DICOM CONFORMANCE STATEMENT

Intera R10.3 (SP3) & R10.4

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1. INTRODUCTION

This chapter provides general information about the purpose, scope and contents of this Conformance Statement.

1.1. Scope and Field of Application

The scope of this DICOM Conformance Statement is to facilitate data exchange with equipment of Philips Medical Systems. This document specifies the compliance to the DICOM standard (formally called the NEMA PS 3.X standards). It contains a short description of the applications involved and provides technical information about the data exchange capabilities of the equipment. The main elements describing these capabilities are: the supported DICOM Service Object Pair (SOP) Classes, Roles, Information Object Definitions (IOD) and Transfer Syntaxes. The field of application is the integration of the Philips Medical Systems equipment into an environment of medical devices. This Conformance Statement should be read in conjunction with the DICOM standard and its addenda [DICOM].

1.2. Intended Audience

This Conformance Statement is intended for:

- (potential) customers
- system integrators of medical equipment
- marketing staff interested in system functionality
- software designers implementing DICOM interfaces

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

1.3. Contents and Structure

The DICOM Conformance Statement is contained in chapter 2 through 7 and follows the contents and structuring requirements of DICOM PS 3.2.

1.4. Used Definitions, Terms and Abbreviations

DICOM definitions, terms and abbreviations are used throughout this Conformance Statement. For a description of these, see NEMA PS 3.3 and PS 3.4. The word Philips in this document refers to Philips Medical Systems.

1.5. References

[NICOM] The Digital Imaging and Communications in Medicine (DICOM) standard (NEMA PS 3.X):
National Electrical Manufacturers Association (NEMA)
Publication Sales 1300 N. 17th Street, Suite 1847
Rosslyn, Va. 22209, United States of America

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1.6. Important Note to the Reader

This Conformance Statement by itself does not guarantee successful interoperability of Philips equipment with non-Philips equipment. The user (or user’s agent) should be aware of the following issues:

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

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

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

- ACR  American College of Radiology
- AE   Application Entity
- AET  Application Entity Title
- ANSI American National Standard Institute
- CT   Computed Tomography (Image Storage)
- DICOM Digital Imaging and Communication in Medicine
- DIMSE DICOM Message Service Element
- EBE  Explicit VR Big Endian
- ELE  Explicit VR Little Endian
- FSC  File-Set Creator
- FSR  File-Set Reader
- FSU  File-Set Updater
- HIS  Hospital Information System
- ILE  Implicit VR Little Endian
-IOD  Information Object Definition
- MIP  Maximum/Minimum Intensity Projection
- MOD  Magneto-Optical Disc
- MPR  Multi-Planar Reformat
- MR   Magnetic Resonance (Image Storage)
- NEMA National Electrical Manufacturers Association
- PACS Picture Archiving and Communication System
- PC   Personal Computer
- PDU  Protocol Data Unit
- PS   Grayscale Softcopy Presentation State (Storage)
- Q/R  Query/Retrieve
- RIS  Radiology Information System
- RWA  Real World Activity
- SC   Secondary Capture (Image Storage)
- SCP  Service Class Provider
- SCU  Service Class User
- SOP  Service Object Pair
- TCP/IP Transmission Control Protocol/Internet protocol
- UI   User Interface
- UID  Unique Identifier
2. IMPLEMENTATION MODEL

The Intera (Gyroscan) system of Philips Medical Systems, later referred to as Intera, is an MR image generating system.

The Intera (Gyroscan) is primarily intended for:
A DICOM Radiology Information System (RIS) interface to retrieve the Worklist of patients to be examined and to send an MPPS request to the RIS.
A DICOM Image Import function to receive DICOM MR images and image related data (originating from the same or other Intera systems) from a remote DICOM node.
A DICOM Image Export function to transfer DICOM MR or DICOM SC images and image related data from the Intera to a remote system. After the store request a Storage Commit request can be sent to the remote system.
A DICOM Image Print function to print MR images on a DICOM network printer.
A DICOM Media export function write and read DICOM MOD's.

Supported DICOM functionality of the Intera:

Network SCU:
- Storage
- Query/Retrieve
- Study Management (Modality Performed Procedure Step)
- Storage Commitment
- Basic Worklist Management

Network SCP:
- Verification
- Storage

Print SCU:
- Print Management

DICOM Media:
- Media Storage (Read, Write, Update)

These DICOM functions are described in this document.
2.1. Application Data Flow Diagram

Intera has 2 Application Entities (AE). The related implementation model is shown in Figure 2.

Before or after an acquisition a remote system can send related images of one or more of the scheduled patients to the Intera. The Intera can send a query request for images to an archive. DICOM Instances (MR, SC Images, Private SOP Classes and grayscale softcopy presentation state) are imported for reference purposes only.

The Intera DICOM Modality Worklist function requests the Worklist from a DICOM Information System like a RIS. At the start and the end of the acquisition/processing MPPS messages are sent to the RIS to inform the RIS of the status of the Examination.

The created Images are converted into a DICOM message to be sent to the remote system or can be written onto a local disk or a MOD. After the storage to a remote archive the Intera can request a storage commitment.

The Intera DICOM Print function allows the Intera operator to send/print images on a DICOM network printer.

Secondary Capture Images can be created when the user uses the screen capture function.
Figure 2. Implementation Model Intera
2.2. Functional definition of Application Entities

2.2.1. Intera Network AE

2.2.1.1. Worklist services

The Intera Worklist Management RWA requests the Worklist from a DICOM Information System like a RIS with the Worklist Management service. The function is initiated on the Intera by clicking the “RIS” button.

At the start and at the end of the acquisition/processing the configured MPPS node system is informed of the process of the selected procedure step by the Modality Performed Procedure Step (MPPS) service. The function is initiated at the start of a new examination (status is IN-PROGRESS). When the object has been archived and other administrative data has been updated the operator pushes the “ready” or “incomplete” button and Intera sends a new MPPS message with the status COMPLETED/DISCONTINUED.

2.2.1.2. Intera Import services

The Intera Network AE acts as SCP for the storage SOP classes and as SCU for the Q/R SOP classes: the Intera will respond to a remote request and store the images in the patient database. Imported images are to be used for reference only; when these are exported afterwards again no guarantee for consistency or completeness can be given.

2.2.1.3. Intera Export services

The Intera operator can activate the DICOM Image Export function. The Intera Network AE acts as SCU of the Storage Service Class. The selected images and related object data are converted into a DICOM message to be sent to the remote system.

The images to be sent are selected from one or more examinations. At export the images will be sent to a user selected remote destination. The images transferred are intended for viewing purposes; planscan information can be calculated from reference images. Post-processing like MPR, MIP, 3D reconstruction and rendering are possible, depending on the capabilities of the workstation receiving the MR images; for more detailed interpretation a large amount of information is stored in private elements. These have to be discarded by another DICOM system when modifying/processing the images. These DICOM nodes are then responsible for data consistency.

2.2.1.4. Verification services

The Intera verification function can handle verification requests.

2.2.2. Intera Print AE

The Intera DICOM Print function allows the Intera operator to send/print images on a DICOM network printer. The Intera DICOM Print AE acts as SCU of the Basic Grayscale Print Management Meta SOP Class. After selecting the images these can be sent to a DICOM network printer.

2.2.3. Media

The Intera has the function to Read, Write or Update MOD’s and DICOM files written by the CT/MR application Profile. As an extension to this profile also grayscale softcopy presentation state objects can be written, updated and read from MOD’s.
2.3. Sequencing of Real World Activities

Worklist Management
When a RIS interface is configured, the prepared worklist data can be requested by clicking the "RIS" button on the Patient Administration user interface. It may request the Worklist for "Today" and "Tomorrow" from the specific Intera AE title. After receiving the worklist data from the RIS the Intera will display the worklist on the user interface. The user can select a relevant patient record and add or modify missing or wrong data before the received patient data is stored in the Intera database. The Worklist contains the Requested Procedure Steps.

Prefetching Images
Before or after requesting a worklist a remote system can send related images of one or more of the scheduled patients to the Intera, for reference purposes. In this way prefetching of images can be performed.

If no RIS is configured or no connection is possible, data can be introduced manually via the user interface.

After preparation of the scanner and the patient, the operator will perform the requested, or on his own initiative modified, procedure steps. Results may be MR images and screen-grabs stored as Secondary Capture images, as well as Private MR Spectrum and Private MR Series Data.

Export
The selected MR images and other objects can be sent (manually or by acquisition protocol) to a selected remote system. The Intera can be configured to send grayscale softcopy presentation state for the selected series.

Print
After selecting the images these can be sent to a DICOM network printer.

Media
Storage on MOD can be initiated by selecting the requested images and pressing the MOD destination button on the user interface.

Storage Commitment
After sending the images to an archive, the Intera can be configured to request a storage commitment from the archive. After receiving the Storage Commitment, this is indicated on the Patient Administration Users Interface. After this the user may decide to delete the images locally.

Worklist, MPPS and Storage Commitment are part of the IHE Scheduled Workflow option package.
3. AE SPECIFICATIONS

The Network capabilities of the system consists of two DICOM Application Entities:

- Intera Network AE
- Intera Print AE

These are specified in section 3.1 to section 3.2.

The Media services are described in section 3.3.

3.1. Intera Network AE Specification

The Intera Network AE Application Entity provides standard conformance to the DICOM V3.0 SOP classes as a SCU specified in Table 1.

<table>
<thead>
<tr>
<th>SOP Class Name</th>
<th>UID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Commitment Push Model</td>
<td>1.2.840.10008.1.20.1</td>
</tr>
<tr>
<td>Modality Performed Procedure Step</td>
<td>1.2.840.10008.3.1.2.3.3</td>
</tr>
<tr>
<td>MR Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.4</td>
</tr>
<tr>
<td>Secondary Capture Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.7</td>
</tr>
<tr>
<td>Grayscale Softcopy Presentation State Storage</td>
<td>1.2.840.10008.5.1.4.1.1.1.11.1</td>
</tr>
<tr>
<td>Patient Root Query/Retrieve Info Model - FIND</td>
<td>1.2.840.10008.5.1.4.1.2.1.1</td>
</tr>
<tr>
<td>Patient Root Query/Retrieve Info Model - MOVE</td>
<td>1.2.840.10008.5.1.4.1.2.1.2</td>
</tr>
<tr>
<td>Study Root Query/Retrieve Info Model - FIND</td>
<td>1.2.840.10008.5.1.4.1.2.2.1</td>
</tr>
<tr>
<td>Study Root Query/Retrieve Info Model - MOVE</td>
<td>1.2.840.10008.5.1.4.1.2.2.2</td>
</tr>
<tr>
<td>Modality Worklist Information Model - FIND</td>
<td>1.2.840.10008.5.1.4.31</td>
</tr>
<tr>
<td>Private MR Spectrum Storage</td>
<td>1.3.46.670589.11.0.0.12.1</td>
</tr>
<tr>
<td>Private MR Series Data Storage</td>
<td>1.3.46.670589.11.0.0.12.2</td>
</tr>
</tbody>
</table>

The Intera DICOM Network AE Application Entity provides standard conformance to the DICOM V3.0 SOP classes as a SCP specified in Table 2.

<table>
<thead>
<tr>
<th>SOP Class Name</th>
<th>UID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verification</td>
<td>1.2.840.10008.1.1</td>
</tr>
<tr>
<td>MR Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.4</td>
</tr>
<tr>
<td>Secondary Capture Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.7</td>
</tr>
<tr>
<td>Grayscale Softcopy Presentation State Storage</td>
<td>1.2.840.10008.5.1.4.1.1.1.11.1</td>
</tr>
<tr>
<td>Private MR Spectrum Storage</td>
<td>1.3.46.670589.11.0.0.12.1</td>
</tr>
<tr>
<td>Private MR Series Data Storage</td>
<td>1.3.46.670589.11.0.0.12.2</td>
</tr>
</tbody>
</table>
3.1.1. Association Establishment Policies

3.1.1.1. General
The Intera Network AE always proposes the following DICOM Application Context Name (ACN): 1.2.840.10008.3.1.1.1.

The Maximum PDU size is configurable.

3.1.1.2. Number of Associations
The Intera Network AE will attempt one association for each service as SCU at the time. For the SCP service also one association is supported.

3.1.1.3. Asynchronous Nature
The Intera Network AE does not support asynchronous operations and will not perform asynchronous window negotiation.

3.1.1.4. Implementation Identifying Information

| Implementation Class UID:       | 1.3.46.670589.11.0.0.51.4.2.2 |
| Implementation Version Name:    | MR DICOM 2.2                    |
3.1.2. Association Initiation Policy

3.1.2.1. Worklist Management

3.1.2.1.1. Associated Real-World Activity

The Worklist Management function will be accessible through the Intera user interface. An association will be initiated to the configured remote system (usually a RIS). After receiving the Worklist the association is released.

3.1.2.1.2. Proposed Presentation Context

The Intera Network AE will propose the following presentation context.

Table 3. Proposed Presentation Context for Worklist Management SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modality Worklist Information Model - FIND</td>
<td>1.2.840.10008.5.1.4.31</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2.1.3. SOP Specific Conformance Worklist SOP Classes

Following are the status codes that are processed by the Intera Network AE when received from a remote Modality Worklist SCP system:

Table 4. WLM Status

<table>
<thead>
<tr>
<th>Service Status</th>
<th>Status Codes</th>
<th>Further Meaning</th>
<th>Behaviour upon receiving Status Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refused</td>
<td>A700</td>
<td>Out of resources</td>
<td>Processing of the matches and the association is terminated. A message appears on the User Interface.</td>
</tr>
<tr>
<td>Failed</td>
<td>A900</td>
<td>Identifier does not match SOP Class</td>
<td>The association is terminated and the status is logged into the system error log. A message appears on the User Interface.</td>
</tr>
<tr>
<td></td>
<td>Cxxx</td>
<td>Unable to process</td>
<td>Processing of the matches and the association is terminated. A message appears on the User Interface.</td>
</tr>
<tr>
<td>Cancel</td>
<td>FE00</td>
<td>Matching terminated due to cancel</td>
<td>Processing of the matches and the association is terminated. A message appears on the User Interface.</td>
</tr>
<tr>
<td>Success</td>
<td>0000</td>
<td>Matching is complete - No final identifier is supplied</td>
<td>The association is released and the matches received are stored.</td>
</tr>
<tr>
<td>All other status codes</td>
<td>xxxx</td>
<td>-</td>
<td>No specific behaviour.</td>
</tr>
</tbody>
</table>
Table 5 lists the received attributes that are shown on the user interface, providing the mapping of the DICOM attribute to the UI entry.

