



Report of the 41<sup>st</sup> Meeting of the  
Coordinated Group for Meteorological Satellites

## Parallel Working Group Sessions: WGIII Report

## WGIII REPORT

### Working Group III: Operational Continuity and Contingency Planning

#### WGIII/0 Introduction and objectives

The CGMS Working Group on Operational Continuity and Contingency Planning (WGIII) was convened on 8 July 2013 with Suzanne Hilding (NOAA) and Peng Zhang (CMA) as co-chairs and Jérôme Lafeuille (WMO) as rapporteur. The participants included representatives of CMA, CNSA, EUMETSAT, JMA, KARI, NOAA, ROSCOSMOS, WMO and the International Radio-occultation Working Group (IROWG) (the list of participants is available in the Annex).

The co-chairs recalled the main objectives of the meeting which were to:

- review the overall status of implementation of the space-based observing system, with a view to address potential gaps;
- advise on coordination and optimisation of plans;
- advance the contribution of CGMS to the architecture for climate monitoring from space; and
- initiate a CGMS effort to promote the socio-economic benefits of space missions.

#### WGIII/1 Review of actions and recommendations from previous meetings

##### Actions

38.40	WMO in collaboration with the atmospheric composition community and satellite experts to further refine the requirements for atmospheric composition requirements and the optimal way to address these in the revised baseline.	ON-GOING. It was agreed by the Joint Steering Committee of the Open Programme Area Group on Environmental Pollution and Atmospheric Chemistry (GAW JSC OPAG-EPAC) in March 2013 that the ad-hoc Task Team be established before the end of 2013.
40.02	WMO Secretary General to send a letter to CMA inviting them to consider redeploying the FY-3 to an early morning orbit and offering international support to reach this objective.	COMPLETED. An exchange of letters occurred between WMO SG and the PR of China. This was followed by a Tiger Team seminar in

		Beijing, and an important statement by the PR of China at the WMO Executive Council in May 2013.
40.03	WMO to convene a CGMS tiger team to coordinate the technical evaluation of the global and regional impact of flying a FY-3 satellite in early morning orbit, in order to support CMA in the assessment process.	COMPLETED. The Tiger Team involved seven NWP centres from Europe, Asia and the United States, and actively pursued its evaluation, as reported in WMO-WP-13
40.04	WGIII to establish a CGMS tiger team on assessing the impact and socio-economic benefits of satellite missions who would collaborate with e.g. the WMO CBS and other partners and would report at CGMS-41.	Finally CLOSED after discussion of item III/6, The Terms of Reference of this team were agreed by WGIII as reported under III/6. The nominations to the team will be done within a new action.
40.32	NOAA, in consultation with South America users and WMO, to investigate options for a follow-on to GOES-12 mission for South America, in order to develop a transition plan, involving GOES or other geostationary satellites, until the availability of the GOES next generation, which is expected to provide full coverage of both North and South America.	COMPLETED. NOAA-WP-20 reports that GOES-12 will have to be decommissioned in August 2013. A new action to review the GOES-East scanning schedule was agreed as reported under III/2.2.
40.33	EUMETSAT to report at CGMS-41 on its plans for Indian Ocean coverage beyond 2013.	COMPLETED. EUMETSAT-WP-15 reported that IODC is extended to the end of 2016.
40.34	All CGMS members to review and update their contribution to the mapping of CGMS mission plans against the CGMS baseline, and inform WMO accordingly. (5 December 2012)	CLOSED. Replaced by two new actions.
40.35	CGMS members to consider opportunities for partnership with NOAA on COSMIC-2 ground segment and DSCOVER follow-on mission and report to CGMS-41. (July 2013)	CLOSED. The context has changed and the action as it stands is no longer relevant.
40.36	CGMS satellite operators to inform the ICTSW via the WMO Secretariat (jlafeuille@wmo.int) on their needs for space weather data and warning products.	Action directed to the ad-hoc meeting on space weather.

