Plenary actions open from previous plenary sessions (at CGMS-47)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMSSEC	E.6	A46.21	CGMS Secretariat to organise a special plenary session or a side event on operational oceanography at CGMS-47 to help advance the operational nature of ocean observation. (Ref. CGMS-46-NOAA-WP-11, CGMS-46-IOC-UNESCO-WP-02)	CGMS-47: Deferred to CGMS-48 in view of the WMO constituent body reform. The CGMS Secretariat will include this session at CGMS-48 taking into account the proposal in CGMS-47 IOC-UNESCO-WP-01: - Receive annual briefing on the UN Decade of Ocean Science for Sustainable Development - Sustain satellite and in situ system of ocean observing systems - Utilize geostationary meteorological satellites for ocean observations - Enhance data acquisition for special observing periods - Add CGMS-relevant ocean measurements to tsunami watch infrastructure - Add HAB toxic aerosols to coastal air pollution forecasts (in addition to WMO-IOC coordination following the WMO constituent body reform)	CGMS-48 (CGMS-47)	**OPEN**	
WMO	H	A46.11	**On ocean variables:** In view of the anticipated reorganisation of JCOMM, WMO to provide a report with proposals on future coordination/cooperation between JCOMM and CGMS.	*CGMS-47: In view of the WMO constituent body reform, the action is deferred to CGMS-48.* CGMSSEC IS#3, 13 Mar 2019: CGMSSEC has discussed	CGMS-48 (CGMS-47)	**OPEN**	
CGMS-47plenary actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WMO	3.1.2	A47.01	**On WIGOS Vision 2040:** WMO to report to CGMS-48 on activities undertaken to respond to the new WIGOS Vision 2040		CGMS-48	**OPEN**	

WMO	3.2.5	A47.02	**On global NWP:** WMO to provide a report at next CGMS on baseline requirements for satellite products for global NWP, to trigger a CGMS discussion on status of delivery of such observations and possible improvements in the future and inclusion in the CGMS baseline document.		CGMS-48	**OPEN**	
NOAA, WMO	3.2	A47.03	**On PP sector engagement:** WMO and NOAA to report on the status of affairs and related issues on public private sector engagement to CGMS-48		CGMS-48	**OPEN**	
WMO, IOC-UNESCO	3.3	A47.04	**On operational oceanography:** WMO and IOC-UNESCO to report on their coordination following the WMO constituent body reform to CGMS-48		CGMS-48	**OPEN**	
IOC-UNESCO	3.3	A47.05	**On operational oceanography:** IOC-UNESCO to provide to GCMS-48 guidance on satellite data requirement for improved coastal ocean prediction and services		CGMS-48	**OPEN**	
CGMS members	5.1	A47.06	CGMS members to propose a WGI co-chair by Q2 2019		Jun 2019	**OPEN**	
CGMS members	5.2	A47.07	CGMS agencies to analyse if existing cloud service activities can serve as a demonstration project, exploring at least two of the WMO Information Systems (WIS 2.0) principles. (Initially discussed in WGIV/8)		Dec 2019	**OPEN**	3.7
CGMSSEC, CMA	5.5	A47.08	**Hyperspectral sounding:** CGMSSEC together with CMA to organise a thematic session at CGMS-48 on hyperspectral sounding observations		CGMS-48	**OPEN**	
NOAA, CMA	5.5	A47.09	NOAA and CMA to report on the flood mapping project		CGMS-48		
CGMSSEC	7	A47.10	**Arctic observations:** CGMSSEC to secure the inclusion of Arctic observations on the plenary and working group agendas for future CGMS plenary sessions		CGMS-48	**OPEN**	

CGMS members	7	A47.11	**Arctic observations:** Provide product priorities for Arctic observations for a special Arctic session in WG II during CGMS-48		CGMS-48	**OPEN**	
WMO	8.2	A47.12	**Climate session:** WMO to present implications of the WMO constituent body reform to the interface between CGMS and the requirements/GCOS at CGMS-48.		CGMS-48	**OPEN**	
CGMS members	8.2	A47.13	**Climate session:** CGMS members are invited to provide application case studies that use climate data record to support training		CGMS-48	**OPEN**	
SCOPE-CM	8.2	A47.14	SCOPE-CM to provide implementation plan based on the agreed new concept				
WGClimate	8.3	A47.15	**Climate/GHG session:** WGClimate to present the roadmap for the implementation of the recommendations from the GHG monitoring constellation white paper (including resource implications)		31 Oct 2019	**OPEN**	
CGMS agencies	8.3	A47.16	CGMS agency response on possible resource allocation		CGMS-48	**OPEN**	
CGMS members	9.1	A47.17	**On training and education:** CGMS members active in VLab to propose the next Co-Chair to represent CGMS satellite operators in the VLab (starting October 2020). Nominations to be presented to VLab by December 2019.		Dec 2019	**OPEN**	

CGMS-47 Plenary recommendations					
Lead	**AGN item**	**Rec #**	**Description**	**STATUS (feedback for completion)**	**HLPP ref**

CGMS space agencies	5.7	R47.01	**IPWG** strongly recommends to CGMS members to continue the constellation of PMW sensors to ensure quality satellite precipitation products for weather, climate, and hydrological applications. Additionally, IPWG would like to be kept informed of longer term plans for subsequent launches of microwave sensors to ensure continuity of long-term observations that meet the documented needs of the user community.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.7	R47.02	**IPWG** also recommends that there be a CGMS-wide coordination of the crossing times of precipitation relevant satellites in an effort to improve the temporal sampling of diurnal cycle, convective systems lifecycles, and severe storms.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.7	R47.03	(From **IPWG**) As precipitation moves to higher temporal rates, we recommend to CGMS members to synchronize full-disk geostationary sampling schedules which will optimize GEO scans to improve temporal sampling of precipitation products and unknown future PMW imager availability for merged products.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.7		(From **IPWG)** Collaboration between space programs and data assimilation centers should be specifically encouraged to incorporate DA requirements as part of scientific requirements when developing new satellite / observing systems. This would reduce barriers for operational assimilation of observations, and potentially provide a greater range of utility for various sensors.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.7		(From **IPWG)** Higher spatial and temporal (sub-hourly) resolution and higher spectral sampling in the microwave measurement of clouds and precipitation should be considered in future observing systems.	*TBC if transferred to some of the WGs*	

CGMS space agencies	5.7		(From **IPWG)** Latency and quality of satellite data should be improved, from both operational and research missions, to fit in the DA high temporal resolution cycle.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.8	R47.04	(From **ICWG)** CGMS members to budget a baseline funding for the intercomparison study, given its importance and impacts on global cloud products.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.8	R47.05	(From **ICWG)** CGMS members to consider introducing multi-sensor (satellite and ground-based measurements) applications for convective nowcasting when developing/updating product requirements.	*TBC if transferred to some of the WGs*	
CGMS space agencies	5.8	R47.06	(From **ICWG**) CGMS agencies to continue operating conically-scanning passive MW sensors in an early afternoon orbit as well as in a dusk/dawn orbit in order to maintain this unique long-term time series.	*TBC if transferred to some of the WGs*	
CGMS members	9.1	R47.07	**On training and education:** CGMS members to provide contributions into the WMO VLab Trust Fund to ensure the continuation of technical support to the VLab. CGMS members considering to provide additional support should contact the WMO Space Programme Secretariat		

WGI actions open from previous plenary sessions (at CGMS-47)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
DCS (WGI) sub-group	WGI/5.3	A46.06	The DCS sub group is invited to review and provide comments to this draft of the CGMS agency best practices in support to user DCS data access.	CGMS-47 CGMS-WP-17. Proposed Best Practices to be further reviewed to take into account DCP data formats.	CGMS-48 (CGMS-47)	**OPEN**	
CGMS members	WGI/7.2	A46.12	Members to provide the status of their systems already in place and those planned, along with their overall approach to dealing with the challenges associated with handling and circulating large data volumes	CGMS-47: EUMETSAT expects to report on progress to CGMS-48 in 2020.	CGMS-48 (CGMS-47)	**OPEN**	
CGMS-47 WGI actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS space agencies	WGI/1.1	WGI/A47.01	CGMS members are requested to provide nominations to the CGMS Secretariat for the position of Co-Chair of CGMS Working Group I		Q2 2019	**OPEN**	
WGI	WGI/4.1	WGI/A47.02	Consider the advantages of using RHCP/LHCP against the simplicity/affordability of the Direct Broadcast stations and to formulate a CGMS Agency Best Practice on use of Circular Polarisation for Direct Broadcast		CGMS-48	**OPEN**	
WGI	WGI/4.1	WGI/A47.03	Analyse possible solutions to address the expected increase in instrument data from future polar orbiting satellites and to propose new DB standards and/or Best Practices as required		CGMS-48	**OPEN**	
WGI	WGI/4.1	WGI/A47.04	Initiate a peer review process between the agencies (e.g. NOAA, CMA and EUMETSAT) of the Implementation of CGMS Best Practices for LEO Direct Broadcast Data documents prepared by these agencies, with the aim of improving quality and consistency of these documents and references prior to presentation at the CGMS plenary sessions		End 2019	**OPEN**	
WGI	WGI/4.1	WGI/A47.05	To review and if appropriate identify any common viewing geometries that are missing from the proposed list of NetCDF encoding good practices		End 2019	**OPEN**	

DCS sub group	WGI/5.1	WGI/A47.06	To coordinate the elaboration of the user requirements, the technical specifications, and potential applications for a new DCP Standard and make a proposal to WGI		CGMS-48	**OPEN**	
CGMS Member	WGI/5.1	WGI/A47.07	Review and provide comments to Draft V1B of the DCS Handbook		Aug 2019	**OPEN**	
EUM	WGI/6.1	WGI/A47.08	Form a Space Weather Database Task Group. A first report Form the TG on its activities would be presented at CGMS-48 including: • Establish the membership and ToR of the Task Group • Establish the requirements of the Space Weather Database parameters • Establish the requirements for the Security / Confidentiality aspects • Establish the process and rules for access the Database content		CGMS-48	**OPEN**	
NOAA	WGI/6.2	WGI/A47.09	Form a Task Group on Space Debris and Collision Avoidance to produce a Best Practice on Collision Avoidance		CGMS-48	**OPEN**	
EUM	WGI/7.1	WGI/A47.10	Perform a detailed analysis consisting of: • Developing a simulation algorithm considering all variables affecting the LEO Orbit coordination • Developing plots and other simulation outputs as tools for illustrating the potential coordination possibilities and improvements in both global and direct broadcast mission return in a cross-member coordinated mission analysis approach.		CGMS-48	**OPEN**	
WGI	WGI/7.1	WGI/A47.11	Develop a Best Practice on the considerations to be made on orbital phasing between satellites, as a measure for reducing pass scheduling conflicts and maximising the amount of instrument observation collected.		CGMS-48	**OPEN**	

CGMS-47 WGI Recommendations					
Lead	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**HLPP ref**

CGMS members	WGI/3.1	WGI/R47.01	CGMS members are recommended to take appropriate actions towards their national frequency regulatory authorities to support unwanted emission limits for IMT-2020/5G at 26 GHz in the order of -42 dB(W/200 MHz) for base stations and -38 dB(W/200 MHz) for terminal stations to protect passive sensors in the 23.6 – 24 GHz band.		
CGMS members	WGI/3.1	WGI/R47.02	CGMS members are therefore are recommended to propose to their national frequency regulatory authorities not to support an identification for IMT-2020/5G in the bands 47.2-50.2 GHz and 50.4-52.6 GHz in order to protect passive sensors in the neighbouring passive bands 50.2-50.4 GHz and 52.6-54.25 GHz.		

WGII actions open from previous plenary sessions (at CGMS-47)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
IROWG	4	A45.02	IROWG to develop a detailed proposal for OSSEs regarding LEO-LEO MW occultation and GNSS-RO&-reflectometry.	*CGMS-47: Pending IROWG meeting autumn 2019* WGII IS#2 2019: Next update expected at next IROWG meeting in September 2019.	Sept 2019 (CGMS-47, 1 Nov 2017,	**OPEN**	
IPWG	4	A45.04	IPWG to produce documentation on precipitation climate data record generation and related activities worldwide, including prospects for continuity	CGMS-47: Ongoing. In conjunction with GEWEX, a precipitation assessment is underway and was discussed in detail at IPWG-9 through a dedicated session. The goal is to have the assessment competed in 2020.	CGMS-47 (CGMS-46)	**OPEN**	
CGMS agencies	4	A45.06	CGMS Agencies to implement Landing Pages on calibration events accessed via WMO-OSCAR.	*CGMS-47: See CGMS-47-WMO-WP-15 for status update. Some agencies still to provide landing page information.*	CGMS-47 (CGMS-46)	**OPEN**	
CGMS members	WGII/5	A46.01	CGMS members to provide a summary of their known unfilled spectroscopy needs, and to develop a means of facilitating interaction between laboratory spectroscopy groups to spur cooperation and mitigate the lack of resources (financial and persons). (Ref. CGMS-46-ITWG-WP-01)	CGMS-47: No update. Mitch to go back and discuss with ITWG. Presentation to be given to CGMS-48. WGII IS#2 2019: Ken/Mitch to check with CGMS-Secretariat if action has been taken to ask CGMS members to provide input.	CGMS-48 (By CGMS-47)	**OPEN**	
CGMS members	WGII/5	A46.02	All AMV producers to implement the "Common QI module" in their algorithms.	CGMS-47: Common QI showed skill in filtering collocated AMVs and led to improved agreement between AMVs generated by satellite operators • Action 1 to IWWG co-chairs: Place the Common QI in a public repository. • Done -> https://github.com/swanzong/IWWG • Send any questions to stevew@ssec.wisc.edu • Recommendation 1 to AMV producers: Implement the software prior to IWW15 • Partially complete : EUMETSAT and NWCSAF/HRW have included the Common QI in their repositories. NOAA, KMA and JMA have plans to complete the integration in late 2019	By IWW15, CGMS-48	**OPEN**	

CGMS members	WGII/5	A46.03	AMV producers to adopt the new AMV BUFR template.	CGMS-47: The AMV sequence 3.10.067 endorsed by the WMO in November 2017 has been rejected by some users in early 2018 because it could not be used in automated framework. • The WMO corrected the sequence appropriately and endorsed the new AMV BUFR sequence 3.10.077 in November 2018. • NOAA, EUMETSAT and JMA are working on the production of the test data, planning an operational change early 2020. The NWCSAF will release a software patch later in 2019 which includes the new BUFR sequence. A new deadline to IWW15 (spring 2020) has been set to agencies to change their AMV BUFR sequence. • AMV producers to provide their users with a small test dataset (a few hours of data) encoded in the new BUFR format as soon as possible. • Nine months later, AMV producers will provide parallel dissemination of their AMV data in the new and old BUFR sequence over a 2-3 month period of	End 2019	**OPEN**	
NWP community	WGII/5	A46.04	NWP community to define the best configuration to be used by the AMV producers, for use in global and regional NWP models.	CGMS-47: The Met Office and Met Norway is planning to test various configurations of AMVs, via the NWC SAF software, to work towards optimal configurations. • There are no updates to report at this time. • We expect more discussion at the IWW15. • No results to report yet. • This topic and results will be re-visited at IWW15	By IWW15, CGMS-48	**OPEN**	

IWWG	WGII/5	A46.06	IWWG to look at improving quality indicators for high resolution wind derivation for mesoscale and regional applications. (Ref. CGMS-46-IWWG-WP-01)	CGMS-47: Research activities continue that aim to identify additional quality information from the AMV derivation that could be used to filter out poor quality AMVs and/or set observation errors for the AMV height assignment. • Quality measure associated with the correlation surface (addresses feature tracking) • Optimal estimation cost associated with cloud top temperature retrieval (addresses AMV height assignment) • Cloud top pressure error estimates (addresses AMV height assignment) • No results to report at this time. • We expect that some useful information relevant to this action may be extracted from work associated with A46.04.	CGMS-48 (By CGMS-47)	**OPEN**	
IWWG	WGII/5	A46.07	IWWG to consider developing climate projects from Atmospheric Motion Vectors (AMVs) and to report to the CEOS/CGMS WGClimate with a potential pilot project. (Ref. CGMS-46-IWWG-WP-01)	CGMS-47: IWWG has reviewed the gaps identified by the last Essential Climate Variables (ECV) inventory. • The international status of polar and geostationary AMV reprocessing has been updated and is presented in Annexe 1 of the IWWG Working Paper. • This topic will be discussed in a specific session at the next at IWW15.	CGMS-48 (By CGMS-47)	**OPEN**	
IROWG	WGII/5	A46.08	IROWG to develop process and principles for RO data quality control to ease intercomparison of data from different providers.	WGII IS#2 2019: to be raised at next IROWG in September 2019.	Sep 2019	**OPEN**	
CGMS members	WGII/7	A46.13	CGMS members to provide comments on the impact studies conducted by ECMWF on OSES vs. FSOI and how CGMS members can benefit from the findings. (Ref. CGMS-46-WMO-WP-13)		CGMS-48? (CGMS-47)	**OPEN**	
CGMS members	WGII/10	A46.14	CGMS members to provide points of contact for GOFC-GOLD to the CGMS Secretariat (Ref. CGMS-46-GUEST-WP-02)	CGMS-47: WGII to reach out to GOFC-GOLD. WGII IS#2 2019: check with CGMS-Sec	By 31 August 2019	**OPEN**	
CGMS members	WGII/10	A46.15	CGMS members to provide points of contact for AEROSAT to the CGMS Secretariat (Ref. CGMS-46-GUEST-WP-01)	CGMS-47: WGII to reach out to GOFC-GOLD. WGII IS#2 2019: check with CGMS-Sec	By 31 August 2019	**OPEN**	
CGMS-47 WGII actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**

	WGII/??	WGII/A47.01				**OPEN**	
	WGII/	WGII/A47.02				**OPEN**	
	WGII/	WGII/A47.03				**OPEN**	
	WGII/	WGII/A47.04				**OPEN**	
	WGII/	WGII/A47.05				**OPEN**	
	WGII/	WGII/A47.06				**OPEN**	
	WGII/	WGII/A47.07				**OPEN**	
	WGII/	WGII/A47.08				**OPEN**	
	WGII/	WGII/A47.09				**OPEN**	
	WGII/	WGII/A47.10				**OPEN**	
	WGII/	WGII/A47.11				**OPEN**	
	WGII/	WGII/A47.12				**OPEN**	

CGMS-47 WGII Recommendations					
Lead	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**HLPP ref**
	WGII/??	WGII/R47.01			
	WGII/	WGII/R47.02			
	WGII/	WGII/R47.03			
	WGII/	WGII/R47.04			
	WGII/	WGII/R47.05			
	WGII/	WGII/R47.06			
CGMS members	WGII/5	R46.02	CGMS member are encouraged to take due consideration to climate applications requirements during the planning for new meteorological satellite missions. (Ref. CGMS-46-ITWG-WP-01)	CGMS-47: ICWG invited IPWG representative Ben Johnson to present at ICWG-2 and engagement is developing. WGII IS#2 2019: needs to be further precised/developed (GCOS?, FCDR). Possibly with WGClimate? WGII IS#1 Dec 2018: WGII co-chairs to check with Mitch Goldberg Sep 2018 CGMSSEC: WGII is requested to make this more specific.	
ISRO	7	R45.07	ISRO to consider adding a direct broadcast capability to future satellites.		

CGMS agencies	8	R45.09	CGMS agencies encouraged to document their products online, including ATBDs and validation reports, and link product page URLs to the WMO Product Access Guide following defined documentation criteria. (current agency focal points in WMO IPET-SUP: Sally Wannop (EUMETSAT), Natalia Donoho (NOAA), Geun-Hyeok Ryu (was Chu-Yong Chung) and Jin Woo (KMA), Xiang Fang (CMA), Shiro Ohmori (JMA))	CGMS-47: Ongoing. For NOAA: NOAA-WP-16 (Landing pages include this information). WGII IS#1 Dec 2018: To be addressed in IPET-SUP-5 in February 2019. WGII IS#2 15 Mar 2018: WMO has taken these into account. **KMA** has registered a link to COMS L1B imagery in 2015 for WMO PAG and is currently available. KMA's renewed web page has been setup including MI level 2 products image and ATBD. KMA is preparing its registration process for PAG. -MI Level 2 products image http://nmsc.kma.go.kr/html/homepage/en/ver2/satellites/coms/searchSatelliteImageN.do?data_type=1089 -MI Level 2 products ATBD http://nmsc.kma.go.kr/html/homepage/en/ver2/common_board/Data/selectData.do?board_c_cd=023&cmn_data_seq_n=5322 **KMA** POC - Geun-Hyeok Ryu (geunhyeokryu@korea.kr) - Jin Woo (superjwoo@korea.kr) **IMD** will prepare an online product document including ATBD, validation report and its link will be	

CGMS members	WGII/4	R44.05	CGMS members to budget a baseline funding for the cloud intercomparison study, given its importance and impacts on global cloud products.	WGII IS#1 Dec 2018: Discussed at the ICWG . Message to remain. IWWG side funded. ICWG not yet. WGII IS#2 15 Mar 2018: For further discussion within ICWG. Co-chair to provide an update. CGMS-45: ICWG-WP-01: Currently, ICWG helps to facilitate the collection of data used for assessments (e.g., level-2 retrieval assessment in TG "Assessment of level-2 retrievals" or level-3 climate data records in TG "Assessment of cloud parameter data records for climate studies"), but many teams carried out the efforts on a volunteer basis. Lack of funding has limited the scope and prohibited a definitive analysis of the new HIMAWARI-8 data set.	
CGMS R&D agencies	WGII/4	R44.07	Research agencies to consider continuing space-borne lidar for ice/liquid water since they have proven very valuable to validate retrievals from passive sensors	CGMS-47: Keep open. WGII IS#2 15 Mar 2018: Maintain it as a recommendation. US decadal survey on EO from space, specific measurements were noted , will influence the decision making.	

CGMS space agencies	WGII/4	R44.15	Future satellite programmes should include the provision of high temporal frequency MW humidity sounding radiances (alongside cloud and precipitation sensitive observations).	CGMS-47: not part of the CGMS baseline. Monitor progress, in particular with regards to small satellites. WGII IS#2 2019: Check if discussed in WG III Risk Assessment Workshop. Mails have been sent to WGIII co-chairs/rapporteur to check. WGII IS#1 Dec 2018: WGII co-chairs to contact WGIII co-chairs and the pass recommendation to WGIII. *Sep 2018 CGMSSEC: Sugges t this is an action on WGIII for consideration .* CGMS-45: NASA Cubesat mission Tropics underway CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
ROSC, ROSH	WGII/4	R44.16	Roscosmos to develop and release a direct broadcast processing package (for level 1 data) for the MTVZA-GY microwave imager. Roshydromet to provide dissemination of this package to interested users.	WGII IS#1 Dec 2018: Letters have been sent (by whom ???) Apr 2018: Following feedback from Roshydromet, the text of this recommendation has been updated (as discussed during CGMS-45 WGII).	

CGMS space agencies	WGII/4	R44.18	CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.	CGMS-47: Proposed to be transferred to WG III. Following further discussion in the CGMS Secretariat, we propose that this recommendation is maintained in WGII until CGMS-47, and then taken up when the risk assessment is discussed, at that stage we can see if it should be transferred to WGIII (or stay in WGII or other). WG II IS#2 2019: Mails have been sent to WGI co-chairs/rapporteur to transfer this recommendation to WG I. WGII IS#1 Dec 2018: WGII co-chairs to contact WGI co-chairs to forward recommendation to WGI. *Sep 2018 CGMSSEC: Suggests this is an action on WGI to consider coordination of orbits.* CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	

CGMS members	WGII/4	R44.20	CGMS members to continue to support SCOPE-Nowcasting and its transition to pre-operational phase, in particular to consider financial support the finalization of the satellite-based volcanic ash retrieval algorithm intercomparison activitiy (Pilot Project 2) over the next 12-18 months.	CGMS-47: See CGMS-47-WMO-WP-10 WGII IS#1Dec 2018: Needs checking with the Chairperson of SCOPE-Nowcasting - who will do this in WGII? WGII IS#2 15 Mar 2018: Ongoing. SCOPE-NWC making good progress. Funding earmarked by EUMETSAT and WMO. A Workshop to be held in October '18. Maintain as recommendation. CGMS-45: Funds earmarked by EUMETSAT for 2018 Deadline for indication of support to volcanic ash activity) No indication of support to VA intercomparison so far received by WMO. WMO has identified resources to engage consultant for 2.5 months FTE to support SCOPE-Nowcasting.	
CGMS space agencies	WGII/6	R44.21	Operators to take into account in the planning of their data distribution systems the emerging stringent requirements on data latency from SRNWP	WGII IS#2 15 Mar 2018: Maintain it as a recommendation.	
CGMS space agencies	WGII/7	R44.25	For monitoring the Polar Regions, the Group stressed the importance of the deployment of HEO missions	CGMS-47: NOAA considering in its system studies and talking with potential partners. WGII IS#1 Dec 2018: Meeting on 5 Dec 2018 at EUMETSAT to discuss HEO missions. *Sep 2018 CGMSSEC: This recommendation needs rephrasing/formulation, closing or other.* Link to WGIII required	

CGMS space agencies	WGII/8	R44.26	Satellite operating agencies should support proposals and programs to acquire high-accuracy characterization measurements of the Moon, to develop a new, high accuracy, SI-traceable lunar reference standard for reflected solar wavelengths.	CGMS-47: Maintain WGII IS#1 Dec 2018: KMA (Dohyeong Kim) to check with GSICS. WGII IS#2 15 Mar 2018: Update expected at the March '18 GSICS meeting. SWTT is preparig a proposal on integrating space weather products into GSICS. To be discussed at CGMS-46. CGMS-45: GSICS discussed this issue	
CGMS space agencies	WGII/8	R44.28	Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications	CGMS-47: Recommended to be transferred to WG I. WGII IS#1 Dec 2018: To be maintained (See also CGMS-44 WGI action A44.08 related to IROWG)	
CGMS members	WGII/3	R43.02	CGMS members to consider removing spectral gaps from future hyperspectral sounders to support GSICS intercalibration of IR imagers.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	4.1
CGMS members	WGII/6	R43.03	CGMS members to consider include a water vapour channel and a CO2 channel to polar-orbiting imagers, to maintain accuracy and coverage of polar winds and cloud height retrievals achieved by MODIS.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at a second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	

CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.	CGMS-47: Closed in WG II Update IMD: IMD is final stage of implementing MMRDPS system in July 2019 and will start sharing INSAT-3D/3DR level 1B data to all NMA after on line registration on our on-line data supply portal similar to NOAA. Though at present we are sharing L1B data to NOAA and Canada Meteorological Agencies nearly real time basis through FTP. WG II IS#2 2019: Mails have been sent to WGIV co-chairs/rapporteur to transfer this recommendation to WG IV. WGII IS#1 Dec 2018: WGII proposes to transfer this to WGIV WGII IS#2 15 Mar 2018: - Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMDRPS system expected in June 2018. CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).	

ISRO	WGII/5	R43.10	ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D	CGMS-47: ISRO has carried out following activities: (1) Using Bayesian formulations, a new rain retrieval algorithm for SAPHIR is developed. (2) This algorithm is recently made operational on MOSDAC. (3) This is being used for merging the SAPHIR rain with INSAT measurements. INSAT-3D/3DR based Hydero-Estimator algorithm that provides pixel-scale and half-hourly precipitation is already operational. We will likely to complete the merging of precipitation from SAPHIR and INSAT-3D in near future. This action may be kept open. WGII IS#2 15 Mar 2018: ISRO/IMD invited to report on this at CGMS-46. Nov 2017: IMD will coordinate with SAC (ISRO) to develop and implement the multi sensor precipitation estimate based on SAPHIR and INSAT-3D/3DR data on priority. CGMS-45: ISRO/IMD have plans		

IROWG, WMO	WGIII/	WGIII/A47.02	**CGMS baseline and RO:** IROWG and 7th WMO Impact Workshop needs to validate the current Baseline in terms of the coverage, number, quality and sampling of RO.	Added as action	2020, CGMS-48	**OPEN**	

	WGIII/		IROWG to review the CGMS Baseline and validate wording that captures CGMS Member contribution to RO data in terms of coverage, number, quality and sampling; and share impact studies of RO data between the CGMS Baseline and WIGOS 2040 vision observing targets.	Same as above - merge?		**OPEN**	
GSICS	WGIII/		*GSICS to continue cross calibration progress of microwave imagers. (WGII)*	Transfer to WGII - Did you inform them?	?	**OPEN**	

WGIII actions open from previous plenary sessions (at CGMS-47)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WGIII	WGIII/4.2	A46.02	WGIII to consider how to account for the unique SST conical microwave imager in the CGMS Baseline and Risk Assessment	*CGMS-47: Adressed within the scope of the initial CGMS baseline and risk assessment performed in spring 2019. For further review in 2020* 1 Mar 2019: Discussed at the risk assessment workshop. As for the Baseline, these should be included once future plans are clearer. Future plans will be discussed at CGMS-47 plenary.	CGMS-48 (CGMS-47)	**OPEN**	
NOAA	F	A46.09	**On passive microwave observations:** NOAA to inform CGMS on US's plans/frequency/ features of the post WindSat/SSMI MW radiometry missions (update on SSM/I)	CGMS-47: Transferred from plenary to WGIII. Deferred. Expected to be presented to CGMS-48.	CGMS-48 (CGMS-47)	**OPEN**	
CGMS-47 WGIII actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WMO	WGIII/??	WGIII/A47.01	**Early Morning Orbit:** WMO to reconvene a WMO-CGMS Tiger Team on the impact of the Early Morning orbit. It is premature to convene this Tiger Team until an assessment of FY-3E is conducted.		2021	**OPEN**	
EUM	WGIII/	WGIII/A47.02	**GEO coverage in the IODC region:** EUMETSAT to conduct a study on GEO Imager coverage, data quality, availability and resilience in the IODC region		CGMS-48?	**OPEN**	
CGMSSEC	WGIII/	WGIII/A47.03	CGMSSEC to write to NSOAS stating the importance of HY-2B MWI and ALT data.		Dec 2019		
NOAA	WGIII/	WGIII/A47.04	**MW imaging in LEO for SST:** NOAA to provide an update on SSMI status and possible follow-on	A related action from plenary is likely to be transferred from Take action from plenary and transfer to WGIII (same action)	CGMS-48	**OPEN**	
ISRO	WGIII/	WGIII/A47.05	ISRO to provide an update on its plans for follow-on mission to Oceansat-3A.		CGMS-48	**OPEN**	
ISRO	WGIII/	WGIII/A47.06	ISRO to confirm data latency for Aditya-L1 mission		CGMS-48	**OPEN**	
ISRO	WGIII	WGIII/A47.07	**On passive microwave observations:** ISRO is recommended to confirm its plans for a Megha-Tropiques follow up mission in low inclination and its plans for TSU and MSU MW sounders and to consider complementary orbits for the deployment of these sounders. (Formerly plenary recommendation R46.07)	(CGMS-47: transferred from plenary recommendation to WGIII action)	CGMS-48	**OPEN**	
JAXA, NASA	WGIII/	WGIII/A47.08	NASA and JAXA to provide future plans for precipitation measurement mission(s)		CGMS-48	**OPEN**	
WGIII	WGIII/	WGIII/A47.09	WG-III to update the CGMS Baseline and conduct the annual Risk Assessment for submission to CGMS-48		CGMS-48	**OPEN**	

WMO	WGIII/	WGIII/A47.10	WMO to conduct a Gap Analysis against the approved WIGOS Vision 2040 and to explore the possibility of coordinating this with the impact assessment planned by the CGMS Science Working Group reporting to WG-II		CGMS-48?	**OPEN**	
WMO	WGIII/	WGIII/A47.11	WMO to hold a workshop on OSCAR/Space in order to develop plans for its sustainment and future development, both in terms of information content and system capability		2020	**OPEN**	
EUM	WGIII/	WGIII/A47.12 (WGIII R46.01)	CGMSSEC to enquire with EUMETSAT NWP SAF Radiative Transfer Model (RTM) support for FY-2E/H Indian Ocean coverage. (Formerly WGIII recommendation R46.01)	(Changed from recommendation to action. CGMS-47 WGIII: Recommendation to be passed to EUMETSAT)	Dec 2019	**OPEN**	
WMO	WGIII	WGIII/A47.13 (WGIII R44.02)	Noting the recent conclusions of the WMO IPET-DRMM and the concurrence expressed in CGMS WG III, WMO is encouraged to add the satellite identifier (from Common Code Table C5) and satellite instrument identifier (from Common Code Table C8) to OSCAR Space.	(Changed from recommendation to action. CGMS-47 WGIII discussion). Sep 2018 CGMSSEC: Suggest this is converted to an action on WMO for consideration.		**OPEN**	

Related AGN item to be added
Deadline to be added

WGIV actions open from previous plenary sessions (at CGMS-47)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
EUMETSAT	WGIII/2	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-47: Availability of Elektro-L N2 meteorological products to be discussed with Roshydromet. CMA to provide status of implementation of IODC products on CMACast. Implementation of all other products on EUMETCast Africa and provision to CMA completed	(CGMS-44/45/46) ***New deadline Dec 2019***	**OPEN**	1.1
CGMS Secretariat WMO, satellite operators, WMO	WGIV (WGII)	A44.05	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs.	CGMS-47: Current situation is ok, no specific requirements. Satellite operators will certainly address regional requirements for their next-gen satellites. Future global (next-gen satellite) requirements will be addressed in an inter-sessional meeting with GODEX-NWP participation .	(CGMS-45/46/47) ***New deadline CGMS-48***	**OPEN**	3.12
TFMI	WGIV/9	A45.02	TFMI to work on the WIGOS metadata standard, in particular to assess the WIGOS Metadata OGC Observations and Measurements standard, and recommend possible adjustments for satellite observations to the WMO WIGOS team.	CGMS-47: included in work plan of TFMI Oct 2018: A WIGOS metadata assessment provision to IPET WIGOS by March 2019 is feasible.	(CGMS-46) ***New deadline CGMS-47***	**OPEN**	3.9.1
TFMI	WGIV/12.1	A45.03	CGMS satellite operators to provide documentation on the data formats for space weather observations, and to forward related space weather metadata to the WIS.	CGMS-47: Space weather metadata aspect to be assessed by TFMI. Remaining action superseded by on-going Space Weather data provider survey (SWCG/A47.05)	(CGMS-46) ***New deadline CGMS-48***	**OPEN**	3.10
WG IV	WGII/4	A45.05	Action from WGII: Ensure timely (< 1 hr) and free access to all geostationary visible, IR and water vapour data that is required to improve global hydrological prediction.	**What about CGMS-47 dicussions?** Put on hold until requirements are clarified (see new action A46.02)	CGMS-47?	**OPEN**	
WMO	WGIV/3.2	A46.02	WMO to further refine the requirement from IPWG for GEO image data, in terms of users and geographical resolution	CGMS secretariat to contact WMO & IPWG	(CGMS-47) Dec 2019	**OPEN**	
WMO	WGIV/6	A46.03	WMO to liaise with GSICS on implementing GSICS monitoring capabilities in WDQMS, to include incident management capabilities, and report back to WG-IV, proposing a way forward	Side Meeting between GSICS and WMO regarding WDQMS. WMO will invite GSICS to attend next TT-WDQMS meeting.	CGMS-48	**OPEN**	

CGMS satellite operators	WGIV/7	A46.04	To consider an enhancement of advance notifications of processing changes as specified below and provide feedback to WG-IV. If a planned change to data processing results in a change in brightness temperature of 0.1K or 20% of NEdT (whichever is smaller), this should be made clear in notifications to users. These notifications should be made no later than 8 weeks before the change and test data should be provided if possible. [From the ITWG ITSC-21	CGMS-47: EUMETSAT: A general change and user notification process is in place. An analysis is in progress w.r.t. the requested specification. Results to be discussed in an inter-sessional meeting. 5 Dec 2018: It was clarified that "instrument changes" means changes w.r.t. performance, and not changes vs specification.	(CGMS-47) Dec 2019	**OPEN**	
CMA	WGIV/7	A46.05	To consider implementing a subscription-based anomaly/event notification service, similar to that provided by NOAA and EUMETSAT and provide feedback to WG-IV.	CGMS-47: System is under construction.	(CGMS-47) Dec 2019	**OPEN**	
WGIV	(Plenary E.10)	A46.06	Following CGMS-46 plenary discussions related to IROWG and GCOS IP: CGMS WGIV to consider the GCOS IP actions on long-term data preservation (LTDP). Ref. GCOS IP action G 26.	CGMS-47: NOAA: Under federal law, supported by a suite of policies and procedures (see below for a summary), NOAA ensures through its National Environmental	CGMS-47?	**OPEN**	
CGMS satellite operators	IS-2	A46.08	CGMS members to review the "CGMS/WMO best practices for achieving user readiness for new meteorological satellites" (https://www.cgms-info.org/documents/CGMS-BP_user_readiness_Apr2016.pdf) and to provide feedback and make recommendations on updates.	CGMS-47: action refined	CGMS-48	**OPEN**	3.2.1
CGMS-47 WGIV actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS members	WGIV/8	WGIV/A47.01	To provide a point of contact for participation in regular inter-sessional teleconferences lead by NOAA, starting discussions to establish an expert group on cloud services interoperability.		July 2019	**OPEN**	3.7
CMA, JMA,KMA, WMO	WGIV/9	WGIV/A47.02	To liaise with WMO and prepare the report of RSS observation activities including user readiness and notification.		CGMS-48	**OPEN**	N/A
NOAA	WGIV/12	WGIV/A47.03	To support enabling the connectivity between the OAI PMH NESDIS repository and GISC Washington, to be able to harvest metadata.		July 2019	**OPEN**	3.8

