Digital Imaging and Communications in Medicine (DICOM)

Supplement 89: Worklist and Performed Procedure Step Use Cases

(Informative)

Version: Final Text   November 01, 2005

DICOM Working Group 06

DICOM Standards Committee

1300 N. 17th Street

Rosslyn, Virginia 22209 USA

28   Table of Contents

32

Scope and Field Of Application

The purpose of this Informative Annex is to make modifications to Annex J of part 17 as follows:

36
- o Add a reference to documentation of similar material within the IHE Radiology Technical Framework

- o Remove or modify sections that are incorrect or misleading

40
Changes to NEMA Standards Publication PS 3.17-2004

Amend Section J.1:

J.1 PURPOSE OF THIS ANNEX

44 The DICOM Standard was published in 1993 and addresses medical images communication between medical modalities, workstations and other medical devices as well as data exchange between medical devices and the Information System (IS). DICOM defines SOP Instances with Patient, Visit and Study information managed by the Information System and allows to communicate the Attribute values of these objects.

48

Since the publication of the DICOM Standard great effort has been made to harmonize the Information Model of the DICOM Standard with the models of other relevant standards, especially with the HL7 model and the CEN TC 251 WG3 PT 022 model. The result of these effort is a better understanding of the
52 various practical situations in hospitals and an adaptation of the model to these situations. In the discussion of models, the definition of Information Entities and their Identifying Parameters play a very important role.

56 The purpose of this Informative Annex is to show which identifying parameters may be included in Image SOP Instances and their related Modality Performed Procedure Step (MPPS) SOP Instance. Different scenarios are elucidated to describe varying levels of integration of the Modality with the Information System, as well as situations in which a connection is temporarily unavailable.

60
Note: In this Annex, "Image SOP Instance" is used as a collective term for all Composite Image Storage SOP Instances, ~~as well as Standalone Overlay, LUT, and Curve Storage SOP Instances, etc~~.

64 The scenarios described here are informative and do not constitute a normative section of the DICOM Standard.

Amend Section J.2:

68 ## J.2 INTEGRATED ENVIRONMENT

"Integrated" means in this context that the Acquisition Modality is connected to an Information System or Systems that may be an SCP of the Modality Worklist SOP Class or an SCP of the Modality Performed

Procedure Step SOP Class or both. In the following description only the behavior of "Modalities" is
mentioned, it goes without saying that the IS must conform to the same SOP Classes.

72

The Modality receives identifying parameters by querying the Modality Worklist SCP and generates other
Attribute values during image generation. It is desirable that these identifying parameters be included in
the Image SOP Instances as well as in the MPPS object in a consistent manner. In the case of a
Modality that is integrated but unable to receive or send identifying parameters, e.g. link down,
emergency case, the Modality may behave as if it were not integrated.

76

The Study Instance UID is a crucial Attribute that is used to relate Image SOP Instances (whose Study is
identified by their Study Instance UID), the Modality PPS SOP Instance which contains it as a reference,
and the actual or conceptual Requested Procedure (i.e. Study) and related Imaging Service Request in
the IS.

80

84

**For a detailed description of an integrated environment see the IHE Radiology Technical
Framework. This document can be obtained at:**

http:\\www.ihe.net

88

Delete Section J.6

J.6 MAPPING OF STUDY INSTANCE UIDS TO THE STUDY SOP INSTANCE UID
If modalities are not integrated with an Information System that is an SCP of the Modality Worklist SOP
Class, they are not able to receive an IS generated Study Instance UID, and therefore they must create
their own Study Instance UIDs.
The MPPS is a way of conveying back to an IS the Study Instance UID generated by the Modality in such
a case.

92

Integration of a Performed Procedure Step (and the corresponding Image SOP Instances) with the Study
or Imaging Service Request to which it corresponds is a management function of the IS. Even with all the
normal identifying Attributes present and consistent, it may not always be possible to perform such
matching in a completely automatic fashion.

96

**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)**

100

**Images and Standalone IOD
[Type]
MPPS IOD [SCU/SCP Type]**
--- ---- Scheduled Step Attributes Sequence
[1/1] (c)

104

Study Instance UID [1] Study Instance UID [1] >Study Instance UID [1/1]
Referenced Study Sequence [2]
(d)

108

Referenced Study Sequence [3] (c) >Referenced Study Sequence [2/2] (f)
Accession Number [2] Accession Number [2] >Accession Number [2/2]
---- Request Attributes Sequence [3] (a,c) ----
Requested Procedure ID [1] >Requested Procedure ID [1C] >Requested Procedure ID [2/2]
Scheduled Procedure Step ID

112

[1]
>Scheduled Procedure Step ID [1C] >Scheduled Procedure Step ID [2/2]
Scheduled Procedure Step

116

Description [1C]
>Scheduled Procedure Step Description
[3]

120

>Scheduled Procedure Step Description

124 [2/2]

Scheduled Protocol Code

Sequence [1C]

>Scheduled Protocol Code Sequence

128 [3]

Performed Protocol Code Sequence

[2/2]

---- Study ID [2] Study ID [2/2]

132 ---- Performed Procedure Step ID [3] (b) Performed Procedure Step ID [1/1]

---- Performed Procedure Step Start Date

[3] (b)

Performed Procedure Step Start Date

136 [1/1]

---- Performed Procedure Step Start Time

[3] (b)

Performed Procedure Step Start Time

140 [1/1]

---- Performed Procedure Step Description

[3]

Performed Procedure Step Description

144 [2/2]

Requested Procedure

Description [1C]

PS 3.17 - 2004

148 Page 110

Requested Procedure Code

Sequence [1C]

---- Procedure Code Sequence [2/2]

152 ---- Referenced Performed Procedure Step

Sequence [3] (d)

---- >Referenced SOP Class UID [1C] SOP Class UID [1/1]

156 ---- >Referenced SOP Instance UID [1C] SOP Instance UID [1/1]

---- Protocol Name [3] Protocol Name [1/1]

Performed Protocol Code Sequence [3] Performed Protocol Code Sequence

[1/1]

160 (a) Recommended if the Modality conforms as a SCU to the Modality Worklist SOP Class and Modality
Performed Procedure Step

(b) Recommended if the Modality conforms as a SCU to the Modality Performed Procedure Step SOP

Class

164 (c) Sequence may have one or more Items

(d) Sequence may have only one Item

(e) Worklist may have one or more Items related to one Modality Performed Procedure Step

(f) Referenced Study Sequence may have only one item. If more Study Sequences are related to the

168 Modality Performed Procedure Step, additional Scheduled Step Attribute Sequence items must be
created.

(g) Protocol Name is a series-specific protocol identification. It may be equivalent or more specific than
the one conveyed by the Performed Protocol Code Sequence for the Modality Performed

172 Procedure Step during which a series has been created. However, it cannot contradict with the
definition of a protocol in defined in the Perfomed Protocol Code Sequence.