**Minutes V1.0**

**309th CEOS SECRETARIAT MEETING**

Thursday 15 June 2023

Chaired by GISTDA

**Participants**

**CEO:** –

**CSA:** Frédéric Fournier, Emma Fernandes

**EUMETSAT:** Robert Husband, Paul Counet

**ESA SIT Chair Team:** Eleni Paliouras, Stephen Briggs, Stephen Ward, George Dyke

**GISTDA:** Pakorn Apaphant, Atipat Wattanuntachai, Tanita Suepa, Matt Steventon, Libby Rose

**JAXA:** Yuko Nakamura, Yukio Haruyama, Satoshi Uenuma

**NASA:** Christine Bognar

**NOAA:** Charles Wooldridge

**SEO:** –

**WGCapD:** Jorge Del Rio Vera

**WGCV:**  –

**WGClimate:** Jeff Privette, Yasjka Meijer

**WGDisasters:**  Helene De Boissezon, Laura Frulla

**WGISS:**  Makoto Natsuisaka

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

Pakorn Apaphant (GISTDA, CEOS Chair) welcomed everyone to CEOS SEC-309.

Apologies for being unable to attend SEC-309 were received from Marie-Claire Greening (CEOS Executive Officer), Philippe Goryl (ESA, WGCV Chair) and Dave Borges (NASA, SEO).

It was noted that the open SEC actions will be covered under their respective agenda items.

## CEOS Chair Report

Pakorn Apaphant (GISTDA, CEOS Chair) reported:

2023 CEOS Plenary

* The dates for the 2023 CEOS Plenary are confirmed. Side meetings will be held on Tuesday, November 14; Plenary on Wednesday and Thursday, November 15 - 16; and there will be an excursion on Friday, November 17.
* Plenary will be held in Chiang Rai (in the north of Thailand) and the invitation was circulated to CEOS Members and Associates just prior to SEC-309.
* A workshop on carbon accounting from space will be held on Tuesday, November 14, prior to CEOS Plenary. CEOS members will be invited to promote the utility of Earth observation to regional practitioners and government representatives. The event will have a political focus, with the aim of increasing uptake of EO for reporting and decision-making.

66th Session of the Committee on the Peaceful Uses of Outer Space (UN COPUOS)

* Pakorn presented the official CEOS Statement at the 66th session of the Committee on the Peaceful Uses of Outer Space (UN COPUOS). It was a good opportunity to engage with UN COPUOS members and hear about their work.
* Pakorn also shared an update on CEOS initiatives with UNOOSA. UNOOSA plans to work with GISTDA to gather feedback on the Space 2030 Agenda.

GEO-TREES

* GEO-TRESS has engaged the GISTDA CEOS Chair Team regarding support with sites in Thailand. GISTDA has agreed to explore opportunities.
* Pakorn has been encouraging further connections between GEO-TREES and CEOS members. This is a practical example of the CEOS-GEO relationship.

Engaging Regional CEOS Agencies

* The GISTDA team had the chance to meet with their counterparts in other Asian CEOS Agencies, including the Indian Space Research Organisation (ISRO), CNSA (China National Space Administration) and the Korea Aerospace Research Institute (KARI). Pakorn encouraged them to join CEOS meetings and activities. Very positive feedback was received, and they indicated their intent to consider sending representatives to the CEOS Plenary that will be held on November 14-16, 2023, in Chiang Rai.
* GISTDA also had a chance to speak with SANSA recently and invited them to participate in this year’s plenary.
* Pakorn encouraged other SEC regional representatives to do similar outreach on a regular basis with CEOS agencies in their regions.

New Space

* GISTDA has been assigned as a coordinator for sections of the New Space Task Team White Paper.
* Atipat Wattanuntachai (GISTDA, CEOS Chair Team) thanked the Working Groups and Virtual Constellations for their feedback to date on observation gaps that can be addressed by New Space missions.
* GISTDA recently hosted a session on observation gaps at an ASEAN workshop, at the end of May. ASEAN State members’ requirements and findings were consistent with past responses from CEOS entities.
* GISTDA attended the ASEAN Satellite Workshop during the week of June 5, which included a session on EO. Commercial entities, including Amazon and Axelspace, also participated. It was again found that the observation gaps identified were very consistent with what was identified by CEOS entities.
* Pakorn encouraged Working Groups and Virtual Constellations who have yet to provide feedback on observation gaps to GISTDA (via atipat@gistda.or.th) to do so as soon as possible, so their feedback can be included in the White Paper.

