports storage commitment for all the SOP Class UIDs listed in Table 2.2-2.
- *syngo* Dynamics Server supports the Referenced Study Component Sequence Attribute.
- *syngo* Dynamics Server will keep the Transaction ID applicable indefinitely.
- *syngo* Dynamics Server can send a Storage Commitment request on a per object or per study basis.

Notifications

- *syngo* Dynamics Server does not perform any notification-based actions when a success status is received.
- *syngo* Dynamics Server will generate a warning dialog and the operation will remain in the Job Queue when a failure status is received. The number of automated retry attempts and the time interval between each is configurable for each remote AE. Please note that depending on the performance of the storage commitment SCP these settings might need to be adapted.

Implementation Specific Details

- If Storage Commitment is enabled for the Archive Storage AE:
  - *syngo* Dynamics Server will consider locally cached study data as available for deletion to free space if a successful Storage Commitment response was returned from that Storage AE for the objects in the commitment request and other deletion criteria are met. Only objects successfully committed are available for local deletion if space is needed.
- If Storage Commitment is not enabled for the Archive Storage AE
  - *syngo* Dynamics Server does not perform any actions when a success status is received.

2.2.1.7 Real-World Activity – Find Object

Associated Real-World Activity – Find Object

syngo Dynamics Server can query a remote AE for composite objects to the Series Level. An association is established when the user initiates a query from the graphical user interface. *syngo* Dynamics Server will establish an association automatically to query a remote AE to obtain a list of relevant objects based on pre-fetch configuration rules.

Proposed Presentation Contexts – Find Object

syngo Dynamics Server will propose the Presentation Contexts shown in Table 2.2-5.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		

Patient Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	Yes
Study Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.2.1				
Patient/Study Only Query/Retrieve IM Find (Retired)	1.2.840.10008.5.1.4.1.2.3.1				

Table 2.2-5 Proposed Presentation Contexts – Find Object

SOP Specific Conformance – Find Object

syngo Dynamics Server provides standard conformance to the DICOM Query/Retrieve Service Class as an SCU. The Query/Retrieve Information Model used depends on the attributes used to constrain the query. *syngo* Dynamics Server supports the Relational queries extended SCU behavior. The Attributes used in the Patient Root Query are listed in Table 2.2-6. The Patient and Study Level Attributes in Table 2.2-6 are also supported for the Patient/Study Only Query/Retrieve.

Patient Root Query Attributes			
Level	**Description**	**Tag**	**Type**
Patient	Patient's Name	(0010,0010)	R
Patient	Patient ID	(0010,0020)	U
Patient	Patient's Birth Date	(0010,0030)	O
Patient	Patient's Sex	(0010,0040)	O
Patient	Current Patient Location	(0038,0300)	O
Study	Study Date	(0008,0020)	R
Study	Study Time	(0008,0030)	R
Study	Accession Number	(0008,0050)	R
Study	Study ID	(0020,0010)	R
Study	Study Instance UID	(0020,000D)	U
Study	Modalities in Study	(0008,0061)	O
Study	Referring Physician's Name	(0008,0090)	O
Study	Study Description	(0008,1030)	O
Study	Name of Physician(s) Reading Study	(0008,1060)	O
Study	Admitting Diagnoses Description	(0008,1080)	O
Study	Patient's Age	(0010,1010)	O
Study	Number of Study Related Instances	(0020,1208)	O
Study	Station Name	(0008,1010)	O
Study	Performing Physician's Name	(0008,1050)	O
Study	Study Status ID	(0032,000A)	O

Study	Requesting Physician	(0032,1032)	O
Series	Modality	(0008,0060)	R
Series	Series Number	(0020,0011)	R
Series	Series Instance UID	(0020,000E)	U
Series	Series Description	(0008,103E)	O
Series	Operator's Name	(0008,1070)	O

Table 2.2-6 Patient Root Query Attributes

Note 1: *syngo* Dynamics Server includes the Patient ID Attribute in all levels of the query and Study Instance UID Attribute in the Series level query.

Note 2: *syngo* Dynamics Server will use the wildcard "*" instead of the ^ in the name field as a separator, example: last name*firstname for queries.

syngo Dynamics Server supports the Relational-queries extended SCU behavior. The Attributes used in the Study Root Query are listed in Table 2.2-7.

Study Root Query Attributes			
Level	Description	Tag	Type
Study	Study Date	(0008,0020)	R
Study	Study Time	(0008,0030)	R
Study	Accession Number	(0008,0050)	R
Study	Patient's Name	(0010,0010)	R
Study	Patient ID	(0010,0020)	R
Study	Study ID	(0020,0010)	R
Study	Study Instance UID	(0020,000D)	U
Study	Modalities in Study	(0008,0061)	O
Study	Referring Physician's Name	(0008,0090)	O
Study	Study Description	(0008,1030)	O
Study	Name of Physician(s) Reading Study	(0008,1060)	O
Study	Admitting Diagnoses Description	(0008,1080)	O
Study	Patient's Birth Date	(0010,0030)	O
Study	Patient's Sex	(0010,1040)	O
Study	Patient's Age	(0010,1010)	O
Study	Number of Study Related Instances	(0020,1208)	O
Study	Station Name	(0008,1010)	O
Study	Performing Physician's Name	(0008,1050)	O
Study	Study Status ID	(0032,000A)	O
Study	Requesting Physician	(0032,1032)	O

Study	Current Patient Location	(0038,0300)	O
Series	Modality	(0008,0060)	R
Series	Series Number	(0020,0011)	R
Series	Series Instance UID	(0020,000E)	U
Series	Series Description	(0008,103E)	O
Series	Operator's Name	(0008,1070)	O

Table 2.2-7 Study Root Query Attributes

Note 1: *syngo* Dynamics Server includes the Study Instance UID Attribute in the Series level query

Note 2: *syngo* Dynamics Server will use the wildcard "*" instead of the ^ in the name field as a separator, example: lastname* first name for queries.

2.2.1.8 Real-World Activity – Move Object

2.2.1.8.1 Associated Real-World Activity – Move Object

syngo Dynamics Server can retrieve composite objects from a remote AE. An association is established when the user initiates a query from the graphical user interface. *syngo* Dynamics Server will establish an association automatically to retrieve objects that were archived to the remote AE or to pre-fetch relevant objects from the remote AE based on pre-fetch configuration rules.

2.2.1.8.2 Proposed Presentation Contexts – Move Object

syngo Dynamics Server will propose the Presentation Contexts shown in Table 2.2-8.

