**Minutes V1.0**

**274th CEOS SECRETARIAT MEETING**

Thursday 17 December 2020

Chaired by NASA

**Participants**

**CEO:** Kerry Sawyer, Marie-Claire Greening (incoming CEO)

**ESA:** Ivan Petiteville

**EUMETSAT:** Robert Husband, Jörg Schulz

**GEO SEC:** Doug Cripe

**ISRO:** Nitant Dube

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

**LSI-VC:** Steve Labahn, Zolti Szantoi

**NASA:** Sandra Cauffman (Chair), Christine Bognar, Andy Mitchell, Yasha Moz, George Dyke, Matthew Steventon

**NOAA:** Chuck Wooldridge

**SIT Chair Team:** Jonathon Ross

**SEO:** Brian Killough, Kim Holloway

**WGCapD:** Pham Thi Mai Thy

**WGClimate:** Albrecht von Bargen, Jeff Privette

**WGCV:**  Akihiko Kuze

**WGDisasters:** David Green, Dave Borges

**WGISS:** Robert Woodcock

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

Sandra Cauffman (NASA, CEOS Chair Team) welcomed everyone to SEC-274. She thanked SEC for their efforts throughout what has been a challenging year because of the pandemic.

Sandra thanked Alain Ratier (EUMETSAT), who is retiring in December 2020, for his longstanding efforts and commitment to CEOS over many years. She also congratulated Josef Aschbacher (ESA) on his appointment to the position of ESA Director General. Lastly, offered congratulations on the multilateral collaboration that led to the successful launch of Sentinel-6 Michael Freilich, and for the symbolic gesture of renaming the mission after Dr. Michael Freilich.

Christine Bognar (NASA, CEOS Chair Team) then proceeded to the roll call.

1. **Action Status**

Christine Bognar (NASA, CEOS Chair Team) reviewed the outstanding SEC and CEOS Plenary actions and requested updates from the actionees. The following updates were noted:

272-01: Jonathon Ross (GA, SIT Chair Team) and Brian Killough (NASA, SEO) reported that the action to prepare guidelines for the use of the CEOS ARD logo has been completed. The short document was attached with the written reports for the SEC-274 meeting. No further input on the document was received before or during the call, and as such, Action 272-01 was closed.

272-02: In addition to the CEOS ARD logo guidelines, this action was recorded to consider broader CEOS logo and branding guidelines. Brian Killough has initiated work on this with Kim Holloway (SEO), and will report back to CEOS SEC at SEC-275. When these guidelines are available, the CEOS ARD logo guidelines will be revisited to ensure consistency with the overarching guidelines.

272-03: Christine Bognar (NASA, CEOS Chair Team) reported that the action was completed on December 7, 2020, with an email from Sandra to the CEOS community. The action is closed. Christine thanked everyone for the inputs received, including from the GEO Secretariat. Doug Cripe noted that the GEO Secretariat Director Gilberto Camara is a strong advocate of open science, so the NASA CEOS Chair’s proposal resonates well. Doug noted the GEO Open Science Statement that will be presented to the GEO Programme Board soon.

Brian Killough (NASA, SEO) noted that the feedback received on the NASA CEOS Chair theme will be taken into consideration for an implementation plan, which will guide the effort over the following year.

It was confirmed that the final deadline for submission of ideas is by the end of the calendar year. Ivan Petiteville (ESA) reported that he will submit an idea related to the CEOS MIM Database.

33-08: Kerry Sawyer (CEOS Executive Officer) reported that Asanda Sangoni (SANSA) has confirmed that CSIR/SAC is still interested in continuing to be identified as a CEOS Associate. CSIR/SAC has provided two new names for their CEOS Principal and Contact, and Kerry will ensure the website and mailing lists are updated accordingly.

