**Minutes V1.0**

**261st CEOS SECRETARIAT MEETING**

Thursday 13 February 2020

Chaired by ISRO

**Participants**

**CEO:** Kerry Sawyer

**ESA:** Ivan Petiteville

**EUMETSAT:** Robert Husband

**GEO SEC:** Doug Cripe

**ISRO:** Nitant Dube (Chair), Raj Kumar, Stephen Ward, George Dyke,

Matthew Steventon

**JAXA:** Nobutaka Nakagawa, Yukio Haruyama

**NASA:** Christine Bognar

**NOAA:** Albert DeGarmo, Paul DiGiacomo, Merrie Neely

**P-VC:** Chris Kidd, Gail Jackson

**SIT Chair Team:** Adam Lewis, Jonathon Ross, Andreia Siqueira

**SEO:** Brian Killough

**VAST-VNSC:** Linh Phan

**WGCapD:** Nancy Searby, Lauren Childs-Gleason

**WGClimate:** Jörg Schulz

**WGCV:**  Akihiko Kuze

**WGDisasters:** Dave Borges, Pierric Ferrier

**WGISS:** –

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

Nitant Dube (ISRO, CEOS Chair Team) welcomed everyone to the call and reviewed the agenda.

1. **CEOS Executive Officer Report**

Kerry Sawyer (NOAA, CEOS Executive Officer) reported on the status of the CEOS 2020-2022 Work Plan:

* Essentially every working entity except for one Virtual Constellation has provided updates, however Kerry is still waiting on a few existing Deliverables to be reconciled (working with two Working Groups).
* There are now 150 Deliverables in the 2020-2022 CEOS Work Plan (64 existing and 86 new). The CEO will send responses to responsible entities to ensure all fields in the Tracking Tool have the required information. It is particularly important for Deliverables to have an identified external link, i.e., to a particular GEO 2020-2022 Work Programme Flagship/Initiative/Community Activity or GCOS/UNFCCC/UNCBD/etc. activity.
* The CEO is working with the CEOS Chair, SIT Chair Team, and SEO on a Deliverable renaming convention to facilitate tracking and statusing of Deliverables and to move away from the tedious sequential numbering system. The proposal is for all Deliverables to be in the following format: 2-4 character identifier, year created, and number, e.g., CARB-2020-01.

Kerry also reported on the 16th GEO Programme Board and the side meeting on disaster risk reduction:

* Official CEOS attendees were Andreia Siqueira (Principal) and Kerry Sawyer (Alternate) with Ivan Petiteville (ESA) and Jonathon Ross (GA) representing PO/GEO Members.
* The Programme Board discussed outcomes of the GEO Plenary and Ministerial, noting the focus on developing countries, GEO’s status with UNFCCC, sustainable development, and disaster risk reduction. The Canberra Declaration was circulated by Kerry earlier this week with specific sections highlighted for the attention of CEOS.
* Kerry thanked David Green (NASA, WGDisasters Chair) for presenting on CEOS’s disaster risk reduction efforts at the side meeting. Two UNDRR representatives were present. They noted CEOS’s expertise in making data available but disconnect from the user side.
* The Programme Board thanked Osamu Ochiai (JAXA) for his significant contributions to the PB on behalf of JAXA as PB Co-Chair.
* GEO Engagement Teams were proposed to facilitate reporting and interaction on key GEO Flagships and Initiatives. CEOS participation in the climate working group has been welcomed.

Ivan Petiteville (ESA) noted that a new working group of the Programme Board has also been created on urban resilience. CEOS may wish to consider participation in this group as well.

