**Minutes V1.0**

**289th CEOS SECRETARIAT MEETING**

Thursday 10 February 2022

Chaired by CNES

**Participants**

**CEO:** Marie-Claire Greening

**CNES:** Olivier Marsal, Aurélien Sacotte, Matt Steventon, Stephen Ward

**ESA SIT Chair Team:** Ivan Petiteville, Stephen Briggs, George Dyke

**EUMETSAT:** Robert Husband, Paul Counet

**GEO SEC:** Doug Cripe

**GISTDA** Watanyoo Suksa-ngiam

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

**NASA:** Christine Bognar

**NOAA:** Kerry Sawyer

**SEO:** Brian Killough, Dave Borges
**WGCapD:** Jorge Del Rio Vera

**WGClimate:**  Albrecht von Bargen

**WGCV:**  Akihiko Kuze

**WGDisasters:** Hélène de Boissezon, Laura Frulla

**WGISS:** Makoto Natsuisaka, Tom Sohre

1. **Welcome, Agenda Review**

Olivier Marsal (CNES, CEOS Chair Team) welcomed and thanked everyone for attending SEC-289.

Olivier noted apologies from Selma Cherchali (CNES, CEOS Chair) for being unable to attend the SEC meeting due to other official commitments. Olivier reviewed the agenda for SEC-289 and opened the floor for any comments and additions to the agenda. There were no further additions to the agenda.

1. **SIT Chair Report**

Ivan Petiteville (ESA, SIT Chair Team) reported:

* The SIT Chair team will meet with the representatives of the International Methane Emissions Observatory including UNEP to explore possible new collaborative ideas between CEOS, GHGSat and UNEP soon. A relevant item will feature on the SIT-37 agenda.
* Informal discussions with the Virtual Constellations (VCs) were held to discuss progress, issues, and obstacles. The compendium of notes from these calls will be shared with SEC.
* Thirteen people have joined the CEOS ARD Oversight Group, which is led by Ferran Gascon, Sentinel-2 Mission Manager on behalf of the ESA SIT Chair Team. The CEOS ARD Oversight Group met on 3 February with a good first discussion and some concrete actions, including on the Terms of Reference to be presented to SIT-37 for endorsement.
* SIT-37 will be held virtually from 29-31 March, 2022. A week at a glance for the meeting has been shared with SEC for feedback.
* SIT Technical Workshop 2022 is planned to be held in person in September.

*Discussion*

Albrecht von Bargen (WGClimate) proposed a discussion offline between WGClimate leadership and the ESA SIT Chair Team to ensure the various carbon and climate activities are well coordinated.

1. **CEOS Executive Officer Report**

Marie-Claire Greening (CEOS Executive Officer) reported:

