



## **Demonstration exercise for an artificial volcanic eruption scenario and the impacts on aviation**

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As evident from the past, aviation shows vulnerability with regard to natural hazards. There is still a significant gap in the Europe-wide availability of real-time hazard measurement and monitoring information for airborne hazards describing “what, where, and how much”. The H-2020 project EUNADICS-AV (“European Natural Disaster Coordination and Information System for Aviation”) intends to close this gap with a platform containing all the data and information, enabling all stakeholders in the aviation system to obtain fast, coherent, and consistent information.

As the project is now in its last phase, all EUNADICS-AV developments need to be tested and evaluated. For this purpose, the EUNADICS-AV team organizes a demonstration exercise in March 2019 where crisis scenarios will be simulated as realistically as possible and the added value of EUNADICS-AV products will be shown.

The goal of the EUNADICS-AV demonstration exercise is to present the tasks of the project participants during aviation-affecting hazardous events. The whole EUNADICS-AV reaction chain will be considered for two selected events: a volcanic eruption and a nuclear attack (artificial examples). Starting from (1) the detection of the hazardous event and (2) the declaration of early warnings, (3) (3) observations from different sources (e.g. satellite, lidar, in situ) are used to analyse the situation and are furthermore combined with models to determine the source terms and to refine the analysis (4). These results are then used to (5) cost-efficiently re-route airplanes. Every step of the whole procedure will be executed with a demonstration of which data would be used in a real event and how the procedures and dependencies would take place.

The results of the artificial volcanic eruption of Etna will be presented in this contribution. Starting from the Etna eruption in Italy the ash cloud disperses over Europe affecting the European airspace significantly. The spatial extension of the ash and SO<sub>2</sub> lasts for several days and the impacts of this event on aviation will be demonstrated.