Exploitation Platforms Architecture and Technology

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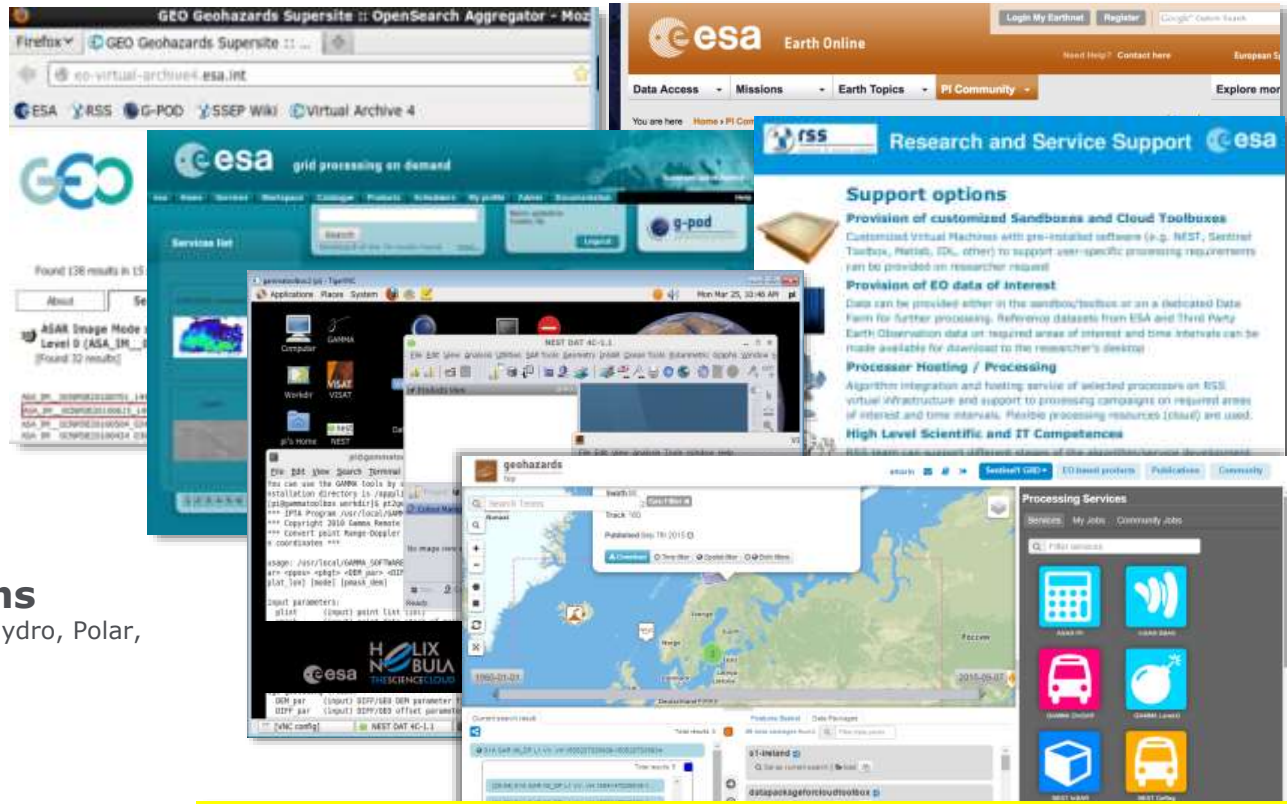
Earth Observation Ground Segment Evolution Concept
→ From Data Online to Platforms

One-stop community data access
- Relevant data & resources (toolboxes)
- GEO Geohazards Supersites …

Managed community user services, processing on demand
- Services and ICT resources
- GPOD & RSS

Cloud models, embryonic collaborative
virtual workplaces
- Helix Nebula
- CIOP sandboxes
- SuperSites Exploitation Platform, EP4SM
- SNAP

Full fledged exploitation platforms
- Thematic - Coastal, Forestry, Geohazards, Hydro, Polar, Urban, Food Security, Atmosphere (TAMP)
- Proba V, BioMass MEPs
- **Right now: TEPs Pre-ops to ops**