Recommendations

40.35	R & D or operational satellite operators should consider the provision of some high-accuracy and stable reference instruments as anchors for operational instruments, in particular, for climate purposes.	ON-GOING. METOP-A/IASI is used by GSICS as the primary reference for IR sensor calibration. Excellent consistency is observed with AQUA/AIRS, SNPP/CrIS, and METOP-B/IASI. The proposed NASA CLARREO mission concept would provide SI traceability.
40.36	CGMS Satellite Operators to address the anticipated or potential gaps identified in the WMO Gap Analysis, in particular: <ul style="list-style-type: none"> <li>• infrared and microwave sounding on the early morning orbit,</li> <li>• hyperspectral sounding missing in some geostationary sectors,</li> <li>• long-term follow-on of radio-occultation constellation,</li> <li>• global precipitation measurement precipitation radar follow-on mission,</li> <li>• long-term Earth Radiation Budget monitoring</li> <li>• limb sounding for high-vertical resolution observations in the stratosphere and mesosphere (of temperature, humidity, wind, aerosol, ozone and other trace gases).</li> </ul>	ON-GOING. Was discussed at CGMS-41 WGIII
40.37	All CGMS members to provide updates on satellite programmes to be included in OSCAR, through their annual reports to CGMS and by other means as appropriate.	ON-GOING.
40.38	CGMS satellite operators to support NWP centres to perform Observing System Experiments (OSEs) on the regional impact of a potential gap of sounding from the early morning orbit.	ON-GOING. Tiger Team activities have been very effective.
40.39	CGMS members to support CMA in further investigations of the benefit and technical consequences of potential move of a mid morning mission to an early morning mission.	ON-GOING. Tiger Team activities have been pretty effective. See WMO-WP-13

40.40	CGMS members, through WGIII, to evaluate the CGMS baseline in the light of the architecture strategy with a view to populate the space segment part of the initial physical view of the architecture and identify gaps and scenarios to address them.	ON-GOING. Addressed under III/4,
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## WGIII/2 Status of implementation of the baseline

### WGIII/2.1 Updated mapping of actual/planned missions against the baseline

In order to play its role in monitoring possible risks or continuity issues, as foreseen by the High-level Priority Plan (HLPP), it is essential for WGIII to maintain a comparison between the nominal plans and the current or actually planned missions. For this purpose, the CGMS and WMO Secretariats had circulated a draft mapping of the planned missions against the CGMS baseline but little response was received. This tentative mapping will be further updated by WMO with the reports from satellite operators to CGMS. The updated mapping will be sent to CGMS members for review, in advance of the first WGIII inter-sessional meeting.

The following actions and recommendations were taken:

CGMS-41 actions – WGIII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
WMO	WGIII/2.1	41.33	WMO to circulate an updated mapping of CGMS members' missions to the CGMS baseline for operational/sustained missions, for review by CGMS members (31 August 2013).	31-Aug-13	OPEN	HLPP #1.1.1
CGMS space agencies	WGIII/2.1	41.34	All CGMS members to provide feedback on the updated mapping of satellite plans with the CGMS baseline (30 September 2013).	30-Sep-13	OPEN	HLPP #1.1.1

CGMS-41 recommendations – WGIII						
"Actionee"	Action	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIII/2.1	41.13 (Ref WGIII R40.35)	CGMS members to consider opportunities for partnership with NOAA on COSMIC-2 ground segment and DSCOVR follow-on mission and report to CGMS-41. WGIII discussions at CGMS-41: Ongoing. Metop-IASI is used by GSICS as the primary reference for IR sensor calibration. Excellent consistency is observed with AQUA/AIRS, SNPP/CrIS, and Metop-B/IASI. The proposed NASA CLARREO mission concept would provide SI traceability.	CGMS-42	OPEN	HLPP#1.1
CGMS satellite operators	WGIII/2.1 R	41.14 (Ref. WGIII R40.36)	CGMS Satellite Operators to address the anticipated or potential gaps identified in the WMO Gap Analysis, in particular: <ul style="list-style-type: none"> <li>• infrared and microwave sounding on the early morning orbit,</li> <li>• hyperspectral sounding missing in some geostationary sectors,</li> <li>• long-term follow-on of radio-occultation constellation,</li> <li>• global precipitation measurement precipitation radar follow-on mission,</li> <li>• long-term Earth Radiation Budget monitoring</li> <li>• limb sounding for high-vertical resolution observations in</li> </ul>	CGMS-42	OPEN	HLPP#1.1

