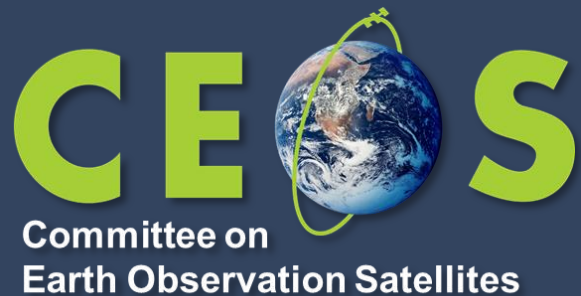


Greenhouse Gas (GHG) Task Team



Yasjka Meijer, ESA
GHG Task Team Lead

19th AC-VC

24TH October 2023, Brussels

❖ Working Group on Climate jointly with CGMS

- Focal point for UNFCCC Engagement
- CEOS responses to the GCOS IP

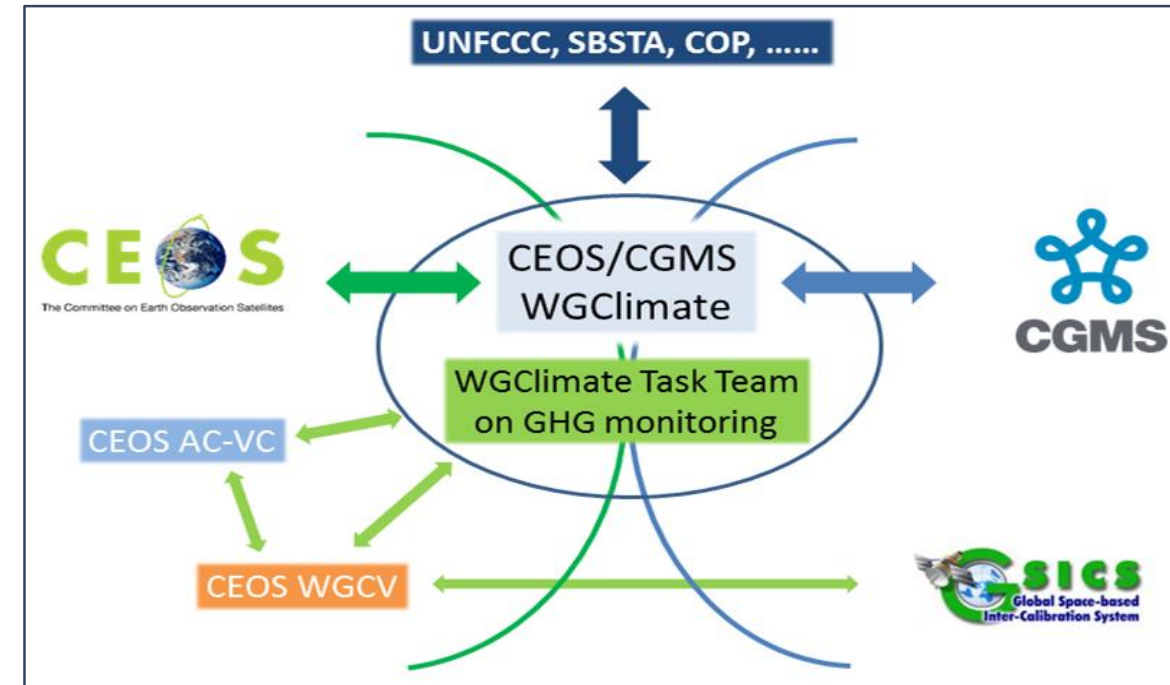
❖ Roadmaps of CEOS on

- [GHG](#)
- AFOLU
- Aquatic Carbon (TBD)

❖ GHG Task Team (lead Yasjka meijer)



- ❖ **Responsible** for maintaining and implementation of the **GHG Roadmap**
- ❖ **Interfaces with, stimulates and monitors GHG related activities** across various (CGMS &) CEOS WGs: WG-Climate, WG-CalVal, AC-VC, WG-CapD, NewSpace Task Team, etc
- ❖ Actively **ensure representation** of CEOS and CGMS bodies by identifying Points of Contact (PoCs) for tasks to be executed by these bodies



