



The Icelandic volcanological data node and data service

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Through funding from the European FP7 programme, the International Civil Aviation Authority (ICAO), as well as the local Icelandic government and RANNÍS research fund, the establishment of the Icelandic volcano observatory (VO) as a cross-disciplinary, international volcanological data node and data service is starting to materialize. At the core of this entity is the close collaboration between the Icelandic Meteorological Office (IMO), a natural hazard monitoring and research institution, and researchers at the Earth Science Institute of the University of Iceland, ensuring long-term sustainable access to research quality data and products.

Existing Icelandic Earth science monitoring and research infrastructures are being prepared for integration with the European EPOS infrastructure. Because the VO is located at a Met Office, this infrastructure also includes meteorological infrastructures relevant to volcanology. Furthermore, the FP7 supersite project, FUTUREVOLC cuts across disciplines to bring together European researchers from Earth science, atmospheric science, remote sensing and space science focussed on combined processing of the different data sources and results to generate a multiparametric volcano monitoring and early warning system. Integration with atmospheric and space science is to meet the need for better estimates of the volcanic eruption source term and dispersion, which depend not only on the magma flow rate and composition, but also on atmosphere-plume interaction and dispersion. This should lead to better estimates of distribution of ash in the atmosphere.

FUTUREVOLC will significantly expand the existing Icelandic EPOS infrastructure to an even more multidisciplinary volcanological infrastructure. A central and sustainable part of the project is the establishment of a research-quality data centre at the VO. This data centre will be able to serve as a volcanological data node within EPOS, making multidisciplinary data accessible to scientists and stakeholders, and enabling the generation of products and services useful for civil protection, societal infrastructure and international aviation.

The 2010 Eyjafjallajökull eruption demonstrated that eruption and dispersion of volcanic ash in the atmosphere can have far-reaching detrimental effects on aviation. The aviation community is therefore an important stakeholder in volcano monitoring, but interaction between the two communities is not well established. Traditionally Met Offices provide services vital to aviation safety and therefore have strong ties to the aviation community, with internationally established protocols for interaction. The co-habitation of a Met Office with a VO establishes a firm connection between these communities and allows adaptation of already established protocols to facilitate access to information and development of services for aviation, as well as sources of support for the VO.