



TT-GSRN Work Plan (2021-2024)

Deliverable 1c – Initial Terms of Reference for GSRN Lead Centre

Summary	This document provides the initial terms of reference for the GSRN Lead Centre.
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Version history:

<i>Version</i>	<i>Date</i>	<i>Status</i>	<i>Comment</i>
1.0	April 2022	Draft	Secretariat version
2.0	May 2022	Draft	Secretariat and GSRN-LC version
3.0	June 2022	Approved	Approved by TT-GSRN-1
4.0	September 2023	Approved	Updated from version 3.0. Approved by TT-GSRN-2

GCOS Surface Reference Network (GSRN) Lead Centre

Terms of Reference

Approved: 29.09.2023

Reviewed by: 31.12.2025

The GSRN Lead Centre (GSRN-LC) is to be responsible for the monitoring of the Global Climate Observing System (GCOS) Surface Reference Network (GSRN), including development of GCOS needs for station operation, coordination among stations, and ensuring archival and dissemination of GSRN data and metadata (this could in principle supported by a third party).

Noting that this is the initial implementation of the GSRN it is possible that the Terms of Reference may be revised and updated prior to the review date.

1. Internal reporting, responsibilities, and guidance

- Report to the GSRN Steering Committee (GSRN-SC) on an annual basis, detailing the status of the GSRN, the performance against agreed activities and any significant variations from expected performance. It shall also maintain a risk-register which should be reviewed at least annually. Initially the role of the Steering Committee will be undertaken by the Task Team of GSRN (TT-GSRN).
- Oversight of the GSRN operations, managing the certification, review and recertification processes for all GSRN stations and coordinating these processes with the GSRN national focal points.
- Regularly evaluate the operational status and observation quality and compile and publish evaluation reports.
- Provide administrative and technical support for Expert Teams.
- The Lead Centre, or a nominated GSRN station representative/WMO member, shall co-organise a regular GSRN coordination meeting, at least annually.
- Regularly carry out technical exchanges, collect and summarize best practices throughout the network.
- The Lead Centre can delegate some of its responsibilities to other GSRN teams (i.e. regional centres, expert teams) with the approval of the GSRN-SC.

2. Coordination of the network in collaboration with Members, GSRN-SC and GCOS Secretariat

- Select stations and develop a network based on existing reference quality observing stations.
- Coordinate national contributions to the network.
- Ensure that all observations are of reference quality and meet the requirements for GSRN sites.
- Establish common procedures and standards across the GSRN.
- Certify stations as being of reference quality and contributing to the GSRN.
- Coordinate mechanisms for ensuring adequate overlap and comparisons when inevitable instrument changes / improvements are made.
- Coordinate with the data user community.
- Contribute to the plan for the long-term operation and development of GSRN.

3. Data management

- Establish systems to monitor station performance and perform QA/QC, including feedback to stations having potential problems.
- Define the GSRN data format in collaboration with TT-GSRN.
- Collect and aggregate the GSRN data and metadata from GSRN sites.
- Perform the data processing and store and archive the GSRN data and metadata.
- Provide climate data sets including their relative uncertainties.
- Ensure the GSRN data and metadata are easily discoverable and freely and openly available to all users, conforming to the WMO Unified Policy for the International Exchange of Earth System Data.
- Establish a system to monitor the status and performance of the overall GSRN Network.
- Undertake development and provision of guidelines to harmonize long-time series of surface observations, especially for archived data sets.

4. Training, education, development and research (in collaboration with Members, GCOS Secretariat, GSRN-SC and associated research facilities)

- Provide training and support e.g. on measurement procedures and data management either on-line or on-site at the lead centre as required.
- Provide advice on instrument deployments and developments, and coordinate work to encourage commercial development of reference instruments.
- With WMO, GCOS and BIPM engage additional instrument experts and scientists in the work of GSRN.
- Promote GSRN related research activities, e.g. on representativeness and uncertainty of GSRN measurements and expanded application of GSRN data products.
- Collaborate with the WMO Measurement lead centres in GSRN specific research activities.