Progress and Future Plans for the Architecture for Climate Monitoring from Space

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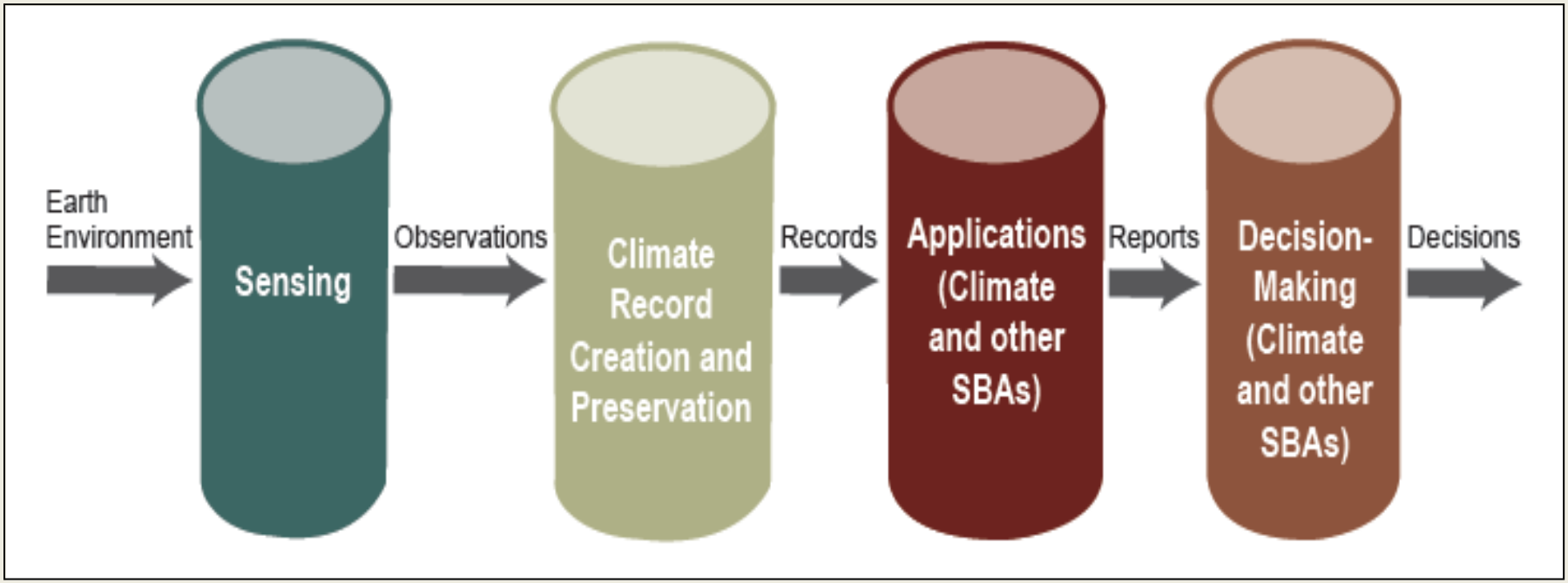
CGMS

