DIGITAL STRATEGY A BALANCING ACT

A short history of an ambitious team who curbed their enthusiasm for the larger good

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A short history of an ambitious team who told their evil overlord to shhh and calm down

Background

A LITTLE
ABOUT ME

Computer science background

Brief experience of private industry

Followed by experience of many Libraries in Oxford and then Lancaster

Used to code (ok-ish)

Not any more though :(

But really enjoy the leadership :)

A LITTLE
ABOUT ME

Ex Libris and non-Ex Libris work

Oxford's Primo (SOLO) and Aleph implementation

Dabbled with MetaLib and SFX

Leganto implementation and Esploro partnership

Lots of repositories and stuff

A LITTLE
ABOUT TEAM

enhance the reach, impact and potential of digital and research

to inspire moments of optimism, innovation and excellence

to create value and to make a difference for our stakeholders

to be partners in digital and research processes

Digital strategy

KEY DRIVERS

Technology changes outpace capacity to learn and deliver

Major impact of Machine Learning, AI, IoT and Blockchain

Growth in Digital Scholarship requirements

Evidence driven decision making – impact & value

Lack of general purpose digital skills but also way of thinking

LANCASTER CONTEXT

Digitally innovative university - fifth dimension of the Strategy

Digital Lancaster - digital vision of the University

Goals: Digital Research, Digital Teaching & Learning, Digital Engagement

Enablers: Digital Fluency, Digital Services, Digital Innovation

Library leads on Digital Research goal

LIBRARY CONTEXT

Digitally innovative Library

Digitally fluent Library

Innovation and diversity of thinking as a core principle

Formation of Innovation Group

INNOVATION

To be one of the top libraries in the UK, Lancaster University Library has to take a transformative approach towards building innovation in its approach and practices. We will need to continue establishing an ethos of collaboration, both internally within the institution and beyond that.

An ethos that empower us to actively seek partnerships, inspire creativity, develop leadership and build confidence.

INNOVATION

To develop a strong insight into our customers' behaviour, we need to develop data-driven services. This will provide us with the capability to continuously refine and improve our services.

In addition to data-driven services, this also requires development of an attitude that motivates staff to consistently improve services and challenge stagnant services.

This will further require a change in their thinking model, asking how they will measure the success of a service at the time of its inception.

INITIAL OUTCOMES

Most ideas were non-digital in their nature

Some required digital work, more require cultural change work

Better indoor navigation, better room booking system, better enquiry management, streamlining of resource sharing, Primo learning wizard, better visitor registration, staff points on each floor.

Not all digital work comes through these ideas, we also have major projects, i.e. Primo in the cloud, Leganto, Jisc Research Data Shared Service, Esploro, Pure, DMAonline, etc.

Our current Projects

or little pieces of code

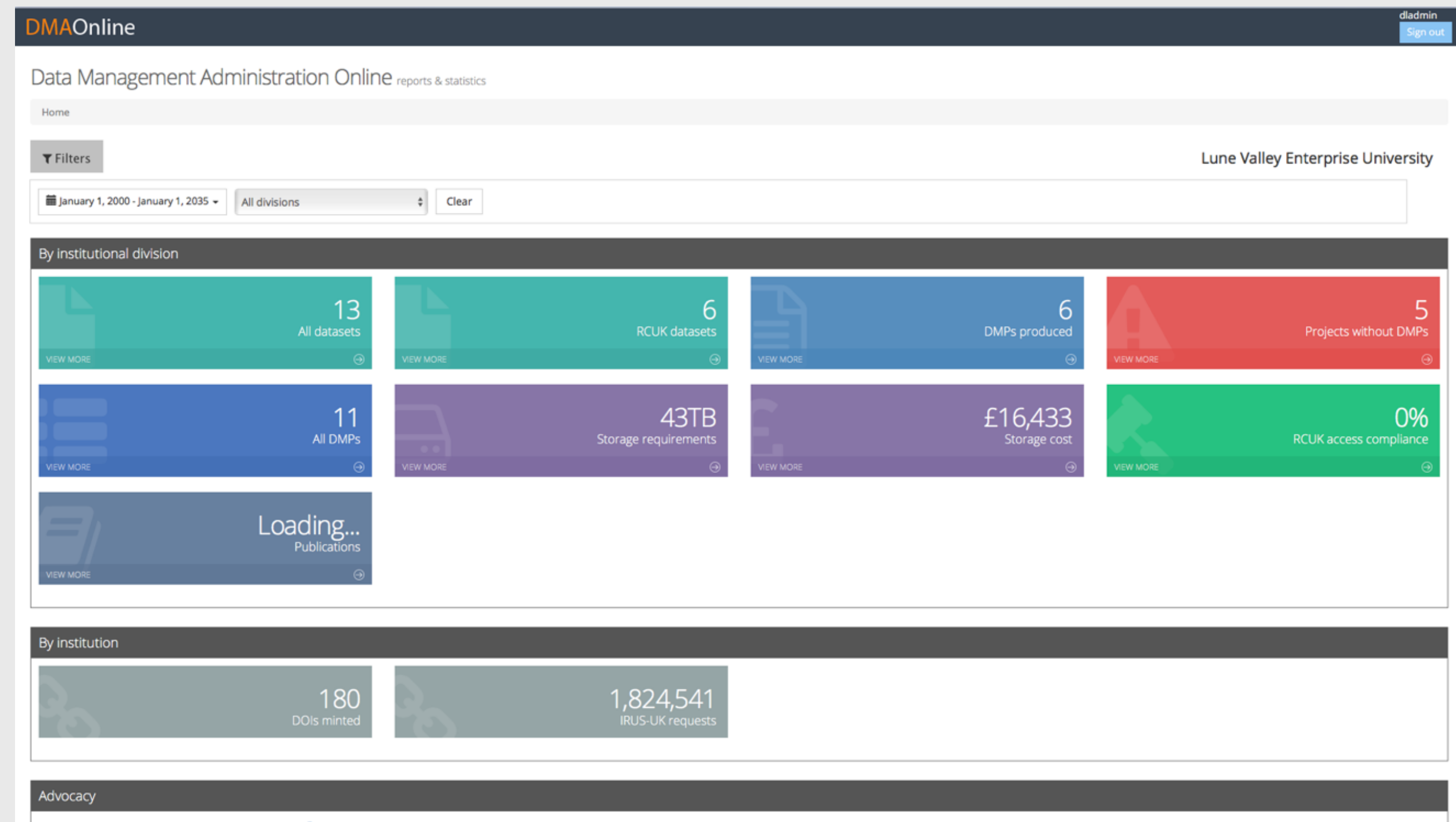# RESEARCH DATA SHARED SERVICE (RDSS)

