

Update of ACTRIS activities related to atmospheric sciences and the EU air quality directive preparations

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27th EMEP Task Force on Measurements and Modelling Meeting

Bled, 28-29 April 2026 (draft 13 April)

New Air Quality Directive

DIRECTIVE (EU) 2024/2881 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on ambient air quality and cleaner air for Europe

Published in Official Journal on 20 November 2024

Compliance by 11 December 2026

Definitions:

- *‘black carbon’ or ‘BC’ means carbonaceous aerosols measured by **light absorption**;*
- *‘ultrafine particles’ or ‘UFP’ means particles with a diameter less than or equal to 100 nm, where UFP are measured as the **particle number concentrations** per cubic centimetre for a size range with a lower limit of 10 nm and for a size range with no restriction on the upper limit;*

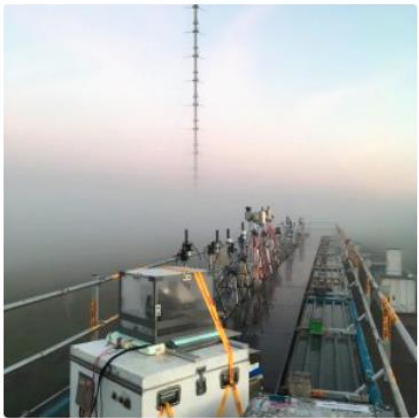
Article 10: Monitoring Supersites

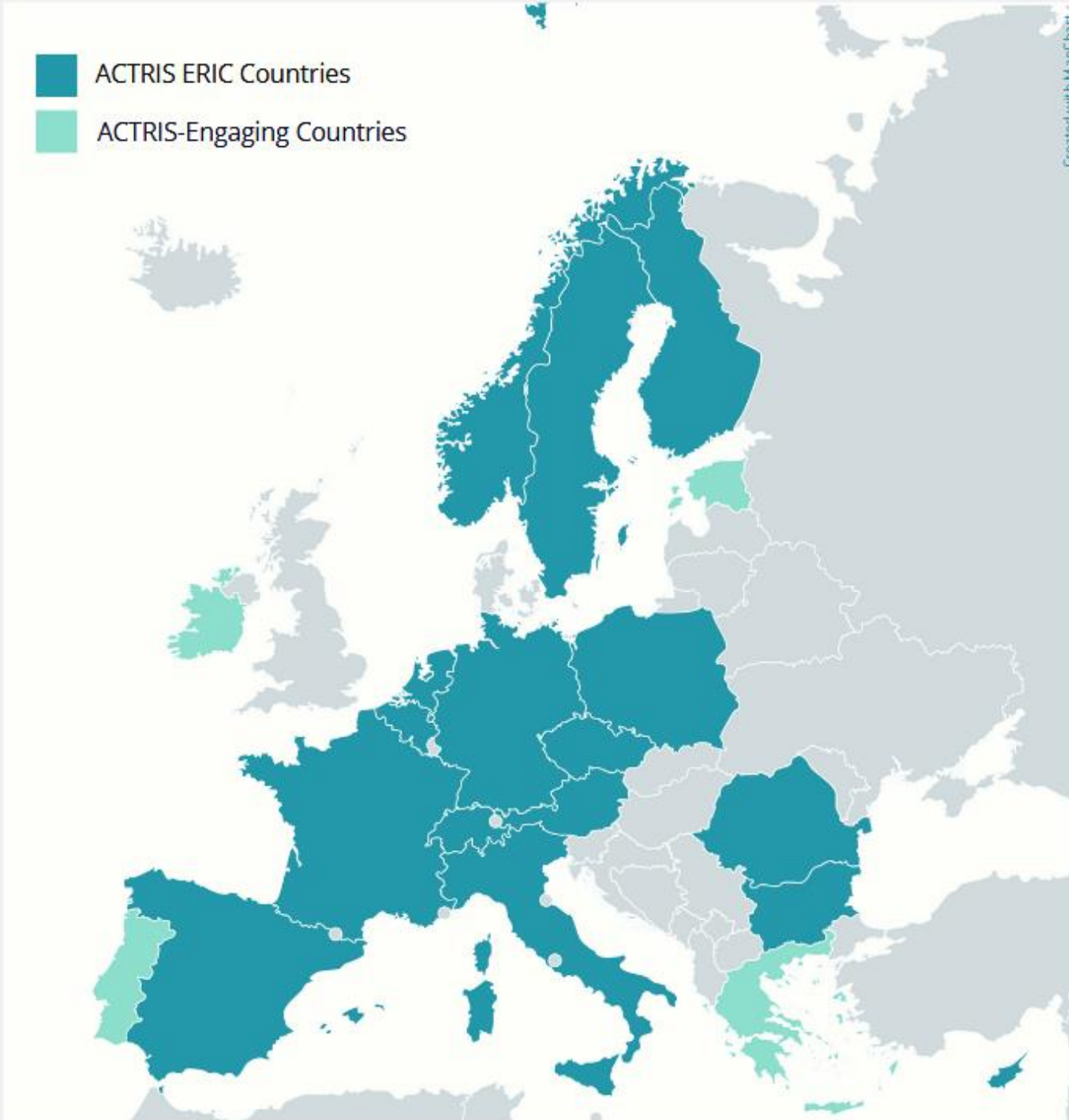
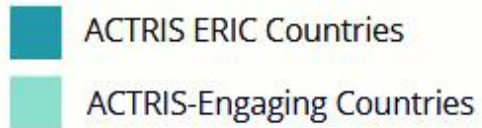
1. Each Member State shall establish at least **one monitoring supersite per 10 million inhabitants at an urban background** location. Member States that have **fewer than 10 million inhabitants shall establish at least one monitoring supersite at an urban background** location. Member States whose territory is **more than 10 000 km², but not more than 100 000 km², shall establish at least one monitoring supersite at a rural background** location. Each Member State whose territory is more than 100 000 km² shall establish **at least one monitoring supersite per 100 000 km² at a rural background** location.
2. The siting of monitoring supersites shall be determined for urban background locations and rural background locations in accordance with Point B of Annex IV.
3. All sampling points that meet the requirements laid down in Points B and C of Annex IV and which are installed at monitoring supersites may be taken into account for the purpose of meeting the requirements on the minimum number of sampling points for the relevant pollutants as specified in Annex III.
4. A Member State may establish, with **one or more neighbouring Member States**, one or **more joint monitoring supersites** to meet the requirements set out in paragraph 1. This does not affect the obligation of each Member State to establish **at least one monitoring supersite at an urban background** location and the obligation of each Member State whose territory is **more than 10 000 km² to establish at least one monitoring supersite at a rural background** location.
5. Measurements at monitoring supersites at urban background locations and rural background locations shall include the pollutants listed in Section 1, Tables 1 and 2, of Annex VII and may also include the pollutants listed in Table 3 of that Section.
6. A Member State may choose not to measure black carbon, ultrafine particles or ammonia in half of its monitoring supersites at rural background locations if the number of its monitoring supersites at rural background locations exceeds the number of its monitoring supersites at urban background locations by at least a ratio of 2:1, as long as the selection of its monitoring supersites is representative for those pollutants.
7. Where appropriate, **monitoring shall be coordinated with the monitoring strategy and measurement programme of EMEP, the Aerosol, Clouds and Trace Gases Research Infrastructure (ACTRIS)**, and the monitoring of air pollution impacts undertaken pursuant to Directive (EU) 2016/2281.

