



IBM Watson Imaging Clinical Review 3.0

DICOM CONFORMANCE STATEMENT

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INTENDED USE

Watson Imaging Clinical Review Version 3 is a proposed software application that assists healthcare institutions with selecting additional studies for inclusion in quality assurance, education, and training processes.

The software identifies specific types of potential discrepancies in certain imaging exams after the diagnostic radiology report has been finalized.

The software analyzes certain imaging studies for the supported potential findings and compares them with the findings described in the final diagnostic report. If a potential finding discovered in the imaging data is missing in the text of the final diagnostic report, administrative personnel are notified of the discrepancy via push notification (e.g., email or SMS) and the study is added to the Administrator's Clinical Review 3 worklist for them to decide whether it should be included in their quality review, education, or training processes.

Clinical Review 3's support of quality review, education, and training processes does not replace the processes themselves, but provides additional information for administrative personnel to consider when deciding which cases to include in these processes.

Clinical Review 3 is not designed or intended to support the diagnostic or treatment workflow.

**Manufacturer's Address**

Merge Healthcare Incorporated
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For application support or to report issues with user documentation, contact Customer Support:

- In North America: call toll-free 1-877-741-5369
- Outside of North America: +31.40.299.0773
- Email: WHISupport@us.ibm.com

Part	Date	Version	Description
IASO-2219	October 2019	1.0	Initial version for IBM Watson Imaging Clinical Review 3.0

The latest revision of this document can be found in [IBM Watson Health Community](#).



Chapter 1 DICOM Conformance

This document describes the conformance of IBM Watson Imaging Clinical Review 3.0 to the DICOM 3.0 standard and supplements the *IBM iConnect Enterprise Archive 13.0 DICOM Conformance Statement*. Watson Imaging Clinical Review 3.0 is compatible with iConnect Enterprise Archive 13.0.

The following sections list the supported SOP classes, transfer syntaxes, and the DICOM tags read by Watson Imaging Clinical Review.

Related Documents

NEMA PS3 Digital Imaging and Communications in Medicine (DICOM) Standard, available free at <http://dicom.nema.org/>.

Supported SOP Classes

iCEA supports receiving almost any SOP class. Watson Imaging Clinical Review processes only the following:

Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2

Supported Transfer Syntaxes

iCEA supports receiving almost any transfer syntax. Watson Imaging Clinical Review processes only the following:

Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99
Explicit VR Big Endian	1.2.840.10008.1.2.2
RLE Lossless	1.2.840.10008.1.2.5
JPEG Lossless, Non-hierarchical (Process 14)	1.2.840.10008.1.2.4.57

JPEG Lossless (Process 14, SV1)	1.2.840.10008.1.2.4.70
JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80
JPEG2000 Lossless	1.2.840.10008.1.2.4.90

DICOM Tags Ingested by Watson Imaging Clinical Review

While iCEA receives and stores almost any object, the requirements described in the Notes column must be met for Watson Imaging Clinical Review to process the object. If the requirement is not met, the object is not processed.

Attribute	Tag	Notes
TransferSyntaxUID	0002,0010	
ImageType	0008,0008	All images in a CT volume must have the same image type (0008,0008) and must contain the terms 'ORIGINAL', 'PRIMARY', and 'AXIAL'.
SOPClassUID	0008,0016	
SOPInstanceUID	0008,0018	
StudyDate	0008,0020	
SeriesDate	0008,0021	
StudyTime	0008,0030	
SeriesTime	0008,0031	
AcquisitionTime	0008,0032	
AccessionNumber	0008,0050	
Modality	0008,0060	All x-ray images must have the modality (0008,0060) either CR or DX.
Manufacturer	0008,0070	
ManufacturerModelName	0008,1090	
PatientName	0010,0010	
PatientID	0010,0020	All images in a CT volume must have the same Patient ID.

Attribute	Tag	Notes
PatientSex	0010,0040	
PatientAge	0010,1010	
SliceThickness	0018,0050	Maximum slice thickness is 5mm,. All images in a CT volume must have the same slice thickness (0018,0050) and be less than or equal to 5mm).
KVP	0018,0060	
SpacingBetweenSlices	0018,0088	All images in a CT volume must have a spacing between two consecutive slices of less than or equal to 5mm.
GantryDetectorTilt	0018,1120	If present, all images in a CT volume must have gantry/detector Tilt (0018,1120) set to 0.
ExposureTime	0018,1150	
XRyTubeCurrent	0018,1151	
Exposure	0018,1152	
FilterType	0018,1160	All images in a CT volume must have the same Filter Type (0018,1160).
ConvolutionKernel	0018,1210	All images in a CT volume must have the same Convolution Kernel (0018,1210).
PatientPosition	0018,5100	
ViewPosition	0018,5101	
StudyInstanceUID	0020,000D	All images in a CT volume must have the same Study Instance UID (0020,000D).
SeriesInstanceUID	0020,000E	All images in a CT volume must have the same Series Instance UID (0020,000E).
SeriesNumber	0020,0011	
AcquisitionNumber	0020,0012	
InstanceNumber	0020,0013	

Attribute	Tag	Notes
ImagePositionPatient	0020,0032	Top-left corners of all images in a CT volume are co-linear (on the same line). When all images in a CT volume are sorted by the top-left corners (0020,0032), the distance between adjacent images is equal (no variability in the slice spacing or missing slices).
ImageOrientationPatient	0020,0037	All images in a CT volume must have the same Image Orientation (0020,0037).
FrameOfReferenceUID	0020,0052	All images in a CT volume must have the same frame of reference UID (0020,0052).
SliceLocation	0020,1041	
NumberOfFrames	0028,0008	Images in a CT volume must not be multi-frame (0028,0008).
Rows	0028,0010	For x-ray images, the ratio of Rows (0028,0010) to Columns (0028,0011) must be >0.5 and <1.5. All images in a CT volume must have the same number of rows (0028,0010) and number of columns (0028,0011) and they should be equal to 512. All x-ray images must have a ratio of Rows (0028,0010) to Columns (0028,0011) of >0.5 and <1.5).
Columns	0028,0011	
PixelSpacing	0028,0030	All images in a CT volume must have the same pixel spacing (0028,0030), equal values in both X and Y dimension, and a minimum value of .5.
BurnedInAnnotation	0028,0301	If present, all images in a CT volume must have Burned In Annotation (0028,0301) set to NO.
WindowCenter	0028,1050	
WindowWidth	0028,1051	
RescaleIntercept	0028,1052	
RescaleSlope	0028,1053	
RescaleType	0028,1054	

