

DICOM Correction Proposal Form

| Tracking Information - Administration Use Only | |
|--|---|
| Correction Proposal Number | CP-201 |
| STATUS | Assigned |
| Date of Last Update | 2000/05/18 |
| Person Assigned | Andrei Leontiev andrei_leontiev@idx.com |
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| Submission date | 2000/05/17 |

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|---|------------------|
| Correction Number | CP-201 |
| Log Summary: Replace action items with protocol | |
| Type of Modification | Name of Standard |
| Correction | PS 3.3, 3.4, 3.6 |
| Rationale for Correction <p>The concept of action items has proven difficult to reconcile with the real-world of scheduling. In reality, most procedure plans include one more or more "protocols" which are at a higher level than action items were originally envisaged.</p> <p>Furthermore, there is no single code that is used to identify scheduled and performed procedure steps. Either a descriptive field or a single value in a list of action items has generally been used for this in practice. It is envisaged that most of the time, the action item list, renamed to protocol, will consist of a single item, though in some circumstances there will be more than one protocol code per procedure step.</p> | |
| Sections of documents affected PS 3.3, 3.4, 3.6 | |
| Correction Wording: Amend as follows: | |

Change action item to protocol in PS 3.3:

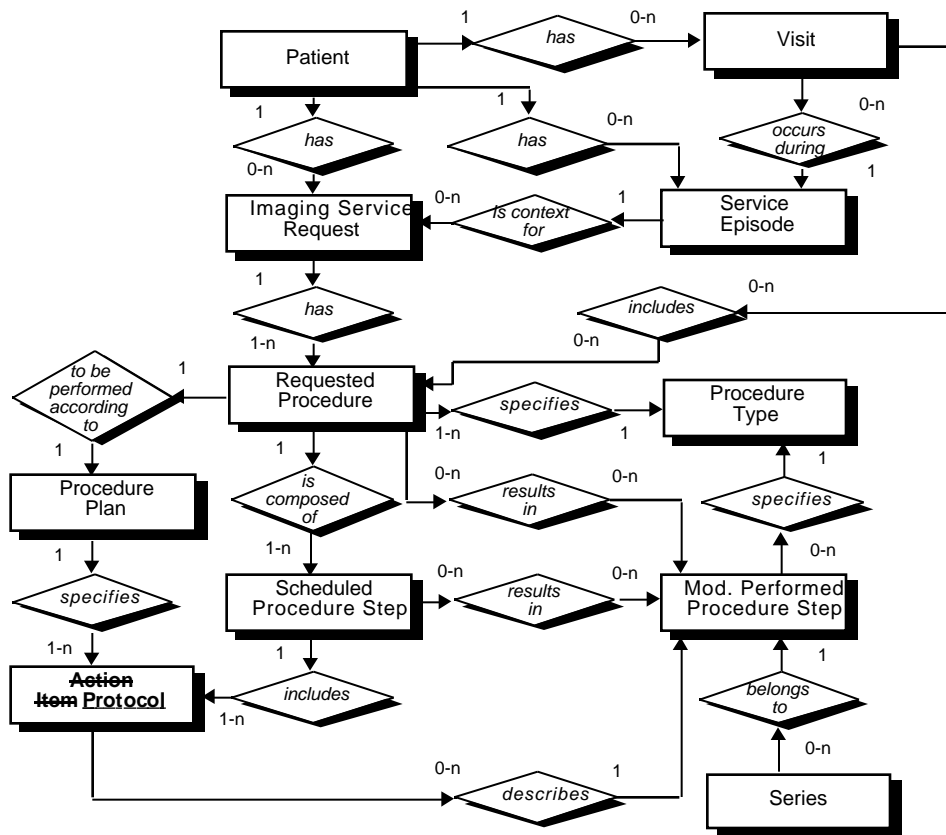


Figure 7-3.
MODEL OF THE REAL WORLD FOR THE PURPOSE OF MODALITY-IS INTERFACE

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7.3.1 Definition of the Extensions of the DICOM Real-World Model

7.3.1.1 PATIENT

A Patient is a person receiving, or registered to receive, healthcare services.

