DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2018/03/12
Person Assigned	Andrew Casertano
Submitter Name	Andrew Casertano, WG-22
Submission Date	2018/03/12

Correction Number	CP-1571
Log Summary: Add Orthodontics and Forensic Odontology View Sets to Structured Display	
Name of Standard: PS 3.3, 3.6, 3.17	
Rationale for Correction: Additional dental view sets are required to support structured displays for Orthodontics and Forensic Odontology. These sets include visible light images. They are based on classifications provided by the American Board of Orthodontics (ABO) and the National Institute of Standards and Technology (NIST) Forensics Science Standards Board.	
Open Issue (Will close after coordinating with SNOMED and DICOM WG6): According to SNOMED representative, we can include qualifier in our new request. This will be how we capture the patient state of "relaxed" in "relaxed lip" - at rest or at ease, generally relaxed lips are not touching. Other addition is "indirect **and** mirrored image perspective" Two SNOMED/SNODENT revisions were submitted in February 2018. Correction Wording:	

Update PS3.3 Table C.11.16-1. Structured Display Module Attributes as follows:

Table C.11.16-1. Structured Display Module Attributes

Attribute Name	Tag	Type	Attribute Description
…			
Hanging Protocol Name	(0072,0002)	3	Identifies the hanging protocol that was used in the creation of this structured display. See Table OO.1.1-1 "Hanging Protocol Names for Dental Image Layout based on JSOMR classification" in PS3.17 for standard hanging protocols for dentistry. **See PS3.17 Table O.1.1-n for standard hanging protocols for dentistry.**

Attribute Name	Tag	Type	Attribute Description
...			
Hanging Protocol Creator	(0072,0008)	3	Identifies the creator of the Hanging Protocol. See Table OO.1.1-1 "Hanging Protocol Names for Dental Image Layout based on JSOMR classification" in PS3.17 for standard hanging protocols for dentistry. **See PS3.17 Table O.1.1-n for standard hanging protocols for dentistry.**

Add the following material to the end of OO.1.1 in PS3.17

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4. An orthodontic provider transfers images to other parties for clinical reasons such as:

    a. transferring records to a different orthodontic provider for continuation of treatment;

    b. referral to consultant(s);

    c. laying out images for the American Board of Orthodontics Clinical Examination;

    d. documenting treatment progress or growth;

    e. supporting processes at payers.

Both parties agree on this specific ABO-01 image layout for clarification and clear communication.

It is required that all images that populate a particular structured display are acquired on the same date.

Given that proper consent and legal requirements have been met, the image acquiring orthodontic provider will oversee the export of images in this DICOM Structured Display layout in such a way that will meet security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...).

The image-acquiring orthodontic provider or staff will then initialize the transfer of the exported DICOM Structured Display image set to the other party. This procedure shall also meet security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...), and can happen usually over email (as specified in ADA SCDI TR-1085) or other third party platforms that are able to implement security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...).

The receiving party imports the DICOM Structured Display image set and visualizes the images in the same layout.

1.1 Forensics Use Case

5. An orthodontic provider needs to transfer images for forensic reasons to other parties such as a Law Enforcement Agency (LEA).

Both parties agree on this specific ABO-01 image layout for analysis, comparison, collection, preservation and presentation of evidence. A consistent DICOM Structured Display layout will greatly facilitate the analysis by the LEA personnel for their purposes.

It is recommended that all images that populate a particular structured display be acquired on the same date.

Given that proper consent and legal requirements have been met, the image acquiring orthodontic provider will oversee the export of images in this DICOM Structured Display layout in such a way that will meet security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...).

The image acquiring orthodontic provider or staff will then initialize the transfer of the exported DICOM Structured Display image set to the other party. This procedure shall also meet security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...), and can happen usually over email (as specified in ADA SCDI TR-1085) or other third party platforms that are able to implement security and privacy requirements enforced by local laws and regulations (e.g., HIPAA, GDPR, ...).

The receiving party imports the DICOM Structured Display image set and visualizes the images in the layout.

Table 0.1.1.2 Hanging Protocol Names for Dental Image Layout is based on ABO classification and Acquisition Perspective Sequence. It shows a structured display standard template, where Viewset ID is based on the American Board of Orthodontics (ABO) classification.

Note: Laterality, Anatomic Region Sequence and Anatomic Region Modifier describe the subject during acquisition.

