



Global Climate Observing System

CBS Lead Centers for GCOS – 4th Meeting

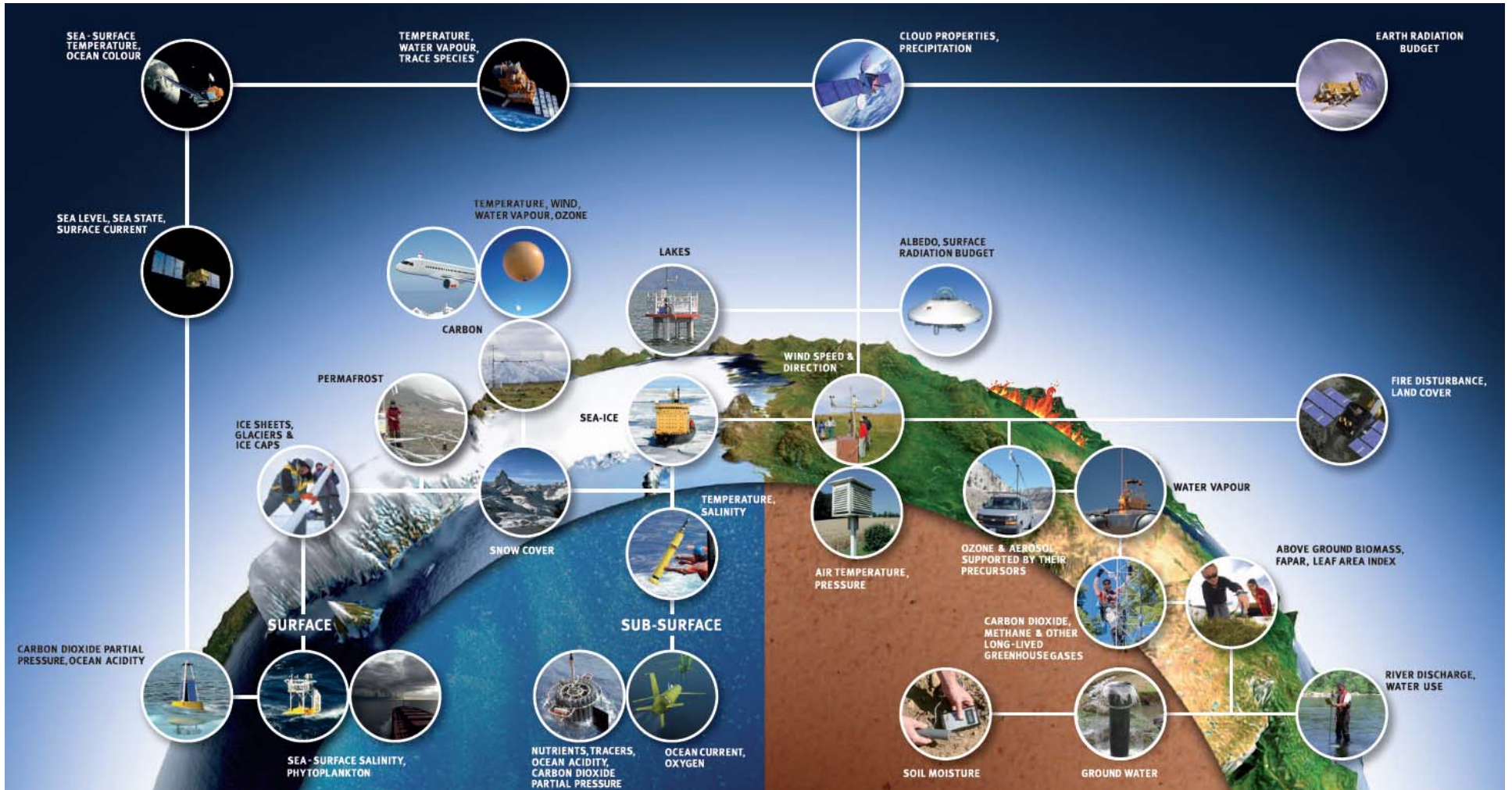
GCOS Secretariat

Santiago, Chile, 8-10 October 2013



The vision of GCOS is that all users have access to the climate observations, data records and information which they require to address pressing climate-related concerns. GCOS users include individuals, national and international organizations, institutions and agencies. The role of GCOS is to work with partners to ensure the sustained provision of reliable physical, chemical and biological observations and data records for the total climate system – across the atmospheric, oceanic and terrestrial domains, including hydrological and carbon cycles and the cryosphere.

