

DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2018/03/12
Person Assigned	Andrew Casertano mailto: acasertano@gmail.com
Submitter Name	Andrew Casertano, Brent Dove acasertano@gmail.com
Submission Date	2018/03/12

Correction Number	CP-1570
Log Summary:	Add Dental Acquisition Context Module
Name of Standard:	2017d PS3.3, PS3.6, PS3.16
Rationale for Correction:	<p>Dentistry needs an Acquisition Context Module for clinical and forensic use cases.</p> <p>The Visible Light Photography IOD includes the 'Acquisition Context Module' to describe conditions present during data acquisition. Rather than develop a new module, a new context group provides the required standard attributes. <i>Other attributes may be vendor-specific; therefore, it may not be possible to commonly define the commonly used values. However, being able to convey those in a coded way in the Acquisition Context Sequence appears to be much more favorable and informative to the end-user, compared to the use of private tags.</i></p>

Open Item: We initially created new VL photographic parameters module since the C.8.17.3 Ophthalmic Photographic parameters module contains eye care specific attributes. WG-6 recommended that we modify the existing [A.32.4. VL Photographic Image IOD](#) (see section 3.3., A.32.4.), not create a new sequence.
 Closed Item: Another consideration to the general vs. dental specific solution, WG-6 referred to C.8.12 VL Modules and Functional Group Macros (see section 3.3, C.8.12). WG-6 recommended we reuse existing optical path module attributes (see section 3.3, C.8.12.5). Created CP 1669, Add Optical Path Module to all Visible Light family IODs and remove from this CP.

Open Item: We will need to build new code tables (see section 3.16, part C.). Table example cited include CID 92 Joint Position During Acquisition and a new PS3.16 Annex C Acquisition Context Template to contain Acquisition Perspective, Image Perspective, Subject State, Occlusal Relationship as CODE content items with a new CID for the coded values for each of them, just like TID 3401, and reference it as an Attribute Constraint for this application in the VL Photographic IOD section of PS3.3, along with constrains on Anatomic Region Sequence, etc. New WG 6 direction to us is to create View Code Sequence instead of Acquisition Context.

Closed Item: Our discussion with WG-6 resulted in DICOM needs to make anatomical information encoding in general and visible light images consistent. For visible light imaging, such as the VL Photographic IOD, Anatomic Region Sequence is included via the VL Image Module, but Image Laterality is not, which is inconsistent with the pattern established, for example, by Digital X-Ray IODs. The Image laterality attribute is in widespread use, rather than requiring that it be sent as a modifier of Primary Anatomic Structure Sequence, which is rarely used in practice. CP-1744 will add the necessary attributes as optional in the General Image Module. These are image-level attributes and cannot be added to the General Series Module.

Open Item: WG-6 requests that we divide our tables between existing and new SNOMED/SNODENT codes that are not yet in the DICOM standard.

Item #1: Amend PS3.6 Annex A, Table A-3, CONTEXT GROUP UID VALUES

**Table A-3
CONTEXT GROUP UID VALUES**

Context UID	Context Identifier	Context Group Name
...		
1.2.840.10008.6.1.XXXX	40XX	Dental Acquisition Context Module
...		

Item #2: Add TID xxxx Dental Acquisition Context Module to PS3.16 Annex C as follows:

TID xxxx Dental Acquisition Context Module

Type: Extensible
 Order: Non-Significant
 Root: No

Table TID xxxx. Dental Acquisition Context

	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1	CODE	DT (109054,DCM,"Patient State")	1	M		DCID xxxx "Dental Procedural State"

	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
				Laterality		Values"
2	INCLUDE	BTID xxxx "Laterality"	1	U		CID 244 Laterality \$LateralityValue Coded term or Context Group for value of Laterality
3	INCLUDE	BTID xxxx "Anatomic Region"	1	U		CID 4028 "Craniofacial Anatomic Regions"
4	INCLUDE	BTID xxxx "Acquisition Perspective"	1	U		CID xx Dental Acquisition Perspective
5	INCLUDE	BTID xxxx "Image Perspective"	1	U		CID xx Dental Image Perspective
6	INCLUDE	BTID xxxx "Subject State"	1	U		TID 1007. Subject Context, Patient CID xx Dental Patient Subject State
7	INCLUDE	BTID xxxx "Occlusal Relationship"	1	U		

Item #3: Modify PS3.16 CID 4028 as follows: Note Bolded entries not currently in table 4028 anatomic regions but can be found in table 7601 cancer anatomic sites.

