

# GCOS ECV Rationalization

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Deputy Chair GCOS Steering Committee

Chair GCOS Atmospheric Observations Panel for Climate

Chair, GCOS Task Team on ECV Rationalisation



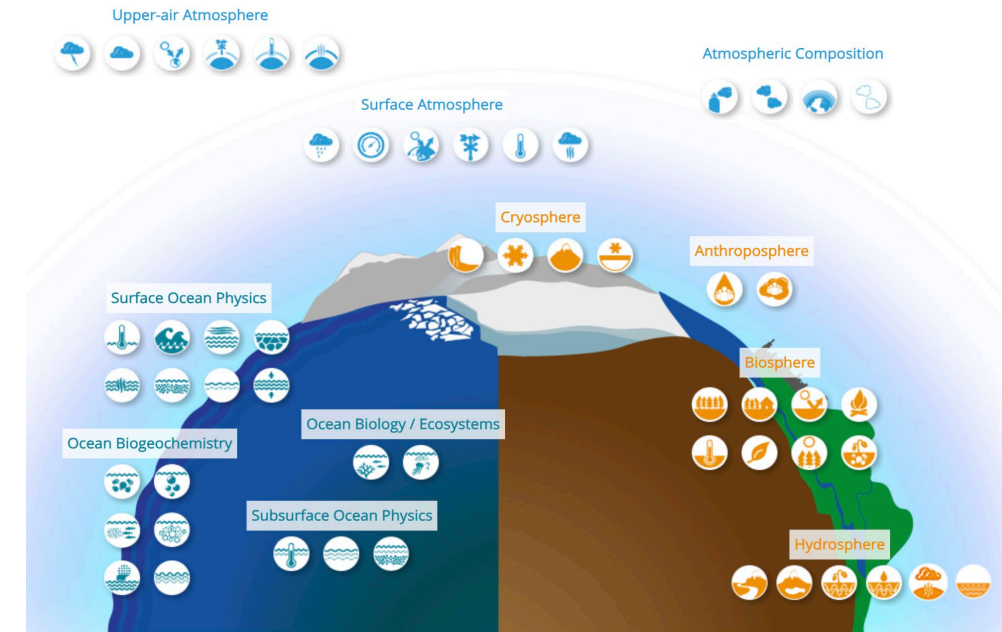
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# Background

*After 20 years of ECV framework:*

- Are all the 55 Essential Climate Variables still essential? Are we missing anything?
- Is the current grouping the best possible one? Are we reflecting the earth cycles adequately? Is it fair?
- Is there enough transparency and coherence in the process that leads to including a new
- Are the concepts related to the definition of ECVs used consistently across GCOS and are they sufficiently clear for users of the ECVs?



# Background

*After 20 years of ECV framework:*

- Are all the 55 Essential Climate Variables still essential? Are we missing anything?
- Is the current grouping the best possible? Are we reflecting the earth as it is? Is it fair?
- Is there enough data to support the process of defining ECVs?
- Are the concepts and the definition of ECVs used consistently across GCOS and are they sufficiently clear for users of the ECVs?

These were the questions that lead to an initial cross-panel meeting in Bonn in 2023, and then to the establishment of a **GCOS ECV Rationalization Task Team.**





# The ECV Rationalization Task Team

## Membership:

- Three members per GCOS panel (atmosphere, ocean and terrestrial)
- Two external experts (ESA and C3S)

**Three online meetings and one in person meeting (GFZ, Potsdam)**

## Main outputs:

1. Governance of the process for adoption of ECVs
2. Revised definitions for “ECV” and “ECV quantity”.
3. New proposal of a set of ECVs and ECV quantities





# The ECV Rationalization Task Team

## Membership:

- Three members of the panel (atmospheric, terrestrial) and C3S) **one in**

### VERY IMPORTANT:

This is just a proposal and the start of a 2-y long journey where extensive consultations will be undertaken, internally (GCOS panels), with key stakeholders, and with the broader community

### NOTHING IS LOCKED AT THIS POINT

1. Review of the process for adoption of ECVs
2. Revised definitions for “ECV” and “ECV quantity”.
3. New proposal of a set of ECVs and ECV quantities



# Typology of changes

- 1. Regrouping, reordering:** Some ECVs were the same at different levels of depths; other ECVs or ECV quantities were repeated across panels → **IMPORTANT:** There are now **four cross-panel ECVs** (CH<sub>4</sub> and Short-lived GHG, CO<sub>2</sub> and Long-lived GHG, Albedo, Turbulent Heat Fluxes)
- 2. Some ECVs have become ECV products:** there were considerable differences between ECVs which encompassed many ECV products (now called ECV quantities), and others that were “single ECVs” but were referring to aspects of the same phenomenon of interest (e.g. FAPAR, Leaf Area Index). In the latter case, the ECVs have been “downgraded” to ECV quantity and grouped/merged under a new ECV (e.g. transient tracers under ECV Ocean Circulation).

# Typology of changes

- 3. Removing ECVs.** The Anthropogenic ECVs (GHG emissions and Water Use) have been removed.
- 4. Adding ECV quantities:** when reviewing the ECVs, it became evident that some ECV quantities were missing. It remains to be double checked that there is sufficient observational capacity underpinning them.
- 5. Changes in terminology:** for consistency, clarity of communication and policy relevance. Eg. Atmosphere, ocean, terrestrial preferred to air-sea-land; Ocean acidification instead of Inorganic carbon; no acronyms.

# Next steps

Time	Activity	Responsible
Q3 2024	Consultation of ECV/ECV quantities list v.1 with GCOS panels	GCOS officers
Q3 2024	Preparation of materials to be used during the consultation with key stakeholders	TT chair and Secretariat
<b>MILESTONE</b> <i>Sep 2024</i>	<ul style="list-style-type: none"> <li>• ECV/ECV quantities list v.2</li> <li>• Materials for consultation process finalised</li> <li>• Final list of key stakeholders</li> </ul>	TT
Q4 2024	10-15 structured interviews with stakeholders	TT chair and Secretariat and TT members
Q1 2025	Analysis of the results from the interviews and preparation of material for public review	TT chair, Secretariat and TT members
<b>MILESTONE</b> <i>March 2025</i>	<ul style="list-style-type: none"> <li>• ECV/ECV quantities list v.3</li> <li>• Materials for public review, including PPT to inform in Conferences finalised</li> </ul>	TT (online meeting)
Q2 2025	Public Review	GCOS Secretariat
Q3 2025	Analysis of the results from the public review	TT chair, Secretariat and TT members
<b>MILESTONE</b> <i>End of 2025</i>	<ul style="list-style-type: none"> <li>• ECV/ECV quantities list v.4</li> <li>• Draft 0 of an ECV paper describing the process and introducing the new ECVs and procedures</li> </ul>	TT ( <b>final in person meeting</b> )



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**NOTHING IS FINAL UNTIL EVERYTHING IS FINAL!**

# Thank you!



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OBSERVING SYSTEM**  
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