Global Observing Systems for Climate



Global Observing Systems for Climate

GCOS was set up to help ensure that observational needs are met for:

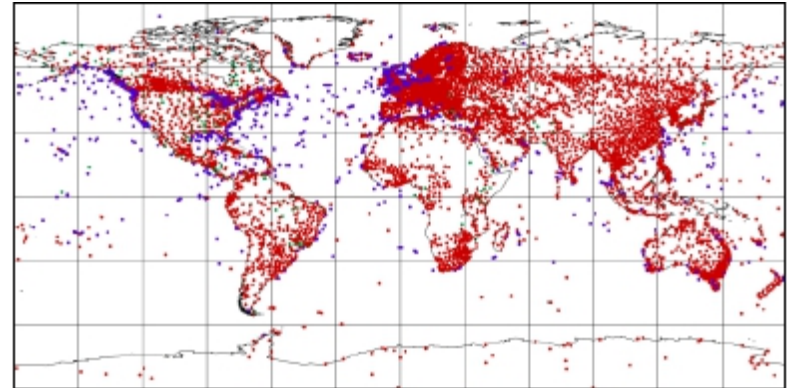
- *monitoring*
- *research*
- *applications*



GCOS is concerned with ...

The observations:

- what is measured, how is it measured, where is it measured, how is the measurement sustained, etc.



Data transmission:

- what is transmitted, with what time delay, in what code

Data management (including data rescue):

- archiving and access to raw data, metadata, and data products
- recovery and rehabilitation of past data

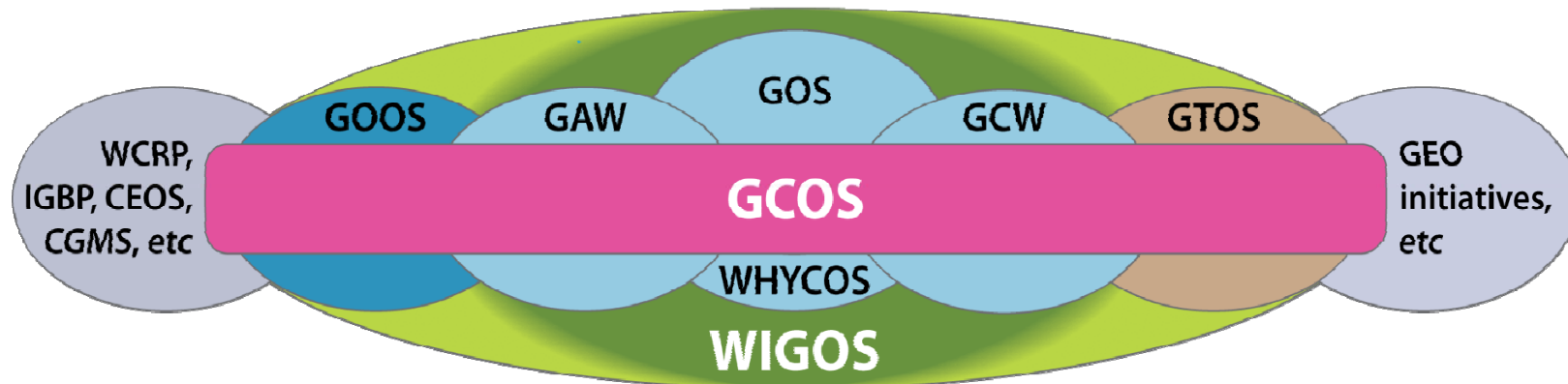


Data and products:

- Fundamental records, including recalibration and homogenisation
- Satellite retrievals, gridded fields from *in situ* and remotely-sensed measurements, etc.

GCOS climate components

Oceans – Atmosphere – Land – Cryosphere – Hydrosphere – Carbon Cycle



- the WMO **observing systems** (e.g. WIGOS – GOS, GCW, GAW)
- the IOC-led co-sponsored **Global Ocean Observing System** (GOOS)
- the FAO-led co-sponsored **Global Terrestrial Observing System** (GTOS)
- observational elements of **research programmes** (WCRP, IGBP, etc.)
- **network systems** contributing climate observations, data management or products (GTNs, GOFC-GOLD, etc.)
- which together form our overall global observing system for climate, and the climate-observing component of the **Group on Earth Observation System of Systems** (GEOSS)

Co-sponsored GCOS/WCRP panels

Atmospheric Observation Panel for Climate (AOPC) [2-5 April 13]

- has most direct interaction with WMO/WIGOS/CCI; GRUAN governance is an example

Ocean Observations Panel for Climate (OOPC) [Sept 13]

- co-sponsored by GOOS, reactivated following GOOS reorganization; support now based in GCOS office

Terrestrial Observation Panel for Climate (TOPC) [6-7 March 13]

- Co-sponsored by FAO, Secretariat of GTOS is non-functional at FAO; new arrangements are needed
- engagement continues to be active, e.g. on architecture for monitoring from space

Global Climate Observing System

GCOS to submit a Third Adequacy Report to Subsidiary Body for Scientific and Technical Advice of the UNFCCC SBSTA in 2015, and a new Implementation Plan in 2016, with a draft of the latter encouraged to be provided one year before.

