

## DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2014/06/25
Person Assigned	Rob Horn
Submitter Name	Ulrich Busch ( <a href="mailto:ulrich.busch@varian.com">ulrich.busch@varian.com</a> )
Submission Date	2013/08/30

Correction Number	CP-1343
Log Summary: Add Patient Photo to Patient Identification Modules	
Name of Standard PS 3.3 2013	
Rationale for Correction: <p>To identify the patient which is going to receive a medical procedure, using face photos has become common practice in many areas. Especially where elderly or mentally impaired patients are involved, the photo is an essential means identify the patient. E.g. in radiotherapy and surgery, applying medical procedures the wrong patient has been reported on various occasions, where patients have similar names or just have erroneously identified themselves when they have been called up in a waiting room etc.</p> <p>Therefore Patient photo should be an optional element available in modules serving to identify the patient. This change proposal adds that facility to the modules involved in patient identification.</p> <p>The face pictures may be found as part of an enterprise wide identity system, which usually provides a RESTful access to a JPEG image. For this purpose a URL alternative is provided. Other access control and security related controls for URLs are outside the scope of DICOM.</p> <p>The face pictures may be found as part of the study, or on an image archive, and accessed as a DICOM image, perhaps as a secondary capture or visible light image. For this purpose a DICOM SOP instance reference alternative is provided.</p>	
Correction Wording:	

*In PS 3.3, section 'C.2.2 Patient Identification Module, add the following:*

**C.2.2 Patient Identification Module**

Table C.2-2 defines the Attributes relevant to identifying a patient.

**Table C.2-2  
PATIENT IDENTIFICATION MODULE ATTRIBUTES**

Attribute Name	Tag	Attribute Description
Patient's Name	(0010,0010)	Patient's full name
Patient ID	(0010,0020)	Primary hospital identification number or code for the patient.
...		
<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>(0010,1100)</u></b>	<b><u>A photo to confirm the identity of a patient. Only a single Item is permitted in this Sequence. See C.2.2.1.1.</u></b>
<b><u>&gt;Include Referenced Instances and Access Macro' Table 10-3b</u></b>		
Medical Record Locator	(0010,1090)	An identifier used to find the patient's existing medical record (e.g. film jacket).

**C.2.2.1 Patient Identification Module Attributes**

**C.2.2.1.1 Referenced Patient Photo Sequence**

**A Patient Photo may be provided as an additional means to confirm the identity of the patient.**

**When the Referenced SOP Sequence (0008,1199) is present, the Referenced SOP Class UID (0008,1150) shall be either VL Photographic Image Storage (1.2.840.10008.5.1.4.1.1.77.1.4) or Secondary Capture Image Storage (1.2.840.10008.5.1.4.1.1.7).**

**When the WADO Retrieval Sequence (0040,E023) is present, the Retrieve URI (0040,E010) shall refer to a JPEG image if the referenced server is not WADO-compliant.**

<i>In PS 3.3, section 'C.7 Patient Module', add the following:</i>
--

**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.
....			
<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>(0010,1100)</u></b>	<b><u>3</u></b>	<b><u>A photo to confirm the identity of a patient. Only a single Item is permitted in this Sequence. See C.2.2.1.1.</u></b>
<b><u>&gt;Include Referenced Instances and Access Macro Table 10-3b</u></b>			

In PS 3.3, section 'C.30.4 Unified Procedure Step Relationship Module', add the following:

**C.30.4 Unified Procedure Step Relationship Module**

Table C.30.4-1 specifies the Attributes that describe the relationship of a Unified Procedure Step (UPS).

**Table C.30.4-1  
Unified Procedure Step Relationship Module Attributes**

<b>Attribute Name</b>	<b>Tag</b>	<b>Attribute Description</b>
Patient's Name	(0010,0010)	Patient's full legal name.
Patient ID	(0010,0020)	Primary hospital identification number or code for the patient. See C.30.4.1
...		
Patient's Sex	(0010,0040)	Sex of the named Patient. Enumerated Values: M = male F = female O = other
<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>(0010,1100)</u></b>	<b><u>A photo to confirm the identity of a patient.</u></b> <b><u>Only a single Item is permitted in this Sequence.</u></b>  <b><u>See C.2.2.1.1.</u></b>
<b><u>&gt;Include Referenced Instances and Access Macro'</u></b> <b><u>Table 10-3b</u></b>		

In PS 3.4, section 'CC.2.5.1.3 UPS Attribute Service Requirements', add the following:

**CC.2.5.1.3 UPS Attribute Service Requirements**

This table combines the attribute requirements for multiple DIMSE services (N-CREATE, N-SET, N-GET, C-FIND) to facilitate consistency between the requirements.