7.3.1.2 SERVICE EPISODE

A Service Episode is a collection of events, aggregated during an interval bounded by start and stop times (e.g. an outpatient visit or a hospitalization). The definition of the start time, stop time, and included events of a Service Episode is entirely arbitrary. A Service Episode is the context in which the treatment or management of an arbitrary subset of a Patient's medical conditions occurs. In the context of imaging services, a Service Episode may involve one or more Healthcare Organizations (administrative entities that authorize Healthcare Providers to provide services within their legal administrative domain, e.g. hospitals, private physician's offices, multispecialty clinics, nursing homes). A subset of Service Episode, the Facility Episode, is the collection of events that fall under the accountability of a particular Healthcare Organization. A Service Episode identifies the Certified Health Care Providers who have been delegated responsibility by one or more Healthcare Organizations to provide healthcare services to the Patient. One or more Certified Healthcare Providers (Organizations or individual persons, e.g. physician group practices, individual physicians, technologists, nurses) may be accountable for the healthcare services provided in a Service Episode. The Certified Health Care Providers are accountable to one or more Healthcare Organizations and to the Patient for the outcomes of the services provided. A Service Episode may be associated with one or more physical locations

(e.g. different rooms, departments, buildings, or cities). One or more DICOM Visits may be associated with a Service Episode.

- Notes:
1. The Service Episode is defined both in the ISIS model and in this extension of the DICOM model of the real world, to ensure consistency with PT3-022, CAP-IEC and HL7. The DICOM Visit is a part of the Service Episode. The Service Episode describes several administrative aspects of healthcare, while the DICOM Visit is limited to the description of one visit of a Patient to a facility.
 2. In the context of the Modality Worklist SOP Class, only the DICOM Visit is of relevance, the Service Episode Modules are not defined.

7.3.1.3 IMAGING SERVICE REQUEST

An Imaging Service Request is a set of one or more Requested Procedures selected from a list of Procedure Types. An Imaging Service Request is submitted by one authorized imaging service requester to one authorized imaging service provider in the context of one Service Episode. An Imaging Service Request includes pertinent specific and general information. Each instance of an Imaging Service Request carries the information common to one or more Requested Procedures requested at the same moment. An Imaging Service Request may be associated with one or more DICOM Visits. The existence of an Imaging Service Request will typically result in the creation of one or more Imaging Service Reports and the distribution of Imaging Service Reports to one or more destinations.

7.3.1.4 PROCEDURE TYPE

A Procedure Type identifies a class of procedures. In the context of imaging services, a Procedure Type is an item in a catalog of imaging procedures that can be requested and reported upon in an imaging service facility. An instance of a Procedure Type typically has a name and one or more other identifiers. A Procedure Type is associated with one or more Procedure Plans.

- Note: The information content of this entity relates to the general identification of a Procedure Type rather than to its decomposition into the **action items protocol(s)** required to perform a specific instance of a Requested Procedure for a particular Patient.

7.3.1.5 REQUESTED PROCEDURE

A Requested Procedure is an instance of a Procedure of a given Procedure Type. An instance of a Requested Procedure includes all of the items of information that are specified by an instance of a Procedure Plan that is selected for the Requested Procedure by the imaging service provider. This Procedure Plan is defined by the imaging service provider on the basis of the Procedure Plan templates associated with the considered Procedure Type. An Imaging Service Request may include requests for several different Requested Procedures. The purpose of this entity is to establish the association between Imaging Service Requests and Procedure Types, to convey the information that belongs to this association and to establish the relationships between Requested Procedures and the other entities that are needed to describe them. A single Requested Procedure of one Procedure Type is the smallest unit of service that can be requested, reported, coded and billed. Performance of one instance of a Requested Procedure is specified by exactly one Procedure Plan. A Requested Procedure leads to one or more Scheduled Procedure Steps involving **Action-item-Protocols** as specified by a Procedure Plan. A Requested Procedure may be associated with one or more DICOM Visits. A Requested Procedure may involve one or more pieces of equipment.

