



Report of the 43<sup>rd</sup> Meeting of the  
Coordinated Group for Meteorological Satellites

## Parallel Working Group Sessions: WGIV Report



## WG IV REPORT

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Working Group IV (WGIV) on Global Data Dissemination convened on Monday 18 May 2015 at 08:30.

The Working Group held its session on Monday 18 May from 08.30-14:30. Jae-Dong Jang from KMA served as chair and Klaus-Peter Renner from EUMETSAT as rapporteur. Representatives of the following organisations attended the session: CMA, EUMETSAT, ISRO, JMA, KMA, NOAA, and WMO as members, and KARI as Observer (the list of participants is included in the Annex).

The agenda proposed by the CGMS Secretariat was adopted with the following modifications:

The working paper “CGMS-43-IMD-WP-01” was moved to the beginning, to allow the presenter to attend the parallel working group session. However in this report the paper is located under the planned agenda item.

### **WGIV/0            Objectives**

The objectives of the WGIV were postponed until Agenda item WGIV/2, where the updated **objectives were recalled**.

### **WGIV/1            Review of actions and recommendations from previous meetings**

Actions:

After CGMS-42 a total of 13 Actions were open, 4 could be closed during the meeting, 9 actions remain open.

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
CGMS Members	WGIV	A39.51	Action 39.51: All CGMS Members to propose using interoperability standards for providing and sharing of climate data records and report on their efforts at the next meeting of CGMS Deadline: CGMS-40	<p>EUMETSAT: No further developments since CGMS-39. EUMETSAT is prepared to revisit this following an input from other CGMS members. NOAA provided inputs which were circulated via the CGMS list server on 02/11/12. Other CGMS members to provide their input.</p> <p>CGMS-41 WGIV commented that a more standardised solution is needed. Further discussion could take place at the EUMETSAT-WCRP Symposium on climate research and Earth observation from space planned for October 2014 if not completed earlier.</p> <p>Feb '15: Outcome still pending.</p> <p><i>WGIV at CGMS-43 recommended to highlight this topic at plenary, in particular during the Climate session G. after consultation with John Bates (CEOS) who provided a presentation about data access, it is recommended to address this at the first inter-sessional meeting</i></p>	(CGMS-40, -42) <b>New deadline CGMS-44</b>	<b>OPEN</b>	HLPP#5.1.3

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
(CGMS satellite operators) <b>ROSH</b>	WGIV	A40.37	CGMS satellite operators to report about the implementation of the World Geodetic System (WGS84) and Earth Geodetic Model (EGM-96) geographical reference systems.	<p>EUMETSAT has updated the standard and reported that it will implement the new standard starting with the next generation of GEO satellites MTG.</p> <p>JMA has recently made up a new document for the format of "Himawari standard data" and it adopts WGS84 for the reference of geodetic parameters. The document has been available on the JMA/MSW Web site since 30 October 2013. <a href="http://www.data.jma.go.jp/mscweb/en/himawari89/space_segment/hsd_sample/HS_D_users_guide_en_v11.pdf">http://www.data.jma.go.jp/mscweb/en/himawari89/space_segment/hsd_sample/HS_D_users_guide_en_v11.pdf</a></p> <p>IMD is using WGS84 for Insat 3D as documented in the product guide "INSAT/DP/SAC/SIPA/DPSG/TN-02/Ver 1.3/Mar 10" (provided by IMD).</p> <p>KMA: COMS HRIT and LRIT data is based on CGMS LRIT/HRIT Global Specification (Issue 2.6, not WGS84). KMA does not plan to adopt WGS84 for the COMS data. For GK-2A which is the COMS follow-on, KMA will adopt WGS84 for HRIT, LRIT and UHRIT (all 16 channels data) disseminated by GK-2A to users. Documentation will be available in the near future.</p> <p>Other CGMS members (CMA) to report on the implementation.</p> <p>CGMS-42-ROSH-WP-02: Open. CGMS-43-JMA-WP-08 (Section 2)</p>	(CGMS-41, 42, -43) <b>New deadline CGMS-44</b>	<b>OPEN</b>	HLPP #3.2

