

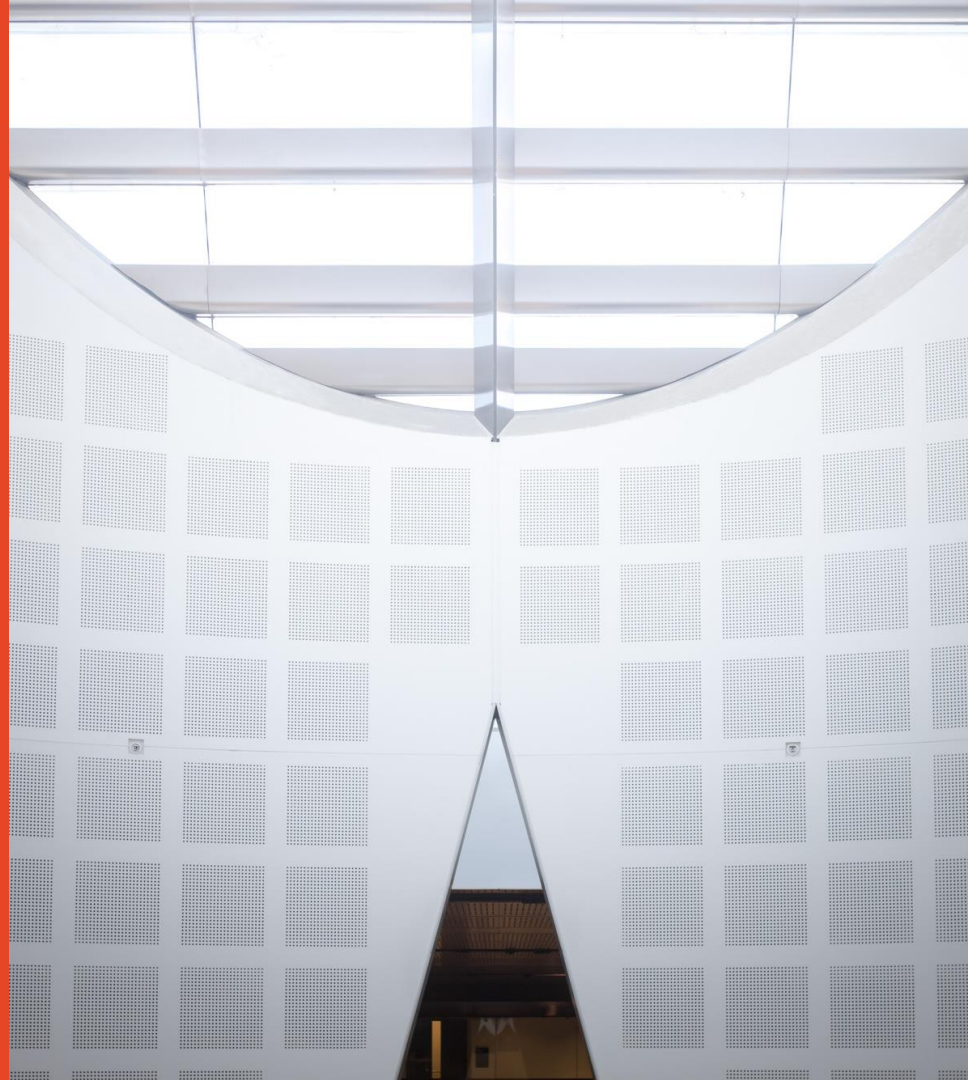
Phase II of the Imaging Data Service: Expanding XNAT

