CGMS-45 Plenary actions							
Actionee	**AGN item**	**Action #**	**Description**	**Action feedback/closing docum**	**Deadline**	**Status**	**HLPP ref**
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)	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	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**: ? **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.	CGMSSEC IS#2 30 Jan 2018: Discussion ongoing with CEOS SEC.	CGMS-46	**OPEN**	

CGMS	C.3	A45.04	CGMS to invite the ISWGs to nominate experts for participation in the OSCAR/Space Science and Technical Advisory Team.	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)	30 Jan 2018: WMO, NOAA, IPWG discussions. WMO to hold workshop in March 2018. CGMS-46 WMO-WP-xx In progress.	CGMS-46 (31/12/2017)	**OPEN**	
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).	1 Feb 2018: The JAXA completed the short-term climate normal from GSMaP data archives for the SEMDP and is now going to set-up the ftp site to provide GSMaP data for the SEMDP, which will be expected to be ready by the end of March 2018. CGMSSEC IS#2 30 Jan 2018: See action A45.05.	Mar 2018 (31/12/2017)	**OPEN**	

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)	CGMSSEC 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	**OPEN**	
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)	Expected to be discussed in March 2018	CGMS-46	**OPEN**	
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	CGMSSEC IS#2 30 Jan 2018: IPET-SUP will discuss this in Feb 2018. IPET-SUP is preparing a 'Critical Satellite Data Position Paper'. CGMSSEC IS 21 Nov 2017: Still under elaboration at WMO. CGMS-46 WMO-WP-xx	CGMS-46	**OPEN**	
CGMS members	C.6.1	A45.28	CGMS members to provide a focal point of contact to WMO (sbojinski@wmo.int) for participation in the WMO Public Private Engagement discussion	CGMSSEC IS 21 Nov 2017: Action to be revisited at CGMS-46. **EUM:** paul.counet@eumetsat.int **IMD:** Dr. S.K.Peshin, Scientist-G/ Head Satcom <sunil peshin <sunil.peshin@gmail.com> **NOAA:** Karen Saint Germain <karen.st.germain@noaa.gov>	15-Oct-17	**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.	CGMS-46 IOC-UNESCO-WP-xx	CGMS-46	**OPEN**	
WMO	C.8	A45.10	WMO to report on the progress regarding JCOMM TT and satellite observations.	CGMS-46 WMO-WP-xx	CGMS-46	**OPEN**	
EUMETSAT	D.13	A45.11	EUMETSAT, on behalf of ROSHYDROMET, to ingest Meteor-M N2 level 1 brightness temperatures from MTVZA-GY on the GTS for global data exchange	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.	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	**OPEN**	
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)	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	**OPEN**	

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).	15 Feb 2018: New dates 30 Apr - 2 May 2018. Jan 2018: Meeting postponed. See action A45.17. **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	**OPEN**	
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)	New dates 30 Apr - 2 May 2018 at WMO (postponed from 5-7 March 2018)	Q1 2018	**OPEN**	
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)	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 (pascal.lecomte@esa.int and joerg.schulz@eumetsat.int)	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)	**OPEN**	

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	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))	CGMSSEC IS#2 30 Jan 2018: No further progress. NOAA provided comments on GEO work programme.	15-Sep-17	**OPEN**	
CGMS members	I.1	A45.24	CGMS Members to indicate to WMO (sbojinski@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.	CGMSSEC IS#2 30 Jan 2018: NOAA considers supporting this position. Discussions ongoing between WMO and NOAA.	15-Sep-17	**OPEN**	

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	**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	**OPEN**	
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	30 Jan 2018: Potentially might not be considered a priority at this point in time (unclear if a direct relevance to SCOPE-NWC). CGMSSEC to verify with S Bojinski/WMO. **JMA** declined participation in the project (8 Sep 2017). **EUM**: Pending SCOPE NWC EP meeting (jochen.grandell@eumetsat.int) **IMD**: participation confirmed (3 Oct '17). **NOAA** presented its interest at the meeting.	01-Sep-17	**OPEN**	