				<p>NOAA May 2015: NOAA does not have plans to use WGS-84 for GOES-R, but will instead use GRS-80. See more information here:</p> <p>NOAA does not have plans to use WGS-84 for GOES-R, but will instead use GRS-80. See more information here: <a href="http://www.goes-r.gov/users/docs/PUG-main-vol1-verC.pdf">http://www.goes-r.gov/users/docs/PUG-main-vol1-verC.pdf</a></p> <p>&amp;NOAA does not have plans to use WGS-84 for GOES-R, but will instead use GRS-80. See more information here: <a href="http://www.goes-r.gov/products/docs/PUG-Vol-5A-vC.1-Interim.pdf">http://www.goes-r.gov/products/docs/PUG-Vol-5A-vC.1-Interim.pdf</a>. Current POES are using WGS-72. Suomi NPP and JPSS will use WGS-84.</p> <p>WGIV at CGMS-43: change actionee to Roshydromet.</p>			
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WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
ROSH	WGI V	A40. 38	ROSHYDROMET to report at CGMS-41 on the technical modalities for the near-real time provision of Meteor-M global data sets and associated ancillary information, as needed to fully contribute to the GOS.	<p>This action was previously WGII 40.29. Following the CGMS-40 debriefing on 9 November 2012 it was decided to allocate it to WGIV. A new satellite of Meteor-M series is to be launched in 2013. After the commissioning phase ROSH will review the technical modalities for the near real time provision of Meteor-M data and associated ancillary information.</p> <p>CGMS-42 ROSH-WP-02: A new Meteor-M satellite is to be launched in summer 2014. After the commissioning phase Roshydromet will review the technical modalities for the near-real time provision of Meteor-M data and associated ancillary information based on instrument operational functionality.</p> <p>Apr 2015: Meteor-M N2 is now operational. There are still calibration issues to be resolved for major instruments. Microwave sounder MTVZA-GY data simulation is now being supported by the RTTOV v11 package. Provision of global datasets could be discussed.</p> <p>ROSH were unable to attend CGMS-43 and the action was postponed to CGMS-44</p>	(CGMS-41, 42, -43) <b>New deadline CGMS-44</b>	<b>OPEN</b>	HLPP#2. 8

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
EUMETSAT	WGI V/2	A41.49	EUMETSAT to present the MTG dissemination baseline for RA-I (Africa).	CGMS-42: Definition is in progress but too premature to report upon. Jan 2015 IS#1 WGI/WGIV webex session: A study is under preparation bringing together the user community. Unlikely that results will be available for CGMS-43. Verbal status report to be provided. Output will serve as input to data dissemination baseline for Africa. WGIV at CGMS-43: verbal status by EUMETSAT: Study is in progress and the results will be provided at CGMS-44.	(CGMS-42, -43) <b>new deadline CGMS-44</b>	<b>OPEN</b>	HLPP# 2.2, #5.3
CGMS Members - CMA	WGI V/8	A41.56	Each CGMS member to review the GEO version of the Long Term Data Preservation Guidelines (GEO LTDP) and provide feedback on the applicability of each single guideline to its own organisation by creating a compatibility table for the organisation	CGMS-42-ROSH-WP-02: Still open CGMS-42-NOAA-WP-01: In general, NOAA is compliant with the GEO Long Term Preservation Guidelines (GEO LTDP) since these guidelines are based upon the Reference Model for an Open Archival Information System (OAIS-ISO 14721) and Producer Archive Interface Methodology Abstract Standard (PIAMAS-ISO 20652). Please see WP for full feedback. EUM: Michael Schick. WGIV at CGMS-43: further feedback expected by CMA only, change actionee to CMA, deadline Dec 2015	(CGMS-42, -43) <b>new deadline 31 Dec 2015</b>	<b>OPEN</b>	HLPP#5 .1

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
WMO	WGI V/8	A41.57	WMO to provide feedback from CCI (Commission for Climatology) regarding the GEO LTDP.	Jan 2015: CCI to still provide feedback. WMO to remind them.  WGIV at CGMS-43: a last reminder to be sent, topic for intersessional meeting, deadline Dec 2015, then closure with or without feedback	(CGMS-42, -43)  <b>new deadline 31 Dec 2015</b>	<b>OPEN</b>	HLPP#5.1
CGMS Members	WGI V/9	A41.58	CGMS members to provide feedback on the improved concept of the WMO Product Access Guide (PAG), in particular on the feasibility with respect to their organization's product catalogues	EUM: Input provided to WMO Space Programme mid 2014, EUMETSAT's product navigator URLs provided to the PAG. NOAA: CGMS-42-NOAA-WP-01 ROSH: CGMS-42-ROSH-WP-02: Still open  Other CGMS members to provide feedback.  Jan 2015: The Product Access Guide has been published. EUM: No comments in view of action A42.04 (Feb '15)  WGIV at CGMS-43: action is obsolete after publication of PAG, can be closed	(CGMS-42) <b>new deadline CGMS-43</b>	<b>CLOSED</b>	HLPP#5.3



WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
CGMS Members	WGI V/4.2	A42.01	<p>CGMS members producing ocean colour products to comment on the 2 recommendations given in CGMS-42-CEOS-WP-29:</p> <ul style="list-style-type: none"> <li>- to adopt netCDF4/CF for their ocean colour data;</li> <li>- to support large volume, batch data access and download (e.g., through established means such as ftp/http), as well as more targeted access through protocols such as REDDS/OpenDAP</li> </ul>	<p>KMA (KIOST) : - GOCI data is currently in HDF-EOS5. netCDF4/CF will be considered as a candidate for GOCI-II data format.</p> <p>- KIOST partially supports large volume data access and download through ftp. KIOST will consider positively to support more targeted access through protocols such as THREDDS/OpenDAP.</p> <p>NOAA 13 May 2015: a. Yes, our SNPP-VIIRS ocean color products will adopt netCDF4 format. In addition, we would like recommend additional formats of png, Geotiff and HDF4.1. b. To support large volumes, batch data access and download, we have established means such as ftp/http. We are planning to build the Thredds distribution server which has the following functionality: more targeted access through protocols such as OpenDAP, HDF, GRIB, BUFR, and NEXRAD.</p> <p>WGIV at CGMS-43: no further feedback expected, can be closed</p>	CGMS-43	<b>CLOSED</b>	HLPP# 2.5

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
CGMS Members	WGI V/6	A42.02	CGMS members to comment on the work done in the context of the EUMETSAT provided VIIRS Regional Service, and to provide feedback on the proposal to define a standardised compact product format, generalised to cover the advanced imagers of the current and planned polar orbiting satellites.	WGIV at CGMS-43: this is addressed in the RARS context and will be handled by WGI. Suggest to wait until a conclusion is reached in RARS before expanding to a wider context. Action to be closed and a new action created in WGI.	CGMS-43	<b>CLOSED</b>	HLPP# 2.7
CGMS Members	WGI V/7	A42.03	CGMS members to comment on the IGDDS vision, and to provide feedback to WMO (jlafeuille@wmo.int)	Reminder and text for commenting circulated to csr on 26 Feb 2015 by CGMSSEC. EUMETSAT feedback provided to WMO on 19 May 2015.  WGIV at CGMS-43: action is obsolete with CGMS-43-WMO-WP-09 on the "WMO Satellite Data Dissemination Strategy", can be closed	CGMS-43	<b>CLOSED</b>	HLPP# 2.8

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
CGMS Members	WGI V/9	A42.04	CGMS members to nominate focal points that would work with the WMO Secretariat in populating the PAG, initially for one year; such nomination could take into account current membership of the WMO Expert Team on Satellite Utilization and Products (ET-SUP). WMO: Stefan Bojinski sbojinski@wmo.int	ESA: Jean-Louis Fellous, jfellous@noos.fr EUM: Sally.Wannop@eumetsat.int JMA: Daisaku Uesawa,satellite@ml.kishou.go.jp KMA: Chu-Yong CHUNG cychung@kma.go.kr NOAA nominates Tony Mostek, anthony.mostek@noaa.gov ROSH: Dr. Sergey Uspensky, Head of Department, SRC "PLANETA" E-mail: uspenskys@planet.iitp.ru  WGIV at CGMS-43: this topic is a data content issue, rather than data access. Closed for WGIV. New action to be raised in WGII	15-Jul-14	<b>CLOSED</b>	HLPP# 5.3
CGMS Members	WGI V/9	A42.05	CGMS Members to provide detailed comments on the Reference User Readiness Project to WMO (sbojinski@wmo.int)	EUM: Input on MTG provided through the WMO ET-SUP. This is now referred to SATURN Satellite User Readiness Navigator, part of SATURN portal. <a href="https://www.wmo-sat.info/satellite-user-readiness/">https://www.wmo-sat.info/satellite-user-readiness/</a>  WGIV at CGMS-43: extend deadline to CGMS-44	(CGMS-43) <b>new deadline CGMS-44</b>	<b>OPEN</b>	HLPP# 5.3

WGIV status of actions on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
WGI and WGIV	Plen E.1.3 (wrt WGI and WGI V)	Plen A42.07	Following the revised scope of WGI and WGIV, the WGs to update the "Terms of Reference" of both WGs for endorsement by CGMS	<i>Note: This is a plenary action that needs to be treated in WGs I and IV.</i>  <i>ToRs agreed by WGIV at CGMS-43</i>	CGMS-43	<b>CLOSED</b>	-

WGIV status of recommendations on the occasion of CGMS-42							
Actionee	Action	#	Description	Action feedback/closing document	Deadline	Status	HLPP ref
CGMS space agencies	WGIV/7	R42.01	Satellite operators to provide WIS Discovery Metadata Records, compliant to WIS requirements and following the guidance to be provided by the CGMS-WMO Task Force on metadata implementation, in order to facilitate satellite information discovery and access	NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: <a href="http://www.ngdc.noaa.gov/metadata/">http://www.ngdc.noaa.gov/metadata/</a>  WGIV CGMS-43 discussions: Ongoing and routine activity. Recommendation maintained until CGMS-44	(CGMS-43)	<b>OPEN</b>	HLPP# 2.9

The final status of all CGMS-42 actions and recommendations (plenary and working groups) following CGMS-43 discussions is available [here](http://www.cgms-info.org/documents/CGMS-42_LoAandLoR_final.pdf) ([http://www.cgms-info.org/documents/CGMS-42\\_LoAandLoR\\_final.pdf](http://www.cgms-info.org/documents/CGMS-42_LoAandLoR_final.pdf)).



