

Status of CGMS-46 actions following CGMS-47 plenary

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 Iriishojgaard@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: <i>Following the IS discussion, it was agreed to close the action at this stage.</i> 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: bpschantanu@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							

Status of CGMS-46 actions following CGMS-47 plenary

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]	<i>WMO will present status of the Vision preparation presented to Congress in June 2019 (CGMS-47-WMO-WP-02)</i> 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: usnenskvs@planet.iitpp.ru	31 Aug 2018	CLOSED	1.1
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	

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WMO, NOAA	C.4, C.5	A46.04	<p>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</p>	<p>CGMS-47-WMO-WP-05, CGMS-47-NOAA-WP-02 <i>It is expected that this agenda item will continue to be addressed in future plenary sessions.</i></p> <p>CGMSSEC IS#3. 13 Mar 2019: The plenary agenda has been modified permitting WMO and NOAA to report consecutively.</p> <p>CGMSSEC IS#2, 22 Jan 2019: WMO will provide a progress report on the PPE / GWE to CGMS-47 (included under the WMO session</p>	CGMS-47	CLOSED	
WMO, CGMS space agencies	E.4	A46.05	<p>Report from working group WGIII: CGMS WGIII members</p> <p>i) to do the initial risk assessment against the CGMS baseline using the OSCAR Space database as a reference;</p> <p>ii) propose a process to incorporate the annual risk assessment into the regular work programme of CGMS and WGIII; and</p> <p>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</p>	<p>Sep 2018: Superseded by WGIII action CGMS-46 A46.05 and closed in plenary</p>	by Q1 2019	CLOSED	1.1

Status of CGMS-46 actions following CGMS-47 plenary

CGMSSEC	E.5	A46.06	<p>Report from working group SWTT/SWCG: CGMSSEC to invite ISES (poc: terry.onsager@noaa.gov) to become a permanent observer of CGMS.</p>	<p><i>CGMS-47: The new ISES lead, Jesse Andries, was unable to come to CGMS-47. The contacts with ISES is handled within the SWCG.</i></p> <p>CGMSSEC #3, 13 Mar 2019/SWCG IS#2, 7 Feb 2019: Decision process still ongoing.</p> <p>CGMSSEC IS#2, 22 Jan 2019: Informal positive response received, pending formalisation.</p> <p>16 Jan 2019: Formal response still pending from ISES.</p> <p>26 Sep 2018: ISES currently reorganising lead, formal positive response expected by November 2018.</p> <p>30 Aug 2018: CGMSSEC invitation sent to ISES (CGMS/LET/18/1015458).</p>	31 Aug 2018	CLOSED	6.2.1
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Status of CGMS-46 actions following CGMS-47 plenary

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: <ul style="list-style-type: none"> - 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 <i>Co-18</i>)	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: <i>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</i>	May 2019 (WGIII), mid 2020 (WGII)	CLOSED	

Status of CGMS-46 actions following CGMS-47 plenary

GSICS	F	A46.08	<p>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)</p>	<p><i>CGMS-47: The MW intercalibration mini-conference will be held in conjunction with 2020 GSICS annual meeting in Korea, March 16, 2020</i> CGMS-47-GSICS-WP-02</p> <p>CGMSSEC IS#3, 13 Mar 2019: Will be further discussed at GSICS EP in May and in WGII at CGMS-47.</p> <p>CGMSSEC IS#2, 22 Jan 2019: Expected to be discussed at the GSICS Research WG in March 2019.</p> <p>20 Nov 2018: CGMSSEC IS#1 GSICS [poc: Mitch.goldberg@noaa.gov] to lead on the action in coordination with CMA and EUMETSAT.</p> <p>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.</p>	CGMS-47	CLOSED	1.1
NOAA	F	A46.09	<p>On passive microwave observations: NOAA to inform CGMS on US's plans/frequency/features of the post WindSat/SSM/I MW radiometry missions</p>	<p><i>CGMS-47: Deferred. Expected to be presented to CGMS-48</i></p>	CGMS-48 (CGMS-47)	OPEN	1.2
JWG CLIM	G.1	A46.10	<p>On scatterometry observations: JWG Climate to analyse and facilitate the generation of ocean surface wind ECVs from scatterometer observations and report to CGMS-47</p>	<p><i>CGMS-47-JWGCLIM-WP-03</i> <i>(reference is also made to the 2019 ECV Inventory Gap Analysis).</i></p> <p>To be discussed in the JWG Climate meeting in March 2019, (part of the gap analysis)</p>	CGMS-47	CLOSED	6.1

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WMO	H	A46.11	<p>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.</p>	<p><i>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.</i></p> <p>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"</p> <p>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.</p> <p>Anticipated on the agenda</p>	CGMS-48 (CGMS-47)	OPEN	3.6
IOC-UNESCO	H	A46.12	<p>On ocean variables (CGMS-46-IOC-WP-03): IOC to provide guidance to CGMS on satellite data requirements for the UN Ocean Decade</p>	<p>CGMS-47-IOC-UNESCO-WP-01 Satellite data requirements for the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)</p> <p>CGMS-47: CGMS-47-JCOMM-WP-01</p>	CGMS-47	CLOSED	3.6
CGMS members	I.2	A46.13	<p>On CEOS-CGMS WGClimate (CGMS-46-CGMS-WP-03): CGMS members are requested to support the future work of the joint WGClimate by:</p> <ul style="list-style-type: none"> • 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. 	<p>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.</p> <p>(Long-term action, status at CGMS-47)</p> <p>Nov 2018: CGMSSEC to circulate the invitation letter (participation by CMA, CSNA, JMA, KMA, IMD, ROSHYDROMET, and ROSCOSMOS to be requested specifically).</p>	CGMS-47	CLOSED	6.1

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CGMS members	J.1	A46.14	<p>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).</p>	<p><i>Action closed and superseded through CGMS-47-VLab-WP-01.</i></p> <p>CGMSSEC IS#2, 22 Jan 2019: CGMS members are requested to consider putting forward a candidate for the co-chair Vlab position.</p> <p>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.</p> <p>20 Nov 2018 CGMSSEC#1: WMO to report back by end Nov</p>	Dec 2019 (Q1 2019)	CLOSED	5.2.2
CGMS operators	J.1	A46.15	<p>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</p>	CGMS-47-VLab-WP-01	15 Jun 2018	CLOSED	5.2
WMO	K	A46.16	<p>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.</p>	<p><i>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.</i></p> <p>Oct 2018: document expected to be available for review by mid-Nov 2018 for commenting by mid-Dec 2018</p>	31 Aug 2018	CLOSED	6.3.1

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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 addressed 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

