



ARISTOTLE (All Risk Integrated System TOwards The hoListic Early-warning)

Alberto Michelini (1), Gerhard Wotawa (2), Delia Arnold-Arias (2), and the ARISTOTLE Team

(1) Istituto Nazionale Geofisica e Vulcanologia, Centro Nazionale Terremoti, Roma, Italy (alberto.michelini@ingv.it), (2) Zentralanstalt für Meteorologie und Geodynamik, Vienna, Austria (gerhard.wotawa@zamg.ac.at)

The Emergency Response Coordination Centre (ERCC) is the EU coordination office for humanitarian aid and civil protection operations of DG ECHO (EU Humanitarian Aid and Civil Protection). ERCC needs rapidly authoritative multi-hazard scientific expertise and analysis on 24*7 basis since, when a disaster strikes, every minute counts for saving lives and immediate, coordinated and pre-planned response is essential. The EU is committed to providing disaster response in a timely and efficient manner and to ensure European assistance meets the real needs in the population affected, whether in Europe or beyond.

The ARISTOTLE consortium was awarded the European Commission's DG ECHO "Pilot project in the area of Early Warning System for natural disasters" (OJ 2015 S/154-283349). The tender articulates the needs and expectations of DG ECHO in respect of the provision of multi-hazard advice to the Emergency Response & Coordination Centre in Brussels. Specifically, the tender aims to fill the gap in knowledge that exists in the:

- first 3 hours immediately after an event that has the potential to require a country to call on international help
- provision of longer term advice following an emergency
- provision of advice when a potential hazardous event is starting to form; this will usually be restricted to severe weather and flooding events and when possible to volcanic events.

The ARISTOTLE Consortium was awarded the tender and the project effectively started on February 1st, 2016, for a duration of 2 years. ARISTOTLE (aristotle.ingv.it) is a multi-hazard partnership created by combining expertise from of total of 5 hazard groups [4 main hazard groups plus a sub-hazard - Severe Weather, Floods, Volcanos (only for ashes and gases hazard deriving from eruptions), Earthquakes and the related Tsunamis as a sub-hazard given its peculiarities and potential huge impact]. Each Hazard Group brings together experts from the particular hazard domain to deliver a 'collective analysis' which is then fed into the partnership multi-hazard discussions. The hazards are very different and have very diverse timelines for phenomenological occurrence (Figure 1).

The ARISTOTLE consortium includes 15 partner institutions (11 from EU Countries; 2 from non-EU countries and 2 European organizations) operating in the Meteorological and Geophysical domains. The project coordination is shared among INGV and ZAMG for the geophysical and meteorological communities, respectively.

Primary target of the tender project is the prototyping and the implementation of a scalable system (in terms of number of partners and hazards) capable of providing to ERCC the "desiderata" above. To this end, the activities of the project have been focusing on the establishment of a multi-hazard operational board (MHOB) that is assigned the 24*7 operational duty regulated by a "Standard Operating Protocol". The presentation will illustrate the different modes of operation envisaged and the status and the solutions found by the project consortium to respond to the ERCC requirements.