

A unique Index to serve all INSPIRE data associated to a Borehole

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A unique Index to serve all INSPIRE data associated to a Borehole

INSPIRE conference 2017 – Strasbourg – 2017-09-07

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EPOS in a nutshell

- European Plate Observing System
  - www.epos-eu.org
  - European research infrastructure on solid earth science
  - Integrates the existing and future advanced European facilities into a single, distributed, sustainable infrastructure



25 COUNTRIES

Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Grecee, Hungary, Iceland, Ireland, Italy, Netherland, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

4 INTERNATIONAL ORGANIZATIONS

Orfeus, Emsc, Euref, Intermagnet

256 NATIONAL RESEARCH INFRASTRUCTURES

4939 SEISMIC STATIONS

2272 GPS RECEIVERS

464 TB SEISMIC DATA

118 LABORATORIES

828 INSTRUMENTS

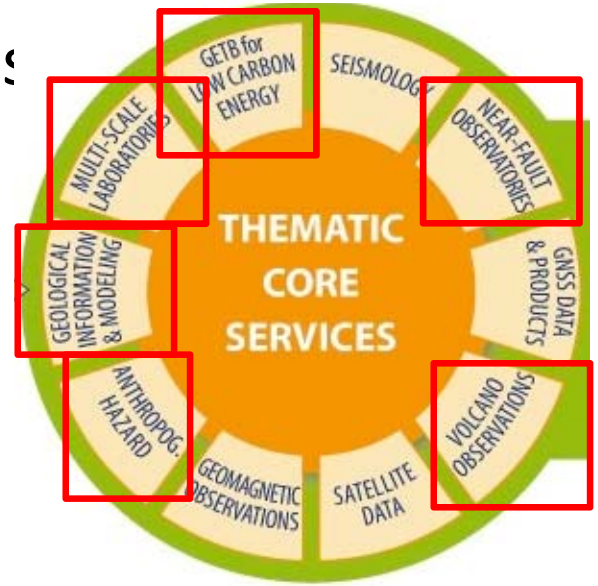
Several PetaBytes of solid Earth Science data will be available

Several thousands of users expected to access the infrastructure

Borehole in EPOS

- Core notion for Thematic Core Service ‘Geological information and modelling’

- But also of interest for other TCSs
  - Near fault observatories,
  - Volcano observation,
  - Anthropogenic Hazards,
  - Multiscale Laboratories,
  - Geo-Energy,
  - …

