CGMS HIGH LEVEL PRIORITY PLAN (HLPP)
2014 - 2018

1. INTRODUCTION

The main goals of the coordination activities of the Coordination Group for Meteorological Satellites are to support operational weather monitoring and forecasting as well as climate monitoring, in response to requirements formulated by WMO, its programmes and other programmes jointly supported by WMO and other international agencies.

It is the policy of CGMS to coordinate satellite systems of its members in an end-to-end perspective, including protection of in orbit assets and support to users - e.g. through appropriate training - as required to facilitate and develop shared access to and use of satellite data and products in various applications. This policy reflects in the structure of this 5-year High Level Priority Plan, which covers:

1. Coordination of observing systems and protection of assets
2. Data dissemination, direct read out services and contribution to the WIS Products development
3. Enhance the quality of satellite-derived data and Products
4. Outreach and training activities
5. Cross-cutting issues and new challenges

This rolling 5-year plan is seen as part of a longer term perspective, in particular as regards the new challenges raised by climate monitoring in the context of the implementation of the Global Framework for Climate Services recently approved by the Extraordinary Congress of WMO on 31 October 2012.

It will be reviewed on an annual basis, considering in particular new requirements and perspectives arising from interactions with the user and scientific communities, the development of applications, e.g. NWP, and relevant research activities. It will ensure proper interaction with other space agencies and their relevant constituencies (e.g. CEOS including its working groups and virtual constellations).

HIGH LEVEL PRIORITY TASKS

The high level priority tasks are presented according to the logic of the CGMS end-to-end systems

1 COORDINATION OF OBSERVING SYSTEMS AND PROTECTION OF ASSETS

1.1 Coordination of observing systems

1.1.1 Coordinate the implementation of the CGMS baseline missions (updated nominal locations/orbits, operators), including optimisation of the distribution of Low Earth Orbit (LEO) sun-synchronous orbits to ensure efficient temporal sampling of the atmosphere and of the oceans;

1.1.2 Support satellite impact studies including regional verification;

1.1.3 Facilitate the evolution of research short-term missions to an operational status (where appropriate e.g. HEO missions);

1.1.4 Investigate through IROWG how a coordinated and optimised system could be set up for radio occultation observations for atmosphere and ionosphere monitoring;

1.1.5 Identifying partnership opportunities on space and ground segments and establish CGMS coordinated mechanisms for hosted payloads, e.g. for solar wind monitoring;

1.1.6 Identify potential gaps and ensure appropriate contingency measures are in place including analysis of budget constraints and associated risk assessment.

1.2 Coordination/Optimisation of data collection systems

1.2.1 Coordinated participation in the activities of the International Forum of Users of Satellite Data Telecommunication Systems, to prepare the future use of the International Data Collection System (IDCS);

1.2.2 Assess Data Collection Platform (DCP) and Argos Data Collection System (A-DCS) status and evolutions including International channels, taking into account requirements of tsunami alert systems and in-situ ocean observations (e.g. buoys);

1.2.3 Share lessons learnt and share experiences on certification of DCS platforms (especially High Rate DCPs);

1.2.4 Share information on the development of their High Rate DCPs and share lessons learned on mitigating interference between DCPs;

1.2.5 To confirm user requirements for sharing data/information delivered using DCS (outside the regional area). Evolve the mechanisms to share DCP data.

1.3 Radio Frequency (RF) Protection

1.3.1 Establish a coordinated position on the future of L-band services;

1.3.2 Investigate how to mitigate Earth Exploration Satellite Service (EESS) X-band (8025 – 8400 MHz) congestion and coordinate interference assessments on a regular basis and, as necessary, establish inter-agency coordination mechanisms to facilitate sharing and use of this frequency band by LEO and GEO systems;

1.3.3 Facilitate an effective preparation of national positions for the World Radiocommunication Conference (WRC) favorable for the CGMS-related issues.

2 DATA DISSEMINATION, DIRECT READ OUT SERVICES AND CONTRIBUTION TO THE WIS

2.1 Support the user-provider dialogue on regional/continental scales through regional coordination groups maintaining requirements for dissemination of satellite data and products through the various broadcast services;

2.2 Support the implementation of sustained, coordinated Digital Video Broadcast (DVB) satellite services for the Americas, Africa, Europe and the Asia Pacific regions;

2.3 Increase access to, and use of, data from R&D and pre-operational missions;

2.4 Investigate the feasibility of introducing a coordinated dissemination service for meteorological information in helping to mitigate disasters;

2.5 Investigate the feasibility of introducing a coordinated dissemination service for information in support of the ocean user community;

2.6 Maintain the CGMS Direct Broadcast Global Specifications, optimise and harmonise the approach to direct read-out dissemination, whilst investigating possible alternatives;