7.3.1.6 SCHEDULED PROCEDURE STEP

A Scheduled Procedure Step is an arbitrarily defined scheduled unit of service, that is specified by the Procedure Plan for a Requested Procedure. A Scheduled Procedure Step prescribes **one or more Action-item-Protocols (events) which may be identified by one or more protocol codes**. A Scheduled Procedure Step involves equipment (e.g. imaging Modality equipment, anesthesia equipment, surgical equipment, transportation equipment), human resources, consumable supplies, location, and time (e.g. start time, stop time, duration). While in the context of imaging services the scheduling of a Procedure Step might include only a general designation of imaging Modality that could be satisfied by multiple pieces of the same equipment type, the

performance of one instance of a Scheduled Procedure Step involves one and only one piece of imaging Modality equipment.

The performance of a Scheduled Procedure Step may result in the creation of zero or more Modality Performed Procedure Step instances.

- Notes:
1. The Procedure Step entity is provided to support management of the logistical aspects of procedures (e.g. materials management, human resources, scheduling). The full definition of the contents of Procedure Steps and ~~their constituent action item protocols~~ **according to which they are performed (events)** is implementation dependent and is beyond the scope of this Standard. ~~A single Action item Protocol (event) contained within a given Scheduled Procedure Step might or might not be schedulable in a given facility.~~
 2. A Scheduled Procedure Step may contribute to more than one Requested Procedure (e.g. a Scheduled Procedure Step requiring an intravenous iodine contrast injection might be shared by an intravenous pyelogram and a CT examination). However, for billing purposes an instance of a Scheduled Procedure Step is typically considered to be a part of only one Requested Procedure.
 3. **Typically each Scheduled Procedure Step contains at least one Action item Protocol (event) of a magnitude that would justify an entry in the medical record.**

7.3.1.7 PROCEDURE PLAN

A Procedure Plan is a ~~protocol or~~ specification that defines the **ordered** set of **Action item Protocols** that must be done in order to perform the Scheduled Procedure Steps of a Requested Procedure. **Each Scheduled Procedure Step is performed according to a single Protocol which may be identified by one or more Protocol Codes. The distribution of Action item Protocols over the set of Scheduled Procedure Steps that constitute a single Requested Procedure is assumed to be performed by the IS, and is not specified by this Standard.** The ~~Action item Protocols~~ actually performed during a Procedure Step may differ from those prescribed in the related Procedure Plan. Audit of actually performed ~~Action item Protocols~~ versus the prescribed Procedure Plan is an important element of quality control, but is not specified by this Standard.

- Note: The fact that ~~Action item Protocol Codes~~ are in a given order in a Procedure Plan is not evident in Figure 7.3. However, the order of ~~Action item Protocols~~ is represented at the syntax level (i.e. as the sequence of items present in the ~~Action item Protocol Code Sequence (0040,0008)~~).

7.3.1.8 ACTION ITEM PROTOCOL

An ~~Action item Protocol~~ is a **specification of one of the ordered set** of actions prescribed by a Procedure Plan to perform a **specific Procedure Step**—an instance of a Requested Procedure. ~~Action item Protocols are simple (atomic) events.~~ A Scheduled Procedure Step contains **at least only one Action item Protocol which may be conveyed by one or more Protocol Codes**. Typically, the code ~~or codes~~ identifying an ~~Action item Protocol~~ instance would be selected from a catalog of ~~action types protocols~~. Multiple ~~Action item Protocols of the same action type~~ may **not** exist in one Scheduled Procedure Step. ~~The distribution of Action item Protocols over the set of Scheduled Procedure Steps of a Single Requested Procedure is not specified by this Standard.~~

7.3.1.9 MODALITY PERFORMED PROCEDURE STEP

A Performed Procedure Step is an arbitrarily defined unit of service that has actually been performed (not just scheduled). Logically it corresponds to a Scheduled Procedure Step, but real-world conditions may dictate that what is actually performed does not correspond exactly with what was requested or scheduled.

- Note: For example, two or more Scheduled Procedure Steps, Requested Procedures or Imaging Service Requests may have been generated by different Referring Physicians but may be satisfied by a single Performed Procedure Step at the discretion of a Performing Physician or Operator. Alternatively, a single Scheduled Procedure Step may need to be satisfied by multiple Performed Procedure Steps on different types or instances of equipment, due to

clinical need or failure conditions, or over extended periods of time.

It contains information describing the type of procedure actually performed.

