

Climate Monitoring Architecture: Status and way forward

Presented to CGMS-41 plenary session

CGMS HLPP

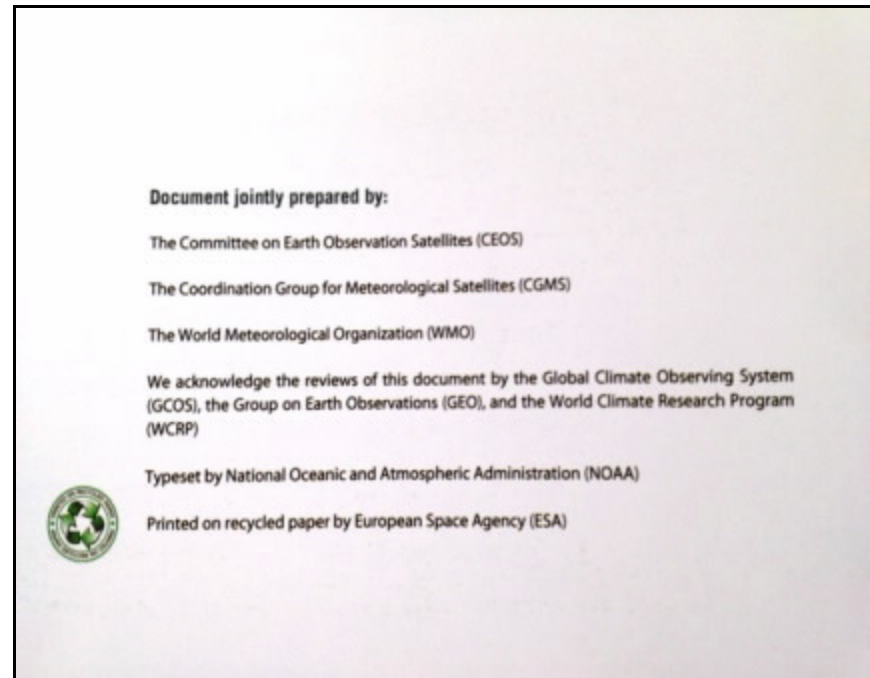
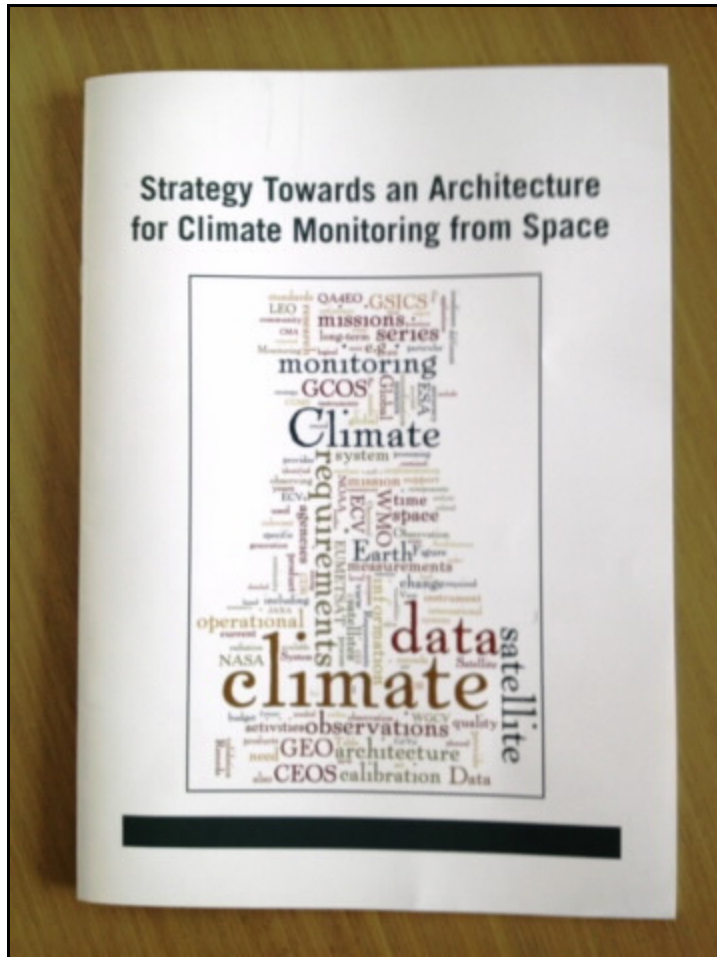
Advancing the architecture for climate monitoring from space...