So: From distributing data and tools to **providing access to complete work environments**
- Each a step in a logical progression
- Concept evolves – **technology**, **partnerships, programmatics, funding models ...**

Thematic and other Exploitation Platforms

and others in development and planned…

Relations with international activities

WGDisasters Pilots
FDA Pilot

Charter Platform
prototypes

GEO Supersites
GEOSS Portal

Exploitation Platforms -> Architecture

- Open Source Software components
- Open Standards for interoperability
- Reference model, Open architecture
- Several Big Data technologies, with advances in TRLs and SRLs on various topics e.g. integrated accounting

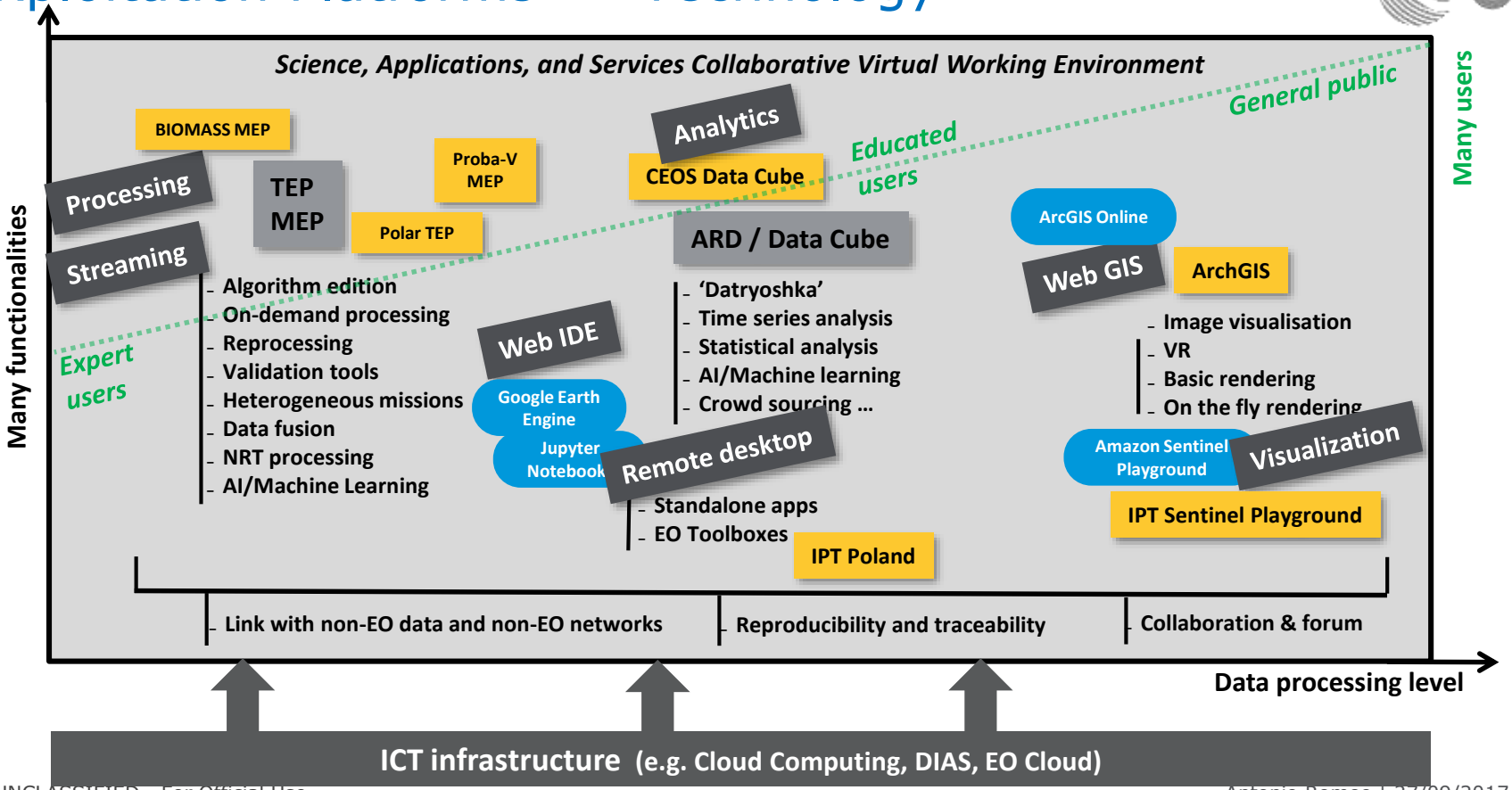
⇒ Initial draft of the Open Architecture released 1 year ago with CC-BY-SA 4.0 license, on http://tep.eo.esa.int

