(Yet another talk on)

STAC, and how it's making our lives easier

Chris McNeill – Geospatial Solutions Architect
Satellite Applications Catapult

We work with
Innovate UK

CATAPULT
Satellite Applications

SATELLITE APPLICATIONS CATAPULT

Who we are

We are a not-for-profit innovation and technology company transforming the way the world uses satellite technology and data.

WE ARE INDEPENDENT

WE ARE GOVERNMENT BACKED

WE HELP GROW BUSINESSES

Our technology focus

UBIQUITOUS CONNECTIVITY

GEOSPATIAL INTELLIGENCE

LOCATION DATA & AUTONOMY

ACCESS TO SPACE

APPLICATIONS

Our expertise

USER CENTRED DESIGN TO SUPPORT NEEDS DRIVEN INNOVATION

MARKET INTELLIGENCE AND WIDE SECTOR NETWORK

SATELLITE DATA CAPABILITIES & **TECHNOLOGY INTEGRATION**

SERVICE ACCELERATION FOR RAPID MARKET TESTING

STRATEGIC SUPPORT FOR **COMMERCIALLY SUSTAINABLE GROWTH**

OUR STRATEGIC VISION

ENERGISING THE MARKET

Through our market programmes we unlock latent customer demand, open new markets, and drive exports by raising awareness, changing preconceptions and showcasing the power of space derived services.

EMPOWERING TECHNOLOGY

Through our technology programme we help companies advance their products to be closer to market programme opportunities by identifying the barriers to entry such as regulation, incumbents, or simple accessibility.

ENABLING BUSINESS

We connect business of all sizes with the resources and facilities they need to launch and grow, opening new routes to market and attracting inward investment. We provide targeted business support, user-centred design expertise and signposting to finance.

GEOSPATIAL INTELLIGENCE

Earth Observation data ubiquitous in everyday decision making

Mission: *to accelerate the adoption of geospatial analytics into business processes, at a scale that drives value across industries globally.*
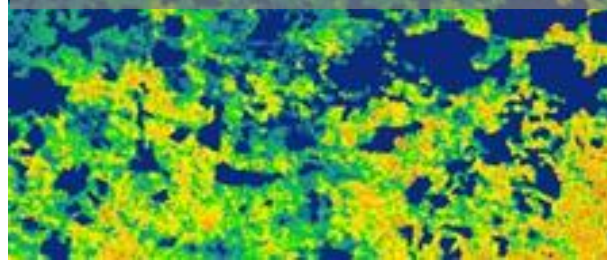
- *Thought leadership* in development of geospatial solutions in collaboration with the Space Sector.

- *Strategic education* to enhance capabilities, skills and awareness for other industries.

- Unlocking investment for *transformative innovation* projects.