- ✓ Assess how CGMS can optimally contribute to the implementation of the GFCS by taking an active role in the construction of the Architecture for Climate Monitoring from Space;
- ✓ Evaluate the “CGMS baseline for the operational contribution to the GOS” in the light of the logical view of the architecture;
- ✓ Ensure the data holdings of CGMS members are appropriately reflected in the Architecture for Climate Monitoring from Space (physical view) through their systematic contributions to the Essential Climate Variable (ECV) Inventory;
- ✓ Work with CEOS towards a sustainable implementation of the global architecture for climate monitoring from space. (CGMS 40 Plenary Action)

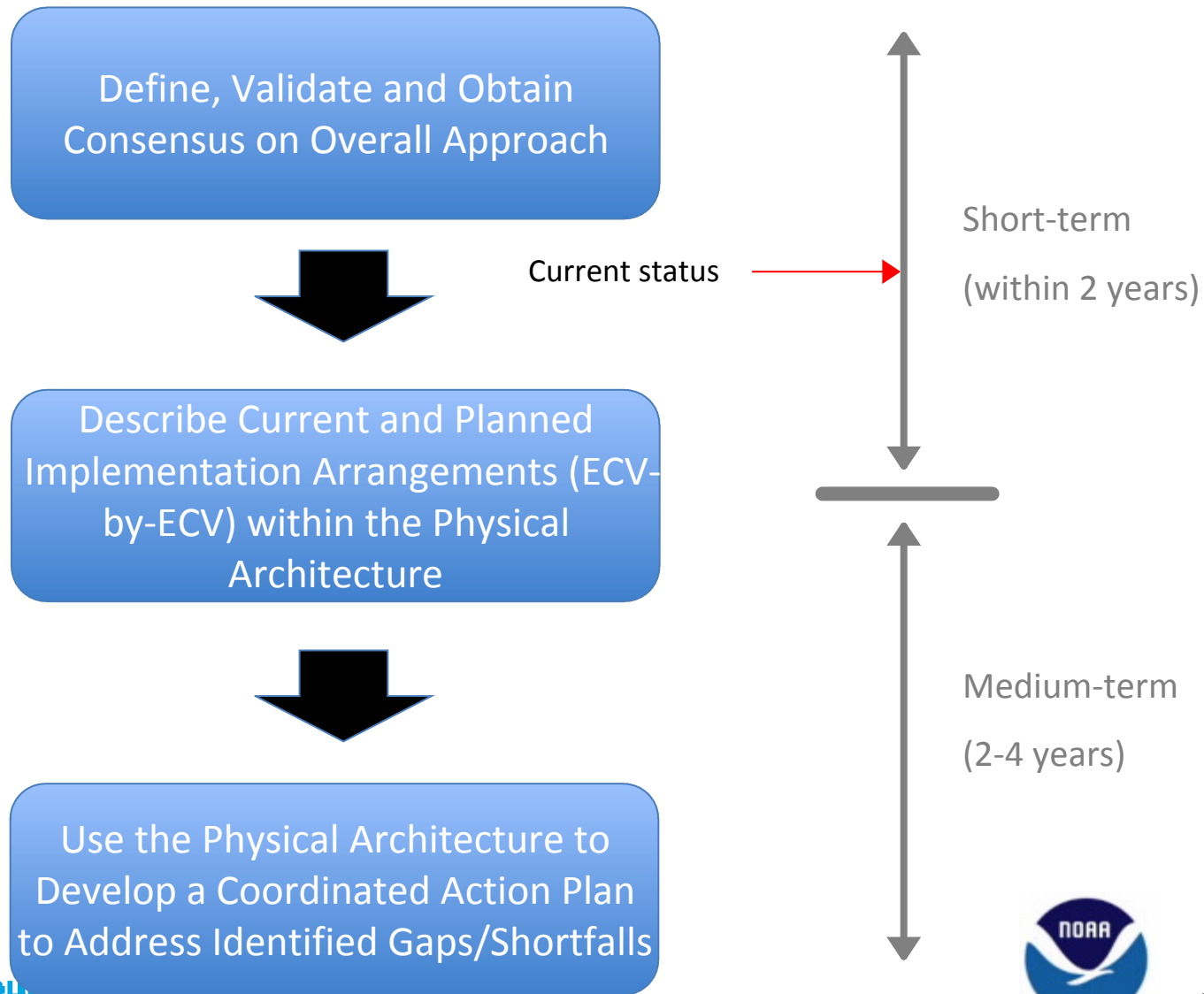
Progress since CGMS-40

- Space Architecture key component of GFCS Observations and Monitoring Pillar
- Space and Climate Week, February 18-22, 2013
 - Evaluation of ECV inventory effort; additional outreach for CGMS agencies
 - ECV validation procedure
 - Analysis approach
 - Discussion of Assessments
- Status of ECV Inventory: **Continuous Process; encourage additional input**
- Mapping satellite plans to CGMS baseline and ECVs
 - template developed by WMO and distributed on May 14 by CGMS Secretariat
- Terms of Reference of Proposed CEOS-CGMS Working Group on Climate

Architecture Strategy Published



Way Forward



Status Report CEOS-CGMS Essential Climate Variable Inventory - History

- Joint activity CEOS, CGMS and WMO
- Call released with CEOS MIM in May, responses were due October 5th – time extended through May 2013
- Questionnaire form – through a web interface.
- Responses were requested at the dataset level
- Addresses both existing/past missions and future/planned mission in two separate questionnaires
- Each single entry takes on average 25 minutes to complete (caveat – If all information in one place...)
- Areas Covered
 - General
 - Dataset Usage
 - Dataset Stewardship
 - Dataset Properties
 - Dataset Access

