



WGClimate needs Data Assessments

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The CEOS Climate Working Group will:

Review and assess, on behalf of CEOS, the generation of Fundamental Climate Data Records (FCDRs) and derived Essential Climate Variable (ECV) climate products supported by Member space agencies, complementary with existing entities and roles;



What need to be done ?

- **Data Assessment of ECV Products and timeseries with respect to GCOS requirements**

Pilots

- **SST**
- **OCR**
- **...**

Who could contribute to this?



Internal

1. Virtual Constellations
2. Working Groups (particularly WGCV)

External

1. WCRP-WDAC
2. GEWEX & SPARC
3. Scientific Groups associated with VCs (e.g. IOCCG)



1. Identify expert groups (e.g. WCRP/GCOS Letter)
2. Define best practices (NOT SAs)
3. Joint VC (WG) & expert group assessment teams
4. Make sure they have Adequate Resources
5. Identify appropriate body(ies) to review assessments



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Dear Colleague,

We are writing because we believe that your organization can help to strengthen the international expert groups that, through scientific analysis, intercomparison and review of data records, prepare the ground for world-class climate science and sound decision-making.

Today, there is an unprecedented demand in many socio-economic sectors for relevant climate information for climate change adaptation, mitigation and risk management. Decision-makers expect this information, including related uncertainties, to be based on sound science and trustworthy data. Ensuring transparency, traceability and good scientific judgment in the generation of data records that underpin climate research and climate change monitoring has therefore become imperative.

The ICSU and UN-sponsored Global Climate Observing System (GCOS) and the World Climate Research Programme (WCRP) enjoy a long-standing partnership in the international coordination of climate science and monitoring. GCOS has, since 1992, worked closely with climate scientists and other climate information users (e.g., Parties to the UN Framework Convention on Climate Change (UNFCCC)) to ensure that their needs for high-quality data are addressed by all global Earth observing systems in the atmosphere, in the oceans, on land, and in space. Over the past three decades, WCRP has been successful in fostering the understanding and prediction of the Earth's climate system by engaging world-class climate scientists in measuring, modelling and analyzing the climate system for the benefit of science and society. WCRP also coordinates and supports the development of climate scenarios and climate model experiments and projections that are used in environmental assessments such as the Ozone, IPCC, etc. These efforts depend increasingly on long-term climate observations and records that your organization has been instrumental in establishing over the past few decades.

Since their creation, GCOS and WCRP have promoted the need for well-supported and systematic scientific data stewardship for climate data records, e.g., through advocating the provision of sufficient metadata and the publication of analyses using climate data records in the open literature (cf. Annex II). A number of international scientific groups, some quite independent of GCOS and WCRP, have been tasked by their sponsors to support these goals, many of them with an excellent track record (cf. Annex I).

However, there is currently no systematic international approach to ensure transparency, traceability and sound scientific judgment in the generation of climate data records across all fields of climate science and related Earth observations, and there are no dedicated sustained resources in place to support such an objective. For example, there are currently eight sea-ice concentration products produced by different organizations globally that differ significantly in providing an estimate of sea-ice extent and concentrations, mostly due to differences in methodology and not the variability or dynamics of underlying phenomenon. It is very confusing and frustrating for the non-experts as to which one of these products they can use in their research and analysis, and the necessary documents to

ECV Sea Surface Temperature	GCOS/WCRP OOPC WG SST & Sea Ice WCRP/GCOS WOAP GHRSSST JCOMM DBCP JCOMM SOOP
ECV Ocean Surface Salinity	WCRP CLIVAR GSOP SMOS and Aquarius/SAC-D science teams Argo Steering Committee JCOMM SOOP
ECV Sea Level	JCOMM GLOSS CEOS OST Ocean Surface Topography Science Team
ECV Sea State	JCOMM Expert Team on Wind, Waves and Storm Surges
ECV Sea Ice	WCRP CliC ASPeCT Expert Group GCOS/GOOS/WCRP OOPC WG SST & Sea Ice JCOMM Expert Team on Sea Ice IICWG
ECV Surface Current	JCOMM DBCP CEOS OST CEOS OSVW
ECV Ocean Colour	IOCCG IOCCP CEOS OCR

WGClimate and the VCs



- **Some VCs already committing to new ECV relevant activities e.g. IOCCG/OCR-VC Standing “WG” on ECV Assessments, SST-VC/GHRSST CDR-TAG**
- **Generalisation is sometimes impractical (and may not be useful).**
- **Converging on the following areas (at least for the near-future):**
 - **ECV Assessments**
 - **Metrics**
- **ECV Inventory will also provide information for forward looking roadmaps**

Discussion on Assessments



Ultimately existence of an assessment should be indicated in the ECV Inventory but assessment itself would remain independent

Need to also be clear on differences between system metrics (e.g. maturity matrix) and data assessments – two orthogonal axes.

Desirable roles/responsibility:

- Someone to provide “blueprint”/protocol for assessments, i.e. WCRP-WDAC (benefitting from experience with GEWEX, SPARC) – but with input for external expert groups
- Domain specific competence/scientific bodies (e.g. GHRSSST, IOCCG, OST-ST, OSVW-ST) together with CEOS VCs undertake individual assessments
- CEOS WGClimate to ensure assessment have resources, where appropriate thorough CEOS member agencies
- GCOS/WCRP Panels to provide review of assessments