

## **Terms of Reference**

### **Polar Space Task Group (PSTG)**

The Polar Space Task Group (PSTG) shall be established under the auspices of the World Meteorological Organization's (WMO) Executive Council Panel of Experts on Polar Observations Research and Services (EC-PORS). The group's mandate is to provide coordination across space Agencies to facilitate acquisition and distribution of fundamental satellite datasets, and to contribute to or support development of specific derived products in support of cryospheric scientific research and applications.

The PSTG shall actively seek realisation of benefits from the growing constellation of polar orbiting satellites by mobilising the unique and complementary capabilities of each of the respective participating Agencies, whether research and development or operationally oriented. In the case of the latter, the role is to support the scientific activities that may lead to improved numerical weather and climate forecasting, or development of improved operational polar products and services, to the extent that these activities fall within each Agency's mandate.

The PSTG is a successor of the successful International Polar Year Space Task Group (IPY-STG), established for the purpose of Space Agency planning, processing and archiving of the IPY Earth Observation legacy dataset. This new group shall be an independent working group which reports to the EC-PORS via common membership of its Observational Task Team. A suitable reporting mechanism shall be established to inform CEOS, CGMS and WMO Consultative Meetings on High-Level Policy on Satellite Matters on relevant PSTG progress and issues.

Membership of the PSTG shall be established by invitation from the WMO Secretary General and nomination by the respective Space Agency. Following the successful IPY-STG, the re-establishment of the PSTG is phased to coincide with the four year interval bridging the WMO Congresses in 2011 and 2015 (i.e. Cg-XVI and Cg-CVII). EC-PORS is specifically tasked with the establishment of the WMO Global Cryosphere Watch. Thus, the initial working term of PSTG shall foresee a 3 year interval of activities between 2011 and 2014, with the goal to review progress and working mandate prior to the deadline for inputs to the WMO Congress in 2015.

#### **Objectives**

1. The group shall review cryosphere and polar scientific requirements, including user needs and observational requirements stemming from, but not limited to GCOS, the IGOS-P Cryosphere Theme Report, the WMO Expert Team on Satellites (ET-SAT), and the specific needs of the WMO Global Cryosphere Watch (GCW), the World Climate Research Programme (WCRP), SCAR/IASC and the Group on Earth Observations (GEO);
2. The group shall develop a mechanism to source these requirements, through workshops, meetings, etc.,
3. The group shall develop a set of key strategic goals to meet user needs and observational requirements and prioritize them considering existing Agency-specific Programmes or International Project Frameworks;

4. The group shall develop a short-, mid- and long-term implementation strategy covering atmosphere, ocean and terrestrial domains, based on the strategic goals and requirements;
5. Members shall establish commitments on behalf of their Agency to support data acquisition, and support for product development and establishment of relevant accompanying scientific studies, as appropriate for the Agency;
6. Members shall participate in the joint development and coordination of mission acquisition plans with consideration of:
  - existing *in-situ* observing system infrastructure,
  - individual agency mandates and resources, including space-segment and ground-segment assets,
  - time-space distribution of planned in-situ and air-/shipborne campaign activities,
7. The group shall develop and coordinate plans for satellite data product distribution and archiving;
8. The group shall develop indicators or metrics of success of data use,
9. PSTG meetings shall be held at least once each year, with:
  - Intermediate Working Group meetings as needed,
  - Quarterly teleconferences as needed,
  - Standing invitation to Members for hosting meetings at their respective premises or suitable local venues

### **Membership**

- Members of PSTG shall be nominated by Heads of Space Agencies, upon invitation by WMO Secretary General;
- Positions of Chair and Vice-Chair of PSTG shall be established:
  - The Chair and Vice-Chair are nominated by PSTG members as needed,
  - The Chair and Vice-Chair rotates amongst Member Agencies.

### **Policy Framework**

The EC-PORS Panel of Experts reports annually, via the WMO Secretariat, to the Executive Council (EC) of WMO. The EC consists of 37 Members, including the President, three vice-Presidents and the presidents of the six regional associations (each ex-officio members). The Executive reports to WMO Congress every four years (2011, 2015, etc.), on which all members of WMO are represented.

### **Reporting Framework**

The PSTG shall informally report to WMO via the EC-PORS in the context of its Observations Framework. EC-PORS will take responsibility for establishing the scientific needs of its research framework and identify observation gaps or specific science and data requirements originating from the GCW which are relevant to PSTG.

Observational requirements assembled by PSTG shall be provided as an input to the Rolling Review of Requirements (RRR) process of the WMO Expert Team on Evolution of the GOS (ET-GOS).

Representatives of GCOS and WCRP (particularly, the Climate and Cryosphere - CliC Project) will be invited to participate in the STG meetings to facilitate coordination. Other groups with polar interests may also be invited to participate, as appropriate.

The PSTG (through an agency liaison) shall report on an annual basis to the Committee on Earth Observation Satellites (CEOS), particularly at their Strategic Implementation Team (SIT) meetings, and the Coordination Group for Meteorological Satellites (CGMS) (through WMO), as well as to the WMO Consultative Meetings on High-level Policy on Satellite Matters, where Actions and Recommendations can be brought to the attention of the Space Agency members.

### **Secretariat**

The group's Secretariat shall be provided by the WMO Space Programme (SAT) within the Observing and Information Systems (OBS) Department of the WMO Secretariat.

The Secretariat will prepare meeting invitations, assemble, post and/or distribute documents, convene inter-sessional teleconferences, prepare, review and distribute meeting minutes, ensure action items are communicated to members and followed up, and necessary mail and email exchanges with members, and hosting of meetings.

Annex I

**Key Functional Requirements**

The PSTG activity shall have the capability to:

- a) Assemble disciplinary science requirements for polar and cryospheric research to be addressed with spaceborne systems through regular and broad interaction with the science community.
  - b) Through iteration amongst the planning and processing arms of the participating international space agencies, develop a concise, prioritized list of observational objectives based on:
    - i) efficient use of the international constellation of satellites;
    - ii) operating mandates of each space agency;
    - iii) satisfying science objectives best served by coordinating agency activities.
  - c) Regularly assess and revise observation acquisitions and acquisition plans
  - d) Redirect observation priorities over time
  - e) Develop plans to use shared resources for processing and distributing data and data products
  - f) Establish subgroups addressing instrument specific issues
  - g) Encourage active participation by all interested space agencies
- Members may be requested to contribute to meeting presentations or periodic reports to EC-PORS or WMO Consultative Meetings on High-Level Policy on Satellite Matters, identifying progress and successes, or key Actions and Recommendations.