DICOM Conformance Statement

TraceMasterVue 860420

- This page is left intentionally empty -

1. DICOM Conformance Statement Overview

This document is the DICOM Conformance Statement for the TraceMasterVue 860420 system.

TraceMasterVue functions as an ECG Management System within a larger information technology infrastructure that supports the business of a Cardiology Department. In this process the HL7 Order information is also used to synchronize patient and study information in the data objects received from the data sources if required.

TraceMasterVue automates the processing and storage of ECG data from multiple sources such as cardiographs and bedside monitors. It also provides a variety of tools to analyze, view, edit, and compare ECGs, as well as generate reports in various formats. During the processing new DICOM objects might be created as the original is enhanced.

It provides, among other things, the following DICOM services:

- Import of DICOM objects
- Export of DICOM objects
- Storage Commitment
- Functions as bridge for MWL & MPPS requests and responses from a remote DICOM node.

The following table provides an overview of all network services as provided by the TraceMaterVue.

Table 1: Network Services

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	**UID**			
Transfer				
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes	Yes
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes**	Yes
Workflow Management				
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes	No
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Yes*	Yes*	No
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31	Yes*	Yes*	No
Verification SOP Class	1.2.840.10008.1.1	No	Yes	No

*Only forwarding is supported.
** Encapsulated PDF can be viewed only on Microsoft Edge or Google Chrome.

2. Table of Contents

3. Introduction

The introduction specifies product and relevant disclaimers as well as any general information that the vendor feels is appropriate.

3.1. Revision History

The revision history provides dates and differences of the different releases.

Table 2: Revision History

Document Version	Date of Issue	Description of change
00	09-May-2022	Initial Version

3.2. Audience

This Conformance Statement is intended for:

- (Potential) customers
- System integrators of medical equipment
- Marketing staff interested in system functionality
- Software designers implementing DICOM interfaces

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

3.3. Remarks

The DICOM Conformance Statement is contained in chapter 4 through 8 and follows the contents and structuring requirements of DICOM PS 3.2.
This DICOM Conformance Statement by itself does not guarantee successful interoperability of Philips equipment with non-Philips equipment. The user (or user's agent) should be aware of the following issues:

- **Interoperability**
  Interoperability refers to the ability of application functions, distributed over two or more systems, to work successfully together. The integration of medical devices into an IT environment may require application functions that are not specified within the scope of DICOM. Consequently, using only the information provided by this Conformance Statement does not guarantee interoperability of Philips equipment with non-Philips equipment.
  It is the user's responsibility to analyze thoroughly the application requirements and to specify a solution that integrates Philips equipment with non-Philips equipment.

- **Validation**
  Philips equipment has been carefully tested to ensure that the actual implementation of the DICOM interface corresponds with this Conformance Statement.
  Where Philips equipment is linked to non-Philips equipment, the first step is to compare the relevant Conformance Statements. If the Conformance Statements indicate that successful information exchange should be possible, additional validation tests will be necessary to ensure the functionality, performance, accuracy and stability of image and image related data. It is the responsibility of the user (or user's agent) to specify the appropriate test suite and to carry out the additional validation tests.

- **New versions of the DICOM Standard**
  The DICOM Standard will evolve in future to meet the user's growing requirements and to incorporate new features and technologies. Philips is actively involved in this evolution and plans to adapt its equipment to future versions of the DICOM Standard. In order to do so, Philips reserves the right to make changes to its products or to discontinue its delivery. The user should ensure that any non-Philips provider linking to Philips equipment also adapts to future versions of the DICOM Standard. If not, the incorporation of DICOM enhancements into Philips equipment may lead to loss of connectivity (in case of networking) and incompatibility (in case of media).

3.4. Definitions, Terms and Abbreviations

Table 3: Definitions, Terms and Abbreviations

Abbreviation/Term	Explanation
AE	Application Entity

Abbreviation/Term	Explanation
ANSI	American National Standard Institute
AP	Application Profile
BOT	Basic Offset Table
CD	Compact Disc
CD-R	CD-Recordable
CD-M	CD-Medical
CR	Computed Radiography
CT	Computed Tomography
DCR	Dynamic Cardio Review
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DIMSE-Composite
DIMSE-N	DIMSE-Normalized
DX	Digital X-Ray
EBE	DICOM Explicit VR Big Endian
ELE	DICOM Explicit VR Little Endian
FSC	File-set Creator
FSR	File-set Reader
FSU	File-set Updater
GUI	Graphic User Interface
HIS	Hospital Information System
HL7	Health Level Seven
ILE	DICOM Implicit VR Little Endian
IOD	Information Object Definition
ISIS	Information System - Imaging System
MOD	Magneto-Optical Disk
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
NEMA	National Electrical Manufacturers Association
NM	Nuclear Medicine
PDU	Protocol Data Unit
RF	X-Ray Radiofluoroscopic
RIS	Radiology Information System
RT	Radiotherapy
RWA	Real-World Activity
SC	Secondary Capture
SCM	Study Component Management
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/Internet Protocol
UID	Unique Identifier
US	Ultrasound
USMF	Ultrasound Multi-frame
WLM	Worklist Management
XA	X-Ray Angiographic

3.5. References

[DICOM] Digital Imaging and Communications in Medicine, Parts 1 - 22 (NEMA PS 3.1- PS 3.22),
National Electrical Manufacturers Association
1300 North 17th Street
Suite 900
Arlington, Virginia 22209
Internet: https://www.dicomstandard.org/current
Note that at any point in time the official standard consists of the most recent yearly edition of the base standard (currently 2020) plus all the supplements and correction items that have been approved as Final Text.

4. Networking

This section contains the networking related services (vs. the media related ones).

4.1. Implementation model

The implementation model consists of three sections:

- The application data flow diagram, specifying the relationship between the Application Entities and the "external world" or Real-World Activities,
- A functional description of each Application Entity, and
- The sequencing constraints among them.

4.1.1 Application Data Flow

The TraceMaterVue system consists of one single application entity, the TraceMaterVue DICOM Proxy Entity TraceMaterVue AE. The figure below shows the networking application data flow as a functional overview of the TraceMaterVue AE. On the left the local Real-World Activities are presented, whereas on the right the remote Real-World Activities are presented.

4.1.2 Functional Definition of AE's

This section contains a functional definition for each individual local Application Entity.

4.1.2.1 Functional Definition of TraceMaterVue AE

The TraceMaterVue AE is the only application entity within TraceMaterVue. It includes the following DICOM functionality.
- Import (STORE SCP) DICOM objects (ECG Waveforms and Encapsulated PDF) to a local database.
- Storage Commitment (SCP) from a remote DICOM system in synchronous and asynchronous modes.
- Export (STORE SCU) DICOM objects (ECG Waveforms and Encapsulated PDF) from the local database to a network DICOM node.
- MWL and MPPS: forward requests and responses from a remote DICOM node and to another DICOM remote node.

4.1.3 Sequencing of Real World Activities

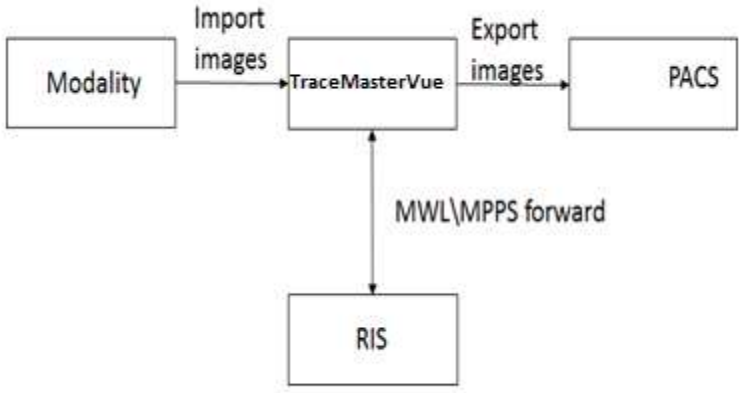


Figure 1: Sequence of Real World Activities

4.2. AE Specifications

This section in the DICOM Conformance Statement is a set of Application Entity specifications. There are as many of these subsections as there are different AE's in the implementation.

4.2.1 TraceMaterVue AE

Detail of this specific Application Entity is specified in this section.

4.2.1.1. SOP Classes

This Application Entity provides Standard Conformance to the following SOP Classes.