WHAT IS ACTRIS?

Aerosol, Clouds and Trace Gases Research Infrastructure (ACTRIS) is a pan-European research infrastructure having the goal to produce high-quality integrated datasets in the field of atmospheric sciences. ACTRIS provides different services, including access to instrumented platforms, tailored for scientific and technological usage.

	In Situ	Remote Sensing
Aerosol		
Clouds		
Trace Gases		





17+1 member countries:

Austria
Belgium
Bulgaria
Czechia
Cyprus
Denmark
Finland
France
Germany
Italy
Netherlands
Norway
Poland
Romania
Spain
Sweden
Switzerland
+ Greece

ACTRIS Community countries:

Estonia, Ireland, Portugal

Main message:

- Implementation of the new air quality directive is a challenging task!
- Requires an open, active and constructive collaboration in EU, Member States, regional and local levels
- Individual pathways and priorities for the different Member States
- Important to utilize the expertise and established roles of different organizations (e.g., EEA, EMEP, AQUILA, ACTRIS, EURAMET)

ACTRIS support

- In training
 - material on-line for UFP, size distribution and eBC measurements (ACTRIS, RI-URBANS, AQUILA)
 - Discussions on new training events in collaboration with AQUILA, EEA and EMEP
- In planning for the new supersites (through National Contact Points)
 - Instrumentation, data flow, co-location (See service tools)
- In development of Near Real Time (NRT) data workflows
 - Discussions with EEA, AQUILA and ACTRIS DC
- In coordinating and planning instrument harmonization / calibration structures
 - discussions with AQUILA, ACTRIS
- In provision of high quality, long-term data sets

