



## **Conformance Statement for TCS 2.03**

**Medcon Telemedicine Technology**

<http://www.medcon.com>

**This document contains DICOM conformance statements for TCS 2.03**

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## 1. Introduction

This document contains DICOM conformance statements for **TCS 2.03**.

**NOTE** The DICOM Standard is constantly evolving. This DICOM Conformance Statement describes Medcon's conformance thereto at the time of writing.

As the DICOM Standard evolves or by user's request, Medcon modifies its product accordingly. Revised versions of the DICOM Conformance Statement are issued periodically. The currently published version may not reflect all the latest modifications. Please contact Medcon in case of any question. Medcon reserves the right to make changes in its products to comply with evolving DICOM Standards and to update the DICOM Conformance Statement at reasonable intervals.

**TCS 2.03** includes both **ImageManager** and **ImageDisplay** functionality. During installation, user may choose which functionality is to be installed. As an **ImageManager**, **TCS 2.03** permits the external systems to have access to data stored on the **TCS 2.03** database.

As an **ImageDisplay**, **TCS 2.03** provides an operator with options to store, query, retrieve and print DICOM data into and from DICOM compatible systems.

## 2. Implementation Model

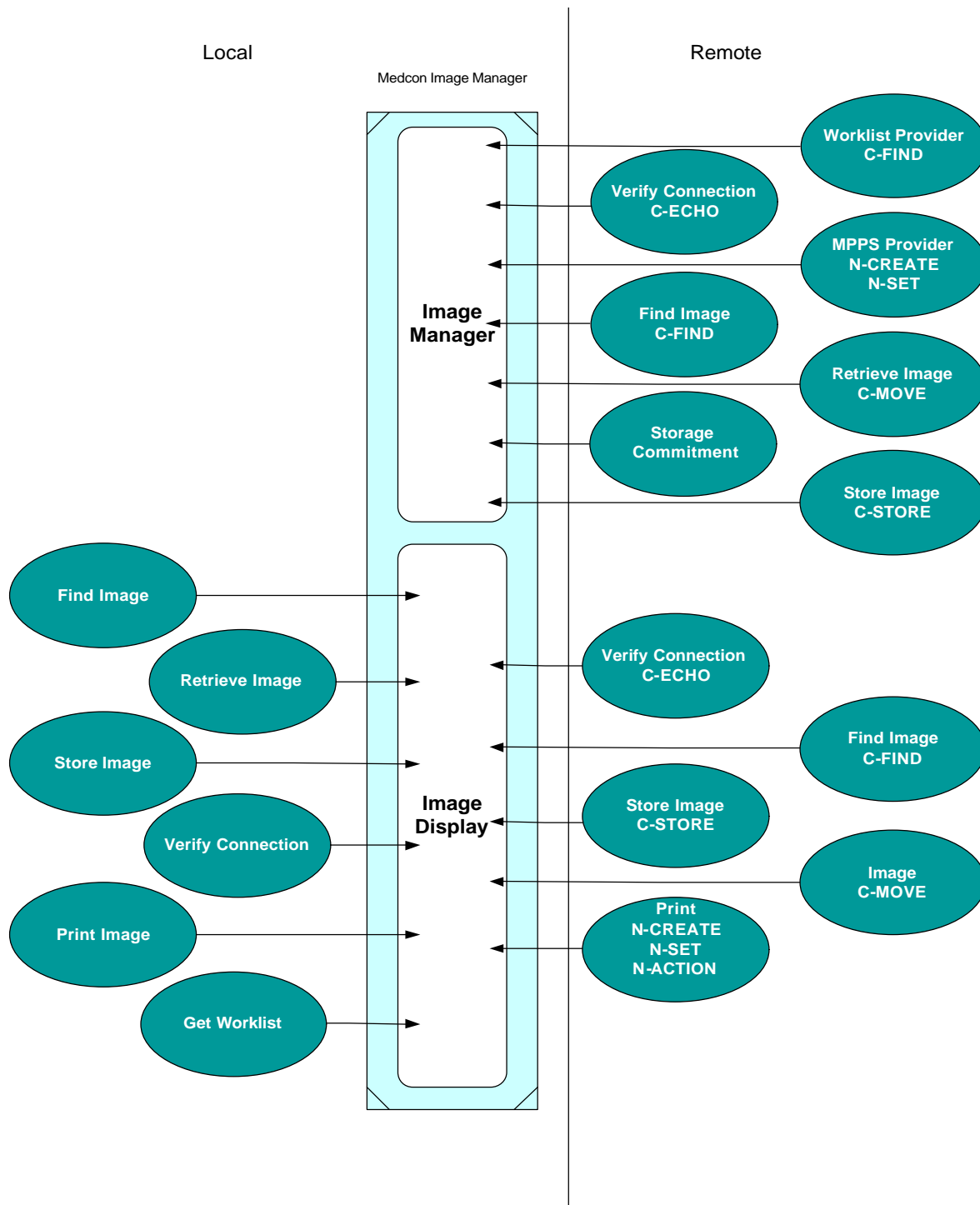
**TCS 2.03** provides:

- Image storage (SCU/SCP)
- Queries on images data base (SCU/SCP)
- Retrieving images (SCU/SCP)
- Commitment of the storage of data (SCP)
- Printing images (SCU)
- Getting Worklist (SCU)
- Providing Worklist (SCP)
- Modality Performed Procedure Step Management (SCP)

## 2.1 Application Data Flow Diagram

Figure 1 shows the relationship between TCS 2.03 and external applications.

**Figure 1**



## 2.2 Functional Definition of Application Entities

The **TCS 2.03 ImageManager** uses a registry and configuration files that contain information used to validate association attempts from Local and Remote Application entities. The **TCS 2.03 ImageManager** then listens for association requests on the configured port.

An association request for Storage Services from a Remote Application Entity causes the **TCS 2.03 ImageManager** to validate the request according to the configuration parameters set at execution time. The Remote Application Entity then sends the Information Object Instance. The **TCS 2.03 ImageManager** stores the received Information Object Instance on its local database, if the data does not already exist, or in a predefined directory on hard disk. The data remains in that directory until removed by the **TCS 2.03 ImageManager** based on the LimitDays quota.

An association request from a Remote Application Entity for Query or Retrieve Services causes **TCS 2.03 ImageManager** to validate the request according to the configuration parameters set at execution time. The Remote Application Entity then sends the Query or Retrieve request.

The **ImageManager** searches the local database for the instance(s) specified. If the request was C-FIND, then a response is returned for each match. If the request was C-MOVE, then an association is originated to the subassociation for the C-STORE operation with the destination Application Entity specified in the C-MOVE message.

Operator defines to which DICOM server the requests are routed. In case of a print request, the system passes the request to a DICOM print provider.

**TCS 2.03 ImageManager** SCP is able to accept multiple associations at a time.

The number of simultaneous associations is configurable (in relation to system resources).

## 2.3 Sequencing of Real-World Activities

Not Applicable

## 3. AE Specifications

**TCS 2.03** initiates and accepts Associations. **TCS 2.03** is composed of a single Application Entity, MEDSERVER AE (AE title is configurable).

### 3.1 AE TCS 2.03 – Specification

**TCS 2.03** provides Standard Conformance to the following DICOM 3.0 SOP Classes as SCP:

**Table 1 - SOP Classes Supported by TCS 2.03 as SCP**

| SOP Class Name   | SOP Class UID                 |
|--|-------------------------------|
| Verification   | 1.2.840.10008.1.1             |
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1     |
| Computed Tomography Image Storage                          | 1.2.840.10008.5.1.4.1.1.2     |
| Ultrasound Multi-frame Image Storage                       | 1.2.840.10008.5.1.4.1.1.3.1   |
| Ultrasound Multi-frame Image Storage (Retired)             | 1.2.840.10008.5.1.4.1.1.3     |
| Ultrasound Image Storage                                   | 1.2.840.10008.5.1.4.1.1.6.1   |
| Ultrasound Image Storage (Retired)                         | 1.2.840.10008.5.1.4.1.1.6     |
| Magnetic Resonance Image Storage                           | 1.2.840.10008.5.1.4.1.1.4     |
| Enhanced Magnetic Resonance Image Storage                  | 1.2.840.10008.5.1.4.1.1.4.1   |
| Secondary Capture Image Storage                            | 1.2.840.10008.5.1.4.1.1.7     |
| Multi-Frame Single bit Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.1   |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.2   |
| Multi-Frame Grayscale Word Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.3   |
| Multi-Frame True Color Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.4   |
| X-Ray Angiographic Image Storage                           | 1.2.840.10008.5.1.4.1.1.12.1  |
| X-Ray Radiofluoroscopic Image Storage                      | 1.2.840.10008.5.1.4.1.1.12.2  |
| X-Ray Bi-Plane Angiographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.12.3  |
| Nuclear Medicine Image Storage                             | 1.2.840.10008.5.1.4.1.1.20    |
| Nuclear Medicine Image Storage (Retired)                   | 1.2.840.10008.5.1.4.1.1.5     |
| Grayscale Softcopy Presentation State Storage              | 1.2.840.10008.5.1.4.1.1.11.1  |
| Positron Emission Tomography Image Storage                 | 1.2.840.10008.5.1.4.1.1.128   |
| Radiotherapy Image   | 1.2.840.10008.5.1.4.1.1.481.1 |
| Digital X-Ray Image Storage – For Presentation             | 1.2.840.10008.5.1.4.1.1.1.1   |

