

COPERNICUS-CAMS50 : An Air Quality Ensemble modelling system over Europe. From research to operation.

M. Pithon¹, S. Guidotti¹, V-H. Peuch², R. Engelen², L. Rouil³, F. Meleux³, H. Pech¹, S. Rouzeau¹

Copernicus is the European Commission supported programme for monitoring the Earth's environment using satellite and ground based observations. The short term variation in atmospheric composition that determines the quality of the air around us, is one of the areas covered by this programme.

The European Centre for Medium-Range Weather Forecasts has therefore been appointed by the European Union to implement the Copernicus Atmosphere Monitoring Service (CAMS) to meet the need for data and processed information in response to environmental concerns of policymakers, business and citizens. These services which achieved an operational status in 2015, are the result of more than ten years of pilot and active research projects (GEMS, MACC, MACC-II, MACC-III).

To address this need on the European scale, Météo France, in partnership with INERIS, was chosen as the provider of an operational regional production chain to deliver high resolution CAMS products over a domain covering Europe. This regional production is based upon an ensemble of seven AQ models producing analyses, forecasts and re-analyses of the regulatory air pollutant concentrations over the whole of Europe. The three different streams of product dissemination are intended to use emerging technologies as the WMO Information system and Web based services to enable easy access to metadata and the ability to visualize datasets.

This distributed system of various models, operated in different institutes in Europe, has to be organized in an operational production chain which is able to meet user requirements in terms of delivery, punctuality and reliability. This operationalisation process, the integration into Meteo France IT environment and the system monitoring will be described as well as the way data and products are provided to end users with compliance to OGC standards. Finally, the mutual benefits between active research activities and operational implementation in this regional system will be highlighted.

1: Meteo-France, Toulouse, France

2 : ECMWF, Reading, UK

3 : INERIS, Verneuil-en-Halatte, France