



## Validation of the DICOM content from remote storage model

### Client Overview

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The client is one of the leading medical technology supplier and consultant, committed to provide a meaningful innovation that improves quality of care, enhance patients' lives and enable the delivery of better outcomes at lower cost. Client operates in four main business areas: Diagnostic Imaging Systems; Patient Care and Clinical Informatics; Customer Services; and Home Healthcare.

### Challenges

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Client was facing challenges related to Radiology information *system (RIS)* and picture archiving and communications *systems (PACS)* with the interoperability issues. Client wanted a trusted organization that can validate the DICOM content from their remote storage model. Absence of whole DICOM network workflow is another issue in case of expansion of radiology and modalities imaging systems. Client were looking for a suitable partner who can verify the integrity of their DICOM files transmitted between the separate archives i.e. from two different DICOM storage applications- PACS and Off-site archive. The client's systems includes: a query/retrieve module (Q/R), DICOM evaluation module, SCP (storage services class provider) and GUI.

### Solutions

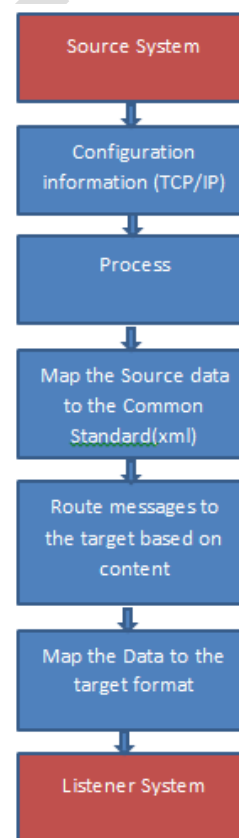
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OPTRA team engaged with the client's informatics team and understood the challenges. Optra Systems designed a test environment which aids to assess the conformance of an implementation of DICOM standard and helped in implementing the IHE (integrating the healthcare enterprise) compliant image Archive and record repository.

Optra's expert team developed DICOM file evaluation and validation tool, that system was comprised of a DICOM Q/R module, directory archives, DICOM evaluation module, SCP and GUI for real time interaction between the user and system which we have developed. Optra also assisted the client with DICOM test scripts to validate the DICOM communication exchange between the devices which are connected over the network. The designed system had been operated to verify whether the DICOM data elements, value representation and pixel data were identical or not. Also the differences in the two data sets were recorded with the data elements and pixel data.

### Workflow

- Identify/select the source system
- Identify listener and the configuration information for the type of listener selected for e.g. TCP/IP
- Select the process for e.g. DICOM
- Map the Source data to the Common Standard (xml etc.)
- Route messages to the appropriate target or targets based on the content of the message.
- Map the Data to the Exact Format Required by the Target System



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# Optra Advantage

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*Optra helps validating the contents from DICOM files against the DICOM standard.*

- Provides DICOM file contents in readable format
- Helps to extract attributes and insights from different file format
- Create test scripts or templates for test files and helps to edit the attribute
- Checks attributes in the file against the requirements of IODs (Information Object Definitions) and Modules defined in DICOM standard
- Verify encoding of data elements and values against data structures encoding rules of the DICOM
- Validate the datasets & value representation and redundancies against data dictionary of DICOM standard
- Helps testing the uniformity of attributes and it's elements in multiple files that are similar for the identical entities

## About Optra Systems

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Optra Systems is an ISO-certified global organization with deep domain expertise in medical devices, lab automation, life science informatics and healthcare IT solutions. The company provides a fully-scalable, cost-effective OptiShore™ delivery model. This enables customers to choose the optimal balance between on-site, on-shore, and off-shore development that will best address their budget and collaboration requirements. With Optra Systems, customers are able to shrink their time-to-market by leveraging practical, building-block based solutions. Committed to clear communication and total transparency, the company consistently meets or exceeds its clients' expectations. Offering a full complement of expert engineering and consulting services, Optra Systems is aligned to real business needs applied over the entire product development lifecycle. The robust, scalable and efficient IT infrastructure of the company, together with its outstanding project management team, consistently ensures superior results. Optra Systems 's

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global delivery model helps its customers cut costs by about 50% without compromising on quality and realize a 200% improved production cycle.

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