

## DICOM Correction Item

Correction Number	CP-681
Log Summary: Convey Worklist details into created IODs and MPPSs	
Type of Modification	Name of Standard
Modification	PS 3.3, 3.4 2004

### Rationale for Correction

During the development of its Technical Framework, IHE Radiology has identified data elements in image and MPPS instances that are necessary for propagating scheduled information from one system to subsequent systems in a workflow chain. IHE aims at closing the workflow loop for its group case and Presentation of Grouped Procedures case in the Scheduled Workflow.

The underlying data model defines the critical identifiers that need to be kept consistent in order to relate different instances over the workflow performed by RIS, PACS, workstation, and modality (IHE Radiology TF-2, A.4).

Values from acquired image instances can serve to fill in values in subsequently generated instances related to this acquisition. This is especially true while grouping or referencing instances for presentation on a workstation that can only use the acquired images to obtain such workflow information.

Per DICOM definition, the Request Attributes Sequence (0040,0275) in images is designed to contain attributes from the Imaging Service Request. A system generating instances including this sequence can therefore use this sequence to copy a subset of the scheduled information that led to the creation of these instances. It is proposed to complete the Request Attributes Sequence (0040,0275) by adding the following elements as Type 3 data elements:

- **Referenced Study Sequence (0008,1110):** This element is needed to append instances to a Group Case from a Modality, i.e. information from the acquired and grouped images can be re-used for subsequently processed instances. This is especially true if the Group Case resulted from grouping several SPSs belonging to different Requested Procedure, e.g. 3 SPS belonging to 2 different Requested Procedure. The Request Attributes Sequence data from previous images is a prerequisite for reliably filling the Referenced Study Sequence in the appended PPS (otherwise: ambiguity of relation between SPS and Requested Procedure).
- **Accession Number (0008,0050):** This element is useful to append instances to a Modality Group Case (i.e. information from the acquired and grouped images can be re-used for subsequently processed instances). This is especially true if the Group Case grouped several SPSs belonging to different Imaging Service Request (e.g. 2 SPS belonging to 2 different Imaging Service Request). The Accession Number in the Request Attributes Sequence of previously grouped images is a prerequisite to fill the Accession Number in the Append PPS.
- **Requested Procedure Code Sequence (0032,1064):** This element is needed to group instances for presentation/ viewing (IHE "Presentation of Grouped Procedures" (PGP) profile), or to append instances to one of the Requested Procedures of a Group Case. For PGP, if the Modality is acquiring what was scheduled, it will send in the images a Procedure Code Sequence including as many items as there are different Requested Procedure Codes. IHE requires the modality to provide in the GSPS and in the associated PPS (for PGP) only the Procedure Code of the referenced Requested Procedure.
- **Requested Procedure Description (0032,1060):** This element is needed to be able to fill the Requested Procedure Description attribute in the PPS instance when performing an Append PPS on a workstation.

<ul style="list-style-type: none"> <li>• <b>Study Instance UID (0020,000D):</b> This element is received from the Order Filler through Modality Worklist. It facilitates the mapping performed by Modalities when appending instances to one of the Requested Procedures of a Group Case.</li> </ul> <p>Similarly for MPPS, those RIS or PACS that completely exploit MPPS values can benefit from using coded values from the Requested Procedure Code Sequence for group or PGP cases. It is proposed to optionally add the attribute Requested Procedure Code Sequence (0032,1064) to the Scheduled Step Attribute Sequence (0040,0270) in MPPS, as Type 3 attribute.</p>
Sections of documents affected
PS 3.3, 3.4
Correction Wording:

**Modify Table C.4.13 in PS3.3 as follows:**

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

Attribute Name	Tag	Attribute Description
Patient's Name	(0010,0010)	Patient's full legal name.
Patient ID	(0010,0020)	Primary hospital identification number or code for the patient.
Issuer of Patient ID	(0010,0021)	Identifier of the Assigning Authority that issued the Patient ID.
Patient's Birth Date	(0010,0030)	Date of birth of the named patient
Patient's Sex	(0010,0040)	Sex of the named Patient. Enumerated Values: M = male F = female O = other
Referenced Patient Sequence	(0008,1120)	Uniquely identifies the Patient SOP Instance.
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Scheduled Step Attributes Sequence	(0040,0270)	Sequence containing attributes that are related to the scheduling of the Procedure Step. The Sequence may have one or more Items.
>Study Instance UID	(0020,000D)	Unique identifier for the Study.
>Referenced Study Sequence	(0008,1110)	Uniquely identifies the Study SOP Instance associated with this Scheduled Procedure Step. This Sequence shall have only one Item.
>>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the SOP Class.
>>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the SOP Instance.
>Accession Number	(0008,0050)	A departmental IS generated number that identifies the order for the Study.
>Placer Order Number/Imaging Service Request	(0040,2016)	The order number assigned to the Imaging Service Request by the party placing the order.