1. **SIT Chair Report**

Eleni Paliouras (ESA, SIT Chair Team) reported:

IMEO-CEOS Workshop

* The SIT Chair team coordinated representation of multiple CEOS agency experts at the recent CEOS-IMEO workshop held at Harvard University from June 7-8. Yasjka Meijer (ESA, WGClimate GHG Task Team Lead) reported on the outcomes:
  + The meeting aimed to explore coordination opportunities among public, private and NGO methane observation providers.
  + Around 40 people joined in person, with an additional 20 online.
  + The discussions suggested that CEOS should develop in detail some use cases, around 3-4 of them, from hotspot to large-scale. Each will have different stakeholder requirements and needs for cal/val. The WGClimate GHG Task Team will organise a meeting in early July, with the aim to identify one of these use cases and develop it further to understand uncertainties of emissions estimates.
  + Terminology conflicts were raised, noting that the same words are used for different meanings across communities.
  + Some of the tasks in IMEO overlap with the WMO Greenhouse Gas Watch initiative. However, it was agreed that there is still room for complementarity.
  + Immediate access to data is needed for the Methane Pledge.
  + IMEO has established direct access to facility-level contacts, which is critical for action in response to findings.
  + Regarding rapid access for the IMEO methane alert system, MARS, data delivered within one day would be sufficient.
  + The workshop saw traditional space, New Space and the commercial sector involved, alongside philanthropic organisations and mixes of these categories. There is room and a desire for coordination of all of these efforts into a ‘virtual constellation’. The question for CEOS leadership is whether CEOS should take the lead on this. There is certainly a need for coordination, and it may be that a CEOS Virtual Constellation is an effective means.
  + These topics (pilot activities, virtual constellation for methane) will be explored further at the SIT Technical Workshop in October.

Carbon & Biomass

* The AFOLU Roadmap draft has been distributed for review by CEOS. They plan to present on it during the SIT Technical Workshop on October 17-19, 2023. Feedback is requested by August 1, 2023. Some comments have been received already.

2023 CEOS Earth Observation Handbook

* Many CEOS community members have contributed texts and articles for the new CEOS Earth Observation Handbook, which is timed to coincide with the first UNFCCC Global Stocktake later this year.
* UNFCCC Executive Secretary (Simon Stiell) has agreed to do the foreword, alongside Simonetta Cheli (ESA, SIT Chair).
* The draft is currently out for review by SEC, alongside many other CEOS groups and individuals.
* The writing team thanks everyone that has found time to make comments thus far. The review window closes on Friday June 16, to allow a move to the design phase.
* It is anticipated that the first digital design version will be shared with SEC at the end of summer.

CEOS Analysis Ready Data (CEOS-ARD)

* The Open Geospatial Consortium Analysis Ready Data Standards Working Group (OGC ARD SWG) held its first meeting on June 5, 2023. CEOS has strong representation, and the CEOS-ARD Oversight Group is considering who might be able to serve as an additional co-chair on behalf of CEOS.
* Clement Albinet of ESA was endorsed by WGCV as the alternate WGCV point of contact for CEOS-ARD assessment peer reviews. Clement will work alongside Medhavy Thankappan and Peter Harrison of Geoscience Australia. The additional support will provide redundancy and help to accelerate the peer review process.

CEOS New Space

* Inputs for the New Space Task Team White Paper are being collected. Numerous CEOS Agencies and entities have provided inputs recently. The SIT Chair team thanks everyone that has contributed.

Upcoming meetings or events

* The 2023 SIT Technical Workshop will be held at ESA ESRIN on October 17-19. The SIT Chair Team will soon start working on the statement of objectives for this meeting.

1. **CEOS Executive Officer Report**

Marie-Claire Greening (CEOS Executive Officer) was unable to report to SEC-309 due to an overlap with her attendance at the GEO Programme Board (PB) meeting in Geneva on behalf of CEOS. A written report has been provided.

