



Varian DICOM Worklist

DICOM Conformance Statement

Abstract This document provides information about the DICOM Conformance of the Varian DICOM Worklist versions V13, V13.5, V13.6.

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1. Introduction

1.1 Audience

This document is intended for the following groups of persons:

- Customers and hospital staff who want to use ARIA Worklist Service
- System integrators of medical equipment
- Other vendors offering interfacing via DICOM
- Marketing and sales persons

It is assumed, that the reader is familiar with the DICOM standard.

The document is structured firmly along the template definition as specified in Part 2 of the DICOM standard.

1.2 Overview

This document specifies the compliance to DICOM conformance requirements for connecting to the Varian Medical Systems Treatment Management System (TMS) over the ARIA Worklist Service.

The ARIA Worklist Service features described in this document support information exchange between the ARIA Worklist Service and third-party systems for the following uses:

Workflow: The ARIA Worklist Service allows the client to query for Unified Procedure Steps (UPS) or Modality Scheduled Procedure Steps, to update the Unified Procedure Step or to create a Modality Performed Procedure Step and update it.

Table 1-1 provides an overview of the network services supported by ARIA Worklist Provider Application Entity.

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Verification		
Verification	Not supported	Yes
Workflow Management		
Unified Procedure Step - Pull - Trial	Not supported	Yes
Unified Procedure Step - Push - Trial	Not supported	Yes
Modality Worklist	Not supported	Yes
Modality Performed Procedure Step	Not supported	Yes
Query/Retrieve		
Study Root Query/Retrieve Information Model - MOVE	Not supported	Yes

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer (as part of retrieval)		
RT Beams Delivery Instruction Storage - Trial	Yes	Not supported
Secondary Capture Image Storage	Yes	Not supported

Table 1-1: Network Services

The following product is in the scope of this Conformance Statement:

- ARIA Worklist Service

1.3 Remarks

The scope of this Conformance Statement is to facilitate communication with ARIA Worklist Service and other vendor's medical equipment. The Conformance Statement should be read and understood in conjunction with the DICOM standard [1], Supplement 74 and Supplement 96 of the DICOM standard [3].

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.

Because the DICOM standard is subject to ongoing changes, enhancements and improvements, Varian Medical Systems reserves the right to advance their products by making use of upcoming DICOM features without prior announcement.

1.4 References

- [1] Digital Imaging and Communications in Medicine (DICOM), Parts 1-18 (2009)
National Electrical Manufacturers Association (NEMA)
Rosslyn, VA
United States of America
- [2] DICOM Supplement 74 (Frozen Draft): Utilization of Worklist in Radiotherapy Treatment Delivery
DICOM Standards Committee, Working Group 7 Radiation Therapy
Rosslyn, VA
United States of America
- [3] DICOM Supplement 96 (Frozen Draft): Unified Worklist and Procedure Step
DICOM Standard Committee, Working Group 6
Rosslyn, VA
United States of America

1.5 Abbreviations

This section provides the definitions of terms, acronyms, and abbreviations which are used throughout the document. An arrow sign (→) left of a word indicates that it can be looked up in this table.

AE	Application Entity (→DICOM term)
BDI	RT Beams Delivery Instruction
DB	Varian System Database
DICOM	Digital Imaging and Communications in Medicine, a standard on image communications in medical applications
DIMSE	DICOM Message Service element
DNS	Domain Name System
EMPTY	Attribute is sent without a value
IE	Information Entity
IOD	Information Object Definition (→DICOM term)
MPPS	Modality Performed Procedure Step
MSPS	Modality Scheduled Procedure Step
NEMA	National Electrical Manufacturers Association
PDU	Protocol Data Unit (→DICOM term)
RQ	Request
RSP	Response
RT	Radiation Therapy
SC Image	Secondary Capture Image
SCU	Service Class User (→DICOM term)
SCP	Service Class Provider (→DICOM term)
SOP	Service-Object-Pair, a definition of an information object (like an image) and of a service (like storage) that can be performed for the object (→DICOM term)
SPS	Scheduled Procedure Step
TCP/IP	Transmission Control Protocol / Internet Protocol, a widely used computer networking protocol
TMS	Treatment Management System
UID	Unique Identifier used to identify an object by a worldwide unique identifier (→DICOM term)
UPS	Unified Procedure Step
Varian DICOM Worklist	Is the same as all the following terms, ARIA Worklist / Worklist Service / ARIA Worklist Service / DICOM Worklist
VNAP	Value Not Always Present (attribute sent zero length if no value is present)
VR	Value Representation, a data encoding method in →DICOM

2. Networking

2.1 Implementation Model

2.1.1 Application Data Flow

The following sections illustrate the application's data flow models. There are two models, one for Unified Worklist and one for Modality Worklist.

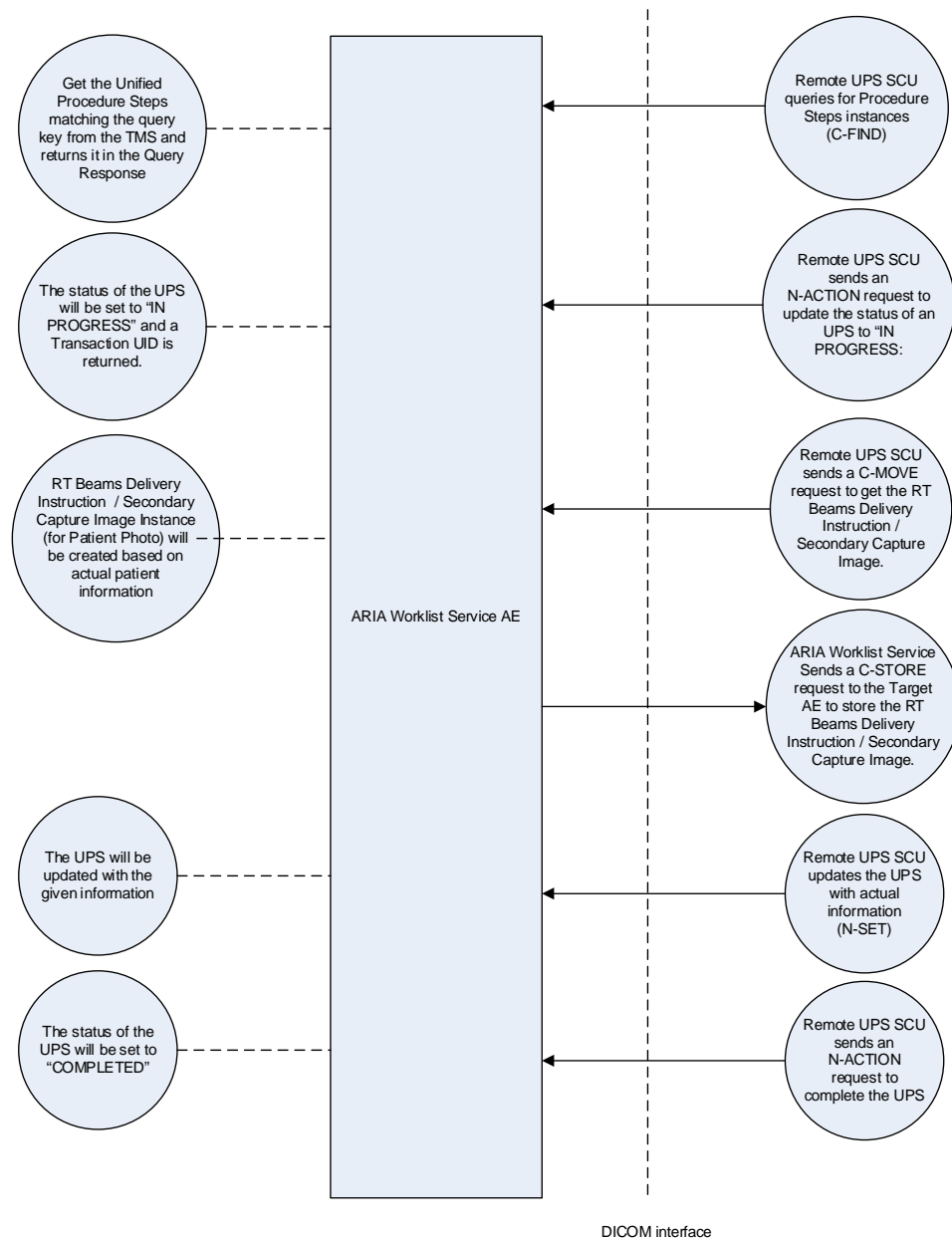


Figure 2-1: Application Data Flow for Unified Worklist

A Remote UPS Client can send a C-FIND request to the ARIA Worklist Service to get the list of Unified Procedure Steps. The client can take ownership over a selected UPS by setting it to "In

Progress". ARIA Worklist Service will return a Transaction UID, which will be required by the client for all updates it will make of this UPS.

The client can request the ARIA Worklist Service to move the RT Beams Delivery Instruction / Secondary Capture Image (for Patient Photo) to the given location.

The client can update the selected UPS with the actual information using N-SET request. No more updates can be made after the status of the UPS is set to "Completed" or "Canceled".

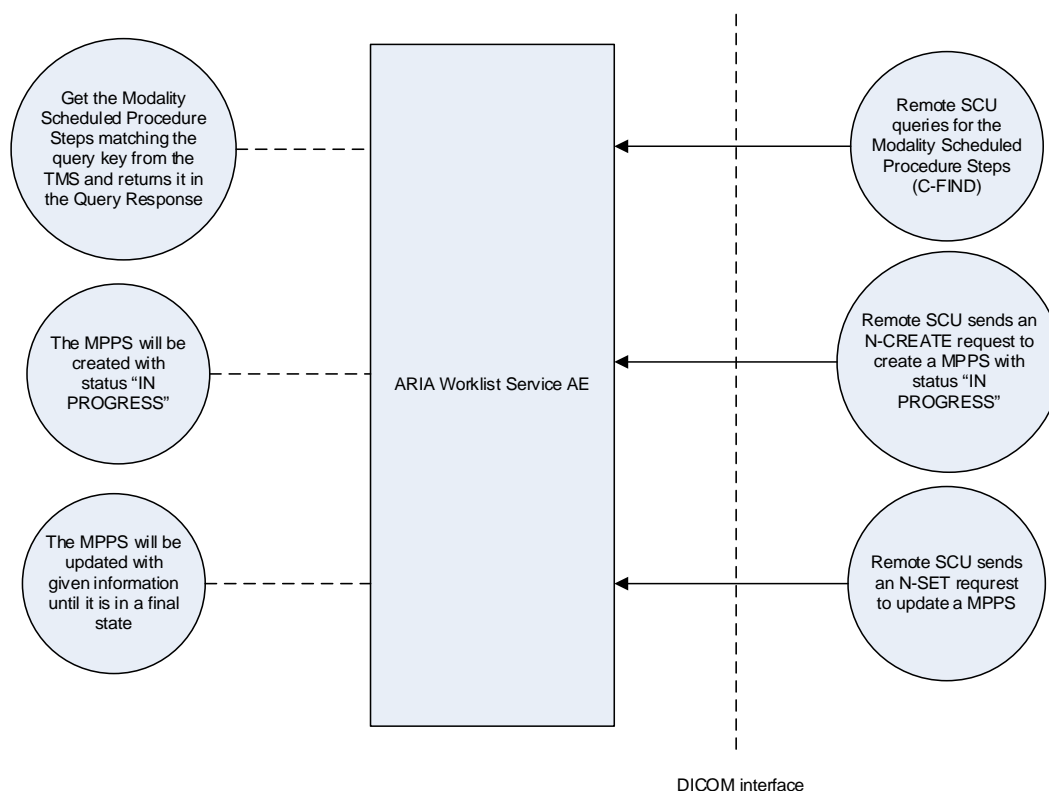


Figure 2-2: Application Data Flow for Modality Worklist

A Remote Client can send a C-FIND request to the ARIA Worklist Service to get the list of Modality Scheduled Procedure Steps. The client can send a N-CREATE request for a Modality Performed Procedure Step, which can belong to an existing Modality Scheduled Procedure Step or is an un-scheduled MPPS.

The client can update the created MPPS with the actual information using N-SET request, until it is in a final state. The possible final states are: COMPLETED or DISCONTINUED.

2.1.2 Functional Definition of AE's

2.1.2.1 Functional Definition of the ARIA Worklist Service Application Entity

The ARIA Worklist Service Application Entity resides on a workstation with connection to the TMS or on the TMS server itself. It is a Windows Service which starts up when the station on which it resides is brought up, and runs continuously until the station is brought down or the service is stopped via services management console. It will then wait for a remote Application Entity to request an association. The ARIA Worklist Service Application Entity accepts the association if the proposed context is valid and supported. It waits for C-ECHO, C-FIND, N-ACTION, N-CREATE and N-SET commands from the remote Application Entity. The associations are maintained by the ARIA Worklist Service until the remote Application Entity initiates the release process or an abort. The following operations are supported:

- Verification
 - The connection is verified by responding to an external C-ECHO command.
- Unified Procedure Step – Pull - Trial
 - C-FIND
 - N-ACTION
 - N-SET
- RT Beams Delivery Instruction - Trial
 - C-MOVE
 - C-STORE as an SCU
- Secondary Capture Image
 - C-MOVE
 - C-STORE as an SCU
- Modality Worklist
 - C-FIND
- Modality Performed Procedure Step
 - N-CREATE
 - N-SET

2.1.3 Sequencing of Real World Activities

The ARIA Worklist Service Application Entity does not control the sequence; however it expects the requests to be sent in a certain sequence.

The standard sequence for Unified Worklist and Modality Worklist are described in the following two chapters.

2.1.3.1 Unified Worklist

The following diagram shows a standard sequence for Unified Worklist.

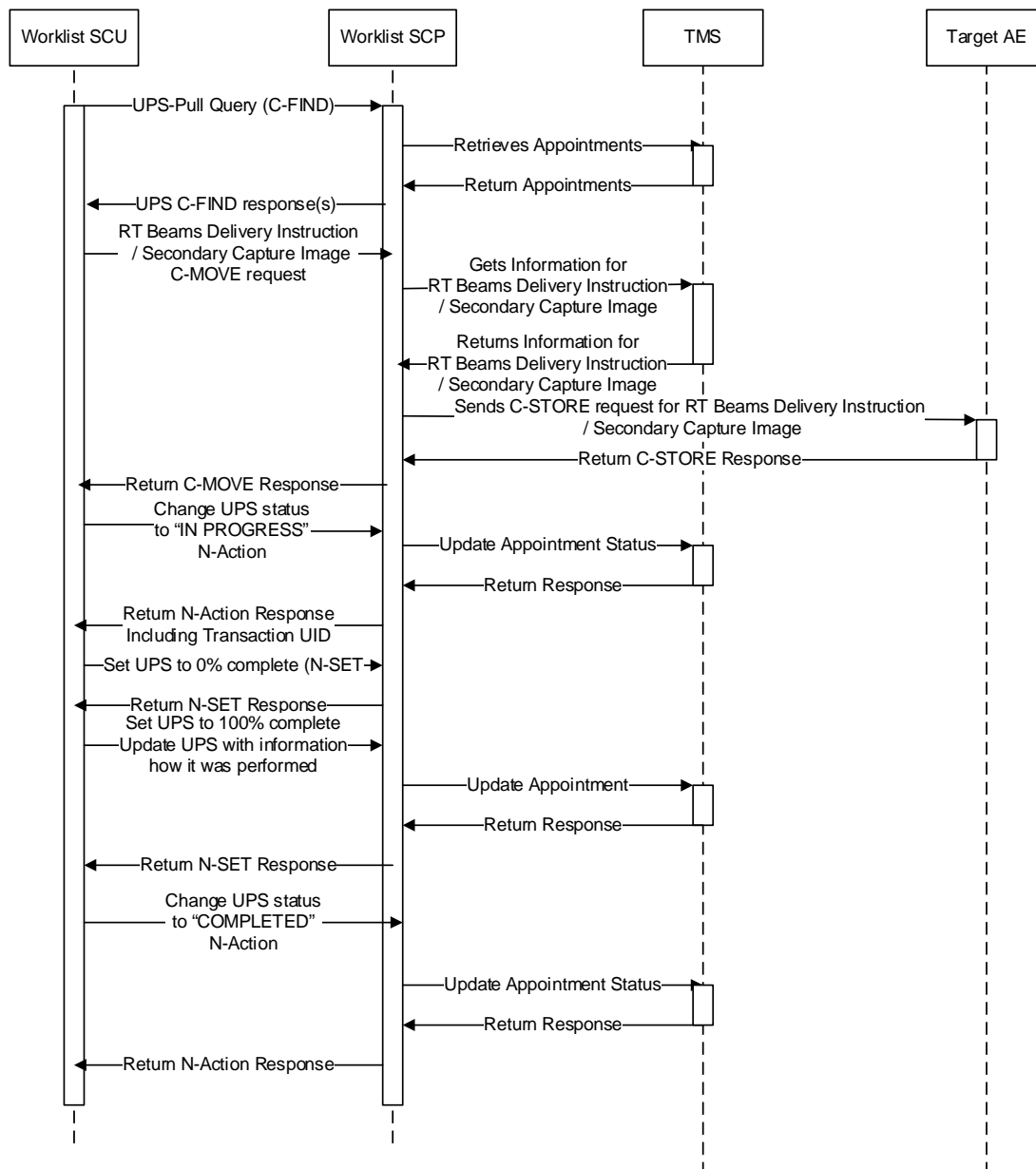


Figure 2-3: Sequence Diagram for Unified Worklist

The above sequence diagram shows a possible sequence from the selection of a Unified Procedure Step till the completion. Steps where the Worklist SCP is not involved are not shown, e.g. retrieving input data from the archive, or sending output objects to the archive. However the Worklist Provider cannot control the sequence. All sequences are accepted as long as it follows the following rules:

- An UPS with status "SCHEDULED" must be at least once retrieved with C-FIND. A SOP Instance UID is created, which is typically valid until the UPS is "COMPLETED" or

“CANCELED”

- An UPS with status “SCHEDULED” can either be set to “IN PROGRESS” or to “CANCELED” through an N-ACTION request. No other requests will be accepted at this point. The N-ACTION request will return a Transaction UID when setting the UPS to “IN PROGRESS”.
- An UPS with status “IN PROGRESS” can be updated using an N-SET request and the correct Transaction UID. There is no limitation how often it can be updated.
- An UPS with status “IN PROGRESS” and with a Progress of 100% must be set to “COMPLETED” with an N-ACTION request and the correct Transaction UID.
- An UPS with status “IN PROGRESS” and with a Progress of less than 100% can be set to “CANCELED” with an N-ACTION request and the correct Transaction UID.
- No N-ACTION or N-SET requests will be accepted to modify an UPS with status “COMPLETED” or “CANCELED”.

2.1.3.2 Modality Worklist

The following diagram shows a standard sequence for Modality Worklist and Modality Performed Procedure Step.

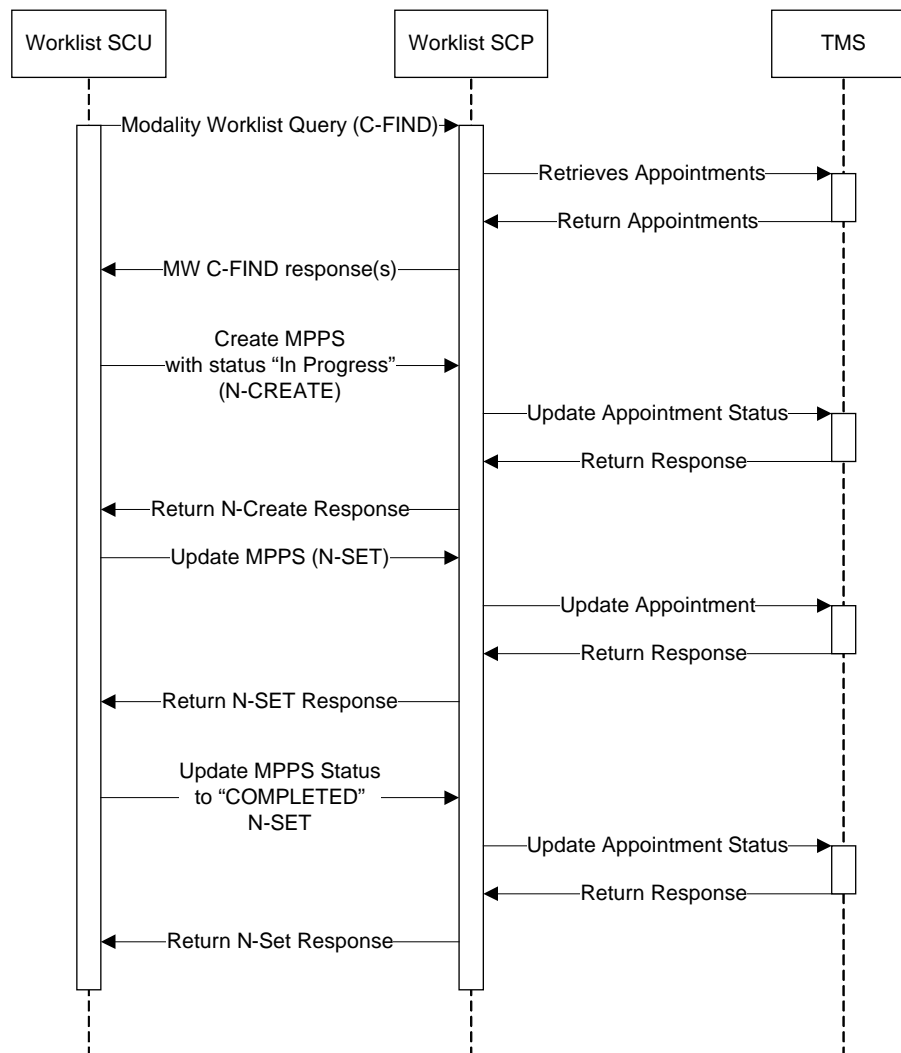


Figure 2-4: Sequence Diagram for Modality Worklist

The above sequence diagram shows a possible sequence from the selection of a Modality Scheduled Procedure Step, creation of a Modality Performed Procedure Step till the completion of the MPPS. However the Worklist Provider cannot control the sequence. All sequences are accepted as long as it follows the following rules:

- An MPPS with status “IN PROGRESS” can be updated through an N-SET request until it reached a final state
- A MSPS can only have one MPPS which has status “IN PROGRESS” at the time.

2.2 AE Specifications

2.2.1 ARIA Worklist Service Application Entity

2.2.1.1 SOP Classes

The ARIA Worklist Service Application Entity provides Standard Conformance to the following DICOM V3.0 and Supplement 96 SOP Classes as an SCP.

SOP Class Name	SOP Class UID	SCU	SCP
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	No	Yes
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	No	Yes
Unified Procedure Step - Pull - Trial	1.2.840.10008.5.1.4.34.4.3	No	Yes
Unified Procedure Step - Push - Trial	1.2.840.10008.5.1.4.34.4.1	No	Yes
RT Beams Delivery Instruction - Trial	1.2.840.10008.5.1.4.34.1	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	No	Yes
Verification	1.2.840.10008.1.1	No	Yes

Table 2-1: Standard SOP Classes for ARIA Worklist Service Application Entity

Note 1: The SCU role is supported only to perform C-STORE sub-commands upon a C-MOVE request.