AQ training



Schedule:

Training #1: 23 th January 2025	09:30 – 11:30 CET	Aerosol particle number concentration
Training #2: 27 th January 2025	09:30 – 11:30 CET	Aerosol particle number size distribution
Training #3: 11 th February 2025	09:30 – 11:30 CET	Equivalent Black Carbon
Training #4: 19 th September 2025	09:00 – 11:30 CET	Urban mapping of pollutants and citizen science
Training #5: 29 th September 2025	09:00 – 11:30 CET	Source apportionment

Available as recordings!

ri-urbans.eu

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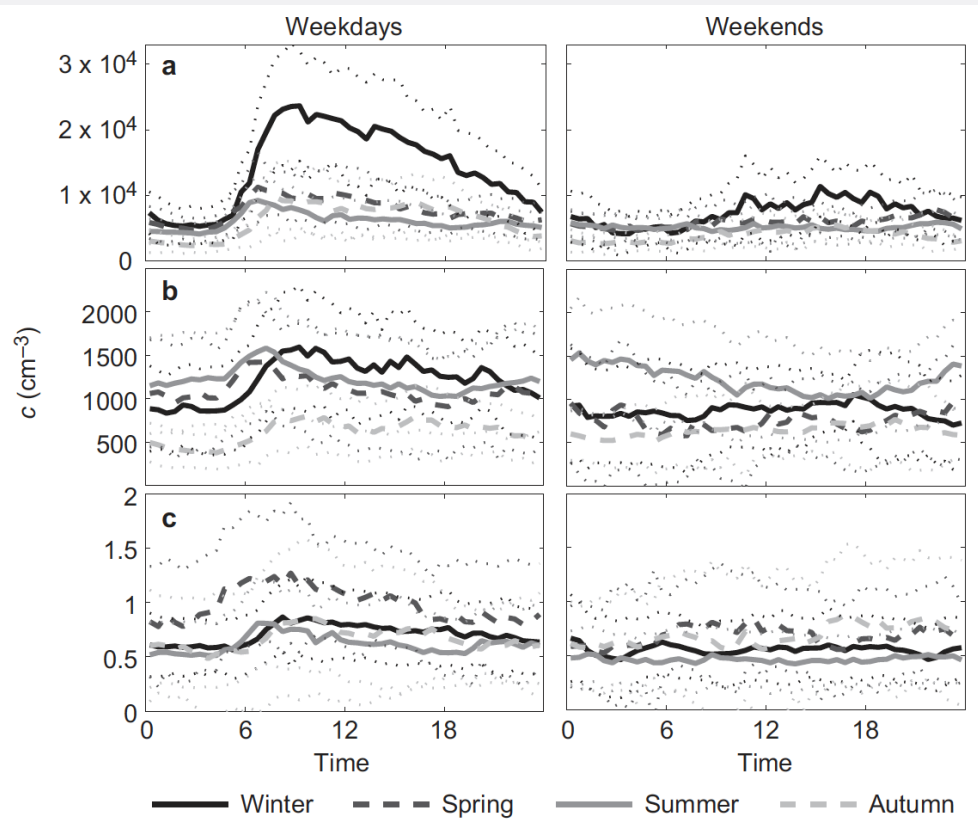
ACTRIS-Italy continues its collaboration with regional environmental agencies

 Published: 31, March, 2026

As follow up of the event "Towards the new European Air Quality Directive: Dialogue and Synergies between Research Infrastructures, Local Authorities, and Environmental Agencies," held on April 7 and 8, 2025, ACTRIS Italy organized a series of thematic online meetings on the new Air Quality Directive with Regional Environmental Protection Agencies (ARPA) and ISPRA.



SMEAR III urban background site in Kumpula Campus in Helsinki



Diurnal cycle of UFPs (top),
accumulation mode (middle) and coarse
mode (bottom)

- Collaborative effort of University of Helsinki (UHEL), Finnish Meteorological Institute and Helsinki (FMI) Region Environmental Services (HSY)
- Aerosol size distribution and number concentration measurements since 2001
- Black Carbon measurements
- ACTRIS aerosol in-situ and trace gas in-situ observation site
- ICOS Ecosystem site
- New AQ container installed April 2026