Matt Steventon (GISTDA, CEOS Chair Team) highlighted some important points from Marie-Claire’s written report regarding the GEO SEC representative to CEOS:

* In March 2023, the GEO Secretariat presented their new Concept of Operations to the GEO Executive Committee. Under this new structure, a position will be opened within a new GEO Communication and Partnerships Unit dedicated to strategic coordination with GEO Participating Organisations. This new posting will replace Laurent Durieux as the GEO Secretariat representative to CEOS. The GEO Secretariat has not yet started the recruitment process for the new strategic coordination role.
* In the meantime, CEOS remains without a GEO liaison, a situation that adds to the practical difficulties already experienced for a number of months.
* With this in mind, and with the current discussions and proposed changes to GEO post-2025, it is timely for CEOS to review and reassess both, its overall engagement with GEO as well as its targeted and regular interactions with GEO in both directions. A dedicated session on this topic will be included at the SIT Technical Workshop (October 17-19, 2023) and, to support the discussion, the CEO will prepare an assessment of current CEOS interactions with, and contributions to, GEO through an analysis of the CEOS Work Plan and specific interactions with CEOS entities.

*Discussion*

* Christine Bognar (NASA) suggested that it would be interesting to know whether GEO will be represented at this year’s CEOS Plenary. Charles Wooldridge (NOAA) indicated that Yana Gevorgyan (GEO Secretariat Director) is considering attending Plenary and suggested it would be appropriate for the CEOS Chair to send a personal invitation.

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| **309-01** | CEOS Chair to send an official invitation to GEO Secretariat Director, Yana Gevorgyan, for the 2023 CEOS Plenary. | **SEC-310** |

1. **Working Group Reports**

**WGDisasters**

Helene De Boissezon (CNES, WGDisasters Chair) reported:

* Recovery Observatory demonstrators will soon come to an end. WGDisasters is now preparing use cases for the cost-benefit analysis. This process aims to identify how partners could be found for the phase following the demonstrators. The group has organised a virtual meeting for June 28 to discuss it further.
* The Volcano demonstrator is finalising its proposal for the period 2024 and beyond, with the International Virtual Volcano Observatory.
* The Landslides demonstrator is doing much the same, preparing a sustainability report to support ongoing scientific needs.
* The Seismic demonstrator is currently in scientific mode, and not fully operational.
* WGDisasters submitted contributions to the New Space Task Team White Paper, through the observation gaps chapter coordinated by GISTDA.
* WGDistasters-20 will be hosted by USGS on September 5-9, 2023, in Yellowstone National Park, Montana, USA.
* WGDisasters also participated in the GEO Symposium this week in Geneva, through a panel discussion.

**WGClimate**

Jeff Privette (NOAA, WGClimate Chair) reported:

* The ECV Inventory of climate records is undergoing a restructure to lower the operational maintenance costs. The process won’t be able to start until December due to delays in the tender process, but WGClimate will proceed with merged gap analyses without a contractor. A draft is expected around August 2023.
* Former WGClimate Chair Albrecht von Bargen (DLR) is serving as the interim representative to the GCOS Terrestrial Observation Panel for Climate (TOPC), and WGClimate is still seeking a permanent representative. Any CEOS Agency member can serve in this role, i.e., they need not be the standing agency representative to WGClimate.
* WGClimate submitted feedback on the observation gap opportunities for New Space to GISTDA for the New Space Task Team White Paper.
* WGClimate is working with the CGMS Secretariat on actions and slides in the lead up to CGMS-51 Plenary. The focus will be to initiate discussions on systematising space for the Global Stocktakes.
* Regarding the Space Agencies’ Response to the GCOS IP (SARGIP), the first routine check-in for action teams was held virtually on June 5, 2023. The teams are proceeding and assessing which action teams will focus on 2023 / 2024 results. There is a plan for a high-level, glossy report on SARGIP to SBSTA and GCOS, and WGClimate encourages all CEOS Agencies to support this large undertaking.
* A plan and schedule for preparing the annual Space Agency Statement for SBSTA is under preparation. This will be presented to CGMS-51 Plenary in two weeks’ time.
* The 19th World Meteorological Congress was held in May/June 2023. During the meeting the WMO Greenhouse Gas coordination role “Global Greenhouse Gas Watch” (GGGW) was approved.
  + The GHG Task Team and WGClimate are supportive of this and will be engaging with WMO on differences between the CEOS Greenhouse Gas Roadmap and WMO plans.
  + WMO is hosting an observation coordination and planning meeting in October 2023.

*Discussion*

* Pakorn Apaphant (GISTDA, CEOS Chair) invited WGClimate to report to the pre-Plenary carbon accounting workshop.

