OBJECTIVES

- Implement satellite products and services mature to successfully contribute and foster advanced geophysical investigations
- Guarantee the sustainability of Satellite Data Services and design a suitable governance model, to ensure a long-term operational supply
- Deliver an effective Satellite Data Procurement, in coordination with the Space Agencies
- Involve the scientific community of Satellite Data in a common collaborative framework
- Ensure interoperability between the Satellite Data services and Integrated Core Services

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TCS SATELLITE DATA

Satellite Data are used in all Earth Observation domains and applications. TCS Satellite Data will implement EO services transversal with respect to the large EPOS community and suitable to be used in several scenarios. TCS will deploy mature services that have already well demonstrated their effectiveness and relevance in investigating the physical processes driving earthquakes, unrest episodes, tectonics as well as Earth surface dynamics.

Integrating European Research Infrastructures for solid Earth Science

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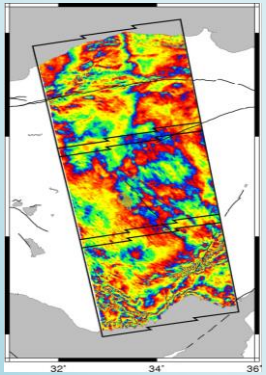
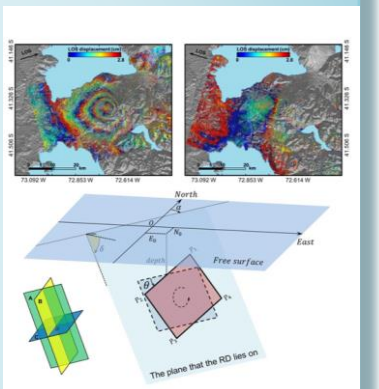
SATELLITE SERVICES

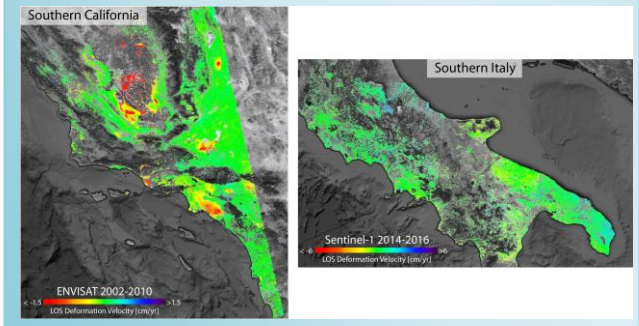
- ✓ The TCS Satellite Data will deploy **5 services**: EPOSAR (CNR, Italy), GDM (CNRS, France), 3D-Def (CSIC, Spain), COMET (UoL, UK), and MOD (GFZ, Germany).
- ✓ Each service is related to a different provider and a specific **National Research Infrastructure**.
- ✓ TCS will allow users to run web tools, implement new products, discover satellite products.
- ✓ Two kinds of products: Standard (Level-1, such as SAR **interferograms**, DTM, and ground **displacement** maps) and Value-added (Level-2/3, such as **3D** displacements maps, source **mechanisms**, and fault **models**).

THE PRODUCTS

EPOSAR, **GDM**, **COMET**, **MOD** and **3D-Def** services will provide advanced satellite products, mainly based on **ERS**, **ENVISAT** and **Sentinel** data, suitable to be used for Earth surface dynamic analyses. In particular, interferograms and **displacement** maps, **deformation** time-series and velocity maps, Digital Elevation Models, 3D displacement maps, fault **models**, and volcanic deformation **alerts** will be released.

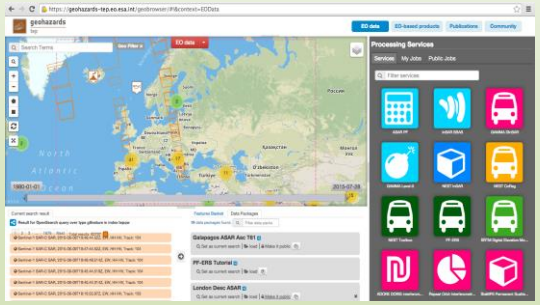






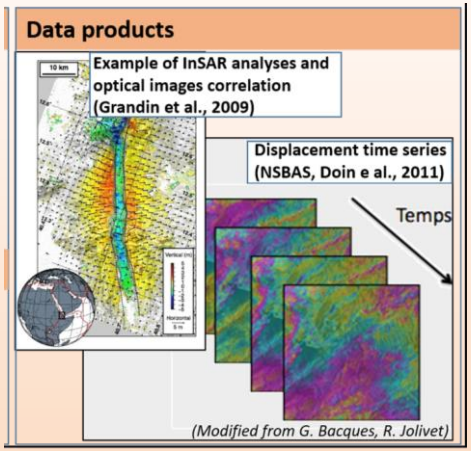
A COMMON INTERFACE

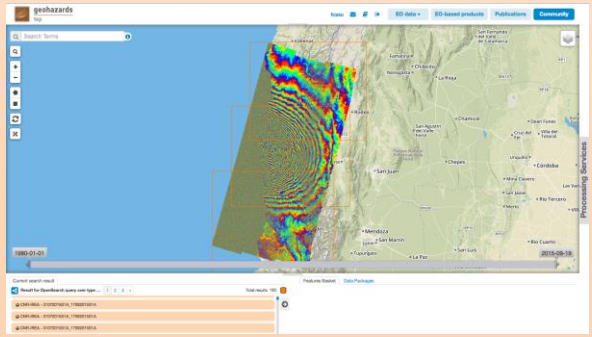
TCS will provide access to products and tools through a common interface. To this aim, ESA is developing the **Geohazards Exploitation Platform** (GEP), which is an open source environment designed to share **data**, **results** and **processing services**. In particular, the users can benefit from a large collection of **SAR** and **Optical** data, **open source science tools** and commercial software, as well as **Cloud** and **GRID** computational resources.



THE TOOLS

On demand and **systematic** services for the generation of ground displacement maps and time series, through the use of **SAR interferometry** (DInSAR) technique, and the retrieval of the geometry and the physical parameters of the deformation sources, by exploiting **modeling approaches**, optimized to integrate DInSAR information.





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