

Report on Outcomes of Relevance to CEOS from the Montreal Biodiversity Conference

The most significant outcomes of COP-15 relevant to the Ecosystem Extent Task Team are probably:

- The GBF includes Goal A (as expected—top level for Ecosystems, Species, and Genetics)
- The Monitoring Framework includes headline indicator A.2 ("extent of natural ecosystems"); all Parties will need to report on that.

I should note that the method for assessing A.2 was not identified and no standard classification scheme was selected (which makes sense due to wide variation in ecosystems across countries). These and other topics will be discussed by a CBD working group and reported on at COP-16 in two years.

Also relevant was a side meeting hosted by GEO BON on the Global Biodiversity Observation System concept that I have mentioned in previous CEOS meetings, and a related concept called the Global Knowledge Support Service for Biodiversity, hosted by the UNEP-World Conservation Monitoring Centre. Discussion on the relationship between these concepts are now starting.

CEOS SEC-303 Report

Entity: SIT Chair Team

Prepared By: SIT Chair Team

Updates on issues raised during the last CEOS SEC teleconference

- The SIT-38 draft objectives have been written to address the unique focus of the SIT meetings, that is: *“hearing, discussing, and agreeing requests for, and coordination of, implementation resources”*.

Issues requiring discussion/decision during current CEOS SEC teleconference

- No specific issues.

Other highlights, activities, actions, projects, collaborations

Carbon & Biomass

- SIT Chair team is ongoing contact with IMEO colleagues regarding their data requests
- Work ongoing with the CEO for harmonised WP update of C&B actions.

CEOS-ARD

- The first meeting of the OGC ARD Standards Working Group will take place at ESA ESRIN, during the occasion of the 125th OGC Members Meeting. This group seeks to develop formal standards for geospatial ARD, and the work will use CEOS-ARD as a basis. CEOS is expected to be represented by ARD experts from LSI-VC, WGCV, WGISS and the CEOS-ARD Oversight Group, and work is ongoing to coordinate the CEOS presence.
- The LSI-VC organised an IGARSS 2023 session, CCS.134: *Analysis Ready Data: New Opportunities* and CEOS representatives have provided a number of abstracts. CEOS is also contributing to session CCS.137: *Towards standards for data products: Analysis Ready Data, Decision Ready Information, and Geodata Cubes*.

Upcoming meetings or events

- The first meeting of the CEOS New Space Task Team will take place on Monday the 23rd of January. Aim will be to consider the inputs received from CEOS on possible focus topics and to define objectives and tasks for 2023.
- The SIT Chair team is planning a round of ‘VC Chats’ to take place in February 2023, ahead of the SIT-38 meeting. The team is working with VC Leads to schedule calls.
- SIT-38 will be held at ESA ESRIN (Frascati, Italy) in the week of 27th March 2023. Tue 28th March will be assigned to side meetings and Wed 29th and Thu 30th March will be the main days for SIT-38. An early draft of the meeting objectives were shared in mid-December. The SIT Chair Team will prepare a first draft of the agenda over the next few weeks. Information regarding registrations, side meetings, logistics, etc. will be sent shortly.
- The SIT Technical Workshop will be held 17-19 October 2023 at ESA ESRIN (Frascati, Italy).

CEOS SEC-302 Report

Entity: CEO

Prepared By: Marie-Claire Greening

Actions:

301-06	CEOS Executive Officer to work with Laurent Durieux (GEO Secretariat) and CEOS leadership to find a suitable date for the CEOS-GEO Coordination Meeting. The February timeframe is suggested.	SEC-302	Monday 6 th February 2023 has been agreed
--------	---	---------	--

CEOS-GEO Coordination Meeting

This meeting will take place in hybrid form on Monday 6th February 2023. In-person attendance will be at the GEOSEC offices in Geneva, with CEOS representation by the SIT Chair (Ivan Petiteville), the SEO (David Borges) and the CEO (Marie-Claire Greening). The CEOS Chair (Pakorn Apaphant) will attend remotely for the first half of the meeting, as will other experts who will be invited to dial in for specific topical sessions, with times chosen for these sessions mindful of differing time zones. A draft agenda has been agreed by CEOS leadership and has been shared for comment with the CEOS SEC, and also with the GEO Secretariat. Topics proposed in the draft agenda include:

- Overarching topics
 - 2023 CEOS Chair theme
 - GEO Week 2022 outcomes
 - Plans for the 2023 GEO Ministerial
 - Role of CEOS in the post-2025 GEO Strategy
 - Capacity Development and Data Democracy
- Support to Global Challenges:
 - Climate and Carbon
 - Sustainable Development Goals
 - Disaster Risk Reduction and Response
 - Biodiversity (with a focus on Ecosystem Extent)