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name**	**UID**		

Patient Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	Yes
Study Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.2.2				
Patient/Study Only Query/Retrieve IM Move(Retired)	1.2.840.10008.5.1.4.1.2.3.2				

Table 2.2-8 Proposed Presentation Contexts – Find Object

2.2.1.8.3 SOP Specific Conformance – Move Object

syngo Dynamics Server provides standard conformance to the DICOM Query/Retrieve Service Class as an SCU.

- *syngo* Dynamics Server supports the Relational-retrieve extended SCU behavior.

2.2.1.9 Real-World Activity – Get Worklist

2.1.10.9.2 Associated Real-World Activity – Get Worklist

syngo Dynamics Server can query a remote AE for patient and study information that matches certain query constraints. *syngo* Dynamics Server will establish an association with a remote AE when the user initiates a query from the graphical user interface. *syngo* Dynamics Server will establish an association automatically to verify an incoming study or if an unsolicited notification is received from a remote AE depending on HIS verification configuration rules.

2.2.1.9.2 Proposed Presentation Contexts – Get Worklist

syngo Dynamics Server will propose the Presentation Contexts shown in Table 2.2-9.

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name**	**UID**		
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Table 2.2-9 Proposed Presentation Contexts – Get Worklist

2.2.1.9.3 SOP Specific Conformance – Get Worklist

syngo Dynamics Server provides Standard conformance to the DICOM Basic Worklist Management Service Class as an SCU.

syngo Dynamics Server may request matching on the following Optional Matching Key Attributes:

Accession Number (0008,0050)

Referring Physician's Name (0008,0090)

Study Instance UID (0020,000D)

Study Status ID (0032,000A)

The Study Classification and Study Scheduling Modules are Extended SOP Class attributes and are not part of the Modality Worklist Information Model.

syngo Dynamics Server will use the format 20010101-20011231 for date range matching.

syngo Dynamics Server requests the Return Key attributes listed in Table 2.2-10.

Module	Attribute Name	Tag	Notes
Scheduled Procedure Step	Scheduled Procedure Step Sequence	(0040,0100)	
	>Scheduled Station AE Title	(0040,0001)	
	>Scheduled Procedure Step Start Date	(0040,0002)	See Note 1
	>Scheduled Procedure Step Start Time	(0040,0003)	
	>Modality	(0008,0060)	See Note 1
	> Scheduled Performing Physician's Name	(0040,0006)	
	>Scheduled Station Name	(0040,0010)	See Note 1
	>Comments on the Scheduled Procedure Step	(0040,0400)	
Requested Procedure	Requested Procedure ID	(0040,1001)	
	Requested Procedure Description	(0032,1060)	
	Requested Procedure Code Sequence	(0032,1064)	
	> Code Value	(0008,0100)	
	> Coding Scheme Designator	(0008,0102)	
	> Code Meaning	(0008,0104)	
	Study Instance UID	(0020,000d)	
	Reason for the Requested Procedure	(0040,1002)	
	Requested Procedure Comments	(0040,1400)	
Imaging Service Request	Accession Number	(0008,0050)	See Note 1
	Referring Physician's Name	(0008,0090)	
	Reason for Imaging Service Request	(0040,2001)	
	Imaging Service Request Comments	(0040,2400)	
Visit Identification	Admission ID	(0038,0010)	

Module	Attribute Name	Tag	Notes
Visit Status	Current Patient Location	(0038,0300)	
Visit Relationship	Referenced Patient Sequence	(0008,1120)	
	> Referenced SOP Instance UID	(0008,1155)	
Patient Identification	Patient's Name	(0010,0010)	See Note 1
	Patient ID	(0010,0020)	See Note 1
	Other Patient IDs	(0010,1000)	
	Patient's Birth Date	(0010,0030)	
	Patient's Sex	(0010,0040)	
	Patient's Age	(0010,1010)	
	Military Rank	(0010,1080)	
	Branch of Service	(0010,1081)	
Study Classification	Study Status ID	(0032,000a)	See Note 1
	Study Priority ID	(0032,000c)	
Study Scheduling	Requesting Physician	(0032,1032)	
	Requesting Service	(0032,1033)	

Table 2.2-10 Requested Return Key Attributes

Note 1: These attributes are available as query criteria in the Study Fixing interface.

2.2.1.10 Real-World Activity – Study Update

2.2.1.10.1 Associated Real-World Activity – Study Update

syngo Dynamics Server can update a remote AE when a study has been completed. *syngo* Dynamics Server will establish an association automatically to update study status based on configuration rules.

2.2.1.10.2 Proposed Presentation Contexts – Study Update

syngo Dynamics Server will propose the Presentation Contexts shown in Table 2.2-11.

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name**	**UID**		
Study Component Management SOP Class (Retired)	1.2.840.10008.3.1.2.3.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Basic Study Content Notification SOP Class (Retired)	1.2.840.10008.1.9				

Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3				

Table 2.2-11 Proposed Presentation Contexts – Study Update

2.2.1.10.3 SOP Specific Conformance – Study Update

syngo Dynamics Server provides standard conformance to the DICOM Study Content Notification and partial conformance to the Study Component Management Service Classes as an SCU. The Study Component Management is not conformant to PS3.4, however it is included in this document since some remote AEs do provide support for the *syngo*® Dynamics implementation.

syngo Dynamics Server will attempt to use Study Component Management over Basic Study Content Notification if both SOP classes are supported by the remote AE.

MPPS notifications are configurable in the user interface.

2.2.1.10.4 Study Component Management – Operations

syngo Dynamics Server can create an instance of the Study Component SOP and provide information about a specific real-world Study using the DIMSE N-CREATE Service.

syngo Dynamics Server does not provide the following Type1 Attributes:

Referenced Study Sequence (0008,1110)

>Referenced SOP Class UID (0008,1150)

>Referenced SOP Instance UID (0008,1155)

Procedure Code Sequence (0008,1032)

>Code Value (0008,1032)

>Coding Scheme Designator (0008,0102)

>Code Meaning (0008,0104)

syngo Dynamics Server will include the following Private Data Element:

Tag : (0003,3000) ,Name:Patient Instance UID, VR:UI, VM:1

syngo® Dynamics will provide the Attribute Values listed in Table 2.2-12.