- Advancing Research Data Management through collaboration

- R&D project, now a beta service

- Started from Research at Risk co-design process

- Provides a framework agreement and interoperability standard for vendors

- Three core components - repository, preservation and reporting

- 15 pilot institutions including Lancaster and York
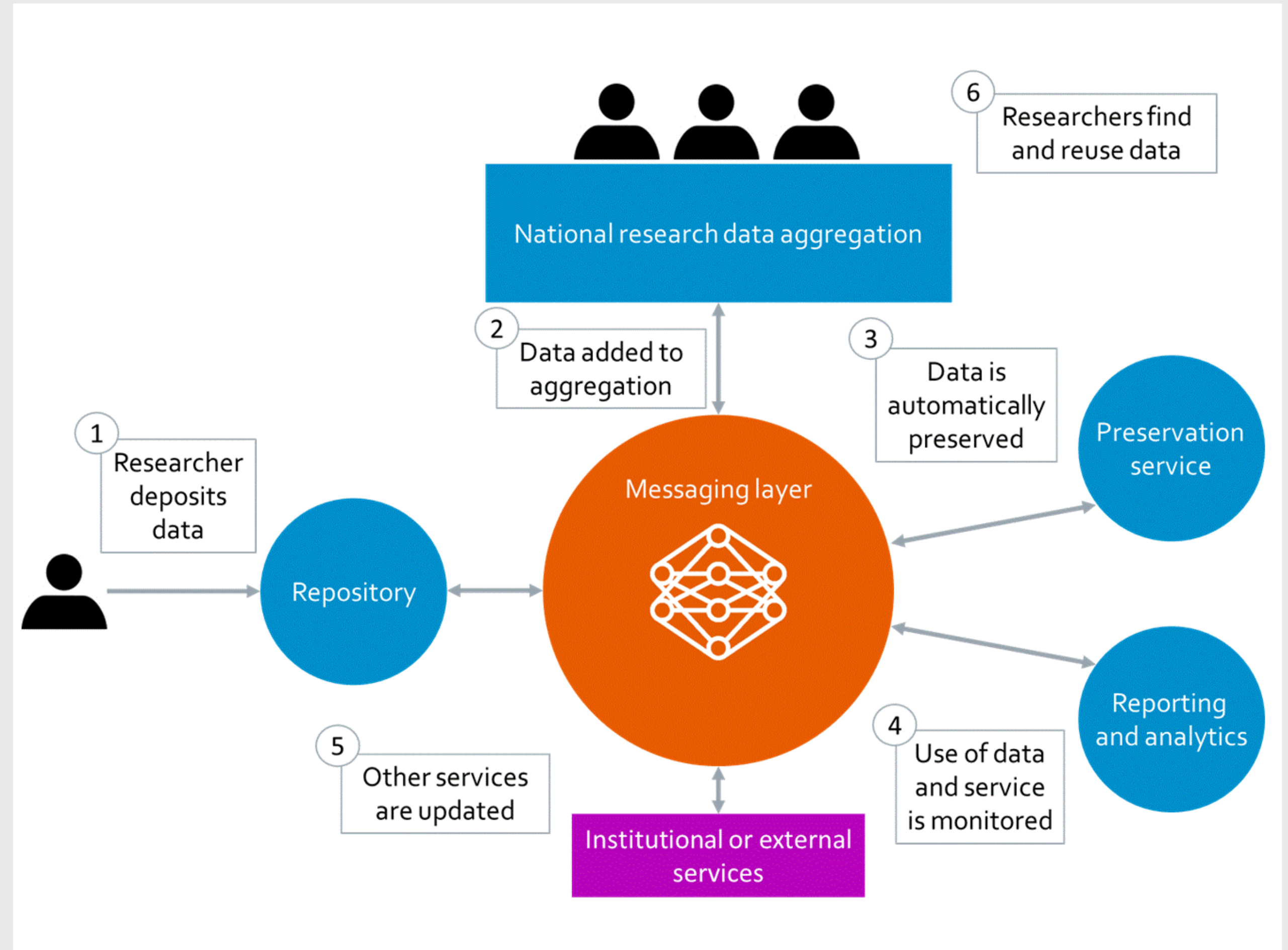
DATA MANAGEMENT ADMINISTRATION ONLINE

- Idea proposed as part of Research at Risk co-design discussions

- R&D project, about to be launched as a service

- Uses Jisc messaging layer to develop a common reporting and intelligence tool

- Allows institution to see multiple views, DVC/PVC (Research), Librarian, Data Manager, IT Manager, etc