GEO Programme Board

The 25th GEO Programme Board (PB) will be held at the GEOSEC offices in Geneva from 7th to 8th February. These two days follow on from the CEOS-GEO Coordination meeting on the 6th, so Ivan and Marie-Claire will stay and attend the PB in person. Topics of interest to CEOS on the draft agenda include an update on the 2023-2025 GEO Work Programme and the post-2025 Work Programme incubators, updates

from each of the topical GEO working groups, and an update on the post-2025 strategy for GEO. Planning for the 2023 GEO Symposium will also be discussed.

WMO Polar Space Task Group Follow-On

CEOS has nominated Maria Berdahl to the WMO as the Point of Contact to develop Terms of reference for the WMO Polar Space Task Group Follow-On. Ms Berdahl works as a Programme Officer in the EO unit of the European Commission's (EC) Directorate-General for Defence Industry and Space (DG DEFIS). Her work covers the Polar dimension of Copernicus and the Copernicus Atmosphere Monitoring Service; she is seconded to the EC from the Norwegian Space Agency. Ms Berdahl will also act as a liaison between CEOS and this initiative, bringing any matters requiring consideration by CEOS leadership to our attention. It has been stressed that Ms Berdahl is appointed by CEOS to provide expert guidance and advice only, any major decisions requiring endorsement by CEOS would need to be brought back to CEOS leadership by Ms Berdahl and to pass through our approval process.

CEOS Work Plan 2023 – 2025

The CEOS Work Plan covers a forward-looking three-year period, and an annual review and update of the plan takes place at the beginning of each year. The aim for this year's annual update, which will ultimately become the 2023-25 CEOS Work Plan, is that it be endorsed virtually just before SIT-38 at the end of March. The following is the schedule for review, update and endorsement:

- **Thursday 5th January 2023:** Review and update requests sent to all entities who are responsible for each section of the Work Plan and to those specifically responsible for the deliverables it informs.
- **Friday 10th February 2023:** Deadline for receipt of all reviews and updates to the Work Plan text and deliverables, including detailed definition of any new deliverables to be identified for the next Work Plan period.
- **Friday 17th February 2023:** Full new draft of Work Plan to be sent out for final review by CEOS membership and CEOS entities.
- **Friday 3rd March 2023:** Deadline for receipt of all final comments to the full Work Plan draft.
- **Monday 6th March 2023:** Final version of Work Plan to be sent out to CEOS Principals seeking their virtual endorsement ahead of SIT Plenary.
- **Monday 20th March 2023:** Virtual endorsement of 2023-2025 CEOS Work Plan
- **Monday 27th March 2023:** SIT Plenary week

Statement to COPUOS STSC

The 60th session of the Committee on the Peaceful Uses of Outer Space (COPUOS) Scientific and Technical Subcommittee (STSC) will take place in Vienna, Austria, from

6 – 17 February 2023. CEOS is providing a statement to be delivered by the CEOS chair as a pre-recorded reading as well as a written version for the meeting participants and for upload to the meeting webpages. The statement will have an SDG focus and will be delivered during session 5 (“Space technology for sustainable socioeconomic development”) on Tuesday 7th February. The statement was provided to the SEC for comment and feedback on 10th January. Based on these comments, a final version was created and was circulated to the SEC for information on 16th January 2023.

Upcoming meetings or events

- CEOS – GEO Coordination Meeting, Geneva, Switzerland (6 February)
- UNCOPUOS STSC 60th Session, Vienna, Austria (6 – 17 February)
- GEO Programme Board #25, Geneva, Switzerland (7 – 8 February)
- SilvaCarbon 2023 CEOS Workshop, Thailand (22 February – 2 March)
- WGClimate-18, Tokyo, Japan (28 February – 2 March)
- WGCapD-12, Vienna, Austria (1 – 3 March)

An updated calendar of CEOS meetings / events, and some key external events that the community may find of relevance, is detailed in the following page. If any key meetings or events are missing from this calendar, or if any dates have changed since publication, please contact Marie-Claire.