2.2.1.2 Association Policies

2.2.1.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed.

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

Table 2-2: DICOM Application Context for ARIA Worklist Service Application Entity

The ARIA Worklist Service Application Entity accepts but never initiates associations.

Maximum PDU size received	28672
---------------------------	-------

Table 2-3: Maximum PDU size received as a SCP for the ARIA Worklist Service Application Entity.

2.2.1.2.2 Number of Associations

The ARIA Worklist Service Application Entity does not limit the number of concurrent associations.

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

Table 2-4: Number of Associations accepted by the ARIA Worklist Service Application Entity.

2.2.1.3 Asynchronous Nature

ARIA Worklist Service Application Entity does not support asynchronous communication.

2.2.1.4 Implementation Identifying Information

The implementation information for this Application Entity is defined in the following table.

ARIA Worklist Service Implementation Class UID	1.2.246.352.70.2.2.10.1
Implementation Version Name	(not used)

Table 2-5: DICOM Implementation Class and Version for ARIA Worklist Service Application Entity

2.2.1.5 Association Initiation Policy

The ARIA Worklist Service does not initiate any associations.

2.2.1.6 Association Acceptance Policy

The ARIA Worklist Service accepts Associations only if they have valid Presentation Contexts. If none of the Presentation Contexts are accepted, then the Association Request itself is rejected. It can be configured to only accept Associations from known hosts (using TCP/IP address) and/or Application Entity Titles.

2.2.1.7 Activities

Note: In SOP Specific Conformance for the Activity, a value of “* Not Implemented ***” in Remark/Types of Matching column indicates that an Attribute is unknown and therefore ignored by the application.**

2.2.1.7.1 Activity – Receive Verification Request (C-ECHO)

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-6: Proposed Presentation Contexts for ARIA Worklist Service Application Entity

2.2.1.7.1.1 SOP specific conformance for the verification SOP Class

The ARIA Worklist Service Application Entity provides standard conformance to the DICOM Verification Class as a Service Class Provider.

2.2.1.7.2 Activity – Receive Query Request (C-FIND)

2.2.1.7.2.1 Description and Sequencing of Activity

If the ARIA Worklist Service AE receives a query (C-FIND) request then the responses will be sent over the same Association used to send the C-FIND-Request.

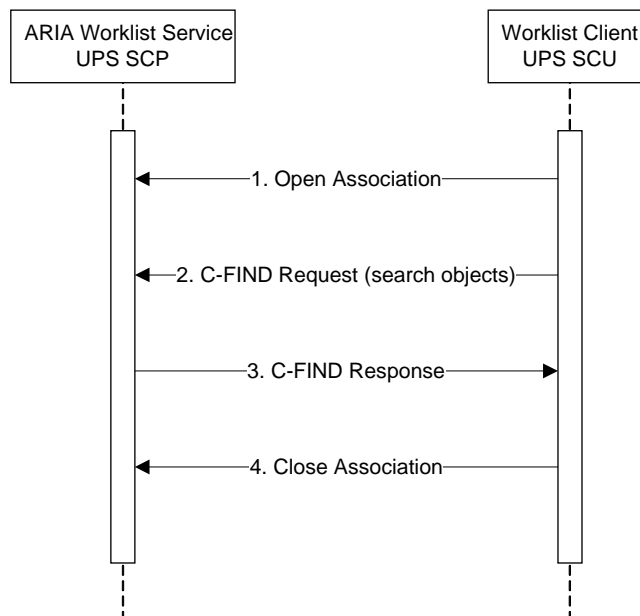


Figure 2-5: Sequencing of Activities – ARIA Worklist Service handling C-FIND Requests

A typical sequence of interactions between ARIA Worklist Service C-FIND SCP and a remote C-FIND SCU querying Instances is illustrated in Figure 2-5

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends a C-FIND Request Message.
3. The ARIA Worklist Service AE returns a C-FIND Response Message for each matching UPS. A final C-FIND Response is sent indicating that the matching is complete.

4. Remote AE releases Association.

2.2.1.7.2.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Unified Procedure Step - Pull SOP Class - Trial	1.2.840.10008.5.1.4.34.4.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-7: Acceptable Presentation Contexts for ARIA Worklist Service – C-FIND

2.2.1.7.2.3 SOP Specific Conformance

The C-FIND service of the Unified Procedure Step - Pull SOP Class - Trial always returns additional attributes, even if they are not requested.

Scheduled Station Name Code Sequence or Patient ID and Scheduled Procedure Step Start Date and Time attribute must be included in every C-FIND request in order for successful processing of request.

Only the appointments scheduled for the current date are returned in the C-FIND RSP.

The following table shows the supported query keys. Not all required query keys are supported.

Attribute Name	Tag	VR	Matching Criteria	Types of Matching
Scheduled Procedure Step Priority	(0074,1200)	CS		*** Not Implemented ***
Procedure Step Label	(0074,1204)	LO		*** Not Implemented ***
Procedure Step State	(0074,1000)	CS	Appointment Status	Single Value Matching Only the Procedure Step State "SCHEDULED" or "IN PROGRESS" is accepted.
Worklist Label	(0074,1202)	LO		*** Not Implemented ***
Scheduled Station Name Code Sequence	(0040,4025)	SQ	Code Value: Machine ID Code Meaning: Machine ID	Single Value Matching
Scheduled Station Class Code Sequence	(0040,4026)	SQ		*** Not Implemented ***
Scheduled Station Geographic Location Code Sequence	(0040,4027)	SQ		*** Not Implemented ***

Attribute Name	Tag	VR	Matching Criteria	Types of Matching
Human Performer Code Sequence	(0040,4034)	SQ		*** Not Implemented ***
Human Performs Name	(0040,4037)	PN		*** Not Implemented ***
Scheduled Procedure Step Start Date and Time	(0040,4005)	DT	Appointment Start Date and Time	Range Matching Only a range inside the today's date is supported.
Expected Completion Date and Time	(0040,4011)	DT	Appointment End Date and Time	Range Matching Only a range inside the today's date is supported.
Scheduled Workitem Code Sequence	(0040,4018)	SQ		*** Not Implemented ***
Patient ID	(0010,0020)	LO	Patient ID1	Single Value Matching
Issuer of Patient ID	(0010,0021)	LO		*** Not Implemented ***
Patient's Name	(0010,0010)	PN		*** Not Implemented ***
Patient's Birth Date	(0010,0030)	DA		*** Not Implemented ***
Patient's Sex	(0010,0040)	CS		*** Not Implemented ***
Admission ID	(0038,0010)	LO		*** Not Implemented ***
Issuer of Admission ID	(0038,0011)	LO		*** Not Implemented ***
Accession Number	(0008,0050)	SH		*** Not Implemented ***
Requested Procedure ID	(0040,1001)	SH		*** Not Implemented ***
Confidentiality Code	(0040,1008)	LO		*** Not Implemented ***
Requested Service	(0032,1033)	LO		*** Not Implemented ***
Related Procedure Step Sequence	(0074,1220)	SQ		*** Not Implemented ***

Table 2-8: Required Query Keys and their support in ARIA Worklist Service

Note: The ARIA Worklist Service supports in the input sequence of a Scheduled Procedure Step only the reference to an instance of RT Plan or RT ION Plan SOP class, RT Beams Delivery Instruction, Secondary Capture Image and additionally RT Beams Treatment Record, or RT ION Beams Treatment Record in case of a Continuation. Reference to those objects will only be provided, if the Plan or Treatment Records are stored in the TMS.

The ARIA Worklist Service Application Entity will return one of the following Response Status to the C-FIND Request.

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent.
Failure	Data Set does not match SOP Class	A900	Sent when Data Set is empty
	Refused: Not Authorized	C305	Never sent.
	Unable to process	C000 - CFFF	Error ID is set to give more information about Error: 0xC100, Received Command is not a C-FIND or C-CANCEL-FIND-RQ Request 0xC102, Failed to retrieve UPS from database 0xC103, Unexpected Error 0xC110, Required Query Keys not set: Start Date
	SOP Class not supported	0122H	Never sent.
Cancel	Matching terminated due to Cancel Request	FE00	Sent after receiving a Cancel Request
Pending	Matches are continuing – Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys	FF00	Never sent.
	Matches are continuing – Warning that one or more Optional Keys were not supported for the existence of this Identifier.	FF01	Never sent.
Success	Matching is completed – No final Identifier is supplied	0000	C-FIND Request processed successfully.

Table 2-9: ARIA Worklist Service Response Status Values for C-FIND

2.2.1.7.3 Activity – Change Status (N-ACTION)

2.2.1.7.3.1 Description and Sequencing of Activity

If the ARIA Worklist Service AE receives a status change request (N-ACTION), it will change the status of the UPS if it is according the rules. It will then send the response over the same association used to send the N-ACTION request.

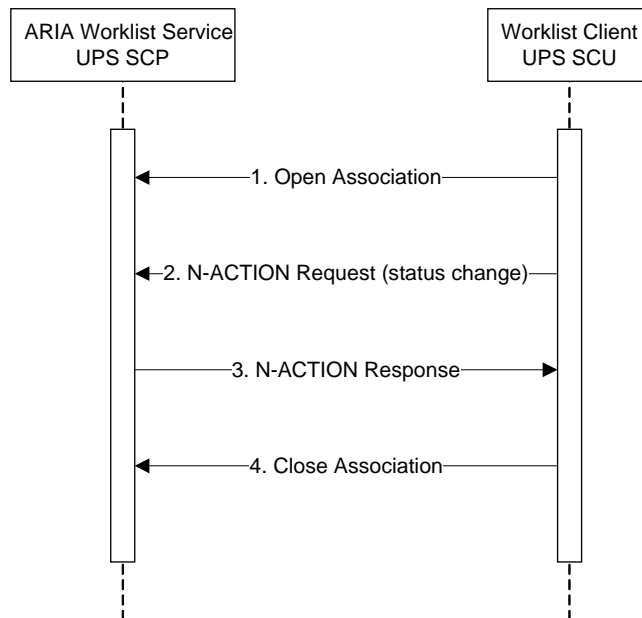


Figure 2-6: Sequencing of Activities – ARIA Worklist Service handling N-ACTION requests

A typical sequence of interactions between ARIA Worklist Service N-ACTION SCP and a remote N-ACTION SCU requesting status changes is illustrated in Figure 2-6.

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends one N-ACTION Request.
3. The ARIA Worklist Service updates the UPS with the new status if it is a valid status change request (see Table 2-10).
4. Remote AE releases Association.

The following table shows all possible status changes. Status changes not mentioned in Table 2-10 are not valid, and therefore ARIA Worklist Service responses with an error message.

Requested UPS Status	Transaction UID	Current UPS Status	Current Progress	New Appointment Status ¹⁾
IN PROGRESS	Empty	SCHEDULED	N/A	In Progress
COMPLETED	Valid Transaction UID	IN PROGRESS	100	Completed
CANCELED	Valid Transaction UID	IN PROGRESS	0	Canceled

Requested UPS Status	Transaction UID	Current UPS Status	Current Progress	New Appointment Status ¹⁾
CANCELED	Valid Transaction UID	IN PROGRESS	> 0, < 100	Part. Compl Active
CANCELED	Valid Transaction UID	IN PROGRESS	100	Part. Compl. Finished

Table 2-10: Valid Status changes

Note:

1): The shown Appointment Status is valid, if the Appointment has only one Unified Procedure Step. Otherwise the Appointment status can be different then shown in this table. The appointment status has following value:

- Completed: If all Unified Procedure Steps are COMPLETED
- Canceled: If all Unified Procedure Steps are CANCELED with 0 Progress
- Part. Compl. Finished (Partially Completed Finished): If all Procedure Steps are either CANCELED or COMPLETED and at least one of the Procedure Steps has a Progress bigger than 0
- Part. Compl. Active (Partially Completed Active): If at least one Procedure Step is CANCELED or COMPLETED and one is SCHEDULED
- In Progress: If at least one Procedure Step is IN PROGRESS

2.2.1.7.3.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Unified Procedure Step - Pull SOP Class - Trial	1.2.840.10008.5.1.4.34.4.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-11: Accepted Presentation Contexts

2.2.1.7.3.3 SOP Specific Conformance

The ARIA Worklist Service Application Entity provides standard conformance to Unified Procedure Step –Push SOP Class N-ACTION.

N-ACTION SCU shall include following attributes in the N-ACTION-RQ.

Attribute Name	Tag	VR	Remark
Requested SOP Class UID	(0000,0003)	UI	UPS Push SOP Class UID
Requested SOP Instance UID	(0000,1001)	UI	UPS SOP Instance UID

Attribute Name	Tag	VR	Remark
Scheduled Procedure Step Status	(0074,1000)	CS	Appointment Status
Transaction UID	(0008,1195)	UI	Required if changing status to COMPLETED or CANCELED

Table 2-12: SOP Specific Conformance – Attributes

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent.
Failure	Data Set does not match SOP Class	A900	Sent when Data Set is empty
	Refused: Not Authorized	C305	Never sent.
	Unable to process	C000 – CFFF	Error ID is set to give more information about Error: 0xC100, Received Command is not a N-ACTION Request 0xC101, Dataset is empty 0xC104, Cancel / Subscription / Unsubscription Request not yet implemented 0xC106, Invalid Status Change Request 0xC108, Unexpected Error 0xC300, Refused because the UPS may no longer be updated 0xC301, Refused because the correct Transaction UID was not provided 0xC304, Refused because the UPS has not met final state requirements for the requested state change
	SOP Class not supported	0122H	Never sent.
	Unmatched Transaction UID	A505	The Transaction UID sent in the Status change request does not match the Transaction UID associated with the SOP Instance UID.
	May no longer be updated	A501	The UPS is already in a final state (CANCELED or COMPLETED) and cannot be updated anymore.

Service Status	Further Meaning	Error Code	Reason
Success	Status is successfully updated	0000	Update of all supported attributes successful. Report UPS status change. A new Transaction UID will be returned only when setting the UPS to "IN PROGRESS."

Table 2-13: ARIA Worklist Service Response Status Values for Status Change Request (N-ACTION)

2.2.1.7.4 Activity – Update Unified Procedure Step (N-SET)

2.2.1.7.4.1 Description and Sequencing of Activity

If the ARIA Worklist Service receives an N-SET request, it will update the UPS if the status of the UPS is SCHEDULED or if the status is IN PROGRESS and the Transaction UID is valid. It will then send the response message over the same association used to send the N-SET request.

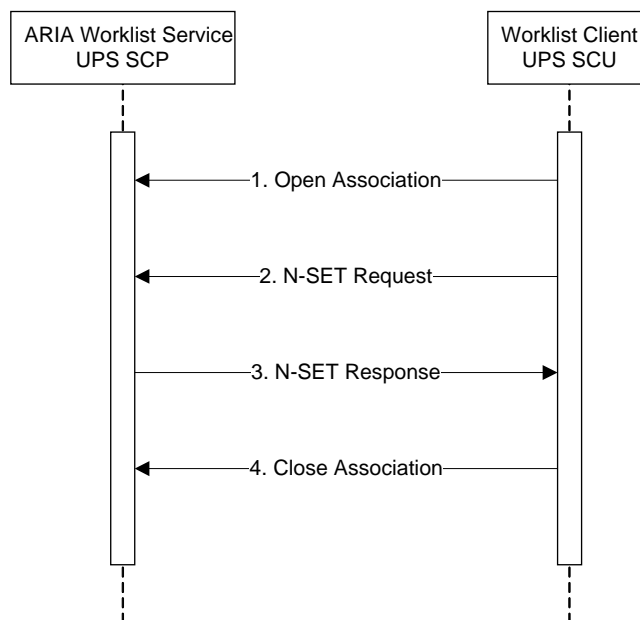


Figure 2-7: Sequencing of Activities – ARIA Worklist Service handling N-SET Requests

A typical sequence of interactions between ARIA Worklist Service N-SET SCP and a remote N-SET SCU requesting UPS updates is illustrated in Figure 2-7.

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends one N-SET Requests.
3. The ARIA Worklist Service updates the UPS with the new information if an update is allowed.
4. Remote AE releases Association.

2.2.1.7.4.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Unified Procedure Step - Pull SOP Class - Trial	1.2.840.10008.5.1.4.34.4.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-14: Accepted Presentation Contexts

2.2.1.7.4.3 SOP Specific Conformance

The ARIA Worklist Service Application Entity does not support the full set of Type 1 attribute. ARIA Worklist Service does not look at the not supported attributes, and therefore may return a success, even if not all requested information is updated.

Attribute Name	Tag	VR	Remark
Requested SOP Class UID	(0000,0003)	UI	UPS Push SOP Class UID
Requested SOP Instance UID	(0000,1001)	UI	UPS SOP Instance UID
Transaction UID	(0008,1195)	UI	Valid Transaction UID
Scheduled Procedure Step Priority	(0074,1200)	CS	*** Not Implemented ***
Procedure Step Label	(0074,1204)	LO	*** Not Implemented ***
Worklist Label	(0074,1202)	LO	*** Not Implemented ***
Scheduled Station Name Code Sequence	(0040,4025)	SQ	*** Not Implemented ***
Scheduled Station Class Code Sequence	(0040,4026)	SQ	*** Not Implemented ***
Scheduled Station Geographic Location Code Sequence	(0040,4027)	SQ	*** Not Implemented ***
Human Performer Code Sequence	(0040,4034)	SQ	*** Not Implemented ***
Human Performer's Name	(0040,4037)	PN	*** Not Implemented ***
Scheduled Procedure Step Start Date and Time	(0040,4005)	DT	*** Not Implemented ***
Expected Completion Date and Time	(0040,4011)	DT	*** Not Implemented ***
Scheduled Workitem Code Sequence	(0040,4018)	SQ	*** Not Implemented ***
Comments on the Scheduled Procedure Step	(0040,0400)	LT	*** Not Implemented ***
Input Information Sequence	(0040,4021)	SQ	*** Not Implemented ***
Related Procedure Step Sequence	(0074,1220)	SQ	*** Not Implemented ***
UPS Progress Information Sequence	(0074,1002)	SQ	Zero or one item supported.
> Unified Procedure Step Progress	(0074,1004)	DS	Performed Procedure Progress

Attribute Name	Tag	VR	Remark
> Unified Procedure Step Progress Description	(0074,1006)	ST	*** Not Implemented ***
> Unified Procedure Step Communications URI Sequence	(0074,1008)	SQ	*** Not Implemented ***
> Unified Procedure Step Discontinuation Reason Code Sequence	(0074,100e)	SQ	*** Not Implemented ***
UPS Performed Procedure Sequence	(0074,1216)	SQ	Zero or one item supported
>Actual Human Performers Sequence	(0040,4035)	SQ	*** Not Implemented ***
> Performed Station Name Code Sequence	(0040,4028)	SQ	*** Not Implemented ***
> Performed Station Class Code Sequence	(0040,4029)	SQ	*** Not Implemented ***
> Performed Station Geographic Location Code Sequence	(0040,4030)	SQ	*** Not Implemented ***
> Performed Processing Application Code Sequence	(0040,4007)	SQ	*** Not Implemented ***
> Performed Procedure Step Start Date	(0040,0244)	DA	Performed Procedure Start Date Time (Not displayed in any of the ARIA applications.)
> Performed Procedure Step Start Time	(0040,0245)	TM	Performed Procedure Start Date Time (Not displayed in any of the ARIA applications.)
> Performed Procedure Step Description	(0040,0254)	LO	Activity Description (Not displayed in any of the ARIA applications.)
> Comments on the Performed Procedure Step	(0040,0280)	ST	*** Not Implemented ***
> Performed Workitem Code Sequence	(0040,4019)	SQ	*** Not Implemented ***
> Performed Processing Parameters Sequence	(0074,1212)	SQ	*** Not Implemented ***
> Performed Procedure Step End Date	(0040,0250)	DA	Performed Procedure End Date Time (Not displayed in any of the ARIA applications.)
> Performed Procedure Step End Time	(0040,0251)	TM	Performed Procedure End Date Time (Not displayed in any of the ARIA applications.)
> Output Information Sequence	(0040,4033)	SQ	Zero or more Items supported For details, please refer to [A.2.3]

Attribute Name	Tag	VR	Remark
> Non-DICOM Output Code Sequence	(0040,4032)	SQ	*** Not Implemented ***

Table 2-15: Supported attributes of an N-SET request

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent
Failure	May No Longer Be Updated	A501	Performed Procedure is in a final state and cannot be updated anymore. An error is returned
	Unmatched Transaction UID	A505	Invalid Transaction UID, no update is done, an error is returned.
	Processing Failure	C001	Error ID is set to give more information about Error: 0xC100, N-SET Request: Unexpected Command / Unexpected Error 0xC300, Refused because the UPS may no longer be updated 0xC301, Refused because the correct Transaction UID was not provided 0xC304, Refused because the UPS has not met final state requirements for the requested state change
Success	Unified Procedure Step is successfully updated	0000	Update of all supported attributes was successful

Table 2-16: ARIA Worklist Service Response Status Values for N-SET

2.2.1.7.5 Activity – Move RT Beams Delivery Instruction / Secondary Capture Image (C-MOVE)

2.2.1.7.5.1 Description and Sequencing of Activity

If the ARIA Worklist Service AE receives a move (C-MOVE) request, it will create the RT Beams Delivery Instruction / Secondary Capture Image (for Patient Photo) and send a C-STORE request to the target destination. The C-MOVE response will be sent over the same association as the C-MOVE request was received.

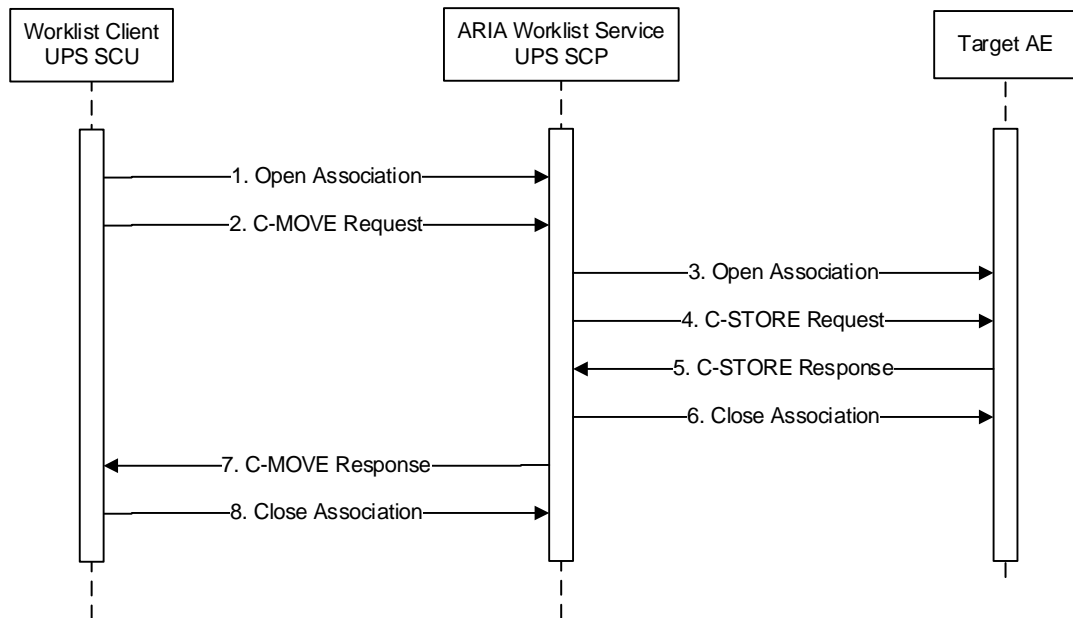


Figure 2-8 Sequencing of Activities – ARIA Worklist Service handling C-MOVE Requests

A typical sequence of interactions between ARIA Worklist Service C-MOVE SCP and a remote C-FIND SCU querying Instances is illustrated in Figure 2-5

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends a C-MOVE Request Message
3. The ARIA Worklist Service AE opens an association to the Target AE
4. The ARIA Worklist Service AE sends a C-STORE request to the Target AE
5. The Target AE sends a C-STORE—RSP message to the ARIA Worklist Service AE
6. The ARIA Worklist Service AE releases the association to the Target AE
7. The ARIA Worklist Service AE sends a C-MOVE-RSP message to the Remote AE
8. The Remote AE releases Association

2.2.1.7.5.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
RT Beams Delivery Instruction – Trial	1.2.840.10008.5.1.4.34.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-17: Acceptable Presentation Contexts for ARIA Worklist Service – C-MOVE

2.2.1.7.5.3 SOP Specific Conformance for RT Beams Delivery Instruction / Secondary Capture Image Move

Only Instance Level C-MOVE for RT Beams Delivery Instruction / Secondary Capture Image is supported.