**WGISS**

Makoto Natsuisaka (JAXA, WGISS Chair) reported:

* The WGISS chair participated in the CEOS New Space Task Team meeting on May 31, 2023, and joined the review of the draft white paper.
* The WGISS chair and vice chair participated in the WGCV-52 meeting on June 7, 2023. The status of CEOS Interoperability Framework was reported and the assignment of Factor ‘champions’ was discussed. WGCV have identified a lead for the Data Quality Factor and have made recommendations regarding the Semantic Factor.
* The joint meeting with CGMS Working Group IV was organised on June 7, 2023. The objective of the meeting was to introduce individual activities on both technical groups and to identify topics for which both groups have mutual interests. The Data Management and Stewardship Maturity Matrix developed by WGISS, and the Cloud Use Best Practice developed by CGMS Working Group IV were identified as those topics and the importance of continuous communication was agreed.
* WGISS-56 will be held October 24-26, in Paris, France, hosted by CNES.

**WGCapD**

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

* An *ad hoc* group inside WGCapD is analysing options to improve the reusability of learning objects. The *ad hoc* group will meet again in June (week of June 19) to discuss repositories for learning objects.
* The WGCapD monthly meeting took place on May 4 and the discussion centred around a document compiling needs from the presentations of UN entities that took place during the joint UN-Space/WGCapD-12. The document is a work in progress and available [here](http://here.). There is a form to insert resources matching the needs (form [here](http://here.)). SEC responses to the form are welcomed.
* WGCapD consulted with its members to respond to GISTDA’s call for inputs to the New Space Task Team White Paper on observation gap opportunities. Information was provided on May 30. The contribution mentions two areas of cooperation with New Space: the first is on joint capacity-building activities and the second on data archive preservation and availability.
* A new deliverable has been requested by the Faculty of Science and Technology of the National University of Itapúa, Paraguay, due to the extreme El Niño Southern Oscillation (ENSO) season expected in Paraguay. Requirements of the training are in discussion and once clarified, WGCapD members will be consulted on availability.
* Members from AEM and SANSA delivered presentations on their agencies’ capacity-building activities during the monthly WGCapD meeting. The presentations were provided with the written report.

**WGCV**

Matt Steventon (WGCV Secretariat) reported on behalf of Philippe Goryl (ESA, WGCV Chair):

* WGCV-52 was held at ESA ESRIN, June 5-9, 2023. Excellent reports were provided by all subgroups and there were very active discussions across all priority areas. 41 actions and 7 formal decisions were recorded, demonstrating the high level of activity in the group.
* An LPV Subgroup Workshop is being held this week, following WGCV-52.
* The SI-Traceable Satellite (SITSat) Task Team Terms of Reference were endorsed and this group under WGCV will convene shortly. The team will collaborate on joint topics of interest related to SI-traceable satellites and provide a level of coordination for this emerging class of mission.
* It was agreed that the Pre-Flight Calibration Workshop will be organised for September 2024. Organisation is underway in coordination with GSICS.
* Cody Anderson (USGS, WGCV Vice Chair) was identified as the Factor champion for the ‘Data Quality’ Factor of the CEOS Interoperability Framework. WGCV also suggests that the Semantics Factor of the Interoperability Framework be distributed vertically / cross-cutting.
* Clement Albinet of ESA was confirmed as the alternate WGCV point of contact for CEOS-ARD self-assessment peer reviews.
* It was agreed that SARCALNET documents will, in time, be presented to WGCV for review and eventual endorsement such that the activity can be badged as a top-level WGCV activity like RadCalNet.
* A new Terrain Mapping subgroup (TMSG) Co-Chair is sought. All nominations are welcome.
* The TMSG and DEMIX (Digital Elevation Model Intercomparison eXercise) Workshop plenary meeting will be organised in July 2023, together with the geomorphometry 23 workshop.
* Various additional inputs for the New Space Task Team White Paper were discussed at WGCV-52, including around GNSS, SITSats and match-up databases.
* Support is needed for key GHG cal/val networks, including NDACC (Network for the Detection of Atmospheric Composition Change), TCCON (Total Carbon Column Observing Network) and COCCON (COllaborative Carbon Column Observing Network). WGCV will prepare inputs for CEOS leadership consideration.
* The annual meeting of the NDACC-IRWG / TCCON / COCCON will be hosted by the Royal Belgian Institute for Space Aeronomy (BIRA-IASB) supported by the Belgian Science Policy Office (BELSPO). This event will take place on June 12-16, 2023, at the Radisson Blu Balmoral Hotel, Spa, Belgium.
* WGCV is considering potential applications of the CEOS Analytics Lab (previously known as the CEOS Earth Analytics Interoperability Lab).
* There was great progress at WGCV-52 on the concept of a CEOS-FRM Assessment Framework (Fiducial Reference Measurement) and pilot assessments against the preliminary framework are planned between now and WGCV-53 in February/March 2024.
* A WGCV cal/val portal newsletter is being planned. The team will ensure cross-posting with CEOS Newsletter and CEOS social media.
* WGCV-53 is being planned (tentatively) in Cordoba, Argentina, preferably March 4-8, 2024.
* The Infrared and Visible Optical Sensors (IVOS) subgroup will meet at DLR, Germany at the end of September 2023.
* The SAR subgroup workshop will be organised in October 2023 at DLR in Germany.
* The Atmospheric Composition subgroup, together with AC-VC, will organise a joint workshop in October 2023, in Brussels, Belgium.