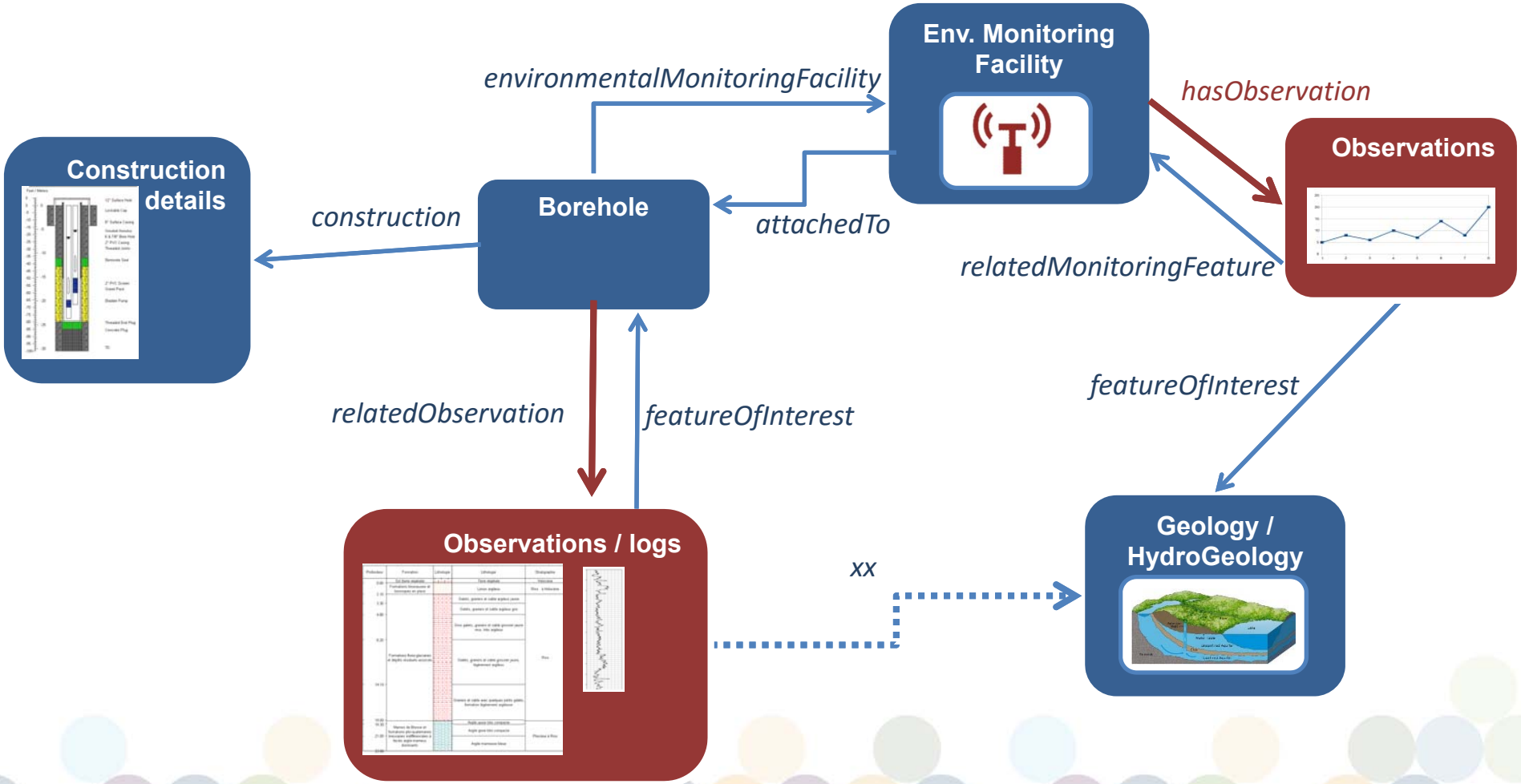


Borehole in EPOS

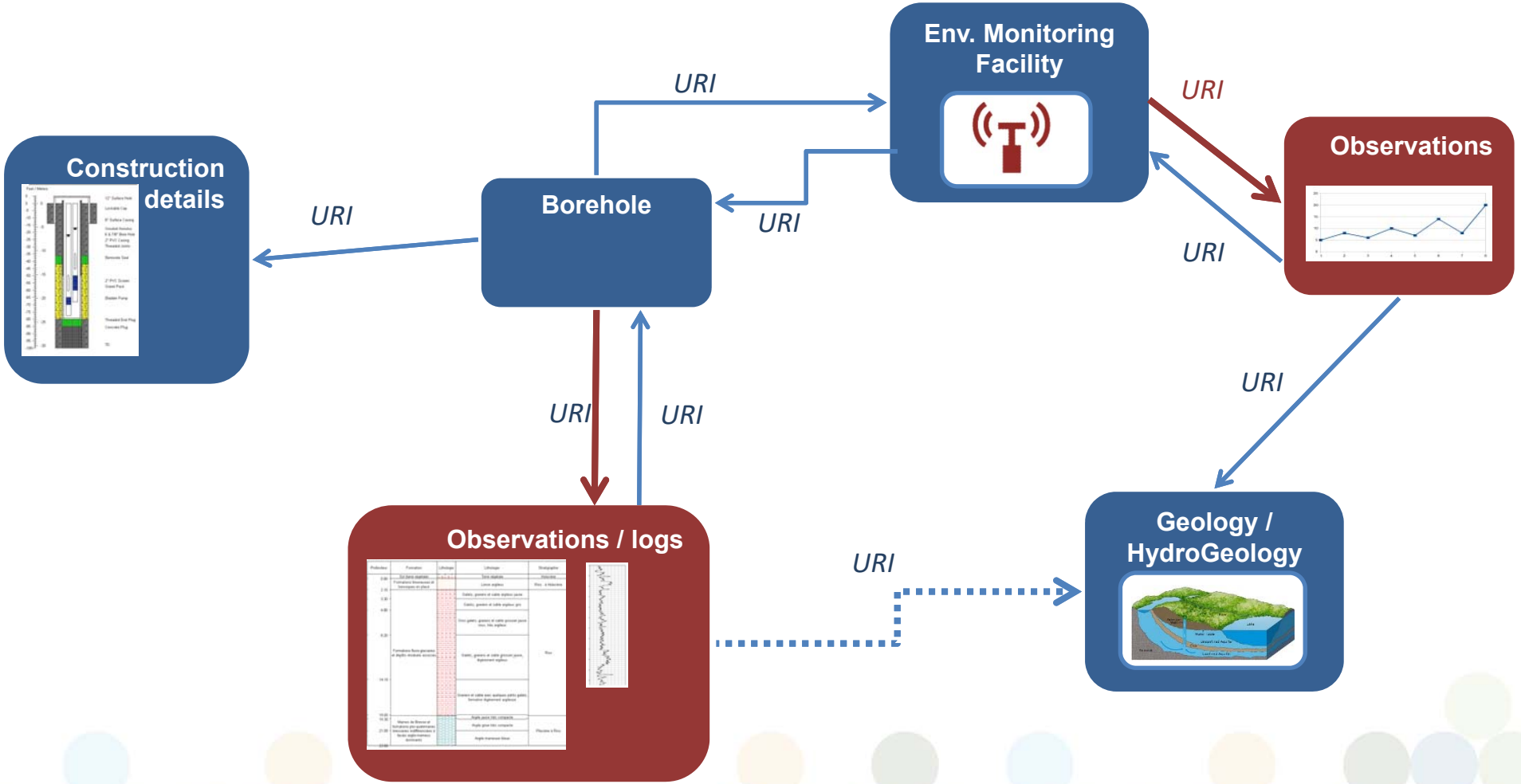
- Objective: to provide a unique EU access point to search for Boreholes
  - Using “Summary borehole information”
  - and providing link to richer structured information flows

- IT approach
  - Not re-invent the wheel, try to re-use / extend pre-existing initiatives..
  - GeoSciML 4.1 Borehole View was extended with couple fields (still is Simple Feature SF-0)

