



World Meteorological Organization
Working together in weather, climate and water

GCOS Networks

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GCOS Networks from 2nd Adequacy Report

The GCOS implementation strategy envisages five complementary types of network that will provide observations. These are:

- **Comprehensive global observing networks** including regional and national *in situ* networks as well as satellites, which provide observations at the detailed space and time scales required to fully describe the nature, variability and change of a specific climate variable;
 - **Baseline global observing networks**, which involve a limited number of observations at selected locations that are globally distributed and provide long-term high-quality data records of key global climate variables, as well as calibration for the comprehensive networks;
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- **Reference networks**, which provide highly-detailed and accurate observations at a few locations for calibration purposes;
 - **Research networks**, which can provide estimates of the local variability of key variables to evaluate models and/or provide comprehensive data sets to understand climate processes; and,
 - **Ecosystem networks**, where a number of different variables are measured at several locations within a specific ecosystem and are used to characterize that ecosystem.
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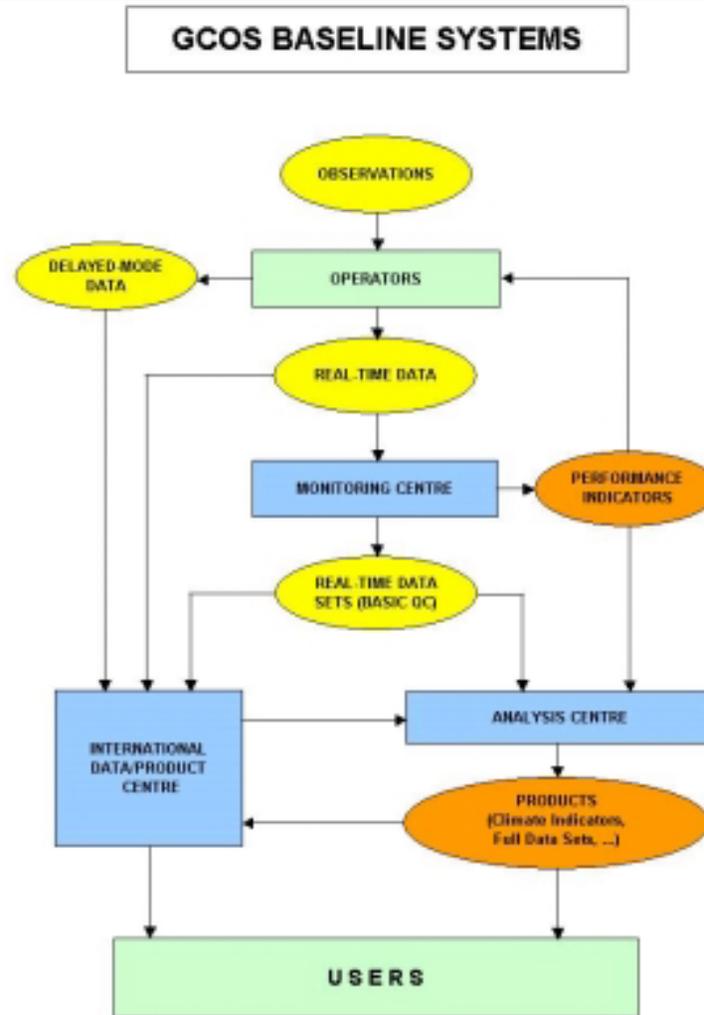
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Although an ultimate goal, **it is presently unrealistic to attempt to establish and operate networks at all five levels for all climate variables.**

Priority is currently given within GCOS to the establishment of **key baseline networks** making in situ observations, **selected comprehensive networks** many of which use satellite technology, a **selected number of reference networks**, and the **long-term operation of a number of research networks**. As the terrestrial ecosystem networks develop, more use will be made of them for climate monitoring.



Schematic of the components of a typical GCOS baseline network





GCOS Baseline Components

Specific components include:

- the **operators** who collect the observations;
- the **centres** that monitor the international exchange of the observations, conduct quality assurance and produce information on the performance of the network;
- the **analysis centres** that integrate the observations into products for the various user communities; the international data centres that are responsible for the archiving of the observations and maintaining a permanent but accessible repository of the data for subsequent analysis;
- the **telecommunications systems** that act as the glue to keep the system together.

Also required are the standards and guidelines for taking observations, the communications protocols required to exchange the data, the data management and archiving procedures, and the regular valuation of performance.



So what would be best for CryoNet?