A Requested Procedure results in the creation of zero or more Performed Procedure Steps.

A Scheduled Procedure Step results in the creation of zero or more Performed Procedure Steps.

The Performed Procedure Step contains information about it's state (e.g. in progress, discontinued or completed).

A Modality Performed Procedure Step is a Performed Procedure Step that results from the acquisition of images from a Patient or other Imaging Subject on a Modality.

It contains information describing the performance of a step of an imaging procedure, including data about the performance of the procedure itself, radiation dose values to which the patient has been exposed if ionizing radiation is in use, and data for billing and material management.

The Modality Performed Procedure Step contains references to zero or more Series of Images and other Composite SOP Instances that may be created as part of the procedure step. A particular Series is part of only one Modality Performed Procedure Step.

Action item Protocol

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C.4.10 Scheduled Procedure Step Module

**Table C.4-10
 SCHEDULED PROCEDURE STEP MODULE ATTRIBUTES**

| Attribute Name | Tag | Attribute Description |
|---|-------------|---|
| Scheduled Procedure Step Sequence | (0040,0100) | One or more Scheduled Procedure Steps for one Requested Procedure. |
| ... | ... | ... |
| >Scheduled <u>Action item Protocol</u> Code Sequence | (0040,0008) | Sequence describing the Scheduled <u>Action item Protocol (s)</u> following a specified coding scheme. This sequence contains one or more <u>Action item Protocol Codes</u> . |
| >>Include 'Code Sequence Macro' Table 8.8-1 | | No Baseline Context ID is defined. |
| | | |

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C.4.13 Performed Procedure Step Relationship

Table C.4-13 specifies the Attributes used to reference other SOP Classes and other Information Entities of the DICOM real-world model as defined in Section 7.3.1.6.

**Table C.4-13
 PERFORMED PROCEDURE STEP RELATIONSHIP MODULE ATTRIBUTES**

| Attribute Name | Tag | Attribute Description |
|--|-------------|--|
| ... | ... | ... |
| Scheduled Step Attribute Sequence | (0040,0270) | Sequence containing attributes that are related to the scheduling of the Procedure Step. The Sequence may have one or more Items. |
| ... | ... | ... |
| >Scheduled Action item Protocol Code Sequence | (0040,0008) | Sequence describing the Scheduled Action item Protocol (s) following a specific coding scheme. This sequence contains one or more Action item Protocol Codes . |
| >>Include 'Code Sequence Macro' Table 8.8-1 | | No Baseline Context ID is defined. |

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C.4.15 Image Acquisition Results

Table C.4-15 specifies attributes that describe the acquisition of images during the performance of the Procedure Step and that provide references to the Series, Images and Standalone SOP Instances associated with this Modality Performed Procedure Step.

**Table C.4-15
 IMAGE ACQUISITION RESULTS MODULE ATTRIBUTES**

| Attribute Name | Tag | Attribute Description |
|--|-------------|--|
| Performed Action item Protocol Sequence | (0040,0260) | Sequence describing the Action item Protocols performed for this Procedure Step. This sequence may have zero or more Items. |
| >Include 'Code Sequence Macro' Table 8.8-1 | | No Baseline Context ID is defined. |
| ... | ... | ... |

...

C.7.3.1 General Series Module

Table C.7-4 specifies the Attributes which identify and describe general information about the Series within a Study.

**Table C.7-4
 GENERAL SERIES MODULE ATTRIBUTES**

| Attribute Name | Tag | Type | Attribute Description |
|-----------------------------|-------------|------|---|
| ... | ... | ... | ... |
| Request Attributes Sequence | (0040,0275) | 3 | Sequence that contains attributes from the Imaging Service Request. The sequence may have one or more Items. |

| | | | |
|---|-------------|------------------------------------|--|
| ... | ... | ... | |
| >Scheduled Action item Protocol Code Sequence | (0040,0008) | 3 | Sequence describing the Scheduled Action item Protocol (s) following a specific coding scheme. This sequence contains one or more Action item Protocol Codes . |
| >>Include 'Code Sequence Macro' Table 8.8-1 | | No Baseline Context ID is defined. | |
| ... | ... | ... | ... |
| Performed Action item Protocol Sequence | (0040,0260) | 3 | Sequence describing the Action item Protocols performed for this Procedure Step. One or more Items may be included in this Sequence. |
| >Include 'Code Sequence Macro' Table 8.8-1 | | No Baseline Context ID is defined. | |