- Supporting *technology commercialisation.*

Vegetation Dynamics
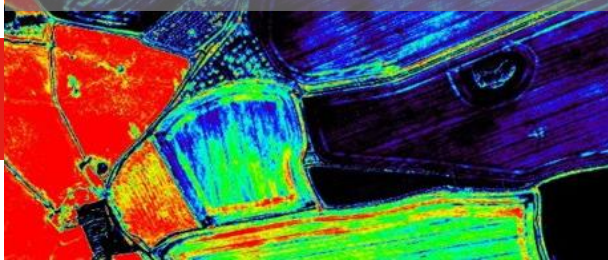
Biomass

Air Pollution
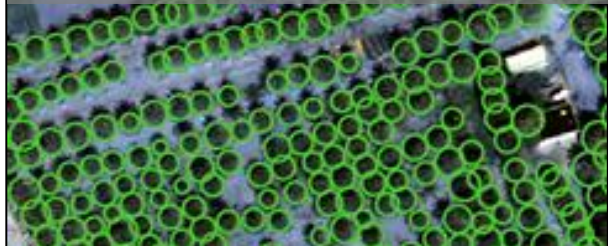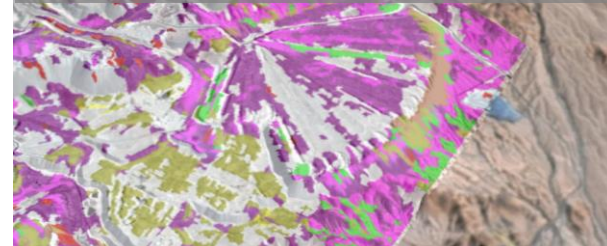
Renewable Energy
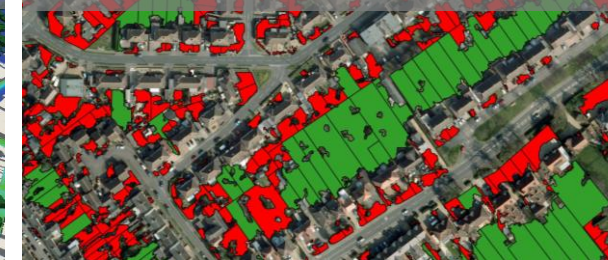
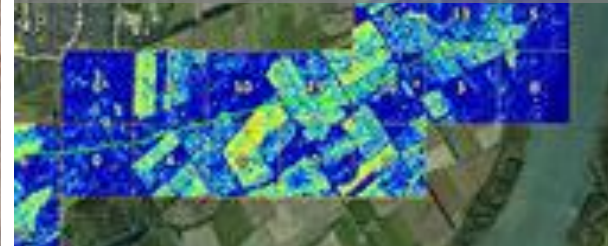Sustainable Finance

Geotechnics
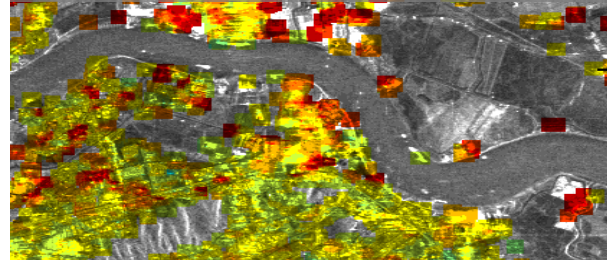
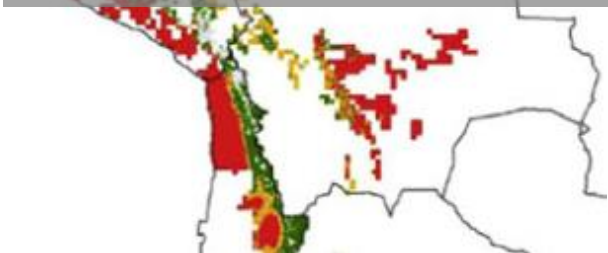Ecosystem Services
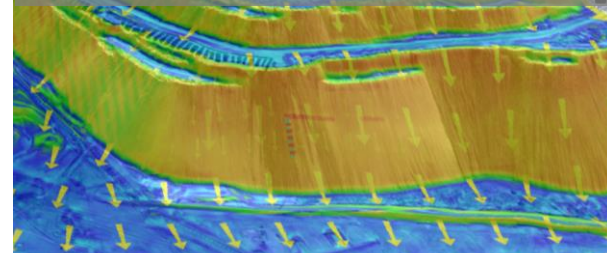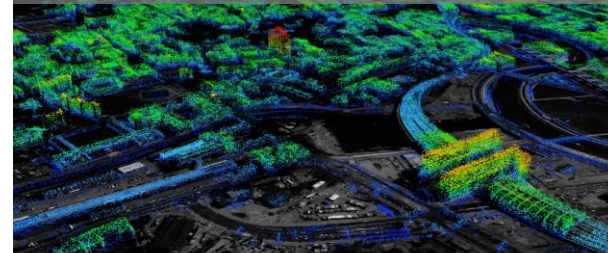
Environmental Risk

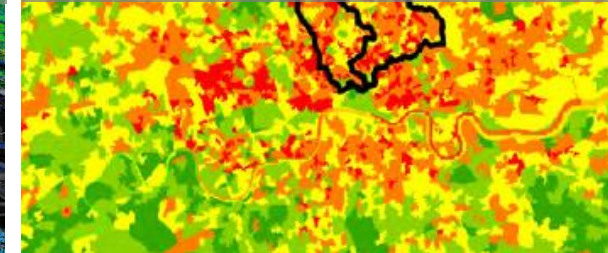Tree Counting

Geology

Utilities

Urban Development

Pest and Disease

Elevation Models

Critical Infrastructure

Health

What do we do with EO data?

