

DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2021/07/05
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Correction Number	CP-2020
Log Summary:	Correct Directory Content Example
Name of Standard	PS3.3, PS3.10 2021b
Rationale for Correction:	Per the Figure F.4-1. Basic Directory IOD Information Model in PS3.3, and corroborated by Table F.4-1. Relationship Between Directory Records, the First Directory Record of the Root Directory Entity is not permitted to be of Type "STUDY". PATIENT is permitted, which may then have a STUDY below it. However, Table A.1-1. Directory Content Example in PS3.10 shows the Root Directory Entity pointing to a Directory Record of Type "STUDY". This CP corrects Table A.1-1 in the spirit of Figure F.2-2. Example of a Directory Organization and Content and adds a clarifying note in F.3-3.
Correction Wording:	

Modify PS3.3 to add the reference for Directory Record Type of the Root Directory Entity in Attribute Description of Tag (0004,1200) and (0004,1202) of Table F.3-3 as shown

Table F.3-3. Directory Information Module Attributes

Attribute Name	Tag	Type	Attribute Description
Offset of the First Directory Record of the Root Directory Entity	(0004,1200)	1	Offset of the first byte (of the Item Data Element) of the first Directory Record of the Root Directory Entity. This Offset is a number of bytes starting with the first byte of the File Meta Information. When the Root Directory Entity contains no Directory Record, this offset shall be set to 00000000H. Notes 1. This offset includes the File Preamble and the DICM Prefix. 2. <u>See Table F.4-1 for a list of Directory Record Types that are permitted directly below the Root Directory Entry.</u>
Offset of the Last Directory Record of the Root Directory Entity	(0004,1202)	1	Offset of the first byte (of the Item Data Element) of the last Directory Record of the Root Directory Entity. This Offset is a number of bytes starting with the first byte of the File Meta

Attribute Name	Tag	Type	Attribute Description
			Information. When the Root Directory Entity contains no Directory Record, this offset shall be set to 00000000H. Note This offset includes the File Preamble and the DICM Prefix.
...	...	...	...

Modify PS3.10 to add item data for Patient A and Patient B, and to adjust sample offset values of Table A.1-1 as shown

Table A.1-1. Directory Content Example

	Meta-Info	128 bytes	File Preamble [all bytes set to 00H]
		4 bytes	DICOM Prefix [DICM]
		0002,0000	File Meta Information Group Length
		0002,0001	File Meta-Information Version [0001]
		0002,0002	Media Storage SOP Class UID [1.2.840.10008.1.3.10]
		0002,0003	Media Storage SOP Instance UID [1.2.840.23856.36.45.3]
		0002,0010	Transfer Syntax UID [1.2.840.10008.1.1]
		0002,0012	Implementation Class UID [1.2.840.23856.34.90.3]
		...	...
	File-set Identification	0004,1130	File-set ID [EXAMPLE] ...
		...	
	General Directory Information	0004,1200	Offset of First Record of Root Directory Entity {48291688}
		0004,1202	Offset of Last Record of Root Directory Entity {6F18}
		0004,1212	File-set Consistency Flag [0000H]
		...	...
		0004,1220	Directory Record Sequence. This Data Element Value includes the following Sequence of Items.

<u>{1688}</u>	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes the following Data Elements)</u>
	<u>Patient A</u>	<u>0004,1400</u>	<u>Offset of the next Directory Record in Directory Entity {4624}</u>
	<u>Directory Record</u>	<u>0004,1410</u>	<u>Record In-use Flag [FFFFH]</u>
		<u>0004,1420</u>	<u>Offset of Referenced Lower Level Directory Entity {1828}</u>
		<u>...</u>	<u>...</u>
<u>{1828}</u>		<u>0004,1430</u>	<u>Directory Record Type [PATIENT]</u>
	<u>Selection Keys</u>	<u>0010,0010</u>	<u>Patient's Name [Patient A]</u>
		<u>0010,0020</u>	<u>Patient ID [123-45-6789]</u>
		<u>....</u>	<u>....</u>
	<u>Item Delimitation Tag</u>	<u>FFFE,E00D</u>	<u>Item Delimitation Tag is present only if Item is of undefined length</u>
<u>{18281829}</u>	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes the following Data Elements)</u>
	<u>Study 1</u>	<u>0004,1400</u>	<u>Offset of the next Directory Record in Directory Entity (not shown in example)</u>
	<u>Directory Record</u>	<u>0004,1410</u>	<u>Record In-use Flag [FFFFH]</u>
		<u>0004,1420</u>	<u>Offset of Referenced Lower Level Directory Entity {22992300}</u>
		<u>...</u>	<u>...</u>
<u>{23002299}</u>		<u>0004,1430</u>	<u>Directory Record Type [STUDY]</u>
	<u>Selection Keys</u>	<u>0020,000D</u>	<u>Study Instance UID [1.2.840.4656.23.4568745]</u>
		<u>0020,0010</u>	<u>Study ID [srt78UJ]</u>
		<u>...</u>	<u>....</u>
	<u>Item Delimitation Tag</u>	<u>FFFE,E00D</u>	<u>Item Delimitation Tag is present only if Item is of undefined length</u>
<u>{23002299}</u>	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes the following Data Elements)</u>
	<u>Series 1</u>	<u>0004,1400</u>	<u>Offset of the next Directory Record in Directory Entity (not shown in example)</u>
	<u>Directory Record</u>	<u>0004,1410</u>	<u>Record In-use Flag [0FFFFH]</u>
		<u>0004,1420</u>	<u>Offset of Referenced Lower Level Directory Entity {26812682}</u>
		<u>...</u>	<u>...</u>