See PS 3.4 Section 5.4 for the meaning of the requirement codes used in the N-CREATE, N-SET, N-GET and Return Key columns in the following table.

See PS 3.4 C.1.2 for the meaning of the requirement codes used in the Match Key column in the following table.

See Table CC.2.5-1 for the meaning of the requirement codes used in the Final State column of the following table.

**Table CC.2.5-3  
UPS SOP CLASS N-CREATE/N-SET/N-GET/C-FIND ATTRIBUTES**

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
...								
<b>Unified Procedure Step Relationship Module</b>								
Patient's Name	(0010,0010)	2/2	Not allowed	O	3/2	R	2	
Patient ID	(0010,0020)	1C/2	Not allowed	O	3/2	R	2	Required if the subject of the workitem requires identification or if the workitem is expected to result in the creation of objects that identify the subject. See PS 3.3 C.30.4.1

*Include Issuer of Patient ID Macro Table CC.2.5-2e*

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
Other Patient IDs Sequence	(0010,1002)	2/2	3/3	O	3/2	O	2	
>Patient ID	(0010,0020)	1/1	1/1	O	-/1	O	1	
<i>Include Issuer of Patient ID Macro Table CC.2.5-2e</i>								
Patient's Birth Date	(0010,0030)	2/2	Not allowed	O	3/2	R	2	
Patient's Sex	(0010,0040)	2/2	Not allowed	O	3/2	R	2	
<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>(0010,1100)</u></b>	<b><u>3/3</u></b>	<b><u>3/3</u></b>	<b><u>O</u></b>	<b><u>3/3</u></b>	<b><u>:</u></b>	<b><u>3</u></b>	
<b><i>&gt;Include Referenced Instances and Access Macro Table CC.2.5-2c</i></b>								

Add the following row to PS3.6, Section 6

<b><u>(0010,1100)</u></b>	<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>ReferencedPatientPhotoSequence</u></b>	<b><u>SQ</u></b>	<b><u>1</u></b>
---------------------------	---	--	------------------	-----------------

Add the following row to PS 3.15 Table E.1-1

**Table E.1-1  
Application Level Confidentiality Profile Attributes**

Attribute Name	Tag	Retired (from PS 3.6)	In Std. Comp. IOD (from PS 3.3)	Basic Profile	Retain Safe Private Option	Retain UIDs Option	Retain Device Ident. Option	Retain Patient Chars. Option	Retain Long. Full Dates Option	Retain Long. Modif. Dates Option	Clean Desc. Option	Clean Struct. Cont. Option	Clean Graph. Option
...													
<b><u>Referenced Patient Photo Sequence</u></b>	<b><u>(0010,1100)</u></b>	<b><u>N</u></b>	<b><u>Y</u></b>	<b><u>X</u></b>									

### **E.3.2 Clean Recognizable Visual Features Option**

When this Option is specified in addition to an Application Level Confidentiality Profile, if there is sufficient visual information within the Pixel Data of a set of instances to allow an individual to be recognized from the instances themselves or a reconstruction of a set of instances, then sufficient removal or distortion of the Pixel Data shall be applied to prevent recognition.

This may require intervention of or approval by a human operator.

The Attribute Recognizable Visual Features (0028,0302) shall be added to the Dataset with a value of "NO".

- Notes:
1. This capability is called out as a specific option, since it may be extremely burdensome in practice to implement and is unnecessary for the vast majority of anatomic sites and modalities.
  2. In the case of full-face photographs, the risk of visual identification is obvious, and numerous techniques are well established for de-identification, such as applying black rectangles over the eyes, etc.
  3. In the case of high-resolution cross-sectional imaging of the entire head and neck, it has been suggested that a 3D volume or surface rendering of the pixel data may be sufficient to allow identification (or matching against a constrained subset of individuals) under some circumstances.
  4. Application of this option may render the pixel data unusable for the purpose for which it has been collected, and hence its use may require a compromise between de-identification and utility based on obtaining appropriate ethical approval and informed consent. Consider for example, the case of dental images.
  - 5. Since the Referenced Patient Photo Sequence is removed as part of the Basic Profile, support of the Clean Recognizable Visual Features option does not add requirements for that attribute.**