**Table 5. Mapping between UI Fields and DICOM Attributes for Modality Worklist Query**

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>UI Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled Procedure Step Sequence</td>
<td>(0040,0100)</td>
<td>Sequence attribute not required in UI</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Start Date</td>
<td>(0040,0002)</td>
<td>Not visible</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Start Time</td>
<td>(0040,0003)</td>
<td>Not visible</td>
</tr>
<tr>
<td>&gt;Modality</td>
<td>(0008,0060)</td>
<td>Not visible</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Description</td>
<td>(0040,0007)</td>
<td>Exam Name</td>
</tr>
<tr>
<td>Requested Procedure ID</td>
<td>(0040,1001)</td>
<td>Not visible</td>
</tr>
<tr>
<td>Accession Number</td>
<td>(0008,0050)</td>
<td>Accession Number</td>
</tr>
<tr>
<td>Referring Physician’s Name</td>
<td>(0008,0090)</td>
<td>Physician</td>
</tr>
<tr>
<td>Patient’s Name</td>
<td>(0010,0010)</td>
<td>Patient’s name</td>
</tr>
<tr>
<td>Patient ID</td>
<td>(0010,0020)</td>
<td>Registration ID</td>
</tr>
<tr>
<td>Patient’s Birth Date</td>
<td>(0010,0030)</td>
<td>Date of birth</td>
</tr>
<tr>
<td>Patient’s Sex</td>
<td>(0010,0040)</td>
<td>Sex</td>
</tr>
<tr>
<td>Patient’s Weight</td>
<td>(0010,1030)</td>
<td>Weight</td>
</tr>
</tbody>
</table>

In the following tables an overview of the WLM request attributes is given. Additional information is included in the Note field.

**Table 6. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - SOP Common Module**

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>Single value matching ISO_IR 100</td>
</tr>
</tbody>
</table>

**Table 7. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - Scheduled Procedure Step Module**

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled Procedure Step Sequence</td>
<td>0040,0100</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Requested Contrast Agent</td>
<td>0032,1070</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Station AE Title</td>
<td>0040,0001</td>
<td>Single value matching &lt;local network AET&gt;</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Start Date</td>
<td>0040,0002</td>
<td>Range matching &lt;Today&gt; - &lt;Tomorrow&gt; or Single value matching &lt;Today&gt;, &lt;Tomorrow&gt;</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Start Time</td>
<td>0040,0003</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step End Date</td>
<td>0040,0004</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step End Time</td>
<td>0040,0005</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Performing Physician’s Name</td>
<td>0040,0006</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Description</td>
<td>0040,0007</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Action Item Code Sequence</td>
<td>0040,0008</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Code Value</td>
<td>0008,0100</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Coding Scheme Designator</td>
<td>0008,0102</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Coding Scheme Version</td>
<td>0008,0103</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Code Meaning</td>
<td>0008,0104</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 8. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - Requested Procedure Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;Scheduled Procedure Step ID</td>
<td>0040,0009</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Station Name</td>
<td>0040,0010</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Location</td>
<td>0040,0011</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Pre-Medication</td>
<td>0040,0012</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Status</td>
<td>0040,0020</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Comments on the Scheduled Procedure Step</td>
<td>0040,0400</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 9. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - Imaging Service Request Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced Study Sequence</td>
<td>0008,1110</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
<tr>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure Description</td>
<td>0032,1060</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure Code Sequence</td>
<td>0032,1064</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Code Value</td>
<td>0008,0100</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Coding Scheme Designator</td>
<td>0008,0102</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Coding Scheme Version</td>
<td>0008,0103</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Code Meaning</td>
<td>0008,0104</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure ID</td>
<td>0040,1001</td>
<td>-</td>
</tr>
<tr>
<td>Names of Intended Recipients of Results</td>
<td>0040,1010</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure Comments</td>
<td>0040,1400</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 10. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - Visit Status Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Patient Location</td>
<td>0038,0300</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 11. Modality Worklist Information Model - FIND SOP Class - C-FIND-RQ - Patient Identification Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td>Patient ID</td>
<td>0010,0020</td>
<td>-</td>
</tr>
</tbody>
</table>
### 3.1.2.2. MPPS

#### 3.1.2.2.1. Associated Real-World Activity

The Intera Network AE initiates an association to the MPPS server when the first scan of the examination is initiated and sends an N-CREATE message with all appropriate information for the study. By pressing the "ready" or "incomplete" button an N-SET message is then sent with end dates and time, with a status COMPLETED/DISCONTINUED.

#### 3.1.2.2.2. Proposed Presentation Context

The Intera Network AE will propose the following presentation context.

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID (Modality Performed Procedure Step SOP Class)</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.2.840.10008.3.1.2.3.3</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3.1.2.2.3. SOP Specific Conformance MPPS SOP Classes

The Intera Network AE provides standard conformance to the MPPS SOP Class.

This chapter specifies in detail the applied attributes in the N-CREATE and N-SET Service Element of this supported SOP Class.

Status information may be obtained via the Queue Manager.
### Table 15. Modality Performed Procedure Step SOP Class - N-CREATE-RQ - SOP Common Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creation Date</td>
<td>0008,0012</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>Instance Creation Time</td>
<td>0008,0013</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>Instance Creator UID</td>
<td>0008,0014</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>SOP Class UID</td>
<td>0008,0016</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>SOP Instance UID</td>
<td>0008,0018</td>
<td>Additional attribute.</td>
</tr>
</tbody>
</table>

### Table 16. Modality Performed Procedure Step SOP Class - N-CREATE-RQ - Performed Procedure Step Relationship Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced Patient Sequence</td>
<td>0008,1120</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td>Patient ID</td>
<td>0010,0020</td>
<td>-</td>
</tr>
<tr>
<td>Patient's Birth Date</td>
<td>0010,0030</td>
<td>-</td>
</tr>
<tr>
<td>Patient's Sex</td>
<td>0010,0040</td>
<td>-</td>
</tr>
<tr>
<td>Scheduled Step Attribute Sequence</td>
<td>0040,0270</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Accession Number</td>
<td>0008,0050</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced Study Sequence</td>
<td>0008,1110</td>
<td>Always empty.</td>
</tr>
<tr>
<td>&gt;Study Instance UID</td>
<td>0020,000D</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Requested Procedure Description</td>
<td>0032,1060</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Description</td>
<td>0040,0007</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Scheduled Action Item Code Sequence</td>
<td>0040,0008</td>
<td>Always empty.</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step ID</td>
<td>0040,0009</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Requested Procedure ID</td>
<td>0040,1001</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 17. Modality Performed Procedure Step SOP Class - N-CREATE-RQ - Performed Procedure Step Information Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure Code Sequence</td>
<td>0008,1032</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Station AE Title</td>
<td>0040,0241</td>
<td>Applied value: &lt;local network AET&gt;</td>
</tr>
<tr>
<td>Performed Station Name</td>
<td>0040,0242</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Location</td>
<td>0040,0243</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Start Time</td>
<td>0040,0245</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step End Date</td>
<td>0040,0250</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step End Time</td>
<td>0040,0251</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Status</td>
<td>0040,0252</td>
<td>Applied value: IN PROGRESS</td>
</tr>
<tr>
<td>Performed Procedure Step ID</td>
<td>0040,0253</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Type Description</td>
<td>0040,0255</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 18. Modality Performed Procedure Step SOP Class - N-CREATE-RQ - Image Acquisition Results Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td>Study ID</td>
<td>0020,0010</td>
<td>-</td>
</tr>
<tr>
<td>Performed Action Item Code Sequence</td>
<td>0040,0260</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Series Sequence</td>
<td>0040,0340</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

### Table 19. Modality Performed Procedure Step SOP Class – N-CREATE-RQ - Radiation Dose Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomic Structure, Space or Region Sequence</td>
<td>0008,2229</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Distance Source to Detector</td>
<td>0018,1110</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Image Area Dose Product</td>
<td>0018,115E</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Total Time of Fluoroscopy</td>
<td>0040,0300</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Total Number of Exposures</td>
<td>0040,0301</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Entrance Dose</td>
<td>0040,0302</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Exposed Area</td>
<td>0040,0303</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Distance Source to Entrance</td>
<td>0040,0306</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Comments on Radiation Dose</td>
<td>0040,0310</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

### Table 20. Modality Performed Procedure Step SOP Class – N-CREATE-RQ - Billing And Material Management Code Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing Procedure Step Sequence</td>
<td>0040,0320</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Film Consumption Sequence</td>
<td>0040,0321</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Billing Supplies and Devices Sequence</td>
<td>0040,0324</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

### Table 21. Modality Performed Procedure Step SOP Class – N-SET-RQ - SOP Common Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance Creation Date</td>
<td>0008,0012</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>Instance Creation Time</td>
<td>0008,0013</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>Instance Creator UID</td>
<td>0008,0014</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>SOP Class UID</td>
<td>0008,0016</td>
<td>Additional attribute.</td>
</tr>
<tr>
<td>SOP Instance UID</td>
<td>0008,0018</td>
<td>Additional attribute.</td>
</tr>
</tbody>
</table>

### Table 22. Modality Performed Procedure Step SOP Class - N-SET-RQ - Performed Procedure Step Information Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure Code Sequence</td>
<td>0008,1032</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Procedure Step End Date</td>
<td>0040,0250</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step End Time</td>
<td>0040,0251</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 23. Modality Performed Procedure Step SOP Class - N-SET-RQ - Image Acquisition Results Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed Procedure Step Status</td>
<td>0040,0252</td>
<td>Applied values: COMPLETED, DISCONTINUED</td>
</tr>
<tr>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td></td>
</tr>
<tr>
<td>Performed Procedure Type Description</td>
<td>0040,0255</td>
<td></td>
</tr>
</tbody>
</table>

### Table 24. Modality Performed Procedure Step SOP Class – N-SET-RQ - Radiation Dose Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomic Structure, Space or Region Sequence</td>
<td>0008,2229</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Distance Source to Detector</td>
<td>0018,1110</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Image Area Dose Product</td>
<td>0018,115E</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Total Time of Fluoroscopy</td>
<td>0040,0300</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Total Number of Exposures</td>
<td>0040,0301</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Entrance Dose</td>
<td>0040,0302</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Exposed Area</td>
<td>0040,0303</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Distance Source to Entrance</td>
<td>0040,0306</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Comments on Radiation Dose</td>
<td>0040,0310</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

### Table 25. Modality Performed Procedure Step SOP Class – N-SET-RQ - Billing And Material Management Code Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing Procedure Step Sequence</td>
<td>0040,0320</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Film Consumption Sequence</td>
<td>0040,0321</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Billing Supplies and Devices Sequence</td>
<td>0040,0324</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>
3.1.2.3. Query Remote Database

3.1.2.3.1. Associated Real-World Activity
The operator queries a remote database by means of the filter tool in the Patient Administration facility. The Intera initiates an association to the selected peer entity and uses it to send C-FIND requests (and receive the associated C-FIND responses).

3.1.2.3.2. Proposed Presentation Contexts
The Intera will propose the presentation context as given in the next Table.

Table 26. Proposed Presentation Context for Query Remote Database SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Query/Retrieve Information Model - FIND</td>
<td>See table 1.</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2.3.3. C-FIND SCU Conformance
Depending on the configuration the Intera shows the following behaviour.

If the remote system is configured as archive (PACS) the Intera shall always require a non-universal matching query filter before performing a query to the remote system. Otherwise Intera shall perform an initial universal matching query. After this initial query the subsequent queries shall be as specified in the Patient Administration Filter.

Intera provides the Patient Administration Filter dialog to enter matching criteria for the following matching keys.

Table 27. Patient Administration Filter

<table>
<thead>
<tr>
<th>Filter Key</th>
<th>DICOM Matching Key</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient name</td>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td>Registration ID</td>
<td>Patient ID</td>
<td>0010,0020</td>
<td>-</td>
</tr>
<tr>
<td>Date of birth</td>
<td>Patient's Birth Date</td>
<td>0010,0030</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 28. Patient Root Query/Retrieve Information Model - FIND SOP Class - C-FIND-RQ

<table>
<thead>
<tr>
<th>Q/R Level</th>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT</td>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Query/Retrieve Level</td>
<td>0008,0052</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient ID</td>
<td>0010,0020</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Birth Date</td>
<td>0010,0030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ethnic Group</td>
<td>0010,2160</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Sex</td>
<td>0010,0040</td>
<td>-</td>
</tr>
<tr>
<td>STUDY</td>
<td>Study Date</td>
<td>0008,0020</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Study Time</td>
<td>0008,0030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Accession Number</td>
<td>0008,0050</td>
<td>-</td>
</tr>
<tr>
<td>Q/R Level</td>
<td>Attribute Name</td>
<td>Tag</td>
<td>Note</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------</td>
<td>------------------</td>
<td>-------</td>
</tr>
<tr>
<td>SERIES</td>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Date</td>
<td>0008,0021</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Time</td>
<td>0008,0031</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Description</td>
<td>0008,103E</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Body Part Examined</td>
<td>0018,0015</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Protocol Name</td>
<td>0018,1030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Instance UID</td>
<td>0020,000E</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Number</td>
<td>0020,0011</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Number of Series Related Instances</td>
<td>0020,1209</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Status</td>
<td>0040,0252</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Examination Source</td>
<td>2001,1063</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 29. Study Root Query/Retrieve Information Model - FIND SOP Class - C-FIND-RQ

<table>
<thead>
<tr>
<th>Q/R Level</th>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY</td>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Query/Retrieve Level</td>
<td>0008,0052</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Study Date</td>
<td>0008,0020</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Study Time</td>
<td>0008,0030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Accession Number</td>
<td>0008,0050</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient ID</td>
<td>0010,0020</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Birth Date</td>
<td>0010,0030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Patient's Sex</td>
<td>0010,0040</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ethnic Group</td>
<td>0010,2160</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>-</td>
</tr>
<tr>
<td>SERIES</td>
<td>Series Date</td>
<td>0008,0021</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Time</td>
<td>0008,0031</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Description</td>
<td>0008,103E</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Body Part Examined</td>
<td>0018,0015</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Protocol Name</td>
<td>0018,1030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Instance UID</td>
<td>0020,000E</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Series Number</td>
<td>0020,0011</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Number of Series Related Instances</td>
<td>0020,1209</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Status</td>
<td>0040,0252</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Examination Source</td>
<td>2001,1063</td>
<td>-</td>
</tr>
</tbody>
</table>

In case of errors or warnings a message will appear on the UI.
3.1.2.4. Retrieve Images

3.1.2.4.1. Associated Real-World Activity
The operator is able to copy all series in a patient/study (examination) folder from a remote database to the local database by means of the "Local Database" button in the Intera patient administration facility. The Intera initiates an association to the selected peer entity and uses it to send C-MOVE requests (and receive the associated C-MOVE responses). The association is released when all selected images have been transmitted.