*Discussion*

* Jeff Privette (NOAA, WGClimate Chair) suggested a side meeting of WGCV and the WGClimate GHG Task Team at the SIT Technical Workshop on the topic of sustainment of the various Greenhouse Gas cal/val networks, and potential coordination with WMO on this topic.

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| **309-02** | WGCV Chair and WGClimate Chair to coordinate a side meeting during the SIT Technical Workshop on October 17-19, 2023, to discuss Greenhouse Gas cal/val network sustainment and potential coordination with WMO on this topic. | **SIT Technical Workshop 2023** |

1. **SEO Report**

Matt Steventon reported on behalf of David Borges (NASA, SEO), who was unable to report to SEC-309 due to an overlap with his attendance at the GEO Open Data Workshop. An advance apology and written report were provided. Matt reported:

* Requested that SEC Action 307-03 be closed. SEO and CEOS Communications Team continues to develop the new Communications Strategy which will be circulated for comments and feedback prior to SIT Technical Workshop 2023. SEO remains open to guidance and input regarding the development of the Strategy, as well as CEOS agency contacts that are able and willing to amplify CEOS communications via social media.
* The GEO Secretariat invited the SEO to join the reconstituted GEOSS Infrastructure and Data Task Team (GIDTT), and the SEO has accepted this request. CEOS representation on the GIDTT will include Mirko Albani (ESA), Alex Held (CSIRO) and Dave Borges (NASA, SEO). GIDTT meetings are expected to begin in September 2023.
* The SEO virtually attended the first official OGC ARD Standards Working Group (SWG) meeting, held at the 126th OGC Member Meeting on June 5, 2023. The ARD SWG has open leadership roles, and the SEO is working with the CEOS-ARD Oversight Group and LSI-VC to consider CEOS representation in these positions.
* The SEO is hosting a CEOS exhibition booth at IGARSS 2023 on July 17-21, 2023, in Pasadena, California, USA. Please contact Dave Borges and Libby Rose if you wish to contribute any specific CEOS content.

1. **AOB**

CEOS Plenary 2024

* Frédéric Fournier (CSA, 2024 CEOS Chair Team) reported that CSA has undertaken a comprehensive review of community events and holidays in late 2024 in their effort to select a candidate week for the 2024 CEOS Plenary.
* Éric Laliberté (CSA, 2024 CEOS Chair) sent an email to SEC on June 7, 2023, proposing the dates for the 2024 CEOS Plenary as October 22-24, 2024. The first day will be for side meetings, followed by the two days of the Plenary.
* The location of the meeting is not yet confirmed, but it is likely to be in Eastern Canada.
* Christine Bognar noted that NASA is checking the calendars of Karen St. Germain and Julie Robinson, as well as for conflicts with other conferences. NASA hopes to have an answer in the coming week.

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| **309-03** | SEC to review the proposed 2024 CEOS Plenary dates of October 22-24, 2024, and report any issues to the CSA 2024 CEOS Chair Team. | **30 June 2023** |

## Next Meeting and Adjournment

Pakorn Apaphant (GISTDA, CEOS Chair) thanked everyone for participating in SEC-309. SEC-310 will be held on July 20, 2023, at 7 AM US East. The plan for CEOS SEC teleconferences/meetings leading up to the 2023 Plenary is as follows (typically Thursday):

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| SEC-310: July 20, 2023  SEC-311: September 7, 2023  SEC-312: September 28, 2023 | SEC-313: October 17, 2023 (SIT Technical Workshop)  SEC-314: November 14, 2023 (CEOS Plenary) |

The start time for all teleconferences will be 7 AM US East. Face-to-face meeting times will be advised closer to the dates.