			the stratosphere and mesosphere (of temperature, humidity, wind, aerosol, ozone and other trace gases).			
CGMS members	WGIII/2.1 R	41.15 (Ref. WGIII R40.37)	All CGMS members to provide updates on satellite programmes to be included in OSCAR, through their annual reports to CGMS and by other means as appropriate.	CGMS-42	OPEN	HLPP#1.1

## WGIII/2.2 Continuity issues and risk analysis

**WMO-WP-14** reported that, based on earlier outcomes of CGMS plenary sessions and WMO CBS, the WMO Executive Council adopted a Resolution on “Avoiding gaps in Essential Space-based Observations” inviting the CGMS to monitor the plans and coordinate efforts, in view of the risks of gaps in the following missions:

- early morning orbit imagery and sounding
- afternoon orbit continuity between SNPP and JPSS-1
- geostationary coverage of South America
- geostationary hyperspectral sounding
- operational follow-on of the R&D GPM mission
- Earth Radiation Budget measurement
- limb sounding observations of atmospheric composition
- space weather

The preliminary gap analysis presented by WMO emphasised the first three issues (early morning and afternoon orbits, geostationary coverage), which are related to core components of the meteorological constellations. In addition, it highlighted risks recently arisen on the funding of the US contribution to the COSMIC-2 radio-occultation programme, a joint undertaking of the United States and NSPO of Taiwan, China. WGIII discussed the risks affecting these missions and agreed related actions.

### *Radio-occultation:*

The International Radio-occultation Working Group (IROWG) representative explained that the COSMIC-2 programme included two components: An equatorial constellation of 6 low-inclination (24°) satellites to be launched in 2015/2016, and a polar constellation of 6 high-inclination (72°) satellites to be launched nominally in 2018. The current funding uncertainties are putting at risk this latter component, which would dramatically reduce the number of occultations per day, and bias the observations towards the lower latitudes. This would have a major impact on the global observation system since COSMIC-2 alone is expected to represent about 80% of the future global radio-occultation capability.

Following WGIII discussions, EUMETSAT informed the WG co-chairs that in response to discussions which took place at CGMS-40, EUMETSAT has planned to start a study in 2014 on optimisation of RO constellations in the future, considering missions planned to fly on different orbital planes. This study will be closely coordinated with the IROWG. EUMETSAT will be pleased to report on progress at CGMS-42.

Following the discussions, the following actions were agreed:

CGMS-41 actions - WGIII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
IROWG	WGIII/2.2	41.35	IROWG to update its assessment of the planned availability of radio-occultation data taking into account the risks on the funding of the US part of the COSMIC-2 polar constellation, and to report at the IROWG workshop to be held in Graz, Austria on 5-11 September 2013. (September 2013)	15-Sep-13	OPEN	HLPP #1.1.4
EUM	WGIII/2.2	41.36	EUMETSAT to report on its study on RO constellation optimisation at CGMS-42.	CGMS-42	OPEN	HLPP #1.1.4
WMO	WGIII/2.2	41.37	WMO to send a letter to the United States (appropriate authority t.b.d.) recalling the demonstrated impact of radio-occultation observations on NWP and their use in climate monitoring and space weather, highlighting the major role expected to be played by the COSMIC-2 programme in the global observing system, and stressing the concerns of the global community about the risks on the funding of the US contribution, which would dramatically affect the implementation of this programme. (Mid October 2013)	15-Oct-13	OPEN	HLPP #1.1.4