- Allow intelligent KPIs and institutional benchmarking

- VueJS, about to move to Aurora, API driven

DATA MANAGEMENT ADMINISTRATION ONLINE

DMA online

T
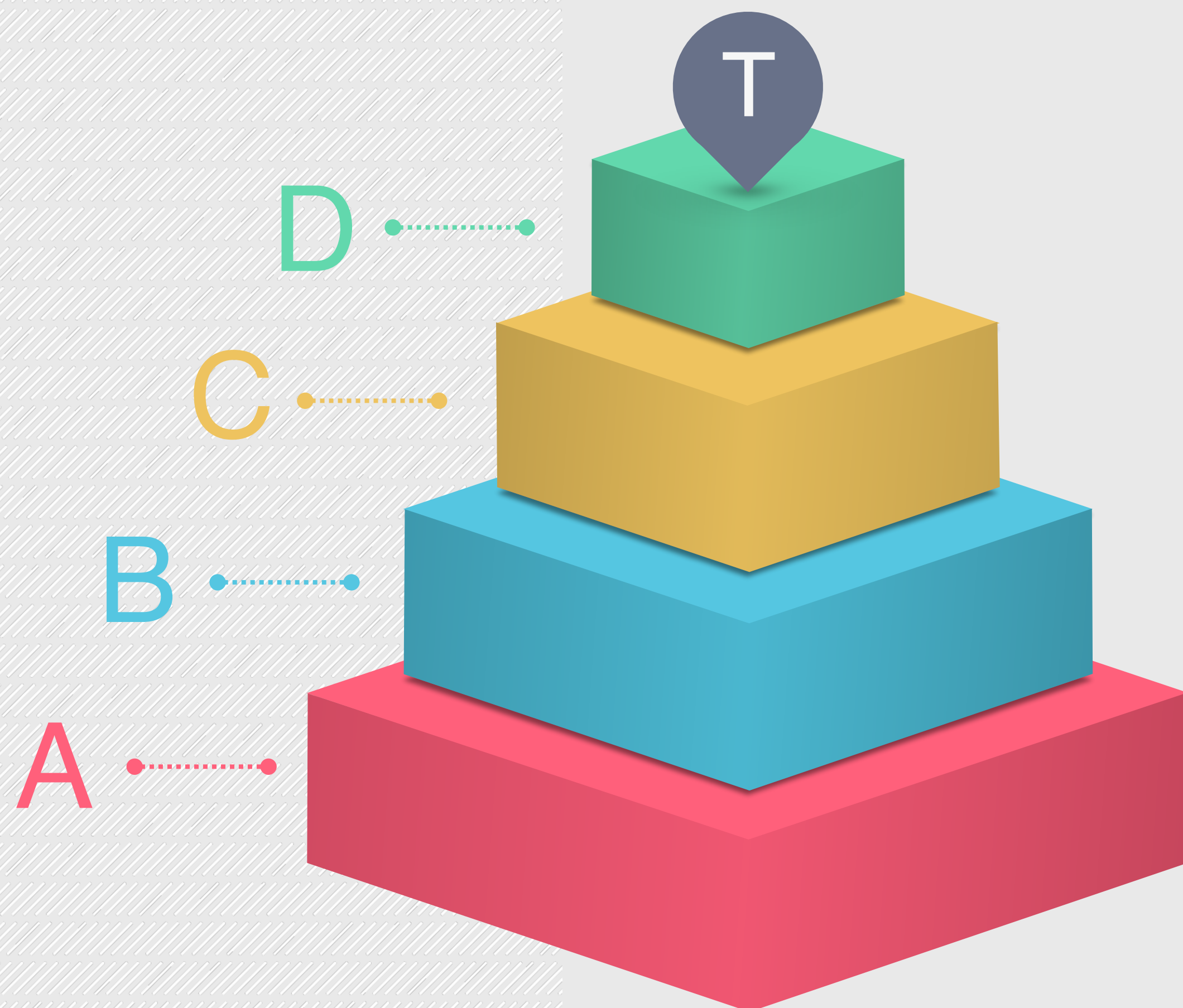
D - - - - Dashboard for reporting or end points for Tableau