Presented by

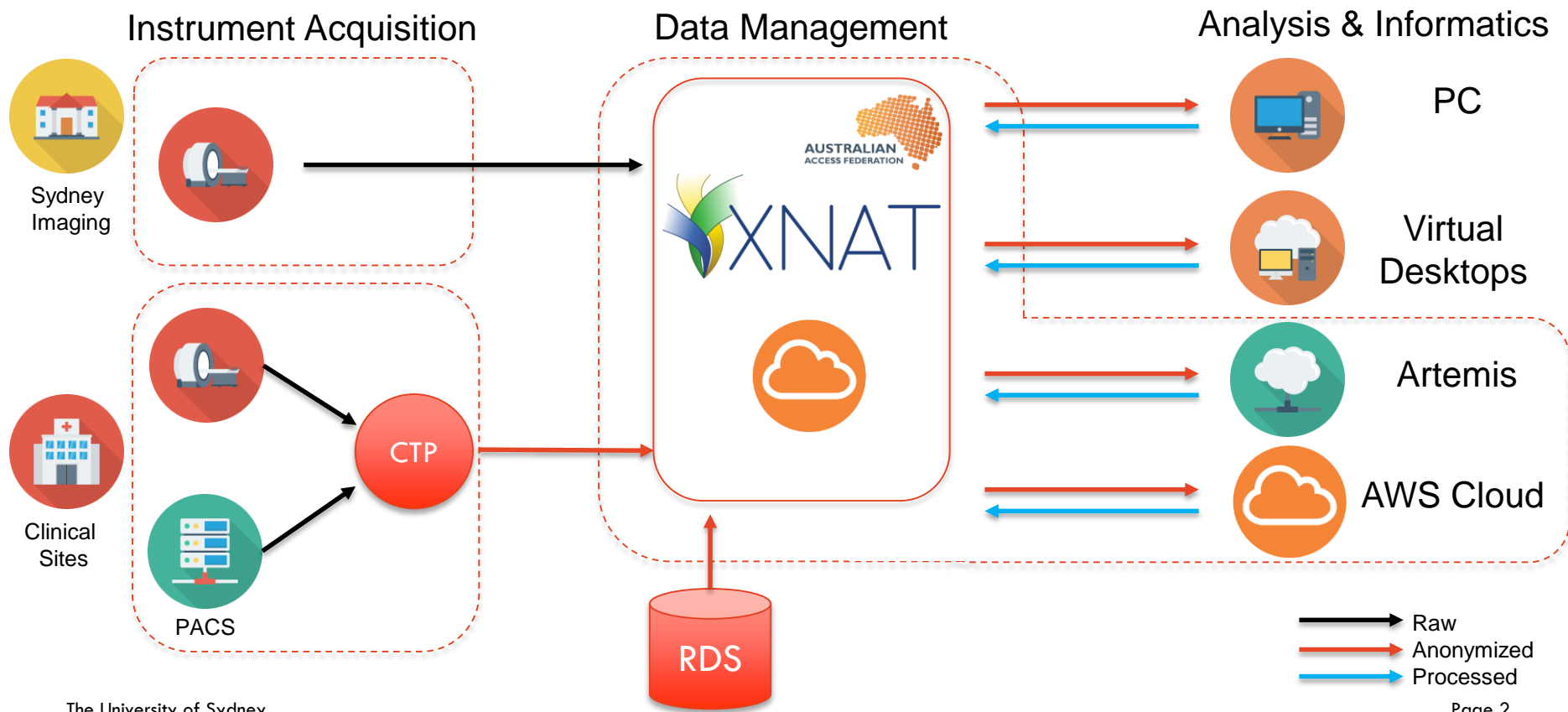
Dr Ryan Sullivan^{1,2}

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²Operations Team, Core Research Facilities

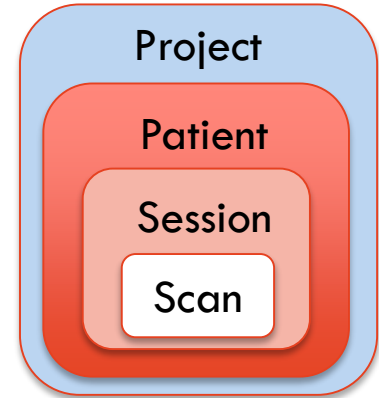


Imaging Data Service Overview



IDS: Data Management and Collaboration

- Secure, searchable, and sharable repository
 - Standard data hierarchy
 - Project based user access controls controlled by CI
 - Expandable data formats for supporting modalities
- Cloud based, browser accessible
 - View and annotate DICOM
 - Australian Access Federation (AAF) login
 - [Collaborate with 52 research & health institutions](#)
 - Generate custom reports across projects