*Geostationary constellation:*

**EUM-WP-15** informed WGIII that EUMETSAT had agreed to extend the Indian Ocean coverage on a best-effort basis until the end of life of Meteosat-7, expected to occur around the end of 2016. Different options are being considered for the deployment of the MSG satellites and there is no guarantee that EUMETSAT would have a spare capacity for Indian Ocean coverage with an MSG satellite. However, EUMETSAT is willing to collaborate with other regional satellite operators including ISRO, ROSHYDROMET and CMA to investigate a medium-term strategy ensuring coverage of the Indian Ocean region with advanced geostationary imagery. The following action was agreed as a consequence:

CGMS-41 actions – WGIII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
EUM	WGIII/2.2	41.38	EUMETSAT to initiate the dialogue with ISRO, ROSHYDROMET, CMA, and other interested partners to investigate a medium-term strategy for ensuring coverage of the Indian Ocean coverage with advanced geostationary imagery. (15 January 2014)	15-Jan-14	OPEN	HLPP #

Roscosmos/Roshydromet indicated that the implementation of the Electro-L programme had been reviewed in line with CGMS-40 WGIII discussions, with the objective to secure geostationary observations at 76°E as the primary position under responsibility of the Russian Federation. WGIII expressed its appreciation to Roscosmos/Roshydromet for this global coordination effort.

The future plans for Indian Ocean coverage should be monitored and discussed by WGIII in inter-sessional meetings and at CGMS-42.

As regards South America coverage, **NOAA-WP-20** reported that GOES-12, which has largely exceeded its end of life, had to be decommissioned mid August 2013 for safety reasons. The user community was informed of this

process during the April 2013 NOAA Satellite Conference. As a mitigation action for South America users, NOAA is studying the feasibility of optimising the GOES-East scan schedule in order to preserve a sufficient refresh cycle of South America imagery even in case of North America rapid scan in severe weather conditions.

In view of this, NOAA agreed to the following action:

<b>CGMS-41 actions – WGIII</b>						
<b>Actionee</b>	<b>Action</b>	<b>#</b>	<b>Description</b>	<b>Deadline</b>	<b>Status</b>	<b>HLPP ref</b>
NOAA	WGIII/2.2	41.39	NOAA to provide update on the study to optimise the GOES-E scanning mode with a view to ensure a sufficient number of South America scans during North America rapid scan periods.	15-Jan-13	<b>OPEN</b>	HLPP #1.1.6

*Afternoon orbit transition:*

As concerns the transition from SNPP to JPSS, NOAA indicated that the JPSS programme schedule was unchanged. WGIII agreed that this critical transition should continue to be monitored at future meetings.

**WGIII/3 Tiger Team on LEO optimisation**

**WMO-WP-13** reported on the outcome of the Tiger team convened by WMO, in response to CGMS-40 Action 40.03, in order to support CMA in the assessment process of the potential redeployment of a FY-3 satellite in early morning orbit. Seven NWP centres (ECMWF, Met Office, DWD, JMA, KMA, CMA/NWPC and JCSDA) conducted and shared the results of Observing System Experiments to assess the impact of optimised polar-orbit observations on global and regional NWP. These results were discussed at a Tiger Team seminar hosted by CMA in April 2013. There is a consensus among international experts to acknowledge that a satellite mission in an early morning orbit (around 6:00 Equatorial Crossing Time) would bring significant benefits through improved accuracy of weather forecast, thanks to the optimum temporal distribution of sounding radiances assimilated into NWP models. Further benefits are expected from the direct use of imagery and derived products in a number of applications including tropical cyclone monitoring, fog and fire detection, air quality monitoring, climate monitoring, and solar monitoring for space weather. Moreover, early morning/late afternoon satellite observations are well timed to support the daily operational briefings held by weather services (e.g. 8:00/20:00 local time). With the FY-3 programme, China could provide one of the three main components of the global constellation besides Europe and the USA. Additional missions would complement this backbone constellation, contributing to the overall operational robustness of the observing system.