What is GRUAN?

- GCOS Reference Upper Air Network
- Network for ground-based reference observations for climate in the free atmosphere in the frame of GCOS
- Currently 16 stations, envisaged to be a network of 30-40 sites across the globe

GCOS Reference Upper-Air Network



Recent GRUAN successes

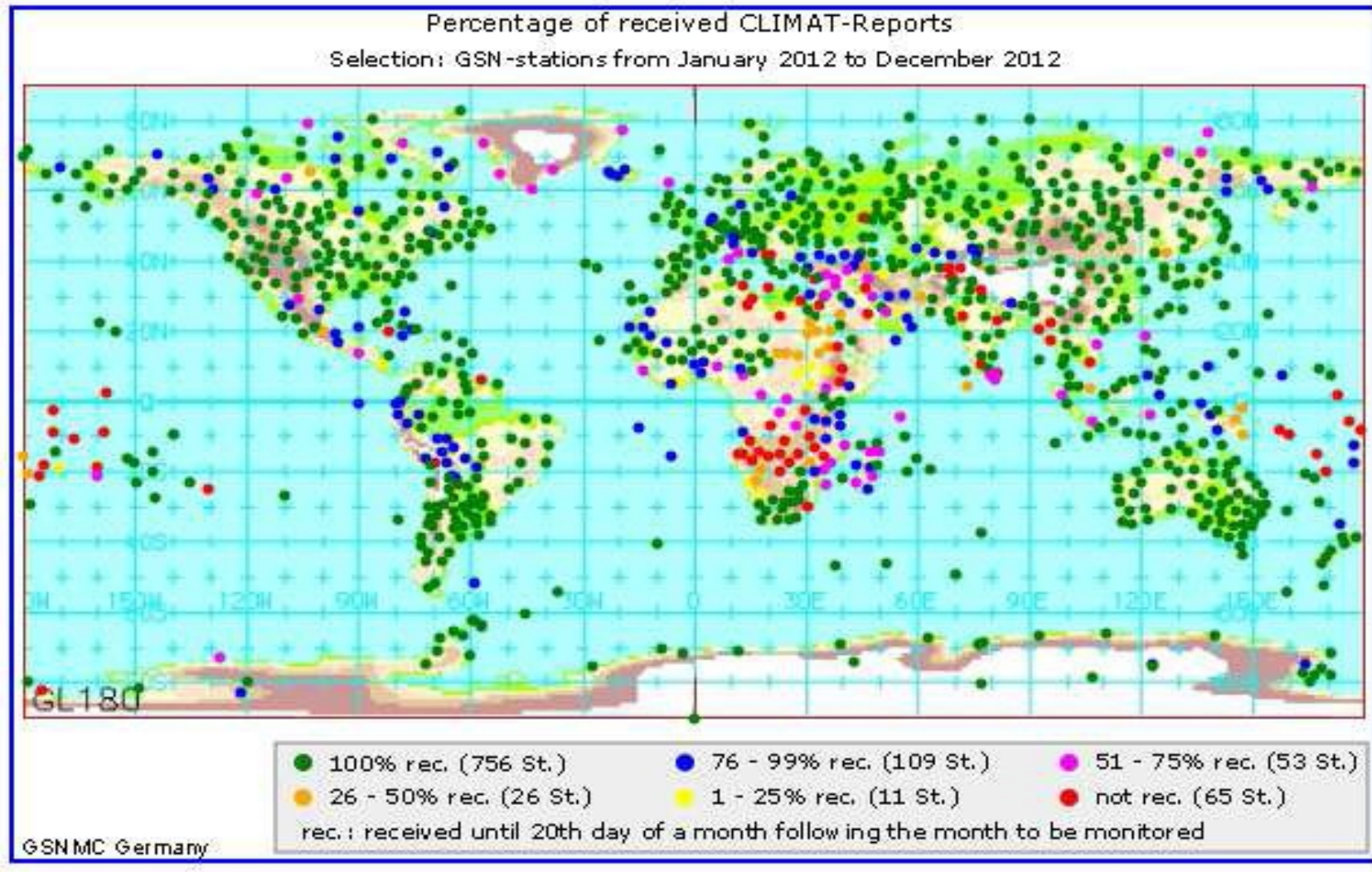
- The Franco-German Arctic research at Ny-Ålesund (early 2013), is the first station whose measurement programme has been certified according to the GRUAN standards.
- Recently, the German Research Centre for Geosciences, GFZ, accepted to function as GNSS processing facility for GRUAN.
- The GRUAN Manual and Guide have been published as a joint GCOS-WIGOS publications.