Attribute Name	Tag
Specific Character Set	(0008,0005)
Modality	(0008,0060)
Study Component Status ID	(0032,1055)
Study Description	(0008,1030)
Study ID	(0020,0010)
Study Date	(0008,0020)

Attribute Name	Tag
Study Time	(0008,0030)
Accession Number	(0008,0050)
Retrieve AE Title	(0008,0054)
Institution Name	(0008,0080)
Referring Physician's Name	(0008,0090)
Station Name	(0008,1010)
Institutional Department Name	(0008,1040)
Patient's Name	(0010,0010)
Patient ID	(0010,0020)
Patient's Birth Date	(0010,0030)
Patient's Sex	(0010,0040)
Other Patient IDs	(0010,1000)
Study Instance UID	(0020,000D)
Acquisition In Study	(0020,1004)
Study Status ID	(0032,000A)
Study Priority ID	(0032,000C)
Requesting Physician	(0032,1032)
Study Completion Date	(0032,1050)
Study Completion Time	(0032,1051)
Current Patient Location	(0038,0300)
Requested Procedure ID	(0040,1001)
Patient Instance UID	(0003,3000)
Referenced Series Sequence	(0008,1115)
>Series Date	(0008,0021)
>Series Time	(0008,0031)
>Series Instance UID	(0020,000E)
>Retrieve Application Entity Title	(0008,0054)
>Referenced Image Sequence	(0008,1140)
>>Referenced SOP Class UID	(0008,1150)
>>Referenced SOP Instance UID	(0008,1155)

Table 2.2-12 Study Component Management N-CREATE Attributes

2.2.1.10.5 Basic Study Content Notification

syngo Dynamics Server can issue a Basic Study Content Notification to a remote AE using the DIMSE N-CREATE Service to identify the change in study status.

- *syngo* Dynamics Server processes all Successful Response Status Code shown in Table 2.2-13 identically.

Service Status	Further Meaning	Response Status Codes
Success	Complete Study Content exists on system supporting SCP	0000
Success	Partial Study Content exists on system supporting SCP	0001
Success	None of the Study Content exists on system supporting SCP	0002
Success	It is unknown whether or not study content exists on system supporting SCP	0003
Failed	Failed Operation	Cxxx

Table 2.2-13 Study Content Notification Response Statuses

- *syngo* Dynamics Server includes the Basic Study Descriptor IOD Attributes shown in Table 2.2-14.
- *syngo* Dynamics Server always includes the Type 2C Elements indicated in Table 2.2-14 as part of the C-Store.
- *syngo* Dynamics Server includes the Attribute Accession Number (0008,0050) that is not part of the Basic Study Creator IOD.

Module	Attribute Name	Tag	Notes
Patient Summary	Patient's Name	(0010,0010)	
	Patient ID	(0010,0020)	
Study Content	Study ID	(0020,0010)	
	Study Instance UID	(0020,000D)	
	Referenced Series Sequence	(0008,1115)	
	>Series Instance UID	(0020,000E)	
	>Retrieve AE Title	(0008,0054)	Type 2C
	>Referenced Image Sequence	(0008,1140)	
	>>Retrieve AE Title	(0008,0054)	Type 2C
	>>Referenced SOP Class UID	(0008,1150)	
	>>Referenced SOP Instance UID	(0008,1155)	
SOP Common	SOP Class UID	(0008,0016)	
	SOP Instance UID	(0008,0018)	
	Accession Number	(0008,0050)	Not part of IOD

Table 2.2-14 Basic Study Content Notification N-CREATE Attributes

2.2.1.10.6 Modality Performed Procedure Step

syngo Dynamics Server can create a Modality Performed Procedure Step instance on a remote AE using the DIMSE N-CREATE Service to identify the change in study status. This provides support to modalities without native MPPS support.

syngo® Dynamics will create a Modality Performed Procedure Step SOP Instance for a specified source if configured through the graphical user interface. Since *syngo* Dynamics Server only creates the SOP Instance when a study has been sent for storage, the status of DISCONTINUED is never used.

syngo® Dynamics will provide the N-CREATE Attributes Values shown in Table 2.2-15. These values are obtained from information contained within the image object.

syngo® Dynamics will provide the N-SET Attributes Values shown in Table 2.2-16.

Module	Attribute Name	Tag	Notes
PPS Relationship	Patient's Name	(0010,0010)	
	Patient ID	(0010,0020)	
	Patient's Birth Date	(0010,0030)	
	Patient's Sex	(0010,0040)	
	Referenced Patient Sequence	(0008,1120)	Null Value
	Scheduled Step Attribute Sequence	(0040,0270)	
	>Study Instance UID	(0020,000D)	
	>Referenced Study Sequence	(0008,1110)	Null Value
	>Accession Number	(0008,0050)	
	>Requested Procedure ID	(0040,1001)	
	>Requested Procedure Description	(0032,1060)	
	>Scheduled Procedure Step ID	(0040,0007)	
	>Scheduled Procedure Step Description	(0008,0054)	
	>Scheduled Protocol Code Sequence	(0040,0008)	Null Value
PPS Information	Performed Station AE Title	(0040,0241)	
	Performed Station Name	(0040,0242)	
	Performed Location	(0040,0243)	Null Value
	Performed Procedure Step Start Date	(0040,0244)	
	Performed Procedure Step Start Time	(0040,0245)	
	Performed Procedure Step ID	(0040,0253)	
	Performed Procedure Step End Date	(0040,0250)	Null Value
	Performed Procedure Step End Time	(0040,0251)	Null Value
	Performed Procedure Step Status	(0040,0252)	IN PROGRESS
	Performed Procedure Step Description	(0040,0254)	
	Performed Procedure Type Description	(0040,0255)	
	Procedure Code Sequence	(0008,1032)	Empty
Image Acquisition Results	Modality	(0008,0060)	
	Study ID	(0020,0010)	
	Performed Action Item Sequence	(0040,0260)	Empty
	Performed Series Sequence	(0040,0340)	
	>Performing Physician's Name	(0008,1050)	
	>Operators' Name	(0008,1070)	
	>Protocol Name	(0018,1030)	

Module	Attribute Name	Tag	Notes
	>Series Instance UID	(0020,000E)	
	>Series Description	(0008,1030)	
	>Retrieve AE Title	(0008,0054)	
	>Referenced Image Sequence	(0008,1140)	
	>Referenced SOP Class UID	(0008,1150)	
	>Referenced SOP Instance UID	(0008,1155)	
	>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	
	>Referenced SOP Class UID	(0008,1150)	
	>Referenced SOP Instance UID	(0008,1155)	