Status of CGMS-46 actions following CGMS-47 plenary

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

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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 superseded 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	<p>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.</p>	<p>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.</p>	
European Commission (EC)	K	R46.13	<p>On greenhouse gas monitoring: The CEOS Chair (the European Commission) to support the establishment of a subgroup within JWGLIM for the coordination of greenhouse gas monitoring activities.</p>	<p>CLOSED Nov 2018: Refer to CGMS-46 action A46.18 Sep 2018: Rephrased by CGMSSEC for the sake of clarity.</p>	6.3.1

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.	<p>CLOSED</p> <p>Sep 2018: Referenced in the HLPP (and will be reviewed annually).</p> <p>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</p> <p>21 Feb 2018: Discussions between IPWG and VLab have started on how to organize regular joint training activities in response to identified needs.</p> <p>CGMSSEC IS#2 30 Jan 2018: WMO/Bojinski to provide feedback to CGMSSEC</p> <p>For information: Nov '17: IPWG co-Chair (Haddad) provided training at AOMSUC-8. Oct. 2017</p>	4.5.3
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WGI actions open from previous plenary sessions (at CGMS-46)								
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-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 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-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 <i>See also WGII recommendation R44.28</i> 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	
CGMS-46 WGI actions								
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref	

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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-47-CGMS-WP-01 by the CGMS/SFCG liaison officer	7 Sep 2018	CLOSED	2.3.1
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-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 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-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

CGMS-46 actions following CGMS-47 plenary

CGMS members	WGI/5	A46.04	<p>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:</p> <ul style="list-style-type: none"> • 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 <p>Members should review and provide inputs on these topics prior to the first meeting.</p>	Sub-group met on 10-12 Oct 2018.	1 Sep 2018	CLOSED	2.2
DCS (WGI) sub-group	WGI/5	A46.05	Provide a consolidated DCS report covering the items in CGMS-46 WGI A46.04	CGMS-47 CGMS-WP-19	CGMS-47	CLOSED	2.2
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	2.2.5
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-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 members	WGI/5.3	A46.08	Review and update CGMS-46-CGMS-WP-25 Annexes regarding DCS information	CGMS-47: All inputs received. This content is now part of DCS sub-group report	1 Sep 2018	CLOSED	
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.	CGMS-47: A CGMS Web Page has been created	1 Sep 2018	CLOSED	

CGMS-46 actions following CGMS-47 plenary

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-47: A specific Task Group on Space Weather Database was created to more specifically 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 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-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 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	

WGII 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	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.	<p>Closed on the occasion of CGMS-47</p> <ul style="list-style-type: none"> • Future ICWG intercomparison studies should be funded in a similar manner to CREW (ICWG predecessor) and IWWG studies. ICWG seeks guidance on this. <p>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.</p> <p>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.</p> <p>CGMS-46: Action remains open following WGII discussions.</p> <p>WGII IS#2 15 Mar '18: ICWG meets in Nov 2018 and expects it to be closed by then. 26 June 2016 date TBC</p> <p>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).</p> <p>CGMS-45: remains open since some submissions missing or forthcoming and closing is now foreseen for spring</p>	New: CGMS-47 (1 Sept 2016, CGMS-46)	CLOSED	4.2.4

IROWG	4	A45.02	<p>IROWG to develop a detailed proposal for OSSEs regarding LEO-LEO MW occultation and GNSS-RO&-reflectometry.</p>	<p><i>CGMS-47: Pending IROWG meeting autumn 2019</i></p> <p>WGII IS#2 2019: Next update expected at next IROWG meeting in September 2019.</p> <p>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.</p> <p>Detailed status report on this action dated 6 June 2018 is available from IROWG (contact: ulrich.foelsche@uni-graz.at).</p> <p>CGMS-46: Action remains open following WGII discussions.</p> <p>WGII IS#2 15 Mar 2018: No progress information.</p> <p>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,</p>	<p>Sept 2019 (CGMS-47, 1 Nov 2017, CGMS-46)</p>	<p>OPEN</p>	
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CGMS-46 actions following CGMS-47 plenary

IWWG	4	A45.03	<p>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.</p>	<p>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.</p> <p>CGMS-46: Action remains open following WGII discussions.</p> <p>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.</p> <p>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</p>	CGMS-47	<p>CLOSED</p>	<p>(01/07/2017, CGMS-46)</p>
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IPWG	4	A45.04	<p>IPWG to produce documentation on precipitation climate data record generation and related activities worldwide, including prospects for continuity</p>	<p><i>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 completed in 2020.</i></p> <p>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):</p> <ol style="list-style-type: none"> 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. <p>WGII IS#1 Dec 2018: At IPWG-9 (in Nov 2018) updates were given on the joint precipitation work with</p>	CGMS-48 or -49 (CGMS-47 CGMS-46)	OPEN	
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CGMS-46 actions following CGMS-47 plenary

GSICS	4	A45.05	GSICS to produce annual state of the observing system report to be delivered at CGMS	<p>WG II IS#2 2019: CLOSED - implemented.</p> <p>GSICS 22 Jan 2019: GSICS-EP chair to report on the combined version of all agencies at CGMS-47 (like at CGMS-46), since satellite operators will report on the "annual status of observing system" at the GSICS annual meeting in March at Frascati, Italy.</p> <p>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</p> <p>10 Oct 2018: First version was presented at CGMS-46 Next version will be delivered at CGMS-47.</p> <p>CGMS-46: Action remains open following WGII discussions. See CGMS-46-GSCIS-WP-01</p> <p>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</p> <p>WGII IS #1 20 Nov 2017: It is related to the action of GSICS-EP-03 "to develop</p>	CGMS-47 (CGMS-46)	CLOSED	
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CGMS-46 actions following CGMS-47 plenary

CGMS agencies	4	A45.06	CGMS Agencies to implement Landing Pages on calibration events accessed via WMO-OSCAR.	<p><i>CGMS-47: See CGMS-47-WMO-WP-15 for status update. Some agencies still to provide landing page information.</i></p> <p>WGII IS#2 March 2019: still open</p> <p>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.</p> <p>Sep 2018: See also WGIII action A46.03</p> <p>CGMS-46: Action remains open following WGII discussions.</p> <p>CGMS-46 WMO-WP-02</p> <p>WGII IS#2 15 Mar 2018: Other agencies are requested to provide the URL to their respective landing pages.</p> <p>KMA implemented the Landing Pages on COMS calibration events on June 2016. http://nmsc.kma.go.kr/html/homepage/en/landing/info.do#coms</p> <p>IMD Dr. Ashim K. Mitra, Scientist-D (SR-Cal/Val) NASA charles.webb@nasa.gov NOAA mitch.goldberg@noaa.gov ROSH z.andreeva@meteof.ru http://planet.rssi.ru/calval/portal-main-en (the web-page is under construction)</p>	CGMS-48 (CGMS-47 CGMS-46)	OPEN	4.1
CGMS-46 WGII actions							
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref

CGMS-46 actions following CGMS-47 plenary

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)	<p>CGMS-47: No update. Mitch to go back and discuss with ITWG. Presentation to be given CGMS-48.</p> <p>WGII IS#2 2019: Ken/Mitch to check with CGMS-Secretariat if action has been taken to ask CGMS members to provide input.</p> <p>CGMS-47 EUM-WP-xx</p>	Dec 2019, CGMS-48 (By CGMS-47)	OPEN	4.6.1
CGMS members	WGII/5	A46.02	All AMV producers to implement the “Common QI module” in their algorithms.	<p>CGMS-47: Common QI showed skill in filtering collocated AMVs and led to improved agreement between AMVs generated by satellite operators</p> <ul style="list-style-type: none"> • Action 1 to IWWG co-chairs: Place the Common QI in a public repository. • Done -> https://github.com/swanzong/IWWG • Send any questions to steve@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. <p>WGII IS#2 2019: Request to developers to implement this. On-going.</p> <p>WGII IS#1 Dec 2018: There is a Gitlab repository (<i>who is the owner of it?</i>), 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)</p>	By IWW15, CGMS-48	OPEN	4.2.1

CGMS members	WGII/5	A46.03	AMV producers to adopt the new AMV BUFR template.	<p>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.</p> <ul style="list-style-type: none"> • 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
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.	<p>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.</p> <ul style="list-style-type: none"> • 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. <p>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)</p>	By IWW15, CGMS-48	OPEN	4.2.1

CGMS-46 actions following CGMS-47 plenary

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)	<p>CGMS-47: For the ASCAT winds community, the TRISTAR configuration has a significant benefit by improving the coverage of the ASCAT measurements.</p> <p>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.</p> <p>WGII IS#2 2019: While the scatterometer community prefers TRISTAR configuration, other communities prefer other configurations. Final decision to be taken in September 2019.</p> <p>WGII IS#1 Dec 2018: Discussion between WGII and IWWG?</p> <p>(Oct 2018: Discussion with WGI superseded - currently not required. Sep 2018: Needs discussing in WGI)</p>	By CGMS-47	CLOSED	
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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)	<p>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.</p> <ul style="list-style-type: none"> • 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. <p>WGII IS#2 2019: no update</p>	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)	<p>CGMS-47: IWWG has reviewed the gaps identified by the last Essential Climate Variables (ECV) inventory.</p> <ul style="list-style-type: none"> • 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. <p>WGII IS#2 2019: no update</p>	CGMS-48 (By CGMS-47)	OPEN	

CGMS-46 actions following CGMS-47 plenary

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. 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	
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-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 WGClimat-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	
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)	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	
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)	WGII IS#2 2019: closed	By 31 August 2018	CLOSED	4.5.4

CGMS-46 actions following CGMS-47 plenary

EUM, IMD	WGII/7	A46.12	EUMETSAT and IMD to establish contact for collaboration on SAF Nowcasting activities (Ref. CGMS-46-IMD-WP-06)	Dec 2018: Dr. lothar.schueller@eumetsat.int Oct 2018: Dr. A.K. Mitra, ashimmitra@gmail.com	By 31 August 2018	CLOSED	
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-47: Mitch Goldberg to report following the ITWG meeting.	1 Dec 2019 (By CGMS-47)	OPEN	
CGMS members	WGII/10	A46.14	CGMS members to provide points of contact for GOFCC-GOLD to the CGMS Secretariat (Ref. CGMS-46-GUEST-WP-02)	CGMS-47: <i>No input provided to CGMSSEC . WGII members need to reach out and confirm the pocs.</i> WGII IS#2 2019: check with CGMS-Sec	CGMS-48	OPEN	4.5.4
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: <i>No input provided to CGMSSEC . WGII members need to reach out and confirm the pocs.</i> WGII IS#2 2019: check with CGMS-Sec	CGMS-48	OPEN	4.5.4
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-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
CGMS-46 WGII Recommendations							
Lead	AGN item	Rec #	Description	Recommendation feedback/closing document	HLPP ref		
ESA	WGII/5	R46.01	European Space Agency to consider becoming a full member of the GSICS Executive Panel.	COMPLETED 14 Dec 2018: ESA has confirmed becoming a full member of GSICS EP.			

CGMS-46 actions following CGMS-47 plenary

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)	<p>CGMS-47: ICWG invited IPWG representative Ben Johnson to present at ICWG-2 and engagement is developing.</p> <p>WGII IS#2 2019: needs to be further precised/developed (GCOS?, FCDR). Possibly with WGClimate?</p> <p>WGII IS#1 Dec 2018: WGII co-chairs to check with Mitch Goldberg</p> <p>Sep 2018 CGMSSEC: WGII is requested to make this more specific.</p>
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.	<p>CLOSED</p> <p>Sep 2018: Action on WGIV A46.04</p>
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.	<p>COMPLETED:</p> <p>Sep 2018: Covered by User readiness Best Practices.</p> <p><i>However, review against Best Practices needed, taking also climate requirements into account</i></p>
CGMS members	WGII/5	R46.05	AMV producers to reduce as much as possible the product data latency	<p>CLOSED</p> <p>Sep 2018 CGMSSEC: Considered closed. Would need significant rephrasing/detailing.</p>
CGMS members	WGII/5	R46.06	CGMS members should consider hosting radion occultation payloads on future missions. (Ref. CGMS-46-IROWG-WP-01)	<p>COMPLETED:</p> <p>Sep 2018: Covered by the new CGMS Baseline.</p>

CGMS-46 actions following CGMS-47 plenary

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)	COMPLETED: CGMS-46 plenary endorsed WGII recommendation and an action on the CGMS Secretariat was raised accordingly.	
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.	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.	
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)	Closed	

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).	<p>CGMS-47: Ben Johnson (IPWG) attended ICWG-2 and gave a briefing on the IPWG and areas of collaboration.</p> <ul style="list-style-type: none"> • 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. <p>WGII IS#1 Dec 2018: CLOSED following discussions.</p> <p>Sep 2018: CGMSSEC recommends WGII to close this recommendation, it is covered by the work in the ISWGs and working groups.</p> <p>WGII IS#2 15 Mar 2018: It was agreed to maintain the recommendation, albeit some difficulty in implementing it</p> <p>WGII IS #1 20 Nov 2017: Informal discussions held on the topic within IPWG.</p>	
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WMO	4	R45.02	<p>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.</p>	<p>CGMS-47: CLOSED. Engagement between IPWG and VLab ongoing</p> <p>WGII IS#1 Dec 2018: Luciane Veeck (VLab TSO) to follow up with Ralph Ferraro (IPWG)</p> <p>Sep 2018 CGMSSEC: Suggests this is converted to an action on WMO.</p> <p>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.</p> <p>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.</p> <p>IROWG workshops are usually combined with scientific workshops where students participate. IWWG</p>	
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CGMS-46 actions following CGMS-47 plenary

