

DICOM Correction Proposal

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Correction Number	CP-1632
Log Summary: Add Support for non-Patient Instance References	
Name of Standard PS 3.3, PS 3.4 2017b	
<p>Rationale for Correction:</p> <p>The DICOM Standard contains some IODs that are not patient-related. Those IODs do not include the hierarchy of the Patient-Study-Series information entities. As a consequence, such IOD do not include a Study UID and a Series UID.</p> <p>Current examples are Color Palette, Hanging Protocols, Implant Templates, CT Defined Procedure Protocol IOD (Supplement 121). In future there may be more of such IODs like e.g. an assessment IOD for non-Patient objects similar to the Content Assessment Results IOD.</p> <p>Referencing such objects is currently not possible at locations where reference Macros like 10-3b “Referenced Instances and Access Macro Attributes” and Table C.17-3 “Hierarchical SOP Instance Reference Macro Attributes” are used. These macros assume Patient-Study-Series hierarchy and therefore mandate the Study UID and a Series UID to be present.</p> <p>It was analyzed which the referencing locations could benefit from extensions to support non-patient IODs. The result of the analysis can be found below.</p> <p>In conclusion the only location to add support for non-patient references is the Unified Worklist and Procedures Step Service, where this capability is useful to support protocol / template related operations e.g. in quality procedures.</p> <p>Outlook: Previous versions of this CP contain proposals for re-structuring the current Hierarchical Reference Macro in C.17.2.1 to support both patient and non-patient references. Those proposals will be available in future is needed.</p>	

Occurrences of potential interest for non-patient instance references:

The Macros 10-3b “Referenced Instances and Access Macro Attributes” and C.17-3 “Hierarchical SOP Instance Reference Macro Attributes” are used at various places. Most of those places require Patient-related instances a priori and therefore are left out from the following table. The remaining items have been considered, discussed and decided as follows:

Module	Referencing Sequence	Reference mechanism used	Conclusion
C.30.2 Unified Procedure Step Scheduled Procedure Information Module	Input Information Sequence (0040,4021)	Table 10-3b “Referenced Instances and Access Macro Attributes”	Extend Macro
C.30.3 Unified Procedure Step	Output Information Sequence	Table 10-3b “Referenced Instances and Access	Extend Macro

Performed Procedure Information Module	(0040,4033)	Macro Attributes”	
C.17.2 SR Document General Module	Pertinent Other Evidence Sequence (0040,A385)	Table C.17-3 “Hierarchical SOP Instance Reference Macro Attributes”	No need to change. See 1*)
C.17.6.2 Key Object Document Module	Current Requested Procedure Evidence Sequence (0040,A375)	Table C.17-3 “Hierarchical SOP Instance Reference Macro Attributes”	Change not suitable. See 3*)
C.17.6.2 Key Object Document Module	Pertinent Other Evidence Sequence (0040,A385)	Table C.17-3 “Hierarchical SOP Instance Reference Macro Attributes”	Change not suitable. See 3*)
C.33 Content Assessment Modules	Various	Table 10-11 “SOP Instance Reference Macro Attributes”	No need to change. See 2*)

1*) From the description, the Pertinent Other Evidence Sequence (0040,A385) will contain Patient-related instances in any case. To reference non-Patient-related instance, e.g. like encapsulated documents containing general information about the procedures applies etc. the Referenced Instance Sequence (0008,114A) can be used.

2*) The Content Assessment Results IOD only handles assessment of Patient-related instances. A future assessment object for non-Patient-related instances will need to be a new IOD.

3*) Extending the sequences listed would not affect the collection of objects established by the KOS object. The references listed above would only affect annotations to those objects. Yet also in these case goes beyond the scope of the KOS IOD. In case a KOS-like collection should be available which can support both patient and non-patient references, a new IOD should be introduced. The same may apply to Structured Reports in general.

Correction Wording:

In PS3.3, Section 10.3, Table 10-3b. Referenced Instances and Access Macro Attributes, apply the following changes:

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Table 10-3b “Referenced Instances and Access Macro Attributes” contains identifiers and access details for a collection of instances. It is intended to provide sufficient information to retrieve the referenced instances.

Table 10-3b. Referenced Instances and Access Macro Attributes

Attribute Name	Tag	Type	Attribute Description
Type of Instances	(0040,E020)	1	Type of object instances referenced. Defined Terms: DICOM CDA
Study Instance UID	(0020,000D)	1C	Unique identifier for the Study.

Attribute Name	Tag	Type	Attribute Description
			Required if Type of Instances (0040,E020) is DICOM and the Information Model of the referenced instance contains the Study IE.
Series Instance UID	(0020,000E)	1C	Unique identifier for the Series that is part of the Study identified in Study Instance UID (0020,000D), if present, and contains the referenced object instance(s). Required if Type of Instances (0040,E020) is DICOM and the Information Model of the referenced instance contains the Series IE.
Referenced SOP Sequence	(0008,1199)	1	References to object instances. One or more Items shall be included in this Sequence
...

In PS3.4, CC.2.5.1.2, Table CC.2.5-2c Referenced Instances and Access Macro, apply the following changes:

CC.2.5.1 Unified Procedure Step Attribute Specification

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CC.2.5.1.1 UPS Final State Requirements

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CC.2.5.1.2 UPS Macros

To reduce the size and complexity of Table CC.2.5-3, a macro notation is used.

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Table CC.2.5-2c. Referenced Instances and Access Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
Type of Instances	(0040,E020)	1/1	1/1		-/1	O	1	
Study Instance UID	(0020,000D)	1C/1	1C/1		-/1	O	1C	Required if Type of Instances (0040,E020) is DICOM and the Information Model of the referenced instance contains the Study IE.
Series Instance UID	(0020,000E)	1C/1	1C/1		-/1	O	1C	Required if Type of Instances (0040,E020) is DICOM and the Information Model

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
								<u>of the referenced instance contains the Series IE.</u>
...	