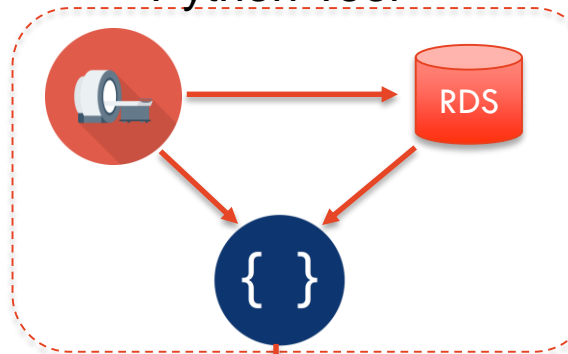
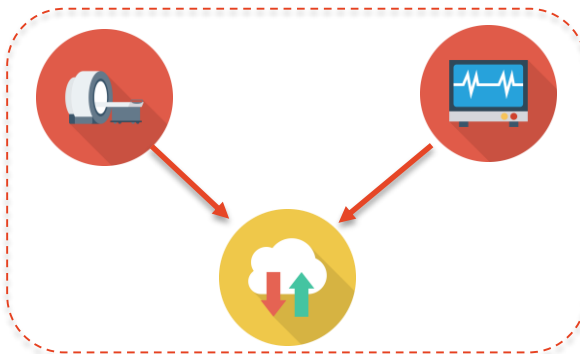
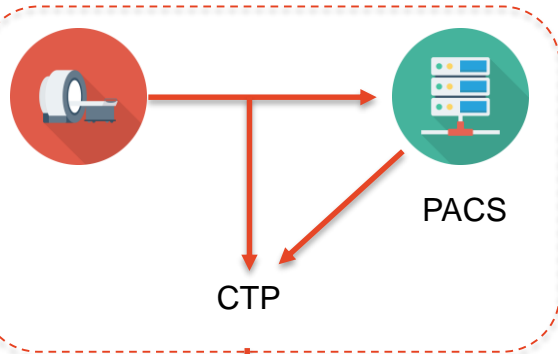
Data Hierarchy