C - - - - DMAOnline ingest engine

**B** - - - - Messages and Events

A - - - - Jisc Research Data Shared Service
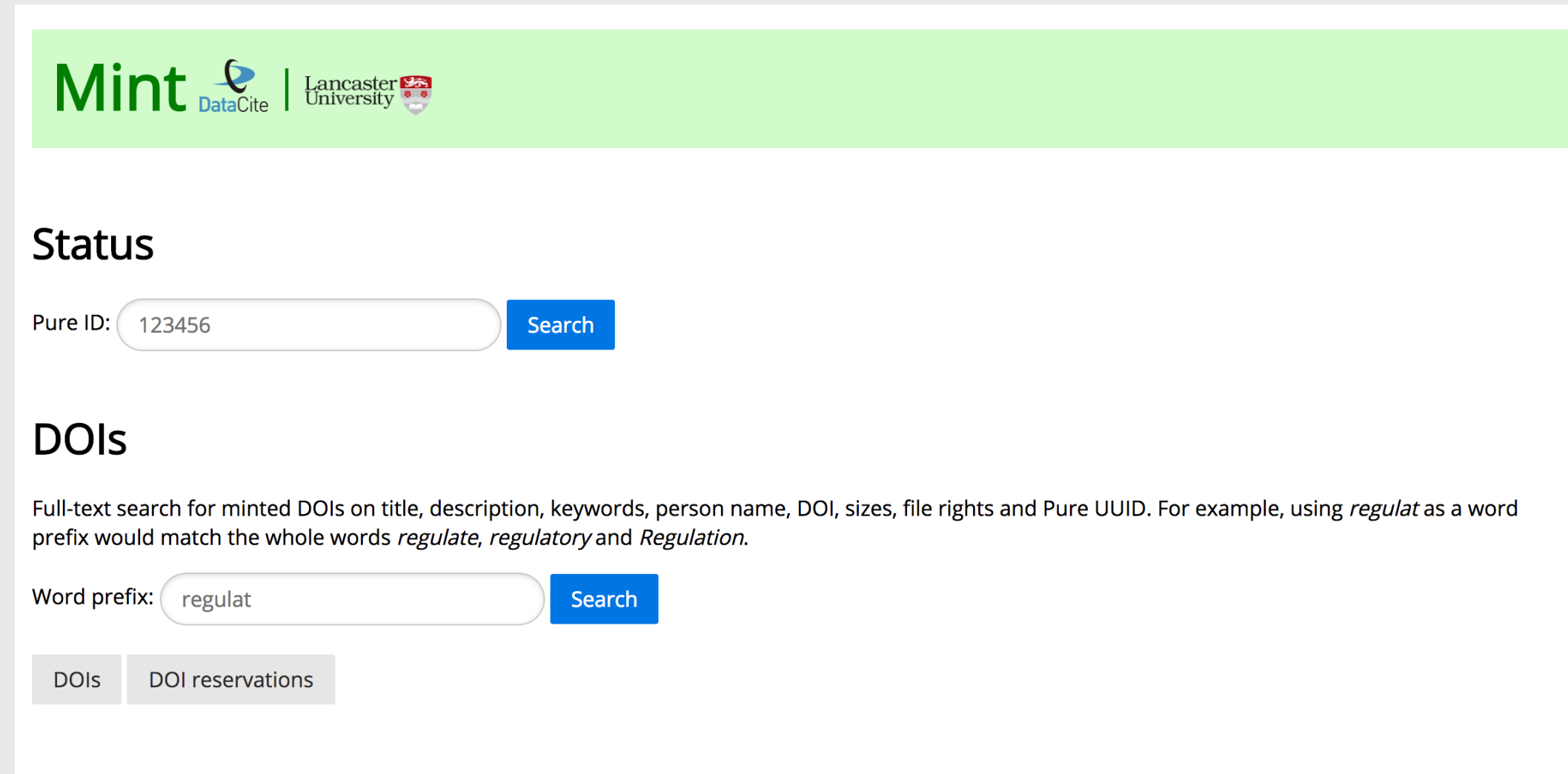
DATA MANAGEMENT ADMINISTRATION ONLINE

- Tenant configuration service to configure local hierarchies of organisation, compliance thresholds, KPIs, etc

- Additional sources such as Zendesk for RDM enquiries

- REST and GraphQL queries for API

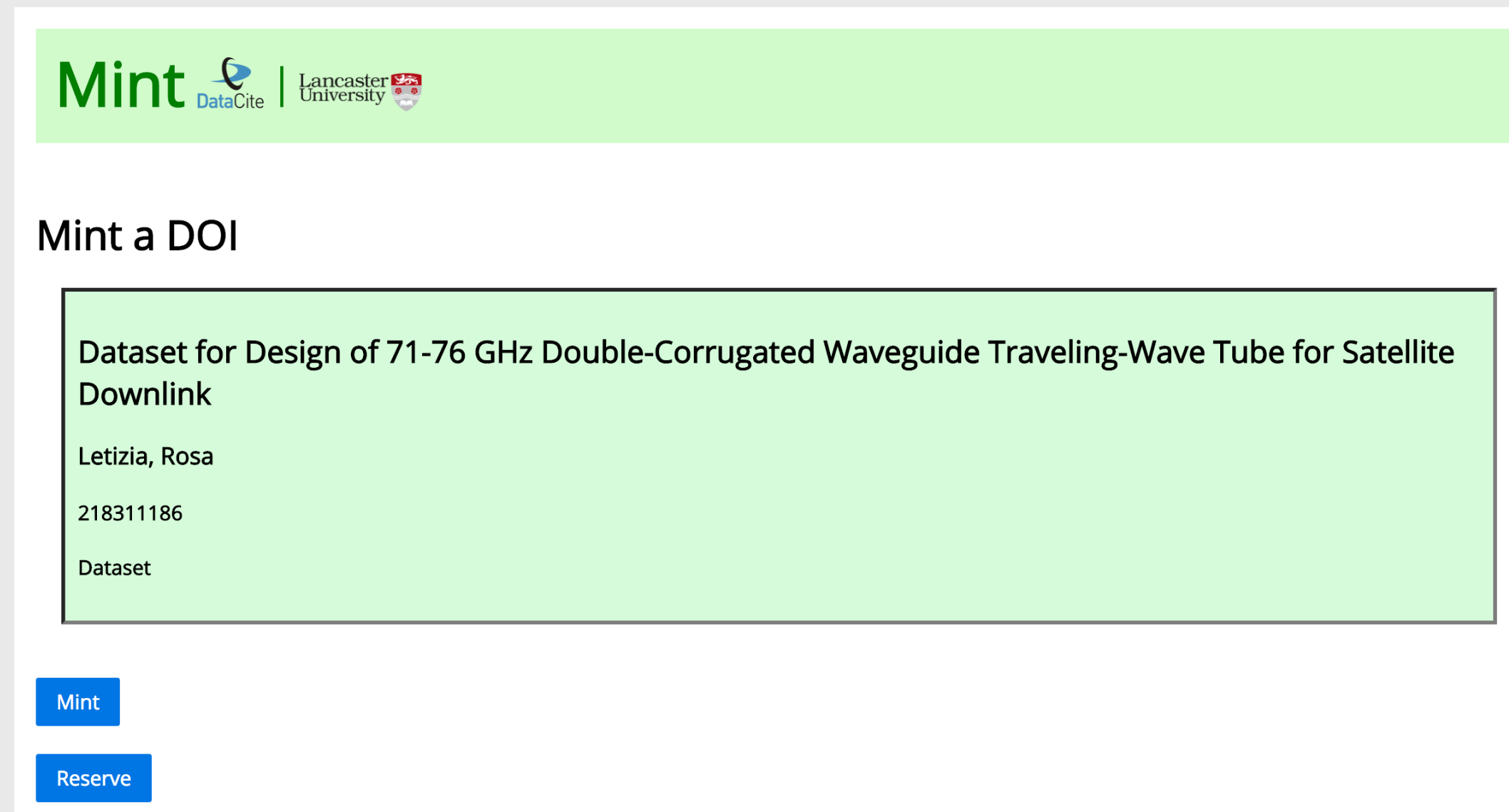- VueJS for front end, considering moving to Amazon Aurora for backend

