

In-service Aircraft for a Global Observing System

The Consortium

IAGOS-ERI builds on 15 years of scientific and technological experience gained in the research projects MOZAIC (Measurement of Ozone and Water Vapour on Airbus in-service Aircraft) and CARIBIC (Civil Aircraft for the Regular Investigation of the Atmosphere Based on an Instrument Container).

The Partnership

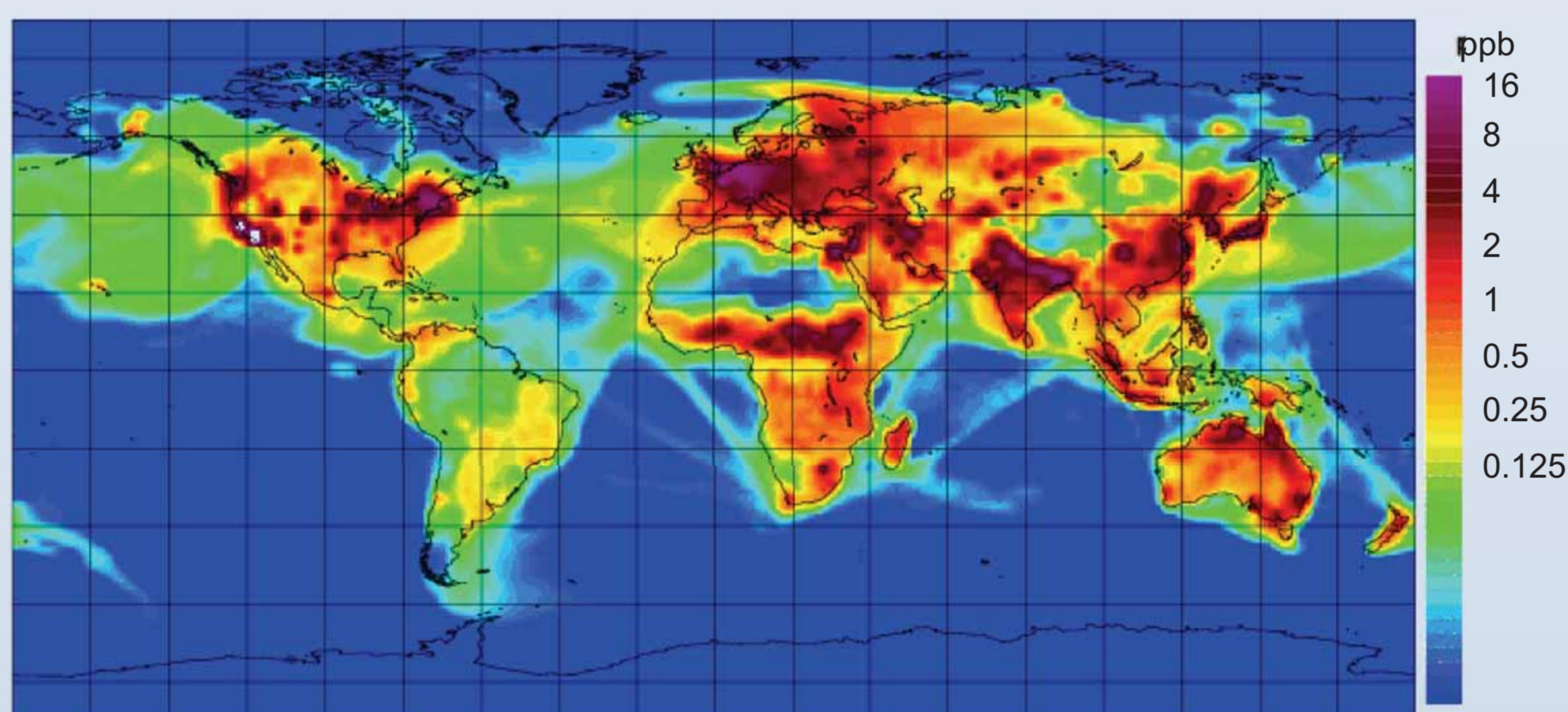
Associated Airlines



The Science

The need for routine aircraft observations at the global scale is driven by:

- The scientific communities engaged in modelling of
 - Climate Change
 - Air Quality
 - Carbon Cycle
 - Impact of Aviation
- The Task Force on Hemispheric Transport of Air Pollutants (HTAP)
- The GMES Atmospheric Service (GAS)
- The scientific community engaged in improving satellite data



ECMWF/GEMS Forecast of Surface NOx for 26.11.2008 (<http://gems.ecmwf.int>)

The Technical Approach

IAGOS-ERI deploys newly developed high-tech instruments aboard a fleet of Airbus longhaul aircraft for regular in-situ measurements of atmospheric chemical species (O_3 , CO , CO_2 , NO_y , NO_x , H_2O), aerosols and cloud particles.



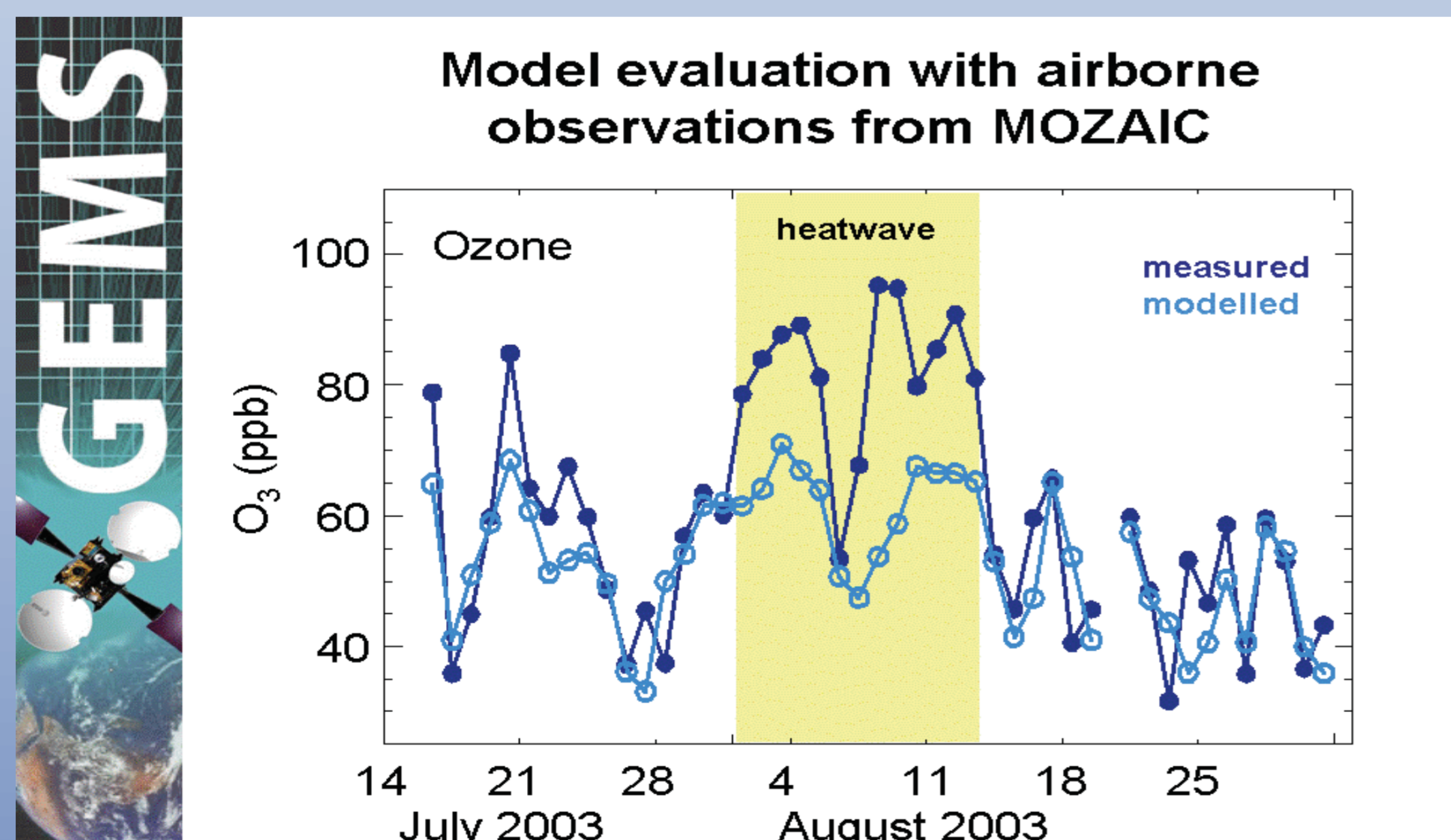
IAGOS instruments are permanently installed in the avionics compartment.

