European Natural Disaster Coordination and Information System for Aviation (EUNADICS-AV)

Gerhard Wotawa (1), Marcus Hirtl (1), Delia Arnold (1), Susanne Katzler-Fuchs (2), Gelsomina Pappalardo (3), Lucia Mona (3), Mikhail Sofiev (4), Gerrit de Leeuw (4), Nicolas Theys (5), Hugues Brenot (5), Matthieu Plu (6), Carl-Herbert Rockitansky (7), Kurt Eschbacher (7), Arnoud Apituley (8), and Wim Som de Cerff (8)

(1) Central Institute for Meteorology and Geodynamics, Data, Methods and Modelling, Vienna, Austria (gerhard.wotawa@zamg.ac.at), (2) Brimatech Services GmbH, Vienna, Austria, (3) Consiglio Nazionale delle Ricerche (CNR), Italy, (4) Finish Meteorological Institute (FMI), Helsinki, Finland, (5) Royal Belgian Institute for Space Aeronomy (BIRA-IASB), Brussels, Belgium, (6) Meteo France (MF), Toulouse, France, (7) Paris Lodron University of Salzburg, Austria, (8) Royal Netherlands Meteorological Institute (KNMI), De Bilt, Netherlands

Commercial aviation is one of the key infrastructures of our modern world. Even short interruptions can cause economic damages summing up to the Billion-Euro range. As evident from the past, aviation shows vulnerability with regard to natural hazards. Safe flight operations, air traffic management and air traffic control is a shared responsibility of EUROCONTROL, national authorities, airlines and pilots. All stakeholders have one common goal, namely to warrant and maintain the safety of flight crews and passengers. Currently, however, there is a significant gap in the Europe-wide availability of real time hazard measurement and monitoring information for airborne hazards describing "what, where, how much" in 3 dimensions, combined with a near-real-time European data analysis and assimilation system. This gap creates circumstances where various stakeholders in the system may base their decisions on different data and information. The H-2020 project EUNADICS-AV ("European Natural Disaster Coordination and Information System for Aviation"), started in October 2016, intends to close this gap in data and information availability, enabling all stakeholders in the aviation system to obtain fast, coherent and consistent information. The project intends to combine and harmonize data from satellite earth observation, ground based and airborne platforms, and to integrate them into state-of-the art data assimilation and analysis systems. Besides operational data sources, data from the research community are integrated as well. Hazards considered in the project include volcano eruptions, nuclear accidents and events, and forest fires. The availability of consistent and coherent data analysis fields based on all available measurements will greatly enhances our capability to respond to disasters effectively and efficiently, minimizing system downtimes and thus economic damage while maintaining the safety of millions of passengers.