

CGMS FUTURE DIRECTION 2022+

POSITION PAPER THEME: RELATIONSHIP WITH THE PRIVATE SECTOR

Lead: NOAA

TOPIC DESCRIPTION AND RATIONALE FOR CGMS ENGAGEMENT

How can CGMS harness/leverage the opportunities of a rapidly growing commercial space sector while maintaining standards for operational quality/timeliness/continuity/etc, transparency and open data sharing principals that have underpinned the growing global weather and climate enterprise?

Challenges/Opportunities for CGMS

- The observational needs of some stakeholders/communities supported by CGMS observations (weather, water, climate, oceans and more) increasingly require more diverse data types, at enhanced temporal and spatial scale – while other users may value stability of observation types/data over innovation
- Research community and commercial entities can innovate more quickly than most CGMS agencies who value (understandably and appropriately) continuity
- Exponential growth in commercial space sector including a dizzying pace of innovation provides opportunities for access to new data faster than ever before, and can create policy tensions when the funders of CGMS agencies see the private sector as more cost effective/an opportunity to support economic growth (this paradox can be both real – they may be cheaper and faster and just as good as well as perceived – cost per observation is cheaper but not the same quality or there are valid concerns about continuity of observational record, transparency, etc.)
- No clear mechanism for consistent and continued dialogue between private sector and CGMS
- What level of data does CGMS believe is a ‘inherently governmental’ responsibility and what data can be provided by the private sector – how much risk are we willing to assume? In what areas (quality, quantity, transparency, sharing, continuity)

To further refine this description/rationale, recommend we begin by developing:

- A shared understanding of the range of Member agencies’ view and practices relating to operational use of commercial EO, that can inform the development of the most appropriate private sector engagement mechanism(s) for CGMS.
- Definitions of the common terms in commercial Earth observation enterprise to facilitate consistent communication/dialogue across Members, stakeholders (e.g. WMO) and industry (could also be used to enhance consistency in the future across Member procurement calls)
- Cross-walk what’s listed here with other themes (e.g. cloud, AI/ML, etc.) as the private sector is not uniquely new space actors selling data (also consider a model that facilitates relationships with other potential future private sector providers -perhaps on-orbit servicing, etc.)

Commented [AT1]: NASA input:

The draft seems to focus specifically on “operational data buys.” Unclear if there should be a similar focus on “research data buys” or whether the CGMS focus makes sense to limit consideration to operational data buys. Note that there may be areas of overlap – e.g., for retrospective research to look at the full impact of available data. And as there’s more interest in moving from a “strictly weather” perspective to a more integrated “Earth System perspective” one may have to look a little bit more broadly, although the basic interaction principles don’t seem that likely to change. Data purchases for research may come with different licensing arrangements than those purchased for operations, so it’s good to have some thought about that (and the resulting implications). Especially when the goal is integration of commercial data into long-term data sets (e.g., documentation of climate change) having detailed information about instrument calibration may be critical, and being sure that relevant data purchases include the relevant information will be important.

Commented [AT2]: Paul Counet 15 Feb:

Somewhere in this section we might have to explain that CGMS members are operationally using these data, which put very specific requirements on the expected data services. CGMS engagement with the private sector shall be developed with this in mind.

Commented [AT3]: Paul Counet 15 Feb:

We need also to assess the scientific quality of the data and the capacity from industry to deliver a reliable operational service on long-term periods. Exchanging best practices among CGMS agencies on how to do this is important.