The Tiger Team had recommended to:



- CMA to implement a FY-3 mission in an early morning orbit, with the appropriate platform and payload adaptations, and to sustain such mission in the long term.
- WMO and CGMS to support trade-off studies (including e.g. OSSEs) as necessary in the course of the development phase of the FY-3 early morning mission;
- CMA and international partners to pursue strong international collaboration on data assimilation in order, as soon as possible, to maximise the benefits of future (early morning) and current FY-3 missions;
- CMA with the international community to further prepare to exploit the benefit of the early morning orbit polar satellite monitoring payload for space weather, climate monitoring, air quality and disaster monitoring;
- WMO and CGMS to promote the use of FY-3 early morning data, contributing to a robust and efficient Global Observing System, taking advantage of the Asia-Oceania Meteorological Satellite Users Conference.

Following this Tiger Team seminar, the PR of China informed the WMO Executive Council that CMA was exploring the procedures related to the adjustment of China's Meteorological Satellite Development Plan for the period from 2011 to 2020 in order to include a series of FY-3 early-morning orbit satellites, which will contribute significantly to improvement of Earth observation and regional and global numerical weather predictions. The Council applauded this statement, considering that such a decision by China would be a major accomplishment for the space-based global observing system.

WGIII noted that EUMETSAT had formally reaffirmed its commitment to ensuring access to and use of mid-morning satellite data and products by CMA.

In **CMA-WP-09**, CMA presented the progress of technical studies performed by CMA and CNSA for the adaptation of an FY-3 satellite to a 6:00 ECT early morning orbit. The earliest possibility would be to reconfigure FY-3E, currently planned for launch in 2016 on an A.M. orbit. Whilst there was no major issue for the platform, the payload definition would be reviewed. The priority payload configuration for the FY-3 early morning orbit tentatively includes a low-light level imager, microwave temperature and humidity sounders (MWTS, MWHS), a dual band scatterometer (WindRAD), infrared spectrometer (HIRAS), a radio-occultation receiver (GNOS) and a Space Environment Suite. The day-night imager would be a new sensor, the specifications of which should be defined by the end of 2013. CMA is calling upon international collaboration at various levels to facilitate such a challenging programme redefinition: Support to trade-off studies through e.g. OSSEs in the course of the development phase, stronger collaboration on data assimilation in order to maximise the benefits of future (early morning)

and current FY-3 missions, support on other applications such as space weather, climate monitoring, air quality and disaster monitoring.

WGIII commended CMA for actively pursuing this programme redefinition and the following actions and recommendations were agreed as a result of the discussions:

CGMS-41 actions – WGIII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
WMO	WGIII/3	41.40	WMO Secretary-General to send a letter to the PR of China to commend CMA on progress made, report on the outcome of CGMS-41 discussions on FY-3 redeployment, and confirm the strong support of the international community on this endeavour.	15-Sep-13	OPEN	HLPP #1.1.1
NOAA	WGIII/3	41.41	NOAA to provide a report on the benefit of Day-Night imagery (e.g. as experience with SNPP/VIIRS) at CGMS-42 in order to assist CMA in refining its requirements for an imager for the early morning orbit mission.	CGMS-42	OPEN	HLPP #1.1.1

CGMS-41 recommendations – WGIII						
“Actionee”	Action	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIII/3 R	41.16 (Ref. R40.38)	CGMS satellite operators to support NWP centres to perform Observing System Experiments (OSEs) on the regional impact of a potential gap of sounding from the early morning orbit.	CGMS-42	OPEN	HLPP#1.1
CGMS members	WGIII/3 R	41.17 (Ref. R40.39)	CGMS members to support CMA in further investigations of the benefit and technical consequences of potential move of a mid morning mission to an early morning mission.	CGMS-42	OPEN	HLPP#1.1

#### WGIII/4 Architecture for Climate Monitoring From Space

In response to WGIII Action 40.07, **EUM-WP-04** presented the draft Terms of Reference of a Joint CEOS-CGMS working group on climate that would combine the contributions of CEOS and CGMS to the development of the climate monitoring architecture. WGIII supported the principle of this joint entity and the proposed description of tasks. WMO strongly supported the proposed establishment of the joint group and recalled that the WMO Executive Council (EC-65) had highlighted the role that the WMO Space Programme should continue to play in facilitating the future development of the physical and operational structure; to promote the synergy and integration between in-situ and space-based observing systems for validating the space observations and products; and to ensure the engagement of the broader user communities for utilising the deliverables and realising the benefits of the Architecture.