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	CGMSSEC IS#2 30 Jan 2018: CGMSSEC in the process of identifying points of contact for corresponding with GOFC-GOLD	CGMS-46	**OPEN**	
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.	CGMSSEC IS#2 30 Jan 2018: CGMSSEC in the process of identifying points of contact for corresponding with AEROSAT	CGMS-46	**OPEN**	
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.	CGMSSEC IS#2 30 Jan 2018: CGMSSEC to contact WMO/Bojinski 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 CMA: ?	CGMS-46	**OPEN**	
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	B2a http://www.beidou.gov.cn/xt/gfxz/201712/P020171226742357364174.pdf B1c http://www.beidou.gov.cn/xt/gfxz/201712/P020171226741342013031.pdf			

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.	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		**CLOSED**
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.	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]		
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/	CGMSSEC IS#2 30 Jan 2018: No further progress. There was no feedback by CGMS-45 and the recommendation remains open.	2.5	

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	Next WMO workshop will take place in May 2016 (China), hence there might be a verbal/preliminary report only to CGMS-44. Discussed at CGMS-45.	(CGMS-44) New deadline CGMS-46	**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	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	**OPEN**	1.3
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-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	**OPEN**	1.4
EUM	5	A45.05	EUMETSAT to report to CGMS-46 on the status of progress on future EDCP (ESA study)		CGMS-46	**OPEN**	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		Sep 2017	**OPEN**	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.		CGMS-46	**OPEN**	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.	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	**OPEN**	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.	WG I and WG IV co-chairs and rapporteurs will meet on 6 Dec 2017 to discuss the way forward.	CGMS-46	**OPEN**	

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"	**OPEN**	1.3

CGMS space agencies	WGI/5	R44.02	All CGMS DCS operators to consider making all DCP messages available on the GTS.	**IMD**: DCP message of IMD network is being disseminated on GTS. [Nov 2017] 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	**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	Nov 2017: DCP message of IMD network is being disseminated on the GTS.	**OPEN**	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.	WGII IS #1 20 Nov '17: Two golden days for intercomparison studies have been chosen: 19 Aug 2015 (ICWG cloud properties), 26 June 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-46 (1 Sept 2016)	**OPEN**	3.2.3
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	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. IROWG rapporteur to check status (space weather-related); state-of-the-art to be	New deadline: CGMS-46 (CGMS-45)	**OPEN**	1.1.4
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 #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	**OPEN**	3.3.2

IROWG	4	A45.02	IROWG to develop a detailed proposal for OSSEs regarding LEO-LEO MW occultation and GNSS-RO&-reflectometry.	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-46 (1 Nov 2017)	**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.	WGII IS #1 20 Nov 2017: No update	01-Jul-17	**OPEN**	
IPWG	4	A45.04	IPWG to produce documentation on precipitation climate data record generation and related activities worldwide, including prospects for continuity	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-46	**OPEN**	5.1

GSICS	4	A45.05	GSICS to produce annual state of the observing system report to be delivered at CGMS	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 Instruments (from presentations given at the GRWG meeting)". GRWG/GDWG (meeting in March 2018) is preparing for the template regarding the report. It will be reported in CGMS-46.	CGMS-46	**OPEN**	3.1
CGMS agencies	4	A45.06	CGMS Agencies to implement Landing Pages on calibration events accessed via WMO-OSCAR.	**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	CGMS-46	**OPEN**	3.1
CGMSSEC	5	A45.07	CGMS SEC to approach GOFC-GOLD to explore the possibility for CGMS members to become part of the fire project.	26 Feb 2018: CGMSSEC is identifying the appropriate point of contact for such correspondence. WGII IS #1 20 Nov 2017: No progress yet	CGMS-46	**OPEN**	
CGMSSEC	5	A45.08	CGMS SEC to explore with AEROSAT if they pursue an activity regarding the use of new-generation GEO data	26 Feb 2018: CGMSSEC is identifying the appropriate point of contact for such correspondence. WGII IS #1 20 Nov 2017: No progress yet	31-Jul-17	**OPEN**	

