

The Atmospheric Demonstration Experiment of the Integrated Carbon Observation System (ICOS)

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ICOS is a new European research infrastructure for quantifying and understanding the greenhouse gas balance of the European continent and adjacent regions. It consists of a harmonized and standardized network of long-term observation sites coordinated through a set of central facilities including an Atmospheric Thematic Center (ATC) and a Central Analytic Laboratory (CAL). The aim of this infrastructure is to provide the long-term atmospheric and flux observations required to understand the present state and predict future behavior of the global carbon cycle and greenhouse gas emissions.

ICOS is currently in its preparatory phase (ICOS PP). In conclusion of the ICOS PP, a 6-month demonstration experiment starts in April 2011 in order to demonstrate the feasibility of the ICOS infrastructure and its capability to properly manage a network of standardized instruments, with centralized data processing performed in near real time. For that purpose, the atmospheric demonstration experiment relies on a small demo network made of 4 Atmospheric Stations (AS) and central facilities (ATC and CAL). Moreover the demonstration experiment will allow us to validate the ICOS AS design pattern before the deployment of new ICOS AS within the infrastructure network during the construction phase. Indeed, a prototype of the ICOS AS pattern, designed by the LSCE and CEA with the assessment of the ICOS community, is installed in the atmospheric demo network at the OPE site (ANDRA, France).

The poster presents the Atmospheric Demo Experiment and focus on the design pattern of the ICOS Atmospheric Station.



Figure 1. ICOS Demo Atmospheric Network.