| SOP Class Name  | SOP Class UID                  |
|---|--------------------------------|
| Digital X-Ray Image Storage – For Processing              | 1.2.840.10008.5.1.4.1.1.1.1.1  |
| Digital Mammography Image Storage – For Presentation      | 1.2.840.10008.5.1.4.1.1.1.2    |
| Digital Mammography Image Storage – For Processing        | 1.2.840.10008.5.1.4.1.1.1.2.1  |
| Digital Intra-oral X-Ray Image Storage – For Presentation | 1.2.840.10008.5.1.4.1.1.1.3    |
| Digital Intra-oral X-Ray Image Storage – For Processing   | 1.2.840.10008.5.1.4.1.1.1.3.1  |
| Visible Light Endoscopic Image Storage                    | 1.2.840.10008.5.1.4.1.1.77.1.1 |
| Visible Light Microscopic Image Storage                   | 1.2.840.10008.5.1.4.1.1.77.1.2 |
| Visible Light Slide-Coordinates Microscopic Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.3 |
| Visible Light Photographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.77.1.4 |
| 12-lead ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.1  |
| General ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.2  |
| Ambulatory ECG Waveform Storage                           | 1.2.840.10008.5.1.4.1.1.9.1.3  |
| Hemodynamic Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.2.1  |
| Cardiac Electrophysiology Waveform Storage                | 1.2.840.10008.5.1.4.1.1.9.3.1  |
| Basic Voice Audio Waveform Storage                        | 1.2.840.10008.5.1.4.1.1.9.4.1  |
| High Resolution Audio Waveform Storage (Retired)          | 1.2.840.10008.5.1.4.1.1.9.2.2  |
| Draft Waveform Storage                                    | 1.2.840.10008.5.1.4.1.1.9.1    |
| Key Object Selection Document                             | 1.2.840.10008.5.1.4.1.1.88.59  |
| Basic Text Structure Report                               | 1.2.840.10008.5.1.4.1.1.88.11  |
| Enhanced Structure Report                                 | 1.2.840.10008.5.1.4.1.1.88.22  |
| Comprehensive Structure Report                            | 1.2.840.10008.5.1.4.1.1.88.33  |
| Storage Commitment Push Model SOP Class                   | 1.2.840.10008.1.20.1           |
| Patient Root Query/Retrieve Info Model - Find             | 1.2.840.10008.5.1.4.1.2.1.1    |
| Study Root Query/Retrieve Info Model - Find               | 1.2.840.10008.5.1.4.1.2.2.1    |
| Patient Root Query/Retrieve Info Model - Move             | 1.2.840.10008.5.1.4.1.2.1.2    |
| Study Root Query/Retrieve Info Model - Move               | 1.2.840.10008.5.1.4.1.2.2.2    |

TCS 2.03 provides Standard Conformance to the following DICOM 3.0 SOP Classes as SCU:

**Table 2 - SOP Classes Supported by TCS 2.03 as SCU**

| SOP Class Name                                  | SOP Class UID               |
|---|-----------------------------|
| Verification                                    | 1.2.840.10008.1.1           |
| Patient Root Query/Retrieve Info Model - Find   | 1.2.840.10008.5.1.4.1.2.1.1 |
| Study Root Query/Retrieve Info Model - Find     | 1.2.840.10008.5.1.4.1.2.2.1 |
| Patient Root Query/Retrieve Info Model - Move   | 1.2.840.10008.5.1.4.1.2.1.2 |
| Study Root Query/Retrieve Info Model - Move     | 1.2.840.10008.5.1.4.1.2.2.2 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9       |
| Basic Color Print Management Meta SOP Class     | 1.2.840.10008.5.1.1.18      |

| SOP Class Name   | SOP Class UID                  |
|--|--------------------------------|
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1      |
| Computed Tomography Image Storage                          | 1.2.840.10008.5.1.4.1.1.2      |
| Ultrasound Multi-frame Image Storage                       | 1.2.840.10008.5.1.4.1.1.3.1    |
| Ultrasound Multi-frame Image Storage (Retired)             | 1.2.840.10008.5.1.4.1.1.3      |
| Ultrasound Image Storage                                   | 1.2.840.10008.5.1.4.1.1.6.1    |
| Ultrasound Image Storage (Retired)                         | 1.2.840.10008.5.1.4.1.1.6      |
| Magnetic Resonance Image Storage                           | 1.2.840.10008.5.1.4.1.1.4      |
| Enhanced Magnetic Resonance Image Storage                  | 1.2.840.10008.5.1.4.1.1.4.1    |
| Secondary Capture Image Storage                            | 1.2.840.10008.5.1.4.1.1.7      |
| Multi-Frame Single bit Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.1    |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.2    |
| Multi-Frame Grayscale Word Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.3    |
| Multi-Frame True Color Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.4    |
| X-Ray Angiographic Image Storage                           | 1.2.840.10008.5.1.4.1.1.12.1   |
| X-Ray Radiofluoroscopic Image Storage                      | 1.2.840.10008.5.1.4.1.1.12.2   |
| X-Ray Bi-Plane Angiographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.12.3   |
| Nuclear Medicine Image Storage                             | 1.2.840.10008.5.1.4.1.1.20     |
| Nuclear Medicine Image Storage (Retired)                   | 1.2.840.10008.5.1.4.1.1.5      |
| Grayscale Softcopy Presentation State Storage              | 1.2.840.10008.5.1.4.1.1.11.1   |
| Positron Emission Tomography Image Storage                 | 1.2.840.10008.5.1.4.1.1.128    |
| Radiotherapy Image   | 1.2.840.10008.5.1.4.1.1.481.1  |
| Digital X-Ray Image Storage – For Presentation             | 1.2.840.10008.5.1.4.1.1.1.1    |
| Digital X-Ray Image Storage – For Processing               | 1.2.840.10008.5.1.4.1.1.1.1.1  |
| Digital Mammography Image Storage – For Presentation       | 1.2.840.10008.5.1.4.1.1.1.2    |
| Digital Mammography Image Storage – For Processing         | 1.2.840.10008.5.1.4.1.1.1.2.1  |
| Digital Intra-oral X-Ray Image Storage – For Presentation  | 1.2.840.10008.5.1.4.1.1.1.3    |
| Digital Intra-oral X-Ray Image Storage – For Processing    | 1.2.840.10008.5.1.4.1.1.1.3.1  |
| Visible Light Endoscopic Image Storage                     | 1.2.840.10008.5.1.4.1.1.77.1.1 |
| Visible Light Microscopic Image Storage                    | 1.2.840.10008.5.1.4.1.1.77.1.2 |
| Visible Light Slide-Coordinates Microscopic Image Storage  | 1.2.840.10008.5.1.4.1.1.77.1.3 |
| Visible Light Photographic Image Storage                   | 1.2.840.10008.5.1.4.1.1.77.1.4 |
| 12-lead ECG Waveform Storage                               | 1.2.840.10008.5.1.4.1.1.9.1.1  |
| General ECG Waveform Storage                               | 1.2.840.10008.5.1.4.1.1.9.1.2  |
| Ambulatory ECG Waveform Storage                            | 1.2.840.10008.5.1.4.1.1.9.1.3  |
| Hemodynamic Waveform Storage                               | 1.2.840.10008.5.1.4.1.1.9.2.1  |
| Cardiac Electrophysiology Waveform Storage                 | 1.2.840.10008.5.1.4.1.1.9.3.1  |
| Basic Voice Audio Waveform Storage                         | 1.2.840.10008.5.1.4.1.1.9.4.1  |

| SOP Class Name                                   | SOP Class UID                 |
|--|-------------------------------|
| High Resolution Audio Waveform Storage (Retired) | 1.2.840.10008.5.1.4.1.1.9.2.2 |
| Draft Waveform Storage                           | 1.2.840.10008.5.1.4.1.1.9.1   |
| Key Object Selection Document                    | 1.2.840.10008.5.1.4.1.1.88.59 |
| Basic Text Structure Report                      | 1.2.840.10008.5.1.4.1.1.88.11 |
| Enhanced Structure Report                        | 1.2.840.10008.5.1.4.1.1.88.22 |
| Comprehensive Structure Report                   | 1.2.840.10008.5.1.4.1.1.88.33 |

### 3.1.1 Association Establishment Policies

#### 3.1.1.1 General

PDU size is configurable for both SCU/SCP.

#### 3.1.1.2 Number of Associations

The number of simultaneous associations is defined by configuration.

Asynchronous mode (multiple concurrent operations on one association) is not supported.

#### 3.1.1.3 Implementation Identifying Information

TCS 2.03 will provide an implementation class UID - 2.16.376.1.1.511752891.1.

TCS 2.03 will provide an implementation version name – MEDCON09SEP2004.

### 3.1.2 Association Initiation Policy

TCS 2.03 attempts to initiate a new association in the following cases:

- 1) To check connection to remote system
- 2) To transfer (store) a series of images on remote system
- 3) To find several images in remote system
- 4) To retrieve several images from remote system
- 5) To print several images
- 6) To get worklist
- 7) To confirm storage commitment

#### 3.1.2.1 Real-World Activity – Storing Images

##### 3.1.2.1.1 Associated Real-World Activity

The associated Real-World Activity is an attempt to store a series of images on a remote system.

The TCS 2.03 ImageManager initiates an association for C-STORE if it has received a valid C-MOVE message from a Remote Application Entity. The SOP Class UID of the Information Object to be sent over the C-STORE context is used to verify that a valid Presentation Context exists prior to issuing the C-STORE message.

