1	Status	Final Text					
2	Date of Last Update	2020/01/16					
3	Person Assigned	David Clunie					
4		mailto:dclunie@dclunie.com					
5	Submitter Name	Jörg Riesmeier					
6		mailto:dicom@jriesmeier.com					
7	Submission Date	2019/02/08					
0	Correction Number CD 1990						
0	Correction Number CP-1889						
9	Log Summary: Recently added OV, SV and UV VRs were not included in PS3.18 or PS3.19						
10	Name of Standard						
11	PS3.18, PS3.19						
12	Rationale for Correction:						
13	The recently added OV, SV and UV VRs were not included in PS3.18 or PS3.19. Add them.						
14	Correction Wording:						

Amend DICOM PS3.18 as follows (changes to existing text are bold and underlined for additions and struckthrough for removals):

10.4.1.1.2 Metadata Resources

Table 10.4.1-2 defines the resources used to retrieve the metadata contained in Instances.

Table 10.4.1-2. Retrieve Transaction Metadata Resources

5	Resource	URI Template
G	Study Metadata	/studies/{study}/metadata
8	Series Metadata	/studies/{study}/series/{series}/metadata
10	Instance Metadata	/studies/{study}/series/{series}/instances/{instance}/metadata

The Metadata Resources are used to retrieve the DICOM instances without retrieving Bulkdata. The Metadata returned for a study, series, or instance resource includes all Attributes in the resource. For Data Elements having a Value Representation (VR) of DS, FL, FD, IS, LT, OB, OD, OF, OL, <u>OV</u>, OW, SL, SS, ST, <u>SV</u>, UC, UL, UN, US, <u>and UV</u>, the origin server is permitted to replace the Value Field of the Data Element with a Bulkdata URI. The user agent can use the Bulkdata URI to retrieve the Bulkdata.

16 F.2.2 DICOM JSON Model Object Structure

- 17 Each attribute object contains the following named child objects:
- vr: A string encoding the DICOM Value Representation. The mapping between DICOM Value Representations and JSON Value
 Representations is described in Section F.2.3.
- At most one of:
 - Value: An array containing one of:
 - The Value Field elements of a DICOM attribute with a VR other than PN, SQ, OB, OD, OF, OL, <u>OV, OW</u>, or UN (described in ???)
 - The encoding of empty Value Field elements is described in ???
 - The Value Field elements of a DICOM attribute with a VR of PN. The non-empty name components of each element are encoded as a JSON strings with the following names:
 - Alphabetic
 - Ideographic
 - Phonetic
 - JSON DICOM Model objects corresponding to the sequence items of an attribute with a VR of SQ

Empty sequence items are represented by empty objects

- BulkDataURI: A string encoding the WADO-RS URL of a bulk data item describing the Value Field of an enclosing Attribute with
 a VR of DS, FL, FD, IS, LT, OB, OD, OF, OL, <u>OV</u>, OW, SL, SS, ST, <u>SV</u>, UC, UL, UN, US, <u>and UV</u> (described in ???)
- InlineBinary: A base64 string encoding the Value Field of an enclosing Attribute with a VR of OB, OD, OF, OL, <u>OV,</u> OW, or UN (described in ???)

Note

1. For Private Data Elements, the group and element numbers will follow the rules specified in ????

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2. The person name representation is more closely aligned with the DICOM Data Element representation than the DICOM ???? XML representation.

F.2.3 DICOM JSON Value Representation

Table F.2.3-1. DICOM VR to JSON Data Type Mapping

5	VR Name	Туре	JSON Data Type			
6	AE	Application Entity	String			
7	AS	Age String	String			
8	AT	Attribute Tag	String			
9	CS	Code String	String			
10	DA	Date	String			
11	DS	Decimal String	Number or String			
12	DT	Date Time	String			
13	FL	Floating Point Single	Number			
14	FD	Floating Point Double	Number			
15	IS	Integer String	Number or String			
16	LO	Long String	String			
17	LT	Long Text	String			
18	OB	Other Byte	Base64 encoded octet-stream			
19	OD	Other Double	Base64 encoded octet-stream			
20	OF	Other Float	Base64 encoded octet-stream			
21	OL	Other Long	Base64 encoded octet-stream			
22	<u>OV</u>	Other 64-bit Very Long	Base64 encoded octet-stream			
23	OW	Other Word	Base64 encoded octet-stream			
24 25	PN	Person Name	Object containing Person Name component groups as strings (see Section F.2.2)			
26	SH	Short String	String			
27	SL	Signed Long	Number			
28	SQ	Sequence of Items	Array containing DICOM JSON Objects			
29	SS	Signed Short	Number			
30	ST	Short Text	String			
31	<u>SV</u>	Signed 64-bit Very Long	Number or String			
32			See Note.			
33	ТМ	Time	String			
34	UC	Unlimited Characters	String			
35	UI	Unique Identifier (UID)	String			
36	UL	Unsigned Long	Number			
37	UN	Unknown	Base64 encoded octet-stream			
38 39	UR	Universal Resource Identifier or Universal Resource Locator (URI/URL)	String			
40	US	US Unsigned Short Number				
41	UT	Unlimited Text	String			

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[VR Name	Туре	JSON Data Type
	UV	Unsigned 64-bit Very Long	Number or String.
			See Note.

