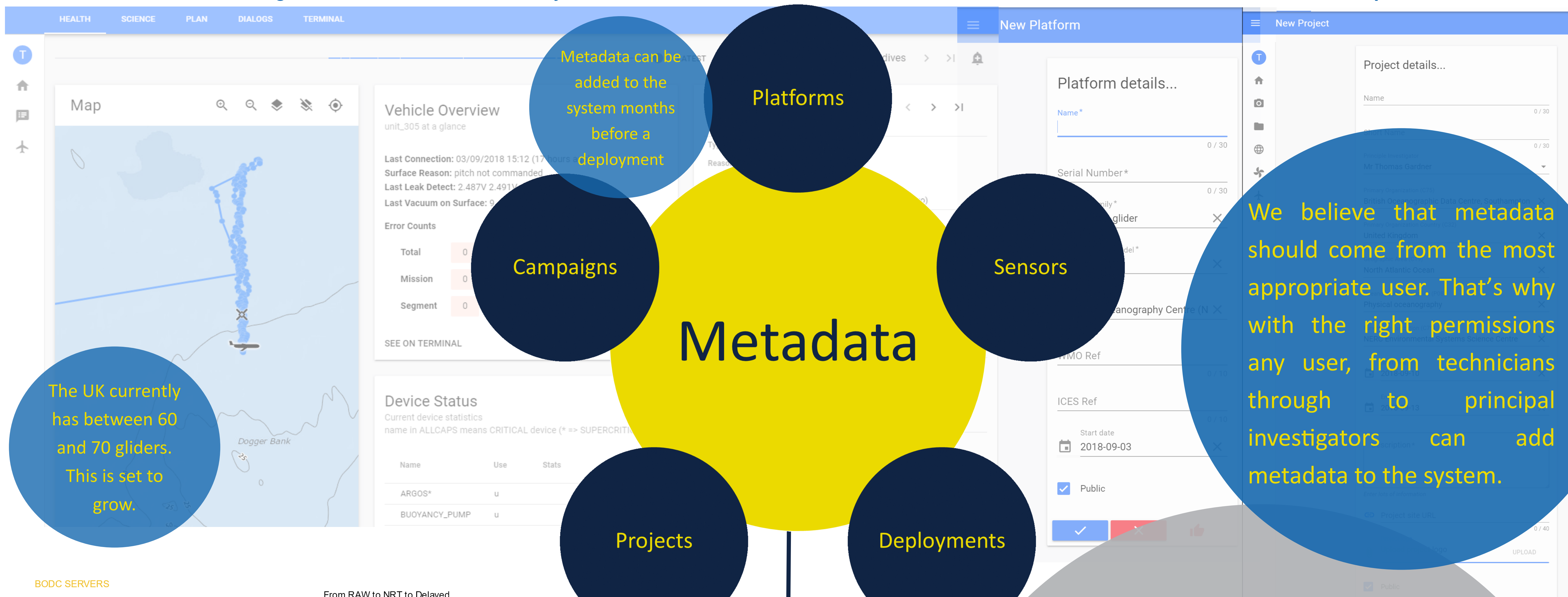# Oceanids command and control (C2) data system – Marine autonomous systems data for vehicle piloting, scientific data users, operational data assimilation, and linking to the FAIR principles.

Thomas Gardner *thogar@bodc.ac.uk,* **Justin Buck** *justin.buck@bodc.ac.uk,* **Alexandra Kokkinaki** *alexk@bodc.ac.uk,* **Oceanids C2 development team**