CGMS members	WGIV/15	WGIV/A47.04	To provide a point of contact for participation in regular inter-sessional teleconferences on cyber security including related training aspects.		July 2019	**OPEN**	N/A

CGMS-47 WGIV Recommendations					
Lead	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**HLPP ref**
CGMS	WGIV/12	WGIV/R47.01	CGMS-46 Plenary to endorse the recommendations available from CGMS-TFMI-WIGOS-Standard-Review (link see CGMS-47-CGMS-WP-07).		**3.9.1**
CGMS	WGIV/12	WGIV/R47.02	CGMS-46 Plenary to endorse the presented working plan regarding the assessment of the WIGOS Metadata Representation Format and allow the task force to proceed on the defined tasks.		**3.9.1**
CGMS	WGIV/13	WGIV/R47.03	CGMS-46 Plenary to endorse the Five-year Strategy document proposed by VLab, w.r.t. items in the scope of WG-IV.		**5.2.1**
CGMS members	WGIV/3.2	R44.02	CGMS members to continue the provision of up-to-date User Readiness information in the SATURN portal	at CGMS-47: consider conversion into best practise during inter-sessional meeting	3.2.2
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	at CGMS-47: consider conversion into best practise during inter-sessional meeting	3.7
CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.	at CGMS-47: consider conversion into best practise during inter-sessional meeting	

CGMS-47 SWCG actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
SWCG	SWCG/3	SWCG/A47.01	CCMS members to assess whether magentorquer TM can be extracted to allow assessment for magnetic field derivation		July 2019	**OPEN**	
SWCG	SWCG/3	SWCG/A47.02	Survey ISES on need for operational spaceborne LEO magnetometer data		July 2019	**OPEN**	
SWCG	SWCG/3	SWCG/A47.03	Encourage WMO CGMS Early Morning Tiger Team to include Space Weather data in their impact analysis.		July 2019	**OPEN**	
SWCG	SWCG/7	SWCG/A47.04	Propose improvements of the space weather parameters in the OSCAR DB . The parameters available in the existing DB may not be sufficient to properly describe measurement capabilities of SW instrumentation.		CGMS-48	**OPEN**	
SWCG	SWCG/8	SWCG/A47.05	CGMS Members to complete the on-going Space Weather data provider survey		May 2019	**OPEN**	
SWCG	SWCG/8	SWCG/A47.06	Identify Space Weather Data and Services Users and send survey including findings from the Data Providers Survey for their comment.		June 2019	**OPEN**	
SWCG	SWCG/8	SWCG/A47.07	Establish a small task group to identify gaps and disconnects from service and ICAO perspective with objective to report out in Jan 2019		July 2019	**OPEN**	
SWCG IC TG	SWCG/9	SWCG/A47.08	Space Weather Inter-calibration Task Group members to agree on a specific period of data for validating the inter-calibration approach for high energy particle sensors on-board GEO satellites.		July 2019	**OPEN**	
SWCG IC TG	SWCG/9	SWCG/A47.09	Space Weather Inter-calibration Task Group to produce a "White Paper" with the objective of getting feedback from GSICS on issues faced by CGMS members concerning inter-calibration of high-energy particle sensors, including, how to share data, use of each sensor for space weather products and identified problems. Consider also the inter-calibration issues of other space-based space weather observation.		July 2019	**OPEN**	

CGMS-47 WGI Recommendations			

Lead	AGN item	Rec #	Description	Recommendation feedback/closing document	HLPP ref
	SWCG/??	SWCG/R47.01			
	SWCG/	SWCG/R47.02			
	SWCG/	SWCG/R47.03			
	SWCG/	SWCG/R47.04			
	SWCG/	SWCG/R47.05			
	SWCG/	SWCG/R47.06			

CGMS-47: Deferred to CGMS-48 in view of the reorganisation in WMO, and pending WMO Congress decisions in June. The CGMS Secretariat will include this session at CGMS-48 taking into account the proposal in CGMS-47 IOC-UNESCO-WP-01:	WGIII/		*ISES to provide rationale and need for operational magnetometer observations in LEO. (SWCG)*	For SWCG! Did you inform them?		**OPEN**
SWCG	WGIII/		*SWCG to provide rationale and need for operational magnetometer observations in LEO and propose updates to CGMS Baseline as appropriate*	For SWCG! Did you inform them? Some merging with the above? I guess ISES to SWCG and then SWCG to CGMS…		**OPEN**

Plenary actions open from previous plenary sessions (at CGMS-46)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS space agencies, IROWG, IPWG, IWWG, ICWG, ITWG	C.2	A45.02	CGMS International Science Working Groups and CGMS space agency members to formulate science questions, including the impact of data latency, in view of the 7th Impact WS 2020 (ref. CGMS-45-WMO-WP-02) and provide these to lriishojgaard@wmo.int. Questions are needed for CGMS-46 for the analysis to be made and results provided to the workshop in 2020.	CGMS-47: The meeting will be held in 2020. WMO will report on the outcome to CGMS-48 (meeting in Seoul, May 12-15, 2020) CGMSSEC IS#3. 13 Mar 2019: WMO report to be addressed in WGIII and/or WG II. CGMSSEC IS#2 22 Jan 2019:	end 2018 (CGMS-46)	**CLOSED**	1.3
CGMS members (CNSA, CNES, JAXA, JMA, ROSH)	C.6.1	A45.28	CGMS members to provide a focal point of contact to WMO (wbalogh@wmo.int) for participation in the WMO Public Private Engagement discussion	*CGMSSEC IS#2. 22 Jan 2019:* *Following the IS discussion, it was agreed to close the action at this stage.* 7 June 2018: CGMS members are requested to provide outstanding pocs to wbalogh@wmo.int (18 May 2018: CGMS-46-WMO-WP-03, WMO Policy Framework for Public-Private Sector Engagement) CGMSSEC IS 21 Nov 2017: Action to be revisited at CGMS-46. **CNSA: TBD** **CNES: TBD** **ESA:** ivan.petiteville@esa.int **EUM:** paul.counet@eumetsat.int **IMD:** Virendra Singh (vsvsingh69@gmail.com) **ISRO:** bpshantanu@isro.gov.in (Mr. Shantanu Bhatawdekar) **JAXA: TBC** **JMA:** kunimatu@met.kishou.go.jp (Hiroshi KUNIMATSU) **KMA:**cychung0530@korea.kr (Chu-Yong Chung) **NASA:** sandra.a.cauffman@nasa.gov cc kevin.j.murphy@nasa.gov **NOAA:** karen.st.germain@noaa.gov **ROSC:** tkachenk_2000@mail.ru (Alexander Tkachenko)	30 Jun 2018 (15/10/2017)	**CLOSED**	
CGMS-46 plenary actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMSSEC, CGMS members	C.1	A46.01	**On WIGOS Vision 2040 (CGMS-46-WMO-WP-01):** CGMS members to comment (through CGMSSEC) in particular on Chapter II - space-based WIGOS component - based on WMO's current understanding of the CGMS Baseline, Contingency Plan and Gap Analysis. [Including CO2 and greenhouse gas monitoring]	*WMO will present status of the Vision preparation presented to Congress in June 2019 (CGMS-47-WMO-WP-02)* CGMSSEC IS#3. 13 Mar 2019: WMO to present final document in WG III and plenary	1 Nov 2018	**CLOSED**	**1.2**

CGMS members (CNES, CNSA, CSA, EUM)	C.2	A46.02	**On OSCAR space (CGMS-46-WMO-WP-02):** CGMS members and observers to confirm the focal points of contact/members for the OSCAR/Space Support Team (O/SST) to tkurino@wmo.int, wbalogh@wmo.int copy to cgmssec@eumetsat.int	CGMS-47: Addressed in WGIII and superseded by CGMS-47-WMO-WP-03b **CMA:** lufeng@cma.gov.cn **CNES:** Pierre.Tabary@cnes.fr **CNSA:** TBD **CSA:** ralph.girard@canada.ca **ECCC:** shannon.kaya@canada.ca, christopher.linklater@canada.ca **ESA:** ivan.petiteville@esa.int **EUM:** stephan.bojinski@eumetsat.int **IMD:** ashimmitra@gmail.com **ISRO:** jvthomas@isro.gov.in **JAXA:** oki.riko@jaxa.jp **JMA:** r_yoshida@met.kishou.go.jp **KMA:** dohyeong@gmail.com **NASA:** charles.webb@nasa.gov **NOAA:** Matthew.Butler@noaa.gov **ROSC:** avkarelin@tsniimash.ru **ROSH:** uspenskys@planet.iitp.ru	31 Aug 2018	**CLOSED**	1.1	A
CGMS members	C.4	A46.03	**On PP sector engagement (CGMS-46-WMO-WP-03):** CGMS members are requested to participate in the CM-14 on 23 June 2018 at WMO in Geneva.	http://www.wmo.int/pages/prog/sat/meetings/CM-14.php	23 Jun 2018	**CLOSED**		
WMO, NOAA	C.4, C.5	A46.04	**On PP sector engagement (CGMS-46-WMO-WP-03, CGMS-46-NOAA-WP-02):** WMO and NOAA to report on the status of affairs and related issues on public private sector engagement to CGMS-47	*CGMS-47-WMO-WP-05, CGMS-47-NOAA-WP-02* *It is expected that this agenda item will continue to be addressed in future plenary sessions.* CGMSSEC IS#3. 13 Mar 2019: The plenary agenda has been modified permitting WMO and NOAA to report consecutively. CGMSSEC IS#2, 22 Jan 2019: WMO will provide a progress report on the PPE / GWE to CGMS-47 (included under the WMO session	CGMS-47	**CLOSED**		
WMO, CGMS space agencies	E.4	A46.05	**Report from working group WGIII:** CGMS WGIII members i) to do the initial risk assessment against the CGMS baseline using the OSCAR Space database as a reference; ii) propose a process to incorporate the annual risk assessment into the regular work programme of CGMS and WGIII; and iii) to explore ways of integrating WMO's position on critical satellite data (CGMS-46-WMO-WP-04) into the CGMS baseline; to be addressed at a dedicated workshop by Q1 2019	Sep 2018: Superseeded by WGIII action CGMS-46 A46.05 and closed in plenary	by Q1 2019	**CLOSED**	1.1	

CGMSSEC	E.5	A46.06	**Report from working group SWTT/SWCG:** CGMSSEC to invite ISES (poc: terry.onsager@noaa.gov) to become a permanent observer of CGMS.	*CGMS-47: The new ISES lead, Jesse Andries, was unable to come to CGMS-47. The contacts with ISES is handled within the SWCG.* CGMSSEC #3, 13 Mar 2019/SWCG IS#2, 7 Feb 2019: Decision process still ongoing. CGMSSEC IS#2, 22 Jan 2019: Informal positive response received, pending formalisation. 16 Jan 2019: Formal response still pending from ISES. 26 Sep 2018: ISES currently reorganising lead, formal positive response expected by November 2018. 30 Aug 2018: CGMSSEC invitation sent to ISES (CGMS/LET/18/1015458).	31 Aug 2018	**CLOSED**	6.2.1
CGMSSEC	E.6	A46.21	CGMS Secretariat to organise a special plenary session or a side event on operational oceanography at CGMS-47 to help advance the operational nature of ocean observation. (Ref. CGMS-46-NOAA-WP-11, CGMS-46-IOC-UNESCO-WP-02)	CGMS-47: Deferred to CGMS-48 in view of the WMO constituent body reform, and pending WMO Congress decisions in June. The CGMS Secretariat will include this session at CGMS-48 taking into account the proposal in CGMS-47 IOC-UNESCO-WP-01: - Receive annual briefing on the UN Decade of Ocean Science for Sustainable Development - Sustain satellite and in situ system of ocean observing systems - Utilize geostationary meteorological satellites for ocean observations - Enhance data acquisition for special observing periods - Add CGMS-relevant ocean measurements to tsunami watch infrastructure - Add HAB toxic aerosols to coastal air pollution forecasts (in addition to WMO-IOC coordination following WMO	CGMS-48 (CGMS-47)	**OPEN**	-
CGMSSEC (and CGMS WGs)	E.5	A46.07	**On CGMS working groups:** The Terms of Reference of the CGMS Working Groups to be reviewed every 5 years. CGMSSEC/CGMS WGs to secure this is included on relevant future plenary meeting agendas. WGII to review its ToRs in 2020 WGIII to review its ToRs in 2019 (WGI, WGIV and SWCG to review its ToRs in 2023)	*CGMS-47: The revised WG III ToRs will be presented to plenary within the scope of the WG III presentations to plenary. CGMS-47-WGIII-WP-07*	May 2019 (WGIII), mid 2020 (WGII)	**CLOSED**	

GSICS	F	A46.08	**On passive microwave observations:** GSICS is requested to organise an expert meeting on the intercalibration of operational PMW sensors to meet the WIGOS 2040 targets for a coordinated effort to share information on current and future PMW instruments and report to CGMS-47 (CGMS-46-EUM-WP-14)	*CGMS-47: The MW intercalibration mini-conference will be held in conjunction with 2020 GSICS annual meeting in Korea, March 16, 2020* *CGMS-47-GSICS-WP-02* CGMSSEC IS#3, 13 Mar 2019: Will be further discussed at GSICS EP in May and in WGII at CGMS-47. CGMSSEC IS#2, 22 Jan 2019: Expected to be discussed at the GSICS Research WG in March 2019. 20 Nov 2018: CGMSSEC IS#1 GSICS [poc: Mitch.goldberg@noaa.gov] to lead on the action in coordination with CMA and EUMETSAT. 19 Oct 2018: Discussed at expert meeting on the occasion of the CEOS WGCV in August 2018 at EUMETSAT. CMA will take the lead in organising the intercomparisons in the framework of the GSICS MW subgroup and to report at the March 2019 GSICS plenary. CMA (Lu Qifeng) / EUM (Bojan Bojkov) to report on this in WGII and in the PMW plenary follow-up session at CGMS-47.	CGMS-47	**CLOSED**	1.1
NOAA	F	A46.09	**On passive microwave observations:** NOAA to inform CGMS on US's plans/frequency/ features of the post WindSat/SSMI MW radiometry missions	*CGMS-47: Deferred. Expected to be presented to CGMS-48*	CGMS-48 (CGMS-47)	**OPEN**	1.2
JWG CLIM	G.1	A46.10	**On scatterometry observations:** JWG Climate to analyse and facilitate the generation of ocean surface wind ECVs from scatterometer observations and report to CGMS-47	*CGMS-47-JWGCLIM-WP-03* *(reference is also made to the 2019 ECV Inventory Gap Analysis).* To be discussed in the JWG Climate meeting in March 2019, (part of the gap analysis)	CGMS-47	**CLOSED**	6.1

WMO	H	A46.11	**On ocean variables:** In view of the anticipated reorganisation of JCOMM, WMO to provide a report with proposals on future coordination/cooperation between JCOMM and CGMS.	*CGMS-47: In view of the WMO constituent body reform and decisions to be taken by WMO Cg-18, the action is deferred to CGMS-48.* CGMSSEC IS#3, 13 Mar 2019: CGMSSEC has discussed this item with JCOMM. Likely to be premature for CGMS-47, currently expected to be explicitly addressed at CGMS-48.There will however, be a presentation on sea ice monitoring in the plenary session "Observations and monitoring of the Arctic" 28 Jan 2019, WMO: CGMS should work with the JCOMM co-presidents to develop closer coordination and cooperation on mutually beneficial subjects. This is an opportunity for CGMS to learn about the wide range of activities in JCOMM. Anticipated on the agenda	CGMS-48 (CGMS-47)	**OPEN**	3.6
IOC-UNESCO	H	A46.12	**On ocean variables (CGMS-46-IOC-WP-03):** IOC to provide guidance to CGMS on satellite data requirements for the UN Ocean Decade	CGMS-47-IOC-UNESCO-WP-01 Satellite data requirements for the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) CGMS-47: CGMS-47-JCOMM-WP-01	CGMS-47	**CLOSED**	3.6
CGMS members	I.2	A46.13	**On CEOS-CGMS WGClimate (CGMS-46-CGMS-WP-03):** CGMS members are requested to support the future work of the joint WGClimate by: • Providing annual inputs for the ECV Inventory; • Provide experts to support further gap analysis, coordinated actions implementation and other related activities, and • regular participation to WGClimate meetings.	CGMS-47-JWGCLIM-WP-03 Closure expected on the understanding that the three activities are of long-term nature and agencies should exercise them routinely every year. (Long-term action, status at CGMS-47) Nov 2018: CGMSSEC to circulate the invitation letter (participation by CMA, CSNA, JMA, KMA, IMD, ROSHYDROMET, and ROSCOSMOS to be requested specifically).	CGMS-47	**CLOSED**	6.1
CGMS members	J.1	A46.14	**On VLab (CGMS-46-WMO-WP-07)**: CGMS members active in VLab to indicate to WMO whether they would in principle be interested and in a position to indicate a candidate to co-chair VLab on behalf of CGMS satellite operators from 2020. (nominations to be presented to CGMS-47 2019).	*Action closed and superseeded through CGMS-47-VLab-WP-01.* CGMSSEC IS#2, 22 Jan 2019: CGMS members are requested to consider putting forward a candidate for the co-chair Vlab position. Dec 2018: An “invitation to indicate a candidate” was reinforced during VLMG-9 in July 2018. To date no indication was received by the VLab office yet. VLab will continue to make reminders. 20 Nov 2018 CGMSSEC#1: WMO to report back by end Nov	Dec 2019 (Q1 2019)	**CLOSED**	5.2.2

CGMS operators	J.1	A46.15	**On Vlab (CGMS-46-WMO-WP-07)**: CGMS satellite operators active in VLab are requested to ensure a suitable representative and attendance at VLMG-9 meeting in USA, 16-20 July 2018	CGMS-47-VLab-WP-01	15 Jun 2018	**CLOSED**	5.2
WMO	K	A46.16	**On greenhouse gas monitoring:** WMO to provide the latest version of the integrated WIGOS 2040 by 31 August to CGMS and CEOS SIT members for review.	*CGMSSEC IS#2, 22 Jan 2019: Document provided ~mid Dec 2018. Feedback to WMO by David Crisp, Canada, .. (EUM input provided early 2018 and has been reflected in the current text). Refer to A46.01.* Oct 2018: document expected to be available for review by mid-Nov 2018 for commenting by mid-Dec 2018	31 Aug 2018	**CLOSED**	6.3.1
CGMS members	K	A46.17	**On greenhouse gas monitoring:** CGMS Members to review the WIGOS 2040 vision wrt to GHG/carbon monitoring and provide feedback to WMO by 1 November 2018	*CGMSSEC IS#2, 22 Jan 2019: Document provided ~mid Dec 2018. Refer to A46.01.* 16 Jan 2019: Document circulated on 14 Dec 2018 to CGMS members for commenting by 10 Jan 2019. No responses to date. Oct 2018: document expected to be available for review in the course of December 2018 for commenting by early January 2018	1 Nov 2018	**CLOSED**	6.3.1
JWG CLIM	K	A46.18	**On greenhouse gas monitoring:** JWGCLIM to complete their analysis of the feasibility of establishing a subgroup on CO2/GHG in the JWG CLIM	CGMS-47: CGMS-47-JWGCLIM-WP-02, CGMS-47-JWGCLIM-WP-03. WGClimate arrangements for GHG monitoring included. 5 Dec 2018: CEOS plenary minutes shared with CGMS members. Nov 2018: CEOS plenary endorsement of CO2/GHG theme incorporated in JWG Climate, exact structure to be adressed at the JWG March 2019 meeting, CEOS SIT April 2019, and outcome to be reported at CGMS-47 for endorsement. NOAA will provide comments if new documents are provided	Nov 2018	**CLOSED**	6.3.1
CGMS members	M	A46.19	**On HLPP:** CGMS members to comment on the revised HLPP text and provide feedback to CGMSSEC@eumetsat.int	The revised HLPP has been published online (Aug 2018). https://www.cgms-info.org/documents/CGMS_HIGH_LEVEL_PRIORITY_PLAN_(HLPP)_-_2018-2022.pdf	1 Jul 2018	**CLOSED**	-
CGMSSEC, CMA	O	A46.20	**Schedule of future plenary sessions:** CGMSSEC to propose a plan for future CGMS plenary sessions after CGMS-47 in 2019	CGMS-47: CMA has confirmed the hosting of CGMS-48 in 2020	CGMS-47	**CLOSED**	-

CGMS-46 Plenary recommendations					
Lead	**AGN item**	**Rec #**	**Description**	**STATUS (feedback for completion)**	**HLPP ref**

CGMS space agencies	E.10	R46.01	**Report from IROWG (CGMS-46-IROWG-WP-02):** IROWG recommends to CGMS: - that raw data and level 1 data (including meta data) be made available for reprocessing/reanalysis of climate data records and for data validation - the long-term archiving of such data (incl. meta data)	**CLOSED** CGMS-47: The matter will be discussed within the framework of WGII as well as the JWG Climate	1.2
JAXA	F	R46.02	**On passive microwave observations:** CGMS recommends JAXA to confirm the AMSR3 mission to mitigate the risk of a critical gap in low frequency microwave imagery	**CLOSED** CGMS-47: JAXA will also report regularly to plenary and WGII and WGIII. Sep 2018: Included in the HLPP, for annual review	1.1
EC/ Copernicus	F	R46.03	**On passive microwave observations:** CGMS recommends the European Commission to confirm the CIMR Sentinel mission to provide coverage from an additional orbit.	**CLOSED** Sep 2018: Completed following inclusion in the HLPP, and will be reviewed annually.	1.2
EUM, CMA, ISRO, JAXA, NOAA, …	F	R46.04	**On passive microwave observations:** CGMS recommends all agencies planning MW imagery missions, to consider expanding to 6.6 GHz and increasing horizontal resolution to provide constellation for all weather SST, and ice monitoring	**CLOSED** Sep 2018: Completed following inclusion in the HLPP, and will be reviewed annually.	1.2
CGMS operators	F	R46.05	**On passive microwave observations:** CGMS agencies to optimise their plans to fill the gaps between the CGMS baseline and the WIGOS Vision 2040	**CLOSED** Sep 2018: Completed following inclusion in the HLPP, and will be reviewed annually.	1.1
KMA	F	R46.06	**On passive microwave observations:** KMA is recommended to confirm its planned MW sounding mission on an orbit that complements the early morning, mid-morning and afternoon orbits.	**CLOSED** CGMS-47: KMA reports annually to CGMS, and MW sounding missions are covered by WGIII. 31 Oct 2018: KMA's LEO programme postponed for 2-3 years time.	1.1
ISRO	F	R46.07	**On passive microwave observations:** ISRO is recommended to confirm its plans for a Megha-Tropiques follow up mission in low inclination and its plans for TSU and MSU MW sounders and to consider complementary orbits for the deployment of these sounders.	**CLOSED** CGMS-47: Transferred to WGIII This matter is now discussed within the framework of WGIII.	1.1
CGMS operators (WGIII)	G.1	R46.08	**On scatterometry observations:** CGMS operators (through WGIII) are requested to coordinate efforts to have well temporally distributed scatterometer observations.	**CLOSED** Addressed in WG I in its considerations about orbit phasing. Sep 2018 CGMSSEC: Need for WGIII (baseline, gaps…) and WGI (orbits) to consider	
CGMS operators	G.1	R46.09	**On scatterometry observations:** CGMS operators to consider looking into the possibility of future scatterometer missions in low inclination orbit for higher temporal resolution.	**CLOSED** Addressed within the framework of WGIII. CGMS-47 WGIII - expected to be tracked in view of the gap analyses.	

CGMS operators	G.2	R46.10	**On GEO imaging over Indian Ocean:** CGMS operators covering the Indian Ocean are encouraged to make available further meteorological satellite data in NRT mode (for non-commercial use) in open domain.	**CLOSED** following CGMS-47 WGIII discussions and a corresponding action raised there.	
CGMS members	J.1	R46.11	**On VLab (CGMS-46-WMO-WP-07)**: CGMS members to provide regular annual contributions into the WMO VLab Trust Fund to ensure the continuation of technical support to the VLab.	**CLOSED** *and superseeded through CGMS-47-VLab-WP-01.* Jan 2019: KMA, NOAA and EUM regularly contribute. Other agencies are kindly also requested to consider doing so.	5.2.3
CMA, JMA, KMA	J.2	R46.12	**On RAII WIGOS project (CGMS-46-JMA/KMA-WP-02)**: CMA, JMA, KMA to jointly build a portal in the Project website for their operational information regarding rapid-scanning observations on demand from geostationary meteorological satellites in the regions.	**CLOSED** CGMSSEC IS#2, 22 Jan 2019: CMA and JMA reported on their launches of request-based high frequency regional observation services provided by their GEO satellites at the RA II and RA V Joint Meeting in October 2018. For user's convenience, the RA II WIGOS Project put the summaries with links of their operational information on the Project's web page: "Request-based high frequency regional observation", RA II WIGOS Project to Develop Support for NMHSs in Satellite Data, Products and Training http://www.jma.go.jp/jma/jma-eng/satellite/ra2wigosproject/ra2wigosproject-intro_en_jma.html#request KMA expects to have the dedicated web site in place in the course of 2020 following the data policy decision related to GEO Kompsat 2A mid 2019. Next steps on rapid-scan observations expected to be further discussed at IPET-SUP-5 on 11-13 Feb 2019. http://www.wmo.int/pages/prog/sat/meetings/IPET-SUP-5.php KMA and JMA will report on the project status at CGMS-47. Where new recommendations or actions can be raised as necessary.	
European Commission (EC)	K	R46.13	**On greenhouse gas monitoring:** The CEOS Chair (the European Commission) to support the establishment of a subgroup within JWGCLIM for the coordination of greenhouse gas monitoring activities.	**CLOSED** Nov 2018: Refer to CGMS-46 action A46.18 Sep 2018: Rephrased by CGMSSEC for the sake of clarity.	6.3.1

Pending URL from KMA.

WMO (+IPWG)	E.1.3	R45.02	Recognising that IPWG has considerable expertise in precipitation science and applications, IPWG requests the WMO (likely via VLAB) to establish regular training events on precipitation data sets and applications, for which IPWG will provide disciplinary expertise.	**CLOSED** Sep 2018: Referenced in the HLPP (and will be reviewed annually). 5 Jun 2018, following CGMS-46 WGII discussions: IPWG co-chair participated in training event at AOMSUC-8. IPWG rapporteur has engaged VLAB requesting that any future training associated with precipitation should include IPWG involvement. We are awaiting the current year training priorities at WMO to see if these include precipitation. This also addresses HLPP 3.5.3 21 Feb 2018: Discussions between IPWG and VLab have started on how to organize regular joint training activities in response to identified needs. CGMSSEC IS#2 30 Jan 2018: WMO/Bojinski to provide feedback to CGMSSEC For information: Nov '17: IPWG co-Chair (Haddad) provided training at AOMSUC-8, Oct. 2017	4.5.3

WGI actions open from previous plenary sessions (at CGMS-46)			
Actionee	**AGN item**	**Action #**	**Description**
WMO	WGI/6	A43.06	WMO to assess the impact of improved data latency from polar orbiters on NWP (WMO Impact Workshops) and other applications
CGMS space agencies, IROWG	WGI/6.1	A44.08	CGMS agencies with satellites with DB and RO occultation sensors to assess the technical feasibility of a RARS/DBNet RO occultation service in support of the Space Weather community.
CGMS-46 WGI actions			
Actionee	**AGN item**	**Action #**	**Description**
CGMS members	WGI/3.1	A46.01	CGMS agencies to provide to the next meeting of ITU-R Working Party 7C (19—25 September 2018), comments/inputs to the Preliminary draft new Report ITU-R RS.[SPACE_WEATHER_SENSORS] (Technical and operational characteristics of RF-based space weather sensors) in order to provide the missing information on space weather instruments/ applications, either directly as input contribution to the ITU-R WP 7C meeting (with deadline 7 September 2018) or to the CGMSSEC (deadline 3 September 2018)) who gathers the inputs and sends them as one input to the WP 7C meeting in September
CGMS operators	WGI/4.1	A46.02	Present the current operational orbit maintenance strategy, as an input the discussion of the advantages of orbital phasing between satellites as a measure for reducing pass scheduling conflicts and maximising the amount of instrument observation collected, with a view to producing a future best practice.

CGMS members	WGI/4.1	A46.03	Provide the status of implementation of CGMS best practices in support to local and regional processing of LEO direct broadcast data
CGMS members	WGI/5	A46.04	Appoint DCS Managers as members to the WGI DCS sub-group, noting that the first meeting will be held on the occasion of the Satcom Forum 2018/DCS Workshop in October 2018. The first agenda of the Sub-Group would include: • Review of the Best Practice for DCP Certification • Review of the Best Practice for DCP data access • Review of designs for a potentially new IDCS DCP standard Members should review and provide inputs on these topics prior to the first meeting.
DCS (WGI) sub-group	WGI/5	A46.05	Provide a consolidated DCS report covering the items in CGMS-46 WGI A46.04
DCS (WGI) sub-group	WGI/5.3	A46.06	The DCS sub group is invited to review and provide comments to this draft of the CGMS agency best practices in support to user DCS data access.
DCS (WGI) sub-group	WGI/5.3	A46.07	DCS sub group to discuss and if agreed propose a new IDCS standard. This is the pre-requisite for a decision on a common certification
CGMS members	WGI/5.3	A46.08	Review and update CGMS-46-CGMS-WP-25 Annexes regarding DCS information
CGMSSEC	WGI/5.3	A46.09	In preparation for the Satcom Forum and DCS Workshop, it is proposed to create a simple DCS page on the CGMS Website.
SWCG (SWTT)	WGI/6.1	A46.10	To make a presentation/paper to CGMS-47 on use case/s for spacecraft anomaly reports, including recommendations to CGMS operators arising from this analysis.
CGMS members	WGI/6.2	A46.11	Members to provide the status of their collision avoidance processes and the lesson learned when implementing these processes

CGMS members	WGI/7.2	A46.12	Members to provide the status of their systems already in place and those planned, along with their overall approach to dealing with the challenges associated with handling and circulating large data volumes

Action feedback/closing document	Deadline	Status	HLPP ref
CGMS-47: The workshop will be held on 12-15 May 2020. WMO has a new action to provide a report on the outcome of the workshop to CGMS-48. CGMS-46: Preparations have started for the 7th WMO Impact Workshop in 2020, with questions currently being formulated. There have also been discussions at IPET-SUP to define the questions that could be answered, in particular regarding the impact of data latency. Status of progress on questions to be addressed to be checked at CGMS-47	CGMS-47 (CGMS-44)	**CLOSED**	1.3
CGMS-47: This is technically feasible and NOAA plan to implement this for COSMIC-II. EUMETSAT is working on a first prototype for Metop. This will be pursued as part of the SWCG activities. Nov 2018: Discussions ongoing *See also WGII recommendation R44.28* May 2018: IROWG paper postponed potentially to CGMS-47 Deadline for extended following CGMS-45 and 46 discussions, noting that NOAA has no plans to do implement such a service.	CGMS-47 (CGMS-45, 46)	**CLOSED**	1.4

Action feedback/closing document	Deadline	Status	HLPP ref
CGMS-47-CGMS-WP-01 by the CGMS/SFCG liaison officer	7 Sep 2018	**CLOSED**	2.3.1
CGMS-47: Paper CGMS-47-EUMETSAT-WP-09 presented the current orbital maninenance strategy. This action to be closed noting that another action has been raised to produce a best practice document regarding orbit maintenance. Nov 2018: CMA, EUM, NOAA (and other members as necessary) are requested to report on the current status and plans to WGI	by Q1 2019	**CLOSED**	

CGMS-47: All Member Agencies presented the status of implementation, and will present at future CGMS meetings. An action initiated to implement a process to ensure a consistent presentations of direct broadcast implementation.	CGMS-47	**CLOSED**	2.4.4
Sub-group met on 10-12 Oct 2018.	1 Sep 2018	**CLOSED**	2.2
CGMS-47 CGMS-WP-19	CGMS-47	**CLOSED**	2.2
CGMS-47 CGMS-WP-17. Proposed Best Practices to be further reviewed to take into account DCP data formats.	CGMS-48 (CGMS-47)	**OPEN**	2.2.5
CGMS-47: The DCS sub group continues to work on a new standard. A new more specific action was raised on the sub group.	CGMS-47	**CLOSED**	2.2
CGMS-47: All inputs received. This content is now part of DCS sub-group report	1 Sep 2018	**CLOSED**	
CGMS-47: A CGMS Web Page has been created	1 Sep 2018	**CLOSED**	
CGMS-47: A specific Task Group on Space Weather Database was created to more specifcally address the requirements, development and rules for use of a Space Weather Database 5 Dec 2018 WGI-SWCG Joint IS#1: Report on SpWx data usage and role of anomaly form/template for spacecraft operators to be prepared by A.Monham Intersessional meeting to be held on the topic on 5 Dec 2018 (Rephrased by CGMSSEC 21 Sep 2018)	CGMS-47	**CLOSED**	2.4.1
CGMS-47: Presentations made by EUM and NOAA on their Collision Avoidance processes. A new action raised to develop a Best Practice on Collision Avoidance	CGMS-47	**CLOSED**	

CGMS-47: EUMETSAT expects to report on progress to CGMS-48 in 2020.	CGMS-48 (CGMS-47)	**OPEN**	

WGII actions open from previous plenary sessions (at CGMS-46)			
Actionee	**AGN item**	**Action #**	**Description**
CGMS space agencies	WGII/4	A44.02	CGMS members to submit data to the ICWG intercomparison: full-disk data at 10 minute temporal resolution, 2 km spatial resolution in the native AHI projection is preferred. The data should be submitted by 1 September 2016.

IROWG	4	A45.02	IROWG to develop a detailed proposal for OSSEs regarding LEO-LEO MW occultation and GNSS-RO&-reflectometry.
IWWG	4	A45.03	IWWG to liaise with the NOAA representative on PSTG (Jeff Key, jeff.key@noaa.gov) regarding the potential use of 3D winds from AIRS for Year of Polar Prediction studies.

IPWG	4	A45.04	IPWG to produce documentation on precipitation climate data record generation and related activities worldwide, including prospects for continuity

GSICS	4	A45.05	GSICS to produce annual state of the observing system report to be delivered at CGMS

CGMS agencies	4	A45.06	CGMS Agencies to implement Landing Pages on calibration events accessed via WMO-OSCAR.

CGMS-46 WGII actions

Actionee	AGN item	Action #	Description
CGMS members	WGII/5	A46.01	CGMS members to provide a summary of their known unfilled spectroscopy needs, and to develop a means of facilitating interaction between laboratory spectroscopy groups to spur cooperation and mitigate the lack of resources (financial and persons). (Ref. CGMS-46-ITWG-WP-01)

CGMS members	WGII/5	A46.02	All AMV producers to implement the “Common QI module” in their algorithms.
CGMS members	WGII/5	A46.03	AMV producers to adopt the new AMV BUFR template.

NWP community	WGII/5	A46.04	NWP community to define the best configuration to be used by the AMV producers, for use in global and regional NWP models.
IWWG	WGII/5	A46.05	IWWG to provide information to clarify their preference for flying the Metop satellites in a TRISTAR configuration. (Ref. CGMS-46-IWWG-WP-01)

IWWG	WGII/5	A46.06	IWWG to look at improving quality indicators for high resolution wind derivation for mesoscale and regional applications. (Ref. CGMS-46-IWWG-WP-01)
IWWG	WGII/5	A46.07	IWWG to consider developing climate projects from Atmospheric Motion Vectors (AMVs) and to report to the CEOS/CGMS WGClimate with a potential pilot project. (Ref. CGMS-46-IWWG-WP-01)
IROWG	WGII/5	A46.08	IROWG to develop process and principles for RO data quality control to ease intercomparison of data from different providers.