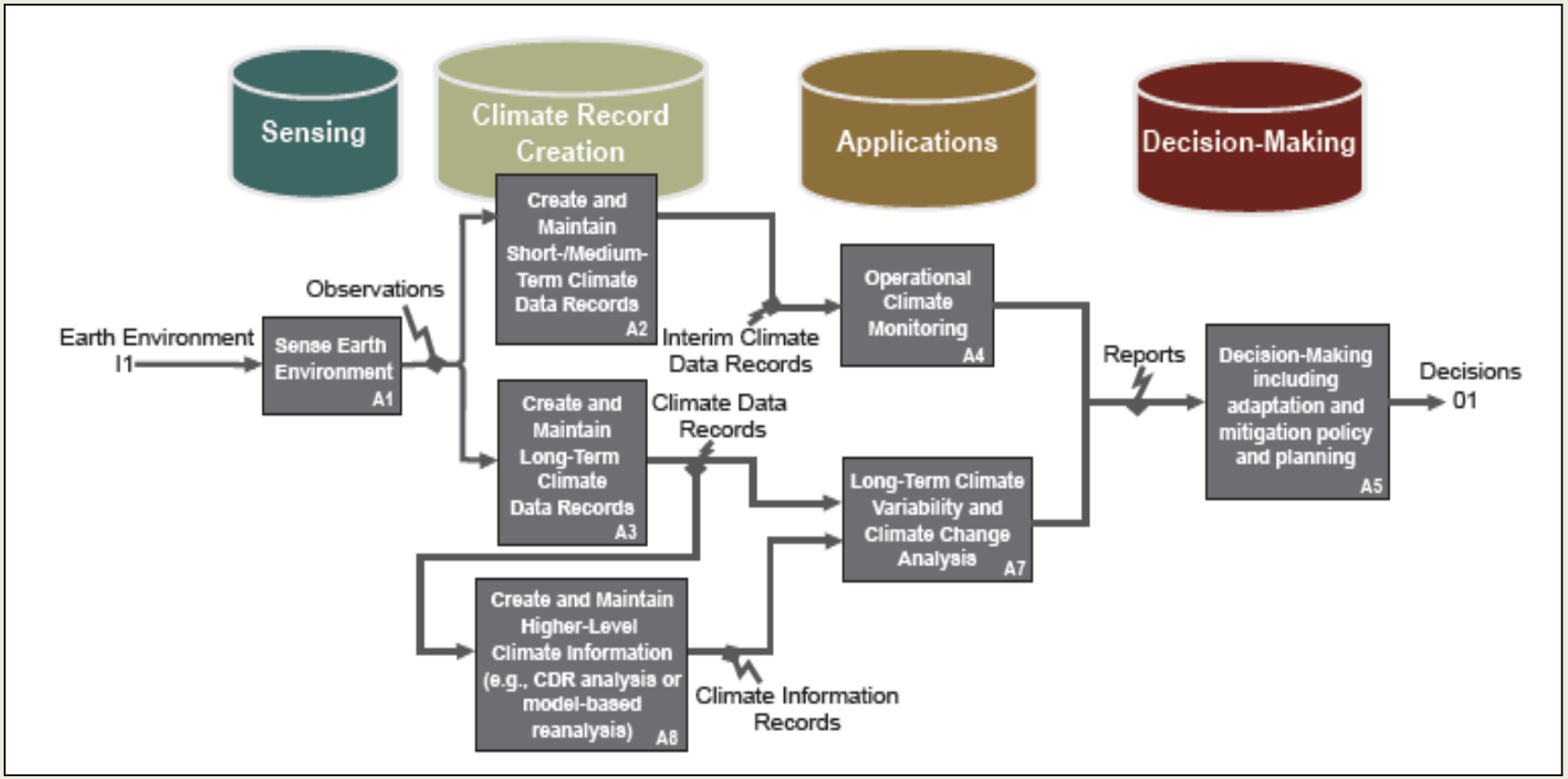
Outline

- The climate monitoring architecture strategy forms the basis for moving forward to achieve the goals of the Working Group on Climate (WGClimate)
- The architecture allows for participation of agencies across a broad range of time scales and societal applications
- I invite WMO members to help work in areas that benefit both their agencies and the broader climate community