CEOS and relevant key external Meetings and Events 2023

January			
	08-Jan-23	12-Jan-23	2023 AMS Annual Meeting Denver, Colorado, USA
	30-Jan-23	01-Feb-23	WMO International GHG Monitoring Symposium Geneva, Switzerland
February			
	02-Feb-23	02-Feb-23	CEOS / CGMS GHG Task Team meeting Geneva, Switzerland
	06-Feb-23	06-Feb-23	CEOS - GEO Coordination Meeting Geneva, Switzerland & Virtual
	06-Feb-23	17-Feb-23	UNCOUOS STSC 60th Session Vienna, Austria
	07-Feb-23	08-Feb-23	GEO Programme Board Meeting #25 Geneva, Switzerland
	21-Feb-23	21-Feb-23	OGC ARD Standards Working Group Meeting Frascati, Italy
	22-Feb-23	02-Mar-23	SilvaCarbon 2023 CEOS Workshop Thailand
	27-Feb-23	03-Mar-23	GSICS Annual Meeting College Park, USA
	28-Feb-23	02-Mar-23	WGClimate-18 Tokyo, Japan
March			
	01-Mar-23	03-Mar-23	WGCAPD-12 Vienna, Austria & Virtual
	22-Mar-23	23-Mar-23	GEO Executive Committee Meeting #60 Geneva, Switzerland
	23-Mar-23	24-Mar-23	LSI-VC-13 ESRIN, Italy
	28-Mar-23	30-Mar-23	SIT-38 & Side Meetings ESRIN, Italy
April			
	16-Apr-23	21-Apr-23	COSPAR 2023 Singapore
	17-Apr-23	20-Apr-23	38th Space Symposium Colorado Springs, USA
	18-Apr-23	20-Apr-23	Joint meeting: WGISS-55 / WGDisasters-19 Cordoba, Argentina & Virtual
	23-Apr-23	28-Apr-23	EGU General Assembly Vienna, Austria & Virtual
	24-Apr-23	28-Apr-23	ISRSE-39 Antalya, Turkey
May			
	01-May-23	05-May-23	CEOS ARD Workshop ??
	16-May-23	19-May-23	JURSE 2023 Heraklion, Crete
	09-May-23	11-May-23	GFOI Plenary Rome, Italy
	31-May-23	09-Jun-23	UN COPUOS 66th Session Vienna, Austria
June			
	05-Jun-23	09-Jun-23	WGCV-52 Frascati, Italy
	13-Jun-23	14-Jun-23	GEO Symposium 2023 Geneva, Switzerland
	15-Jun-23	16-Jun-23	GEO Programme Board Meeting #26 Geneva, Switzerland
	15-Jun-23	16-Jun-23	GEO Open Data and Open Knowledge Workshop Geneva, Switzerland
	26-Jun-23	28-Jun-23	CGMS-51 Plenary TBD, Japan
July			
	16-Jul-23	21-Jul-23	IGARSS 2023 Pasadena, USA
August			
September			
	05-Sep-23	06-Sep-23	GEO Programme Board Meeting #27 Virtual
October			
	02-Oct-23	06-Oct-23	74th International Astronautical Congress (IAC) Baku, Azerbaijan
	17-Oct-23	19-Oct-23	SIT 2023 Technical Workshop & Side Meetings Frascati, Italy
	24-Oct-23	26-Oct-23	WGISS-56 Paris, France & Virtual
November			
	06-Nov-23	10-Nov-23	GEO Ministerial Summit / GEO-19 and ExCom Cape Town, South Africa
	13-Nov-23	15-Nov-23	37th CEOS Plenary and Associated Side Meetings Chiang Rai, Thailand
	30-Nov-23	12-Dec-23	UNFCCC COP-28 Dubai, United Arab Emirates
December			

Legend:

	CEOS leadership participation required
	For information; CEOS leadership participation optional

CEOS SEC Report- 303

(January 2023)

Entity: WGDisasters

Prepared By: L FRULLA (CONAE) - H de BOISSEZON (CNES) - A EDDY (AG)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- Participation to UNOOSA/UN-Spider RSO workshop that was held 15-17th of November 2022 in Vienna) for presentation of WG Disasters RO Demonstrator and of the joint WG Disasters / WG CapD initiative about RO for DRM decision makers.
- A 1st RO for DRM Decision makers event was held in El Salvador during the regional forum on DRM organised by CEPREDENAC 7 December, including most of the heads of civil protection agencies from 9 SICA countries. Further events are to be planned later in 2023 in Africa and Asia.
- RO Demo Team held a December meeting to review progress (RO activation#4 in Pakistan still underway; Sustainability Report reviewed; cost benefit studies to be conducted in 2023 – final report to be presented to Plenary in Nov 2023)
- Landslide Demonstrator preparing use case for GEO/UNDRR EO Risk Tool Kit
- Volcano Demonstrator preparing final report (due Q3 2023), which includes developing concept of International Virtual Volcano Observatory (IVVO), to be provided sustained monitoring of Holocene era volcanoes.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- WG Disasters telcon 32 scheduled for 2 February
- WGDisasters 19 and WGGIS 55 take place jointly from April 18 to 21 in Argentina (Córdoba Province) at CONAE's Main Receiving Station. It will include a morning meeting between both Working Groups (including an EO & machine learning discussion) and a DRM-related site visit on the last day.
- WGDisasters 20 to be held in September 2023 in Yellowstone, USA, at the invitation of USGS (Yellowstone Volcano Observatory).