## **WGIV/2          Revised Terms of Reference of WGIV**

**CGMS-43-EUMETSAT-WP-02** EUMETSAT presented the updated Terms of Reference of WGIV from this paper which also contains the Terms of Reference for WGI.

CGMS Working Group IV on “Global Data Dissemination” was created in 2001. During the existence of the working group a considerable evolution in telecommunication systems and associated services took place, leading to an expansion of the scope in the working group. With the implementation of ATOVS Retransmission Services (RARS) and wider use of DVB dissemination services it became necessary to redefine the scope of WGIV with respect to WGI to avoid unnecessary overlaps in both groups.

The revised Terms of Reference were agreed by the group and recommended for endorsement by Plenary.

## **WGIV/3          WMO Satellite Data Dissemination Strategy**

**CGMS-43-WMO-WP-09** - WMO presented the WMO Satellite Dissemination Strategy.

Ensuring the operational access to, and use of, satellite data and products for a growing number of WMO Members in the coming decade is a major objective for both WMO and CGMS. In achieving this, we are faced with major technical challenges including the exponential growth of data rates for new satellites, the requirement for improved latency (e.g. for NWP) and the threat to radio frequency allocations for meteorological satellites. There are also strategic and organizational challenges including the digital divide between most and least advanced users, and the need to ensure interoperability and standardization of evolving systems, and their integration into WIS. At the same time, a number of opportunities are opened by the constant progress in information and communication technology (e.g. the Cloud).

Following earlier discussions at CGMS-42 and CBS-Ext.(2014), a medium-term Satellite Data Dissemination Strategy is proposed. This Strategy calls for active support of CGMS members in particular in the following areas:

- Enhancing data availability
  - Global Coverage of LEO Direct Broadcast Acquisition, Processing and Distribution Systems
  - Bilateral Exchange of Data and Products
  - Routine Availability of Data and Products from R&D Satellites
- Description and Registration of Satellite Data and Products
  - Making Satellite Data and Products Discoverable on the WIS
  - Standardized Data Formats
- Dissemination and user access
  - Standardized Direct Broadcast
  - Global Access to Data and Products on the Core WIS Network
  - Full Integration and Operation of DVB Broadcast Services
  - On-demand Access to Satellite Data and Products

In summary, IGDDS is now reformulated as a broad strategy, including

- A vision
- Strategic targets realizing the vision
- Strategic activity threads for the realization
- A concept for overseeing the strategy implementation

The working group took note of the presentation and emphasised the common elements of the WMO and CGMS strategy. Following the recommendation from the paper, an action was proposed by the working group:

CGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIV/3	A43.01	CGMS members to comment on “WMO Satellite Data Dissemination Strategy” (CGMS-43-WMO-WP-09)	CGMS-44	OPEN	HLPP # 2

#### **WGIV/4            Global DVB satellite services**

**CGMS-43-EUMETSAT-WP-15** EUMETSAT presented the EUMETCast Evolution consisting of the EUMETCast Satellite and EUMETCast Terrestrial elements.

A new EUMETCast Europe Service based on DVB-S2 became operational in August 2014. The old DVB-S service remained active until 31 December 2014, allowing the users to migrate in a seamless manner to the new system. On the new system a “Basic Service” provides continuity for the former DVB-S service, while the “High Volume Service” allows a factor 1.5 higher data rate for the same transponder resources, but requires larger reception antennas.

The data rates on EUMETCast Europe will significantly increase with Copernicus Sentinel 3A and 3B data, and later with MTG and EPS SG data, leading to a multi-transponder usage.

EUMETCast Africa and EUMETCast Americas are operated as a turn-around services, broadcasting a sub-sets of the data from EUMETCast Europe toward Africa and South America in C band using the DVB-S standard.

Significant data rate increases are expected for EUMETCast Africa in the context of Copernicus Sentinel 3 and MTG. This will eventually also fill up a full transponder and require an upgrade to the DVB-S2 standard. It is planned to extend EUMETCast Americas for one more year until end of 2016, and then terminate the service.

A pilot project has been established for distribution of a EUMETCast multicast stream over terrestrial research networks involving GÉANT and NRENs. A number of pilot users including EUMETSAT member states across Europe, NOAA and KMA participate in this project. The majority of the EUMETCast infrastructure (EUMETCast platform, registration, helpdesk, reception stations) can be shared or used in the EUMETCast Terrestrial system.

It is foreseen to start a Demonstration EUMETCast Terrestrial dissemination service in 2016, allowing subscription of eligible users via the standard EUMETCast user support management and the Earth Observation Portal

On request by WMO it was clarified that MTG does not have any Direct Broadcast capability, and EUMETCast will be used for data dissemination.

The working group took note.

