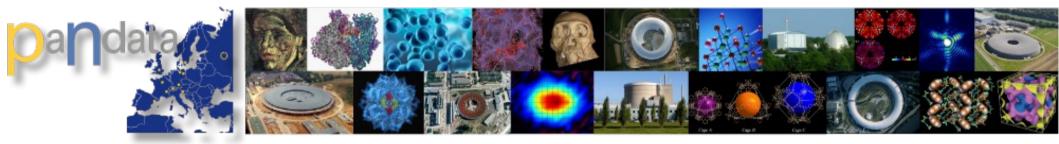# ICAT Deployment

Status @ Elettra

Dublin, 24 March 2014.

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Facility overview

- **Two light sources**

  - **ELETTRA** Synchrotron Radiation Facility
    - Operational since 1993 – users since 1994
    - 20 beamlines, 4 more in construction/upgrade

  - **FERMI@ELETTRA** Free Electron Laser
    - Operational since 2011 – users since 2012
    - 3 beamlines, 3 more planned

Virtual User Office (VUO)

- Operational since 1997

- Possible authentication with Umbrella (Nov. 2013);
  Facility LDAP > 8 years

- Contains plenty of useful metadata

- Uses DOIs

- Enforces Elettra's Data Policy

- Hosts data access service

    - Download / Upload

    - Proposal submitter(s) and selected BL scientist(s) may grant data
      access to other participants

- **https://vuo.elettra.eu**

Data file formats

- Fermi@Elettra:

  - **Custom HDF5** files on all beamlines

    - Integraged with TANGO

- Elettra:

  - **Custom HDF5** files on some beamlines

    - Part of endstation DAQ TANGO

    - Converters from legacy formats

  - Variety of data formats on older beamlines

    - TIFF, RAW, ASCII...

- **NeXus**: Not adopted

ICAT metadata catalogue

- Three instances deployed (1 public)
  - Updated to the latest ICAT 4.3.2
  - Glassfish 3 and 4 containers
  - Topcat 1.11.0 and ICE
  - Authentication with local and remote db, simple
  - LDAP module not compatible with the Elettra LDAP

Data ingestion software

- **iGEST**

  - Python module

  - Simple to configure (template based mappings)

    - Works with any HDF5 file (NeXus included)

  - Supports parallelism during ingestion

  - Compatible with the FERMI acquisition pipeline

iGEST mapping example

```
[icat]
icatwsdl=https://icat-elettra.grid.elettra.trieste.it:8181/ICATService/ICAT?wsdl
user=user@gmail.com
password=12345678901112
plugin=db

[template]
h5template=temp_vlabsample.h5

[icatmeta]
facility=entry/instrument/source/name
instrument=entry/instrument/name
investigationtype=entry/experiment_type
investigation=entry/experiment_identifier
datasettype=entry/dataset/type
dataset=entry/dataset/name
sample=entry/sample/name
sampletypename=entry/sample/type/name
sampleformula=entry/sample/chemical_formula
facilitycycle=entry/instrument/facilitycycle
```
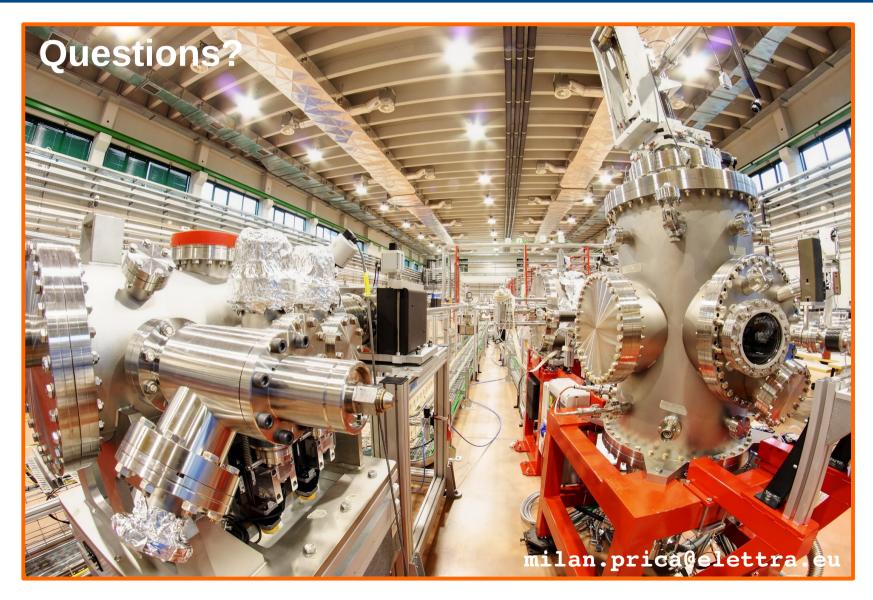
Issues

- LDAP Authentication:

  - Custom module needs to be developed for ELETTRA

  - Umbrella – ICAT authentication could be used?

- Rules and Users:

  - Rules to be defined for ELETTRA

  - Users should be inserted automatically from VUO

Issues

- Front-end (TopCAT):

  - A custom front-end integrated with VUO would be a better solution for ELETTRA

  - Users often perceive the front-end as "the catalogue"

  - Configuration tools should be part of the front-end

- Schema:

  - Many cross dependencies

  - Quite complex to match to the facility needs

Thank you!

Questions?

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