CEOS SEC-303 Report

19 January 2023

Entity: Joint CEOS-CGMS Working Group on Climate (WGClimate)

Prepared By: Jeffrey L. Privette (NOAA), Wenying Su (NASA)

Updates on issues raised during the last CEOS SEC teleconference

- None

Issues requiring discussion during current CEOS SEC teleconference

- CEOS NewSpace Team
 - Privette participating in initial meeting
 - Discussing at WGClimate-18; hope to name permanent representative
- CEOS ARD Team
 - Discussing at WGClimate-18; hope to name permanent representative

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- Uses Cases: Sea Ice Extent published
- WGClimate poster on CDR definitions at American Meteorological Society (AMS) Annual Meeting (January)
- GCOS partnership
 - First bimonthly meeting held January 13th
 - GCOS representative participating in WGClimate-18

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- GHG Task Team meeting, Feb. 2nd, Geneva, following WMO GHG Symposium
 - Co-chairs: Yasjka Meijer (ESA) and Mark Dowell (EC)
- WGClimate-18 to be held 28 February - 2 March (Tokyo), hosted by JAXA
 - ~30 participants; Hybrid format
 - Draft agenda ready by end of week
 - Topics: GHG, Water, NewSpace, ARD, Normals, GCOS, SCO
- CEOS-GEO Summit February 6th -- virtual for WGClimate reps
 - Role of GHG TT in the Climate-Carbon session -- TBD?

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

CEOS SEC Report

(two pages max.)

Entity: WGISS

Prepared By: Makoto Natsuisaka (JAXA) and Tom Sohre (USGS)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- WGISS EXEC was held on Jan 10th, 2023. The discussions in the CEOS Plenary were feedbacked to the EXEC members. Potential collaboration issues which WGISS could contribute to are suggested to the interest group leaders.
 - Guidelines for maturity matrix might be useful for new space task team. (Data Preservation and Stewardship Interest Group)
 - Application of Service Discovery Best Practice to CEOS tools and services might be productive. (System Level Team)
 - The interoperability framework was placed as a new interest group. The coordination with CEOS ARD Oversight Group, LSI-VC, WGCV, SEO and CSIRO, etc. will be soon started.
 - A way forward on the Interoperability data and use with cloud, including EAIL, should be discussed with SEO and CSIRO.
 - Survey of AI/ML use cases in CEOS entities could be important items for AI/ML white paper. The survey results might be input to an activity of WGCapD. (Technology Exploration Interest Group)
 - The new CEOS chair priority was introduced.
 - Update of CEOS work plan 2023-2025 was asked to the interest group leaders.
- Session coordination for the WGISS-55 meeting in April 2023 was discussed. The joint session with WGDIsaster is planned.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- None

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- WGISS-55 April 18-20, Cordova Argentine
- WGISS-56 October 24-26, Paris France

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

CEOS SEC Report

(two pages max.)

Entity: WGCapD

Prepared By: Jorge Del Rio Vera (United Nations Office for Outer Space Affairs)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Not applicable

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- WGCapD ViceChair role

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- Outputs
 - Preparations and presentations at the Indigenous Mapping Workshop (IMW) 2022 coordinated by CSA in cooperation with NASA.

Metadata standards for learning objects:

- Meeting to take place on 20 January (meeting agenda in annex)
 - **Objective:** first meeting of a series of meetings on finding convergence towards metadata standards for learning objects and finding convergence towards sharing learning objects

FRIDAY 20 13:15-14:15 UTC

AGENDA

Learning objects repositories

Accessibility

Searchability

Licensing

Metadata standards for learning objects

Learning objects

[Click here to join the meeting](#)

Upcoming meetings or events

WGCapD annual meeting

- Meeting to take place in Vienna, from 1-3 March. The meeting will take place in hybrid format. Registration form is available [here](#)
 - Meeting will take advantage of the physical presence in Vienna to invite UN organizations.