CID 4028 Craniofacial Anatomic Regions

Type: Extensible
Version: 2018mmdd

Table CID 4028. Craniofacial Anatomic Regions

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	T-D006D	Bone structure of head and/or neck	312779009	C0730130
SRT	T-11501	Cervical spine	122494005	C0728985
SRT	T-11156	Ethmoid bone	52374004	C0015027
SRT	T-AB100	External ear	28347008	C0013453
SRT	T-AA770	Eyeball	79652003	C0229242
SRT	T-D0801	Eye region	371398005	C0015392
SRT	T-D1200	Face	89545001	C0015450
SRT	T-11196	Facial bones	91397008	C0015455
SRT	T-51200	Floor of mouth	3630002	C0026638
SRT	T-11110	Frontal bone	74872008	C0016732

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
<u>SRT</u>	<u>T-54910</u>	<u>Gingiva (gingival structure)</u>	<u>113279002</u>	
<u>SRT</u>	<u>T-51110</u>	<u>Hard palate (hard palate structure)</u>	<u>90228003</u>	
SRT	T-D1100	Head	69536005	C0018670
SRT	T-D1000	Head and Neck	774007	C0460004
SRT	T-11190	Hyoid bone	21387005	C0020417
SRT	T-AB700	Inner ear	22945000	C0022889
SRT	T-AB959	Internal Auditory Canal	361078006	C1283773
SRT	T-D1213	Jaw region	661005	C0022359
SRT	T-1115A	Lacrimal bone	6229007	C0222733
SRT	T-24100	Larynx	4596009	C0023078
SRT	T-52000	Lip	48477009	C0023759
SRT	T-11180	Mandible	91609006	C0024687
SRT	T-11133	Mastoid bone	59066005	C0446908
SRT	T-11170	Maxilla	70925003	C0024947
SRT	T-AB300	Middle ear	25342003	C0013455
SRT	T-13100	Muscle of head	22688005	C0224097
SRT	T-13300	Muscle of neck	81727001	C0027532
SRT	T-11149	Nasal bone	74386004	C0027422
SRT	T-D1600	Neck	45048000	C0027530
SRT	T-11102	Optic canal	55024004	C0450102
<u>SRT</u>	<u>T-51300</u>	<u>Oral mucosa</u>	<u>113277000</u>	<u>C0026639</u>
SRT	T-D14AE	Orbital structure	363654007	C0029180
SRT	T-11160	Palatine bone	51283005	C0222734
SRT	T-22000	Paranasal sinus	2095001	C0030471
SRT	T-11120	Parietal bone	24924006	C0030558
<u>SRT</u>	<u>G-A101</u>	<u>Pharynx (pharyngeal structure)</u>	<u>54066008</u>	
SRT	T-61007	Salivary gland	385294005	C0036098
SRT	T-11100	Skull	89546000	C0037303

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	T-51120	Soft palate	49460000	C0030219
SRT	T-11150	Sphenoid bone	73117003	C0037884
SRT	T-61300	Submandibular gland	54019009	C0038556
SRT	T-11130	Temporal bone	60911003	C0039484
SRT	T-15290	Temporomandibular joint	53620006	C0039493
SRT	T-C5100	palatine tonsil	75573002	C0040421
SRT	T-53000	Tongue	21974007	C0040408
SRT	T-54010	Tooth	38199008	C0040426
SRT	T-25000	Trachea	44567001	C0040578
SRT	T-51130	palatine uvula	26140008	C0042173
SRT	T-11011	Vertebral column and cranium	110517009	C1266914
SRT	T-11166	Zygoma	13881006	C0043539

Item #4: add PS3.16 Table CID xxx1. Dental Acquisition Perspective as follows:

CID xxx1 Dental Acquisition Perspective

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
Type: Non-Extensible
Version: 2018mmdd
UID:

Table CID xxx1. Dental Acquisition Perspective

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	G-A145	Sagittal	30730003	
SRT	G-A138	Coronal	81654009	
SRT	R-40810	Occlusal projection	710098004	

Item #5: add PS3.16 Table CID xxx2. Dental Image Perspective as follows:

CID xxx2 Dental Image Perspective

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
Type: Non-Extensible

Table CID xxx2. Dental Image Perspective

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	XX	Direct	255589003	
SRT	XX	indirect and mirrored	XX	
SRT	XX	indirect	255541007	
SRT	XX	mirror	47162009	

Item #6: Modify PS3.16 Table TID 1007. Subject Context, Patient to include "Subject State" as follows:

Table TID 1007. Subject Context, Patient

Identifies (and optionally describes) a patient who is the subject.

Type: Extensible

Order: Significant

Table TID 1007. Subject Context, Patient

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			UIDREF	EV (121028, DCM, "Subject UID")	1	U		E.g., SOP Instance UID of Detached Patient Instance
2			PNAME	EV (121029, DCM, "Subject Name")	1	MC	Required if not inherited.	Defaults to value of Patient's Name (0010,0010) in Patient Module
3			CODE	EV (121030, DCM, "Subject ID")	1	MC	Required if not inherited.	Defaults to value of Patient ID (0010,0020) in Patient Module
4			DATE	EV (121031, DCM, "Subject Birth Date")	1	U		Defaults to value of Patient's Birth Date (0010,0030) in Patient Module
5			CODE	EV (121032, DCM, "Subject Sex")	1	U		Defaults to value equivalent to Patient's Sex (0010,0040) in Patient Module DCID 7455 "Sex"
6			NUM	EV (121033, DCM, "Subject Age")	1	U		Defaults to value of Patient's Age (0010,1010) in Patient Study Module UNITS = DCID 7456 "Units of Measure for Age"

