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The "Volcano Observations" Thematic Core Service of the European Plate Observing System (EPOS): status of the implementation.

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The European volcanological community contributes to implementation of European Plate Observing System (EPOS) by making operational an integrated platform to guarantee a seamless access to the data provided by the European Solid Earth communities. To achieve this objective, the Volcano Observations Work Package (WP11) will implement a Thematic Core Services (TCS) which is planned to give access to the data and services provided by the European Volcano Observatories (VO) and some Volcanological Research Institutions (VRI; as university departments, laboratories, etc.); both types are considered as national research infrastructures (RI) over which to build the TCS. Currently, the networks on European volcanoes consist of thousands of stations or sites where volcanological parameters are continuously or periodically measured. These sites are equipped with instruments for geophysical (seismic, geodetic, gravimetric, electromagnetic), geochemical (volcanic plumes, fumaroles, groundwater, rivers, soils), environmental observations (e.g. meteorological and air quality parameters), as well as various prototypal monitoring systems (e.g. Doppler radars, ground based SAR). In Europe also operate laboratories for sample analysis (rocks, gases, isotopes, etc.), and almost continuous analysis of space-borne data (SAR, thermal imagery, SO_2 and ash), as well as high-performance computing centres. All these RIs provide high-quality information (observations) on the current status of European volcanoes and the geodynamic background of the surrounding areas.
The implementation of the Volcano Observations TCS is addressing technical and management issues, both considering the current heterogeneous state of the art of the volcanological research infrastructures in Europe. Indeed, the frame of the VO and VRI is now too fragmented to be considered as a unique distributed infrastructure, thus the main effort planned in the frame of the EPOS-IP is focused to create services aimed at providing an improved and more efficient access to the volcanological facilities and observations on active volcanoes. The main gap to be overcame to facilitate the access to this valued information and to make this fragmented community into a unique infrastructure is concerning the heterogeneity in the technical solutions to provide the access. To tackle with this issue, WP11 launched an internal questionnaire to survey the current status of the services among the partners involved in the project.
The technical heterogeneity reflects also in the management issues, and in particular in the data policies, governance structures and financial perspectives. Indeed, each research infrastructure currently adopts a own data policy (moreover, in some cases it is difficult to define a proper data policy), refers to different financial models and has different organization, also due to the different formal commitments of VO and/or VRI in own countries. Furthermore, to guarantee the sustainability of the TCS, a proper governance structure and financial model is under definition, with the twofold aim to guarantee the service provision and to represent the community.
Thus the main challenging objective of the WP11 in the framework of EPOS-IP is to overcome the fragmentation and to strengthen the building of the European volcanological community which current worldwide high reputation is confirmed by the fact that three over four volcanic Supersites are located in Europe, managed by European institutions and were supported by EC through two EC-FP7 Projects (Futurevolc and MED-SUV).