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.	<p>WG II IS#2 2019: CLOSED</p> <p>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.</p> <p>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.</p> <p>WGII IS#2 15 Mar 2018: Included in IPWG report aspects to CGMS</p> <p>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</p> <p>WGII IS #1 20 Nov 2017: ICWG input:</p>	
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)	<p>WGII IS#1 Dec 2018: CLOSED following discussions.</p> <p>WGII IS#2 15 Mar 2018: Joint session planned at IPWG-9.</p> <p>WGII IS #1 20 Nov 2017: IPWG: see action WGII A45.05</p>	

GSICS	4	R45.05	Calibration events logging task team be folded under GSICS as a task team	<p>Dec 2018: CLOSED by WG II (discussed during GSICS annual meeting).</p> <p>Sep 2018 CGMSSEC: This is an action on GSICS to consider this. WGII to securite it is followed up with GSICS.</p> <p>During 2018 GSICS annual meeting, members discussed to confine the only "calibration" events logging. The draft guideline has been already written by task team.</p> <p>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</p> <p>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)</p>	4.1
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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.	<p>CLOSED:</p> <p>PROPOSED COMPLETION (22 Jan 2019)</p> <p>The GSICS community proposes the closure of R45.06 due to the following.</p> <p>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:</p> <ul style="list-style-type: none"> - creating stable Landing Pages linked from OSCAR/Space and; - adopting nomenclature and standards for instrument events. <p>The purpose of R45.06 is to <i>asses</i> the compliance with the new guidelines, and <i>establish a list of instruments</i> to be addressed by the calibration logging system. I.e. sufficient to focus on the first step of the white paper.</p> <p>Several GSICS agencies (CMA/EUM/KMA/JMA/Roshydromet) have already launched the Landing Page.</p>	4.1
ISRO	7	R45.07	ISRO to consider adding a direct broadcast capability to future satellites.		

<p>ROSH, WG IV</p>	<p>7</p>	<p>R45.08</p>	<p>Roshydromet to explore steps with Working Group IV to enable global exchange of data from the MTVZA-GY instrument.</p>	<p><i>CGMS-47: CLOSED. MTVZA-GY presently not working. When next payload is launched, effort will be made to enable global exchange.</i></p> <p><i>Sep 2018 CGMSSEC: Suggests to convert this to an action on Roshydromet [for future missions] (and WGIV).</i></p> <p>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)</p> <p>WGII IS #1 20 Nov 2017: MTVZA-GY no longer functional,</p> <p>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.</p>	<p>2.4.4</p>
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<p>CGMS agencies</p>	<p>8</p>	<p>R45.09</p>	<p>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))</p>	<p>CGMS-47: Ongoing. For NOAA: NOAA-WP-16 (Landing pages include this information).</p> <p>WGII IS#1 Dec 2018: To be addressed in IPET-SUP-5 in February 2019.</p> <p>WGII IS#2 15 Mar 2018: WMO has taken these into account.</p> <p>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.</p> <p>-MI Level 2 products image http://nmsc.kma.go.kr/html/homepage/en/ver2/satellites/coms/searchSatelliteImageN.do?data_type=1089</p> <p>-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</p> <p>KMA POC</p> <ul style="list-style-type: none"> - Geun-Hyeok Ryu (geunhyeokryu@korea.kr) - Jin Woo (superjwoo@korea.kr) <p>IMD will prepare an online product document including ATBD, validation report and its link will be</p>	
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CGMS-46 actions following CGMS-47 plenary

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.	<p>WGII IS#1 Dec 2018: Discussed at the ICWG . Message to remain. IWWG side funded. ICWG not yet.</p> <p>WGII IS#2 15 Mar 2018: For further discussion within ICWG. Co-chair to provide an update.</p> <p>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.</p>	
IROWG, IPWG, IWWG, ITWG	WGII/4	R44.06	To enhance coordination, ISWGs to discuss with ICWG co-chairs key items for collaboration.	<p>CGMS-47: Closed. To be addressed during intersessional meetings of ISWGs chairs.</p> <p>WGII IS#1 Dec 2018: IPWG, IWWG working with ICWG.ICWG to report to CGMS-47.</p> <p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p> <p>Nov '17: Some informal discussions held in IPWG</p>	
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	<p>CGMS-47: Keep open.</p> <p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p> <p>US decadal survey on EO from space, specific measurements were noted , will influence the decision making.</p>	

CGMS-46 actions following CGMS-47 plenary

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	<p>CGMS-47: Closed</p> <p>KMA 22 Jan 2019: KMA will operate 10-minute timeline and 2 minute interval rapid scan target observation.</p> <p>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</p> <p>CGMS-45: NOAA consider this for GOES-16</p>	
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.	<p>COMPLETED.</p> <p>Sep 2018: Part of new baseline and new HLPP.</p> <p>WGII IS#2 15 Mar 2018: Will be addressed in WGIII workshop on contingency planning, baseline review 30 Apr-2 May 2018.</p> <p>CGMS-45: Questions of resolution, frequency need to be resolved, not just high-level mission continuity</p> <p>CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.</p>	

CGMS-46 actions following CGMS-47 plenary

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.).	<p>CGMS-47: CLOSED - Sent to WG III#</p> <p>WG II IS#2 2019: mails have been sent to WGIII co-chairs/rapporteur to transfer this recommendation to WG III</p> <p><i>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</i></p> <p>CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.</p>	
NOAA	WGII/4	R44.11	NOAA to ensure that both, equatorial and polar components of COSMIC-2 are fully funded and launched.	CLOSED	
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)	<p>COMPLETED</p> <p>Sep 2018: Covered by the new CGMS Baseline and the revised HLPP</p>	1.2
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-47: CLOSED - Each agency will take its own approach	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.	<p>COMPLETED</p> <p>WGII IS#1 Dec 2018: Three orbits are part of the CGMS baseline. Overpass time to be coordinated by WG I. <i>WGII co-chairs and rapporteurs to bring this to the attention of WGI co-chairs/rapporteurs.</i></p> <p>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.</p>	
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).	<p>CGMS-47: not part of the CGMS baseline. Monitor progress, in particular with regards to small satellites.</p> <p>WGII IS#2 2019: Check if discussed in WG III Risk Assessment Workshop. Mails have been sent to WGIII co-chairs/rapporteur to check.</p> <p>WGII IS#1 Dec 2018: WGII co-chairs to contact WGIII co-chairs and the pass recommendation to WGIII.</p> <p><i>Sep 2018 CGMSSEC: Suggest this is an action on WGIII for consideration .</i></p> <p>CGMS-45: NASA Cubesat mission Tropics underway</p> <p>CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.</p>	