1. **SIT Chair Report**

Adam Lewis (GA, SIT Co-Chair) reported the following action updates:

* 259-01: Adam is following up with Chuck Wooldridge regarding the reply to the Intergovernmental Oceanographic Commission (IOC) of UNESCO on the Decade of Ocean Science.
* 259-03: The SIT Chair Team has issued a communication to all Principals noting the need for all CEOS working teams, including the Virtual Constellations, to be present at SIT-35 to ensure Principals can have informed discussions and debates.
* 259-06: A plenary session has been added to the SIT-35 draft agenda at the request of the CEOS Chair to discuss the reinstatement of GTOS as a CEOS Associate member.
* CEOS-33-08: The SIT Chair Team has investigated this issue and determined that there is no such entity as “CRI” at present. The New Zealand Government funds a number of different Crown Research Institutes, a number of whom may be eligible for some status within CEOS. However, the SIT Chair’s recommendation is that:
	+ The “CRI” as currently listed be removed, at the SIT-35 Plenary session if necessary, as there is no such single entity in existence.
	+ Addition of specific Crown Research Institutes be managed through normal CEOS processes.
* CEOS-33-02: This action called on the SIT Chair to *“prepare and broaden the response to WMO’s letter on enhancing collaboration with CEOS and providing focal points for the OSCAR/Space Database”*. This action was closed, with CEOS Agencies invited to contact WMO if interested. Following a lack of responses from CEOS Agencies, WMO has asked the SIT Chair to encourage (or even designate) CEOS MIM Database contact points to also serve as OSCAR contact points. The SIT Chair is considering a response, but is not disposed to propose this to agencies, as they have already been given the opportunity to nominate who they want (including perhaps the individuals also serving as CEOS MIM Database contact points) to WMO.

Adam also reported:

* The first draft of the detailed agenda for SIT-35 has been circulated for comment. Feedback on the draft and process from SEC is welcomed as soon as possible, with the penultimate version planned to be ready for discussion at SEC-262 (March 5).
* Regarding the summary of the CEOS-GEO Bilateral Meeting that appears in the written report, Adam suggested that CEOS contributions to GEO are broader than the report perhaps suggests, hence the proposal to show explicit links in the CEOS Work Plan 2020-2022 Tasks. Several follow up actions were identified at the CEOS-GEO Bilateral Meeting, including:
	+ SIT Chair to work with the GEO Secretariat to explore a definition of a ‘well managed collection of ARD in the commercial cloud’.
	+ SIT Chair to contribute to a GEO Secretariat planned workshop on Data Cubes and interoperability.
	+ SIT Chair Team to participate in a workshop on Land Degradation Neutrality (hosted by the Secretariat of the UN Convention on Desertification) to highlight the value of CEOS Analysis Ready Data.
	+ SIT Chair to consider participation in a GEO-led coastal workshop.

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| **261-01** | SIT Chair Team to share the registration list for SIT-35. | **ASAP** |

Kerry Sawyer (NOAA, CEOS Executive Officer) noted the SIT-35 agenda item on a ‘deep dive’ into specific CEOS Work Plan Tasks/Deliverables and queried the inclusion of the CEOS Water Strategy item. At the CEOS-GEO Bilateral Meeting it was confirmed that the GEOSS Water Strategy is now obsolete. Adam noted it is proposed to be addressed openly in the SIT meeting for awareness, even if this is just recognition that the GEOSS Strategy is now obsolete.

1. **Precipitation Virtual Constellation (P-VC) Report**

Chris Kidd (NASA) reported on behalf of the P-VC Co-Leads:

* The GPM Constellation, which forms the basis of the VC, currently has 11 (and a half) missions/instruments active. It is expected that the TROPICS constellation will start coming online in mid-2021. MetOp-SG and AMSR-3 are also forthcoming. The Aerosol Cloud and Convection Precipitation (ACCP) mission is being studied by NASA. Geostationary coverage over the Indian Ocean will soon be provided by an old GOES satellite, with data made available through NOAA.
* Data products from GPM are being revised and reprocessed over the next two years.
* A Global Energy and Water Exchanges (GEWEX) International Precipitation Working Group (IPWG) Precipitation Assessment Report is currently being written, and it is expected to be completed by mid-2020.
* A revised white paper on the future of the Precipitation Virtual Constellation is being written by Chris Kidd and George Huffman (NASA).
* A review of GPM, led by Scott Brown, is ongoing. It is hoped that the outcome will be an operations extension of the core mission.
* There are various upcoming meetings of relevance including a TROPICS application meeting next week, a GPM ground validation meeting in Boulder, Colorado (March), a Copernicus microwave mission meeting at ESTEC in April, and an IPWG workshop in Fort Collins, Colorado, in June (a P-VC meeting will also be held alongside this meeting).