2.7 Evaluate the set of applicable (or TBD) standards for direct and other dissemination mechanisms in use by CGMS members and assess if there is a need, in view of future systems, to amend, modify or revise such standards (or to derive new ones);

2.8 Facilitate the transition to new direct readout systems (GOES-R, JPSS, FY-3);

2.9 Work together to define a set of recommendations seeking affordable future receiving stations or alternatives to direct read-out solutions;

2.10 Further enhance the Regional ATOVS Retransmission Services (RARS) initiatives through their extension to advanced sounders for at least half of the globe;

2.11 Utilise operationally the WIS infrastructure for satellite data provision and discovery;

2.12 Provide coordinated CGMS inputs to WMO on satellite and instrument identifiers or data representation and metadata within the WIS (including the Regional Meteorological Data Communications Network).

3 ENHANCE THE QUALITY OF SATELLITE-DERIVED DATA AND PRODUCTS

3.1 Establish within GSICS a fully consistent calibration of relevant satellite instruments across operational CGMS agencies, recognising the importance of collaboration between operational and research CGMS agencies;

3.2 Establish commonality in the derivation of satellite products for global users where appropriate (e.g., through sharing of prototype algorithms);

3.3 Foster the continuous improvement of products through validation and inter-comparison through international working groups and SCOPE-type mechanisms;

3.4 Harmonise the metadata (e.g. quality descriptors) and format of products to be exchanged;

3.5 Develop, and start implementing, methods to describe the error characteristics of satellite data and products;

3.6 Strengthen interaction with users in selected thematic areas by establishing a close relation with them as beta-testers and foster optimum use of satellite data.

4 OUTREACH AND TRAINING

4.1 Impact and benefit of EO satellite missions

4.1.1 Develop a credible methodology for assessing the socio-economic benefit of investment in EO satellite missions;

4.1.2 Engage in communication and outreach activities to promote EO benefits.

4.2 Training

4.2.1 Continue to foster optimum use of satellite data for weather forecasting, climate applications, and environmental assessments including hazardous events such as volcanic ash and flooding;

4.2.2 Update and develop new VLab training material where necessary, and in collaboration with partner institutions such as Collaboration among Education and Training Programmes (COMET) and Committee on Space Research (COSPAR);

4.2.3 Provide shared, regular support to funding the VLab Technical Support Officer function through the WMO VLab Trust Fund, and to the VLab Centres of Excellence as per agreed expectations.

4.3 User Conferences

4.3.1 Conduct regional satellite users conferences to (i) share experience and foster the exchange of ideas; ii) promote better access, and improve the utilisation of, existing satellite data and products; (iii) prepare the user community on new satellite systems' data products and services, (iv) engage young people entering the field and (v) other items as appropriate.

5 CROSS CUTTING ISSUES AND NEW CHALLENGES

5.1 Advancing the architecture for climate monitoring from space

5.1.1 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;

5.1.2 Evaluate the "CGMS baseline for the operational contribution to the GOS" in the light of the logical view of the architecture;

5.1.3 Extend the use of the Global Space-based Inter-Calibration System (GSICS) and the Sustained Co-Ordinated Processing of Environmental satellite data for Climate Monitoring (SCOPE-CM) frameworks;

5.1.4 Analyse long term data sets for specific climate relevant phenomena to demonstrate their impact on climate applications;

5.1.5 Establish priorities of multi decadal ECV products (including ECVs addressed by the International Science Working Groups) and contribute to creation of key FCDR that provide the basis for many ECVs;

5.1.6 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;

5.1.7 Establish an integrated approach for accessing climate data records produced by CGMS members;

5.1.8 Promote a common approach to the long-term preservation of data through the exchange of information and the establishment of a coordinated consensus on best practice;

5.1.9 Work with CEOS towards a sustainable implementation of the global architecture for climate monitoring from space.

5.2 Space Weather

5.2.1 Establish a coordinated approach to the monitoring of space weather and the reporting of space weather-related spacecraft anomalies;

5.2.2 Assess how CGMS is organised to address space weather matters.

5.3 Prepare operational users for new generation of Geostationary meteorological satellites through user readiness programmes, with coordinated contributions from CGMS members in the areas of:

5.3.1 Sensor and signal characteristics;

5.3.2 Data dissemination and global data exchange;

5.3.3 Test datasets, processing and analysis tools;

5.3.4 Products;

5.3.5 User training, including testbeds;

5.3.6 Information on these topics should be synthesized and maintained by WMO in an multi-lingual online user guide, dynamically linked to resources of CGMS members;

5.3.7 Maintaining close cooperation with user organizations, taking into account the “guidelines for ensuring user readiness for new generation satellites” adopted at WMO EC-65.