

CEOS Constellations Process Paper

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Background

- March 25 White Paper developed in advance of SIT-21 included agreed definition of Virtual Constellations for GEO and guidelines for proposing new Constellations
- Questions raised following SIT-21 review led to SIT Chair dialogue with S. Briggs/J-L Fellous/B. Ryan in May-August timeframe:
 - May 12 M. Kicza outline on key differences among related documents
 - June 16 S. Briggs/J-L Fellous propose Constellations Dialogue Paper
 - July 10 M. Kicza takes Dialogue Paper into account and proposes consolidated Constellations Process Paper
 - July 30 S. Briggs accepts Process Paper text as basis for moving forward
 - August 14 M. Kicza sends out Process Paper to CEOS Members, requesting feedback in advance of SIT-22 discussion, and asking drafters of OCR and OSVW new Constellation proposals to take into account
- Written feedback received prior to SIT-22 from USGS, SEO, ESA, CSA, and EUMETSAT
- September 16 discussion with those who submitted inputs

Structure of August 14 Process Paper Draft

1. Introduction (link to GEO, definition, examples of other satellite Constellations)
2. Goals, include:
 - Pursuing problem-focused approach to achieve significant results in relatively short time
 - Facilitating participation of smaller contributors
 - Pooling assets in support of the GEOSS 10-Year Implementation Plan
 - Reducing redundancy and improving continuity and overlap among missions
 - Adopting standards and guidelines; contributions to common objectives
 - Using accreditation/recognition process to ensure satisfaction of relevant community needs
3. The Initial Set of CEOS Constellations (development process; unique nature of each; resulting products combined through Service Providers; utilization by end-users)
4. Proposing New Constellations (proposal by two or more CEOS Agencies that addresses objectives, vision, statement of need, measures of success, collaborators, schedule)
5. Detailed Process Overview
 - 5.1 Initial proposal to study a possible Constellation
 - Preliminary mission statement with succinct description of problem
 - Key anticipated outcomes
 - User requirements to be addressed; targeted user community participation
 - Identification of satellite programs and space-based data to be involved/utilized
 - Preliminary assessment of compliance with GCOS Climate Monitoring Principles
 - Timetable, proposed study leads, etc.

Structure of August 14 Process Paper Draft (con't)

5.2 Study Report based on approved proposal undertaken by nominated Study Team

- Expands on all points addressed in initial proposal
- Includes outline of standards and guidelines for contributors
- recommendations for formation of Constellation Team and identification of involved space agencies and other entities

5.3 Implementation Plan development

- Description of Constellation elements
- Phased approach focusing on achievable results described in terms of outputs
- Outlining of an end-to-end value chain involving identified users
- Includes detailed time schedule of implementation steps to be monitored

5.4 Membership of Constellation Teams

- Identify CEOS Agencies ready to contribute that clearly agree to participate
- Include other specialists and user community representatives as agreed with SIT

5.5 Identification of standards to cover all aspects of the user experience

- Science requirements for measurements being undertaken
- Technical specifications for inter-calibration with space and ground systems
- Technical specifications for data format and interoperability of data acquisition and distribution networks

Structure of August 14 Process Paper Draft (con't)

5.6 Criteria for Accreditation/Recognition and Metrics for Success

- Importance of criteria measurable against an agreed set of metrics
- Criteria need to be tied very closely to GEO SBAs/GEOSS WP Tasks
- Take care in defining criteria and metrics to accommodate all contributions
- Light-weight, easy-to-use, end-to-end test scenario is sought, adaptable to non-CEOS users

5.7 Identification of funding sources

- Presumes pledged support of participating Agencies
- Additional funding requirements need to be identified early in process with suggestions as to how support can be obtained

5.8 Role of SIT in the Constellations Process—timely approval of Implementation Plans

- Responsibility of SIT Chair to lead review and approval of initial proposals, study reports and implementation reports on a timely basis
- SIT Chair and staff to have regular consultations with Constellation Team
- Co-Leads and assist them in obtaining support from Agencies, CEOS WGs, SEO

5.9 User Community Engagement

- Clear statement of primary user community requirements is needed
- Existing requirements statements (e.g. GCOS IP, IGOS Themes, GEO IP and WP) should be utilized
- Regular contact with appropriate user community essential; end-to-end value chain

Summary of Comments Received

Sept. 8 (USGS/Cramer and Stryker submission of substantive edits)

- “Edits are an attempt to clarify and simplify the document and front-load the process as much as possible...(to make it) possible for SIT to ‘turn on’ or ‘turn off’ a proposed Constellation early on, thus saving much time and energy...”

Sept. 9 (SEO/Killough)

- Suggested change to Standards section, noting that “Constellation teams shall work with the SEO to develop requirements and perform assessments and gap analyses, as needed,” and pointing to SEO being able to support measurements development, WGCV to support calibration development, and WGISS to support data development.

Sept. 10 (ESA/Briggs response to USGS-proposed edits)

- “Many of your amendments to text improve it greatly”
- “...process for new Constellations should not be long winded, but should be commensurate with level of commitment needed...which is considerable”
- *A priori* support needed from space agencies who will eventually deliver data
- “Intention is not to prevent new Constellations, but to ensure that new ones are indeed viable and fully supported”

Summary of Comments Received

Sept. 12 (EUMETSAT/Prahm)

- Suggested changes similar to those submitted by USGS and EUMETSAT

Sept. 16 (CSA)

- Suggested change to improve the clarity of defining Constellations

Sept. 16 (NOAA/ESA/USGS/EUMETSAT/NASA)

- Revised 16 September 2008 version of the Constellations Process Paper
- Have substantively modified Sections 4 and 5 to include a specific description of the three phases for proposing new Constellations
 - Phase I – An initial proposal to the SIT with a request to determine SIT Agency interest in a possible Constellation;
 - Phase II – A full proposal with a request for SIT approval to proceed with the Constellation, to include study team members and SIT Agency confirmation of co-leadership;
 - Phase III – Development of an Implementation Plan to include:
 - Requirements
 - Schedule
 - Accreditation and Recognition Metrics
 - Funding