3.1.2.4.2. Proposed Presentation Contexts
The Intera will propose the presentation context as given in next table.

Table 30. Proposed Presentation Context for Retrieve Images SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Query/Retrieve</td>
<td>See table 1.</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td>Information Model - MOVE</td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2.4.3. C-MOVE SCU Conformance
The Intera Network AE provides standard conformance for all levels except Image level, which is not supported.

Status information may be obtained via the Queue Manager.

3.1.2.5. Export Images

3.1.2.5.1. Associated Real-World Activity
After selection of a remote station and after selection of one or more images, these images will be sent when initiating the Export command. Intera initiates one association to the selected remote entity and uses it to send the selected images via C-STORE requests (and receives the associated C-STORE responses).

The Intera will release the association after successful transfer of the images or when an error occurs.

3.1.2.5.2. Proposed Presentation Contexts
The Intera will propose the presentation context as given in the next table.

Table 31. Proposed Presentation Context for Export Images SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All storage SOP classes in table 1.</td>
<td>All storage SOP classes in table 1.</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2.5.3. Storage SCU Conformance
The Intera Network AE provides standard conformance.

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Upon receiving a C-STORE response containing an Error or Refused status the implementation will release the association. All the images associated with the job will be considered by the Intera to have failed to transfer. The Intera Network AE has the ability to automatically recover from this situation and will attempt to send all the images at a later time.

The behaviour on successful and unsuccessful transfer of images is given in the table below.

### Table 32. C-STORE Status

<table>
<thead>
<tr>
<th>Service Status</th>
<th>Codes</th>
<th>Further Meaning Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refused</td>
<td>A7xx</td>
<td>Message in console.</td>
</tr>
<tr>
<td>Error</td>
<td>A9xx</td>
<td>Message in console.</td>
</tr>
<tr>
<td></td>
<td>Cxxx</td>
<td>Message in console.</td>
</tr>
<tr>
<td>Warning</td>
<td>B00x</td>
<td>Message in console.</td>
</tr>
<tr>
<td>Success</td>
<td>0000</td>
<td>Message in console.</td>
</tr>
</tbody>
</table>

If the Intera user makes changes in the default image settings and/or annotations, these settings and annotations can be exported as DICOM Standard grayscale softcopy presentation state if the Storage SCP supports this function.

On the export of such an image the Intera system first sets up an association to determine if the SCP supports the grayscale softcopy presentation state SOP class. If the SCP supports this SOP class the Intera will request the storage of the MR Image objects and the related grayscale softcopy presentation state object. In annex 1 the supported attributes for the MR storage object service are listed. Annex 2 gives an overview of the supported Secondary Capture attributes. Annex 3 gives an overview of the supported grayscale softcopy presentation state attributes.

If an MR image is exported and the remote system does not support the MR Image SOP class the Intera automatically converts the MR image into a Secondary Capture image.

If the SCP does not support the grayscale softcopy presentation state service the graphical information is added to the MR image object and a new SOP Instance UID is generated for this MR image. The MR object will then include the supported attributes of the (conditional) modules; Overlay Plane module and VOI LUT module.

In the following tables an overview is presented with the supported modules for each exported instance.

### Table 33. Supported module for the MR Image Storage SOP Class

<table>
<thead>
<tr>
<th>Module</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Module</td>
<td>Always</td>
</tr>
<tr>
<td>Patient Medical Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>Patient Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>Study Classification Module</td>
<td>Always</td>
</tr>
<tr>
<td>Requested Procedure Module</td>
<td>Always</td>
</tr>
<tr>
<td>Imaging Service Request Module</td>
<td>Always</td>
</tr>
<tr>
<td>Performed Procedure Step Information Module</td>
<td>Always</td>
</tr>
</tbody>
</table>
### Module Usage

<table>
<thead>
<tr>
<th>Module</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing and Material Management Code Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Series Module</td>
<td>Always</td>
</tr>
<tr>
<td>Frame of Reference Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Equipment Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Image Module</td>
<td>Always</td>
</tr>
<tr>
<td>Image Plane Module</td>
<td>Always</td>
</tr>
<tr>
<td>Image Pixel Module</td>
<td>Always</td>
</tr>
<tr>
<td>MR Image Module</td>
<td>Always</td>
</tr>
<tr>
<td>Overlay Plane Module</td>
<td>If overlay is applied and Presentation State SOP class is either not configured or not accepted by SCP.</td>
</tr>
<tr>
<td>Modality LUT Module</td>
<td>Depending on configuration.</td>
</tr>
<tr>
<td>VOI LUT Module</td>
<td>Always</td>
</tr>
<tr>
<td>SOP Common Module</td>
<td>Always</td>
</tr>
<tr>
<td>Private Group</td>
<td>Always</td>
</tr>
</tbody>
</table>

#### Table 34. Supported module for the Secondary Capture Image Storage SOP Class

<table>
<thead>
<tr>
<th>Module</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>Patient Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Series Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Equipment Module</td>
<td>Always</td>
</tr>
<tr>
<td>SC Equipment Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Image Module</td>
<td>Always</td>
</tr>
<tr>
<td>Image Pixel Module</td>
<td>Always</td>
</tr>
<tr>
<td>SC Image Module</td>
<td>Always</td>
</tr>
<tr>
<td>SOP Common Module</td>
<td>Always</td>
</tr>
</tbody>
</table>

#### Table 35. Supported modules for the Grayscale Softcopy Presentation State Storage SOP Class

<table>
<thead>
<tr>
<th>Module</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>Patient Study Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Series Module</td>
<td>Always</td>
</tr>
<tr>
<td>Presentation Series Module</td>
<td>Always</td>
</tr>
<tr>
<td>General Equipment Module</td>
<td>Always</td>
</tr>
<tr>
<td>Overlay Plane Module</td>
<td>If overlay is applied.</td>
</tr>
<tr>
<td>Displayed Area Module</td>
<td>Always</td>
</tr>
<tr>
<td>Graphic Annotation Module</td>
<td>If graphic annotations are applied.</td>
</tr>
<tr>
<td>Spatial Transformation Module</td>
<td>If rotation or flipping are applied.</td>
</tr>
<tr>
<td>Graphic Layer Module</td>
<td>If graphic annotations, overlays, or curves are applied.</td>
</tr>
<tr>
<td>Modality LUT Module</td>
<td>Always</td>
</tr>
<tr>
<td>Softcopy Presentation LUT Module</td>
<td>Always</td>
</tr>
</tbody>
</table>
3.1.2.6. Storage Commitment

3.1.2.6.1. Associated Real-World Activity

The Storage Commitment function comprises the storage commitment of images on a remote system.

Storage Commitment will be initiated in a new association after closing the association of the related image storage (C-STORE). This new association will be open until the remote archive sends a storage commitment report (synchronous) or when the configured maximum time is passed. When this maximum configured period is passed, it is the responsibility of the remote archive to setup a new association with Intera and send the storage commitment report (asynchronous).

For cases when the Storage Commitment SCP is not functioning (i.e. momentarily off-line), the Intera Storage Commitment implementation queues the N-ACTION request for future re-transmission.

Upon receiving an N-ACTION response containing a failure status, this status will be logged to the system log file and the implementation will terminate the association.

Upon receiving an N-EVENT-REPORT message containing failed storage commitments the "stored" field in the User Interface is set to "Failed".

3.1.2.6.2. Proposed Presentation Contexts

The Intera will propose the presentation contexts as given in the next table.

Table 36. Proposed Presentation Contexts for Storage Commitment SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Commitment</td>
<td>1.2.840.10008.1.20.1</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td>Push Model SOP Class</td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2.6.3. Storage Commitment SCU Conformance

Storage Commitment is accomplished according to the real world activity described earlier. The Intera Network AE provides Standard conformance to the Storage Commitment SOP class.

There are no SOP class specific status codes defined by DICOM for the N-ACTION or the N-EVENT-REPORT, therefore, only general statuses from PS3.7 [DICOM] are used.

Table 37. Storage Commitment Push Model SOP Class - N-ACTION-RQ

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced Performed Procedure Step Sequence</td>
<td>0008,1111</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>-</td>
</tr>
<tr>
<td>Attribute Name</td>
<td>Tag</td>
<td>Note</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------</td>
<td>------</td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
<tr>
<td>Transaction UID</td>
<td>0008,1195</td>
<td>-</td>
</tr>
<tr>
<td>Referenced SOP Sequence</td>
<td>0008,1199</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
</tbody>
</table>
3.1.3. Association Acceptance Policy

3.1.3.1. Verification
The Intera Network AE shall act as Verification SCP for any remote SCU.

3.1.3.1.1. Associated Real-World Activity
An association can be accepted to verify application level communication using the C-ECHO command.

3.1.3.1.2. Presentation Context Table
The Intera DICOM Import AE may accept the following presentation contexts.

Table 38. Accepted Presentation Contexts for Verification SCP

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Extended Negotiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verification</td>
<td>1.2.840.10008.1.1</td>
<td>ELE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
</tbody>
</table>

3.1.3.1.3. SOP Specific Conformance for Verification SOP Classes
The Intera DICOM Import AE provides standard conformance to the Verification SOP class.

3.1.3.2. Import Images
The Intera Network AE shall act as Storage SCP for any remote Storage SCU that is configured in the Intera configuration using an accepted presentation context.

3.1.3.2.1. Associated Real-World Activity
After the Intera Network AE accepts an association from the Storage SCU it shall receive images, send store responses including the relevant status, and finally release the association on SCU request.

3.1.3.2.2. Presentation Context Table
The Intera Network AE may accept the following presentation contexts.

Table 39. Accepted Presentation Contexts for Import Images SCP

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All storage SOP</td>
<td>All storage SOP</td>
<td>ELE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
<tr>
<td>classes in table 2</td>
<td>classes in table 2</td>
<td>EBE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td>SCP</td>
<td>None</td>
</tr>
</tbody>
</table>

3.1.3.2.3. SOP Specific Conformance for Storage SOP Classes
Only MR images created on an Intera are allowed to be imported again. Then these imported images are used for reference only; it is not intended to export them again. SC images can be imported at all times from any source.
When Intera receives non-native MR images it will not import such images, respond with error status (C000) "Cannot understand", and abort the association.
3.1.3.3. Storage Commitment

The Intera Network AE shall act as Storage Commitment SCU to receive asynchronous Storage Commitment reports from requests sent to the Storage Commitment SCP.

3.1.3.3.1. Associated Real-World Activity

After the Intera Network AE accepts an association from the Storage Commitment SCP it shall receive Storage Commitment reports, send responses including the relevant status, and finally release the association on SCP request.

3.1.3.3.2. Presentation Context Table

The Intera Network AE may accept the following presentation contexts:

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Commitment Push Model SOP Class</td>
<td>1.2.840.10008.1.20.1</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2</td>
<td>SCU</td>
<td>None</td>
</tr>
</tbody>
</table>

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

The Intera Network AE implements the Storage Commitment Push Model SOP Class conform the standard DICOM Storage Commitment Service Class.
3.2. Intera Print AE Specification

The Intera Print AE provides conformance to the following DICOM 3.0 SOP class as an SCU:

Table 41. Supported SOP classes by the Intera Print AE as SCU

<table>
<thead>
<tr>
<th>SOP Class Name</th>
<th>UID</th>
<th>DIMSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Grayscale Print Management Meta SOP Class</td>
<td>1.2.840.10008.5.1.1.9</td>
<td>-</td>
</tr>
<tr>
<td>&gt; Basic Film Session SOP Class</td>
<td>1.2.840.10008.5.1.1.1</td>
<td>N-CREATE</td>
</tr>
<tr>
<td>&gt; Basic Film Box SOP Class</td>
<td>1.2.840.10008.5.1.1.2</td>
<td>N-DELETE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N-ACTION</td>
</tr>
<tr>
<td>&gt; Basic Grayscale Image Box SOP Class</td>
<td>1.2.840.10008.5.1.1.4</td>
<td>N-SET</td>
</tr>
<tr>
<td>&gt; Printer SOP Class</td>
<td>1.2.840.10008.5.1.1.16</td>
<td>N-EVENT-REPORT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N-GET</td>
</tr>
</tbody>
</table>

3.2.1. Association Establishment Policies

3.2.1.1. General

The Intera Print AE Specification always proposes the following DICOM Application Context Name (ACN): 1.2.840.10008.3.1.1.1.

The Print AE has a fixed Maximum PDU size of 64K.

3.2.1.2. Number of Associations

Always one at a time. It releases the association with DICOM SCP if no operation is done on the association within 120 s. or by user cancellation.