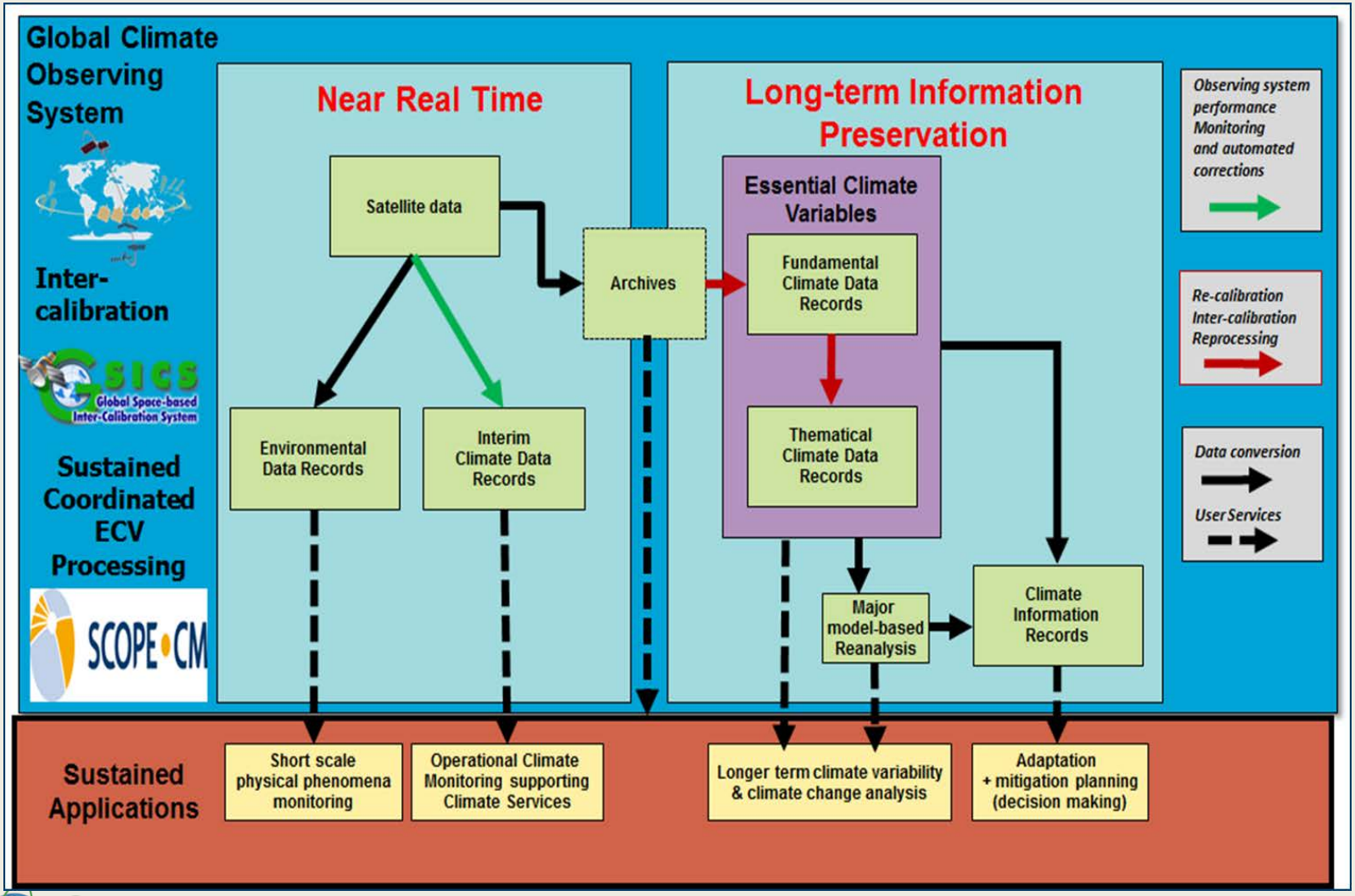
Logical Architecture 4 Pillars



Logical Architecture – Data Flow

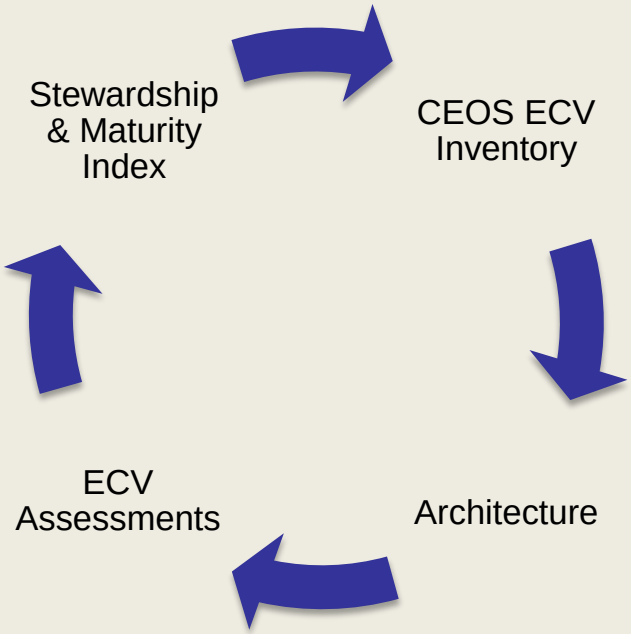


Architecture – Latency/Application View



Implementation – Capturing the Physical Climate Monitoring Architecture

- The Logical Architecture views provide a generic flow applicable to all Agencies
- The Physical Architecture is needed to capture the ‘as is’ and ‘to be’ systems actually being used
- The Physical Architecture is being documented by conducting an Essential Climate Variable (ECV) Inventory
- Results of the ECV Inventory will then be used to assess completeness and maturity of ECVs



WGClimate Work Plan

- WGClimate was the trial Working Group for the new form of the CEOS-CGMS 3-year Work Plan
- Work Plan elements implement WGClimate objectives in sequential order
- Activities include Climate Monitoring, Research, and Services (CMRS)
  - Coordinate development of Climate Data Records (CDRs) and related datasets addressing Essential Climate Variables (ECVs) established by the Global Climate Observing System (GCOS)
  - Continue cooperation with Group on Earth Observations (GEO), Global Climate Observing System (GCOS), and the World Meteorological Organization (WMO), in the development of a space-based system to support climate information and adaptation.

WGClimate Work Plan – Climate Monitoring, Research, and Services

- *The first 3 CMRS activities form an iterative cycle, acknowledged in the last CMRS activity –*
- **CMRS-**1: ECV inventory (first version) – Tools needed are available
- **CMRS-2**: Gap analysis (first version) – Identify several target ECVs and conduct analysis
- **CMRS-3**: Action plan (first version) – Identify actions Space Agencies can take to mitigate any gaps