The Users

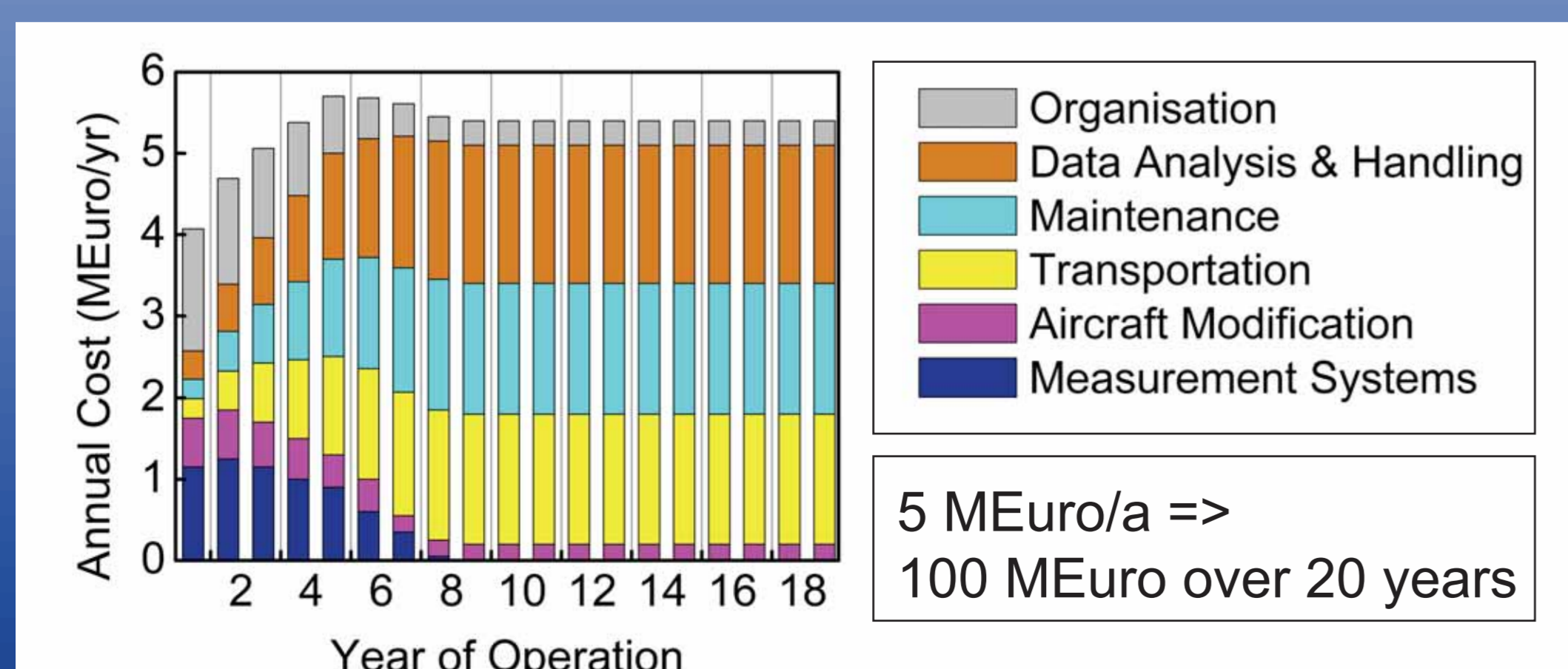
IAGOS-ERI provides data for users in science and policy, including:

- Modelling of climate change and global air quality
- Air quality forecasting in the GMES Atmospheric Service.
- Verification of CO_2 emissions and Kyoto monitoring
- Numerical weather prediction
- Validation of satellite data products