Table 4: SOP Classes for Storage Application Entity

SOP Class Name	SOP Class UID	SCU	SCP
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31	Yes*	Yes*
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Yes*	Yes*
Verification SOP Class	1.2.840.10008.1.1	No	Yes

*only forwarding as a proxy.

Note: Any SOP specific behavior is documented later in the conformance statement in the applicable SOP specific conformance section.

4.2.1.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

4.2.1.2.1. General

The DICOM standard application context is specified below.

Table 5: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2. Number of Associations

The number of simultaneous associations that an Application Entity may support as an Initiator or Acceptor is specified here.

Table 6: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations	Dynamic (depends on system resource)

Table 7: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	Dynamic (depends on system resource)

4.2.1.2.3. Asynchronous Nature

The implementation supports negotiation of multiple outstanding transactions, along with the maximum number of outstanding transactions supported.

Table 8: Asynchronous nature as an Association Initiator for this AE

Description	Value
Maximum number of outstanding asynchronous transactions	Dynamic (depends on system resource)

4.2.1.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 9: DICOM Implementation Class and Version for TraceMaterVue AE

Implementation Class UID	1.3.46.670589.32.860420.3.6
Implementation Version Name	3.6.0.1

4.2.1.2.5. Communication Failure Handling

The behavior of the AE during communication failure is summarized in the next table.

Table 10: Communication Failure Behavior

Exception	Behavior
ARTIM Timeout	The association is released and the connection is closed.
Association aborted	The association is released and the connection is closed.

4.2.1.3. Association Initiation Policy

The behavior of this Application Entity is summarized in the next Table.

Table 11: Association Rejection Response

Result	Source	Reason/Diagnosis	Behavior
1 - rejected-permanent	1 - DICOM UL service-user	1 - no-reason-given	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=1 - rejected-permanent source=1 - service-user reason=1 - no-reason-given
		2 - application-context-name-not supported	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=1 - rejected-permanent source=1 - service-user reason=2 - application-context-name-not-supported
	2 - DICOM UL service-provider (ACSE related function)	1 - no-reason-given	Association is not established. The following error is logged. result=1 - rejected-permanent source=2 - service-user(ACSE) reason=1 - no-reason-given
		2 - protocol-version-not-supported	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=1 - rejected-permanent source=2 - service-provider (ACSE) reason=2 - protocol-version-not-supported

Result	Source	Reason/Diagnosis	Behavior
	3 - DICOM UL service-provider (Presentation related function)	1 - temporary-congestion	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=1 - rejected-permanent source=3 - service-provider (Presentation) reason=1 - temporary-congestion
		2 - local-limit-exceeded	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=1 - rejected-permanent source=3 - service-provider (Presentation) reason=2 - local-limit-exceeded
2 - rejected-transient	1 - DICOM UL service-user	1 - no-reason-given	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=1 - service-user reason=1 - no-reason-given
		2 - application-context-name-not-supported	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=1 - service-user reason=2 - application-context-name-not-supported
	2 - DICOM UL service-provider (ACSE related function)	1 - no-reason-given	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=2 - service-provider (ACSE) reason=1 - no-reason-given
		2 - protocol-version-not-supported	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=2 - service-provider (ACSE) reason=2 - protocol-version-not-supported
	3 - DICOM UL service-provider (Presentation related function)	1 - temporary-congestion	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=3 - service-provider (Presentation) reason=1 - temporary-congestion
		2 - local-limit-exceeded	Association is not established. The following error is logged. A-ASSOCIATE-RJ result=2 - rejected-transient source=3 - service-provider (Presentation) reason=2 - local-limit-exceeded

The behavior of the AE on receiving an Association abort is summarized in the next table.

Table 5: Association Abort Handling

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0- reason-not-specified	Return response, stop processing.

Source	Reason/Diagnosis	Behavior
2 - DICOM UL service-provider (initiated abort)	0 - reason-not-specified	Return response, stop processing.
	1 - unrecognized-PDU	Return response, stop processing.
	2 - unexpected-PDU	Return response, stop processing.
	4 - unrecognized-PDU-parameter	Return response, stop processing.
	5 - unexpected-PDU-parameter	Return response, stop processing.
	6 - invalid-PDU-parameter-value	Return response, stop processing.

Notes:

1. Associate PDU items that are recognized:
- 0x10 APPLICATION CONTEXT
- 0x20 PRESENTATION CONTEXT (RQ)
- 0x21 PRESENTATION CONTEXT (AC)
- 0x30 ABSTRACT SYNTAX
- 0x40 TRANSFER SYNTAX
- 0x50 USER INFO
- 0x51 MAXIMUM LENGTH
- 0x52 IMPLEMENTATION CLASS UID
- 0x53 ASYNCHRONOUS OPERATIONS WINDOW
- 0x54 SCP/SCU ROLE SELECTION
- 0x55 IMPLEMENTATION VERSION NAME
- 0x56 SOP CLASS EXTENDED NEGOTIATION

2. Associate PDU items for Unexpected-PDU parameterReceived more than once:
- 0x10 APPLICATION CONTEXT (SCU, SCP)
- 0x30 ABSTRACT SYNTAX (SCU, SCP)
- 0x40 TRANSFER SYNTAX (SCU)

Received unexpectedly:
- 0x20 PRESENTATION CONTEXT (RQ) (SCU)

3. Associate PDU items for Invalid-PDU parameter value:
Received more than once (SCU, SCP):
- 0x50 USER INFO
- 0x51 MAXIMUM LENGTH
- 0x52 IMPLEMENTATION CLASS UID
- 0x53 ASYNCHRONOUS OPERATIONS WINDOW
- 0x55 IMPLEMENTATION VERSION NAME

Received illegally:
- 0x21 PRESENTATION CONTEXT (AC) (SCP)

PDU items not received:
- 0x10 APPLICATION CONTEXT (SCU, SCP)
- 0x20 PRESENTATION CONTEXT (RQ) (SCP)
- 0x21 PRESENTATION CONTEXT (AC) (SCU)
- 0x50 USER INFO (SCU, SCP)
- 0x30 ABSTRACT SYNTAX (SCU)
- 0x40 TRANSFER SYNTAX (SCU)
- 0x51 MAXIMUM LENGTH (SCU, SCP)
- 0x52 IMPLEMENTATION CLASS UID (SCU)

4. PDU types that are recognized:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x04 P-DATA-TF
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
- 0x07 A-ABORT

5. Expected PDU's for following states:
STATE_IDLE:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
STATE_ASSOCIATED:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x06 A-RELEASE-RP
STATE_ASSOCIATING (SCU):
- 0x01 A-ASSOCIATE-RQ
- 0x04 P-DATA-TF
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
STATE_RELEASING:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
STATE_WAIT_FOR_ASSOCIATE (SCP):
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x04 P-DATA-TF
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
- 0x07 A-ABORT
STATE_WAIT_FOR_FINISH:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x04 P-DATA-TF
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
STATE_WAIT_FOR_DISCONNECT:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
STATE_TIMED_OUT:
- 0x01 A-ASSOCIATE-RQ
- 0x02 A-ASSOCIATE-AC
- 0x03 A-ASSOCIATE-RJ
- 0x04 P-DATA-TF
- 0x05 A-RELEASE-RQ
- 0x06 A-RELEASE-RP
- 0x07 A-ABORT

Table 6: DICOM Command Communication Failure Behavior

Source	Reason/Diagnosis	Behavior
Reply Timeout	Timeout	N/A
Association aborted	Association aborted	The command is marked as failed. The reason is logged and reported to the user.

4.2.1.3.1. (Real-World) Activity – Image Export

4.2.1.3.1.1. Description and Sequencing of Activities

The TraceMaterVue implements the Storage service class to store selected images at an archive or other storage SCP

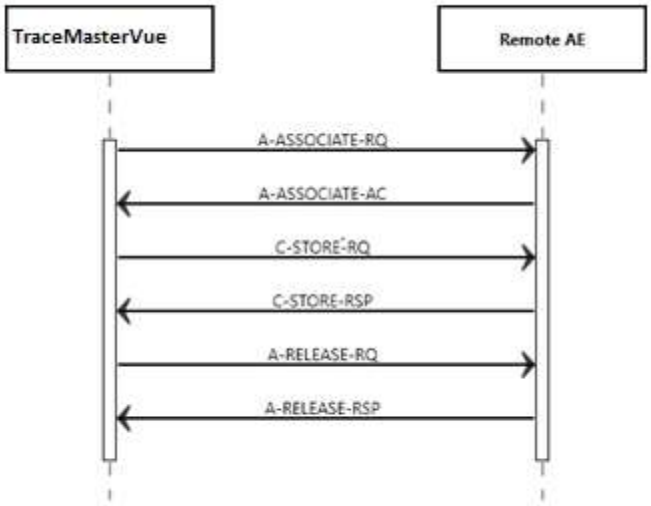


Figure 2: Data Flow Diagram – Image export

4.2.1.3.1.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 14: Proposed Presentation Contexts for (Real-World) Activity – Image Export

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name List**	**UID List**		
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Note: Implicit VR Little Endian is preferred transfer syntax. For Explicit VR Little Endian, it needs to be configured.

