**Minutes V1.0**

**265th CEOS SECRETARIAT MEETING**

Thursday 14 May 2020

Chaired by ISRO

**Participants**

**CEO:** Kerry Sawyer

**ESA:** –

**EUMETSAT:** Paul Counet, Robert Husband

**GEO SEC:** Doug Cripe

**ISRO:** Raj Kumar (Chair), Nitant Dube, Matthew Steventon

**JAXA:** Osamu Ochiai, Yukio Haruyama, Koji Akiyama

**NASA:** Sandra Cauffman, Christine Bognar, Paula Bontempi

**NOAA:** Chuck Wooldridge, Albert DeGarmo

**OST-VC:** Annick Sylvestre-Baron, Remko Scharroo

**SIT Chair Team:** Alex Held, Adam Lewis, Jonathon Ross, Flora Kerblat, Stephen

Ward, Andreia Siqueira

**SEO:** Brian Killough

**VAST-VNSC:** Linh Phan

**WGCapD:** Nancy Searby, Lauren Childs, Christine Mataya

**WGClimate:** Jörg Schulz

**WGCV:**  Cindy Ong

**WGDisasters:** David Green, Dave Borges

**WGISS:** Robert Woodcock

1. **Welcome and Introductions, Review of Agenda, Action Review**

Raj Kumar (ISRO, CEOS Chair Team) welcomed everyone to the call.

Raj reviewed the outstanding action **264-02** (*CEOS Chair to communicate to the broader CEOS community the proposal regarding the establishment of a mechanism through which CEOS Agencies can pool resources to help fund the CEO position, and to consider having an executive officer who could be a CEOS Agency representative or a qualified person who would be a contractor acceptable to CEOS*). He noted that the CEOS Chair Team communicated the CEO proposal to the whole CEOS community earlier this week. A discussion followed on the next steps:

* Kerry Sawyer (NOAA, CEOS Executive Officer) asked if there is an action for agencies to report back and confirm that the request about pooling resources is feasible for them. It is important that we identify any constraints now so the situation can be fully assessed.
* Sandra Cauffman (NASA) agreed that we need to ask agencies if they are both willing and able to pool resources in this manner. There are a couple of mechanisms available, including the GEO route presented by Brian Killough (NASA, SEO) at SEC-264.
* Sandra suggested that the situation needs to be understood by June, and that the ISRO team should send a follow up message to ask agencies to respond.
* Kerry suggested that the follow up email could include a template of questions about feasibility and constraints. A short paragraph on summarising the GEO proposal should also be shared.
* Christine Bognar (NASA) thanked ISRO for sending the initial message, which is important to bring the issue to the attention of agencies that do not participate in CEOS SEC meetings.
* Adam Lewis (GA, SIT Co-Chair) suggested that the CEOS Chair try to ease the response as much as possible, possibly by presenting a default option and seeking reactions/objections.
* Sandra added that the email needs to note the urgency and have a due date for responses.

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| **265-01** | ISRO CEOS Chair Team to send a follow up message to the CEOS community on the CEO position, seeking to confirm agencies’ positions regarding the feasibility of pooling resources and possibility of the role being filled by a qualified person who would be a contractor acceptable to CEOS. | **ASAP** |

1. **Global Tropical Cyclogenesis Prediction using Scatterometer Observations**

Raj Kumar (ISRO, CEOS Chair Team) noted that the proposal for a collaborative CEOS project with connection to the CEOS Chair Initiatives was circulated numerous times following SEC-264. No feedback has been received. A discussion followed:

* David Green (NASA, WGDisasters Chair) appreciates the opportunity to review the document. This is an area of concern and interest for both WGDisasters and NASA. David likes the suggestion but will need to explore it more to understand where WGDisasters might connect and contribute. He noted this activity is also consistent with efforts to build more CEOS-CGMS bridges.
* Chuck Wooldridge (NOAA) reported that he has checked with NOAA scientists and confirms that the proposal is of interest to NOAA as well. He asked whether the CEOS Chair Team might be able to coordinate a dedicated teleconference on this topic. Raj Kumar (ISRO, CEOS Chair Team) agreed to set up a call.

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| **265-02** | Raj Kumar to organise a time for a dedicated teleconference on the proposal for a collaborative CEOS project on global tropical cyclogenesis prediction using scatterometer observations, inviting EUMETSAT, NOAA, WGDisasters, and others as desired. | **ASAP** |

1. **Extended Invitations for CEOS SEC Meeting Participation**

Raj Kumar (ISRO, CEOS Chair Team) thanked everyone for their responses to his email on this topic. The responses were varied; however, one key point was that by inviting one agency to attend SEC will set a precedent that leads to further agencies also asking to attend. He suggested that alternatively outside agencies could be invited to specific discussions and increase their participation in relevant working teams.