**CGMS-43-IMD-WP-01** ISRO presented a paper on behalf of IMD concerning EUMETCast transmission over India.

EUMETCast transmission over India is limited to only the western part and data loss is reported from the reception station used by IMD. It is requested to analyse the possibility to extend the access to EUMETCast to the entire Indian region so that scientists and the operational agencies can make a better use of it in weather forecasting and research. IMD would be willing to provide Indian satellite data for this GEONETCast facility.

In response to the presentation EUMETSAT explained that an extension of the footprint to cover India is technically not possible, since a commercial telecommunication satellite provides the service. Instead, IMD was encouraged to consider using CMACast which covers the Indian region as a GEONETCast facility and it already provides a subset of EUMETCast data.

CMA confirmed that CMACast has good coverage over India.

The below action was made following the discussions.

CGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
EUM	(WGIII/2.) WGIV/4	A43.02	(Action transferred from WGIII) EUMETSAT to propose dissemination plan for data from Indian Ocean Data Coverage partners identified in CGMS-43-EUM-14 roadmap.	CGMS-44	OPEN	HLPP # 1.1.6

**CGMS-43-NOAA-WP-35** NOAA presented a report on the Status and Future Plans for GEONETCast Americas.

GEONETCast Americas (GNC-A) is a regional contribution to the global GEONETCast system. GNC-A serves much of North America, the Caribbean Basin and all of Central and South America. GEONETCast Americas has links with “global” GEONETCast regional environmental data dissemination systems.

NOAA has made several enhancements to the broadcast in coordination with our partners, participated in capacity building projects in the Americas region and has worked to re-vitalize the GNC-A Coordination Group. NOAA is working closely with regional partners to support the nine

GEOSS Societal Benefit Areas and to address the requirements of the Coordination Group on Satellite Data requirements for RA III AND RA IV where appropriate. Brazil's INPE intends to contribute to GNC-A by increasing the bandwidth available.

GNC-A supports capacity building through assisting the efforts of countries to add receive stations and develop national networks like those in Brazil, El Salvador, Costa Rica, Colombia and Mexico; collaboration with the WMO Virtual Laboratory for Training and Education in Satellite Meteorology (VLab) and promoting participation in the GEONETCast Americas Coordination Group. NOAA assisted WMO VLab organizers to plan a Train the Trainer event on April 25th and 26th 2015 which focused on GNC-A. On 09 November 2014, a first Hands-On "GEONETClass" was provided by INPE focusing on GeoTIFF manipulation. Another training session in the region was held in Mexico on 11 September 2014 dedicated to the use of GeoTIFF images in GNC-A.

The GNC-A Coordination Group has been re-vitalized to serve as a forum for regional Partners, Providers and Users to provide advice and coordinated input on the GEONETCast Americas data flow, including the identification of data and products, data acquisition, priorities, data utilization, system operation, and opportunities for capacity building.

WMO thanked NOAA for the efforts in taking up the questions from the user community, for the conversion of user stations, and encouraged all satellite operators to make further improvements for the users.

In general there is strong development in areas less covered by powerful data access methods, e.g. Africa, Central and South America. This results in increasing requirements for full resolution data leading to a growing need for diverse dissemination systems, Direct, DVB, terrestrial, etc. It is important to answer how all WMO members can benefit from the full meteorological satellite capabilities.

On the question as to why GNC-A is not considered fully operational, NOAA clarified that the service is not operationally monitored on a 24/7 basis, rather on a working day basis. However the achieved performance is close to 100% due to the high reliability of the system.

EUMETSAT commented that frequent discussions, in the form of user coordination groups in the regions, are recommended to make best use the limited dissemination capacities, or in other words to deliver the best package to the users.

#### **WGIV/5            Incorporation and dissemination of R&D and pre-operational mission data**

**CGMS-43-EUMETSAT-WP-16** EUMETSAT presented an overview of the EUMETSAT Third-Party Data Services transmitted on EUMETCast. The document is structured in two parts – an assessment of the Third-Party Data Services under consideration, and a summary of the status of currently on-going Third-Party Data Services, implementation activities, excluding those implemented at the request of Copernicus. The Third-Party Data Services include data from R&D satellites (NASA, ESA, CNES, China, JAXA, ISRO) and operational agencies (CMA, KMA, ROSHYDROMET).

The working group took note of the presentation.



**WGIV/6 Coordinated dissemination services for:****WGIV/6.1 Disaster mitigation purposes**

There was no specific presentation under this topic. As part of **CGMS-43-NOAA-WP-35** NOAA mentioned that GEONETCast Americas is an alternative dissemination method for the Disaster Charter.

CMA noted that satellite-based dissemination can become the only working data access method during disasters when ground infrastructure is destroyed, as recently experienced in the Himalaya.

**WGIV/6.2 Ocean user community**

No papers were presented under this item. The working group started a discussion on how to better address coordination needs for the ocean community and proposed to address this at the plenary meeting.