To assist in the development and expansion of the initial GRUAN network towards better global coverage, as well as to participate in the development of climate data records to improve the monitoring of vertical profiles of atmospheric Essential Climate Variables

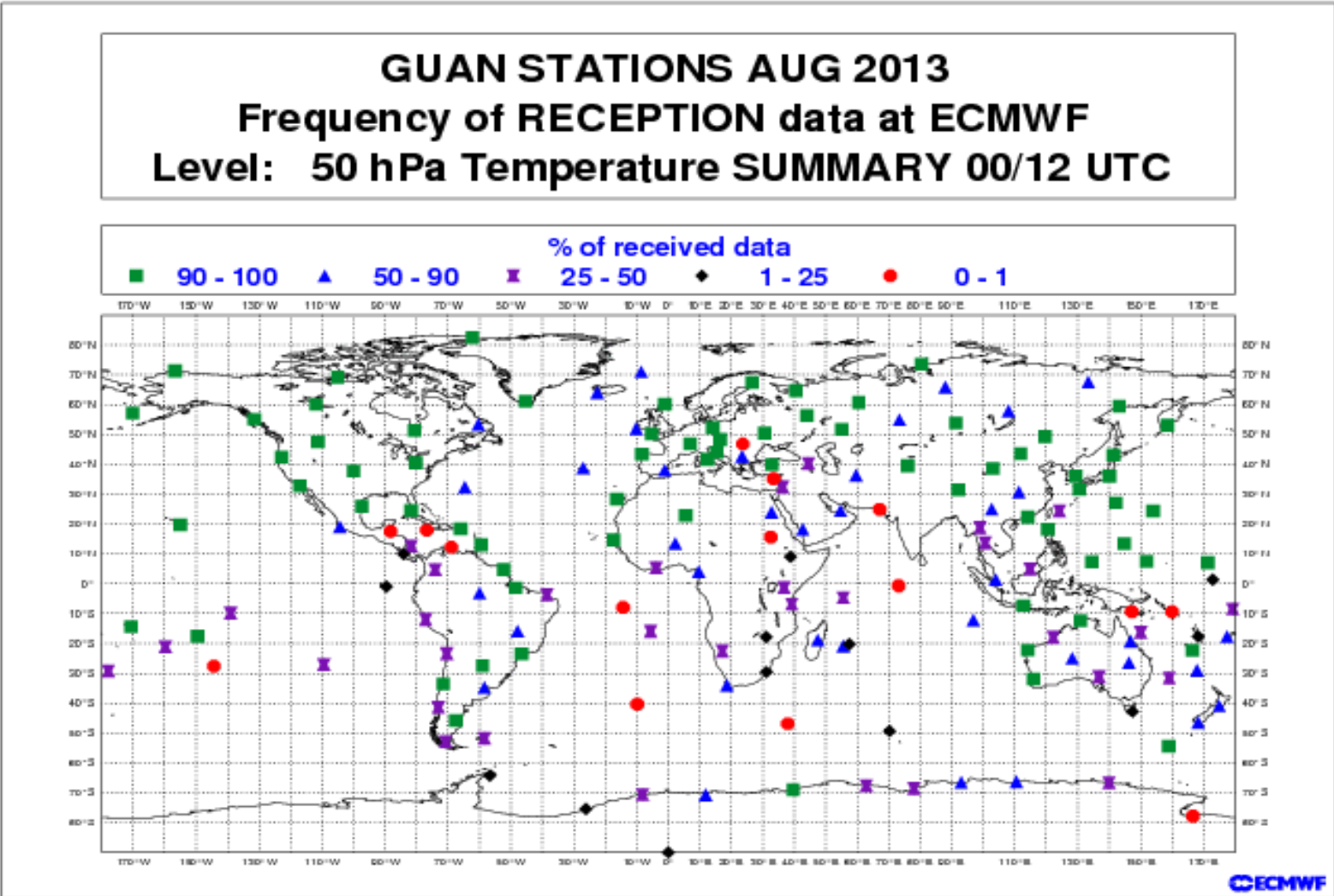
GCOS Cooperation Mechanism (GCM)

- The GCM was established to identify and make the most effective use of resources available for improving climate observing systems in developing countries, particularly to enable them to collect, exchange, and utilize data on a continuing basis in pursuance of the UNFCCC.

DWD Monitoring 2012



ECMWF Monitoring



THANKYOU



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