

DPHIANT

Plans for v1.3 - v1.4

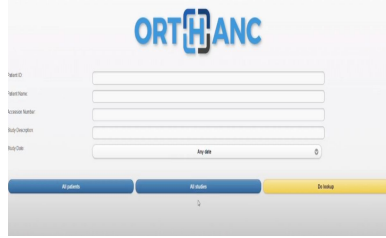
DICOM Personal Health Information Anonymization Tool

Ben Wilson

Nigam Lad

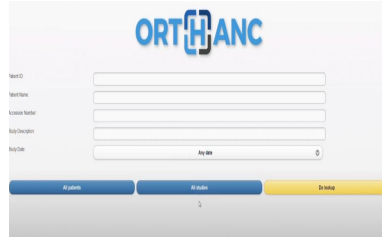
Yidu Guo

Completed Deliverables



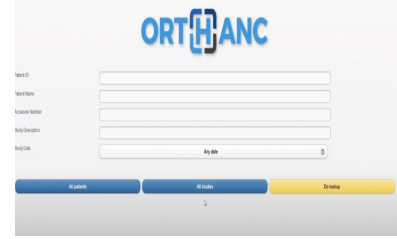
Orthanc Modality

Stand in for actual MRI or Xray machine, DICOM files are sent from here to the DPHIANT Middleman



DPHIANT Middleman

Intercepts DICOM files from Orthanc Modality and runs anonymization process, then sends to DPHIANT Deep Storage



DPHIANT Deep Storage

Anonymized DICOM files are received from DICOM Middleman and stored in Deep Storage for further research and analysis



Milestone #3 Features

1. Anonymize appropriate fields in DICOM

DICOM Tags

✓ Show tag description

Meta header

0002 0000 (FileMetaInformationGroupLength): 208
0002 0002 (MediaStorageSOPClassUID): 1.2.840.10008.5.1.4.1.1.7
0002 0003 (MediaStorageSOPInstanceUID): 1.3.6.1.4.1.5962.99.1.2280943358.716200484.1363785608958.60.0
0002 0010 (TransferSyntaxUID): 1.2.840.10008.1.2.4.90
0002 0012 (ImplementationClassUID): 1.2.276.0.7230010.3.0.3.6.6
0002.0013 (ImplementationVersionName): OFFIS_DCMTK_366

Dataset

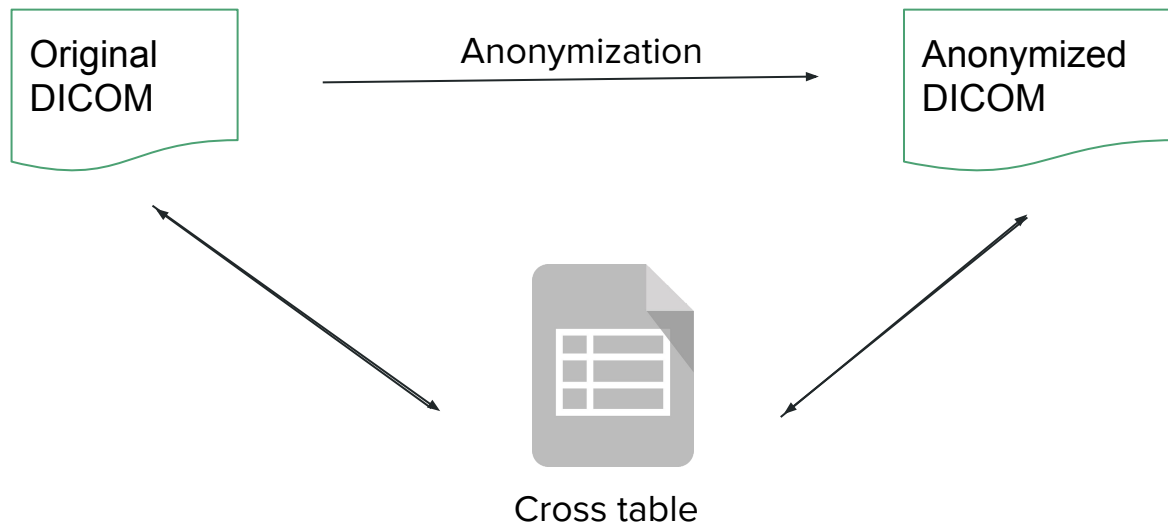
0008 0006 (ImageType): DERIVED/PRIMARY
0008 0016 (SOPClassUID): 1.2.840.10008.5.1.4.1.1.7
0008 0018 (SOPInstanceUID): 1.3.6.1.4.1.5962.99.1.2280943358.716200484.1363785608958.60.0
0008 0020 (StudyDate): 20080408
0008 0021 (SeriesDate): 20080408
0008 0022 (AcquisitionDate): 20080407
0008 0023 (ContentDate): 20080408
0008 0030 (StudyTime): 023126.000
0008 0031 (SeriesTime): 024342.000
0008 0032 (AcquisitionTime): 183534.000
0008 0033 (ContentTime): 024342.000
0008 0050 (AccessionNumber)
0008 0060 (Modality): MG
0008 0064 (ConversionType): WSD
0008 0070 (Manufacturer): HOLOGIC, Inc.
0008 0080 (InstitutionName): DPHIANT
0008 0090 (ReferringPhysicianName)
0008 1030 (StudyDescription): BREAST IMAGING TOMOSYNTHESIS
* 0008 1032 (ProcedureCodeSequence): []
0008 103e (SeriesDescription): L CC Tomosynthesis Projection
0008 1090 (ManufacturerModelName): Selenia Dimensions
0010 0010 (PatientName): Michael Bedford
0010 0020 (PatientID): e0c4f8c3-fe22-4c92-bb83-2dc6edfb9372