Osamu Ochiai (JAXA) noted while it is within the right of the CEOS Chair to invite observers to the CEOS Secretariat teleconferences, he supports the idea to instead involve agencies in specific discussions on an as-needed basis and for the CEOS Chair to work to increase agency engagement at the working team level.

Paul Counet (EUMETSAT) supported ISRO’s approach. He does not support the idea of a blanket invitation for additional agencies to attend CEOS SEC meetings. Paul agreed with the suggestion that the minutes of the SEC meetings could be shared to increase visibility.

Adam Lewis (GA, SIT Co-Chair) noted that we should be aware that agencies may well already be involved in the relevant working teams. Their request could be an indication of their desire to make a greater contribution.

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| **265-03** | ISRO CEOS Chair Team and the CEO to write a response to USGS regarding their request to participate in the SEC meetings, noting that the CEOS Chair will:   * consider inviting agencies to engage with certain SEC discussions; * be able to share the CEOS SEC meeting minutes, if desired; and, * work with agencies to help increase engagement at the working team level. | **ASAP** |

1. **CEOS Executive Officer Report**

Kerry Sawyer (NOAA, CEOS Executive Officer) reported:

* CEOS 2020-2022 Work Plan: the expected virtual endorsement of the 2020-2022 Work Plan by May 15 will be delayed. Responses to individualised requests for updates to the descriptive paragraphs and proposed Deliverables have been slow, with just 8 of 20 responding by the May 6 due date. Kerry will begin to transfer the data collected in the master spreadsheet to the online CEOS Deliverables Tracking Tool beginning next week.
* GEO Working Groups Status: The CEOS Principal to GEO, Dr. D K Das (ISRO) sent an email to the GEO Secretariat on May 1 nominating a number of individuals to participate in the four GEO Working Groups on behalf of CEOS. Kerry thanked everyone for the nominations. We have not received any confirmation on our nominations but understand the GEO community has responded favourably to the request and there was significant interest in participating in the WGs.
* CEOS has been invited to participate in the FAO-hosted three half-day (from May 19 to 21, 2020) online consultations on *“Exploring new frontiers for terrestrial observation and monitoring”* with particular focus on revitalizing the Global Terrestrial Observation System (GTOS), Global Land Cover database (GLC-SHARE) and upgrading the Global Agro-Ecological Zoning (GAEZ). The SIT Co-Chair, Adam Lewis (GA), will be presenting on CEOS and GTOS, with focus on CEOS Land Surface Imaging Virtual Constellation, the CEOS Analysis Ready Data Strategy, land cover mapping/monitoring, and an overview of CEOS. The conference will be a Zoom Meeting, which means a number of CEOS Agencies are prohibited from participating.

1. **SIT Chair Report**

Alex Held (CSIRO, SIT Co-Chair) reported:

* 263-01:​ Adam is following up with Chuck Wooldridge and Steve Volz to finalise the draft response to IOC on the Decade of Ocean Science and will circulate it for review by CEOS SEC when ready.
* SDG-AHT: ​Welcome another agency to support CSIRO as a co-lead of the sub-team on SDG Indicator 15.3.1 (terms of reference now available to clarify responsibilities) at least until CEOS Plenary 2020. DLR has expressed interest.
* SIT-35-13: ​NOAA provided the SIT Chair Team with the questionnaires compiled during the NOAA SIT Chair term.
* The review period for the SIT-35 minutes has now closed. Any final comments are requested in the 24 hours following the close of SEC-265, after which the record will be finalised.
* Adam Lewis (GA, SIT Co-Chair) will provide a presentation on CEOS’s work, including in the land domain, to an FAO-hosted virtual meeting on GTOS and land cover, scheduled for May 19.
* The CEOS Working Teams All Hands Call #2 (with VCs, WGs, and SDG-AHT) will take place on Tuesday May 19​.
* Discussions with VC leads will take place during the weeks of June 1 and 8.

Osamu Ochiai (JAXA) was invited by the SIT Chair to report on the Agriculture, Forestry and Other Land Use (AFOLU) Roadmap initiative:

* JAXA and ESA are working to engage NASA, USGS, and UKSA in drafting an AFOLU Roadmap to accompany the GHG Roadmap. The first teleconference of the team is planned for May 20 and will cover the options to develop such a roadmap. The scope of AFOLU presents a significant challenge.