2 Image Layout

The lower left coordinate is (0,0) and the lower right coordinate is (1,0). The upper left coordinate is (0,1) and the upper right coordinate is (1,1).

Table O.1.1-2 - Hanging Protocol Names for Dental Image Layout based on ABO classification and Acquisition Perspective Sequence

ID	Name	Layout
ABO-01	The American Board of Orthodontics (ABO) Case Submission Display	

3 Image Metadata

- ILC: Image Location Code

- CO (centric occlusion, showing the teeth together in maximum intercuspation)

- CR (centric relation, showing the relationships of the teeth when the mandibular condyles are seated in the temporomandibular joints)
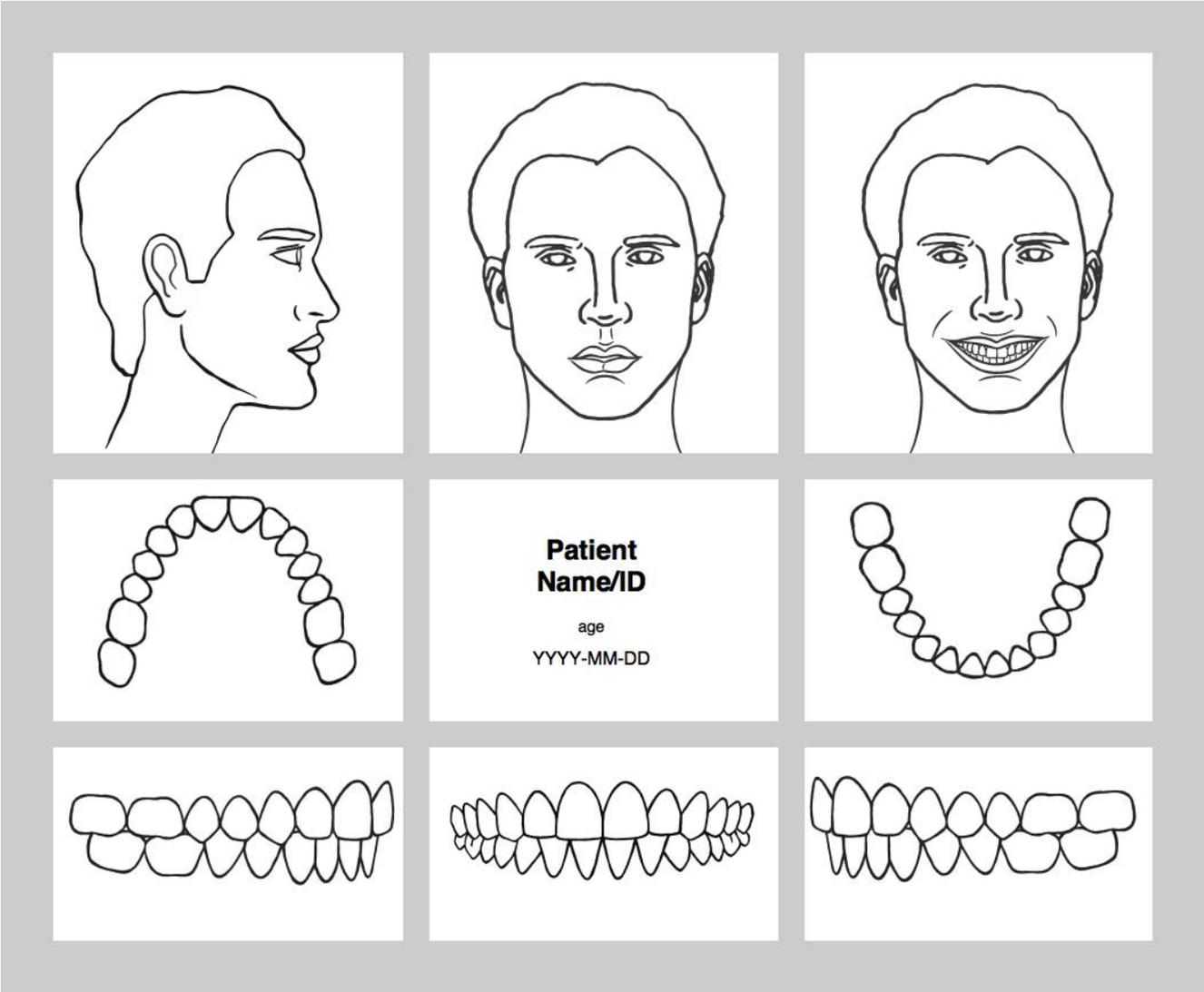
Note: The ABO-1 template usually displays CO relationships, but if a discrepancy exists between CO and CR perhaps due to a lateral or anteroposterior functional shift, a second supplemental template may be assembled to demonstrate CR relationships. In addition, a supplemental template could be assembled with the extraoral photos showing lips closed (LC) rather than relaxed lips for the purpose of demonstrating lip strain.

