

**Volcanic Ash Advisory for Transportation:
(implement of volcanoes monitoring systems of active explosive volcanoes to increase the reliability of ash plume dispersion modeling and ash concentration charts).**

Marco Magnani, Naoko Taki, Hiroaru Suyama.
(Weathernews Inc., Chiba, Japan)

On April 2010, a series of eruptions from Eyjafjallajökull in the south of Iceland had an enormous impact on the European air traffic industry, and increased the needs and demands for accurate ash concentration forecasts and risk aversion information from the major airlines. From that moment Weathernews Inc. started the VAAT (Volcanic Ash Advisory for Transportation) project to support the needs of the transportation industry.

Our project uses a new, non-standard approach to increase the precision of our models, so that we can determine the ash concentration in the volcanic plumes, as well the ash dispersion patterns with high level of precision. So far most of the research institutions, weather agencies, etc based their modeling on satellites images and web cameras, when available, but now Weathernews has been using new methods of monitoring, having developed for example the “WITH RADAR” (X-band radar), which is capable of scanning the ash cloud every 6 seconds and to monitor the volcanic ash even on night time, 24 hours a day. The “WITH RADAR” was already employed with success this year during the Shinmoedake eruption in Kyushu Island.

Furthermore we are planning to extend more the installation of web cameras, especially in countries where the infrastructures are not developed enough, but with a large number of active explosive volcanoes, as for example Indonesia, Philippine and Kamchatka.

In conclusion Weathernews wants to base as much as possible the modeling on direct monitoring of the volcanoes, in order to increase the ash plumes dispersion forecast precision and to provide reliable ash concentration charts, which are fundamental information for the aviation operators. In order to achieve these goals Weathernews is implementing the traditional monitoring systems and at the same time developing new non standard monitoring systems, such the “WITH RADAR”.