3.2.1.3. Asynchronous Nature

The Intera Print AE does not support asynchronous operations and will not perform asynchronous window negotiation.

3.2.1.4. Implementation Identifying Information

<table>
<thead>
<tr>
<th>Implementation Class UID:</th>
<th>2.16.124.113531.1.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Version Name:</td>
<td>MR PRINT 1.2</td>
</tr>
</tbody>
</table>

3.2.2. Association Initiation Policy

When the application submits a print job designated for a listed print server to the AE, the AE will request an association with the configured print server. For every supported printer the Association Initiation Policy can be configured, a list of attribute values can be configured.

3.2.2.1. Print Management

3.2.2.1.1. Associated Real-World Activity

The Print request causes the AE to initiate an association.

3.2.2.1.2. Proposed Presentation Context

The Intera Print AE will propose the following presentation contexts:
Table 42. Proposed Presentation Contexts for Print Management SCU

<table>
<thead>
<tr>
<th>Abstract Syntax</th>
<th>UID</th>
<th>Transfer Syntax</th>
<th>UID List</th>
<th>Role</th>
<th>Ext. Neg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Grayscale Print</td>
<td>1.2.840.10008.5.1.1.9</td>
<td>ELE</td>
<td>1.2.840.10008.1.2.1</td>
<td>SCU</td>
<td>None</td>
</tr>
<tr>
<td>Management Meta SOP Class</td>
<td></td>
<td>EBE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ILE</td>
<td>1.2.840.10008.1.2.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2.2.1.3. **SOP Specific Conformance Printer SOP Classes**

The Intera does not support the N-EVENT-REPORT DIMSE Service for the Printer SOP class. When the system receives an N-EVENT-REPORT FAILURE, Intera will disable the printer, and the operator will have to re-enable the printer again.

The Intera does not detect the printer status FAILURE (N-GET). Instead of releasing the association, the print job is continued.

Conform the DICOM standard, the Basic Film Box SOP Class – N-ACTION DIMSE does not contain any dataset.

Note:
Applied values other than mentioned below are NOT supported.

Table 43. Basic Film Session SOP Class - N-CREATE-RQ
- Basic Film Session Presentation Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Copies</td>
<td>2000,0010</td>
<td>Between 1 and 99</td>
</tr>
<tr>
<td>Print Priority</td>
<td>2000,0020</td>
<td>Applied Value: MED</td>
</tr>
<tr>
<td>Medium Type</td>
<td>2000,0030</td>
<td>Applied Value: BLUE FILM</td>
</tr>
<tr>
<td>Film Destination</td>
<td>2000,0040</td>
<td>Applied Values: MAGAZINE, PROCESSOR</td>
</tr>
<tr>
<td>Film Session Label</td>
<td>2000,0050</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 44. Basic Film Box SOP Class - N-CREATE-RQ
- Basic Film Box Presentation Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Display Format</td>
<td>2010,0010</td>
<td>Applied Values: COL, CUSTOM, ROW, SLIDE, STANDARD, SUPERSLIDE</td>
</tr>
<tr>
<td>Film Orientation</td>
<td>2010,0040</td>
<td>Applied Value: PORTRAIT</td>
</tr>
<tr>
<td>Film Size ID</td>
<td>2010,0050</td>
<td>Applied Values: 8INX10IN, 10INX12IN, 10INX14IN, 11INX14IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM</td>
</tr>
<tr>
<td>Magnification Type</td>
<td>2010,0060</td>
<td>Applied Value: CUBIC</td>
</tr>
<tr>
<td>Smoothing Type</td>
<td>2010,0080</td>
<td>-</td>
</tr>
<tr>
<td>Border Density</td>
<td>2010,0100</td>
<td>Applied Value: BLACK</td>
</tr>
<tr>
<td>Empty Image Density</td>
<td>2010,0110</td>
<td>Applied Value: BLACK</td>
</tr>
<tr>
<td>Min Density</td>
<td>2010,0120</td>
<td>-</td>
</tr>
<tr>
<td>Max Density</td>
<td>2010,0130</td>
<td>-</td>
</tr>
<tr>
<td>Trim</td>
<td>2010,0140</td>
<td>Applied Value: NO</td>
</tr>
<tr>
<td>Configuration Information</td>
<td>2010,0150</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 45. Basic Film Box SOP Class - N-CREATE-RQ
- Basic Film Box Relationship Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced Film Session Sequence</td>
<td>2010,0500</td>
<td>Parent Film Session</td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 46. Basic Grayscale Image Box SOP Class - N-SET-RQ
- Image Box Pixel Presentation Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnification Type</td>
<td>2010,0060</td>
<td>Applied Value: CUBIC</td>
</tr>
<tr>
<td>Smoothing Type</td>
<td>2010,0080</td>
<td>SCP specific.</td>
</tr>
<tr>
<td>Image Position</td>
<td>2020,0010</td>
<td>Applied Value: 1</td>
</tr>
<tr>
<td>Polarity</td>
<td>2020,0020</td>
<td>Applied Value: NORMAL</td>
</tr>
<tr>
<td>Basic Grayscale Image Sequence</td>
<td>2020,0110</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Samples per Pixel</td>
<td>0028,0002</td>
<td>Applied Value: 1</td>
</tr>
<tr>
<td>&gt;Photometric Interpretation</td>
<td>0028,0004</td>
<td>Applied Value: MONOCHROME2</td>
</tr>
<tr>
<td>&gt;Rows</td>
<td>0028,0010</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Columns</td>
<td>0028,0011</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Bits Allocated</td>
<td>0028,0100</td>
<td>Applied Value: 8</td>
</tr>
<tr>
<td>&gt;Bits Stored</td>
<td>0028,0101</td>
<td>Applied Value: 8</td>
</tr>
<tr>
<td>&gt;High Bit</td>
<td>0028,0102</td>
<td>Applied Value: 7</td>
</tr>
<tr>
<td>&gt;Pixel Representation</td>
<td>0028,0103</td>
<td>Applied Value: 0x0000</td>
</tr>
<tr>
<td>&gt;Pixel Data</td>
<td>7FE0,0010</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 47. Printer SOP Class - N-EVENT-REPORT-RSP
- Printer Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer Status Info</td>
<td>2110,0020</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 48. Printer SOP Class - N-GET-RQ
- Printer Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>0008,0070</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturer's Model Name</td>
<td>0008,1090</td>
<td>-</td>
</tr>
<tr>
<td>Device Serial Number</td>
<td>0018,1000</td>
<td>-</td>
</tr>
<tr>
<td>Software Version(s)</td>
<td>0018,1020</td>
<td>-</td>
</tr>
<tr>
<td>Printer Status</td>
<td>2110,0010</td>
<td>Applied Values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAILURE, NORMAL, WARNING</td>
</tr>
<tr>
<td>Printer Status Info</td>
<td>2110,0020</td>
<td>Applied Values: FILM JAM,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RECEIVER FULL, SUPPLY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMPTY, SUPPLY LOW</td>
</tr>
<tr>
<td>Printer Name</td>
<td>2110,0030</td>
<td>-</td>
</tr>
</tbody>
</table>

3.2.3. Association Acceptance Policy
The Intera Print AE does not accept any associations.
3.3. Media Specification

The Intera provides standard conformance to the DICOM Media Storage Service and File Format (PS 3.10 [DICOM]) and the Media Storage Application Profiles (PS 3.11 [DICOM]) as far as the reading of uncompressed images on MOD medium is concerned.

The Intera supports multi-patient and multi-session (both for reading and writing) MOD disks.

The supported Application Profiles, their Roles and the Service Class (SC) options, all defined in DICOM terminology, are listed in Table 49.

Table 49. Application Profile, Activities and Roles of the DICOM Media part of the Intera

<table>
<thead>
<tr>
<th>Application Profile</th>
<th>Identifier</th>
<th>Real World Activity</th>
<th>Role</th>
<th>SC Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR Studies on MOD</td>
<td>AUG-CTMR-MOD650</td>
<td>Display Directory of MOD disk</td>
<td>FSR</td>
<td>Interchange</td>
</tr>
<tr>
<td></td>
<td>AUG-CTMR-MOD12</td>
<td>Write image(s) on MOD disk</td>
<td>FSC, FSU</td>
<td>Interchange</td>
</tr>
<tr>
<td></td>
<td>AUG-CTMR-MOD23</td>
<td>Read image(s) from MOD disk</td>
<td>FSR</td>
<td>Interchange</td>
</tr>
<tr>
<td></td>
<td>AUG-CTMR-MOD41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next table gives an overview of the supported SOP Classes that can be written via this Application Profile.

Table 50. Supported SOP Classes by the Media AE

<table>
<thead>
<tr>
<th>SOP class Name</th>
<th>UID</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.4</td>
</tr>
<tr>
<td>Secondary Capture Image Storage</td>
<td>1.2.840.10008.5.1.4.1.1.7</td>
</tr>
<tr>
<td>Greyscale Softcopy Presentation State Storage</td>
<td>1.2.840.10008.5.1.4.1.1.11.1</td>
</tr>
<tr>
<td>Private MR Spectrum Storage</td>
<td>1.3.46.670589.11.0.0.12.1</td>
</tr>
<tr>
<td>Private MR Series Data Storage</td>
<td>1.3.46.670589.11.0.0.12.2</td>
</tr>
</tbody>
</table>

Note that the Grayscale Softcopy Presentation State object is not in the application profile but is written as an additional SOP class (extended Application profile).

3.3.1. File Meta Information

The (Source) Application Entity Title is derived from the Network AE.

The Implementation Class UID and the Implementation Version Name in the File Meta Header are specified in section 3.1.

3.3.2. Media related Real-World Activities

3.3.2.1. Display Directory

The Media AE will act as a FSR when reading the directory of the medium. This will result in an overview of the patients, studies, series and images on the Intera user interface.

3.3.2.1.1. Application Profile(s) for this RWA

See Table 49.
3.3.2.1.2. Required and optional DICOMDIR Keys
Default all mandatory DICOM keys are written to the DICOMDIR file, if configured additional keys can be stored.

3.3.2.2. Write images on MOD disk
The Media AE will act as a FSC/FSU when writing all selected images in a patient folder onto the MOD medium.

3.3.2.2.1. Application Profile(s) for this RWA
See Table 49.

3.3.2.2.2. Support for Attributes in the images
The DICOMDIR file will be extended when new images are written. In case some attributes are not present in the images but are specified Mandatory in the DICOMDIR definition in DICOM Media, a generated dummy value will be filled in.

Implementation remarks and restriction:
- When writing the DICOMDIR records the following key values are generated if no value of the corresponding attribute is supplied:
  - Patient ID;
  - Study ID;
  - Study Instance UID;
  - Series Number;
  - Series Instance UID;
  - Image Number;
  - SOP Instance UID.
- The mechanism of generating a value for Patient ID creates each time a new value based on Patient’s Name for each new study written to the MOD, even if this study belongs to a patient recorded earlier.
- The default value for the Pixel Intensity Relationship (0028,1040) is set to DISP.
- A number of attributes (e.g., Window Width and Window Centre) can be formatted as floating point numbers.

3.3.2.2.3. Supported DICOMDIR attributes

Table 51. DICOMDIR Attributes

<table>
<thead>
<tr>
<th>DICOMDIR Key</th>
<th>Attribute TAG</th>
<th>Attribute Name</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT</td>
<td>(0010,0010)</td>
<td>Patient’s Name</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,0020)</td>
<td>Patient ID</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,0030)</td>
<td>Patient's Birth Date</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,0032)</td>
<td>Patient's Birth Time</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,0040)</td>
<td>Patient’s Sex</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,1000)</td>
<td>Other Patient IDs</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,1001)</td>
<td>Other Patient Names</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0010,2160)</td>
<td>Ethnic Group</td>
<td>-</td>
</tr>
<tr>
<td>STUDY</td>
<td>(0008,0020)</td>
<td>Study Date</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0008,0030)</td>
<td>Study Time</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0008,0050)</td>
<td>Accession Number</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0008,1030)</td>
<td>Study Description</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0020,000D)</td>
<td>Study Instance UID</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0020,0010)</td>
<td>Study ID</td>
<td>-</td>
</tr>
</tbody>
</table>
### DICOMDIR Key | Attribute TAG | Attribute Name | Note
--- | --- | --- | ---
(0040,0244) | | Performed Procedure Step Start Date | -
(0040,0252) | | Performed Procedure Step Status | -
(0040,0254) | | Performed Procedure Step Description | -
(2001,1063) | | Examination Source | -
**SERIES** | (0008,0021) | Series Date | -
(0008,0031) | | Series Time | -
(0008,0060) | | Modality | -
(0018,1030) | | Protocol Name | -
(0020,000E) | | Series Instance UID | -
(0020,0011) | | Series Number | -
(2001,1014) | | MRSeriesNrOfEchoes | -
(2001,1017) | | MRSeriesNrOfPhases | -
(2001,1018) | | MRSeriesNrOfSlices | -
(2001,101D) | | MRSeriesReconstructionNumber | -
(2001,105F) | | StackSequence | -
(2001,1060) | | MRSeriesNrOfStacks | -
(2001,1081) | | MRSeriesNrOfDynamicScans | -
(2005,1020) | | MRSeriesNrOfChemicalShifts | -
**IMAGE** | (0008,0008) | Image Type | -
(0008,1140) | | Referenced Image Sequence | If available
(0020,0013) | | Instance Number | -
(0020,0032) | | Image Position (Patient) | -
(0020,0037) | | Image Orientation (Patient) | -
(0020,0052) | | Frame of Reference UID | -
(0028,0004) | | Photometric Interpretation | -
(0028,0010) | | Rows | -
(0028,0011) | | Columns | -
(0028,0030) | | Pixel Spacing | -
(0028,0101) | | Bits Stored | -
(0028,0102) | | High Bit | -
**PRESENTATION** | (0008,1115) | Referenced Series Sequence | -
(0020,0013) | | Instance Number | -
(0070,0080) | | Presentation Label | -
(0070,0081) | | Presentation Description | -
(0070,0082) | | Presentation Creation Date | -
(0070,0083) | | Presentation Creation Time | -
(0070,0084) | | Presentation Creator’s Name | Applied value: Intera

#### 3.3.2.3. Read images from MOD disk

The Intera Media AE will act as a FSR when reading all/selected images from the MOD medium. Only images made on an Intera are allowed to be imported again, these imported images are used for reference only, it is not intended to export them again.
3.3.2.3.1. Application Profile(s) for this RWA

See Table 49.

