

Working Group I: Global Issues on Satellite Systems and Telecommunication Coordination

CGMS 41

WG-I

Purpose

Address items requiring detailed discussions by the relevant CGMS telecommunications experts. Provide technical assessments and recommendations to the plenary session supporting:

- Optimizations, best practices and standardisation of satellite telecommunication systems including Direct Broadcast,
- Coordinated CGMS position on frequency protection and frequency management (for telecommunications, and for active/passive remote sensing).
- Working by consensus, WG I makes recommendations and proposes actions which are reported to the plenary session.
- It is the prerogative of the CGMS plenary to review the WG I report and to endorse, or decide differently, on the actions and recommendations made by the WG I members.

Topics of Interest to Plenary

I/2 Frequency management matters: SFCG, ITU and WRC activities

- WRC-15 preparatory activities progressing according to established regional agendas.
- WRC-15 will have as one of the main focuses the decision on:
 - additional spectrum allocations to the mobile service;
 - spectrum requirements and possible additional spectrum allocations for the Mobile-Satellite Service;
 - identification of additional frequency bands for International Mobile Telecommunications (IMT) and to facilitate the development of terrestrial mobile broadband applications;
 - new allocations to the Maritime Mobile Satellite Service;
 - additional allocation of spectrum to support Fixed Satellite Service;

All related or threatening bands and allocations of Metstats, Earth Exploration Satellite Service (EESS) or Science Research Service.

- Reports from CGMS organizations confirm status of preparation for WRC-15.
- Space Frequency Coordination Group (SFCG) report to CGMS -from SFCG-33 meeting last week- also confirm progress in the preparation of WRC-15.



Topics of Interest to Plenary

1/2 Frequency management matters: SFCG, ITU and WRC activities (cont)

- WG-I also noted the resolution of WMO Executive Council asking its CBS to pursue an intensive preparation for WRC-15, in collaboration with other relevant international bodies, in particular, the Coordination Group for Meteorological Satellites and the Space Frequency Coordination Group.
- WG-I noted the detailed positions reported and confirm that these positions are fully in line to the ones adopted by the different CGMS members in the different regional areas in which the preparatory activities of WRC-15 are taking place.
- WG-I was also re-iterating the need of CGMS members to closely and regularly liaise with their national frequency management/regulation authorities on the importance of the frequency bands assigned/associated to CGMS systems and the need to protect/preserve them. These regular activities shall ensure that adequate awareness is raised, and maintained, with the national authorities that will convey the national positions to the WRC.



Topics of Interest to Plenary

I/3 Direct broadcast services

- WG-I addressed proposals for possible recommendations seeking affordable receiving stations;
- **It is necessary to separate the discussion topics between Direct Readout terminals (for LEO systems) and direct broadcast and re-broadcast terminals (HRIT/LRIT like terminals for GEO systems).**
- For the specific case of Direct Readout terminals, WG-I is considered the adequate WG to address aspects related to affordable receiving systems (but it is a cross-cutting topic -with participation of and support from WG-II and WG-IV as necessary).
- **RARS like systems** and their evolution is an aspect to be considered in the discussions of WG-I for aspects related to **improvement of timeliness of LEO systems data (in support to NWP and NCW).**
- NOAA has approved the development of a network of direct broadcast stations which will include Suomi NPP, METOP, EOS (AIRS), and POES (AMSU), and potentially GCOM and FY3 series satellites.



Topics of Interest to Plenary

1/3 Direct broadcast services (cont)

- NOAA welcomes the participation of other CGMS agencies and would like to explore including for example FY3 and Russian satellites and would encourage open access to level 0 and level 1 processing code to convert satellite data packets to calibrated sensor observations.
- **HLPP focus priority on sounding data (for NWP), while locally for now-casting (based on imager information) and where relevant with scatterometer data** (e.g. like EARS) but with due consideration of the need of tuning formats and products for adapting to available bandwidths for data repatriation, circulation and dissemination.
- **WMO also expressed the importance of these RARS related activities not only for Asia, Europe and North America but also for regions 1, 3 and 5 (of WMO).**
- **Exchange of data (data transfers) between regions is considered also part of the RARS service implementation (timeliness requirements to be considered).** Through the tour the table it was recommended to build, as much as possible, an expansion of the existing RARS infrastructure.
- The concept of RARS in the different regions shall also encompass pre-operational and R&D satellites.



