# CGMS future direction 2022+ overview of activities

**Presented to CGMS-52 WG-I, -II, -III, -IV and SWCG sessions, agenda item 1**

Coordination Group for Meteorological Satellites

CGMS

## Socio Economic Benefits

**Demonstrate the Socio-Economic Benefits of satellite observations for the approval of national budgets for satellite systems and for maintaining political support for the global observing system effort.**

**Short and Medium Term**

- Collect and make available to CGMS members, SEB case studies of relevant satellite systems for the purpose of identifying common practices.
- To explore with WMO the possibility to develop a study on the SEB value of the space-based observing system responding to WIGOS 2040 in cooperation with CGMS
- Create a dedicated area on the CGMS website on SEBs

**Champion**

- JMA / Yasuhiko Sumida

**To be addressed in WGIII, 26 April.**

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## Hybrid Space Observations Architectures

**Identify and optimize the contributions of CGMS satellites to hybrid systems**

**Short and Medium Term**

- Taking passive µwave sensing as an initial case, demonstrate the impact of CGMS contributions, as part of the integrated system, explicitly considering data buy.
- Address such aspects as orbit coordination and harmonized data access to ensure the different components of the hybrid space infrastructures provide a seamless operational service to the users.
- Conduct a critical review of WIGOS 2040 with respect to hybrid systems

**Champion**

- EUMETSAT / Simon Elliott [WGIV]

**To be addressed in cross-cutting session 24 April 13:30.**

## Relationship to Private Sector

**Harness/leverage the opportunities of a rapidly growing commercial space sector while maintaining operational standards and open data sharing**

**Short and Medium Term**

- Identify/evaluate potential or future commercial EO technologies – and share info on pilots/testbeds/etc. to evaluate new commercial EO technologies.
- Assess the operational maturity of commercial observation technology.
- Develop best practices for End User License Agreements/Procurements (draft document circulated on 14 April for CGMS review and for endorsement by CGMS-52 plenary)

**Champion**

- NOAA / Mara Browne

**To be addressed in cross-cutting session 24 April 13:30**

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## Research to Operations

**Continue high-value observations demonstrated with research satellites in a sustainable way and maximize research benefits from operational satellites.**

**Short and Medium Term**

- Collect the experience of each agency by carrying out a Research-to-Operations method survey with each agency including identification of research missions with a potential transfer to operations;
- Propose a consistent CGMS Research-to-Operations baseline process that includes flexibility and adaptability and facilitates the participation of R&D agencies;
- Encourage both CGMS agencies and R&D operations to incorporate the Research to Operations baseline process in the planning stage of the new satellite system and to report on their experiences with the application of the process.

**Champion(s)**

- NASA / Will McCarty
- NOAA / Laurie Rokke and Jordan Gerth
- NOAA support / Matt Zandbergen

**To be addressed in cross-cutting session 23 April 13:30**

**Lead: WGIV, support WGII**

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## Space Situational Awareness

**Contribute to the sustainable use of outer space, to the efforts to mitigate existing space debris and to reduce production of new debris to a sustainable level.**

**Short and Medium Term**

- Review of CGMS Member Agencies' satellite operations for collision avoidance and re-entry, and establish best practises to support improvement
- Establish space weather observation requirements for improved STC services and space sustainability
- Establish CGMS best practises for long term space sustainability, considering a "Zero Debris Policy"

**Champion**

- ESA / Juha-Pekka Luntama

**To be addressed in WGI (Task Group on Space Environment Sustainability) April 22**

## Future Information Technologies

**Maximize benefits to CGMS of emerging Information technologies, in particular AI/ML, Internet of Things and Cloud Technology**

**Short and Medium Term**

- Assess the Internet-Of-Things technology for inter- and intra-connections between satellite and ground network.
- Explore improvements to LEO satellite systems low latency data access from both a global and regional perspective.
- Identify the actual and potential cloud and AI/ML technologies for applying to the data management infrastructure, and develop best practices
- Prepare demonstration to collaborate with private sector regarding satellite data distribution

**Champions**

- IOT: EUMETSAT /Antoine Jeanjean
- Cloud: TBD
- AI/ML: CMA / Dr XU Na

**To be addressed in:**

- **IOT: WGI, 22 April (Task Group on Low Latency Data Access)**
- **Cloud: WGIV, 23 April**
- **AI/ML: Cross cutting session 23 April 13:30**

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## Further CGMS 2022+ strategic themes (agreed at CGMS-51 plenary)

### Climate and Earth System monitoring

**Lead for establishing position paper: WMO / Albert Fischer**

**Status: open**

### Support to Developing Countries

**Lead for position paper: CMA / Xian DI**

**Status: open** To be discussed in WGIV. A survey for developing countries is being considered.

**Lead: WGIV**

## To be considered by CGMS:

- Members are requested to participate in relevant discussions during the week of the CGMS-52 WGs, including the cross-cutting sessions for all WGs on 23 and 24 April.
- Members to nominate candidates for leading the sub-theme on Cloud Technologies.