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	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 study on using satellites for flood mapping (http://ceos.org/ourwork/workinggroups/disasters/floods/); No action on the part of SCOPE-Nowcasting action required at this moment.	01-Sep-17	**OPEN**	
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.	WGII IS #1 20 Nov 2017: (Ref. Plenary Action A45.32) Potential interest by EUMETSAT Land, Nowcasting and Climate SAFs. EUMETSAT to invite experts to participate in next WG II IS call (March 2018).	01-Sep-17	**OPEN**	
CMA	7	A45.11	CMA to add Clear-sky Radiance as an FY-4A baseline product	WGII IS #1 20 Nov 2017: Not yet added as baseline product	CGMS-46	**OPEN**	
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 #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.	WGII IS #1 20 Nov 2017: Although not specifically related to the action, the IPWG co-Chair (Haddad) provided training at the most recent meeting of the AOMSUC in Oct. 2017.	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.	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 sensors. For example, can an algorithm be developed that combines cloud/precipitation	
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 #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	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
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.		
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 #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))	**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	
CMA		R45.10	CMA to add Clear-Sky Radiance as a FY-4A baseline product.	see above.	
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 panel in Sep 2016 to decide on approach regarding next call for proposals; check draft SEP-11 report	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.	To be discussed at second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	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 a second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)	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.	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
ISRO	WGII/5	R43.10	ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D	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.	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	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
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*	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).	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	CLOSED. Should be part of agencies	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.	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.	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.	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		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	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-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

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.		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.	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.		
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 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		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.	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.		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	CGMS-45: 6.9MHz currently used, in future only GCOM-W will provide this capability for the time being.			

Plenary action/recommendation for reference:

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		Sep-17	**OPEN**	

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.	CGMSSEC IS#2 30 Jan 2018: Further clarification to be requested from IPWG about scope of "advance sensors". Recommendation to be addressed in WGII To be discussed in WGIII Apr/May workshop [continuity of GPM]			

The following actions were raised by WGII for the other CGMS Working Groups:

WG III	WGII/4		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	**OPEN**	
WG IV	WGII/4		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	**OPEN**	
SWTT 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	**OPEN**	
SWTT co-chairs	SWTT/10 (WGII/9)	A45.12	Invite a GSICS representative to the next SWTT inter-sessional meeting; and to a topical discussion meeting during the European Space Weather Week 27 Nov-1 Dec 2017 in Oostende, Belgium.		CGMS-46	**OPEN**	

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	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	**OPEN**	1.1
WMO	WGIII/	A44.02	WMO Secretariat to present the draft Vision at CEOS, GEO plenary sessions 2016.	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)	(End 2016) New deadline: 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).	**EUM**: sally.wannop @eumetsat.int **IMD**: sunil.peshin@gmail.com **ISRO**: jvthomas@isro.gov.in **NASA**: charles.webb@nasa.gov **NOAA**: Matthew.Butler@noaa.gov	31 Jul 2017	**OPEN**	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"	To be discussed at the workshop at WMO on 30 Apr-2 May 2018.	CGMS-46	**OPEN**	
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	WGIII IS 28 Nov 2017: WMO to provide a process proposal at Apr/May 2018 workshop.	CGMS-46	**OPEN**	
CGMS members	WGIII/5.4	A45.03	WMO to support one face to face Inter-sessional meeting to start off new planning effort.	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	**OPEN**	
SETT	WGIII/8	A45.04	Propose a way forward for guiding and coordinating socio-economic Benefit studies among the CGMS community.	SETT seeking to identify new case studies. WMO recommends looking at risk analysis and SETT could look at potential consequences thereof. CGMS-46 NOAA-WP-xx	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)	WGIII IS 28 Nov 2017: WMO expects to form the organising committee in the course of 2018 to address the WS content.	End 2018	**OPEN**	

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	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-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.	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	**OPEN**	
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	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 and 45 and	1.1.4

Plenary recommendation:

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.	CGMSSEC IS#2 30 Jan 2018: Further clarification to be requested from IPWG about scope of "advance sensors". Recommendation to be addressed in WGII To be discussed in WGIII Apr/May workshop [continuity of GPM]	

