

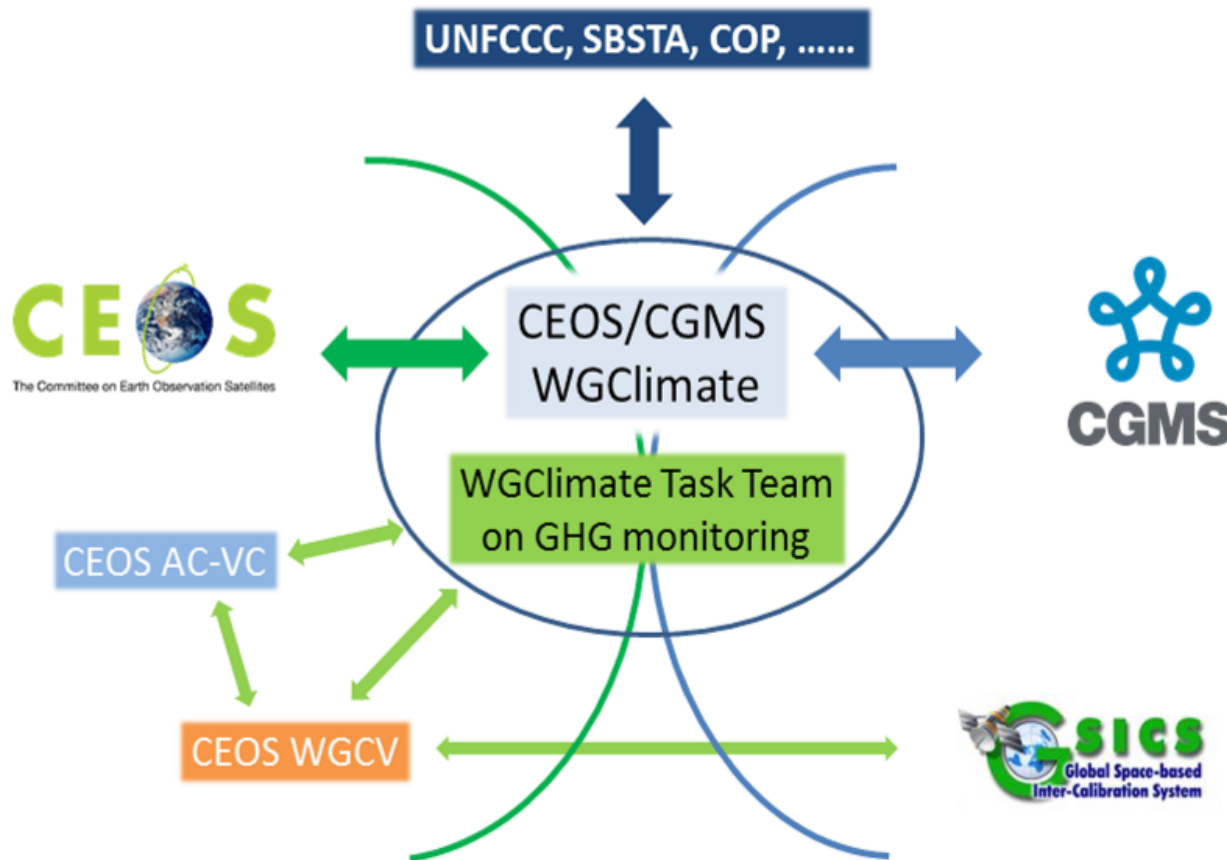
# WGClimate Response to the WMO G3W Initiative

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## Context for Greenhouse Gas Monitoring in CEOS and CGMS



### Roadmap on GHG Monitoring (v1)

- Derives from AC-VC GHG White Paper
- Targets: UNFCCC Global Stocktakes
  - One operational system
- Endorsed at CGMS-48 (v1; 2020)