SCOPE-CM	WGII/5	A46.09	SCOPE-CM Executive Panel Chair to convene a strategy planning meeting with high-level representatives from SCOPE-CM members and other interested agencies, who are empowered to authorise resources, to agree on a revised strategy for SCOPE-CM and a new Implementation Plan, which shall be reported back to CGMS-47. (Ref. CGMS-46-WMO-WP-10)
CGMS members	WGII/6	A46.10	CGMS to endorse the "First International Operational Satellite Oceanography Symposium" as a CGMS activity and to nominate points of contact for serving on the Symposium Programme Committee. (Ref. CGMS-46-NOAA-WP-11)
ESA, IMD and other CGMS members	WGII/6	A46.11	CGMS members interested in participating in the CMA/NOAA operational flood mapping initiative to contact Mitch Goldberg (mitch.goldberg@noaa.gov). (Ref. CGMS-46-NOAA-WP-10)
EUM, IMD	WGII/7	A46.12	EUMETSAT and IMD to establish contact for collaboration on SAF Nowcasting activities (Ref. CGMS-46-IMD-WP-06)
CGMS members	WGII/7	A46.13	CGMS members to provide comments on the impact studies conducted by ECMWF on OSES vs. FSOI and how CGMS members can benefit from the findings. (Ref. CGMS-46-WMO-WP-13)
CGMS members	WGII/10	A46.14	CGMS members to provide points of contact for GOFC-GOLD to the CGMS Secretariat (Ref. CGMS-46-GUEST-WP-02)
CGMS members	WGII/10	A46.15	CGMS members to provide points of contact for AEROSAT to the CGMS Secretariat (Ref. CGMS-46-GUEST-WP-01)
CGMS members	WGII/5	A46.16	CGMS members to provide points of contacts for space weather instrument inter-calibration. (Ref. CGMS-46-GSICS-WP-01)
CGMS-46 WGII Recommendations			
Lead	**AGN item**	**Rec #**	**Description**

ESA	WGII/5	R46.01	European Space Agency to consider becoming a full member of the GSICS Executive Panel.
CGMS members	WGII/5	R46.02	CGMS member are encouraged to take due consideration to climate applications requirements during the planning for new meteorological satellite missions. (Ref. CGMS-46-ITWG-WP-01)
CGMS members	WGII/5	R46.03	CGMS members should give due consideration to potential impacts of changes to instrument data processing changes. Specifically ITWG proposes that if the expected maximum change (temporally, geographically) in the observed brightness temperature of any channel of the instrument exceeds 0.1K or 20% of NEdT (whichever is smaller) it should be made clear in notifications to users. User notifications to be made no later than 8 weeks in advance of the change and with test data (at least a few orbits, ideally more) provided whenever possible.
CGMS members	WGII/5	R46.04	AMV producers to provide a 9-month overlap period when transitioning to a new generation of satellite and for major derivation changes.
CGMS members	WGII/5	R46.05	AMV producers to reduce as much as possible the product data latency
CGMS members	WGII/5	R46.06	CGMS members should consider hosting radion occultation payloads on future missions. (Ref. CGMS-46-IROWG-WP-01)
CGMSSEC	WGII/6	R46.07	CGMS Secretariat to consider organizing a special plenary session or a side event on operational oceanography **at CGMS-47** to help advance the operational nature of ocean observation. (Ref. CGMS-46-NOAA-WP-11, CGMS-46-IOC-UNESCO-WP-02)

CGMS members	WGII/7	R46.08	CGMS to consider nominating 2-3 persons to support the drafting of the updated terms of reference for the Polar Satellite Task Group and to engage with Global Cryosphere Watch to support the activity.
CGMS members	WGII/7	R46.09	CGMS to take note of the status of the NOAA/JPSS SNPP Reprocessing of Sensor Data Records reprocessing effort and encourage all satellite operators to reprocess their mission data and make them easily accessible. (Ref. CGMS-46-NOAA-13)
ICWG	4	R45.01	ICWG to liaise with IPWG to explore common interests in the area of cloud microphysics and scattering libraries of hydrometeors (liquid, ice).

WMO	4	R45.02	Recognizing that IPWG has considerable expertise in precipitation science and applications, IPWG requests the WMO (likely via VLAB) to establish a regular training event on precipitation data sets and applications, for which IPWG will provide disciplinary expertise.

CGMS member, WG II	4	R. 45.03	Recognizing the need for continued enhancements to the baseline precipitation observing system to a broader user community (including hydrology, NWP prediction, RTM modelling), IPWG recommends that CGMS members continue to pursue advanced sensors through close coordination with CGMS ISWG's including IPWG, ITWG and ICWG.
IPWG	4	R45.04	IPWG to maintain close relationship with GEWEX in its work, and at its next workshop (e.g. through a joint session)

GSICS	4	R45.05	Calibration events logging task team be folded under GSICS as a task team
GSICS	4	R45.06	Under the calibration events logging task team, agencies should assess the compliance of each agency with the new guidelines on events logging, and establish a list of instruments to be addressed by the calibration logging system.
ISRO	7	R45.07	ISRO to consider adding a direct broadcast capability to future satellites.

ROSH, WG IV	7	R45.08	Roshydromet to explore steps with Working Group IV to enable global exchange of data from the MTVZA-GY instrument.
CGMS agencies	8	R45.09	CGMS agencies encouraged to document their products online, including ATBDs and validation reports, and link product page URLs to the WMO Product Access Guide following defined documentation criteria. (current agency focal points in WMO IPET-SUP: Sally Wannop (EUMETSAT), Natalia Donoho (NOAA), Geun-Hyeok Ryu (was Chu-Yong Chung) and Jin Woo (KMA), Xiang Fang (CMA), Shiro Ohmori (JMA))

CGMS members	WGII/4	R44.05	CGMS members to budget a baseline funding for the cloud intercomparison study, given its importance and impacts on global cloud products.
IROWG, IPWG, IWWG, ITWG	WGII/4	R44.06	To enhance coordination, ISWGs to discuss with ICWG co-chairs key items for collaboration.
CGMS R&D agencies	WGII/4	R44.07	Research agencies to consider continuing space-borne lidar for ice/liquid water since they have proven very valuable to validate retrievals from passive sensors
CGMS space agencies	WGII/4	R44.08	All operators of next-generation GEO imagers to consider the implementation of routine full-disc 10-min (or better) scanning for nowcasting

CGMS space agencies	WGII/4	R44.09	CGMS Members to continue an operational constellation of conically-scanning microwave platforms to guarantee sustained support for the current level of capability.
CGMS members, (+ WGIII?)	WGII/4	R44.10	At the request of IPWG, CGMS to improve cross-agency coordination of satellite assets into A-train-like convoys of instruments with sensitivities to distinct aspects of precipitation processes (e.g., CloudSat, EarthCare, GPM, etc.).
NOAA	WGII/4	R44.11	NOAA to ensure that both, equatorial and polar components of COSMIC-2 are fully funded and launched.
CGMS members	WGII/4	R44.12	CGMS agencies to target at least 20,000 occultations/day, at appropriate global distribution, to be made available to the operational and research communities, based on recent impact studies (NWP, climate and space weather)
CGMS members	WGII/4	R44.13	CGMS agencies to ensure that the RO receiver design includes sufficient software/firmware flexibility to allow changes in the signal processing including processing of new GNSS signals/constellations, including ionospheric measurements

CGMS space agencies	WGII/4	R44.14	CGMS agencies to maintain the constellation of at least three polar orbits (early morning, morning, and afternoon), each with full sounding capabilities (IR and MW). The overpass times of operational satellites with sounding capability (IR and MW) should be coordinated between agencies to maximize their value.
CGMS space agencies	WGII/4	R44.15	Future satellite programmes should include the provision of high temporal frequency MW humidity sounding radiances (alongside cloud and precipitation sensitive observations).
ROSC, ROSH	WGII/4	R44.16	Roscosmos to develop and release a direct broadcast processing package (for level 1 data) for the MTVZA-GY microwave imager. Roshydromet to provide dissemination of this package to interested users.

CGMS space agencies	WGII/4	R44.18	CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.
CGMS space agencies	WGII/4	R44.19	CGMS agencies to explore possibilites to derive winds from new upcoming satellites and opportunities.
CGMS members	WGII/4	R44.20	CGMS members to continue to support SCOPE-Nowcasting and its transition to pre-operational phase, in particular to consider financial support the finalization of the satellite-based volcanic ash retrieval algorithm intercomparison activitiy (Pilot Project 2) over the next 12-18 months.

CGMS space agencies	WGII/6	R44.21	Operators to take into account in the planning of their data distribution systems the emerging stringent requirements on data latency from SRNWP
CMA	WGII/7	R44.22	CMA to make available data from FY-3D HIRAS and FY-4A GIIRS early in commissioning
CGMS space agencies	WGII/7	R44.23	CGMS agencies with operational direct broadcast needs are encouraged to attend the next ITWG sponsored Direct Broadcast Users Meeting in March 2017 hosted by CONAE, Argentina.
CGMS space agencies	WGII/7	R44.24	CGMS agencies to provide key documentation related to the quality of their products, to allow for informed uptake by users. These documents should include ATBDs, cal/val plans, and regular validation reports

CGMS space agencies	WGII/7	R44.25	For monitoring the Polar Regions, the Group stressed the importance of the deployment of HEO missions
CGMS space agencies	WGII/8	R44.26	Satellite operating agencies should support proposals and programs to acquire high-accuracy characterization measurements of the Moon, to develop a new, high accuracy, SI-traceable lunar reference standard for reflected solar wavelengths.
CGMS space agencies	WGII/8	R44.27	Long-term continuity of absolute solar spectral irradiance measurement with SI-traceable accuracy should be ensured.
CGMS space agencies	WGII/8	R44.28	Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications

WGII	WGIII/6	R44.29	From WGIII to WGII: WGII to study this issue and provide guidance on the potential impact of temporal a gap in the PMW SST products.
CGMS members	WGII/3	R43.02	CGMS members to consider removing spectral gaps from future hyperspectral sounders to support GSICS intercalibration of IR imagers.
CGMS members	WGII/6	R43.03	CGMS members to consider include a water vapour channel and a CO2 channel to polar-orbiting imagers, to maintain accuracy and coverage of polar winds and cloud height retrievals achieved by MODIS.

CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.
ISRO	WGII/5	R43.10	ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D

CGMS space agencies	WGII/7	R43.13	CGMS Members to approach Operators of GNSS systems to request them to provide a minimum level of information on the signal structure and interface control (ICD) in a timely manner to enable the use of these for future RO missions.

There are several projects being conducted by satellite operating agencies and GSICS memb
eventually to redevelop the lunar calibration reference.

*** LUSI (NIST)**

The LUnar Spectral Irradiance (LUSI) project is ongoing by the U.S. National Institute of Stan
ground-based Moon observations from Mauna Loa Observatory (MLO) in Hawaii, USA (3402
of the spatially integrated irradiance directly, with no spatial post-processing. Expected unce
traceable to NIST primary standards. Currently the instrument is being characterised and cal
for installation of the LUSI observatory dome.

*** air-LUSI (NASA, NIST, USGS)**

A smaller version of the NIST LUSI instrument has been developed for deployment on the N.
NASA Earth Science Technology Office. The air-LUSI project is led by Kevin Turpie of the Univ
NIST LUSI team, the USGS lunar calibration project, and a robotics team from the University
flight in August 2018, reaching 21.3 km altitude; the lunar data currently are being processe

*** Lunar measurement campaign (CMA)**

The China Meteorological Administration is continuing efforts to acquire measurements of t
imaging spectrometers, a hyperspectral lunar photometer, and a shortwave infrared Fourie
instruments are operated alongside the lunar instruments. The CMA ground-based campaig
is planned for Daocheng, Sichuan province.

*** CLARREO Pathfinder (NASA)**

The Climate Absolute Radiance and Refractivity Observatory Pathfinder mission (CLARREO P
Solar (RS) sensor as a demonstration of inter-calibration and measurement technologies. Sc
a wide range of phase angles when the Moon is observable from the instrument's location c
observations meet the absolute calibration goals for the RS sensor, the CPF Moon observati
accuracy lunar irradiance measurements. CLARREO Pathfinder is scheduled for launch to the

*** ARCSTONE (NASA)**

The ARCSTONE project will acquire lunar spectral measurements from a 6U cubesat platforr
instrument design allows observing the Sun and Moon through the same optical path with r
lunar disk reflectance. Tying these measurements to the solar spectral irradiance, such as fr
provide SI-traceable lunar spectral irradiance with potential sub-percent accuracy. The ARCS
Office, and has a potential flight demonstration in the 2024 time frame.

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
Closed on the occasion of CGMS-47 • Future ICWG intercomparison studies should be funded in a similar manner to CREW (ICWG predecessor) and IWWG studies. ICWG seeks guidance on this. WGII IS#2 2019: Good participation. All data from agencies successfully received. Decision for change to 10-minute temporal resolution has taken place, but not yet implemented. Coordination still necessary with ICWG. WGII IS#1 Dec 2018: Action remains open following WGII discussions, pending/subject to provision of 10- minute temporal resolution data by NOAA. Steve Wanzong to check. CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar '18: ICWG meets in Nov 2018 and expects it to be closed by then. 26 June 2016 date TBC WGII IS #1 20 Nov '17: Two golden days for intercomparison studies have been chosen: 19 Aug 2015 (ICWG cloud properties), 21 July 2016 (ICWG and IWWG). CGMS-45: remains open since some submissions missing or forthcoming and closing is now foreseen for spring	New: CGMS-47 (1 Sept 2016, CGMS-46)	**CLOSED**	4.2.4

CGMS-47: Pending IROWG meeting autumn 2019 WGII IS#2 2019: Next update expected at next IROWG meeting in September 2019. WGII IS#1 Dec 2018: OSSE work to assimilate GNSS-R observations has already started in the context of the CYGNSS mission, but there is still work to be done. Regarding LEO-LEO: The critical missing link is to develop a LEO-LEO forward operator that can be used in NWP systems. Currently it is unclear who would be paying for such a development. Detailed status report on this action dated 6 June 2018 is available from IROWG (contact: ulrich.foelsche@uni-graz.at). CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar 2018: No progress information. 1 Feb 2018/29 Nov 2017: Activity initiated, IROWG has reached out to its members, deadline extended. Regarding the GNSS-R OSSEs, some work has been done to be extended as the global observing system develops. Regarding LEO-LEO occultation OSSEs,	Sept 2019 (CGMS-47, 1 Nov 2017, CGMS-46)	**OPEN**	
WGII IS#1 Dec 2018: Closed following discussions. From NOAA side it is understood that funding is available to extent use of 3D winds from AIRS from YPP studies. That work is ongoing and continuing. CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar 2018: Yr of polar prediction ongoing. NASA will start looking at these in NRT in their model. Steve Wanzong NASA will talk to NOAA. WGII IS #1 20 Nov 2017: No update; NRT product by Dave Santek (SSEC/U Wisconsin) used by NASA GMAO as part of a project; Steve Wanzong to inform Jeff Key	CGMS-47 (01/07/2017, CGMS-46)	**CLOSED**	

CGMS-47: Ongoing. In conjunction with GEWEX, a precipitation assessment is underway and was discussed in detail at IPWG-9 through a dedicated session. The goal is to have the assessment competed in 2020. WGII IS#2 2019: IPWG engaged with SCOPE-CM, working closely with GEWEX. Proposed to be closed at CGMS-47 due to progress as follows (Ralph Ferraro will make presentation): 1. IPWG maintains updated information on its web page regarding CDR quality data sets (and solicits this from its members). See http://www.isac.cnr.it/~ipwg/data.html This is done in concert with other groups such as CEOS, GEWEX, etc. 2. For the recommendation, this is where our precipitation assessment comes into play. One of our past co-chairs, Remy Roca, leads the GEWEX Data Working Group, and Remy, along with outgoing co-chair, Ziad Haddad, organized a precipitation assessment. WGII IS#1 Dec 2018: At IPWG-9 (in Nov 2018) updates were given on the joint precipitation work with GEWEX. Goal is to have this assessment completed by	CGMS-48 or -49 (CGMS-47 CGMS-46)	**OPEN**	

WG II IS#2 2019: CLOSED - implemented. GSICS 22 Jan 2019: GSICS-EP chair to report on the combined version of all agencies at CGMS-47 (like at CGMS-46), since satellie operators will report on the "annual status of observing system" at the GSICS annual meeting in March at Frascati, Italy. WGII IS#1 Dec 2018: Who will take the lead on the report? The CGMS Secretariat proposes to add this as a news item on the CGMS website 10 Oct 2018: First version was presented at CGMS-46 Next version will be delivered at CGMS-47. CGMS-46: Action remains open following WGII discussions. See CGMS-46-GSCIS-WP-01 WGII IS#2 15 Mar 2018: GRWG/GDWG will provide the template and sample to GSICS-EP as Action in 2018 GSICS annual meeting. Mitch will report in WG II at CGMS-46 WGII IS #1 20 Nov 2017: It is related to the action of GSICS-EP-03 "to develop	CGMS-47 (CGMS-46)	**CLOSED**	

CGMS-47: See CGMS-47-WMO-WP-15 for status update. Some agencies still to provide landing page information. WGII IS#2 March 2019: still open WGII IS#1 Dec 2018: Ongoing - WMO is in the process of updating/implementing missing Landing Pages. EUMETSAT and the CGMS Secretariat will verify the CGMS agencies landing pages in OSCAR. Sep 2018: See also WGIII action A46.03 CGMS-46: Action remains open following WGII discussions. CGMS-46 WMO-WP-02 WGII IS#2 15 Mar 2018: Other agencies are requested to provide the URL to their respective landing pages. **KMA** implemented the Landing Pages on COMS calibration events on June 2016. http://nmsc.kma.go.kr/html/homepage/en/landing/info.do#coms **IMD** Dr. Ashim K. Mitra, Scientist-D (SR-Cal/Val) **NASA** charles.webb@nasa.gov **NOAA** mitch.goldberg@noaa.gov **ROSH** z.andreeva@meteorf.ru http://planet.rssi.ru/calval/portal-main-en (the web-page is under construction)	CGMS-48 (CGMS-47 CGMS-46)	**OPEN**	4.1

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
CGMS-47: No update. Mitch to go back and discuss with ITWG. Presentation to be given CGMS-48. WGII IS#2 2019: Ken/Mitch to check with CGMS-Secretariat if action has been taken to ask CGMS members to provide input. CGMS-47 EUM-WP-xx	Dec 2019, CGMS-48 (By CGMS-47)	**OPEN**	4.6.1

CGMS-47: Common QI showed skill in filtering collocated AMVs and led to improved agreement between AMVs generated by satellite operators • Action 1 to IWWG co-chairs: Place the Common QI in a public repository. • Done -> https://github.com/swanzong/IWWG • Send any questions to stevew@ssec.wisc.edu • Recommendation 1 to AMV producers: Implement the software prior to IWW15 • Partially complete : EUMETSAT and NWCSAF/HRW have included the Common QI in their repositories. NOAA, KMA and JMA have plans to complete the integration in late 2019. WGII IS#2 2019: Request to developers to implement this. On-going. WGII IS#1 Dec 2018: There is a Gitlab repository (who is the owner of it?), tested by a few people. An email needs to be sent out to the IWWG community asking them to add this to their software (Steve Wanzong, Co-Chair, IWWG)	By IWW15, CGMS-48	**OPEN**	4.2.1
CGMS-47: The AMV sequence 3.10.067 endorsed by the WMO in November 2017 has been rejected by some users in early 2018 because it could not be used in automated framework. • The WMO corrected the sequence appropriately and endorsed the new AMV BUFR sequence 3.10.077 in November 2018. • NOAA, EUMETSAT and JMA are working on the production of the test data, planning an operational change early 2020. The NWCSAF will release a software patch later in 2019 which includes the new BUFR sequence. A new deadline to IWW15 (spring 2020) has been set to agencies to change their AMV BUFR sequence. • AMV producers to provide their users with a small test dataset (a few hours of data) encoded in the new BUFR format as soon as possible. • Nine months later, AMV producers will provide parallel dissemination of their AMV data in the new and old BUFR sequence over a 2-3 month period of time to allow the switch to take place.	End 2019 (CGMS-48)	**OPEN**	4.2.1

CGMS-47: The Met Office and Met Norway is planning to test various configurations of AMVs, via the NWC SAF software, to work towards optimal configurations. • There are no updates to report at this time. • We expect more discussion at the IWW15. • No results to report yet. • This topic and results will be re-visited at IWW15. WGII IS#1 Dec 2018: The two NWP contacts that will help with this action are: Mary Forsythe mary.forsythe@metoffice.gov.uk and Roger Randriamampianina rogerr@met.no (Steve Wanzong, Co-Chair, IWWG)	By IWW15, CGMS-48	**OPEN**	4.2.1
CGMS-47: For the ASCAT winds community, the TRISTAR configuration has a significant benefit by improving the coverage of the ASCAT measurements. For dual Metop winds, both TRISTAR and TRIDENT configurations are possible. However, the TRISTAR configuration enables the creation of two complementary products C-B and B-C that are asymmetric, impacting both the coverage and quality. WGII IS#2 2019: While the scatterometer community prefers TRISTAR configuration, other communties prefere other configurations. Finale decision to be taken in September 2019. WGII IS#1 Dec 2018: Discussion between WGII and IWWG? (Oct 2018: Discussion with WGI superseeded - currently not required. Sep 2018: Needs discussing in WGI)	By CGMS-47	**CLOSED**	

CGMS-47: Research activities continue that aim to identify additional quality information from the AMV derivation that could be used to filter out poor quality AMVs and/or set observation errors for the AMV height assignment. • Quality measure associated with the correlation surface (addresses feature tracking) • Optimal estimation cost associated with cloud top temperature retrieval (addresses AMV height assignment) • Cloud top pressure error estimates (addresses AMV height assignment) • No results to report at this time. • We expect that some useful information relevant to this action may be extracted from work associated with A46.04. • This topic will be re-visited at IWW15. WGII IS#2 2019: no update	CGMS-48 (By CGMS-47)	**OPEN**	
CGMS-47: IWWG has reviewed the gaps identified by the last Essential Climate Variables (ECV) inventory. • The international status of polar and geostationary AMV reprocessing has been updated and is presented in Annex 1 of the IWWG Working Paper. • This topic will be discussed in a specific session at the next at IWW15. WGII IS#2 2019: no update	CGMS-48 (By CGMS-47)	**OPEN**	
WGII IS#2 2019: to be raised at next IROWG in September 2019. 10 Oct 2018: Best practices to be developed. (WGII to consider extension to other areas e.g. winds/IWWG). To be raised at the next IROWG meeting (date TBD)	Oct 2019	**OPEN**	

CGMS-47: See CGMS-47-SCOPE-CM-WP-01WGII WGII IS#2 2019: Meeting was held 7-8 February 2019. Convergence on a plan forward. To be presented to WGClimate-10 in March 2019 and to CGMS-47. Recommended to be closed at CGMS-47. 10 Oct 2018: SCOPE-CM to report back to CGMS-47 on proposed new structure for endorsement. WMO to contact Jeff Privett in order for him to do so. Outcome of meeting in September 2018?	First half of 2019	**CLOSED**	
WGII IS#2 2019: already foreseen. Will take place in June. Action can therefore be close. 13 Dec 2018: CGMSSEC contacted NOAA to explore the need for reaching out IMD: Dr. R.K. Giri, rk.giriccs@gmail.com	CGMS-47 Plenary	**CLOSED**	
WGII IS#2 2019: closed	By 31 August 2018	**CLOSED**	4.5.4
Dec 2018: Dr. lothar.schueller@eumetsat.int Oct 2018: Dr. A.K. Mitra, ashimmitra@gmail.com	By 31 August 2018	**CLOSED**	
CGMS-47: Mitch Goldberg to report following the ITWG meeting.	1 Dec 2019 (By CGMS-47)	**OPEN**	
CGMS-47: No input provided to CGMSSEC . WGII members need to reach out and confirm the pocs. WGII IS#2 2019: check with CGMS-Sec	CGMS-48	**OPEN**	4.5.4
CGMS-47: No input provided to CGMSSEC . WGII members need to reach out and confirm the pocs. WGII IS#2 2019: check with CGMS-Sec	CGMS-48	**OPEN**	4.5.4
CGMS-47: Closed. WGII IS#2 2019: ROSCOSMOS contact missing **KMA/NMSC:** Han-Cheol Lim (hclim09@korea.kr)	By 31 August 2018	**CLOSED**	6.2.2
Recommendation feedback/closing document	**HLPP ref**		

COMPLETED 14 Dec 2018: ESA has confirmed becoming a full member of GSICS EP.	
CGMS-47: ICWG invited IPWG representative Ben Johnson to present at ICWG-2 and engagement is developing. WGII IS#2 2019: needs to be further precised/developed (GCOS?, FCDR). Possibly with WGClimate? WGII IS#1 Dec 2018: WGII co-chairs to check with Mitch Goldberg Sep 2018 CGMSSEC: WGII is requested to make this more specific.	
CLOSED Sep 2018: Action on WGIV A46.04	
COMPLETED: Sep 2018: Covered by User readiness Best Practices. *However, review against Best Practices needed, taking also climate equirements into account*	
CLOSED Sep 2018 CGMSSEC: Considered closed. Would need significant rephrasing/detailing.	
COMPLETED: Sep 2018: Covered by the new CGMS Baseline.	
COMPLETED: CGMS-46 plenary endorsed WGII recommendation and an action on the CGMS Secretariat was raised accordingly.	

COMPLETED WGII IS#1 Dec 2018: PSTG has active CGMS member representatives from CMA, CNES, EUM, ISRO, NOAA, NASA who will be engaged in any future revision of the ToR - after the update made to include high mountains (*and the H in PHORS). Future updates to the ToR will reflect the WMO reorganisation, existence of EC-PHORS, and the positioning of PSTG in respect to the Commissions and cross-cutting activities. 10 Oct 2018: PSTG meeting next week. WMO (W Balogh) to bring up CGMS aspects there.	
Closed	
CGMS-47: Ben Johnson (IPWG) attended ICWG-2 and gave a briefing on the IPWG and areas of collaboration. • ICWG would like to establish a topical group to meet on this collaboration and include membership from IPWG. This group could meet at both meetings as warranted. The areas of collaboration would include cloud modeling and use of cloud microphysical products in precipitation retrievals. WGII IS#1 Dec 2018: **CLOSED** following discussions. Sep 2018: CGMSSEC recommends WGII to close this recommendation, it is covered by the work in the ISWGs and working groups. WGII IS#2 15 Mar 2018: It was agreed to maintain the recommendation, albeit some difficulty in implementing it WGII IS #1 20 Nov 2017: Informal discussions held on the topic within IPWG.	

CGMS-47: CLOSED. Engangement between IPWG and VLab ongoing WGII IS#1 Dec 2018: Luciane Veeck (VLab TSO) to follow up with Ralph Ferraro (IPWG) Sep 2018 CGMSSEC: Suggests this is converted to an action on WMO. 23 May 2018: The VLab Management Group (VLMG-9) planned for July 2019 will discuss how the VLab should deal with external training requests (defining process for requests, clarifying VLab scope and audience, sharing requests with training partners). CGMS-46 WGII to decide if the recommendation shall be maintained, closed or converted into an action. **WGII IS#2 15 Mar 2018:** ACTION: WMO to inform VLab about the ISWGs co-chairs regarding training requests. ISWGs are encouraged to organize training events for local students and practitioners, in conjunction with their science workshops, and in coordination with WMO VLab. IROWG workshops are usually combined with scientific workshops where students participate. IWWG	

WG II IS#2 2019: **CLOSED** WGII IS#1 Dec 2018: Link NWP community when design of new missions is considered. Requirements are included in CGMS baseline and Vision for WIGOS in 2040 (Mikael). IPWG to look at CGMS baseline and Vision document to provide their feedback. Sep 2018 CGMSSEC: WGII to verify the lead on this recommendation. Most of these are included in the CGMS baseline or HLPP by now. Notably GEO microwave missions are not [yet]. IPWG to specify what their requirements are. WGII IS#2 15 Mar 2018: Included in IPWG report aspects to CGMS 23 Feb 2018 - IPWG: It would include (but not be limited to): Space based precipitation and cloud radars - one that combined relevant frequencies of heritage sensors like cloudsat and GPM precip radar. Microwave cloud imagers (similar to what will fly on next generation EUMETSAT polar orbiters); geostationary microwave sensors; lightning mappers WGII IS #1 20 Nov 2017: ICWG input:	
WGII IS#1 Dec 2018: **CLOSED** following discussions. WGII IS#2 15 Mar 2018: Joint session planned at IPWG-9. WGII IS #1 20 Nov 2017: IPWG: see action WGII A45.05	

Dec 2018: **CLOSED** by WG II (discussed during GSICS annual meeting). Sep 2018 CGMSSEC: This is an action on GSICS to consider this. WGII to securite it is followed up with GSICS. During 2018 GSICS annual meeting, members discussed to confine the only "calibration" events logging. The draft guideline has been already written by task team. WGII IS#2 15 Mar 2018: To be discussed in GSICS meeting in week of 19 Mar 2018; results part of GSICS report to CGMS-46 WGII IS #1 20 Nov 2017: Dohyeong Kim to follow up. CGMSSEC to clarify whether WG I or WG IV should provide operational guidance to logging task team (when reviewing the TORs of WG I and WG IV)	4.1
CLOSED: **PROPOSED COMPLETION** (22 Jan 2019) The GSICS community proposes the closure of R45.06 due to the following. The "new guideline" noted in R45.06 is a white paper on Satellite Instrument Event (CGMS-45-EUM-WP-33), which consists of 2 steps: - creating stable Landing Pages linked from OSCAR/Space and; - adopting nomenclature and standards for instrument events. The purpose of R45.06 is to *asses* the compliance with the new guidelines, and *establish a list of instruments* to be addressed by the calibration logging system. I.e. sufficient to focus on the first step of the white paper. Several GSICS agencies (CMA/EUM/KMA/JMA/Roshydromet) have already launched the Landing Page.	4.1

CGMS-47: CLOSED. MTVZA-GY presentlly not working. When next payload is launched, effort will be made to enable global exchange. *Sep 2018 CGMSSEC: Suggests to convert this to an action on Roshydromet [for future missions] (and WGIV).* WGII IS#2 15 Mar 2018: Roscosmos has enquired with WMO and DBNet community about processing software details (for Linux platform, user documentation in English) WGII IS #1 20 Nov 2017: MTVZA-GY no longer functional, WMO letter has gone to Roscosmos (Mikhail Khailov) regarding processing software for Direct Readout of future Meteor-M N2-1 data, following discussions at AOMSUC-8 in Oct 2017.	2.4.4
CGMS-47: Ongoing. For NOAA: NOAA-WP-16 (Landing pages include this information). WGII IS#1 Dec 2018: To be addressed in IPET-SUP-5 in February 2019. WGII IS#2 15 Mar 2018: WMO has taken these into account. **KMA** has registered a link to COMS L1B imagery in 2015 for WMO PAG and is currently available. KMA's renewed web page has been setup including MI level 2 products image and ATBD. KMA is preparing its registration process for PAG. -MI Level 2 products image http://nmsc.kma.go.kr/html/homepage/en/ver2/satellites/coms/searchSatelliteImageN.do?data_type=1089 -MI Level 2 products ATBD http://nmsc.kma.go.kr/html/homepage/en/ver2/common_board/Data/selectData.do?board_c_cd=023&cmn_data_seq_n=5322 **KMA** POC - Geun-Hyeok Ryu (geunhyeokryu@korea.kr) - Jin Woo (superjwoo@korea.kr) **IMD** will prepare an online product document including ATBD, validation report and its link will be	

WGII IS#1 Dec 2018: Discussed at the ICWG . Message to remain. IWWG side funded. ICWG not yet. WGII IS#2 15 Mar 2018: For further discussion within ICWG. Co-chair to provide an update. CGMS-45: ICWG-WP-01: Currently, ICWG helps to facilitate the collection of data used for assessments (e.g., level-2 retrieval assessment in TG “Assessment of level-2 retrievals” or level-3 climate data records in TG “Assessment of cloud parameter data records for climate studies”), but many teams carried out the efforts on a volunteer basis. Lack of funding has limited the scope and prohibited a definitive analysis of the new HIMAWARI-8 data set.	
CGMS-47: Closed. To be addressed during intersessional meetings of ISWGs chairs. WGII IS#1 Dec 2018: IPWG, IWWG working with ICWG.ICWG to report to CGMS-47. WGII IS#2 15 Mar 2018: Maintain it as a recommendation. Nov '17: Some informal discussions held in IPWG	
CGMS-47: Keep open. WGII IS#2 15 Mar 2018: Maintain it as a recommendation. US decadal survey on EO from space, specific measurements were noted , will influence the decision making.	
CGMS-47: Closed KMA 22 Jan 2019: KMA will operate 10-minute timeline and 2 minute interval rapid scan target observation. WGII IS#2 15 Mar 2018: Maintain it as a recommendation. NOAA: 2 minute scan under consideration, needs testing for GOES-17, NWS to be involved CGMS-45: NOAA consider this for GOES-16	

COMPLETED. Sep 2018: Part of new baseline and new HLPP. WGII IS#2 15 Mar 2018: Will be addressed in WGIII workshop on contingency planning, baseline review 30 Apr-2 May 2018. CGMS-45: Questions of resolution, frequency need to be resolved, not just high-level mission continuity CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
CGMS-47: CLOSED - Sent to WG III# WG II IS#2 2019: mails have been sent to WGIII co-chairs/rapporteur to transfer this recommendation to WG III *Sep 2018 CGMSSEC: Suggests this to be an action on WGIII for consideration (particularly in view of newly developed or to be developed R&D satellites).See also WGIII R44.04* CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
CLOSED	
COMPLETED Sep 2018: Covered by the new CGMS Baseline and the revised HLPP	1.2
CGMS-47: **CLOSED** - Each agency will take its own approach	1.1.4

COMPLETED WGII IS#1 Dec 2018: Three orbits are part of the CGMS baseline. Overpass time to be cooordinated by WG I. *WGII co-chairs and rapporteurs to bring this to the attention of WGI co-chairs/rapporteurs.* Sep 2018 CGMSSEC: Consider coordination of overpass times should be a subject of WGI. The remainder is covered by the new CGMS Baseline and revised HLPP. CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
CGMS-47: not part of the CGMS baseline. Monitor progress, in particular with regards to small satellites. WGII IS#2 2019: Check if discussed in WG III Risk Assessment Workshop. Mails have been sent to WGIII co-chairs/rapporteur to check. WGII IS#1 Dec 2018: WGII co-chairs to contact WGIII co-chairs and the pass recommendation to WGIII. *Sep 2018 CGMSSEC: Sugges t this is an action on WGIII for consideration .* CGMS-45: NASA Cubesat mission Tropics underway CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
WGII IS#1 Dec 2018: Letters have been sent (by whom ???) Apr 2018: Following feedback from Roshydromet, the text of this recommendation has been updated (as discussed during CGMS-45 WGII).	

CGMS-47: Proposed to be transferred to WG III. Following further discussion in the CGMS Secretariat, we propose that this recommendation is maintained in WGII until CGMS-47, and then taken up when the risk assessment is discussed, at that stage we can see if it should be transferred to WGIII (or stay in WGII or other). WG II IS#2 2019: Mails have been sent to WGI co-chairs/rapporteur to transfer this recommendation to WG I. WGII IS#1 Dec 2018: WGII co-chairs to contact WGI co-chairs to forward recommendation to WGI. *Sep 2018 CGMSSEC: Suggests this is an action on WGI to consider coordination of orbits.* CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
COMPLETED WGII IS#1 Dec 2018: Completed following the IS discussions. WGII IS#2 15 Mar 2018: Maintain it as a recommendation. For IWWG.	
CGMS-47: See CGMS-47-WMO-WP-10 WGII IS#1Dec 2018: Needs checking with the Chairperson of SCOPE-Nowcasting - who will do this in WGII? WGII IS#2 15 Mar 2018: Ongoing. SCOPE-NWC making good progress. Funding earmarked by EUMETSAT and WMO. A Workshop to be held in October '18. Maintain as recommendation. CGMS-45: Funds earmarked by EUMETSAT for 2018 Deadline for indication of support to volcanic ash activity) No indication of support to VA intercomparison so far received by WMO. WMO has identified resources to engage consultant for 2.5 months FTE to support SCOPE-Nowcasting.	