CGMS-46 actions following CGMS-47 plenary

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. <i>Sep 2018 CGMSSEC: Suggests this is an action on WGI to consider coordination of orbits.</i> CGMS-44 WGII - For reference: WG III should discuss this and come up with results at CGMS-45.	
CGMS space agencies	WGII/4	R44.19	CGMS agencies to explore possibilities to derive winds from new upcoming satellites and opportunities.	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-46 actions following CGMS-47 plenary

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 activity (Pilot Project 2) over the next 12-18 months.	<p>CGMS-47: See CGMS-47-WMO-WP-10</p> <p>WGII IS#1 Dec 2018: Needs checking with the Chairperson of SCOPE-Nowcasting - who will do this in WGII?</p> <p>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.</p> <p>CGMS-45: Funds earmarked by EUMETSAT for 2018</p> <p>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.</p>
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	<p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p>
CMA	WGII/7	R44.22	CMA to make available data from FY-3D HIRAS and FY-4A GIIRS early in commissioning	<p>CGMS-47: CLOSED</p> <p>WGII IS#1 Dec 2018: CMA did not attend discussion.</p> <p><i>Sep 2018 CGMSSEC: Suggests this is an action on CMA for consideration.</i></p>
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.	<p>CLOSED/COMPLETED</p> <p>CGMS-45: Last week of June 2017, Madison WI, USA</p>

<p>CGMS space agencies</p>	<p>WGII/7</p>	<p>R44.24</p>	<p>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</p>	<p>CGMS-47: Closed. Link to ATBDs recommendation.</p> <p>WGII IS#2 2019: could be a best practice guideline e.g. for inclusion into SATURN (e.g. as landing pages).</p> <p>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.</p> <p><i>Sep 2018 CGMSSEC: WGII to rephrase and create an action to this purpose, or close this recommendation. Are there being WGII best practices developed?</i></p> <p><i>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.</i></p> <p>CGMS-45: NOAA-WP-13</p> <p>CGMS-44 WGII: Part of WGII action to develop best practices</p>	
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CGMS-46 actions following CGMS-47 plenary

CGMS space agencies	WGII/7	R44.25	For monitoring the Polar Regions, the Group stressed the importance of the deployment of HEO missions	<p>CGMS-47: NOAA considering in its system studies and talking with potential partners.</p> <p>WGII IS#1 Dec 2018: Meeting on 5 Dec 2018 at EUMETSAT to discuss HEO missions.</p> <p><i>Sep 2018 CGMSSEC: This recommendation needs rephrasing/formulation, closing or other.</i></p> <p>Link to WGIII required</p>	
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.	<p>CGMS-47: Maintain</p> <p>WGII IS#1 Dec 2018: KMA (Dohyeong Kim) to check with GSICS.</p> <p>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.</p> <p>CGMS-45: GSICS discussed this issue</p>	

CGMS-46 actions following CGMS-47 plenary

CGMS space agencies	WGII/8	R44.27	Long-term continuity of absolute solar spectral irradiance measurement with SI-traceable accuracy should be ensured.	<p>CGMS-47: Closed</p> <p>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.</p> <p>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).</p> <p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p>	
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	<p>CGMS-47: Recommended to be transferred to WG I.</p> <p>WGII IS#1 Dec 2018: To be maintained</p> <p>(See also CGMS-44 WGI action A44.08 related to IROWG)</p>	

CGMS-46 actions following CGMS-47 plenary

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.	<p>WGII IS#1 Dec 2018: Considered COMPLETED. Potential gaps in low-frequency microwave data. Addressed by other actions already.</p> <p><i>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.</i></p> <p>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.</p>	
CGMS members	WGII/3	R43.02	CGMS members to consider removing spectral gaps from future hyperspectral sounders to support GSICS intercalibration of IR imagers.	<p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p> <p>To be discussed at second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)</p>	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.	<p>WGII IS#2 15 Mar 2018: Maintain it as a recommendation.</p> <p>To be discussed at a second WGII inter-sessional meeting after CGMS-44. (For WG III to consider)</p>	

<p>CGMS space agencies</p>	<p>WGII/10</p>	<p>R43.07</p>	<p>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.</p>	<p>CGMS-47: Closed in WG II</p> <p>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.</p> <p>WG II IS#2 2019: Mails have been sent to WGIV co-chairs/rapporteur to transfer this recommendation to WG IV.</p> <p>WGII IS#1 Dec 2018: WGII proposes to transfer this to WGIV</p> <p>WGII IS#2 15 Mar 2018: -</p> <p>Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMRDPS system expected in June 2018.</p> <p>CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).</p>	
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ISRO	WGII/5	R43.10	<p>ISRO is encouraged to implementing a multi-sensor precipitation estimate based on SAPHIR and INSAT-3D</p>	<p>CGMS-47: ISRO has carried out following activities:</p> <ul style="list-style-type: none"> (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. <p>INSAT-3D/3DR based Hydro-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.</p> <p>WGII IS#2 15 Mar 2018: ISRO/IMD invited to report on this at CGMS-46.</p> <p>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.</p> <p>CGMS-45: ISRO/IMD have plans</p>	
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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.	<p>COMPLETED</p> <p>WGII IS#1 Dec 2018: (Beidou and GLONASS ICD received).</p> <p>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</p> <p>CGMS-45: IROWG discussed this and made recommendations</p>	
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There are several projects being conducted by satellite operating agencies and GSICS member institutions to acquire high-accuracy lunar measurements, eventually to redevelop the lunar calibration reference.

*** LUSI (NIST)**

The LUNar Spectral Irradiance (LUSI) project is ongoing by the U.S. National Institute of Standards and Technology (NIST). LUSI will acquire a long-term set of ground-based Moon observations from Mauna Loa Observatory (MLO) in Hawaii, USA (3402 m altitude). The LUSI instrument makes spectral measurements of the spatially integrated irradiance directly, with no spatial post-processing. Expected uncertainty is less than 1% absolute. The instrument calibration is traceable to NIST primary standards. Currently the instrument is being characterised and calibrated at NIST, and the MLO site is reserved and being prepared 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 NASA ER-2 high-altitude aircraft under a project sponsored by the NASA Earth Science Technology Office. The air-LUSI project is led by Kevin Turpie of the University of Maryland Baltimore County, in collaboration with the NIST LUSI team, the USGS lunar calibration project, and a robotics team from the University of Guelph, Canada. The experiment had a successful engineering flight in August 2018, reaching 21.3 km altitude; the lunar data currently are being processed. Science acquisition flights are scheduled for September 2019.