The RT Beams Delivery Instruction Instance is created based on actual patient information in the ARIA database and therefore can only be retrieved until Treatment Records are sent back or the Unified Procedure Step is COMPLETED or CANCELED.

The Secondary Capture Image Instance is created from the Patient Photo in the ARIA database.

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent
Failure	No Such SOP Instance	0112	Requested SOP Instance could not be found
	Move Destination Unknown	A801	Move Destination unknown
	Cannot Understand	C000	Move Request not supported, for example Move Request on Study or Series Level are not supported
Success	Move was successful	0000	RT Beams Delivery SOP Instance is successfully moved

Table 2-18: ARIA Worklist Service Response Status Values for C-MOVE

2.2.1.7.6 Activity – Receive Modality Worklist Query Request (C-FIND)

2.2.1.7.6.1 Description and Sequencing of Activity

If the ARIA Worklist Service AE receives a query (C-FIND) request then the responses will be sent over the same Association used to send the C-FIND-Request.

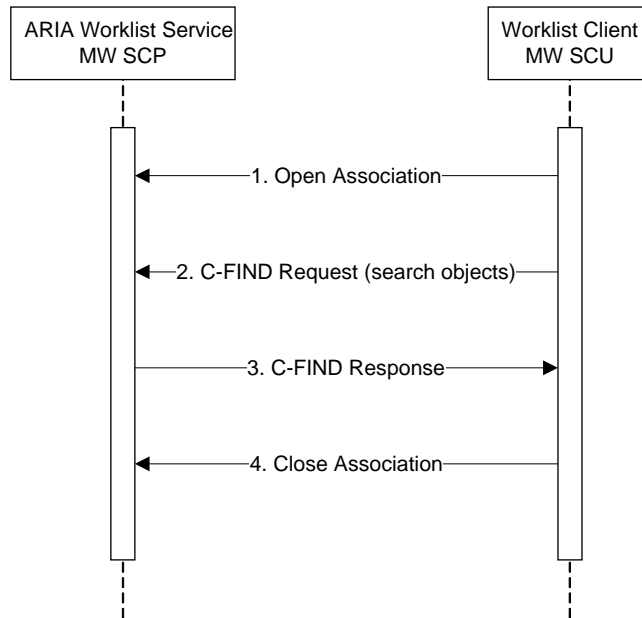


Figure 2-9: Sequencing of Activities – ARIA Worklist Service handling C-FIND Requests

A typical sequence of interactions between ARIA Worklist Service C-FIND SCP and a remote C-FIND SCU querying Instances is illustrated in Figure 2-5

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends a C-FIND Request Message.
3. The ARIA Worklist Service AE returns a C-FIND Response Message for each matching MSPS. A final C-FIND Response is sent indicating that the matching is complete.
4. Remote AE releases Association.

2.2.1.7.6.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-19: Acceptable Presentation Contexts for ARIA Worklist Service – C-FIND

2.2.1.7.6.3 SOP Specific Conformance

The C-FIND service of the Modality Worklist Information SOP Class always returns all supported attributes, even if they are not requested.

Scheduled Station AE Title or Patient ID attribute must be included in the request.

The following table shows the supported query keys. Not all required query keys are supported.

Attribute Name	Tag	VR	Matching Criteria	Types of Matching
Scheduled Procedure Step Sequence	(0040,0100)	SQ		
> Scheduled Station AE Title	(0040,0001)	AE	Machine AE Title	Single Value Matching
> Scheduled Procedure Step Start Date	(0040,0002)	DT	Appointment Start Date	Range Matching
> Scheduled Procedure Step Start Time	(0040,0003)	TM	Appointment Start Time	Range Matching
> Scheduled Procedure Step End Date	(0040,0004)	DT	Appointment End Date	Range Matching
> Scheduled Procedure Step End Time	(0040,0005)	TM	Appointment End Time	Range Matching
> Modality	(0008,0060)	CS		*** Not Implemented ***
> Scheduled Performing Physician's Name	(0040,0006)	PN		*** Not Implemented ***
> Scheduled Station Name	(0040,0010)	SH	Machine Name	Single Value Matching
> Scheduled Procedure Step Status	(0040,0020)	CS	Only SCHEDULED and ARRIVED status supported for matching. The mapping between Appointment Status and Scheduled Procedure Step Status is Open -> SCHEDULED Open and Checked in -> ARRIVED	Single Value Matching
Requested Procedure ID	(0040,1001)	SH		Single Value Matching
Accession Number	(0008,0050)	SH		*** Not Implemented ***
Patient's Name	(0010,0010)	PN		*** Not Implemented ***

Attribute Name	Tag	VR	Matching Criteria	Types of Matching
Patient ID	(0010,0020)	LO	Patient ID1	Single Value Matching

Table 2-20: Required Query Keys and their support in ARIA Worklist Service

The ARIA Worklist Service Application Entity will return one of the following Response Status to the C-FIND Request.

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent.
Failure	Data Set does not match SOP Class	A900	Sent when Data Set is empty
	Refused: Not Authorized	C305	Never sent.
	Unable to process	C000 - CFFF	Error ID is set to give more information about Error: 0xC100, Received Command is not a C-FIND or C-CANCEL-FIND-RQ Request 0xC102, Failed to retrieve MSPS from database 0xC103, Unexpected Error
	SOP Class not supported	0122H	Never sent.
Cancel	Matching terminated due to Cancel Request	FE00	Sent after receiving a Cancel Request
Pending	Matches are continuing – Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys	FF00	
	Matches are continuing – Warning that one or more Optional Keys were not supported for the existence of this Identifier.	FF01	Never sent.
Success	Matching is completed – No final Identifier is supplied	0000	C-FIND Request processed successfully.

Table 2-21: ARIA Worklist Service Response Status Values for C-FIND response

2.2.1.7.7 Activity – Create Modality Performed Procedure Step (N-CREATE)

2.2.1.7.7.1 Description and Sequencing of Activity

If the ARIA Worklist Service AE receives a Modality Performed Procedure Step (MPPS) N-CREATE request, it will match it to a scheduled Appointment. If no Appointment is found, a new Appointment is created if all necessary information is given.

The Appointment status will be set to 'In Progress'.

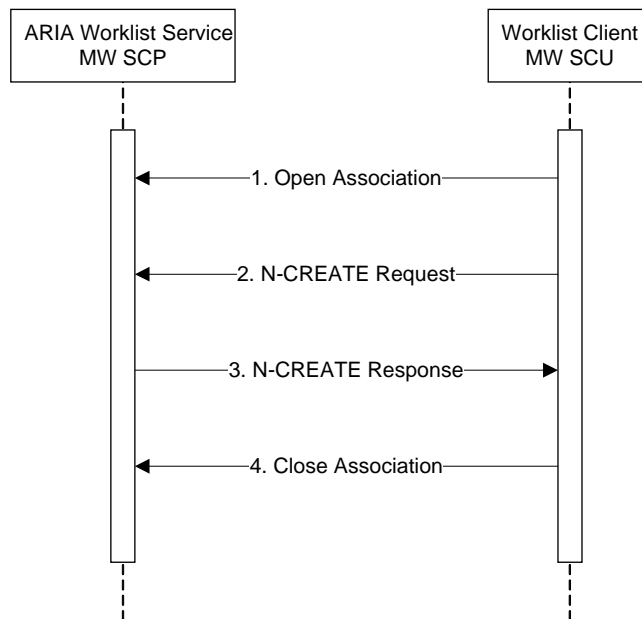


Figure 2-10: Sequencing of Activities – ARIA Worklist Service handling N-CREATE requests

A typical sequence of interactions between ARIA Worklist Service N-CREATE SCP and a remote N-CREATE SCU requesting the creation of a Modality Performed Procedure Step is illustrated in Figure 2-10

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends one N-CREATE Request.
3. The ARIA Worklist service gets the Appointment with given Requested Procedure ID, Patient ID and Study UID.
4. If the appointment is found, the Appointment status will be set to 'In Progress'.
5. The ARIA Worklist service sends a success response.
6. Remote AE releases Association.

The workflow for adding another MPPS to a MSPS is the same. The only difference is that the appointment status is Completed or Canceled before it will be set again to In Progress.

2.2.1.7.7.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in the table below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Table 2-22: Acceptable Presentation Contexts for ARIA Worklist Service – N-CREATE

2.2.1.7.7.3 SOP Specific Conformance

The ARIA Worklist Service Application Entity does not support the full set of Type 1 attribute. ARIA Worklist Service does not look at the not supported attributes, and therefore may return a success, even if not all requested information is updated.

Attribute Name	Tag	VR	Remark
Specific Character Set	(0008,0005)	CS	*** Not Implemented ***
SOP Instance UID	(0008,0018)	UI	*** Not Implemented ***
Scheduled Step Attribute Sequence	(0040,0270)	SQ	One or more items supported.
> Study Instance UID	(0020,000D)	UI	Used to identify scheduled appointment
> Accession Number	(0008,0050)	SH	*** Not Implemented ***
> Requested Procedure ID	(0040,1001)	SH	Used to identify scheduled appointment
> Requested Procedure Code Sequence	(0032,1064)	SQ	*** Not Implemented ***
>> Code Value	(0008,0100)	SH	*** Not Implemented ***
>> Coding Scheme Designator	(0008,0102)	SH	*** Not Implemented ***
>> Code Meaning	(0008,0103)	SH	*** Not Implemented ***
Patient's Name	(0010,0010)	PN	*** Not Implemented ***
Patient ID	(0010,0020)	LO	Used to identify scheduled appointment
Patient's Birth Date	(0010,0030)	DA	*** Not Implemented ***
Performed Procedure Step ID	(0040,0253)	SH	*** Not Implemented ***
Performed Station AE Title	(0040,0241)	AE	Used to find machine. The machine will be linked to the appointment.
Performed Procedure Step Start Date	(0040,0244)	DA	Performed Procedure Start Date Time

Attribute Name	Tag	VR	Remark
Performed Procedure Step Start Time	(0040,0245)	TM	Performed Procedure Start Date Time
Performed Procedure Step Status	(0040,0252)	CS	Performed Procedure status
Procedure Code Sequence	(0008,1032)	SQ	*** Not Implemented ***
> Code Value	(0008,0100)	SH	*** Not Implemented ***
> Coding Scheme Designator	(0008,0102)	SH	*** Not Implemented ***
> Code Meaning	(0008,0103)	SH	*** Not Implemented ***
Modality	(0008,0060)	CS	*** Not Implemented ***
Performed Protocol Code Sequence	(0040,0260)	SQ	*** Not Implemented ***
> Code Value	(0008,0100)	SH	*** Not Implemented ***
> Coding Scheme Designator	(0008,0102)	SH	*** Not Implemented ***

Table 2-23: Supported attributes of an N-CREATE request

The ARIA Worklist Service Application Entity will return one of the following Response Status to the N-CREATE Request.

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent
Failure	Unable to process	C000 - CFFF	Possible reasons: More than one scheduled appointment found Unexpected error
Success	MPPS is created	0000	MPPS processed successfully.

Table 2-24: ARIA Worklist Service Response Status Values for N-CREATE response

2.2.1.7.8 Activity – Update Modality Performed Procedure Step (N-SET)

2.2.1.7.8.1 Description and Sequencing of Activity

If the ARIA Worklist Service receives an N-SET request, it will update the MPPS if the status of the MPPS is IN PROGRESS. It will then send the response message over the same association used to send the N-SET request.

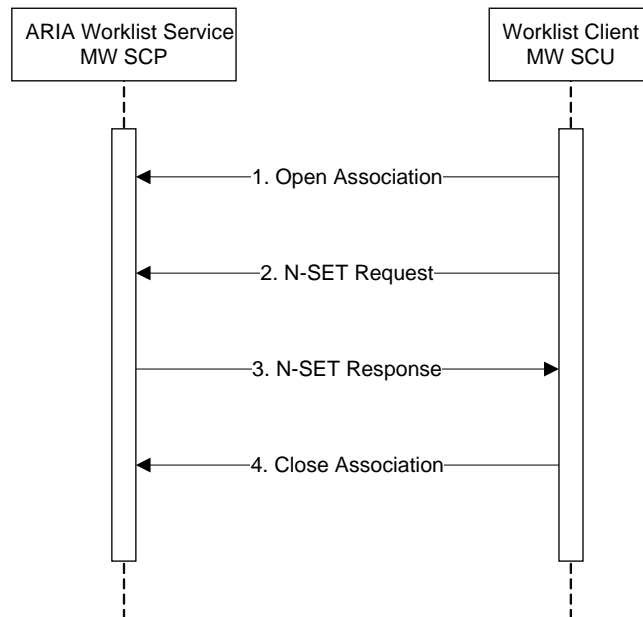


Figure 2-11: Sequencing of Activities – ARIA Worklist Service handling N-SET Requests

A typical sequence of interactions between ARIA Worklist Service N-SET SCP and a remote N-SET SCU requesting MPPS updates is illustrated in Figure 2-7.

1. Remote AE opens Association to ARIA Worklist Service.
2. Remote AE sends one N-SET Requests.
3. The ARIA Worklist Service updates the MPPS with the new information if an update is allowed.
4. Remote AE releases Association.

2.2.1.7.8.2 Accepted Presentation Contexts

The ARIA Worklist Service accepts Presentation Contexts shown in Table 2-22.

2.2.1.7.8.3 SOP Specific Conformance

The ARIA Worklist Service Application Entity does not support the full set of Type 1 attribute. ARIA Worklist Service does not look at the not supported attributes, and therefore may return a success, even if not all requested information is updated.

Attribute Name	Tag	VR	Remark
Requested SOP Instance UID	(0000,1001)	UI	Used to get appointment
Performed Procedure Step Status	(0040,0252)	CS	Appointment status
Performed Procedure Step End Date	(0040,0250)	DA	*** Not Implemented ***
Performed Procedure Step End Time	(0040,0251)	TM	*** Not Implemented ***
Performed Protocol Code Sequence	(0040,0260)	SQ	*** Not Implemented ***

Attribute Name	Tag	VR	Remark
> Code Value	(0008,0100)	SH	*** Not Implemented ***
> Coding Scheme Designator	(0008,0102)	SH	*** Not Implemented ***
Performed Series Sequence	(0040,0340)	SQ	*** Not Implemented ***

Table 2-25: Supported attributes of an N-SET request

The ARIA Worklist Service Application Entity will return one of the following Response Status to the N-SET Request.

Service Status	Further Meaning	Error Code	Reason
Refused	Out of Resources	A700	Never sent
Failure	May No Longer Be Updated	A501	Appointment is in a final state and cannot be updated anymore. An error is returned
	Unmatched Transaction UID	A505	Invalid Transaction UID, no update is done, an error is returned.
	Processing Failure	C001	Error ID is set to give more information about Error: 0xC100: N-SET Request: Unexpected Command / Unexpected Error
Success	Modality Performed Procedure Step is successfully updated	0000	Update of all supported attributes was successful

Table 2-26: ARIA Worklist Service Response Status Values for N-SET response

2.3 Network Interfaces

2.3.1 Physical Network Interfaces

The application is indifferent to the physical medium over which TCP/IP executes; which is dependent on the underlying operating system and hardware.

2.3.2 Additional Protocols

When host names rather than IP addresses are used in the configuration properties to specify presentation addresses for remote AEs, the application is dependent on the name resolution mechanism of the underlying operating system (e.g. DNS).

2.3.2.1 IPv4 and IPv6 Support

This product supports both IPv4 and IPV6. It does not utilize any of the optional configuration identification of security features of IPv6.

3. Media Interchange

ARIA Worklist Service Application Entity does not support Media Interchange.

4. Support of Character Sets

ARIA Worklist service supports the following Specific character sets.

- ISO_IR 100 (ISO 8859-1 Western European)
- ISO_IR 192 (Unicode in UTF-8)
- ISO_IR 101 (ISO 8859-2 Central European)
- ISO_IR 109 (ISO 8859-3 Latin 3)
- ISO_IR 110 (ISO 8859-4 Baltic)
- ISO_IR 144 (ISO 8859-5 Cyrillic)
- ISO_IR 127 (ISO 8859-6 Arabic)
- ISO_IR 126 (ISO 8859-7 Greek)
- ISO_IR 138 (ISO 8859-8 Hebrew)
- ISO_IR 148 (ISO 8859-9 Turkish)
- ISO_IR 166 (ISO 8859-15 Thai)
- ISO_IR 13 (Japanese JIS X 0201 Katakana)
- GB18030 (Simplified Chinese)

5. Security

5.1 Security Profiles

No Security Profiles are supported.

5.2 Association Level Security

The ARIA Worklist Service Application Entity checks the following values when determining whether to accept Association Open Requests:

- Called AE Title

By default those additional checks are disabled when setting up a new ARIA Worklist Service configuration. The security can be enabled by setting the appropriate configuration value in the DICOM Worklist Service configuration dialog.

5.3 Application Level Security

To set up a new ARIA Worklist Service configuration or to change an existing ARIA Worklist Service configuration local administrative credentials on the affected computer are required

Appendix A IOD Details

A.1 Supported IODs

For better reference with DICOM Standard [1] and Supplement 96 [3] section titles of the following sub-sections are decorated with section number of DICOM Standard or Supplement 96 where the corresponding IOD Module table can be found

Note: In Supported IODs value of “*** Not Implemented ***” in the Module Description column indicates that the Module is NOT used and therefore ignored by the application.

A.1.1 Unified Worklist and Procedure Step – B.X.2

IE	Module	Reference	Module Description
Unified Procedure Step	Unified Procedure Step Relationship Module	Unified Procedure Step Relationship Module – C.X.4	References the related SOPs and IEs
	Unified Procedure Step Scheduled Procedure Information	Unified Procedure Step Scheduled Procedure Information Module – C.X.2	Describes the UPS task to be performed including information about place, time, priority and input data
	Unified Procedure Step Progress Information	Unified Procedure Step Progress Information Module – C.X.1	Describes the progress of a UPS task
	Unified Procedure Step Performed Procedure Information	Unified Procedure Step Performed Procedure Information Module – C.X.3	Describes the work performed including information about status, place, time and result data
	SOP Common	SOP Common – C.12.1	Contains SOP common information

Table A-1: Unified Procedure Step IOD Modules

A.1.2 RT Beams Delivery Instruction IOD Module Table – A.tt.3-1

IE	Module	Reference	Module Description
Patient	Patient	Patient-C.7.1.1	
	Clinical Trial Subject	Clinical Trial Subject-C.7.1.3	*** Not Implemented ***
Study	General Study	General Study-C.7.2.1	
	Patient Study	Patient Study-C.7.2.2	
	Clinical Trial Study	Clinical Trial Study-C.7.2.3	
Series	General Series	General Series-C.7.3.1	
	Clinical Trial Series	Clinical Trial Series-C.7.3.2	
Equipment	General Equipment	General Equipment-C.7.5.1	*** Not Implemented ***
Treatment Delivery	RT Beams Delivery Instruction	RT Beams Delivery Instruction-C.8.8.aa	
	Common Instance Reference Module	Common Instance Reference Module - C.12.2	*** Not Implemented ***
	SOP Common	SOP Common – C.12.1	

Table A-2: RT Beams Delivery Instruction IOD Modules

A.1.3 Secondary Capture Image IOD Modules

IE	Module	Reference	Module Description
Patient	Patient	Patient-C.7.1.1	

IE	Module	Reference	Module Description
	Clinical Trial Subject	Clinical Trial Subject-C.7.1.3	*** Not Implemented ***
Study	General Study	General Study-C.7.2.1	
	Patient Study	Patient Study-C.7.2.2	*** Not Implemented ***
	Clinical Trial Study	Clinical Trial Study-C.7.2.3	*** Not Implemented ***
Series	General Series	General Series-C.7.3.1	
	Clinical Trial Series	Clinical Trial Series-C.7.3.2	*** Not Implemented ***
Equipment	General Equipment	General Equipment-C.7.5.1	*** Not Implemented ***
	SC Equipment	SC Equipment Module-C.8.6.1	
Image	General Image	General Image Module-C.7.6.1	
	Image Pixel	Image Pixel Module-C.7.6.3	
	Device	Device Module-C.7.6.12	*** Not Implemented ***
	Specimen	Specimen Module-C.7.6.22	*** Not Implemented ***
	SC Image	SC Image Module-C.8.6.2	*** Not Implemented ***
	Overlay Plane	Overlay Pane Module-C.9.2	*** Not Implemented ***

IE	Module	Reference	Module Description
	Modality LUT	Modality LUT Module- C.11.1	*** Not Implemented ***
	VOI LUT	VOI LUT Module- C.11.2	*** Not Implemented ***
	SOP Common	SOP Common – C.12.1	

Table A-3: Secondary Capture Image IOD Modules

A.1.4 Modality Worklist Information – K.6.1.2

IE	Module	Reference	Module Description
Patient	Patient Relationship	Patient Relationship – C.2.1	*** Not Implemented ***
	Patient Identification	Patient Identification – C.2.2	
	Patient Demographic	Patient Demographic – C.2.3	
	Patient Medical	Patient Medical – C.2.4	
Visit	Visit Relationship	Visit Relationship – C.3.1	*** Not Implemented ***
	Visit Identification	Visit Identification – C.3.2	*** Not Implemented ***
	Visit Status	Visit Status – C.3.3	*** Not Implemented ***
	Visit Admission	Visit Admission – C.3.4	
Scheduled Procedure Step	SOP Common	SOP Common – C.12.1	Contains SOP common information
	Scheduled Procedure Step	Scheduled Procedure Step – C.4.10	

IE	Module	Reference	Module Description
Requested Procedure	Requested Procedure	Requested Procedure – C.4.11	
Imaging Service Request	Imaging Service Request	Imaging Service Request – C.4.12	

Table A-4: Modality Worklist Scheduled Information Modules

A.1.5 Modality Performed Procedure Step – B.17.2

IE	Module	Reference	Module Description
Modality Performed Procedure Step	SOP Common	SOP Common – C.12.1	Contains SOP common information
	Performed Procedure Step Relationship	Performed Procedure Step Relationship – C.4.13	Referenced the related SOPs and IEs
	Performed Procedure Step Information	Performed Procedure Step Information – C.4.14	Includes identifying and status information as well as place and time
	Image Acquisition Results	Image Acquisition Results – C.4.15	Identifies Series and Images related to this PPS and specific image acquisition conditions.
	Radiation Dose	Radiation Dose – C.4.16	*** Not Implemented ***
	Billing and Material Management Codes	Billing and Material Management Codes – C.4.17	Contains codes for billing and material management.