Instrument Upload

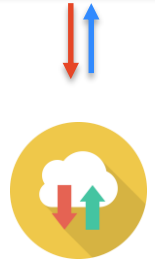
DICOM Send

Browser GUI

Python Tool



External Analysis



XNAT Gateway

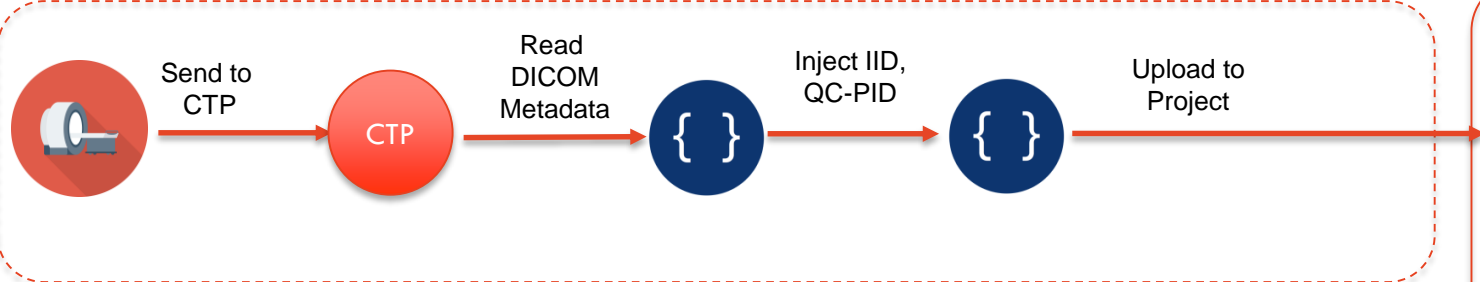
Simple Upload Tool

XNAT Desktop

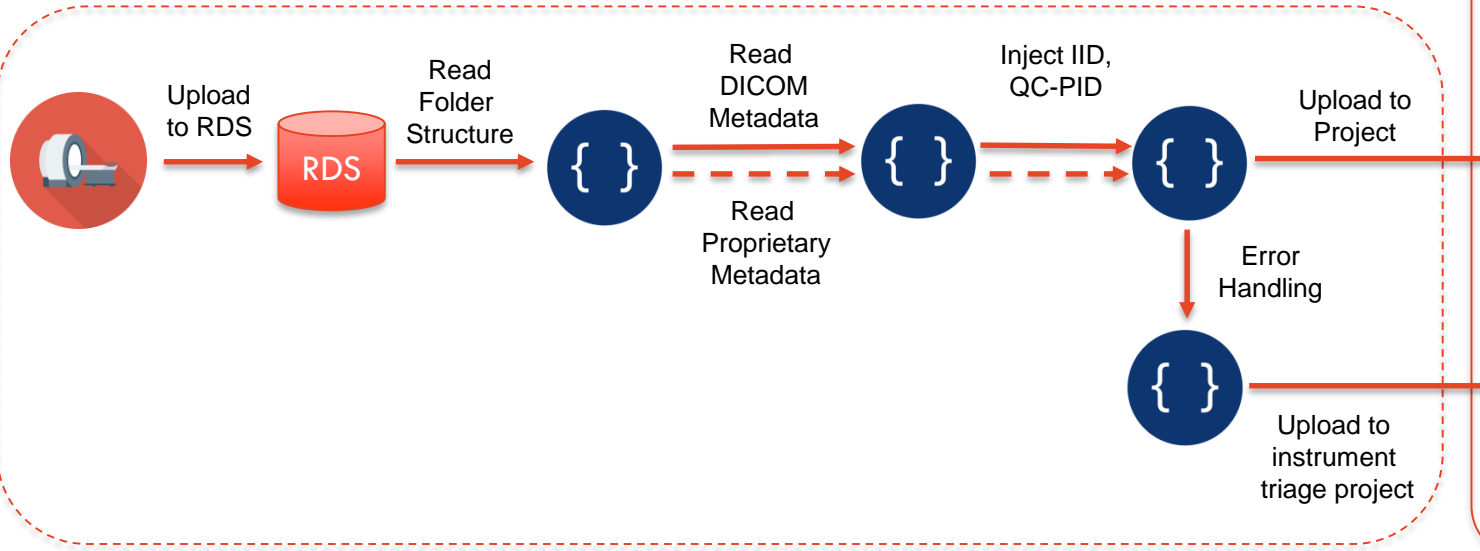
REST API

IDS: Automated Instrument Upload

DICOM Only



Arbitrary



Error Handling

{}
{}
Email alert

Reporting

- Determining ROI
 - Instrument ID
 - Project ID
- Quality Control
 - NIF TDR
 - QCPID
- Facility Management
 - Combine booking & instrument metadata



Scan	Sequence	Timestamp	Duration
2520	Scout	142533	15.0s
2521	Scout	142928	15.0s
2522	Scout	143038	15.0s
2523	Scout	143107	15.0s
2525	Scout	143732	15.0s
2526	FSE T2w (axial,n)	144819	69.0s
2527	EPI1 SEDWI-15ms	150131	128.0s
2528	EPI1 SEDWI-15ms	150827	1022.0s
2529	EPI1 SEDWI-15ms	151324	1022.0s
2530	EPI1 SEDWI-15ms	151712	1022.0s
2533	EPI1 SEDWI-15ms	152901	1916.0s
2534	FSE T2w (axial,n)	153057	557.0s
2535	EPI1 SEDWI-15ms	151421	1022.0s

Central Operations

- Research Dashboard (DASHR)
 - Project allocation
- Service Now
 - Integrated Helpdesk and tickets
- Future:
 - Ethics controlled user access



ARDC Discovery Activity – Sensitive Data

Semantic mapping using CTP

Plain Language
Consent



Grouping



Technical

I consent to...:

- share my medical images for research purposes, but not including information such as my name or date of birth
- share my sociological data such as occupation and the region I live in