>Filler Order Number/Imaging Service Request	(0040,2017)	The order number assigned to the Imaging Service Request by the party filling the order.
>Requested Procedure ID	(0040,1001)	Identifier of the related Requested Procedure.
>Requested Procedure Description	(0032,1060)	Institution-generated administrative description or classification of Requested Procedure.
<b>&gt;Requested Procedure Code Sequence</b>	<b>(0032,1064)</b>	<b><u>A sequence that conveys the Procedure Type of the requested procedure. The Requested Procedure Code Sequence shall contain only a single item.</u></b>
<b>&gt;&gt;Include 'Code Sequence Macro' Table 8.8-1</b>		<b><u>No Baseline Context ID is defined.</u></b>
>Scheduled Procedure Step ID	(0040,0009)	Identifier of the related Scheduled Procedure Step.
>Scheduled Procedure Step Description	(0040,0007)	Institution-generated description or classification of the Scheduled Procedure Step to be performed.
>Scheduled Protocol Code Sequence	(0040,0008)	Sequence describing the Scheduled Protocol following a specific coding scheme. This sequence contains one or more Items.
<b>&gt;&gt;Include 'Code Sequence Macro' Table 8.8-1</b>		<b><i>No Baseline Context ID is defined.</i></b>
>>Protocol Context Sequence	(0040,0440)	Sequence that specifies the context for the Scheduled Protocol Code Sequence Item. One or more items may be included in this sequence. See Section C.4.10.1.
<b>&gt;&gt;&gt;Include 'Content Item Macro' Table 10-2</b>		<b><i>No Baseline Template is defined.</i></b>
>>> Content Item Modifier Sequence	(0040,0441)	Sequence that specifies modifiers for a Protocol Context Content Item. One or more items may be included in this sequence. See Section C.4.10.1.
<b>&gt;&gt;&gt;&gt;Include 'Content Item Macro' Table 10-2</b>		<b><i>No Baseline Template is defined.</i></b>

**Modify Table 10-9 in PS3.3 as follows:**

**Table 10-9  
 REQUEST ATTRIBUTES MACRO ATTRIBUTES**

<b>Attribute Name</b>	<b>Tag</b>	<b>Type</b>	<b>Attribute Description</b>
Requested Procedure ID	(0040,1001)	1	Identifier that identifies the Requested Procedure in the Imaging Service Request.
<b><u>Accession Number</u></b>	<b><u>(0008,0050)</u></b>	<b><u>3</u></b>	<b><u>An identifier of the Imaging Service Request for this Requested Procedure.</u></b>
<b><u>Study Instance UID</u></b>	<b><u>(0020,000D)</u></b>	<b><u>3</u></b>	<b><u>The unique identifier for the Study provided for this Requested Procedure.</u></b>
<b><u>Referenced Study Sequence</u></b>	<b><u>(0008,1110)</u></b>	<b><u>3</u></b>	<b><u>Uniquely identifies the Study SOP Instances associated with this SOP Instance. One or more items may be included.</u></b>

<u>&gt;Referenced SOP Class UID</u>	<u>(0008,1150)</u>	<u>1</u>	<u>Uniquely identifies the referenced SOP Class</u>
<u>&gt;Referenced SOP Instance UID</u>	<u>(0008,1155)</u>	<u>1</u>	<u>Uniquely identifies the referenced SOP Instance.</u>
<u>Requested Procedure Description</u>	<u>(0032,1060)</u>	<u>3</u>	<u>Institution-generated administrative description or classification of Requested Procedure.</u>
<u>Requested Procedure Code Sequence</u>	<u>(0032,1064)</u>	<u>3</u>	<u>A sequence that conveys the Procedure Type of the requested procedure. The Requested Procedure Code Sequence shall contain only a single item.</u>
<b>&gt;Include 'Code Sequence Macro' Table 8.8-1</b>		<b>No Baseline Context ID is defined.</b>	
Reason for the Requested Procedure	(0040,1002)	3	Reason for requesting this procedure.
Reason for Requested Procedure Code Sequence	(0040,100A)	3	Coded Reason for requesting this procedure.
<b>&gt;Include 'Code Sequence Macro' Table 8.8-1</b>		<b>Context ID may be defined in the macro invocation.</b>	
Scheduled Procedure Step ID	(0040,0009)	1	Identifier that identifies the Scheduled Procedure Step.
Scheduled Procedure Step Description	(0040,0007)	3	Institution-generated description or classification of the Scheduled Procedure Step to be performed.
Scheduled Protocol Code Sequence	(0040,0008)	3	Sequence describing the Scheduled Protocol following a specific coding scheme. This sequence contains one or more Items.
<b>&gt;Include 'Code Sequence Macro' Table 8.8-1</b>		<b>Context ID may be defined in the macro invocation.</b>	
>Protocol Context Sequence	(0040,0440)	3	Sequence that specifies the context for the Scheduled Protocol Code Sequence Item. One or more items may be included in this sequence.
<b>&gt;&gt;Include 'Content Item Macro' Table 10-2</b>		<b>Context ID may be defined in the macro invocation.</b>	
>> Content Item Modifier Sequence	(0040,0441)	3	Sequence that specifies modifiers for a Protocol Context Content Item. One or more items may be included in this sequence. See Section C.4.10.1.
<b>&gt;&gt;&gt;Include 'Content Item Macro' Table 10-2</b>		<b>Context ID may be defined in the macro invocation.</b>	