Tasks:

1. Determine which tags to anonymize
2. Anonymize desired tags
3. Ensure tags to be anonymized are changeable

Milestone #3 Features

2. Create cross table between original and anonymized patient study for backward compatibility

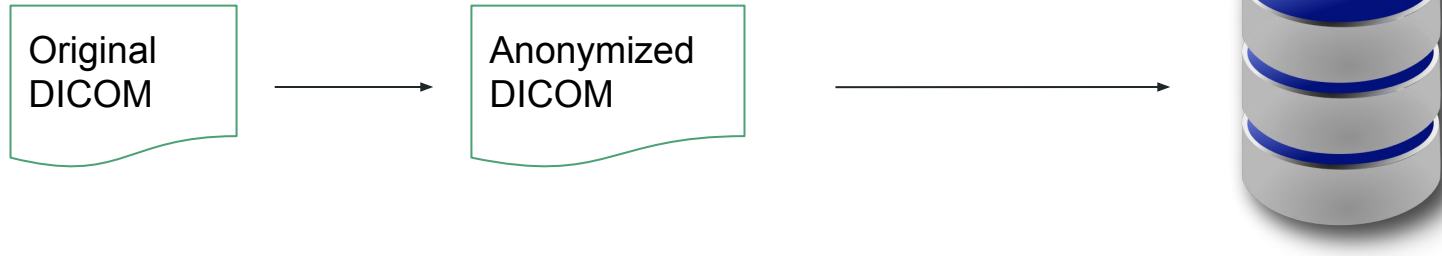


Tasks

1. Create cross table
2. Implement cross reference between original study to cross table
3. Implement cross reference between anonymized study to cross table
4. Implement database for cross table

Milestone #3 Features

3. Store anonymized study in deep storage



3.1 Research and implement database for deep storage of anonymized DICOM files

- Eg: ODBC

Tasks:

1. Research database implementation for deep storage
2. Continue pipeline implementation to store anonymized DICOM file to deep storage

Milestone #3 Features

1. Anonymize appropriate fields in DICOM
2. Create cross table between original and anonymized patient for backward compatibility
3. Store anonymized study in deep storage

Milestone #4 Features

1. Solution for patient mismatching

There are scenarios that exist such that certain known personal information could be changed for a patient, such as name, age, sex, and address

In the case that DICOM file containing information from a previously known patient with different personal information is uploaded, a solution is needed to distinguish that they are from the same patient

Milestone #4 Features

2. Automate pipeline

All features and functions implemented will be automated