*** Lunar measurement campaign (CMA)**

The China Meteorological Administration is continuing efforts to acquire measurements of the Moon using multiple different types of instruments, including imaging spectrometers, a hyperspectral lunar photometer, and a shortwave infrared Fourier Transform Spectrometer. Atmospheric characterisation instruments are operated alongside the lunar instruments. The CMA ground-based campaign has resumed at Lijiang (3193 m altitude), and another campaign is planned for Daocheng, Sichuan province.

*** CLARREO Pathfinder (NASA)**

The Climate Absolute Radiance and Refractivity Observatory Pathfinder mission (CLARREO Pathfinder, CPF) will acquire views of the Moon with its Reflected Solar (RS) sensor as a demonstration of inter-calibration and measurement technologies. Science planning for lunar observations by CPF RS specifies capturing a wide range of phase angles when the Moon is observable from the instrument's location on the International Space Station. Presuming the lunar observations meet the absolute calibration goals for the RS sensor, the CPF Moon observations represent a potential to collect a substantial set of high accuracy lunar irradiance measurements. CLARREO Pathfinder is scheduled for launch to the International Space Station in early 2023.

*** ARCSTONE (NASA)**

The ARCSTONE project will acquire lunar spectral measurements from a 6U cubesat platform, covering the wavelength range from 350 to 2500 nm. The instrument design allows observing the Sun and Moon through the same optical path with no interchange of components, thus giving a direct measure of lunar disk reflectance. Tying these measurements to the solar spectral irradiance, such as from the Total and Spectral Solar Irradiance Sensor (TSIS), can provide SI-traceable lunar spectral irradiance with potential sub-percent accuracy. The ARCSTONE project is funded by the NASA Earth Science Technology Office, and has a potential flight demonstration in the 2024 time frame.

WGIII actions open from previous plenary sessions (at CGMS-46)							
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref
WMO	WGIII/	A44.02	WMO Secretariat to present the draft Vision at CEOS, GEO plenary sessions 2016.	<p>CLOSED on the occasion of WGIII IS #2 6 Feb 2019</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>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.</p> <p>CGMS-45: Status presented, CGMS agencies invited to provide comments (including on carbon observations). Deferred to next cycle.</p>	Oct/Nov (End 2016, CGMS-46)	CLOSED	1.1

CGMS-46 actions following CGMS-47 plenary

SETT	WGIII/8	A45.04	Propose a way forward for guiding and coordinating socio-economic benefit studies among the CGMS community.	<p><i>Provided in CGMS-47-CGMS-WP-20</i></p> <p>WGIII IS#2 6 Feb 2019: NOAA will hold a workshop in spring time. Will provide update at CGMS-47.</p> <p>24 Oct 2018 WGIII IS: SETT updates expected early/spring 2019</p> <p>CGMS-46: Remains open following WGIII discussions. See CGMS-46-NOAA-WP-15</p> <p>WGIII IS#3 10 Apr 2018: Apr/May meeting at which stage more information will follow.</p> <p>SETT seeking to identify new case studies. WMO recommends looking at risk analysis and SETT could look at potential consequences thereof.</p>	CGMS-47 (CGMS-46)	CLOSED	
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CGMS-46 actions following CGMS-47 plenary

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	<p><i>Superseded by CGMS-47-WMO-WP-03a/3b and new, related actions.</i></p> <p>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.</p> <p>24 Oct 2018 WGIII IS: EUMETSAT will address this topic in the coming weeks.</p> <p>CGMS-46: Remains open following WGIII discussions.</p> <p>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.</p> <p>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</p>	CGMS-47 (CGMS-46)	CLOSED	
WMO	WGIII/4.1	A46.01	7th WMO Impact Workshop to include EM orbit impact among its science questions	<p>CLOSED on the occasion of WGIII IS #2 6 Feb 2019. WMO received adequate input for 7th WMO Impact Workshop (Iriishojgaard@wmo.int is part of the science committee).</p>	CGMS-47	CLOSED	1.3

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	<p><i>CGMS-47: Adressed within the scope of the initial CGMS baseline and risk assessment performed in spring 2019. For further review in 2020 ?</i></p> <p>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.</p> <p>WGIII IS #2 6 Feb 2019: No update. Topic to be discussed at the Risk Assessment Workshop Feb/Mar 2019.</p> <p>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?</p>	CGMS-48 (CGMS-47)	OPEN	1.2
CGMS members	WGIII/7.3 (plen C.2)	A46.03	<p>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</p>	<p><i>CGMS-47: Superseded by CGMS-47-WMO-WP-03b and part of the WGIII general framework</i></p> <p>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.</p> <p>24 Oct 2018 WGIII IS: Webex to be held on 25 Oct 2018</p> <p>Sep 2018: See also WGII action A45.06</p> <p><i>(Moved from plenary 7 Aug)</i></p>	25 Sep 2018	CLOSED	1.1

CGMSSEC, WMO	WGIII/7.3 (plen C.2)	A46.04	<p>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.</p>	<p>CLOSED <i>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</i></p> <p>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.</p> <p>24 Oct 2018 WGIII IS: CGMSSEC/EUM to discuss with WMO what support it might be able to provide and report back.</p> <p><i>(Moved from plenary 7 Aug)</i></p>	end 2018	CLOSED	1.1
WMO	WGIII/9	A46.05	<p>WMO to review the Vision for WIGOS 2040 to be more precise regarding the GSPRO measurements to be provided by Tier 1</p>	<p>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.</p> <p><i>(Added following review of the draft report)</i></p>	end 2018	CLOSED	

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	CLOSED <i>CGMS risk assessment workshop held on 27 Feb-1 Mar 2019. WS conclusions are available from WGIII.</i> WGIII IS #2 6 Feb 2019 WMO to provide the revised version of the Vision 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. <i>(Added following review of the draft report)</i>	Q1 2019	CLOSED	
CGMS-46 WGIII recommendations (including recommendations from previous plenaries)							
Lead	AGN item	Rec #	Description	Recommendation feedback/completion document	HLPP ref		
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-47 WGIII: Recommendation to be passed to EUMETSAT			
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.	CLOSED following discussions in WGIII and superseded by CGMS-47-WMO-WP-03a & b and 17a & b	1.1		
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-47 WG discussion - WMO to provide feedback. Sep 2018 CGMSSEC: Suggest this is converted to an action on WMO for consideration.			
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	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			