A wide variety of satellite sources

Processed in a wide variety of ways

For a wide variety of use-cases
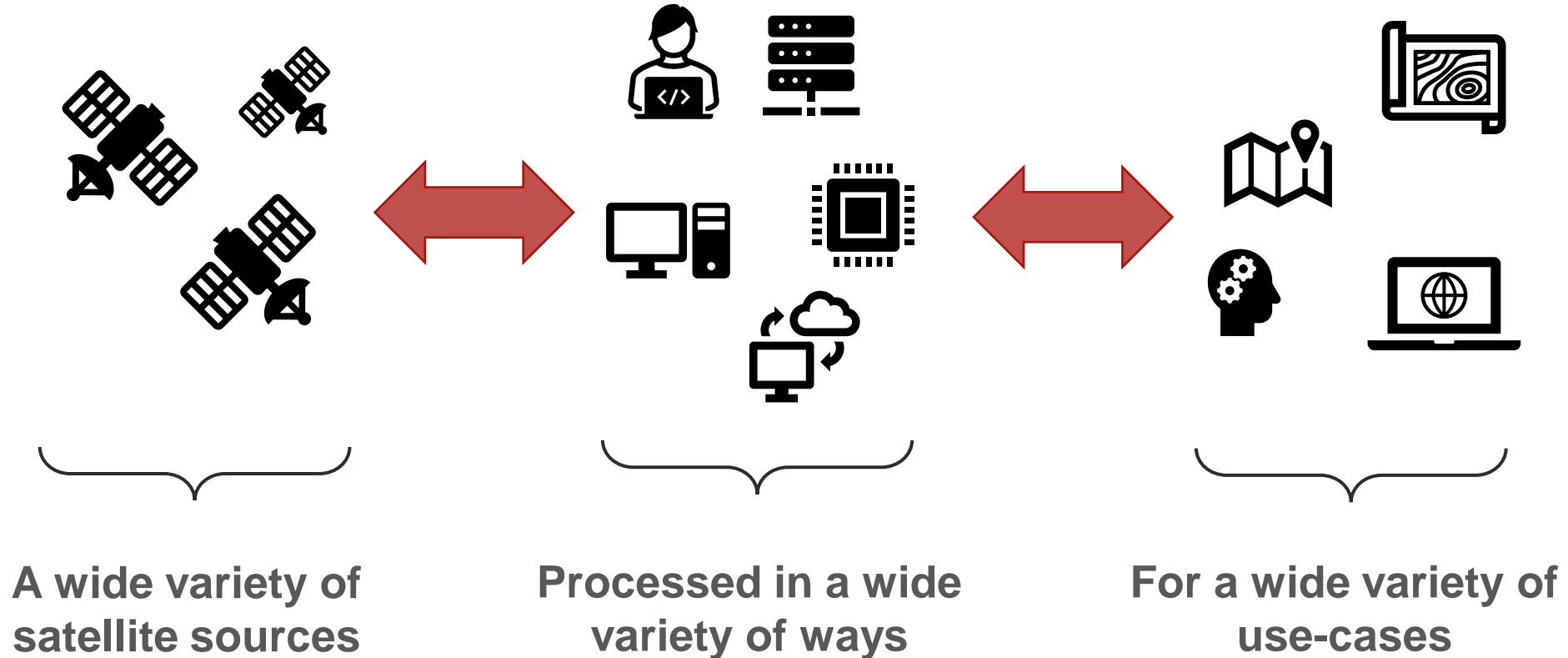
Wouldn't it be great if there was a standard, open way for data to be managed in these systems