3.3.2.3.2. Support for Attributes in the images

The mandatory attributes of the DICOM images are required for the correct storage of the images in the Intera internal image database. For conformance see ANNEX 1.

3.3.3. Augmented Application Profile

As an augmentation to the STD-CTMR application profiles, also grayscale softcopy presentation state and private objects shall be interchanged per MOD.
4. COMMUNICATION PROFILES

Intera provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard. No OSI stack communications are provided with this implementation.

4.1. TCP/IP Stack

Intera supports Ethernet v2.0 and IEEE 802.3, 10/100 BASE-T and 1000 BASE-T depending on system hardware.
5. EXTENSIONS/SPECIALIZATIONS/PRIVATIZATIONS

The following standard extensions are applied for the MR Image Storage SOP class. See also the overview of the applied MR Image IOD.

Table 52. Applied Standard Extensions

<table>
<thead>
<tr>
<th>Module</th>
<th>Reference</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Medical Module</td>
<td>Table 59</td>
<td>-</td>
</tr>
<tr>
<td>Study Classification Module</td>
<td>Table 62</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure Module</td>
<td>Table 63</td>
<td>Additional attribute: Requested Contrast Agent</td>
</tr>
<tr>
<td>Imaging Service Request Module</td>
<td>Table 64</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Information Module</td>
<td>Table 65</td>
<td>-</td>
</tr>
<tr>
<td>Billing and Material Management Code Module</td>
<td>Table 66</td>
<td>-</td>
</tr>
<tr>
<td>General Series Module</td>
<td>Table 67</td>
<td>Additional attributes in Referenced Performed Procedure Step Sequence: &gt;Specific Character Set &gt;Instance Creation Date &gt;Instance Creation Time &gt;Instance Creator UID &gt;Instance Number</td>
</tr>
<tr>
<td>Modality LUT</td>
<td>Table 75</td>
<td>Present if configured. Must be applied when viewing the image.</td>
</tr>
<tr>
<td>Private Group</td>
<td>Table 78</td>
<td>Private MR attributes.</td>
</tr>
</tbody>
</table>

The Intera system supports private SOP classes; for the C-STORE services these private SOP classes are listed in the following table.

Table 53. Supported Private SOP Classes as SCU and SCP by the Intera

<table>
<thead>
<tr>
<th>SOP Class Name</th>
<th>UID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private MR Spectrum Storage</td>
<td>1.3.46.670589.11.0.0.12.1</td>
</tr>
<tr>
<td>Private MR Series Data Storage</td>
<td>1.3.46.670589.11.0.0.12.2</td>
</tr>
</tbody>
</table>
6. Configuration

The Intera is configured by means of a configuration program. This program is accessible from the login prompt of the operating system. It is password protected and intended to be used by Philips Customer Support Engineers only. The program allows the Customer Support Engineer to enter configuration information needed by the Intera applications.

6.1. Local Network Configuration

An Intera can be configured in two ways for the local IP network:
- Automatically via DHCP (hospital provided).
- By assigning a dedicated IP address, (sub)net mask and gateway (if necessary) manually.

This is determined upon installation time of the Intera.

6.2. AE Title/Presentation Address Mapping

6.2.1. Local AE Title and Presentation Address

The Intera contains two configurable AE Titles, one for the DICOM print service and one for all other DICOM services.

The Intera host name is configurable.

The Intera listens default on port 3010. This port number is configurable.

6.2.2. Remote AE Titles and Presentation Addresses

All relevant remote applications that are able to initiate an association with the Intera, must be configured on the Intera with the following information:
- AE Title.
- The SOP classes and transfer syntaxes for which the Intera accepts associations.

All relevant remote applications that are able to accept an association from the Intera must be configured on the Intera with the following information:
- IP Address.
- Host name and listening port number.
- AE Title.
- The SOP classes and transfer syntaxes that are supported by the remote application.

6.3. Configurable Parameters

6.3.1. Configuration of the Local System

The following items are configurable per Intera installation:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Explanation</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum data PDU size</td>
<td>For associations initiated by the Intera; value must be greater than 0</td>
<td>32768</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Explanation</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow incoming queries?</td>
<td>Not used – should not be changed</td>
<td>No</td>
</tr>
<tr>
<td>ARTIM timeout</td>
<td>Max. time Intera waits for an incoming association</td>
<td>60 seconds</td>
</tr>
<tr>
<td>Max nbr of associations</td>
<td>Simultaneous incoming connections to the Intera</td>
<td>1</td>
</tr>
<tr>
<td>Image number direction</td>
<td>Instance number given upon storage export</td>
<td>H-F / R-L / A-P</td>
</tr>
<tr>
<td>Institution name</td>
<td>Must be shorter than 40 characters</td>
<td>-</td>
</tr>
</tbody>
</table>

The following DICOM services are only supported when a software key has been purchased:
- RIS (Modality Worklist Management).
- Storage Commitment and Modality Performed Procedure Step (MPPS).

### 6.3.2. Configuration per Remote System

All relevant remote applications are defined through selection of one of the available preconfigured templates. Each defined remote application can be fine-tuned (if necessary) through several configurable parameters. What parameters are configurable depends on the selected template.

**Table 55. Configurable Parameters for Remote Systems of Intera**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Explanation</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>IsArchive</td>
<td>If set to Yes then the network node plays role of archive</td>
<td>-</td>
</tr>
<tr>
<td>Storage Commitment Network Name</td>
<td>Only when IsArchive is Yes;</td>
<td>-</td>
</tr>
<tr>
<td>Storage Commitment Max. Reply</td>
<td>Only when IsArchive is Yes;</td>
<td>-</td>
</tr>
<tr>
<td>Waiting Time</td>
<td>For asynchronous storage commitment use –1</td>
<td>-</td>
</tr>
<tr>
<td>Supported SOP classes</td>
<td>Depends on used template; SOP classes can be unconfigured</td>
<td>-</td>
</tr>
<tr>
<td>Supported Transfer Syntaxes</td>
<td>Depends on used template; the preference can be configured by ordering the supported transfer syntaxes</td>
<td>-</td>
</tr>
<tr>
<td>ARTIM timeout</td>
<td>Max. time Intera waits for association acknowledge</td>
<td>60 seconds</td>
</tr>
<tr>
<td>Split multiple day range</td>
<td>Only with RIS template</td>
<td>Yes</td>
</tr>
<tr>
<td>Pure DICOM</td>
<td>Do not send private attributes: only standard attributes</td>
<td>No</td>
</tr>
<tr>
<td>Combine MR Rescaling</td>
<td>Exported Window Width and Center have been rescaled</td>
<td>Yes</td>
</tr>
<tr>
<td>Send logging</td>
<td>For trouble shooting purposes</td>
<td>No</td>
</tr>
<tr>
<td>Receive logging</td>
<td>For trouble shooting purposes</td>
<td>No</td>
</tr>
<tr>
<td>Add group length attributes</td>
<td>For trouble shooting purposes</td>
<td>No</td>
</tr>
</tbody>
</table>

- The Basic Worklist Management services may be configured for one node only.
- A worklist query can be configured in two ways:
  - Intera requests one worklist: for today till tomorrow
  - Intera requests two worklists: one for today and one for tomorrow (default)
  This is configurable through the parameter ‘Split multiple day range’.
- The MPPS service may be configured for one node only.
- If IsArchive is set to Yes then the following statements apply:
  - Only complete series can be sent;
  - Storage commitment shall be enabled;
  - A committed image shall be marked in the Patient Administration UI with “archive” flag set;
  - Query filter must be specified and applied.
- The Intera can autopush MR images to the selected remote application. Whether or not to autopush a scan is defined in the scan protocol.
6.3.3. Print Configuration

Configurable per Intera installation:
• The DICOM printers to be selected by the operator.

Configurable for each defined DICOM printer:
All relevant DICOM printers are defined through selection of one of the available preconfigured templates. Each defined DICOM printer can be fine-tuned (if necessary) through several configurable parameters. The following list shows all the configurable printer parameters. Depending on the type of printer not all parameters may be present.

• Medium type
• Film formats
• Destination
• Photometric Interpretation
• Film size ID
• Orientation
• Magnification
• Smoothing
• Border density
• Empty image density
• Min. density
• Max. density
• Trim
• Configuration Info
• Polarity

The Intera can print to only one DICOM printer at a time.
7. Support of Extended Character Sets

Intera supports extended character set “ISO_IR 100” that is the Latin alphabet No 1, supplementary set.

If the RIS Worklist contains a Specific Character Set attribute that is not empty and not equal to ISO_IR 100 then the Intera will send a C-CANCEL request to the RIS and a “RIS ERROR” message will be displayed; the Intera will reject the RIS import.

For Print the server provides no support for extended character sets in the communication with DICOM SCP's.
8. Remarks

The following table shows the relation between MWL and MPPS attributes and image storage attributes.

Table 56. Correlation of DICOM Object

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Level</th>
<th>Attribute</th>
<th>MWL Tag</th>
<th>MPPS Create Tag</th>
<th>Related Store Tag</th>
<th>MPPS Set Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patient</td>
<td>Patient’s Name</td>
<td>0010,0010</td>
<td>0010,0010</td>
<td>0010,0010</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Patient</td>
<td>Patient ID</td>
<td>0010,0020</td>
<td>0010,0020</td>
<td>0010,0020</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Patient</td>
<td>Patient’s Birth Date</td>
<td>0010,0030</td>
<td>0010,0030</td>
<td>0010,0030</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Patient</td>
<td>Patient’s Sex</td>
<td>0010,0040</td>
<td>0010,0040</td>
<td>0010,0040</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Study</td>
<td>Accession Number</td>
<td>0008,0050</td>
<td>0008,0050</td>
<td>0008,0050</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Study</td>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>0020,000D</td>
<td>0020,000D</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Study</td>
<td>Request Procedure Description</td>
<td>0032,1060</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Study</td>
<td>Request Procedure ID</td>
<td>0040,1001</td>
<td>0040,1001</td>
<td>0040,1001</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Exam</td>
<td>Code Value</td>
<td>0008,0100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Exam</td>
<td>Code Scheme Designator</td>
<td>0008,0102</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Exam</td>
<td>Code Meaning</td>
<td>0008,0104</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Scheduled Procedure Step Descr</td>
<td>0040,0007</td>
<td>0040,0007</td>
<td>0040,0007</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Scheduled Procedure Step ID</td>
<td>0040,0009</td>
<td>0040,0009</td>
<td>0040,0009</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Examination Comments</td>
<td>-</td>
<td>0040,0280</td>
<td>0040,0280</td>
<td>0040,0280</td>
</tr>
<tr>
<td>15</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>Performed Series Sequence</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0040,0340</td>
</tr>
<tr>
<td>16</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;Referenced Image Sequence</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,1140</td>
</tr>
<tr>
<td>17</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;&gt;Referenced SOP Class UID</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,0016</td>
</tr>
<tr>
<td>18</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;&gt;Referenced SOP Instance UID</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,0018</td>
</tr>
<tr>
<td>19</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;Referenced Stand Alone SOP Inst. Seq for the reyscale softcopy presentation state Objects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0040,0220</td>
</tr>
<tr>
<td>20</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;&gt;Referenced SOP Class UID</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,0016</td>
</tr>
<tr>
<td>21</td>
<td>Series / Image / reyscale softcopy presentation state</td>
<td>&gt;&gt;Referenced SOP Instance UID</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,0018</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Series Protocol Name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0018,1030</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Series Description</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0008,103E</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>Series Instance UID</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0020,000E</td>
</tr>
</tbody>
</table>
Intera provides a dialog to modify examination attributes. The following table shows the correlation between the Modify Examination dialog fields and the related DICOM attributes.

**Table 57. Mapping between Modify Examination Dialog Fields and DICOM Attributes**

<table>
<thead>
<tr>
<th>UI Entry</th>
<th>Attribute Name</th>
<th>Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient name</td>
<td>Patient’s Name</td>
<td>0010,0010</td>
</tr>
<tr>
<td>Registration ID</td>
<td>Patient ID</td>
<td>0010,0020</td>
</tr>
<tr>
<td>Date of birth</td>
<td>Patient’s Birth Date</td>
<td>0010,0030</td>
</tr>
<tr>
<td>Sex</td>
<td>Patient’s Sex</td>
<td>0010,0040</td>
</tr>
<tr>
<td>Exam name</td>
<td>Scheduled Procedure Step Description</td>
<td>0040,0007</td>
</tr>
<tr>
<td></td>
<td>Study Description</td>
<td>0008,1030</td>
</tr>
<tr>
<td></td>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
</tr>
<tr>
<td>Accession number</td>
<td>Accession Number</td>
<td>0008,0050</td>
</tr>
<tr>
<td>Exam date</td>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
</tr>
<tr>
<td></td>
<td>Study Date</td>
<td>0008,0020</td>
</tr>
<tr>
<td>Patient weight</td>
<td>Patient’s Weight</td>
<td>0010,1030</td>
</tr>
<tr>
<td>Physician</td>
<td>Referring Physician’s Name</td>
<td>0008,0090</td>
</tr>
<tr>
<td>Comments</td>
<td>Comments on the Scheduled Procedure Step</td>
<td>0040,0400</td>
</tr>
<tr>
<td></td>
<td>Study Comments</td>
<td>0032,4000</td>
</tr>
<tr>
<td></td>
<td>Comments on the Performed Procedure Step</td>
<td>0040,0280</td>
</tr>
</tbody>
</table>

Note that for each UI entry the first attribute (in italics) is used for initial value.

