

Access to ACTRIS observations, calibrations and services

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The EU-funded Integrating Activity ACTRIS-2 (Aerosols, Clouds, and Trace gases Research InfraStructure) contributes to the construction of a user-oriented and distributed research infrastructure, offering high quality services to wide user communities across Europe and beyond. ACTRIS is unique in the EU-RI landscape, providing 4-D integrated, high-quality data from near surface to high altitude, relevant for climate and air-quality research (ESFRI 2016). Through a comprehensive pan-European network of observational and calibration facilities, ACTRIS develops and implements harmonized observational protocols and operating procedures to improve systematic and timely delivery of long-term observational data and products.

One of the key activities within the project is the provision of access to a large number of ACTRIS-2 services, implemented through its virtual and trans-national access programme, comprising wide and open access to high-quality information, tools and services through the ACTRIS Data Centre, hands-on access to a large number of ground-based observing platforms and advanced instrumentation, and physical and remote access to thematic calibration centres for instrument testing and development, quality assurance, training and best practices, and international collaboration.

Eighteen world-class observational facilities, unique in Europe and representing a variety of environments and air mass types, offer access to comprehensive measurement programmes and cutting-edge research, scientific campaigns, intercomparisons, and training capabilities for exploitation of state-of-the-art resources, knowledge, and expertise. The observational sites comprise historical sites, operational since decades with long records and experience of access provision, and new sites for novel research opportunities.

The calibration facilities constitute multi-national installations and are globally unparalleled, being beneficial not only to the entire scientific communities, but also to users from the industrial sector and operational networks, and offer access and services to:

- the Lidar Calibration Centre (LiCal) for testing and calibration of lidars and ceilometers, including characterization and optimization of single components and assessment of whole system performances;
- the AERONET-Europe Calibration facility for calibration and standards maintenance service for sun/sky/polar/moon photometers, complementing the NASA AERONET programme for routine, real-time, and high-quality aerosol column integrated properties;

- the European Centre for Aerosol Calibration (ECAC) for calibration and quality assurance of high quality physical, optical, and chemical in-situ aerosol measurements, instrument audits and capacity building.

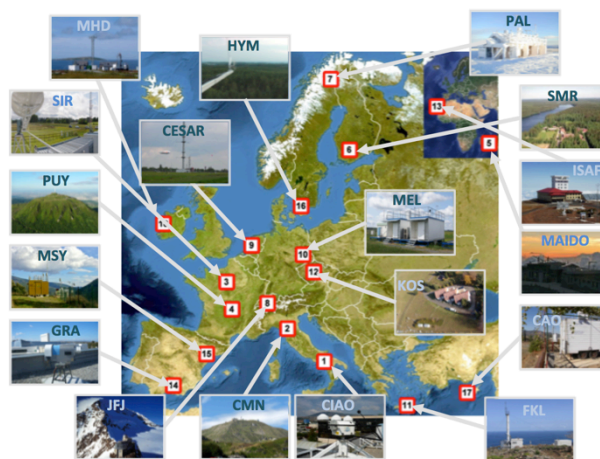


Figure 1. ACTRIS-2 observation facilities for free and open trans-national access

ACTRIS infrastructure data are produced, processed, and quality-controlled according to standard procedures, and properly archived for long-term usage. Innovative data and mature data products and analysis are accessible in timely manner through the centralized virtual services of the ACTRIS Data Centre; metadata and interoperable data are available to improve the services to all users including operational and data management services, public services and authorities, interested in long-term, reliable, high quality data and products, climate and air quality information relevant for decision making and policy development.

Through the diversity of access and services, ACTRIS represents a fundamental step towards the establishment of the atmospheric component of the Integrated European Observing System and a clear upgrade in services offered to users.

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ESFRI (2016). *European Strategy Report on Research Infrastructures: Roadmap 2016*. ISBN: 978-0-9574402-4-1