### 3.1.2.1.2 Proposed Presentation Contexts

TCS 2.03 will propose one Presentation Context, as shown in Table 3. The proposed Presentation Context will use the SOP Class UID that corresponds to the Series modality.

**Table 3 - Proposed Presentation Contexts**

| <b>Presentation Context Table</b> |            |   |                        |             |                             |
|-----------------------------------|------------|---|------------------------|-------------|-----------------------------|
| <b>Abstract Syntax</b>            |            | <b>Transfer Syntax</b>                              |                        | <b>Role</b> | <b>Extended Negotiation</b> |
| <b>Name</b>                       | <b>UID</b> | <b>Name</b>   | <b>UID</b>             |             |                             |
| See Note                          | See Note   | Implicit VR Little Endian                           | 1.2.840.10008.1.2      | SCU         | None                        |
| See Note                          | See Note   | Explicit VR Little Endian                           | 1.2.840.10008.1.2.1    | SCU         | None                        |
| See Note                          | See Note   | Explicit VR Big Endian                              | 1.2.840.10008.1.2.2    | SCU         | None                        |
| See Note                          | See Note   | JPEG Lossless, Hierarchical, First-Order Prediction | 1.2.840.10008.1.2.4.70 | SCU         | None                        |
| See Note                          | See Note   | JPEG Lossy Process 1                                | 1.2.840.10008.1.2.4.50 | SCU         | None                        |
| See Note                          | See Note   | RLE Lossless  | 1.2.840.10008.1.2.5    | SCU         | None                        |

Note: The Abstract Syntax corresponds to the SOP Class UID for Series modality and can be one of the following:

**Table 4 - Abstract Syntaxes**

| <b>Abstract Syntax</b>                                     |                              |
|--|------------------------------|
| <b>Name</b>  | <b>UID</b>                   |
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1    |
| Computed Tomography Image Storage                          | 1.2.840.10008.5.1.4.1.1.2    |
| Ultrasound Multi-frame Image Storage                       | 1.2.840.10008.5.1.4.1.1.3.1  |
| Ultrasound Multi-frame Image Storage (Retired)             | 1.2.840.10008.5.1.4.1.1.3    |
| Ultrasound Image Storage                                   | 1.2.840.10008.5.1.4.1.1.6.1  |
| Ultrasound Image Storage (Retired)                         | 1.2.840.10008.5.1.4.1.1.6    |
| Magnetic Resonance Image Storage                           | 1.2.840.10008.5.1.4.1.1.4    |
| Enhanced Magnetic Resonance Image Storage                  | 1.2.840.10008.5.1.4.1.1.4.1  |
| Secondary Capture Image Storage                            | 1.2.840.10008.5.1.4.1.1.7    |
| Multi-Frame Single bit Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.1  |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.2  |
| Multi-Frame Grayscale Word Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.3  |
| Multi-Frame True Color Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.4  |
| X-Ray Angiographic Image Storage                           | 1.2.840.10008.5.1.4.1.1.12.1 |
| X-Ray Radiofluoroscopic Image Storage                      | 1.2.840.10008.5.1.4.1.1.12.2 |
| X-Ray Bi-Plane Angiographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.12.3 |

| <b>Abstract Syntax</b>                                    |                                |
|---|--------------------------------|
| <b>Name</b>   | <b>UID</b>                     |
| Nuclear Medicine Image Storage                            | 1.2.840.10008.5.1.4.1.1.20     |
| Nuclear Medicine Image Storage (Retired)                  | 1.2.840.10008.5.1.4.1.1.5      |
| Grayscale Softcopy Presentation State Storage             | 1.2.840.10008.5.1.4.1.1.11.1   |
| Positron Emission Tomography Image Storage                | 1.2.840.10008.5.1.4.1.1.128    |
| Radiotherapy Image  | 1.2.840.10008.5.1.4.1.1.481.1  |
| Digital X-Ray Image Storage – For Presentation            | 1.2.840.10008.5.1.4.1.1.1.1    |
| Digital X-Ray Image Storage – For Processing              | 1.2.840.10008.5.1.4.1.1.1.1.1  |
| Digital Mammography Image Storage – For Presentation      | 1.2.840.10008.5.1.4.1.1.1.2    |
| Digital Mammography Image Storage – For Processing        | 1.2.840.10008.5.1.4.1.1.1.2.1  |
| Digital Intra-oral X-Ray Image Storage – For Presentation | 1.2.840.10008.5.1.4.1.1.1.3    |
| Digital Intra-oral X-Ray Image Storage – For Processing   | 1.2.840.10008.5.1.4.1.1.1.3.1  |
| Visible Light Endoscopic Image Storage                    | 1.2.840.10008.5.1.4.1.1.77.1.1 |
| Visible Light Microscopic Image Storage                   | 1.2.840.10008.5.1.4.1.1.77.1.2 |
| Visible Light Slide-Coordinates Microscopic Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.3 |
| Visible Light Photographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.77.1.4 |
| 12-lead ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.1  |
| General ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.2  |
| Ambulatory ECG Waveform Storage                           | 1.2.840.10008.5.1.4.1.1.9.1.3  |
| Hemodynamic Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.2.1  |
| Cardiac Electrophysiology Waveform Storage                | 1.2.840.10008.5.1.4.1.1.9.3.1  |
| Basic Voice Audio Waveform Storage                        | 1.2.840.10008.5.1.4.1.1.9.4.1  |
| High Resolution Audio Waveform Storage (Retired)          | 1.2.840.10008.5.1.4.1.1.9.2.2  |
| Draft Waveform Storage                                    | 1.2.840.10008.5.1.4.1.1.9.1    |
| Key Object Selection Document                             | 1.2.840.10008.5.1.4.1.1.88.59  |
| Basic Text Structure Report                               | 1.2.840.10008.5.1.4.1.1.88.11  |
| Enhanced Structure Report                                 | 1.2.840.10008.5.1.4.1.1.88.22  |
| Comprehensive Structure Report                            | 1.2.840.10008.5.1.4.1.1.88.33  |

### **3.1.2.2 Real-World Activity – Finding Images**

#### **3.1.2.2.1 Associated Real-World Activity**

The associated Real-World Activity is an attempt to find some of the images in a remote system. The user of the Client Application selects the Query operation button on the user interface. The user can specify wild card or specific information for Patient Name, Patient ID, Patient Sex, Patient Birthdate, Study ID, Study UID, Study Accession Number, Study Date Range, Study Time Range, Referring Physician, Modalities in Study.

Wild card queries can result in an excessive number of responses. The user interface is able to restrict

the number of patients displayed.

The user can cancel the current Query operation by clicking the Cancel button.

**TCS 2.03 ImageManager** defaults to using Patient Root Query Model when initiating query request. The query model used can be changed to Study Root Query Model by changing a configuration parameter.

### 3.1.2.2.2 Multiple Sources Option

**TCS 2.03 ImageDisplay** can be configured to access multiple **ImageManager** /*Image Archive* sources with a single user request.

If communication with one information source fails, **TCS 2.03 ImageDisplay** provides the information it received from other sources. In addition, the **TCS 2.03 ImageDisplay** informs the users that they are viewing potentially incomplete results.

When **TCS 2.03 ImageDisplay** performs a study-level or series-level query to multiple sources and finds the study/series referenced in multiple places, the study/series is either duplicated or the study/series is split across the systems. When the user queries of the study/series, **TCS 2.03 ImageDisplay** collates the information, determine if the information is actually duplicated or split, and presents a consolidated view of results to the user.

### 3.1.2.2.3 Proposed Presentation Contexts

For this Real-World Activity, **TCS 2.03** will propose one of the Presentation Contexts listed in Table 5.

**Table 5 - Proposed Presentation Contexts**

| Presentation Context Table  |  |                           |                     |      |                      |
|-----------------------------|--|---------------------------|---------------------|------|----------------------|
| Abstract Syntax             |  | Transfer Syntax           |                     | Role | Extended Negotiation |
| Name                        | UID  | Name                      | UID                 |      |                      |
| 1.2.840.10008.5.1.4.1.2.1.1 | Patient Root Query/Retrieve Information Model – FIND SOP Class | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCU  | None                 |
| 1.2.840.10008.5.1.4.1.2.2.1 | Study Root Query/Retrieve Information Model – FIND SOP Class   | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCU  | None                 |
| 1.2.840.10008.5.1.4.1.2.1.1 | Patient Root Query/Retrieve Information Model – FIND SOP Class | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU  | None                 |
| 1.2.840.10008.5.1.4.1.2.2.1 | Study Root Query/Retrieve Information Model – FIND SOP Class   | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU  | None                 |

| Presentation Context Table  |  |                        |                     |      |                      |
|-----------------------------|--|------------------------|---------------------|------|----------------------|
| Abstract Syntax             |  | Transfer Syntax        |                     | Role | Extended Negotiation |
| Name                        | UID  | Name                   | UID                 |      |                      |
| 1.2.840.10008.5.1.4.1.2.1.1 | Patient Root Query/Retrieve Information Model – FIND SOP Class | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | SCU  | None                 |
| 1.2.840.10008.5.1.4.1.2.2.1 | Study Root Query/Retrieve Information Model – FIND SOP Class   | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | SCU  | None                 |

### 3.1.2.3 Real-World Activity – Retrieving Images

#### 3.1.2.3.1 Associated Real-World Activity

The associated Real-World Activity is an attempt to retrieve images from a remote system.