Topics of Interest to Plenary

I/3 Direct broadcast services (cont)

- Preliminary concepts/ideas from the different participants in WG-I:
 - Homogeneity of products (specially L2 and formats);
 - The use of OSCAR to capture the necessary information;
 - The idea of specializing agencies by instruments;
 - Use of same core software for the centralized global instrument data processing and the local processing of the regional data has proven to be successful and ensuring consistency of products (example Suomi NPP).
 - This requires the core software to be portable;
 - Better if defined and considered from the early programme development phases;
 - Should consider modern computer architectures (multi-core computers, cloud computing, etc) in order to optimise timeliness of product generation and secure future proofing
 - Timeliness oriented, including the use of clearly defined product granules for faster processing, distribution and exchange between stations and regions.
- It seems natural that each organisation is responsible for developing / releasing & supporting product processing packages for the instruments on their satellites (need for a release and change mechanism agreed at CGMS?);
- To consider the “minimum reqs” for S/W release and its associated documentation (including test data);



Topics of Interest to Plenary

I/3 Direct broadcast services (cont)

- Helpdesk for issues on product processors (who, how) during pre-ops and operational phases;
- **Open access to mission specific details** including Space to Ground ICD, Data Formats and Instrument Characteristics relevant or necessary **for RARS activities**(in english?);
- **Harmonisation** (where possible) **of Front-Ends characteristics** (G/T, polarisation, limiting range of alternative for modulation, FEC, etc) to achieve economical and multi-mission capable reception systems



Topics of Interest to Plenary

I/3 Direct broadcast services (final)

- **A Task Team is proposed to be organized and working by Inter-Sessional meetings to ensure progress before next CGMS meeting.**
- **WG-I agree in having dedicated bi-monthly Inter-Sessional e-meetings for the purpose of discussion and addressing topics in relation to LEO Direct Readout terminals, RARS like systems and services and associated standards** (where relevant in close coordination with WG-II and IV by regular exchange of info between chairs and rapporteurs).
- **Action xxx. CGMS members to nominate representatives in the Task Team to work on RARS related aspects.**
- **Due date before 1st IS meeting (mid October 2013)**



Topics of Interest to Plenary

I/4 International data collection and distribution

- It is proposed to further **analyze whether the remaining 11 International channels (I12-I22) could be reallocated to Regional use**, taking into account the future operational plans ;
- NOAA provided reports on interference from Ionospheric Scintillation from Solar activity into the DCS;
- **A possible re-convergence on the DCP platform specifications. A joint report to be prepared and presented to the next CGMS meeting.**
- It was agreed to have dedicated inter-sessional discussions to progress on the assessment of the potential transfer of these 11 international channels to the regional use and to discuss possible re-convergence on the DCP platform specification and the certification activities and experiences.
- WG-I agree in having dedicated bi-monthly Inter-Sessional e-meetings for the purpose of discussing this (and other WG-I topics). First IS meeting is aimed mid-November 2013



Topics of Interest to Plenary

I/4.2 Coordination and Global Standards: CGMS Global Spec 04

- **Based on WG-I action 40.13.** Round table for comments review to proposed update to CGMS Global Specification 04 (by end of Q1 2013 – same e-meeting as for action 40.12). **Deadline: 31.03.2013**
- **Status: Closed.** WG-I considers this action closed with the outcome of the inter-sessional meeting at end March 2013 (held together with WG-IV). In this meeting, the participants confirmed support to the proposed modifications to CGMS-04 (as contained in CGMS-40 EUM-WP-08). Addressed during CGMS-41 WG-I for final comments by the WG-I participants during this specific agenda topic and re-confirmed unanimously.
- **This is reported to plenary for final endorsement for applying the necessary change control mechanism to the update of the corresponding CGMS global spec (04).**



WGI contributions to the HLPP (con't)

- **Section 1.2, Coordination/Optimisation of data collection systems.**

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);

