IAGOS developments in the frame of IGAS for metadata standardization and database interoperability

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Abstract

IAGOS aims at the provision of long-term, frequent, regular, accurate, and spatially resolved in-situ observations of atmospheric chemical composition. IAGOS observation systems are deployed on a fleet of in-service aircraft of internationally operating airlines. The IAGOS database forms an essential element of the global network of atmospheric composition observations. In the framework of the newly starting IGAS project, major developments are planned in order to interoperate with international portals and other databases enabling easy use of the IAGOS observations by operational and other environmental services. These include metadata and formats standardization, added-value services, QA/QC procedures and traceability, and the real-time data transmission.

IAGOS Data access interface

Selection by :
• Location
• Time
• Parameters
• Data type : raw data, averaged data, profiles

Output format :
• NetCDF
• NASA Ames

www.igas-project.org

JOIN interface

• Intercomparison of model outputs with in-situ data
• Interoperable web services
• Display aircraft data as vertical profiles
• JOIN will interrogate the IAGOS and DLR database using OGC protocols.

IAGOS Database

• 9 aircrafts
• Almost 40 000 flights since August 1994
• Measurements of ozone, carbon monoxide, greenhouse gases, nitrogen oxides, aerosols, cloud particles, meteorological data, etc.

IAGOS architecture

IAGOS Data access interface

IAGOS Database access

• Contains IAGOS and former MOZAIC project data
• CARIBIC data will be integrated in 2014
• Data access handled by open access policy based on submission of research requests reviewed by the PIs
• Supported by the French atmospheric chemistry data centre ETHER (CNES and CNRS)

www.iagos.org

Interoperability

• IAGOS metadata compliant to the standards ISO 19115, INSPIRE and CF convention
• PostGIS database
• OGC web services : WCS (for 2D or gridded data), SOS (for 1D data)
• Linked to DLR Research Aircraft Database
• Metadata harvesting by international portals (EuroGeoss)

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