⇒ Update to be released in Q4 2017

⇒ Architecture to be further consolidated via dedicated industrial contract from 2018 onwards

Figure 2-1 Architecture macro-components general overview

Exploitation Platforms -> Technology



(Thematic) Exploitation Platforms -> OSS reuse

Thematic Exploitation Platforms -> OSS development

coastal tep

food security tep

forestry tep

geohazards tep

hydrology tep

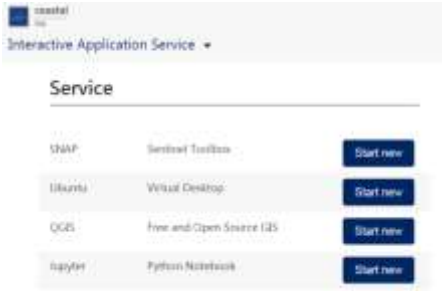
polar tep

urban tep

Wispy: modular Python WPS implementation,

PUMA: Platform for Urban Analysis and Management,

Interactive Application Service,



Web Browser Interfaces,

ElasticCAS: an EO OpenSearch engine,

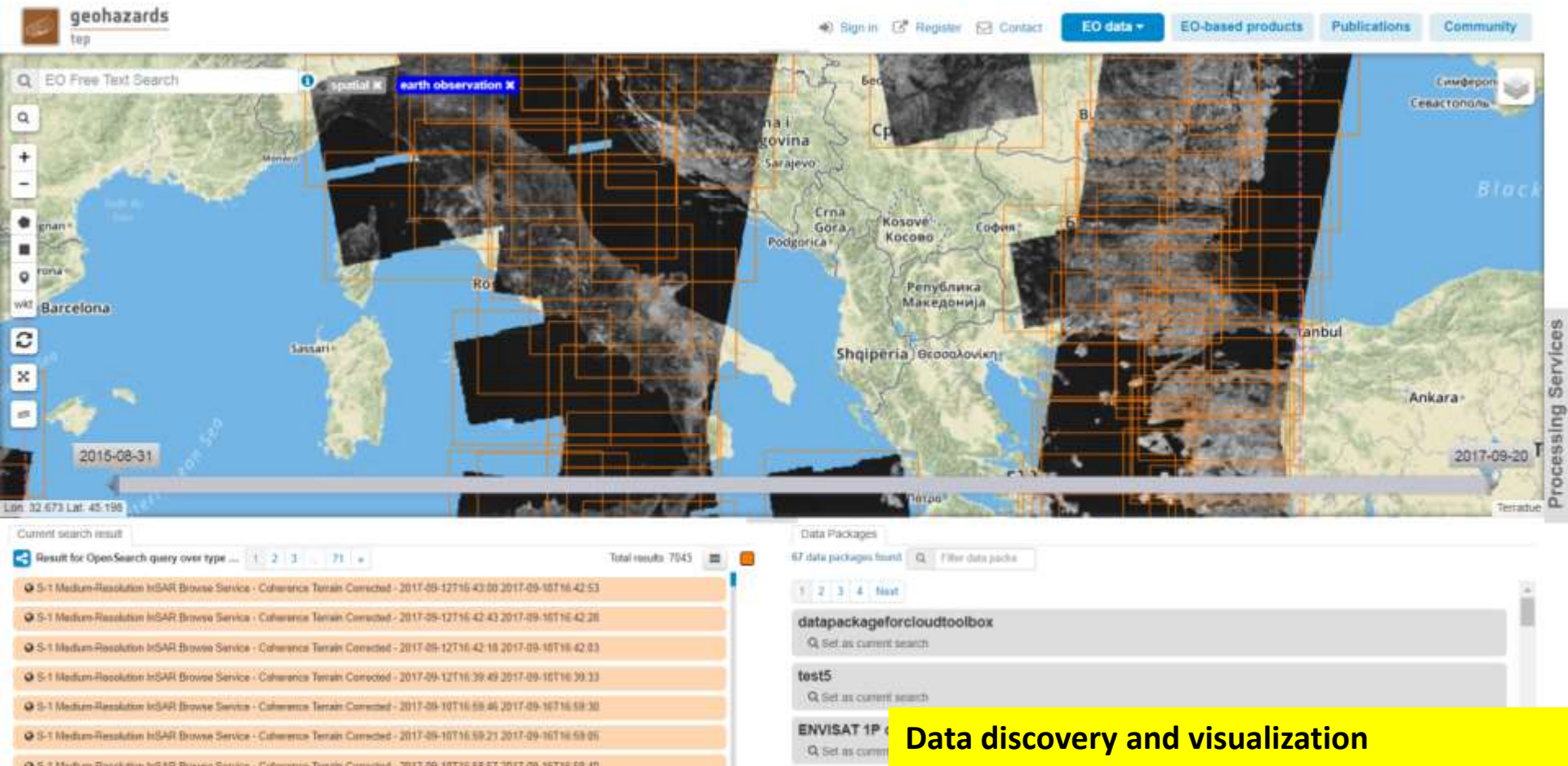
Data Access Gateway,

WPS server and Execution Environment,

and many more…

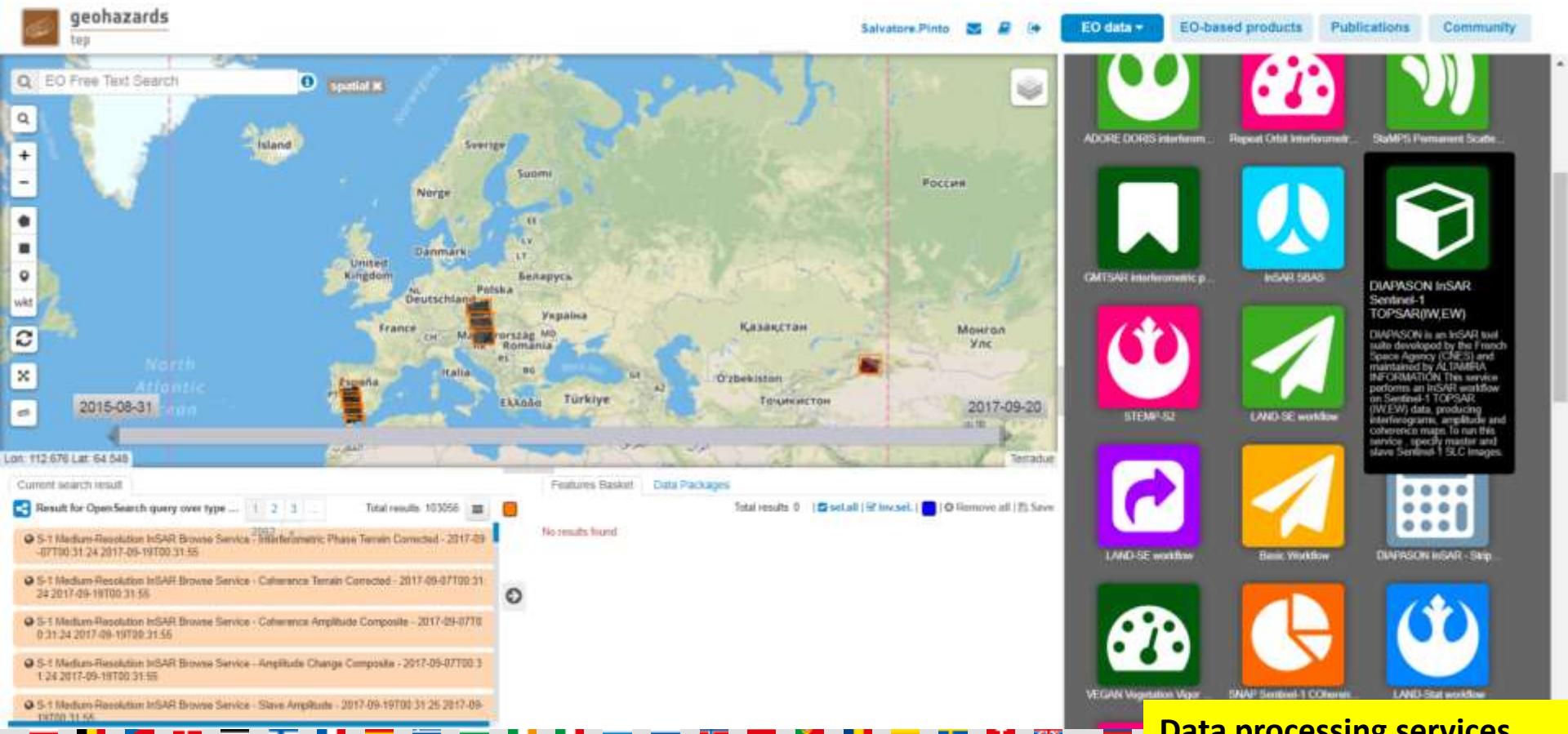
If you want to know more, contact us at tepcoreteam@esa.int