What is STAC

> STAC
> **SpatioTemporal Asset Catalogs**
> The STAC specification is a **common language to describe geospatial information**, so it can more easily be worked with, indexed, and discovered.
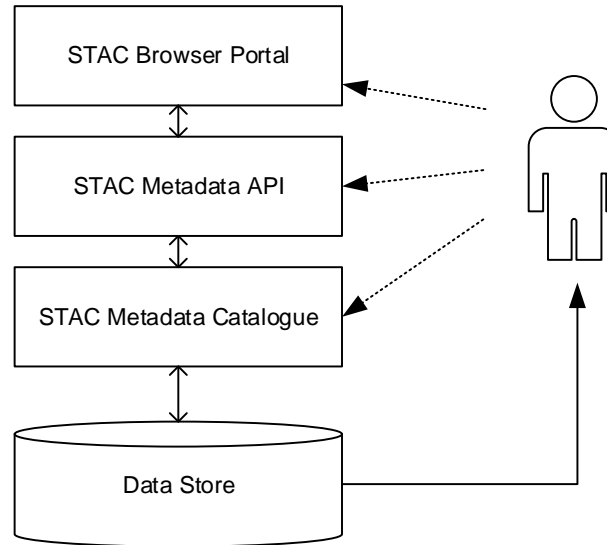>
> *from stacpec.org*

Data Providers – uniform and standard way of cataloguing and exposing assets

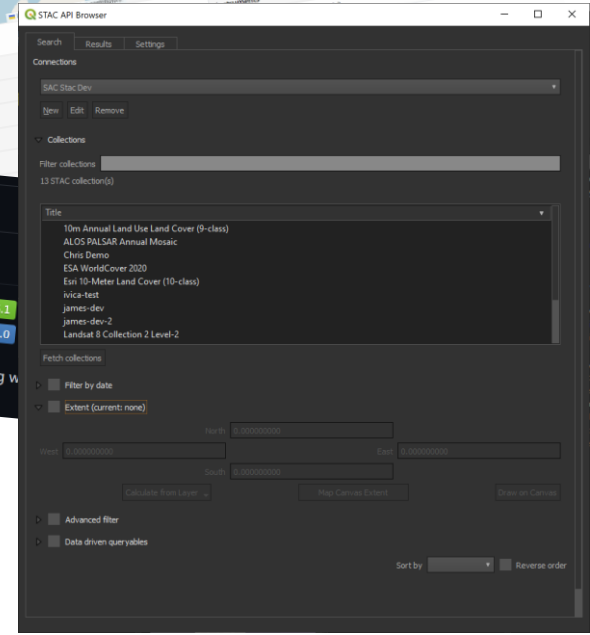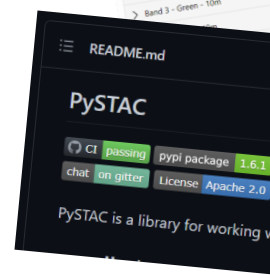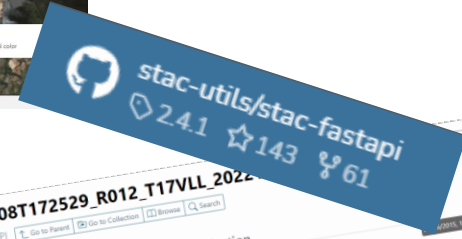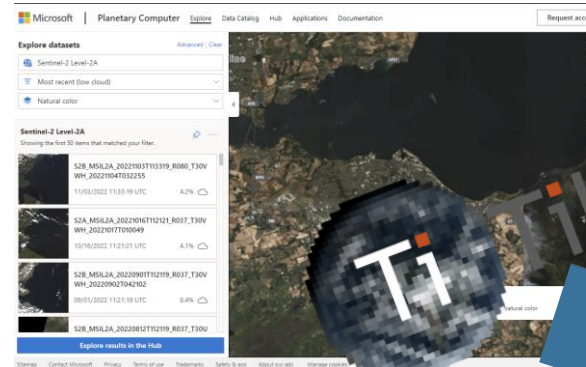**Developers –** simplify building data management solutions and make re-usable tools

Data Users – make use of common tooling, save time. Do real work rather than data management!