Table A-5: Modality Performed Procedure Step IOD Modules

A.2 Modules and Attributes

For better reference with DICOM Standard [1] section titles of the following sub-sections are decorated with section number of DICOM Standard Part 3 where the corresponding Module Attribute table can be found.

The first four columns in the following tables contain definitions from the DICOM standard. References in those columns refer to the DICOM Standard [1] and not to this document.

The “Handling” column describes for each Attribute whether it is supported and to which database attribute it maps. A value of “*** Not Implemented ***” indicates that an Attribute is unknown and therefore ignored by the application.

Note: The “Attribute Name” column in the following tables contains references to following tables. Please refer DICOM Standard [1] for more information about the content of these tables.

- ‘Person Identification Macro’ Table 10-1
- ‘Content Item Macro’ Table 10-2
- ‘Image SOP Instance Reference Macro’ Table 10-3
- ‘Request Attributes Macro’ Table 10-9
- ‘SOP Instance Reference Macro’ Table 10-11
- ‘Performed Procedure Step Summary Macro’ Table 10-16
- ‘Code Sequence Macro’ Table 8.8-1

A.2.1 Unified Procedure Step Progress Information Module – C.X.1

Attribute Name	Tag	Type	Description	Handling
Unified Procedure Step State	(0074,1000)		<p>Contains the state of the Unified Procedure Step. See F.X.1 for more details.</p> <p>Enumerated Values:</p> <p>SCHEDULED = The UPS is scheduled to be performed.</p> <p>IN PROGRESS = An SCU has taken ownership of the UPS and has likely started performing the procedure step. This is the only state that implies an exclusive lock.</p> <p>CANCELED = The UPS has been permanently stopped before or during execution of the step due to voluntary or involuntary action by a human or machine.</p> <p>COMPLETED = The UPS has been completed.</p> <p>Note: CANCELLED with two L's is NOT a valid value.</p>	<p>The Appointment Status is set based of the following rule:</p> <p>“Open” -> All Unified Procedure Steps belonging to this appointment have state “SCHEDULED”</p> <p>“Canceled” -> All Unified Procedure Steps belonging to this appointment have state “CANCELED” and Progress 0</p> <p>“In Progress” -> One of the Unified Procedure Steps has state “IN PROGRESS”</p> <p>“Part. Compl. Finished” -> All Unified Procedure Steps reached a final state (COMPLETED or CANCELED), and at least one of them has a Progress bigger than 0.</p> <p>“Part. Compl. Active” -> All other cases.</p>
UPS Progress Information Sequence	(0074,1002)		Zero or one item may be present.	Zero or one item supported.
>Unified Procedure Step Progress	(0074,1004)		<p>A numerical indicator of progress expressed as percentage complete.</p> <p>Note: This is primarily for simplicity and ease of rendering (e.g. progress bar). The percentage is not necessarily an accurate indication of total time.</p>	Performed Procedure Progress
>Unified Procedure Step Progress Description	(0074,1006)		A textual description of progress. For example, it might contain “Annealing complete”.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Unified Procedure Step Communications URI Sequence	(0074,1008)		Zero or more items may be present in this sequence.	*** Not Implemented ***
>>Contact URI	(0074,100a)		URI to communicate with performer of the procedure in progress. Any URI (telephone number, URL, etc.) is permitted.	*** Not Implemented ***
>>Contact Display Name	(0074,100c)		Name of the person, department or organization to contact for more information about the performance of the procedure step.	*** Not Implemented ***
>Unified Procedure Step Discontinuation Code Sequence	(0074,100e)		Reasons for Discontinuation	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***

A.2.2 Unified Procedure Step Scheduled Procedure Information Module – C.X.2

Attribute Name	Tag	Type	Description	Handling
Scheduled Procedure Step Priority	(0074,1200)		<p>Priority of the scheduled Unified Procedure Step</p> <p>Enumerated Values are:</p> <p>HIGH: used to indicate an urgent or emergent work item, equivalent to a STAT request.</p> <p>MEDIUM: used to indicate a work item that has a priority less than HIGH and higher than LOW. It can be used to further stratify work items.</p> <p>LOW: used to indicate a routine or non-urgent work item.</p>	Scheduled Procedure Priority if this value is defined, otherwise Appointment Priority

Attribute Name	Tag	Type	Description	Handling
Scheduled Procedure Information Modification Date and Time	(0040,4010)		Date and time when the Scheduled Procedure Information was last modified or first created (whichever is most recent). Note: This attribute should be implicitly updated by the worklist management system whenever any modification is made to Scheduled Procedure Information Module attributes of a Unified Procedure Step.	*** Not Implemented ***
Worklist Label	(0074,1202)		A label identifying the worklist to which the Unified Procedure Step instance belongs.	Scheduled Procedure Worklist Label, which is usually set to "Varian Delivery Worklist"
Procedure Step Label	(0074,1204)		A label describing the task of the Unified Procedure Step in text appropriate for displaying in the user selection interface.	Scheduled Procedure Step Label. This value is usually set the Procedure Step Label defined for the first Procedure Item
Comments on the Scheduled Procedure Step	(0040,0400)		User-defined comments on the scheduled Unified Procedure Step.	Read-Only Appointment Note added in Appointment Dialog of Appointment Scheduling. Limited to 254 character
Scheduled Station Name Code Sequence	(0040,4025)		Identifying name within the enterprise of the equipment for which the Unified Procedure Step is scheduled. The name conveyed in the Code Value (0008,0100) may be the same as the AE Title, but does not have to be. Zero or more Items may be included in this sequence.	Zero or one item supported.
>Code Value	(0008,0100)		See Section 8.1. Required if a sequence item is present.	Machine ID (Configured in RT Admin Application as Machine ID.)
>Coding Scheme Designator	(0008,0102)		See Section 8.2. Required if a sequence item is present.	" 99VMS_MACHINE"

Attribute Name	Tag	Type	Description	Handling
>Code Meaning	(0008,0104)		See Section 8.3. Required if a sequence item is present.	Machine ID (Configured in Data Admin Application as Code Value for Unified Worklist in Resource Details.)
Scheduled Station Class Code Sequence	(0040,4026)		Class of the equipment for which the Unified Procedure Step is scheduled. Zero or more Items may be included in this sequence.	Zero or one item supported.
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	PDS
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	"99VMS_IHE"
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	"Positioning and Delivery System"
Scheduled Station Geographic Location Code Sequence	(0040,4027)		Geographic location of the equipment for which the Unified Procedure Step is scheduled. Zero or more Items may be included in this sequence.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Scheduled Human Performers Sequence	(0040,4034)		The list of human performers that are scheduled to be involved or responsible for performing the Workitem in the Unified Procedure Step. Zero or more Items may be included in this sequence.	Zero or one item supported. Filled when schedulable resource of Staff Type Doctor / Staff is added in Resource/Staff of Appointment Dialog in Appointment Scheduling application.

Attribute Name	Tag	Type	Description	Handling
>Human Performer Code Sequence	(0040,4009)		Human performer that is involved or responsible for performing the Workitem. Only a single Item shall be permitted in this sequence.	Zero or one item supported.
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	Code Value configured in Staff Details -> DICOM Worklist tab for Resource of Staff Type Doctor / Staff (Configured in Data Admin Application -> Staff & Resources -> Doctors & Staff.)
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	Code Scheme configured in Staff Details -> DICOM Worklist tab for Resource of Staff Type Doctor / Staff (Configured in Data Admin Application -> Staff & Resources -> Doctors & Staff.)
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	Display Name of Resource of Staff Type Doctor / Staff (Configured in Data Admin Application -> Staff & Resources -> Doctors & Staff.)
>Human Performer's Name	(0040,4037)		Name of the human performer.	*** Not Implemented ***
>Human Performer's Organization	(0040,4036)		Organization to which the human performer is accountable for the activities in the Workitem.	*** Not Implemented ***
Scheduled Procedure Step Start Date and Time	(0040,4005)		Date and time on which the Unified Procedure Step is scheduled to start.	Scheduled Procedure Step Date and Start Time The value is between the Appointment Start Date & Time and End Date & Time

Attribute Name	Tag	Type	Description	Handling
Expected Completion Date and Time	(0040,4011)		Date and time on which the Unified Procedure Step is expected to be completed.	Scheduled Procedure Step End Date and End Time The value is between the Appointment Start Date & Time and End Date & Time
Scheduled Workitem Code Sequence	(0040,4018)		A sequence that conveys the code for the Workitem. Only a single Item shall be permitted in this sequence.	Procedure Item
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	Procedure Item Code Value
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	Procedure Item DICOM Coding Scheme Designator value "DCM".
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	Procedure Item Code Meaning
Scheduled Processing Parameters Sequence	(0074,1210)		A sequence that conveys the processing parameters to be used by the performing system when carrying out the Workitem. Zero or more Items may be included in this sequence.	One or more items supported.
>Value Type	(0040,A040)		The type of the value encoded in this name-value item. Enumerated Value: DATETIME DATE TIME PNAME UIDREF TEXT CODE NUMERIC	Only TEXT is supported.

Attribute Name	Tag	Type	Description	Handling
>Concept Name Code Sequence	(0040,A043)		Coded concept name of this name-value item.	Only one item supported.
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	For Treatment Delivery Type: 2008001 For Patient Check-in Status: 1001
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	For Treatment Delivery Type: 99IHERO2008 For Patient Check-in Status: 99VMS_DWLPARAM
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	For Treatment Delivery Type: Treatment Delivery Type For Patient Check-in Status: Patient Check-in Status
>DateTime	(0040,A120)		DateTime value for this name-value item. Required if Value Type (0040,A040) is DATETIME.	*** Not Implemented ***
>Date	(0040,A121)		Date value for this name-value item. Required if Value Type (0040,A040) is DATE.	*** Not Implemented ***
>Time	(0040,A122)		Time value for this name-value item. Required if Value Type (0040,A040) is TIME.	*** Not Implemented ***
>Person Name	(0040,A123)		Person name value for this name-value item. Required if Value Type (0040,A040) is PNAME.	*** Not Implemented ***
>UID	(0040,A124)		UID value for this name-value item. Required if Value Type (0040,A040) is UIDREF.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Text Value	(0040,A160)		Text value for this name-value item. Required if Value Type (0040,A040) is TEXT.	Supported values for Treatment Delivery Type: TREATMENT CONTINUATION Note: For normal patient treatment 'Treatment Delivery Type' is TREATMENT & for continuation of interrupted treatment 'Treatment Delivery Type' is CONTINUATION. For Patient Check-in Status: CHECKEDIN NOT CHECKEDIN
>Concept Code Sequence	(0040,A168)		Coded concept value for this name-value item.Required if Value Type (0040,A040) is CODE	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Numeric Value	(0040,A30A)		Numeric value for this name-value item. Required if Value Type (0040,A040) is NUMERIC.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Measurement Units Code Sequence	(0040,08EA)		Units of measurement for a numeric value in this name-value item. Required if Value Type (0040,A040) is NUMERIC.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Input Availability Flag	(0040,4020)		Flag that indicates the availability of Composite SOP Instances referenced in the Attribute “Input Information Sequence” (0040,4021) of the Unified Procedure Step. Enumerated values are: INCOMPLETE COMPLETE The value INCOMPLETE denotes that the list of Composite SOP Instances may not yet be complete. The value COMPLETE denotes that all Composite SOP Instances are available and listed. Note: It may happen that the list of Composite SOP Instances is empty when the value of the Input Availability Flag is COMPLETE. In such a case a Workitem has been scheduled that does not require input information.	COMPLETE if the required Input can be provided, otherwise INCOMPLETE

Attribute Name	Tag	Type	Description	Handling
Input Information Sequence	(0040,4021)		List of Composite SOP Instances that forms the input information needed to perform the scheduled Unified Procedure Step. See also Input Availability Flag (0040,4020). Zero or more Items may be included in this sequence.	Zero or more Items supported. Supported SOP Instances: Scheduled Plan RT Beams Delivery Instruction Secondary Capture Image Treatment Record Notes: For Brachy treatment, RT Beams Delivery Instruction is not supported. Treatment Record is only present for partial treatment.
> Study Instance UID	(0020,000D)	1	Unique identifier for the Study	Study Instance UID
> Referenced Series Sequence	(0008,1115)	1	Sequence of Items where each Item includes the Attributes of a Series containing referenced Composite Object(s). One or more Items may be included in this sequence	One or more items supported.
>> Series Instance UID	(0020,000E)	1	Unique identifier of a Series that is part of this Study and contains the referenced Composite Object(s).	Series Instance UID
>> Retrieve AE Title	(0008,0054)	3	Title of the DICOM Application Entity where the Composite Object(s) may be retrieved on the network.	For Plan / Treatment Record- Archive AE Title configured in the Worklist Service Configuration For BDI / SC Image – Worklist Service AE Title configured in the Worklist Service Configuration

Attribute Name	Tag	Type	Description	Handling
>> Storage Media File-Set ID	(0088,0130)	3	The user or implementation specific human readable identifier that identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>> Storage Media File-Set UID	(0088,0140)	3	Uniquely identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>> Referenced SOP Sequence	(0008,1199)	1	References to Composite Object SOP Class/SOP Instance pairs that are part of the Study defined by Study Instance UID and the Series defined by Series Instance UID (0020,000E). One or more Items may be included in this sequence	One or more items supported.
>>> Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.	SOP Class UID
>>> Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.	SOP Instance UID
>> Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made. One or more Items may be included in this sequence.	*** Not Implemented ***
>>> Include 'Code Sequence Macro' Table 8.8-1			Baseline Context ID may be specified in Macro invocation.	*** Not Implemented ***
>> Referenced Digital Signature Sequence	(0400,0402)	3	Sequence of references to Digital Signatures in the referenced SOP Instance. One or more Items may be present. Note: The Attributes in this sequence can be used to detect if the referenced SOP Instance has been altered.	*** Not Implemented ***
>>> Digital Signature UID	(0400,0100)	1	The Unique Identifier of a Digital Signature held in the referenced SOP Instance.	*** Not Implemented ***
>>> Signature	(0400,0120)	1	The Signature Value identified by the Digital Signature UID within the Referenced SOP Instance UID.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>> Referenced SOP Instance MAC Sequence	(0400,0403)	3	<p>A MAC Calculation from data in the referenced SOP Instance that can be used as a data integrity check.</p> <p>Only a single Item shall be permitted in this Sequence.</p> <p>Note: This Attribute may be used in place of the Referenced Digital Signature Sequence Attribute (0400,0402), particularly if the SOP Instance does not have appropriate Digital Signatures that can be referenced.</p>	*** Not Implemented ***
>>> MAC Calculation Transfer Syntax UID	(0400,0010)	1	<p>The Transfer Syntax UID used to encode the values of the Data Elements included in the MAC calculation. When computing the MAC, only Transfer Syntaxes that explicitly include the VR and use Little Endian encoding shall be used.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Certain Transfer Syntaxes, particularly those that are used with compressed data, allow the fragmentation of the pixel data to change. If such fragmentation changes, Digital Signatures generated with such Transfer Syntaxes could become invalid. 2. This does not constrain the transfer syntax used to transmit the object. 	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>> MAC Algorithm	(0400,0015)	1	The algorithm used in generating the MAC. Defined Terms: RIPEMD160 MD5 SHA1 Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.	*** Not Implemented ***
>>> Data Elements Signed	(0400,0020)	1	A list of Data Element Tags in the order they appear at the top level of the referenced SOP Instance that identify the Data Elements used in creating the MAC. See Section C.12.1.1.3.1.1.	*** Not Implemented ***
>>> MAC	(0400,0404)	1	The MAC generated as described in Section 12.2.1.1, but unencrypted and without inclusion of fields from the Digital Signatures Sequence. See Section C.12.1.1.3.1.2.	*** Not Implemented ***
Study Instance UID	(0020,000D)		Unique Study identification that shall be used for the created Composite SOP Instances resulting from this Unified Procedure Step. Note: In most cases this will be the same Study Instance UID as for the instances in the Input Information Sequence (0040,4021).	Study Instance UID of Plan, if Plan is present, otherwise not supplied.

A.2.3 Unified Procedure Step Performed Procedure Information Module – C.X.3

Attribute Name	Tag	Type	Description	Handling
UPS Performed Procedure Sequence	(0074,1216)		Zero or one item may be present.	Zero or one item supported

Attribute Name	Tag	Type	Description	Handling
>Actual Human Performers Sequence	(0040,4035)		The list of human performers that are/were actually involved or responsible for performing the Procedure Step. Zero or more Items may be included in this sequence. Note: Initially this list will be empty. A list of entries may be created at or after the status transition of the Unified Procedure Step State (0074,1000) to "IN PROGRESS"	*** Not Implemented ***
>>Human Performer Code Sequence	(0040,4009)		Human performer that is involved or responsible for performing the Workitem. Only a single Item shall be permitted in this sequence.	*** Not Implemented ***
>>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>>Human Performer's Name	(0040,4037)		Name of the human performer.	*** Not Implemented ***
>>Human Performer's Organization	(0040,4036)		Organization to which the human performer is accountable for the activities in the Workitem.	*** Not Implemented ***
>Performed Station Name Code Sequence	(0040,4028)		Name within the enterprise of the equipment that created the Procedure Step. This name may be the same as the AE Title, but does not have to be. Zero or one Item may be included in this sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Station Class Code Sequence	(0040,4029)		Class of the equipment that created the Procedure Step. Zero or one Item may be included in this sequence	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Station Geographic Location Code Sequence	(0040,4030)		Geographic location of the equipment that created Procedure Step. Zero or one Item may be included in this sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Processing Applications Code Sequence	(0040,4007)		The list of processing application instances and/or application types on which the Procedure Step is executed. Zero or more Items may be included in this sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Procedure Step Start Date	(0040,0244)		Date on which the Procedure Step started.	Performed Procedure Start Date
>Performed Procedure Step Start Time	(0040,0245)		Time at which the Procedure Step started.	Performed Procedure Start Time
>Performed Procedure Step Description	(0040,0254)		Institution-generated description or classification of the Procedure Step that was performed.	Activity Description (Not displayed in any of the ARIA applications.)
>Performed Workitem Code Sequence	(0040,4019)		A sequence that conveys the type of procedure performed. Zero or more items may be present in this sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Processing Parameters Sequence	(0074,1212)		A sequence that conveys details of the procedure performed. Zero or more items may be present in this sequence	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Value Type	(0040,A040)		The type of the value encoded in this name-value item. Enumerated Value: DATETIME DATE TIME PNAME UIDREF TEXT CODE NUMERIC	*** Not Implemented ***
>>Concept Name Code Sequence	(0040,A043)		Coded concept name of this name-value item.	*** Not Implemented ***
>>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>>DateTime	(0040,A120)		DateTime value for this name-value item. Required if Value Type (0040,A040) is DATETIME.	*** Not Implemented ***
>>Date	(0040,A121)		Date value for this name-value item. Required if Value Type (0040,A040) is DATE.	*** Not Implemented ***
>>Time	(0040,A122)		Time value for this name-value item. Required if Value Type (0040,A040) is TIME.	*** Not Implemented ***
>>Person Name	(0040,A123)		Person name value for this name-value item. Required if Value Type (0040,A040) is PNAME.	*** Not Implemented ***
>>UID	(0040,A124)		UID value for this name-value item. Required if Value Type (0040,A040) is UIDREF.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Text Value	(0040,A160)		Text value for this name-value item. Required if Value Type (0040,A040) is TEXT.	*** Not Implemented ***
>>Concept Code Sequence	(0040,A168)		Coded concept value for this name-value item. Required if Value Type (0040,A040) is CODE	*** Not Implemented ***
>>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>>Numeric Value	(0040,A30A)		Numeric value for this name-value item. Required if Value Type (0040,A040) is NUMERIC.	*** Not Implemented ***
>>Measurement Units Code Sequence	(0040,08EA)		Units of measurement for a numeric value in this name-value item. Required if Value Type (0040,A040) is NUMERIC.	*** Not Implemented ***
>>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Performed Procedure Step End Date	(0040,0250)		Date on which the Procedure Step ended.	Performed Procedure Actual End Date
>Performed Procedure Step End Time	(0040,0251)		Time at which the Procedure Step ended.	Performed Procedure Actual End Time

Attribute Name	Tag	Type	Description	Handling
>Output Information Sequence	(0040,4033)		A Sequence that provides reference to any resulting Composite SOP instances or HL7 Structured Documents (unencapsulated) created. Zero or more Items may be included in this sequence.	Zero or more Items supported Supported SOP Instances: Treatment Record
>> Study Instance UID	(0020,000D)	1	Unique identifier for the Study	Study Instance UID
>> Referenced Series Sequence	(0008,1115)	1	Sequence of Items where each Item includes the Attributes of a Series containing referenced Composite Object(s). One or more Items may be included in this sequence	One or more items supported.
>>> Series Instance UID	(0020,000E)	1	Unique identifier of a Series that is part of this Study and contains the referenced Composite Object(s).	Series Instance UID
>>> Retrieve AE Title	(0008,0054)	3	Title of the DICOM Application Entity where the Composite Object(s) may be retrieved on the network.	Retrieve AE Title
>>> Storage Media File-Set ID	(0088,0130)	3	The user or implementation specific human readable identifier that identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>>> Storage Media File-Set UID	(0088,0140)	3	Uniquely identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>>> Referenced SOP Sequence	(0008,1199)	1	References to Composite Object SOP Class/SOP Instance pairs that are part of the Study defined by Study Instance UID and the Series defined by Series Instance UID (0020,000E). One or more Items may be included in this sequence	One or more items supported.
>>>> Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.	SOP Class UID