WGII IS#2 15 Mar 2018: Maintain it as a recommendation.	
CGMS-47: CLOSED WGII IS#1 Dec 2018: CMA did not attend discussion. *Sep 2018 CGMSSEC: Suggests this is an action on CMA for consideration.*	
CLOSED/COMPLETED CGMS-45: Last week of June 2017, Madison WI, USA	
CGMS-47: Closed. Link to ATBDs recommendation. WGII IS#2 2019: could be a best practice guideline e.g. for inclusion into SATURN (e.g. as landing pages). WGII IS#1 Dec 2018: For further discussion in WG II. Currently the focus is on RO. Ken Holmlund/Mitch Goldberg to confirm. Pending progress, further expansion will be considered. *Sep 2018 CGMSSEC: WGII to rephrase and create an action to this purpose, or close this recommendation. Are there being WGII best practices developed?* *In addition to R44.24, there was a WGII action A44.11 agreed at CGMS-44: CGMS to develop best practices for documenting products and their quality.* *This action was closed at CGMS-45, leaving recommendation 44.24. There were discussions about Best Practices in WGII at CGMS-45, but the reasons for closing the action 44.11 are not stated in the CGMS-45 report.* CGMS-45: NOAA-WP-13 CGMS-44 WGII: Part of WGII action to develop best practices	

CGMS-47: NOAA considering in its system studies and talking with potential partners. WGII IS#1 Dec 2018: Meeting on 5 Dec 2018 at EUMETSAT to discuss HEO missions. *Sep 2018 CGMSSEC: This recommendation needs rephrasing/formulation, closing or other.* Link to WGIII required	
CGMS-47: Maintain WGII IS#1 Dec 2018: KMA (Dohyeong Kim) to check with GSICS. WGII IS#2 15 Mar 2018: Update expected at the March '18 GSICS meeting. SWTT is preparig a proposal on integrating space weather products into GSICS. To be discussed at CGMS-46. CGMS-45: GSICS discussed this issue	
CGMS-47: Closed WG II IS#2 2019: maintain. To be transferred to WG III. Mails have been sent to WGIII co-chairs/rapporteur to transfer this recommendation to WG III. WGII IS#1 Dec 2018: NASA recently launched TSIS to ISS, which has achieved part of this goal for next 5 years. Solar spectral irradiance measurements should be part of the CGMS baseline (needs cross-checking) or should be part of the Vision 2040 (needs cross-checking). WGII IS#2 15 Mar 2018: Maintain it as a recommendation.	
CGMS-47: Recommended to be transferred to WG I. WGII IS#1 Dec 2018: To be maintained (See also CGMS-44 WGI action A44.08 related to IROWG)	

WGII IS#1 Dec 2018: Considered **COMPLETED**. Potential gaps in low-frequency microwave data. Addressed by other actions already. *Sep 2018 CGMSSEC: Please rephrase, turn into an action, close or other. (WGs should not make recommendations to each other. Recommendations are for members or external entities to consider.* WGII IS#2 15 Mar 2018: Maintain it as a recommendation. CGMS-45: 6.9MHz currently used, in future only GCOM-W will provide this capability for the time being.	
WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	4.1
WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at a second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	

CGMS-47: Closed in WG II Update IMD: IMD is final stage of implementing MMRDPS system in July 2019 and will start sharing INSAT-3D/3DR level 1B data to all NMA after on line registration on our on-line data supply portal similar to NOAA. Though at present we are sharing L1B data to NOAA and Canada Meteorological Agencies nearly real time basis through FTP. WG II IS#2 2019: Mails have been sent to WGIV co-chairs/rapporteur to transfer this recommendation to WG IV. WGII IS#1 Dec 2018: WGII proposes to transfer this to WGIV WGII IS#2 15 Mar 2018: - Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMDRPS system expected in June 2018. CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).	
CGMS-47: ISRO has carried out following activities: (1) Using Bayesian formulations, a new rain retrieval algorithm for SAPHIR is developed. (2) This algorithm is recently made operational on MOSDAC. (3) This is being used for merging the SAPHIR rain with INSAT measurements. INSAT-3D/3DR based Hydero-Estimator algorithm that provides pixel-scale and half-hourly precipitation is already operational. We will likely to complete the merging of precipitation from SAPHIR and INSAT-3D in near future. This action may be kept open. WGII IS#2 15 Mar 2018: ISRO/IMD invited to report on this at CGMS-46. Nov 2017: IMD will coordinate with SAC (ISRO) to develop and implement the multi sensor precipitation estimate based on SAPHIR and INSAT-3D/3DR data on priority. CGMS-45: ISRO/IMD have plans	

COMPLETED WGII IS#1 Dec 2018: (Beidou and GLONASS ICD received). IS#2 15 Mar 2018: Beidou B2a and B1c ICDs are now available (see Plenary Recommendation 45.01): B2a http://www.beidou.gov.cn/xt/gfxz/201712/P020171226742357364174.pdf B1c http://www.beidou.gov.cn/xt/gfxz/201712/P020171226741342013031.pdf CGMS-45: IROWG discussed this and made recommendations	

ɔer institutions to acquire high-accuracy lunar measurements,

dards and Technology (NIST). LUSI will acquire a long-term set of
2 m altitude). The LUSI instrument makes spectral measurements
ertainty is less than 1% absolute. The instrument calibration is
libratedat NIST, and the MLO site is reserved and being prepared

ASA ER-2 high-altitude aircraft under a project sponsored by the
versity of Maryland Baltimore County, in collaboration with the
of Guelph, Canada. The experiment had a successful engineering
d. Science acquisition flights are scheduled for September 2019.

the Moon using multiple different types of instruments, including
r Transform Spectrometer. Atmospheric characterisation
n has resumed at Lijiang (3193 m altitude), and another campaign

Pathfinder, CPF) will acquire views of the Moon with its Reflected
ience planning for lunar observations by CPF RS specifies capturing
on the International Space Station. Presuming the lunar
ons represent a potential to collect a substantial set of high
e International Space Station in early 2023.

n, covering the wavelength range from 350 to 2500 nm. The
ıo interchange of components, thus giving a direct measure of
om the Total and Spectral Solar Irradiance Sensor (TSIS), can
STONE project is funded by the NASA Earth Science Technology

H/RSP, (RSP/J Ackermann, USC/JoS,)
EUM to report to CGMS-47 as
necessary

Some space agencies have done this
(JMA, EUM)
DG/CS to provide background, unclear
what the needs are.

WGIII actions open from previous plenary sessions (at CGMS-46)			
Actionee	**AGN item**	**Action #**	**Description**
WMO	WGIII/	A44.02	WMO Secretariat to present the draft Vision at CEOS, GEO plenary sessions 2016.
SETT	WGIII/8	A45.04	Propose a way forward for guiding and coordinating socio-economic benefit studies among the CGMS community.

CGMS agencies	WGIII/5.1.2	A45.08	Agencies to consider contributing resources (financial, in-kind, or via secondment) to the development and maintenance of OSCAR/Space
WMO	WGIII/4.1	A46.01	7th WMO Impact Workshop to include EM orbit impact among its science questions
WGIII	WGIII/4.2	A46.02	WGIII to consider how to account for the unique SST conical microwave imager in the CGMS Baseline and Risk Assessment

CGMS members	WGIII/7.3 (plen C.2)	A46.03	**On OSCAR space (CGMS-46-WMO-WP-02):** Nominated OSCAR/Space Support Team (O/SST) pocs (ref. CGMS-46 A46.02) to review and provide updates to the Oscar landing pages for calibration events relevant to their respective agencies to tkurino@wmo.int and wbalogh@wmo.int copy to cgmssec@eumetsat.int
CGMSSEC, WMO	WGIII/7.3 (plen C.2)	A46.04	**On OSCAR space (CGMS-46-WMO-WP-02):** CGMSSEC to investigate the provision of a dedicated resource to support the CGMS risk assessment and coordinate the provision of OSCAR/Space content.
WMO	WGIII/9	A46.05	WMO to review the Vision for WIGOS 2040 to be more precise regarding the GSPRO measurements to be provided by Tier 1

WGIII	WGIII/6	A46.06	WGIII to hold a CGMS Risk Assessment Workshop prior to CGMS-47 with the dual purpose to (i) provide the initial risk assessment of the CGMS Baseline, and (ii) Propose a way forward on how to incorporate an annual risk assessment in the regular work programme of CGMS, including agenda of WGIII. iii) to explore ways of integrating WMO's position on critical satellite data (CGMS-46-WMO-WP-04) into the CGMS baseline; to be addressed at a dedicated workshop by Q1 2019
CGMS-46 WGIII recommendations (including recommendations from previous plenaries)			
Lead	**AGN item**	**Rec #**	**Description**
CGMSSEC (NWP SAF)	WGIII/3	R46.01	CGMSSEC to enquire with EUMETSAT NWP SAF Radiative Transfer Model (RTM) support for FY-2E/H Indian Ocean coverage.
CGMS Members	WGIII/ 7.3	R46.02	CGMS Members recommended to utilise OSCAR/Space database as a reference common tool for gap analysis and risk assessment.
WMO	WGIII/	R44.02	Noting the recent conclusions of the WMO IPET-DRMM and the concurrence expressed in CGMS WG III, WMO is encouraged to add the satellite identifier (from Common Code Table C5) and satellite instrument identifier (from Common Code Table C8) to OSCAR Space.
CGMS space agencies	WGII	R44.04	**From CGMS-44 WGII:** CGMS (WGIII) to have a special discussion on the value of formation flying similar to the A Train – especially for precipitation and other hydrological applications
CGMS space agencies	WGII	R44.05	**From CGMS-44 WGII:** CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.
CGMS members	WGIII/2.2	R43.01	CGMS members are encouraged to consider including RO capabilities on all future polar-orbiting satellites.

WGIII and WGII to discuss current WGII recommendations possibly better addressed in WGI

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
CLOSED on the occasion of WGIII IS #2 6 Feb 2019 Presented to both GEO and CEOS plenary. Consolidation of the text is ongoing and will be briefly addressed at CGMS-47. The Vision will be presented to WMO Cg-18 for endorsement. 24 Oct 2018 WGIII IS: The latest version of the Vision is expected to be available around mid November. A consolidated input will then be provided to WMO by CGMSSEC by mid December 2018. 17 Oct 2018: WMO presented the WIGOS Vision 2040 to CEOS Plenary on 17 Oct 2018. Action expected to be closed by end of 2018 at the latest. WGIII IS #3 10 Apr 2018: WMO to confirm if the vision will be presented to CEOS. (Not on the CEOS SIT AGN in April 2018). WGIII IS 28 Nov 2017: WMO organised a side event at GEO plenary. WMO will seek to present the Vision to CEOS in the course of 2018. CGMS-45: Status presented, CGMS agencies invited to provide comments (including on carbon observations). Deferred to next cycle.	Oct/Nov (End 2016, CGMS-46)	**CLOSED**	1.1
Provided in CGMS-47-CGMS-WP-20 WGIII IS#2 6 Feb 2019: NOAA will hold a workshop in spring time. Will provide update at CGMS-47. 24 Oct 2018 WGIII IS: SETT updates expected early/spring 2019 CGMS-46: Remains open following WGIII discussions. See CGMS-46-NOAA-WP-15 WGIII IS#3 10 Apr 2018: Apr/May meeting at which stage more information will follow. SETT seeking to identify new case studies. WMO recommends looking at risk analysis and SETT could look at potential consequences thereof.	CGMS-47 (CGMS-46)	**CLOSED**	

Superseeded by CGMS-47-WMO-WP-03a/3b and new, related actions. WGIII IS #2 6 Feb 2019: EUMETSAT will support the content management of the OSCAR/Space database in 2019. WMO will provide a paper to CGMS-47 addressing the long-term sustainability of the OSCAR/Space database (medium- to long-term plans, resources, etc) to enable CGMS space agencies to consider in what way they could support it. 24 Oct 2018 WGIII IS: EUMETSAT will address this topic in the coming weeks. CGMS-46: Remains open following WGIII discussions. WGIII IS#3 10 Apr 2018: CGMS-46 WMO-WP-02 to provide a status report, issues, and way forward. Linked to the issues of the gap analysis process. WGIII IS 28 Nov 2017: WMO to articulate the needs and what type of support is needed to then be circulated to space agency members	CGMS-47 (CGMS-46)	**CLOSED**	
CLOSED on the occasion of WGIII IS #2 6 Feb 2019. WMO received adequate input for 7th WMO Impact Workshop (lriishojgaard@wmo.int is part of the science committee).	CGMS-47	**CLOSED**	1.3
CGMS-47: Adressed within the scope of the initial CGMS baseline and risk assessment performed in spring 2019. For further review in 2020 ***?*** 1 Mar 2019: Discussed at the risk assessment workshop. As for the Baseline, these should be included once future plans are clearer. Future plans will be discussed at CGMS-47 plenary. WGIII IS #2 6 Feb 2019: No update. Topic to be discussed at the Risk Assessment Workshop Feb/Mar 2019. 24 Oct 2018 WGIII IS: To be discussed at risk analysis WS at EUMETSAT Feb/Mar 2019. Might consider feedback/ongoing discussions from related CEOS VCs. CGMSSEC/EUM: preparing a CGMS baseline document for publication on the CGMS website (as per CGMS-46) - to include the contingency plan?	CGMS-48 (CGMS-47)	**OPEN**	1.2

CGMS-47: Superseded by CGMS-47-WMO-WP-03b and part of the WGIII general framework WGIII IS #2 6 Feb 2019 (slight rephrasing of the action to include 'landing pages' for calibration events) WMO waiting on member input, preferably before GSICS annual meeting the first week of March. 24 Oct 2018 WGIII IS: Webex to be held on 25 Oct 2018 Sep 2018: See also WGII action A45.06 (Moved from plenary 7 Aug)	25 Sep 2018	**CLOSED**	1.1
CLOSED *1 Mar 2019: WMO provided an update on OSCAR/Space at the risk assessment workshop. At CGMS-47, WMO will present the OSCAR/Space sustainability and long-term continuity (incl requirements and resources. CGMS-47-WMO-WP-03* WGIII IS #2 6 Feb 2019 - WMO to provide update on OSCAR/Space at the risk assessment workshop in Feb/Mar. At CGMS-47, WMO will present the overall and future requirements and resources of the OSCAR/Space database needed. 24 Oct 2018 WGIII IS: CGMSSEC/EUM to discuss with WMO what support it might be able to provide and report back. (Moved from plenary 7 Aug)	end 2018	**CLOSED**	1.1
CLOSED WGIII IS #2 6 Feb 2019 WMO has taken this into account (incl IPET-SUP feedback) and is currently consolidating the version to be presented to WMO Congress. It is expected that the revised version will be available by the WGIII risk assessment workshop. WMO will provide an update on the Vision 2040 to CGMS-47. (Added following review of the draft report)	end 2018	**CLOSED**	

CLOSED *CGMS risk assessment workshop held on 27 Feb-1 Mar 2019. WS conclusions are available from WGIII.* WGIII IS #2 6 Feb 2019 WMO to provide the revised version of the Vision to to risk assessment workshop in Feb/Mar. 24 Oct 2018 WGIII IS: WS to be held on 27 Feb - 1 Mar 2019 at EUMETSAT. Draft objectives and agenda to CGMSSEC to provide the invitation by mid November 2018. (Added following review of the draft report)	Q1 2019	**CLOSED**	
Recommendation feedback/completion document	**HLPP ref**		
CGMS-47 WGIII: Recommendation to be passed to EUMETSAT			AT to contact Lothar S
CLOSED following discussions in WGIII and superseeded by CGMS-47-WMO-WP-03a & b and 17a & b	1.1		
CGMS-47 WG discussion - WMO to provide feedback. Sep 2018 CGMSSEC: Suggest this is converted to an action on WMO for consideration.			
CLOSED following WGIII discussions and superseded by CGMS-47-CGMS-WP-13WGIIIa Sep 2018 CGMSSEC: Suggest this is converted to an action on WGIII. See also WGII R44.10			
CLOSED following WGIII discussions and superseded by CGMS-47-CGMS-WP-13WGIIIa Sep 2018 CGMSSEC: Suggests this is an action on WGI to consider coordination of orbits. See also WGII R44.18.			
CLOSED following WGIII discussions and superseded by CGMS-47-CGMS-WP-13WGIIIa Under discussion. Discussed at CGMS-44, 45 and 46.	1.1.4		

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Open WGIV actions from CGMS-45 or earlier following CGMS-46 discussions			
Actionee	**AGN item**	**Action #**	**Description**
EUMETSAT	WGIII/2	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.

NOAA	(WGI/4) WGIV/7	A43.03	NOAA to consider including GLM products in the HRIT stream
TFMI	(WGI/6) WGIV/10.1	A43.05	CGMS Task Force on Metadata Implementation to review the metadata for existing DBNET products

CGMS Secretariat WMO, satellite operators, WMO	WGIV (WGII)	A44.05	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs.
JMA/KMA	WGIV/4	A45.01	JMA/KMA to coordinate a regional user survey in RA II/V based on the WMO 2016 global survey (CGMS-45 WMO-WP-15) in collaboration with BOM and WMO, taking into consideration the communication satellite broadcast systems available in the regions.

TFMI	WGIV/9	A45.02	TFMI to work on the WIGOS metadata standard, in particular to assess the WIGOS Metadata OGC Observations and Measurements standard, and recommend possible adjustments for satellite observations to the WMO WIGOS team.
TFMI	WGIV/12.1	A45.03	CGMS satellite operators to provide documentation on the data formats for space weather observations, and to forward related space weather metadata to the WIS.
CGMS satellite operators	WGIV/12.2	A45.04	CGMS members to report on the status of near real-time access to space weather data from instruments hosted on meteorological satellites. This includes data from space environment monitor suites, solar X-ray/EUV sensors, and radio occultation instruments on any orbiting satellite. Members are asked to detail product level definitions including near real-time availability of each level and user access required to obtain each level of data.

WG IV	WGII/4	A45.05	Action from WGII: Ensure timely (< 1 hr) and free access to all geostationary visible, IR and water vapour data that is required to improve global hydrological prediction.

CGMS-46 WGIV actions

Actionee	AGN item	Action #	Description
NOAA	WGIV/3.2	A46.01	NOAA to appoint a new PoC on SATURN for GOES
WMO	WGIV/3.2	A46.02	WMO to further refine the requirement from IPWG for GEO image data, in terms of users and geographical resolution
WMO	WGIV/6	A46.03	WMO to liaise with GSICS on implementing GSICS monitoring capabilities in WDQMS, to include incident management capabilities, and report back to WG-IV, proposing a way forward
CGMS satellite operators	WGIV/7	A46.04	To consider an enhancement of advance notifications of processing changes as specified below and provide feedback to WG-IV. If a planned change to data processing results in a change in brightness temperature of 0.1K or 20% of NEdT (whichever is smaller), this should be made clear in notifications to users. These notifications should be made no later than 8 weeks before the change and test data should be provided if possible. [From the ITWG ITSC-21 Report]

CMA	WGIV/7	A46.05	To consider implementing a subscription-based anomaly/event notification service, similar to that provided by NOAA and EUMETSAT and provide feedback to WG-IV.
WGIV	(Plenary E.10)	A46.06	Following CGMS-46 plenary discussions related to IROWG and GCOS IP: CGMS WGIV to consider the GCOS IP actions on long-term data preservation (LTDP). Ref. GCOS IP action G 26.
WGIV	(SWTT)	A46.07	From SWTT/SWCG to WGIV: Determine data formats of space weather measurements use by CGMS Members, particularly particle sensor data (GEO and LEO) and magnetic field data (GEO)
CGMS satellite operators	IS-2	A46.08	CGMS members to review the "CGMS/WMO best practices for achieving user readiness for new meteorological satellites" (https://www.cgms-info.org/documents/CGMS-BP_user_readiness_Apr2016.pdf) and to provide feedback and make recommendations on updates.
CGMS-46 WGIV Recommendations			
Lead	**AGN item**	**Rec #**	**Description**

CGMS satellite operators	WGIV/8.1	R46.01	CGMS agencies interested in accessing near real-time flood maps should be made aware of the RealEarth Website. A training module is also available from the UCAR COMET MetED website. The flood mapping algorithm from VIIRS is also provided for direct broadcast users through the CSPP software package. Contact Mitch.Goldberg@noaa.gov for further information.
CGMS members	WGIV/3.2	R44.01	CGMS members to contribute to the implementation of the Best Practices for User Readiness for meteorological satellite systems under development, both GEO and LEO
CGMS members	WGIV/3.2	R44.02	CGMS members to continue the provision of up-to-date User Readiness information in the SATURN portal

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
CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
at CGMS-47: Availability of Elektro-L N2 meteorological products to be discussed with Roshydromet. CMA to provide status of implementation of IODC products on CMACast. Implementation of all other products on EUMETCast Africa and provision to CMA completed. 5 Dec 2018: Elektro-L N2 meteorological products not yet available. Implementation of all other data at EUMETSAT side (EUMETCast Africa) completed. Access for CMA via EUMETCast Terrestrial in progress, to be completed latest Jan 2019. CGMS-46: Progress reported in CGMS-46-EUMETSAT-WP-08 CGMS-46-ISRO-WP-05 and closure expected in autumn 2018. WGIV IS-1, Oct 2017: EUMETSAT: work in progress, pending dissemination facility upgrade and EUMETCast Africa contract renewal in 2018, and pending decision to add more data Status at CGMS-45: CGMS-45-EUMETSAT-WP-37	(CGMS-44/45/46) ***New deadline Dec 2019***	**OPEN**	1.1

at CGMS-47: Due to bandwidth constraints it is not possible to add a suitable GLM product to the HRIT stream. Alternative methods are available for users to access GLM data, such as GEONETCast Americas, PDA, archive products, etc. 5 Dec 2018: NOAA evaluation still ongoing. At CGMS-46: A usable GLM product provided to PDA is still in development within the National Weather Service as the current GLM product available in PDA is not a feasible solution for HRIT due to bandwidth limitations. NOAA is testing multiple imagery configurations to determine availability and frequency of all level 2 products from GOES-R series satellites including GLM. From this information coupled with end user feedback, NOAA can balance the demand for multiple bands of high resolution imagery data and the inclusion of level 2 products without increasing current latencies. CGMS-45: NOAA evaluation still ongoing. WG-IV WEBEX 18 Jan 2017 and communication: NOAA is considering putting GLM on HRIT/EMWIN. At this	(CGMS-44/45/46) **New deadline CGMS-47**	**CLOSED**	
at CGMS-47: closed by CGMS-47-CGMS-WP-07 12 Nov 2018: CGMSSEC slightly rephrasing the action. Expected to be completed by March 2019 and report to CGMS-47. 5 Nov 2018: TFMI webex No progress due to lack of resources by TFMI key members, will be addressed with TFMI in inter-sessional meetings.	(CGMS-44/45/46) ***New deadline CGMS-47***	**CLOSED**	3.9.1

at CGMS-47: Current situation is ok, no specific requirements. Satellite operators will certainly address regional requirements for their next-gen satellites. Future global (next-gen satellite) requirements will be addressed in an inter-sessional meeting with GODEX-NWP participation . and CC Matt Buttler and Simon Eilliott 12 Nov 2018: Pending outcome of the GODEX-NWP meeting. At CGMS-46: No further input, feedback from GODEX-NWP required. 22 May 2018: To be discussed in WGIV at CGMS-46, which needs participation/representation from WGII to explain the background and purpose to enable WGIV to move forward. The next GODEX-NWP meeting will be held 27-30 Nov 2018 in New Delhi, India. WG-IV WEBEX 18 Jan 2017: WMO: GODEX-NWP scheduled May 2017, needs will be addressed there, WMO will provide feedback.	(CGMS-45/46/47) ***New deadline CGMS-48***	**OPEN**	3.12
at CGMS-47: closed by CGMS-47-joint-JMA-KMA-WP-02. 5 Dec 2018: user survey was issued 4 Dec 18 to all members of RA II/V CGS-46-Joint-JMA/KMA-WP-02 user survey planned in 2018. JMA 11 Oct '17: The Coordinating Group meeting of RA II WIGOS satellite project on 21 Oct '17 will take place in Vladivostoc after AOMSUC-8. The topic regarding the user survey will be included in the agenda.	(CGMS-46) ***New deadline CGMS-47***	**CLOSED**	

at CGMS-47: included in work plan of TFMI Oct 2018: A WIGOS metadata assessment provision to IPET WIGOS by March 2019 is feasible. The work is divided in two steps. In the first step an assessment to be done of the abstract (the standard), and an assessment from satellite providers. (March 2019) The second step is the assimilation in XML, i.e. the transport level. (July 2019) CGMS-46: No progress due to lack of resources by TFMI key members, will be addressed with TFMI in inter-sessional meetings.	(CGMS-46) ***New deadline CGMS-47***	**OPEN**	3.9.1
at CGMS-47: Space weather metadata aspect to be assessed by TFMI. Remaining action superseded by on-going Space Weather data provider survey (SWCG/A47.05) Nov 2018: A survey is ongoing by TFMI to be concluded by end 2018 for the establishement of a best practice. CGMS-46-NICT-WP-02 see also CGMS-46 WGIV/12.1	(CGMS-46) ***New deadline CGMS-48***	**OPEN**	3.10
at CGMS-47: Superseded by on-going Space Weather data provider survey (SWCG/A47.05) Nov 2018: EUMETSAT - N/A. CGMS-46: CGMS-46-NICT-WP-02 see also CGMS-46 WGIV/12.1	(CGMS-46) ***New deadline CGMS-47***	**CLOSED**	3.11

Put on hold until requirements are clarified (see new action A46.02) 29 May 2018: NOAA provides this data at the requested latency. 14 Mar 2018: IPWG recognises it is not feasible having all channel data from the new era of GEO satellites, however: a) At a minimum, sustained 30-min refresh full disk longwave IR (10 to 15-min desired), near realtime access; b) Given the expanded spectral bands of the operational global geo constellation, additional 6.2 um water vapor channel data, at the same refresh as IR c) Finally, visible channel data desired 25 Oct '17: CGMSSEC has sent a message to IPWG co-chairs to this purpose asking for more details to enable WGIV to react. [enquiry sent to R Ferraro 19 Feb 2018] WGIV IS 11 Oct '17: This action was discussed and WGIV concluded the request is too open and would have a significant impact on the data access in this form. The following clarification was formulated and CGMSSEC is asked to pass this on to the IPWG:	CGMS-47	**OPEN**	

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
Matthew.butler@noaa.gov	Dec 2018	**CLOSED**	3.2.2
CGMS secretariat to contact WMO & IPWG	(CGMS-47) Dec 2019	**OPEN**	
Side Meeting between GSICS and WMO regarding WDQMS. WMO will invite GSICS to attend next TT-WDQMS meeting.	CGMS-48	**OPEN**	
at CGMS-47: EUMETSAT: A general change and user notification process is in place. An analysis is in progress w.r.t. the requested specification. Results to be discussed in an inter-sessional meeting. 5 Dec 2018: It was clarified that "instrument changes" means changes w.r.t. performance, and not changes vs specification.	(CGMS-47) Dec 2019	**OPEN**	

at CGMS-47: System is under construction.	(CGMS-47) Dec 2019	**OPEN**	
at CGMS-47: NOAA: Under federal law, supported by a suite of policies and procedures (see below for a summary), NOAA ensures through its National Environmental Satellite, Data, and Information Service (NESDIS) and the National Centers for Environmental Information (NCEI) that level 0 and level 1 satellite data, along with metadata and derived level 2 and higher products, are preserved for the long term and made available to the public at no more than the cost of reproduction. EUM Nov 2018: EUMETSAT fully recognises the importance of early satellite data for climate activities and follows the CEOS Preservation Guidelines, documented in "Long Term Preservation of Earth Observation Space Data". In adopting these guidelines and the relevant operational processes EUMETSAT ensures the long-term preservation and usability of (early) satellite raw and level 1 data, including metadata. For all EUMETSAT missions, the raw data and metadata as well as the derived level 1 and level 2 products are archived and preserved in the EUMETSAT Data Centre. The level 1 and level 2 data are accessible online and free of charge by users. The generation of	CGMS-47	**OPEN**	
at CGMS-47: Superseded by on-going Space Weather data provider survey (SWCG/A47.05)	CGMS-47	**CLOSED**	3.10
at CGMS-47: action refined	CGMS-48	**OPEN**	3.2.1
Recommendation feedback/completion document	**HLPP ref**		

at CGMS-47: closed 5 Dec 2018 IS-2: To be closed at CGMS-47	
at CGMS-47: closed 5 Dec 2018 IS-2: It was agreed to replace this recommendation with an action to report on the status, and propose R44.01 for closure at CGMS 47. New action A46.08 created. *Sep 2018 CGMSSEC: Remove/close, or replace with an action on members to report on their implementation of BPs at CGMS-47.* CGMS-45, -46: Recommendation still valid - retained. Closed for NOAA.	2.4.4
at CGMS-47: consider conversion into best practise during inter-sessional meeting 5 Dec 2018 IS-2: To be closed at CGMS-47 CGMS-45, -46: Recommendation still valid - retained.	3.2.2

at CGMS-47: consider conversion into best practise during inter-sessional meeting 5 Dec 2018 IS-2: Agreed standard, wait for report from TFMI, then if needed start placing specific actions. Nov 2018: Guidance is available. Recommendation proposed to be rephrased. CGMS-45, -46: Recommendation still valid - retained. **IMD:** To be conveyed in due course [Nov 2017] NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: http://www.ngdc.noaa.gov/metadata/ WGIV CGMS-43 discussions: Ongoing and routine activity. Recommendation maintained until CGMS-44 WGIV webex 9 Dec 2015: To be taken up at the TT on Meta Data meeting the week of 14 Dec 2015. CGMS-44-EUMETSAT-WP-17	3.7
at CGMS-47: consider conversion into best practise during inter-sessional meeting ***15 Mar 2019: Recommendation transferred from WGII to WGIV*** WG II IS#2 March 2019: Mails have been sent to WGIV co-chairs/rapporteur to transfer this recommendation to WG IV. WGII IS#1 Dec 2018: WGII proposes to transfer this to WGIV WGII IS#2 15 Mar 2018: - Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMDRPS system expected in June 2018. CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).	

invite
chairman MAHFOUF Jean-francois jean-francois.mahfouf@meteo.fr,
Simon Elliot
Mikael Rattenborg

SWCG actions open from previous plenary sessions (at CGMS-46)			
Actionee	**AGN item**	**Action #**	**Description**
CGMS members	SWTT/10 (WGII/9)	A45.02	SWTT members review GSICS activities and deliver recommendations for its use as a framework for space weather sensor inter-calibration activities.

CGMS-46 SWCG actions			
Actionee	**AGN item**	**Action #**	**Description**
SWCG	SWTT/7	A46.01	CGMS SWTT to review the contents related to space weather stored in OSCAR/Space database and provide any updates to tkurino@wmo.int

SWCG, WMO	SWTT/9	A46.02	Clarify what information needs to be provided in each field of the space weather anomaly form
CGMS Members	SWTT/9	A46.03	Expand on space weather template inputs to include full investigations when available and when possible.
SWCG	SWTT/11	A46.05	Survey CGMS Members to identify cross-member use of space weather data

SWCG	SWTT/11	A46.06	Investigate issues (e.g., access, calibration, format) regarding data dissemination and use of space weather data by end users (will coordinate with WGIV)
SWCG, WGI	SWTT/9	A46.07	Develop strategies to increase reporting into the space weather anomaly database through intersessional meetings with WGI
SWCG (from WGI)	SWTT/9	A46.08	Provide use case(s) from space weather anomaly analyses and any recommendations to operators arising

CGMS Members	SWTT/11	A46.09	CGMS Members to nominate representatives to participate in a task group on space weather calibration

CGMS-46 SWTT/SWCG Recommendations			
Lead	**AGN item**	**Rec #**	**Description**
CGMS	SWTT/3	R46.01	CGMS-46 Plenary to endorse Space Weather Coordination Group terms of reference

Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
17 Oct 2018 IS#1: Agreement has been reached to use GSICS as a framework. Discussed at CGMS-46. Ongoing. 1 Dec 2017, discussed during CGMS topical discussion at European Space Weather Week; awaiting submittal of space weather intercalibration product – energetic electrons Oct 2017, Decision made to pursue GSICs as framework for inter calibrations of space weather products. 12 Oct 2017, discussed GSICS as topical discussion at ESWW. 14 Sep 2017, GSICS materials discussed during IS.	CGMS-47 **(**30 Dec 2017)	**CLOSED**	6.2.2
Action feedback/closing document	**Deadline**	**Status**	**HLPP ref**
CGMS-47-WMO-WP-21SWCG (Toshi Kurino): Inputs Provided. This is a continuous process and will be a standing agenda item. A new action is raised to capture the assessment of suitability of the OSCAR space weather parameter description. 24 Apr 2019 IS#3: CGMS-47-WMO-WP-21SWCG (Toshi Kurino) will contain an assessment 7 Feb 2019 IS#2: Members (NOAA and NICT in particular) requested to secure that the OSCAR space database is updated in time for the WGIII risk assessment workshop on 27 Feb2019 with a copy to , tnagatsu@nict.go.jp, ajay.mehta@noaa.gov, matthew.butler@noaa.gov, and andrew.monham@eumetsat.int. 17 Oct 2018 IS#1: Two types of inputs to be made by SWCG members: a) Check the existing coverage of space weather sensors and identify what is missing and needs to be added to ensure completeness . b) The parameters available in the existing DB may not be sufficient to properly describe measurement capabilities of SW instrumentation. Proposals for improvement of the parameters in the DB are requested.	CGMS-47	**CLOSED**	

CGMS-47: CGMS-47-EUMETSAT-WP-14 provided inputs. All issues concerning progress on the anomaly form and database to be in ToR of the proposed Space Weather Database Task Group. 7 Feb 2019 IS#2: Report on SpWx data usage and role of anomaly form/template for spacecraft operators being prepared by A.Monham as agreed in WGI/SWCG Joint IS#1 on 5.Dec.2018 17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed / Andrew before end October 2018	Feb 2019	**CLOSED**	2.4.1
CGMS-47: CGMS-47-EUMETSAT-WP-14 provided inputs. *All issues concerning progress on the anomaly form and database to be in ToR of the proposed Space Weather Database Task Group.* 7 Feb 2019 IS#2: See A46.02 17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed/Andrew before end October 2018	CGMS-47	**CLOSED**	2.4.1
CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group. 24 Apr 2019 IS#3: Survey for SpWx sensor data providers was sent to WGI and WGIV on 13 March, with request to provide responses by 30 April 7 Feb 2019 IS#2: NOAA has provided a template "CGMS space weather data users" including formats. EUMETSAT (Andrew Monham) to provide additional comments on the template. Share the template with WGI and WGIV and complete iteration by 15 Feb 2019. 17 Oct 2018 IS#1: discussion of A46.05, A46.06, A46.10: Ken Holmlund to check info already gatthered by EUMETSAT can be shared – Action due 31 October. Draft Templates Action due 8 November (Elsayed/Andrew)	Dec 2018	**CLOSED**	2.4.1

CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group: To be discussed with WGIV. 7 Feb 2019 IS#2: See A46.05 17 Oct 2018 IS#1: discussion of A46.05, A46.06, A46.10 on WG-IV (see above)	CGMS-47	**CLOSED**	3.10
CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group. *7 Feb 2019 IS#2: See A46.02* 17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed/Andrew before end October 2018	CGMS-47	**CLOSED**	2.4.1
CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group. 7 Feb 2019 IS#2: See A46.02 17 Oct 2018 IS#1: Inputs from members on use cases to be sent by 16th November. Overall discussion of Anomaly Forms planed between Elsayed/Andrew before end October 2018	CGMS-47	**CLOSED**	2.4.1

CGMS-47: ROSHYDROMET participation confirmed: Contact points are Dr. Konstantin Ts. Litovchenko and Dr. Kirill Kholodkov (TBC) TG participation is: CMA: guojg@cma.gov.cn EUM: Kenneth.holmlund@eumetsat.int, Andrew.Monham@eumetsat.int ISRO: TBD KMA: dkim@kma.go.kr NICT: tnagatsu@nict.go.jp NOAA: terry.onsager@noaa.gov, elsayed.talaat@noaa.gov, matthew.butler@noaa.gov ROSH: k.kholodkov@swx.space-weather.ru, k.litovchenko@meteorf.ru 24 Apr 2019 IS#3: Jianguang Guo (CMA)and Dohyeong Kim (KMA) confirmed as members. Nagatsuma san contacting Alexander Karelin (ROSCOSMOS) Task group on inter-calibration of high energy particle sensor, CGMS-47-SWCG-WP-02 – Nagatsuma-san is providing an input 7 Feb 2019 IS#2: CMA:	Oct 2018	**CLOSED**	

Recommendation feedback/closing document	**HLPP ref**
COMPLETED. Endorsed by CGMS-46 plenary on 7 June 2018.	