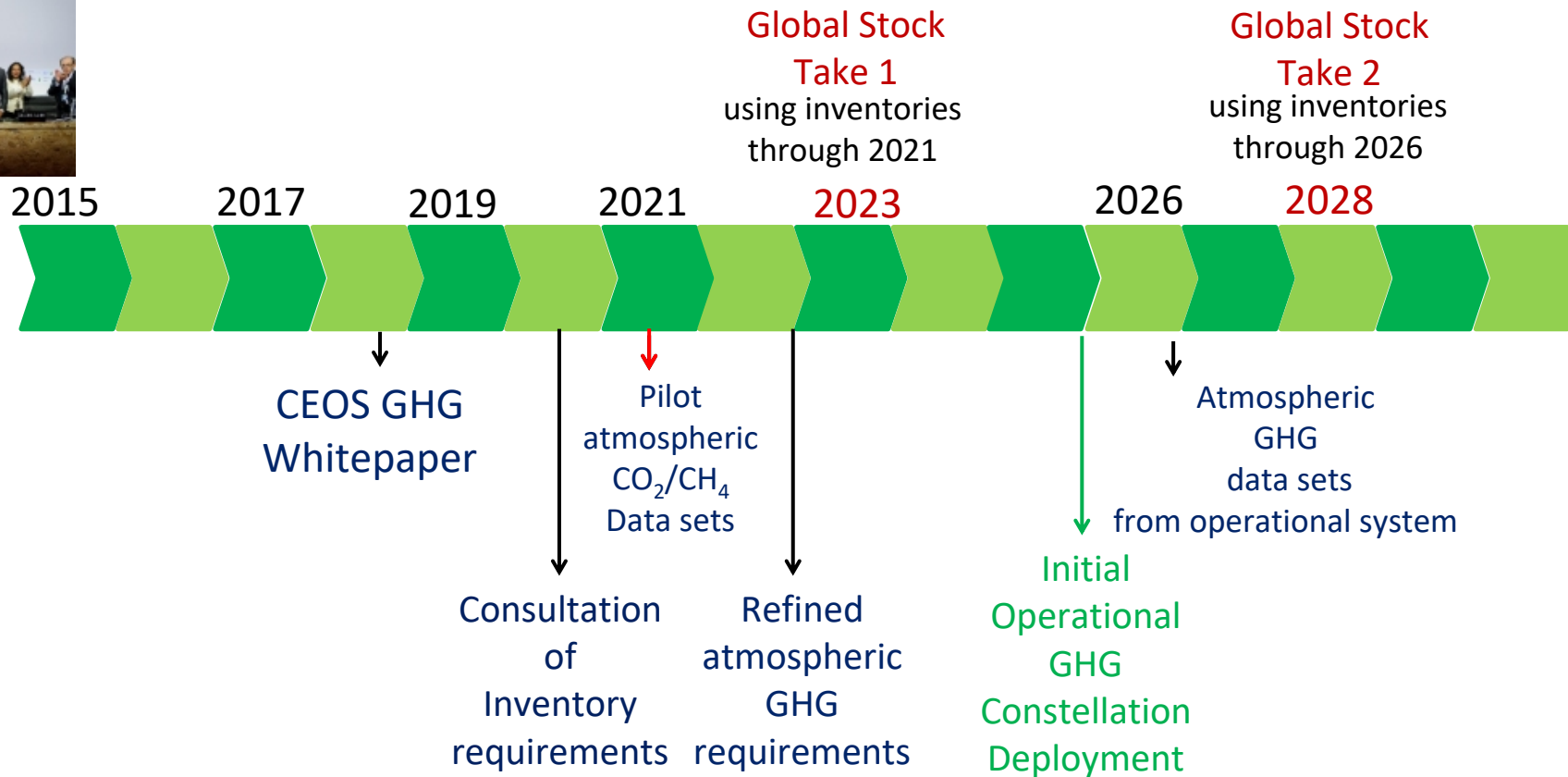
### 2024 Update (v2)

- New Stakeholders and Partners
  - G3W, IMEO, Global Methane Pledge
  - Scales, Maturities vary widely
- Evolving NewSpace capabilities
- CO<sub>2</sub> and CH<sub>4</sub> handled separately
- Deliver L2 products, enable L2+ users

# Original High Level GHG Roadmap Timeline



PARIS2015  
CLIMATE CHANGE CONFERENCE  
COP21-CMP11



## Coordinating CGMS Working Group Support for GHG Operational Provisions

- WGClimate, GHG TT and CGMS Working Group met June 3<sup>rd</sup> for initial dialog
  
- Goal (draft):  
Design a sustained, fit-for-purpose backbone system which, in coordination with other observing capabilities (e.g., *in situ*), supports the space-based GHG data and information needs of specific users (e.g., G3W, Global Stocktakes, UNEP IMEO). The system will be sufficiently flexible to allow evolution, augmentation and innovation insertion.
  
- Leverage GHG Roadmap update to begin addressing operational needs and capabilities
  - First step: Mapping of stakeholders and their requirements to identify operationalization opportunities

## WG Capabilities that could support an operational GHG monitoring

- WG-I
  - Coordination of essential operational elements, e.g., orbits, downlinks, shared ground processing, user uptake
  - Preparation of future satellite constellations
- WG-II
  - Operational calibration and cross-calibration leveraging GSICS mechanisms
  - Support development of future operational products
  - Explore new technological applications for ground segment (e.g., AI/ML)
- WG-III
  - Opportunities for leveraging CGMS baseline for GHG backbone system
  - Analyses of the hybrid observing system (operational, research and NewSpace entities)
  - Support from WG II on quality of NewSpace
  - Support link to WIGOS vision 2050 for the GHG instrumentation
- WG-IV
  - Coordinate data access and exchange, including use of communication satellite broadcast systems
  - Metadata standards facilitating discovery, use and long -term preservation

## Mapping CGMS WG Roles and Capabilities to Plenary GHG Non-Paper\* Implications

- Observational Data Requirements for G3W –WGClimate, WG-I, and WG-II
- Sustain and operationalize the Observational Framework – WGClimate, WG-II and WG-III
- Commercial providers – WG-III
- Standardization – WG-II and WG-IV
- Infrastructure and Data Management – WG-I and WG-IV
- Enhanced Analytical Approaches – WG-II
- Integration of AI and ML methods – WG-II
- Support and Collaboration - WG-IV

## Key issues of relevance to CGMS:

### **CGMS contribution to GHG monitoring and the G3W**

- The WGClimate is updating and restructuring the Roadmap for GHG Monitoring to better meet requirements of the G3W and other defined stakeholders
- G3W is a close partner that will use space observations operationally provided through the CGMS and WMO infrastructures
- The WGClimate, its GHG Task Team and CGMS standing Working Groups met June 3<sup>rd</sup> to explore potential CGMS WG contributions to a future operational observing system (space & ground)

**To be considered by CGMS:**

- WGClimate requests that CGMS Plenary nominate one individual to represent CGMS as a whole in WGClimate's GHG Task Team
  - Supports Roadmap update, tracks implementation with CGMS Working Groups
- WGClimate recommends an (semi-)annual meeting of the chairs/leads of WGClimate, its GHG Task Team, and the CGMS Working Groups, building on success of June 3 meeting
- WGClimate will take the responsibility to coordinate with WMO G3W and will report on results to CGMS Plenary