The user selects one or more images, series or studies within studies from a list presented as a result of a previous Query operation. Then the user selects the Retrieve operation button on the user interface to initiate the move operation.

The user can cancel the current Retrieve operation by clicking the Cancel button.

#### 3.1.2.3.2 Multiple Sources Option

**TCS 2.03 ImageDisplay** can be configured to access multiple **ImageManager/ImageArchive** sources with a single user retrieval request.

When **TCS 2.03 ImageDisplay** performs a study-level or series-level query to multiple sources and finds the study/series referenced in multiple places, the study/series is either duplicated or the study/series is split across the systems. When the user requests a retrieval of the study/series, **TCS 2.03 ImageDisplay** collates the information, determines whether the information is actually duplicated or split, and presents a consolidated view of results to the user.

Avoiding redundant retrieval is managed by checking whether a definite IOD has already been retrieved in the current session.

#### 3.1.2.3.3 Proposed Presentation Contexts

For this Real-World Activity, **TCS 2.03** will propose one of the Presentation Contexts listed in Table 6.

**Table 6- Proposed Presentation Contexts**

| Presentation Context Table |                     |                 |                   |      |                      |
|----------------------------|---------------------|-----------------|-------------------|------|----------------------|
| Abstract Syntax            |                     | Transfer Syntax |                   | Role | Extended Negotiation |
| Name                       | UID                 | Name            | UID               |      |                      |
| Patient Root               | 1.2.840.10008.5.1.4 | Implicit        | 1.2.840.10008.1.2 | SCU  | None                 |

| Presentation Context Table                                     |                                 |                           |                     |      |                      |
|--|---------------------------------|---------------------------|---------------------|------|----------------------|
| Abstract Syntax  |                                 | Transfer Syntax           |                     | Role | Extended Negotiation |
| Name   | UID                             | Name                      | UID                 |      |                      |
| Query/Retrieve Information Model – MOVE SOP Class              | .1.2.1.2                        | VR Little Endian          |                     |      |                      |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4<br>.1.2.2.2 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCU  | None                 |
| Patient Root Query/Retrieve Information Model – MOVE SOP Class | 1.2.840.10008.5.1.4<br>.1.2.1.2 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU  | None                 |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4<br>.1.2.2.2 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU  | None                 |
| Patient Root Query/Retrieve Information Model – MOVE SOP Class | 1.2.840.10008.5.1.4<br>.1.2.1.2 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCU  | None                 |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4<br>.1.2.2.2 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCU  | None                 |

### 3.1.2.4 Real-World Activity – Printing Images

#### 3.1.2.4.1 Associated Real-World Activity

The associated Real-World Activity is a request to print one or more images.

The Print Module represents a single Application Entity. It acts independently of other DICOM applications that may be running on the same system. The Print Module can support printing to multiple DICOM printers at the same time, each printer being uniquely identified by an Application Entity Title and port.

### 3.1.2.4.2 Proposed Presentation Contexts

TCS 2.03 will propose one of the Presentation Contexts listed in Table 7.

**Table 7 - Proposed Presentation Contexts**

| Presentation Context Table                      |                        |   |                        |      |                      |
|---|------------------------|---|------------------------|------|----------------------|
| Abstract Syntax                                 |                        | Transfer Syntax                                     |                        | Role | Extended Negotiation |
| Name  | UID                    | Name  | UID                    |      |                      |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | Implicit VR Little Endian                           | 1.2.840.10008.1.2      | SCU  | None                 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | Explicit VR Little Endian                           | 1.2.840.10008.1.2.1    | SCU  | None                 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | Explicit VR Big Endian                              | 1.2.840.10008.1.2.2    | SCU  | None                 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | JPEG Lossless, Hierarchical, First-Order Prediction | 1.2.840.10008.1.2.4.70 | SCU  | None                 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | JPEG Lossy Process 1                                | 1.2.840.10008.1.2.4.50 | SCU  | None                 |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9  | RLE Lossless  | 1.2.840.10008.1.2.4.5  | SCU  | None                 |
| Basic Color Print Management Meta SOP Class     | 1.2.840.10008.5.1.1.18 | Implicit VR Little Endian                           | 1.2.840.10008.1.2      | SCU  | None                 |
| Basic Color Print Management Meta SOP Class     | 1.2.840.10008.5.1.1.18 | Explicit VR Little Endian                           | 1.2.840.10008.1.2.1    | SCU  | None                 |

| Presentation Context Table                  |                        |   |                        |      |                      |
|---|------------------------|---|------------------------|------|----------------------|
| Abstract Syntax                             |                        | Transfer Syntax                                     |                        | Role | Extended Negotiation |
| Name  | UID                    | Name  | UID                    |      |                      |
| Basic Color Print Management Meta SOP Class | 1.2.840.10008.5.1.1.18 | Explicit VR Bif Endian                              | 1.2.840.10008.1.2.2    | SCU  | None                 |
| Basic Color Print Management Meta SOP Class | 1.2.840.10008.5.1.1.18 | JPEG Lossless, Hierarchical, First-Order Prediction | 1.2.840.10008.1.2.4.70 | SCU  | None                 |
| Basic Color Print Management Meta SOP Class | 1.2.840.10008.5.1.1.18 | JPEG Lossy Process 1                                | 1.2.840.10008.1.2.4.50 | SCU  | None                 |
| Basic Color Print Management Meta SOP Class | 1.2.840.10008.5.1.1.18 | RLE Lossless  | 1.2.840.10008.1.2.4.5  | SCU  | None                 |

### 3.1.2.5 Real-World Activity – Verification

#### 3.1.2.5.1 Associated Real-World Activity

The associated Real-World Activity is an attempt to check whether remote AE is ready for DICOM dialog.

#### 3.1.2.5.2 Proposed Presentation Contexts

For this Real-World Activity, TCS 2.03 will propose one of the Presentation Contexts listed in Table 8.

**Table 8- Proposed Presentation Contexts**

| Presentation Context Table |                   |                                 |                     |      |                      |
|----------------------------|-------------------|---------------------------------|---------------------|------|----------------------|
| Abstract Syntax            |                   | Transfer Syntax                 |                     | Role | Extended Negotiation |
| Name                       | UID               | Name                            | UID                 |      |                      |
| Verification               | 1.2.840.10008.1.1 | DICOM Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Verification               | 1.2.840.10008.1.1 | DICOM Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Verification               | 1.2.840.10008.1.1 | DICOM Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |

### 3.1.2.6 Real-World Activity – Getting Modality Worklist from Remote System

TCS 2.03 user requests Modality Worklist from the remote information system. The associated Real-World activity is requested by the user to perform a Worklist query based on user-specified criteria. The association is closed when all data have been received from the remote DICOM network node. The client is also able to abort the association through an operator requested abort or when an error occurs.

**Table 9- Proposed Presentation Contexts**

| Presentation Context Table                |                        |                           |                     |      |
|---|------------------------|---------------------------|---------------------|------|
| Abstract Syntax                           |                        | Transfer Syntax           |                     | Role |
| Name                                      | UID                    | Name                      | UID                 |      |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCU  |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU  |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCU  |

Depending on user requested search type, C-FIND request will contain elements of the following sets of matching key attributes:

**Find by Accession number**

| Matching Key Attribute       | Matching Key Type |
|------------------------------|-------------------|
| (0008,0050) Accession Number | O                 |

**Find by Patient ID and Name**

| Matching Key Attribute     | Matching Key Type |
|----------------------------|-------------------|
| (0010,0020) Patient ID     | R                 |
| (0010,0010) Patient's Name | R                 |

**Find by Scheduled Date, Station and Physician**

| Matching Key Attribute                            | Matching Key Type |
|---|-------------------|
| (0040,0002) Scheduled Procedure Step Start Date   | R                 |
| (0040,0006) Scheduled Performing Physician's Name | R                 |
| (0040,0010) Scheduled Station Name                | R                 |
| (0040,0001) Scheduled Station AE Title            | R                 |

**Find by Modality**

| Matching Key Attribute | Matching Key Type |
|------------------------|-------------------|
| (0008,0060) Modality   | R                 |

**3.1.3 Association Acceptance Policy**

**TCS 2.03** accepts an association for storing, finding and retrieving images. If the proposed association is store, **TCS 2.03** will receive any images transmitted on the association and store the images in the format specified by PS 3.10 in Medcon system. **TCS 2.03** places no limitations on who may connect to it, nor on the number of simultaneous connections it will support.

**3.1.3.1 Real-World Activity – Storing Images**

The Real-World Activity associated with the C-STORE operation is the storage of the image in the Medcon system. **TCS 2.03** will issue a failure status response if it is unable to store the image.

When **TCS 2.03** receives the association request, it will allow the follow activities to be performed during that association:

- Verification - Allow a remote DICOM device to verify that **TCS 2.03 ImageManager** is active on the DICOM network
- Storage Commitment - Receive the request for storage commitment. No manual operation is needed.

**3.1.3.1.1 Associated Real-World Activity**

The Real-World activity associated with the C-STORE operation is the storage of the image on the disk of the system upon which **TCS 2.03** is running. Images are stored by writing the data set of the C-STORE command to disk and adding the PS 3.10 header.

**TCS 2.03** will issue a failure status response if it is unable to store the image on disk or if the image does not conform to the IOD of the SOP class under which it was transmitted.

**3.1.3.1.2 Presentation Context Table**

Any of the Presentation Contexts shown in Table 10 are acceptable to **TCS 2.03** for receiving images.