- **CMRS-9**: Update of ECV inventory, gap analysis and action plan (version 2) – The above sequence forms the basis for an ongoing analysis cycle, in agreement with the new GCOS plans

WGClimate Work Plan – Climate Monitoring, Research, and Services

- *The next two CMRS activities seek to assure that climate products are connected to user applications and decision support*

- **CMRS-4**: Case studies linking CDRs to societal applications and informed policy decisions – Identify examples from current work and map it to the Climate Monitoring Architecture

- **CMRS-5**: Contributions to the Global Framework for Climate Services (GFCS) – Work to identify existing examples of Climate Services that can be applied or adapted to the GFCS focus areas

WGClimate Work Plan – Climate Monitoring, Research, and Services

- *The final three elements identify important interactions with external communities*

- **CMRS-6**: Report to UNFCCC Subsidiary Body for Scientific and Technological Advice-Research and Systematic Observation (SBSTA-RSO

- **CMRS-7:** Report to GCOS implementation plan activities accomplished by Space Agencies on climate observations

- **CMRS-8**: Incorporation of in situ data holdings within the ECV inventory – reuse original ECV questionnaire framework. Data base analysis and follow up will not be done by CEOS

Conclusions

- CEOS, CGMS, and WMO have agreed to an architecture for climate monitoring from space
- The logical architecture provides a generic framework for a physical architecture
- The physical architecture is being captured in an Essential Climate Variable inventory
- The steps in populating the ECV inventory are captured in a Work Plan for 2014-2016 for the Joint CEOS-CGMS Working Group on Climate