

SonicDICOM ver2.0

DICOM Conformance Statement

April 21, 2016

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1. Introduction

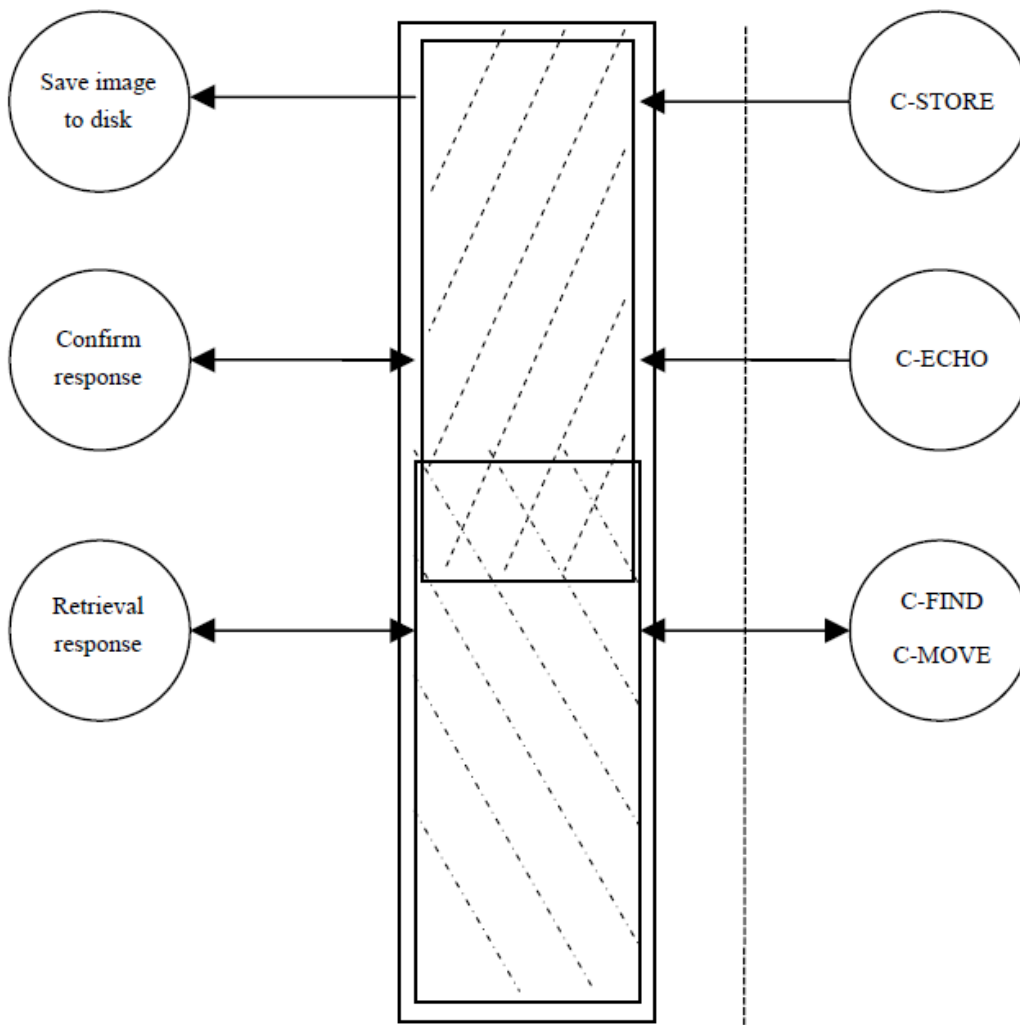
This document is a DICOM Conformance Statement for SonicDICOM ver2.0, stating consistency with conformance to the DICOM standard.

1. 1 Version history

Version	Date	Comments
1.0	February 16, 2016	First version
2.0	April 21, 2016	Added Patient Root Query/Retrieve

2. Implementation Model

2.1 Flow of Application Data



2.2 AE function definitions

The following functions are supported.