Table 2.2-15 Modality Performed Procedure Step N-CREATE Attributes

Module	Attribute Name	Tag	Notes
PPS Information	Performed Procedure Step End Date	(0040,0250)	
	Performed Procedure Step End Time	(0040,0251)	
	Performed Procedure Step Status	(0040,0252)	COMPLETED
Image Acquisition Results	Performed Series Sequence	(0040,0340)	
	>Performing Physician's Name	(0008,1050)	
	>Operators' Name	(0008,1070)	
	>Protocol Name	(0018,1030)	
	>Series Instance UID	(0020,000E)	
	>Series Description	(0008,1030)	
	>Retrieve AE Title	(0008,0054)	*syngo Dynamics Server* AE Title
	>Referenced Image Sequence	(0008,1140)	
	>Referenced SOP Class UID	(0008,1150)	
	>Referenced SOP Instance UID	(0008,1155)	
	>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	
	>Referenced SOP Class UID	(0008,1150)	
	>Referenced SOP Instance UID	(0008,1155)	

Table 2.2-16 Modality Performed Procedure Step N-SET Attributes

2.3 Network Interfaces

2.3.1 Physical Network Interface

syngo Dynamics Server provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

syngo Dynamics Server DICOM services use the TCP/IP stack from the Microsoft Windows Server operating system upon which it executes.

2.3.2 Additional Protocols

2.3.3 IPv4 and IPv6 Support

Currently only IPv4 networks are supported (no support for IPv6).

2.4 Configuration

2.4.1 AE Title/Presentation Address Mapping

The default AE Title for *syngo* Dynamics Server is the NetBIOS Name of the computer. The system provides a mechanism to configure *syngo* Dynamics server and client AE Titles to have a different name than the Host Name. This parameter can be configured. Mapping from AE Title to TCP/IP addresses and ports is maintained within the *syngo* Dynamics Server database.

2.4.2 Configurable Parameters

The configurable parameters of the *syngo* Dynamics Server are stored in the database. The following items are configurable:

Attribute Name	Tag
Remote AE Title	Allows the *syngo* Dynamics Server to initiate or accept associations from a remote AE
Packet Size	Listening Port used by the remote AE uses to accept DICOM communications.
Read Timeout	The maximum size in bytes of the packet used to communicate with the remote AE.
Connect Timeout	How long a communication pause is tolerated before the connection is reset.

Table 2.4.2 : Configurable Parameters

3 Media Interchange

3.1 Introduction

This section specifies the *syngo*® Dynamics Workplace compliance to the DICOM Media Interchange. It details the DICOM Media Storage Application Profiles and roles which are supported.

This station provides DICOM interchange capabilities on CD, DVD as well as regular Windows file systems and USB media with different application profiles supported for each media type. Support for CD/DVD media is dependent on the appropriate hardware being installed on the station.

3.2 Implementation Model

3.2.1 Application Data Flow Diagram

The Basic and Specific Application models for writeable and non-writeable media are shown in the following illustrations.

3.2.1.1 Description of the Data Flow Diagram for Writeable Media

The Display/Edit Application Entity (AE) handles the Directory Display, Image Viewing, Study Updating, Study Copying and Media Creation functionality for the writeable media device. The Display/Edit Application Entity (AE) is commanded by the user to perform DICOM Services operating on the DICOM media through the use of buttons and menu selections on the graphical user interface of the Workplace.

The Application models for writeable media devices are shown in the figure below.

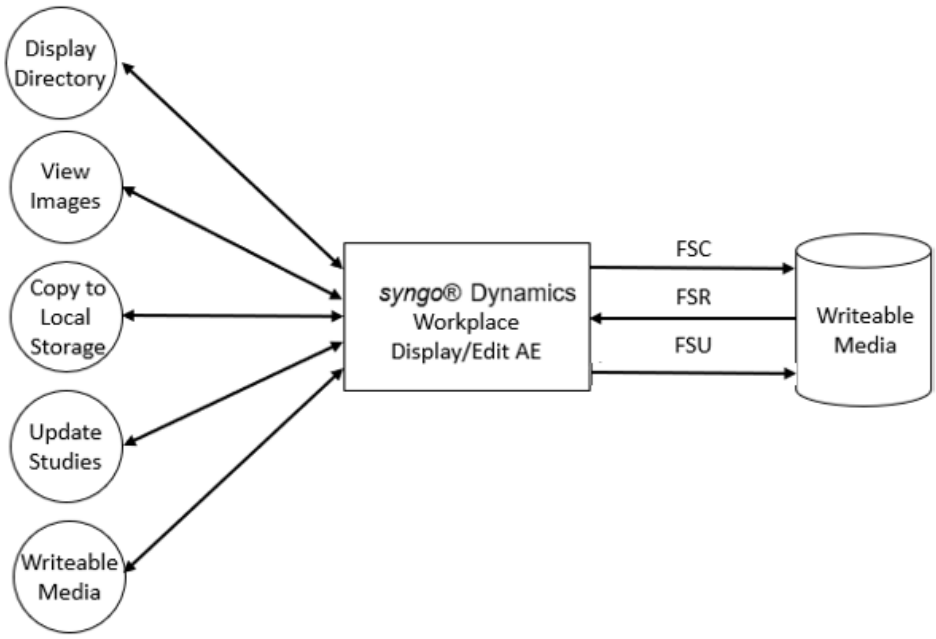

Figure 1: Writeable media Implementation Model

3.2.1.2 Description of the Data Flow Diagram for the CD-RW/DVD-RW Device

The Display/Edit Application Entity (AE) handles the Directory Display, Image Viewing, Study Updating, Study Copying and CD-RW/DVD-RW Creation functionality for the CD-RW/DVD-RW device. The Display/Edit Application Entity (AE) is commanded by the user to perform DICOM Services operating on the DICOM media through the use of buttons and menu selections on the graphical user interface of the station. The Application models for the CD/DVD device (writeable media) are

shown in Figure 1. Note that the *syngo*® Dynamics Workplace does not support any official Application Profiles for CD/DVD. However, DICOM Media exchange files can be written and read along with a DICOMDIR in accordance with Figure 2.