Jonathon Ross (GA, SIT Chair Team) asked about the key user requirements expected to emerge over the next ten years. Chris noted the diverse nature of the user community that P-VC engages with (from hydrologists to climatologists) and therefore the vast set of requirements. Catering to the whole community is a challenge.

1. **GEO SEC Report**

Doug Cripe (GEO Secretariat) reported:

* A successful GEO-CEOS Bilateral Meeting was held from 3-4 February. Some resulting actions for the GEO Secretariat are as follows:
	+ Work with CEOS on Analysis Ready Data (review the concept and organise an ARD/Open Data Cube technical workshop in conjunction with the CEOS SIT Technical Workshop in Zagreb, Croatia (September 2020)).
	+ Advance the vision for a global network of regional, interoperable satellite Data Cubes that are supported by shared tools and algorithms (with CEOS, OGC). It is possible there may also be a meeting around this alongside the SIT Technical Workshop.
	+ Draft concept papers on Open Data Cube and *in situ* data.
	+ Follow up with UNCCD and the GEO LDN Initiative regarding potential CEOS case studies (for ARD, SDGs).
	+ Help to identify biomass experts.
	+ Interface with the Spatial Climate Observatory on the status of their remit.
* The GEO Knowledge Hub Implementation Plan schedule has been set back a few months (to the July GEO ExCom rather than March) as a result of discussions at the 16th Programme Board meeting around the lack of sufficient review time.
* A GEO LDN Initiative workshop on Data Quality Standards will be held 23-24 March 2020, in Bonn, Germany. Doug suggested it would be good if someone from CEOS could attend to help set the minimum requirements for support to SDG 15.3.1.

Kerry Sawyer (NOAA, CEOS Executive Officer) noted that the dates for the GEO LDN Initiative Workshop on Data Quality Standards conflicts with SIT-35. Adam Lewis (GA, SIT Co-Chair) suggested this might cause issues for previously promised GA attendance.

Jonathon Ross (GA, SIT Chair Team) noted that the three specific requests from GEO to CEOS from the bilateral meeting regarding representation on the GEO Climate Working Group, GOS4M, and the GEOGLAM Advisory Group will be tabled at SIT-35 for Principal feedback.

1. **SEO Report**

Brian Killough (NASA, SEO) reported:

* The SEO (Brian and several programmers) will attend an Open Data Cube "hackathon" at Geoscience Australia from February 24-28. Side meeting topics will include the transition of the Africa Regional Data Cube to the Digital Earth Africa project.
* The SEO (Brian) will attend a Digital Earth Africa Technical Advisory Committee (TAC) meeting in Pretoria, South Africa, March 3-5.
* The second teleconference meeting of the "CEOS External Request Process Paper" team was held on January 15. A third teleconference was held yesterday, February 12. The team plans to produce a first draft of the process paper for SIT-35. Representatives from NASA, NOAA, GA, ESA, ISRO, EC, and JAXA are on the team.
* Brian attended the CEOS-GEO bilateral meetings in Geneva and also met with CSIRO and Marc Paganini (ESA) on the SDG-AHT. There was strong interest from the GEO Secretariat on the topics of Analysis Ready Data and the Open Data Cube.

Nitant Dube (ISRO, CEOS Chair Team) asked about the existence of outreach/training videos on Open Data Cube. Brian noted his recent discussions with WGCapD on this topic. He expects more materials will be forthcoming. Brian also noted that there are new CEOS booth posters on CEOS Analysis Ready Data and the CEOS Database.

