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8	Correction Number CP-1704	
9	Log Summary: Relax requirement to provide default Transfer Syntax if lossless compressed image is too large	
10	Name of Standard	
11	PS3.5, PS3.18	
12	Rationale for Correction:	
13	Multi-frame (e.g., DBT) images have been encountered that are too large to encode in an uncompressed Transfer Syntax, due to	
14	the OB/OW VR 32 bit VL field, but can be encoded using a lossless Transfer Syntax.	
15	Waive the requirement to provide such images in the default Transfer Syntax, in a similar manner to the waiver for lossy compressed	
16	images.	
17	Address the same issue in PS3.18, and mention the issue of EVRLE data elements that are too large and need UN VR.	
18	Correction Wording:	

Amend DICOM PS3.5 as follows (changes to existing text are bold and underlined for additions and ~~struckthrough~~ for removals):

10.1 DICOM Default Transfer Syntax

DICOM defines a default Transfer Syntax, the DICOM Implicit VR Little Endian Transfer Syntax (UID = "1.2.840.10008.1.2"), which shall be supported by every conformant DICOM Implementation. This implies that:

- a. If an Application Entity issues an A-ASSOCIATE request, it shall offer the DICOM Implicit VR Little Endian Transfer Syntax in at least one of the Presentation Contexts associated with each offered Abstract Syntax.

Note

Offering Abstract Syntax (AS1) in two Presentation Contexts with Transfer Syntaxes (TS1) and (TS2) is not valid, but offering AS1-TS1, AS1-TS2 and AS1-TSD is valid because the DICOM Default Little Endian Transfer Syntax (TSD) is present in at least one of the Presentation Contexts that are based on Abstract Syntax (AS1).

- b. If an Application Entity receives an A-ASSOCIATE indication corresponding to a request that follows the requirements specified in Section 10.1 (a), every Presentation Context related to a given Abstract Syntax cannot be rejected in an A-ASSOCIATE response for the reason that none of the Transfer Syntaxes are supported.

Both of these requirements, (a) and (b), are waived when the Application Entity sending the pixel data has only access to the pixel data in lossy compressed form or the pixel data in a lossless compressed form that is of such length that it cannot be encoded in the default Transfer Syntax, and a Transfer Syntax that uses a pixel data reference is not offered.

Requirement (b) to accept the default Transfer Syntax is waived if a Transfer Syntax that uses a pixel data reference is offered.

Note

In other words, every sending AE is required to be able to convert any Data Set it is going to transmit into the default Transfer Syntax, regardless of the form in which it originally received or stored the Data Set, except in the ~~single-cases~~ when it the decompressed Pixel Data is too large to encode in the default Transfer Syntax or is received ~~it~~ in a lossy compressed form. In ~~that exceptional~~ the case of lossy compressed Pixel Data, the sending AE is permitted to propose only the lossy compressed Transfer Syntax appropriate to the lossy form that was received. In the case of lossless compressed Pixel Data that is too large to encode in the default Transfer Syntax, the sending AE is permitted to propose any appropriate lossless compression Transfer Syntax, not necessarily that in which the image was received, as an alternative to the default Transfer Syntax.

~~In particular, t~~his waiver does not apply to Data Sets received in a lossless compressed form if the decompressed Pixel Data is small enough to encode in the default Transfer Syntax, which means that any AE receiving a Data Set in a lossless compressed Transfer Syntax that needs to re-send the Data Set is required to be able to decompress it in order to support (at least) the default Transfer Syntax.

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

8.2.11 Transfer Syntax UID

For the URI service the parameter name shall be "transferSyntax" containing one value.

RS Services shall not support this parameter.

The Transfer Syntax to be used within the DICOM image objects, as specified in ?????. This parameter is OPTIONAL for the URI based mode and the WS mode "DICOM Requester" transaction. It shall not be present if contentType is other than application/dicom.

By default the DICOM object(s) returned shall be encoded in Explicit VR Little Endian. Neither Implicit VR, nor Big Endian shall be used. The response shall be the Transfer Syntax requested if possible. If it is not possible for the response to be sent using the requested transfer syntax then the Explicit VR Little Endian Uncompressed Transfer Syntax shall be used, unless the pixel data in its compressed form is of such length that it cannot be encoded in the Explicit VR Little Endian Uncompressed Transfer Syntax.

Note

1. **If transcoding to the Explicit VR Little Endian Transfer Syntax, a VR of UN may be needed for the encoding of Data Elements with explicit VR whose value length exceeds 65534 ($2^{16}-2$) (FFFEH, the largest even length unsigned 16 bit number) but which are defined to have a 16 bit explicit VR length field. See PS3.5 Section 6.2.2.**
2. The transfer syntax can be one of the JPIP Transfer Syntaxes, in which case the returned objects will contain the URL of the JPIP provider for retrieving the pixel data.

The value(s) shall be encoded as a unique identifier (UID) string, as specified in ????, except that it shall not be padded to an even length with a NULL character.