- Verification of existence (Verification class SCP).
- Saving images under request from remote host (Storage class SCP).
- Transferring image in response to a retrieval query from remote host (Query/Retrieve class SCP)

2.3 Sequencing Control of Real-world Activities

N/A

3. AE Specification

3.1 AE Specification

Conforms to the following DICOM SOP classes as an SCP	
SOP Class UID	SOP Class Name
[Verification]	
1.2.840.10008.1.1	Verification
[Storage]	
1.2.840.10008.5.1.4.1.1.1	Computed Radiography Image Storage
1.2.840.10008.5.1.4.1.1.1.1	Digital X-Ray Image Storage –For Presentation
1.2.840.10008.5.1.4.1.1.1.1.1	Digital X-Ray Image Storage –For Processing
1.2.840.10008.5.1.4.1.1.1.2	Digital Mammography X-Ray Image Storage –For Presentation
1.2.840.10008.5.1.4.1.1.2	CT Image Storage
1.2.840.10008.5.1.4.1.1.3.1	Ultrasound Multi frame Image Storage
1.2.840.10008.5.1.4.1.1.4	MR Image Storage
1.2.840.10008.5.1.4.1.1.6.1	Ultrasound Image Storage
1.2.840.10008.5.1.4.1.1.7	Secondary Capture Image Storage
1.2.840.10008.5.1.4.1.1.12.1	X-Ray Angiographic Image Storage
1.2.840.10008.5.1.4.1.1.12.2	X-Ray Radiofluoroscopic Image Storage
1.2.840.10008.5.1.4.1.1.12.3	X-Ray Angiographic Bi-Plane Image Storage
1.2.840.10008.5.1.4.1.1.20	Nuclear Medicine Image Storage
1.2.840.10008.5.1.4.1.1.77.1.1	VL Endoscopic Image Storage
1.2.840.10008.5.1.4.1.1.77.1.2	VL Microscopic Image Storage
1.2.840.10008.5.1.4.1.1.77.1.3	VL Slide-Coordinates Microscopic Image Storage
1.2.840.10008.5.1.4.1.1.77.1.4	VL Photographic Image Storage
1.2.840.10008.5.1.4.1.1.128	Positron Emission Tomography Image Storage
1.2.840.10008.5.1.4.1.1.128	Positron Emission Tomography Image Storage
1.2.840.10008.5.1.4.1.1.481.1	RT Image Storage
[Query/Retrieve]	
1.2.840.10008.5.1.4.1.2.1.1	Patient Root Query/Retrieve Model - FIND
1.2.840.10008.5.1.4.1.2.1.2	Patient Root Query/Retrieve Model - MOVE
1.2.840.10008.5.1.4.1.2.2.1	Study Root Query/Retrieve Model - FIND
1.2.840.10008.5.1.4.1.2.2.2	Study Root Query/Retrieve Model - MOVE

3.1.1 Association Establishment Policies

3.1.1.1 Overview

The proposed Application Context Name is "1.2.840.1008.3.1.1.1" The proposed maximum PDU size is 16 KB.

3.1.1.2 Number of Associations

A single association is established at the same time for each provider. Note that while only one association is established at the same time for a singular AE, associations may be established for sub-operations unrestricted to this

3.1.1.3 Asynchronicity

Asynchronous operations are not supported.

3.1.1.4 Implementation Identification Information

Product name	Implementation Class UID	Implementation Version
SonicDICOM	1.2.392.200224.1.2000	2.0

3.1.2 Association Initiation Policies

N/A

3.1.2.1 Real-World Activities

N/A

3.1.3 Association Acceptance Policies

Association accepted for the following activities.

- When requested for DICOM communication Verification from a remote system.
- When an image is transferred from a remote system.
- When there is a retrieval and image request from a remote system.

3.1.3.1 Real-World Activity: Verification

3.1.3.1.1 Related Real-World Activities

C-ECHO response performed in response to confirmation from remote system.

3.1.3.1.2 Proposed Presentation Context

Presentation Context Table				
Abstract Syntax		Transfer Syntax		Role
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP

3.1.3.1.2.1 SOP Specific Conformance (Verification Class)

Standard conformance is provided to Verification in DICOM communication.

3.1.3.2 Real-World Activity: Image Reception

3.1.3.2.1 Related Real-World Activities

If an image exists after image transfer is completed according to an image transfer request from a remote system, the image is saved on a local disk, and registered in the database.