We love STAC!

- Build what you need
- Plug & play

Flexible foundation for applications, desktop GIS workflows and data scientists
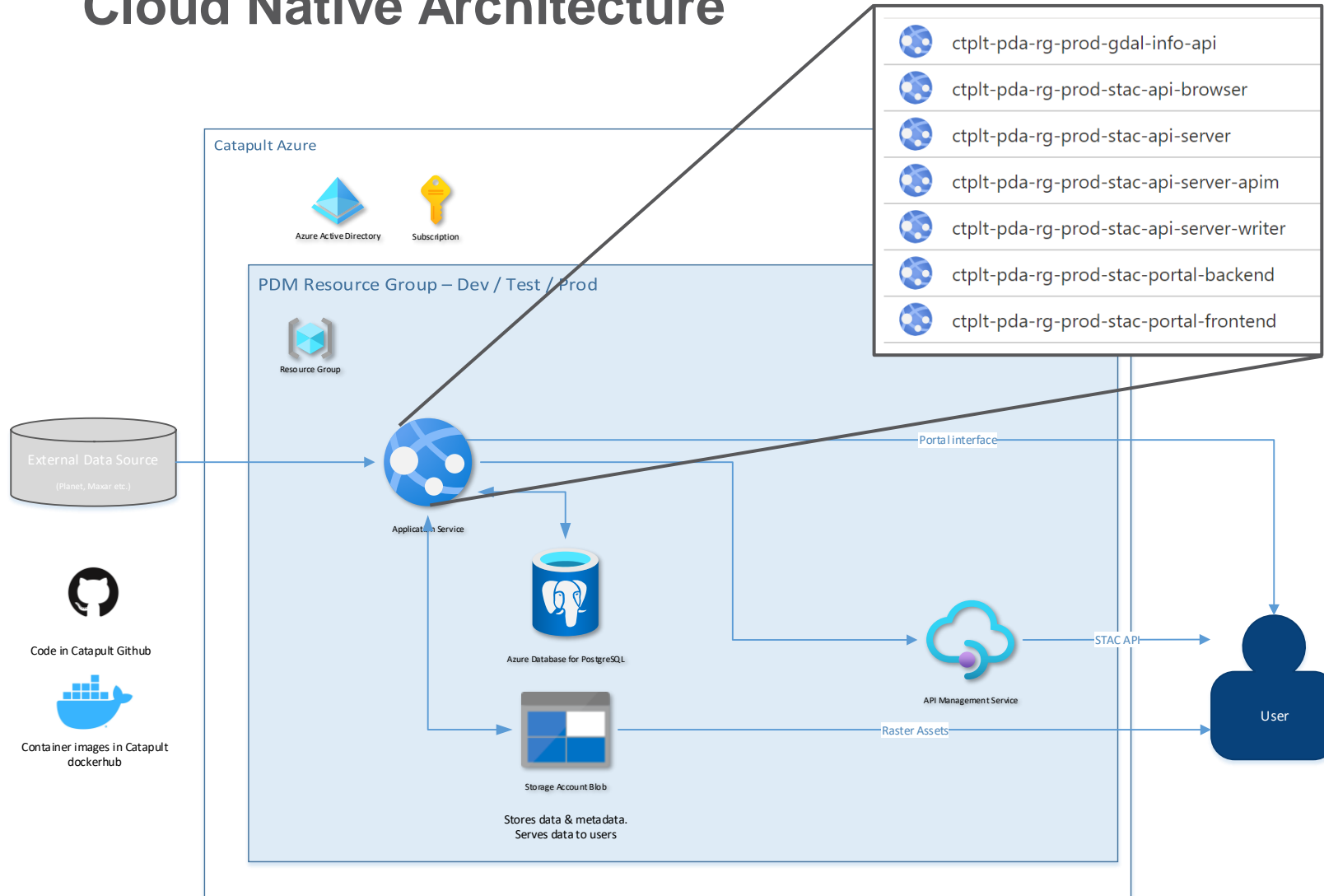
Catapult's STAC Portal

