



DICOM Conformance Statement

Product Name/s: **ChestLink** and **ChestEye**

Version/s: **ChestLink V1.0** and **ChestEye V2.6** | 6 Nov 2024

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1. Introduction

Oxipit and our **ChestLink and ChestEye** is a sophisticated artificial intelligence-powered platform designed to assist radiologists in the interpretation of medical images, providing insights and diagnostic support. The solution is fully compliant with the Digital Imaging and Communications in Medicine (DICOM) standard, ensuring seamless integration with other DICOM-compliant systems such as PACS (Picture Archiving and Communication Systems), HIS (Hospital Information Systems), RIS (Radiology Information Systems), and imaging modalities (MRI, CT, etc.).

This document outlines the specific DICOM services and features supported by our **ChestLink and ChestEye** and provides details on how our solution interacts with other systems within a healthcare environment.

2. Implementation Model

2.1 System Overview

Our **ChestLink and ChestEye** interfaces with DICOM-compliant systems for the reception and processing of medical images. Our system supports DICOM storage allowing it to seamlessly integrate into a radiology workflow. The AI component provides automated image analysis, flagging findings of interest, and generating reports that can be reviewed by radiologists.

2.2 Functional Capabilities

- **DICOM Storage:** Our **ChestLink and ChestEye** solution can receive and store DICOM images from modalities or PACS systems.
- **AI-Enhanced Image Processing:** Once images are received, they are analyzed by our AI model to detect abnormalities or specific clinical findings (e.g., lung nodules, fractures).
- **Result Export:** The AI-generated reports can be sent back to PACS to be made available for radiologist review.

3. Supported DIMSE services

Our solution can act as both a Service Class Provider (SCP) and Service Class User (SCU) for specific DICOM services. The following Application Entity Title (AET) is used for both: CHESTEYESCP.

3.1 SCP Services

Used for receiving images and reports for AI processing.

3.1.1 Service classes

- Storage Service Class (C-STORE DIMSE service)
- Verification Service Class (C-ECHO DIMSE service)

3.1.2 SOP Classes

SOP Class Name	UID
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
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra-Oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-Oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1
Segmented Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.10
Multiple Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.11
Variable Modality LUT Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.12
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2

Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.11.3
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.11.4
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.11.5
Grayscale Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.11.6
Compositing Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.11.7
Advanced Blending Presentation State Storage	1.2.840.10008.5.1.4.1.11.8
Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.11.9
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.11.12.1
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.11.12.1.1
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.11.12.2
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.11.12.2.1
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.11.12.8
Legacy Converted Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.11.12.8.1
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.11.13.1.1
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.11.13.1.2
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.11.13.1.3
Breast Projection X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.11.13.1.4
Breast Projection X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.11.13.1.5
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.11.13.0
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.11.13.1
Intravascular Optical Coherence Tomography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.11.14.1
Intravascular Optical Coherence Tomography Image Storage - For Processing	1.2.840.10008.5.1.4.1.11.14.2
CT Image Storage	1.2.840.10008.5.1.4.1.11.2
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.11.2.1
Legacy Converted Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.11.2.2

Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.11.20
CT Performed Procedure Protocol Storage	1.2.840.10008.5.1.4.11.200.2
XA Performed Procedure Protocol Storage	1.2.840.10008.5.1.4.11.200.8
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.11.3.1
Parametric Map Storage	1.2.840.10008.5.1.4.11.30
MR Image Storage	1.2.840.10008.5.1.4.11.4
Enhanced MR Image Storage	1.2.840.10008.5.1.4.11.4.1
MR Spectroscopy Storage	1.2.840.10008.5.1.4.11.4.2
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.11.4.3
Legacy Converted Enhanced MR Image Storage	1.2.840.10008.5.1.4.11.4.4
RT Image Storage	1.2.840.10008.5.1.4.11.481.1
RT Physician Intent Storage	1.2.840.10008.5.1.4.11.481.10
RT Segment Annotation Storage	1.2.840.10008.5.1.4.11.481.11
RT Radiation Set Storage	1.2.840.10008.5.1.4.11.481.12
C-Arm Photon-Electron Radiation Storage	1.2.840.10008.5.1.4.11.481.13
Tomotherapeutic Radiation Storage	1.2.840.10008.5.1.4.11.481.14
Robotic-Arm Radiation Storage	1.2.840.10008.5.1.4.11.481.15
RT Radiation Record Set Storage	1.2.840.10008.5.1.4.11.481.16
RT Radiation Salvage Record Storage	1.2.840.10008.5.1.4.11.481.17
Tomotherapeutic Radiation Record Storage	1.2.840.10008.5.1.4.11.481.18
C-Arm Photon-Electron Radiation Record Storage	1.2.840.10008.5.1.4.11.481.19
RT Dose Storage	1.2.840.10008.5.1.4.11.481.2
Robotic Radiation Record Storage	1.2.840.10008.5.1.4.11.481.20
RT Radiation Set Delivery Instruction Storage	1.2.840.10008.5.1.4.11.481.21
RT Treatment Preparation Storage	1.2.840.10008.5.1.4.11.481.22
Enhanced RT Image Storage	1.2.840.10008.5.1.4.11.481.23
Enhanced Continuous RT Image Storage	1.2.840.10008.5.1.4.11.481.24
RT Patient Position Acquisition Instruction Storage	1.2.840.10008.5.1.4.11.481.25
RT Structure Set Storage	1.2.840.10008.5.1.4.11.481.3
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.11.481.4
RT Plan Storage	1.2.840.10008.5.1.4.11.481.5

RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.11.481.6
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.11.481.7
RT Ion Plan Storage	1.2.840.10008.5.1.4.11.481.8
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.11.481.9
Ultrasound Image Storage	1.2.840.10008.5.1.4.11.6.1
Enhanced US Volume Storage	1.2.840.10008.5.1.4.11.6.2
1.2.840.10008.5.1.4.11.6.3	1.2.840.10008.5.1.4.11.6.3
Raw Data Storage	1.2.840.10008.5.1.4.11.66
Spatial Registration Storage	1.2.840.10008.5.1.4.11.66.1
Spatial Fiducials Storage	1.2.840.10008.5.1.4.11.66.2
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.11.66.3
Segmentation Storage	1.2.840.10008.5.1.4.11.66.4
Surface Segmentation Storage	1.2.840.10008.5.1.4.11.66.5
Tractography Results Storage	1.2.840.10008.5.1.4.11.66.6
Real World Value Mapping Storage	1.2.840.10008.5.1.4.11.67
Surface Scan Mesh Storage	1.2.840.10008.5.1.4.11.68.1
Surface Scan Point Cloud Storage	1.2.840.10008.5.1.4.11.68.2
Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7.1
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7.2
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7.3
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7.4
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.11.771.1
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.11.771.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.11.771.2
Video Microscopic Image Storage	1.2.840.10008.5.1.4.11.771.2.1
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.11.771.3
VL Photographic Image Storage	1.2.840.10008.5.1.4.11.771.4

Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.771.4.1
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.771.5.1
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.771.5.2
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.771.5.3
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.771.5.4
Wide Field Ophthalmic Photography Stereographic Projection Image Storage	1.2.840.10008.5.1.4.1.1.771.5.5
Wide Field Ophthalmic Photography 3D Coordinates Image Storage	1.2.840.10008.5.1.4.1.1.771.5.6
Ophthalmic Optical Coherence Tomography En Face Image Storage	1.2.840.10008.5.1.4.1.1.771.5.7
Ophthalmic Optical Coherence Tomography B-scan Volume Analysis Storage	1.2.840.10008.5.1.4.1.1.771.5.8
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.771.6
Dermoscopic Photography Image Storage	1.2.840.10008.5.1.4.1.1.771.7
1.2.840.10008.5.1.4.1.1.771.8	1.2.840.10008.5.1.4.1.1.771.8
1.2.840.10008.5.1.4.1.1.771.9	1.2.840.10008.5.1.4.1.1.771.9
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8
Macular Grid Thickness and Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1
Ophthalmic Thickness Map Storage	1.2.840.10008.5.1.4.1.1.81.1
Corneal Topography Map Storage	1.2.840.10008.5.1.4.1.1.82.1
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22