* Updates for the 2022-2024 CEOS Work Plan have been received steadily and the formulation of a full draft of the new three-year Work Plan is underway.
* SEC Action **288-01** has been completed. A letter acknowledging receipt of the request for a CEOS representative to be nominated to the Executive Council of EC-PHORS was signed by the CEOS Chair and sent to WMO on 4February, 2022.
* ESA has nominated Dr Anna Maria Trofaier to represent CEOS on the EC-PHORS Executive Council. Marie-Claire will send a communication email to CEOS about the nomination to seek approval.
* The annual CEOS-GEO Coordination Meeting was held virtually on 8-9 February, 2022. Some highlights included:
	+ High-level strategic discussions on the alignment of the CEOS and GEO priorities and areas of improvement.
	+ The main message was the need for CEOS to be able to rely on GEO as a bridge between the EO world and end-users, also to identify, filter and prioritise observation needs. CEOS can more effectively respond to any requests from GEO for support or involvement if that request is very clearly defined, stakeholders engaged, and priorities identified.
	+ The GEO priority of urban resilience was discussed, and it was suggested that a dedicated focal point within the GEOSEC would be helpful for CEOS. Urban resilience is a new domain and much strategic thinking is required to identify the key stakeholders and their needs before any activities are planned. CEOS suggested GEO consider inviting key external stakeholders like the World Bank to the GEO Symposium in June to help identify needs and expectations of information derived from EO. The Living Planet Symposium would also potentially be a good forum.
	+ Data Cubes, ARD and the open science theme were addressed. The main thrust of the conversation was centred around the need for GEO to help better identify specific user requirements, thereby ensuring that the satellite data and their supporting applications serve the needs of users. CEOS looks to GEO to understand and broker user needs.
	+ GEO is willing to support the UN Convention on Biological Diversity and the post-2020 Global Biodiversity Framework and the GEOSEC agreed to be involved in the dedicated session on biodiversity that has been planned for SIT-37.
	+ The IPCC and UNFCCC processes are key areas where GEO and CEOS can cooperate. CEOS is already actively involved in the new GEO Climate Change Working Group. GEO was asked to consider providing active and targeted support to CEOS in building PPPs, and in establishing a relationship of trust with private sector missions.
	+ GEO was asked to consider integrating new CEOS products into its toolkit platforms, and to work with CEOS on technical bridges between EO toolkits for integration purposes. Brian Killough (CEOS SDG Coordination Lead) suggested there needs to be a more active triangulation of coordination between CEOS, GEO and UN Custodian Agencies with respect to the SDGs.
	+ GEO, through the DRR WG, were asked to consider ways to engage less developed countries in GSNL. It was also suggested that the CEOS WGDisasters work with the GEO DRR WG to consider ways to work more with regional GEOs, including ways to gain a better understanding of what contributions CEOS could make related to regional GEO requirements.
	+ GEO noted and welcomed the current drive to improve coordination across CEOS with respect to the oceans. GEO Blue Planet and the UN Decade of Ocean Science for Sustainable Development were discussed; GEO is keen to investigate the definition of a set of standards for marine ARD products.

*Discussion*

Ivan Petiteville (ESA, SIT Chair Team) noted the importance of GEO’s role in serving as a focal point and filter for observation requirements to avoid duplication of work. Clear and consolidated end-user requirements would be ideal and efficient.

Doug Cripe (GEO SEC) noted that Yana Gevorgyan (GEO SEC Director) was pleased with the meeting and her intention in such meetings is to identify new things that can be done with the CEOS team. For example, nexus ideas for the marine domain.

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| **Decision 01** | To increase engagement and transparency, it was agreed that the final minutes and written reports of the monthly CEOS Secretariat meetings will be shared with all CEOS Members and CEOS Associates, via the CEOS mailing lists. |
| **289-01** | CEOS Executive Officer to share a summary report on the CEOS-GEO Coordination Meeting. | **Before SEC-290** |
| **289-02** | CEOS Executive Officer to seek endorsement from Principals regarding the ESA nomination for the EC-PHORS Executive Council. | **Before SEC-290** |

1. **Working Group Reports**

**WGDisasters**

Hélène de Boissezon (CNES) reported on behalf of Pierric Ferrier (CNES, WGDisasters Chair):

* The Volcano demonstrator report has been received and is being analysed.
* DIS-19-02 report related to the update of the Santorini Report on priorities for the geohazard community has been cancelled due to a lack of interest following solicitation for input.
* Seismic Demonstrator Report, which was action item DIS-19-03, has been delayed to Q2 2022.
* A Flood pilot report with the GEO-LEO-SAR for areas of intensive flood risk is expected in March 2022 (DIS-20-06).
* Update to the CEOS Work Plan is on track and will be submitted on 11 February.
* WGDisasters will participate in the next EGU General Assembly, in hybrid mode.
* Biennial reports from Iceland, Virunga Volcanoes and Southern Andes Supersites have been received.
* A joint WGCapD and WGDisasters activity related to the Recovery Observatory Demonstrator has been planned. This is focused on decision-makers in post-crisis and recovery after disasters.
* WGDisasters will host a special session on Innovative Applications of Satellite Data for Risk Management and Disasters, highlighting selected WGDisasters activities at ISPRS in June, 2022.
* WGDisasters-17 will be held virtually from 15-17 March, 2022.

