**Minutes V1.0**

**225th CEOS SECRETARIAT MEETING**

Thursday 22nd June 2017

7AM US East, 1PM Europe, 8PM Tokyo, 9PM Sydney

Chaired by USGS

**Participants**

**CEO:** Jonathon Ross

**COM:** Astrid-Christina Koch

**CSIRO/FDA-AHT:** Alex Held

**ESA/SIT Chair Team:** Ivan Petiteville

**EUMETSAT:** Robert Husband

**JAXA:** Shizu Yabe, Yukio Haruyama, Chu Ishida, Koji Akiyama

**NASA:** Christine Bognar, Brad Doorn

**NOAA/SIT Vice-Chair Team:** Kerry Sawyer

**SEO:** Brian Killough

**USGS/CEOS Chair Team:** Frank Kelly, Jenn Lacey, Eric Wood, Matthew Steventon, Stephen Ward

**VAST/VNSC:** Vu Anh Tuan

**WGCapD:** Senthil Kumar

**WGClimate:** –

**WGCV:**  Kurt Thome

**WGDisasters:** Stéphane Chalifoux

**WGISS:** Andrew Mitchell

**GEO Secretariat:** Osamu Ochiai

*The collection of written reports received ahead of the teleconference are attached in Appendix A. They present a thorough overview of the status and activities of the CEOS entities present at CEOS SEC-225.*

1. **Welcome and Introductions**

Frank Kelly (USGS, CEOS Chair) welcomed everyone to CEOS SEC-225, including the VAST/VNSC colleague present as part of their induction as future CEOS Chair.

1. **Review of Agenda**

Frank Kelly (USGS, CEOS Chair) asked for feedback on the agenda/additional agenda items. Nothing was raised.

1. **Action Status**

Frank Kelly (USGS, CEOS Chair) noted that the updated SEC action record was included with the meeting agenda. No actions were reviewed.

1. **Working Group Reports**

**WGDisasters (Stéphane Chalifoux, CSA, Chair)**

Stéphane directed the Secretariat to his written report for a complete update, noting three points for the attention of CEOS SEC:

* *Recovery Observatory (RO):* The World Bank is expected to forward a request to the Copernicus Emergency Service for activation. A user workshop was held on May 30 and 31 to present the updated Operational Plan and prospective products, which aim to be produced regularly. The event is being prepared closely with Haitian partners: The Centre national d’information Géospatiale (CNIGS), the Comité interministériel pour l’aménagement du territoire (CIAT), l’Observatoire national pour l’environnement et la vulnérabilité (ONEV, part of the Environment ministry), as well as international organizations active in Haiti including UNDP, UNEP, WHO and others. The Operational Plan is expected to be presented at CEOS Plenary for approval.
* The Global Partnership on Space Technology Applications for Disaster Risk Reduction (GP-STAR) held a side event at the Global Platform for Disaster Risk Reduction in Cancun on May 26. CEOS was one of the four panelists in the side event, and the CEOS representative discussed CEOS activities and challenges, in particular the applications of SAR.
* The 8th CEOS WGDisasters meeting, to be hosted by CONAE with NASA support, is in the final planning phase and is envisaged to be held in Buenos Aires, Argentina, from September 4 to 8, 2017. Stéphane invited CEOS SEC members to attend.

**WGClimate**

Pascal Lecomte (ESA, WGClimate Chair) sent his apologies for his absence ahead of the call.

Astrid-Christina Koch (COM) reported that the SBSTA statement is being worked on by COM and WGClimate. A teleconference between the teams is yet to be organized, but will be done soon.

**WGISS (Andrew Mitchell, NASA, Chair)**

Andrew reported the following select points from the written report on behalf of WGISS:

* *WGISS Vice Chair Nomination:* Awaiting a response from the CEOS Agency which expressed interest in putting forward a nominee (expected in July).
* The second technology exploration webinar was held on June 19th with the topic: *‘The Concept of Data Cubes to Enable Analysis of Large Earth Observation Data Sets’*. Rob Woodcock (CSIRO) and Brian Killough (NASA/SEO) provided an introduction to Data Cubes. Discussions covered Data Cube user needs, key features, and basic high-level architecture. A recording can be found here:

<http://ceos.org/ourwork/workinggroups/wgiss/technology-exploration/ceos-wgiss-technology-exploration-webinars/>

* Continuing to work with the GEODAB (GEO Data Access Broker) team to identify and create best practices for GEO to connect to WGISS Connected Data Assets (FedEO, CWIC and IDN). On the 19th of May, GEODAB updated their connection to CWIC to production.
* The CEOS Carbon Portal is in the works in collaboration with the CEOS Carbon Lead.
* WGISS-44 will be held September 25-29, 2017, in Beijing, China. The meeting is being hosted by the Chinese Academy of Sciences, and will feature another technology exploration workshop.