**The conditional Contrast Module is not implemented**

Protocol Name (0018,1030) can be filled by the operator to contain the information relevant for MR. Future developments in user-interface with scanner controlled injectors will provide more detailed contrast information.

**Note for Image Plane module attribute (0020,1041) Slice Location**

The value of this attribute is calculated from the image position values (0020,0032) of each image in the series. These are compared to those of the image with Instance Number 1. It is meant for sorting purposes in simple cases, when the receiving node cannot effectively calculate the image position in patient space from the attribute (0020,0032) Image Position (Patient).

**Note for Displayed Area module**

The conditional presentation state attributes (0070,0101) Presentation Pixel Spacing and (0070,0102) Presentation Pixel Aspect Ratio are not used.

**Note for Softcopy Presentation State**

The following attributes of the Displayed Area Module are not sent:

- Presentation Pixel Spacing (0070,0101) and
- Presentation Pixel Aspect Ratio (0070,0102)

For applications that need the attribute values, the following remark is valid:

- The Pixel Aspect Ratio (0028,0034) is always 1:1, this can be found in the Image Pixel Module of the images,
- The Pixel Spacing (0028,0030) can be found in the Image Plane Module of the images, the row spacing always equals the column spacing.
This omission for the Softcopy Presentation State will be solved in a future update that will become available to all R 10 systems.

**DICOM Connectivity test**

The Intera has the possibility to perform a connectivity session with a remote node. In this session the following issues are tested sequentially:

- Perform a TCP/IP ping to the remote node (Network Connectivity);
- Check what DICOM services are supported by both the Intera and the remote node (Associate DICOM Node);
- Make a DICOM association with the remote node via the DICOM Verification service class (Verify DICOM Node);
- Check if the remote node accepts a DICOM secondary capture image and if so, check the storage of that image via a query of the database of that remote node (Network Store Query).

Each of the tested issues can be configured separately. Only a Philips service engineer can initiate this test.
ANNEX 1. Overview applied Magnetic Resonance Image IOD

The details of the applied modules are given in the tables below. The situation that an attribute is present conditionally/optionally or that an attribute may contain a zero length value is indicated too. Conditions and Defined/Enumerated Values of DICOM 3.0 are applicable but are not shown in the tables. The specified attributes are present and filled except for what is specified in the notes.

Table 58. MR Image Storage SOP Class – Patient Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s Name</td>
<td>0010,0010</td>
<td>The characters ‘=' and '' are not used. Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient ID</td>
<td>0010,0020</td>
<td>Received from RIS or entered by the operator (Registration Number on UI).</td>
</tr>
<tr>
<td>Patient’s Birth Date</td>
<td>0010,0030</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient’s Sex</td>
<td>0010,0040</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient Comments</td>
<td>0010,4000</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 59. MR Image Storage SOP Class – Patient Medical Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Alerts</td>
<td>0010,2000</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Contrast Allergies</td>
<td>0010,2110</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Pregnancy Status</td>
<td>0010,21C0</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Special Needs</td>
<td>0038,0050</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Patient State</td>
<td>0038,0500</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

Table 60. MR Image Storage SOP Class – General Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Date</td>
<td>0008,0020</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Study Time</td>
<td>0008,0030</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Accession Number</td>
<td>0008,0050</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Referring Physician’s Name</td>
<td>0008,0090</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Study Description</td>
<td>0008,1030</td>
<td>Received from RIS as Scheduled Procedure Step Description) or entered by the operator (visible as Exam Name).</td>
</tr>
<tr>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Study ID</td>
<td>0020,0010</td>
<td>Value received from RIS or generated by the Intera system.</td>
</tr>
</tbody>
</table>

Table 61. MR Image Storage SOP Class – Patient Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s Weight</td>
<td>0010,1030</td>
<td>Weight of the patient, in kilograms.</td>
</tr>
</tbody>
</table>
Table 62.  MR Image Storage SOP Class – Study Classification Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Comments</td>
<td>0032,4000</td>
<td>Attribute from UI.</td>
</tr>
</tbody>
</table>

Table 63.  MR Image Storage SOP Class – Requested Procedure Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested Procedure Description</td>
<td>0032,1060</td>
<td>Attribute from RIS.</td>
</tr>
<tr>
<td>Requested Contrast Agent</td>
<td>0032,1070</td>
<td>-</td>
</tr>
<tr>
<td>Requested Procedure ID</td>
<td>0040,1001</td>
<td>Attribute from RIS.</td>
</tr>
<tr>
<td>Reason for the Requested Procedure</td>
<td>0040,1002</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Requested Procedure Priority</td>
<td>0040,1003</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Patient Transport Arrangements</td>
<td>0040,1004</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Requested Procedure Location</td>
<td>0040,1005</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Names of Intended Recipients of Results</td>
<td>0040,1010</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Requested Procedure Comments</td>
<td>0040,1400</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

Table 64.  MR Image Storage SOP Class – Imaging Service Request Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requesting Physician</td>
<td>0032,1032</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Requesting Service</td>
<td>0032,1033</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Reason for the Imaging Service Request</td>
<td>0040,2001</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Issue Date of Imaging Service Request</td>
<td>0040,2004</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Issue Time of Imaging Service Request</td>
<td>0040,2005</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Placer Order Number</td>
<td>0040,2006</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Filler Order Number</td>
<td>0040,2007</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Order Entered By</td>
<td>0040,2008</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Order Enterer’s Location</td>
<td>0040,2009</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Order Callback Phone Number</td>
<td>0040,2010</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Imaging Service Request Comments</td>
<td>0040,2400</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

Table 65.  MR Image Storage SOP Class – Performed Procedure Step Information Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed Station AE Title</td>
<td>0040,0241</td>
<td>-</td>
</tr>
<tr>
<td>Performed Station Name</td>
<td>0040,0242</td>
<td>Always empty.</td>
</tr>
<tr>
<td>Performed Location</td>
<td>0040,0243</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step End Date</td>
<td>0040,0250</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step End Time</td>
<td>0040,0251</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Status</td>
<td>0040,0252</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Type Description</td>
<td>0040,0255</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 66.  MR Image Storage SOP Class – Billing and Material Management Code Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film Consumption Sequence</td>
<td>0040,0321</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>
### Table 67. MR Image Storage SOP Class – General Series Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series Date</td>
<td>0008,0021</td>
<td>-</td>
</tr>
<tr>
<td>Series Time</td>
<td>0008,0031</td>
<td>-</td>
</tr>
<tr>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td>Series Description</td>
<td>0008,103E</td>
<td>Contains the values of Sub-anatomy and Scan name.</td>
</tr>
<tr>
<td>Referenced Performed Procedure Step</td>
<td>0008,1111</td>
<td>-</td>
</tr>
<tr>
<td>Sequence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;Specific Character Set</td>
<td>0008,0005</td>
<td>Applied value: ISO_IR 100</td>
</tr>
<tr>
<td>&gt;Instance Creation Date</td>
<td>0008,0012</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Instance Creation Time</td>
<td>0008,0013</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Instance Creator UID</td>
<td>0008,0014</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>Applied value: 1.2.840.10008.3.1.2.3.3</td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Instance Number</td>
<td>0020,0013</td>
<td>-</td>
</tr>
<tr>
<td>Protocol Name</td>
<td>0018,1030</td>
<td>Applied value: &lt;Scan name&gt;</td>
</tr>
<tr>
<td>Patient Position</td>
<td>0018,5100</td>
<td>Attribute is always present.</td>
</tr>
<tr>
<td>Series Instance UID</td>
<td>0020,000E</td>
<td>Generated by Intera system.</td>
</tr>
<tr>
<td>Series Number</td>
<td>0020,0011</td>
<td>Created dynamically at export. Contains the concatenation of the acquisition number and the private reconstruction number.</td>
</tr>
<tr>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Start Time</td>
<td>0040,0245</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step ID</td>
<td>0040,0253</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td>-</td>
</tr>
<tr>
<td>Request Attributes Sequence</td>
<td>0040,0275</td>
<td>Only send if received from RIS.</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Description</td>
<td>0040,0007</td>
<td>Only send if received from RIS.</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step ID</td>
<td>0040,0009</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Requested Procedure ID</td>
<td>0040,1001</td>
<td>-</td>
</tr>
<tr>
<td>Comments on the Performed Procedure Step</td>
<td>0040,0280</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 68. MR Image Storage SOP Class – Frame of Reference Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame of Reference UID</td>
<td>0020,0052</td>
<td>-</td>
</tr>
<tr>
<td>Position Reference Indicator</td>
<td>0020,1040</td>
<td>Always empty.</td>
</tr>
</tbody>
</table>

### Table 69. MR Image Storage SOP Class – General Equipment Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>0008,0070</td>
<td>Applied Value: Philips Medical Systems</td>
</tr>
<tr>
<td>Institution Name</td>
<td>0008,0080</td>
<td>Configured on the system.</td>
</tr>
<tr>
<td>Station Name</td>
<td>0008,1010</td>
<td>Same as the Host Name.</td>
</tr>
<tr>
<td>Manufacturer's Model Name</td>
<td>0008,1090</td>
<td>Applied value: Intera</td>
</tr>
<tr>
<td>Device Serial Number</td>
<td>0018,1000</td>
<td>Applied value: SRN</td>
</tr>
<tr>
<td>Software Version(s)</td>
<td>0018,1020</td>
<td>The release text of the original Image.</td>
</tr>
</tbody>
</table>
### Table 70. MR Image Storage SOP Class – General Image Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Date</td>
<td>0008,0023</td>
<td>Present if image is part of a dynamic scan.</td>
</tr>
<tr>
<td>Content Time</td>
<td>0008,0033</td>
<td>Present if image is part of a dynamic scan.</td>
</tr>
<tr>
<td>Referenced Image Sequence</td>
<td>0008,1140</td>
<td></td>
</tr>
<tr>
<td>&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td></td>
</tr>
<tr>
<td>&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td></td>
</tr>
<tr>
<td>Acquisition Number</td>
<td>0020,0012</td>
<td>Is visible on the UI as Scan number.</td>
</tr>
<tr>
<td>Instance Number</td>
<td>0020,0013</td>
<td></td>
</tr>
<tr>
<td>Image Comments</td>
<td>0020,4000</td>
<td></td>
</tr>
<tr>
<td>Lossy Image Compression</td>
<td>0028,2110</td>
<td>Applied value: 00</td>
</tr>
</tbody>
</table>

### Table 71. MR Image Storage SOP Class – Image Plane Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slice Thickness</td>
<td>0018,0050</td>
<td></td>
</tr>
<tr>
<td>Image Position (Patient)</td>
<td>0020,0032</td>
<td></td>
</tr>
<tr>
<td>Image Orientation (Patient)</td>
<td>0020,0037</td>
<td></td>
</tr>
<tr>
<td>Slice Location</td>
<td>0020,1041</td>
<td>Not for diagnostic use, see Remarks chapter 8.</td>
</tr>
<tr>
<td>Pixel Spacing</td>
<td>0028,0030</td>
<td></td>
</tr>
</tbody>
</table>

### Table 72. MR Image Storage SOP Class – Image Pixel Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rows</td>
<td>0028,0010</td>
<td></td>
</tr>
<tr>
<td>Columns</td>
<td>0028,0011</td>
<td></td>
</tr>
<tr>
<td>Pixel Aspect Ratio</td>
<td>0028,0034</td>
<td>Applied value: 1\1</td>
</tr>
<tr>
<td>Bits Stored</td>
<td>0028,0101</td>
<td></td>
</tr>
<tr>
<td>High Bit</td>
<td>0028,0102</td>
<td></td>
</tr>
<tr>
<td>Pixel Representation</td>
<td>0028,0103</td>
<td></td>
</tr>
<tr>
<td>Pixel Data</td>
<td>7FE0,0010</td>
<td></td>
</tr>
</tbody>
</table>

### Table 73. MR Image Storage SOP Class – MR Image Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Type</td>
<td>0008,0008</td>
<td>See Table 79.</td>
</tr>
<tr>
<td>Scanning Sequence</td>
<td>0018,0020</td>
<td></td>
</tr>
<tr>
<td>Sequence Variant</td>
<td>0018,0021</td>
<td></td>
</tr>
<tr>
<td>Scan Options</td>
<td>0018,0022</td>
<td></td>
</tr>
<tr>
<td>MR Acquisition Type</td>
<td>0018,0023</td>
<td></td>
</tr>
<tr>
<td>Repetition Time</td>
<td>0018,0080</td>
<td></td>
</tr>
<tr>
<td>Echo Time</td>
<td>0018,0081</td>
<td></td>
</tr>
<tr>
<td>Inversion Time</td>
<td>0018,0082</td>
<td>Attribute is always present.</td>
</tr>
<tr>
<td>Number of Averages</td>
<td>0018,0083</td>
<td></td>
</tr>
<tr>
<td>Imaging Frequency</td>
<td>0018,0084</td>
<td></td>
</tr>
<tr>
<td>Imaged Nucleus</td>
<td>0018,0085</td>
<td></td>
</tr>
<tr>
<td>Echo Number(s)</td>
<td>0018,0086</td>
<td></td>
</tr>
<tr>
<td>Magnetic Field Strength</td>
<td>0018,0087</td>
<td></td>
</tr>
<tr>
<td>Spacing Between Slices</td>
<td>0018,0088</td>
<td></td>
</tr>
</tbody>
</table>
### Attribute Name | Tag | Note
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Phase Encoding Steps</td>
<td>0018,0089</td>
<td>-</td>
</tr>
<tr>
<td>Echo Train Length</td>
<td>0018,0091</td>
<td>-</td>
</tr>
<tr>
<td>Percent Sampling</td>
<td>0018,0093</td>
<td>-</td>
</tr>
<tr>
<td>Percent Phase Field of View</td>
<td>0018,0094</td>
<td>-</td>
</tr>
<tr>
<td>Trigger Time</td>
<td>0018,1060</td>
<td>-</td>
</tr>
<tr>
<td>Low R-R Value</td>
<td>0018,1081</td>
<td>-</td>
</tr>
<tr>
<td>High R-R Value</td>
<td>0018,1082</td>
<td>-</td>
</tr>
<tr>
<td>Intervals Acquired</td>
<td>0018,1083</td>
<td>-</td>
</tr>
<tr>
<td>Intervals Rejected</td>
<td>0018,1084</td>
<td>-</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>0018,1088</td>
<td>-</td>
</tr>
<tr>
<td>Reconstruction Diameter</td>
<td>0018,1100</td>
<td>Filled with the field of view in [mm]. Applied value: Max(Rows,Columns) * PixelSpacing</td>
</tr>
<tr>
<td>Receive Coil Name</td>
<td>0018,1250</td>
<td>-</td>
</tr>
<tr>
<td>Transmit Coil Name</td>
<td>0018,1251</td>
<td>-</td>
</tr>
<tr>
<td>Acquisition Matrix</td>
<td>0018,1310</td>
<td>-</td>
</tr>
<tr>
<td>In-plane Phase Encoding Direction</td>
<td>0018,1312</td>
<td>-</td>
</tr>
<tr>
<td>Flip Angle</td>
<td>0018,1314</td>
<td>-</td>
</tr>
<tr>
<td>Temporal Position Identifier</td>
<td>0020,0100</td>
<td>-</td>
</tr>
<tr>
<td>Number of Temporal Positions</td>
<td>0020,0105</td>
<td>-</td>
</tr>
<tr>
<td>Samples per Pixel</td>
<td>0028,0002</td>
<td>Applied value: 1</td>
</tr>
<tr>
<td>Photometric Interpretation</td>
<td>0028,0004</td>
<td>Applied values: MONOCHROME1, MONOCHROME2</td>
</tr>
<tr>
<td>Bits Allocated</td>
<td>0028,0100</td>
<td>Applied value: 16</td>
</tr>
</tbody>
</table>