3.1.3.2.2 Proposed Presentation Context

Presentation Context Table			
Abstract Syntax		Transfer Syntax	Role
1.2.840.10008.5.1.4.1.1.1	Computed Radiography Image Storage	*3.1.3.2.2.1	SCP
1.2.840.10008.5.1.4.1.1.1.1	Digital X-Ray Image Storage – For Presentation		SCP
1.2.840.10008.5.1.4.1.1.1.1.1	Digital X-Ray Image Storage – For Processing		SCP
1.2.840.10008.5.1.4.1.1.1.2	Digital Mammography X-Ray Image Storage – For Presentation		SCP
1.2.840.10008.5.1.4.1.1.2	CT Image Storage		SCP
1.2.840.10008.5.1.4.1.1.3.1	Ultrasound Multi frame Image Storage		SCP
1.2.840.10008.5.1.4.1.1.4	MR Image Storage		SCP
1.2.840.10008.5.1.4.1.1.6.1	Ultrasound Image Storage		SCP
1.2.840.10008.5.1.4.1.1.7	Secondary Capture Image Storage		SCP
1.2.840.10008.5.1.4.1.1.12.1	X-Ray Angiographic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.12.2	X-Ray Radiofluoroscopic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.12.3	X-Ray Angiographic Bi-Plane Image Storage		SCP
1.2.840.10008.5.1.4.1.1.20	Nuclear Medicine Image Storage		SCP
1.2.840.10008.5.1.4.1.1.77.1.1	VL Endoscopic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.77.1.2	VL Microscopic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.77.1.3	VL Slide-Coordinates Microscopic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.77.1.4	VL Photographic Image Storage		SCP
1.2.840.10008.5.1.4.1.1.128	Positron Emission Tomography Image Storage		SCP
1.2.840.10008.5.1.4.1.1.128	Positron Emission Tomography Image Storage		SCP
1.2.840.10008.5.1.4.1.1.481.1	RT Image Storage		SCP

3.1.3.2.2.1 Transfer Syntax

Transfer Syntax	
1.2.840.10008.1.2	Implicit VR Little Endian
1.2.840.10008.1.2.1	Explicit VR Little Endian
1.2.840.10008.1.2.2	Explicit VR Big Endian
1.2.840.10008.1.2.4.50	JPEG Baseline(1)
1.2.840.10008.1.2.4.51	JPEG Extended(2, 4)
1.2.840.10008.1.2.4.70	JPEG Lossless
1.2.840.10008.1.2.4.90	JPEG 2000 Image Compression (Lossless Only)
1.2.840.10008.1.2.4.91	JPEG 2000 Image Compression
1.2.840.10008.1.2.5	RLE Lossless

3.1.3.2.2.2 SOP Specific Conformance (Storage Class)

Basically no data element is forcibly rounded or omitted in reception. If the transferred image has the same UID as that of an SOP instance that has been already registered, the transferred image is overwrite-saved.

3.1.3.3 Real-World Activity: Retrieval Response

3.1.3.3.1 Related Real-World Activities

When a retrieval request is received from a remote system, a response is returned based on information in a local database.

3.1.3.3.2 Proposed Presentation Context

Presentation Context Table			
Abstract Syntax		Transfer Syntax	Role
1.2.840.10008.5.1.4.1.2.1.1	Patient Root Query/Retrieve Information Model - FIND	*3.1.3.3.2.1	SCP
1.2.840.10008.5.1.4.1.2.2.1	Study Root Query/Retrieve Information Model - FIND		SCP

3.1.3.3.2.1 Transfer Syntax

Transfer Syntax	
1.2.840.10008.1.2	Implicit VR Little Endian
1.2.840.10008.1.2.1	Explicit VR Little Endian
1.2.840.10008.1.2.2	Explicit VR Big Endian

3.1.3.3.2 SOP Specific Conformance (Query Class)

Patient Root Query/Retrieve Information Model is supported. The following keys are supported.

Level	Attribute Name	Tag	Type
Patient	Patient Name	(0010,0010)	R
Patient	Patient ID	(0010,0020)	U
Patient	Patient's Birth Date	(0010,0030)	O
Patient	Patient's Sex	(0010,0040)	O
Patient	Number of Patient Related Studies	(0020,1200)	O
Patient	Number of Patient Related Series	(0020,1202)	O
Patient	Number of Patient Related Instances	(0020,1204)	O

Study Root Query/Retrieve Information Model is supported. The following keys are supported.