CGMS-45 Plenary actions						
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**
CGMS space agencies	C.1	A45.01	CGMS space agencies to provide comments on draft Vision for WIGOS in 2040 (Appendix I) by 31/07/2017 (CGMS-45-WMO-WP-01)	18 May 2018: Vision 2040 to be addressed in plenary by WMO CGMS-46-WMO-WP-01 15 Feb 2018: Feedback also provided in response to action CGMS A45.19 (related to carbon monitoring in the Vision 2040) CGMSSEC IS 21 Nov 2017: WMO is currently consolidating the input in a single document over the next 2 months and it will be shared at the latest by CGMS-46. JMA, NOAA and NASA feedback provided.	31 Jul 2017	**CLOSED**

CGMS space agencies, IROWG, IPWG, IWWG, ICWG, ITWG	C.2	A45.02	CGMS International Science Working Groups and CGMS space agency members to formulate science questions, including the impact of data latency, in view of the 7th Impact WS 2020 (ref. CGMS-45-WMO-WP-02) and provide these to lriishojgaard@wmo.int. Questions are needed for CGMS-46 for the analysis to be made and results provided to the workshop in 2020.	*7 Jun 2018: Action remains open following CGMS-46 plenary discussions. WMO expects to provide a formal announcement in the 2nd half of 2018 to which the remaining ISWGs can respond.* *CGMS-46-IWWG-WP-02 US Polar AMVs latency issues previously discussed.* 4 Jun 2018: Reports to CGMS-46 WGII (and plenary) expected to be provided by IPWG, IROWG and IWWG **IROWG**: science questions request (7th impact workshop) sent to IROWG members (CGMS-46 WGII discussions). CGMSSEC IS#2 30 Jan 2018: WMO to prepare a formal announcement in spring 2018 in preparation of the workshop. WGII IS #1 20 Nov 2017: **IPWG:** Not started yet **ICWG**: To progress on the assimilation of cloud properties for very short range NWP forecasting using very high resolution models. For example, can cloud property retrievals help to select the ensemble member (time + t) that matches the current cloud conditions best. **ITWG**: Mitch Goldberg to initiate discussion with Co-chair. **IWWG**: TBC **IROWG**: ?	CGMS-46	**OPEN**

WMO	C.3	A45.03	WMO, in collaboration with CEOS, to investigate the possibility of aligning the reporting templates for OSCAR/Space with those used to update the CEOS MIM database, at least for common parameters, thus facilitating the reporting task at the agency level.	CGMS-46 WMO-WP-02 Some coordination will be sought as far as is possible. CGMSSEC IS#4 26 Apr 2018: Due to the different content and focus of the two databases, aligning parts of them is not deemed feasible. The actions has therefore been closed. CGMSSEC IS#2 30 Jan 2018: Discussion ongoing with CEOS SEC.	CGMS-46	**CLOSED**
CGMS	C.3	A45.04	CGMS to invite the ISWGs to nominate experts for participation in the OSCAR/Space Science and Technical Advisory Team.	CGMS-46 WMO-WP-02 The OSCAR/Space Science and Technical Advisory Team (O/SSTAT) to continue providing information on their satellite programmes to be recorded in OSCAR/Space, according to the recommended procedure with templates provided by WMO Space Programme. CGMSSEC EUM/CGMS/LET/17/929217 of 10 July 2017 **IROWG**: Harald Anlauf <harald.anlauf@dwd.de> (nominated by IROWG co-chairs 3 Aug 2017) **IWWG**: Regis Borde <regis.borde@eumetsat.int> (nominated by IWWG co-chairs 1 Aug 2017) **IPWG**: Sophie Cloche <Sophie.Bouffies-Cloche@ipsl.jussieu.fr>; (26 Sep 2017) **ICWG**: Steven Sherwood <s.sherwood@unsw.edu.au> **ITWG & GSICS**: mitch.goldberg@noaa.gov	End Aug 2017	**CLOSED**

NOAA	C.4	A45.05	NOAA/NESDIS to support the Space-based Monitoring of Weather and Climate Extremes project by providing satellite observations of heavy precipitation events, and land surface parameters for monitoring droughts. The observations are required with a short latency of about one day. Furthermore the project requires the creation of climate reference data sets which will be used by the RCCs to classify observations as extreme event or not (CGMS-45-WMO-WP-05)	*7 June 2018: Closed following presentation in CGMS-46 plenary. Addressed in the Jakarta workshop where NOAA and others agreed to provide the data that was requested (see also action plan in CGMS-46-WMO-WP-16).* 29 May 2018: WMO will present the results of the workshop at CGMS-46. NOAA has no additional comments. 22 May 2018: The actions was reviewed in the SEMDP Workshop and progress will be reported to CGMS-46 (CGMS-46-WMO-WP-16) 26 Apr 2018: Feedback pending from IPWG following a recent meeting in Jakarta (SEMDP workshop). 30 Jan 2018: WMO, NOAA, IPWG discussions. WMO to hold workshop in March 2018.	CGMS-46 (31/12/2017)	**CLOSED**
JAXA	C.4	A45.06	JAXA to support the Space-based Monitoring of Weather and Climate Extremes project by providing a short-term (from 5-day up to monthly) climate normal from GSMaP data archives as a reference precipitation data set for the initial SEMDP areas, i.e. East Asia and Western Pacific regions. JAXA is also requested to set-up the on-line environment to provide GSMaP data with short latency to be utilized in the SEMDP (CGMS-45-WMO-WP-05).	*7 June 2018: Closed following presentation at CGMS-46 plenary* CGMS-46 WMO-WP-16 22 May 2018: JAXA completed the short-term climate normal from GSMaP data archives for the SEMDP and preliminarily set-up the ftp site to provide GSMaP data for the SEMDP in March 2018. Following feedback from the SEMDP workshop, JAXA is improving it with readiness anticipated for end August 2018. CGMSSEC IS#2 30 Jan 2018: See action A45.05.	Mar 2018 (31/12/2017)	**CLOSED**

IPWG	C.4	A45.07	IPWG co-chairs and rapporteur to provide guidance on the estimation of uncertainties and representativeness of the short-latency precipitation products related to the Space-based Monitoring of Weather and Climate Extremes project (CGMS-45-WMO-WP-05)	5 June 2018: CGMS-46 WGII discussions: IPWG co-chairs developed a white paper summarising the uncertainties in the most widely used precipitation products generated by CGMS members. The paper addresses the needs of the broad based precipitation user community, including SWCEM. Action closed as a consequence. 4 June 2018: IPWG to provide input to CGMS-46 WGII and plenary. May 2018: Action expected to be carried over to the CGMS-46 list of actions with a new deadline. Apr 2018: To be discussed at the upcoming IPWG meeting in autumn 2018 CGMSSEC IS#3 7 Mar 2018: A draft document is under preparation tentatively to be presented to CGMS-46 GMSSEC IS#2 30 Jan 2018: WMO to discuss interaction with IPWG. Nov '17: IPWG Rapporteur has participated as a member of the planning group for SEMPD and has reported the request to the IPWG co-chairs.	CGMS-46	**CLOSED**

JWG CLIM	C.4	A45.08	CEOS/CGMS Working Group on Climate to provide feedback on the proposed definition for ICDR (CGMS-45-WMO-WP-05)	*8 Jun 2018: Closed following CGMS-46 plenary discussions* 7 Jun 2018: Expected to be closed following CGMS-46 plenary discussions.CGMS-46-CGMS-WP-03 22 May 2018: CGMS-46-JWGCLIM-WP-02. CGMS-46-WMO-WP-16 WGClimate #9 in March 2018 has agreed a modified ICDR definition. Expected to be discussed at the JWClimate in WMO on 27-29 March 2018,	CGMS-46	**CLOSED**
WMO	C.6.1	A45.09	WMO to report to CGMS-46 on the status of the development of WMO Policy Framework for public-private sector engagement in view of the implications for free and open international exchange of meteorological satellite observations	*7 June 2018: Closed following presentation in CGMS-46 plenary* 18 May 2018: CGMS-46-WMO-WP-04, Development of a WMO Position on Critical Satellite Data; CGMS-46-WMO-WP-03 WMO Policy Framework for Public-Private Sector Engagement *Closure pending CGMS-46 plenary discussions.* CGMSSEC IS#2 30 Jan 2018: IPET-SUP will discuss this in Feb 2018. IPET-SUP is preparing a 'Critical Satellite Data Position Paper'. A WMO paper is expected for CGMS-46. CGMSSEC IS 21 Nov 2017: Still under elaboration at WMO.	CGMS-46	**CLOSED**

CGMS members	C.6.1	A45.28	CGMS members to provide a focal point of contact to WMO (wbalogh@wmo.int) for participation in the WMO Public Private Engagement discussion	*7 June 2018: CGMS members are requested to provide outstanding pocs to wbalogh@wmo.int* (18 May 2018: CGMS-46-WMO-WP-03, WMO Policy Framework for Public-Private Sector Engagement) CGMSSEC IS 21 Nov 2017: Action to be revisited at CGMS-46. **CNES:** **ESA:** ivan.petiteville@esa.int **EUM:** paul.counet@eumetsat.int **IMD:** sunil.peshin@gmail.com> **ISRO:** **JAXA:** **JMA:** **KMA:**cychung0530@korea.kr (Chu-Yong Chung) **NASA:** **NOAA:** karen.st.germain@noaa.gov **ROSC:** tkachenk_2000@mail.ru (Alexander Tkachenko) **ROSH:**	8 Jun 2018 (15/10/2017)	**OPEN**
IOC-UNESCO	C.8	A45.29	IOC-UNESCO to provide a paper on guidance to CGMS members (at CGMS-46) on geostationary satellite measurements of essential ocean variables.	*7 Jun 2018: Closed following CGMS-46 plenary discussions and CGMS-46 IOC-UNESCO-WP-03*	CGMS-46	**CLOSED**
WMO	C.8	A45.10	WMO to report on the progress regarding JCOMM TT and satellite observations.	*7 Jun 2018: Action closed following CGMS-46 plenary discussions, CGMS-46 IOC-WP-03, and that WMO is currently undertaking a reorganisation impacting on JCOMM. To be revisited in the future.* JCOMM-5 in 2017 decided to resuscitate the Team (ToRs for Team and Coordinator exist). First contact made by Sarah Grimes (WDS/MMO) with David Halpern (NASA JPL) to gauge an interest in leading the Team.	CGMS-46	**CLOSED**
EUMETSAT	D.13	A45.11	EUMETSAT, on behalf of ROSHYDROMET, to ingest Meteor-M N2 level 1 brightness temperatures from MTVZA-GY on the	The instrument stopped working and is non-recoverable.	Q4 2017 (Q3 2017)	**CLOSED**

IWWG	E.1.1.1	A45.12	IWWG to prepare a proposal to CGMS on how to fund the analysis of the future AMV International Intercomparison studies.	5 Jun 2018: Action closed following CGMS-46 WGII discussions. CGMS-46-IWWG-WP-01 and -02 • Future AMV international intercomparison studies will be funded in the same manner of the two last studies, through a VSA contract of the EUMETSAT Nowcasting SAF. Future AMV international intercomparison studies will be funded in the same manner of the two last studies, through a VSA contract of the EUMETSAT Nowcasting SAF. 18 May 2018: CGMS-46-IWWG-WP-01/-02 CGMSSEC IS#2 30 Jan 2018: Recall to IWWG purpose of action and discussion 2-3 years ago regarding overall funding of ISWGs at CGMS. EUM (Ken Holmlund), NOAA (Mitch Goldberg), to interact with the respective ISWG co-chairs.	CGMS-46	**CLOSED**
CGMSSEC	E.2	A45.13	On behalf of CGMS, CGMS SEC to send a letter to ITU Secretary-General. Letter drafted by WGI (AWGI45.01) emphasising the need for protecting EESS and passive bands necessary for remote sensing. It also agreed in tasking WMO to take similar steps and informing the different members of WMO on the need of emphasasing the importance of protecting the passive sensing bands (as per WGI discussions, CGMS-45-CGMS-WP-05)	CGMS/LET/17/926178 sent to ITU on 6 Jul 2017 and circulated to CGMS and WGI list servers. ITU response letter 60(DIR)O-2017-003233 of 11 Jul 2017 Circulate on CGMS and WGI list servers 17 Aug 2017	Jun/Jul 2017	**CLOSED**
WMO	E.2	A45.14	WMO to send a letter to ITU Secretary-General based on the CGMSSEC letter (drafted by WGI (AWGI45.01) emphasising the need for protecting EESS and passive bands necessary for remote sensing. It also agreed in tasking WMO to take similar steps and informing the different members of WMO on the need of emphasasing the importance of protecting the passive sensing bands (as per WGI discussions, CGMS-45-CGMS-WP-05))	WMO letter 27975/2017/OBS/WIS/ITS/RF of 31 Jul 2017 Circulated on CGMS and WGI list servers 17 Aug 2017	mid July 2017	**CLOSED**

WGI/WGIV (CGMS members)	E.2	A45.15	• WGI/WGIV to establish a small task team to examine the current Terms of Reference in light of the thematic areas covered by both working groups to address overlap and to consider adding relevant topics related to satellite and ground system operational topics not currently covered in either of the two working groups and to report to CGMS-46 • The team should propose additional operational topics as well as possible alternatives for realignment of the themes for both working groups to include the possible merger of the two working groups (including the topics discussed in the Space Weather Task Team) (Ref. CGMS-45-CGMS-WP-05)	*7 Jun 2018: Closed following discussions in and endorsement by CGMS-46 plenary.CGMS-46-CGMS-WP-18.* 18 May 2018: CGMS-46-CGMS-WP-18 Draft Terms of Reference of WGs I and IV Discussions held between WGI and WGIV co-chairs and rapporteurs. It is expected that revised ToRs will be provided to plenary at CGMS-46 for endorsement.	CGMS-46	**CLOSED**
CGMS members	E.4	A45.16	CGMS members to nominate contributors to participate in the intersessional meetings on the CGMS contingency planning including the WMO face-to-face meeting (ref WGIII discussions, CGMS-45-CGMS-WP-07) in Geneva (at WMO).	The workshop was held on 30 Apr - 2 May 2018 at WMO. **CMA**: zhangp@cma.gov.cn **EUM**: sean.burns@eumetsat.int **IMD**: Virendra Singh <vsvsingh69@gmail.com> **JMA**: Yoshishige Shirakawa <yshirakawa@met.kishou.go.jp> **NOAA**: ajay.mehta@noaa.gov **WMO**: riishojgaard@eumetsat.int	Jul-17	**CLOSED**
WMO	E.4	A45.17	WMO to call for and hold a face-to face intersessional meeting on the CGMS contingency planning in the first half of 2018 (ref WGIII discussions, CGMS-45-CGMS-WP-07)	Meeting was held on 30 Apr - 2 May 2018 at WMO (postponed from 5-7 March 2018)	Q1 2018	**CLOSED**
WMO	E.5	A45.18	WMO to send an invitation for the IPT-SWeISS to the CGMS Secretariat to secure participation by CGMS at the meeting.	CGMSSEC IS#2 30 Jan 2018: Action now closed. Elsayed Taalat is the CGMS point of contact. WMO letter 22994/2017/OBS/SAT/IPT-SWeISS of 27 June 2017 received by CGMSSEC. CGMSSEC letter 928853 of 5 July 2017 initially nominating Elsayed Taalat (SWTT Co-Chair).	Jul-17	**CLOSED**

CGMS members	G	A45.19	CGMS to deliver proposal to WMO for inclusion in Vision 2040 for a target architecture to monitor GHG and carbon from space. (Ref. CGMS-45 plenary session G)	22 May 2018: To be discussed at CGMS-46 15 Feb 2018: Comments by JAXA and David Crisp incorporated. Sent to WMO for further consideration. CGMS informed via list server. Jan 2018: CGMSSEC has circulated an amended document mid January requesting feedback by members by 1 February 2018. CGMSSEC IS 21 Nov 2017: WMO welcomes such contribution which eventually would be incorporated in the space programme section of the integrated WIGOS Vision 2040. The CEOS-CGMS writing team is putting together a white paper. Ken and Stephan continues to request feedback.	Oct-17	**CLOSED**
CGMS members	H.2	A45.20	CGMS to endorse the gap analysis report and the coordinated action plan in writing prior to CEOS 2017 plenary meeting, to the Joint CEOS-CGMS WG Climate (joerg.schulz@eumetsat.int)	*8 Jun 2018: Endorsed by CGMS-46 plenary* 7 Jun 2018: Closure of action pending discussions in CGMS-46 plenary.CGMS-46-WMO-WP-25, CGMS-46-WP-03 18 May 2018: CGMS-46-JWGCLIM-WP-01 Endorsement of the gap analysis report and the coordinated action plan CGMSSEC IS#2 30 Jan 2018: Further information to be provided following CEOS SIT-33. For CEOS: CEOS SIT Workshop has decided that this document will be presented to CEOS SIT-33 in April 2018. For CGMS: Endorsement will be required by/at CGMS-46 plenary. An agenda item will be included to this purpose. NOAA provided feedback prior to CEOS.	CGMS-46 (15/10/2017)	**CLOSED**

CGMS members	H.2	A45.21	CGMS to endorse the final draft of the space agency response to the new GCOS-IP in writing, prior to the submission to the SBSTA-47, to the CEOS-CGMS JWG Climate (pascal.lecomte@esa.int and joerg.schulz@eumetsat.int) Version 2 can be found here: https://www.cgms-info.org/documents/Space_Agency_Response_to_GCOS_IP_v2.0_Oct2017.pdf	*8 Jun 2018: Endorsed by CGMS-46 plenary* 7 Jun 2018: Closure of action pending discussions in CGMS-46 plenary.CGMS-46-WMO-WP-25, CGMS-46-CGMS-WP-03 May 2018: Will be discussed at CGMS-46 The document "Space Agency Response to GCOS Implementation Plan" will be delivered on 25. September with two weeks' time for review and endorsement. It will be submitted to UNFCCC Sec on 6 October 2017. (CGMS members were informed on 13 Sep 2017). Joint response circulated on the CGMS list server on 25 Oct 2017. The response has been provided to GCOS and UNFCCC Secretariat. NOAA comments sent prior to SBSTA-47	15-Oct-17	**CLOSED**
CGMS members	H.2	A45.22	CGMS to review the Space Agency Statement to COP-23 SBSTA-47 in writing (prior internal review by the EC and submission to the SBSTA-47 by 6 October 2017), to the Joint CEOS/CGMS WG Climate (pascal.lecomte@esa.int and joerg.schulz@eumetsat.int)	The statement has been reviewed but can be provided for information after release from EU. Message circulated to cgms list server.	14-Jul-17	**CLOSED**
CGMS members	F.1	A45.23	CGMS members to consider ideas on further contributions to the 3 GEO Engagement Priorities (SDGs, Paris Agreement, Sendai Framework of Actions) and potential interests of participation to Flagships, Initiatives and Foundational Tasks in the GEO Work Programme 2017-2019 (Areas in need of strengthening: CEOS-CGMS Joint Working Group on Climate; Non-meteorological Applications for Next Generation Geostationary Satellites (CEOS-CGMS); GEONETCast; Radio-Frequency Protection Education and Training (VLab); User Requirement (Member's studies); Carbon Observations (CEOS-CGMS))	May 2018: Action considered closed. Future interactions to be addressed as needed. Mar 2018: GEO invited to CGMS-46 - answer pending. CGMSSEC IS#2 30 Jan 2018: No further progress. NOAA provided comments on GEO work programme.	15-Sep-17	**CLOSED**

CGMS members	I.1	A45.24	CGMS Members to indicate to WMO (wbalogh@wmo.int) and the CGMS Secretariat (cgmssec@eumetsat.int) whether they would be interested in and in a position to host the VLab Technical Support Officer as of 1 September 2018.	28 Apr 2018: The University of Maryland has agreed to host the VLab Technical Support Offiver as of 1 September 2018. The exchange of the Letter of Agreement is presently being finalised. CGMSSEC IS#4 26 Apr 2018: NOAA considers supporting this position. Discussions ongoing between WMO and NOAA.	15-Sep-17	**CLOSED**
CGMS space agencies, CGMSSEC	J.2	A45.25	CGMS space agencies to provide the list of oceanographic products from GEO satellites to cgmssec@eumetsat.int for provision to IOC-UNESCO (David.Halpern@jpl.nasa.gov).	**CMA** (30 Sep '17) **EUM** (22 Sep '17) stephane.sauxpicart@meteo.fr **ISRO** (12 Sep '17) rksharma@sac.isro.gov.in **JMA** (25 Oct '17) s-ohmori@met.kishou.go.jp, satellite@met.kishou.go.jp **KMA** (Oct '17) Chu-Yong Chung cychung@kma.go.kr **NOAA** (15 Sep '17) steven.j.goodman@noaa.gov	30-Sep-17	**CLOSED**
CGMS members	J.2	A45.26	CGMS members to confirm participation in the 3 proposed Non Meteorological Applications projects - aerosol/dust, fire, and flooding - and nominate POCs to form Task Teams reporting to WGII	5 Jun 2018: Closed following CGMS-46 WGII discussions 18 May 2018: To be discussed in WGII and reported in the WGII report to plenary **EUM**: bojan.bojkov@eumetsat.int, lothar.schueller@eumetsat.int **IMD**: Ashim K. Mitra, Scientist-D (SR-Cal/Val) ashimmitra@gmail.com **JMA**: Koji Yamashita satellite@ml.kishou.go.jp **KMA (NMSC):** Eun-Ha SOHN soneh0431@korea.kr **NOAA**: mitch.goldberg@noaa.gov	Sep-17	**CLOSED**

CGMS members	J.2	A45.27	CGMS members to confirm interest in a flood mapping pilot project using GEO satellites, as a proposal for the SCOPE-Nowcasting Executive Panel meeting on Sept 18-20, 2017	5 Jun 2018: Closed following CGMS-46 WGII discussions 18 May 2018: Will be addressed in WGII, CGMS-46-NOAA-WP-10, NOAA/CMA Flood Mapping Initiative Proposal **KMA** participates in the aerosol/dust and fire projects. **JMA** declined participation in the project (8 Sep 2017). **EUM:** Limited resources, and little relevance currently. **IMD:** participation confirmed (3 Oct '17). **NOAA** presented its interest at the meeting.	01-Sep-17	**CLOSED**
CGMSSEC	J.2	A45.30	Fire: CGMS SEC to approach GOFC-GOLD to explore the possibility for CGMS members to become part of the fire project	5 Jun 2018: Closed following CGMS-46 WGII discussions 18 May 2018: GOFC GOLD will provide a presentation to CGMS-46 WGII (CGMS-46-GUEST-WP-02), the outcome will be presented in the WGII report to plenary.	CGMS-46	**CLOSED**
CGMSSEC	J.2	A45.31	Aerosol: CGMS SEC to explore with AEROSAT if they pursue an activity regarding the use of new-generation GEO data.	5 Jun 2018: Closed following CGMS-46 WGII discussions 18 May 2018: AEROSAT will provide a presentation to CGMS-46 WGII (CGMS-46-GUEST-WP-01), the outcome will be presented in the WGII report to plenary.	CGMS-46	**CLOSED**
CMA, NOAA	J.2	A45.32	NOAA and CMA to develop a proposal to develop GEO-based flood mapping as a potential SCOPE-Nowcasting pilot project. The WMO Multi-Hazard Early System (MHEWS) and the Flash Flood Guidance System (FFGS) should be invited to collaborate in this proposal.	5 Jun 2018: Closed following CGMS-46 WGII discussions 18 May 2018: Will be addressed in WGII, CGMS-46-NOAA-WP-10, NOAA/CMA Flood Mapping Initiative Proposal NOAA: GOES-16 AHI-based flood mapping product (research domain). Proposal: Integration of GOES-R/ABI data in Flood Mapping Software for Flood Monitoring and Forecasting	CGMS-46	**CLOSED**

CGMS-45 plenary Recommendations						
"Actionee"	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/ closing document**	**HLPP ref**	
CGMS agencies	E.1.2	R45.01	IROWG recommends CGMS members to encourage GNSS providers and agencies to make ICDs (Interface Control Documents) of GLONASS and Beidou Open Service signals available as soon as possible	Completed on the occasion of CGMS-46 WGII. B2a http://www.beidou.gov.cn/xt/gfxz/201712/P020171226742357364174.pdf B1c http://www.beidou.gov.cn/xt/gfxz/201712/P020171226741342013031.pdf GLONASS provided (in Russian)		**Completed**
WMO	E.1.3	R45.02	Recognising that IPWG has considerable expertise in precipitation science and applications, IPWG requests the WMO (likely via VLAB) to establish regular training events on precipitation data sets and applications, for which IPWG will provide disciplinary expertise.	**ONGOING** 5 Jun 2018, following CGMS-46 WGII discussions: IPWG co-chair participated in training event at AOMSUC-8. IPWG rapporteur has engaged VLAB requesting that any future training associated with precipitation should include IPWG involvement. We are awaiting the current year training priorities at WMO to see if these include precipitation. This also addresses HLPP 3.5.3 21 Feb 2018: Discussions between IPWG and VLab have started on how to organize regular joint training activities in response to identified needs. CGMSSEC IS#2 30 Jan 2018: WMO/Bojinski to provide feedback to CGMSSEC For information: Nov '17: IPWG co-Chair (Haddad) provided training at AOMSUC-8, Oct. 2017		

CGMS members + IPWG, ITWG and ICWG	E.1.3	R45.03	Recognising the need for continued enhancements to the baseline precipitation observing system to a broader user community (including hydrology, NWP prediction, RTM modeling), IPWG recommends that CGMS members continue to pursue advanced sensors through close coordination with CGMS ISWG's including IPWG, ITWG and ICWG.	5 Jun 2018, following CGMS-46 WGII discussions: At the request of CGMS, IPWG provided more specific guidance on the request to pursue advanced sensors, to include space-based precipitation and cloud radars - one that combined relevant frequencies of heritage sensors like Cloudsat and GPM precip radar, microwave cloud imagers, geostationary microwave sensors and lightning mappers.23 Feb 2018 - IPWG: It would include (but not be limited to): Space based precipitation and cloud radars - one that combined relevant frequencies of heritage sensors like cloudsat and GPM precip radar. Microwave cloud imagers (similar to what will fly on next generation EUMETSAT polar orbiters); geostationary microwave sensors; lightning mappers CGMSSEC IS#2 30 Jan 2018: Further clarification to be requested from IPWG about scope of "advance sensors". Recommendation to be addressed in WGII [General scope to be discussed in WGIII Apr/May workshop - in light of a continuity of GPM type mission]		**Completed**

IOC-UNESCO, CGMS members	C.7	R44.02	**On Second International Indian Ocean Expedition (IIOE-2, 19-23 March 2018) for enhanced data acquisition and management:** It was recommended to establish a working alliance between the IIOE-2 and the remote sensing community (CGMS) within/through the IIOE-2 Steering Committee framework and/or the IIOE-2 Joint Project Office. http://www.iioe-2.incois.gov.in/	5 Jun 2018, completed following CGMS-46 WGII discussions. 18 May 2018: CGMS-46-IOC-UNESCO-WP-02, Update on the Second International Indian Ocean Expedition (IIOE-2) and linkages to CGMS going forward. To be addressed in CGMS-46 WGII CGMSSEC IS #3 7 Mar 2018: Side meeting to be held at IIOE-2 to identify recommendations for coordination between CGMS and the IIOE community for potential reporting to WGII and WGIII. There was no feedback by CGMS-45 and the recommendation remains open.	2.5	**Completed**

WGI actions open from previous plenary sessions (at CGMS-45)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WMO	WGI/6	A43.06	WMO to assess the impact of improved data latency from polar orbiters on NWP (WMO Impact Workshops) and other applications	CGMS-46: Preparations have started for the next WMO Impact in Workshop 2020, with questions currently being formulated. There have also been discussions at IPET-SUP to define the questions that could be answered, in particular regarding the impact of data latency No progress was presented at CGMS-44 or 45.	CGMS-47 (CGMS-44)	**OPEN**	1.1.2
CGMS space agencies	WGI/2	A44.05	CGMS agencies to provide prior to CGMS 45 a report on the space weather activities (including spacecraft and instruments) of relevance on frequency management and frequency protection topics	29 May 2018 See CGMS-46-NOAA-04 Closed on the occasion of a dedicated WGI inter-sessional meeting on 7 Sept 2017. CGMSSEC to request SWTT representative to provide a paper to WGI to this purpose (and present it in WGI). SWTT informed by e-mail 7 April 2017. CGMS-45 NOAA-WP-04 Agency reports on Frequency topics to include a dedicated chapter on space weather.	(Feb 2017) CGMS-46	**CLOSED**	1.3
CGMS space agencies, IROWG	WGI/6.1	A44.08	CGMS agencies with satellites with DB and RO occultation sensors to assess the technical feasibility of a RARS/DBNet RO occultation service in support of the Space Weather community.	May 2018: IROWG paper postponed potentially to CGMS-47 Deadline for extended following CGMS-45 and 46 discussions, noting that NOAA has no plans to do implement such a service. CGMS 44: CGMSSEC request IROWG representative to provide and present a paper to WGI to support the discussion on the technical feasibility of a service.	CGMS-47 (CGMS-45, 46)	**OPEN**	1.4

CGMS space agencies	WGI	A44.09	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs	*CGMS-46: Discussed in WGI and the matter has been incorporated in the HLPP* May 2018 proposed to be closed. Dedicated WP on the topic at CGMS 46 and covered by the update of the ToR of WG-I and WG-IV and the related HLPP. The next GODEX-NWP meeting will be held 27-30 Nov 2018 in New Delhi, India. Mar 2018 To be discussed at WGI intersessional on data formats. Deadline extended following CGMS-45 discussions. As a member, NOAA agrees that the GODEX-NWP group would be an excellent source of information on the planned types of next-gen GEO	(CGMS-45) CGMS-46	**CLOSED**	
CGMS-45 WGI actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
EUM	3	A45.01	WGI chair to draft a letter, on behalf of CGMS, to ITU Secretary-General emphasizing the need for protecting EESS and passive bands necessary for remote sensing	CGMS/LET/17/926178 sent to ITU on 6 Jul 2017 and circulated to CGMS and WGI list servers. ITU response letter 60(DIR)O-2017-003233 of 11 Jul 2017 circulate on CGMS and WGI list servers 17 Aug 2017 Supporting WMO letter 27975/2017/OBS/WIS/ITS/RF of 31 Jul 2017, circulated on CGMS and WGI list servers 17 Aug 2017	End June 2017	**CLOSED**	1.3
EUM	3.1	A45.02	CGMS/SFCG liaison officer to share SF36-45/D with WGI participants, IROWG chair and IPT-SWeISS members	Circulated at CGMS-45. Inter-sessional webex on frequencies and space weather frequencies took place on 7 Sept 2017.	End June 2017	**CLOSED**	1.3
WMO	3.1	A45.03	WMO to share with all CGMS members the outcome of the survey prior to the inter-sessional meeting	Draft survey circulated on WGI list server on 13 September 2017.	Aug 2017	**CLOSED**	1.3
CGMS WGI members	4.2	A45.04	WGI members to nominate/confirm points of contact participating in the related inter-sessional meetings	**NOAA**: vanessa.l.griffin@noaa.gov	Jun 2017	**CLOSED**	1.4
EUM	5	A45.05	EUMETSAT to report to CGMS-46 on the status of progress on future EDCP (ESA study)	CGMS-46-EUMETSAT-WP-05	CGMS-46	**CLOSED**	1.2
CGMS members	5	A45.06	WGI participants to review annex I of CGMS-45-EUMETSAT-WP-30 and update the related information in time for the first inter-sesssional meeting	May 18 proposed to be closed after SatCom Forum meeting in 2017 and dedicated WP for CGMS-46 CGMS-46-CGMS-WP-25	Sep 2017	**CLOSED**	1.2
CGMS members	6.2	A45.07	WGI to re-assess during the dedicated inter-sessional meetings the aspects of S/W delivery and installation needs in BP.04 for avoiding, if considered adequate, making explicit reference to any tool or package.	Update provided by EUMETSAT at CGMS-46 CGMS-46-CGMS-WP-15	CGMS-46	**CLOSED**	1.4

CGMS members	6.2	A45.08	CGMS member with satellites with a Direct Broadcast service to evaluate the draft template for reporting status of implementation and to address possible updates in the first of the inter-sessional meeting on DB topics identified above.	Discussed at CGMS-46 May 18 2018, template agreed in Inter-sessional and being used by NOAA and EUMETSAT (CGMS-46-NOAA-WP-05 and CGMS-46-EUMETSAT-WP-13) as precursors for other CGMS members. WGI intersessional to be held in 11 April 2018 closure expected at that stage. WGI-IS-DB 6 September 2017: EUMETSAT presented the updated template for the Implementation Status. It was agreed to distribute the document as is across the different CGMS organizations and review its completion during the following intersessional meeting. The template can evolve when feedback is provided. EUMETSAT and NOAA will present their Implementation Status during the next intersessional meeting.	Oct 2017	**CLOSED**	1.4.
WGI and WGIV chairs and rapporteurs	9 (AOB)	R45.01	A small task team be established to examine the current Terms of Reference of WGs I and IV in light of the thematic areas covered by both working groups. The team should propose additional operational topics as well as possible alternatives for realignment of the themes for both working groups to include the possible merger of the two working groups.	Activity completed and new ToR for both WGs drafted in CGMS-46-CGMS-WP-18 for CGMS 46 consideration and decision	CGMS-46	**CLOSED**	

CGMS-45 WGI Recommendations						
"Actionee	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**Status**	**HLPP ref**
CGMS space agencies	WGI/2	R44.01	CGMS agencies to inform their Frequency Managers on the space weather activities to ensure the necessary protection and coordination at Frequency management level	NOAA has informed their spectrum managers on space weather activities. They are actively working to identify spectrum for the SWFO as well as coordinating with other SMs on COSMIC-2 in preparation for launch. NOAA SM are also engaged in WRC Agenda Item 2.3 "relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors"	**Completed**	1.3
CGMS space agencies	WGI/5	R44.02	All CGMS DCS operators to consider making all DCP messages available on the GTS.	Draft Best practices were proposed in CGMS-46 WGI, which recommended that all DCP messages are made available on the GTS.	**Completed**	1.2

CGMS space agencies	WGI	R44.03	From CGMS-44 WGII: Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications	CGMS-46 CGMS-WP-09	**Completed**	5.2

WGII actions open from previous plenary sessions (at CGMS-45)								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	
CGMS space agencies	WGII/4	A44.02	CGMS members to submit data to the ICWG intercomparison: full-disk data at 10 minute temporal resolution, 2 km spatial resolution in the native AHI projection is preferred. The data should be submitted by 1 September 2016.	CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar '18: ICWG meets in Nov 2018 and expects it to be closed by then. 26 June 2016 date TBC WGII IS #1 20 Nov '17: Two golden days for intercomparison studies have been chosen: 19 Aug 2015 (ICWG cloud properties), 21 July 2016 (ICWG and IWWG). CGMS-45: remains open since some submissions missing or forthcoming and closing is now foreseen for spring 2018. IPWG will assess the initial results at the next IPWG meeting in Autumn 2018. CGMS-44: ICWG plans underway. Communicate new golden days to CGMS members as soon as decided.	New: CGMS-47 (1 Sept 2016, CGMS-46)	**OPEN**	3.2.3	(USC/Rro; RSP/PW…)
IMD	WGII/6	A44.08	IMD to provide more information (documentation, availability details, URL) about the RAPID tool , for inclusion in the WMO webpage on Visualization Tools to CGMSSEC	WGII IS #1 20 Nov '17: Documentation provided by ISRO on 12 June 2017. WMO to forwarded document to CGMSSEC and action is closed accordingly. CGMS-45: Details to be provided by ISRO.	1 Oct 2016	**CLOSED**		