- *Considered well covered by the activities of the International Forum of Users of Satellite Telecommunication Systems and the participation of identified members of CGMS (e.g. WMO and EUMETSAT).*
- *It is proposed that WMO regularly reports to WG-I on the progress made by this International Forum in the areas of relevance to CGMS (WG-I).*

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 ocean observations (e.g. buoys);

- *Considered well covered by the different working papers provided by the different WG-I members (see specific and dedicated report by NOAA in CGMS-41-NOAA-WP-08 regarding specifically Argos and CGMS-41-NOAA-WP-08, CGMS-41-ROSHYDROMET-WP-03, CGMS-41-JMA-WP-08 and CGMS-41-EUMETSAT-WP-09 for the regional DCS systems and the related IDCS activities and proposal for future adaptations). Dedicated Inter-Sessional meetings are*



WGI contributions to the HLPP (con't)

- **Section 1.2, Coordination/Optimisation of data collection systems (cont)**

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

- *No specific WPs provided. Discussions by the WG-I on the identified gap confirmed the need to maintain this topic in the HLPP and the intention to address it by dedicated Inter-Sessional meetings to progress on these topics.*

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

- *Dedicated sections in specific WPs (i.e. CGMS-41-NOAA-WP-08 on solar activities related “interferences”). Discussions by the WG-I on this topic confirmed its relevance and the need to maintain it in the HLPP and the intention to address it by dedicated Inter-Sessional meetings to progress on these topics.*

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

- *No specific WPs provided. Discussions by the WG-I on the identified gap confirmed the need to maintain this topic in the HLPP and the intention to address it by dedicated Inter-Sessional meetings to progress on these topics.*

WGI contributions to the HLPP (con't)

- **Section 1.3 Radio Frequency (RF) Protection.**

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

- *Coordination in the positions is being achieved by the progress being made in the definition of the future systems (current systems are already designed and in most cases built and therefore no modifications can be expected).*

Investigate how to mitigate Earth Exploration Satellite Service (EESS) X-band congestion and coordinate interference assessments on a regular basis and as necessary Establish coordination mechanisms for sharing and using this band (both GEO and LEO systems and inter-agencies);

- *No specific WPs provided, the Inter-sessional meetings organized after CGMS-40 did not materialize as the necessary inputs were not ready at agency level for feeding the inter-sessional meeting and supporting the related discussions. It is considered a recurrent point to be maintained in the HLPP (or in the agenda of WG-I) but CGMS members need to ensure the availability of interference studies to support discussions. It is planned to continue addressing it by dedicated Inter-Sessional meetings to progress on these topics. In parallel, EUMETSAT and CMA have confirmed interference assessments results and minimum of interference at high latitude sites via SFCG dedicated reports on the topic (discussed at SFCG meeting in June*

WGI contributions to the HLPP (con't)

- **Section 1.3 Radio Frequency (RF) Protection.(cont)**

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

- *Considered well covered by the different working papers provided by the different WG-I members. This topic needs to be kept in the HLPP for securing adequate information flow inside CGMS on national and regional level preparatory activities (as well as the dedicated report from SFCG activities provided by CGMS Liaison representative in SFCG).*



WGI contributions to the HLPP (con't)

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

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

- *Considered well covered by the different working papers provided by the different WG-I members (see specific and dedicated presentations by NOAA in CGMS-41-NOAA-WP-13 and EUMETSAT in CGMS-41-EUM-WP-17(PPT) regarding RARS). Dedicated Inter-Sessional meetings are identified by WG-I to progress on these topics.*

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

- *Considered of full relevance to WG-I. Dedicated Inter-Sessional meetings are identified by WG-I to progress on these topics.*

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

- *Considered well covered by the different working papers provided by the different WG-I members (see specific and dedicated presentations by NOAA in CGMS-41-NOAA-WP-09 regarding affordable receiving stations). Dedicated Inter-Sessional meetings are identified by WG-I to progress on these topics.*



WGI contributions to the HLPP (con't)

Section 2 DATA DISSEMINATION, DIRECT READ OUT SERVICES AND CONTRIBUTION TO THE WIS (cont)

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

- *Considered of full relevance to WG-I. Dedicated Inter-Sessional meetings are identified by WG-I to progress on these topics.*