In an advanced presentation of **NOAA-WP-04**, NOAA summarised the status and way forward for the development of the architecture for climate monitoring from space, which CGMS has agreed to contribute to as part of its HLPP (Section 5.1). Since CGMS-40, the report on the strategy for the architecture has been published, the first results of the ECV Product Inventory have been analysed, and a Climate and Space week was organised in Geneva in February 2013 with in particular a joint meeting of the CEOS-CGMS-WMO

architecture definition team and of the CEOS Working group on Climate. Several actions were discussed: Consistency check of the ECV Product Inventory; mapping of the CGMS baseline with the ECVs; user requirements analysis on case studies; and the merging of CEOS and CGMS efforts in a joint structure for the climate architecture.

**WMO-WP-15** presented a tentative mapping of the current contents of the ECV product Inventory against the CGMS baseline as foreseen in the HLPP. This illustrates that most of the registered ECV products with a known satellite source are based on mission types listed in the CGMS baseline. In particular 105 of these products are based on FCDRs from core operational missions of the CGMS baseline, or precursors of such missions: Geostationary imagery, polar-orbiting VIS/IR and MW imagery, polar-orbiting IR and MW sounding. Since these missions will be sustained, they have the potential to support long-term climate data sets and products in the future.

Comparing the CGMS baseline with the ECV product inventory led to the following comments for the development of the climate monitoring architecture:

- FCDRs are important deliverables that should be documented as such in the inventory, since some FCDRs, e.g. radiances, support several TCDRs or are used directly in climate models without being processed into TCDRs;
- Moreover, there is a better visibility on future FCDRs than TCDRs. As a matter of fact, the ECV product inventory contains few entries related to future capabilities and the development of an architecture requires a forward-looking approach;
- Thanks to the prospective nature of the CGMS baseline, and subject to a slightly more precise characterisation of the missions, CGMS could, on this basis, commit on the long-term provision of FCDRs, which would be a tangible step in the development of the architecture; and
- As technology progresses and instrument designs evolve, high attention shall be paid to the compatibility with the FCDRs of relevant heritage instruments.

WGIII considered that the architecture will benefit from GSICS activities to support the generation of FCDRs for instruments in its field of expertise. As concerns TCDRs, it expected that the WGII would play a role e.g. in promoting product intercomparisons with the contribution of science groups (e.g. with IWWG for wind vectors, or IPWG for precipitation estimates).

These findings should be reported to the plenary. The following actions were agreed:

CGMS-41 actions - WGII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
WMO	WGIII/4	41.42	WGIII (actionee TBD) to review the categorisation of missions in the CGMS baseline and refine it as appropriate in order to support a high-level mapping with FCDRs.	15-Dec-13	OPEN	HLPP #5.1.2
WGIII members	WGIII/4	41.43	WGIII (actionee TBD) to define a first list of FCDRs that CGMS members can commit to provide on a sustained basis as a contribution to the architecture for climate monitoring from space, building on the CGMS baseline, and to communicate this contribution to the future CEOS-CGMS working group on climate.	15-Feb-14	OPEN	HLPP #5.1.6

It was also recommended to extend the ECV product inventory to FCDRs and the design phase of new sensors should include an analysis of compatibility with heritage instruments.

CGMS-41 recommendations - WGIII						
"Actionee"	Action	#	Description	Deadline	Status	HLPP ref
CGMS members	WGIII/4 R	41.18 (Ref. R40.40)	CGMS members, through WGIII, to evaluate the CGMS baseline in the light of the climate architecture strategy with a view to populate the space segment part of the initial physical view of the architecture and identify gaps and scenarios to address them.	CGMS-42	OPEN	HLPP#5.1

### WGIII/5 Integration of R&D missions (RTO)

No WP was presented under this agenda item, but this topic being part of the HLPP should be kept on the regular agenda of WGIII. NOAA volunteered the following action:

CGMS-41 actions – WGIII						
Actionee	Action	#	Description	Deadline	Status	HLPP ref
NOAA	WGIII/4	41.44	NOAA to report at CGMS-42 on its activities towards transitioning mature R&D missions to an operational status.	CGMS-42	OPEN	HLPP #1.1.3

### WGIII/6 Socio-economic benefits

Responding to WGIII Action 40.04, **NOAA-WP-29** proposed the terms of reference and suggestions for the membership of a Tiger Team on assessing the impact and socio-economic benefits of space missions. The purpose would be i) to develop a credible methodology and common terminology for articulating the socio-economic benefit of satellite observing systems, and ii) to explore most effective ways to communicate this information to desired stakeholders.

