



IBM Watson Imaging Clinical Review 3.2

DICOM CONFORMANCE STATEMENT

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Instructions for use are available electronically in PDF format. Paper format can be requested for supported languages by contacting Customer Support, and will be provided free of charge within seven calendar days of receiving the request. The paper format can also be provided at the time of delivery if so requested at the time of order.

INTENDED USE:


Watson Imaging Clinical Review Version 3 is a 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.

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The symbols glossary is provided electronically at <https://developer.ibm.com/watsonhealth/ibm-merge-statements-and-patches/>.

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-2867	June 2020	1.0	Initial version for IBM Watson Imaging Clinical Review 3.2
		2.0	Updated to reflect algorithm changes

The latest revision of this document can be found in [IBM Watson Health Community \(https://mergecustomer.force.com/mergeusercommunity/login\)](https://mergecustomer.force.com/mergeusercommunity/login).



Chapter 1 DICOM Conformance

This document describes the conformance of IBM Watson Imaging Clinical Review 3.x to the DICOM 3.0 standard and supplements the *IBM iConnect Enterprise Archive 13.0 DICOM Conformance Statement*. Watson Imaging Clinical Review 3.x 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
Transfer Syntax UID	0002,0010	
Image Type	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'.
SOP Class UID	0008,0016	All images in a CT volume must have SOP Class UID (0008,0016) set to 1.2.840.10008.5.1.4.1.1.2.
SOP Instance UID	0008,0018	
Study Date	0008,0020	
Series Date	0008,0021	
Study Time	0008,0030	
Series Time	0008,0031	
Acquisition Time	0008,0032	
Accession Number	0008,0050	
Modality	0008,0060	All x-ray images must have the modality (0008,0060) either CR or DX.
Manufacturer	0008,0070	
Manufacturer Model Name	0008,1090	
Patient Name	0010,0010	
Patient ID	0010,0020	All images in a CT volume must have the same Patient ID.
Patient Birth Date	0010,0030	

Attribute	Tag	Notes
Patient Sex	0010,0040	
Patient Age	0010,1010	
Slice Thickness	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	
Spacing Between Slices	0018,0088	All images in a CT volume must have a spacing between two consecutive slices of less than or equal to 5mm.
Contrast/Bolus Ingredient	0018,1048	If present, Contrast/Bolus Ingredient (0018,1048) of all images in a CT volume shall not contain BARIUM.
Gantry Detector Tilt	0018,1120	If present, all images in a CT volume must have gantry/detector Tilt (0018,1120) set to 0.
Exposure Time	0018,1150	
XRay Tube Current	0018,1151	
Exposure	0018,1152	
Filter Type	0018,1160	All images in a CT volume must have the same Filter Type (0018,1160).
Convolution Kernel	0018,1210	All images in a CT volume must have the same Convolution Kernel (0018,1210).
Patient Position	0018,5100	
View Position	0018,5101	
Multi-Energy CT Acquisition	0018,9631	No images in a CT volume can be created with multi-energy technique (0018,9361).
Study Instance UID	0020,000D	All images in a CT volume must have the same Study Instance UID (0020,000D).
Series Instance UID	0020,000E	All images in a CT volume must have the same Series Instance UID (0020,000E).
Series Number	0020,0011	
Acquisition Number	0020,0012	
Instance Number	0020,0013	

Attribute	Tag	Notes
Image Position Patient	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).
Image Orientation Patient	0020,0037	All images in a CT volume must have the same Image Orientation (0020,0037).
Frame Of Reference UID	0020,0052	All images in a CT volume must have the same frame of reference UID (0020,0052).
Slice Location	0020,1041	
Number Of Frames	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.
Columns	0028,0011	
Pixel Spacing	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.
Burned In Annotation	0028,0301	If present, all images in a CT volume must have Burned In Annotation (0028,0301) set to NO.
Window Center	0028,1050	
Window Width	0028,1051	
Rescale Intercept	0028,1052	
Rescale Slope	0028,1053	
Rescale Type	0028,1054	