

The Quality Assurance / Science Activity Centre Switzerland of WMO's Global Atmosphere Watch Programme



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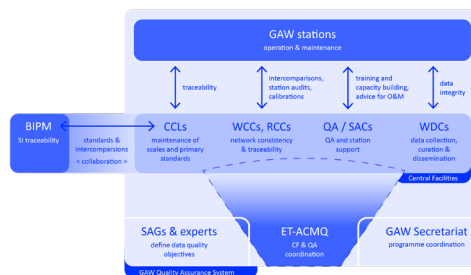
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QA/SACs in the GAW Framework

QA/SACs ...

- are central elements of the GAW quality management framework, which ensures that atmospheric composition data are consistent, comparable, and traceable to common reference scales,
- provide network-wide guidance, harmonized procedures, and independent quality checks,
- safeguard the integrity of long-term observations,
- work closely with other GAW Central Facilities to maintain a coherent, high-quality global observing system.



Elements of the GAW Quality Management Framework, main tasks and interactions (WMO, 2025)

QA/SAC-CH – Main Pillars

- Science & QA/QC: support for surface O₃, CO, CH₄, CO₂, and N₂O observations, including methods and data evaluation.
- Training, Twinning & Capacity Building: hands on training, webinars, workshops, and long-term partnerships to strengthen measurement capabilities.
- Outreach: contributions to GAW communication, visibility, and dissemination of best practices.
- Cross-cutting Activities: coordination with regional programmes and projects for alignment and improvement.

Highlights

- GAW-QC web platform deployed globally, enabling near-real-time QA/QC for CH₄, CO₂, CO, O₃ and N₂O across 130+ stations.
- Scientific exploitation of GAW data, joint analysis of in-situ and remote sensing data, statistical interpretation.
- Leadership in WMO/GAW governance, contributing to expert teams, advisory groups, and WMO guidelines and reports.



- Capacity building, from GAWTEC teaching to blended operator training and sustained support for partner stations.



Partner stations

- Strong integration with Swiss, European, and global programmes, ensuring harmonized strategies and shared outcomes.

Main Learnings

- Proactive QA/QC is scalable when supported by simple, visible tools like GAW-QC.
- Blended capacity building is most effective, combining online modules, in-person training, and audits.



Training in Indonesia

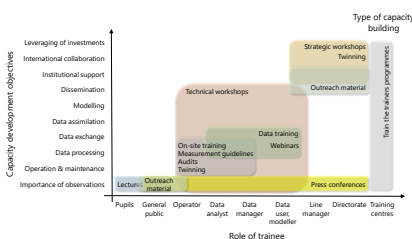
- Long-term observations rely on governance and funding, not only technology, requiring advocacy and lifecycle planning.

Challenges

- Aging instruments: address through lifecycle planning, engineering support, and targeted funding proposals.
- Operator turnover: mitigate with tutorials, promotion of regional flagship stations, peer reviews, and refresher webinars.
- Resource constraints: prioritize high-leverage activities with network-wide impact

Outlook

- Promote and institutionalize GAW-QC, adding stations, establish links to World Data Centres.
- Stabilize partner stations through instrument replacement, recommissioning, and engagement with decision-makers.
- Strengthen measurement standards and capabilities, promoting WMO guidelines and developing standardized setups.
- Scale GAW-wide capacity building with hybrid trainings and harmonized curricula.
- Sustain contributions to G3W, focusing on pragmatic network design and demonstrator case studies.



Capacity development objectives, target audiences and envisaged capacity-building activities (WMO, 2025)

WMO, 2025, WMO GAW Science and Implementation Plan: 2024–2027, <https://library.wmo.int/idurl/4/69472>