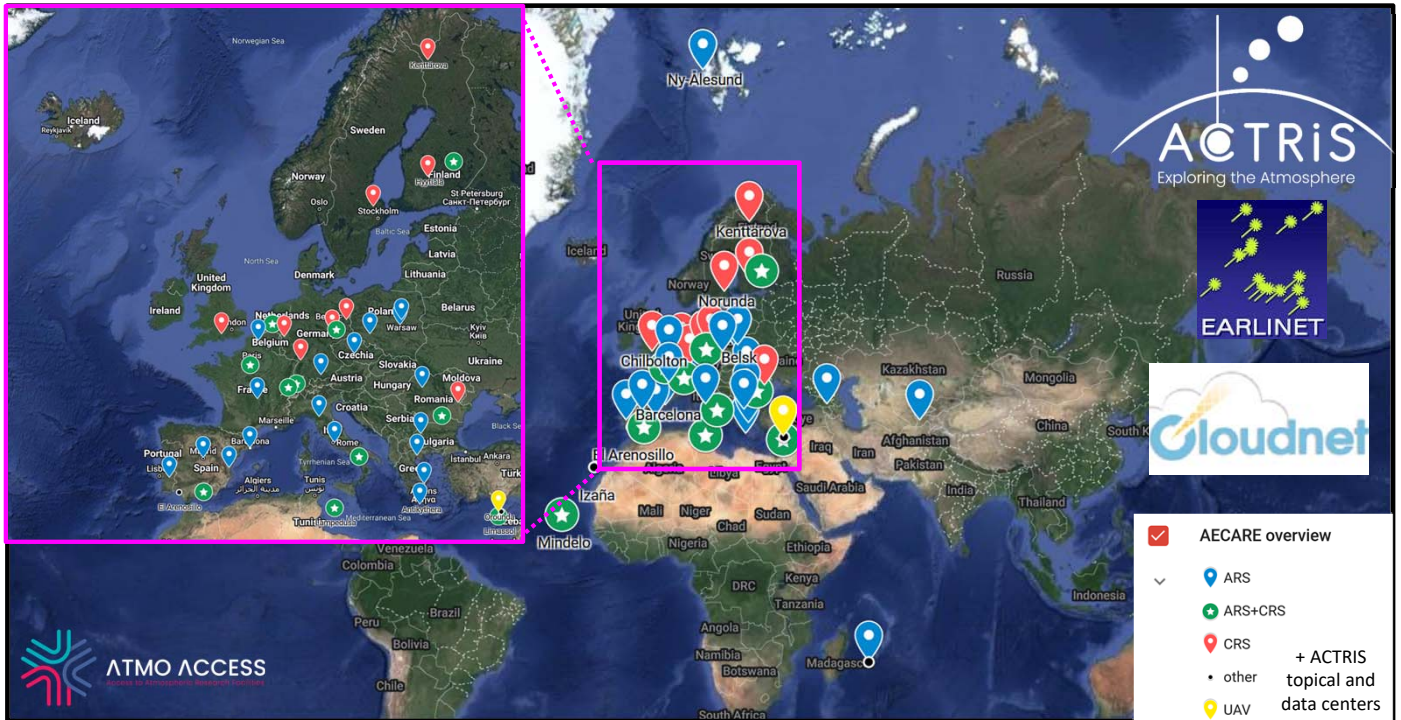


EVID05: AECARE - ACTRIS for EarthCARE L2 product evaluation



Holger Baars, Eleni Marinou, Doina Nicolae, Lucia Mona, Ewan O'Connor, Martial Haeffelin, Arnoud Apituley, Ulla Wandinger on behalf of the ACTRIS, EARLINET, Cloudnet, and ATMO-ACCESS teams



- Validation by means of ground-based remote-sensing observations covering **ACTRIS, EARLINET & Cloudnet**, with the support of **ATMO-ACCESS** TNA pilot project
- Permanent and mobile stations plus the ACTRIS topical and data centers (CARS, CCRES, CLU, ARES)
- ACTRIS quality assurance and conversion to GEOMS including automatic harvesting by EVDC
- **Funding for instrument operation and data delivery secured** – data will be freely available
- **Funding for validation activities very limited** available on European scale via ATMO-ACCESS, national funding partly but limited available








ARS = Aerosol remote sensing

High power lidar Sun/sky/lunar photometers

	Minimum requirements	Optimum set up
Capabilities	Backscatter + Raman extinction + depolarization at 355 nm or 532 nm	3+2+2: Backscatter + Raman extinction + depolarization at 355 and 532 nm plus backscatter at 1064 nm
Height resolution (raw)	≤ 15 m	≤ 3.75 m
Time resolution (raw)	≤ 60 s	≤ 10 s
Full overlap	≤ 300 m	≤ 200 m
Maximum altitude	≥ 15000 m	> 15000 m

CRS = Cloud remote sensing

Doppler Cloud Radar Microwave radiometer Doppler lidar Low power lidar and ceilometer Disdrometer

Doppler cloud radar		
Criteria	Minimum requirements	Optimum set up
Minimum sensitivity	-40 dBZ at 1 km in the absence of attenuation.	-50 dBZ at 1 km in the absence of attenuation.
Temporal resolution	30 seconds and 60 m resolution in the vertical	1 second and 10 m resolution (or better) in the vertical
Velocity resolution	10 cm s ⁻¹ or better	5 cm s ⁻¹ or better
Doppler spectrum	No	Yes
Polarisation diversity	No	Yes (LDR preferred but SLDR also suitable)
Type of instruments that fulfill the Minimum requirement or the optimum setup	35 or 95 GHz cloud radar in vertical pointing mode	Polarisation and Doppler spectrum capabilities. Elevation scanning capabilities with angular resolution better than 2°

ACTRIS = The Aerosol, Clouds and Trace Gases Research Infrastructure, ATMO-ACCESS = Sustainable Access to Atmospheric Research Facilities, EARLINET = European Research Lidar Network, EVDC = ESA Validation Data Center, CARS = ACTRIS center for Aerosol Remote Sensing, ARES = ACTRIS Aerosol Remote Sensing Data Centre Unit, CLU = ACTRIS Cloud Remote Sensing Data Unit, CCRES = ACTRIS Centre for Cloud Remote Sensing, TNA= Trans National Access