**WGIV/7 Global data exchange from next generation GEO satellites**

**CGMS-43-JMA-WP-08** JMA presented the Himawari-8/9 data distribution/dissemination plan.

The Japan Meteorological Agency (JMA) will distribute multi-band high frequency data with high-resolution from Himawari-8 via the HimawariCast service and the HimawariCloud service.

Dissemination of current MTSAT-2 imagery captured with 5 bands at 30/60-minute intervals began via the HimawariCast service on 29 January 2015.

Once Himawari-8 becomes operational, imagery from the satellite will be disseminated via the service with 14 out of 16 bands and 10-minute intervals. JMA launched the HimawariCloud service on 8 April 2015 with distribution of Himawari-8 in-orbit-test imagery. NMHSs in the Himawari-8/9 coverage area can access HimawariCloud and retrieve data using an HTTP 1.1 client such as a Web browser or Wget.

In response to specific questions by EUMETSAT and KMA, JMA explained that the MTSAT-1R direct broadcast will be terminated and the satellite deorbited in December 2015. JMA will start an operational HimawariCast and HimawariCloud service in July 2015 for Himawari-8 data. On HimawariCast there are no plans to extend the number of disseminated bands (from 14 to 16), due to limitations in the bandwidth.

**CGMS-43-KMA-WP-09** KMA presented the KMA Data Service Plan for GK-2A which is scheduled to be launched in May 2018.

The baseline data broadcast policy for GeoKOMPSAT-2A is to disseminate all 16 channels data of meteorological observations in Ultra HRIT (tentatively named as UHRIT) in X band and to maintain H/LRIT broadcast corresponding to COMS five channels in L band. GeoKOMPSAT-2A data will also be provided to users via landline service such as website, FTP etc.

In response to comments from WMO, KMA clarified that the rationale for keeping the L band transmission was to provide continuity for users who have recently procured L band stations. KMA also confirmed that the timeliness for all data is 3 – 5 min.

**CGMS-43-ROSHYDROMET-WP-05** EUMETSAT presented this paper on behalf of ROSHYDROMET who was not able to attend the meeting.

The document presents an overview of satellite data exchange mechanisms in Roshydromet, including participation in EUMETSAT Advanced Retransmission Service (EARS). The launch of the next geostationary satellite Electro-L N2 for IODC is currently scheduled for July 2015. After the commissioning phase, it is planned to provide EUMETSAT with the data converted to HRIT format for redistribution to national meteorological services and all interested parties.

The working group took note.

CGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
NOAA	(WGI/4) WGIV/7	A43.03	(Action transferred from WGI) NOAA to consider including GLM products in the HRIT stream	CGMS-44	OPEN	HLPP # 1.4.2

**WGIV/8            Development of coordinated approach for compression of data, incl. geographical location, from high-resolution imaging instruments**

No paper was presented under this item.

The working group recalled that the related open action A42.02 should be first addressed in WGI in the context of RARS.

**WGIV/9            Contribution to the WIS infrastructure incl. RMDCN**

EUMETSAT explained that the originally planned working paper **CGMS-43-EUMETSAT-WP-17** on “Analysis of satellite products exchanged on the GTS” was not yet in a state to be presented. More coordination is needed and the paper is now planned for CGMS-44.

**WGIV/10          Coordination of metadata for satellites and instruments**

**CGMS-43-EUMETSAT-WP-18** EUMETSAT presented the feedback on “GEO version of the Long Term Data Preservation Guidelines (GEO LTDP)” in this paper.

EUMETSAT as a member of the LTDP working group within the GSCB has previously reviewed and assessed the Long Term Data Preservation Guidelines. Common Guidelines for Earth Observation Space Data are essential for the future of collaborative ground segments and exchange of data, which is already actively taking place as part of climate initiatives. Common guidelines should be standardised and adopted to ensure a minimum level of adherence by the global players.

EUMETSAT fulfils the Level A guidelines and the majority of Level B ones. In general, inputs such as from CGMS members should be taken to adjust the adherence levels A, B and C and to find a decent common, minimum level of compliance that long term archives should be recommended to implement.

A certification for a given adherence level could potentially be interesting for EO long-term archives. The working group took note.

#### **WGIV/10.1 Task force on metadata**

**CGMS-43-EUMETSAT-WP-19** EUMETSAT presented the Progress Report and Outcomes from the TF on Metadata Implementation.

The CGMS-WMO Task Force on Metadata implementation was created after CGMS 42 to provide a consolidated view regarding the WMO Information System (WIS) discovery metadata definition for satellite data products, accelerate the adoption of WIS by satellite data providers and represent the satellite data users' point of view within the WIS.

The Task Force has started to work on two aspects of its mandate: the generation of guidance documentation to generate WIS discovery WMO Core Profile 1.3 metadata for satellite data products and a "WIS portal usability report" representing the view of satellite data users when using the WIS portals.

