

DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2012/03/26
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Submission date	2011/01/16

Correction Number	CP-1123
Log Summary:	Add codes and SOP Common attribute to identify data created for quality purposes
Name of Standard	PS 3.3 2011, PS 3.16 2011

Rationale for Correction:

1) Objects (images, measurements, dose reports, etc) associated with scans performed on phantoms will sometimes be stored, e.g. as part of a non-patient-related QA procedure or as part of a calibration for a patient-related procedure. Currently, there is no flag to indicate that the subject of those objects is a phantom.

Such phantom objects must be identified to be able to gather them for QA processing, or exclude them from patient-oriented activities such as interpretation, departmental performance reports, or submissions to dose repositories.

Parsing Patient Names to find/exclude ones that "sound like phantoms" is clumsy. Having all systems which might receive such objects maintain a list of patient IDs that are actually serial numbers is also awkward.

Quality Control Image (0028,0300) is a Type 3 attribute in the General Image Module which indicates whether or not this image is a quality control or phantom image (YES/NO). That helps when the objects are images. When the objects are not images, systems should not have to retrieve images referenced in the object (if any are, and if they have access to them) in the hope of finding out if the subject is a phantom. The type of Phantom is already specified in the Device Module.

A Quality Control Subject attribute is added to the Patient Demographic Module to reflect that "characteristic" of the subject of the DICOM instance.

Note: for cases where a phantom is scanned as part of a patient procedure specific calibration, the phantom objects would go into a separate study (which the patient study instances could reference as related objects for purpose of calibration) in order to avoid having instances in one study with differing Study Level values for Patient Demographic attributes.

2) When a quality assurance procedure is performed, Procedure Intent is a mandatory field for Dose Report SRs however the current codes require recording a quality assurance procedure as having diagnostic intent or interventional intent. . A Quality Intent code is added for quality assurance procedures.

3) Target Region is a mandatory field for Dose Report SRs. A Phantom code is added for use as appropriate.

Sections of documents affected

PS 3.3, PS 3.6, PS 3.16

Correction Wording:

<include proposed change below, following guidelines for formatting of changes in supplements>

Add a Quality Control Subject flag to the Patient and Patient Demographic Modules in Part 3

C.2.3 Patient Demographic Module

Table C.2-3 defines the Attributes relevant to generally describing a patient.

**Table C.2-3
PATIENT DEMOGRAPHIC MODULE ATTRIBUTES**

Attribute Name	Tag	Attribute Description
Patient's Age	(0010,1010)	Age of the Patient.
Occupation	(0010,2180)	Occupation of the Patient.
Confidentiality Constraint on Patient Data Description	(0040,3001)	Special indication to the modality operator about confidentiality of patient information (e.g., that he should not use the patients name where other patients are present).
Patient's Birth Date	(0010,0030)	Date of birth of the named patient
Patient's Birth Time	(0010,0032)	Time of birth of the named patient
Patient's Sex	(0010,0040)	Sex of the named patient. Enumerated Values: M = male F = female O = other
<u>Quality Control Subject</u>	<u>(0010,0200)</u>	<u>Indicates whether or not the subject is a quality control phantom.</u> <u>Enumerated Values:</u> <u> YES</u> <u> NO</u> <u>If this Attribute is absent, then the subject may or may not be a phantom.</u> <u>This attribute describes a characteristic of the Imaging Subject. It is distinct from Quality Control Image (0028,0300) in the General Image Module, which is used to describe an image acquired.</u>
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**Table C.7-1
PATIENT MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Patient's Name	(0010,0010)	2	Patient's full name.
Patient ID	(0010,0020)	2	Primary hospital identification number or code for the patient.
<i>Include Issuer of Patient ID Macro Table 10-18</i>			
Patient's Birth Date	(0010,0030)	2	Birth date of the patient.
Patient's Sex	(0010,0040)	2	Sex of the named patient. Enumerated Values: M = male F = female O = other
<u>Quality Control Subject</u>	<u>(0010,0200)</u>	<u>3</u>	<u>Indicates whether or not the subject is</u>

			<p>a quality control phantom.</p> <p>Enumerated Values:</p> <p><u>YES</u></p> <p><u>NO</u></p> <p>If this Attribute is absent, then the subject may or may not be a phantom.</p> <p>This attribute describes a characteristic of the Imaging Subject. It is distinct from Quality Control Image (0028,0300) in the General Image Module, which is used to describe an image acquired.</p>
Referenced Patient Sequence	(0008,1120)	3	<p>A sequence that provides reference to a Patient SOP Class/Instance pair.</p> <p>Only a single Item is permitted in this Sequence.</p>
...			

Add a Quality Control Subject in Part 6

Tag	Name	Keyword	VR	VM
<u>(0010,0200)</u>	<u>Quality Control Subject</u>	<u>QualityControlSubject</u>	<u>CS</u>	<u>1</u>

Add a code for Quality Control Intent to CID 3629 in Part 16

CID 3629 Procedure Intent

**Context ID 3629
Procedure Intent
Version: ~~20030327~~20120326**

Type: Extensible

Coding Scheme Designator	Code Value	Code Meaning
SRT	R-408C3	Diagnostic Intent
SRT	R-41531	Therapeutic Intent
SRT	R-002E9	Combined Diagnostic and Therapeutic Procedure
<u>DCM</u>	<u>113680</u>	<u>Quality Control Intent</u>

Add a definition for the code for Quality Control Intent to Annex D in Part 16

This Annex specifies the meanings of codes defined in DICOM, either explicitly or by reference to another part of DICOM or an external reference document or standard.

DICOM Code Definitions (Coding Scheme Designator "DCM" Coding Scheme Version "01")

Code Value	Code Meaning	Definition	Notes
<u>133680</u>	<u>Quality Control Intent</u>	<u>This procedure is intended to gather data that is used for calibration or other quality control purposes.</u>	

Add the code for Phantom to CID 4031 in Part 16

CID 4031 Common Anatomic Regions

**Context ID 4031
Common Anatomic Regions**

Type: Extensible Version: 20091024-20120326

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
...		
<u>DCM</u>	<u>113681</u>	<u>Phantom</u>
...