**WGClimate**

Albrecht von Bargen (DLR, WGClimate Chair) reported:

* Continuous update of use cases and the review process is ongoing. Around 15 use cases have been finalised, with website publication by NOAA/NCEI ongoing. WGClimate invites agencies to propose more use cases. The use cases are available on the ECV Inventory webpage.
* Preparation of the ECV Gap Analysis Workshop related to the Carbon Cycle has started. The organisation committee comprises representation from EUMETSAT, JAXA, ECMWF, and the GHG and AFOLU Task Teams. The workshop had been moved to May 18-20 in advance of the Living Planet Symposium, allowing meetings to be in a hybrid format. Agencies are invited to nominate experts to attend.
* Ongoing cooperation with GCOS:
	+ GCOS Science conference is co-organised with EUMETSAT.
	+ WGClimate will review the updated GCOS Implementation Plan in advance of the public review in May 2022. The GCOS IP will be published in July 2022 and presented during the GCOS Science Conference and COP-27.
* WGClimate meetings are projected for March 22-24 and June 2022.
* The second GCOS Science Conference will be held from 17-19 October, 2022.

**WGISS**

Makoto Natsuisaka (JAXA, WGISS Chair) reported:

* The Data Preservation and Stewardship Interest Group has been updating the “CEOS WGISS Data Management and Stewardship Maturity Matrix”. The updated matrix will be discussed at the upcoming WGISS-53 meeting.
* A webinar *“How to use the WGISS Data Management and Stewardship Maturity Matrix”* is being prepared in collaboration with WGCapD.
* An AVHRR dataset recovery activity has started with the goal to unfold and make accessible 1km AVHRR data from regional archives. This will possibly be open and free.
* A system-level team meeting was held on 25 January and the interest of WGCapD in the STAC activity was noted.
* WGISS attended the first CEOS ARD Oversight Group meeting on 3 February.
* WGISS-53 will be held virtually on 22-24 March, 2022. Presentations from other WGs, VCs, and AHTs are welcomed.

**WGCapD**

Jorge Del Rio Vera (UNOOSA, WGCapD Chair) reported:

* SEC Action **288-02** has been completed. The WGCapD Chair and CEO met to discuss UN-COPUOS representation of CEOS. It was agreed that WGCapD would seek to present EOTEC DevNet at the upcoming meeting of the Scientific and Technical Subcommittee (STSC) in February 2022.
* It was agreed to explore the benefits of providing an official written statement to the UN-COPUOS Plenary in July 2022. CEOS has an observer seat. WGCapD has nominated Nancy Searby (NASA) to represent CEOS and give a presentation at the UN-COPUOS meeting.
* Part 3 of the *"Earth Observations Toolkit for Sustainable Cities and Human Settlements Training"* webinar is planned for 10 February.
* WGCapD-11 will be held virtually on 23-25 February. Region-specific meetings will take place on 22 February.

*Discussion*

Kerry Sawyer (NOAA) noted there are already many national delegations planning to attend the UN-COPUOS Plenary. She suggested it would be helpful to have a summary that explains the objectives of CEOS participation specifically.

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| **289-03** | WGCapD Chair to prepare a short document detailing the potential benefits and objectives of CEOS participation in the UN-COPUOS Plenary. | **SEC-290** |

**WGCV**

Akihiko Kuze (JAXA, WGCV Chair) reported:

* WGCV is considering nominations for the WGCV Vice Chair for the term of October 2022 to October 2024. Presentations by candidates will be held in March during WGCV-50. A final vote and selection will be held in October during WGCV-51.
* WGCV-50 will be virtual from 22-25 March, 2022.
* WGCV-51 will be held in person in October 2022, in Tokyo. A joint meeting with WGISS has been proposed.
1. **GEO Report**