Comprehensive SR Storage	1.2.840.10008.5.1.4.11.88.33
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.11.88.34
Extensible SR Storage	1.2.840.10008.5.1.4.11.88.35
Procedure Log Storage	1.2.840.10008.5.1.4.11.88.40
Mammography CAD SR Storage	1.2.840.10008.5.1.4.11.88.50
Key Object Selection Document Storage	1.2.840.10008.5.1.4.11.88.59
Chest CAD SR Storage	1.2.840.10008.5.1.4.11.88.65
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.11.88.67
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.11.88.68
Colon CAD SR Storage	1.2.840.10008.5.1.4.11.88.69
Implantation Plan SR Storage	1.2.840.10008.5.1.4.11.88.70
Acquisition Context SR Storage	1.2.840.10008.5.1.4.11.88.71
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.11.88.72
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.11.88.73
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.11.88.74
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.11.88.75
Enhanced X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.11.88.76
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.11.9.1.1
General ECG Waveform Storage	1.2.840.10008.5.1.4.11.9.1.2
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.11.9.1.3
1.2.840.10008.5.1.4.11.9.1.4	1.2.840.10008.5.1.4.11.9.1.4
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.11.9.2.1
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.11.9.3.1
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.11.9.4.1
General Audio Waveform Storage	1.2.840.10008.5.1.4.11.9.4.2
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.11.9.5.1
Respiratory Waveform Storage	1.2.840.10008.5.1.4.11.9.6.1
Multi-channel Respiratory Waveform Storage	1.2.840.10008.5.1.4.11.9.6.2
Routine Scalp Electroencephalogram Waveform Storage	1.2.840.10008.5.1.4.11.9.7.1
Electromyogram Waveform Storage	1.2.840.10008.5.1.4.11.9.7.2

Electrooculogram Waveform Storage	1.2.840.10008.5.1.4.11.9.7.3
Sleep Electroencephalogram Waveform Storage	1.2.840.10008.5.1.4.11.9.7.4
Body Position Waveform Storage	1.2.840.10008.5.1.4.11.9.8.1
Content Assessment Results Storage	1.2.840.10008.5.1.4.11.90.1
Microscopy Bulk Simple Annotations Storage	1.2.840.10008.5.1.4.11.91.1
RT Brachy Application Setup Delivery Instruction Storage	1.2.840.10008.5.1.4.34.10
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7
Verification SOP Class	1.2.840.10008.1.1

3.1.3 Transfer Syntaxes

Transfer Syntax	UID
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
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
JPEG Extended (Process 2 and 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80
JPEG-LS Lossy (Near-Lossless) Image Compression	1.2.840.10008.1.2.4.81
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91

3.1.4 DICOM Attributes

Attribute Name	Tag	VR	Presence	Description
SOP Instance UID	(0008,0018)	Unique Identifier (UI)	Required	
SOP Class UID	(0008,0016)	Unique Identifier (UI)	Required	
Study Instance UID	(0020,000D)	Unique Identifier (UI)	Required	
Series Instance UID	(0020,000E)	Unique Identifier (UI)	Required	
Modality	(0008,0060)	Code String (CS)	Required	Accepted values: CR, DX, DR, SR, MG, CT.

3.2 SCU Services

Used for sending AI results to the PACS for storage.

3.2.1 Service Classes

- Storage Service Class (C-STORE DIMSE service)
- Verification Service Class (C-ECHO DIMSE service)

3.2.2 SOP Classes

SOP Class Name	UID
Basic Text SR Storage	1.2.840.10008.5.1.4.11.88.11
Secondary Capture Image Storage	1.2.840.10008.5.1.4.11.7
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.11.11.1
Encapsulated PDF Storage	1.2.840.10008.5.1.4.11.104.1
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.11.11.1
Verification SOP Class	1.2.840.10008.1.1

3.2.3 Transfer Syntaxes

Transfer Syntax	UID
Implicit VR Little Endian	1.2.840.10008.1.2

4. Network Communication

Our system supports DICOM over the following network protocols:

- **DICOM TCP/IP (Network):** Uses standard DICOM ports and communication over TCP/IP for image and report transfer.
- **Physical Media, Email (SMTP), SFTP:** Alternatives for non-real-time or batch data transfer.

5. Security Profiles

Our **ChestLink and ChestEye** ensures data integrity and security by supporting:

- **DICOM Security Extensions:** Encrypted communication through TLS (Transport Layer Security), version 1.3.
- **HIPAA and GDPR compliance:** The solution follows strict data protection guidelines, ensuring the confidentiality of patient information.

6. Non-Conformance

If non-conformance or any interoperability issues arise, users should contact support@oxipit.ai

7. Conclusion

Our **ChestLink and ChestEye** is designed to fully conform to the [DICOM 3.0] standard, ensuring seamless integration into a wide range of medical imaging environments. It supports essential DICOM services required for storing and processing medical images.