**Table 10 - Acceptable Presentation Contexts for TCS 2.03**

| Presentation Context Table |          |   |                        |      |                      |
|----------------------------|----------|---|------------------------|------|----------------------|
| Abstract Syntax            |          | Transfer Syntax                                     |                        | Role | Extended Negotiation |
| Name                       | UID      | Name  | UID                    |      |                      |
| See Note                   | See Note | Implicit VR Little Endian                           | 1.2.840.10008.1.2      | SCP  | None                 |
| See Note                   | See Note | Explicit VR Little Endian                           | 1.2.840.10008.1.2.1    | SCP  | None                 |
| See Note                   | See Note | Explicit VR Big Endian                              | 1.2.840.10008.1.2.2    | SCP  | None                 |
| See Note                   | See Note | JPEG Lossless, Hierarchical, First-Order Prediction | 1.2.840.10008.1.2.4.70 | SCP  | None                 |

| Presentation Context Table |          |                      |                        |      |                      |
|----------------------------|----------|----------------------|------------------------|------|----------------------|
| Abstract Syntax            |          | Transfer Syntax      |                        | Role | Extended Negotiation |
| Name                       | UID      | Name                 | UID                    |      |                      |
| See Note                   | See Note | JPEG Lossy Process 1 | 1.2.840.10008.1.2.4.50 | SCP  | None                 |
| See Note                   | See Note | RLE Lossless         | 1.2.840.10008.1.2.4.5  | SCP  | None                 |

Note: The Abstract Syntax corresponds to the SOP Class UID for Series modality and can be one of the following:

**Table 11 - Abstract Syntaxes**

| Abstract Syntax  |                               |
|--|-------------------------------|
| Name   | UID                           |
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1     |
| Computed Tomography Image Storage                          | 1.2.840.10008.5.1.4.1.1.2     |
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1     |
| Computed Tomography Image Storage                          | 1.2.840.10008.5.1.4.1.1.2     |
| Ultrasound Multi-frame Image Storage                       | 1.2.840.10008.5.1.4.1.1.3.1   |
| Ultrasound Multi-frame Image Storage (Retired)             | 1.2.840.10008.5.1.4.1.1.3     |
| Ultrasound Image Storage                                   | 1.2.840.10008.5.1.4.1.1.6.1   |
| Ultrasound Image Storage (Retired)                         | 1.2.840.10008.5.1.4.1.1.6     |
| Magnetic Resonance Image Storage                           | 1.2.840.10008.5.1.4.1.1.4     |
| Enhanced Magnetic Resonance Image Storage                  | 1.2.840.10008.5.1.4.1.1.4.1   |
| Secondary Capture Image Storage                            | 1.2.840.10008.5.1.4.1.1.7     |
| Multi-Frame Single bit Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.1   |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.2   |
| Multi-Frame Grayscale Word Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.3   |
| Multi-Frame True Color Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.4   |
| X-Ray Angiographic Image Storage                           | 1.2.840.10008.5.1.4.1.1.12.1  |
| X-Ray Radiofluoroscopic Image Storage                      | 1.2.840.10008.5.1.4.1.1.12.2  |
| X-Ray Bi-Plane Angiographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.12.3  |
| Nuclear Medicine Image Storage                             | 1.2.840.10008.5.1.4.1.1.20    |
| Nuclear Medicine Image Storage (Retired)                   | 1.2.840.10008.5.1.4.1.1.5     |
| Grayscale Softcopy Presentation State Storage              | 1.2.840.10008.5.1.4.1.1.11.1  |
| Positron Emission Tomography Image Storage                 | 1.2.840.10008.5.1.4.1.1.128   |
| Radiotherapy Image   | 1.2.840.10008.5.1.4.1.1.481.1 |
| Digital X-Ray Image Storage – For Presentation             | 1.2.840.10008.5.1.4.1.1.1.1   |
| Digital X-Ray Image Storage – For Processing               | 1.2.840.10008.5.1.4.1.1.1.1.1 |
| Digital Mammography Image Storage – For Presentation       | 1.2.840.10008.5.1.4.1.1.1.2   |
| Digital Mammography Image Storage – For Processing         | 1.2.840.10008.5.1.4.1.1.1.2.1 |
| Digital Intra-oral X-Ray Image Storage – For Presentation  | 1.2.840.10008.5.1.4.1.1.1.3   |

| <b>Abstract Syntax</b>                                    |                                |
|---|--------------------------------|
| <b>Name</b>   | <b>UID</b>                     |
| Digital Intra-oral X-Ray Image Storage – For Processing   | 1.2.840.10008.5.1.4.1.1.1.3.1  |
| Visible Light Endoscopic Image Storage                    | 1.2.840.10008.5.1.4.1.1.77.1.1 |
| Visible Light Microscopic Image Storage                   | 1.2.840.10008.5.1.4.1.1.77.1.2 |
| Visible Light Slide-Coordinates Microscopic Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.3 |
| Visible Light Photographic Image Storage                  | 1.2.840.10008.5.1.4.1.1.77.1.4 |
| 12-lead ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.1  |
| General ECG Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.1.2  |
| Ambulatory ECG Waveform Storage                           | 1.2.840.10008.5.1.4.1.1.9.1.3  |
| Hemodynamic Waveform Storage                              | 1.2.840.10008.5.1.4.1.1.9.2.1  |
| Cardiac Electrophysiology Waveform Storage                | 1.2.840.10008.5.1.4.1.1.9.3.1  |
| Basic Voice Audio Waveform Storage                        | 1.2.840.10008.5.1.4.1.1.9.4.1  |
| High Resolution Audio Waveform Storage (Retired)          | 1.2.840.10008.5.1.4.1.1.9.2.2  |
| Draft Waveform Storage                                    | 1.2.840.10008.5.1.4.1.1.9.1    |
| Key Object Selection Document                             | 1.2.840.10008.5.1.4.1.1.88.59  |
| Basic Text Structure Report                               | 1.2.840.10008.5.1.4.1.1.88.11  |
| Enhanced Structure Report                                 | 1.2.840.10008.5.1.4.1.1.88.22  |
| Comprehensive Structure Report                            | 1.2.840.10008.5.1.4.1.1.88.33  |

### 3.1.3.1.2.1 SOP Specific Conformance

#### 3.1.3.1.2.1.1 SOP Specific Conformance to Storage SOP Classes

**TCS 2.03** conforms to the SOPs of the Storage Service Class at Level 2 (Full). No elements are discarded or coerced by **TCS 2.03**. In the event of a successful C-STORE operation, the Images have successfully been written to Medcon system. They may be accessed by Medcon applications or through DICOM Query/Retrieve Model.

If **TCS 2.03** returns one of the following status codes, then the C-STORE was unsuccessful:

|             |                   |                                   |   |
|-------------|-------------------|-----------------------------------|---|
| <b>A700</b> | Refused           | Out of resources                  | Indicates that there was not enough space to store the images   |
| <b>A800</b> |                   | SOP Class Not Supported           | Indicates that the SOP Class of the Image in the C-STORE operation did not match the Abstract Syntax negotiated for the Presentation Context. This indicates a problem with the SCU of the Service Class. |
| <b>A900</b> | Failed            | Data Set does not match SOP Class | Indicates that the Data Set does not encode an instance of the SOP Class specified. This indicates a problem with SCU of the Service Class.   |
| <b>C000</b> | Unable to Process | Cannot understand                 | Indicates that TCS 2.03 cannot parse the Data Set into elements. This indicates a problem with the SCU.   |

### 3.1.3.1.3 Presentation Context Acceptance Criterion

**TCS 2.03** defines no limit on the number of presentation contexts accepted.

If **TCS 2.03** runs out of resources when trying to accept multiple presentation contexts, **TCS 2.03** will reject the association request. **TCS 2.03** does not check for duplicate presentation contexts and will accept duplicate presentation contexts.

### 3.1.3.1.4 Transfer Syntax Selection Policies

**TCS 2.03** prefers explicit Little Endian Transfer Syntax with compressed pixel data.

If offered a choice of Transfer Syntaxes in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. JPEG Lossless, Hierarchical, First-Order Prediction Transfer Syntax
2. Explicit Little Endian Transfer Syntax
3. Implicit Little Endian Transfer Syntax
4. Explicit Big Endian Transfer Syntax

### 3.1.3.2 Real World Activity – Finding Images

#### 3.1.3.2.1 Associated Real World Activity

The Associated Real-World Activity associated with the C-FIND operation is the finding of the image in the Medcon system. **TCS 2.03** will issue a failure status response if it is unable to find the image. The search is performed by comparing the keys specified in request with corresponding keys of images in system.

### 3.1.3.2.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 12 are acceptable to **TCS 2.03** for finding images.

**Table 12 - Acceptable Presentation Contexts**

| Presentation Context Table                                     |                             |                           |                     |      |                      |
|--|-----------------------------|---------------------------|---------------------|------|----------------------|
| Abstract Syntax  |                             | Transfer Syntax           |                     | Role | Extended Negotiation |
| Name   | UID                         | Name                      | UID                 |      |                      |
| Patient Root Query/Retrieve Information Model – FIND SOP Class | 1.2.840.10008.5.1.4.1.2.1.1 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Study Root Query/Retrieve Information Model – FIND SOP Class   | 1.2.840.10008.5.1.4.1.2.2.1 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Patient Root Query/Retrieve Information Model – FIND SOP Class | 1.2.840.10008.5.1.4.1.2.1.1 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Study Root Query/Retrieve Information Model – FIND SOP Class   | 1.2.840.10008.5.1.4.1.2.2.1 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Patient Root Query/Retrieve Information Model – FIND SOP Class | 1.2.840.10008.5.1.4.1.2.1.1 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |
| Study Root Query/Retrieve Information Model – FIND SOP Class   | 1.2.840.10008.5.1.4.1.2.2.1 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |

#### 3.1.3.2.2.1 SOP Specific Conformance for FIND SOP Classes

**TCS 2.03** conforms to the SOPs of the Find Service Class at Level 2 (Full).

The **TCS 2.03 ImageManager** searches the Medcon database for the requested Information Objects described in the C-FIND identifier and returns a response for each match.