This document presents the work performed by the Task Force during year one, the progress made in the direction of fulfilling its mandate and the planned schedule for finalising its work. It describes in particular the information model for satellite data products created by the Task Force as a necessary preliminary work for generating the WIS metadata for satellite products guidance documentation. It also summarizes the recommendations of the WIS Portal Usability Report to help move the WIS infrastructure towards a state where it completely fulfils the satellite data user's community needs when using a meteorology product catalogue.

WMO thanked the task force for the job done and emphasized the importance of this task for WIS and also WIGOS. The job is not finished yet and formal feedback will be required.

WMO will support the work of TT-Metadata by ensuring the involvement and contribution of the related peer WMO Expert Teams including WIGOS.

The following actions and recommendation were raised:

<b>CGMS-43 actions – WGIV</b>						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIV/10.1	A43.04	CGMS members to provide comments on the Progress Report of Task Team on discovering Meta Data (CGMS-43-EUMETSAT-WP-19)	CGMS-44	OPEN	HLPP #2.8

CGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
EUM	(WGI/6) WGIV/10/1	A43.05	(Action transferred from WGI) CGMS Task Team on metadata to define discovery metadata for DBNET	CGMS-44	OPEN	HLPP # 1.4.5, 2.8

CGMS-43 recommendations – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS space agencies	WGIV/10	R43.01	Satellite operators to provide WIS Discovery Metadata Records, compliant to WIS requirements and following the guidance to be provided by the CGMS-WMO Task Force on metadata implementation, in order to facilitate satellite information discovery and access. NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: <a href="http://www.ngdc.noaa.gov/metadata/">http://www.ngdc.noaa.gov/metadata/</a> The recommendation will be kept following WGIV CGMS-43 discussions.	CGMS-44	OPEN	HLPP # 2.7

#### **WGIV/11 Data access portals, harmonisation between different portals**

No papers were presented. The working group raised an action to get feedback on the need for coordination of this agenda item:

WGIII IIIVCGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIV/11	A43.06	CGMS members to provide a listing of their data access portals.	CGMS-44	OPEN	HLPP # 2.7

#### **WGIV/12 User dialogue and interface**

##### **WGIV/12.1 Response to region-based requirements for satellite data access and exchange**

**CGMS-43-NOAA-WP-36** NOAA presented the “NOAA Response to Satellite Data User Requirements in WMO RAs III/IV”

A “Preparatory Meeting of the Coordination Group on Satellite Data Requirements for RAIII and RAIV” was held on April 8, 2013 prior to the NOAA Satellite Conference. In the meeting report, it was noted that the “Satellite Data Requirements Task Team” was originally formed in June of 2009 under the auspices of the Secretary General of WMO. All member states in RA III and IV were invited to



nominate representatives to the Coordination Group on Satellite Data Requirements. The initial spread-sheet detailing the requirements was completed in 2011.

The terms of reference for the Requirements Coordination Group contains the following task:

“The Group maintains an updated list of satellite data and products available to the Region through existing dissemination services. Data and products shall be classified by categories of variables and derived products.”

NOAA has been working with the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) and the Instituto Nacional de Pesquisas Espaciais (INPE) to detail the products on the requirements table that are available from the satellite providers. By the end of 2014, there were 395 products listed that covered 49 out of the 58 categories of data and products. Work continues to fill in the remaining gaps. A very successful and well-attended meeting of the Coordination Group on Satellite Data Requirements for RA III and RA IV was held at the April 2015 NOAA Satellite Conference.

**CGMS-43-WMO-WP-15** WMO presented the “Operational data requirements of the WMO Coordination Group on Satellite Data Requirements for Region III and IV (Americas)”.

The WMO Coordination Group on Satellite Data Requirements for RA III and IV has been formally recognized by the WMO Regional Associations III and IV and held its first formal session on 27-28 April 2015. The Group currently comprises 14 Members as well as NOAA and EUMETSAT in their capacity as satellite data providers.

The Satellite Data Requirements for Region III and IV currently comprises 396 entries spanning GEO and LEO-based level 1b/1.5 data and products such as winds, precipitation, lightning, and volcanic ash. The Group has prioritized its requirements and matched them with actual provisions from providers (NOAA, EUMETSAT, INPE).

The Group is concerned with the issues impeding coordinated and efficient, user-tailored satellite data distribution across the Region, particularly for near real-time services: diversity of satellite data distribution mechanisms over the Region (none of which meet all requirements), the diversity of technical and financial capacities among countries, issues with near real-time access, the need to prepare for using data from the next-generation GOES-R/S, and uncertainty with the timing of operational data availability from GOES-R/S.

The Group recognized the efforts by NOAA to assist the Region in the provision and distribution of satellite data, and appreciated the plans to replace the GOES East NOP imagery with an equivalent amount of GOES-R series imagery if GOES-R is placed at the GOES East position. The Group also appreciated the EUMETSAT-NOAA transition plan to reduce the risks of interruption of service for current EUMETCast-Americas users.