IROWG	WGII/8	A44.13	IROWG to define the requirements on timeliness for RO observations	CGMS-46: Closed following WGII discussions. WGII IS#2 15 Mar '18: IROWG is expected to attend/report to CGMS-46. WGII IS #1 20 Nov 2017: N.B. COSMIC-2B has been discontinued in its current form, NOAA is considering alternatives CGMS-45: IROWG-WP-01: We recommend that future RO missions include communications infrastructure that will enable 95 % of the measurements to be available for use in operational models within 30 minutes or less. Data older than 30 minutes is of lower value for current models. Near-real time data latency would be optimal, but is not always practical, and should be considered to be a useful goal for future missions when possible. In the specific case of COSMIC-2 Polar, south polar ground stations (e.g., McMurdo, Troll) should be deployed to reduce data latency IROWG to look at the implications of the requirement on ionospheric processing.	New deadline: CGMS-46 (CGMS-45)	**CLOSED**	1.1.4	support direct read-out
CGMS-45 WGII actions								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	
SCOPE-CM Chair	4	A45.01	SCOPE-CM Chair to inform ISRO about the maturity matrix model, to enable its application to ISRO datasets.	WGII IS#2 15 Mar 2018: Action closed following discussions. WGII IS #1 20 Nov 2017: SCOPE-CM EP-12 held in Oct 2017 (ISRO participated remotely). WGII to follow up on the maturity model	15 Aug 2017	**CLOSED**	3.3.2	

IROWG	4	A45.02	IROWG to develop a detailed proposal for OSSEs regarding LEO-LEO MW occultation and GNSS-RO&-reflectometry.	CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar 2018: No progress information. 1 Feb 2018/29 Nov 2017: Activity initiated, IROWG has reached out to its members, deadline extended. Regarding the GNSS-R OSSEs, some work has been done to be extended as the global observing system develops. Regarding LEO-LEO occultation OSSEs, limited progress is expected prior to CGMS-46.	CGMS-47 (1 Nov 2017, CGMS-46)	**OPEN**		
IWWG	4	A45.03	IWWG to liaise with the NOAA representative on PSTG (Jeff Key, jeff.key@noaa.gov) regarding the potential use of 3D winds from AIRS for Year of Polar Prediction studies.	CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar 2018: Yr of polar prediction ongoing. NASA will start looking at these in NRT in their model. Steve Wanzong NASA will talk to NOAA. WGII IS #1 20 Nov 2017: No update; NRT product by Dave Santek (SSEC/U Wisconsin) used by NASA GMAO as part of a project;	CGMS-47 (1 Jul 17, CGMS-46)	**OPEN**		RSP/RB

IPWG	4	A45.04	IPWG to produce documentation on precipitation climate data record generation and related activities worldwide, including prospects for continuity	CGMS-46: Action remains open following WGII discussions. WGII IS#2 15 Mar 2018: ECV gap analysis on precipitation CDRs ongoing with involvemetn from IPWG. Part of IPWG report to CGMS-46. 7 Mar 2018: In conjunction with GEWEX, a precipitation assessment is being planned; a mature outline, with associated section leads, have been identified and will be discussed further over the coming months and at IPWG-9. WGII IS #1 20 Nov 2017: IPWG is organsing a precipitation assessment jointly with GEWEX - with a kick off meeting held in Oct. 2017. Co-Chair Haddad and former co-chair Roca (who serves as lead of the GEWEX Data Working Group) are co-organisers.	CGMS-47 (CGMS-46)	**OPEN**	5.1	USC? RSP/PW
GSICS	4	A45.05	GSICS to produce annual state of the observing system report to be delivered at CGMS	CGMS-46: Action remains open following WGII discussions. See CGMS-46-GSCIS-WP-01 WGII IS#2 15 Mar 2018: GRWG/GDWG will provide the template and sample to GSICS-EP as Action in 2018 GSICS annual meeting. Mitch will report in WG II at CGMS-46 WGII IS #1 20 Nov 2017: It is related to the action of GSICS-EP-03 "to develop an approach for an Annual GSICS report on the State of the Observing System with Respect to Instrument Performance and Intercomparisons with GSICS Reference	CGMS-47 (CGMS-46)	**OPEN**	3.1	H/RSP, RSP/TH, (RSP/DC)

CGMS agencies	4	A45.06	CGMS Agencies to implement Landing Pages on calibration events accessed via WMO-OSCAR.	CGMS-46: Action remains open following WGII discussions. CGMS-46 WMO-WP-02 *ESA, IMD, NASA, ROSHYDROMET are requested to provide focal points.* WGII IS#2 15 Mar 2018: Other agencies are requested to provide the URL to their respective landing pages. **KMA** implemented the Landing Pages on COMS calibration events on June 2016. http://nmsc.kma.go.kr/html/homepage/en/landing/info.do#coms **IMD** Dr. Ashim K. Mitra, Scientist-D (SR-Cal/Val) **NASA** charles.webb@nasa.gov **NOAA** mitch.goldberg@noaa.gov **ROSH** http://planet.rssi.ru/calval/portal-main-en (the web-page is under construction)	CGMS-47 (CGMS-46)	**OPEN**	3.1	EUM: USC (PM? SW? RSP/TH - status at EUM
CGMSSEC	5	A45.07	CGMS SEC to approach GOFC-GOLD to explore the possibility for CGMS members to become part of the fire project.	CGMS-46: Closed following WGII discussions. 18 May 2018: GOFC-GOLD will provide a presentation to WGII at CGMS-46. 9 Apr 2018: CGMSSEC sent an invitation to CGMS-46 WGII to GOFC-GOLD co-chairs to explore possible cooperation aeras. WGII IS #1 20 Nov 2017: No progress yet	CGMS-46	**CLOSED**		Originating from NMA. Fire team: Chris Justice, NASA, Jochen Goldene, Krishna Vadrevo.
CGMSSEC	5	A45.08	CGMS SEC to explore with AEROSAT if they pursue an activity regarding the use of new-generation GEO data	CGMS-46: Closed following WGII discussions. 18 May 2018: AEROSAT will provide a presentation to WGII at CGMS-46. 10 Apr 2018: Co-chairs of AEROSAT has responded positively, and expects to attend remotely with a presentation. 9 Apr 2018: CGMSSEC sent an invitation to CGMS-46 WGII to AEROSAT to explore possible cooperation aeras. WGII IS #1 20 Nov 2017: No progress yet	31-Jul-17	**CLOSED**		Originating from NMA. Who is the formal POC? Simon Pinnock ESA/Thomas Holzer, DLR.

CGMS agencies	5	A45.09	To confirm interest in a flood mapping pilot project using GEO satellites, as a proposal for the SCOPE-Nowcasting executive panel meeting (18-20 Sep 2017	CGMS-46: Closed following WGII discussions. See CGMS-46-NOAA-WP-10 WGII IS#2 15 Mar 2018: NOAA update: - JPSS flood mapping projects ongoing as part of JPSS proving ground; on GNC-A - Int'l Charter Space and Major Disasters contribution - Contribution by NASA-USAID and other federal agencies supporting the ServirHubs - NOAA and CMA to discuss in week of 21 March 2018 CGMS-46 NOAA-WP-xx planned CMA supports the intent to collaborate For discussion at WGII at CGMS-46 WGII IS #1 20 Nov 2017: (Ref. Plenary Action A45.27 and NOAA-CMA Plenary Action A45.32) INSAT-3D/3DR rainfall products are disseminated. **IMD** confirms its participation in the flood mapping pilot project to SCOPE-Nowcasting EP. CEOS WG Disasters just completed a pilot	CGMS-46 (Sep 2017)	**CLOSED**		Originating from NMA. Lothar Schueller L and CM [and H] SAFs….
NOAA and CMA (lead), WMO (contributing)	5	A45.10	Develop a proposal to develop GEO-based flood mapping as a potential SCOPE-Nowcasting pilot project. The WMO Multi-Hazard Early Warning System (MHEWS) and the Flash Flood Guidance System (FFGS) should be invited to collaborate in this proposal.	CGMS-46: Closed following WGII discussions. See CGMS-46-NOAA-WP-10 WGII IS#2 15 Mar 2018: CMA has progressed on flood mapping. Discussions to take place during GSICS EP on in-situ NOAA/Mitch Goldberg and CMA/Zhang Peng WGII IS #1 20 Nov 2017: (Ref. Plenary Action A45.32) Potential interest by EUMETSAT Land,	01-Sep-17	**CLOSED**		Idem. EUM interested but resource issues…

CMA	7	A45.11	CMA to add Clear-sky Radiance as an FY-4A baseline product	CGMS-46: Closed following WGII discussions. 5 Apr 2018: CGMS Secretariat provided a link to the MSG ATBD to CMA http://www.eumetsat.int/website/wcm/idc/idcplg?IdcService=GET_FILE&dDocName=PDF_MSG_MET_PROD_ATBD&RevisionSelectionMethod=LatestReleased&Rendition=Web. CMA confirmed it plans to add CSR products to its operational products list (but this might take some time to do so). WGII IS#2 15 Mar 2018: CMA would like guidance materials, end products JMA, EUMETSAT, NOAA provide guidance material (ATBD etc) to CMA regarding CSR products. WGII IS #1 20 Nov 2017:	CGMS-46	**CLOSED**	
CGMS-45 WGII Recommendations							
"Actionee'	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**HLPP ref**		
ICWG	4	R45.01	ICWG to liaise with IPWG to explore common interests in the area of cloud microphysics and scattering libraries of hydrometeors (liquid, ice).	WGII IS#2 15 Mar 2018: It was agreed to maintain the recommendation, albeit some difficulty in implementing it WGII IS #1 20 Nov 2017: Informal discussions held on the topic within IPWG.	3.7.2, 3.7.3		

WMO	4	R45.02	Recognizing that IPWG has considerable expertise in precipitation science and applications, IPWG requests the WMO (likely via VLAB) to establish a regular training event on precipitation data sets and applications, for which IPWG will provide disciplinary expertise.	23 May 2018: The VLab Management Group (VLMG-9) planned for July 2019 will discuss how the VLab should deal with external training requests (defining process for requests, clarifying VLab scope and audience, sharing requests with training partners). CGMS-46 WGII to decide if the recommendation shall be maintained, closed or converted into an action. **WGII IS#2 15 Mar 2018:** ACTION: WMO to inform VLab about the ISWGs co-chairs regarding training requests. ISWGs are encouraged to organize training events for local students and practitioners, in conjunction with their science workshops, and in coordination with WMO VLab. IROWG workshops are usually combined with scientific workshops where students participate. IWWG considers this for the next workshop, as does IPWG. **21 Feb 2018:** Discussions between IPWG and VLab have started on how to organize regular joint training activities in response to identified needs.	4.2.1

CGMS member, WG III	4	R. 45.03	Recognizing the need for continued enhancements to the baseline precipitation observing system to a broader user community (including hydrology, NWP prediction, RTM modelling), IPWG recommends that CGMS members continue to pursue advanced sensors through close coordination with CGMS ISWG's including IPWG, ITWG and ICWG.	WGII IS#2 15 Mar 2018: Included in IPWG report aspects to CGMS 23 Feb 2018 - IPWG: It would include (but not be limited to): Space based precipitation and cloud radars - one that combined relevant frequencies of heritage sensors like cloudsat and GPM precip radar. Microwave cloud imagers (similar to what will fly on next generation EUMETSAT polar orbiters); geostationary microwave sensors; lightning mappers WGII IS #1 20 Nov 2017: ICWG input: - To encourage the IPWG to use cloud property retrievals as part of their precipitation retrieval schemes. For example, can cloud particle size, cloud top temperature, cloud phase, and cloud liquid water path information improve the detection of convective or warm precipitating clouds in an early stage (even before these cloud start precipitating). - To encourage the development of combined cloud and precipitation retrievals, exploiting the full range of existing and future	
IPWG	4	R45.04	IPWG to maintain close relationship with GEWEX in its work, and at its next workshop (e.g. through a joint session)	WGII IS#2 15 Mar 2018: Joint session planned at IPWG-9. WGII IS #1 20 Nov 2017: IPWG: see action WGII A45.05	

GSICS	4	R45.05	Calibration events logging task team be folded under GSICS as a task team	During 2018 GSICS annual meeting, members discussed to confine the only "calibration" events logging. The draft guideline has been already written by task team. WGII IS#2 15 Mar 2018: To be discussed in GSICS meeting in week of 19 Mar 2018; results part of GSICS report to CGMS-46 WGII IS #1 20 Nov 2017: Dohyeong Kim to follow up. CGMSSEC to clarify whether WG I or WG IV should provide operational guidance to logging task team (when reviewing the TORs of WG I and WG IV)	3.1	Addressed in WGI from an operations perspective.See also WGII R45.06
GSICS	4	R45.06	Under the task team, agencies should assess the compliance of each agency with the new guidelines on events logging, and establish a list of instruments to be addressed by the calibration logging system.			Addressed in WGI from an operations perspective.
ISRO	7	R45.07	ISRO to consider adding a direct broadcast capability to future satellites.			
ROSH, WG IV	7	R45.08	Roshydromet to explore steps with Working Group IV to enable global exchange of data from the MTVZA-GY instrument.	WGII IS#2 15 Mar 2018: Roscosmos has enquired with WMO and DBNet community about processing software details (for Linux platform, user documentation in English) WGII IS #1 20 Nov 2017: MTVZA-GY no longer functional, WMO letter has gone to Roscosmos (Mikhail Khailov) regarding processing software for Direct Readout of future Meteor-M N2-1 data, following discussions at AOMSUC-8 in Oct 2017.		

CGMS agencies	8	R45.09	CGMS agencies encouraged to document their products online, including ATBDs and validation reports, and link product page URLs to the WMO Product Access Guide following defined documentation criteria. (current agency focal points in WMO IPET-SUP: Sally Wannop (EUMETSAT), Natalia Donoho (NOAA), Chu-Yong Chung and Jin Woo (KMA), Xiang Fang (CMA), Shiro Ohmori (JMA))	WGII IS#2 15 Mar 2018: WMO has taken these into account. **KMA** has registered a link to COMS L1B imagery in 2015 for WMO PAG and is currently available. (Link to L2 product imagery is not yet registered with WMO PAG) KMA's web page has been renewed, they want to register a new imagery link of L1B & L2 product including ATBD, and will send renewed web information to WMO. (e.g. http://nmsc.kma.go.kr/html/homepage/en/satellite/searchSatelliteImage.do?data_type=1001 => http://nmsc.kma.go.kr/html/homepage/en/ver2/satellites/coms/searchSatelliteImageN.do?data_type=1001) **KMA** POC (Ms. Woo not changed) - Geun-Hyeok Ryu (geunhyeokryu@korea.kr) - Jin Woo (superjwoo@korea.kr) **IMD** will prepare an online product document including ATBD, validation report and its link will be communicated to WMO product access guide.		EUM portal link + RSP/USC ongoing work.
CMA		R45.10	CMA to add Clear-Sky Radiance as a FY-4A baseline product.	**CLOSED** - duplicate - see action CGMS-46 WGII A45.11		
SCOPE-CM members	WGII/3	R43.01	SCOPE-CM to invite contributions to its next call for proposals, with particular regard to the sea ice, snow cover and land surface temperature communities, and others currently not represented.	**COMPLETED** Concluded following CGMS-46 WGII discussions, noting that SCOPE-CM is revising its strategy and implementation plan. See also CGMS-46-WMO-WP-10.	3.3.2	
CGMS members	WGII/3	R43.02	CGMS members to consider removing spectral gaps from future hyperspectral sounders to support GSICS intercalibration of IR imagers.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	3.1.1	Not relevant to EUM currently.
CGMS members	WGII/6	R43.03	CGMS members to consider include a water vapour channel and a CO2 channel to polar-orbiting imagers, to maintain accuracy and coverage of polar winds and cloud height retrievals achieved by MODIS.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. To be discussed at a second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	1.1.6	Part of baseline for Metimage. Not relevant to EUM currently.

CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.	WGII IS#2 15 Mar 2018: - Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMDRPS system expected in June 2018. CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).	2	EUM - pathfinders GSI/LW
ISRO	WGII/5	R43.10	ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D	WGII IS#2 15 Mar 2018: ISRO/IMD invited to report on this at CGMS-46. Nov 2017: IMD will coordinate with SAC (ISRO) to develop and implement the multi sensor precipitation estimate based on SAPHIR and INSAT-3D/3DR data on priority. CGMS-45: ISRO/IMD have plans	HLPP # 3	
IWWG, IPET-OSDE	WGII/6	R43.12	IWWG to liaise with the application focal points in the WMO RRR process (on IPET-OSDE) to provide feedback on the winds-related observation requirements in the RRR database.	**COMPLETED** 7 Jun 2018: CGMS-46-IWWG-WP-01/-02 WGII IS#2 15 Mar 2018: Discussion at IWWS-14 is planned. Update to be provided to CGMS-46. CGMS-45: IWWG addressed this for capabilities, need to follow up regarding requirements	HLPP # 1.1	

CGMS space agencies	WGII/7	R43.13	CGMS Members to approach Operators of GNSS systems to request them to provide a minimum level of information on the signal structure and interface control (ICD) in a timely manner to enable the use of these for future RO missions.	IS#2 15 Mar 2018: Beidou B2a and B1c ICDs are now available (see Plenary Recommendation 45.01): B2a http://www.beidou.gov.cn/xt/gfxz/201712/P020171226742357364174.pdf B1c http://www.beidou.gov.cn/xt/gfxz/201712/P020171226741342013031.pdf CGMS-45: IROWG discussed this and made recommendations To be discussed at the second WGII inter-sessional meeting after CGMS-44.	HLPP # 1.1.3	RSP/CM
GSICS	WGII/4	R44.02	GSICS to report to SCOPE-CM projects on its plan to intercalibrate the geostationary ring using hyperspectral IR sounders as transfer function	**COMPLETED** CGMS-46: Closed following WGII discussions. WGII IS#2 15 Mar 2018: Done, occurring in IOGEO. It was therefore proposed to close this recommendation.	3.3.2	
GSICS	WGII/4	R44.03	GSICS member agencies to identify roles and responsibilities and funding needs to support the geostationary ring GSICS corrections including the processing of retrospective data going back to NASA EOS AIRS (2002).	**COMPLETED** CGMS-46: Closed following WGII discussions. WGII IS#2 15 Mar 2018: SCOPE-CM is already undertaking this. Hence, it was proposed to close this recommendation. CGMS-45: Partially addressed; GRWG encouraged agencies to inter-calibrate past data	3.1.1	
CGMS space agencies	WGII/4	R44.04	CGMS agencies should employ the GSICS Correction as part of their operational procedures	**COMPLETED** CGMS-46: Closed following WGII discussions. Closure of recommendation made Treated within the scope of GSICS and GSICS EP. Should be part of agency procedures. EUM partly undertakes this (not part of operational products).	3.1.1	

CGMS members	WGII/4	R44.05	CGMS members to budget a baseline funding for the cloud intercomparison study, given its importance and impacts on global cloud products.	WGII IS#2 15 Mar 2018: For further discussion within ICWG. Co-chair to provide an updat. CGMS-45: ICWG-WP-01: Currently, ICWG helps to facilitate the collection of data used for assessments (e.g., level-2 retrieval assessment in TG “Assessment of level-2 retrievals” or level-3 climate data records in TG “Assessment of cloud parameter data records for climate studies”), but many teams carried out the efforts on a volunteer basis. Lack of funding has limited the scope and prohibited a definitive analysis of the new	3.2.3
IROWG, IPWG, IWWG, ITWG	WGII/4	R44.06	To enhance coordination, ISWGs to discuss with ICWG co-chairs key items for collaboration.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. Nov '17: Some informal discussions held in IPWG	
CGMS R&D agencies	WGII/4	R44.07	Research agencies to consider continuing space-borne lidar for ice/liquid water since they have proven very valuable to validate retrievals from passive sensors	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. US decadal survey on EO from space, specific measurements were noted , will influence the decision making.	1.1.3
CGMS space agencies	WGII/4	R44.08	All operators of next-generation GEO imagers to consider the implementation of routine full-disc 10-min (or better) scanning for nowcasting	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. NOAA: 2 minute scan under consideration, needs testing for GOES-17, NWS to be involved CGMS-45: NOAA consider this for GOES-16	3.2.4
CGMS space agencies	WGII/4	R44.09	CGMS Members to continue an operational constellation of conically-scanning microwave platforms to guarantee sustained support for the current level of capability.	WGII IS#2 15 Mar 2018: Will be addressed in WGIII workshop on contingency planning, baseline review 30 Apr-2 May 2018. CGMS-45: Questions of resolution, frequency need to be resolved, not just high-level mission continuity CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	1.1.6

CGMS members	WGII/4	R44.10	At the request of IPWG, CGMS to improve cross-agency coordination of satellite assets into A-train-like convoys of instruments with sensitivities to distinct aspects of precipitation processes (e.g., CloudSat, EarthCare, GPM, etc.).	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
NOAA	WGII/4	R44.11	NOAA to ensure that both, equatorial and polar components of COSMIC-2 are fully funded and launched.		1.1.4
CGMS members	WGII/4	R44.12	CGMS agencies to target at least 20,000 occultations/day, at appropriate global distribution, to be made available to the operational and research communities, based on recent impact studies (NWP, climate and space weather)		1.1.4
CGMS members	WGII/4	R44.13	CGMS agencies to ensure that the RO receiver design includes sufficient software/firmware flexibility to allow changes in the signal processing including processing of new GNSS signals/constellations, including ionospheric measurements		1.1.4
CGMS space agencies	WGII/4	R44.14	CGMS agencies to maintain the constellation of at least three polar orbits (early morning, morning, and afternoon), each with full sounding capabilities (IR and MW). The overpass times of operational satellites with sounding capability (IR and MW) should be coordinated between agencies to maximize their value.	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	1.1.1
CGMS space agencies	WGII/4	R44.15	Future satellite programmes should include the provision of high temporal frequency MW humidity sounding radiances (alongside cloud and precipitation sensitive observations).	CGMS-45: NASA Cubesat mission Tropics underway CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	1.1.1
ROSC, ROSH	WGII/4	R44.16	Roscosmos to develop and release a direct broadcast processing package (for level 1 data) for the MTVZA-GY microwave imager. Roshydromet to provide dissemination of this package to interested users.	Apr 2018: Following feedback from Roshydromet, the text of this recommendation has been updated (as discussed during CGMS-45 WGII).	1.1.5

CGMS space agencies	WGII/4	R44.17	CGMS agencies to identify the resources required to support the 3rd intercomparison of satellite-derived winds.	**COMPLETED** CGMS-46: Closed following WGII discussions. WGII IS#2 15 Mar 2018: IWWG: The EUMETSAT NWC SAF will undertake the study. Recommendation to be converted into an action. Reference is made to recommendation for ICWG.	3.2.1
CGMS space agencies	WGII/4	R44.18	CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	1.1.6
CGMS space agencies	WGII/4	R44.19	CGMS agencies to explore possibilites to derive winds from new upcoming satellites and opportunities.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. For IWWG.	
CGMS members	WGII/4	R44.20	CGMS members to continue to support SCOPE-Nowcasting and its transition to pre-operational phase, in particular to consider financial support the finalization of the satellite-based volcanic ash retrieval algorithm intercomparison activitiy (Pilot Project 2) over the next 12-18 months.	WGII IS#2 15 Mar 2018: Ongoing. SCOPE-NWC making good progress. Funding earmarked by EUMETSAT and WMO. A Workshop to be held in October '18. Maintain as recommendation. CGMS-45: Funds earmarked by EUMETSAT for 2018 Deadline for indication of support to volcanic ash activity) No indication of support to VA intercomparison so far received by WMO. WMO has identified resources to engage consultant for 2.5 months FTE to support SCOPE-Nowcasting.	3.2.2
CGMS space agencies	WGII/6	R44.21	Operators to take into account in the planning of their data distribution systems the emerging stringent requirements on data latency from SRNWP	WGII IS#2 15 Mar 2018: Maintain it as a recommendation.	2

CMA	WGII/7	R44.22	CMA to make available data from FY-3D HIRAS and FY-4A GIIRS early in commissioning		
CGMS space agencies	WGII/7	R44.23	CGMS agencies with operational direct broadcast needs are encouraged to attend the next ITWG sponsored Direct Broadcast Users Meeting in March 2017 hosted by CONAE, Argentina.	CGMS-45: Last week of June 2017, Madison WI, USA	
CGMS space agencies	WGII/7	R44.24	CGMS agencies to provide key documentation related to the quality of their products, to allow for informed uptake by users. These documents should include ATBDs, cal/val plans, and regular validation reports	CGMS-44 WGII: Part of WGII action to develop best practices CGMS-45 NOAA-WP-13	5.3
CGMS space agencies	WGII/7	R44.25	For monitoring the Polar Regions, the Group stressed the importance of the deployment of HEO missions	*Link to WGIII required*	1.1
CGMS space agencies	WGII/8	R44.26	Satellite operating agencies should support proposals and programs to acquire high-accuracy characterization measurements of the Moon, to develop a new, high accuracy, SI-traceable lunar reference standard for reflected solar wavelengths.	WGII IS#2 15 Mar 2018: Update expected at the March '18 GSICS meeting. SWTT is preparig a proposal on integrating space weather products into GSICS. To be discussed at CGMS-46. CGMS-45: GSICS discussed this issue	3.1.2
CGMS space agencies	WGII/8	R44.27	Long-term continuity of absolute solar spectral irradiance measurement with SI-traceable accuracy should be ensured.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation.	3.2.1
CGMS space agencies	WGII/8	R44.28	Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications		
WGII	WGIII/6	R44.29	From WGIII to WGII: WGII to study this issue and provide guidance on the potential impact of temporal a gap in the PMW SST products.	WGII IS#2 15 Mar 2018: Maintain it as a recommendation. CGMS-45: 6.9MHz currently used, in future only GCOM-W will provide this capability for the time being.	

WGIII actions open from previous plenary sessions (at CGMS-45)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS members	WGIII/	A44.01	CGMS Members: To review and react to the WIGOS Vision 2040 as it develops	WGIII IS #3: Closed in view of progress of the Vision. If needed, new actions will be raised on the occasion of CGMS-46. Feb 2018: CGMSSEC has provided an update to WMO based on feedback from CGMS Members (see also CGMS-45 plenary actions). Nov 2017: WMO is currently consolidating the space part into an integrated Vision 2040 document for which a draft will be presented to CGMS-46. Jul 2016: Input provided by EUM, NOAA	(Aug 2016) New deadline: CGMS-46	**CLOSED**	1.1

WMO	WGIII/	A44.02	WMO Secretariat to present the draft Vision at CEOS, GEO plenary sessions 2016.	WGIII IS #3 10 Apr 2018: WMO to confirm if the vision will be presented to CEOS. (Not on the CEOS SIT AGN in April 2018). WGIII IS 28 Nov 2017: WMO organised a side event at GEO plenary. WMO will seek to present the Vision to CEOS in the course of 2018. CGMS-45: Status presented, CGMS agencies invited to provide comments (including on carbon observations). Deferred to next plenary cycle (2017)	CGMS-47 (End 2016, CGMS-46)	**OPEN**	1.1

CGMS members	WGIII/3	A44.03	CGMS operators nominate focal points for maintaining these elements (dates, landing pages), and other elements included in OSCAR/Space (e.g., instrument characteristics).	CGMS-46: Discussed, this action has been closed and a new related action opened. CGMS-46 WMO-WP-02 WGIII IS#3 10 Apr 2018: Other CGMS members are requested to provide their points of contact. O/SST: • CMA: lufeng@cma.gov.cn • CNES: TBD • CNSA: TBD • CSA: TBD • ESA: ivan.petiteville@esa.int • EUMETSAT: TBD • IMD: ashimmitra@GMAIL.COM, sunil.peshin@gmail.com • ISRO: jvthomas@isro.gov.in • JAXA: oki.riko@jaxa.jp • JMA: r_yoshida@met.kishou.go.jp • KMA: dohyeong@gmail.com • NASA: charles.webb@nasa.gov • NOAA: Matthew.Butler@noaa.gov • ROSC: avkarelin@mail.ru • ROSH: uspenskys@planet.iitpp.ru	30 Sep 2018 (31 Jul 2017)	**CLOSED**	5.3
CGMS-45 WGIII actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**

CGMS	WGIII/4	A45.01	Initiate review of CGMS Baseline, to be synchronised with development of WMO "Vision for WIGOS in 2040"	CGMS-46: Closed following WGIII discussions. 29 May 2018: Closure proposed. Discuss and covered at CGMS Baseline and Contingency Plan Workshop April 30 - May 2, 2018 WGIII #3 10 Apr 2018: Ongoing To be discussed at the workshop at WMO on 30 Apr-2 May 2018.	CGMS-46	**CLOSED**	
WMO	WGIII/ 5.1.1	A45.02	Update the risks assessment and gap analysis of implementation against the CGMS baseline; include the potential risk of gaps in the capability for passive microwave imaging in this update	CGMS-46: Closed following WGIII discussions. CGMS-46 WMO-WP-14 29 May 2018: **Closure proposed**: Microwave imaging was included in CGMS baseline. WGIII IS#3 10 Apr 2018: Will be addressed at the Apr/May workshop , and the outcome will be provided to CGMS-46. WGIII IS 28 Nov 2017: WMO to provide a process proposal at the Apr/May 2018 workshop.	CGMS-46	**CLOSED**	

CGMS members	WGIII/5.4	A45.03	WMO to support one face to face Inter-sessional meeting to start off new planning effort.	WGIII IS#3 10 Apr 2018: Closed since the meeting is now scheduled. Workshop planned for 30/4-2/5 2018 at WMO, Geneva. Agenda to be discussed at the next WGIII inter-sessional and circulated ~end January 2018	CGMS-46	**CLOSED**	
SETT	WGIII/8	A45.04	Propose a way forward for guiding and coordinating socio-economic benefit studies among the CGMS community.	CGMS-46: Remains open following WGIII discussions. See CGMS-46-NOAA-WP-15 WGIII IS#3 10 Apr 2018: Apr/May meeting at which stage more information will follow. SETT seeking to identify new case studies. WMO recommends looking at risk analysis and SETT could look at potential consequences thereof.	CGMS-47 (CGMS-46)	**OPEN**	
WGIII and SWTT	WGIII/9	A45.05	WGIII and SWTT to organise a joint inter-sessional to discuss SW updates to CGMS baseline	16 Oct 2017: SWTT draft space-based space weather baseline circulated, which includes SWTT and joint SWTT/WGIII discussions WGIII-SWTT IS held 27 Sep 2017.	Jul-17	**CLOSED**	

WMO	WGIII/10	A45.06	Include impact of data latency among science questions posed to 7th WMO Impact Workshop (in 2020)	CGMS-46: Closed following WGIII discussions (new related action raised). WGIII IS#3 10 Apr 2018: WMO to confirm to what extent this is incorporated properly in the questions and address it at CGMS-46 as the latest. WGIII IS 28 Nov 2017: WMO expects to form the organising committee in the course of 2018 to address the WS content.	End 2018	**CLOSED**	
CGMS Agencies	WGIII/5.1.2	A45.08	Agencies to consider contributing resources (financial, in-kind, or via secondment) to the development and maintenance of OSCAR/Space	CGMS-46: Remains open following WGIII discussions. WGIII IS#3 10 Apr 2018: CGMS-46 WMO-WP-xx to provide a status report, issues, and way forward. Linked to the issues of the gap analysis process. WGIII IS 28 Nov 2017: WMO to articulate the needs and what type of support is needed to then be circulated to space agency members	CGMS-47 (CGMS-46)	**OPEN**	

WGIII	WGII/4	A45.07	**Action from WGII (from CEOS VC SST):** Study the continuity of the current constellation of passive microwave sensors (for high quality satellite precipitation products for weather, climate and hydrological applications) through proper coordination of satellites, sensors and equatorial crossing times.	CGMS-46: Closed following WGIII discussions. 29 May 2018: **Closure proposed.** Discussed and covered at CGMS Baseline and Contingency Plan Workshop April 30 - May 2, 2018 WGIII IS#3 10 Apr 2018: To be discussed at the Apr/May workshop. WGIII IS 28 Nov 2017: To be considered in the framework of the gap analysis, contingency planning/baseline at the March 2018 workshop.	CGMS-46	**CLOSED**	
CGMS-45 WGIII Recommendations							
"Actionee'	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**HLPP ref**		
WMO	WGIII/	R44.02	Noting the recent conclusions of the WMO IPET-DRMM and the concurrence expressed in CGMS WG III, WMO is encouraged to add the satellite identifier (from Common Code Table C5) and satellite instrument identifier (from Common Code Table C8) to OSCAR Space.		2.7		

CGMS space agencies	WGII	R44.03	**From CGMS-44 WGII**: CGMS Members to continue an operational constellation of conically-scanning microwave platforms to guarantee sustained support for the current level of capability	**COMPLETED** CGMS-46: Closed following WGIII discussions. 29 May 2018: **Closure proposed.** Discussed and covered at CGMS Baseline and Contingecy Plan Workshop April 30 - May 2 Ref. gap analysis discussion	
CGMS space agencies	WGII	R44.04	**From CGMS-44 WGII:** CGMS to have a special discussion on the value of formation flying similar to the A Train – especially for precipitation and other hydrological applications		
CGMS space agencies	WGII	R44.05	**From CGMS-44 WGII:** CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.		
CGMS members	WGIII/2.2	R43.01	CGMS members are encouraged to consider including RO capabilities on all future polar-orbiting satellites.	Discussed at CGMS-44, 45 and 46	1.1.4

WGIV Actions open from previous plenary sessions (at CGMS-45)								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	
EUM	WGIII/2	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.	5 June 2018: Progress reported in WP and closure expected late 2018. CGMS-46-EUMETSAT-WP-08 CGMS-46-ISRO-WP-05 18 May 2018: CGMS-46-EUMETSAT-WP-08, Update of EUMETSAT contribution to the IODC dissemination plan WGIV IS-1, Oct 2017: EUMETSAT: work in progress, pending dissemination facility upgrade and EUMETCast Africa contract renewal in 2018, and pending decision to add more data Status at CGMS-45: CGMS-45-EUMETSAT-WP-37 CGMS-45-ISRO-WP-05 Ongoing work, deadline extended. WGIV webex 9 Dec 2015: WMO seeking to assure that the dissemination to users will be equivalent to the current one (EUMETSAT, CMA, ROSH and ISRO to collaborate and clarify this in view of CGMS-44. EUMETSAT makes FY-2F data available	**New deadline Dec 2018** (CGMS-44, -45, -46)	**OPEN**	1.1.6	H/RSO

NOAA	(WGI/4) WGIV/7	A43.03	NOAA to consider including GLM products in the HRIT stream	At CGMS-46: Progress reported in WP and closure expected in autumn 2018. CGMS-46-EUMETSAT-WP-08 CGMS-46-ISRO-WP-05 A usable GLM product provided to PDA is still in development within the National Weather Service as the current GLM product available in PDA is not a feasible solution for HRIT due to bandwidth limitations. NOAA is testing multiple imagery configurations to determine availability and frequency of all level 2 products from GOES-R series satellites including GLM. From this information coupled with end user feedback, NOAA can balance the demand for multiple bands of high resolution imagery data and the inclusion of level 2 products without increasing current latencies	**New deadline CGMS-47** (CGMS-44, 45, -46)	**OPEN**		
TT metadata	(WGI/6) WGIV/10.1	A43.05	CGMS Task Team on metadata to define discovery metadata for DBNET	CGMS-46: No progress due to lack of resources by key TT members, will be addressed with TT in inter-sessional meetings. 18 May 2018: CGMS-46-EUMETSAT-WP-07, Report on achievements and next steps of the Task Team on metadata	**New deadline CGMS-47** (CGMS-44, 45, -47)	**OPEN**	3.4.1	GSI/Gau

CGMS members		A43.06	CGMS members to provide a listing of their data access portals.	CGMS-46: At CGMS-46: CGMS-46-NOAA-WP-17 A usable GLM product provided to PDA is still in development within the National Weather Service as the current GLM product available in PDA is not a feasible solution for HRIT due to bandwidth limitations. NOAA is testing multiple imagery configurations to determine availability and frequency of all level 2 products from GOES-R series satellites including GLM. From this information coupled with end user feedback, NOAA can balance the demand for multiple bands of high resolution imagery data and the inclusion of level 2 products without increasing current latencies. 29 May 2018: NOAA is reviewing this possibility. If GLM is added to HRIT, an	(CGMS-44) **New deadline CGMS-46**	**CLOSED**	-	Closed for EUM, NOAA
EUMETSAT	WGIV/7	A44.02	To provide a timeline for the users preparation information for MTG, in accordance with "CGMS-44-WMO-WP-02 Best Practices for Achieving User Readiness for New Meteorological Satellites"	CGMS-46: WG-IV agenda item 11.2 verbal presentation. 18 May 2018: EUMETSAT to make a verbal input at CGMS-46 WG-IV WEBEX 18 Jan 2017 EUMETSAT: High Level information for Saturn was provided. CGMS-45: Ongoing work, keep open until more	(30 Dec 2016) ***New deadline Dec 2017***	**CLOSED**	5.3	H/USC