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.	**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. **WG-IV webex/communication 18 Jan 2017:** Status of IODC Service by CMA: The CMA FY-2E at 86.5E is undertaking IODC service. CMA shall keep continuity of IODC service at 86.5E, on assumption: - FY-2G, launched 31 December 2014, currently operating at 105E; - Launch of FY-2H is planned for the end of 2017 or early 2018. **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-2E data available through EUMETCast. EUM expects its Council to take a decision on moving Meteosat-8 to ca 40° E in June 2016. CGMS-44 EUM-WP-14	(CGMS-44, -45) ***New deadline CGMS-46***	**OPEN**	1.1.6

NOAA	(WGI/4) WGIV/7	A43.03	NOAA to consider including GLM products in the HRIT stream	WGIV IS-1, Oct 2017: NOAA: A decision will be made after GLM is declared operational, not before 2018. CGMS-45: NOAA evaluation still ongoing. 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	(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		(CGMS-44, -45) ***New deadline Dec 2017***	**OPEN**	3.4.1

CGMS members		A43.06	CGMS members to provide a listing of their data access portals.	Discussed at CGMS-45. Ongoing, deadline extended to CGMS-46. WG-IV WEBEX 18 Jan, 12 Oct 2017 and e-mail communication: **CMA**: http://data.cma.cn/en http://satellite.nsmc.org.cn/PortalSite/default.aspx?currentculture=en-US **EUM**: http://navigator.eumetsat.int https://eoportal.eumetsat.int CGMS-44-EUMETSAT-WP-17 **ISRO**: http://mosdac.gov.in **IMD:** www.satellite.imd.gov.in and www.rapid.imd.gov.in **JMA/MSC:** http:/www.jma-net.go.jp/msc/en/ **NASA**: https://search.earthdata.nasa.gov **NOAA**: CGMS-44-NOAA-WP-14 PPT **ROSC**: CGMS-45-ROSCOSMOS-WP-03	(CGMS-44) **New deadline CGMS-46**	**OPEN**	-
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

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. CGMS-45: GODEX-NWP not yet ready to provide feedback.	(CGMS-45) ***New deadline CGMS-4***	**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.	**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	**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	**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.	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-46	**OPEN**	2.8

CGMS satellite operators	WGIV/12.2	A45.04	CCGMS 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.	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-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.	23 Feb '18: Discussion ongoing within IPWG 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: The precipitation community to clarify what data are needed, in terms of time/spatial resolution, spectral channel selection, and sub-setting. CGMSSEC to follow this up with IPWG.	CGMS-46	**OPEN**	

CGMS-45 WGIV Recommendations					
"Actionee"	**AGN item**	**Rec #**	**Description**	**Recommendation feedback/closing document**	**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	**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 WGIV webex 9 Dec 2015: To be taken up at the TT on Meta Data meeting the week of 14	2.7
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 - retained. Closed for NOAA.	5.3
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: Recommendation still valid - retained.	5.3

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 ESWW. presentations by Terry Onsager, ETalaat, T Nagatsuma, J-P Luntama, T Kurino, and J Ideström; an outbrief to SWTT at IS on 7 Dec 2017. 1 Aug 2017, E Talaat gave a CGMS briefing during the UN/US Workshop on ISWI. The Decade after the International Heliophysical Year 2007, Boston, US, E Talaat and J-P Luntama outbrief to SWTT during IS 17 Sep 2017. CGMS-45: CGMS presentation and discussions at ESWW and UNCOPUOS. Discussions held with ISWI, COSPAR, and ISES. CGMS SWTT organized electron inter-calibration mini-workshop at US SWW. CGMS space weather role is included in draft UNCOPUOS framework for space weather services. Planned: Dedicated CGMS ESWW topical discussion meeting ("SW activities in CGMS") - Nov 2017 Presentation of CGMS at UN/US ISWI workshop - Jul/Aug 2017	(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.	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	**OPEN**	
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	Included in SWTT A45.04 7 Nov 17: Joint meeting to discuss results from space weather anomalies survey	30 Dec 2017	**OPEN**	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.	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	**OPEN**	
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.	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* plenary.	**OPEN**	5.2