

DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2024-06-10
Person Assigned	
Submitter Name	Ingo.Wilkening@siemens-healthineers.com
Submission Date	2024-05-16

Correction Number	CP-2409																		
Log Summary:	Multiple Inconsistencies of DCM CodeMeanings in PS3.16 table D-1 versus CIDs																		
Name of Standard	DICOM PS3.16 2024b - Content Mapping Resource																		
Rationale for Correction:	<p>The part 3.16 contains 64 inconsistencies where the CodeMeaning used in a CID is different than the CodeMeaning given in Table D-1. DICOM Controlled Terminology Definitions.</p> <p>While some differences like obsolete spaces seem to be minor issues, they hinder the evaluation and test of Structured Reports in automated test systems.</p> <p>We therefor suggest correcting all of them.</p> <p>Kind of observations:</p> <ul style="list-style-type: none"> In the case of codes 109931 / 109932, CodeMeaning is flipped in D-1 against in CID 8301 <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>DCM Code</th> <th>CodeMeaning in D-1</th> <th>CodeMeaning in CID 3487</th> </tr> </thead> <tbody> <tr> <td>109931</td> <td>DIN Grayscale Pattern</td> <td>DIN Geometry Pattern</td> </tr> <tr> <td>109932</td> <td>DIN Geometry Pattern</td> <td>DIN Grayscale Pattern</td> </tr> </tbody> </table> <ul style="list-style-type: none"> In the case of codes 122383 / 122384, CodeMeaning is flipped in D-1 against in CID 3487 <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>DCM Code</th> <th>CodeMeaning in D-1</th> <th>CodeMeaning in CID 3487</th> </tr> </thead> <tbody> <tr> <td>122383</td> <td>Entire Pullback</td> <td>Stented Region</td> </tr> <tr> <td>122384</td> <td>Stented Region</td> <td>Entire Pullback</td> </tr> </tbody> </table> <ul style="list-style-type: none"> In most of the other 60 cases the text is slightly textual different There are a few cases where only a space makes the difference 122247 in D-1: VO2male = BSA (138.1 - 11.49 * loge(age) + 0.378 * HRf) 122247 in CID 3664: VO2male = BSA (138.1 - 11.49 * loge(age) + 0.378*HRf) Some differences highlight obvious typos: 126345 in D-1: Gamma Capillary Transit Time (GCCT) Model 126345 in CID 4101: Gamma Capillary Transit Time (GCTI) Model There are cases where the same CodeMeaning from D-1 is used multiple times in CIDs, but different in other CIDs. In such cases the more often variant should be favoured. Patient Positioning Problem used in CID 4222 Positioning used in from D-1 used correctly used in CID 6135, CID 7011, E-1. French, F-1. Japanese 	DCM Code	CodeMeaning in D-1	CodeMeaning in CID 3487	109931	DIN Grayscale Pattern	DIN Geometry Pattern	109932	DIN Geometry Pattern	DIN Grayscale Pattern	DCM Code	CodeMeaning in D-1	CodeMeaning in CID 3487	122383	Entire Pullback	Stented Region	122384	Stented Region	Entire Pullback
DCM Code	CodeMeaning in D-1	CodeMeaning in CID 3487																	
109931	DIN Grayscale Pattern	DIN Geometry Pattern																	
109932	DIN Geometry Pattern	DIN Grayscale Pattern																	
DCM Code	CodeMeaning in D-1	CodeMeaning in CID 3487																	
122383	Entire Pullback	Stented Region																	
122384	Stented Region	Entire Pullback																	
For more details on observations, please see section "Correction Wording".																			

Further Rational for Correcting:

Correction Wording:

We assume that implementers of SRs rather used the CodeMeanings found in the CIDs. That is because when implementing the template by TID, they will look at the necessary CIDs. The table D-1 is more the general definition of the codes. We assume it is less used by implementers.

We assume that:

- Changes in the table D-1 may have a low impact on existing implementations.
- Changes in the CIDs would probably have a high impact on implementations and most likely require software code changes.

→ For that reason, we suggest in most of the cases changing the texts in table D-1, and to keep the texts in the CIDs.