Metadata

Platforms

Campaigns

Sensors

Projects

Deployments

Metadata can be added to the system months before a deployment
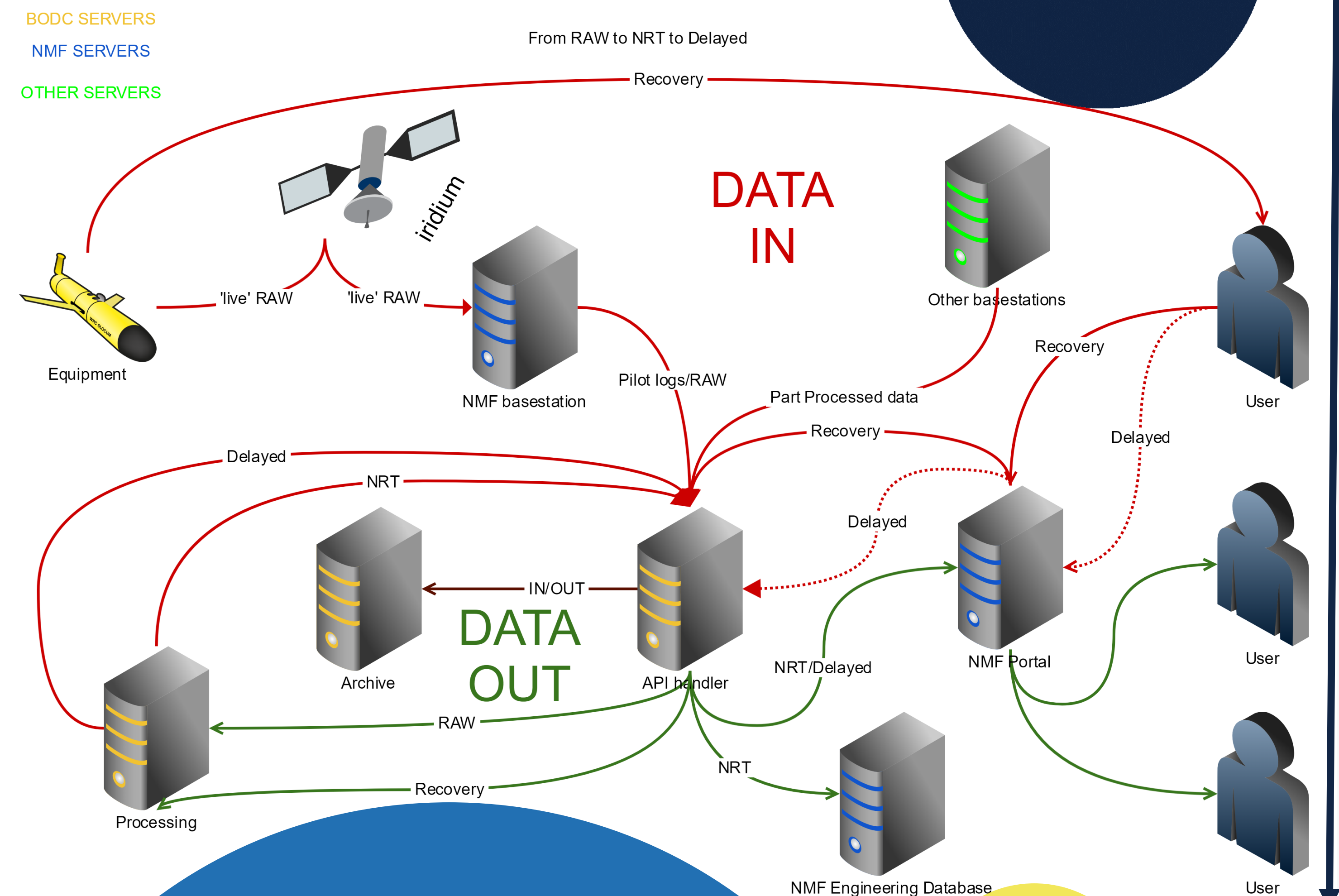
The UK currently has between 60 and 70 gliders. This is set to grow.

We believe that metadata should come from the most appropriate user. That's why with the right permissions any user, from technicians through to principal investigators can add metadata to the system.

Alignment with FAIR principles:
  Findability, accessibility, and interoperability via dissemination of data to the Ocean Glider Network
  Findability of metadata (partial) with unique sensor/platform/deployment identifiers
  Accessibility and re-usability of metadata via exposure via OGC SOS server.
  Interoperable metadata via marine SWE profile for SensorML and NERC vocabularies server for terms and values.
  Data re-usability (partial) via the use of community standards and on-going work to develop a common data access policy.