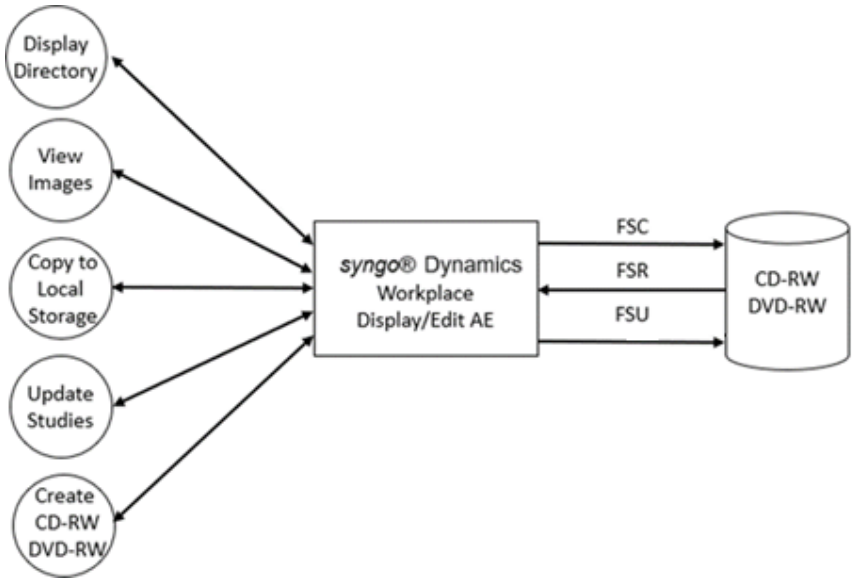

Figure 2: CD-RW and DVD-RW Implementation Model

3.2.1.3 Description of the Data Flow Diagram for non-Writeable Media

syngo Dynamics Workplace handles the Directory Display, Image Viewing, and copying studies off the non-writeable media to local storage functionality for the non-writeable media device. *syngo* Dynamics Workplace is commanded by the user to perform DICOM Services operating on the DICOM media through the use of buttons and menu selections on the graphical user interface of the Workplace.

The Application model for non-writeable media devices are shown in the figure below.

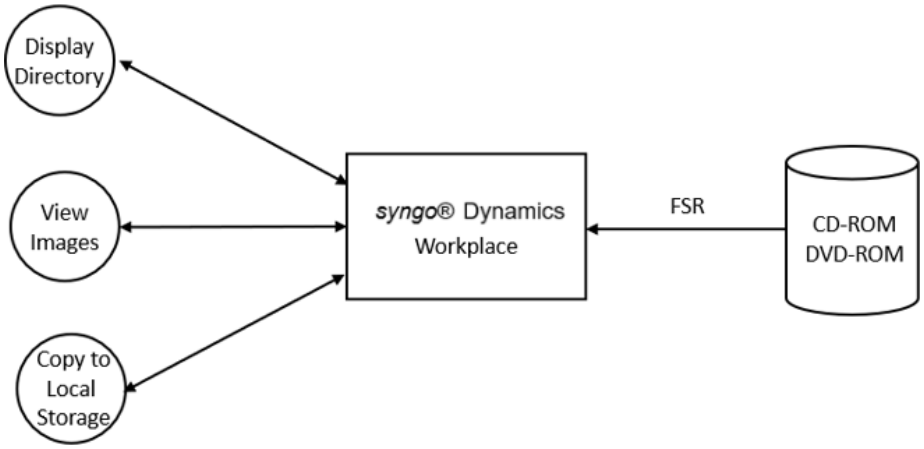

Figure 3: CD-ROM and DVD-ROM Implementation Model

3.2.2 Functional definitions of AEs

The *syngo*® Dynamics Workplace has only one Application Entity: the Display/Edit Application. The Display/Edit Application supports the following functions:

- Display a directory listing of the DICOM File Set (FSR)
- Display images from a DICOM File Set (FSR)
- Copy images from a DICOM File Set (FSR)
- Update or Delete DICOM File Sets (FSU)
- Create DICOM File Set on a CDROM/DVD (FSC)
- Create DICOM File Set on USB media or Windows file system location (FSC)

3.2.3 Sequencing of Real-World Activities

Users of the *syngo*® Dynamics Workplace initiate actions which trigger the reading, writing and updating of DICOM objects to and from the supported media.

A DICOM File Set must exist on the media for a DICOM File Set to be updated

3.2.4 File Meta Information for Implementation Class and Version

The *syngo*® Dynamics Workplace Display/Edit Application uses the following implementation identifying parameters:

- File Meta Information Version 1
- Implementation Class UID 1.3.12.2.1107.5.8.11.105

3.3 AE SPECIFICATIONS

3.3.1 Media Storage AE – Specification

3.3.1.1 Display/Edit Application Entity Specification

The Display/Edit Application Entity provides standard conformance to the DICOM Interchange Option of the Media Storage Service Class. The **Application Profiles** and roles are listed in the table

Refer to Table 2 : Media Services.

Table 2. 1 Display/Edit Application Entity Profiles, Real-World Activities, and Roles

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
DICOM Media Storage Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7 .4	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1 .1	JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1 .1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
Ultrasound Multi- frame Image Storage	1.2.840.10008.5.1.4.1.1.3 .1	Explicit VR Little Endian	1.2.840.10008.1.2.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1
MR Image	1.2.840.10008.5.1.4.1.1.4	JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6 .1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6 .1	RLE Lossless Image Compression	1.2.840.10008.1.2.5
		JPEG Lossy, Baseline	1.2.840.10008.1.2.4.50
		Explicit VR Little Endian	1.2.840.10008.1.2.1

SC Image (grayscale / palette color)	1.2.840.10008.5.1.4.1.1.7	JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.70
		Explicit VR Little Endian	1.2.840.10008.1.2.1

Table 2.2 Supported Media Storage SOP Classes

Refer to Table 1 Network Services for the supported media storage SOP classes and display sop classes are documented in table

Table 2.2.1 Supported Media Display SOP Classes

3.3.1.2 File Meta Information for Display/Edit Application Entity

The *syngo*® Dynamics Workplace Source Application Entity Title will be the AE Title assigned to the *syngo*® Dynamics Workplace.

3.3.1.3 Real-World Activities

The *syngo*® Dynamics Workplace Display/Edit Application Entity is used for the following

real world activities:

- Display Directory Listing - In this activity the Display/Edit Application Entity acts as a File-Set Reader.
- Viewing of Images - In this activity the Display/Edit Application Entity acts as a File-Set Reader.
- Copy to Local Storage - In this activity the Display/Edit Application Entity acts as a File- Set Reader.
- Updating Images - In this activity the Display/Edit Application Entity acts as a File-Set Updater.
- Creating a DVD, or CD-R - In this activity the Display/Edit Application Entity acts as a File-Set Creator.
- Creating a Windows file system or USB media set - In this activity the Display/Edit Application Entity acts as a File-Set Creator.

3.3.1.4 Real World Activity: Display Directory

The *syngo*® Dynamics Workplace Display/Edit Application is an FSR when reading the directory of the medium. This will result in an overview of the patients, studies and images in the *syngo*® Dynamics Workplace Study List.