Doug Cripe (GEO SEC) reported:

* The GEO Program Board meeting will be held from 22-24 February. It will have a focus on Implementation Plans of the Flagships and Initiatives of GEO.
* The GEO Executive Committee meeting will be held on 15-16 March, 2022.
* GEO Week 2022 will be held from 31 October to 4 November, possibly in Ghana.
* The Expert Advisory Group is advancing the review of GEOSS. The GEO Mid-term Evaluation found that GEOSS is not well understood and that the concept should be reviewed, with a proposal due to be presented to the GEO Plenary in November 2022. The next meeting of the Expert Advisory Group has been planned for early March.
* Integrated Global Water Cycle Observation Community (IGWCO) is undertaking a revision of its water strategy produced in 2014. There were some implications for CEOS in that strategy and CEOS had provided a response. IGWCO invites CEOS to be part of the review process. More details will be shared in the next CEOS SEC meeting.
1. **SEO Report**

Brian Killough (SEO, NASA) reported:

* The SEO has initiated a project with Sinergise to integrate the Open Data Cube (ODC) with the Sentinel Hub. This will allow ODC users from around the world to develop or test their algorithms on the Sentinel Hub infrastructure and easily use all the Copernicus datasets available on the platform.
* The SEO has been collaborating with Gary Geller (NASA JPL, GEOBON) and Ernst & Young (EY) on the 2022 Data Challenge. This project will use CEOS satellite data products (Sentinel-2, Copernicus DEM, land cover) from the Microsoft Planetary Computer to develop machine learning species distribution models for frogs in Australia, Costa Rica, and Africa. This project is a great opportunity to support biodiversity.
* The SEO has initiated a collaboration with Alyssa Whitcraft (GEOGLAM) to demonstrate soil organic carbon stock and flux estimates for agriculture lands using CEOS time-series satellite data and the Open Data Cube (ODC). The resulting Jupyter Notebook algorithms would be open and available to support AFOLU and SDG 15.3.1.
* The SEO is investigating primary AFOLU land cover datasets and developing sample analysis products to support the Global Stocktakes (GST). To date, demonstration land cover products have been developed from 10m ESA World Cover, 100m ESA Copernicus, 300m ESA CCI and 500m NASA MODIS data. Initial results suggest interoperable use of these datasets should be avoided as there are large differences in classifications and area estimates. In addition, higher resolution datasets are only recent and lower resolution datasets must be used for records. In all cases, country-based users should do validation testing.
* Invited everyone to the CEOS Communications Team meeting on 15 February at 12 PM UTC.

*Discussion*

Regarding the collaboration on soil organic carbon stock and flux estimates for agriculture lands using CEOS time-series satellite data, Doug Cripe (GEO SEC) asked if Brian had connected with Neil Sims of the GEO Land Degradation Neutrality (LDN) initiative. As one of the sub-indicators is organic soil carbon (difficult to estimate), Doug asked if there is an opportunity to complement what is needed for SDG 15.3.1. Brian noted he will be further discussing this topic with Neil Sims.

1. **Next Meeting and Adjournment**

Olivier Marsal (CNES, CEOS Chair Team) thanked everyone for participating. CEOS SEC-290 will be held on March 10, 2022, at the usual time of 7 AM US East.

The plan for CEOS SEC teleconferences/meetings leading up to the 2022 Plenary is as follows (typically Thursday):

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| SEC-290: March 10, 2022SEC-291: Late March (pre-SIT-37 meeting)SEC-292: April 14, 2022SEC-293: May 12, 2022SEC-294: June 9, 2022SEC-295: July 21, 2022 | SEC-296: September 1, 2022SEC-297: Mid-September (pre-SIT-TW meeting)SEC-298: October 13, 2022SEC-299: November 10, 2022SEC-300: Pre-CEOS-36 Plenary meeting |

The start time for all teleconferences will be 7 AM US East. If there are face-to-face meetings, the times will be advised closer to the dates.