Attribute Name	Tag	Type	Description	Handling
>>>> Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.	SOP Instance UID
>>> Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made. One or more Items may be included in this sequence.	*** Not Implemented ***
>>>> Include 'Code Sequence Macro' Table 8.8-1			Baseline Context ID may be specified in Macro invocation.	*** Not Implemented ***
>>> Referenced Digital Signature Sequence	(0400,0402)	3	Sequence of references to Digital Signatures in the referenced SOP Instance. One or more Items may be present. Note: The Attributes in this sequence can be used to detect if the referenced SOP Instance has been altered.	*** Not Implemented ***
>>>> Digital Signature UID	(0400,0100)	1	The Unique Identifier of a Digital Signature held in the referenced SOP Instance.	*** Not Implemented ***
>>>> Signature	(0400,0120)	1	The Signature Value identified by the Digital Signature UID within the Referenced SOP Instance UID.	*** Not Implemented ***
>>> Referenced SOP Instance MAC Sequence	(0400,0403)	3	A MAC Calculation from data in the referenced SOP Instance that can be used as a data integrity check. Only a single Item shall be permitted in this Sequence. Note: This Attribute may be used in place of the Referenced Digital Signature Sequence Attribute (0400,0402), particularly if the SOP Instance does not have appropriate Digital Signatures that can be referenced.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>>> MAC Calculation Transfer Syntax UID	(0400,0010)	1	<p>The Transfer Syntax UID used to encode the values of the Data Elements included in the MAC calculation. When computing the MAC, only Transfer Syntaxes that explicitly include the VR and use Little Endian encoding shall be used.</p> <p>Notes: 1. Certain Transfer Syntaxes, particularly those that are used with compressed data, allow the fragmentation of the pixel data to change. If such fragmentation changes, Digital Signatures generated with such Transfer Syntaxes could become invalid.</p> <p>2. This does not constrain the transfer syntax used to transmit the object.</p>	*** Not Implemented ***
>>>> MAC Algorithm	(0400,0015)	1	<p>The algorithm used in generating the MAC.</p> <p>Defined Terms: RIPEMD160 MD5 SHA1</p> <p>Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.</p>	*** Not Implemented ***
>>>> Data Elements Signed	(0400,0020)	1	<p>A list of Data Element Tags in the order they appear at the top level of the referenced SOP Instance that identify the Data Elements used in creating the MAC. See Section C.12.1.1.3.1.1.</p>	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>>> MAC	(0400,0404)	1	The MAC generated as described in Section 12.2.1.1, but unencrypted and without inclusion of fields from the Digital Signatures Sequence. See Section C.12.1.1.3.1.2.	*** Not Implemented ***
>Non-DICOM Output Code Sequence	(0040,4032)		A Sequence that describes the type of any other output produced as results. Zero or more Items may be included in this sequence. Note: This does not provide a direct link or identifier for the output. Such output may be indexed by Patient ID, Accession # or other similar attributes.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***

A.2.4 Unified Procedure Step Relationship Module – C.X.4

Attribute Name	Tag	Type	Description	Handling
Patient's Name	(0010,0010)		Patient's full legal name.	Patient First Name, Last Name, Middle Name, Honorific, Prefix
Patient ID	(0010,0020)		Primary hospital identification number or code for the patient. See C.X.4.1	Patient ID1
Issuer of Patient ID	(0010,0021)		Identifier of the Assigning Authority that issued the Patient ID.	Patient ID1 Issuer

Attribute Name	Tag	Type	Description	Handling
Other Patient IDs Sequence	(0010,1002)		A sequence of identification numbers or codes used to identify the patient, which may or may not be human readable, and may or may not have been obtained from an implanted or attached device such as an RFID or barcode.	*** Not Implemented ***
>Patient ID	(0010,0020)		An identification number or code used to identify the patient.	*** Not Implemented ***
>Issuer of Patient ID	(0010,0021)		Identifier of the Assigning Authority that issued the Patient ID.	*** Not Implemented ***
>Type of Patient ID	(0010,0022)		The type of identifier in this item. Defined Terms: TEXT RFID BARCODE Note: The identifier is coded as a string regardless of the type, not as a binary value.	*** Not Implemented ***
Patient's Birth Date	(0010,0030)		Date of birth of the named patient.	Patient Birth Date
Patient's Sex	(0010,0040)		Sex of the named Patient. Enumerated Values: M = male F = female O = other	Patient Sex
Admission ID	(0038,0010)		Identification number of the visit as assigned by the healthcare provider	*** Not Implemented ***
Issuer of Admission ID	(0038,0011)		Name of healthcare provider that issued the Admission ID	*** Not Implemented ***
Admitting Diagnoses Description	(0008,1080)		Description of admitting diagnosis (diagnoses).	*** Not Implemented ***
Admitting Diagnoses Code Sequence	(0008,1084)		A sequence that conveys the admitting diagnosis (diagnoses). One or more Items may be included in this Sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Referenced Request Sequence	(0040,A370)		The list of Requested Procedures the Procedure Step shall contribute to. Zero or more Items may be included in the sequence.	Only one item supported
>Study Instance UID	(0020,000D)		Unique identifier for the Study.	*** Not Implemented ***
>Referenced Study Sequence	(0008,1110)		Uniquely identifies the Study SOP Instance associated with this Unified Procedure Step. Only a single Item shall be permitted in this sequence.	*** Not Implemented ***
>>Referenced SOP Class UID	(0008,1150)		Uniquely identifies the SOP Class.	*** Not Implemented ***
>>Referenced SOP Instance UID	(0008,1155)		Uniquely identifies the SOP Instance.	*** Not Implemented ***
>Accession Number	(0008,0050)		A departmental IS generated number that identifies the Imaging Service Request.	*** Not Implemented ***
>Requested Procedure Code Sequence	(0032,1064)		A sequence that conveys the Procedure Type of the Requested Procedure. Zero or one Item may be included in this sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>> Coding Scheme Version	(0008,0103)		See Section 8.2. Required if the value of Coding Scheme Designator (0008,0102) is not sufficient to identify the Code Value (0008,0100) unambiguously. May be present otherwise.	*** Not Implemented ***
>Placer Order Number / Imaging Service Request	(0040,2016)		The order number assigned to the Imaging Service Request by the party placing the order.	Always set to "Not Available".
>Filler Order Number / Imaging Service Request	(0040,2017)		The order number assigned to the Imaging Service Request by the party filling the order.	Always set to "Not Available".
>Requested Procedure ID	(0040,1001)		Identifier of the related Requested Procedure.	Activity Instance ID
>Requested Procedure Description	(0032,1060)		Institution-generated description or classification of the Requested Procedure.	Activity Code
>Reason for the Requested Procedure	(0040,1002)		Reason for requesting this procedure.	*** Not Implemented ***
> Reason for Requested Procedure Code Sequence	(0040,100A)		Coded reason for requesting this procedure.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Requested Procedure Comments	(0040,1400)		User-defined comments on the Requested Procedure.	Read-Only Appointment Note added in Appointment Dialog of Appointment Scheduling. Limited to 254 character.
>Confidentiality Code	(0040,1008)		Confidentiality Constraints on the Requested Procedure by the party filling the order.	*** Not Implemented ***
>Names of Intended Recipients of Results	(0040,1010)		Names of the physicians, who are intended recipients of results.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Imaging Service Request Comments	(0040,2400)		User-defined comments on the Imaging Service Request.	*** Not Implemented ***
>Requesting Physician	(0032,1032)		Physician who requested the Imaging Service Request.	*** Not Implemented ***
>Requesting Service	(0032,1033)		Institutional department where the request initiated.	*** Not Implemented ***
>Issue Date of Imaging Service Request	(0040,2004)		Date on which the Imaging Service Request was issued by the requester.	*** Not Implemented ***
>Issue Time of Imaging Service Request	(0040,2005)		Time at which the Imaging Service Request was issued by the requester.	*** Not Implemented ***
>Referring Physician's Name	(0008,0090)		Patient's primary physician for this Imaging Service Request.	*** Not Implemented ***
Related Procedure Step Sequence	(0074,1220)		List of Procedure Step Instances related to this Procedure Step Instance	*** Not Implemented ***
>Referenced SOP Class UID	(0008,1150)		Uniquely identifies the SOP Class of the referenced Instance	*** Not Implemented ***
>Referenced SOP Instance UID	(0008,1155)		Uniquely identifies the referenced SOP Instance	*** Not Implemented ***
>Procedure Step Relationship Type	(0074,1222)		Description of the referenced Procedure Step's relationship to this Procedure Step.	*** Not Implemented ***

A.2.5 SOP Common – C.12.1

Attribute Name	Tag	Type	Description	Handling
SOP Class UID	(0008,0016)	1	Uniquely identifies the SOP Class. See C.12.1.1.1 for further explanation. See also PS 3.4.	Populated for UPS / SPS / BDI / SC Image
SOP Instance UID	(0008,0018)	1	Uniquely identifies the SOP Instance. See C.12.1.1.1 for further explanation. See also PS 3.4.	Populated for UPS / SPS / BDI / SC Image.

Attribute Name	Tag	Type	Description	Handling
Specific Character Set	(0008,0005)	1C	Character Set that expands or replaces the Basic Graphic Set. Required if an expanded or replacement character set is used. See C.12.1.1.2 for Defined Terms.	The Worklist Service can be configured to set this value to any of the following. ISO_IR 100 ISO_IR 192 ISO_IR 101 ISO_IR 109 ISO_IR 110 ISO_IR 144 ISO_IR 127 ISO_IR 126 ISO_IR 138 ISO_IR 148 ISO_IR 166 ISO_IR 13 GB18030 Supported character set depends on client operating system version. No character translation is performed other than reading/writing contents of DICOM string attributes in corresponding database attributes. Also no support for multiple character sets within a single attribute.
Instance Creation Date	(0008,0012)	3	Date the SOP Instance was created.	*** Not Implemented ***
Instance Creation Time	(0008,0013)	3	Time the SOP Instance was created.	*** Not Implemented ***
Instance Creator UID	(0008,0014)	3	Uniquely identifies device which created the SOP Instance.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Related General SOP Class UID	(0008,001A)	3	Uniquely identifies a Related General SOP Class for the SOP Class of this Instance. See PS 3.4.	*** Not Implemented ***
Original Specialized SOP Class UID	(0008,001B)	3	The SOP Class in which the Instance was originally encoded, but which has been replaced during a fall-back conversion to the current Related General SOP Class. See PS 3.4.	*** Not Implemented ***
Coding Scheme Identification Sequence	(0008,0110)	3	Sequence of items that map values of Coding Scheme Designator (0008,0102) to an external coding system registration, or to a private or local coding scheme. One or more items may be present in the sequence.	*** Not Implemented ***
> Coding Scheme Designator	(0008,0102)	1	The value of a Coding Scheme Designator, used in this SOP Instance, which is being mapped.	*** Not Implemented ***
> Coding Scheme Registry	(0008,0112)	1C	The name of the external registry where further definition of the identified coding scheme may be obtained. Required if coding scheme is registered. Defined term: HL7	*** Not Implemented ***
> Coding Scheme UID	(0008,010C)	1C	The coding scheme UID identifier. Required if coding scheme is identified by an ISO 8824 object identifier compatible with the UI VR.	*** Not Implemented ***
> Coding Scheme External ID	(0008,0114)	2C	The coding scheme identifier as defined in an external registry. Required if coding scheme is registered and Coding Scheme UID (0008,010C) is not present.	*** Not Implemented ***
> Coding Scheme Name	(0008,0115)	3	The coding scheme full common name	*** Not Implemented ***
> Coding Scheme Version	(0008,0103)	3	The coding scheme version associated with the Coding Scheme Designator (0008,0102).	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Responsible Organization	(0008,0116)	3	Name of the organization responsible for the Coding Scheme. May include organizational contact information.	*** Not Implemented ***
Timezone Offset From UTC	(0008,0201)	3	<p>Contains the offset from UTC to the timezone for all DA and TM Attributes present in this SOP Instance. Encoded as an ASCII string in the format "&ZZZZ". The components of this string, from left to right, are & = "+" or "-", and ZZZZ = Hours and Minutes of offset.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. This encoding is the same as described in PS 3.5 for the DT Value Representation. 2. This Attribute does not apply to values with a DT Value Representation, which may contain an explicitly encoded timezone. 3. The corrected time may cross a 24 hour boundary. For example, if Local Time = 1.00 a.m. and Offset = +0200, then UTC = 11.00 p.m. (23.00) the day before. 4. The "+" sign may not be omitted. Time earlier than UTC is expressed as a negative offset. <p>Note:</p> <p>For example: UTC = 5.00 a.m. Local Time = 3.00 a.m. Offset = -0200 The local timezone offset is undefined if this Attribute is absent.</p>	*** Not Implemented ***
Contributing Equipment Sequence	(0018,A001)	3	Sequence of Items containing descriptive attributes of related equipment which has contributed to the acquisition, creation or modification of the composite instance. One or more Items may be included in this Sequence. See C.12.1.1.5 for further explanation.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Purpose of Reference Code Sequence	(0040,A170)	1	Describes the purpose for which the related equipment is being reference. Only a single Item shall be permitted in this sequence. See C.12.1.1.5 for further explanation.	*** Not Implemented ***
>> Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>> Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>> Coding Scheme Version	(0008,0103)	1C	See Section 8.2. Required if a sequence item is present and the value of Coding Scheme Designator (0008,0102) is not sufficient to identify the Code Value (0008,0100) unambiguously.	*** Not Implemented ***
>> Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
> Manufacturer	(0008,0070)	1	Manufacturer of the equipment that contributed to the composite instance.	*** Not Implemented ***
> Institution Name	(0008,0080)	3	Institution where the equipment that contributed to the composite instance is located.	*** Not Implemented ***
> Institution Address	(0008,0081)	3	Address of the institution where the equipment that contributed to the composite instance is located.	*** Not Implemented ***
> Station Name	(0008,1010)	3	User defined name identifying the machine that contributed to the composite instance.	*** Not Implemented ***
> Institutional Department Name	(0008,1040)	3	Department in the institution where the equipment that contributed to the composite instance is located.	*** Not Implemented ***
> Manufacturer's Model Name	(0008,1090)	3	Manufacturer's model name of the equipment that contributed to the composite instance.	*** Not Implemented ***
> Device Serial Number	(0018,1000)	3	Manufacturer's serial number of the equipment that contributed to the composite instance.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Software Version(s)	(0018,1020)	3	Manufacturer's designation of the software version of the equipment that contributed to the composite instance.	*** Not Implemented ***
> Spatial Resolution	(0018,1050)	3	The inherent limiting resolution in mm of the acquisition equipment for high contrast objects for the data gathering and reconstruction technique chosen. If variable across the images of the series, the value at the image center.	*** Not Implemented ***
> Date of Last Calibration	(0018,1200)	3	Date when the image acquisition device calibration was last changed in any way. Multiple entries may be used for additional calibrations at other times. See C.7.5.1.1.1 for further explanation.	*** Not Implemented ***
> Time of Last Calibration	(0018,1201)	3	Time when the image acquisition device calibration was last changed in any way. Multiple entries may be used. See C.7.5.1.1.1 for further explanation.	*** Not Implemented ***
> Contribution Date Time	(0018,A002)	3	The Date & Time when the equipment contributed to the composite instance.	*** Not Implemented ***
> Contribution Description	(0018,A003)	3	Description of the contribution the equipment made to the composite instance.	*** Not Implemented ***
Instance Number	(0020,0013)	3	A number that identifies this Composite object instance.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
SOP Instance Status	(0100,0410)	3	<p>A flag that indicates the storage status of the SOP Instance. Not Specified (NS) implies that this SOP Instance has no special storage status, and hence no special actions need be taken. Original (OR) implies that this is the primary SOP instance for the purpose of storage, but that it has not yet been authorized for diagnostic use. Authorized Original (AO) implies that this is the primary SOP instance for the purpose of storage, which has been authorized for diagnostic use. Any copies of an Authorized Original should be given the status of Authorized Copy. Authorized Copy (AC) implies that this is a copy of an Authorized Original SOP Instance.</p> <p>Enumerated Values: NS, OR, AO, AC</p> <p>Note: Proper use of these flags is specified in Security Profiles. Implementations that do not conform to such Security Profiles may not necessarily handle these flags properly.</p>	*** Not Implemented ***
SOP Authorization Date and Time	(0100,0420)	3	The date and time when the SOP Instance Status (0100,0410) was set to AO.	*** Not Implemented ***
SOP Authorization Comment	(0100,0424)	3	Any comments associated with the setting of the SOP Instance Status (0100,0410) to AO.	*** Not Implemented ***
Authorization Equipment Certification Number	(0100,0426)	3	The certification number issued to the Application Entity that set the SOP Instance Status (0100,0410) to AO.	*** Not Implemented ***
MAC Parameters Sequence	(4FFE,0001)	3	A sequence of one or more items that describe the parameters used to calculate a MAC for use in Digital Signatures.	*** Not Implemented ***
> MAC ID Number	(0400,0005)	1	A number used to identify this MAC Parameters Sequence item.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> MAC Calculation Transfer Syntax UID	(0400,0010)	1	The Transfer Syntax UID used to encode the values of the Data Elements included in the MAC calculation. Only Transfer Syntaxes that explicitly include the VR and use Little Endian encoding shall be used. Notes: Certain Transfer Syntaxes, particularly those that are used with compressed data, allow the fragmentation of the pixel data to change. If such fragmentation changes, Digital Signatures generated with such Transfer Syntaxes could become invalid.	*** Not Implemented ***
> MAC Algorithm	(0400,0015)	1	The algorithm used in generating the MAC to be encrypted to form the Digital Signature. Defined Terms: RIPEMD160 MD5 SHA1. Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.	*** Not Implemented ***
> Data Elements Signed	(0400,0020)	1	A list of Data Element Tags in the order they appear in the Data Set which identify the Data Elements used in creating the MAC for the Digital Signature. See Section C.12.1.1.3.1.1.	*** Not Implemented ***
Digital Signatures Sequence	(FFFA,FFFA)	3	Sequence holding one or more Digital Signatures.	*** Not Implemented ***
> MAC ID Number	(0400,0005)	1	A number used to identify which MAC Parameters Sequence item was used in the calculation of this Digital Signature.	*** Not Implemented ***
> Digital Signature UID	(0400,0100)	1	A UID that can be used to uniquely reference this signature.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Digital Signature DateTime	(0400,0105)	1	The date and time the Digital Signature was created. The time shall include an offset (i.e., time zone indication) from Coordinated Universal Time. Note: This is not a certified timestamp, and hence is not completely verifiable. An application can compare this date and time with those of other signatures and the validity date of the certificate to gain confidence in the veracity of this date and time.	*** Not Implemented ***
> Certificate Type	(0400,0110)	1	The type of certificate used in (0400,0115). Defined Term: X509_1993_SIG Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.	*** Not Implemented ***
> Certificate of Signer	(0400,0115)	1	A certificate that holds the identity of the entity producing this Digital Signature, that entity's public key or key identifier, and the algorithm and associated parameters with which that public key is to be used. Algorithms allowed are specified in Digital Signature Security Profiles (see PS 3.15). Notes: 1. As technology advances, additional encryption algorithms may be allowed in future versions. Implementations should take this possibility into account. 2. When symmetric encryption is used, the certificate merely identifies which key was used by which entity, but not the actual key itself. Some other means (e.g., a trusted third party) must be used to obtain the key.	*** Not Implemented ***
> Signature	(0400,0120)	1	The MAC generated as described in Section 12.2.1.1 and encrypted using the algorithm, parameters, and private key associated with the Certificate of the Signer (0400,0115). See Section C.12.1.1.3.1.2.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Certified Timestamp Type	(0400,0305)	1C	The type of certified timestamp used in the Certified Timestamp (0400,0310) Attribute. Required if Certified Timestamp (0400,0310) is present. Defined Terms: CMS_TSP û Internet X.509 Public Key Infrastructure Time Stamp Protocol Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.	*** Not Implemented ***
> Certified Timestamp	(0400,0310)	3	A certified timestamp of the Digital Signature (0400,0120) Attribute Value, which shall be obtained when the Digital Signature is created. See Section C.12.1.1.3.1.3.	*** Not Implemented ***
Encrypted Attributes Sequence	(0400,0500)	1C	Sequence of Items containing encrypted DICOM data. One or more Items shall be present. Required if application level confidentiality is needed and certain recipients are allowed to decrypt all or portions of the Encrypted Attributes Data Set. See C.12.1.1.4.1.	*** Not Implemented ***
> Encrypted Content Transfer Syntax UID	(0400,0510)	1	Transfer Syntax used to encode the encrypted content. Only Transfer Syntaxes that explicitly include the VR and use Little Endian encoding shall be used.	*** Not Implemented ***
> Encrypted Content	(0400,0520)	1	Encrypted data. See C.12.1.1.4.2.	*** Not Implemented ***
HL7 Structured Document Reference Sequence	(0040,A390)	1C	Sequence of items defining mapping and/or access mechanism for HL7 Structured Documents referenced from the current SOP Instance. One or more Items may be included in this sequence. See C.12.1.1.6. Required if HL7 Structured Documents are referenced within the Instance.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
> Referenced SOP Class UID	(0008,1150)	1	Unique identifier for the class of HL7 Structured Document.	*** Not Implemented ***
> Referenced SOP Instance UID	(0008,1155)	1	Unique identifier for the HL7 Structured Document as used in DICOM instance references.	*** Not Implemented ***
> HL7 Instance Identifier	(0040,E001)	1	Instance Identifier of the referenced HL7 Structured Document, encoded as a UID (OID or UUID), concatenated with a caret ("^") and Extension value (if Extension is present in Instance Identifier).	*** Not Implemented ***
> Retrieve URI	(0040,E010)	3	Retrieval access path to HL7 Structured Document. Includes fully specified scheme, authority, path, and query in accordance with RFC 2396	*** Not Implemented ***

A.2.6 Common Instance Reference Module - C.12.2

*** Not Implemented ***

A.2.7 Patient Relationship – C.2.1

*** Not Implemented ***

A.2.8 Patient Identification – C.2.2

Attribute Name	Tag	Type	Description	Handling
Patient's Name	(0010,0010)		Patient's full name	Patient First Name, Last Name, Middle Name, Honorific, Prefix
Patient ID	(0010,0020)		Primary hospital identification number or code for the patient.	Patient ID1

Attribute Name	Tag	Type	Description	Handling
Issuer of Patient ID	(0010,0021)		Identifier of the Assigning Authority (system, organization, agency, or department) that issued the Patient ID. Note: Issuer of Patient ID (0010,0021) is equivalent to HL7 v2 PID-3 component 4.	Patient ID1 Issuer
Other Patient IDs	(0010,1000)		Other identification numbers or codes used to identify the patient.	Patient ID2
Other Patient IDs Sequence	(0010,1002)		A sequence of identification numbers or codes used to identify the patient, which may or may not be human readable, and may or may not have been obtained from an implanted or attached device such as an RFID or barcode.	*** Not Implemented ***
>Patient ID	(0010,0020)		An identification number or code used to identify the patient	*** Not Implemented ***
>Issuer of Patient ID	(0010,0021)		Identifier of the Assigning Authority that issued the Patient ID.	*** Not Implemented ***
>Type of Patient ID	(0010,0022)		The type of identifier in this item. Defined Terms: TEXT RFID BARCODE Note: The identifier is coded as a string regardless of the type, not as a binary value.	*** Not Implemented ***
Other Patient Names	(0010,1001)		Other names used to identify the patient.	*** Not Implemented ***
Patient's Birth Name	(0010,1005)		Patient's birth name.	Maiden Name
Patient's Mother's Birth Name	(0010,1060)		Birth name of patient's mother.	Mother's Maiden Name
Medical Record Locator	(0010,1090)		An identifier used to find the patient's existing medical record (e.g. film jacket).	*** Not Implemented ***