Status Report CEOS-CGMS Essential Climate Variable Inventory - Response

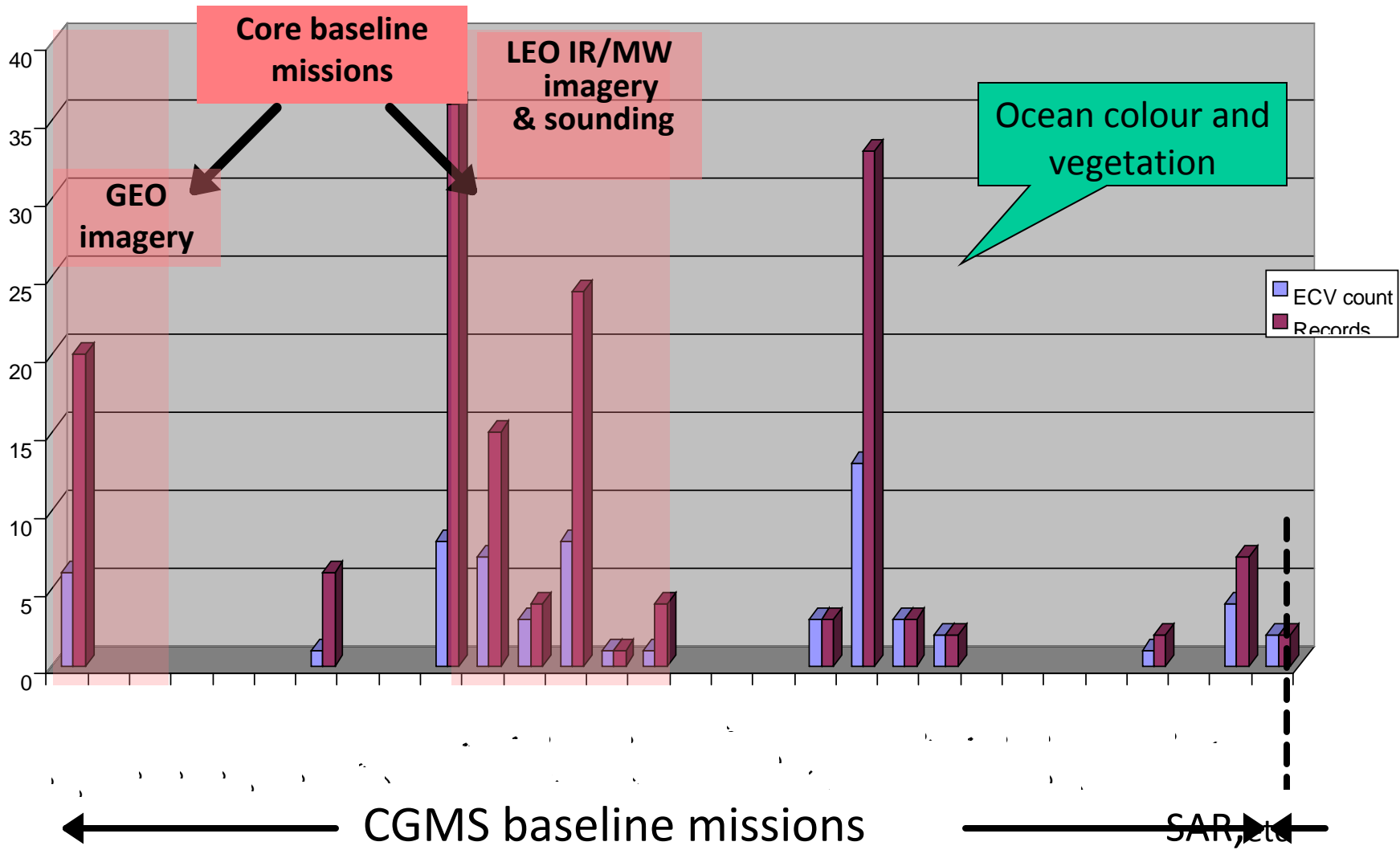
- 213 Records entered by 11 different Space Agencies
- 25 of 29 Satellite-based ECVs submitted – 10 of 11 Atmosphere, 4 of 6 Oceans, and 11 of 12 Terrestrial (missing greenhouse gas precursors, sea surface salinity, sea state, and lakes)
- Working to fill in some ECVs that did not have complete information

Status Report CEOS-CGMS Essential Climate Variable Inventory - Lessons

- The ECV inventory covers different topical areas that are not co-located in some Agencies – missions, scientific processing, and data centers
- This makes filling in the questionnaire more difficult than originally envisioned – BUT – emphasizes why it is so needed
- Many Agencies fund individual Principal Investigators to produce ECVs and we need to cast a wider net to capture more of these
- Request feedback and suggestions to improve the ECV database website (ecv-inventory.com)
- Request feedback on how the data will be used and potential queries or analysis products