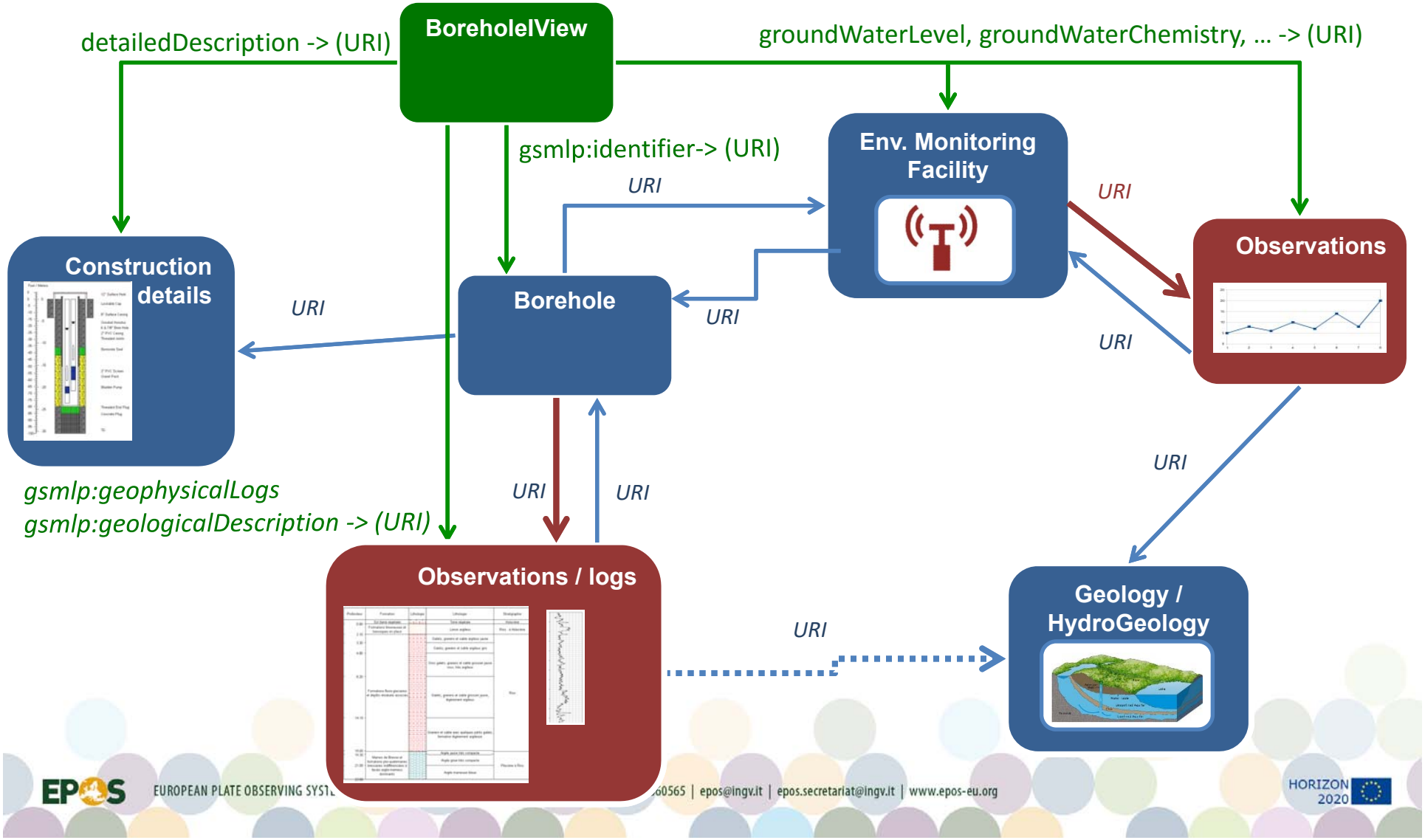
Borehole in EPOS – Model View



Borehole in EPOS – Resource View



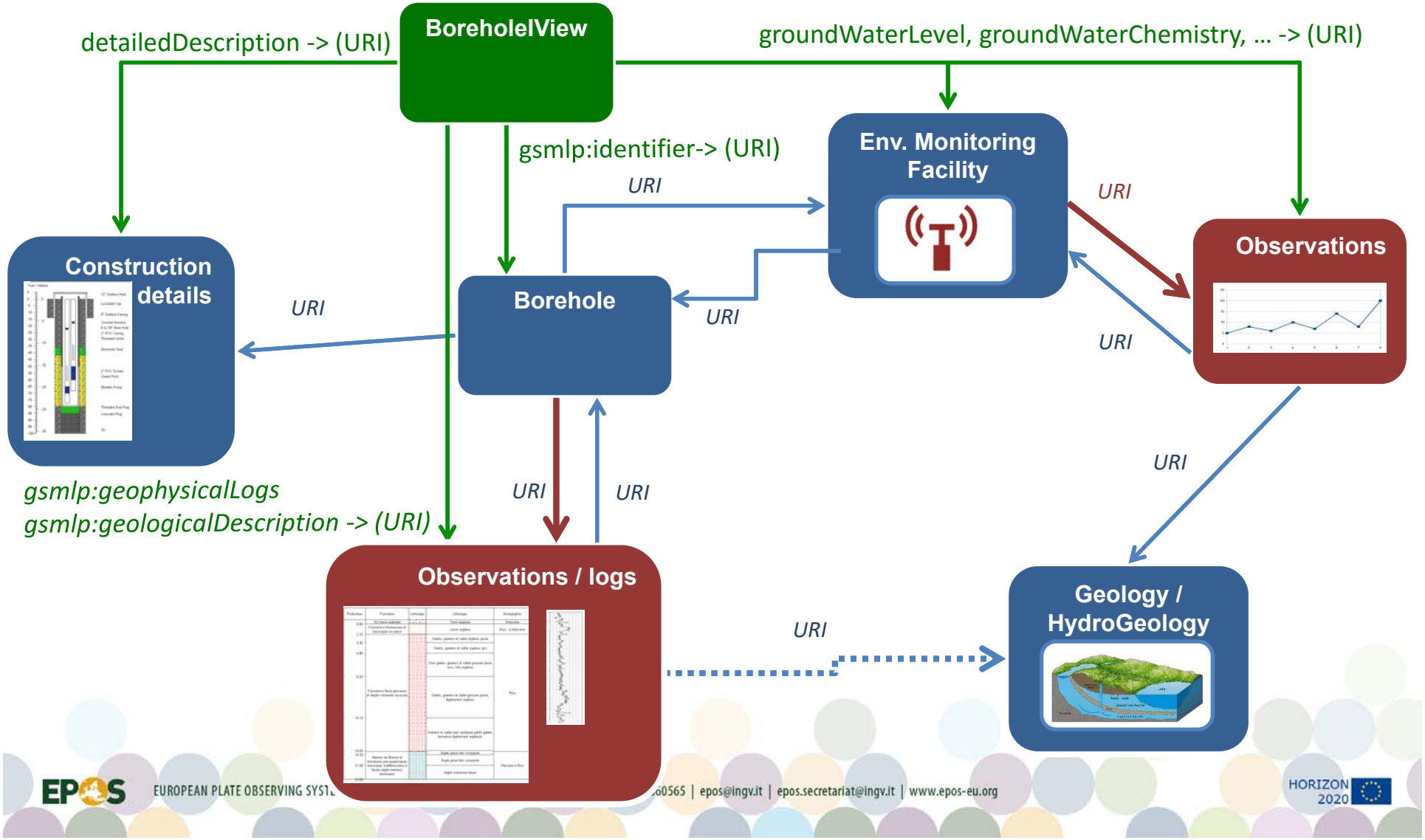
Using the index as a quick look-up and shortcut to data flows