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LONG- AND MEDIUM-TERM GOALS FOR CGMS:

Transparency/Shared Evaluation of Emerging Technologies

- Identify/Evaluate potential or future commercial EO technologies that may be available to Members to supplement government observations (perhaps WGII?)
- Share info among Members on pilots/testbeds/etc. to evaluate new commercial EO technologies
- Can we agree on some shared criteria/standards (by observation or overall) for determining when/if a commercial observation technology is mature enough to be operationally ingested/purchased?
- Mechanism(s) to engage commercial industry (including but not limited to opportunities to share current data availability and future plans)

Best Practices for Operational Data Buys

- Develop best practices/templates for End User License Agreements/Procurements (RFIs/RFPs, etc.) that address/consider the following (Plus what else?) in balance with national regulatory requirements, frameworks, procurement policy/law with:
 - intergovernmental and international data sharing agreements (e.g. WMO & GEO)
 - Creative approaches to data sharing that do not substantially increase cost to the buying Member while meeting the needs of other CGMS Members and stakeholders (WMO, CEOS, SpWx agencies, academic partners) while minimizing the impact to the data provider
 - standard open data licenses for Member consideration when letting contracts, such as:
 - [Creative Commons Zero 1.0 Universal Public Domain Dedication](#) (CC0 1.0)),
 - [Creative Commons Attribution 4.0 International](#) (CC BY 4.0)), or
 - [Creative Commons Attribution-Noncommercial 2.0 Generic](#) (CC BY-NC 2.0)
 - language to allow data sharing with other Members (and key stakeholders, e.g. WMO Members) for data characterization and evaluation purposes.

Commented [AT4]: Paul Counet 15 Feb: Somewhere we need to insert how CGMS members will interact with the private sector, with the objective to comply with the new WMO Res.1, i.e. to continue to promote global and free exchange of data, ie a discussion on data policy in interacting with the private sector.

Tracking

- Include list of Members' commercially-purchased data among CGMS Docs (perhaps in baseline/risk assessment - under what conditions/criteria do they get included – or do they go in an amendment)

Measuring Impact

- Develop best practices/guidance for considering the value of public access and the additional costs of data sharing rights when comparing the cost to produce the data internally as compared to purchasing the data.
- Consider the feasibility of current programs that enable grantees access to cloud computing as a model that could be translated to the purchasing of Earth observation and geospatial data.

IMPACT ON CGMS ACTIVITIES

- Need to balance potential benefits of commercial data buys (lower cost? Faster deployment of new technologies, etc) with need to meet high user standards for operational data and manage risks associated with using/relying on newer/less proven space actors

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- How do commercial data buys impact our risk assessment?
- Need to identify a mechanism(s) for more systematically engaging commercial actors as a community?
- Preparing user communities for commercial data (faster pace than gov-developed satellites)

IMPLICATIONS ON CGMS STRUCTURE AND KEY DOCUMENTS

- Update/include in HLPP as appropriate
- Identify mechanism(s) for interfacing with private sector (mechanism must not violate any Members acquisition/procurement processes)
- Consider/update how to evaluate/include commercially-procured data in the CGMS Risk Assessment and the CGMS Baseline (WGIII)
- Development/Publication of best practices documents (described above)

IMPACT ON EXTERNAL INTERFACES

- WMO– especially as relates to regulatory materials to implement Res 1 + Geneva Declaration (Public-Private Partnerships) + IOC (ocean-related/relevant data)
- CGMS efforts could inform/be coordinated with CEOS and GEO + relevant Space Weather institutions
- (Note: Head of OECD Space may be interested in helping understand/evaluate economic trade-offs for space economy)

Commented [AT5]: Paul Counet 15 Feb: We might note that CEOS has just started a similar activity and that CGMS will need to be coordinated with that activity.

LIST OF REFERENCE DOCS (Last updated 1/2/23)

- [GEO Commercial Engagement: Rules of Procedure & Associates Form](#)
- [WMO Geneva Declaration](#)
- [WMO Resolution 1](#)
- [NOAA Commercial Space Policy](#)
- [NOAA/NESDIS Commercial Space Activity Assessment Process](#)
- [World Bank Report Charting a Course for Sustainable Hydrological and Meteorological Networks](#)
- [\(report\) USG Commercial Data Purchases: Perspectives from the EO Enterprise](#)
- [\(report\) Big Data Use in Wildfire Management: How not to get burned by the legal challenges of data sharing](#) (USGEO Tabletop Exercise)
- [ISRO: Commitment towards a reformed space sector: Opening up of Space Sector on the Path to Atmanirbhar Bharat](#)