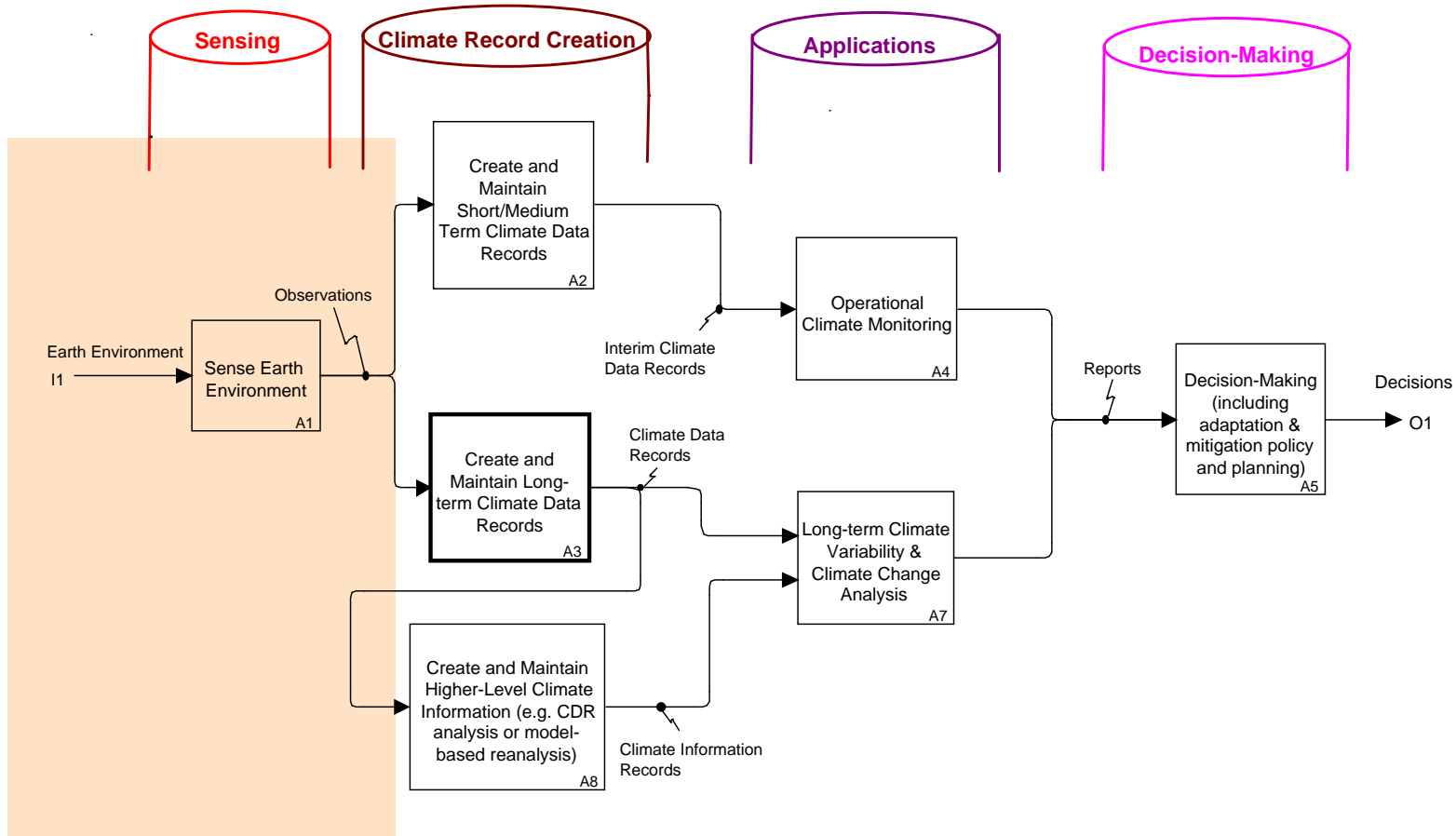
2. ECV Product Inventory Mapping to CGMS baseline missions

High relevance of CGMS baseline missions



Coordination Group for Meteorological Satellites - CGMS

Scope of the “CGMS baseline” in the end-to-end process



- CGMS Baseline addresses the sensing level (sensor categories and system configuration) including calibration

Recommendations

- Extend the ECV product inventory to FCDRs (not only for derived TCDRs)
- The CGMS baseline has a prospective dimension but often too generic to inform on FCDRs :
 - Use refined version of CGMS baseline missions (finer categorization) to draw list of sustained FCDRs coordinated by CGMS
 - Design phase of new sensors should include analysis of compatibility with heritage sensors

Way Forward

CGMS Priorities and Actions:

- More input by CGMS members requested;
 - ECV Inventory
 - Mapping satellite plans to CGMS baseline and ECVs:
- Action 8: WG III to review the categorization of missions in the CGMS baseline and refine it as appropriate in order to support a high-level mapping with FCDRs.
- Action 9: WG III to define a first list of FCDRs that CGMS Members can commit to provide on a sustained basis as a contribution to the architecture for climate monitoring from space, building on the CGMS baseline, and to communicate this contribution to the future CEOS-CGMS working group on climate.