1. **Working Group Reports**

**WGDisasters**

Dave Borges (NASA, WGDisasters Secretariat) noted the following:

* WGDisasters Chair Team represented WGDisasters at the 16th GEO Programme Board Special Session on Disaster Risk Resilience with UNDRR to develop a common understanding of how GEO and CEOS are currently supporting UNDRR, the Sendai Framework, as well as the Global Risk Assessment Report (GAR) and Global Risk Assessment Framework (GRAF).
* WGDisasters Chair Team submitted an Understanding Risk Forum 2020 Side Event proposal, titled ‘Harnessing the Evolution of Earth Observations and Risk’, which has been accepted by World Bank GFDRR organisers. This three-part interactive workshop will showcase and educate participants on effective methods of integrating EO into risk assessment and investment activities, highlight the transitions and progress that has been made over the last decade, and invite participants to explore what innovations we have to look forward to over the next decade. DRR EO experts as well as end users from across the CEOS and GEO communities will be called on to participate.
* The Landslide Pilot Team is in the process of developing a new Landslide Hazards Demonstrator Implementation Plan.
* A new GEO/LEO/SAR Flood Pilot Proposal is under development.

**WGClimate**

Jörg Schulz (EUMETSAT, WGClimate Chair) reported:

* WGClimate performed an update/confirmation of CEOS Work Plan Tasks and Deliverables, but still needs to get back to how to implement VC support to the ECV Inventory gap analysis. WGClimate may make a proposal in the next two weeks based on the approach described in the SEC-259 report.
* The ECV Inventory gap analysis report and action plan stalled due to other commitments; however, these are expected shortly.
* GHG Monitoring Roadmap: Drafting is nearing completion. Editors will have a teleconference hopefully next week, after which the document will go out for broader review. The plan remains to present at SIT-35.
* GCOS has distributed the updated GCOS requirements for ECVs. WGClimate will work on a coordinated response. All WGClimate members and contributors to the ECV Inventory will be involved in order to have a broad assessment. Results will be discussed at WGClimate-12 (hosted by JAXA in Tsukuba, Japan, 30 March – 3 April 2020).
* WGClimate Vice Chair Albrecht von Bargen (DLR) will participate in GCOS AOPC-25 and address the requirements analysis and how WGClimate will contribute to the GCOS Status Report.
* WGClimate-13 is planned to take place between the SIT Technical Workshop and CEOS Plenary (TBC).

**WGISS**

Nitant Dube (ISRO, CEOS Chair Team) reported on behalf of Rob Woodcock (CSIRO, WGISS Chair):

* The CEOS Future Data Architectures and Open Source Software Inventory are now available from: <http://ceos.org/data-tools/>
* Planning for WGISS-49 is well underway and a draft agenda will be posted to the CEOS website early this month. Presentations on cross-cutting concerns with LSI-VC, WGCV, AmeriGEOSS and GEO are included in the agenda.
* After very successfully leading the WGISS System Level Team for many years, Yonsook Enloe (NASA) is retiring and as a result will be stepping down from her WGISS role. Damiano Guerrucci (ESA) will be coordinating this activity starting in March.
* Chris Lynnes (NASA), Co-Lead of the WGISS Technology Exploration Interest Group has taken on additional duties at NASA and will need to step down from his WGISS role. Co-Lead Yousuke Ikehata (JAXA) will continue to lead this activity and WGISS will be seeking additional support from its participating agencies.

**WGCapD**

Nancy Searby (NASA, WGCapD Chair) noted the following from her written report:

* The broader CEOS community has been invited to join the 9th Annual Meeting of the Working Group on Capacity Building and Data Democracy’s Regional Spotlight sessions via GoToMeeting.
* In-person registration was closed for the WGCapD-9 Annual Meeting (March 9-13, 2020 in Sunnyvale, CA) on the CEOS meeting page on January 31, but registration for virtual participation remains open.
* WGCapD completed extensive updates to the WGCapD webpages, including:
	+ E-Learning Page: New content for recent webinars and MOOCs.
	+ Training Working Section: New recent workshops and events added; reorganized content for improved structure; added a Data Workshop section.
	+ Resources Section: Updated information and incorporated new links to resources.
* WGCapD presented at the CEOS Working Teams All-Hands Call the approach being developed to coordinate capacity development across various bodies, including the establishment of a Space Capacity Development Advisory Board (SCDAB) to bring together the various capacity development networks in support of the sustainable development frameworks. Nancy reported that the Working Teams All-Hands Call was very helpful and productive.