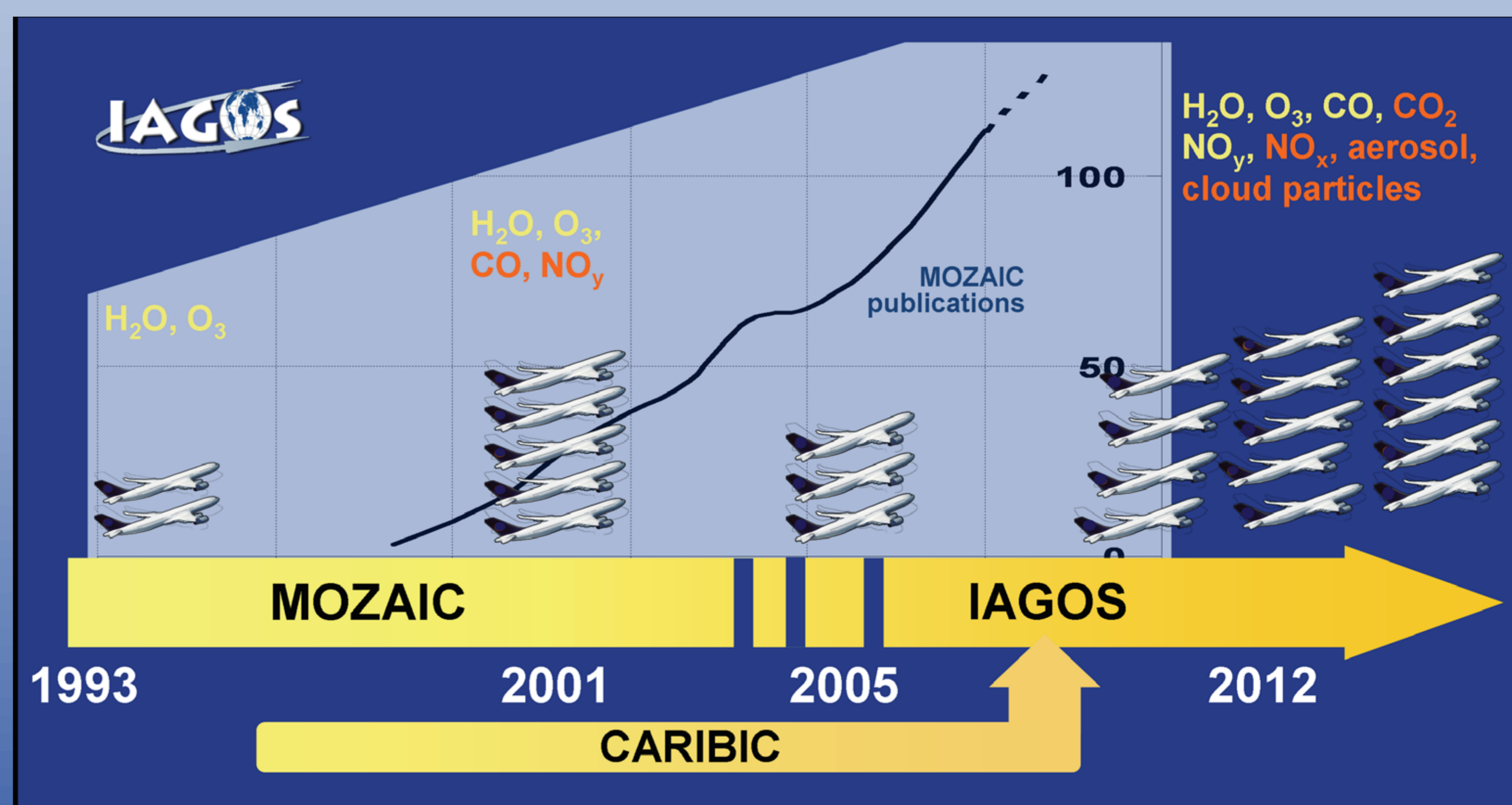
In CARIBIC, a cargo container is deployed as a flying laboratory aboard one aircraft. A special multi-functional inlet system allows optical measurements and accurate sampling for aerosol and trace gases.



The Costs



The Timeline



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