Note

For IS and, DS, SV and UV, a JSON String representation may be used if needed to avoid losing precision.

Although data, such as dates, are represented in the DICOM JSON model as strings, it is expected that they will be treated in the same manner as the original attribute as defined by ????.

Amend DICOM PS3.19 as follows (changes to existing text are bold and underlined for additions and struckthrough for removals):

A.1 Native DICOM Model

A.1.5 Description

12	Name	Optionality	Cardinality	Description
13 14	>vr	0	A	The Value Representation of this element, represented as a two character uppercase string, as defined in ???? and specified for this Data Element in ????.
15				Note
16 17				Implementations may utilize the Value Representation to validate data values, if desired.
18 19	>Value	С	1-n	A Value from the Value Field of the DICOM Data Element. There is one Infoset Value element for each DICOM Value or Sequence Item.
20 21 22				Required if the DICOM Data Element represented is not zero length and an Item, PersonName, InlineBinary or BulkData XML element is not present. Shall not be used if the VR of the enclosing Attribute is either SQ or PN.

Table A.1.5-2. DICOM Data Set Macro

1	Name	Optionality	Cardinality	/ Description			
2 3	>BulkData	С	1	A reference to a blob of data that the recipient may retrieve through use of the GetData() method, a WADO-RS call or a STOW-RS call.			
4 5				Required if the DICOM Data Element represented is not zero length and an XML Infoset Value, Item, InlineBinary or PersonName element is not present.			
6				The provider of the data may use a BulkData reference at its discretion to avoid encoding a large DICOM Value Field as text by value in the Infoset. For example, pixel data or look up			
8				tables.			
9 10				There is a single BulkData Infoset element representing the entire Value Field, and not one per Value in the case where the Value Multiplicity is greater than one.			
11				Note			
12 13 14				E.g., a LUT with 4096 16 bit entries that may be encoded in DICOM with a Value Representation of OW, with a VL of 8192 and a VM of 1, or a US VR with a VL of 8192 and a VM of 4096 would both be represented as a single BulkData element.			
15				All rules (e.g., byte ordering and swapping) in ???? apply.			
16				Note			
17 18				Implementers should in particular pay attention the ???? rules regarding the value representations of OD, OF, OL, OV and OW.			
19 20				If the BulkData has a string or text Value Representation, the value(s) of the DICOM Specific Character Set Data Element, if present, might be necessary to determine its encoding.			
21	>InlineBinary	С	1	The Value Field of the enclosing Attribute encoded as base64.			
22				Required if the DICOM Data Element represented is:			
23				not zero length			
24				 the VR if the enclosing Attribute is either OB, OD, OF, OL, OV, OW, or UN 			
25				an XML Infoset Value or BulkData XML element is not present			
26				Shall not be present otherwise.			
27 28				There is a single InlineBinary Infoset element representing the entire Value Field, and not one per Value in the case where the Value Multiplicity is greater than one.			
29				Note			
30 31 32				E.g., a LUT with 4096 16 bit entries that may be encoded in DICOM with a Value Representation of OW with a VL of 8192 and a VM of 1 would be represented as a single InlineBinary element.			
33				All rules (e.g., byte ordering and swapping) in ???? apply.			
34				Note			
35 36				Implementers should in particular pay attention to the ???? rules regarding the value representations of OD, OF, OL, <u>OV</u> and OW.			

A.1.6 Schema

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In DICOM PS3.19 A.1.6 Schema replace this:

VR = attribute vr {	"AE"	"AS"	"AT" "	CS" "	DA" "	DS" "I	от" "т	FL" "I	D"
	"IS"	"L0"	"LŤ"	"OB''	"0D''	"0F	"0Ĺ"	"OŴ"	"PN"
	SQ"	"SS"	"ST"	"TM"	UC"	"UI"	"UL"	"UN"	"UR"

CP-1889 - Recently added OV, SV and UV VRs were not included in PS3.18 or PS3.19

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"SH"

"SL"

"US" | "UT" }