3.3.1.5 Media Storage Application Profile for the RWA: View Images

For the list of Application Profiles that invoke this AE for the View Images RWA,

see “Table 2. 1 Display/Edit Application Entity Profiles, Real-World Activities, and Roles”.

There are no extensions or specializations.

3.3.1.6 Real World Activity: View Images

The *syngo*® Dynamics Workplace Display/Edit Application is an FSR when viewing images from the medium.

The *syngo*® Dynamics Workplace partially supports the multi-frame ultrasound "image display" Application Profile for MOD and the multi-frame ultrasound "spatial calibration" Application Profile for DVD, CD-R, Windows File System and USB media. The below table shows the supported image formats when viewing studies from re-movable media or fixed Windows file system locations.

Photometric Interpretation	Transfer Syntax	Bits Allocated	Bits Stored	Samples Per Pixel	Planar Configuration
MONOCHROME1	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	1	Absent
	Explicit VR Little Endian 1.2.840.10008.1.2.1	16	16	1	Absent
	JPEG Lossy Baseline (Process 1) 1.2.840.10008.1.2.4.50	8	8	1	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.57	8	8	1	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	8	8	1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	8	8	1	Absent
MONOCHROME2	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	1	Absent
	Explicit VR Little Endian 1.2.840.10008.1.2.1	16	16	1	Absent
	JPEG Lossy Baseline (Process 1) 1.2.840.10008.1.2.4.50	8	8	1	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.57	8	8	1	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	8	8	1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	8	8	1	Absent
RGB	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	3	0 - Color-by-pixel
	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	3	1 - Color-by-plane
PALETTE COLOR	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	8	8	1	Absent
	Explicit VR Little Endian 1.2.840.10008.1.2.1	16	16	1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	16	16	1	Absent
YBR_FULL	Explicit VR Little Endian 1.2.840.10008.1.2.1	8	8	3	0 - Color-by-pixel
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	8	8	3	0 - Color-by-pixel
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	8	8	3	1 - Color-by-plane
YBR_FULL_422	JPEG Lossy Baseline (Process 1) 1.2.840.10008.1.2.4.50	8	8	3	0 - Color-by-pixel

Table 3.3.1.6 :Supported Image Formats

3.3.1.6 Media Storage Application Profile for the RWA: View Images

For the list of Application Profiles that invoke this AE for the View Images RWA, see “Table 2. 1 Display/Edit Application Entity Profiles, Real-World Activities, and Roles”. There are no extensions or specializations.

The *syngo*® Dynamics Workplace displays Ultrasound, NM, PT, SC and XA Angiographic images from the *syngo*® Dynamics Server or DICOM Media.

The *syngo*® Dynamics Workplace supports the image formats shown in when displaying images using software. The *syngo*® Dynamics Workplace supports the display of 8,10,12 and 16 bit image formats.

Photometric Interpretation	Transfer Syntax	Planar Configuration
MONOCHROME1	Uncompressed Implicit VR Little Endian 1.2.840.10008.1.2	Absent
	Uncompressed Explicit VR Little Endian 1.2.840.10008.1.2.1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.57	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	Absent
MONOCHROME2	Uncompressed Implicit VR Little Endian 1.2.840.10008.1.2	Absent
	Uncompressed Explicit VR Little Endian 1.2.840.10008.1.2.1	Absent
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	Absent
	JPEG Lossy Baseline (Process 1) 1.2.840.10008.1.2.4.50	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.57	Absent
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	Absent
RGB	Uncompressed Implicit VR Little Endian 1.2.840.10008.1.2	0 - Color-by-pixel
	Uncompressed Implicit VR Little Endian 1.2.840.10008.1.2	1 - Color-by-plane
	Uncompressed Explicit VR Little Endian 1.2.840.10008.1.2.1	0 - Color-by-pixel
	Uncompressed Explicit VR Little Endian 1.2.840.10008.1.2.1	1 - Color-by-plane
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	0 - Color-by-pixel
YBR_FULL	RLE Lossless Image Compression 1.2.840.10008.1.2.5	0 - Color-by-pixel
	RLE Lossless Image Compression 1.2.840.10008.1.2.5	1 - Color-by-plane
	JPEG Lossless, Non-Hierarchical (Process 14) 1.2.840.10008.1.2.4.70	0 - Color-by-pixel

YBR_FULL_422	Uncompressed Implicit VR Little Endian 1.2.840.10008.1.2	0 - Color-by-pixel
	Uncompressed Explicit VR Little Endian 1.2.840.10008.1.2.1	0 - Color-by-pixel
	JPEG Lossy Baseline (Process 1) 1.2.840.10008.1.2.4.50	0 - Color-by-pixel

Table 3.3.1.3 :Supported Image Formats

3.3.1.4 Real World Activity: Update Studies

The *syngo*® Dynamics Workplace Display/Edit Application is an FSU using the Interchange option when adding studies to the medium. The Display/Edit Application will copy SOP Instances from Local Storage to the medium.

The Display/Edit Application cannot delete studies from media.

The Display/Edit Application cannot add studies to media that has been write- protected.

3.3.1.4.1 Media Storage Application Profile for the RWA: Update Studies

For the list of Application Profiles that invoke this AE for the Copy to Local Storage RWA, see “Table 2. 1 Display/Edit Application Entity Profiles, Real- World Activities, and Roles”. There are no extensions or specializations.

3.3.1.5 Real World Activity: Create CD-R/DVD

The *syngo*® Dynamics Workplace Display/Edit Application is an FSC when creating a CD- R/DVD. A DICOMDIR is created and studies can be exported to the CD-R/DVD (See RWA: Update Studies).

3.3.1.5.1 Media Storage Application Profile for the RWA: Create CD-R/DVD

For the list of Application Profiles that invoke this AE for the Create CD-R RWA, see “Table 2. 1 Display/Edit Application Entity Profiles, Real-World Activities, and Roles”. There are no extensions or specializations.

3.3.1.6 Real World Activity: Display Directory

The *syngo*® Dynamics Workplace Display/Edit Application is an FSR when reading the directory of the medium. This will result in an overview of the patients, studies and images in the *syngo*® Dynamics Workplace Study List.

3.3.1.6.1 Media Storage Application Profile for the RWA: Display Directory

For the list of Application Profiles that invoke this AE for the Display Directory RWA,

see “Table 2. 1 Display/Edit Application Entity Profiles, Real-World Activities, and Roles”.

There are no extensions or specializations.