Change action item to protocol in PS 3.4:

F.7.2.1.1 Modality Performed Procedure Step Subset Specification

The Application Entity which claims conformance to this SOP Class as an SCU must provide all Required Attributes as specified in Table F.7.2-1. Optional Attributes maintained by the SCP may be provided as well. The Application Entity which claims conformance as an SCP to this SOP Class shall support the subset of the Modality Performed Procedure Step Attributes specified in Table F.7.2-1.

**Table F.7.2-1
 MODALITY PERFORMED PROCEDURE STEP SOP CLASS N-CREATE, N-SET AND FINAL
 STATE ATTRIBUTES**

| Attribute Name | Tag | Req. Type N-CREATE (SCU/SCP) | Req. Type N-SET (SCU/SCP) | Requirement Type Final State (See Note 1) |
|---|-------------|--|---------------------------------|---|
| ... | ... | ... | ... | ... |
| Performed Procedure Step Relationship | | | | |
| Scheduled Step Attribute Sequence | (0040,0270) | 1/1 | Not allowed | |
| ... | ... | ... | ... | |
| >Scheduled Action Item Protocol Code Sequence | (0040,0008) | 2/2 | Not allowed | |
| >>Code Value | (0008,0100) | 1C/1 (Required if Sequence Item is present) | Not allowed | |
| >>Coding Scheme designator | (0008,0102) | 1C/1 (Required if Sequence Item is present) | Not allowed | |

| | | | | |
|---|-------------|--|--|-----|
| >>Coding Scheme Version | (0008,0103) | 3/3 | Not allowed | |
| >>Code Meaning | (0008,0104) | 3/3 | Not allowed | |
| ... | ... | ... | ... | ... |
| Image Acquisition Results | | | | |
| ... | ... | ... | ... | ... |
| Performed Action Item Protocol Code Sequence | (0040,0260) | 2/2 | 3/2 | |
| >Code Value | (0008,0100) | 1C/1 (Required if Sequence Item is present) | 1C/1 (Required if Sequence Item is present) | |
| >Coding Scheme Designator | (0008,0102) | 1C/1 (Required if Sequence Item is present) | 1C/1 (Required if Sequence Item is present) | |
| >Coding Scheme Version | (0008,0103) | 3/3 | 3/3 | |
| >Code Meaning | (0008,0104) | 3/3 | 3/3 | |
| ... | ... | ... | ... | ... |

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F.8.2.1.1 Modality Performed Procedure Step Retrieve IOD Subset Specifications

The Application Entity which claims conformance to this SOP Class as an SCU may choose to interpret the Attribute values maintained by the SCP which the SCU receives via the operation of this SOP Class. The Application Entity which claims conformance as an SCP to this Modality Performed Procedure Step Retrieve SOP Class shall support the subset of the Modality Performed Procedure Step Retrieve Attributes specified in Table F.8.2-1.

**Table F.8.2-1
 MODALITY PERFORMED PROCEDURE STEP RETRIEVE SOP CLASS N-GET ATTRIBUTES**

| Attribute Name | Tag | Requirement Type (SCU/SCP) |
|--|-------------|--|
| | ... | ... |
| Performed Procedure Step Relationship | | |
| Scheduled Step Attributes Sequence | (0040,0270) | 3/1 |
| ... | ... | ... |
| >Scheduled Action Item Protocol Code Sequence | (0040,0008) | -/2 |
| >>Code Value | (0008,0100) | -/1C (Required if Sequence Item is present) |
| >>Coding Scheme designator | (0008,0102) | -/1C (Required if Sequence Item is present) |

| | | |
|--|-------------|--|
| >>Coding Scheme Version | (0008,0103) | -/3 |
| >>Code Meaning | (0008,0104) | -/3 |
| ... | ... | ... |
| Image Acquisition Results | | |
| ... | ... | ... |
| Performed Action Item Protocol Code Sequence | (0040,0260) | 3/2 |
| >Code Value | (0008,0100) | -/1C (Required if Sequence Item is present) |
| >Coding Scheme Designator | (0008,0102) | -/1C (Required if Sequence Item is present) |
| >Coding Scheme Version | (0008,0103) | -/3 |
| >Code Meaning | (0008,0104) | -/3 |
| ... | | ... |

