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Integrated Carbon Observing System - greenhouse gas observations for GEO and Copernicus

ICOS is a European research infrastructure designed to monitor in situ greenhouse gas fluxes to and from the atmosphere. Its long-term observations are essential for understanding the present state, and predicting the future behaviour, of the global carbon cycle and greenhouse gases emissions.

In support of the ongoing design and construction of ICOS, the ICOS-INWIRE (Improved sensors, Network and Interoperability for Copernicus) FP7 project started in 2013. The fundamental objective of ICOS-INWIRE is to enhance the capabilities of ICOS and fill in critical gaps for monitoring fluxes and concentrations of greenhouse gases, in order to meet the data needs of operational users, especially in the Copernicus program, and in particular MACC-II. It will achieve this by: developing and testing autonomous sensors systems for greenhouse gas fluxes and concentration, enhancing the data processing operational capabilities of the ICOS concentration and flux measurement network and developing inter-operability between ICOS and other in-situ GHG monitoring networks while assuring the convergence with space systems and the harmonization of exchange mechanisms. These activities will contribute to European capacity to set up pan-European and global networks. In particular, this develops the capabilities of ICOS as a contribution to GEO work program.