Possible response status values are:

|             |                   |                                   |   |
|-------------|-------------------|-----------------------------------|---|
| <b>A700</b> | Refused           | Out of resources                  | Indicates that there was not enough space to store the images   |
| <b>A900</b> | Failed            | Data Set does not match SOP Class | Indicates that the Data Set does not encode an instance of the SOP Class specified. This indicates a problem with SCU of the Service Class. |
| <b>C000</b> | Unable to Process | Cannot understand                 | Indicates that TCS 2.03 cannot parse the Data Set into elements. This indicates a problem with the SCU.                                     |
| <b>FE00</b> | Cancel            |                                   | Terminated due to Cancel Request  |
| <b>0000</b> | Success           |                                   | Matching completed  |
| <b>FF00</b> | Pending           |                                   | Matches are continuing  |

The attribute (0000,0902) contains a descriptive message to explain error returns.

### 3.1.3.2.3 Presentation Context Acceptance Criterion

**TCS 2.03** defines no limit on the number of presentation contexts accepted.

If **TCS 2.03** runs out of resources when trying to accept multiple presentation contexts, **TCS 2.03** will reject the association request. **TCS 2.03** does not check for duplicate presentation contexts and will accept duplicate presentation contexts.

### 3.1.3.2.4 Transfer Syntax Selection Policy

The **TCS 2.03** Application Entity conforms to the DICOM Patient Root Query/Retrieve and DICOM Study Root Query/Retrieve Service Class as an SCP for the Abstract Syntaxes listed in the table in section 3.1.3.2.2.

**TCS 2.03** prefers explicit Little Endian Transfer Syntax.

If offered a choice of Transfer Syntaxes in a Presentation Context, it will apply the following priority to the choice of Transfer Syntax:

- 1) Explicit Little Endian Transfer Syntax
- 2) Implicit Little Endian Transfer Syntax
- 3) Explicit Big Endian Transfer Syntax

### 3.1.3.3 Real World Activity – Retrieving

#### 3.1.3.3.1 Associated Real World Activity

The Real-World Activity associated with the C-MOVE operation is the retrieving of the image from the Medcon system. **TCS 2.03** will issue a failure status response if it is unable to retrieve the image.

### 3.1.3.3.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 13 are acceptable to **TCS 2.03** for retrieving images.

**Table 13 - Acceptable Presentation Contexts**

| Presentation Context Table                                     |                             |                           |                     |      |                      |
|--|-----------------------------|---------------------------|---------------------|------|----------------------|
| Abstract Syntax  |                             | Transfer Syntax           |                     | Role | Extended Negotiation |
| Name   | UID                         | Name                      | UID                 |      |                      |
| Patient Root Query/Retrieve Information Model – MOVE SOP Class | 1.2.840.10008.5.1.4.1.2.1.2 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4.1.2.2.2 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Patient Root Query/Retrieve Information Model – MOVE SOP Class | 1.2.840.10008.5.1.4.1.2.1.2 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4.1.2.2.2 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Patient Root Query/Retrieve Information Model – MOVE SOP Class | 1.2.840.10008.5.1.4.1.2.1.2 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |
| Study Root Query/Retrieve Information Model – MOVE SOP Class   | 1.2.840.10008.5.1.4.1.2.2.2 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |

A response is returned for each match found in the attached database.

#### 3.1.3.3.2.1 SOP Specific Conformance for MOVE SOP Classes

**TCS 2.03** conforms to the SOPs of the Move Service Class at Level 2 (Full).

Possible response status values are:

|             |         |  |
|-------------|---------|--|
| <b>A700</b> | Refused | Out of resources                             |
| <b>A702</b> |         | Unable to perform sub-operations             |
| <b>A801</b> |         | Move Destination Unknown                     |
| <b>A900</b> | Failed  | Identifier does not match SOP Class          |
| <b>C000</b> |         | Unable to Process                            |
| <b>FE00</b> | Cancel  | Terminated due to Cancel Request             |
| <b>0000</b> | Success | Sub-operations completed                     |
| <b>B000</b> | Warning | Sub-operations completed, 1 or more failures |
| <b>FF00</b> | Pending | Matches are continuing                       |

The attribute (0000,0902) contains a descriptive message to explain error returns.

### 3.1.3.3 Presentation Context Acceptance Criterion

**TCS 2.03** defines no limit on the number of presentation contexts accepted.

If **TCS 2.03** runs out of resources when trying to accept multiple presentation contexts, **TCS 2.03** will reject the association request. **TCS 2.03** does not check for duplicate presentation contexts and will accept duplicate presentation contexts.

### 3.1.3.3.4 Transfer Syntax Selection Policy

**TCS 2.03** prefers Explicit Little Endian Transfer Syntax.

If offered a choice of Transfer Syntaxes in a Presentation Context, it will apply the following priority to the choice of Transfer Syntax:

1. Explicit Little Endian Transfer Syntax
2. Implicit Little Endian Transfer Syntax
3. Explicit Big Endian Transfer Syntax

### 3.1.3.4 Real World Activity – Verification

**TCS 2.03** accepts associations from nodes that wish to perform a verification operation on **TCS 2.03**.

#### 3.1.3.4.1 Associated Real World Activity – Verification

The Real World Activity associated with the C-ECHO request is that an external node wishes to verify network or server operation without initiating any actual work.

#### 3.1.3.4.2 Presentation Context Table

Table 14 shows the Presentation Contexts that may be accepted by **TCS 2.03** for verification operations.

**Table 14 - Acceptable Presentation Contexts for TCS 2.03 for Verification**

| <b>Presentation Context Table</b> |                   |                                 |                     |             |                             |
|-----------------------------------|-------------------|---------------------------------|---------------------|-------------|-----------------------------|
| <b>Abstract Syntax</b>            |                   | <b>Transfer Syntax</b>          |                     | <b>Role</b> | <b>Extended Negotiation</b> |
| <b>Name</b>                       | <b>UID</b>        | <b>Name</b>                     | <b>UID</b>          |             |                             |
| Verification                      | 1.2.840.10008.1.1 | DICOM Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP         | None                        |
| Verification                      | 1.2.840.10008.1.1 | DICOM Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP         | None                        |
| Verification                      | 1.2.840.10008.1.1 | DICOM Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP         | None                        |

### 3.1.3.4.2.1 SOP Specific Conformance for SOP Class Verification

Not Applicable.

### 3.1.3.4.3 Presentation Context Acceptance Criterion

**TCS 2.03** will accept the verification SOP classes listed in Table 1 above. **TCS 2.03** defines no limit on the number of presentation contexts accepted. If **TCS 2.03** runs out of resources when trying to accept multiple presentation contexts, **TCS 2.03** will reject the association request.

### 3.1.3.4.4 Transfer Syntax Selection Policies

**TCS 2.03** prefers Explicit Little Endian Transfer Syntax.

If offered a choice of Transfer Syntaxes in a Presentation Context, it will apply the following priority to the choice of Transfer Syntax:

- 1) Explicit Little Endian Transfer Syntax
- 2) Implicit Little Endian Transfer Syntax
- 3) Explicit Big Endian Transfer Syntax

### 3.1.3.5 Real-World Activity – Storage Commitment

The associated Real-World Activity is an attempt to make the commitment for the safekeeping of the SOP instances. **TCS 2.03** uses Storage Commitment SOP Class Push Model implementation in order to guarantee the safe storage of SOP instances.

**TCS 2.03** always returns the N-EVENT-REPORT on a separate association. This association is opened with reverse role negotiation, that is, the Calling AE is the SCP and the Called AE is the SCU.

After an N-ACTION request containing the Study Component Sequence has been received, the Storage Commitment N-EVENT-REPORT is built and returned.

### 3.1.3.5.1 Proposed Presentation Contexts

For this Real-World Activity, TCS 2.03 will propose the Presentation Contexts listed in Table 15.

**Table 15 - Proposed Presentation Contexts**

| Presentation Context Table    |                      |                                 |                     |      |                      |
|-------------------------------|----------------------|---------------------------------|---------------------|------|----------------------|
| Abstract Syntax               |                      | Transfer Syntax                 |                     | Role | Extended Negotiation |
| Name                          | UID                  | Name                            | UID                 |      |                      |
| Storage Commitment Push Model | 1.2.840.10008.1.20.1 | DICOM Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  | None                 |
| Storage Commitment Push Model | 1.2.840.10008.1.20.1 | DICOM Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  | None                 |
| Storage Commitment Push Model | 1.2.840.10008.1.20.1 | DICOM Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  | None                 |

### 3.1.3.6 Real-World Activity – Providing Modality Worklist

TCS 2.03 Worklist SCP application will wait for an association as an SCP for the Modality Worklist Service Class. When a C-FIND request is received, a search is done in TCS database for the data with the requested attributes, and a list of found attributes is returned to the remote requester. The TCS 2.03 Worklist Service accepts a number of associations, which is configured at the time of system initialization.