Jonathon Ross (GA/CEO) commended WGISS on the webinars, and noted that it is very useful that they are posted online.

**WGCapD (Senthil Kumar, ISRO, Vice-Chair)**

Senthil reported the following:

* A workshop on *‘Potential Contributions from EO to Address Public Health Issues’* concluded yesterday. It was a joint effort of CNES, NASA, NOAA, WGCapD, and WHO. It was also co-organised by CSA and the Public Health Agency of Canada. A full report will be given at SEC-226.
* The WGCapD website is being overhauled, and many new materials are being posted, including best practices documents, webinars, etc.
* A SAR data processing and applications webinar was held recently, with approximately 252 participants.
* A Vice-Chair nomination is still sought.

**WGCV (Kurt Thome, NASA, Chair)**

Kurt reported the following points from the WGCV written report:

* WGCV proposed to study methods to validate and determine uncertainties for a merged surface reflectance product from two sensors across different cover as part of the Moderate Resolution Interoperability initiative. The activities will leverage work currently being done by WGCV subgroups, as well as the Landsat-8/Sentinel 2 studies that are part of MRI.
* A description of the GSICS/WGCV IVOS proposed solar irradiance spectrum is being evaluated by WGCV membership for the spectrum’s suitability for inclusion on the CEOS Cal/Val Portal. The spectrum is an update to the Thuillier Reference Spectrum (2003) that is currently on the Portal.
* WGCV remains on target for a public release of the RadCalNet website in November 2017. Terms of Reference for a RadCalNet Admissions Panel are under development.
* Results presented by the LPV subgroup demonstrated significant progress on the WGCV’s CARB-19 action in the CEOS Work Plan. The results are being formalized and are expected to allow closure of that action by September 2017, leading to likely closure of Carbon Action 08.
1. **CEO Report**

Jonathon Ross (GA, CEO) directed the Secretariat to his written report for the full update.

**SBSTA Statement**

A draft was not ready in time for SEC-225. It will be circulated for comment via email before the first draft goes into the internal COM approval processes. SEC should look out and respond promptly. The schedule for completion of the statement is included in the CEO’s written report.

**GEO Plenary and COP Delegation**

The CEOS delegation to GEO Plenary currently consists of Brian Killough (NASA/SEO) and Jonathon Ross (GA/CEO). Agencies are reminded to indicate their planned presence at GEO Plenary to support coordination.

**Korea National Institute for Environmental Research (NIER)**

NIER has approached the CEO with an interest in becoming a CEOS Associate. The CEO will work on the application with JAXA as the regional SEC representative. At this stage the CEO is assessing their eligibility and relationship to KARI and KMA.

**Work Plan Status Updates**

Final updates to reflect Work Plan v1.1 have been made to the Deliverables Tracker database by the CEO and SEO. WGs and VCs have been asked to provide updates prior to their tag-up with the SIT Chair. Requests for Non-VC/WG updates will be made at the same time, but directed to the relevant entities rather than via the SIT Chair Team process.

**OGC Discrete Global Grid System**

The standard has been adopted, and will have many implications on CEOS work in the medium-to-long term.

**Blue Planet Symposium Outcomes**

Jonathon reported that the Blue Planet Symposium was a good meeting. Attendees had a clear interest in the Analysis-Ready Data concept, particularly for inland and coastal waters. He also noted a renewed interest in the application of new geostationary capabilities.

**Earth Observation Summit**

Jonathon is presenting at the Earth Observation Summit in Montreal, Canada. He will be highlighting the Open Data Cube and CEOS Data Cube, as well as FDA, MRI, and CARD4L.

He has taken the opportunity to meet with representatives of the Canada Centre for Mapping and Earth Observation, and they have confirmed that they will be stepping up their involvement in CARD4L.

**GEO Programme Board**

The next GEO Programme Board meeting has been confirmed for August 30-31. Due to schedule conflicts for the SIT Chair Team, the CEO might represent CEOS alone.

**Big Data for Official Statistics**

The UN Statistics Division have confirmed there will be another summit held later this year in Bogota, Colombia, with a special session on satellite data. There will be an opportunity for CEOS to be involved directly with the statistics community. Jonathon thanked CSIRO for working with the Australian Bureau of Statistics in relation to this meeting.