An example -> GeoHazards Exploitation Platform

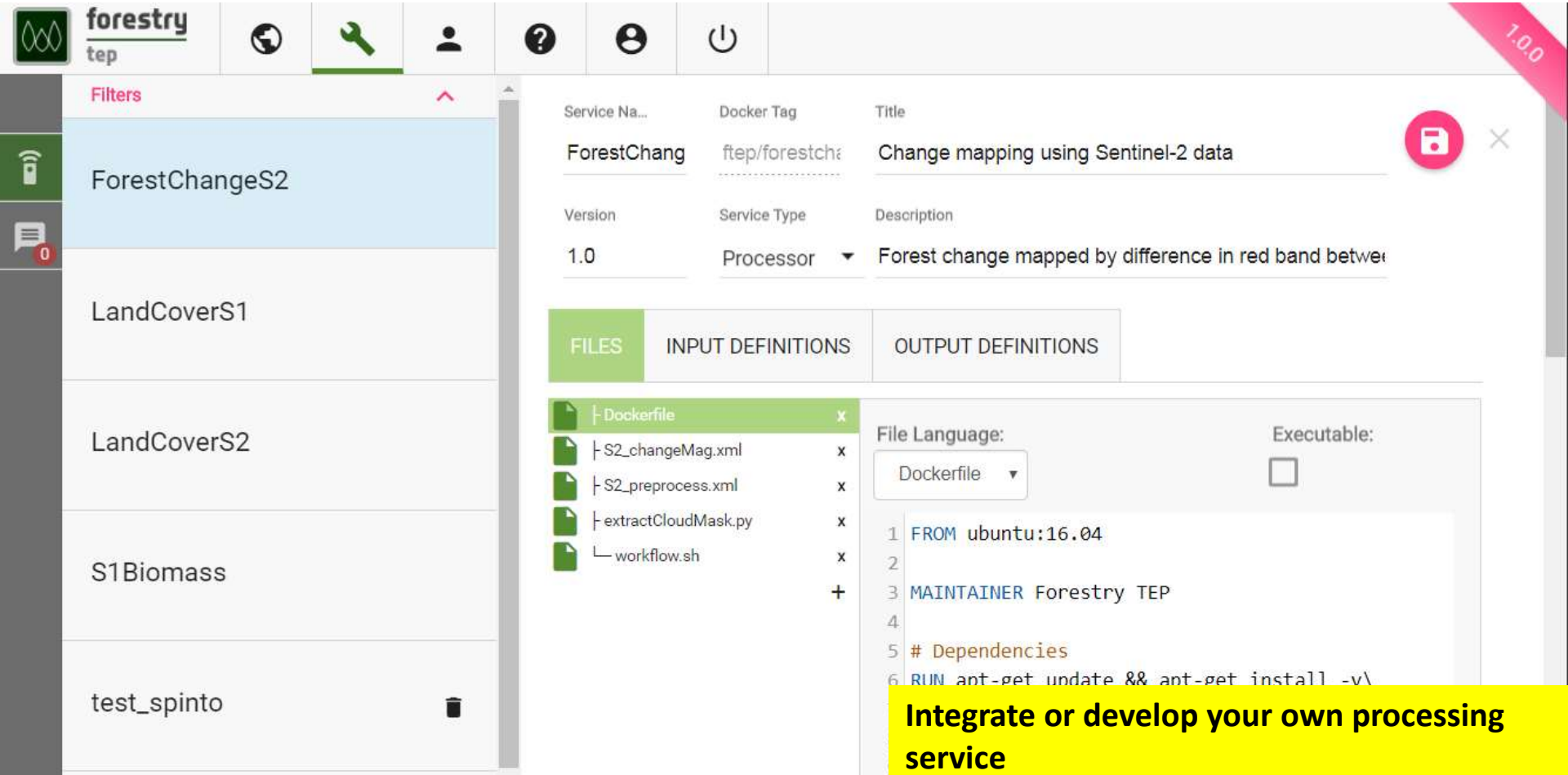


Data discovery