Asynchronous mode is not supported.

**Table 16 - Proposed Presentation Contexts**

| Abstract Syntax                           |                        | Transfer Syntax           |                     | Role |
|---|------------------------|---------------------------|---------------------|------|
| Name                                      | UID                    | Name                      | UID                 |      |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  |
| Modality Worklist Information Model -FIND | 1.2.840.10008.5.1.4.31 | Explicit VR Big Endian    | 1.2.840.10008.1.2.2 | SCP  |

### 3.1.3.6.1.1 SOP Specific Conformance for Modality Worklist SOP Class

The supported Return Key Attributes are as follows:

| Description                            | Tag       | Matching Key Type | Return Key Type |
|--|-----------|-------------------|-----------------|
| <b>Scheduled Procedure Step</b>        |           |                   |                 |
| Scheduled Procedure Step Sequence      | 0040,0100 | R                 | 1               |
| >Scheduled Station AE Title            | 0040,0001 | R                 | 1               |
| >Scheduled Procedure Step Start Date   | 0040,0002 | R                 | 1               |
| >Scheduled Procedure Step Start Time   | 0040,0003 | R                 | 1               |
| >Modality                              | 0008,0060 | R                 | 1               |
| >Scheduled Performing Physician's Name | 0040,0006 | R                 | 2               |
| >Scheduled Procedure Step Description  | 0040,0007 | O                 | 1C              |
| >Scheduled Station Name                | 0040,0010 | O                 | 2               |
| >Scheduled Procedure Step ID           | 0040,0009 | O                 | 1               |
| >Scheduled Procedure Step Location     | 0040,0011 | O                 | 2               |
| >Scheduled Action Item Code Sequence   | 0040,0008 | O                 | 1C              |
| >>Code Value                           | 0008,0100 | O                 | 1C              |
| >>Coding Scheme Designator             | 0040,0102 | O                 | 1C              |
| >>Pre-Medication                       | 0040,0012 | O                 | 2C              |
| >Scheduled Procedure Step Status       | 0040,0020 | O                 | 3               |
| <b>Requested Procedure</b>             |           |                   |                 |
| Requested Procedure ID                 | 0040,1001 | O                 | 1               |
| Requested Procedure Description        | 0032,1060 | O                 | 1C              |
| Requested Procedure Code Sequence      | 0032,1064 | O                 | 1C              |
| >Code Value                            | 0008,0100 | O                 | 1C              |
| >Coding Scheme Designator              | 0008,0102 | O                 | 1C              |
| Study Instance UID                     | 0020,000D | O                 | 1               |
| Referenced Study Sequence              | 0008,1110 | O                 | 2               |
| >Referenced SOP Class UID              | 0008,1150 | O                 | 1C              |
| >Referenced SOP Instance UID           | 0008,1155 | O                 | 1C              |
| Requested Procedure Priority           | 0040,1003 | O                 | 2               |
| <b>Imaging Service Request</b>         |           |                   |                 |
| Accession Number                       | 0008,0050 | O                 | 2               |
| Requesting Physician                   | 0032,1032 | O                 | 2               |

| Description  | Tag       | Matching Key Type | Return Key Type |
|--|-----------|-------------------|-----------------|
| Referring Physician's Name                           | 0008,0090 | O                 | 2               |
| <b>Visit Identification</b>                          |           |                   |                 |
| Admission ID   | 0038,0010 | O                 | 2               |
| Current Patient Location                             | 0038,0300 | O                 | 2               |
| <b>Patient Identification</b>                        |           |                   |                 |
| Patient's Name                                       | 0010,0010 | R                 | 1               |
| Patient ID   | 0010,0020 | R                 | 1               |
| <b>Patient Demographic</b>                           |           |                   |                 |
| Patients Birth Date                                  | 0010,0030 | O                 | 2               |
| Patient's Sex  | 0010,0040 | O                 | 2               |
| Patient's Weight                                     | 0010,1030 | O                 | 2               |
| Confidentiality constraint on patient data           | 0040,3001 | O                 | 2               |
| <b>Patient Medical</b>                               |           |                   |                 |
| Patient State  | 0038,0500 | O                 | 2               |
| Pregnancy Status                                     | 0010,21C0 | O                 | 2               |
| Medical Alerts                                       | 0010,2000 | O                 | 2               |
| Contrast Allergies                                   | 0010,2110 | O                 | 2               |
| Special Needs  | 0038,0050 | O                 | 2               |
| All other Attributes from the Patient Medical Module |           | O                 | 3               |

**3.1.3.7 Real-World Activity – Providing Modality Performed Procedure Step (MPPS)**

TCS 2.03 MPPS SCP application will wait for an association as an SCP for the MPPS Service Class. When N-CREATE/N-SET events are received, a search for the data with the received attributes is performed in TCS database and the required data are stored in TCS database.

**Table 17 - Proposed Presentation Contexts**

| Abstract Syntax                             |                          | Transfer Syntax           |                     | Role |
|---|--------------------------|---------------------------|---------------------|------|
| Name  | UID                      | Name                      | UID                 |      |
| Modality Performed Procedure Step SOP Class | 1.2.840.10008.53.1.2.3.3 | Implicit VR Little Endian | 1.2.840.10008.1.2   | SCP  |
| Modality Performed Procedure Step SOP Class | 1.2.840.10008.53.1.2.3.3 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCP  |

| Abstract Syntax                             |                          | Transfer Syntax        |                     | Role |
|---|--------------------------|------------------------|---------------------|------|
| Name  | UID                      | Name                   | UID                 |      |
| Modality Performed Procedure Step SOP Class | 1.2.840.10008.53.1.2.3.3 | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | SCP  |

### 3.1.3.7.1.1 SOP Specific Conformance for MPPS SOP Class

The supported Return Key Attributes are as follows:

| Description                                 | Tag       | Return Key Type<br>N-CREATE                                       | Return Key Type<br>N-SET | Requirement Type<br>Final State |
|---|-----------|---|--------------------------|---------------------------------|
| <b>SOP Common</b>                           |           |   |                          |                                 |
| Specific Character Set                      | 0008,0005 | 1C (Required if an extended or replacement character set is used) | Not allowed              |                                 |
| <b>Performed Procedure Step Information</b> |           |   |                          |                                 |
| Performed Station AE Title                  | 0040,0241 | 1   | Not allowed              |                                 |
| Performed Station Name                      | 0040,0242 | 2   | Not allowed              |                                 |
| Performed Location                          | 0040,0243 | 2   | Not allowed              |                                 |
| Performed Procedure Step ID                 | 0040,0253 | 1   | Not allowed              |                                 |
| Performed Procedure Step Start Date         | 0040,0244 | 1   | Not allowed              |                                 |
| Performed Procedure Step Start Time         | 0040,0245 | 1   | Not allowed              |                                 |
| Performed Procedure Step Status             | 0040,0252 | 1   | 1                        |                                 |
| Performed Procedure Step End Date           | 0040,0250 | 1   | 1                        | 1                               |
| Performed Procedure Step End Time           | 0040,0251 | 1   | 1                        | 1                               |
| Performed Procedure Step Description        | 0040,0254 | 2   | 2                        |                                 |
| Performed Procedure Type Description        | 0040,0255 | 2   | 2                        |                                 |
| Procedure Code Sequence                     | 0008,1032 | 2   | 2                        |                                 |

| <b>Description</b>                           | <b>Tag</b> | <b>Return Key Type N-CREATE</b>           | <b>Return Key Type N-SET</b>              | <b>Requirement Type Final State</b> |
|--|------------|---|---|-------------------------------------|
| >Code Value                                  | 0008,0100  | 1C (Required if Sequence Item is present) | 1C (Required if Sequence Item is present) |                                     |
| >Coding Scheme Designator                    | 0008,0102  | 1C (Required if Sequence Item is present) | 1C (Required if Sequence Item is present) |                                     |
| >Coding Scheme Version                       | 0008,0103  | 3   | 3   |                                     |
| >Code Meaning                                | 0008,0104  | 3   | 3   |                                     |
| Comments on the Performed Procedure Step     | 0040,0280  | 1   | 3   |                                     |
| <b>Performed Procedure Step Relationship</b> |            |   |   |                                     |
| Scheduled Step Attribute Sequence            | 0040,0270  | 1   | Not allowed                               |                                     |
| >Study Instance UID                          | 0020,000D  | 1   | Not allowed                               |                                     |
| >Referenced Study Sequence                   | 0008,1110  | 2   | Not allowed                               |                                     |
| >>Referenced SOP Class UID                   | 0008,1150  | 1C (Required if Sequence Item is present) | Not allowed                               |                                     |
| >>Referenced SOP Instance UID                | 0008,1155  | 1C (Required if Sequence Item is present) | Not allowed                               |                                     |
| >Accession Number                            | 0008,0050  | 2   | Not allowed                               |                                     |
| >Place Order Number/Imaging Service Request  | 0040,2016  | 3   | Not allowed                               |                                     |
| >Filler Order Number/Imaging Service Request | 0040,2017  | 3   | Not allowed                               |                                     |
| >Requested Procedure ID                      | 0040,1001  | 2   | Not allowed                               |                                     |
| >Requested Procedure Step Description        | 0032,1060  | 2   | Not allowed                               |                                     |
| >Scheduled Procedure Step ID                 | 0040,0009  | 2   | Not allowed                               |                                     |