4.2.1.3.1.3. SOP Specific Conformance for verification SOP Class

TraceMaterVue sends the DICOM messages to the configured DICOM systems

4.2.1.3.1.3.1. Dataset Specific Conformance for C-STORE-RQ

Detail regarding the Dataset Specific response behavior will be reported in this section.

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 15: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successfully stored	Store operation is successful.
Failure	A700	Refused: Out of Resources	Store operation is unsuccessful. Write error log.
	A900	Error: Data Set does not match SOP Class	Store operation is unsuccessful. Write error log.
	C000	Error: Cannot understand	Store operation is unsuccessful. Write error log.
	0111	Duplicate SOP Instance	Store operation is unsuccessful. Write error log.
Warning	B000	Coercion of Data Elements	Store operation is unsuccessful. Write error log.
	B006	Elements Discarded	Store operation is unsuccessful. Write error log.
	B007	Data Set does not match SOP Class	Store operation is unsuccessful. Write error log.

Note: When forwarding MWL and MPPS messages, the TraceMaterVue AE will add Group Length elements to the messages

4.2.1.3.2. (Real-World) Activity – Modality Worklist as SCU

4.2.1.3.2.1. Description and Sequencing of Activities

TraceMasterVue system can be configured to forward MWL to a configured Forward MWL node. The forward node can be configured to receive ECGs also. When MWL messages are received from a modality, the messages are forwarded as such to the forward MWL node. The MWL Information model is same as that received from the SCU node.
The TraceMaterVue system is capable of forwarding the MWL requests from a remote node to another remote node. The system is not capable of creating attributes for C-FIND-RQ.

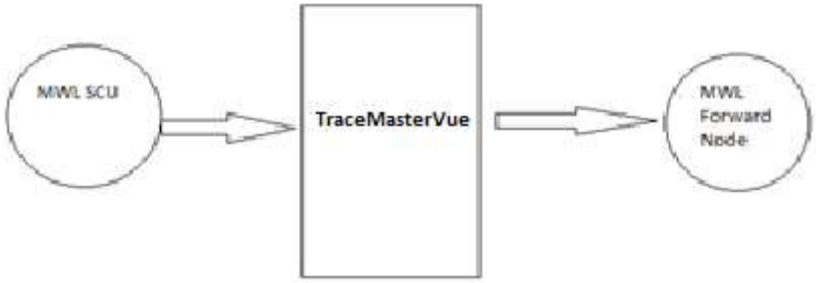


Figure 3: Modality Worklist as SCU

4.2.1.3.3. (Real-World) Activity - Modality Performed Procedure Step as SCU

4.2.1.3.3.1. Description and Sequencing of Activities

TraceMasterVue system can be configured to forward MPPS to a configured Forward MPPS node. The forward node can be configured to receive images also. When MPPS messages are received from a modality, the messages are forwarded as such to the forward MPPS node. The MPPS Information model is same as that received from the SCU node.
The TraceMaterVue system is capable of forwarding the MPPS requests from a remote node to another remote node. The system is not capable of creating attributes for N-CREATE-RQ.

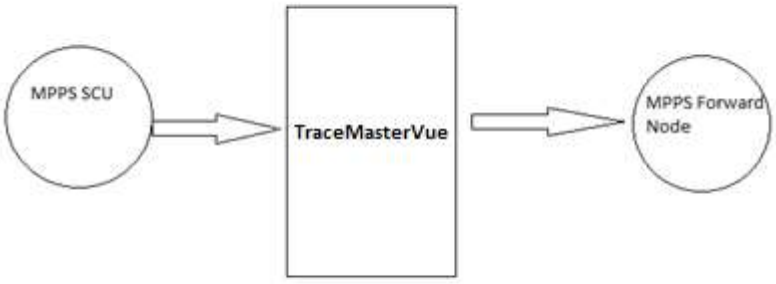


Figure 5: Modality Performed Procedure step as SCU

4.2.1.3.3.1.1.1. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-EVENT-REPORT-SCU

Table 75: Storage Commitment N-EVENT-REPORT Behavior.

Event Type Name	Event Type	Behavior
Storage Commitment Request Successful	1	Store operation is successful.
Storage Commitment Request Complete - Failures Exist	2	Store operation failed. Return a response which contain Failed SOP Sequence

Table 86: Storage Commitment N-EVENT-REPORT Failure Handling Behavior

Service Status	Error Code	Further Meaning	Description
Success	0000	Success	Return the result of Store operation N-EVENT-REPORT always return Success. If Failures Exist, Failed SOP Sequence will be include in the DICOM response dataset

4.2.1.4. Association Acceptance Policy

4.2.1.4.1. (Real-World) Activity – Modality Worklist as SCP

The TraceMaterVue system is capable of forwarding the MWL responses from a remote node to another remote node and vice versa.

4.2.1.4.1.1. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 9: Proposed Presentation Contexts for (Real-World) Activity – Modality Worklist

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU\SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Worklist Information Model - FIND SOP Class		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.1.4.2. (Real-World) Activity - Modality Performed Procedure Step as SCP

The TraceMaterVue system is capable of forwarding the MPPS requests from a remote node to another remote node.

4.2.1.4.2.1. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 10: Proposed Presentation Contexts for (Real-World) Activity – Modality Performed Procedure Step

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU\SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.1.4.3. (Real-World) Activity – Verification as SCP

4.2.1.4.3.1. Description and Sequencing of Activities

A remote system requests verification from TraceMaterVue AE using the C-ECHO command.

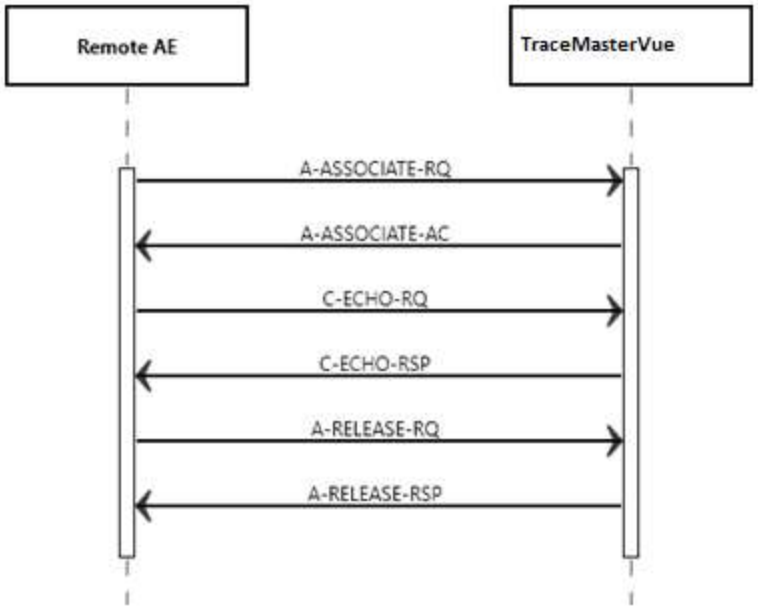


Figure 4: (Real World) Activity - Verification as SCP

4.2.1.4.3.2. Accepted Presentation Contexts

The presentation contexts are defined in the next table.

Table 11: Accepted Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.1.4.3.3. SOP Specific Conformance for Verification SOP Class

TraceMaterVue AE (C-ECHO SCP) provides standard conformance to the DICOM V3.0 verification SOP Class.

4.2.1.4.3.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

Detail regarding the Dataset Specific response behavior will be reported in this section.
This includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 12: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	C-ECHO command was successful received.

4.2.1.4.4. (Real-World) Activity – Image Import

4.2.1.4.4.1. . Description and Sequencing of Activities

The TraceMaterVue accept associations from configured systems that wish to store images in its database using the C-STORE command.
Note – Data imported by TraceMaterVue is converted from DICOM format and stored in a proprietary format.