- <Direct Identifiers>
- <Sociological data>

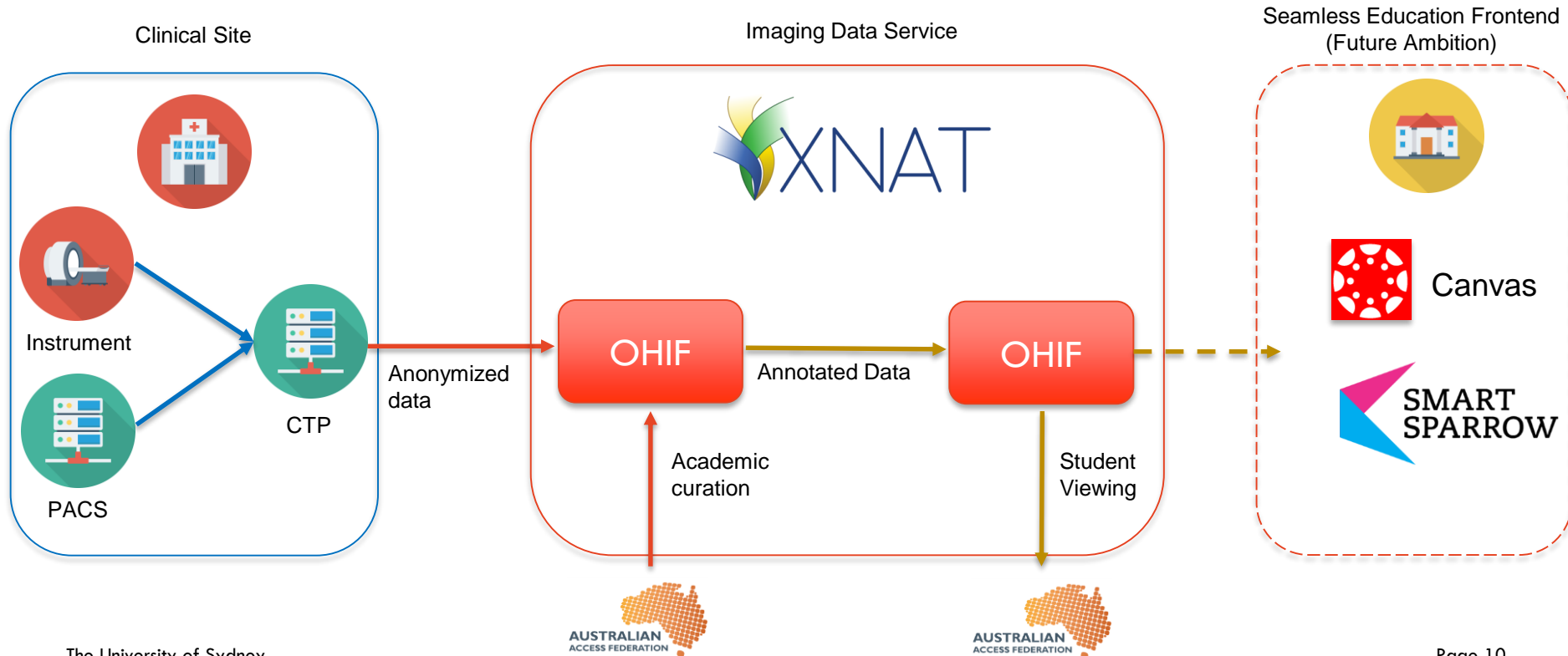
- (0010,1080) Military Rank
- (0010,2150) Region of Residence
- (0010,2160) Ethnic Group
- (0010,2180) Occupation

AAF & Security

- Testing and implementing AAF Plugin
- External Security Audit
 -
 -
 -
 -
 -
- Remediation report to be released
- Worked with Washington University to patch XNAT
 - 1.7.5.4-6



A Cloud Based Dentomaxillofacial Imaging Resource



Proposed Extensions

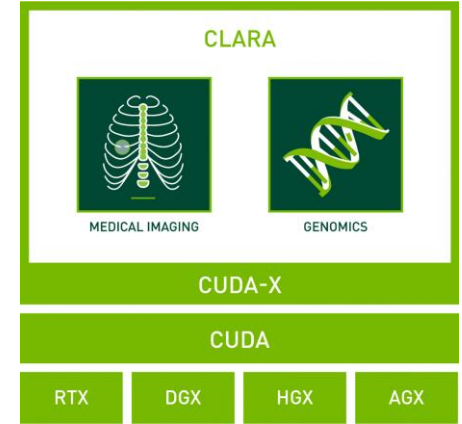


Cardiac and respiratory imaging platform developed by NIH



NextGen Connect is an Open Source platform for HL7 integration with clinical sites

NVIDIA's Clara recently open sourced GPU accelerated AI and Machine Learning SDK



What's important to your research?