- ❖ **Area leads** (plus deputies) have been appointed using the thematic areas of Annex C (actions) in the GHG Roadmap:
 - Stakeholder Engagement - **Mark (John, Wenyang)**
 - System Development Facilitation – **Richard (John, Kevin)**
 - Operational Preparation and Training – **TT discuss**
 - Sensor Development – **John (AC-VC) (Yasjka)**
 - L1 & L2 GHG Product Development – **Ruediger & Dave**
 - Flux Inv. Model Development – **Kevin (Frederic)**
 - Calibration & Validation – **Hiroshi (Kuze)**
- ❖ **Leads mailing list** has been set-up ghg-tt-leads@googlegroups.com
- ❖ **Points of Contact** of all WGs have been obtained
- ❖ **GHG TT mailing list** has been set-up ghg-tt@googlegroups.com
- ❖ Work has been supported by **Symbios!**

General Meetings

- ❖ 02 FEB: [GHG Task Team meeting #2](#), at WMO, Geneva
- ❖ 12 SEP: Leads discussion (telecon)
- ❖ 17 OCT: [GHG Task Team meeting #3](#), at ESRIN
- ❖ Contributions to various CEOS and CGMS (WG) meetings

Topical meetings

- ❖ 7-8 JUN (Joint CEOS/IMEO) International Coordination Workshop on Detection of Anthropogenic Methane Emissions from High-Resolution Satellites, Harvard Uni., USA
- ❖ 03 JUL Emission Uncertainties Workshop, Paris, France

GHG Roadmap Update

- ❖ Only **soft update** through Annex C of the GHG Roadmap
- ❖ **Action list** has been updated through a thorough review per Area coordinated by Area Leads (add more milestones & specific (SMART) actions)
- ❖ Split along various **scales** (point/area vs national/regional)
- ❖ Split between **CO₂ & CH₄**

GCOS IP

- ❖ Contributed to the Space Agency Response to “**GCOS IP 2022**”, specifically to activities: B3.1, F2.2, F5.2 & F5.4
- ❖ Response quite well covered by current or planned GHG TT activities
- ❖ Main activity gap is for observations in difficult areas and challenging circumstances, e.g. Polar regions (esp. winter)

Engagement with WG-CV on sustainability of GHG Cal/Val networks

International Engagement

- ❖ WMO's Global GHG Watch (members in study group & workshops_
- ❖ IMEO (members participating in WGs)
- ❖ CMS Application Workshop

CEOS GHG Missions Portal; centralized overview of [GHG Missions in one Portal](https://ceos.org/ghg) ceos.org/ghg

New Space

- ❖ Significant steps have been taken, reported and followed by J. Worden.
- ❖ **IMEO seeks expertise to coordinate** facility scale observations (in general) and then especially for the 'tip-and-cue. This would be across various operators (commercial, NGOs, philanthropic, public and mixes thereof) → **ROLE for CEOS?**

Status GHG Task Team actions in CEOS Work Plan

- ❖ CARB-23-01: Lessons learnt from pilot CO₂ and CH₄ products (delivered for GST-1) → **closed**
- ❖ CARB-23-02: Standards for uncertainty monitoring of flux estimates → **closed***
- ❖ CARB-23-03: GCOS IP response for GHG-related activities → **closed**
- ❖ CARB-23-04: Update GHG Roadmap (focus on Action List) → **almost completed**
- ❖ CARB-23-05: New Space and GHG product development and standards setting → **closed***

*** This will evolve further as normal work in GHG TT**

Challenges:

- ❖ User engagement:
 - UNFCCC (GST)
 - CO₂: policymakers at smaller spatial and temporal scales (covenant of mayors, finance)
 - CH₄: (policymakers) on non-O&G related emissions, e.g. landfills, wetlands
- ❖ Mission delays, Space Agencies false notion that New Space could do it all
- ❖ Tackle the aquatic (mainly coastal & open ocean) aspect of the carbon cycle
- ❖ Timely switch to missions capable to monitor the carbon cycle in a changing climate

Next steps of GHG Task Team:

- ❖ Coordinate GHG TT activities with the AFOLU Roadmap
 - Coordinate with New Space TT
- ❖ Ensure continuity to earlier/existing missions
- ❖ Engage with and ensure CEOS expertise is used in WMO's G3W and UNEP's IMEO