1. **SIT Chair Report**

Jonathon Ross (GA, SIT Chair Team) reported on behalf of the SIT Co-Chairs:

* Following an internal coordination call, the CEO Team, SIT Chair Team and GEO Secretariat met to discuss the format and agenda for the 2021 CEOS-GEO bilateral meeting. The current GEO Secretariat Director, Gilberto Camera, will be joined by the next GEO Secretariat Director, Yana Gevorgyan.
* The 3rd SIT Chair Working Team All Hands Call was held on Tuesday 8th/Wednesday 9th of December. Notes have since been distributed. Jonathon thanked everyone for their participation. This series of calls will continue in 2021 in response to the positive feedback received.
* Global Stocktake Study Team Call:
  + There was strong consensus on the need for a high-level strategy statement which identifies all of the potential aspects and dimensions for CEOS engagement in the Global Stocktake process.
  + The SIT Chair and Vice Chair Teams are happy to provide the necessary coordination, but will need significant support from the thematic experts, including those from WGClimate, LSI-VC, AC-VC and the ocean VCs.
  + There is a need to keep the scope in check and to monitor aspects that in comparison are more aspirational.
  + The next Study Team call will be in the second half of January, and timed in relation to the next AFOLU team call, which is expected to include participation from the GHG Task Team.
  + In parallel, the GHG and AFOLU activities should continue apace, particularly noting the GST1 deadline of COP-26 and the need to engage dataset producer agencies.
* The GEO Secretariat has approached CEOS to ascertain its interest in nominating for a Co-Chair seat on the GEO Programme Board. Since making this inquiry, IEEE GRSS (Geoscience and Remote Sensing Society) has nominated a candidate for the vacant seat. The individual in question (Tony Milne, UNSW) is an active and well-regarded member of the GEO Programme Board. CEOS SEC needs to decide today whether CEOS wishes to submit a competing nomination. Secretariat guidance is sought on:
  + Whether CEOS can resource a co-chair seat for both 2021 and 2022, noting that the CSIRO/GA SIT Chair Term concludes in 2021.
  + Whether CEOS should, if resourcing were to be available, nominate for the Co-Chair seat, noting that IEEE GRSS has now nominated a candidate.

Discussion:

* In light of the existing nomination and the strength of the candidate proposed for the role of Co-Chair of the GEO Programme Board, Jonathon recommended that CEOS let the nomination go uncontested.
* Ivan Petiteville (ESA) indicated that the most important thing for CEOS is to be present at the Programme Board (and be present at the GEO ExCom) – being Co-Chair of the Programme Board doesn’t provide any extra benefit for CEOS.
* **CEOS SEC agreed that CEOS will not nominate a candidate for the role of GEO Programme Board Co-Chair.** The SIT Chair Team and CEOS Executive Officer will confirm this to the GEO Secretariat.
* Albrecht von Bargen (DLR, WGClimate Chair) confirmed that WGClimate supports the need for a high-level statement identifying the potential aspects and dimensions for CEOS engagement in the Global Stocktake process, and also supports the need for the GHG and AFOLU activities to continue apace and alongside the development of this statement.
* Jörg Schulz said that EUMETSAT very much supports a strong role of the Joint CEOS-CGMS WGClimate in this effort to develop a high-level statement regarding CEOS engagement in the Global Stocktake process. Regarding any issues that have been raised with respect to linkages to CGMS, Jörg assured the SEC that there is no agenda in bringing CGMS into the discussion here. It is just on the CEOS side and should be kept on the CEOS side. The thing that the joint WGClimate can offer is an opportunity to bring CMA to the table, particularly for Greenhouse Gas monitoring. This is not a systematic CGMS activity and it will not be a CGMS activity, in particular any parts related to AFOLU. Jörg appreciated the discussion and the fact that the activity is becoming broader to encompass all of the ECVs. This is a very worthwhile discussion to have.
* Osamu Ochiai (JAXA) said the GST Study Team call was a very good starting point, and a very helpful convergence task for CEOS engagement in the topic. CEOS needs to be a coordinated team and to present a consolidated input and interaction with the UNFCCC Secretariat. He thanked those that participated for their helpful inputs.