We are aware that in some cases the text in D-1 looks more precise:

CodeValue	CodeMeaning in D-1	CodeMeaning in CID 6164 Time Interval
111399	Timeframe uncertain	Not sure

But given the impact for implementers, we still suggest preferring the texts from the CIDs. And, in TID 9003 “Estimated Timeframe” = “Not sure” reads better

Change DICOM PS3.16, Table D-1

For the flipped codes already mentioned in above CP rationale

DCM CodeValue	CodeMeaning in Table D-1	CodeMeaning in CID	Used in which CID
109931	DIN Grayscale Pattern	DIN Geometry Pattern	CID 8301 Test Pattern Code
109932	DIN Geometry Pattern	DIN Grayscale Pattern	CID 8301 Test Pattern Code
122383	Entire Pullback	Stented Region	CID 3487 Intravascular Volumetric Region
122384	Stented Region	Entire Pullback	CID 3487 Intravascular Volumetric Region

change Table D-1 (please keep table sorted by number):

CodeValue	CodeMeaning	Definition
409932 109931	DIN Geometry Pattern	Test image "Bild 3" for the geometrical imaging properties of imaging devices. See [DIN 6868-57] .
409934 109932	DIN Grayscale Pattern	Test image "Bild 2" for the gray-scale reproduction of imaging devices. See [DIN 6868-57] .
422384 122383	Stented Region	Measurement region occupied by the stent .
422383 122384	Entire Pullback	Measurement region that encompasses the entire vessel imaged in a single pullback acquisition.

Change DICOM PS3.16, Table D-1

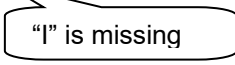
Following are textual changes where the CodeMeaning used in the CIDs should be preferred, and same be used in Table D-1. Entries have been checked that current D-1 CodeMeaning does not appear in other CIDs.

Data in table below was derived from DOCBOOK format found in part16.xml.

Table is sorted by CodeValue.

Update Table D-1, change the CodeMeaning column as:

CodeValue	CodeMeaning in Table D-1 before change:	CodeMeaning in Table D-1 after change (as taken from CID):	CodeMeaning is used in which CID												
109014	350f thermal CO	350f thermal/dye dilution CO	CID 3337 Hemodynamic Annotation CID is referenced in PS3.3 A.34.6.4.9 Waveform Annotation Module												
109015	700f thermal CO	700f thermal/dye dilution CO													
109031	Start of thermal cardiac output bolus	Start of thermal CO													
111399	Timeframe uncertain	Not sure	CID 6164 Time Interval												
111443	Target completely contained in the specimen	Target contained in the specimen	CID 6066 Target Confirmation												
113082	N-acetylaspartate /Creatine Ratio	N-acetylaspartate/Creatine Ratio	CID 4033 MR Proton Spectroscopy Metabolite Delete obsolete space characters.												
113083	N-acetylaspartate /Choline Ratio	N-acetylaspartate/Choline Ratio													
113096	Creatine+Choline/ Citrate Ratio	Creatine+Choline/Citrate Ratio													
113132	Single subject selected from group	Single subject extracted from group	CID 7165 Abstract Segmentation Type												
113211	Deterministic Tracking Algorithm	Deterministic	CID 7262 Diffusion Tractography Algorithm Family CID is used in PS3.3, C.8.33.2 Tractography Results Module , but codes not mentioned there.												
113212	Probabilistic Tracking Algorithm	Probabilistic													
113213	Global Tracking Algorithm	Global													
113217	Bootstrap Tracking Algorithm	Bootstrap	CID 7260 Diffusion Acquisition Value Type referenced in PS3.3 C.8.33.2 Tractography Results Module												
113227	Multi Shot EPI	Multiple Shot EPI													
113543	Generator	Radioisotope Generator	CID 10041 Source of Radioisotope Activity Information D-1 column "Notes" has text " Radioisotope Generator"												
121130	Start Procedure Action Item	Start Procedure Action	CID 3421 Procedure Action												
121131	End Procedure Action Item	End Procedure Action													
121132	Suspend Procedure Action Item	Suspend Procedure Action													
121133	Resume Procedure Action Item	Resume Procedure Action													
121163	By ventilator	Oxygen Administration by ventilator	CID 3531 Oxygen Administration Suggested text matches better similar SCT Table CID 3531. Oxygen Administration												
			<table border="1"> <thead> <tr> <th>Coding Scheme Designator</th> <th>Code Value</th> <th>Code Meaning</th> </tr> </thead> <tbody> <tr> <td>SCT</td> <td>371907003</td> <td>Oxygen Administration by nasal cannula</td> </tr> <tr> <td>SCT</td> <td>371908008</td> <td>Oxygen Administration by mask</td> </tr> <tr> <td>DCM</td> <td>121163</td> <td>Oxygen Administration by ventilator</td> </tr> </tbody> </table>	Coding Scheme Designator	Code Value	Code Meaning	SCT	371907003	Oxygen Administration by nasal cannula	SCT	371908008	Oxygen Administration by mask	DCM	121163	Oxygen Administration by ventilator
Coding Scheme Designator	Code Value	Code Meaning													
SCT	371907003	Oxygen Administration by nasal cannula													
SCT	371908008	Oxygen Administration by mask													
DCM	121163	Oxygen Administration by ventilator													
121734	RT Treatment QA with RT Ion Plan Difference Check	RT Treatment QA by RT Ion Plan Difference Check	Used in CID 9241 Radiotherapy General Workitem Definition Other similar DCM codes 121731, 121732, 121733 have same wording "by"												
			<table border="1"> <tbody> <tr> <td>121731</td> <td>RT Treatment QA by RT Plan Dose Check</td> </tr> <tr> <td>121732</td> <td>RT Treatment QA by RT Plan Difference Check</td> </tr> <tr> <td>121733</td> <td>RT Treatment QA by RT Ion Plan Dose Check</td> </tr> <tr> <td>121734</td> <td>RT Treatment QA with RT Ion Plan Difference Check</td> </tr> </tbody> </table>	121731	RT Treatment QA by RT Plan Dose Check	121732	RT Treatment QA by RT Plan Difference Check	121733	RT Treatment QA by RT Ion Plan Dose Check	121734	RT Treatment QA with RT Ion Plan Difference Check				
121731	RT Treatment QA by RT Plan Dose Check														
121732	RT Treatment QA by RT Plan Difference Check														
121733	RT Treatment QA by RT Ion Plan Dose Check														
121734	RT Treatment QA with RT Ion Plan Difference Check														
122160	Derived Area, Non-Valve	Derived Non-Valve Area	CID 3614 Non-mitral Valve Area												
122242	BSA = 0.0235*WT^0.51456*HT^0.42246	BSA = 0.0235*WT^0.51456*HT cm ^0.42246	CID 3663 Body Surface Area Equation D-1 mentions "cm" in Notes column as "BSA = 0.0235*WT[kg]^0.51456*HT cm ^0.42246"												
122243	BSA = 0.024265*WT^0.5378*HT^0.3964	BSA = 0.024265*WT^0.5378*HT cm ^0.3964	CID 3663 Body Surface Area Equation D.1 mentions "cm" in Notes column as "BSA = 0.024265*WT[kg]^0.5378*HT cm ^0.3964"												
122247	VO2male = BSA (138.1 - 11.49 * loge(age) + 0.378 * HRf)	VO2male = BSA (138.1 - 11.49 * loge(age) + 0.378*HRf)	CID 3664 Oxygen Consumption Equation/Table												
122248	VO2female = BSA (138.1 - 17.04 * loge(age) + 0.378 * HRf)	VO2female = BSA (138.1 - 17.04 * loge(age) + 0.378*HRf)													
122465	RCA Region in ROA Projection	RCA Region in RAO Projection	CID 3460 Circumferential Extent CodeMeanings and Notes have "RAO" for 6 other codes 122464 to 122469. "RAO" seems to be correct and "ROA" a typo.												
122730	Bazett QTc Algorithm	Bazett QT Correction Algorithm	CID 3678 QT Correction Algorithm												
122731	Hodges QTc Algorithm	Hodges QT Correction Algorithm													
122764	Weight exceeds equipment limit	Patient weight exceeds equipment limit	CID 3205 Indications for Pharmacological Stress Test Changed text appears in D-1 column "Notes".												
125206	Cube	Cube Method	CID 12228 Echocardiography Volume Method												
126037	Standardized Added Metabolic Activity	Standardized Added Metabolic													