### Table 74. MR Image Storage SOP Class – Overlay Plane Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlay Rows</td>
<td>60xx,0010</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Columns</td>
<td>60xx,0011</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Type</td>
<td>60xx,0040</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Origin</td>
<td>60xx,0050</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Bits Allocated</td>
<td>60xx,0100</td>
<td>Applied value: 1</td>
</tr>
<tr>
<td>Overlay Bit Position</td>
<td>60xx,0102</td>
<td>Applied value: 0</td>
</tr>
<tr>
<td>Overlay Data</td>
<td>60xx,3000</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 75. MR Image Storage SOP Class – Modality LUT Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rescale Intercept</td>
<td>0028,1052</td>
<td>-</td>
</tr>
<tr>
<td>Rescale Slope</td>
<td>0028,1053</td>
<td>-</td>
</tr>
<tr>
<td>Rescale Type</td>
<td>0028,1054</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 76. MR Image Storage SOP Class – VOI LUT Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window Center</td>
<td>0028,1050</td>
<td>-</td>
</tr>
<tr>
<td>Window Width</td>
<td>0028,1051</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 77. MR Image Storage SOP Class – SOP Common Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>Applied value: ISO_IR 100</td>
</tr>
<tr>
<td>Instance Creation Date</td>
<td>0008,0012</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creation Time</td>
<td>0008,0013</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creator UID</td>
<td>0008,0014</td>
<td>-</td>
</tr>
<tr>
<td>SOP Class UID</td>
<td>0008,0016</td>
<td>Applied value: 1.2.840.10008.5.1.4.1.1.4</td>
</tr>
<tr>
<td>SOP Instance UID</td>
<td>0008,0018</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 78. MR Image Storage SOP Class – Private Group

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Creator Group 2001</td>
<td>2001,0010</td>
<td>VR = LO, VM = 1</td>
</tr>
<tr>
<td>Chemical Shift</td>
<td>2001,1001</td>
<td>VR = FL, VM = 1</td>
</tr>
<tr>
<td>Chemical Shift Number MR</td>
<td>2001,1002</td>
<td>VR = IS, VM = 1</td>
</tr>
<tr>
<td>Diffusion B-Factor</td>
<td>2001,1003</td>
<td>VR = FL, VM = 1</td>
</tr>
<tr>
<td>Diffusion Direction</td>
<td>2001,1004</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Image Enhanced</td>
<td>2001,1006</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Image Type ED ES</td>
<td>2001,1007</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Phase Number</td>
<td>2001,1008</td>
<td>VR = IS, VM = 1</td>
</tr>
<tr>
<td>Slice Number MR</td>
<td>2001,100A</td>
<td>VR = IS, VM = 1</td>
</tr>
<tr>
<td>Slice Orientation</td>
<td>2001,100B</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Diffusion Echo Time</td>
<td>2001,1011</td>
<td>VR = FL, VM = 1</td>
</tr>
<tr>
<td>Dynamic Series</td>
<td>2001,1012</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>EPI Factor</td>
<td>2001,1013</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Number of Echoes</td>
<td>2001,1014</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Number of Locations</td>
<td>2001,1015</td>
<td>VR = SS, VM = 1</td>
</tr>
<tr>
<td>Number of PC Directions</td>
<td>2001,1016</td>
<td>VR = SS, VM = 1</td>
</tr>
<tr>
<td>Number of Phases MR</td>
<td>2001,1017</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Number of Slices MR</td>
<td>2001,1018</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Partial Matrix Scanned</td>
<td>2001,1019</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>PC Velocity</td>
<td>2001,101A</td>
<td>VR = FL, VM = 1-n</td>
</tr>
<tr>
<td>Prepulse Delay</td>
<td>2001,101B</td>
<td>VR = FL, VM = 1</td>
</tr>
<tr>
<td>Prepulse Type</td>
<td>2001,101C</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Reconstruction Number MR</td>
<td>2001,101D</td>
<td>VR = IS, VM = 1</td>
</tr>
<tr>
<td>Respiration Sync</td>
<td>2001,101F</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>SPIR</td>
<td>2001,1021</td>
<td>VR = CS, VM = 1</td>
</tr>
<tr>
<td>Water Fat Shift</td>
<td>2001,1022</td>
<td>VR = FL, VM = 1</td>
</tr>
<tr>
<td>Stack Sequence</td>
<td>2001,105F</td>
<td>VR = SQ, VM = 1</td>
</tr>
<tr>
<td>&gt;Private Creator Group 2001</td>
<td>2001,0010</td>
<td>VR = LO, VM = 1</td>
</tr>
<tr>
<td>&gt;Number of Stack Slices</td>
<td>2001,102D</td>
<td>VR = SS, VM = 1</td>
</tr>
<tr>
<td>&gt;Stack Radial Angle</td>
<td>2001,1032</td>
<td>VR = FL, VM = 1-n</td>
</tr>
<tr>
<td>&gt;Stack Radial Axis</td>
<td>2001,1033</td>
<td>VR = CS, VM = 1-n</td>
</tr>
<tr>
<td>&gt;Stack Slice Number</td>
<td>2001,1035</td>
<td>VR = SS, VM = 1-n</td>
</tr>
<tr>
<td>&gt;Stack Type</td>
<td>2001,1036</td>
<td>VR = CS, VM = 1-n</td>
</tr>
<tr>
<td>Number of Stacks</td>
<td>2001,1060</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Number of Dynamic Scans</td>
<td>2001,1081</td>
<td>VR = IS, VM = 1</td>
</tr>
<tr>
<td>Attribute Name</td>
<td>Tag</td>
<td>Note</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Private Creator Group 2005</td>
<td>2005,0010</td>
<td>VR = LO, VM = 1</td>
</tr>
<tr>
<td>Number of Chemical Shifts</td>
<td>2005,1020</td>
<td>VR = SL, VM = 1</td>
</tr>
<tr>
<td>Syncra Scan Type</td>
<td>2005,10A1</td>
<td>VR = CS, VM = 1</td>
</tr>
</tbody>
</table>
### Table 79. Valid combinations of Image Type applied values

<table>
<thead>
<tr>
<th>Image Type Value (1)</th>
<th>Image Type Value (2)</th>
<th>Image Type Value (3)</th>
<th>Image Type Value (4)</th>
<th>Image Type Value (5)</th>
<th>Scanning Sequence (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>R_SE</td>
<td>R</td>
<td>SE</td>
<td>SE</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>M_SE</td>
<td>M</td>
<td>SE</td>
<td>SE</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>PHASE MAP</td>
<td>P</td>
<td>SE</td>
<td>SE</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>R_IR</td>
<td>R</td>
<td>IR</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>I_IR</td>
<td>I</td>
<td>IR</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>M_IR</td>
<td>M</td>
<td>IR</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>PHASE MAP</td>
<td>P</td>
<td>IR</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>OTHER</td>
<td>CR</td>
<td>IR</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>T0</td>
<td>T0</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>T1 MAP</td>
<td>T1</td>
<td>US</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>T2 MAP</td>
<td>T2</td>
<td>US</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>DENSITY MAP</td>
<td>RHO</td>
<td>US</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>R_FFE</td>
<td>R</td>
<td>FFE</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>I_FFE</td>
<td>I</td>
<td>FFE</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>M_FFE</td>
<td>M</td>
<td>FFE</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>PHASE MAP</td>
<td>P</td>
<td>FFE</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>R_SI</td>
<td>R</td>
<td>SI</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>I_SI</td>
<td>I</td>
<td>SI</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>M_SI</td>
<td>M</td>
<td>SI</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>M_PCA</td>
<td>M</td>
<td>PCA</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>ORIGINAL PRIMARY</td>
<td>VELOCITY MAP</td>
<td>P</td>
<td>PCA</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>DERIVED</td>
<td>DERIVED</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>R</td>
<td>R</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>I</td>
<td>I</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>M</td>
<td>M</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>PHASE MAP</td>
<td>P</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>DIFFUSION MAP</td>
<td>ADC</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>RCBV</td>
<td>RCBV</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>RCBF</td>
<td>RCBF</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>MTT</td>
<td>MTT</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>TTP</td>
<td>TTP</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
<tr>
<td>DERIVED PRIMARY</td>
<td>FA</td>
<td>FA</td>
<td>DERIVED</td>
<td>RM</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 2. Overview applied Secondary Capture Image IOD

### Table 80. Secondary Capture Image Storage SOP Class - Patient Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient's Name</td>
<td>0010,0010</td>
<td>The characters ‘=' and '\' are not used. Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient ID</td>
<td>0010,0020</td>
<td>Received from RIS or entered by the operator (Registration Number on UI).</td>
</tr>
<tr>
<td>Patient's Birth Date</td>
<td>0010,0030</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient's Sex</td>
<td>0010,0040</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient Comments</td>
<td>0010,4000</td>
<td></td>
</tr>
</tbody>
</table>

### Table 81. Secondary Capture Image Storage SOP Class - General Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Date</td>
<td>0008,0020</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Study Time</td>
<td>0008,0030</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Accession Number</td>
<td>0008,0050</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Referring Physician's Name</td>
<td>0008,0090</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Study Description</td>
<td>0008,1030</td>
<td>Received from RIS as Scheduled Procedure Step Description) or entered by the operator (visible as Exam Name).</td>
</tr>
<tr>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Study ID</td>
<td>0020,0010</td>
<td>Value received from RIS or generated by the Intera system.</td>
</tr>
</tbody>
</table>

### Table 82. Secondary Capture Image Storage SOP Class - Patient Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient's Weight</td>
<td>0010,1030</td>
<td>Weight of the patient, in kilograms.</td>
</tr>
</tbody>
</table>

