The Geohazards Exploitation Platform: an advanced cloud-based environment for the Earth Science community

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The idea to create advanced platforms, where the users can find data but also state-of-art algorithms, processing tools, computing facilities, and instruments for dissemination and sharing, in the field of the satellite Earth Observation has been launched several years ago. The initiatives developed in this context have been supported firstly by the Framework Programmes of the European Commission and the European Space Agency and, progressively, by the Copernicus programme.

The Geohazards Exploitation Platform (GEP) is an ESA funded R&D activity to exploit the benefits of new techniques for large scale processing of EO data. It supports the geohazards community by creating an Exploitation Platform with new models of collaboration where data providers, users and technology partners produce and deliver scientific and commercial information products in the Cloud.

The Platform is creating an ecosystem of partnerships for data, applications and ICT resources. Initiated in March 2015 and with a strong and growing user base of early adopters, it defines a new paradigm for EO data exploitation and valorisation, where partners bring in applications, and processors are deployed close to the data, in order to create value-added products with a scientific and/or a commercial value. It builds on a partnership model where:

- Data providers benefit from an integrated workplace to outreach users that seek to extract value out of sensor measurements;
- Technology providers benefit from the Platform connectivity to data sources, and from the turn-key environment (PaaS) for software integration;
- Cloud providers benefit from opportunities to provision commodities and services in support of the ICT challenges created by the growing volume of environmental data from space.

The initiative has already secured funding in order to expand its user base, and will gradually reach a total of 70+ users from more than 50 organisations worldwide by the end of 2017.

The GEP supports federated Cloud operations. The Platform collaborative environment and business processes support users to seamlessly deploy apps and data from a shared marketplace and across multiple cloud environments. In particular it already supports a set of systematic services, automatically producing value added products out of Copernicus Sentinel-1 and Sentinel-2 acquisitions at global scale, federating resources from e-infrastructures (EGI), public research centres (PSNC) and private providers (IPT.PL).

GEP is currently about to enter the pre-operations phase under a consortium led by Terradue and six pilot projects concerning different challenging applications using SAR and optical satellite data.

GEP was selected to participate to the EO pillar of the new EOSC-Hub H2020 project and will be offered to a wider public through the EOSC service catalogue. This project will mobilize e-Infrastructures comprising more than 300 data centres worldwide and 18 pan-European infrastructures, representing a ground-breaking milestone for the implementation of the EOSC. This activity will manage the access provisioning for EOSC services and provide training activities on the usage of EO data and services with outreach activities to widen the exploitation of EO satellite data to non-EO communities.

Topic Area

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