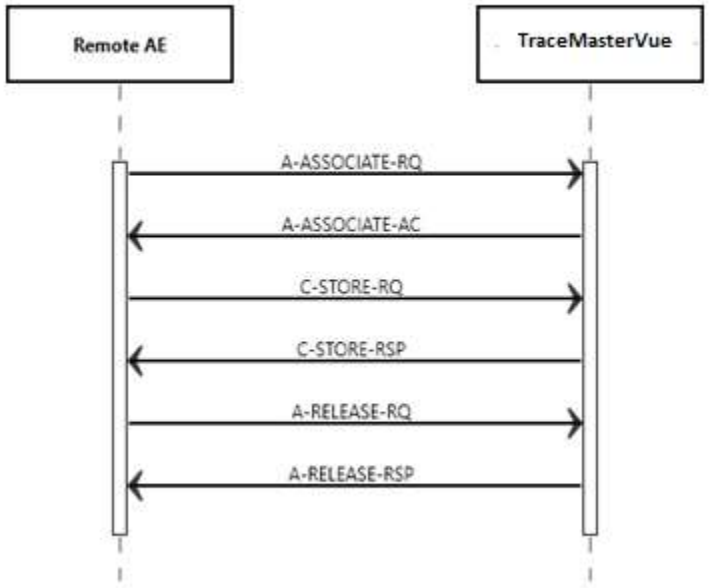


Figure 5: Data Flow Diagram – Store Image – Storage as SCP

Table 13: Accepted Presentation Contexts for (Real-World) Activity – Image Import

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name List**	**UID List**		
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

Notes:

- When imported patient name with five components, TraceMasterVue DICOM Gateway system truncates to three components (last name, middle name and first name).
- For 12 Lead ECG Waveform Storage SOP Class and General Waveform ECG SOP Class the Sampling Frequency (003A, 001A) shall have a value of 500.
- For 12 Lead ECG Waveform Storage SOP Class and General Waveform ECG SOP Class the Number of Waveform Samples (003A,0010) shall have a value in the range of 5000 to 5500.
- TraceMasterVue DICOM Gateway will reject DICOM ECG waveform if DICOM tag "Sampling Frequency (003A, 001A)" value is not 500.

- TraceMasterVue DICOM Gateway will reject DICOM ECG waveform if the waveform bandwidth is out of 0.05- 150 Hz.
- TraceMasterVue DICOM Gateway will reject DICOM ECG waveform if DICOM tag "Filter High Frequency (003A,0221)" value is out of (150,100,40) Hz or "Filter Low Frequency (003A,0020)" value is out of (0.5,0.15,0.05) Hz.
- TraceMasterVue DICOM Gateway will reject DICOM ECG waveform if the DICOM tag "Waveform Samples (003A,0010)" value is out of the range of (5000 - 5500).
- The TraceMasterVue DICOM Gateway will not automatically attempt to resend failed transfers.
- If transfer of a report fails, the TraceMasterVue DICOM Gateway must be restarted manually in order to attempt transfer again

4.2.1.4.4.2. SOP Specific Conformance for Storage SOP Classes

TraceMaterVue system receives the incoming DICOM messages from configured DICOM systems and store it in the local database.

4.2.1.4.4.2.1. Dataset Specific Conformance for C-STORE-RSP

Details regarding the Dataset Specific response behavior will be reported in this section.

This includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

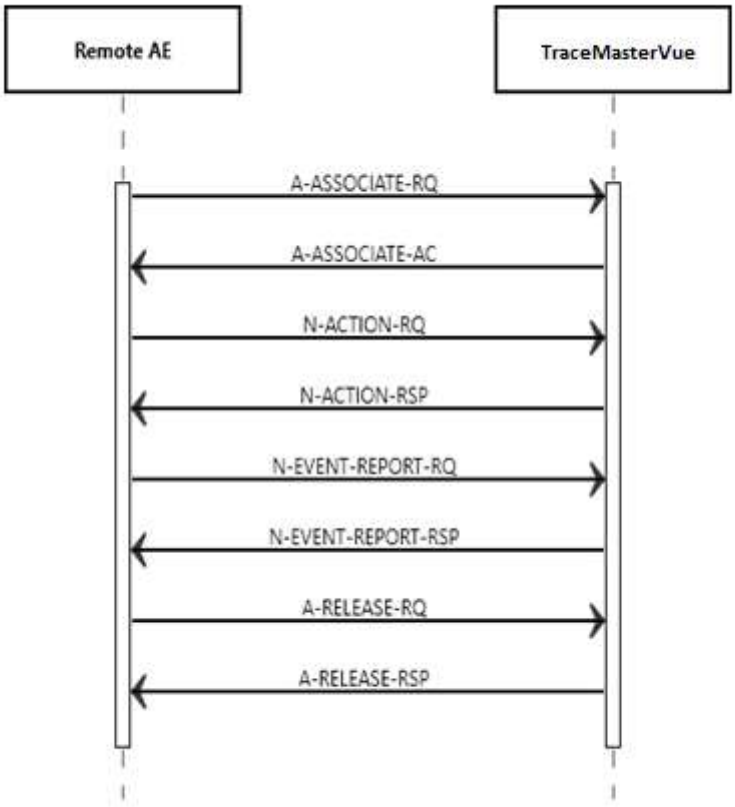
Table 14: Status Response C-STORE

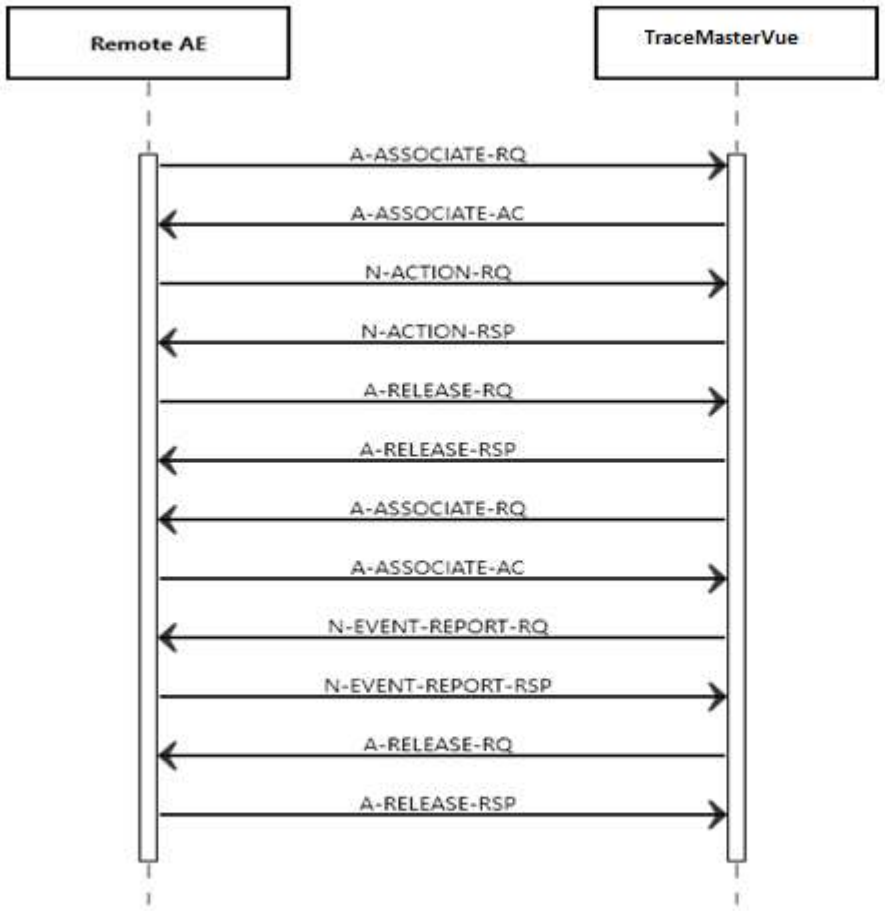
Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successfully stored	Store operation is successful.
Failure	A700	Refused: Out of Resources	Store operation is unsuccessful. Write error log.
	A900	Error: Data Set does not match SOP Class	Store operation is unsuccessful. Write error log.
	C000	Error: Cannot understand	Store operation is unsuccessful. Write error log.
	0111	Duplicate SOP Instance	Store operation is unsuccessful. Write error log.
Warning	B000	Coercion of Data Elements	Store operation is unsuccessful. Write error log.
	B006	Elements Discarded	Store operation is unsuccessful. Write error log.
	B007	Data Set does not match SOP Class	Store operation is unsuccessful. Write error log.