DMAonline Architecture Overview
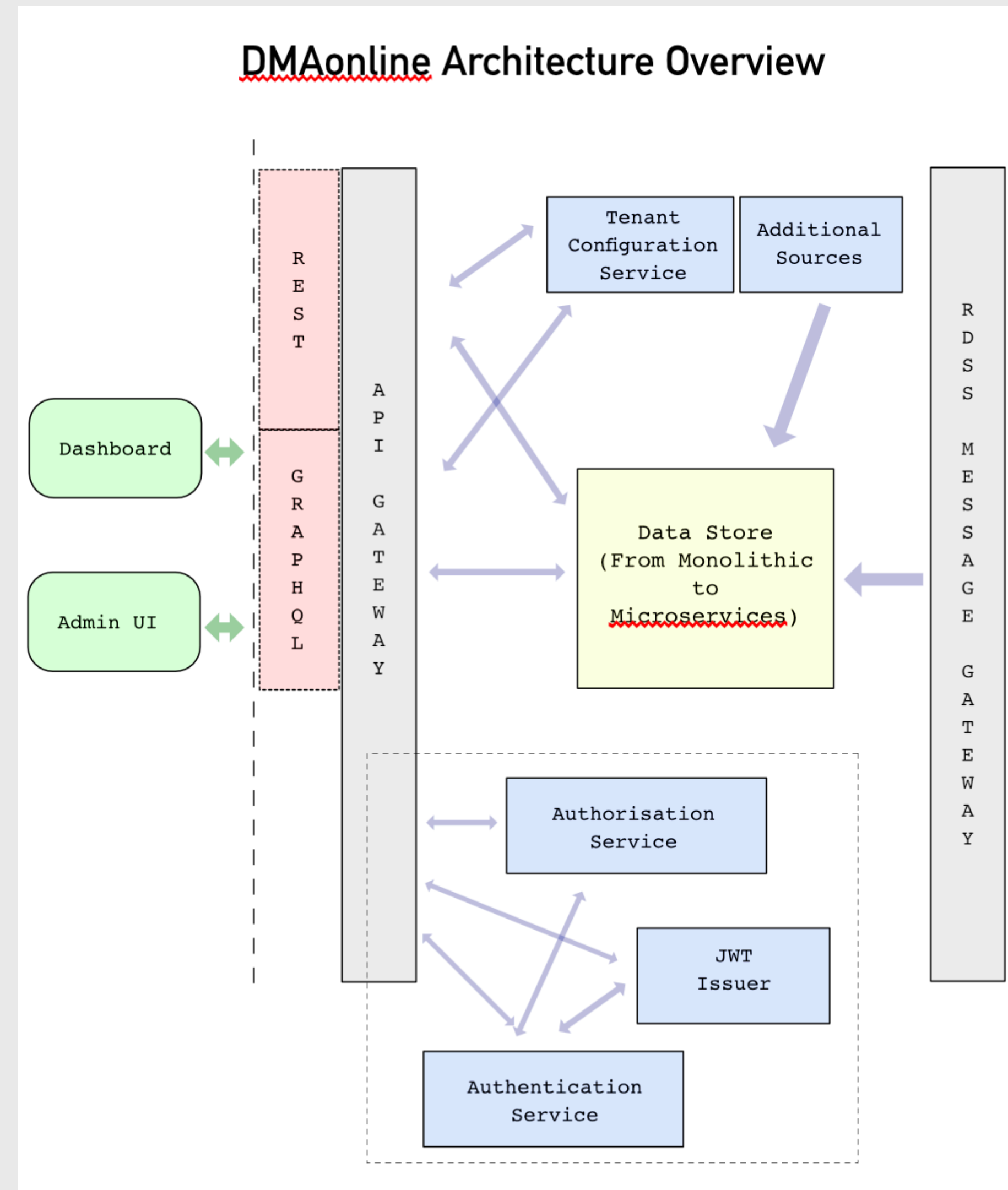
MINT - A DOI MINTING TOOL

Problem:

At the time of our RDM service launch, Pure did not have the capability to mint DOIs. When the capability was developed, it would mint DOIs with minimal DataCite metadata. You are not able to reserve DOIs, neither can you mint DOIs for any other research output than research data.

Mint **DataCite** | Lancaster University

Status

Pure ID: [123456] [Search]

DOIs

Full-text search for minted DOIs on title, description, keywords, person name, DOI, sizes, file rights and Pure UUID. For example, using *regulat* as a word prefix would match the whole words *regulate*, *regulatory* and *Regulation*.