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K.6.1.2.2 Modality Worklist Attributes

Table K.6-1 defines the Attributes of the Modality Worklist Information Model:

**Table K.6-1
 ATTRIBUTES FOR THE MODALITY WORKLIST INFORMATION MODEL**

| Description / Module | Tag | Match- ing Key Type | Return Key Type | Remark/Matching Type |
|-----------------------------------|-------------|---------------------------|-----------------------|---|
| SOP Common | | | | |
| Specific Character Set | (0008,0005) | O | 1C | This attribute is required if expanded or replacement character sets are used. |
| Scheduled Procedure Step | | | | |
| Scheduled Procedure Step Sequence | (0040,0100) | R | 1 | The Attributes of the Scheduled Procedure Step shall only be retrieved with Sequence Matching. The Scheduled Procedure Step Sequence shall contain only a single Item. |
| ... | ... | ... | . | ... |

| | | | | |
|---|-------------|-----|-----|--|
| >>Scheduled Action-Item Protocol Code Sequence | (0040,0008) | O | 1C | Either the Scheduled Procedure Step Description (0040,0005) or the Scheduled Action-Item Protocol Code Sequence (0040,0008) or both shall be supported by the SCP. The Scheduled Action-Item Protocol Code Sequence contains one or more Action-Items Protocol Codes . |
| >>Code Value | (0008,0100) | O | 1C | Required if a Sequence Item is present. |
| >>Coding Scheme Version | (0008,0103) | O | 3 | |
| >>Coding Scheme Designator | (0008,0102) | O | 1C | Required if a Sequence Item is present. |
| >>Code Meaning | (0008,0104) | O | 3 | |
| ... | ... | ... | ... | ... |

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M.2 INTEGRATED ENVIRONMENT

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M.2.1 Modality Conforms to Modality Worklist and MPPS SOP Classes

The modality may:

- N-CREATE a MPPS SOP Instance and include its SOP Instance UID in the Image SOP Instances within the Referenced Study Component Sequence Attribute.
- Copy the following Attribute values from the Modality Worklist information into the Image SOP Instances and into the related MPPS SOP Instance:
 - Study Instance UID
 - Referenced Study Sequence
 - Accession Number
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled **Action-Item Protocol** Code Sequence
- Create the following Attribute value and include it into the Image SOP Instances and the related MPPS SOP Instance:
 - Performed Procedure Step ID
- Include the following Attribute values that may be generated during image acquisition, if supported, into the Image SOP Instances and the related MPPS SOP Instance:
 - Performed Procedure Step Start Date
 - Performed Procedure Step Start Time
 - Performed Procedure Step Description
 - Study ID

M.2.2 Modality Conforms only to the Modality Worklist SOP Class

The modality may:

- In the absence of the ability to N-CREATE a MPPS SOP Instance, generate a MPPS SOP Instance UID and include it into the Referenced Study Component Sequence Attribute of the Image SOP Instances. A system that later N-CREATES a MPPS SOP Instance may use this UID extracted from the related Image SOP Instances.
- Copy the following Attribute values from the Modality Worklist information into the Image SOP Instances:
 - Study Instance UID
 - Referenced Study Sequence
 - Accession Number
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled **Action-Item Protocol** Code Sequence
- Create the following Attribute value and include it into the Image SOP Instances:
 - Performed Procedure Step IDA system that later N-CREATES a MPPS SOP Instance may use this Attribute value extracted from the related Image SOP Instances.
- Include the following Attribute values that may be generated during image acquisition, if supported, into the Image SOP Instances:
 - Performed Procedure Step Start Date
 - Performed Procedure Step Start Time
 - Performed Procedure Step Description
 - Study IDA system that later N-CREATES a MPPS SOP Instance may use these Attribute values extracted from the related Image SOP Instances.