**Land Surface Imaging Virtual Constellation (LSI-VC) Report**

Steve Labahn (USGS, LSI-VC Co-Lead) reported some recent highlights from the LSI-VC:

* CARD4L-compliant USGS Landsat Collection 2 Surface Reflectance (SR) and Surface Temperature (ST) are now released in COG/STAC format in the Cloud (Amazon Web Services), as of December 1, 2020. This is the first officially released CARD4L dataset.
* The CARD4L assessment process continues on ESA’s Sentinel-2 (SR), Element 84 Sentinel-2 (SR), DLR’s EnMAP (SR), SANSA/PCI Geomatics SPOT 1-7 (SR), and JAXA’s ALOS Normalised Radar Backscatter product. Discussions have also been initiated with NASA regarding MODIS.
* CEOS ARD website updates: now includes a table of CARD4L products, their status, details of their self-assessments, summaries of WGCV peer review feedback, links to sample products and MIM Database entries, and other information.
* CARD4L Aquatic Reflectance Product Family Specification (PFS): working closely with GEO AquaWatch and a group of experts to refine, and hopefully finalize, the PFS in early 2021.
* Nightlight Radiance PFS: Brian Killough (NASA, SEO) is working with contacts from NASA, NOAA and USGS to explore the application of the CARD4L approach to nightlight radiance products.
* CEOS ARD Beyond Land Study Group: working with Ed Armstrong (NASA/JPL, SST-VC Co-Lead) to establish a team and discussing the current CARD4L framework.
* CEOS Study Team on Inputs to the UNFCCC Global Stocktake (GST): LSI-VC, along with representatives from both its subgroups (Forests & Biomass and GEOGLAM), participated in the meeting on December 9, 2020.
* COAST: continue to be engaged with COAST, particularly regarding the CARD4L Aquatic Reflectance product and PFS development.
* AFOLU: most of the Forests & Biomass subgroup’s time has been focused on the AFOLU Roadmap and GST activity. The next step is defining necessary products, for which current and future LSI-VC CARD4L products are expected to have a key role.
* Open Geospatial Consortium (OGC): Significant LSI-VC engagement in OGC’s Testbed-16 activity. An Engineering Report is expected to be released at the beginning of next year that will describe CEOS ARD, best practices, etc.
* Communications & Outreach: numerous activities, including the CEOS ARD Webinar (1 July 2020), JACIE, ARD20 Workshop, Synthetic Aperture Radar CEOS ARD Webinar (early February), ESIP (last week in January, tied to the work with Ed Armstrong described above).

Jonathon Ross (GA, SIT Chair Team) thanked Steve Labahn for the report and congratulated LSI-VC on its impressive collection of achievements and progress. The work being undertaken will unlock the potential of CEOS data to a new degree.

1. **CEOS Executive Officer Report**

Kerry Sawyer (CEOS Executive Officer) reported:

* CEOS 2021-2023 Work Plan: A timeline for the update of the CEOS Work Plan was included with the written reports for this SEC meeting. This year’s update will be minimal. This is because the previous version was completed in July 2020 and included updating that makes what we need to do now a lighter load. Work on the update will begin in January. The goal is to re-establish the usual cadence that allows for virtual endorsement of the Work Plan by CEOS Principals around March of each year.
* CEOS Representation to the GEO Programme Board for 2021: The CEOS Executive Officer (CEO) is the second Alternate CEOS representative to the GEO Programme Board. With Kerry leaving the position, the SEC was asked to confirm whether this role should transition to the incoming CEO, Marie-Claire Greening. Christine Bognar (NASA, CEOS Chair Team) confirmed that Marie-Claire was asked and has accepted the role of second Alternate CEOS representative to the GEO Programme Board when she assumes the role CEOS Executive Officer (CEO) on January 2, 2021.
* *CEOS Governance and Processes* Document Revision: It was noted that changes are needed to the *CEOS Governance and Processes* document to reflect changes made to the Terms of Reference for the CEOS Executive Officer. Changes may be needed to the *External Request Process Paper* and the *New Initiatives Process Paper*, as well.