Word prefix: [regulat] [Search]

[DOIs] [DOI reservations]
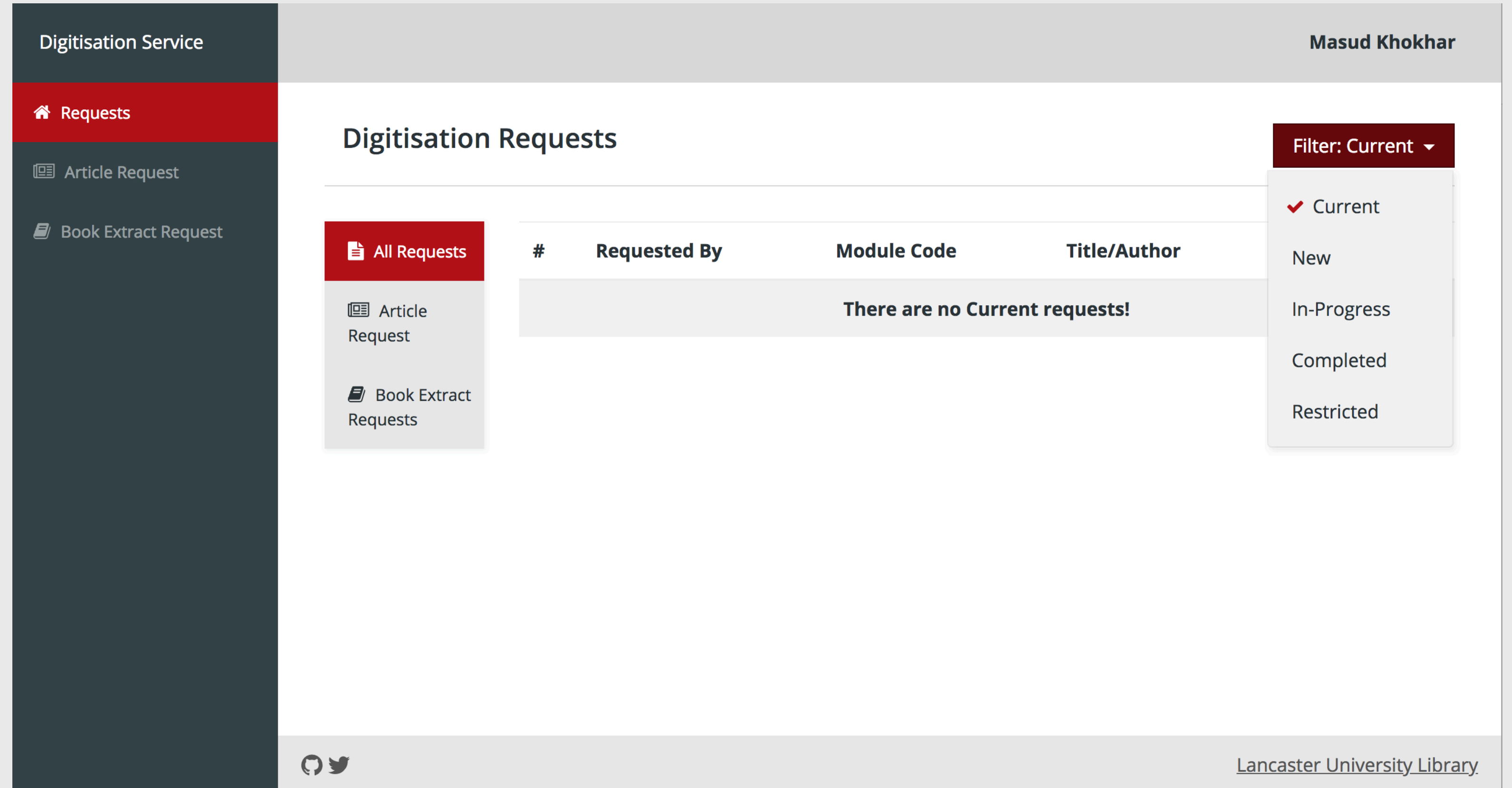
Mint **DataCite** | Lancaster University

Mint a DOI

Dataset for Design of 71-76 GHz Double-Corrugated Waveguide Traveling-Wave Tube for Satellite Downlink

Letizia, Rosa

218311186

Dataset

[Mint]

[Reserve]

LIBRARY DIGITISATION SERVICE

- Having issues with Moodle roll overs and links breaking

- Issues with CLA audits

- Reports on downloads, usage

- Simple, easy to use, easy to manage, workflow based.

LEGANTO IMPLEMENTATION

- Second institution in the world to migrate from Aspire to Leganto, just after University of Edinburgh, they benefitted from our technical expertise and we benefitted from their advocacy approaches

- Issues with campuses across the world, with integration with Moodle (LTI integration on steroids), etc

- Massive Aspire API issues - information partly comes from new REST APIs and partly from Linked Data APIs. They are slow! Also issues with flattening subsections into labels

- Cache builder for local cache development

- Code available at: https://github.com/lulibrary/aspire
- Moodle integration at: https://moodle.org/plugins/mod_leganto

NOISE REPORTING

- Issues with noise levels in the building

- Expectation from Library staff to do something about it

- Is noise real or perceived?