Using the index as a quick look-up and shortcut to data flows

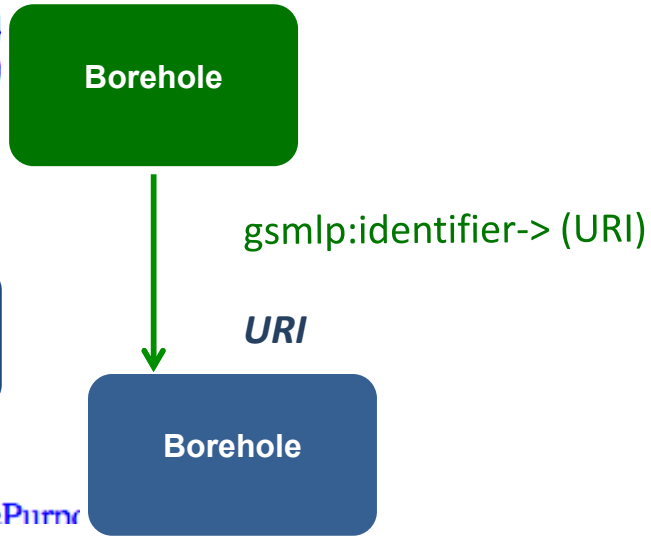

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Using the index as a quick look-up and shortcut to data flows