- Getting the most out of already available, public data
- Managing the data we've already got

Cloud Native Architecture

Catapult Azure

ctplt-pda-rg-prod-gdal-info-api

ctplt-pda-rg-prod-stac-api-browser

ctplt-pda-rg-prod-stac-api-server

ctplt-pda-rg-prod-stac-api-server-apim

ctplt-pda-rg-prod-stac-api-server-writer

ctplt-pda-rg-prod-stac-portal-backend

ctplt-pda-rg-prod-stac-portal-frontend

Azure Active Directory

Subscription

PDM Resource Group – Dev / Test / Prod

Resource Group

External Data Source
(Planet, Maxar etc.)

Code in Catapult Github

Container images in Catapult dockerhub

Application Service

Portal Interface

Azure Database for PostgreSQL

API Management Service

STAC API

Storage Account Blob

Raster Assets

Stores data & metadata.
Serves data to users

User

- Built in Azure, but uses cloud agnostic approaches
- Incorporates best bits of the STAC ecosystem
  - stac-browser
  - stac-fastapi
  - GDAL

Demo Time
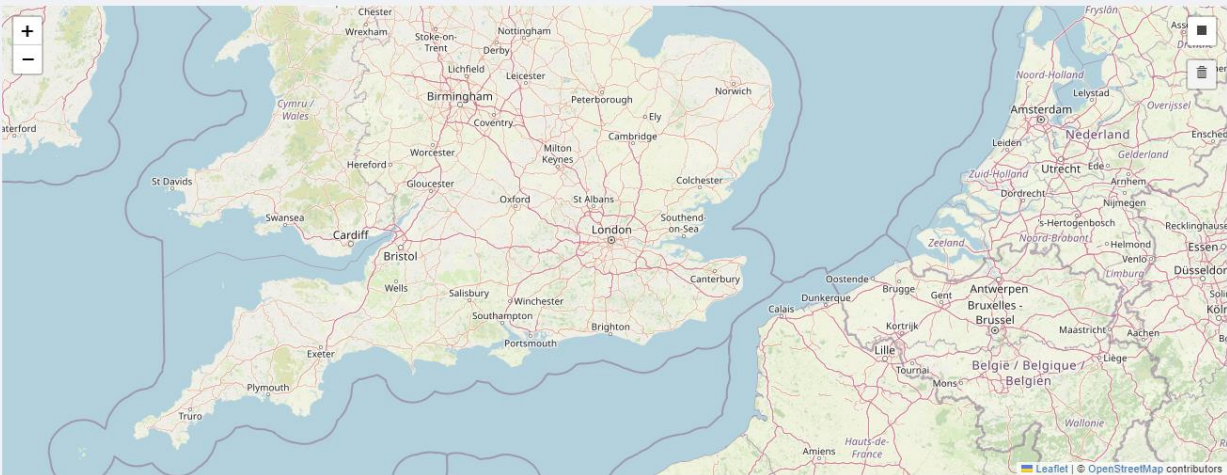
Where have we got to with STAC

- It's getting alarmingly easy to build platforms that can compete with some COTS offerings
- But more vendor engagement would make our lives even better

What do we want to do next?

- Open source
- More data providers
- Better data sharing features (fine grained access control)
- Processing pipelines

OUR STRATEGIC VISION

ENERGISING THE MARKET

Through our market programmes we unlock latent customer demand, open new markets, and drive exports by raising awareness, changing preconceptions and showcasing the power of space derived services.

EMPOWERING TECHNOLOGY

Through our technology programme we help companies advance their products to be closer to market programme opportunities by identifying the barriers to entry such as regulation, incumbents, or simple accessibility.

ENABLING BUSINESS

We connect business of all sizes with the resources and facilities they need to launch and grow, opening new routes to market and attracting inward investment. We provide targeted business support, user-centred design expertise and signposting to finance.

Thank you!

SatelliteApplicationsCatapult

@ChrisDoesTech

sa.catapult.org.uk
spatialdays.com