CodeValue	CodeMeaning in Table D-1 before change:	CodeMeaning in Table D-1 after change (as taken from CID):	CodeMeaning is used in which CID
	(SAM)	Activity	CID 7466 PET Region of Interest Measurement
126038	Standardized Added Metabolic Activity (SAM) Background	Standardized Added Metabolic Activity Background	
126325	IAUCBN60	IAUC60BN	CID 4109 Model-Independent Dynamic Contrast Analysis Parameter D-1 column "Notes" mentions "IAUC60BN"
126326	IAUCBN90	IAUC90BN	CID 4109 Model-Independent Dynamic Contrast Analysis Parameter D-1 column "Notes" mentions "IAUC90BN"
126327	AUCBN180 	IAUC180BN	CID 4109 Model-Independent Dynamic Contrast Analysis Parameter D-1 column "Notes" mentions "IAUC180BN"
126345	Gamma Capillary Transit Time (GCCT) Model	Gamma Capillary Transit Time (GCTT) Model	CID 4101 Tracer Kinetic Model
126510	Monoclonal Antibody (mAb) ^64^Cu	Monoclonal Antibody ^64^Cu	CID 4021 PET Radiopharmaceutical, used in PS3.3 C.8.22.4 Enhanced PET Isotope Module
126511	Monoclonal Antibody (mAb) ^89^Zr	Monoclonal Antibody ^89^Zr	
128011	Neuroradiologic Imaging Specialty	Neuroradiology Imaging Specialty	CID 7449 Reader Specialty
128492	Physical Support	Patient Support	CID 10066 Attenuator Category
130047	External Body Structure	External Body Model	Used in two CIDs: CID 9501 Prescription Anatomy Category used in PS3.3 C.36.6 RT Enhanced Prescription Module CID 9580 RT Segmentation Property Category, used in C.8.8.8 RT ROI Observations Module
130454	Resolved by overriding Interlock	Interlock Overridden	CID 9563 Radiotherapy Interlock Resolution, used in PS3.3 C.36.2.2.18 Interlock Macro
130455	Resolved by repositioning Patient	Patient Repositioned	
AU	Audio	Basic Voice Audio	CID 32 Non-Acquisition Modality Term "Basic Voice Audio" is often used in PS3.3
LS	Laser surface scan	Laser Scan	CID 29 Acquisition Modality "Laser surface scan" is in description for C.7.3.1.1.1 Modality , for defined Term "LS"
	To be discussed:		
RTDOSE	Radiotherapy Dose	RT Dose	CID 32 Non-Acquisition Modality
RTIMAGE	Radiotherapy Image	RT Image	CID 29 Acquisition Modality
RTPLAN	Radiotherapy Plan	RT Plan	CID 32 Non-Acquisition Modality
RTRECORD	Radiotherapy Treatment Record	RT Treatment Record	CID 32 Non-Acquisition Modality
RTSTRUCT	Radiotherapy Structure Set	RT Structure Set	CID 32 Non-Acquisition Modality

(end of table)

Update DICOM PS3.16, [Table CID 32. Non-Acquisition Modality](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	M3D	Model for 3D Manufacturing 3D Manufacturing Modeling System
DCM	OT	Other Modality

Update DICOM PS3.16, [Table CID 3407. Object Reference Purpose](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	122073	Analysis or measurements for current procedure Current procedure evidence

Update DICOM PS3.16, [Table CID 4207. Ophthalmic Image Position](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	111621	Field 1 for Joslin 3 field

Update DICOM PS3.16, [Table CID 4222. Ophthalmic Macular Grid Problem](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	111209	Patient Positioning Problem

Update DICOM PS3.16, [Table CID 9510. Purpose of Reference for RT Treatment Planning Input](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	428186 128185	RT Prescription Result

Update DICOM PS3.16, [Table CID 9564. Treatment Session Confirmation Assertion](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	130457	Cone Present

Update DICOM PS3.16, [Table CID 10050. Summary Radiation Exposure Quantity](#)

Coding Scheme Designator	Code Value	Code Meaning
DCM	111637	Accumulated Average Glandular Dose (mammary)

Delete the sentence below Table CID 10050:

~~Instruction to Editor: No change to the following Context Groups~~