A.2.9 Patient Demographic – C.2.3

Attribute Name	Tag	Type	Description	Handling
Patient's Age	(0010,1010)		Age of the Patient.	Calculated based on Patient's Birth Date
Occupation	(0010,2180)		Occupation of the Patient.	Patient Occupation
Confidentiality Constraint on Patient Data Description	(0040,3001)		Special indication to the modality operator about confidentiality of patient information (e.g., that he should not use the patients name where other patients are present).	*** Not Implemented ***
Patient's Birth Date	(0010,0030)		Date of birth of the named patient	Patient Birth Date
Patient's Birth Time	(0010,0032)		Time of birth of the named patient	*** Not Implemented ***
Patient's Sex	(0010,0040)		Sex of the named patient. Enumerated Values: M = male F = female O = other	Patient Sex
Patient's Insurance Plan Code Sequence	(0010,0050)		A sequence that conveys the patient's insurance plan. Zero or more Items may be included in this Sequence.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Patient's Primary Language Code Sequence	(0010,0101)		The languages that can be used to communicate with the patient. Zero or more Items may be included in the sequence. The sequence items are ordered by preference (most preferred language to least preferred)	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
> Patient's Primary Language Code Modifier Sequence	(0010,0102)		A modifier for a Patient's Primary Language. Can be used to specify a national language variant. Exactly one Item may be included in the sequence.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Patient's Size	(0010,1020)		Patient's height or length in meters	*** Not Implemented ***
Patient's Weight	(0010,1030)		Weight of the patient in kilograms	*** Not Implemented ***
Patient's Address	(0010,1040)		Legal address of the named patient	*** Not Implemented ***
Military Rank	(0010,1080)		Military rank of patient	*** Not Implemented ***
Branch of Service	(0010,1081)		Branch of the military. The country allegiance may also be included (e.g. U.S. Army).	*** Not Implemented ***
Country of Residence	(0010,2150)		Country in which patient currently resides	*** Not Implemented ***
Region of Residence	(0010,2152)		Region within patient's country of residence	*** Not Implemented ***
Patient's Telephone Numbers	(0010,2154)		Telephone numbers at which the patient can be reached	*** Not Implemented ***
Ethnic Group	(0010,2160)		Ethnic group or race of patient	*** Not Implemented ***
Patient's Religious Preference	(0010,21F0)		The religious preference of the patient	*** Not Implemented ***
Patient Comments	(0010,4000)		User-defined comments about the patient	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Responsible Person	(0010,2297)		Name of person with medical decision making authority for the patient.	*** Not Implemented ***
Responsible Person Role	(0010,2298)		Relationship of Responsible Person to the patient. Defined Terms: OWNER	*** Not Implemented ***
Responsible Organization	(0010,2299)		Name of organization with medical decision making authority for the patient.	*** Not Implemented ***
Patient Species Description	(0010,2201)		The species of the patient.	*** Not Implemented ***
Patient Species Code Sequence	(0010,2202)		The species of the patient.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Patient Breed Description	(0010,2292)		The breed of the patient.	*** Not Implemented ***
Patient Breed Code Sequence	(0010,2293)		The breed of the patient.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Breed Registration Sequence	(0010,2294)		Information identifying an animal within a breed registry.	*** Not Implemented ***
>Breed Registration Number	(0010,2295)		Identification number of a veterinary patient within the registry.	*** Not Implemented ***
>Breed Registry Code Sequence	(0010,2296)		Identification of the organization with which an animal is registered.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***

A.2.10 Patient Medical – C.2.4

Attribute Name	Tag	Type	Description	Handling
Medical Alerts	(0010,2000)		Conditions to which medical staff should be alerted (e.g. contagious condition, drug allergies, etc.)	Patient Medical Alerts
Allergies	(0010,2110)		Description of prior reaction to contrast agents, or other patient allergies or adverse reactions.	*** Not Implemented ***
Smoking Status	(0010,21A0)		Indicates whether patient smokes. Enumerated Values: YES NO UNKNOWN	Patient Smoking Status
Additional Patient History	(0010,21B0)		Additional information about the patient's medical history	*** Not Implemented ***
Pregnancy Status	(0010,21C0)		Describes pregnancy state of patient. Enumerated Values: 0001 = not pregnant 0002 = possibly pregnant 0003 = definitely pregnant 0004 = unknown	*** Not Implemented ***
Last Menstrual Date	(0010,21D0)		Date of onset of last menstrual period	*** Not Implemented ***
Patient's Sex Neutered	(0010,2203)		Whether or not a procedure has been performed in an effort to render the patient sterile. Enumerated value: ALTERED = Altered/Neutered UNALTERED = Unaltered/intact	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Special Needs	(0038,0050)		Medical and social needs (e.g. wheelchair, oxygen, translator, etc.)	Patient Special Needs
Patient State	(0038,0500)		Description of patient state (comatose, disoriented, vision impaired, etc.)	Patient State
Pertinent Documents Sequence	(0038,0100)		List of Documents (e.g., SR, or CDA) that contain information considered pertinent for the patient medical condition. Zero or more Items may be included in this sequence.	*** Not Implemented ***
> Referenced SOP Class UID	(0008,1150)	1	Unique identifier for the class of HL7 Structured Document.	*** Not Implemented ***
> Referenced SOP Instance UID	(0008,1155)	1	Unique identifier for the HL7 Structured Document as used in DICOM instance references.	*** Not Implemented ***
>Purpose of Reference Code Sequence	(0040,A170)		Describes the purpose for which the document reference is made. Zero or more Items may be present.	*** Not Implemented ***
>>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Document Title	(0042,0010)		Title of the referenced document.	*** Not Implemented ***
Patient Clinical Trial Participation Sequence	(0038,0502)		Sequence of identifiers for clinical trials in which the patient participates. Zero or more Items may be included in this sequence.	*** Not Implemented ***
>Clinical Trial Sponsor Name	(0012,0010)		The name of the clinical trial sponsor, responsible for conducting the clinical trial and for defining the Clinical Trial Protocol.	*** Not Implemented ***
>Clinical Trial Protocol ID	(0012,0020)		Identifier for the noted protocol, used by the Clinical Trial Sponsor to uniquely identify the investigational protocol.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Clinical Trial Protocol Name	(0012,0021)		The name or title of the clinical trial protocol.	*** Not Implemented ***
>Clinical Trial Site ID	(0012,0030)		The identifier, issued by the Clinical Trial Sponsor, of the site responsible for submitting clinical trial data.	*** Not Implemented ***
>Clinical Trial Site Name	(0012,0031)		Name of the site responsible for submitting clinical trial data.	*** Not Implemented ***
>Clinical Trial Subject ID	(0012,0040)		The assigned identifier for the patient as a clinical trial subject.	*** Not Implemented ***
>Clinical Trial Subject Reading ID	(0012,0042)		Identifies the patient as a clinical trial subject for blinded evaluations.	*** Not Implemented ***

A.2.11 Visit Relationship – C.3.1

*** Not Implemented ***

A.2.12 Visit Identification – C.3.2

*** Not Implemented ***

A.2.13 Visit Status – C.3.3

*** Not Implemented ***

A.2.14 Visit Admission – C.3.4

Attribute Name	Tag	Type	Description	Handling
Referring Physician's Name	(0008,0090)	3	Patient's primary referring physician for this visit	*** Not Implemented ***
Referring Physician's Address	(0008,0092)	3	Referring physician's address	*** Not Implemented ***
Referring Physician's Telephone Numbers	(0008,0094)	3	Referring physician's telephone numbers	*** Not Implemented ***
Referring Physician Identification Sequence	(0008,0096)	3	Identification of the patient's referring physician. Only a single item shall be permitted in this sequence.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Admitting Diagnoses Description	(0008,1080)	3	Description of admitting diagnosis (diagnoses).	Diagnosis Description of Last Diagnosis (reduced to 64 characters)
Admitting Diagnoses Code Sequence	(0008,1084)	3	A sequence that conveys the admitting diagnosis (diagnoses). One or more Items may be included in this Sequence.	One or more items supported.
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	Patient Diagnosis Code
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	Patient Diagnosis Code Type
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	Patient Diagnosis Clinical Description (reduced to 64 characters)
Route of Admissions	(0038,0016)	3	Mode of admission: emergency, normal	*** Not Implemented ***
Admitting Date	(0038,0020)	3	Date patient visit began	*** Not Implemented ***
Admitting Time	(0038,0021)	3	Time patient visit began	*** Not Implemented ***

A.2.15 Scheduled Procedure Step – C.4.10

Attribute Name	Tag	Type	Description	Handling
Scheduled Procedure Step Sequence	(0040,0100)		One or more Scheduled Procedure Steps for one Requested Procedure.	One or more Scheduled Procedure Step supported.
>Scheduled Station AE Title	(0040,0001)		The AE title of the modality on which the Scheduled Procedure Step is scheduled to be performed.	Machine AE Title
>Scheduled Station Name	(0040,0010)		An institution defined name for the modality on which the Scheduled Procedure Step is scheduled to be performed.	Machine ID
>Scheduled Procedure Step Location	(0040,0011)		The location at which the Procedure Step is scheduled to be performed.	Venue ID
>Scheduled Procedure Step Start Date	(0040,0002)		Date on which the Scheduled Procedure Step is scheduled to start.	The value is the Appointment Start Date.
>Scheduled Procedure Step Start Time	(0040,0003)		Time at which the Scheduled Procedure Step is scheduled to start.	The value is the Appointment Start Time.
>Scheduled Procedure Step End Date	(0040,0004)		Date on which the Scheduled Procedure Step is scheduled to end.	The value is the Appointment End Date.
>Scheduled Procedure Step End Time	(0040,0005)		Time at which the Scheduled Procedure Step is scheduled to end.	The value is the Appointment End Time.
>Scheduled Performing Physician's Name	(0040,0006)		Name of the physician scheduled to administer the Scheduled Procedure Step.	*** Not Implemented ***
>Scheduled Performing Physician Identification Sequence	(0040,000B)		Identification of the physician scheduled to administer the Scheduled Procedure Step. Only a single item shall be permitted in this sequence.	*** Not Implemented ***
>>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Scheduled Procedure Step Description	(0040,0007)		Institution-generated description or classification of the Scheduled Procedure Step to be performed. Note: The purpose of this attribute is to store a description or classification that is used at a local level (e.g., a hospital or a managed care network), and this description need not comply to an accepted standard.	*** Not Implemented ***
>Scheduled Protocol Code Sequence	(0040,0008)		Sequence describing the Scheduled Protocol following a specified coding scheme. This sequence contains one or more Items.	Zero or more items supported.
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	Procedure Item Code Value
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	Procedure Item Code Scheme Designator
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	Procedure Item Code Meaning
>>Protocol Context Sequence	(0040,0440)		Sequence that specifies the context for the Scheduled Protocol Code Sequence Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>>Include 'Content Item Macro' Table 10-2				*** Not Implemented ***
>>> Content Item Modifier Sequence	(0040,0441)		Sequence that specifies modifiers for a Protocol Context Content Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>>>Include 'Content Item Macro' Table 10-2				*** Not Implemented ***
>Scheduled Procedure Step ID	(0040,0009)		Identifier that identifies the Scheduled Procedure Step.	Created first time when SPS is queried.

Attribute Name	Tag	Type	Description	Handling
>Scheduled Procedure Step Status	(0040,0020)		A real world condition that may affect the selection of the Scheduled Procedure Step. Defined Terms: SCHEDULED – Procedure Step scheduled ARRIVED – patient is available for the Scheduled Procedure Step READY – all patient and other necessary preparation for this step has been completed STARTED – at least one Performed Procedure Step has been created that references this Scheduled Procedure Step	Scheduled Procedure Status. Scheduled Procedure Status is not visible in any application, the mapping between Appointment Status and Scheduled Procedure Step Status is Open -> SCHEDULED Open and Checked in -> ARRIVED All other status -> at least one Scheduled Procedure has status STARTED
>Comments on the Scheduled Procedure Step	(0040,0400)		User-defined comments on the Scheduled Procedure Step. Note: The Comments attribute is intended to transmit non-structured information, which can be displayed to the operator of the Modality.	Read-Only Appointment Note added in Appoinment Dialog of Appointment Scheduling. Limited to 254 character.
>Modality	(0008,0060)		Source equipment for the image. See Section C.7.3.1.1.1 for Defined Terms.	Modality provided in Query Request, otherwise OT
>Requested Contrast Agent	(0032,1070)		Contrast agent requested for use in the Scheduled Procedure Step.	Appointment Contrast Agent
>Pre-Medication	(0040,0012)		Medication to be administered at the beginning of the Scheduled Procedure Step, e.g. Nuclear Medicine radiopharmaceutical.	Appointment Pre-Medication

A.2.16 Requested Procedure – C.4.11

Attribute Name	Tag	Type	Description	Handling
Requested Procedure ID	(0040,1001)		Identifier that identifies the Requested Procedure in the Imaging Service Request.	Activity Instance ID

Attribute Name	Tag	Type	Description	Handling
Reason for the Requested Procedure	(0040,1002)		Reason for requesting this imaging procedure. Note: This reason is more specific to the requested procedure than the reason mentioned in the imaging service request (0040,2001).	*** Not Implemented ***
Requested Procedure Comments	(0040,1400)		User-defined comments on the Requested Procedure.	*** Not Implemented ***
Reason for Requested Procedure Code Sequence	(0040,100A)		Coded Reason for requesting this procedure. One or more sequence items may be present.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***
Requested Procedure Code Sequence	(0032,1064)		A sequence that conveys the Requested Procedure of one Procedure Type.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
Study Instance UID	(0020,000D)		Unique identifier to be used to identify the Study	Study Instance UID
Study Date	(0008,0020)		Date the Study started, if any previous procedure steps within the same study have already been performed.	*** Not Implemented ***
Study Time	(0008,0030)		Time the Study started, if any previous procedure steps within the same study have already been performed.	*** Not Implemented ***
Referenced Study Sequence	(0008,1110)		Uniquely identifies the Study SOP Instances associated with this SOP Instance.	*** Not Implemented ***
>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Requested Procedure Description	(0032,1060)		Institution-generated administrative description or classification of Requested Procedure	Activity Name
Requested Procedure Priority	(0040,1003)		Requested Procedure Type Urgency. Defined Terms: STAT, HIGH, ROUTINE, MEDIUM, LOW	Appointment Priority (only HIGH, MEDIUM, LOW are supported.)
Patient Transport Arrangements	(0040,1004)		Mode of transportation of the patient to the location of examination.	Patient Transportation Name
Requested Procedure Location	(0040,1005)		Physical location at which the Requested Procedure is to be performed.	*** Not Implemented ***
Confidentiality Code	(0040,1008)		Confidentiality Constraints on the Requested Procedure by the party filling the order.	*** Not Implemented ***
Reporting Priority	(0040,1009)		Requested Reporting Priority. Defined Terms: HIGH, ROUTINE, MEDIUM, LOW	*** Not Implemented ***
Names of Intended Recipients of Results	(0040,1010)		Names of the physicians, who are intended recipients of results.	*** Not Implemented ***
Intended Recipients of Results Identification Sequence	(0040,1011)		Identification of the physicians who are intended recipients of results. One or more items shall be included in this sequence. If more than one item, the number and order shall correspond to the value of Names of Intended Recipients of Results (0040,1010), if present.	*** Not Implemented ***
>>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***

A.2.17 Imaging Service Request – C.4.12

Attribute Name	Tag	Type	Description	Handling
Imaging Service Request Comments	(0040,2400)		User-defined comments on the Imaging Service Request. Note: The Comments attribute is intended to transmit non-structured information, which can be displayed to the operator of the equipment (e.g. Modality).	*** Not Implemented ***
Requesting Physician	(0032,1032)		Name of the physician who requested the Imaging Service Request.	*** Not Implemented ***
Requesting Physician Identification Sequence	(0032,1031)		Identification of the physician who requested the Imaging Service Request. Only a single item shall be permitted in this sequence.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Referring Physician's Name	(0008,0090)		Name of the patient's referring physician for this Imaging Service Request.	*** Not Implemented ***
Referring Physician Identification Sequence	(0008,0096)		Identification of the patient's referring physician. Only a single item shall be permitted in this sequence.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Requesting Service	(0032,1033)		Institutional department where the request initiated.	*** Not Implemented ***
Accession Number	(0008,0050)		A departmental IS generated number that identifies the order for the Imaging Service Request.	Study Accession Number
Issue Date of Imaging Service Request	(0040,2004)		Date on which the Imaging Service Request was issued by the requester.	*** Not Implemented ***
Issue Time of Imaging Service Request	(0040,2005)		Time at which the Imaging Service Request was issued by the requester.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Placer Order Number / Imaging Service Request	(0040,2016)		The order number assigned to the Imaging Service Request by the party placing the order.	Appointment Placer Order Number
Filler Order Number / Imaging Service Request	(0040,2017)		The order number assigned to the Imaging Service Request by the party filling the order.	Appointment Filler Order Number
Order entered by ...	(0040,2008)		The person who entered the Imaging Service Request into an Information System.	*** Not Implemented ***
Order Enterer's Location	(0040,2009)		The location at which the Imaging Service Request was entered.	*** Not Implemented ***
Order Callback Phone Number	(0040,2010)		Telephone Number at which additional information can be retrieved.	*** Not Implemented ***
Admission ID	(0038,0010)		Identification number of the visit as assigned by the healthcare provider	*** Not Implemented ***
Issuer of Admission ID	(0038,0011)		Name of healthcare provider that issued the Admission ID	*** Not Implemented ***

A.2.18 Performed Procedure Step Relationship – C.4.13

Attribute Name	Tag	Type	Description	Handling
Patient's Name	(0010,0010)		Patient's full legal name.	Patient First Name, Last Name, Middle Name
Patient ID	(0010,0020)		Primary hospital identification number or code for the patient.	Patient ID
Issuer of Patient ID	(0010,0021)		Identifier of the Assigning Authority that issued the Patient ID.	*** Not Implemented ***
Patient's Birth Date	(0010,0030)		Date of birth of the named patient	Patient Birth Date
Patient's Sex	(0010,0040)		Sex of the named Patient. Enumerated Values: M = male F = female O = other	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Referenced Patient Sequence	(0008,1120)		Uniquely identifies the Patient SOP Instance.	*** Not Implemented ***
>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***
Service Episode ID	(0038,0060)		Identifier of the Service Episode as assigned by the healthcare provider	*** Not Implemented ***
Issuer of Service Episode ID	(0038,0061)		Name of healthcare provider that issued the Service Episode ID	*** Not Implemented ***
Service Episode Description	(0038,0062)		Description of the type of service episode.	*** Not Implemented ***
Scheduled Step Attributes Sequence	(0040,0270)		Sequence containing attributes that are related to the scheduling of the Procedure Step. The Sequence may have one or more Items.	One or more items supported.
>Study Instance UID	(0020,000D)		Unique identifier for the Study.	Used to find Appointment
>Referenced Study Sequence	(0008,1110)		Uniquely identifies the Study SOP Instance associated with this Scheduled Procedure Step. This Sequence shall have only one Item.	*** Not Implemented ***
>>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***
>Accession Number	(0008,0050)		A departmental IS generated number that identifies the order for the Study.	*** Not Implemented ***
>Placer Order Number/Imaging Service Request	(0040,2016)		The order number assigned to the Imaging Service Request by the party placing the order.	*** Not Implemented ***
>Filler Order Number/Imaging Service Request	(0040,2017)		The order number assigned to the Imaging Service Request by the party filling the order.	*** Not Implemented ***
>Requested Procedure ID	(0040,1001)		Identifier of the related Requested Procedure.	Used to find Appointment
>Requested Procedure Description	(0032,1060)		Institution-generated administrative description or classification of Requested Procedure.	*** Not Implemented ***
>Requested Procedure Code Sequence	(0032,1064)		A sequence that conveys the Procedure Type of the requested procedure. The Requested Procedure Code Sequence shall contain only a single item.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***
>Scheduled Procedure Step ID	(0040,0009)		Identifier of the related Scheduled Procedure Step.	*** Not Implemented ***
>Scheduled Procedure Step Description	(0040,0007)		Institution-generated description or classification of the Scheduled Procedure Step to be performed.	*** Not Implemented ***
>Scheduled Protocol Code Sequence	(0040,0008)		Sequence describing the Scheduled Protocol following a specific coding scheme. This sequence contains one or more Items.	*** Not Implemented ***
>>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***
>>Protocol Context Sequence	(0040,0440)		Sequence that specifies the context for the Scheduled Protocol Code Sequence Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>>Include 'Content Item Macro' Table 10-2	No Baseline Template is defined.			*** Not Implemented ***
>>> Content Item Modifier Sequence	(0040,0441)		Sequence that specifies modifiers for a Protocol Context Content Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>>>Include 'Content Item Macro' Table 10-2			No Baseline Template is defined.	*** Not Implemented ***

A.2.19 Performed Procedure Step Information – C.4.14

Attribute Name	Tag	Type	Description	Handling
Performed Station AE Title	(0040,0241)		AE title of the modality on which the Performed Procedure Step was performed.	Machine AE Title

Attribute Name	Tag	Type	Description	Handling
Performed Station Name	(0040,0242)		An institution defined name for the modality on which the Performed Procedure Step was performed.	Machine ID
Performed Location	(0040,0243)		Description of the location at which the Performed Procedure Step was performed.	*** Not Implemented ***
Performed Procedure Step Start Date	(0040,0244)		Date on which the Performed Procedure Step started. Note: This value may be used to determine the earliest date to use as the Study Date (0008,0020) in composite instances and in updated Modality Scheduled Procedure Steps in order to allow Study level attributes to have consistent values if additional Procedure Steps are performed.	Performed Procedure Start Date Time
Performed Procedure Step Start Time	(0040,0245)		Time at which the Performed Procedure Step started. Note: This value may be used to determine the earliest time to use as the Study Time (0008,0030) in composite instances and in updated Modality Scheduled Procedure Steps in order to allow Study level attributes to have consistent values if additional Procedure Steps are performed.	Performed Procedure Start Date Time
Performed Procedure Step ID	(0040,0253)		User or equipment generated identifier of that part of a Procedure that has been carried out within this step.	Performed Procedure ID
Performed Procedure Step End Date	(0040,0250)		Date on which the Performed Procedure Step ended.	Performed Procedure End Date Time
Performed Procedure Step End Time	(0040,0251)		Time at which the Performed Procedure Step ended.	Performed Procedure End Date Time
Performed Procedure Step Status	(0040,0252)		Contains the state of the Performed Procedure Step. Enumerated Values: IN PROGRESS = Started but not complete DISCONTINUED = Canceled or unsuccessfully terminated COMPLETED = Successfully completed	The Appointment Status will be updated based on Performed Procedure Status.