| <b>Description</b>                                       | <b>Tag</b> | <b>Return Key Type<br/>N-CREATE</b>       | <b>Return Key Type<br/>N-SET</b> | <b>Requirement Type<br/>Final State</b> |
|--|------------|---|----------------------------------|---|
| >Scheduled Procedure Step Description                    | 0040,0007  | 2   | Not allowed                      |   |
| >Scheduled Protocol Code Sequence                        | 0040,0008  | 2   | Not allowed                      |   |
| >>Code Value   | 0008,0100  | 1C (Required if Sequence Item is present) | Not allowed                      |   |
| >>Coding Scheme designator                               | 0008,0102  | 1C (Required if Sequence Item is present) | Not allowed                      |   |
| >>Coding Scheme Version                                  | 0008,0103  | 3   | Not allowed                      |   |
| >>Code Meaning   | 0008,0104  | 3   | Not allowed                      |   |
| Patient's Name   | 0010,0010  | 2   | Not allowed                      |   |
| Patient's ID   | 0010,0020  | 2   | Not allowed                      |   |
| Patient's Birth Date                                     | 0010,0020  | 2   | Not allowed                      |   |
| Patient's Sex  | 0010,0040  | 2   | Not allowed                      |   |
| Referenced Patient Sequence                              | 0008,1120  | 2   | Not allowed                      |   |
| >Referenced SOP Class UID                                | 0008,1150  | 1C (Required if Sequence Item is present) | Not allowed                      |   |
| >Referenced SOP Instance UID                             | 0008,1155  | 1C (Required if Sequence Item is present) | Not allowed                      |   |
| Performed Procedure Discontinuation Reason Code Sequence | 0040,0281  | 3   | 3                                |   |
| >Code Value  | 0008,0100  | 1   | 1                                |   |
| >Coding SchemeDesignator                                 | 0008,0102  | 1   | 1                                |   |
| >Coding SchemeVersion                                    | 0008,0103  | 3   | 3                                |   |

| <b>Description</b>                                 | <b>Tag</b> | <b>Return Key<br/>Type<br/>N-CREATE</b> | <b>Return Key<br/>Type<br/>N-SET</b> | <b>Requirement<br/>Type<br/>Final State</b> |
|--|------------|---|--------------------------------------|---|
| >Code Meaning                                      | 0008,0104  | 3                                       | 3                                    |   |
| <b>Image Acquisition Results</b>                   |            |   |                                      |   |
| Modality   | 0008,0060  | 1                                       | Not allowed                          |   |
| Study ID   | 0020,0010  | 2                                       | Not allowed                          |   |
| Performed Protocol Code Sequence                   | 0040,0260  | 2                                       | 2                                    |   |
| >Code Value  | 0008,0100  | 1                                       | 1                                    |   |
| >Coding Scheme Designator                          | 0008,0102  | 1                                       | 1                                    |   |
| >Coding Scheme Version                             | 0008,0103  | 3                                       | 3                                    |   |
| >Code Meaning                                      | 0008,0104  | 3                                       | 3                                    |   |
| Performed Series Sequence                          | 0040,0340  | 2                                       | 1                                    | 1   |
| >Performed Physician's Name                        | 0008,1050  | 2                                       | 2                                    | 2   |
| >Protocol Name                                     | 0018,1030  | 1                                       | 1                                    | 1   |
| >Operator's Name                                   | 0008,1070  | 2                                       | 2                                    | 2   |
| >Series Instance UID                               | 0020,000E  | 1                                       | 1                                    | 1   |
| >Series Description                                | 0008,103E  | 2                                       | 2                                    | 2   |
| >Retrieve AE Title                                 | 0008,0054  | 2                                       | 2                                    | 2   |
| >Referenced Image Sequence                         | 0008,1140  | 2                                       | 2                                    |   |
| >>Referenced SOP Class UID                         | 0008,1150  | 1                                       | 1                                    |   |
| >>Referenced SOP InstanceUID                       | 0008,1155  | 1                                       | 1                                    |   |
| >Referenced Non-Image Composite SOP Image Sequence | 0040,0220  | 2                                       | 2                                    |   |
| >>Referenced SOP Class UID                         | 0008,1150  | 1                                       | 1                                    |   |
| >>Referenced SOP InstanceUID                       | 0008,1155  | 1                                       | 1                                    |   |

| Description  | Tag | Return Key Type<br>N-CREATE | Return Key Type<br>N-SET | Requirement Type<br>Final State |
|--|-----|-----------------------------|--------------------------|---------------------------------|
| >All other attributes from Performed Series Sequence                                 |     | 3                           | 3                        |                                 |
| All other attributes from Radiation Dose Module and Billing and Material Code Module |     | 3                           | 3                        |                                 |

Possible response status values are:

|             |         |                                     |
|-------------|---------|-------------------------------------|
| <b>A7xx</b> | Refused | Out of resources                    |
| <b>A9xx</b> | Failed  | Identifier does not match SOP Class |
| <b>Cxxx</b> |         | Unable to process                   |
| <b>0110</b> |         | Unable to update data               |
| <b>0000</b> | Success | Sub-operations completed            |

## 4. Communication Profiles

### 4.1 TCP/IP Stack

**TCS 2.03** provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

#### 4.1.1 TCP/IP API

**TCS 2.03 ImageManager** inherits its TCP/IP stack from the computer system upon which it executes.

## 5. Extensions/Specializations/Privatization

**TCS 2.03** supports all the private tags on level 2. Medcon private tags are listed in Table 18.

**Table 18 - Medcon Private Attributes**

| Data Element Tag | Name                                   | Remark |
|------------------|--|--------|
| (000D,0010)      | Private Attributes Identification Code |        |
| (000D,1000)      | Patient TCS Location ID                |        |
| (000D,1001)      | Study TCS Location ID                  |        |
| (000D,1002)      | Instance TCS Location ID               |        |
| (000D,1003)      | Instance TCS ID                        |        |
| (000D,1004)      | Instance TCS Location ID               |        |
| (000D,1005)      | Patient TCS ID                         |        |

| <b>Data Element Tag</b> | <b>Name</b>                            | <b>Remark</b>              |
|-------------------------|--|----------------------------|
| (000D,1006)             | Related File                           |                            |
| (000D,1007)             | Additional Patient ID                  |                            |
| (000D,1021)             | Patient Creation Date                  |                            |
| (000D,1022)             | Patient Creation Time                  |                            |
| (000D,1038)             | Instance Description                   |                            |
| (000D,1062)             | TCS Document File                      |                            |
| (000D,1063)             | Annotation Note                        |                            |
| (000D,1076)             | Annotation Creation Date               |                            |
| (000D,1077)             | Annotation Creation Time               |                            |
| (000D,1082)             | Instance Creation Date                 |                            |
| (000D,1083)             | Instance Creation Time                 |                            |
| (000D,1090)             | TCS Document Type                      |                            |
| (000D,0011)             | Private Attributes Identification Code |                            |
| (000D,1101)             | Patient Name                           |                            |
| (000D,1102)             | Patient ID                             |                            |
| (000D,1103)             | Patient Additional ID                  |                            |
| (000D,1104)             | Patient Optional ID                    |                            |
| (000D,1105)             | Series Description                     |                            |
| (000D,1106)             | Series Optional ID                     |                            |
| (000D,1107)             | Referring Physicians Name              |                            |
| (000D,1108)             | Performing Physicians Name             | Names are Delimited by “\” |
| (000D,1109)             | Instance Name                          |                            |
| (000D,1110)             | Instance Description                   |                            |

Elements from (000D,1101) – (000D,1110) are used for recording the UNICODE version of the relevant standard and private elements (if required).

All elements represent internal information used for media exchange between Medcon Systems.

## 6. Configuration

TCS 2.03 maintains configuration data in Registry and Configuration files. Configuration may be performed by TCS 2.03 Administration utility or manually.

### 6.1 Configurable Parameters

| Parameter Name  | Default Value   | Remark  |
|---|-----------------|---|
| <b>AE Title</b>   | MEDCON_SERVER   |   |
| <b>TCP Listen Port</b>  | 1133            |   |
| <b>PDU Size</b>   | 16768 bytes     |   |
| <b>List of permitted SCP for Query / Retrieve / Store</b>   | Empty           |   |
| <b>List of SCU to be accepted associations from</b>   | Any association |   |
| <b>List of trusted Certification Authorities.</b>   |                 | In case of operation inside secure domain                                   |
| <b>Number of simultaneous associations</b>  | 3               |   |
| <b>Option to do recompression</b>   |                 | Option to change transfer syntax may be defined per modality for Store SCP. |
| <b>Days Limit</b>   | 10              | Number of days for keeping received SOP instances in temporary directory.   |
| <b>Additional constant filters for worklist (WL) requests:<br/>Modality<br/>Performing Physician<br/>Station AE Titles<br/>Station Name</b> | Empty           | These parameters will be constantly added to WL requests.                   |
| <b>Retrieve Timeout</b>   | 45 min          | Time for internal retrieving from TCS 2.03 Archive                          |
| <b>Network Timeout</b>  |                 | Timeout after which TCS 2.03 identifies network problems.                   |
| <b>Remote Printer Port</b>  |                 |   |
| <b>Remote Printer Host</b>  |                 |   |
| <b>Remote Printer AE Title</b>  |                 |   |