GEONETCast-Americas, although currently used by only a few NMSs, was identified as a potential data access option for many NMSs in the Region, either as a primary, cost-effective data access system, or as a back-up system to other techniques (see Action WG III 42.04).

The Group formed two task teams: (i) on assessing the status of data reception systems in the Region, and developing options for each member on the Group; and (ii) on identifying technical and application-specific training needs, with emphasis on transitioning to GOES-R.

The working group commented on both papers, which provided complementary information reports on the activities of the Coordination Group on Satellite Data Requirements in Region III (South America) and Region IV (North America, Central America and the Caribbean), in particular in view of the transition to GOES-R. Data access in the region is very diverse, no “one fits all” mechanism could be identified. Uncertainties in the GOES-R placement cause problems in terms of planning for data reception systems on the user side. An early availability of transition plans will help users in preparation for the transition to GOES-R. GNC-A could be used as risk reduction measure.

It was agreed to highlight these items at plenary.

#### **WGIV/11      Review and updating of the HLPP**

**CGMS-43-CGMS-WP-29** The CGMS Secretariat presented the status and an update proposal of the HLPP, relevant to WGIV.

After discussion the working group concluded that all of the HLPP items covered by WGIV are still considered relevant and important (none of them are obsolete or complete). No update with respect to WGIV was identified.

#### **WGIV/12      Any other business**

There were no items.

#### **WGIV/13      Planning of inter-sessional activities/meetings**

Three inter-sessional meetings are planned:

- 14 October 2015, 13:00 UTC  
WGIV intersessional meeting: topics are status of actions/recommendations and possible contribution to the WIGOS Space 2040 Workshop in November at WMO/Geneva
- 2 December 2015, 13:00 UTC  
WGIV intersessional meeting: topics are status of actions/recommendations and feedback from the WIGOS Space 2040 Workshop
- 24 February 2016, 13:00 UTC  
WGIV intersessional meeting: preparation for CGMS-44.

#### **WGIV/14      Review of actions/conclusions, preparation of WG report for plenary**

New actions and recommendations as included in the report were reviewed and accepted.

The co-chairs thanked the participants and the WGIV session was closed at 14:30 on Monday 18 May.

**Summary list of WGIV Actions:**

CGMS-43 actions – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIV/3	A43.01	CGMS members to comment on “WMO Satellite Data Dissemination Strategy” (CGMS-43-WMO-WP-09)	CGMS-44	OPEN	HLPP # 2
EUM	(WGIII/2.) WGIV/4	A43.02	(Action transferred from WGIII) EUMETSAT to propose dissemination plan for data from Indian Ocean Data Coverage partners identified in CGMS-43-EUM-14 roadmap.	CGMS-44	OPEN	HLPP # 1.1.6
NOAA	(WGI/4) WGIV/7	A43.03	(Action transferred from WGI) NOAA to consider including GLM products in the HRIT stream	CGMS-44	OPEN	HLPP # 1.4.2
CGMS members	WGIV/10.1	A43.04	CGMS members to provide comments on the Progress Report of Task Team on discovering Meta Data (CGMS-43-EUMETSAT-WP-19)	CGMS-44	OPEN	HLPP # 2.8
EUM	(WGI/6) WGIV/10.1	A43.05	(Action transferred from WGI) CGMS Task Team on metadata to define discovery metadata for DBNET	CGMS-44	OPEN	HLPP # 1.4.5, 2.8
CGMS members	WGIV/11	A43.06	CGMS members to provide a listing of their data access portals.	CGMS-44	OPEN	HLPP # 2.7

**Summary list of WGIV recommendations:**

CGMS-43 recommendations – WGIV						
Actionee	AGN item	#	Description	Deadline	Status	HLPP ref
CGMS space agencies	WGIV/10	R43.01	Satellite operators to provide WIS Discovery Metadata Records, compliant to WIS requirements and following the guidance to be provided by the CGMS-WMO Task Force on metadata implementation, in order to facilitate satellite information discovery and access. NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: <a href="http://www.ngdc.noaa.gov/metadata/">http://www.ngdc.noaa.gov/metadata/</a> The recommendation will be kept following WGIV CGMS-43 discussions.	CGMS-44	OPEN	HLPP # 2.7

The status of CGMS-43 actions and recommendations will be maintained on the [CGMS website](#) under MEETINGS and CGMS-43.

The final status of all CGMS-42 actions and recommendations (plenary and working groups) following CGMS-43 discussions is available [here](http://www.cgms-info.org/documents/CGMS-42_LoAandLoR_final.pdf) ([http://www.cgms-info.org/documents/CGMS-42\\_LoAandLoR\\_final.pdf](http://www.cgms-info.org/documents/CGMS-42_LoAandLoR_final.pdf)).