DATA IN / DATA OUT

BODC SERVERS
NMF SERVERS
OTHER SERVERS

From RAW to NRT to Delayed

Recovery

iridium

DATA IN

Equipment

'live' RAW   'live' RAW

NMF basestation

Other basestations

Pilot logs/RAW

Part Processed data

Recovery

Recovery

Delayed

Delayed

Delayed

NRT

IN/OUT

DATA OUT

Archive   API handler   NRT/Delayed   NMF Portal

RAW

Recovery

NRT

Processing

NMF Engineering Database

User

User

User

Data Processing

Near Real Time (NRT) Processing

Delayed Mode Processing

Long term Archival

Quality control

The Oceanids system utilises the metadata collated to automate the process of NRT data upload, processing and delivery. By combining the metadata with the raw Seaglider or Slocum files the system can produce Everyone's Gliding Observatories (EGO) NetCDF format files.
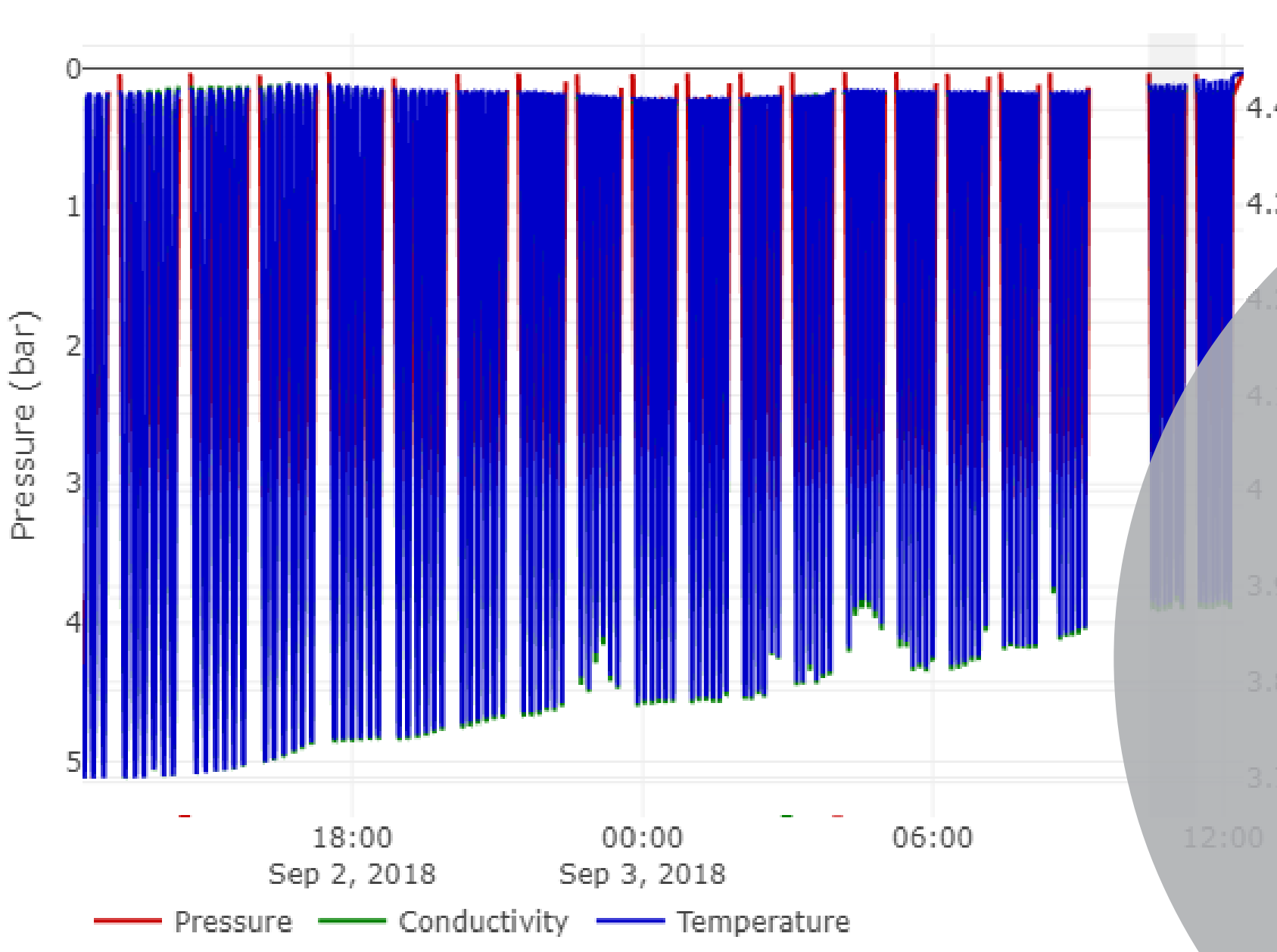
The platforms send NRT data to the system. The system graphs both the science and engineering data, allowing for on-the-fly refinement of the science missions and live monitoring of the platform's health.

The Oceanids system enables stakeholders to interact with marine autonomous platforms and to access standardised NRT data via a common interface.

The internal storage format allows processed data to be delivered in a wide range of different standards. We have focused on the EGO standard first.

It takes less than 5 seconds to go from raw files to a processed EGO NetCDF file

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