4.2.1.4.5.(Real-World) Activity - Storage Commitment Push Model as SCP

4.2.1.4.5.1. Description and Sequencing of Activities

The TraceMasterVue supports synchronous and asynchronous mode for storage commitment SCP.





4.2.1.4.5.2. Accepted Presentation Contexts

Table 22: Accepted Presentation Contexts for Storage Commitment Push Model as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.1.4.5.3. SOP Specific Conformance for SOP Classes

The associated Activity with the Storage Commitment Push Model service is the communication by the STORAGE-SCP AE to peer AEs that it has committed to permanently store Composite SOP Instances that have been sent to it. It thus allows peer AEs to determine whether the TraceMasterVue Server has taken responsibility for the archiving of specific SOP Instances so that they can be flushed from the peer AE system.

The STORAGE-SCP AE takes the list of Composite SOP Instance UIDs specified in a Storage Commitment Push Model N-ACTION Request and checks if they are present in the TraceMasterVue DICOM Server application database. As long as the

Composite SOP Instance UIDs are present in the database, the STORAGE-SCP AE will consider those Composite SOP Instance UIDs to be successfully archived. The STORAGE-SCP AE does not require the Composite SOP Instances to actually be successfully written to archive media in order to commit to responsibility for maintaining these SOP Instances.
Once the STORAGE-SCP AE has checked for the existence of the specified Composite SOP Instances, it will then attempt to send the Notification request (N-EVENT-REPORT-RQ). The default behavior is to attempt to send this Notification over the same Association that was used by the peer AE to send the original N-ACTION Request. If the Association has already been released or Message transfer fails for some reason then the STORAGE-SCP AE will attempt to send the N-EVENT-REPORT-RQ over a new Association. The STORAGE-SCP AE will request a new Association with the peer AE that made the original N-ACTION Request. The STORAGE-SCP AE can be configured to always open a new Association in order to send the Notification request.

4.2.1.4.5.3.1.SOP Specific Conformance for Storage Commitment Push Model SOP Class

4.2.1.4.5.3.2. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-ACTION-SCP

Synchronous and Asynchronous store commitment are supported

Table 23: N-ACTION-RSP Dataset Specification.

Storage Commitment Push Model SOP Class			
Attribute Name	**Tag**	**VR**	**Comment**
Storage Commitment Request - Action Information Module			
Transaction UID	0008,1195	UI	Transaction UID
Referenced SOP Sequence	0008,1199	SQ	Referenced SOP Sequence (if success)
>Referenced SOP Class UID	0008,1150	UI	Referenced SOP Class UID
>Referenced SOP Instance UID	0008,1155	UI	Referenced SOP Instance UID
Failed SOP Sequence	0008,1198	SQ	Failed SOP Sequence (if fail)
>Referenced SOP Class UID	0008,1150	UI	Referenced SOP Class UID
>Referenced SOP Instance UID	0008,1155	UI	Referenced SOP Instance UID
>Failure Reason	0008,1197	US	Failure Reason

Table 154: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Request has been accepted, and will be processed

4.3. Network Interfaces

4.3.1 Physical Network Interfaces

The System provides only DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8 of the standard.
TCP/IP is the only protocol stack supported.
Supported physical medium include:
IEEE 802.3-1995, 10BASE-T
IEEE 802.3-1995, 100BASE-TX (Fast Ethernet)
IEEE 802.3, 1000BASE-X (Fiber Optic Gigabit Ethernet).

The TCP/IP Stack as supported by the underlying Operating System.
The API is the WinSock 2 interface as supported by the underlying Operating System.

4.3.2 Additional Protocols

Not applicable

4.3.2.1 IPv4 and IPv6 Support

The TraceMasterVue B.02 supports IPv4 networks communication

4.4. Configuration

Any implementation's DICOM conformance may be dependent upon configuration, which takes place at the time of installation. Issues concerning configuration are addressed in this section.

4.4.1 AE Title/Presentation Address Mapping

An important installation issue is the translation from AE title to presentation address. How this is to be performed is described here.

4.4.1.1. Local AE Titles

The local AE title mapping and configuration are specified as:

Table 27: AE Title configuration table

Application Entity	Default AE Title	Default TCP/IP Port
TraceMaterVue AE	DICOMPROXY	9104 (Store) 9105(Storage commitment) 9107(MWL) 9108(MPPS)

4.4.1.2. Remote AE Title/Presentation Address Mapping

Remote AE Title, IP-Address, Port-number, supported DICOM Services and supported Transfer Syntaxes are freely configurable.

4.4.2 Parameters

The specification of important operational parameters, their default value and range (if configurable) are specified here.

Table 28: Configuration Parameters Table

Parameter	Configurable	Default Value
General Parameter		
Time-out waiting for acceptance or rejection Response to an Association Open Request (Application Level timeout)	No	N/A
General DIMSE level time-out values (Verification, Storage, Storage Commitment)	No	N/A
Time-out for response to TCP/IP connect request. (Low-level timeout)	No	N/A
Time-out waiting for acceptance of a TCP/IP message over the network (Low-level timeout)	No	N/A
Time-out for waiting for data between TCP/IP packets. (Low-level timeout)	No	N/A
Any changes to default TCP/IP settings, such as configurable stack parameters.	No	N/A
Local AE Specific Parameters		
Size constraint in maximum object size	No	N/A
Maximum PDU size the AE can send and receive	No	16352
Association time-out SCP	No	N/A
Association time-out SCU	No	N/A

Parameter	Configurable	Default Value
AE specific DIMSE level time-out values	No	N/A
Number of simultaneous associations by service and/or SOP class	No	Dynamic
SOP Class support	No	Check Table 5
Transfer Syntax support	No	Implicit VR Little Endian
Remote Configurable Parameters		
Device Type	No	N/A
DICOM services supported by PACS AE	No	N/A
Data Type supported by Archive node	No	N/A
Association (Artim) time-out	No	5 seconds
Storage Commit Max Reply Waiting Time (after time-out the reply will be handled asynchronously)	No	N/A
Number of simultaneous associations by service and/or SOP class	No	Dynamic
SOP Class support	No	Check Table 5
Transfer Syntax support	Yes	Implicit VR Little Endian

5. Media Interchange

5.1. Implementation model

Not Applicable

5.2. AE Specifications

Not Applicable

5.3. Augmented and Private Application Profiles

Not Applicable

5.4. Media Configuration

Not Applicable

6. Support of Character Sets

Any support for character sets in Network and Media services is described here.

Table 29: Supported DICOM Character Sets

Character Set Description	Defined Term	ESC Sequence	ISO Registration Number	Code Element	Character Set
Latin alphabet No. 1	ISO_IR 100	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 100	G1	Supplementary set of ISO 8859
GB18030	GB18030	-	-	L71	Chinese coded character set

7. Security

7.1. Security Profiles

TraceMaterVue does not support any security profiles.

8. Annexes of application " TraceMaterVue”

8.1. IOD Contents

8.1.1 Created SOP Instance

This section specifies each IOD created by this application.

This section specifies each IOD created (including private IOD’s). It should specify the attribute name, tag, VR, and value. The value should specify the range and source (e.g. user input, Modality Worklist, automatically generated, etc.). For content items in templates, the range and source of the concept name and concept values should be specified. Whether the value is always present or not shall be specified.

Abbreviations used in the IOD tables for the column "Presence of Module" are:

ALWAYS	The module is always present
CONDITIONAL	The module is used under specified condition

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS	The attribute is always present with a value
EMPTY	The attribute is always present without any value (attribute sent zero length)
VNAP	The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present)
ANAP	The attribute is present under specified condition – if present then it will always have a value

The abbreviations used in the Module table for the column "Source" are:

AUTO	The attribute value is generated automatically
CONFIG	The attribute value source is a configurable parameter
COPY	The attribute value source is another SOP instance
FIXED	The attribute value is hard-coded in the application
IMPLICIT	The attribute value source is a user-implicit setting
MPPS	The attribute value is the same as that use for Modality Performed Procedure Step
MWL	The attribute value source is a Modality Worklist
USER	The attribute value source is explicit user input

Note:
TraceMaterVue does not generate new Objects. A copy of imported objects is created. For attributes with source 'COPY', the source instance is expected to contain the attribute, else the attribute will not be included in the created object.

