

Considerations on the basis of an European Volcano Observations E-infrastructure: the EPOS experience

Giuseppe Puglisi¹, Patrick Bachelery², Daniele Bailo¹, Alessandro Bartoloni¹, Fawzi Doumaz¹, Teresa J.L. Ferreira³, Danilo Reitano¹, Kristin S. Vogfjord⁴

¹Istituto Nazionale di Geofisica e Vulcanologia, Italy, ²Lab. Magmas et Volcans, Blaise Pascal University-CNRS-IRD; Clermont-Ferrand, France, ³Universidade dos Açores, Centro de Vulcanologia e Avaliação de Riscos Geológicos; Ponta Delgada, Portugal, ⁴Icelandic Meteorological Office; Reykjavik, Iceland

E-mail: giuseppe.puglisi@ct.ingv.it

Data generated by volcano monitoring are as heterogeneous as the complexity of the volcanic processes themselves. All over the world where volcanoes are active, several countries have invested resources to observe and monitor these living and threatening 'geophysical entities'. The Volcano Observatories are the starting point for the construction of universal knowledge about volcano behavior and volcanology in a broad sense.

In this context, each country has often developed its own monitoring and data collection techniques, used their own measurement units, data storage and processing, cartographic projection systems, languages, lexicon/glossary, hardware, standards, etc. This situation somehow constitutes an obstacle each time the volcanological community wants to combine its efforts to better understand how volcanoes work, forecast volcanic events, or improve volcanic hazard assessments and reduce volcanic risk.

EPOS, as the European project aimed at implementing and integrating European Research Infrastructure (RI) in the field of Earth Sciences, is the right matrix for coordinating all the efforts to overcome these obstacles. Starting from existing skills and knowledge, an international working group has been called to contribute to the implementation of the RIDE (Research Infrastructure Database for EPOS, <http://www.epos-eu.org/ride/>), which enabled volcanological community to make a first catalog of the Infrastructures, Facilities, Instruments and Sensors at an European level, with a world-wide accessibility and resonance through the Internet.

The ongoing work consists of a preliminary survey of the current data types available in the European volcanological community, with the goal of defining categories, formats, metadata and other technical details for the data available at all European Observatories. This latter categorization is a fundamental input to design and build a distributed e-infrastructure, which will allow the integration of the geographically distributed national/regional data centers (Observatories, research Institutions, etc.). In the EPOS framework, we refer to this e-infrastructure as the European Volcanologic Thematic Service.

In the presentation, it will be discussed the outcome of the ongoing technical metadata survey and its contribution to the implementation of the European Volcanologic Thematic Service.