3.3.1.7 SOP Classes and Transfer Syntaxes

n.a

3.4 AUGMENTED AND PRIVATE APPLICATION PROFILES

3.4.1 Augmented Application Profiles

The *syngo*® Dynamics Workplace has no augmented or private Application Profiles.

3.4.2 Extensions/Specializations/ Privatizations

The *syngo*® Dynamics Workplace has no extensions and specializations.

Refer Table 1 – Network Services for Privatization detail.

3.5 MEDIA CONFIGURATION

The *syngo*® Dynamics Workplace may not export all private elements of certain US SOP class objects if the private elements contain raw image data.

The Source AE Title encoded in the File Meta Information is derived from the Node Name of the workstation hosting the Workplace application.

4 Transformations of DICOM to CDA

Not Applicable to *syngo* Dynamics

5 Support of Extended Character Sets

The *syngo*® Dynamics Workplace supports the following character sets:

- ISO-IR 6 (default) - Default repertoire
- ISO-IR 100 - Latin Alphabet No. 1

The *syngo*® Dynamics Workplace does not support multi-byte characters.

6 Attribute confidentiality profiles

Not Applicable to *syngo* Dynamics®

7 Security

Not Applicable to *syngo* Dynamics®

8 Annexes

8.1 Standard Extended / Specialized / Private SOP Classes

Refer Table 1 – Network Services for Private SOP Classes.

8.1.1 Comprehensive Text SR SOP Class IOD

IOD of created Comprehensive Text SR SOP Class Instances

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 8.1.1.2	ALWAYS
Study	General Study Module	Table 8.1.1.3	ALWAYS
Series	SR Document Series Module	Table 8.1.1.4	ALWAYS
Equipment	General Equipment Module	Table 8.1.1.5	ALWAYS
SR Document	SR Document General Module	Table 8.1.1.6	ALWAYS
	SR Document Content Module	Table 8.1.1.7	ALWAYS
	SOP Common Module	Table 8.1.1.8	ALWAYS

Table 8.1.1.1 :Supported Image Formats

Table 8.1.1.2 Patient Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Patient's Name	(0010,0010)	AUTO	ALWAYS	ALWAYS			
Patient ID	(0010,0020)	AUTO	ALWAYS	ALWAYS			
Patient's Birth Date	(0010,0030)	AUTO	ALWAYS				
Patient's Sex	(0010,0040)	AUTO	ALWAYS				

Table 8.1.1.3 General Study Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Study Instance UID	(0020,000D)	AUTO	ALWAYS	ALWAYS			
Study Date	(0008,0020)	AUTO	ALWAYS	ALWAYS			
Study Time	(0008,0030)	AUTO	ALWAYS	ALWAYS			
Referring Physician's Name	(0008,0090)	AUTO	ALWAYS	ALWAYS			
Accession Number	(0008,0050)	AUTO	ALWAYS	ALWAYS			

Table 8.1.1.4: SR Document Series Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Modality	(0008,0060)	AUTO	ALWAYS	ALWAYS			
Series Instance UID	(0020,000E)	AUTO	ALWAYS	ALWAYS			
Series Number	(0020,0011)	AUTO	ALWAYS	ALWAYS			
Referenced Performed Procedure Step Sequence	(0008,1111)	AUTO	ALWAYS	ALWAYS			

Table 8.1.1.5: General Equipment Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Manufacturer	(0008,0070)	AUTO	ALWAYS	ALWAYS			

Table 8.1.1.6 : SR Document General Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Instance Number	(0020,0013)	AUTO	ALWAYS	ALWAYS			
Completion Flag	(0040, A491)	AUTO	ALWAYS	ALWAYS	PARTIAL COMPLETE	PARTIAL when Verification Flag is UNVERIFIED COMPLETE when Verification Flag is VERIFIED	
Verification Flag	(0040, A493)	AUTO	ALWAYS	ALWAYS	UNVERIFIED VERIFIED	UNVERIFIED when Completion Flag is PARTIAL VERIFIED when Completion Flag is COMPLETE	
Content Date	(0008,0023)	AUTO	ALWAYS	ALWAYS			
Content Time	(0008,0033)	AUTO	ALWAYS	ALWAYS			
Verifying Observer Sequence	(0040, A073)	AUTO	ALWAYS	CONDITIONAL		Present if Verification Flag (0040, A493) is VERIFIED	
>Verifying Observer Name	(0040, A075)	AUTO	ALWAYS				
>Verifying Organization	(0040, A027)	AUTO	ALWAYS	ALWAYS			
Verification Date Time	(0040, A030)	AUTO	ALWAYS	ALWAYS			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Institution Name	(0008,0080)	AUTO	ALWAYS	ALWAYS			
Institution Code Sequence	(0008,0082)	AUTO	ALWAYS	ALWAYS			
Study Instance UID	(0020,000D)	AUTO	ALWAYS	ALWAYS			
Referenced Study Sequence	(0008,1110)	AUTO	ALWAYS	ALWAYS			

Table 8.1.1.7 : SR Document Content Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Value Type	(0040, A040)	FIXED	ALWAYS	ALWAYS	CONTAINER		

Table 8.1.1.8 : SOP Common Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
SOP Class UID	(0008,0016)	AUTO	ALWAYS	ALWAYS			
SOP Instance UID	(0008,0018)	AUTO	ALWAYS	ALWAYS			

8.1.2 GrayScale Softcopy Presentation State SOP Class IOD

IOD of created GrayScale Softcopy Presentation State SOP Class Instances

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 8.1.2.2	ALWAYS
Study	General Study Module	Table 8.1.2.3	ALWAYS
Series	General Series Module	Table 8.1.2.4	ALWAYS
	Presentation State Module	Table 8.1.2.5	ALWAYS
Equipment	General Equipment Module	Table 8.1.2.6	ALWAYS
Presentation State	Presentation State Identification Module	Table 8.1.2.7	ALWAYS
	Presentation State Relationship Module	Table 8.1.2.8	ALWAYS
	Displayed Area Module	Table 8.1.2.9	ALWAYS
	Softcopy Presentation LUT	Table 8.1.2.10	ALWAYS
	SOP Common	Table 8.1.2.11	ALWAYS

Table 8.1.2.1 :Supported Image Formats

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Patient's Name	(0010,0010)	AUTO	ALWAYS	ALWAYS			
Patient ID	(0010,0020)	AUTO	ALWAYS	ALWAYS			
Patient's Birth Date	(0010,0030)	AUTO	ALWAYS				
Patient's Sex	(0010,0040)	AUTO	ALWAYS				