Using the index as a quick look-up and shortcut to data flows

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BoreholeIndex *has unique direct access to feature information*

Using the index as a quick look-up and shortcut to data flows

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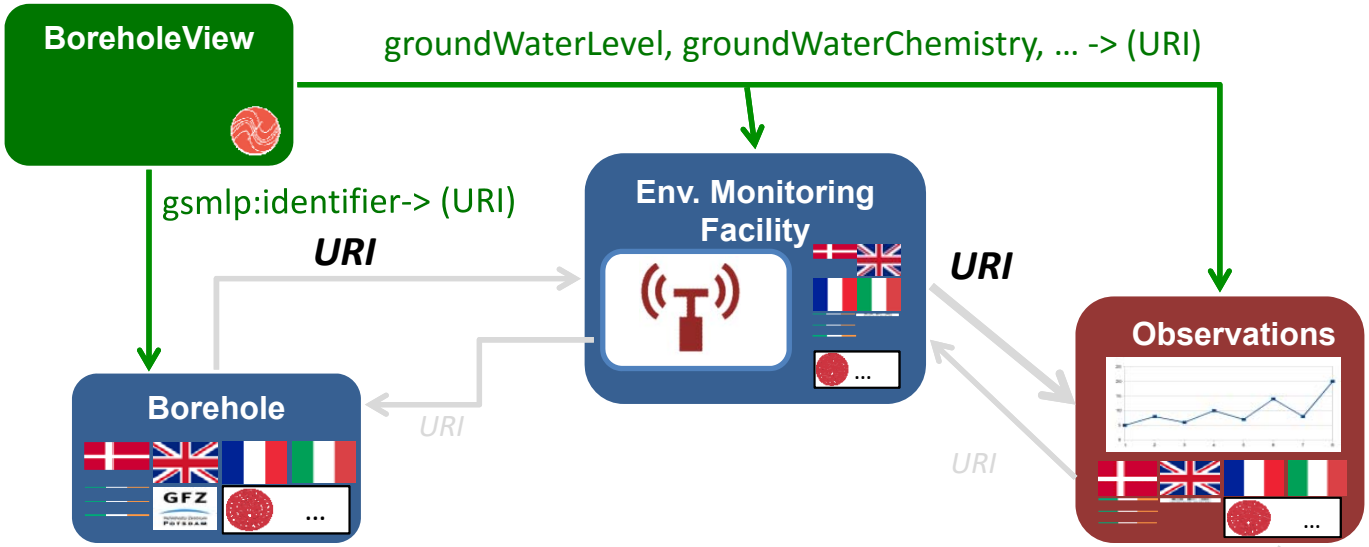
Borehole

BoreholeIndex *has unique direct access to detail feature information*

gsmlp:identifier-> (URI)

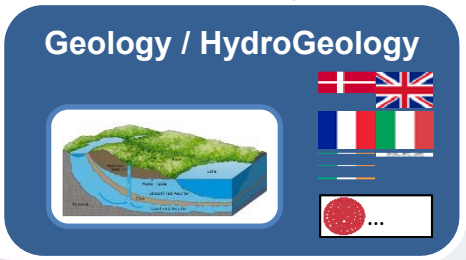
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Using the index as a quick look-up and shortcut to data flows