WGIII endorsed the proposed scope and list of tasks of this new team and recommended to ensure broad participation and an immediate start of activities. Roshydromet and CMA agreed to join the team, and WMO designated L. P. Riishojgaard to link the Tiger Team effort with related CBS activities. During the discussion, it was recognised that assessing socio-

economic benefits of satellite missions is not an easy task and should involve experts external from space agencies. An important and immediate starting point of such an activity should be to share among CGMS members existing studies on the matter.

The following actions were agreed.

<b>CGMS-41 actions – WGIII</b>						
<b>Actionee</b>	<b>Action</b>	<b>#</b>	<b>Description</b>	<b>Deadline</b>	<b>Status</b>	<b>HLPP ref</b>
CGMS members	WGIII/6	41.45	CGMS members to nominate participants in the Tiger Team on socio-economic benefits of space missions.	15-Sep-13	<b>OPEN</b>	HLPP #4.1.1
NOAA	WGIII/6	41.46	NOAA, as the initiator of the Tiger Team on socio-economic benefits, to request inputs from all CGMS members on available socio-economic benefit studies and case studies in order to allow the Tiger Team to compile the existing information as soon as members are nominated.	15-Sep-13	<b>OPEN</b>	HLPP #4.1.1
NOAA/CMA/WMO	WGIII/6	41.47	WGIII co-chairs to plan addressing the Tiger Team on Socio-economic Benefits actions at the first WGIII intersession meeting.	09-Oct-13	<b>OPEN</b>	HLPP #4.1.1

Action WGIII 40.04, being superseded by these new actions, was then closed.

#### **WGIII/7 Any other business**

No other business was discussed.

#### **WGIII/8 Future intersessional meetings**

Three inter-sessional web meetings were planned, with the following topics to be discussed:

*9 October 2013:*

- Updated mapping of the agencies' plans to the CGMS baseline
- Status of the letter to CMA on the progress of the LEO Tiger Team
- Status of the letter to the USA on US funding situation for COSMIC-2
- Outcome of the IROWG workshop on assessment of RO constellation
- Implementation of the Tiger Team on Socio-economic benefits

*15 January 2014:*

- Update on Indian Ocean coverage strategy
- Update on GOES-East scan mode optimization
- Update on SNPP-JPSS transition and COSMIC-2 funding
- Mapping of the current/future constellations to the climate architecture model

2 April 2014:

- Status of EUMETSAT/CMA dialogue and FY-3 data assimilation
- Preparation of CGMS-42

### **WGIII/9      Review of actions and contributions to the HLPP**

WGIII reviewed Sections 1.1 (Coordination of observing systems) and 5.1 (Advancing the architecture for climate monitoring from space) of the HLPP and confirmed its relevance. All the actions of Section 1.1 have been addressed with the exception of *“Identifying partnership opportunities on space and ground segments and establish CGMS coordinated mechanisms for hosted payloads, e.g. for solar wind monitoring”*. All the actions of Section 5.1 within the scope of WGIII have been addressed, noting that other actions of Section 5.1 are more relevant to WGII (e.g. GSICS and SCOPE-CM, long-term dataset analysis, decadal ECV product priorities) or to WGIV (integrated access to CDRs, long-term data preservation). In addition, WGIII addressed Section 4.1 of the HLPP (4.1 Impact and benefit of EO satellite missions).

The full list of WGIII actions and recommendations is available [here](#).

The co-chairs thanked the participants and closed the meeting at 14:30.