Adam Lewis (GA, SIT Co-Chair) reported some updates related to CEOS Analysis Ready Data:

* The CEOS-Industry ARD Workshop will now be held as a webinar in late June.
* Adam is updating the industry paper to reflect feedback and will circulate an update for the Working Teams All Hands Call.
* The LSI-VC-9 meeting concluded yesterday. There was good progress made on various aspects of CEOS ARD.

Alex closed the SIT Chair report by noting the following on upcoming SIT meetings:

* 2020 SIT Technical Workshop:​ virtual, during the weeks of September 7 and 14.
* SIT-36:​ week of March 22, 2021. The SIT Co-Chairs are seeking to confirm these dates early, however no decision has been made whether the meeting will be virtual or in-person, given the fluidity of the situation presently.

1. **Ocean Surface Topography Virtual Constellation (OST-VC) Report**

Remko Scharroo (EUMETSAT) reported on behalf of the OST-VC Co-Leads (himself and Annick Sylvestre-Baron of CNES):

* OST Science Team (OSTST) calls for renewal of the Team for 2021-2024 were released on February 14 for ROSES (managed by NASA/NOAA) and on May 5 for TOSCA (managed by CNES/EUMETSAT). This will ensure that there will be a strong OST Science Team to support OST-related actions through 2024.
* ESA recently initiated the Copernicus Next Generation Topography Constellation (NG-TC) Expert Team. Because of the large overlap with the activities considered for the writing of a white paper on this topic by the OST-VC, it was decided that the activities for the white paper would best be delayed until the NG-TC activities have concluded (late 2020) and the scope of the OST-VC white paper can be reassessed.
* The in-person OSTST meeting in October has been cancelled. A virtual solution will be organised.

1. **GEO SEC Report**

Doug Cripe (GEO Secretariat) reported:

* There was an overwhelming response to the call for participants in the GEO Working Groups, causing a delay in confirmations.
* Another Land Degradation Neutrality (LDN) workshop on data quality standards will be held soon. The first workshop looked at the minimum set of standards needed; this second workshop will be end-user focused, seeking reactions to the initial set of minimum standards. A decision tree is also being created to help guide users towards a number of different outcomes.
* The Integrated Global Water Cycle Observations (IGWCO) Community of Practice held a teleconference recently, which included a discussion on reviving the GEOSS Water Strategy. CEOS should be aware the IGWCO would like to go forward with the current strategy.

1. **SEO Report**

Brian Killough (NASA, SEO) reported:

* The SEO is working with WGISS (Rob Woodcock) to develop a plan for a new CEOS Earth Analytics Interoperability Lab. This new data testing and prototyping hub will use Jupyter Notebooks and the Open Data Cube. Initial plans are to support the COAST initiative and Jupyter Notebook training (a WGCapD deliverable). It will be a general CEOS resource for prototyping, advancing initiatives, trialing cloud implementations of projects, etc.
* Brian completed a review of four GEO-Google proposals for the GEO Secretariat. There were a total of 48 proposals under evaluation.
* CEOS website issues: server issues have necessitated a migration to a new cloud environment, causing various issues that needed to be resolved. The main website, Deliverables Database, and Document Management System are now working normally. The only remaining issue is with the meeting pages being either inaccessible or not editable. The SEO team is working on a solution.

1. **Working Group Reports**

**WGDisasters**

David Green (NASA, WGDisasters Chair) noted the following:

* WGDisasters is updating the CEOS Disaster Risk Management Observation Strategy document that led to the original endorsement of the Working Group in 2013. The Working Group is holding monthly meetings to complete the paper and will submit the new document for review at SIT Technical Workshop and endorsement at CEOS Plenary.
* Development of the GEO/LEO/SAR Flood Pilot is continuing and will explore the feasibility of integrating LEO-GEO optical with multi-frequency and multi-sensor SAR flood observations. Pilot co-leads are conducting targeted and group outreach to finalise pilot details including specific datasets, analysis methods and schedule. The pilot co-leads will contribute to the Global Flood Partnership Annual Meeting. Connections across CEOS and GEO are working effectively.
* WGDisasters continues to attend and contribute to CEOS-COAST teleconferences, focusing on anthropogenic impacts of coastal disasters, and identifying integration opportunities with the GEO/LEO/SAR Flood Pilot.
* WGDisasters was represented at EGU 2020 by Antonio Montuori (ASI) during the session titled *“NH6.1 Application of remote sensing and Earth-observation data in natural hazard and risk studies”* on May 7. During the session, scientific work facilitated by WGDisasters was highlighted.