**WGCV**

Akihiko Kuze (JAXA, WGCV Vice Chair) reported the following:

* The IVOS subgroup had its first teleconference discussion on standards for ARD following the discussions at the VH-RODA workshop.

And highlighted some upcoming meetings:

* CEOS WGCV LPV Supersites and Biomass Validation Workshop; 2-6 March; Canberra, Australia.
* CEOS WGCV IVOS Plenary; 2-6 March; Reston, Virginia, USA.
* GSICS GRWG/GDWG Annual Meeting and Reflective Solar Spectrometer Sub-group Meeting; 16-20 March; Seoul, South Korea.
* 46th CEOS WGCV Plenary; 30 March – 3 April; Pasadena, California, USA.

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| **261-02** | SIT Chair Team to follow up with Alex Held and Marc Paganini regarding SDG-AHT reporting to CEOS SEC teleconferences. | **ASAP** |

1. **AOB**

**CEOS-COAST Update**

Paul DiGiacomo (NOAA) reported an update on CEOS-COAST:

* The team has been assembled. There has been strong interest across CEOS. Paul thanked CEOS entities and agencies for their support.
* The team’s initial teleconferences were held last month, with second teleconferences planned for next week.
* Paul briefed the Working Teams All-Hands Call this week and had good follow up discussions with VCs and other entities.
* The COAST Work Plan has been compiled, and the team is now discussing and scoping their priority activities, including cross-cutting pilot projects.
* A COAST side meeting is planned at SIT-35 to discuss the priority activities in detail. Paul will also present the priorities to the main SIT-35 meeting.
* Paul looks forward to contributing to the GEO Coastal Workshop and awaits further instruction from CEOS leadership on this.

**CEOS Newsletter No.54**

Yukio Haruyama (JAXA) reported that the 54th CEOS Newsletter was completed on February 6. He thanked everyone for their cooperation. The CEOS SEO (Kim Holloway) published the newsletter on the CEOS website home page and publications page on February 10. The document can be found [here](http://ceos.org/document_management/Publications/CEOS_Newsletters/CEOS_Newsletter-No.54_Feb2020.pdf). The CEOS Newsletter team is now preparing for printing and distribution of the physical version.

1. **Action Review, Next Meeting, Adjourn**

Nitant Dube (ISRO, CEOS Chair Team) led a review of open CEOS SEC and CEOS Plenary actions. The following status updates were recorded:

* 238-07: Jörg Schulz will address this with v3 of the ECV Inventory in the next month.
* 259-01: Adam Lewis is reviewing the materials and will follow up.
* 259-02: Kerry Sawyer urged this be resolved as soon as possible. The CEOS Chair Team will be following up.
* 260-03: Still in production.
* 32-02: Targeting completion by the next CEOS Plenary.
* 33-03: Meeting planned for 10-12 June at EC/JRC in Ispra, Italy. Expecting more information soon.
* 33-04: Currently working on a correspondence from the SIT Chair to the UNFCCC Secretariat with a view to a side meeting and discussion at SIT Technical Workshop.
* 33-08: As discussed earlier in the meeting, CRI will be removed from the list of CEOS Associates, as the organisation doesn't exist anymore. The ISRO CEOS Chair Team will follow up with SANSA regarding CSIR.
* 33-10: Complete.
* 33-13: SIT Chair to send a reminder.
* 33-15: Ivan Petiteville noted this has been discussed recently. Jörg Schulz noted that GCOS have made an attempt to align their terminology with OSCAR.

Nitant Dube (ISRO, CEOS Chair Team) thanked everyone for attending. CEOS SEC-262 will be held on March 5 at 7 AM US East. The meeting was adjourned.