

# DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2020/01/16
Person Assigned	W. Corbijn
Submitter Name	Nikhilesh Sonar ( <a href="mailto:nikhilesh.sonar@philips.com">nikhilesh.sonar@philips.com</a> )
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Correction Number	CP-1861
Log Summary: Consistency between DICOM VR definition of DS & IS, and JSON Value Representation	
Name of Standard	PS3.18 2019e
<p>Rationale for Correction:</p> <p>The PS3.5 DICOM VR definition of DS (Decimal String) &amp; IS (Integer String) are defined to be string representations of a numeric value (PS3.5 Table 6.2-1). However, the JSON Value Representation of the same VRs is expected to be a Number type, and not String type (PS3.18 Table F.2.3-1).</p> <p>This requires the implementers to convert between a numeric value and its string representation whenever there is a need to represent DICOM data in JSON, and vice versa.</p> <p>However, this may cause issues of loss of precision. A String alternative is added. This is not expected to cause significant backward compatibility issues since all known JSON parsers support both Number and numbers as String.</p>	
Correction Wording:	

*Item #1: Update PS3.18 Section F.2.3 Table F.2.3-1. DICOM VR to JSON Data Type Mapping*

## F.2.3 DICOM JSON Value Representation

The **DICOM** value representation (VR) is included in each DICOM JSON Model attribute object and named "vr". For example:

```
"vr": "CS"
```

**All The JSON encoding of an Attribute shall use the JSON Data Type corresponding to the DICOM Value Representations as specified JSON Data Types (see in Table F.2.3-1).** The JSON encodings shall conform to the Definition, Character Repertoire (if applicable) and Length of Value specified for that **DICOM** Value Representation (see Section 6.2 "Value Representation (VR)" in PS3.5) with the following exceptions:

- Attributes with a Value Representation of AT shall be restricted to eight character uppercase hexadecimal representation of a DICOM Tag

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

VR Name	Type	JSON Data Type
...		

VR Name	Type	JSON Data Type
DS	Decimal String	Number <u>or String</u> <u>See note.</u>
...		
IS	Integer String	Number <u>or String</u> <u>See note.</u>
...		

**Note: For IS and DS, a JSON String representation can be used to preserve the original format during transformation of the representation, or if needed to avoid losing precision of a decimal string.**