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| **274-01** | CEOS Chair Team and CEO to review the *CEOS Governance and Processes* document, the *External Request Process Paper*, and the *New Initiatives Process Paper* to determine if and what changes may be needed in relation to the *CEOS Executive Officer Terms of Reference*. | **SEC-276** |

* On Monday December 14, David Crisp (NASA/JPL), Brian Killough (NASA, SEO), Albrecht von Bargen (DLR, WGClimate Chair), and Kerry Sawyer (CEOS Executive Officer) participated in the *Innovation in Remote Sensing Technologies for Accelerated Climate Action* webinar. David presented on “*What do Governments need: What are the challenges and opportunities for Governments from a technology perspective, including developing and developed nations”.* A short write-up of outcomes will be shared by December 18, 2020.

Discussion:

* Sandra Cauffman (NASA, CEOS Chair Team) noted that this is the last CEOS SEC meeting for Kerry as CEOS Executive Officer. Sandra thanked Kerry on behalf of CEOS, for her outstanding contributions to and promotion of CEOS. She also thanked NOAA for making it possible for Kerry to serve as CEOS Executive Officer. Christine Bognar (NASA, CEOS Chair Team) added her thanks, and thanks on behalf of the NASA CEOS Chair Team. Jonathon Ross (GA, SIT Chair Team) echoed the same on behalf of the whole SIT Chair Team.

1. **Working Group Reports**

**WGDisasters**

David Green (NASA, WGDisasters Chair) reported:

* WGDisasters Data Coordination Team (DCT) Lead Role: WGDisasters specifically pilots the feasibility and demonstrates the value of open data sharing, exchange and utility. We are not currently aware of other activities that are as actively sharing open and commercial data. This work is consistent with the priorities expressed in the current Working Group Terms of Reference and Strategic Paper. The required mechanisms, which include oversight of data negotiations, tracking, and licenses, as well as individual and organisational agreements are managed by the DCT. The DCT requires membership and focal points to be identified from across CEOS, especially those agencies with restricted access and commercial data. Pierric Ferrier (CNES, WGDisasters Vice Chair) has led DCT activities, but a replacement needs to be identified before Pierric becomes the WGDisasters Chair at the 35th CEOS Plenary. Some further background information (a PowerPoint presentation) was shared with SEC ahead of the meeting via email.

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| **274-02** | CEOS SEC representatives to consider potential candidates for the WGDisasters Data Coordination Team (DCT) Lead Role. This person could be anyone from across the CEOS community. | **SEC-275** |

* Open Geospatial Consortium (OGC) Disasters Pilot: WGDisasters is investigating a potential collaboration that would leverage existing/planned WGDisasters pilots and include consideration of Analysis Ready Data (ARD).
* The WGDisasters Wildfire Pilot Scoping Team is meeting regularly and developing an Implementation Plan (IP). The pilot IP is expected to be shared before CEOS SIT-36 for review ahead of endorsement at that meeting.
* The WGDisasters Flood Pilot Team held its first technical workshop on November 19, 2020. WGISS Chair Rob Woodcock provided an overview and updates on the CEOS Earth Analytics Interoperability Laboratory (EAIL). Pilot team leads shared progress updates, data sharing process details and relevant algorithms to be reviewed.
* WGDisasters-15 will be held virtually, from the 9th to the 11th of March 2021.

**WGClimate**

Albrecht von Bargen (DLR, WGClimate Chair) reported:

* UNFCCC Earth Information Day (EID):
  + The format of the EID was virtual, with numerous different virtual ‘rooms’. The meeting was well received and led to some lively discussions. The panel discussions on adaptation and mitigation were both well attended. On behalf of CEOS and CGMS support to the Global Stocktake, Dave Crisp (NASA JPL) presented, as a seed for the discussion, some slides during the adaptation panel.
  + Posters were also shown in four parallel sessions (virtual spaces) moderated by UNFCCC, where WGClimate had the opportunity to present three posters that were highly regarded (topics: CDR use cases, Greenhouse Gas atmospheric inventory, ECV Inventory).
  + A poster discussion led to a Brazilian NDC contact offering to provide a use case on Greenhouse Gases and the Global Stocktake. Overall, the number of use cases collected is increasing, but there remains a need to further encourage agencies and others for contributions.
* The ECV Inventory gap analysis is ongoing.
* WGClimate attended the AFOLU teleconference, as well as the meeting of the CEOS Global Stocktake Study Team.
* The next WGClimate meeting is under discussion for the first quarter of 2021. A Greenhouse Gas Task Team meeting will be held in advance.