Table O.1.1-3 - Hanging Protocol Names for Dental Image Layout based on ABO classification and Acquisition Perspective Sequence

ILC	ABO Description	Laterality	Anatomic Region Sequence	Anatomic Region Modifier	Acquisition Perspective	Image Perspective	Subject State	Occlusal Relationship
01	EO.RP.LR.CO Extraoral, Right Profile (subject is facing observer's right), Lips Relaxed, Centric Occlusion	(G-A100, SRT, "Right")	(T-D1200, SRT, "Face")	Null	(G-A145, SRT, "Sagittal")	(XX, SRT, "Direct") SCTID: 255589003	(XX, SRT, "Lip Relaxed") SCTID:	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000
02	EO.FF.LR.CO Extraoral, Full Face, Lips Relaxed, Centric Occlusion	(G-A102, SRT, "right and left")	(T-D1200, SRT, "Face")	Null	(G-A138, SRT, "Coronal")	(XX, SRT, "Direct") SCTID: 255589003	(XX, SRT, "Lip Relaxed") SCTID:	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000
03	EO.FF.FS.CO Extraoral, Full Face, Lips Relaxed, Centric Occlusion	(G-A102, SRT, "Right and left")	(T-D1200, SRT "Face")	Null	(G-A138, SRT "Coronal")	(XX, SRT, "Direct") SCTID: 255589003	(XX, SRT, "Smile") SCTID: 225583004	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000
04	IO.MX.MO.OV.WM.BC Intraoral, Maxillary, Mouth Open, Occlusal View, With Mirror, But Corrected	(G-A102, SRT, "Right and left")	(T-111D4, SRT, "Maxilla")	Null	(R-40810, SRT "Occlusal projection")	(XX, SRT, "indirect and mirrored")	(XX, SRT, "Open Mouth") SCTID: 262016004	Null
05	Text box (e.g.: Patient's Initials, Patient's Age in years-months, Date photographs taken)							
0	IO.MD.MO.OV.WM.BC	(G-	(T-11180,	Null	(R-40810,	(XX, SRT,	(XX, SRT,	Null

0 6	Intraoral, Mandibular, Mouth Open, Occlusal View, With Mirror, But Corrected	A102, SRT, "Right and left")	SRT, "Mandible")		SRT, "Occlusal projection")	"indirect and mirrored")	"Open Mouth ") SCTID: 262016004	
0 7	IO.RB.CO.NM or IO.RB.CO. WM.BC Intraoral, Right Buccal Segment, Centric Occlusion, No Mirror (or With Mirror But Corrected)	(G-A100, SRT, "Right")	(T-D1213, SRT, "Jaw region")	(T-51305, SRT, "buccal mucosa")	(G-A145, SRT, "Sagittal")	(XX, SRT, "Direct") SCTID: 255589003	(R-421A4, SRT, "Mouth closed")	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000
0 8	IO.FV.CO.NM Intraoral, Frontal View, Centric Occlusion, No Mirror	(G-A102, SRT, "Right and left")	(T-D1213, SRT, "Jaw region")	(T-51305, SRT, "buccal mucosa")	(G-A138, SRT, "Coronal")	(XX, SRT, "Direct") SCTID: 255589003	(R-421A4, SRT, "Mouth closed")	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000
0 9	IO.LB.CO.NM or IO.LB.CO.WM.BC Intraoral, Left Buccal Segment, Centric Occlusion, No Mirror (or With Mirror But Corrected)	G-A101, SRT "Left")	(T-D1213, SRT, "Jaw region")	(T-51305, SRT, "buccal mucosa")	G-A145, SRT, "Sagittal")	(XX, SRT, "Direct") SCTID: 255589003	(R-421A4, SRT, "Mouth closed")	(XX, SRT, "Centric occlusion of teeth") SCTID: 110320000

4 Examples

Patient
Name/ID

age

YYYY-MM-DD

938F.33

16y 7m

2016-01-17