- Library Maps project for all map based activities, extended for noise reporting. Takes CAD plans in for a building,
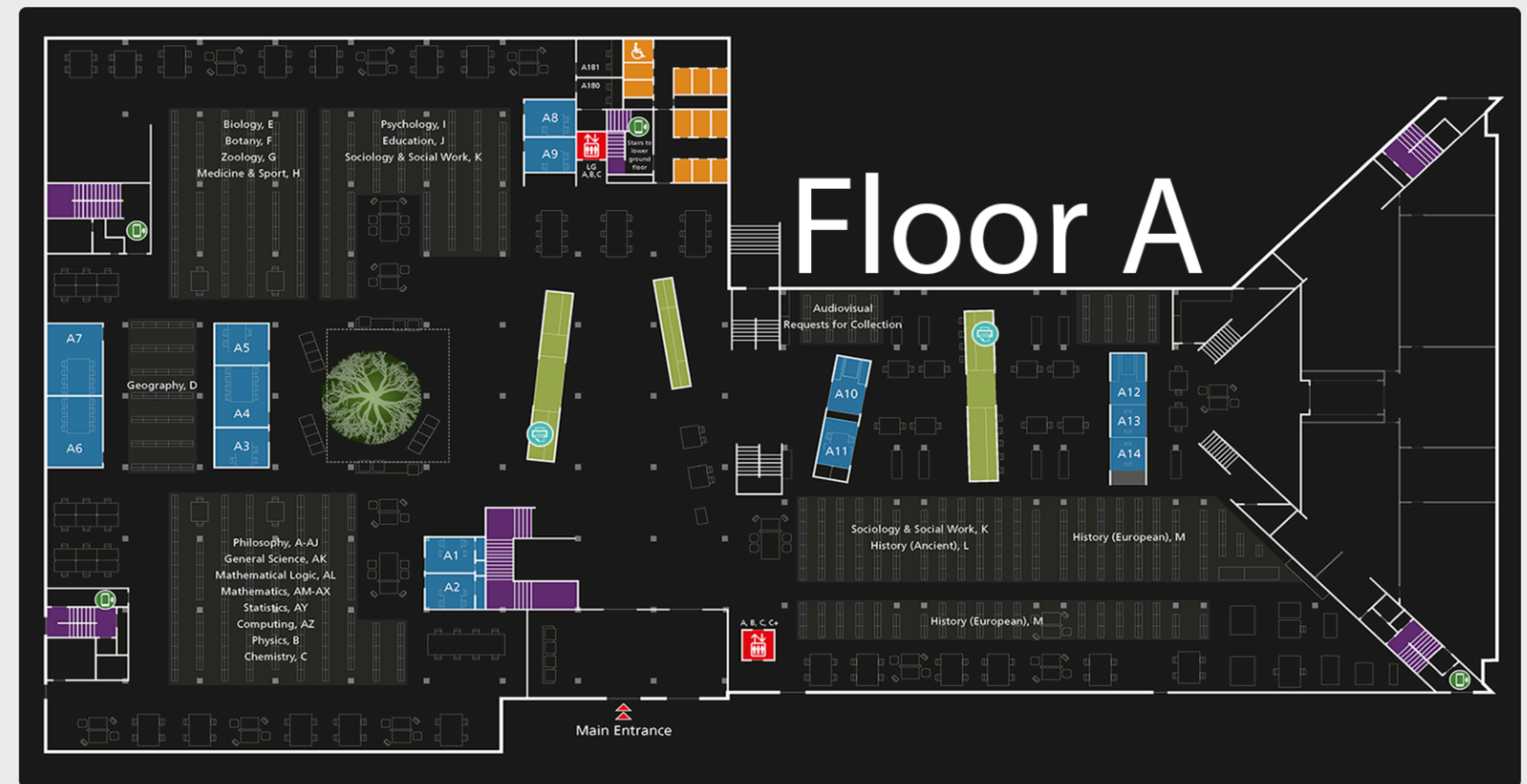
NOISE REPORTING

- Backend admin infrastructure - staff acknowledge reports

- Detection of common patterns

- Heatmaps for management to identify problem points and take action

- Library Maps infrastructure can be used for class mark navigation in Primo, for fixed indoor navigation in buildings, for fault reporting, for safety reporting.

LU LABS - OPENING HOURS API

- LU Labs - When we need to get things done quickly and dirty

- Library opening hours can change during an emergency or depending on staffing.

- Major issue resides with CMS - difficult to learn and slow to update

Project Structure

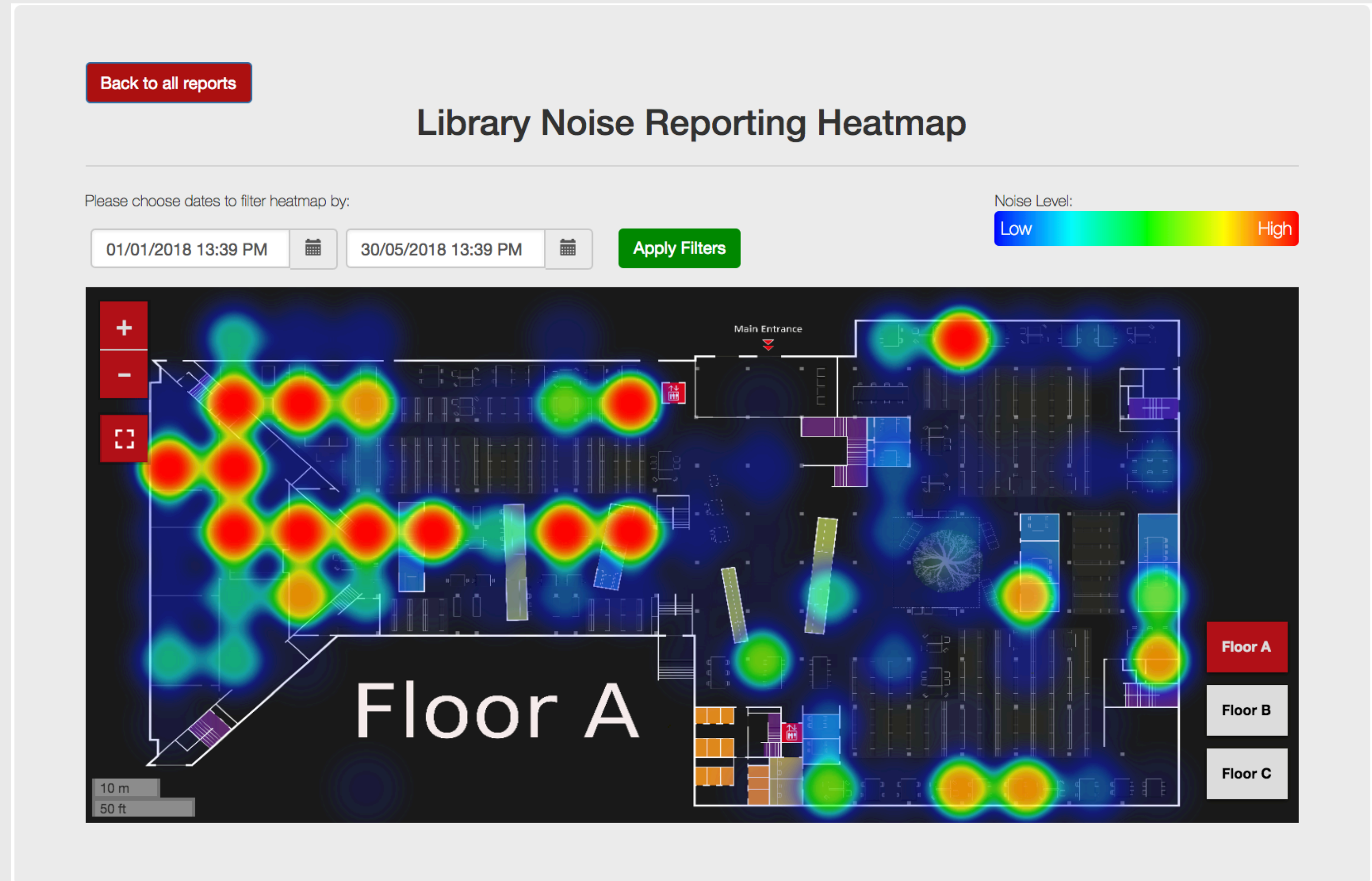The project is built as a serverless application on the LULabs-Sandbox AWS account. The project consists of the following resources:

Name	Resource	Description
library-opening-hours-sandbox	AWS S3 Bucket	Bucket to upload CSV files to
library-opening-hours	AWS DynamoDB Table	Table to store opening hours information
writeOpeningHoursToDB	AWS Lambda Function	Function to process uploaded CSV files and update database
isLibraryOpen	AWS Lambda Function	Function to respond to API calls

LU LABS - RESEARCH CONNECTIONS

- LU Labs - When we need to get things done quickly and dirty

- We don't fully know where our academics collaborate with internationally and whether those academics still exist at Lancaster

- Mixture of experiments with Pure, Scopus, SciVal and Twitter APIs

- Will help us develop independent social media campaigns

LU LABS - PRESERVATION

- LU Labs - When we need to get things done quickly and dirty

- We have research data in Pure but there is no integration between Pure and preservation software

- Ran a trial of extracting research data out of Pure and into Archivematica.

- https://github.com/lulibrary/preservation

LU LABS - RESEARCH DATA METADATA - RDF

- LU Labs - When we need to get things done quickly and dirty

- We have research data in Pure but there is no nice machine readable way to extract and showcase it

- Ran a trial of extracting research data out of Pure and into RDF

- https://github.com/lulibrary/linked_research_metadata

LU LABS - RESEARCH OUTPUTS ANNOUNCEMENT

- LU Labs - When we need to get things done quickly and dirty

- We have research outputs in Pure but there is no nice way to share that automatically

- Ran a trial of extracting metadata out and creating a twitter announcement out of it.

- https://github.com/lulibrary/research_metadata_announcement

The balance

FUTURE THINKING

What can we do to support the future technologies?

Major impact of Machine Learning, AI, IoT and Blockchain

Growth in Digital Scholarship requirements

Evidence driven decision making – impact & value

Lack of general purpose digital skills but also way of thinking

REAL NEED

What is the real need within Library staff?

Ran a digital enablers exercise

Alma and Alma Analytics

Implementation of a preservation system

Digital object creation and support with that

Wayfinding and toilet fault reporting

Tableau introduction and support

Password management

Need a better room/software for remote teaching

SNAZZY STUFF

Learning and adopting Amazon Infrastructure

Cache infrastructure - Alma Webhooks feeds into this.

IoT infrastructure - Beacon based, sensor based, thermal imaging cameras based

To support natural language touch points, to support Facebook messenger bot, Slack bots

Staff infrastructure - starting to develop skills in machine learning primarily

NOT SO SNAZZY STUFF

Process review - integrating digital team into all operations process reviews. Balancing effort and not concentrating on research as much.

Excel skills - we don't have them so bring others in

Alma analytics training - they don't like Ex Libris training, some acquisition librarians are learning SQL

Analytical thinking in general - introducing Alma Analytics more, Google analytics, HotJar

SKILLS DEVELOPMENT

For development team, skills being developed in server less architecture (FaaS), Git, continuous integration, containerisation, machine learning

For other library staff members, we want to focus on introducing digital way of thinking.

Through combination of micro-learning, guided learning, training, and embedding ourselves in the processes

Rapid Improvement Exercises model (RIEs) - turn away analytics, zero search analytics, departmental resource usage, etc

Future Projects

or the only snazzy stuff we would do at this time

CONTINUE WITH CORE PROJECTS

Cache and IoT infrastructure

DMAonline

Library Maps project

Everything else from a development perspective would become a Labs project to become with.

A labs project to full project to service transition will require resources that will need to be asked for

NEXT GEN DIGITAL HUMANITIES REPOSITORY

Discussions have started between Cambridge, Manchester, Lancaster, Edinburgh

Stage 1 - Adopt Cambridge University Digital Library

Stage 2 - Develop full recovery infrastructure (microservices, docker containers, preservation) and value addition services - extend IIIF, develop new visualisations, etc

Stage 3 - Develop intelligence through machine learning on top. Don't know what this would fully look like but we are keen to learn.

THANK YOU
QUESTIONS

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