**WGISS**

Robert Woodcock (CSIRO, WGISS Chair) reported:

* WGISS-49 (April 21-22) was very well attended with an average of 60 people connected to the virtual meeting. Presentations from the meeting are available [here](http://ceos.org/meetings/wgiss-49/). Highlights include:
  + Major improvements in Future Data Architecture (FDA) implementations at CEOS Agencies, particularly Cloud-based access to EO data and analysis tools.
  + Reports and changes to Cloud-friendly metadata and distribution formats.
  + Reports on the use of Jupyter Notebooks for EO analytics.
  + Improvements to the Data Stewardship and Management Maturity Matrix and Persistent Identifier implementation at CEOS Agencies.
* One significant downside to the virtual meeting was the lack of “coffee break” conversations and a reduced set of new actions. Some approaches to rectify this are underway as part of WGISS Exec meetings and in preparation for WGISS-50 (now also confirmed as a virtual meeting).
* WGISS and the SEO have jointly developed a proposal to launch a CEOS Earth Analytics Interoperability Laboratory to assist other Working Groups and CEOS projects working on different aspects of FDA interoperability. The inter-relationships are increasingly difficult to demonstrate, and the Lab will support small-scale practical experiments. This proposal has been tabled at WGISS-49 for discussion and is proposed for inclusion in the upcoming CEOS Working Teams All Hands Meeting.

**WGCapD**

Nancy Searby (NASA, WGCapD Chair) noted:

* Drafted and distributed the WGCapD-9 Annual Meeting report to participants for feedback.
* Space Capacity Development Advisory Board (SCDAB): developed a statement of work summarising the Board’s goals and establishing four key tasks to pursue. Also revised a spreadsheet outlining information to collect regarding existing activities within the nexus of EO and capacity development related to several SDGs (2: Zero Hunger, 7: Affordable and Clean Energy, 5: Gender Equality, 4: Quality Education, and 11: Sustainable Cities and Communities).
* CEOS Work Plan: completed review of carry-over Deliverables and newly planned Deliverables for modifications to deadlines due to delays and coronavirus complications, and in light of the CEOS Executive Officer’s request to review and update 2020-2022 Work Plan Deliverables.
* Planning quarterly regional calls (Africa, Americas, Asia-Oceania, Europe) to discuss and coordinate capacity building activities within each region and engage additional space agencies not yet involved in WGCapD. Everyone is encouraged to join.
* WGCapD leadership has been nominated to join the GEO Capacity Development Working Group. Nancy has received a welcome email, request for a bio, and an invitation to the first teleconference of the Working Group on May 26.

**WGCV**

Cindy Ong (CSIRO, WGCV Chair) reported:

* WGCV is holding its WGCV-46 ‘interim meeting’ this week with a smaller number of attendees. The aim of this meeting is to hear a presentation from the Vice Chair candidate before voting, track progress of WGCV’s Work Plan items, and to decide on the dates of the WGCV-47 virtual meeting and the face-to-face WGCV-48 meeting in Tokyo next year.
* Progress on existing and new Work Plan items have now been submitted to the CEO. Overall there has been good progress.
* WGCV submitted a new CEOS Work Plan item on scatterometer standards, which has a connection to the tropical cyclogenesis proposal from ISRO. Cindy suggested ISRO might be interested in inviting the WGCV contact leading this effort to the dedicated teleconference discussed under item 2 of this meeting.

**WGClimate**

Jörg Schulz (EUMETSAT, WGClimate Chair) reported:

* The virtual WGClimate-12 meeting was held remotely from May 5 to 7, with 4-hour teleconferences on each day. The virtual meeting was very well attended with many more participants compared to a standard face-to-face meeting (including representatives from Brazil and China).
* Dr Jeff Privette (NOAA) has been recommended for endorsement as the new WGClimate Vice Chair by both CEOS and CGMS.
* Delivery of the ECV Inventory Cycle 3 Gap Analysis and Coordinated Action Plan has moved to June 2020 (due to COVID-19’s impact on the EUMETSAT contractor) and it was widely recognised that the workload associated with the Gap Analysis is not sustainable in the medium-to-longer term. The Working Group identified some measures to make it more sustainable (e.g., reducing the scope of the updates by applying intelligent restrictions on the activity).
* The Earth Information Day at COP/SBSTA was felt to be a very useful mechanism by the UNFCCC (Joanna Post of the UNFCCC attended the WGClimate meeting on two of the three days) for getting messages across from space agencies and it is likely to be a regular feature of future COP/SBSTA meetings. There will not be an Earth Information Day this year as the COP-26/SBSTA-53 has been cancelled due to COVID-19.
* Joanna Post (UNFCCC) expressed a lot of willingness to facilitate a dialogue between the Parties of UNFCCC/SBSTA and space agencies on the possible contribution of EO data to the next Global Stocktake. Joanna Post also raised the possibility of space agency involvement in a SBSTA *Ad Hoc* Group on Systematic Observations.
* The GCOS Secretariat (Simon Eggleston) gave a presentation at WGClimate-12 on the update of the GCOS requirements and the plans for the development of the next GCOS Implementation Plan, which still does not accommodate application-specific requirements. WGClimate will write again to GCOS expressing this concern and to propose a way forward.
* The GEO Secretariat gave a presentation at WGClimate-12 on the new GEO Climate Change Working Group. Participation looks to be oversubscribed and there are some overlaps with the mandate of WGClimate which need to be addressed. CEOS nominated delegates were accepted and a few more WGClimate members will be part of the GEO Working Group.
* Use cases for Climate Data Records were discussed and there was a general feeling that this area needs to be given more weight, with long-term actions in the CEOS and CGMS work plans. There was a very good exchange of views on potential use cases. This could also be a mechanism for demonstrating the utility of application-specific requirements.
* The discussion on the Greenhouse Gas (GHG) Roadmap reviewed the current status and tried to clarify the way forward in three areas:
  + User engagement (including with UNFCCC and GCOS): Concerning the GHG Roadmap objectives, it was clarified that we should move away from a sole focus on the Global Stocktake and engage with users to get more precise information about the routine monitoring needs.
  + CGMS involvement and parallel operationalisation of the GHG monitoring system: we need the steps to be defined to a reasonable level of detail to reach an operational system (to be verified that this is captured in Annex C) and then interact to see how to involve the standing CGMS Working Groups.
  + GHG Roadmap action harmonisation and refinement, in particular populating/refining Annex C of the Roadmap (the actual work plan): This is still quite a big task and is necessary to have this refined to a reasonable level of detail before submitting the Roadmap for endorsement by the CEOS and CGMS plenaries.

1. **AOB, Next Meeting, Adjourn**

*2020 CEOS Plenary*

Raj Kumar (ISRO, CEOS Chair Team) reported that the 2020 CEOS Plenary will be held as a virtual meeting, on the same dates as previously announced (October 19-21). There may be a chance of adding one more day based on the overall agenda and timings of the meeting each day.

The ISRO CEOS Chair Team will be working over the coming weeks to tailor the agenda and contents to the virtual format. ISRO will follow the example of the SIT Chair Team and SIT-35 in executing such a large CEOS meeting virtually.

Sandra Cauffman (NASA) and Paul Counet (EUMETSAT) supported the plan for a virtual meeting on the originally agreed dates.

*Draft Plan for the 55th CEOS Newsletter*

Yukio Haruyama (JAXA) has shared the draft outline for the 55th CEOS Newsletter via email. It is proposed that the newsletter be published in the August timeframe. The newsletter will have a focus on COVID-19’s impact on CEOS work and the various CEOS Agency and GEO initiatives established in response.

Polish Space Agency Interest in Joining CEOS

Paul Counet (EUMETSAT) reported that ESA and EUMETSAT have been approached by the Polish Space Agency regarding their interest in joining CEOS. They were sent the terms of reference and have since confirmed their interest in becoming a CEOS Associate. ESA and EUMETSAT have passed on the CEOS Chair’s contact details. Paul noted that we may get an official approach soon. Kerry Sawyer (NOAA, CEOS Executive Officer) asked that the CEO be copied also. Paul agreed to do so.

*Meeting Close*

Raj thanked everyone for attending. CEOS SEC-266 will be held on June 18. The plan for CEOS SEC teleconferences/meetings leading up to the 2020 Plenary is as follows (typically Thursday):

SEC-266: June 18, 2020

SEC-267: July 16, 2020

SEC-268: August 27, 2020

SEC-269: September 2020 (alongside the 2020 CEOS SIT TW)

SEC-270: October 1, 2020

SEC-271: October 2020 (alongside the 34th CEOS Plenary)