

1	Status	Final Text
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8	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

Resource	URI Template
Study Metadata	/studies/{study}/ metadata
Series Metadata	/studies/{study}/series/{series}/ metadata
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, OV, OW, SL, SS, ST, SV, UC, UL, UN, US, ~~and~~UT ~~and~~UV, 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.

F.2.2 DICOM JSON Model Object Structure

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, OV, OW, 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, OV, OW, SL, SS, ST, SV, UC, UL, UN, US, ~~and~~UT ~~and~~UV (described in ???)
 - InlineBinary: A base64 string encoding the Value Field of an enclosing Attribute with a VR of OB, OD, OF, OL, OV, OW, or UN (described in ???)

Note

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

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

VR Name	Type	JSON Data Type
AE	Application Entity	String
AS	Age String	String
AT	Attribute Tag	String
CS	Code String	String
DA	Date	String
DS	Decimal String	Number or String
DT	Date Time	String
FL	Floating Point Single	Number
FD	Floating Point Double	Number
IS	Integer String	Number or String
LO	Long String	String
LT	Long Text	String
OB	Other Byte	Base64 encoded octet-stream
OD	Other Double	Base64 encoded octet-stream
OF	Other Float	Base64 encoded octet-stream
OL	Other Long	Base64 encoded octet-stream
<u>OV</u>	<u>Other 64-bit Very Long</u>	<u>Base64 encoded octet-stream</u>
OW	Other Word	Base64 encoded octet-stream
PN	Person Name	Object containing Person Name component groups as strings (see Section F.2.2)
SH	Short String	String
SL	Signed Long	Number
SQ	Sequence of Items	Array containing DICOM JSON Objects
SS	Signed Short	Number
ST	Short Text	String
<u>SV</u>	<u>Signed 64-bit Very Long</u>	<u>Number or String</u> <u>See Note.</u>
TM	Time	String
UC	Unlimited Characters	String
UI	Unique Identifier (UID)	String
UL	Unsigned Long	Number
UN	Unknown	Base64 encoded octet-stream
UR	Universal Resource Identifier or Universal Resource Locator (URI/URL)	String
US	Unsigned Short	Number
UT	Unlimited Text	String

VR Name	Type	JSON Data Type
<u>UV</u>	<u>Unsigned 64-bit Very Long</u>	<u>Number or String.</u> <u>See Note.</u>

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

Table A.1.5-2. DICOM Data Set Macro

Name	Optionality	Cardinality	Description
>vr	O	A	The Value Representation of this element, represented as a two character uppercase string, as defined in ????. Note Implementations may utilize the Value Representation to validate data values, if desired.
>Value	C	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. 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.

Name	Optionality	Cardinality	Description
>BulkData	C	1	<p>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.</p> <p>Required if the DICOM Data Element represented is not zero length and an XML Infoset Value, Item, InlineBinary or PersonName element is not present.</p> <p>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 tables.</p> <p>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.</p> <p>Note</p> <p>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.</p> <p>All rules (e.g., byte ordering and swapping) in ???? apply.</p> <p>Note</p> <p>Implementers should in particular pay attention the ???? rules regarding the value representations of OD, OF, OL, <u>OV</u> and OW.</p> <p>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.</p>
>InlineBinary	C	1	<p>The Value Field of the enclosing Attribute encoded as base64.</p> <p>Required if the DICOM Data Element represented is:</p> <ul style="list-style-type: none"> • not zero length • the VR if the enclosing Attribute is either OB, OD, OF, <u>OL, OV, OW</u>, or UN • an XML Infoset Value or BulkData XML element is not present <p>Shall not be present otherwise.</p> <p>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.</p> <p>Note</p> <p>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.</p> <p>All rules (e.g., byte ordering and swapping) in ???? apply.</p> <p>Note</p> <p>Implementers should in particular pay attention to the ???? rules regarding the value representations of OD, OF, OL, <u>OV</u> and OW.</p>

A.1.6 Schema

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

1 VR = attribute vr { "AE" | "AS" | "AT" | "CS" | "DA" | "DS" | "DT" | "FL" | "FD"
 2 | "IS" | "LO" | "LT" | "OB" | "OD" | "OF" | "OL" | "OW" | "PN" | "SH" | "SL"
 3 | "SQ" | "SS" | "ST" | "TM" | "UC" | "U" | "UL" | "UN" | "UR" | "US" | "UT" }

4 *with this, by adding OV, SV and UV:*

5 VR = attribute vr { "AE" | "AS" | "AT" | "CS" | "DA" | "DS" | "DT" | "FL" | "FD"
 6 | "IS" | "LO" | "LT" | "OB" | "OD" | "OF" | "OL" | "OV" | "OW" | "PN" | "SH" | "SL"
 7 | "SQ" | "SS" | "ST" | "SV" | "TM" | "UC" | "U" | "UL" | "UN" | "UR" | "US" | "UT" | "UV" }