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
7			CODE	EV (121034, DCM, "Subject Species")	1	MC	Required if not inherited.	DCID 7454 "Species" Defaults to (L-85B00, SRT, "homo sapiens").
8			CODE	EV (121035, DCM, "Subject Breed")	1	U		Defaults to value of Patient Breed Code Sequence (0010,2293) in General Patient Module DCID 7480 "Breed"
<u>9</u>			<u>CODE</u>	<u>EV (121035, DCM, "Subject State")</u>	<u>1</u>	<u>U</u>		<u>Defaults to value of Patient</u>

Item #7: add PS3.16 Table CID xxx3. Dental Patient Subject State as follows:

CID xxx3 Dental Patient Subject State

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)

Type: Non-Extensible

Version: 2018mmdd

Table CID xxx3. Dental Patient Subject State

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	XX	Lip Relaxed	XX	
SRT	XX	Smile	225583004	
SRT	XX	Open Mouth	262016004	
SRT	R-421A4	Mouth closed	47162009	

Item #8: add PS3.16 Table CID xxx4. Occlusal Relationship as follows:

CID xxx4 Occlusal Relationship

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)

Type: Non-Extensible

Version: 2018mmdd

Table CID xxx4. Occlusal Relationship

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	XX	Centric occlusion of teeth	110320000	

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	XX	Null	225583004	

Item #9: Add PS3.16 CID xxx5. Dental Acquisition Context.

Note: Request from WG-6 to Divide table into two, one with existing DICOM code values and another table with new codes, as follows:

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
Type: Extensible
Version: 2018

Table CID XXX5 Dental Acquisition Context

Coding Scheme Designator	Code Value	Code Meaning	SNODENT Concept ID	UMLS Concept ID
SRT	G-A101	Left	7771000	
SRT	G-A100	Right	24028007	
SRT	G-A102	Both (right and left)	51440002	
SRT	R-40997	Midline	399488007	
SRT	T-D1200	Face Structure	895445001	
SRT	T-11170	Bone Structure of Maxilla	70925003	
SRT	T-11180	Bone Structure of Mandible	91609006	
SRT	T-D1213	Jaw (jaw region structure)	661005	
SRT	T-54910	Gingiva (gingival structure)	113279002	
SRT	T-54540	Incisor tooth (structure of incisor tooth)	78509001	
SRT	T-54560	Premolar tooth (structure of premolar tooth)	7644003	
SRT	T-54570	Molar tooth (molar tooth structure)	76928009	
SRT	T-52000	Lip (lip structure)	48477009	
SRT	T-53000	Tongue (tongue structure)	2194007	
SRT	T-51110	Hard palate (hard palate structure)	90228003	
SRT	T-51120	Soft palate (soft palate structure)	49460000	
SRT	T-51200	Floor of mouth (floor of mouth structure)	3630002	
SRT	T-51300	Oral mucosa (oral mucosa membrane structure)	113277000	
SRT	G-A101	Pharynx (pharyngeal structure)	54066008	

SRT	G-A100	Tonsil (tonsillar structure (palatine))	75573002	
SRT	G-A102	Uvula (uvula palatine structure)	26140008	
SRT	R-40997	Anterior	255549009	
SRT	T-D120A	Posterior	255551008	
SRT	T-111D4	Superior	264217000	
SRT	T-111D3	Inferior	261089000	
SRT	T-D1213	Dorsal	255554000	
SRT	T-54910	Ventral	255549009	
SRT	T-54540	Medial	255561001	
SRT	T-54560	Lateral	49370004	
SRT	T-54570	Buccal(facial)	261062005	
SRT	T-52000	Labial	261114002	
SRT	T-53000	Lingual	261121002	
SRT	T-54011	Occlusal (structure of occlusal surface of teeth)	83473006	
<u>SRT</u>	<u>G-A119</u>	<u>Distal</u>	<u>46053002</u>	
<u>SRT</u>	<u>G-A119</u>	<u>Incisal</u>	<u>710097009</u>	

Item #10: Add PS3.16 Context ID XXXX Acquisition Perspective Sequence for Dentistry as follows:

**Context ID XXXX
Acquisition Perspective Sequence for Dentistry**

Type: Extensible

Version: 2018

<u>Coding Scheme Designator</u>	<u>Code Value</u>	<u>Code Meaning</u>	<u>SNODENT Concept ID</u>	<u>UMLS Concept ID</u>
SRT	R-XXXX	Mesial	710099007	
SRT	R-XXXX	Lip Relaxed		
SRT	R-XXXX	Front, Direct Image Perspective	255589003	
SRT	R-XXXX	Centric occlusion of teeth	110320000	
SRT	R-XXXX	Smile	225583004	
SRT	R-XXXX	Indirect Image Perspective	255541007	
SRT	R-XXXX	Mirrored Image Perspective	47162009	
SRT	R-XXXX	Indirect and Mirrored Image Perspective		

SRT	R-XXXX	Open Mouth	262016004	
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