CGMS-46 actions following CGMS-47 plenary

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.	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.	
CGMS members	WGIII/2.2	R43.01	CGMS members are encouraged to consider including RO capabilities on all future polar-orbiting satellites.	CLOSED following WGIII discussions and superseded by CGMS-47-CGMS-WP-13WGIIIa Under discussion. Discussed at CGMS-44, 45 and 46.	1.1.4

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

Open WGIV actions from CGMS-45 or earlier following CGMS-46 discussions							
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.	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

NOAA	(WGI/4) WGIV/7	A43.03	NOAA to consider including GLM products in the HRIT stream	<p>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.</p> <p>5 Dec 2018: NOAA evaluation still ongoing.</p> <p>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.</p> <p>CGMS-45: NOAA evaluation still ongoing.</p> <p>WG-IV WEBEX 18 Jan 2017 and communication: NOAA is considering putting GLM on HRIT/EMWIN. At this</p>	(CGMS-44/45/46) New deadline CGMS-47	CLOSED	
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CGMS-46 actions following CGMS-47 plenary

TFMI	(WGI/6) WGIV/10. 1	A43.05	CGMS Task Force on Metadata Implementation to review the metadata for existing DBNET products	<p>at CGMS-47: closed by CGMS-47-CGMS-WP-07</p> <p>12 Nov 2018: CGMSSEC slightly rephrasing the action. Expected to be completed by March 2019 and report to CGMS-47.</p> <p>5 Nov 2018: TFMI webex</p> <p>No progress due to lack of resources by TFMI key members, will be addressed with TFMI in inter-sessional meetings.</p>	(CGMS-44/45/46) New deadline CGMS-47	CLOSED	3.9.1
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CGMS-46 actions following CGMS-47 plenary

<p>CGMS Secretariat WMO, satellite operators, WMO</p>	<p>WGIV (WGII)</p>	<p>A44.05</p>	<p>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.</p>	<p>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 .</p> <p>and CC Matt Buttler and Simon Elliott</p> <p>12 Nov 2018: Pending outcome of the GODEX-NWP meeting.</p> <p>At CGMS-46: No further input, feedback from GODEX-NWP required.</p> <p>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.</p> <p>WG-IV WEBEX 18 Jan 2017: WMO: GODEX-NWP scheduled May 2017, needs will be addressed there, WMO will provide feedback.</p>	<p>(CGMS-45/46/47) New deadline CGMS-48</p>	<p>OPEN</p>	<p>3.12</p>
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CGMS-46 actions following CGMS-47 plenary

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.	<p>at CGMS-47: closed by CGMS-47-joint-JMA-KMA-WP-02.</p> <p>5 Dec 2018: user survey was issued 4 Dec 18 to all members of RA II/V</p> <p>CGS-46-Joint-JMA/KMA-WP-02 user survey planned in 2018.</p> <p>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.</p>	(CGMS-46) New deadline CGMS-47	CLOSED	
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.	<p>at CGMS-47: included in work plan of TFMI</p> <p>Oct 2018: A WIGOS metadata assessment provision to IPET WIGOS by March 2019 is feasible.</p> <p>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)</p> <p>CGMS-46: No progress due to lack of resources by TFMI key members, will be addressed with TFMI in inter-sessional meetings.</p>	(CGMS-46) New deadline CGMS-47	OPEN	3.9.1

CGMS-46 actions following CGMS-47 plenary

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.	<p>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)</p> <p>Nov 2018: A survey is ongoing by TFMI to be concluded by end 2018 for the establishment of a best practice.</p> <p>CGMS-46-NICT-WP-02 see also CGMS-46 WGIV/12.1</p>	(CGMS-46) New deadline CGMS-48	OPEN	3.10
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.	<p>at CGMS-47: Superseded by on-going Space Weather data provider survey (SWCG/A47.05)</p> <p>Nov 2018: EUMETSAT - N/A.</p> <p>CGMS-46: CGMS-46-NICT-WP-02 see also CGMS-46 WGIV/12.1</p>	(CGMS-46) New deadline CGMS-47	CLOSED	3.11

CGMS-46 actions following CGMS-47 plenary

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.	<p>Put on hold until requirements are clarified (see new action A46.02)</p> <p>29 May 2018: NOAA provides this data at the requested latency.</p> <p>14 Mar 2018: IPWG recognises it is not feasible having all channel data from the new era of GEO satellites, however:</p> <p>a) At a minimum, sustained 30-min refresh full disk longwave IR (10 to 15-min desired), near realtime access;</p> <p>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</p> <p>c) Finally, visible channel data desired</p> <p>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]</p> <p>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.</p> <p>The following clarification was formulated and CGMSSEC is asked to pass this on to the IPWG:</p>	CGMS-47	OPEN	
CGMS-46 WGIV actions							
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref
NOAA	WGIV/3.2	A46.01	NOAA to appoint a new PoC on SATURN for GOES	Matthew.butler@noaa.gov	Dec 2018	CLOSED	3.2.2
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	

CGMS-46 actions following CGMS-47 plenary

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 Report]	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	
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.	at CGMS-47: System is under construction.	(CGMS-47) Dec 2019	OPEN	

CGMS-46 actions following CGMS-47 plenary

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.	<p>at CGMS-47:</p> <p>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.</p> <p>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.</p> <p>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</p>	CGMS-47	OPEN	
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)	at CGMS-47: Superseded by on-going Space Weather data provider survey (SWCG/A47.05)	CGMS-47	CLOSED	3.10

CGMS-46 actions following CGMS-47 plenary

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.	at CGMS-47: action refined	CGMS-48	OPEN	3.2.1
CGMS-46 WGIV Recommendations							
Lead	AGN item	Rec #	Description	Recommendation feedback/completion document	HLPP ref		
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.	at CGMS-47: closed 5 Dec 2018 IS-2: To be closed at CGMS-47			

CGMS-46 actions following CGMS-47 plenary

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	<p>at CGMS-47: closed</p> <p>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.</p> <p><i>Sep 2018 CGMSSEC: Remove/close, or replace with an action on members to report on their implementation of BPs at CGMS-47.</i></p> <p>CGMS-45, -46: Recommendation still valid - retained.</p> <p>Closed for NOAA.</p>	2.4.4
CGMS members	WGIV/3.2	R44.02	CGMS members to continue the provision of up-to-date User Readiness information in the SATURN portal	<p>at CGMS-47: consider conversion into best practise during inter-sessional meeting</p> <p>5 Dec 2018 IS-2: To be closed at CGMS-47</p> <p>CGMS-45, -46: Recommendation still valid - retained.</p>	3.2.2

