



## **The contribution of the European Volcanology community to the implementation of the European Plate Observing System (EPOS) infrastructure**

Giuseppe Puglisi and the EPOS-WP11 Team

Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania - Osservatorio Etneo, Catania, Italy  
(giuseppe.puglisi@ingv.it)

The implementation of a global infrastructure in solid Earth science represents a great opportunity for the European Volcanology community to increase its impact on the overall research scenario in Europe. Indeed prior 2010, volcanoes and volcano-related hazards were less considered with respect to the impact posed by other natural hazards; however after the eruption of the Icelandic volcano Eyjafjallajökull, the general European awareness of volcanic phenomena and their dangerousness has significantly changed. The 2010 eruption has remarked the strategic role of the volcanology institutions and the need to strengthen their cooperation to better assess volcanic processes and the associated hazards and risks. Nowadays, volcanology in Europe is made by different research institutions and observatories ready to give access to interoperable and standardized data and products. Some of them are involved in the European Plate Observing System (EPOS) project and are implementing the 'Volcano Observations' Thematic Core Service (VO-TCS). The TCS aims at developing facilities allowing long-term, easy access to volcanological data and products, and interoperable services provided by its Volcano Observatories and Research Institutions. The VO-TCS will offer virtual access to data, products, services, and computational platforms, and it is also defining the rules and procedures to properly allow transnational access to its volcanological facilities. The portfolio of data, products, software, and services is quite broad and variegated, and spans from geophysics and geochemistry to volcanology. Data collection and analysis varies from in-situ and remote sensing observations to experimental analysis and computational elaborations. Overall, the TCS Volcano Observatories and Research Institutions will provide quantitative, high-quality observations on the European volcanoes and the geodynamic background of the surrounding areas. For the purpose, VO-TCS has been integrating the experiences gained in monitoring and studying the Italian, Icelandic, French, Spanish, Greek, and Portuguese volcanoes. The TCS is benefitting from the outcomes of the two EC-FP7 volcanological Supersite projects: FUTUREVOLC covering volcanoes in Iceland, and MEditerranean Supersite Volcanoes (MED-SUV) for Campi Flegrei, Vesuvius and Mt. Etna. The services developed by the TCS are not only addressed to the volcanology community but to a wide range of users and stakeholders, even not directly involved in research and technology development. Currently, VO-TCS is structured in 10 tasks defined taking into account the diversity of data, products, software, and services to be managed and their future use. Indeed, '...to give access...' means (i) management of the available information in terms of technical standards harmonization, legal aspects and access rules harmonization/definition, information protection, and financial sustainability plan, and (ii) design and development of a robust interoperable e-infrastructure, connected to the EPOS master infrastructure, able to allow discovering and access to all the information available for the European volcanoes. In this context, this contribution aims at providing an overall overview of the activities carried out by the volcanology community in the context of the EPOS-IP project and its step-forwards in the implementation of the EPOS VO-TCS.