**WGISS**

Robert Woodcock (CSIRO, WGISS Chair) reported:

* CEOS Earth Analytics Interoperability Laboratory (EAIL): A new Amazon Web Services (AWS) account has been provisioned by CSIRO Chile via the Chilean Data Observatory and movement of the deployed version of the CEOS EAIL has been completed. The EAIL is now running on this infrastructure and some datasets are being compiled by Rob and the CEOS SEO.
* With the USGS Landsat Collection 2 release to AWS, the CEOS EAIL is now preparing to index the archive as required for supported projects. This will supplement the Sentinel-2 archive that is also available in AWS US West and provide a baseline for EO Cloud data access. Both archives use the new STAC metadata format, but in different ways. An interoperability experiment will be conducted on the CEOS EAIL to assist in improving compatibility and use.

**WGCapD**

Pham Thi Mai Thy (VNSC, WGCapD Vice Chair) reported:

* WGCapD continues to work on its deliverables as defined in the CEOS Work Plan and it is tracking changes to scheduling resulting from COVID-19-related delays. Some of the recent progress includes:
  + CB-51/CB-20-10: The training report for the in-person air quality training that was completed in August in Thailand has been completed and posted on the WGCapD eLearning page, completing this deliverable.
  + CB-21/CB-17-02: Exploration of options for providing portal-based access to capacity building and training resources was completed after linking the ISRO-developed portal to the WGCapD resources page.
  + CB-29/CB-18-07: The deliverable to conduct global capacity building courses through webinars on *Asia-GEOGLAM*, *SAR Missions' Present and Future*, and *Disaster Risk Reduction (UNOOSA) (global training-interactive)* has been completed.

The United Nations Office for Outer Space Affairs and the Centre for Space Science and Technology Education in Asia Pacific launched the *“Geospatial Applications for Disaster Risk Management”* Massive Open Online Course. Approximately, 27,000 users attended at least some of the two-tier course, which consisted of 20 sessions. Over 5,000 users completed the introductory level and 3,370 finished the advanced level.

* + CB-46/CB-20-05: The Earth Observation Training, Education, and Capacity (EOTEC) Development Network (formerly known as SCDAB) held a planning call on December 10. The CGMS VLab capacity building network Co-Chairs joined the meeting for the first time and discussed the need for a gap-identifying coordinating group.
* A capacity building assessment survey was sent to the WGCapD community on December 11, 2020 to identify key contributors, what kind of training each offer for various target audiences, and which tools each are using. We also included a few questions to explore stakeholder barriers and how each contributor is overcoming them, especially during these challenging times. The deadline to respond is December 31, 2020.
* WGCapD is continuing to develop the CEOS Webinar Toolkit and is compiling the necessary components. The creation of a needs assessment guide, promotional flyer template, agenda template, storyboard template, presentation template, and promotional draft email template are in progress. These will be combined with best practice documentation, thematic nomenclatures and icons, logos, and acknowledgement statements in a full package of materials for working teams to use in their webinar creation.
* WGCapD quarterly regional meetings with Asia-Oceania (November 30), Americas (November 30), Africa (December 1), and Europe (December 4) were held to discuss training activities and potential future work plan deliverables, for broader awareness and coordination purposes.
* The WGCapD-10 meeting will be held virtually during the week of March 1, 2021. Registration is now open, and details will be made available on the CEOS website.

**WGCV**

Akihiko Kuze (JAXA, WGCV Chair) reported:

* The Soil Moisture Product Validation Good Practices Protocol was endorsed by WGCV on November 30, 2020 and uploaded to the [CEOS website Publications page](https://ceos.org/about-ceos/publications-2/).
* The Biomass Validation Protocol submitted by the WGCV Land Product Validation (LPV) subgroup is under review and will seek endorsement by SIT-36.
* WGCV leadership participated in the teleconference of the CEOS Study Team on the UNFCCC Global Stocktake. A WGCV contribution on flux validation, in collaboration with AC-VC and WGClimate, was proposed.