### Table 83. Secondary Capture Image Storage SOP Class - General Series Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series Date</td>
<td>0008,0021</td>
<td></td>
</tr>
<tr>
<td>Series Time</td>
<td>0008,0031</td>
<td></td>
</tr>
<tr>
<td>Series Description</td>
<td>0008,103E</td>
<td></td>
</tr>
<tr>
<td>Performing Physician's Name</td>
<td>0008,1050</td>
<td>Name of the Physicians administering the Series.</td>
</tr>
<tr>
<td>Operator's Name</td>
<td>0008,1070</td>
<td>Technologist(s) supporting the series.</td>
</tr>
<tr>
<td>Protocol Name</td>
<td>0018,1030</td>
<td></td>
</tr>
<tr>
<td>Series Instance UID</td>
<td>0020,000E</td>
<td></td>
</tr>
<tr>
<td>Series Number</td>
<td>0020,0011</td>
<td></td>
</tr>
</tbody>
</table>
### Table 84. Secondary Capture Image Storage SOP Class - General Equipment Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>0008,0070</td>
<td>-</td>
</tr>
<tr>
<td>Institution Name</td>
<td>0008,0080</td>
<td>-</td>
</tr>
<tr>
<td>Institution Address</td>
<td>0008,0081</td>
<td>-</td>
</tr>
<tr>
<td>Station Name</td>
<td>0008,1010</td>
<td>-</td>
</tr>
<tr>
<td>Institutional Department Name</td>
<td>0008,1040</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturer's Model Name</td>
<td>0008,1090</td>
<td>Manufacturers model number of the equipment that produced the digital images.</td>
</tr>
<tr>
<td>Device Serial Number</td>
<td>0018,1000</td>
<td>-</td>
</tr>
<tr>
<td>Software Version(s)</td>
<td>0018,1020</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 85. Secondary Capture Image Storage SOP Class - SC Equipment Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
<tr>
<td>Conversion Type</td>
<td>0008,0064</td>
<td>-</td>
</tr>
<tr>
<td>Secondary Capture Device ID</td>
<td>0018,1010</td>
<td>-</td>
</tr>
<tr>
<td>Secondary Capture Device Manufacturer</td>
<td>0018,1016</td>
<td>-</td>
</tr>
<tr>
<td>Secondary Capture Device Manufacturer's Model Name</td>
<td>0018,1018</td>
<td>-</td>
</tr>
<tr>
<td>Secondary Capture Device Software Version(s)</td>
<td>0018,1019</td>
<td>-</td>
</tr>
<tr>
<td>Video Image Format Acquired</td>
<td>0018,1022</td>
<td>-</td>
</tr>
<tr>
<td>Digital Image Format Acquired</td>
<td>0018,1023</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 86. Secondary Capture Image Storage SOP Class - General Image Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Date</td>
<td>0008,0023</td>
<td>-</td>
</tr>
<tr>
<td>Content Time</td>
<td>0008,0033</td>
<td>-</td>
</tr>
<tr>
<td>Acquisition Number</td>
<td>0020,0012</td>
<td>-</td>
</tr>
<tr>
<td>Instance Number</td>
<td>0020,0013</td>
<td>-</td>
</tr>
<tr>
<td>Patient Orientation</td>
<td>0020,0020</td>
<td>Attribute always empty.</td>
</tr>
<tr>
<td>Lossy Image Compression</td>
<td>0028,2110</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 87. Secondary Capture Image Storage SOP Class - Image Pixel Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samples per Pixel</td>
<td>0028,0002</td>
<td>-</td>
</tr>
<tr>
<td>Photometric Interpretation</td>
<td>0028,0004</td>
<td>-</td>
</tr>
<tr>
<td>Planar Configuration</td>
<td>0028,0006</td>
<td>Attribute is always present.</td>
</tr>
<tr>
<td>Rows</td>
<td>0028,0010</td>
<td>-</td>
</tr>
<tr>
<td>Columns</td>
<td>0028,0011</td>
<td>-</td>
</tr>
<tr>
<td>Pixel Aspect Ratio</td>
<td>0028,0034</td>
<td>-</td>
</tr>
<tr>
<td>Bits Allocated</td>
<td>0028,0100</td>
<td>-</td>
</tr>
<tr>
<td>Bits Stored</td>
<td>0028,0101</td>
<td>-</td>
</tr>
<tr>
<td>High Bit</td>
<td>0028,0102</td>
<td>-</td>
</tr>
<tr>
<td>Pixel Representation</td>
<td>0028,0103</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 88. Secondary Capture Image Storage SOP Class - SC Image Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Secondary Capture</td>
<td>0018,1012</td>
<td>-</td>
</tr>
<tr>
<td>Time of Secondary Capture</td>
<td>0018,1014</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 89. Secondary Capture Image Storage SOP Class - SOP Common Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>Applied value: ISO_IR 100</td>
</tr>
<tr>
<td>Instance Creation Date</td>
<td>0008,0012</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creation Time</td>
<td>0008,0013</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creator UID</td>
<td>0008,0014</td>
<td>-</td>
</tr>
<tr>
<td>SOP Class UID</td>
<td>0008,0016</td>
<td>Applied value: 1.2.840.10008.5.1.4.1.1.7</td>
</tr>
<tr>
<td>SOP Instance UID</td>
<td>0008,0018</td>
<td>-</td>
</tr>
</tbody>
</table>
ANNEX 3. Overview applied Grayscale Softcopy Presentation State IOD

The details of the applied modules are given in the tables below. The situation that an attribute is present conditionally optionally or that an attribute may contain a zero length value is indicated too. Conditions and Defined/Enumerated Values of DICOM 3.0 are applicable but are not shown in the tables. The specified attributes are present and filled except for what is specified in the notes.

Table 90. Softcopy Presentation State Storage SOP Class - Patient Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s Name</td>
<td>0010,0010</td>
<td>The characters ‘=’ and ‘\’ are not used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient ID</td>
<td>0010,0020</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Registration Number on UI).</td>
</tr>
<tr>
<td>Patient’s Birth Date</td>
<td>0010,0030</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient’s Sex</td>
<td>0010,0040</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Patient Comments</td>
<td>0010,4000</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 91. Softcopy Presentation State Storage SOP Class - General Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Date</td>
<td>0008,0020</td>
<td>Received from RIS or entered by the operator.</td>
</tr>
<tr>
<td>Study Time</td>
<td>0008,0030</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Accession Number</td>
<td>0008,0050</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Referring Physician’s Name</td>
<td>0008,0090</td>
<td>Received from RIS, entered by the operator or has zero length.</td>
</tr>
<tr>
<td>Study Description</td>
<td>0008,1030</td>
<td>Received from RIS as Scheduled Procedure Step Description) or entered by the operator (visible as Exam Name).</td>
</tr>
<tr>
<td>Study Instance UID</td>
<td>0020,000D</td>
<td>Received from RIS or generated by the Intera system.</td>
</tr>
<tr>
<td>Study ID</td>
<td>0020,0010</td>
<td>Value received from RIS or generated by the Intera system.</td>
</tr>
</tbody>
</table>

Table 92. Softcopy Presentation State Storage SOP Class - Patient Study Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s Weight</td>
<td>0010,1030</td>
<td>Weight of the Patient, in kilograms.</td>
</tr>
</tbody>
</table>

Table 93. Softcopy Presentation State Storage SOP Class - General Series Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series Date</td>
<td>0008,0021</td>
<td>-</td>
</tr>
<tr>
<td>Series Time</td>
<td>0008,0031</td>
<td>-</td>
</tr>
<tr>
<td>Series Description</td>
<td>0008,103E</td>
<td>-</td>
</tr>
<tr>
<td>Referenced Performed Procedure Step Sequence</td>
<td>0008,1111</td>
<td>-</td>
</tr>
<tr>
<td>Protocol Name</td>
<td>0018,1030</td>
<td>-</td>
</tr>
<tr>
<td>Attribute Name</td>
<td>Tag</td>
<td>Note</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Series Instance UID</td>
<td>0020,000E</td>
<td>Generated by Intera system.</td>
</tr>
<tr>
<td>Series Number</td>
<td>0020,0011</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Start Date</td>
<td>0040,0244</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Start Time</td>
<td>0040,0245</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step ID</td>
<td>0040,0253</td>
<td>-</td>
</tr>
<tr>
<td>Performed Procedure Step Description</td>
<td>0040,0254</td>
<td>-</td>
</tr>
<tr>
<td>Request Attributes Sequence</td>
<td>0040,0275</td>
<td>Only send if received from RIS.</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step Description</td>
<td>0040,0007</td>
<td>Value as received from RIS.</td>
</tr>
<tr>
<td>&gt;Scheduled Procedure Step ID</td>
<td>0040,0009</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Requested Procedure ID</td>
<td>0040,1001</td>
<td>-</td>
</tr>
<tr>
<td>Comments on the Performed Procedure Steps</td>
<td>0040,0280</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 94. Softcopy Presentation State Storage SOP Class - Presentation Series Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modality</td>
<td>0008,0060</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 95. Softcopy Presentation State Storage SOP Class - General Equipment Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>0008,0070</td>
<td>Applied value: Philips Medical Systems</td>
</tr>
<tr>
<td>Institution Name</td>
<td>0008,0080</td>
<td>Configured on the system.</td>
</tr>
<tr>
<td>Station Name</td>
<td>0008,1010</td>
<td>Same as the Host Name.</td>
</tr>
<tr>
<td>Manufacturer's Model Name</td>
<td>0008,1090</td>
<td>Manufacturers model number of the equipment produced the digital images. Applied value: Intera</td>
</tr>
<tr>
<td>Device Serial Number</td>
<td>0018,1000</td>
<td>-</td>
</tr>
<tr>
<td>Software Version(s)</td>
<td>0018,1020</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 96. Softcopy Presentation State Storage SOP Class - Overlay Plane Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlay Rows</td>
<td>60xx,0010</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Columns</td>
<td>60xx,0011</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Type</td>
<td>60xx,0040</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Origin</td>
<td>60xx,0050</td>
<td>-</td>
</tr>
<tr>
<td>Overlay Bits Allocated</td>
<td>60xx,0100</td>
<td>Applied value: 1</td>
</tr>
<tr>
<td>Overlay Bit Position</td>
<td>60xx,0102</td>
<td>Applied value: 0</td>
</tr>
<tr>
<td>Overlay Data</td>
<td>60xx,3000</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 97. Softcopy Presentation State Storage SOP Class – Displayed Area Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displayed Area Selection Sequence</td>
<td>0070,005A</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Displayed Area Top Left Hand Corner</td>
<td>0070,0052</td>
<td>Applied value: 1\1</td>
</tr>
<tr>
<td>&gt;Displayed Area Bottom Right Hand Corner</td>
<td>0070,0053</td>
<td>Number of Rows/Columns.</td>
</tr>
<tr>
<td>&gt;Presentation Size Mode</td>
<td>0070,0100</td>
<td>Applied value: SCALE TO FIT</td>
</tr>
</tbody>
</table>
### Table 98. Softcopy Presentation State Storage SOP Class - Graphic Annotation Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Annotation Sequence</td>
<td>0070,0001</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced Image Sequence</td>
<td>0008,1140</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>Uniquely identifies the referenced SOP Class.</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>Uniquely identifies the referenced SOP Instance.</td>
</tr>
<tr>
<td>&gt;Graphic Layer</td>
<td>0070,0002</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Text Object Sequence</td>
<td>0070,0008</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Bounding Box Annotation Units</td>
<td>0070,0003</td>
<td>Applied values: DISPLAY, PIXEL</td>
</tr>
<tr>
<td>&gt;&gt;Anchor Point Annotation Units</td>
<td>0070,0004</td>
<td>Applied values: DISPLAY, PIXEL</td>
</tr>
<tr>
<td>&gt;&gt;Unformatted Text Value</td>
<td>0070,0006</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Bounding Box Top Left Hand Corner</td>
<td>0070,0010</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Bounding Box Bottom Right Hand Corner</td>
<td>0070,0011</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Bounding Box Text Horizontal</td>
<td>0070,0012</td>
<td>Applied values: CENTER, LEFT, RIGHT</td>
</tr>
<tr>
<td>Justification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;Anchor Point</td>
<td>0070,0014</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Anchor Point Visibility</td>
<td>0070,0015</td>
<td>Applied values: N, Y</td>
</tr>
<tr>
<td>&gt;Graphic Object Sequence</td>
<td>0070,0009</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Graphic Annotation Units</td>
<td>0070,0005</td>
<td>Applied values: DISPLAY, PIXEL</td>
</tr>
<tr>
<td>&gt;&gt;Graphic Dimensions</td>
<td>0070,0020</td>
<td>Applied value: 2</td>
</tr>
<tr>
<td>&gt;&gt;Number of Graphic Points</td>
<td>0070,0021</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Graphic Data</td>
<td>0070,0022</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Graphic Type</td>
<td>0070,0023</td>
<td>Applied values: CIRCLE, ELLIPSE, INTERPOLATED, POINT, POLYLINE</td>
</tr>
<tr>
<td>&gt;&gt;Graphic Filled</td>
<td>0070,0024</td>
<td>Applied values: N, Y</td>
</tr>
</tbody>
</table>

### Table 99. Softcopy Presentation State Storage SOP Class - Spatial Transformation Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Horizontal Flip</td>
<td>0070,0041</td>
<td>-</td>
</tr>
<tr>
<td>Image Rotation</td>
<td>0070,0042</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 100. Softcopy Presentation State Storage SOP Class - Graphic Layer Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Layer Sequence</td>
<td>0070,0060</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Graphic Layer</td>
<td>0070,0002</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Graphic Layer Order</td>
<td>0070,0062</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Graphic Layer Recommended Display</td>
<td>0070,0066</td>
<td>-</td>
</tr>
<tr>
<td>Grayscale Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;Graphic Layer Description</td>
<td>0070,0068</td>
<td>-</td>
</tr>
</tbody>
</table>
### Table 101. Softcopy Presentation State Storage SOP Class - Modality LUT Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rescale Intercept</td>
<td>0028,1052</td>
<td>-</td>
</tr>
<tr>
<td>Rescale Slope</td>
<td>0028,1053</td>
<td>-</td>
</tr>
<tr>
<td>Rescale Type</td>
<td>0028,1054</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 102. Softcopy Presentation State Storage SOP Class - Softcopy Presentation LUT Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation LUT Shape</td>
<td>2050,0020</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 103. Softcopy Presentation State Storage SOP Class - Softcopy VOI LUT Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softcopy VOI LUT Sequence</td>
<td>0028,3110</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced Image Sequence</td>
<td>0008,1140</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>Uniquely identifies the referenced SOP Class.</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>Uniquely identifies the referenced SOP Instance.</td>
</tr>
<tr>
<td>&gt;Window Center</td>
<td>0028,1050</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Window Width</td>
<td>0028,1051</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 104. Softcopy Presentation State Storage SOP Class - Presentation State Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced Series Sequence</td>
<td>0008,1115</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Referenced Image Sequence</td>
<td>0008,1140</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Class UID</td>
<td>0008,1150</td>
<td>-</td>
</tr>
<tr>
<td>&gt;&gt;Referenced SOP Instance UID</td>
<td>0008,1155</td>
<td>-</td>
</tr>
<tr>
<td>&gt;Series Instance UID</td>
<td>0020,000E</td>
<td>-</td>
</tr>
<tr>
<td>Instance Number</td>
<td>0020,0013</td>
<td>-</td>
</tr>
<tr>
<td>Presentation Label</td>
<td>0070,0080</td>
<td>-</td>
</tr>
<tr>
<td>Presentation Description</td>
<td>0070,0081</td>
<td>-</td>
</tr>
<tr>
<td>Presentation Creation Date</td>
<td>0070,0082</td>
<td>-</td>
</tr>
<tr>
<td>Presentation Creation Time</td>
<td>0070,0083</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 105. Softcopy Presentation State Storage SOP Class - SOP Common Module

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Character Set</td>
<td>0008,0005</td>
<td>Applied value: ISO_IR 100</td>
</tr>
<tr>
<td>Instance Creation Date</td>
<td>0008,0012</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creation Time</td>
<td>0008,0013</td>
<td>-</td>
</tr>
<tr>
<td>Instance Creator UID</td>
<td>0008,0014</td>
<td>-</td>
</tr>
<tr>
<td>SOP Class UID</td>
<td>0008,0016</td>
<td>Applied value: 1.2.840.10008.5.1.4.1.1.11.1</td>
</tr>
<tr>
<td>SOP Instance UID</td>
<td>0008,0018</td>
<td>-</td>
</tr>
</tbody>
</table>