and visualization

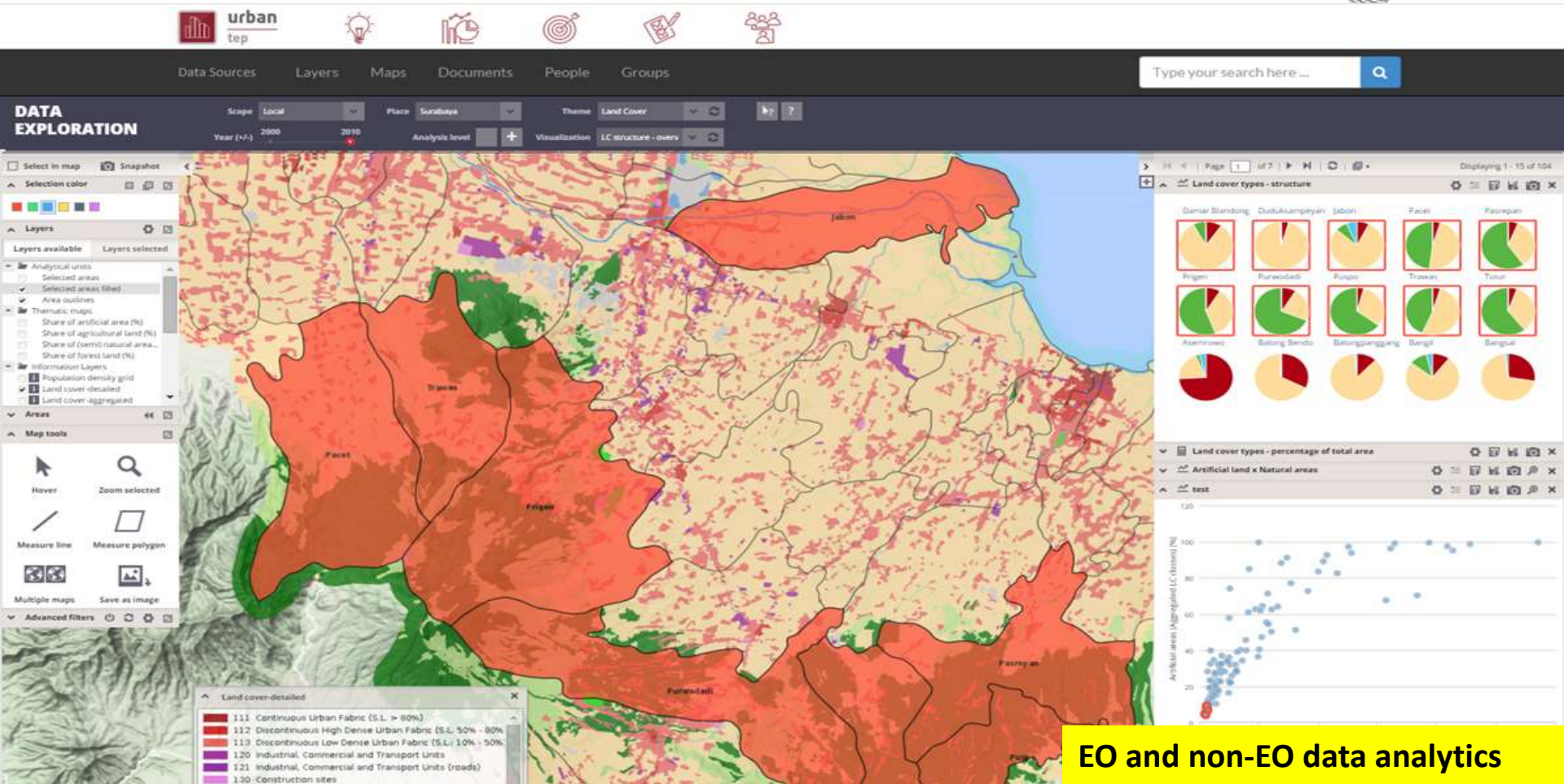
An example -> GeoHazards Exploitation Platform