**Modify Table F.7.2-1 in PS3.4 as follows:**

**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)
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Specific Character Set	(0008,0005)	1C/1C (Required if an extended or replacement character set is used)	Not allowed	
Performed Procedure Step Relationship				
Scheduled Step Attribute Sequence	(0040,0270)	1/1	Not allowed	
>Study Instance UID	(0020,000D)	1/1	Not allowed	
>Referenced Study Sequence	(0008,1110)	2/2	Not allowed	
>>Referenced SOP Class UID	(0008,1150)	<del>1C</del> /1 (Required if Sequence Item is present)	Not allowed	
>>Referenced SOP Instance UID	(0008,1155)	<del>1C</del> /1 (Required if Sequence Item is present)	Not allowed	
>Accession Number	(0008,0050)	2/2	Not allowed	
>Placer Order Number/Imaging Service Request	(0040,2016)	3/3	Not allowed	
>Filler Order Number/Imaging Service Request	(0040,2017)	3/3	Not allowed	
>Requested Procedure ID	(0040,1001)	2/2	Not allowed	
<b><u>&gt;Requested Procedure Code Sequence</u></b>	<b><u>(0032,1064)</u></b>	<b><u>3/3</u></b>	<b><u>Not allowed</u></b>	
<b><u>&gt;&gt;Code Value</u></b>	<b><u>(0008,0100)</u></b>	<b><u>1/1</u></b>	<b><u>Not allowed</u></b>	
<b><u>&gt;&gt;Coding Scheme designator</u></b>	<b><u>(0008,0102)</u></b>	<b><u>1/1</u></b>	<b><u>Not allowed</u></b>	
<b><u>&gt;&gt;Code Meaning</u></b>	<b><u>(0008,0104)</u></b>	<b><u>1/1</u></b>	<b><u>Not allowed</u></b>	
>Requested Procedure Description	(0032,1060)	2/2	Not allowed	
>Scheduled Procedure Step ID	(0040,0009)	2/2	Not allowed	
>Scheduled Procedure Step Description	(0040,0007)	2/2	Not allowed	
>Scheduled Protocol Code Sequence	(0040,0008)	2/2	Not allowed	

>>Code Value	(0008,0100)	1G/1 (Required if Sequence Item is present)	Not allowed	
>>Coding Scheme designator	(0008,0102)	1G/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	
>>All other Attributes from Scheduled Protocol Code Sequence		3/3	Not allowed	
...	...	...	...	...

**Modify table F.8.2-1 in PS3.4 as follows:**

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

Attribute Name	Tag	Requirement Type (SCU/SCP)
Specific Character Set	(0008,0005)	3/1C (Required if an extended or replacement character set is used)
<b>Performed Procedure Step Relationship</b>		
Scheduled Step Attributes Sequence	(0040,0270)	3/1
>Study Instance UID	(0020,000D)	-/1
>Referenced Study Sequence	(0008,1110)	-/2
>>Referenced SOP Class UID	(0008,1150)	-/1G (Required if Sequence Item is present)
>>Referenced SOP Instance UID	(0008,1155)	-/1G (Required if Sequence Item is present)
>Accession Number	(0008,0050)	-/2
>Placer Order Number/Imaging Service Request	(0040,2016)	-/3
>Filler Order Number/Imaging Service Request	(0040,2017)	-/3
<b>&gt;Requested Procedure Code Sequence</b>	<b>(0032,1064)</b>	<b>-/3</b>

>>Code Value	(0008,0100)	-/1
>>Coding Scheme Designator	(0008,0102)	-/1
>>Code Meaning	(0008,0104)	-/1
>Requested Procedure Description	(0032,1060)	-/2
>Requested Procedure ID	(0040,1001)	-/2
>Scheduled Procedure Step ID	(0040,0009)	-/2
>Scheduled Procedure Step Description	(0040,0007)	-/2
>Scheduled Protocol Code Sequence	(0040,0008)	-/2
>>Code Value	(0008,0100)	-/1G (Required if Sequence Item is present)
>>Coding Scheme Designator	(0008,0102)	-/1G (Required if Sequence Item is present)
>>Coding Scheme Version	(0008,0103)	-/3
>>Code Meaning	(0008,0104)	-/3
>>All other Attributes from Scheduled Protocol Code Sequence		-/3
...	...	...