8.1.1.1. List of created SOP Classes

Table 30: List of created SOP Classes

SOP Class Name	SOP Class UID
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1

8.1.1.2. 12-Lead ECG Waveform Storage SOP Class

Table 31: IOD of Created 12-Lead ECG Waveform Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
	Patient Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Waveform	Acquisition Context Module	ALWAYS
	Waveform Identification Module	ALWAYS
	Waveform Module	ALWAYS
	Waveform Annotation Module	CONDITIONAL
	SOP Common Module	ALWAYS

Table 32: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		COPY	ORDER\USER\COPY	
Patient ID	0010,0020	LO		COPY	ORDER\USER\ COPY	
Patient's Birth Date	0010,0030	DA		COPY	ORDER\USER\COPY	
Patient's Sex	0010,0040	CS		COPY	ORDER\USER\COPY	
Ethnic Group	0010,2160	SH		COPY	ORDER\USER\COPY	

Table 33: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	
Study Time	0008,0030	TM		VNAP	COPY	
Accession Number	0008,0050	SH		VNAP	COPY	
Referring Physician's Name	0008,0090	PN		VNAP	COPY	
Name of Physician(s) Reading Study	0008,1060	PN		ANAP	COPY	
Study Description	0008,1030	LO		ANAP	COPY	
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study ID	0020,0010	SH		VNAP	COPY	

Table 34: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Age	0010,1010	AS		VNAP	COPY	
Patient's Size	0010,1020	DS		VNAP	COPY	
Patient's Weight	0010,1030	DS		VNAP	COPY	
Admission ID	0038,0010	LO		ANAP	COPY	

Table 35: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	ECG	ALWAYS	FIXED	
Operators' Name	0008,1070	PN		ANAP	COPY	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	COPY	
Laterality	0020,0060	CS		ANAP	COPY	
Performed Protocol Code Sequence	0040,0260	SQ		ALWAYS	AUTO	
>Code Value	0008,0100	SH	P2-3120A	ANAP	AUTO	
>Coding Scheme Designator	0008,0102	SH	SRT	ANAP	AUTO	
>Code Meaning	0008,0104	LO	12-Lead ECG	ANAP	AUTO	

Table 36: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips	VNAP	FIXED	
Institution Name	0008,0080	LO		ANAP	COPY, USER	
Station Name	0008,1010	SH	StationName	ANAP	FIXED	
Institutional Department Name	0008,1040	LO		ANAP	USER	
Manufacturer's Model Name	0008,1090	LO	860420	ANAP	FIXED	
Device Serial Number	0018,1000	LO		ANAP	CONFIG	
Software Version(s)	0018,1020	LO	3.6.0.1	ANAP	FIXED	

Table 37: Acquisition Context Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Sequence	0040,0555	SQ		VNAP	AUTO\COPY	
>Value Type	0040,A040	CS	CODE	VNAP	AUTO\COPY	
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	5.4.5-33-1	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	Electrode Placement	ANAP	AUTO\COPY	
>Concept Code Sequence	0040,A168	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	5.4.5-33-1-1	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	Standard 12-Lead positions: limb leads placed at extremities	ANAP	AUTO\COPY	
>Measurement Units Code Sequence	0040,08EA	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	mmHg	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	UCUM	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH	1.4	ANAP	AUTO\COPY	

>>Code Meaning	0008,0104	LO	millimeters Hg	ANAP	AUTO\COPY	
>Value Type	0040,A040	CS	NUMERIC	VNAP	AUTO\COPY	
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	F-008EC(Systolic Blood Pressure)	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SRT	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH		ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	Systolic Blood Pressure	ANAP	AUTO\COPY	
>Numeric Value	0040,A30A	DS		VNAP	AUTO\COPY	This will be the systolic BP value.
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	F-008ED	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SRT	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH		ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	Diastolic Blood Pressure	ANAP	AUTO\COPY	
>Numeric Value	0040,A30A	DS		VNAP		This will be the diastolic BP value.

Note: Specified values are applicable context of the TraceMaterVue workflow.

Table 38: Waveform Identification Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		ALWAYS	AUTO\COPY	
Acquisition Datetime	0008,002A	DT		ALWAYS	AUTO\COPY	
Content Time	0008,0033	TM		ALWAYS	AUTO\COPY	
Instance Number	0020,0013	IS	1	ALWAYS	AUTO\COPY	

Table 39: Waveform Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Waveform Sequence	5400,0100	SQ		ALWAYS	AUTO\COPY	
> Multiplex Group Time Offset	0018,1068	DS		ALWAYS	AUTO\COPY	
>Trigger Time Offset	0018,1069	DS		ALWAYS	AUTO\COPY	
>Waveform Originality	003A,0004	CS		ALWAYS	AUTO\COPY	This will be “ORIGINAL” for the rhythm data and “DERIVED” for median data.
>Number of Waveform Channels	003A,0005	US		ALWAYS	AUTO\COPY	
>Number of Waveform Samples	003A,0010	UL		ALWAYS	AUTO\COPY	
>Sampling Frequency	003A,001A	DS		ALWAYS	AUTO\COPY	Frequency in Hz
>Multiplex Group Label	003A,0020	SH		ANAP	AUTO\COPY	This is “RHYTHM” for the first group and “MEDIAN BEAT” for the second group.
>Channel Definition Sequence	003A,0200	SQ		ALWAYS	AUTO\COPY	
>>Channel Source Sequence	003A,0208	SQ		ALWAYS	AUTO\COPY	
>>>Code Value	0008,0100	SH		ANAP	AUTO\COPY	
>>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	This will be "SCPECG"
>>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	This will be "1.3"
>>>Code Meaning	0008,0104	LO		ANAP	AUTO\COPY	
>>Channel Sensitivity	003A,0210	DS		ANAP	AUTO\COPY	

>>Channel Sensitivity Units Sequence	003A,0211	SQ		ANAP	AUTO\COPY	
>>>Code Value	0008,0100	SH	uV	ANAP	AUTO\COPY	
>>>Coding Scheme Designator	0008,0102	SH	UCUM	ANAP	AUTO\COPY	
>>>Coding Scheme Version	0008,0103	SH	1.4	ANAP	AUTO\COPY	
>>>Code Meaning	0008,0104	LO	microvolt	ANAP	AUTO\COPY	
>>Channel Sensitivity Correction Factor	003A,0212	DS		ANAP	AUTO\COPY	
>>Channel Baseline	003A,0213	DS	0	ANAP	AUTO\COPY	
>>Channel Sample Skew	003A,0215	DS	0	ANAP	AUTO\COPY	
>>Waveform Bits Stored	003A,021A	US	16	ALWAYS	AUTO\COPY	
>>Filter Low Frequency	003A,0220	DS		ANAP	AUTO\COPY	
>>Filter High Frequency	003A,0221	DS		ANAP	AUTO\COPY	
>>Noh Filter Frequency	003A,0222	DS		ANAP	AUTO\COPY	
>Waveform Bits Allocated	5400,1004	US	16	ALWAYS	AUTO\COPY	
>Waveform Sample Interpretation	5400,1006	CS	SS	ALWAYS	AUTO\COPY	
>Waveform Data	5400,1010	OW/OB		ALWAYS	AUTO\COPY	