ACTRIS-NEXT

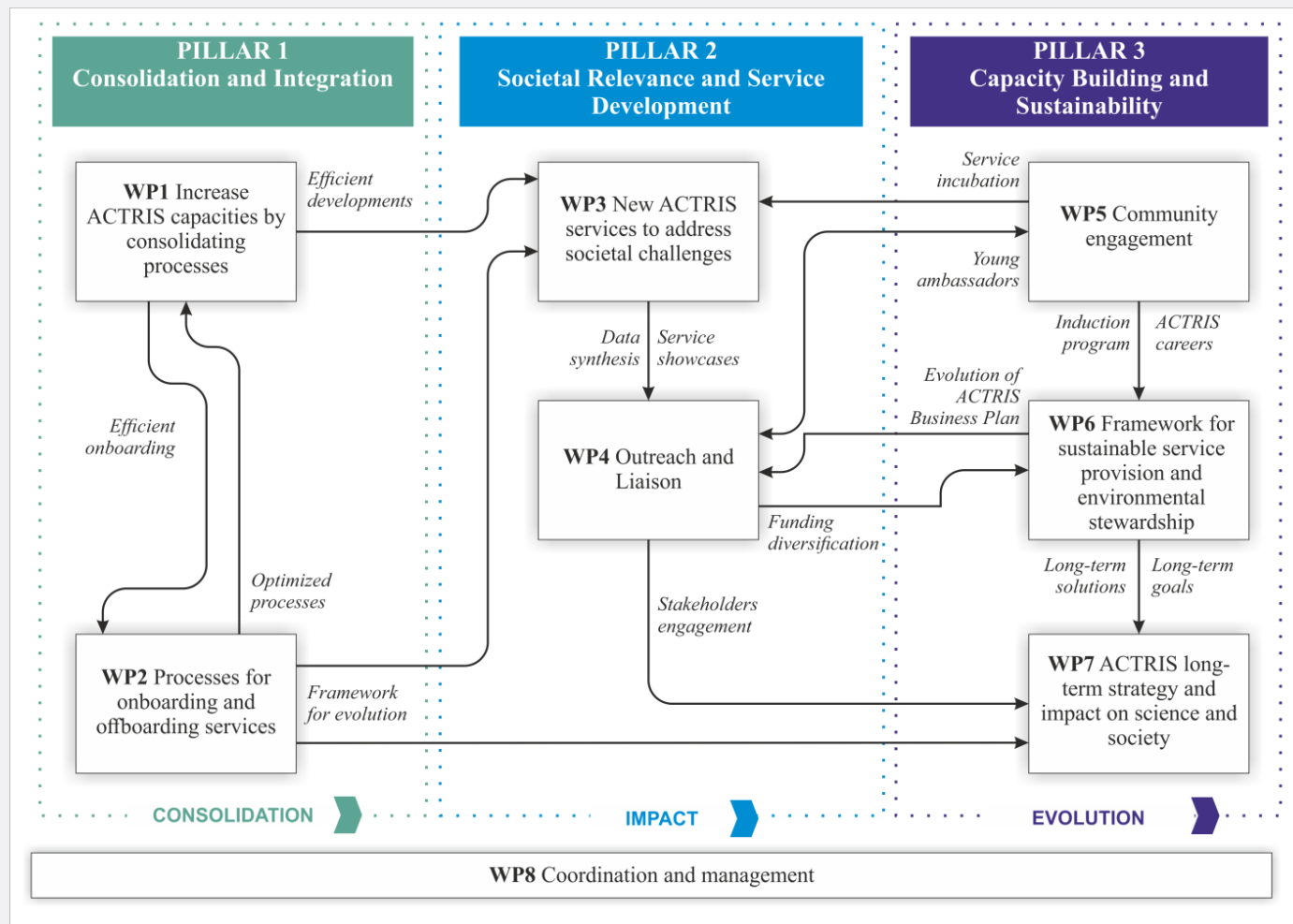
- HORIZON-INFRA-2025-01-DEV-03
- 5 MEUR
- 44 partners
- Coordinator: Tuukka Petäjä, ACTRIS ERIC
- Co-coordinator: Niku Kivekäs, ACTRIS ERIC
- Starting 1.6. 2026
- 48 months

Objective:

to consolidate and expand ACTRIS capacity to address pressing societal challenges related to the atmosphere and adaptability to emerging needs,

ACTRIS NEXT EU-project structure and key contributions

Starts in 2026



• New services / pilots:

• Bioaerosols

• Oxidative potential

• Source apportionment for carbonaceous aerosol

• Rapid response for extreme events

• Wind energy and urban climate

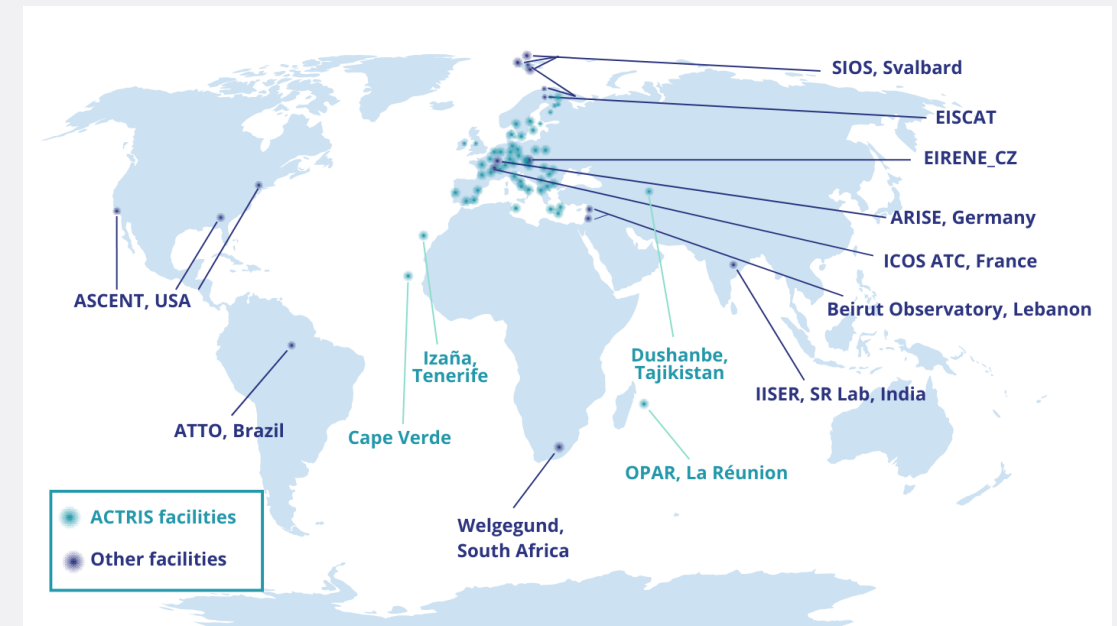
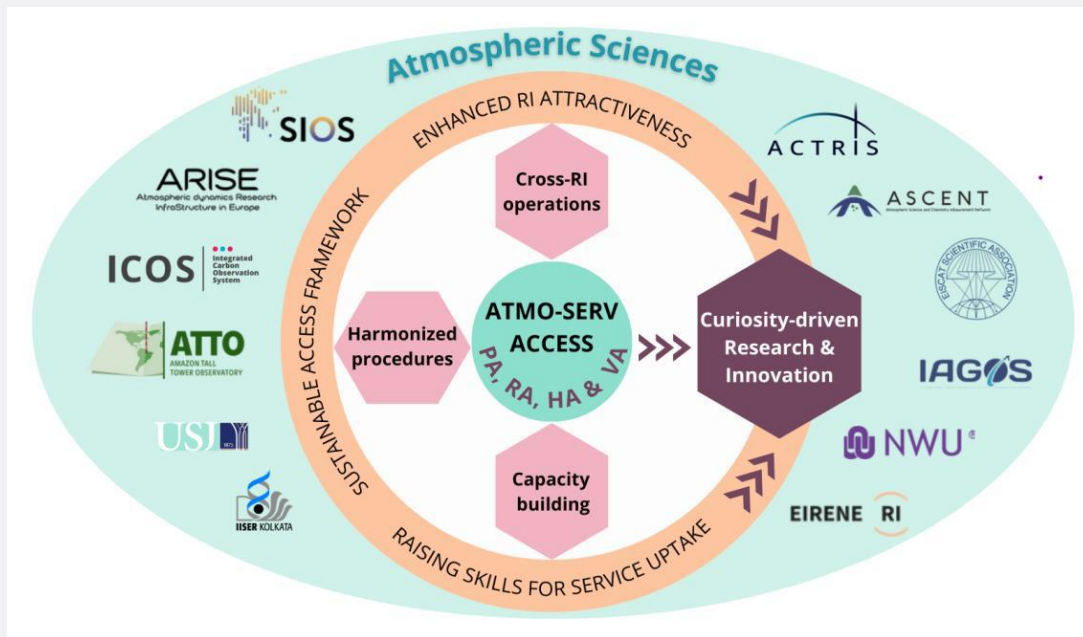
• Solar energy

+ ACTRIS data synthesis report

ATMO-SERV EU-project for access to facilities

Starts in 2026

- Access to 96 atmospheric science research facilities around the world!
- Support curiosity driven science!



Status in AQ directive implementation in the
ACTRIS member countries to be updated after
the meeting with the National Contact Persons
in May 2026



Thank you!

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