



## Latest developments for the IAGOS database: Interoperability and metadata

Damien Boulanger (1), Benoit Gautron (2), Valérie Thouret (2), Martin Schultz (3), Peter van Velthoven (4), Bjoern Broetz (5), Armin Rauthe-Schöch (6), and Guillaume Brissebrat (1)

(1) Observatoire Midi-Pyrénées, CNRS, SEDOO, Toulouse, France (damien.boulanger@obs-mip.fr), (2) Laboratoire d'Aérodynamique, CNRS, Université Paul Sabatier, Toulouse, France, (3) Forschungszentrum Jülich GmbH (FZJ), IEK-8, Jülich, Germany, (4) Royal Netherlands Meteorological Institute (KNMI), De Bilt, The Netherlands, (5) Deutsches Zentrum für Luft und Raumfahrt (DLR), Köln, Germany, (6) Max Planck Institute for Chemistry, Mainz, Germany

In-service Aircraft for a Global Observing System (IAGOS, <http://www.iagos.org>) aims at the provision of long-term, frequent, regular, accurate, and spatially resolved in situ observations of the atmospheric composition. IAGOS observation systems are deployed on a fleet of commercial aircraft. The IAGOS database is an essential part of the global atmospheric monitoring network. Data access is handled by open access policy based on the submission of research requests which are reviewed by the PIs. Users can access the data through the following web sites: <http://www.iagos.fr> or <http://www.pole-ether.fr> as the IAGOS database is part of the French atmospheric chemistry data centre ETHER (CNES and CNRS).

The database is in continuous development and improvement. In the framework of the IGAS project (IAGOS for GMES/COPERNICUS Atmospheric Service), major achievements will be reached, such as metadata and format standardisation in order to interoperate with international portals and other databases, QA/QC procedures and traceability, CARIBIC (Civil Aircraft for the Regular Investigation of the Atmosphere Based on an Instrument Container) data integration within the central database, and the real-time data transmission.

IGAS work package 2 aims at providing the IAGOS data to users in a standardized format including the necessary metadata and information on data processing, data quality and uncertainties. We are currently redefining and standardizing the IAGOS metadata for interoperable use within GMES/Copernicus. The metadata are compliant with the ISO 19115, INSPIRE and NetCDF-CF conventions. IAGOS data will be provided to users in NetCDF or NASA Ames format.

We also are implementing interoperability between all the involved IAGOS data services, including the central IAGOS database, the former MOZAIC and CARIBIC databases, Aircraft Research DLR database and the Jülich WCS web application JOIN (Jülich OWS Interface) which combines model outputs with in situ data for intercomparison. The optimal data transfer protocol is being investigated to insure the interoperability.

To facilitate satellite and model validation, tools will be made available for co-location and comparison with IAGOS. We will enhance the JOIN application in order to properly display aircraft data as vertical profiles and along individual flight tracks and to allow for graphical comparison to model results that are accessible through interoperable web services, such as the daily products from the GMES/Copernicus atmospheric service.