Table 40: Waveform Annotation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Waveform Annotation Sequence	0040,B020	SQ		ALWAYS	COPY	Sequence of Annotation Items
> Annotation Group Number	0040,A180	US	0	ALWAYS	COPY	Number identifying associated annotations. This will be “0”.
> Unformatted Text Value	0070,0006	ST		ALWAYS	COPY	Text Observation Value (annotation
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	1	ALWAYS	COPY	Number identifying associated annotations. This will be “1”.
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the measurement. These are the possible values: VRate "5.10.2.5-1" RR Interval "5.10.2.1-3" PR Interval "5.13.5-7" QRS Duration "5.13.5-9" QT Interval "5.13.5-11" QTc Interval "5.10.2.5-5" P Axis "5.10.3-11" QRS Axis "5.10.3-13" T Axis "5.10.3-15"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	"SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. These are the possible values are: RR Interval, PR Interval, QRS Duration, QT Interval, QTC Interval, Ventricular Heart Rate, P Axis, QRS Axis, T Axis, P Onset, P Offset, QRS Onset, Fiducial Point, QRS Offset, T Offset and pace Maker Spike
> Numeric Value	0040,A30A	DS		ALWAYS	COPY	Numeric measurement value or values.
> Measurement Units Code Sequence	0040,08EA	SQ		ALWAYS	COPY	Units of measurement. Coded entry sequence with one item only.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the measurement unit designator. These are the possible values: VRate "{H.B.}/min" RR Interval "ms" PR Interval "ms" QRS Duration "ms" QT Interval "ms" QTc Interval "ms" P Axis "deg" QRS Axis "deg" T Axis "deg"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "UCUM".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.4".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the measurement unit. These are the possible values are: heart beats per min, millisecond, degree, point and Axis
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	2	ALWAYS	COPY	Number identifying associated annotations. This will be “2”.
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the marker. These are the possible values: P Onset "5.10.3-1" P Offset "5.10.3-2" QRS Onset "5.10.3-3" Fiducial Point "5.7.1-3" QRS Offset "5.10.3-4" T Offset "5.10.3-5"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. These are the possible values: P Onset "P Onset" P Offset "P Offset" QRS Onset "QRS Onset" Fiducial Point "Fiducial Point" QRS Offset "QRS Offset" T Offset "T Offset"
> Referenced Sample Positions	0040,A132	UL		ALWAYS	COPY	List of samples within a multiplex group specifying temporal points for annotation. Position of first sample is 1. There will be only one sample position.
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	3	ALWAYS	COPY	Number identifying associated
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the marker. This will be “5.10.1.2”.
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. This will be “Pacemaker spike”.
> Referenced Sample Positions	0040,A132	UL		ALWAYS	COPY	List of samples within a multiplex group specifying temporal points for annotation. Position of first sample is 1. There will be only one sample position.
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).

Table 41: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS	ISO_IR 100	ANAP	AUTO	
Instance Creation Date	0008,0012	DA		ANAP	AUTO	
Instance Creation Time	0008,0013	TM		ANAP	AUTO	
					AUTO	
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.9.1.1	ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	
Instance Number	0020,0013	IS		ANAP	AUTO	

Table 42: Private / Additional Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Institution Residence	0038,0400	LO				-
Visit Comments	0038,4000	LT				-
Reason for the Requested Procedure	0040,1002	L				-

8.1.1.3. General ECG Waveform Storage SOP Class

Table 43: IOD of General ECG Waveform Storage SOP Class Instances

Information Entity	Module	Presence
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
	Patient Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	Acquisition Context Module	ALWAYS
	General Equipment Module	ALWAYS
Waveform	Encapsulated Document Module	ALWAYS
	Waveform Identification Module	ALWAYS
	Waveform Module	ALWAYS
	Waveform Annotation Module	ALWAYS
	SOP Common Module	ALWAYS

Table 44: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	COPY	
Patient ID	0010,0020	LO		VNAP	COPY	
Patient's Birth Date	0010,0030	DA		VNAP	COPY	
Patient's Sex	0010,0040	CS		VNAP	COPY	
Other Patient IDs	0010,1000	LO		ANAP	COPY	
Ethnic Group	0010,2160	SH		ANAP	COPY	

Table 45: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	
Study Time	0008,0030	TM		VNAP	COPY	
Accession Number	0008,0050	SH		VNAP	COPY	
Referring Physician's Name	0008,0090	PN		VNAP	COPY	
Study Description	0008,1030	LO		ANAP	AUTO	
Study Instance UID	0020,000D	UI		ALWAYS	AUTO\COPY	
Study ID	0020,0010	SH		VNAP	AUTO	

Table 46: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Age	0010,1010	AS		ANAP	USER	
Patient's Size	0010,1020	DS		ANAP	USER	
Patient's Weight	0010,1030	DS		ANAP	USER	
Admission ID	0038,0010	LO		ANAP	MWL	

Table 47: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	“ECG”	ALWAYS	FIXED	
Operators' Name	0008,1070	PN		ANAP	USER	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	COPY	
Laterality	0020,0060	CS		ANAP	AUTO\COPY	
Performed Protocol Code Sequence	0040,0260	SQ		ALWAYS	AUTO	
>Code Value	0008,0100	SH	P2-3120E	ANAP	AUTO	
>Coding Scheme Designator	0008,0102	SH	SRT	ANAP	AUTO	
>Code Meaning	0008,0104	LO	16-lead ECG	ANAP	AUTO	

Table 48: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips	VNAP	AUTO	
Institution Name	0008,0080	LO		ANAP	COPY\USER	
Station Name	0008,1010	SH		ANAP	AUTO	
Institutional Department Name	0008,1040	LO		ANAP	COPY\USER	
Manufacturer's Model Name	0008,1090	LO	860420	ANAP	FIXED	
Device Serial Number	0018,1000	LO		ANAP	AUTO	
Software Versions	0018,1020	LO	3.6.0.1	ANAP	FIXED	

Table 49: Acquisition Context Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Sequence	0040,0555	SQ		VNAP	AUTO\COPY	
>Value Type	0040,A040	CS	CODE	VNAP	AUTO\COPY	
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	5.4.5-33-1	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	Electrode Placement	ANAP	AUTO\COPY	
>Concept Code Sequence	0040,A168	SQ		ALWAYS	AUTO\COPY	
>>Code Value	0008,0100	SH	5.4.5-33-1-1	ANAP	AUTO\COPY	
>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	
>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	
>>Code Meaning	0008,0104	LO	12-Lead positions: limb leads placed at	ANAP	AUTO\COPY	

			extremities			
>Measurement Units Code Sequence	0040,08EA	SQ		ALWAYS	AUTO\COPY	Only the BP has validate value, the attribute will be created.

Note: Specified values are applicable context of the TraceMaterVue workflow.

Table 50: Waveform Identification Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		ALWAYS	AUTO\COPY	
Acquisition Datetime	0008,002A	DT		ALWAYS	AUTO\COPY	
Content Time	0008,0033	TM		ALWAYS	AUTO\COPY	
Instance Number	0020,0013	IS		ALWAYS	AUTO\COPY	

Table 51: Waveform Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Waveform Sequence	5400,0100	SQ		ALWAYS	AUTO\COPY	
> Multiplex Group Time Offset	0018,1068	DS		ALWAYS	AUTO\COPY	
>Trigger Time Offset	0018,1069	DS		ALWAYS	AUTO\COPY	
>Waveform Originality	003A,0004	CS		ALWAYS	AUTO\COPY	This will be “ORIGINAL” for the rhythm data and “DERIVED” for median data.
>Number of Waveform Channels	003A,0005	US		ALWAYS	AUTO\COPY	
>Number of Waveform Samples	003A,0010	UL		ALWAYS	AUTO\COPY	
>Sampling Frequency	003A,001A	DS	500	ALWAYS	AUTO\COPY	Frequency in Hz
>Multiplex Group Label	003A,0020	SH		ANAP	AUTO\COPY	This is “RHYTHM” for the first group and “MEDIAN BEAT” for the second group.
>Channel Definition Sequence	003A,0200	SQ		ALWAYS	AUTO\COPY	
>>Channel Source Sequence	003A,0208	SQ		ALWAYS	AUTO\COPY	
>>>Code Value	0008,0100	SH		ANAP	AUTO\COPY	
>>>Coding Scheme Designator	0008,0102	SH	SCPECG	ANAP	AUTO\COPY	
>>>Coding Scheme Version	0008,0103	SH	1.3	ANAP	AUTO\COPY	
>>>Code Meaning	0008,0104	LO		ANAP	AUTO\COPY	
>>Channel Sensitivity	003A,0210	DS		ANAP	AUTO\COPY	
>>Channel Sensitivity Units Sequence	003A,0211	SQ		ANAP	AUTO\COPY	
>>>Code Value	0008,0100	SH	uV	ANAP	AUTO\COPY	
>>>Coding Scheme Designator	0008,0102	SH	UCUM	ANAP	AUTO\COPY	
>>>Coding Scheme Version	0008,0103	SH	1.4	ANAP	AUTO\COPY	
>>>Code Meaning	0008,0104	LO	microvolt	ANAP	AUTO\COPY	
>>Channel Sensitivity Correction Factor	003A,0212	DS		ANAP	AUTO\COPY	
>>Channel Baseline	003A,0213	DS	0	ANAP	AUTO\COPY	
>>Channel Sample Skew	003A,0215	DS	0	ANAP	AUTO\COPY	
>>Waveform Bits Stored	003A,021A	US	16	ALWAYS	AUTO\COPY	
>>Filter Low Frequency	003A,0220	DS		ANAP	AUTO\COPY	
>>Filter High Frequency	003A,0221	DS		ANAP	AUTO\COPY	