CGMS members	WGIV (WGII)	A44.05	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs.	CGMS-46: At CGMS-46: No further input, feedback from GODEX-NWP required. 22 May 2018: To be discussed in WGIV at CGMS-46, which needs participation/representation from WGII to explain the background and purpose to enable WGIV to move forward. The next GODEX-NWP meeting will be held 27-30 Nov 2018 in New Delhi, India. WG-IV WEBEX 18 Jan 2017: WMO: GODEX-NWP scheduled May 2017,	**New deadline CGMS-47** (CGMS-45, -46)	**OPEN**	
CGMS-45 WGIV actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
JMA/KMA	WGIV/4	A45.01	JMA/KMA to coordinate a regional user survey in RA II/V based on the WMO 2016 global survey (CGMS-45 WMO-WP-15) in collaboration with BOM and WMO, taking into consideration the communication satellite broadcast systems available in the regions.	CGMS-46-Joint-JMA/KMA-WP-02 user survey planned in 2018. CGMS-46-Joint-JMA/KMA-WP-02 JMA 11 Oct '17: The Coordinating Group meeting of RA II WIGOS satellite project on 21 Oct '17 will take place in Vladivostoc after AOMSUC-8. The topic regarding the user survey will be included in the agenda.	**New deadline CGMS-47** (CGMS-46)	**OPEN**	2.1, 2.2
TFMI	WGIV/9	A45.02	TFMI to work on the WIGOS metadata standard, in particular to assess the WIGOS Metadata OGC Observations and Measurements standard, and recommend possible adjustments for satellite observations to the WMO WIGOS team.	CGMS-46: No progress due to lack of resources by key TT members, will be addressed with TT in inter-sessional meetings. 18 May 2018: CGMS-46-EUMETSAT-WP-07, Report on achievements and next steps of the Task Team on metadata	**New deadline CGMS-47** (CGMS-46)	**OPEN**	2.7

CGMS satellite operators	WGIV/12.1	A45.03	CGMS satellite operators to provide documentation on the data formats for space weather observations, and to forward related space weather metadata to the WIS.	CGMS-46: CGMS-46-NICT-WP-02 see also CGMS-46 WGIV/12.1 29 May 2018: Data formats will be in NetCDF; NOAA proposes a white paper be written to collect all Member data formats between CGMS-46 and CGMS-47 WGIV IS 11 Oct '17: CGMS members are requested to provide a Working Paper to CGMS-46 in response to this action. (combined with the response to action WGIV A45.04).	CGMS-47 (CGMS-46)	**OPEN**	2.8
CGMS satellite operators	WGIV/12.2	A45.04	CGMS members to report on the status of near real-time access to space weather data from instruments hosted on meteorological satellites. This includes data from space environment monitor suites, solar X-ray/EUV sensors, and radio occultation instruments on any orbiting satellite. Members are asked to detail product level definitions including near real-time availability of each level and user access required to obtain each level of data.	See CGMS-46-NOAA-WP-01 May 2018 EUM: L0 data available on the EUMETSAT product navigator. Data exchange is bespoke. WGIV IS 11 Oct '17: CGMS members are requested to provide a Working Paper to CGMS-46 in response to this action (combined with the response to action WGIV A45.03).	CGMS-47 (CGMS-46)	**OPEN**	2.9

WG IV	WGII/4	A45.05	**Action from WGII:** Ensure timely (< 1 hr) and free access to all geostationary visible, IR and water vapour data that is required to improve global hydrological prediction.	CGMS-46: Put on hold until requirements are clarified (see new action A46.xx) 29 May 2018: NOAA provides this data at the requested latency. 14 Mar 2018: IPWG recognises it is not feasible having all channel data from the new era of GEO satellites, however: a) At a minimum, sustained 30-min refresh full disk longwave IR (10 to 15-min desired), near realtime access; b) Given the expanded spectral bands of the operational global geo constellation, additional 6.2 um water vapor channel data, at the same refresh as IR c) Finally, visible channel data desired 25 Oct '17: CGMSSEC has sent a message to IPWG co-chairs to this purpose asking for more details to enable WGIV to react. [enquiry sent to R Ferraro 19 Feb 2018] WGIV IS 11 Oct '17: This action was discussed and WGIV concluded the request is too open and would have a significant impact on the data access in this form. The following clarification was formulated	Sep 2018 (CGMS-46)	**OPEN**	
CGMS-45 WGIV Recommendations							
"Actionee"	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**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	*CGMS-46: Recommendation still valid, to be retained.* **IMD:** To be conveyed in due course [Nov 2017] CGMS-45: Recommendation still valid, to be retained. NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: http://www.ngdc.noaa.gov/metadata/ WGIV CGMS-43 discussions: Ongoing and routine activity. Recommendation maintained until CGMS-44	**OPEN**	2.7	GSI/LW (Gau?)
CGMS members	WGIV/3.2	R44.01	CGMS members to contribute to the implementation of the Best Practices for User Readiness for meteorological satellite systems under development, both GEO and LEO	*CGMS-45/-46: Recommendation still valid - retained.* Closed for NOAA.	**OPEN**	5.3	H/USC
CGMS members	WGIV/3.2	R44.02	CGMS members to continue the provision of up-to-date User Readiness information in the SATURN portal	*CGMS-45/-46: Recommendation still valid - retained.* NOAA poc: Mitch.Goldberg@noaa.gov	**OPEN**	5.3	H/USC

CGMS-46 action raised by SWTT/SWCG for the WGIV							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WGIV		A46.10	From SWTT/SWCG to WGIV: Determine data formats of space weather measurements use by CGMS Members, particularly particle sensor data (GEO and LEO) and magnetic field data (GEO)		CGMS-47	**OPEN**	2.9

SWTT actions open from previous plenary sessions (at CGMS-45)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
SWTT		A44.01	SWTT to conduct a workshop with leadership from the various space weather communities that will benefit from CGMS coordination of space-based space weather observing systems.	1 Dec 2017, CGMS topical discussion held during European Space Weather Week with presentations by Terry Onsager, Elsayed Talaat, Tsutomu Nagatsuma, Juha-Pekka Luntama, Toshiyuki Kurino, and Johan Ideström; an outbrief to the SWTT occurred during the 7 Dec 2017, inter-sessional meeting. 1 Aug 2017, Elsayed Talaat, SWTT Co-Chair, gave a CGMS briefing during the United Nations/United States of America Workshop on the International Space Weather Initiative: The Decade after the International Heliophysical Year 2007, which took place in Boston, MA. Elsayed Talaat and Juha-Pekka Luntama gave an outbrief to the SWTT during their inter-sessional meeting on 17 Sep 2017. CGMS-45: CGMS presentation and discussions have occurred at European Space Weather Week (ESWW) and UNCOPUOS. Discussions have been held with leadership of ISWI, COSPAR, and ISES. CGMS SWTT organized electron inter-calibration mini-workshop at US Space Weather Workshop CGMS space weather role is included in draft UNCOPUOS framework for space weather services. Planned:	(15 Dec 2016) New: 30 Nov 2017, CGMS-46	**CLOSED**	5.2.1
CGMS-45 SWTT actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**

CGMS space agencies	SWTT/7	A45.01	SWTT members to identify initial baseline for space-based space weather measurements and hold inter-sessional with WGIII to plan forward analyses. This will be finalised in the first inter-sessional to be held on 14 September 2017.	SWTT IS held on 14 Sep 2017. Joint IS held on 27 Sep 2017 discussing baseline. 12 Oct: 2nd SWTT Inter-sessional held Proposed space-based space weather CGMS baseline distributed 16 Oct 2017 to SWTT and WGIII.	30 Sep 2017	**CLOSED**	1.1.7
CGMS members	SWTT/10 (WGII/9)	A45.02	SWTT members review GSICS activities and deliver recommendations for its use as a framework for space weather sensor inter-calibration activities.	1 Dec 2017, discussed during CGMS topical discussion at European Space Weather Week; awaiting submittal of space weather intercalibration product – energetic electrons Oct 2017, Decision made to pursue GSICs as framework for inter calibrations of space weather products. 12 Oct 2017, discussed GSICS as topical discussion at ESWW. 14 Sep 2017, GSICS materials discussed during IS. 11	30 Dec 2017	**OPEN**	3.1.3
SWTT Co-Chairs	SWTT/10 (WGII/9)	A45.03	Invite a GSICS representative to the next SWTT inter-sessional meeting; and to a topical discussion during the European Space Weather Week Nov-Dec 2017 in Oostende, Belgium	1 Dec 2017, discussed during CGMS topical discussion at European Space Weather Week, Toshi Kurino presented CGMS topical discussion 11 Oct 2017, Decision made to pursue GSICs as framework for inter calibrations of space weather products. ESWW will be determined on 12 Oct 2017. Action on GSICS to name ESWW attendee. 14 Sep 2017, Mitch Goldberg attended the SWTT IS.	30 Dec 2017	**CLOSED**	3.1.3

CGMS space agencies	SWTT/11	A45.04	CGMS operators report on internal procedures to determine if an anomaly results from a space weather event including what thresholds are used.	14 Sep 2017, operator survey reviewed during SWTT IS. Updated inputs sent to WGI for review. Comments incorporated and updated survey questions distributed on 10 Oct 17 by Joaquin to WGI; and by Elsayed to SWTT for collection by WGI (Responses provided by EUM, JMA, NASA, NOAA, …) 7 Nov 17: Joint meeting to discuss results from space weather anomalies survey	30 Dec 2017	**CLOSED**	
SWTT Co-Chairs	SWTT/11	A45.05	CGMS to engage WMO IPT-SWeISS to encourage incorporation of an analysis of anomaly collection, reporting, and resolution processes into their work plan.	Elsayed Talaat SWTT co-chair attended the IPT-SWeISS meeting. SWTT Co-chair Elsayed Taalat, NASA, nominated (EUM/SCIR/LET/17/928853 of 5 July 2017). Door open to further nominations. 19 Oct 17: Elsayed emailed the WMO, STEERING GROUP ON RADIO FREQUENCY COORDINATION (SG-RFC), Collection of Technical and Operational Characteristics for RF-based Space Weather Sensors, to Toshi for its inclusion into the next IPT-SWIeSS meeting 3 Nov 17: Co-chair learned while attending Space Weather meeting in Canada that the deadline is late December for Statement of Guidance for Space Weather Observation (SGSWO) comments	30 Dec 2017	**CLOSED**	
SWTT Co-Chairs	SWTT/10	A45.06	Engage ISES as an observer for CGMS plenary meeting and/or include with SWTT inter-sessional activities.	1 Dec 17: Discussed with Terry Onsager, part of ISES, during ESWW; he co-sponsored the CGMS discussion at ESWW	30 Dec 2017	**CLOSED**	5.2.1

SWTT Co-Chairs	SWTT/10	A45.07	Survey CGMS member operators regarding if and how actions are taking by satellite operators in response to space weather threats and/or conditions	Survey done and responses collected in CGMS-46-SWTT-WP-05 Included in SWTT A45.04 7 Nov 17: Joint meeting to discuss results from space weather anomalies survey	30 Dec 2017	**CLOSED**	3.6.4
SWTT	SWTT/15	A45.08	SWTT develops recommendation as to future structure of the interface between CGMS and the space weather community going forward.	See CGMS-46-SWTT-WP-01 for discussion and recommendation at CGMS-46 1 Dec 17: SWTT will create Terms of Reference to become Ad hoc Working Group on Space Weather Coordination to be presented at CGMS-46	CGMS-46	**CLOSED**	
CGMS-45 SWTT Recommendations							
"Actionee'	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**Status**	**HLPP ref**	

		R44.01	**On Space Weather Task Team:** Sustain the SWTT for another year in order to enable CGMS space weather integration.	18 May 2018: A proposal will be made to CGMS-46 plenary to transfer SWTT into a Space Weather Coordination Group (SWCG) (SWTT agenda item 3). CGMS-45 discussions: Sustain the SWTT for another year in order to enable CGMS space weather integration into existing Working Groups until CGMS-46. CGMS-45: CGMS presentation and discussions have occurred at European Space Weather Week (ESWW) and UNCOPUOS. Discussions have been held with leadership of ISWI, COSPAR, and ISES. CGMS SWTT organised electron inter-calibration mini-workshop at US Space Weather Workshop CGMS space weather role is included in draft UNCOPUOS framework for space weather services. Planned: Dedicated CGMS ESWW topical discussion meeting ("Space Weather Activities in the Coordination Group for Meteorological Satellites.") - Nov 2017 Presentation of CGMS at UN/US ISWI workshop - Jul/Aug 2017 CGMS-44: Recommendation endorsed by *CGMS-44*	**CLOSED**	5.2

CGMS-44 Plenary actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS space agencies	C.1	A44.01	**Vision for the WIGOS space-based component in 2040:** CGMS operators are invited to provide comments on draft v0.2 of the Vision for the WIGOS space-based components in 2040, to sbojinski@wmo.int, by 8 July 2016.	CGMS-44 WMO-WP-01: http://www.eumetsat.int/website/wcm/idc/idcplg?IdcService=GET_FILE&RevisionSelectionMethod=LatestReleased&Rendition=Web&dDocName=CWPT_1666 *EUM, NOAA feedback provided to WMO July 2016*	8 Jul 2016	**CLOSED**	1.1
CMA, JMA, KMA	C.2	A44.02	CGMS operators to publicise the rapid scan capabilities of current and future geostationary satellite among the user community in RA II and V, and build the necessary capacity (on the occasion of 7th AOMSUC).	*Closed following discussions and presentations at the AOMSUC-7 and 4th RA II WIGOS coordination group meeting*	30 Oct 2016	**CLOSED**	1.1
CGMS members	C.6	A44.03	**On NWP and impact on forecasting skills: (**Ref. CGMS-44 WMO-WP-04) CGMS Members to formulate their requests (if any) for additional impact assessment work and transmit them to the WMO Secretariat (lriishojgaard@eumetsat.int).	NOAA provided feedback to WMO on 2 Nov 2016	30 Oct 2016	**CLOSED**	1.1.2
WMO	C.6	A44.04	**On NWP and impact on forecasting skills:** WMO to brief CGMS-45 on the Final Report from the Sixth WMO Impact Workshop, with a particular focus on those recommendations that are directed to the CGMS Members and CGMS Working Groups.	Report will be provided at CGMS-45 under plenary agenda C.2: CGMS-45 WMO-WP-02 Next impact workshop will take place in 2020.	CGMS-45	**CLOSED**	1.1.2
IOC-UNESCO	C.8	A44.05	IOC-UNESCO to provide guidance to CGMS on ocean surface wave observations at CGMS-45.	*Agenda item foreseen in CGMS-45 plenary in the user session.*	CGMS-45	**CLOSED**	1.1.6

DG/CS. Discussions ongoing with DWD Met Office, ECMWF, Meteo France feedback pending.

CGMSSEC	C.8	A44.06	**On sea ice:** Consistent with the discussions held at CGMS-44, CGMS Secretariat to liaise with CEOS SIT Chair on the suggestion that CEOS develop a Virtual Constellation for Sea Ice - following its established process for this purpose, and in coordination with the activities of the WMO PSTG. An initial discussion will be held at 2016 CEOS SIT Technical Workshop (September 2016).	*23 Feb 2017: CEOS SIT Chair letter of 28 Nov 2016 to WMO PSTG was circulated in February 2017 by CGMSSEC closing the action. It was considered by the WMO PSTG that it currently addresses the needs sufficiently.* *The issue was then discussed among CEOS Agencies at the SIT Technical Workshop in September 2016 and at CEOS Plenary in November. It was agreed at the 2016 CEOS SIT Technical Workshop on 14th-15th September 2016 in Oxford, UK that the WMO Polar Space Task Group (PSTG) covers polar sea-ice observations well, but that an increase in SAR observation coordination may be of benefit.* CEOS considered that the PSTG represented a competent body for the coordination of polar space observations and that the creation of a Virtual Constellation or similar body within CEOS to conduct the same function would be an unnecessary duplication. The view was that indeed the PSTG was already functioning very well in this task, that no further body was necessary and the PSTG was reconfirmed as the primary body for this work. A significant number of PSTG Space Agency Members are represented on the Committee of Earth Observing Satellites (CEOS). Since there is no other group responsible for coordinating satellite observations in the polar regions and cryosphere, and in order to encourage information flow, PSTG periodically will continue to periodically submit reports to the CEOS Strategic Implementation Team (SIT) meetings.	01-Sep-16	**CLOSED**	1.1.6
CGMSSEC	C.8	A44.07	CGMSSEC to write a letter on behalf of CGMS to Japan recommending that JAXA consider continuing the GCOM-W series in particular in support of precipitation and sea-ice measurements.	*CGMSSEC letter (CGMS/LET/16/862312 of 29 June 2016) circulated to L-CGMS on 11 July 2016. Action will be closed once CGMS-44 report is published.*	30-Jun-16	**CLOSED**	1.1.6

CEOS SIT WS-16, Sept 2016: Rationale: CEOS would be willing to entertain a community-led proposal for a new VC, but given the existence of the PSTG, this does not appear to be the highest priority at present. It was suggested that the PSTG could be asked to increase emphasis on passive microwave observations of polar sea ice in order to address that coordination gap.

CMA, EUM, ISRO, ROSH	E.2.1	A44.08	**On IODC** (ref. WGIV/3.3)**:** CGMS agencies in the IODC region (CMA, EUMETSAT, ISRO, ROSHYDROMET) to support the distribution of essential data to IODC users via their existing dissemination methods (CMACast, EUMETCast, GTS, Internet, etc).	*Originating from WGIV and endorsed by CGMS-44 plenary on 9 June 2016.*	CGMS-45	**CLOSED**	1.1.6	
CGMSSEC EUMETSAT CMA, ISRO, ROSH	E.3.3	A44.09	**On IODC:** CGMSSEC with EUMETSAT to coordinate with CMA, ISRO and ROSH and update the table on IODC essential data and products (essential as per WMO Res. 40)	*CGMSSEC letter EUM/CGMS/LET/16/861620 of 29 June 2016. Circulated to WGIII on 20 June and to L-CGMS on 22 Aug 2016.*	15-Jun-16	**CLOSED**	1.1.6	
CGMSSEC EUMETSAT (CMA, ISRO, ROSH)	E.3.3	A44.10	**On IODC:** CGMSSEC EUMETSAT to prepare a letter (on behalf of EUM, CMA, ISRO and ROSH) to WMO confirming the baseline for the future multi-partner IODC service essential data and product baseline.	*CGMSSEC letter EUM/CGMS/LET/16/861620 of 29 June 2016. Circulated to WGIII on 20 June and to L-CGMS on 22 Aug 2016.*	31-Jul-16	**CLOSED**	1.1.6	
IWWG	E.5.4	A44.11	**On IWWG matters:** IWWG to develop a detailed plan for the 3rd wind intercomparison, including concept and deliverables, and an estimate of the required resources.	The preparation of the intercomparison study is concluded. Ref. CGMS-45 IWWG-WP-01/01.ppt and -02.ppt	CGMS-45	**CLOSED**	3.2.1	RSP/RB
ICWG	E.5.4	A44.12	**On ICWG matters:** ICWG to develop a detailed plan for the cloud intercomparison activity, including concept, deliverables, and an estimate of the required resources.	CGMS-45: Discussed in and transferred to WGII and therefore closed for plenary. CGMS-45 ICWG-WP-01/01.ppt The intercomparison studies are ongoing. 10 min sampling from GEO sensors by GOES-16 is under discussion. Both items will be discussed at the ICWG-2.	CGMS-45	**CLOSED**	3.2.3	USC/JoS, USC/RRo AT to contact Co-chair andrew.heidinger@noaa.gov, dong.l.wu@nasa.gov recalling the action.

CGMSSEC	G.2	A44.13	**On carbon observation programmes:** Consistent with the discussions held at CGMS-44, CGMS Secretariat to request CEOS SIT Chair to organise a discussion at the CEOS SIT Technical Workshop (September 2016) on developing a suitable mechanism involving both CGMS and CEOS agencies to review how planned carbon observation missions might be better coordinated in response to the GCOS Implementation Plan and to develop a coherent contribution to the WMO Vision for WIGOS 2040.	CGMS-45: Closed following discussions at CGMS-45 and plenary session G. Dedicated carbon sessions will be held between WGII/WGIII as well as in plenary at CGMS-45. CGMSSEC plans a carbon observation session for CGMS-45 plenary to this purpose covering the overall mapping of the various activities within the CEOS ACC, CGMS, Copernicus Task Forces A&B, noting the GCOS IP and corresponding response as well as WIGOS 2040. Discussions took place at CEOS SIT Sept 2016: It was agreed that the ACC-VC should be the basis for the CEOS response, with a formal and open invitation for participation extended to interested additional CGMS participants, and it should be pursued in conjunction with the climate workshop 2017.	Sep-16	**CLOSED**		H/SCIR Stephen Briggs and Ken Holmlund to communicate the outcomes of the discussion on CEOS-CGMS coordination on Atmospheric CO2 Observations from Space - due date: Sept 2016 Rationale: It was agreed that the ACC-VC should be the basis for the CEOS response, with a formal and open invitation for participation extended to interested additional CGMS participants, to be pursued in conjunction with the climate workshop 2017.
CGMSSEC	G.2	A44.14	**On carbon observation programmes:** CGMS Secretariat to include a standing agenda item on carbon observation programmes at future CGMS plenary sessions.	Agenda item foreseen in CGMS-45 plenary as well as a joint WGII/WGIII session.	CGMS-45	**CLOSED**		SCIR/AT
JWG CLIM (CGMS members)	H.3	A44.15	**On GCOS Implementation Plan:** CGMS - through the CEOS-CGMS JWG Climate (pascal.lecomte@esa.int, joerg.schulz@eumetsat.int) - to contribute to the public review of the draft GCOS Implementation Plan (http://www.wmo.int/pages/prog/gcos/)	GCOS IP is now finalised and has been endorsed by the GCOS Committee. (Input provided by NOAA 6 Sep 2016)	25 July-5 Sept 2016	**CLOSED**	5.1	reminder sent to l-cgms 22 Aug 2016
JWG CLIM (CGMS members)	I.1	A44.16	**On training/VLab:** For the scoping of training activities on climate datasets: CGMS - through CEOS-CGMS JWG Climate - to inform the VLab TSO (luveeck@gmail.com) about access to the ECV inventory once available.	Will be made publicly available (close to the CGMS-45 meeting). Inventory is published and available (June 2017). See CGMS-45 JWGCLIM-WP-01.	CGMS-45	**CLOSED**	5.1	USC/JoS.
CGMS-44 Plenary Recommendations								
"Actionee"	**AGN item**	**Rec #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	

KMA, KARI, CMA, CNSA, JMA, JAXA	C.2	R44.01	**On disaster risk reduction:** The "Jakarta Declaration" recommends to CGMS that the satellite operators provide the necessary support to the Joint RA II/V WIGOS project on Satellite Data. The declaration encourages the satellite operators of the Republic of Korea, China, and Japan to make digital data at the full resolution available to all Members involved in the "Satellite Data project" and to support the project in any way they can.	CGMS-45: The recommendation is included in the RA II WIGOS implementation plan 2017-2020, and since several cgms actions and recommendations cover similar purposes it was agreed to close the recommendation at plenary level of CGMS at this point in time. JMA leads an effort defining a protocol for event-driven rapid scanning Himawari-8, in collaboration with BOM Australia contributing to the efforts.	CGMS-45	**CLOSED**	1.1
IOC-UNESCO, CGMS members	C.7	R44.02	**On Second International Indian Ocean Expedition (IIOE-2) for enhanced data acquisition and management:** It was recommended to establish a working alliance between the IIOE-2 and the remote sensing community (CGMS) within/through the IIOE-2 Steering Committee framework and/or the IIOE-2 Joint Project Office.	There was no feedback by CGMS-45 and the recommendation remains open.	CGMS-45	**OPEN**	2.5
CGMS agencies	C.8	R44.03	CGMS agencies to promote sustainability of satellite passive microwave sea ice measurements begun in 1978.	Closed on the occasion of CGMS-45: This will be referenced in the JWG CLIM action plan (ECV Inventory and Gap Analysis) Following the Gap Analysis, it is expected that the following actions/recommendations will arise: • promote sustainability of satellite passive microwave sea ice measurements, • promote the implementation of sustained satellite scatterometer sea ice observations, • promote sustainability of satellite frequent high-¬spatial marginal ice zone measurements, • promote the implementation of sustained satellite measurements of Arctic Ocean sea ice thickness	Long term	**CLOSED**	1.1.6

CGMS agencies	C.8	R44.04	CGMS agencies to promote the implementation of sustained satellite scatterometer sea ice observations with scatterometer to provide an independent source of information concerning climate change impacts on the marine cryosphere.	Closed on the occasion of CGMS-45: This will be referenced in the JWG CLIM action plan (ECV Inventory and Gap Analysis)	Long term	**CLOSED**	5.1
CGMS agencies	C.8	R44.05	CGMS agencies to promote sustainability of satellite frequent high--spatial marginal ice zone measurements for navigation and other near--real time applications.	Closed on the occasion of CGMS-45 since it is addressed by agencies in the Int'l Ice Charting Working Group, and in PSTG. PSTG reports to WG II.	Long term	**CLOSED**	1.1
CGMS agencies	C.8	R44.06	CGMS agencies to promote the implementation of sustained satellite measurements of Arctic Ocean sea ice thickness.	Closed on the occasion of CGMS-45: This will be referenced in the JWG CLIM action plan (ECV Inventory and Gap Analysis)	Long term	**CLOSED**	1.1
CMA, EUM, NOAA	F.1	R44.07	The GEONETCast operators to actively follow-up the commitment made at the side event at the GEO Mexico City summit.	CMA, EUM and NOAA reconfirmed their contributions to GEONETCAST on the occasion of the GEO Plenary in St Petersburgh in Nov 2016		**CLOSED**	
CGMS members	G.1.3	R44.08	**On SCOPE-NWC:** CGMS members to continue to support SCOPE-Nowcasting and its transition to preoperational phase, in particular to financially support the finalisation of the satellite-based volcanic ash retrieval algorithm intercomparison activity (Pilot Project 2) over the next 12-18 months. (Ref. CGMS-44-WMO-WP-15).	CLOSED on the occasion of CGMS-45 NOAA funds Mike Pavolonis for continued development of the GOES-R VolAsh product. Steve Goodman and Mike Pavlonis appointed to SCOPE Nowcasting Executive Panel). EUMETSAT has earmarked resources to financially support completion of the volcanic ash algorithm intercomparison in 2018. WMO has identified resources to engage consultant for 2.5 months FTE to support SCOPE-Nowcasting.	30 Dec 2017	**CLOSED**	3.2.4
CGMS members	I.1	R44.09	**On training/VLab:** CGMS members are invited to share product information, dissemination information and training resources with the CoEs in Kenya, South Africa, Russian Federation, China, and Oman, and with users, to support VLab training activities in the Indian Ocean region.	Closed on the occasion of CGMS-45. CoEs will remind CGMS members of this Recommendation in the preparation phase for these training activities	Long term	**CLOSED**	4.2.1

CGMS members	I.1	R44.10	**On training/VLab:** CGMS operators to make available training resources in all official languages as defined by the satellite operator's charter. Translation of training resources should be considered as a continuous, ongoing effort. Satellite operators without multiple official languages should consider coordinating the translation of their training resources through in-kind contributions by user institutions.	Closed on the occasion of CGMS-45. (Will reach out to VLab community to seek comments) NOAA funds COMET and cooperates with WMO RA III and IV NMHSs and universities in developing Spanish and Portuguese translations for the first 7 GOES-R Foundational Training modules. These will be updated with in-orbit GOES-16 data. Additional translations possible over the next 18 months including new Application Training Modules.	Long term	**CLOSED**	4.2.1
CGMS members	I.1	R44.11	**On training/VLab:** CGMS to join efforts with VLab to investigate ways to fund the continuation of the Project "Conceptual Models for the Southern Hemisphere" (CM4SH) and also extend the initiative to prepare case studies related to the new generation of satellites.	Closed on the occasion of CGMS-45. (Will reach out to VLab community to seek comments)	Long term	**CLOSED**	4.2

Actions and recommendations resulting from CGMS-44 Working Group I discussions
6-7 June 2016

WGI actions open from previous plenary sessions (at CGMS-44)							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
WMO	WGI/6	A43.06	WMO to assess the impact of improved data latency from polar orbiters on NWP (WMO Impact Workshops) and other applications	Next WMO workshop will take place in May 2016 (China), hence there might be a verbal/preliminary report only to CGMS-44.	(CGMS-44) New deadline CGMS-46	**OPEN**	1.1.2
CGMS-44 WGI actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
SFCG liaison officer (EUM)	WGI/2	A44.01	SFCG liaison officer to bring to SFCG/WMO the possibility of migrating the SFCG Remote Sensing Disaster Database (RSDD) into OSCAR from the following perspectives: • Identify the level of overlap between the two databases; • Possibility for WMO to introduce, and maintain, the delta elements of the SFCG RSDD into OSCAR; • Level of support of SFCG members to migrate the SFCG RSDD into OSCAR or preference to retain a separate database; • Arguments for retaining a stand-alone SFCG RSDD, if any.	CGMS-45 EUM-WP-24	CGMS-45	**CLOSED**	1.3
SFCG liaison officer (EUM)	WGI/2	A44.02	SFCG liaison officer to provide a report to WGI on the outcome of SFCG by Q3 2016 (as part of the CGMS-45 WPs)	CGMS-45 EUM-WP-24	30 Sep 2016	**CLOSED**	1.3.3
SFCG liaison officer (EUM)	WGI/2	A44.03	SFCG liaison officer to propose to SFCG that SFCG members will report yearly to SFCG on national regulatory changes/issue in their countries (e.g. to repurpose spectrum currently in use or planned for use by meteorological satellites (both active and passive spectrum bands)).	CGMS-45 EUM-WP-24	CGMS-45	**CLOSED**	1.3.3
SFCG liaison officer (EUM)	WGI/2	A44.04	SFCG liaison officer to report to CGMS WGI as a permanent section of his yearly SFCG outcome report to WGI updates (relevant) on proposed regulatory changes to repurpose spectrum currently in use or planned for use by meteorological satellites (both active and passive spectrum bands).	CGMS-45 EUM-WP-24	CGMS-45	**CLOSED**	1.3.3

Actions and recommendations resulting from CGMS-44 Working Group I discussions
6-7 June 2016

CGMS space agencies	WGI/2	A44.05	CGMS agencies to provide prior to CGMS 45 a report on the space weather activities (including spacecraft and instruments) of relevance on Freq Management and freq protection topics	CGMSSEC to request SWTT representative to provide a paper to WGI to this purpose (and present it in WGI). SWTT informed by e-mail 7 April 2017. Agency reports on Frequency topics to include a dedicated chapter on space weather. CGMS-45 NOAA-WP-04	(Feb 2017) CGMS-46	**OPEN**	1.3
CGMSSEC	WGI/5	A44.06	CGMS Secretariat to distribute to CGMS members (PoC for SATCOM Forum at least) the questionnaire on IDCS (included in EUM-WP-06) end June 2016	*EUMETSAT (Sean Burns) circulated an e-mail to NOAA, ISRO, CMA JMA and ROSHYDROMET on 7 June 2016*	30-Jun-16	**CLOSED**	1.2.1
CGMS space agencies	WGI/5	A44.07	CGMS agencies to reply (end of August) to the questionnaire and to confirm attendees to the splinter meeting on IDCS during the next SATCOM Forum (Sept 2016 in Madrid)	*NOAA (Kay Metcalf (GOES DCS) and Scott Rogerson (Argos DCS) attended SATCOM Forum in Madrid; and presented on their programs) and JMA have provided an input to EUMETSAT. To be discussed at the SATCOM Forum itself.*	31-Aug-16	**CLOSED**	1.2.1
CGMS space agencies	WGI/6.1	A44.08	CGMS agencies with satellites with DB and RO occultation sensors to assess the technical feasibility of a RARS/DBNet RO occultation service in support of the Space Weather community.	*Deadline extended following CGMS-45 discussions.* CGMSSEC to request IROWG representative to provide a paper to WGI to this purpose (and present it in WGI) NOAA does not have any ability to use RARS for RO data	(CGMS-45) CGMS-46	**OPEN**	1.4
CGMS space agencies	WGI	A44.09	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs	*Deadline extended following CGMS-45 discussions.* *As a member, NOAA agrees that the GODEX-NWP group would be an excellent source of information on the planned types of next-gen GEO data to be disseminated and methods of data dissemination between the international NWP modeling centers. The GODEX-NWP group is also at the forefront of RARS endeavors.*	(CGMS-45) CGMS-46	**OPEN**	
CGMS-44 WGI Recommendations							
"Actionee"	**AGN item**	**Rec #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**

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Actions and recommendations resulting from CGMS-44 Working Group I discussions
6-7 June 2016

WMO	WGI/6	R43.03	WMO DBNET Coordination Group to report annually to CGMS WG-I on status and progress	Discussed at WGI webex session 21 Oct 2015 (best practice proposal). WMO DBNet presentation to be circulated to WGI (NOAA, EUM, CMA and ROSH in particular - LEO satellites with direct broadcast) CGMS-44 WMO-WP-10	(CGMS-44) New deadline CGMS-45	**CLOSED**	1.4.4
CGMS space agencies	WGI/2	R44.01	CGMS agencies to inform their Freq Managers on the space weather activities to ensure the necessary protection and coordination at Freq management level	NOAA has informed their spectrum managers on space weather activities. They are actively working to identify spectrum for the SWFO as well as coordinating with other SMs on COSMIC-2 in preparation for launch. NOAA SM are also engaged in WRC Agenda Item 2.3 "relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors"	Long term	**OPEN**	1.3
CGMS space agencies	WGI/5	R44.02	All CGMS DCS operators to consider making all DCP messages available in the GTS.	CGMS-45 CMA-WP-xx CGMS-45 EUM-WP-28 CGMS-45 ISRO-WP-xx CGMS-45 JMA-WP-xx NOAA currently does this CGMS-45 NOAA-WP-xx CGMS-45 ROSH-WP-xx	Long term	**OPEN**	1.2
CGMS space agencies	WGI	R44.03	From CGMS-44 WGII: Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications	NOAA: Detailed instructions for installing and running the AAPP and FY-3 software packages in a Docker image were prepared by the University of Wisconsin CIMSS/SSEC and shared with the DBNet Coordination Group. More widespread dissemination of software packages in this mode is dependent on approval from the agencies creating the software (NWP SAF for AAPP, NSMC/CMA for FY-3) since they require each user of the software to register. The CSPP LEO and GEO teams at CIMSS/SSEC have investigated using Docker for distribution of CSPP, and while it is technically feasible, there has not been a strong use case identified at this time. The actual discussions and solutions would come out of the WMO DBNET effort.	Long term	**OPEN**	5.2

SEP/MD

SEP/MD

SEP/MD

SEP/MD

SEP/MD + H/FLO	
H/RSO	
H/RSO	
H/SEP	to be discussed at IROWG mtg Sept '16; ionospheric mtrg, RO use/ embryonic Ref frequencies!

SEP/MD

H/RSO

WGII actions open from previous plenary sessions (at CGMS-44)								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	EUM responsible/lead
CMA, EUM, JMA, NASA, NOAA, WMO	WGII/3	A42.02	The new task team on calibration events logging to identify a common set of parameters to be monitored as part of the calibration events logging and sensor performance monitoring.	*CGMS-45 EUM-WP-33* *It was suggested to integrate the activity into GSICS and was therefore closed.* *NOAA has an extensive list of parameters monitored for JPSS and GOES-16. NOAA will share that information to develop best practices.* Nov 2016: EUM to report by end 2016 on the way forward CGMS-44: Delays incurred - new deadline proposed. EUMETSAT to check status. Nov 2015: Co-chair R Roebling, drafting white paper to be circulated within ICWG by end 2015 in preparation of CGMS-44. To be included in the GSICS paper following the new WGII agenda (possibly EUMETSAT's paper - TBD). 1st step: Template for calibration event landing pages presented at GDAWG in March 2015. New version of OSCAR/Space allows for identification of individual instruments and thus linking to calibration event test pages, test mode of new version of OSCAR/Space continuing until 1 month before CGMS-43: CGMS-43 EUM-WP-10 CGMS-43-JMA-WP-03 (Section 2.4) NOAA: Work ongoing as a part of the GSICS work plan. Next steps are gathering information and agreeing on common terminology. New deadline following CGMS-43 WGII discussions.	(CGMS-43) **New deadline: CGMS-45**	**CLOSED**	3.1	USC/JoS, USC/RRo?