Attribute Name	Tag	Type	Description	Handling
Performed Procedure Step Description	(0040,0254)		Institution-generated description or classification of the Procedure Step that was performed.	*** Not Implemented ***
Comments on the Performed Procedure Step	(0040,0280)		User-defined comments on the Performed Procedure Step.	*** Not Implemented ***
Performed Procedure Type Description	(0040,0255)		A description of the type of procedure performed.	*** Not Implemented ***
Procedure Code Sequence	(0008,1032)		A sequence that conveys the (single) type of procedure performed.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***
Performed Procedure Step Discontinuation Reason Code Sequence	(0040,0281)		The reason the Performed Procedure Step Status (0040,0252) was set to DISCONTINUED.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 9300.	*** Not Implemented ***

A.2.20 Image Acquisition Results – C.4.15

Attribute Name	Tag	Type	Description	Handling
Modality	(0008,0060)		Type of equipment that originally acquired the data used to create the images associated with this Modality Performed Procedure Step. See C.7.3.1.1.1 for Defined Terms. Note: A Modality value in the created SOP Instances may be different from the MPPS Modality value. For example, multiple series may have been created during the MPPS (images, waveforms, softcopy presentation states and/or structured reports) with SOP Instances in different series having different modality values.	Performed Procedure Modality

Attribute Name	Tag	Type	Description	Handling
Study ID	(0020,0010)		User or equipment generated Study Identifier.	*** Not Implemented ***
Performed Protocol Code Sequence	(0040,0260)		Sequence describing the Protocol performed for this Procedure Step. This sequence may have zero or more Items.	*** Not Implemented ***
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	*** Not Implemented ***
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	*** Not Implemented ***
>Protocol Context Sequence	(0040,0440)		Sequence that specifies the context for the Performed Protocol Code Sequence Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>Include 'Content Item Macro' Table 10-2			No Baseline Template is defined.	*** Not Implemented ***
>> Content Item Modifier Sequence	(0040,0441)		Sequence that specifies modifiers for a Protocol Context Content Item. One or more items may be included in this sequence. See Section C.4.10.1.	*** Not Implemented ***
>>>Include 'Content Item Macro' Table 10-2			No Baseline Template is defined.	*** Not Implemented ***
Performed Series Sequence	(0040,0340)		Attributes of the Series that comprise this Modality Performed Procedure Step. The Sequence may have zero or more Items.	*** Not Implemented ***
>Performing Physician's Name	(0008,1050)		Name of the physician(s) administering this Series.	*** Not Implemented ***
>Performing Physician Identification Sequence	(0008,1052)		Identification of the physician(s) administering the Series. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Performing Physician's Name (0008,1050), if present.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
>Operators' Name	(0008,1070)		Name(s) of the operator(s) who supporting this Series.	*** Not Implemented ***
>Operator Identification Sequence	(0008,1072)		Identification of the operator(s) supporting the Series. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Operators' Name (0008,1070), if present.	*** Not Implemented ***
>>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
>Protocol Name	(0018,1030)		User-defined description of the conditions under which the Series was performed. Note: This attribute conveys series-specific protocol identification and may or may not be identical to the one presented in the Performed Protocol Code Sequence (0040,0260).	*** Not Implemented ***
>Series Instance UID	(0020,000E)		Unique Identifier of the Series.	*** Not Implemented ***
>Series Description	(0008,103E)		User provided description of the Series	*** Not Implemented ***
>Retrieve AE Title	(0008,0054)		Title of the DICOM Application Entity where the Images and other Composite SOP Instances in this Series may be retrieved on the network. Note: The duration for which this location remains valid is unspecified.	*** Not Implemented ***
>Archive Requested	(0040,A494)		The instances in this series are expected to be archived in the long term archive. Defined Terms: NO, YES	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Referenced Image Sequence	(0008,1140)		A Sequence that provides reference to Composite SOP Instances created during the acquisition of the procedure step. The sequence may have zero or more Items. Note: The use of Referenced Image Sequence is historical, and in this context it allows the reference of any Composite SOP Instance.	*** Not Implemented ***
>>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)		Uniquely identifies instances, other than images, of any SOP Class that conforms to the DICOM Composite IOD Information Model, such as Waveforms, Presentation States or Structured Reports, created during the acquisition of the procedure step, and that are not referenced in Referenced Image Sequence (0008,1140). The sequence may have zero or more Items.	*** Not Implemented ***
>>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***

A.2.21 Radiation Dose – C.4.16

*** Not Implemented ***

A.2.22 Billing and Material Management Codes – C.4.17

Attribute Name	Tag	Type	Description	Handling
Billing Procedure Step Sequence	(0040,0320)		Contains billing codes for the Procedure Type performed within the Procedure Step. The sequence may have zero or more Items.	Used to assign additional Billing Procedure Codes to Appointment. Procedure Code must be known in ARIA and each Procedure Code can only be assigned once.
>Code Value	(0008,0100)	1C	See Section 8.1. Required if a sequence item is present.	Used to find Procedure Code
>Coding Scheme Designator	(0008,0102)	1C	See Section 8.2. Required if a sequence item is present.	*** Not Implemented ***
>Code Meaning	(0008,0104)	1C	See Section 8.3. Required if a sequence item is present.	Used to find Procedure Code
Film Consumption Sequence	(0040,0321)		Information about the film consumption for this Performed Procedure Step. The sequence may have zero or more Items.	*** Not Implemented ***
>Number of Films	(2100,0170)		Number of films actually printed.	*** Not Implemented ***
>Medium Type	(2000,0030)		Type(s) of medium on which images were printed. For Defined Terms see Table C.13-1.	*** Not Implemented ***
>Film Size ID	(2010,0050)		Size(s) of film on which images were printed. For Defined Terms see Table C.13-3.	*** Not Implemented ***
Billing Supplies and Devices Sequence	(0040,0324)		Chemicals, supplies and devices for billing used in the Performed Procedure Step. The sequence may have one or more Items.	*** Not Implemented ***
>Billing Item Sequence	(0040,0296)		Code values of chemicals, supplies or devices required for billing. The sequence may have zero or one Items.	*** Not Implemented ***
>>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Quantity Sequence	(0040,0293)		Sequence containing the quantity of used chemicals or devices. The sequence may have zero or one Items.	*** Not Implemented ***
>>Quantity	(0040,0294)		Numerical quantity value.	*** Not Implemented ***
>>Measuring Units Sequence	(0040,0295)		Unit of measurement. The sequence may have zero or one Items.	*** Not Implemented ***
>>>Include 'Code Sequence Macro' Table 8.8-1			Baseline Context ID is 82.	*** Not Implemented ***

A.2.23 Patient- C.7.1.1

Attribute Name	Tag	Type	Description	Handling
Patient's Name	(0010,0010)	2	Patient's full name.	Patient First Name, Last Name, Middle Name, Honorific, Prefix
Patient ID	(0010,0020)	2	Primary hospital identification number or code for the patient.	Patient ID1
Issuer of Patient ID	(0010,0021)	3	Identifier of the Assigning Authority that issued the Patient ID.	Patient ID1 Issuer
Patient's Birth Date	(0010,0030)	2	Birth date of the patient.	Patient Birth Date
Patient's Sex	(0010,0040)	2	Sex of the named patient. Enumerated Values: M = male F = female O = other	Patient Sex
Referenced Patient Sequence	(0008,1120)	3	A sequence that provides reference to a Patient SOP Class/Instance pair. Only a single Item shall be permitted in this Sequence.	*** Not Implemented ***
>Include SOP Instance Reference Macro Table 10-11				*** Not Implemented ***
Patient's Birth Time	(0010,0032)	3	Birth time of the Patient.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Other Patient IDs	(0010,1000)	3	Other identification numbers or codes used to identify the patient.	Patient ID2
Other Patient IDs Sequence	(0010,1002)	3	A sequence of identification numbers or codes used to identify the patient, which may or may not be human readable, and may or may not have been obtained from an implanted or attached device such as an RFID or barcode. If present, shall contain one or more items.	*** Not Implemented ***
>Patient ID	(0010,0020)	1	An identification number or code used to identify the patient.	*** Not Implemented ***
>Issuer of Patient ID	(0010,0021)	1	Identifier of the Assigning Authority that issued the Patient ID.	*** Not Implemented ***
>Type of Patient ID	(0010,0022)	1	The type of identifier in this item. Defined Terms: TEXT RFID BARCODE Note: The identifier is coded as a string regardless of the type, not as a binary value.	*** Not Implemented ***
Other Patient Names	(0010,1001)	3	Other names used to identify the patient.	*** Not Implemented ***
Ethnic Group	(0010,2160)	3	Ethnic group or race of the patient.	*** Not Implemented ***
Patient Comments	(0010,4000)	3	User-defined additional information about the patient.	*** Not Implemented ***
Patient Species Description	(0010,2201)	1C	The species of the patient. Required if the patient is an animal and if Patient Species Code Sequence (0010, 2202) is not present. May be present otherwise.	*** Not Implemented ***
Patient Species Code Sequence	(0010,2202)	1C	The species of the patient. One Item shall be present. Required if the patient is an animal and if Patient Species Description (0010,2201) is not present. May be present otherwise.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 7454.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Patient Breed Description	(0010,2292)	2C	The breed of the patient. Required if the patient is an animal and if Patient Breed Code Sequence (0010,2293) is empty. May be present otherwise.	*** Not Implemented ***
Patient Breed Code Sequence	(0010,2293)	2C	The breed of the patient. Zero or more Items shall be present. Required if the patient is an animal.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 7480.	*** Not Implemented ***
Breed Registration Sequence	(0010,2294)	2C	Information identifying an animal within a breed registry. Zero or more Items shall be present. Required if the patient is an animal.	*** Not Implemented ***
>Breed Registration Number	(0010,2295)	1	Identification number of an animal within the registry.	*** Not Implemented ***
>Breed Registry Code Sequence	(0010,2296)	1	Identification of the organization with which an animal is registered. One Item shall be present.	*** Not Implemented ***
>>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 7481	*** Not Implemented ***
Responsible Person	(0010,2297)	2C	Name of person with medical decision making authority for the patient. Required if the patient is an animal. May be present otherwise.	*** Not Implemented ***
Responsible Person Role	(0010,2298)	1C	Relationship of Responsible Person to the patient. Defined Terms: OWNER Required if Responsible Person is present and has a value.	*** Not Implemented ***
Responsible Organization	(0010,2299)	2C	Name of organization with medical decision making authority for the patient. Required if patient is an animal. May be present otherwise.	*** Not Implemented ***
Patient Identity Removed	(0012,0062)	3	The true identity of the patient has been removed from the Attributes and the Pixel Data Enumerated Values: YES NO	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
De-identification Method	(0012,0063)	1C	A description or label of the mechanism or method use to remove the patient's identity. May be multi-valued if successive de-identification steps have been performed. Note: This may be used to describe the extent or thoroughness of the deidentification, for example whether or not the de-identification is for a "Limited Data Set" (as per HIPAA Privacy Rule). Required if Patient Identity Removed (0012,0062) is present and has a value of YES and De-identification Method Code Sequence (0012,0064) is not present.	*** Not Implemented ***
De-identification Method Code Sequence	(0012,0064)	1C	A code describing the mechanism or method use to remove the patient's identity. One or more Items shall be present. Multiple items are used if successive de-identification steps have been performed Required if Patient Identity Removed (0012,0062) is present and has a value of YES and De-identification Method (0012,0063) is not present.	*** Not Implemented ***
>Include Code Sequence Macro Table 8.8-1			No Baseline Context ID is defined.	*** Not Implemented ***

A.2.24 General Study- C.7.2.1

Attribute Name	Tag	Type	Description	Handling
Study Instance UID	(0020,000D)	1	Unique identifier for the Study.	Study Instance UID
Study Date	(0008,0020)	2	Date the Study started.	For SC Image - Current Date
Study Time	(0008,0030)	2	Time the Study started.	For SC Image - Current Time
Referring Physician's Name	(0008,0090)	2	Name of the patient's referring physician	For SC Image - Empty Value

Attribute Name	Tag	Type	Description	Handling
Referring Physician Identification Sequence	(0008,0096)	3	Identification of the patient's referring physician. Only a single item shall be permitted in this sequence.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Study ID	(0020,0010)	2	User or equipment generated Study identifier.	For SC Image - Empty Value
Accession Number	(0008,0050)	2	A RIS generated number that identifies the order for the Study.	For SC Image - Empty Value
Study Description	(0008,1030)	3	Institution-generated description or classification of the Study (component) performed.	*** Not Implemented ***
Physician(s) of Record	(0008,1048)	3	Names of the physician(s) who are responsible for overall patient care at time of Study (see Section C.7.3.1 for Performing Physician)	*** Not Implemented ***
Physician(s) of Record Identification Sequence	(0008,1049)	3	Identification of the physician(s) who are responsible for overall patient care at time of Study. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Physician(s) of Record (0008,1048), if present.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Name of Physician(s) Reading Study	(0008,1060)	3	Names of the physician(s) reading the Study.	*** Not Implemented ***
Physician(s) Reading Study Identification Sequence	(0008,1062)	3	Identification of the physician(s) reading the Study. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Name of Physician(s) Reading Study (0008,1060), if present.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Referenced Study Sequence	(0008,1110)	3	A sequence that provides reference to a Study SOP Class/Instance pair. The sequence may have zero or more Items.	*** Not Implemented ***
>Include SOP Instance Reference Macro Table 10-11				*** Not Implemented ***
Procedure Code Sequence	(0008,1032)	3	A Sequence that conveys the type of procedure performed. One or more Items may be included in this Sequence.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1 No.			Baseline Context ID is defined	*** Not Implemented ***

A.2.25 General Series- C.7.3.1

Attribute Name	Tag	Type	Description	Handling
Modality	(0008,0060)	1	Type of equipment that originally acquired the data used to create the images in this Series. See C.7.3.1.1.1 for Defined Terms.	For RT Beams Delivery Instruction - RT For SC Image - OT
Series Instance UID	(0020,000E)	1	Unique identifier of the Series.	Series Instance UID
Series Number	(0020,0011)	2	A number that identifies this Series.	For SC Image - 1

Attribute Name	Tag	Type	Description	Handling
Laterality	(0020,0060)	2C	Laterality of (paired) body part examined. Required if the body part examined is a paired structure and Image Laterality (0020,0062) or Frame Laterality (0020,9072) are not sent. Enumerated Values: R = right L = left Note: Some IODs support Image Laterality (0020,0062) at the Image level or Frame Laterality(0020,9072) at the Frame level in the Frame Anatomy functional group macro, which can provide a more comprehensive mechanism for specifying the laterality of the body part(s) being examined.	*** Not Implemented ***
Series Date	(0008,0021)	3	Date the Series started.	For SC Image - Current Date
Series Time	(0008,0031)	3	Time the Series started.	For SC Image – Current Time
Performing Physicians' Name	(0008,1050)	3	Name of the physician(s) administering the Series.	*** Not Implemented ***
Performing Physician Identification Sequence	(0008,1052)	3	Identification of the physician(s) administering the Series. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Performing Physicians' Name (0008,1050), if present.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Protocol Name	(0018,1030)	3	User-defined description of the conditions under which the Series was performed. Note: This attribute conveys series specific protocol identification and may or may not be identical to the one presented in the Performed Protocol Code Sequence (0040,0260).	*** Not Implemented ***
Series Description	(0008,103E)	3	User provided description of the Series	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Operators' Name	(0008,1070)	3	Name(s) of the operator(s) supporting the Series.	*** Not Implemented ***
Operator Identification Sequence	(0008,1072)	3	Identification of the operator(s) supporting the Series. One or more items shall be included in this sequence. If more than one Item, the number and order shall correspond to the value of Operators' Name (0008,1070), if present.	*** Not Implemented ***
>Include 'Person Identification Macro' Table 10-1				*** Not Implemented ***
Referenced Performed Procedure Step Sequence	(0008,1111)	3	Uniquely identifies the Performed Procedure Step SOP Instance to which the Series is related (e.g. a Modality or General-Purpose Performed Procedure Step SOP Instance). The Sequence shall have zero or one Item.	*** Not Implemented ***
>Include SOP Instance Reference Macro Table 10-11				*** Not Implemented ***
Related Series Sequence	(0008,1250)	3	Identification of Series significantly related to this Series. Zero or more Items may be present. Notes: 1. For example, for a combined CT and PET acquisition, the CT images and PET images would be in separate series that could cross-reference each other with multiple purpose of reference codes meaning same anatomy, simultaneously acquired and same indication. 2. The related series may have different Frames of Reference and hence require some sort of registration before spatial coordinates can be directly compared. 3. This attribute is not intended for conveying localizer reference information, for which Referenced Image Sequence (0008,1140) should be used.	*** Not Implemented ***
>Study Instance UID	(0020,000D)	1	Instance UID of Study to which the related Series belongs	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Series Instance UID	(0020,000E)	1	Instance UID of Related Series	*** Not Implemented ***
>Purpose of Reference Code Sequence	(0040,A170)	2	Describes the purpose for which the reference is made. Zero or more Items may be present. When absent, implies that the reason for the reference is unknown.	*** Not Implemented ***
>>Include Code Sequence Macro Table 8.8-1			DCID 7210	*** Not Implemented ***
Body Part Examined	(0018,0015)	3	Text description of the part of the body examined. See PS 3.16 Annex on Correspondence of Anatomic Region Codes and Body Part Examined for Defined Terms Note: Some IODs support the Anatomic Region Sequence (0008,2218), which can provide a more comprehensive mechanism for specifying the body part being examined.	*** Not Implemented ***
Patient Position	(0018,5100)	2C	Patient position descriptor relative to the equipment. Required for CT and MR images; shall not be present if Patient Orientation Code Sequence (0054,0410) is present; may be present otherwise. See C.7.3.1.1.2 for Defined Terms and further explanation.	*** Not Implemented ***
Smallest Pixel Value in Series	(0028,0108)	3	The minimum value of all images in this Series.	*** Not Implemented ***
Largest Pixel Value in Series	(0028,0109)	3	The maximum value of all images in this Series.	*** Not Implemented ***
Request Attributes Sequence	(0040,0275)	3	Sequence that contains attributes from the Imaging Service Request. The sequence may have one or more Items.	*** Not Implemented ***
>Include Request Attributes Macro Table 10-9			No Baseline Context IDs defined	*** Not Implemented ***
Include Performed Procedure Step Summary Macro Table 10-16			No Baseline Context IDs defined	*** Not Implemented ***

A.2.26 General Equipment- C.7.5.1

*** Not Implemented ***

A.2.27 RT Beams Delivery Instruction- C.8.8.aa

Attribute Name	Tag	Type	Description	Handling
Beam Task Sequence	(0074,1020)	1	Specification of beams to be delivered and/or verified. One or more Items may be included in this sequence.	One or more items supported.
>Beam Task Type	(0074,1022)	1	Indication whether beam is to be verified, treated (delivered), or both. Enumerated Values: VERIFY = Beam verification only TREAT = Beam treatment only VERIFY_AND_TREAT = Beam verification and treatment	TREAT
>Treatment Delivery Type	(300A,00CE)	1	Delivery Type of treatment. Enumerated Values: TREATMENT = normal patient treatment CONTINUATION = continuation of interrupted treatment	TREATMENT if the beam needs to be treated completely or CONTINUATION if the beam in the current Fraction was already partially treated.

Attribute Name	Tag	Type	Description	Handling
>Primary Dosimeter Unit	(300A,00B3)	1C	Measurement unit of machine dosimeter. Enumerated Values: MU = Monitor Unit MINUTE = minute NP = Number of Particles This value shall be the same as in the referenced RT Plan. It applies only to the Continuation Start Meterset (0074,0120) and Continuation End Meterset (0074,0121). Required if Delivery Type (300A,00CE) is CONTINUATION.	Primary Dosimeter Unit of Machine
>Continuation Start Meterset	(0074,0120)	1C	Meterset within Beam referenced by Referenced Beam Number (300C,0006) at which treatment delivery starts, in units specified by Primary Dosimeter Unit (300A,00B3). Required if Delivery Type (300A,00CE) is CONTINUATION.	For CONTINUATION: sum of all Actual MU for this Beam along the Treatment Records of the previous partial treatment.
>Continuation End Meterset	(0074,0121)	1C	Meterset within Beam referenced by Referenced Beam Number (300C,0006) at which treatment delivery ends, in units specified by Primary Dosimeter Unit (300A,00B3). Required if Delivery Type (300A,00CE) is CONTINUATION.	For CONTINUATION: Planned MU for this Beam
>Referenced RT Plan Sequence	(300C,0002)	1	Reference to a single RT Plan or RT Ion Plan SOP Instance (whose UID is also supplied in the Input Information Sequence – see PS3.4) containing all the Beams and the Fraction Group referenced in this SOP Instance.	One item supported
>> Study Instance UID	(0020,000D)	1	Unique identifier for the Study	Study Instance UID of Plan