>>Notch Filter Frequency	003A,0222	DS		ANAP	AUTO\COPY	
>Waveform Bits Allocated	5400,1004	US	16	ALWAYS	AUTO\COPY	
>Waveform Sample Interpretation	5400,1006	CS	SS	ALWAYS	AUTO\COPY	
>Waveform Data	5400,1010	OW/OB		ALWAYS		

Table 52: Waveform Annotation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Waveform Annotation Sequence	0040,B020	SQ		ALWAYS	COPY	Sequence of Annotation Items
> Annotation Group Number	0040,A180	US	0	ALWAYS	COPY	Number identifying associated annotations. This will be “0”.
> Unformatted Text Value	0070,0006	ST		ALWAYS	COPY	Text Observation Value (annotation
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	1	ALWAYS	COPY	Number identifying associated annotations. This will be “1”.
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the measurement. These are the possible values: VRate "5.10.2.5-1" RR Interval "5.10.2.1-3" PR Interval "5.13.5-7" QRS Duration "5.13.5-9" QT Interval "5.13.5-11" QTc Interval "5.10.2.5-5" P Axis "5.10.3-11" QRS Axis "5.10.3-13" T Axis "5.10.3-15"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	"SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. These are the possible values are: RR Interval, PR Interval, QRS Duration, QT Interval, QTC Interval, Ventricular Heart Rate, P Axis, QRS Axis, T Axis, P Onset, P Offset, QRS Onset, Fiducial Point, QRS Offset, T Offset and pace Maker Spike
> Numeric Value	0040,A30A	DS		ALWAYS	COPY	Numeric measurement value or values.
> Measurement Units Code Sequence	0040,08EA	SQ		ALWAYS	COPY	Units of measurement. Coded entry sequence with one item only.

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the measurement unit designator. These are the possible values: VRate "{H.B.}/min" RR Interval "ms" PR Interval "ms" QRS Duration "ms" QT Interval "ms" QTc Interval "ms" P Axis "deg" QRS Axis "deg" T Axis "deg"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "UCUM".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.4".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the measurement unit. These are the possible values are: heart beats per min, millisecond, degree, point and Axis
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	2	ALWAYS	COPY	Number identifying associated annotations. This will be “2”.
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the marker. These are the possible values: P Onset "5.10.3-1" P Offset "5.10.3-2" QRS Onset "5.10.3-3" Fiducial Point "5.7.1-3" QRS Offset "5.10.3-4" T Offset "5.10.3-5"
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. These are the possible values: P Onset "P Onset" P Offset "P Offset" QRS Onset "QRS Onset" Fiducial Point "Fiducial Point" QRS Offset "QRS Offset" T Offset "T Offset"
> Referenced Sample Positions	0040,A132	UL		ALWAYS	COPY	List of samples within a multiplex group specifying temporal points for annotation. Position of first sample is 1. There will be only one sample position.
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).
> Annotation Group Number	0040,A180	US	3	ALWAYS	COPY	Number identifying associated

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
> Concept Code Name Sequence	0040,A043	SQ		ALWAYS	COPY	Code representing the fully specified name of the NUMERIC measurement or CODED concept. This sequence shall contain exactly one item.
>> Code Value	0008,0100	SH		ALWAYS	COPY	This is the code for the marker. This will be “5.10.1.2”.
>> Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	This will be "SCPECG".
>> Code Scheme Version	0008,0103	SH		ALWAYS	COPY	This will be "1.3".
>> Code Meaning	0008,0104	LO		ALWAYS	COPY	This is the text name of the marker. This will be “Pacemaker spike”.
> Referenced Sample Positions	0040,A132	UL		ALWAYS	COPY	List of samples within a multiplex group specifying temporal points for annotation. Position of first sample is 1. There will be only one sample position.
> Referenced Waveform Channels	0040,A0B0	US		ALWAYS	COPY	List of channels in waveform to which annotation applies. This will be “0001 0000” (1,0).

Table 53: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS	ISO_IR 100	ANAP	AUTO	
Instance Creation Date	0008,0012	DA		ANAP	AUTO	
Instance Creation Time	0008,0013	TM		ANAP	AUTO	
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.9.1.2	ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	
Instance Number	0020,0013	IS		ANAP	AUTO	

Table 54: Private / Additional Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Institution Residence	0038,0400	LO				-
Visit Comments	0038,4000	LT				-
Reason for the Requested Procedure	0040,1002	L				-

8.1.1.4. Encapsulated PDF Storage SOP Class

Table 55: Encapsulated PDF Storage SOP Class

Information Entity	Module Name	Presence of Module
Patient	Patient	ALWAYS
Study	General Study	ALWAYS
	Patient Study	ALWAYS
	Encapsulated Document Series Module	ALWAYS
Equipment	General Equipment	ALWAYS
	SC Equipment Module	ALWAYS
Encapsulated Document	Encapsulated Document	ALWAYS
	SOP Common	ALWAYS

Table 56: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	COPY	
Patient ID	0010,0020	LO		VNAP	COPY	
Patient's Birth Date	0010,0030	DA		VNAP	COPY	
Patient's Sex	0010,0040	CS		VNAP	COPY	
Ethnic Group	0010,2160	SH		ANAP	COPY	

Table 57: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	
Study Time	0008,0030	TM		VNAP	COPY	
Accession Number	0008,0050	SH		VNAP	COPY	
Referring Physician's Name	0008,0090	PN		VNAP	COPY	
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study ID	0020,0010	SH		VNAP	COPY	

Table 58: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Size	0010,1020	DS		ANAP	COPY	
Patient's Age	0010,1010	AS		ANAP	COPY	
Patient's Weight	0010,1030	DS		ANAP	COPY	

Table 59: Encapsulated Document Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	0008,0060	CS	ECG	ALWAYS	AUTO
Series Instance UID	0020,000E	UI		ALWAYS	AUTO
Series Number	0020,0011	IS		ALWAYS	AUTO

Table 60: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	0008,0070	LO	Philips	VNAP	AUTO
Institution Name	0008,0080	LO		ANAP	AUTO, MWL
Institutional Department Name	0008,1040	LO		ANAP	AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer's Model Name	0008,1090	LO	860420	ANAP	FIXED
Device Serial Number	0018,1000	LO		ANAP	AUTO
Software Version(s)	0018,1020	LO	3.6.0.1	ANAP	FIXED

Table 61: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	0008,0060	CS	ECG	ANAP	AUTO
Conversion Type	0008,0064	CS	WSD	ALWAYS	AUTO

Table 62: Encapsulated Document Module Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Content Date	0008,0023	DA		VNAP	AUTO
Acquisition Date Time	0008,002A	DT		VNAP	AUTO
Content Time	0008,0033	TM		VNAP	AUTO
Instance Number	0020,0013	IS		ALWAYS	AUTO
Burned In Annotation	0028,0301	CS	YES	ALWAYS	AUTO
Concept Name Code Sequence	0040,A043	SQ		VNAP	AUTO
Document Title	0042,0010	ST		VNAP	AUTO
Encapsulated Document	0042,0011	OB		ALWAYS	AUTO
MIME Type of Encapsulated Document	0042,0012	LO	application/pdf	ALWAYS	AUTO

Table 63: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	0008,0005	CS	ISO_IR 100	ANAP	AUTO
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.104.1	ALWAYS	AUTO
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO
Instance Number	0020,0013	IS		ANAP	AUTO
Instance Creation Date	0008,0012	DA		ANAP	AUTO
Instance Creation Time	0008,0013	TM		ANAP	AUTO

8.1.2 Usage of Attributes from Received IOD

Not Applicable

8.1.2.1 Attribute Mapping

Not Applicable

8.1.2.2 Coerced/Modified fields

Not Applicable

8.2 Data Dictionary of Private Attributes

Not Applicable

8.3 Coded Terminology and Templates

Not Applicable

8.3.1 Context Groups

Not Applicable

8.3.2 Template Specifications

Not Applicable

8.3.3 Private code definitions

Not Applicable

8.4 Grayscale Image consistency

Not Applicable

8.5 Standard Extended/Specialized/Private SOPs

Not Applicable

8.6 Private Transfer Syntaxes

Not Applicable

- This part of the page is left intentionally empty -

Issued by:

Philips Medical Systems Nederland B.V.
Veenpluis 6
5684 PC Best
The Netherlands

Internet: https://www.philips.com/healthcare/about/customer-support
Doc Id: HSDP-914106
Date: 09-May-2022