Next WGCapD meeting will take place on 2 February at 13:00 UTC.

Presentations

Presentation from ASI, DLR and UNOOSA on their work on capacity-building during the January monthly teleconference (attached).

CEOS SEC Report

(two pages max.)

Entity: WGCV

Prepared By: Philippe Goryl (ESA), Cody Anderson (USGS)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Nothing to report.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- Establishment of a group/task within WGCV on SITSAT (SITSAT coordination group). It is now envisaged to create a joint task team CEOS/WGCV – GSCIS. It will be proposed at GSICS plenary.

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- Fruitful discussion took place between WGCV and AC-VC on 15 December 2022. A list of network and facilities, including Fiducial Reference Measurements were reviewed. The Greenhouse Gas Cal/Val Portal was also mentioned as a good tool facilitating interoperability in particular with data from JAXA, NASA (OCO) and Europe (S5P). It provides annual Railroad Valley campaign data from 2009 onwards and NASA AMES coincident flight data, Aircraft and satellite overpass measurements. The data are open and free. It was noted that CEOS WGCV IVOS can also help AC-VC for the characterisation of test site, the so-called PICS Pseudo Invariant Calibration Site. WGCV will be involved in the review of the white paper Monitoring Surface PM2.5: An International Constellation Approach to Enhancing the Role of Satellite Observations recently endorsed at CEOS Plenary. A Coordinated meeting between AC-VC and CEOS WGCV ACSG is being planned for summer. AC-VC-19 will hopefully be hosted by BIRA TBC. J-C Lambert will play a key role. This will be confirmed in the next days.
- WGCV is participating in the new CEOS New Space Task Team. A first meeting is planned for January and a call for ideas has been sent out. WGCV will respond in the next day, providing reference, quality reference for the new space (ex: RadCalNet).
- Organisation for the workshop pre-flight calibration has been re-activated. Hopefully a date and location will be blocked within next month.
- GCIS annual meeting will be held in College Park in the USA at the end of February. WGCV will report on common areas, including SITSAT task team, the workshop on pre-flight calibration and on FRM self-assessment process.
- WGCV is now providing input for updating the CEOS workplan and this will be concluded by early February.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- Discussion is being organised in January or February for establishing WGCV Guidelines on hyperspectral Cal/Val.
- JACIE is taking place in Reston Virginia at USGS head quarter from 27-30 March 2023.
- OGC ARD will be held at ESRIN in February. It will be the first meeting of the OGC ARD Standards Working Group. Hoping to have a strong turnout from CEOS colleagues representing CEOS ARD at the meeting.
- Date for WGCV 52: 5-9 June at ESRIN Frascati. It will be followed by Land Product Validation and Evolution workshop and CEOS WGCV LPV meeting.
- GISCS date : 27 Feb to 3 March 2023 in College Park

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

CEOS SEC Report

Entity: SEO

Prepared By: Dave Borges (NASA)

Updates on issues raised during the last CEOS SEC teleconference (Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference (Dot points)

- None

Other highlights, activities, actions, projects, collaborations (Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- SEO is supporting and coordinating IGARSS 2023 Session CCS.21: Cloud-based Platform Environments for Earth Observation: Enabling Science and Applications. 11 papers from multiple CEOS member agencies are expected. Abstract submission deadline extended to 20 January. SEO is also considering hosting a CEOS booth at IGARSS. Please contact Dave Borges with any interest to be included or support.
- Dave Borges met with OGC leadership on Friday, 13 January, to discuss the new OGC ARD Standards Working Group (SWG). SWG Co-chair voting will take place during kick-off meeting on 21 February in Frascati. A draft press release has been shared with SEO, CEOS ARD OG, and LSI-VC for comment and feedback. OGC has requested permission to include the CEOS logo in the press release. Press release expected to post in March.
- SEO and Communications Team are reviewing the current CEOS Communications Strategy and considering methods to improve effectiveness to include better defining target audiences, potentially leveraging existing member agency communications teams, and improve coordination with the GEO communications team. A CEOS Communications side meeting will be requested prior to SIT-38 to serve as a forum for community feedback and discussion.

Upcoming meetings or events (Dot points, e.g. meetings, conferences of relevance, visits)

- CEOS-GEO Coordination Meeting, 6 February 2023, Geneva Switzerland
- Open Geospatial Consortium (OGC) Member Meeting and ARD Standards WG Kick-off Meeting, 20-24 February 2023, Frascati Italy