Attribute Name	Tag	Type	Description	Handling
>> Referenced Series Sequence	(0008,1115)	1	Sequence of Items where each Item includes the Attributes of a Series containing referenced Composite Object(s). One or more Items may be included in this sequence	One or more items supported
>>> Series Instance UID	(0020,000E)	1	Unique identifier of a Series that is part of this Study and contains the referenced Composite Object(s).	Series Instance UID of Plan
>>> Retrieve AE Title	(0008,0054)	3	Title of the DICOM Application Entity where the Composite Object(s) may be retrieved on the network.	Archive AE Title configured for the Worklist Service
>>> Storage Media File-Set ID	(0088,0130)	3	The user or implementation specific human readable identifier that identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>>> Storage Media File-Set UID	(0088,0140)	3	Uniquely identifies the Storage Media on which the Composite Object (s) reside.	*** Not Implemented ***
>>> Referenced SOP Sequence	(0008,1199)	1	References to Composite Object SOP Class/SOP Instance pairs that are part of the Study defined by Study Instance UID and the Series defined by Series Instance UID (0020,000E). One or more Items may be included in this sequence	One or more items supported
>>>> Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.	SOP Class UID of Plan
>>>> Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.	Plan Instance UID
>>> Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made. One or more Items may be included in this sequence.	*** Not Implemented ***
>>>> Include 'Code Sequence Macro' Table 8.8-1			Baseline Context ID may be specified in Macro invocation.	*** Not Implemented ***
>>> Referenced Digital Signature Sequence	(0400,0402)	3	Sequence of references to Digital Signatures in the referenced SOP Instance. One or more Items may be present. Note: The Attributes in this sequence can be used to detect if the referenced SOP Instance has been altered.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>>> Digital Signature UID	(0400,0100)	1	The Unique Identifier of a Digital Signature held in the referenced SOP Instance.	*** Not Implemented ***
>>>> Signature	(0400,0120)	1	The Signature Value identified by the Digital Signature UID within the Referenced SOP Instance UID.	*** Not Implemented ***
>>> Referenced SOP Instance MAC Sequence	(0400,0403)	3	A MAC Calculation from data in the referenced SOP Instance that can be used as a data integrity check. Only a single Item shall be permitted in this Sequence. Note: This Attribute may be used in place of the Referenced Digital Signature Sequence Attribute (0400,0402), particularly if the SOP Instance does not have appropriate Digital Signatures that can be referenced.	*** Not Implemented ***
>>>> MAC Calculation Transfer Syntax UID	(0400,0010)	1	The Transfer Syntax UID used to encode the values of the Data Elements included in the MAC calculation. When computing the MAC, only Transfer Syntaxes that explicitly include the VR and use Little Endian encoding shall be used. Notes: 1. Certain Transfer Syntaxes, particularly those that are used with compressed data, allow the fragmentation of the pixel data to change. If such fragmentation changes, Digital Signatures generated with such Transfer Syntaxes could become invalid. 2. This does not constrain the transfer syntax used to transmit the object.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>>> MAC Algorithm	(0400,0015)	1	The algorithm used in generating the MAC. Defined Terms: RIPEMD160 MD5 SHA1 Note: Digital Signature Security Profiles (see PS 3.15) may require the use of a restricted subset of these terms.	*** Not Implemented ***
>>>> Data Elements Signed	(0400,0020)	1	A list of Data Element Tags in the order they appear at the top level of the referenced SOP Instance that identify the Data Elements used in creating the MAC. See Section C.12.1.1.3.1.1.	*** Not Implemented ***
>>>> MAC	(0400,0404)	1	The MAC generated as described in Section 12.2.1.1, but unencrypted and without inclusion of fields from the Digital Signatures Sequence. See Section C.12.1.1.3.1.2.	*** Not Implemented ***
>Current Fraction Number	(3008,0022)	1	The index of the fraction that is to be delivered or completed in this session. See C.8.8.aa.1.	For TREATMENT: Last treated Fraction Number + 1 For CONTINUATION: Fraction Number of the previous partial treatment
>Referenced Fraction Group Number	(300C,0022)	1C	Indicates which fraction group of the referenced plan is to be treated in the treatment session. Only one Fraction Group shall be specified per Delivery Instruction SOP Instance. Required if the referenced plan has more than one Fraction Group Sequence (300A,0070) item.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Referenced Beam Number	(300C,0006)	1	Uniquely identifies the Beam which is specified by Beam Number (300A,00C0) within Beam Sequence (300A,00B0) in RT Beams Module of referenced RT Plan or RT Ion Plan.	Beam Number
>Beam Order Index	(0074,1024)	3	Identifies required ordering of beam delivery, monotonically increasing by 1, starting from 1.	*** Not Implemented ***
>Table Top Vertical Adjusted Position	(0074,0126)	2	Adjusted Table Top Vertical position in the IEC TABLE TOP coordinate system in mm for patient setup. See C.8.8.aa.2.	*** Not Implemented ***
>Table Top Longitudinal Adjusted Position	(0074,0127)	2	Adjusted Table Top Longitudinal position in the IEC TABLE TOP coordinate system in mm for patient setup. See C.8.8.aa.2.	*** Not Implemented ***
>Table Top Lateral Adjusted Position	(0074,0128)	2	Adjusted Table Top Lateral position in the IEC TABLE TOP coordinate system in mm for patient setup. See C.8.8.aa.2.	*** Not Implemented ***
>Patient Support Adjusted Angle	(0074,102A)	2	Adjusted Patient Support angle for patient setup, i.e. orientation of the IEC PATIENT SUPPORT coordinate system with respect to the IEC FIXED REFERENCE coordinate system in degrees. See C.8.8.aa.2.	*** Not Implemented ***
>Table Top Eccentric Adjusted Angle	(0074,102B)	2	Adjusted Table Top (non-isocentric) angle for patient setup, i.e. orientation of the IEC TABLE TOP ECCENTRIC coordinate system with respect to the IEC PATIENT SUPPORT system in degrees. See C.8.8.aa.2.	*** Not Implemented ***
>Table Top Pitch Adjusted Angle	(0074,102C)	2	Adjusted Table Top Pitch Angle for patient setup, i.e. the rotation of the IEC TABLE TOP coordinate system about the X-axis of the IEC TABLE TOP coordinate system in degrees. See C.8.8.aa.2.	*** Not Implemented ***
>Table Top Roll Adjusted Angle	(0074,102D)	2	Adjusted Table Top Roll Angle for patient setup, i.e. the rotation of the IEC TABLE TOP coordinate system about the Y-axis of the IEC TABLE TOP coordinate system in degrees. See C.8.8.aa.2.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Table Top Vertical Setup Displacement	(300A,01D2)	2	Vertical Displacement in the IEC TABLE TOP coordinate system in mm relative to initial Setup Position, i.e. vertical offset between patient positioning performed using setup and treatment position.	*** Not Implemented ***
>Table Top Longitudinal Setup Displacement	(300A,01D4)	2	Longitudinal Displacement in the IEC TABLE TOP coordinate system in mm relative to initial Setup Position, i.e. longitudinal offset between patient positioning performed using setup and treatment position.	*** Not Implemented ***
>Table Top Lateral Setup Displacement	(300A,01D6)	2	Lateral Displacement in the IEC TABLE TOP coordinate system in mm relative to initial Setup Position, i.e. lateral offset between patient positioning performed using setup and treatment position.	*** Not Implemented ***
>Delivery Verification Image Sequence	(0074,1030)	2C	Beam verification images to be acquired for current beam. Required if Beam Task Type (0074,1022) is VERIFY or VERIFY_AND_TREAT. Only a single Item shall be permitted in this sequence if Beam Task Type (0074, 1022) is VERIFY. One or more Items may be included in this sequence if Beam Task Type (0074, 1022) is VERIFY_AND_TREAT.	*** Not Implemented ***
>>Verification Image Timing	(0074,1032)	1	Indicates the temporal relationship of the verification image with respect to the current treatment beam delivery. Value shall be DURING_BEAM for Beams with a Beam Task Type (0074, 1022) of VERIFY. Enumerated Values: BEFORE_BEAM DURING_BEAM AFTER_BEAM	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Start Cumulative Meterset Weight	(300C,0008)	1C	Cumulative Meterset Weight within current Beam at which image acquisition will start. Required if Verification Image Timing (0074, 1032) is DURING_BEAM.	*** Not Implemented ***
>>Meterset Exposure	(3002,0032)	2C	Treatment machine Meterset duration over which image is to be acquired, specified in Monitor units (MU) or minutes as defined by Primary Dosimeter Unit (300A,00B3) specified in the Referenced RT Plan Sequence (300C,0002). Required if Verification Image Timing (0074, 1032) is BEFORE_BEAM or AFTER_BEAM. See C.8.8.aa.3.	*** Not Implemented ***
>>End Cumulative Meterset Weight	(300C,0009)	2C	Cumulative Meterset Weight within current Beam at which image acquisition will end. Required if Verification Image Timing (0074, 1032) is DURING_BEAM.	*** Not Implemented ***
>>Double Exposure Flag	(0074,1034)	1	Indicates whether the current verification image is a single or double exposure. Enumerated Values: SINGLE = single exposure DOUBLE = double exposure	*** Not Implemented ***
>>Double Exposure Ordering	(0074,1036)	1C	Indicates the ordering of the open (double exposure) field with respect to the primary (collimated) field in a double exposure. Defined terms: OPEN_FIRST = Open field first OPEN_SECOND = Open field second Required if Double Exposure Flag (0074, 1034) is DOUBLE.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>>Double Exposure Meterset	(0074,1038)	2C	If this field is present, an additional exposure with the indicated Meterset is requested. Required if Double Exposure Flag (0074, 1034) is DOUBLE.	*** Not Implemented ***
>>Double Exposure Field Delta	(0074,103A)	2C	Offsets of field-defining edges in mm for the double exposure in the IEC BEAM LIMITING DEVICE coordinate system in the IEC order X1, X2, Y1, Y2. Negative values for X1 and Y1 indicate an enlarged field; negative values for X2 and Y2 indicate a reduced field. Required if Double Exposure Flag (0074, 1034) is DOUBLE. See C.8.8.aa.4.	*** Not Implemented ***
>>X-Ray Image Receptor Translation	(3002,000D)	2	Position in (x, y, z) coordinates in mm of origin of the IEC X-RAY IMAGE RECEPTOR System in the IEC GANTRY coordinate system.	*** Not Implemented ***
>>Related Reference RT Image Sequence	(0074,1040)	3	Uniquely identifies Reference Images to which planned verification image is related. All items in this sequence shall be RT Image SOP Instances.	*** Not Implemented ***
>>>Include 'SOP Instance Reference Macro' Table 10-11				*** Not Implemented ***

A.2.28 Clinical Trial Subject- C.7.1.3

*** Not Implemented ***

A.2.29 Patient Study- C.7.2.2

*** Not Implemented ***

A.2.30 Clinical Trial Study- C.7.2.3

*** Not Implemented ***

A.2.31 Clinical Trial Series- C.7.3.2

*** Not Implemented ***

A.2.32 SC Equipment Module- C.8.6.1

Attribute Name	Tag	Type	Description	Handling
Conversion Type	(0008,0064)	1	Describes the kind of image conversion. Defined Terms : DV = Digitized Video DI = Digital Interface DF = Digitized Film WSD = Workstation SD = Scanned Document SI = Scanned Image DRW = Drawing SYN = Synthetic Image	For SC Image - SI
Modality	(0008,0060)	3	Source equipment for the image. This type definition shall override the definition in the General Series Module. See C.7.3.1.1.1 for Defined Terms.	*** Not Implemented ***
Secondary Capture Device ID	(0018,1010)	3	User defined identification of the device that converted the image	*** Not Implemented ***
Secondary Capture Device Manufacturer	(0018,1016)	3	Manufacturer of the Secondary Capture Device	*** Not Implemented ***
Secondary Capture Device Manufacturer's Model Name	(0018,1018)	3	Manufacturer's model number of the Secondary Capture Device	*** Not Implemented ***
Secondary Capture Device Software Versions	(0018,1019)	3	Manufacturer's designation of software version of the Secondary Capture Device	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Video Image Format Acquired	(0018,1022)	3	Original format of the captured video image (e.g. NTSC, PAL, Videomed-H)	*** Not Implemented ***
Digital Image Format Acquired	(0018,1023)	3	Additional information about digital interface used to acquire the image	*** Not Implemented ***

A.2.33 General Image Module- C.7.6.1

Attribute Name	Tag	Type	Description	Handling
Instance Number	(0020,0013)	2	A number that identifies this image. Note: This Attribute was named Image Number in earlier versions of this Standard.	SC Image Instance Number
Patient Orientation	(0020,0020)	2C	Patient direction of the rows and columns of the image. Required if image does not require Image Orientation (Patient) (0020,0037) and Image Position (Patient) (0020,0032). May be present otherwise. See C.7.6.1.1.1 for further explanation. Note: IOD's may have attributes other than Patient Orientation, Image Orientation, or Image Position (Patient) to describe orientation in which case this attribute will be zero length.	*** Not Implemented ***
Content Date	(0008,0023)	2C	The date the image pixel data creation started. Required if image is part of a series in which the images are temporally related. Note: This Attribute was formerly known as Image Date.	For SC Image - Current Date
Content Time	(0008,0033)	2C	The time the image pixel data creation started. Required if image is part of a series in which the images are temporally related.	For SC Image – Current Time

Attribute Name	Tag	Type	Description	Handling
Image Type	(0008,0008)	3	Image identification characteristics. See C.7.6.1.1.2 for Defined Terms and further explanation.	For SC Image - DERIVED\SECONDARY
Acquisition Number	(0020,0012)	3	A number identifying the single continuous gathering of data over a period of time that resulted in this image.	*** Not Implemented ***
Acquisition Date	(0008,0022)	3	The date the acquisition of data that resulted in this image started	*** Not Implemented ***
Acquisition Time	(0008,0032)	3	The time the acquisition of data that resulted in this image started	*** Not Implemented ***
Acquisition DateTime	(0008,002A)	3	The date and time that the acquisition of data that resulted in this image started. Note: The synchronization of this time with an external clock is specified in the Synchronization Module in Acquisition Time Synchronized (0018,1800).	*** Not Implemented ***
Referenced Image Sequence	(0008,1140)	3	Other images significantly related to this image (e.g. post-localizer CT image or Mammographic biopsy or partial view images). One or more Items may be included in this sequence.	*** Not Implemented ***
>Include 'Image SOP Instance Reference Macro' Table 10-3				*** Not Implemented ***
>Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this sequence.	*** Not Implemented ***
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID 7201.	*** Not Implemented ***
Derivation Description	(0008,2111)	3	A text description of how this image was derived. See C.7.6.1.1.3 for further explanation.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Derivation Code Sequence	(0008,9215)	3	A coded description of how this image was derived. See C.7.6.1.1.3 for further explanation. One or more Items may be included in this Sequence. More than one Item indicates that successive derivation steps have been applied.	*** Not Implemented ***
>Include 'Code Sequence Macro' Table 8.8-1			Defined CID 7203.	*** Not Implemented ***
Source Image Sequence	(0008,2112)	3	The set of Image SOP Class/Instance pairs of the Images that were used to derive this Image. Zero or more Items may be included in this Sequence. See C.7.6.1.1.4 for further explanation.	*** Not Implemented ***
>Include 'Image SOP Instance Reference Macro' Table 10-3				
>Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made, that is what role the source image or frame(s) played in the derivation of this image. Only a single Item shall be permitted in this sequence.	*** Not Implemented ***
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID 7202.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Spatial Locations Preserved	(0028,135A)	3	<p>The extent to which the spatial locations of all pixels are preserved during the processing of the source image that resulted in the current image</p> <p>Enumerated Values: YES NO REORIENTED_ONLY - A projection radiograph that has been flipped, and/or rotated by a multiple of 90 degrees</p> <p>Notes: 1. This applies not only to images with a known relationship to a 3D space, but also to projection images. For example, a projection radiograph such as a mammogram that is processed by a point image processing operation such as contrast enhancement, or a smoothing or edge enhancing convolution, would have a value of YES for this attribute. A projection radiograph that had been magnified or warped geometrically would have a value of NO for this attribute. A projection radiograph that has been flipped, and/or rotated by a multiple of 90 degrees, such that transformation of pixel locations is possible by comparison of the values of Patient Orientation (0020,0020) would have a value of REORIENTED_ONLY. This attribute is typically of importance in relating images with Presentation Intent Type (0008,0068) values of FOR PROCESSING and FOR PRESENTATION.</p> <p>2. When the value of this attribute is NO, it is not possible to locate on the current image any pixel coordinates that are referenced relative to the source image, such as for example, might be required for rendering CAD findings derived from a referenced FOR PROCESSING image on the current FOR PRESENTATION image.</p>	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
>Patient Orientation	(0020,0020)	1C	The Patient Orientation values of the source image. Required if the value of Spatial Locations Preserved (0028,135A) is REORIENTED_ONLY.	*** Not Implemented ***
Referenced Instance Sequence	(0008,114A)	3	Non-image composite SOP Instances that are significantly related to this Image, including waveforms that may or may not be temporally synchronized with this image. One or more Items may be included in this sequence.	*** Not Implemented ***
<i>>Include SOP Instance Reference Macro Table 10-11</i>				*** Not Implemented ***
>Purpose of Reference Code Sequence	(0040,A170)	1	Code describing the purpose of the reference to the Instance(s). Only a single Item shall be permitted in this sequence.	*** Not Implemented ***
<i>>>Include 'Code Sequence Macro' Table 8.8-1</i>			<i>Defined CID 7004 for referenced waveforms.</i>	*** Not Implemented ***
Images in Acquisition	(0020,1002)	3	Number of images that resulted from this acquisition of data	*** Not Implemented ***
Image Comments	(0020,4000)	3	User-defined comments about the image	*** Not Implemented ***
Quality Control Image	(0028,0300)	3	Indicates whether or not this image is a quality control or phantom image. Enumerated Values: YES NO If this Attribute is absent, then the image may or may not be a quality control or phantom image. The phantom device in the image can be described using the Device Module. See C.7.6.12	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Burned In Annotation	(0028,0301)	3	Indicates whether or not image contains sufficient burned in annotation to identify the patient and date the image was acquired. Enumerated Values: YES NO If this Attribute is absent, then the image may or may not contain burned in annotation.	*** Not Implemented ***
Lossy Image Compression	(0028,2110)	3	Specifies whether an Image has undergone lossy compression. Enumerated Values: 00 = Image has NOT been subjected to lossy compression. 01 = Image has been subjected to lossy compression. See C.7.6.1.1.5	*** Not Implemented ***
Lossy Image Compression Ratio	(0028,2112)	3	Describes the approximate lossy compression ratio(s) that have been applied to this image. See C.7.6.1.1.5 for further explanation. May be multivalued if successive lossy compression steps have been applied. Notes: 1. For example, a compression ratio of 30:1 would be described in this Attribute with a single value of 30. 2. For historical reasons, the lossy compression ratio may also be described in Derivation Description (0008,2111).	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Lossy Image Compression Method	(0028,2114)	3	A label for the lossy compression method(s) that have been applied to this image. See C.7.6.1.1.5 for further explanation. May be multivalued if successive lossy compression steps have been applied; the value order shall correspond to the values of Lossy Image Compression Ratio (0028,2112). Note: For historical reasons, the lossy compression method may also be described in Derivation Description (0008,2111).	*** Not Implemented ***
Icon Image Sequence	(0088,0200)	3	This icon image is representative of the Image. Only a single Item shall be permitted in this Sequence.	*** Not Implemented ***
>Include 'Image Pixel Macro' Table C.7-11b			See C.7.6.1.1.6 for further explanation.	*** Not Implemented ***
Presentation LUT Shape	(2050,0020)	3	When present, specifies an identity transformation for the Presentation LUT such that the output of all grayscale transformations, if any, are defined to be in P-Values. Enumerated Values are: IDENTITY - output is in P-Values - shall be used if Photometric Interpretation (0028,0004) is MONOCHROME2 or any color photometric interpretation. INVERSE - output after inversion is in P-Values - shall be used if Photometric Interpretation (0028,0004) is MONOCHROME1. When this attribute is used with a color photometric interpretation then the luminance component is in P-Values.	*** Not Implemented ***
Irradiation Event UID	(0008,3010)	3	Unique identification of the irradiation event(s) associated with the acquisition of this image. See C.7.6.1.1.7.	*** Not Implemented ***

A.2.34 Image Pixel Module- C.7.6.3

Attribute Name	Tag	Type	Description	Handling
Samples per Pixel	(0028,0002)	1	Number of samples (planes) in this image. See C.7.6.3.1.1 for further explanation.	Samples per pixel in Patient Photo
Photometric Interpretation	(0028,0004)	1	Specifies the intended interpretation of the pixel data. See C.7.6.3.1.2 for further explanation.	For SC Image – RGB
Rows	(0028,0010)	1	Number of rows in the image.	Number of rows in Patient Photo
Columns	(0028,0011)	1	Number of columns in the image	Number of columns in Patient Photo
Bits Allocated	(0028,0100)	1	Number of bits allocated for each pixel sample. Each sample shall have the same number of bits allocated. See PS 3.5 for further explanation.	Number of bits allocated for each pixel sample in Patient Photo
Bits Stored	(0028,0101)	1	Number of bits stored for each pixel sample. Each sample shall have the same number of bits stored. See PS 3.5 for further explanation.	Number of bits stored for each pixel sample in Patient Photo
High Bit	(0028,0102)	1	Most significant bit for pixel sample data. Each sample shall have the same high bit. See PS 3.5 for further explanation.	Most significant bit for pixel sample data in Patient Photo
Pixel Representation	(0028,0103)	1	Data representation of the pixel samples. Each sample shall have the same pixel representation. Enumerated Values: 0000H = unsigned integer. 0001H = 2's complement	For SC Image – 0
Pixel Data	(7FE0,0010)	1C	A data stream of the pixel samples that comprise the Image. See C.7.6.3.1.4 for further explanation. Required if Pixel Data Provider URL (0028,7FE0) is not present.	Pixel Data in Patient Photo
Planar Configuration	(0028,0006)	1C	Indicates whether the pixel data are sent color-by-plane or color-by-pixel. Required if Samples per Pixel (0028,0002) has a value greater than 1. See C.7.6.3.1.3 for further explanation.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Pixel Aspect Ratio	(0028,0034)	1C	Ratio of the vertical size and horizontal size of the pixels in the image specified by a pair of integer values where the first value is the vertical pixel size, and the second value is the horizontal pixel size. Required if the aspect ratio values do not have a ratio of 1:1 and the physical pixel spacing is not specified by Pixel Spacing (0028,0030), or Imager Pixel Spacing (0018,1164) or Nominal Scanned Pixel Spacing (0018,2010), either for the entire Image or per-frame in a Functional Group Macro. See C.7.6.3.1.7.	*** Not Implemented ***
Smallest Image Pixel Value	(0028,0106)	3	The minimum actual pixel value encountered in this image.	*** Not Implemented ***
Largest Image Pixel Value	(0028,0107)	3	The maximum actual pixel value encountered in this image.	*** Not Implemented ***
Red Palette Color Lookup Table Descriptor	(0028,1101)	1C	Specifies the format of the Red Palette Color Lookup Table Data (0028,1201) Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.5 for further explanation.	*** Not Implemented ***
Green Palette Color Lookup Table Descriptor	(0028,1102)	1C	Specifies the format of the Green Palette Color Lookup Table Data (0028,1202) Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.5 for further explanation.	*** Not Implemented ***
Blue Palette Color Lookup Table Descriptor	(0028,1103)	1C	Specifies the format of the Blue Palette Color Lookup Table Data (0028,1203) Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.5 for further explanation.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Red Palette Color Lookup Table Data	(0028,1201)	1C	Red Palette Color Lookup Table Data. Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.6 for further explanation.	*** Not Implemented ***
Green Palette Color Lookup Table Data	(0028,1202)	1C	Green Palette Color Lookup Table Data. Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.6 for further explanation.	*** Not Implemented ***
Blue Palette Color Lookup Table Data	(0028,1203)	1C	Blue Palette Color Lookup Table Data. Required if Photometric Interpretation (0028,0004) has a value of PALETTE COLOR or Pixel Presentation (0008,9205) at the image level equals COLOR or MIXED. See C.7.6.3.1.6 for further explanation.	*** Not Implemented ***
ICC Profile	(0028,2000)	3	An ICC Profile encoding the transformation of device-dependent color stored pixel values into PCS-Values. See Section C.11.15.1.1.1. When present, defines the color space of color Pixel Data (7FE0,0010) values, and the output of Palette Color Lookup Table Data (0028,1201-1203). Note: The profile applies only to the Pixel Data (7FE0,0010) attribute at the same level of the dataset and not to any icons nested within sequences, which may or may not have their own ICC profile specified.	*** Not Implemented ***

Attribute Name	Tag	Type	Description	Handling
Pixel Data Provider URL	(0028,7FE0)	1C	A URL of a provider service that supplies the pixel data of the Image. Required if the image is to be transferred in one of the following presentation contexts identified by Transfer Syntax UID: 1.2.840.10008.1.2.4.94 (DICOM JPIP Referenced Transfer Syntax) 1.2.840.10008.1.2.4.95 (DICOM JPIP Referenced Deflate Transfer Syntax)	*** Not Implemented ***
Pixel Padding Range Limit	(0028,0121)	1C	Pixel value that represents one limit (inclusive) of a range of padding values used together with Pixel Padding Value (0028,0120) as defined in the General Equipment Module. See C.7.5.1.1.2 for further explanation. Required if pixel padding is to be defined as a range rather than a single value. Notes: 1. The Value Representation of this Attribute is determined by the value of Pixel Representation (0028,0103). 2. Pixel Padding Value (0028,0120) is also required when this Attribute is present.	*** Not Implemented ***

A.2.35 Device Module- C.7.6.12

*** Not Implemented ***

A.2.36 Specimen Module- C.7.6.22

*** Not Implemented ***

A.2.37 SC Image Module- C.8.6.2

*** Not Implemented ***

A.2.38 Overlay Pane Module- C.9.2

*** Not Implemented ***

A.2.39 Modality LUT Module- C.11.1

*** Not Implemented ***

A.2.40 VOI LUT Module- C.11.2

*** Not Implemented ***