KMA	WGII/4	A42.03	KMA is invited to present a paper of different sources of soil moisture retrieval on their NWP forecasts	*New deadline following CGMS-44 WGII discussions - KMA NWP centre have not yet concluded analyses. KMA has no plans. Ken and Dohyeong to follow up.* CGMS-43-KMA-WP-04: Test use of Metop-B/ASCAT on their global NWP system.	(CGMS-43) **New deadline: CGMS-45**	**CLOSED**	-	
CGMS space agencies	WGII/3	A43.01	Calibration events logging task team to prepare a white paper outlining the set of parameters, the nomenclature, and the standards to be used for reporting on instrument calibration across space agencies.	*CGMS-44: Work in progress, new deadline proposed. See Action 42.02* *NOAA is participating through GSICS. NOAA has a list of parameters it uses to monitor instrument performance.* Nov '2015: Part of/related to CGMS-42 action 42.02. CGMS-45 EUM-WP-33	(CGMS-44) New deadline CGMS-45	**CLOSED**	3.1	USC/JoS, USC/RRo?
ROSH	WGII/3	A43.03	Roshydromet to present an update on Meteor-M N2 data access, processing packages, and results of an intercomparison of the IKFS-2 with other hyperspectral sounders (IASI, AIRS, CrIS), to CGMS-44.	*CGMS-44: No progress reported at CGMS-44 - proposed new deadline.* EUM has received Meteor-M N2 sample data of the MTVZA-GY Imaging/Sounding Microwave Radiometer (29 channels) and dissemination through EUMETCast is expected in Q1 2016 pending EUM Council approval in Dec 2015. mtg. ROSH will deliver a L1 pre-processing software to EUMETSAT early 2016. Nov 2015: ECMWF has looked at microwave instruments which were reported on at the recent ITSC. ITWG and CGMS welcomes the sharing of data by ROSH, and further collaboration is expected. CGMS-45 ROSC-WP-03	(CGMS-44) New deadline CGMS-45	**CLOSED**	1.4.5	

CGMS space agencies	WGII/3	A43.04	CGMS operators to provide a report on their approach on cal/val, including information on dedicated campaigns and permanent sites, and potential support to cal/val infrastructure, in order to maximize benefits of satellite missions.	*3 agencies responded (JMA; NOAA; NASA); keep open as action for CGMS-45 for remaining agencies.* Nov 2015: Feedback is expected as part of the general agency report or in a dedicated WP for the proposed new WGII agenda item 4 (CGMS-44 WG II item 8). CGMS-45 ROSHYDROMET-WP-02, KMA-WP-04	(CGMS-44) New deadline CGMS-45	**CLOSED**	-	
CGMS space agencies	WGII/3	A43.05	CGMS operators to report on their specific plans for reprocessing and associated user requirements (such information would be useful for the ISWGs).	*Keep open as action for CGMS-45 for remaining agencies.* Item 8 - NASA, and NOAA responded (WP-09) CGMS-45: No WPs Action on IPWG to document activities	(CGMS-44) New deadline CGMS-45	**CLOSED**	5.1	DG/CS to advice USC/JoS [CSDP + cover page?] What do the ISWG want? Seek to close this action.
CMA	(Plenary F.1.5.3) for WGII	A43.11	From CGMS-43 plenary: IROWG encouraged CMA to provide NRT GNOS data on the GTS, and CMA agreed to investigate this further	*Nov 2016: CMA is trying to change the data format of GNOS to buffer format. The work will be finished in the beginning of 2017.* Oct 2016: WGII IS#1 - no progress - ask CMA directly. Jun 2016: CGMSSEC recommends this to be discussed in WGII and reported to plenary through WGII CGMS-45: To date, CMA focussed on generating an operational processor; data exchange to follow (CMA-WP-07)	(CGMS-44) New deadline CGMS-45	**CLOSED**	1.1.4	
CGMS-44 WGII actions								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	

Actions and recommendations resulting from CGMS-44 Working Group II discussions
6-7 June 2016

SCOPE-CM Executive Panel	WGII/4	A44.01	SCOPE-CM should review its IP, Terms of Reference, and prepare for the next phase including a possible call for proposals.	Action taken at Sep 2016 11th meeting of SCOPE-CM executive panel CGMS-45 EUM-WP-47	CGMS-45	**CLOSED**	5.1	SCIR/AT sent e-mail to Jeff Privette new EP Chair early March. Reminder on 7 April 2017
CGMS space agencies	WGII/4	A44.02	CGMS members to submit data to the ICWG intercomparison: full-disk data at 10 minute temporal resolution, 2 km spatial resolution in the native AHI projection is preferred. The data should be submitted by 1 September 2016.	ICWG plans underway (see above Action); communicate new Golden Day(s) to CGMS members as soon as decided. NOAA provided this data. CGMS-45: remains open since some submissions missing or forthcoming	***New deadline: ??*** (1 Sept 2016)	**OPEN**	3.2.3	AT to send also to ICWG co-chair
IPWG, IMD	WGII/4	A44.03	IPWG Rapporteur to liaise with IMD (AK Sharma) on the development of precipitation validation sites over India.	*Nov 2016: Dr. S.K.Peshin, Head(SatMet)/Scientist-G sunil.peshin@gmail.com (replaces A K Sharma, retired)* Contact made at IPWG-8 (Raj Ramasenkaran, KJ Ramesh); WMO request letter to IMD needed to pursue; new focal point to be conveyed by IMD; CGMS-45: Contact established	CGMS-45	**CLOSED**	3.3.1	
GSICS members, GSICS EP	WGII/4	A44.04	GSICS to review the GDWG Terms of Reference and associated indicated levels of effort of the members	No progress. To be discussed at March 2017 meeting of GDWG-GRWG; Part of GSICS report Closed at CGMS-45 following discussions in WGII	CGMS-45	**CLOSED**	3.1.1	DG/CS?

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GRWG	WGII/4	A44.05	GRWG to dicuss with ISCCP (SCOPE-CM Project 9) a detailed project proposal for the use of GSICS methodologies to produce a GSICS-compliant ISCCP dataset for evaluation	Discussion on subset of ISCCP to be identified; ISCCP representative to be invited to next meeting of GRWG CGMS-45: Discussed, follow-up action agreed at GRWG meeting in March 2017 ("GCC to coordinate provision of GSICS Corrected test data from the 0.6µm and 11µm channels of all available GEO imagers during Dec 2009 to Ken Knapp to assess the impact of the corrections on ISCCP products." see http://gsics.atmos.umd.edu/pub/Development/20170320/GSICS-GRWG-GDWG-2017_Final-Report.pdf) Suggest closing	CGMS-45	**CLOSED**	5.1	DG/CS? USC proposes to close the action (it does not make sense). Rob to check if ISCCP rep will attend the GRWG mtg.
CMA	WGII/6	A44.07	CMA to provide more information (documentation, availability details, URL) about the 3D-ADVP tool , for inclusion in the WMO webpage on Visualization Tools to CGMSSEC.	*Nov 2016: WMO to provide CMA with the necessary documentation facilitating the comletion of the action.* Oct 2016: WGII IS#1 - Contact CMA directly CGMS-45: Tool currently only for CMA-internal use (Tang Shihao, 7 Jun 2017) and no firm plan to produce int'l version; CMA suggest closing action	1 Oct 2016	**CLOSED**		
IMD	WGII/6	A44.08	IMD to provide more information (documentation, availability details, URL) about the RAPID tool , for inclusion in the WMO webpage on Visualization Tools to CGMSSEC	Documentation to be provided by Virendra Singh to WMO ; CGMS-45: Details to be provided by ISRO	1 Oct 2016	**OPEN**		

CGMS space agencies	WGII/6	A44.09	CGMS operators and WMO to work with NAEDEX-APSDEU to explore options for optimal data exchange of advanced data from next-gen GEOs	CGMS-45: Not discussed at 2017 GODEX-NWP meeting (GODEX-NWP includes limited expertise on capacity planning). Action transferred to WGIV and hence closed in WGII.	CGMS-45	**CLOSED**	2
IWWG	WGII/7	A44.10	IWWG to pursue intercomparisons of Meteosat-8 and FY-2/4 winds over the IODC region. During the transition phase also Meteosat-7 should be considered.	Discussion with European NWP centres to perform such intercomparisons, report back to IWWG; inform IWWG co-chairs (Ken) CGMS-45 CMA-WP-08: CMA made comparisons between Meteosat-8 and FY-2 AMVs over IODC; good agreement, FY-2E AMVs are a bit slower than METEOSAT-8 AMVs at High and middle levels for IR channel, and at High Levels for WV channel.	CGMS-45 (for update)	**CLOSED**	3.2.1
CGMS members	WGII/7	A44.11	CGMS to develop best practices for documenting products and their quality.	CGMS-45 NOAA-WP-13 Suggest closing, new Recommendation: CGMS agencies encouraged to document their products online, including ATBDs and validation reports, and link product page URLs to the WMO Product Access Guide following defined documentation criteria. (Current list of existing CGMS agency focal points to be added here)	CGMS-45 (for update)	**CLOSED**	3
ROSH	WGII/7	A44.12	ROSHYDROMENT to explore the possibilities to implement an operational NRT service for the hyperspectral infrared sounder IKFS-2 on Meteor-M N2	CGMS-45: No direct readout available (ROSC-WP-03), NRT data available through EUMETSAT.	CGMS-45	**CLOSED**	1.4.5

IROWG	WGII/8	A44.13	IROWG to define the requirements on timeliness for RO observations	CGMS-45: IROWG-WP-01: We recommend that future RO missions include communications infrastructure that will enable 95 % of the measurements to be available for use in operational models within 30 minutes or less. Data older than 30 minutes is of lower value for current models. Near-real time data latency would be optimal, but is not always practical, and should be considered to be a useful goal for future missions when possible. In the specific case of COSMIC-2 Polar, south polar ground stations (e.g., McMurdo, Troll) should be deployed to reduce data latency IROWG to look at the implications of the requirement on ionospheric processing. IROWG rapporteur to check status (space weather-related); state-of-the-art to be reported out through IROWG	***New deadline: CGMS-46*** (CGMS-45)	**OPEN**	1.1.4
WGII	SWTT	A44.14	From CGMS-44 SWTT: WGII to determine how to implement the planning and development of Space Weather research and data management activities within the auspices of WGII.	US space weather workshop in May 2017, with meeting on CGMS support to space weather (action on SWTT) ; CGMS-45: addressed under item WGII/9	CGMS-45	**CLOSED**	
CGMS-44 WGII Recommendations							
"Actionee'	**AGN item**	**Rec #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**

SCOPE-CM members	WGII/3	R43.01	SCOPE-CM to invite contributions to its next call for proposals, with particular regard to the sea ice, snow cover and land surface temperature communities, and others currently not represented.	SCOPE-CM executive panl in Sep 2016 to decide on approach regarding next call for proposals; check draft SEP-11 report		**OPEN**	3.3.2	DG/CS? USC: Doubtful if still relevant An updated IP is needed. There might not be a need for call for proposals.
CGMS members	WGII/3	R43.02	CGMS members to consider removing spectral gaps from future hyperspectral sounders to support GSICS intercalibration of IR imagers.	To be discussed at ~~first~~ second WGII inter-sessional meeting after CGMS-44. (For WG III to consider?) NOAA will consider for post JPSS hyperspectral sounders.		**OPEN**	3.1.1	
CGMS members	WGII/6	R43.03	CGMS members to consider include a water vapour channel and a CO2 channel to polar-orbiting imagers, to maintain accuracy and coverage of polar winds and cloud height retrievals achieved by MODIS.	To be discussed at ~~first~~ second WGII inter-sessional meeting after CGMS-44. (For WG III to consider?) NOAA will consider for post JPSS imagers.		**OPEN**	1.1.6	
CGMS space agencies	WGII/10	R43.07	CGMS agencies to make available a non real-time cache of satellite level 1 data over the previous 2-3 months, similar to the NOAA CLASS system.	CGMS-45: NOAA already has the CLASS system. CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).	CGMS-44	**OPEN**	2	
ISRO	WGII/5	R43.10	ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D	CGMS-45: ISRO/IMD have plans	CGMS-45	**OPEN**	HLPP # 3	
IWWG, IPET-OSDE	WGII/6	R43.12	IWWG to liaise with the application focal points in the WMO RRR process (on IPET-OSDE) to provide feedback on the winds-related observation requirements in the RRR database.	CGMS-45: IWWG addressed this for capabilities, need to follow up regarding requirements	CGMS-44	**OPEN**	HLPP # 1.1	

CGMS space agencies	WGII/7	R43.13	CGMS Members to approach Operators of GNSS systems to request them to provide a minimum level of information on the signal structure and interface control (ICD) in a timely manner to enable the use of these for future RO missions.	CGMS-45: IROWG discussed this and made recommendations U.S. Air Force GPS ICDs: http://www.gps.gov/technical/icwg/ To be discussed at ~~first~~ second WGII inter-sessional meeting after CGMS-44.	CGMS-45	**OPEN**	HLPP # 1.1.3	
CGMS plenary	WGII/3	R44.01	CGMS to endorse the proposed Terms of Reference for WGII including the following updates: - A 2-yearly rotation scheme for one of its co-chairs, with KMA starting after the end of CGMS-44 [Dohyeong Kim (KMA) to become the WG II co-chair, replacing Toshiyuki Kurino (JMA)]. Subsequently, co-chairs from CMA, JMA, ROSHYDROMET and IMD will follow. - WMO to provide the second co-chair - NOAA and EUMETSAT to provide the rapporteurs	Endorsed by CGMS-44 plenary	9 Jun 2016	**CLOSED**		
GSICS	WGII/4	R44.02	GSICS to report to SCOPE-CM projects on its plan to intercalibrate the geostationary ring using hyperspectral IR sounders as transfer function	*done, occurring in IOGEO*	15 Sep 2016	**OPEN**	3.3.2	DG/CS -> H/RSP (THe) USC: SCOPE-CM has a plan to do this and coordinates this with GSICS

GSICS	WGII/4	R44.03	GSICS member agencies to identify roles and responsibilities and funding needs to support the geostationary ring GSICS corrections including the processing of retrospective data going back to NASA EOS AIRS (2002).	CGMS-45: Partially addressed; GRWG encouraged agencies to inter-calibrate past data Under review by NOAA.	CGMS-45	**OPEN**	3.1.1	DG/CS SCOPE CM project is already undertaking this. Closure proposed.
CGMS space agencies	WGII/4	R44.04	CGMS agencies should employ the GSICS Correction as part of their operational procedures	Should be part of agencies NOAA applies corrections based on impact assessments		**CLOSED**	3.1.1	EUM partly undertakes this. Not fully operationalise/not part of operational products.
CGMS members	WGII/4	R44.05	CGMS members to budget a baseline funding for the cloud intercomparison study, given its importance and impacts on global cloud products.	CGMS-45: ICWG-WP-01: Currently, ICWG helps to facilitate the collection of data used for assessments (e.g., level-2 retrieval assessment in TG "Assessment of level-2 retrievals" or level-3 climate data records in TG "Assessment of cloud parameter data records for climate studies"), but many teams carried out the efforts on a volunteer basis. Lack of funding has limited the scope and prohibited a definitive analysis of the new HIMAWARI-8 data set.	1 Nov 2016	**OPEN**	3.2.3	
IROWG, IPWG, IWWG, ITWG	WGII/4	R44.06	To enhance coordination, ISWGs to discuss with ICWG co-chairs key items for collaboration.		1 Sep 2016	**OPEN**		
CGMS R&D agencies	WGII/4	R44.07	Research agencies to consider continuing space-borne lidar for ice/liquid water since they have proven very valuable to validate retrievals from passive sensors			**OPEN**	1.1.3	

CGMS space agencies	WGII/4	R44.08	All operators of next-generation GEO imagers to consider the implementation of routine full-disc 10-min (or better) scanning for nowcasting	CGMS-45: NOAA consider this for GOES-16	CGMS-45 (for update)	**OPEN**	3.2.4
CGMS space agencies	WGII/4	R44.09	CGMS Members to continue an operational constellation of conically-scanning microwave platforms to guarantee sustained support for the current level of capability.	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45. CGMS-45: Questions of resolution, frequency need to be resolved, not just high-level mission continuity		**OPEN**	1.1.6
CGMS members	WGII/4	R44.10	At the request of IPWG, CGMS to improve cross-agency coordination of satellite assets into A-train-like convoys of instruments with sensitivities to distinct aspects of precipitation processes (e.g., CloudSat, EarthCare, GPM, etc.).	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.		**OPEN**	
NOAA	WGII/4	R44.11	NOAA to ensure that both, equatorial and polar components of COSMIC-2 are fully funded and launched.		CGMS-45 (for update)	**OPEN**	1.1.4
CGMS members	WGII/4	R44.12	CGMS agencies to target at least 20,000 occultations/day, at appropriate global distribution, to be made available to the operational and research communities, based on recent impact studies (NWP, climate and space weather)			**OPEN**	1.1.4

CGMS members	WGII/4	R44.13	CGMS agencies to ensure that the RO receiver design includes sufficient software/firmware flexibility to allow changes in the signal processing including processing of new GNSS signals/constellations, including ionospheric measurements			**OPEN**	1.1.4
CGMS space agencies	WGII/4	R44.14	CGMS agencies to maintain the constellation of at least three polar orbits (early morning, morning, and afternoon), each with full sounding capabilities (IR and MW). The overpass times of operational satellites with sounding capability (IR and MW) should be coordinated between agencies to maximize their value.	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45. NOAA and EUMETSAT signed the JPS agreement for mid-morning and afternoon orbits until 2040.		**OPEN**	1.1.1
CGMS space agencies	WGII/4	R44.15	Future satellite programmes should include the provision of high temporal frequency MW humidity sounding radiances (alongside cloud and precipitation sensitive observations).	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45. CGMS-45: NASA Cubesat mission Tropics underway Included in NOAA architecture study future trades. NOAA is looking also at MW cubesats. A MW cubesat will be released during the JPSS-1 launch.		**OPEN**	1.1.1
ROSH	WGII/4	R44.16	Roshydromet to develop and release a direct broadcast processing package for the Meteor-M N2 series, including level 1 processing for the MTVZA-GY microwave imager.		CGMS-45 (for update)	**OPEN**	1.1.5

CGMS space agencies	WGII/4	R44.17	CGMS agencies to identify the resources required to support the 3rd intercomparison of satellite-derived winds.	Reference is made to recommendation for ICWG. NOAA Supports participation in IWWG intercomparisons.	1 Nov 2016	**OPEN**	3.2.1
CGMS space agencies	WGII/4	R44.18	CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.	CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.		**OPEN**	1.1.6
CGMS space agencies	WGII/4	R44.19	CGMS agencies to explore possibilites to derive winds from new upcoming satellites and opportunities.		CGMS-45 (for update)	**OPEN**	
CGMS members	WGII/4	R44.20	CGMS members to continue to support SCOPE-Nowcasting and its transition to pre-operational phase, in particular to consider financial support the finalization of the satellite-based volcanic ash retrieval algorithm intercomparison activitiy (Pilot Project 2) over the next 12-18 months.	*CGMS-45: Funds earmarked by EUMETSAT for 2018* *NOAA Reduction Science Program funds Mike Pavolonis for continued development of the GOES-R VolAsh product. Note that Steve Goodman and Mike both appointed to SCOPE Nowcasting Executive Panel.* *Deadline for indication of support to volcanic ash activity)* *No indication of support to VA intercomparison so far received by WMO. WMO has identified resources to engage consultant for 2.5 months FTE to support SCOPE-Nowcasting.*	1 Nov 2016	**OPEN**	3.2.2

CGMS space agencies	WGII/6	R44.21	Operators to take into account in the planning of their data distribution systems the emerging stringent requirements on data latency from SRNWP		CGMS-45 (for update)	**OPEN**	2
CMA	WGII/7	R44.22	CMA to make available data from FY-3D HIRAS and FY-4A GIIRS early in commissioning		CGMS-45 (for update)	**OPEN**	
CGMS space agencies	WGII/7	R44.23	CGMS agencies with operational direct broadcast needs are encouraged to attend the next ITWG sponsored Direct Broadcast Users Meeting in March 2017 hosted by CONAE, Argentina.	CGMS-45: Last week of June 2017, Madison WI, USA	Mar 2017	**OPEN**	
CGMS space agencies	WGII/7	R44.24	CGMS agencies to provide key documentation related to the quality of their products, to allow for informed uptake by users. These documents should include ATBDs, cal/val plans, and regular validation reports	CGMS-44 WGII: Part of WGII action to develop best practices CGMS-45 NOAA-WP-13, available on JPSS and GOES-R websites.	CGMS-45	**OPEN**	5.3
CGMS space agencies	WGII/7	R44.25	For monitoring the Polar Regions, the Group stressed the importance of the deployment of HEO missions	*Link to WGIII required? Yes*		**OPEN**	1.1
CGMS space agencies	WGII/8	R44.26	Satellite operating agencies should support proposals and programs to acquire high-accuracy characterization measurements of the Moon, to develop a new, high accuracy, SI-traceable lunar reference standard for reflected solar wavelengths.	CGMS-45: GSICS discussed this issue		**OPEN**	3.1.2

CGMS space agencies	WGII/8	R44.27	Long-term continuity of absolute solar spectral irradiance measurement with SI-traceable accuracy should be ensured.			**OPEN**	3.2.1
CGMS space agencies	WGII/8	R44.28	Agencies to explore the possibilities to develop suitable processing packages to support a direct broadcast implementation of RO processing, within the DBNet to improve timeliness for space weather applications	NOAA has no current plans to do this.	CGMS-45 (for update)	**OPEN**	
WGII	WGIII/6	R44.29	From WGIII to WGII: WGII to study this issue and provide guidance on the potential impact of temporal a gap in the PMW SST products.	CGMS-45: 6.9MHz currently used, in future only GCOM-W will provide this capability for the time being.	CGMS-45	**OPEN**	
WGII	WGIII/6	R44.29	From WGIII to WGII: WGII to study this issue and provide guidance on the potential impact of temporal a gap in the PMW SST products.	CGMS-45: 6.9MHz currently used, in future only GCOM-W will provide this capability for the time being.	CGMS-45	**OPEN**	

Actions and recommendations resulting from CGMS-44 Working Group III discussions
7 June 2016

WGIII actions open from previous plenary sessions (at CGMS-44)								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing**	**Deadline**	**Status**	**HLPP ref**	
ISRO	WGIII/2.2	A42.05	ISRO to report at CGMS-43 on its progress on radio-occultation processing of ROSA on Oceansat-2 and Megha-Tropiques, and on the possibility of near-real time access to ROSA data acquired at a high latitude station such as Svalbard.	CGMS-43 ISRO-WP-03 partially closed. NRT access to ROSA data remains open.	(CGMS-43) New deadline CGMS-45	**CLOSED**	1.1.4	WGIII to confirm closure!
CGMS-44 WGIII actions								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing**	**Deadline**	**Status**	**HLPP ref**	
CGMS members	WGIII/	A44.01	CGMS Members: To review and react to the WIGOS Vision 2040 as it develops	*Input provided by EUM, NOAA (July 2016)*	(Aug 2016) CGMS-46??	**OPEN**	1.1	Deadline to be confirmed by WGIII!
WMO	WGIII/	A44.02	WMO Secretariat to present the draft Vision at CEOS, GEO plenary sessions 2016.		(End 2016) CGMS-46	**OPEN**	1.1	Deadline to be confirmed by WGIII!
CGMS members	WGIII/3	A44.03	CGMS operators nominate focal points for maintaining these elements (dates, landing pages), and other elements included in OSCAR/Space (e.g., instrument characteristics).	EUM: sally.wannop @eumetsat.int NOAA: Matthew.Butler@noaa.gov	31-Jul-17	**OPEN**	5.3	
CGMS-44 WGIII Recommendations								
"Actionee'	**AGN item**	**Rec #**	**Description**	**Action feedback/closing**	**Deadline**	**Status**	**HLPP ref**	
CGMS members	WGIII/2.2	R43.01	CGMS members are encouraged to consider including RO capabilities on all future polar-orbiting satellites.	CGMS-44 discussions:	Ongoing	**OPEN**	1.1.4	

CGMS members	WGIII/	R44.01	CGMS Members are invited to comment on NOAA Commercial Space Policy and/or associated RFI by June 13, providing inputs per directions at the link: https://www.fbo.gov/index?s=opportunity&mode=form&id=09512e960853e562024b6bd2f631ee6b&tab=core&_cview=0		13 Jun 2016	**CLOSED**	
WMO	WGIII/	R44.02	Noting the recent conclusions of the WMO IPET-DRMM and the concurrence expressed CGMS WG III, WMO is encouraged to add the satellite identifier (from Common Code Table C5) and satellite instrument identifier (from Common Code Table C8) to OSCAR Space.		CGMS-45	**OPEN**	2.7
CGMS space agencies	WGII	R44.03	From CGMS-44 WGII: CGMS Members to continue an operational constellation of conically-scanning microwave platforms to guarantee sustained support for the current level of capability	Ref. gap analysis discussion		**OPEN**	
CGMS space agencies	WGII	R44.04	From CGMS-44 WGII: CGMS to have a special discussion on the value of formation flying similar to the A Train – especially for precipitation and other hydrological applications			**OPEN**	
CGMS space agencies	WGII	R44.05	From CGMS-44 WGII: CGMS satellite operators to consider coordination of orbits for scatterometer instruments and to provide open and timely access to data in order to maximise independent coverage and benefits to nowcasting and NWP from assimilation of scatterometer wind data.			**OPEN**	

WGIV Actions open from previous plenary sessions (at CGMS-44)								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	
EUMETSAT	WGIII/2	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.	Status at CGMS-45: CGMS-45-EUMETSAT-WP-37 CGMS-45-ISRO-WP-05 Ongoing work , extend deadline to cgms-46	(CGMS-44, 45) ***New deadline CGMS-46***	**OPEN**	1.1.6	H/RSO
NOAA	(WGI/4) WGIV/7	A43.03	NOAA to consider including GLM products in the HRIT stream	CGMS-45: NOAA intends to include some GLM data, but is still evaluating how much data and in what regions. WG-IV WEBEX 18 Jan 2017 and communication: NOAA is considering putting GLM on HRIT/EMWIN. At this time, our plan is to include 5 channels of Cloud and Moisture Imagery (CMI) in Full Disk at 2 KM resolution and also 3 channels of mesoscale imagery. Under that plan, there would not be sufficient bandwidth for the predicted size of the GLM data. However, we are just receiving CMI data and will evaluate the HRIT broadcast over the next few weeks [in January 2017] prior to the public release of GOES-R data at the end of February 2017. Webex 21 Oct 2015 discussion: NOAA is working on it, and final product list planned for 2016.	(CGMS-44, 45) ***New deadline CGMS-46***	**OPEN**		

TT metadata	(WGI/6) WGIV/10.1	A43.05	CGMS Task Team on metadata to define discovery metadata for DBNET	NOAA: CGMS-44-NOAA-WP-14 PPT EUM: http://navigator.eumetsat.int https://eoportal.eumetsat.int CGMS-44-EUMETSAT-WP-17, ongoing work, extended deadline. CGMS-45: no change, extended deadline to WGIV IS meeting WG-IV WEBEX 18 Jan 2017 and communication: CMA http://data.cma.cn/en http://satellite.nsmc.org.cn/PortalSite/default.aspx?currentculture=en-US NASA: https://search.earthdata.nasa.gov CGMS-45-ROSCOSMOS-WP-03 Still not complete, extend due date to CGMS-46	(CGMS-44, -45) ***New deadline Dec 2017***	**OPEN**	3.4.1	GSI/Gau

CGMS members		A43.06	CGMS members to provide a listing of their data access portals.	CGMS-44-NOAA-WP-14 PPT EUM: http://navigator.eumetsat.int https://eoportal.eumetsat.int WG-IV WEBEX 18 Jan 2017 and communication: CMA: http://data.cma.cn/en http://satellite.nsmc.org.cn/PortalSite/default.aspx?currentculture=en-US NASA: https://search.earthdata.nasa.gov CGMS-45-ROSCOSMOS-WP-03 Still not complete, extend due date to CGMS-46	(CGMS-44) **New deadline CGMS-46**	**OPEN**	-	Closed for EUM, NOAA
CGMS-44 WGIV actions								
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**	
TFMI (task force on Metadata)	WGIV/3.1	A44.01	To submit the "Guidance Documentation on WMO Core Profile Metadata Creation For Satellite Products" to WMO IPET-MDRD and IPET-SUP.	CGMS-45-EUMETSAT-WP-41	30 Dec 2016	**CLOSED**	2.7	GSI/Gau
EUMETSAT	WGIV/7	A44.02	To provide a timeline for the users preparation information for MTG, in accordance with "CGMS-44-WMO-WP-02 Best Practices for Achieving User Readiness for New Meteorological Satellites"	WG-IV WEBEX 18 Jan 2017 EUMETSAT: High Level information for Saturn was provided. CGMS-45: Ongoing work, keep open until more mature. Extend deadline to WG-IV IS meeting.	(30 Dec 2016) ***New deadline Dec 2017***	**OPEN**	5.3	H/USC

CGMS members (data providers)	WGIV/10	A44.03	CGMS members (data providers) to a) discuss and respond to the recommendation from CGMS-44-CEOS-WP-02: CEOS recommends the adoption of the WGISS supported standards for searching Climate Data Records (CDRs). WGISS will provide technical support to CGMS data providers providing their climate data records through the WGISS data access infrastructure (IDN, CWIC, FedEO); and b) report how far the standards WGISS developed (as described in CGMS-44-CEOS-WP-02) are supported.	WG-IV IS Jan 2017: From NASA: In response to action item # A44.03, I would like to state that EUMETSAT, NASA, ESA, CNES, USGS, JAXA, ISRO (NRSC) and CCMEO have all implemented WGISS supported standards (CEOS Opensearch Best Practices). CMA: will be implemented when appropriate NOAA: NOAA has no response to these standards and does not use them currently. CGMS-45: Sufficiently answered, can be closed.	CGMS-45	**CLOSED**	5.1	RSO/KP to talk to (USC/JoS). CEOS to submit a paper on progress *Action TBC!!*
JCOMM task team	WGIV/6.2	A44.04	The JCOMM Task Team To work together with the International Wind Working Group and the CEOS "Ocean Surface Vector Wind Virtual Constellation" (OSVW-VC) at developing a project on Surface Vector Winds, using the well-known and highly successful GHRSST Project as a model for the adoption of globally-agreed standards for the production and distribution of global, integrated, surface vector winds and associated products.	Proposed closure following CGMS-45 discussions. JCOMM to approach CGMS as necessary.	CGMS-45	**CLOSED**	2.5	H/RSP

CGMS members	WGII	A44.05	From CGMS-44 WGII: CGMS operators and WMO to work with GODEX-NWP to explore options for optimal data exchange of advanced data from next-gen GEOs.	WG-IV WEBEX 18 Jan 2017: WMO: GODEX-NWP scheduled May 2017, needs will be addressed there, WMO will provide feedback. As a member, NOAA agrees that the GODEX-NWP group would be an excellent source of information on the planned types of next-gen GEO data to be disseminated and methods of data dissemination between the international NWP modeling centers. The GODEX-NWP group is also at the forefront of RARS endeavors. CGMS-45: GODEX-NWP not yet ready to provide feedback.	(CGMS-45) ***New deadline CGMS-?? 46 or 47?***	**OPEN**		**WGIV Please confirm deadline!** H/SEP, SEP/SSE?
ROSH	WGII	A44.06	From CGMS-44 WGII: ROSHYDROMET to explore the possibilities to implement an operational NRT service for the hyperspectral infrared sounder IKFS-2 on Meteor-M N		CGMS-45	**CLOSED**		
CGMS-44 WGIV Recommendations								
"Actionee"	**AGN item**	**Rec #**	**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	*CGMS-45: Recommendation still valid, to be retained.* NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: http://www.ngdc.noaa.gov/metadata/ WGIV CGMS-43 discussions: Ongoing and routine activity. Recommendation maintained until CGMS-44 WGIV webex 9 Dec 2015: To be taken up at the TT on Meta Data meeting the week of 14 Dec 2015. See CGMS-44-EUMETSAT-WP-17. Recommendation still valid, to be retained.	(CGMS-43, -45) ***New deadline CGMS-4* 6**	**OPEN**	2.7	GSI/LW
CGMS members	WGIV/3.2	R44.01	CGMS members to contribute to the implementation of the Best Practices for User Readiness for meteorological satellite systems under development, both GEO and LEO	*CGMS-45: Recommendation still valid, to be retained.* Closed for NOAA.	(CGMS-45) ***New deadline CGMS-46***	**OPEN**	5.3	H/USC
CGMS members	WGIV/3.2	R44.02	CGMS members to continue the provision of up-to-date User Readiness information in the SATURN portal	*CGMS-45 NOAA-WP-16* *CGMS-45: Recommendation still valid, to be retained.*	CGMS-45	**OPEN**	5.3	H/USC
EUM and NOAA	WGIV/11.1	R44.03	NOAA (and EUMETSAT, as appropriate) to continue their strong engagement in the WMO Coordination Group on Satellite Data Requirements for Region III and IV (Americas) and to provide support to Region-based access to satellite data, including from GOES-R and JPSS, according to user needs.	Closed following discussions at CGMS-45 Strong engagement continues, now considered normal work. NOAA attends all WMO SDR telecons and meetings. We provided significant support on GOES-R transition to the SDR meeting in September 2016 with attendance and participation by Wayne McKenzie, Jamie Daniels and Amanda Terborg along with Eric Madsen.	CGMS-45	**CLOSED**	2.1	H/USC, USC/SW

CGMS-44 plenary	WGIV/3.1	R44.04	WG-IV recommends to CGMS plenary to endorse the extension of the CGMS TFMI activity to assess the WIGOS Metadata OGC Observations and Measurements mapping and to report its findings/recommendations to WMO IPET-MDRD	Endorsed by CGMS-44 plenary	9 Jun 2016	**CLOSED**	2.7
CGMS-44 plenary	WGIV/3.2	R44.05	WG-IV recommends to CGMS plenary to adopt "CGMS-44-WMO-WP-02 Best Practices for Achieving User Readiness for New Meteorological Satellites", as far as it applies to satellite operators, as CGMS Best Practice.	Endorsed by CGMS-44 plenary	9 Jun 2016	**CLOSED**	5.3
CGMS-44 plenary	WGIV/3.3	R44.06	In the context of IODC data access, WG-IV supports the definition of essential data first and, once defined, recommends the distribution of these data via the established dissemination means by the CGMS agencies in the region (CMA, EUMETSAT, ISRO, ROSHYDROMET).	Endorsed by CGMS-44 plenary	9 Jun 2016	**CLOSED**	1.1.6

Actions and recommendations resulting from CGMS-44 Space Weather Task Team discussions
5 June 2016

CGMS-44 SWTT actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
SWTT		A44.01	SWTT to conduct a workshop with leadership from the various space weather communities that will benefit from CGMS coordination of space-based space weather observing systems.	CGMS presentation and discussions have occurred at European Space Weather Week (ESWW) and UNCOPUOS. Discussions have been held with leadership of ISWI, COSPAR, and ISES. CGMS SWTT organized electron inter-calibration mini-workshop at US Space Weather Workshop CGMS space weather role is included in draft UNCOPUOS framework for space weather services. Planned: Dedicated CGMS ESWW topical discussion meeting ("Space Weather Activities in the Coordination Group for Meteorological Satellites.") Presentation of CGMS at UN/US ISWI workshop	(15 Dec 2016) ***New deadline ??***	**OPEN**	5.2.1
SWTT members		A44.02	Members of SWTT review the current WIGOS 2040 vision to ensure inclusion of necessary space weather observations.	NOAA: Input sent 27 Jul 2016. Webex 22 Mar 2017: WMO to circulate version WIGOS 2040 1.1 for further review by SWTT by CGMS-45 to be reflected in the SWTT agenda at CGMS-45. NASA submitted comments after CGMS-45 SWTT meeting.		**CLOSED**	1.1.7
SWTT		A44.03	(From WGIII): SWTT members wishing to participate in the SETT activities are invited to participate in the SETT activities, and should provide their contact information to the SETT accordingly (Charles.wooldridge@noaa.gov).	Contact information has been sent to SETT	1 Jul 2016	**CLOSED**	4.1.1
CGMS-44 SWTT Recommendations							
"Actionee"	**AGN item**	**Rec #**	**Description**	**Action feedback/closing document**	**Deadline**	**Status**	**HLPP ref**
CGMS-44 plenary		R44.01	**On Space Weather Task Team:** Sustain the SWTT for another year in order to enable CGMS space weather integration into existing Working Groups.	Endorsed by CGMS-44 plenary. CGMS-45: Integration activities ongoing.	(9 Jun 2016) Jun 2018	**OPEN**	5.2

SWTT to confirm new deadline! And add outcome of CGMS-45 discussions