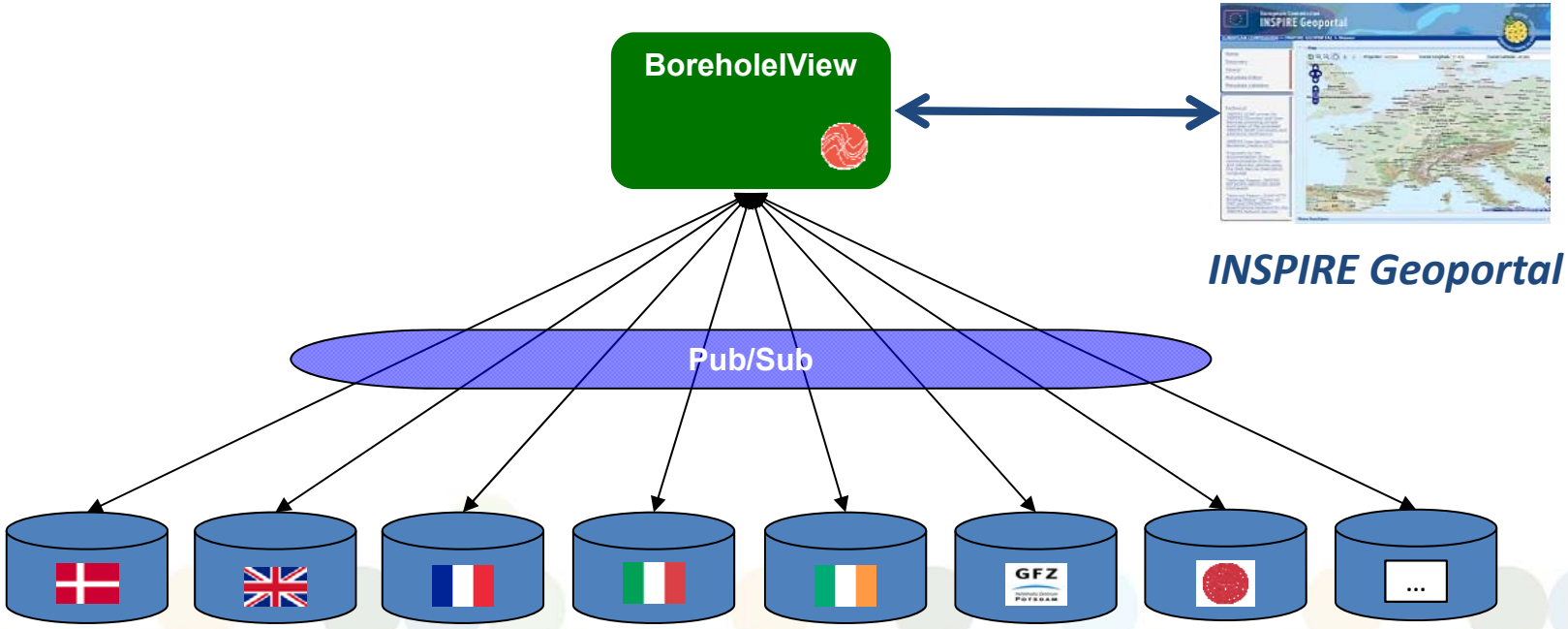

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```

URI



How do we feed the index ?

- Each institution maintains its Borehole summary info service
- Only those summary info are harvested at EU level
- The index is up-to-date thanks to a pub/sub approach



Conclusions

- Exposing summary Information (simpleFeature) is easier/faster than complex Feature
  - Allows to add more data providers

- Harvesting simpleFeature is more reasonable than complex Feature
  - WFS on complexFeature is not meant/suited to synchronize millions of instances !
  - Harvesting a 'Borehole vCard' just for discovery makes more sense

- The Borehole index in turns points to National data flows
  - With respect to INSPIRE semantics
  - Just here to support discovery

Perspectives

- ***Data provider***
  - Add more EU geological surveys and research partners

- ***IT***
  - EU Borehole Index entries now around 3 Million (this will grow)

  ⇒ Need for faster WFS : Studying connexion of GeoServer app-schema with Sol'R index

- ***Having the index indexed by search engines***

  => Exposing its content in (Geo)JSON-LD

Thank you