Table 8.1.2.2 : Patient Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Study Instance UID	(0020,000D)	AUTO	ALWAYS	ALWAYS			
Study Date	(0008,0020)	AUTO	ALWAYS	ALWAYS			
Study Time	(0008,0030)	AUTO	ALWAYS	ALWAYS			
Referring Physician's Name	(0008,0090)	AUTO	ALWAYS	ALWAYS			
Accession Number	(0008,0050)	AUTO	ALWAYS				

Table 8.1.2.3 : General Study Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Modality	(0008,0060)	AUTO	ALWAYS	ALWAYS			
Series Instance UID	(0020,000E)	AUTO	ALWAYS	ALWAYS			
Series Number	(0020,0011)	AUTO	ALWAYS	ALWAYS			

Table 8.1.2.4 : General Series Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Modality	(0008,0060)	AUTO	ALWAYS	ALWAYS			

Table 8.1.2.5 : Presentation Series Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value		Conditions	Com
Manufacturer	(0008,0070)	AUTO	ALWAYS	ALWAYS				

Table 8.1.2.6 : General Equipment Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Presentation Creation Date	(0070,0082)	AUTO	ALWAYS	ALWAYS			
Presentation Creation Time	(0070,0083)	AUTO	ALWAYS	ALWAYS			

Table 8.1.2.7 : Presentation State Identification Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Referenced Series Sequence	(0008,1115)	AUTO	ALWAYS	ALWAYS			
>Series Instance UID	(0020,000E)	AUTO	ALWAYS	ALWAYS			
>Referenced Image Sequence	(0008,1140)	AUTO	ALWAYS				

Table 8.1.2.8 : Presentation State Relationship Module

Table Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Displayed Area Selection Sequence	(0070,005A)	AUTO	ALWAYS	ALWAYS			

Table 8.1.2.9 : Displayed Area Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Presentation LUT Shape	(2050,0020)	AUTO	ALWAYS	IDENTITY			

Table 8.1.2.10 : Softcopy Presentation LUT Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
SOP Class UID	(0008,0016)	AUTO	ALWAYS	ALWAYS			
SOP Instance UID	(0008,0018)	AUTO	ALWAYS	ALWAYS			

Table 8.1.2.11: SOP Common Module

8.2 Created SOP Instances

The *syngo* Dynamics Server Application Entity provides Conformance to the private SOP Classes listed in Table 8.2-1 as an SCU and/or SCP:

SOP Class	SOP Class UID	SCU/SCP
Siemens CSA Non-Image Storage	1.3.12.2.1107.5.9.1	Y/Y
Siemens AX frame sets	1.3.12.2.1107.5.99.3.11	Y/Y
Siemens CT MR volume files	1.3.12.2.1107.5.99.3.10	Y/Y
TomTec Private File	1.2.276.0.48.5.1.4.1.1.7	Y/Y

Table 8.2-1 *syngo* Dynamics Server Supported SOP Classes

8.2.1 Association Initiation by Real-World Activity

syngo Dynamics Server only initiates associations for the following real-world activities:

- Store Private Objects

8.2.1.1 Real-World Activity – Store Private Objects

Associated Real World-Activity – Store Private Objects

syngo Dynamics Server will send private objects that have been sent to it previously to a remote AE for storage. An association is established when the user initiates a transmit request. *syngo* Dynamics Server will establish an association automatically in response to a C-MOVE request, archive to PACS autopilot notification or configured study routing rules.

Proposed Presentation Contexts – Store Private Objects

syngo Dynamics Server may propose any of the Presentation Contexts shown in Table 8.2-2.

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
Siemens CSA Non-Image Storage	1.3.12.2.1107.5.9.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCU	None

Siemens AX frame sets	1.3.12.2.1107.5.99.3.11	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None
Siemens CT MR volume files	1.3.12.2.1107.5.99.3.10	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None
TomTec Private File	1.2.276.0.48.5.1.4.1.1.7	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None

Table 8.2-2 Proposed Presentation Contexts – Store Private Objects

SOP Specific Conformance – Store Private Objects

syngo Dynamics Server provides conformance as specified in Section 2.2.1.5.

8.2.2 Association Acceptance Policy

syngo Dynamics Server accepts associations for the following real-world activities:

- Store Private Objects
- Private Notification of Patient/Study Information Change

8.2.2.1 Real-World Activity – Store Private Objects

8.2.3 Associated Real World-Activity – Store Private Objects

A remote AE can send private objects to *syngo* Dynamics Server for storage. All private objects received by *syngo* Dynamics Server can be retrieved at a later time as described in Section 2.2.1.5

8.2.4 Accepted Presentation Contexts – Store Private Objects

syngo Dynamics Server will accept the Presentation Contexts shown in Table 8.2-3.

Presentation Context Table				
Abstract Syntax		**Transfer Syntax**	**Role**	**Extended Negotiation**
Name	**UID**	**Name** **UID**		
Siemens CSA Non-Image Storage	1.3.12.2.1107.5.9.1	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None
Siemens AX frame sets	1.3.12.2.1107.5.99.3.11	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None
Siemens CT MR volume files	1.3.12.2.1107.5.99.3.10	Implicit VR Little Endian 1.2.840.10008.1.2	SCP	None
TomTec Private File	1.2.276.0.48.5.1.4.1.1.7	Implicit VR Little Endian	SCP	None

		1.2.840.10008.1.2		

Table 8.2-3 Accepted Presentation Contexts – Store Private Objects

SOP Specific Conformance – Store Private Object

syngo Dynamics Server provides conformance as specified in Section 2.2.1.5

Presentation Context Acceptance Criterion – Store Private Object

syngo Dynamics Server will accept any of the Presentation Contexts listed in Table 8.2-3.

Transfer Syntax Selection Policies – Store Private Objects

syngo Dynamics Server only supports Implicit VR Little Endian for this Real World Activity.

8.2.4.1 Real-World Activity – Unsolicited Private Notifications

Associated Real World Activity – Unsolicited Private Notifications

syngo Dynamics Server will accept unsolicited private notifications from a remote AE.

Transfer Syntax Selection Policies – Unsolicited Private Notifications

syngo Dynamics Server only supports Implicit VR Little Endian for this.

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Siemens Healthineers Headquarters

Siemens Healthineers AG

Siemensstr. 3

91301 Forchheim

Germany

Phone: +49 9191 18-0

siemens-healthineers.com

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Legal Manufacturer

Siemens Healthcare GmbH

Henkestr.127

91052 Erlangen

Germany

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