Level	Attribute Name	Tag	Type
Study	Study Date	(0008,0020)	R
Study	Study Time	(0008,0030)	R
Study	Accession Number	(0008,0050)	R
Study	Patient Name	(0010,0010)	R
Study	Patient ID	(0010,0020)	R
Study	Study ID	(0020,0010)	R
Study	Study instance UID	(0020,000D)	U
Study	Modality in Study	(0008,0061)	O
Study	Study Description	(0008,1030)	O
Study	Patient's Birth Date	(0010,0030)	O
Study	Patient's Sex	(0010,0040)	O
Study	Number of Study Related Series	(0020,1206)	O
Study	Number of Study Related Instances	(0020,1208)	O
Series	Modality	(0008,0060)	R
Series	Series Number	(0020,0011)	R
Series	Series Instance UID	(0020,000E)	U
Series	Number of Series Related Instances	(0020,1209)	O
Series	Series Description	(0008,103E)	O
Series	Series Date	(0008,0021)	O
Series	Series Time	(0008,0031)	O
Image	Instance Number	(0020,0013)	R
Image	SOP Instance UID	(0008,0018)	U

3.1.3.4 Real-World Activity: Image Acquisition

3.1.3.4.1 Related Real-World Activities

Respond to requests for images from a remote system.

3.1.3.4.2 Proposed Presentation Context

Presentation Context Table			
Abstract Syntax		Transfer Syntax	Role
1.2.840.10008.5.1.4.1.2.1.2	Patient Root Query/Retrieve Information Model - MOVE	*3.1.3.4.2.1	SCP
1.2.840.10008.5.1.4.1.2.2.2	Study Root Query/Retrieve Information Model - MOVE		SCP

3.1.3.4.2.1 Transfer Syntax

Transfer Syntax	
1.2.840.10008.1.2	Implicit VR Little Endian
1.2.840.10008.1.2.1	Explicit VR Little Endian
1.2.840.10008.1.2.2	Explicit VR Big Endian

3.1.3.4.2.2 SOP Specific Conformance (Acquisition Class)

Standard conformance is provided.

4. Communication Profile

4.1 Supported communication stack

TCP/IP network communication support defined in Part 8 of DCOM Standard is provided.

4.2 TCP/IP stack

Depending on TCP/IP stack supported by operation system.

4.2.1 Physical medium support

Depending on physical medium supported by operation system.

5. Extensions / Specializations / Privatizations

N/A

6. Configuration

Its own AE title can be configured. A remote application entity name can be associated with presentation address.

6.1 AE Title / Presentation Address Mapping

The application entity name can be associated with the presentation address using <AE title> <IP address> <Port number> format.

6.2 Configurable parameters

The following parameters can be configured.

- Local/Remote AE title
- Remote IP address
- Local/Remote TCP/IP Port

7. Support of Extended Character Sets

- ISO_IR_6 ASCII
- ISO_IR_100 Latin Alphabet No. 1 Unextended
- ISO_IR_101 Latin Alphabet No. 2 Unextended
- ISO_IR_109 Latin Alphabet No. 3 Unextended
- ISO_IR_110 Latin Alphabet No. 4 Unextended
- ISO_IR_144 Cyrillic Unextended
- ISO_IR_127 Arabic Unextended
- ISO_IR_126 Greek Unextended
- ISO_IR_138 Hebrew Unextended
- ISO_IR_148 Latin Alphabet No. 5 (Turkish) Unextended
- ISO_IR_13 JIS X 0201 Katakana Unextended
- ISO_IR_87 JIS X 0202 Kanji Unextended
- ISO_IR_166 TIS 620-2533 (Thai) Unextended
- ISO_IR_192 Unicode in UTF-8
- ISO_2022_IR_6 ASCII
- ISO_2022_IR_100 Latin Alphabet No. 1 Extended
- ISO_2022_IR_101 Latin Alphabet No. 2 Extended
- ISO_2022_IR_109 Latin Alphabet No. 3 Extended
- ISO_2022_IR_110 Latin Alphabet No. 4 Extended
- ISO_2022_IR_144 Cyrillic Extended
- ISO_2022_IR_127 Arabic Extended
- ISO_2022_IR_126 Greek Extended
- ISO_2022_IR_138 Hebrew Extended
- ISO_2022_IR_148 Latin Alphabet No. 5 (Turkish) Extended
- ISO_2022_IR_13 JIS X 0201 Katakana Extended
- ISO_2022_IR_166 TIS 620-2533 (Thai) Extended
- ISO_2022_IR_87 JIS X 0208 (Kanji) Extended
- ISO_2022_IR_159 JIS X 0212 (Kanji) Extended
- ISO_2022_IR_149 KS X 1001 (Hangul and Hanja) Extended
- GB18030 Chinese (Simplified) Extended