		0004,1430	Directory Record Type [SERIES]
	<i>Selection Keys</i>	0008,0060 0020,0011 ...	Modality [NM] Series Number [2] ...
	Item Delimitation Tag	FFFE,E00D	Item Delimitation Tag is present only if Item is of undefined length
{26822684}	Item Tag	FFFE,E000	Item Data Element (includes the following Data Elements)
	Image 1 Directory Record	0004,1400	Offset of the next Directory Record in Directory Entity {34203449}
		0004,1410	Record In-use Flag [FFFFH]
		0004,1420	Offset of Referenced Lower Level Directory Entity [00000000H]
		...	...
		0004,1430	Directory Record Type [IMAGE]
		0004,1500	Referenced File ID [DIR\TDRI\3856G3]
		0004,1510	Referenced SOP Class UID in File [1.2.840.10008.5.1.4.1.1.5]
		0004,1511	Referenced SOP Instance UID in File [1.2.840.34.56.78999654.234]
		0004,1512	Referenced Transfer Syntax UID in File [1.2.840.10008.1.2.1]
	<i>Selection Keys</i>	0008,0018 0020,0013 ...	Image SOP Instance UID [1.2.840.34.56.78999654.234] Image Number [1] ...
	Item Delimitation Tag	FFFE,E00D	Item Delimitation Tag is present only if Item is of undefined length
{34203449}	Item Tag	FFFE,E000	Item Data Element (includes the following Data Elements)
	Image 2 Directory Record	0004,1400	Offset of the next Directory Record in Directory Entity [00000000H] (not shown in example)
		0004,1410	Record In-use Flag [FFFFH]
		0004,1420	Offset of Referenced Lower Level Directory Entity [00000000H]
		...	...
		0004,1430	Directory Record Type [IMAGE]

		0004,1500	Referenced File ID [DIR\TDR\3856G7]
		0004,1510	Referenced SOP Class UID in File [1.2.840.10008.5.1.4.1.1.5]
		0004,1511	Referenced SOP Instance UID in File [1.2.840.34.56.78999654.235]
		0004,1512	Referenced Transfer Syntax UID in File [1.2.840.10008.1.2.2]
	<i>Selection Keys</i>	0008,0018	Image SOP Instance UID [1.2.840.34.56.78999654.235]
		0020,0013	Image Number [2]
		...	...
	Item Delimitation Tag	FFFE,E00D	Item Delimitation Tag is present only if Item is of undefined length
{4624}	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes the following Data Elements)</u>
	<u>Patient B</u>	<u>0004,1400</u>	<u>Offset of the next Directory Record in Directory Entity {6F18}</u>
	<u>Directory Record</u>	<u>0004,1410</u>	<u>Record In-use Flag [FFFFH]</u>
		<u>0004,1420</u>	<u>Offset of Referenced Lower Level Directory Entity {5012}</u>
		<u>0004,1430</u>	<u>Directory Record Type [PATIENT]</u>
		...	...
	<u>Selection Keys</u>	<u>0010,0010</u>	<u>Patient Name [Patient B]</u>
		<u>0010,0020</u>	<u>Patient ID [354-18-9122]</u>
		...	...
	<u>Item Delimitation Tag</u>	<u>FFFE,E00D</u>	<u>Item Delimitation Tag is present only if Item is of undefined length</u>
{5012}	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes further Data Elements not shown in this example)</u>
	<u>Study 1</u>		
	<u>Directory Record</u>		
	...		
...			
(Sequence Items for the rest of the subordinate Directory Records)			
{6F18}	<u>Item Tag</u>	<u>FFFE,E000</u>	<u>Item Data Element (includes the following Data Elements)</u>
	<u>Patient C</u>	<u>0004,1400</u>	<u>Offset of the next Directory Record in Directory Entity {00000000H}</u>

	Directory Record	0004,1410	Record In-use Flag [FFFFH]
		<u>0004,1420</u>	<u>Offset of Referenced Lower Level Directory Entity {...}</u>
		0004,1430	Directory Record Type [PATIENT]
		...	...
	<i>Selection Keys</i>	0010,0010	Patient Name [Patient C]
		0010,0020	Patient ID [523-61-8765]
			
	Item Delimitation Tag	FFFE,E00D	Item Delimitation Tag is present only if Item is of undefined length
	Sequence Delimitation Tag	FFFE,E0DD	Used only if the Directory Record Sequence (0004,1220) is of undefined length to delimit the end of the Value of the Directory Record Sequence Data Element.
... <u>(Sequence Items for the rest of the subordinate Directory Records)</u>			