CGMS-46 actions following CGMS-47 plenary

<p>CGMS space agencies</p>	<p>WGIV/7</p>	<p>R42.01</p>	<p>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</p>	<p>at CGMS-47: consider conversion into best practise during inter-sessional meeting</p> <p>5 Dec 2018 IS-2: Agreed standard, wait for report from TFMI, then if needed start placing specific actions.</p> <p>Nov 2018: Guidance is available. Recommendation proposed to be rephrased.</p> <p>CGMS-45, -46: Recommendation still valid - retained.</p> <p>IMD: To be conveyed in due course [Nov 2017]</p> <p>NOAA: Related to metadata, the best reference is NGDC metadata provided here the URL: http://www.ngdc.noaa.gov/metadata/</p> <p>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.</p> <p>CGMS-44-EUMETSAT-WP-17</p>	<p>3.7</p>
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<p>CGMS space agencies</p>	<p>WGII/10</p>	<p>R43.07</p>	<p>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.</p>	<p>at CGMS-47: consider conversion into best practise during inter-sessional meeting</p> <p>15 Mar 2019: Recommendation transferred from WGII to WGIV</p> <p>WG II IS#2 March 2019: Mails have been sent to WGIV co-chairs/rapporteur to transfer this recommendation to WG IV.</p> <p>WGII IS#1 Dec 2018: WGII proposes to transfer this to WGIV</p> <p>WGII IS#2 15 Mar 2018: -</p> <p>Nov 2017: Satellite Level1 data availability of last three months will be implemented after installation and commissioning of MMDRPS system expected in June 2018.</p> <p>CGMS-44 IMD: At present there are no such plans (until a new data centre is installed).</p>	
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CGMS-46 actions following CGMS-47 plenary

SWCG actions open from previous plenary sessions (at CGMS-46)							
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref
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.	<p>17 Oct 2018 IS#1: Agreement has been reached to use GSICS as a framework.</p> <p>Discussed at CGMS-46. Ongoing.</p> <p>1 Dec 2017, discussed during CGMS topical discussion at European Space Weather Week; awaiting submittal of space weather intercalibration product – energetic electrons</p> <p>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.</p> <p>14 Sep 2017, GSICS materials discussed during IS.</p>	CGMS-47 (30 Dec 2017)	CLOSED	6.2.2
CGMS-46 SWCG actions							
Actionee	AGN item	Action #	Description	Action feedback/closing document	Deadline	Status	HLPP ref

SWCG	SWTT/7	A46.01	<p>CGMS SWTT to review the contents related to space weather stored in OSCAR/Space database and provide any updates to tkurino@wmo.int</p>	<p><i>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.</i></p> <p>24 Apr 2019 IS#3: CGMS-47-WMO-WP-21SWCG (Toshi Kurino) will contain an assessment</p> <p>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.</p> <p>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.</p>	CGMS-47	CLOSED	
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CGMS-46 actions following CGMS-47 plenary

SWCG, WMO	SWTT/9	A46.02	Clarify what information needs to be provided in each field of the space weather anomaly form	<p><i>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.</i></p> <p>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</p> <p>17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed / Andrew before end October 2018</p>	Feb 2019	CLOSED	2.4.1
CGMS Members	SWTT/9	A46.03	Expand on space weather template inputs to include full investigations when available and when possible.	<p><i>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.</i></p> <p>7 Feb 2019 IS#2: See A46.02</p> <p>17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed/Andrew before end October 2018</p>	CGMS-47	CLOSED	2.4.1

CGMS-46 actions following CGMS-47 plenary

SWCG	SWTT/11	A46.05	Survey CGMS Members to identify cross-member use of space weather data	<p><i>CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group.</i></p> <p>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</p> <p>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.</p> <p>17 Oct 2018 IS#1: discussion of A46.05, A46.06, A46.10: Ken Holmlund to check info already gathered by EUMETSAT can be shared – Action due 31 October. Draft Templates Action due 8 November (Elsayed/Andrew)</p>	Dec 2018	CLOSED	2.4.1
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)	<p><i>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.</i></p> <p>7 Feb 2019 IS#2: See A46.05</p> <p>17 Oct 2018 IS#1: discussion of A46.05, A46.06, A46.10 on WG-IV (see above)</p>	CGMS-47	CLOSED	3.10

CGMS-46 actions following CGMS-47 plenary

SWCG, WGI	SWTT/9	A46.07	Develop strategies to increase reporting into the space weather anomaly database through intersessional meetings with WGI	<p><i>CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group.</i></p> <p>7 Feb 2019 IS#2: See A46.02</p> <p>17 Oct 2018 IS#1: Overall discussion of Anomaly Forms planned between Elsayed/Andrew before end October 2018</p>	CGMS-47	CLOSED	2.4.1
SWCG (from WGI)	SWTT/9	A46.08	Provide use case(s) from space weather anomaly analyses and any recommendations to operators arising	<p><i>CGMS-47: Closed in favour of new survey-related actions with follow-up by the proposed Space weather User Task Group.</i></p> <p>7 Feb 2019 IS#2: See A46.02</p> <p>17 Oct 2018 IS#1: Inputs from members on use cases to be sent by 16th November. Overall discussion of Anomaly Forms planned between Elsayed/Andrew before end October 2018</p>	CGMS-47	CLOSED	2.4.1

CGMS-46 actions following CGMS-47 plenary

CGMS Members	SWTT/11	A46.09	CGMS Members to nominate representatives to participate in a task group on space weather calibration	<p>CGMS-47: ROSHYDROMET participation confirmed: Contact points are Dr. Konstantin Ts. Litovchenko and Dr. Kirill Kholodkov (TBC)</p> <p>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</p> <p>24 Apr 2019 IS#3: Jianguang Guo (CMA)and Dohyeong Kim (KMA) confirmed as members. Nagatsuma san contacting Alexander Karelin (ROSCOSMOS)</p> <p>Task group on inter-calibration of high energy particle sensor, CGMS-47-SWCG-WP-02 – Nagatsuma-san is providing an input</p> <p>7 Feb 2019 IS#2: CMA:</p>	Oct 2018	CLOSED	
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CGMS-46 SWTT/SWCG Recommendations					
Lead	AGN item	Rec #	Description	Recommendation feedback/closing document	HLPP ref
CGMS	SWTT/3	R46.01	CGMS-46 Plenary to endorse Space Weather Coordination Group terms of reference	COMPLETED. Endorsed by CGMS-46 plenary on 7 June 2018.	