An example -> Forestry Exploitation Platform



An example -> Urban Exploitation Platform



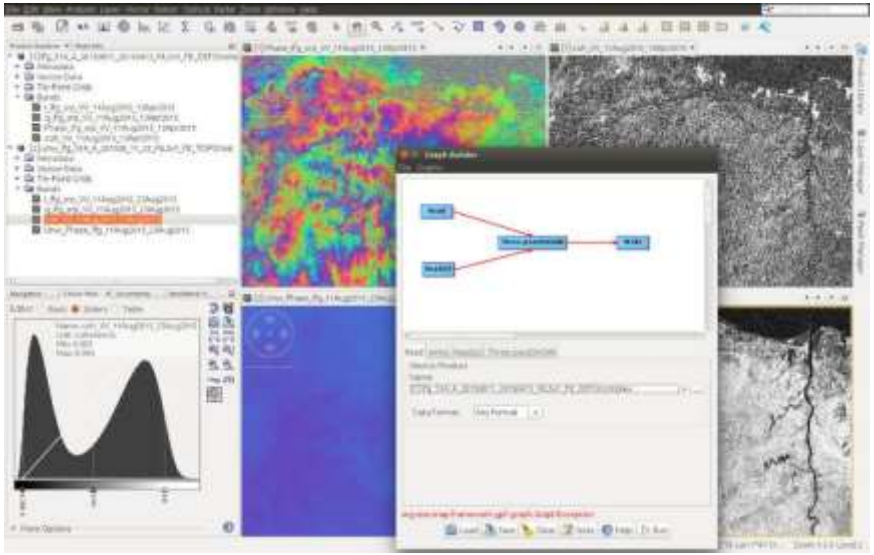
EO and non-EO data analytics

An example -> Coastal Exploitation Platform

coastal tep

Service

SNAP	Sentinel Toolbox	Start new
SNAP		
Ubuntu	Virtual Desktop	Start new
QGIS	Free and Open Source GIS	Start new
Jupyter	Python Notebook	Start new



Interactive applications hosted on the cloud and accessible via the browser

Thanks !

(ask tepcoreteam@esa.int if you want to know more)

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