M.2.3 Modality Conforms only to the MPPS SOP Class

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M.3 NON-INTEGRATED ENVIRONMENT

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M.4 ONE MPPS IS CREATED IN RESPONSE TO TWO OR MORE REQUESTED PROCEDURES

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M.4.1 Choose or Create a Value for Study Instance UID and Accession Number

The modality may:

- In the Image SOP Instances:
 - create a Request Attributes Sequence containing two or more Items each containing the following Attributes:
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled **Action-Item Protocol** Code Sequence
 - create a Referenced Study Sequence containing two or more Items sufficient to contain the Study SOP Instance UID values from the Modality Worklist for both Requested Procedures
 - select one value from the Modality Worklist or generate a new value for:
 - Study Instance UID (see also M.6)

- select one value from the Modality Worklist or generate a new value or assign an empty value for:
 - Accession Number
- In the MPPS SOP Instance:
 - create a Scheduled Step Attributes Sequence containing two or more Items each containing the following Attributes:
 - Study Instance UID
 - Referenced Study Sequence
 - Accession Number
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled ~~Action Item Protocol~~ Code Sequence
 - include the following Attribute value that may be generated during image acquisition, if supported:
 - Procedure Code Sequence
- In both the Image SOP Instances and the MPPS SOP Instance
 - create a Performed Procedure Step ID
 - include the following Attribute values that may be generated during image acquisition, if supported:
 - Performed Procedure Step Start Date
 - Performed Procedure Step Start Time
 - Performed Procedure Step Description
 - Study ID

M.4.2 Replicate the Image IOD

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The modality may:

- For all Series in the MPPS, replicate the entire Series of Images using new Series Instance UIDs
- Create replicated Image SOP Instances with different SOP Instance UIDs that use the new Series Instance UIDs, for each of the two or more Requested Procedures
- In each of the Image SOP Instances, using values from the corresponding Requested Procedure:
 - create a Request Attributes Sequence containing an Item containing the following Attributes:
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled ~~Action Item Protocol~~ Code Sequence
 - copy from the Modality Worklist:
 - Study Instance UID
 - Accession Number
 - create a Referenced Study Sequence containing an Item containing the following Attribute:
 - Study SOP Instance in the Referenced Study Sequence from the Worklist
- In the MPPS SOP Instance (if supported):

- create a Scheduled Step Attributes Sequence containing two or more Items each containing the following Attributes:
 - Study Instance UID
 - Referenced Study Sequence
 - Accession Number
 - Requested Procedure ID
 - Scheduled Procedure Step ID
 - Scheduled Procedure Step Description
 - Scheduled **Action-Item Protocol** Code Sequence
- include the following Attribute value that may be generated during image acquisition, if supported:
 - Procedure Code Sequence
- In both the Image SOP Instances and the MPPS SOP Instance (if supported):
 - create a Performed Procedure Step ID
 - Include the following Attribute values that may be generated during image acquisition, if supported:
 - Performed Procedure Step Start Date
 - Performed Procedure Step Start Time
 - Performed Procedure Step Description
 - Study ID

M.5 MPPS SOP INSTANCE CREATED BY ANOTHER SYSTEM (NOT THE MODALITY)

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M.6 MAPPING OF STUDY INSTANCE UIDS TO THE STUDY SOP INSTANCE UID

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COMPARISON OF CORRESPONDING ATTRIBUTES OF MODALITY WORKLIST INFORMATION MODEL, IMAGE AND STANDALONE IODS AND MODALITY PERFORMED PROCEDURE STEP IOD

| Modality Worklist [Return Key Type] (e) | Images and Standalone IOD [Type] | MPPS IOD [SCU/SCP Type] |
|--|--|--|
| ... | ... | ... |
| Scheduled Action-Item Protocol Code Sequence [1C] | >Scheduled Action-Item Protocol Code Sequence [3] | Performed Action-Items Protocol Code Sequence [2/2] |
| ... | ... | ... |

| |
|--|
| <i>Change action item to protocol in PS 3.6:</i> |
|--|

| | | | |
|-------------|---|----|---|
| (0040,0008) | Scheduled Action-Item Protocol Code Sequence | SQ | 1 |
| (0040,0260) | Performed Action-Item Protocol Sequence | SQ | 1 |