1. **GEO SEC Report**

Doug Cripe (GEO Secretariat) reported:

* The GEO Programme Board meeting will be held on January 26-28, 2021. Marie-Claire Greening (Incoming CEO) will be serving as Alternate for CEOS on the GEO Programme Board.
* GEO Executive Committee Co-Chairs rotate on a yearly basis. The European Commission will be taking on the role for 2021 and they are currently discussing their objectives with the GEO Secretariat. One of their priorities is for the GEO community to have increased access to value-added knowledge, sharing and application platforms, and Analysis Ready Data (ARD). One of their key metrics will be the number of ARD datasets available to GEO Members, Participating Organisations, Associates, and Work Programme activities.
* The GEO Secretariat is following up the CEOS work on biomass, and looking at ways it can be promoted through a Community Activity in the GEO Work Programme.
* The European Marine Observation and Data Network (EMODnet) would like to be connected to GEO Blue Planet. They have produced some data products that sound aligned with ARD. Doug suggested that it would also be good to see a connection made to COAST, to see if there is a potential contribution to CEOS marine ARD.
* An action on the GEO Secretariat to connect CEOS (in particular WGISS) with cloud service providers for a discussion is ongoing, and is now planned for early 2021.
* The CEOS-GEO bilateral meeting will be held on February 2-3, 2021.

1. **SEO Report**

Brian Killough (NASA, SEO) reported:

* SEC Action 272-02: *CEOS Executive Officer to convene a small group (led by the CEO, and including Brian Killough (SEO), and Jonathon Ross (SIT Chair Team)) to draft a process and policy on the use of logos in CEOS.*
  + Brian Killough and Kim Holloway (SEO) have been investigating logo policies for other organisations (e.g., GEO) as examples. They have started a draft document on CEOS branding and logos and will share it with the CEO and SIT Chair Team in early January. A draft will be ready for broader review at the next SEC meeting in January 2021.
* Brian Killough presented a paper at the AGU Conference on December 7 (virtual). The paper was titled *"Demonstrating Interoperable Data Analyses using the Open Data Cube, Google Cloud and Google Earth Engine Satellite Datasets"* and was presented in the IN-017 session titled *"Developing Innovative Tools and Services to Enable Data Use across Broad User Communities"*. Co-authors included George Dyke, Ken Mubea (Digital Earth Africa) and several AMA team members.
* Open Earth Alliance (OEA) GEO Community Activity: The SEO is making progress on plans for an Open Data Cube (ODC) Amazon Cloud and Google Cloud Sandbox. These free and open sandboxes will take advantage of the new Landsat Collection 2 and Sentinel-2 data in the cloud. In addition, the SEO is working on an ODC User Forum, with release expected in Q1 2021.

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

**CEOS Chair 2022**

Ivan Petiteville (ESA) reported that there has not been a decision from CNES at this time. He exchanged emails with Selma Cherchali (CNES) last week, and she confirmed that a decision will be forthcoming early next year. Sandra Cauffman (NASA, CEOS Chair Team) noted that she is in touch with Selma as well and that CNES needs more time. The CEOS Chair Team noted that the matter will be revisited at SEC-275 in January.

**Status of CEOS Newsletter No. 56**

Yukio Haruyama (JAXA) shared an update on the 56th CEOS Newsletter. Draft articles are due by today, December 17. Most articles have already been received. Yukio requested that outstanding articles be submitted before the Christmas break so that editing can proceed from the beginning of January. Yukio thanked everyone for their cooperation and inputs.

Christine Bognar (NASA, CEOS Chair Team) thanked Yukio and the JAXA team for this great ongoing contribution to CEOS.

**Next Meeting**

Christine Bognar (NASA, CEOS Chair Team) thanked everyone for participating and extended best wishes to all for happy holidays.

CEOS SEC-275 will be held on January 14, 2021. The start time for the teleconference will be 7 AM US East.