**CEO Succession**

Two agencies are currently coordinating in relation to a formal candidature for the CEO role for 2018-2019. The current CEO proposes to continue as ‘Assistant CEO’, to aid the transition, for the first 6-9 months of 2018, consistent with the practice adopted for transition from Kerry Sawyer (NOAA) to Marie-Josée Bourassa (CSA) and Jonathon Ross. A Deputy CEO is still sought.

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| 225-01 | *CEO to send GEO Plenary details and call for CEOS delegation nominees to VAST/VNSC contacts.* | SEC-226 |

Christine Bognar (NASA) noted that she will follow up COVERAGE with Jonathon after meeting with Eric Lindstrom today.

Alex Held (CSIRO) asked whether the Blue Planet Symposium decided on any action in relation to inland and coastal waters ARD. Jonathon was not sure, and will follow up off-line with Alex.

1. **SIT Chair Report**

Ivan Petiteville (ESA, SIT Chair Team) reported on behalf of the ESA SIT Chair Team:

* The SIT Chair Team is working on the preparation of the SIT Technical Workshop and side meetings (11-14 September 2017). In that scope, the second round of teleconferences between the SIT Chair Team and each of the Working Group and Virtual Constellation Chairs started in early June. 9 out of 12 have been conducted so far. The teleconference with the Ocean Surface Topography VC cannot be planned due to the lack of leadership (both EUMETSAT and CNES are working on the replacement of the two co-Chairs).
* The deadline for requesting a SIT Technical Workshop side meeting room is June 23. Side meetings planned so far are: GEOGLAM, International Financial Institutions, SDGs, and Open Data Cube.
* SIT Technical Workshop participants are invited to register online (<http://ceos.org/meetings/2017-sit-technical-workshop/>) and it is suggested to book accommodation soon, as it might be difficult to find a hotel room in September. Fifty-five hotel rooms have been reserved for CEOS – please refer to the Invitation letter from the SIT Chair, sent out to CEOS on June 5. The current deadline for accommodation is June 30.
* The final minutes of SIT-32 have just been distributed to CEOS. Thanks to everyone that sent comments.
* The SIT Chair represented CEOS at the GEO Programme Board (PB) meeting in Athens (May 23-24). The meeting focused on the reports from the three PB subgroups on the SDGs, the GEO Work Programme Symposium, and Monitoring & Evaluation.
* The next GEO EXCOM will be held 11-12 July in Geneva.

Vu Anh Tuan (VAST/VNSC) confirmed that VAST representatives will attend SIT Technical Workshop, and they will register soon.

Kerry Sawyer (NOAA, SIT Vice-Chair Team) reported that NOAA is planning SIT-33 for April 23-25. The venue is expected to be in the Denver/Boulder region, Colorado.

Astrid-Christina Koch (COM) thanked Kerry for working around the Commission’s travel restrictions, and asked whether the meeting could be combined with one of the proposed 2018 CEOS Chair workshops on Big Data. Astrid and Kerry will follow up off-line.

1. **GEO SEC Report**

Osamu Ochiai (JAXA/GEO Secretariat) reported the following:

* Osamu has been assigned as a virtual secondee to the GEO Secretariat until July, and his duties include the CEOS interface role. Osamu will also be the JAXA CEOS POC.
* The 6th GEO Programme Board (PB) meeting was held in Athens, Greece (May 23-24), and Osamu noted the following outcomes:
	+ The function of the GEO Work Program (WP) Symposium are principally for course-correction of the WP and also to inform the co-design/co-construction of future WPs. The PB will provide guidelines (coherence, clustering) to Flagships and Initiatives based on WP Symposium outcomes.
	+ The PB believes that a Societal Benefit Area approach to identifying user needs is no longer viable. The Flagships, which serve *"common needs and/or well-defined user groups"*, provide a measure of GEO's success in addressing user needs. The PB recognizes that GEO still needs a way to report on fulfilling user needs more broadly, not just those being addressed by the Flagships, but this should fall under the responsibility of the Monitoring & Evaluation PB sub-group.
	+ *Monitoring & Evaluation:* Data collection has begun (GEOGLOWS, GEO Wetlands, GFOI), and the GEO Secretariat will provide a mock-up report to be presented at the July EXCOM meeting.
	+ PB Sub-group 1 (SDG, Secretariat, Task Teams, and EO4SDGs) will initiate contact with Initiatives/Flagships to identify/refine contributions (mapping process) to engagement priority areas and organize a virtual workshop with Initiatives/Flagships to discuss synergies and “cross-pollination”.
	+ *SDGs:* The next major campaign is the High Level Political Forum in New York (July), where the EO4SDGs Initiative plans to meet with GEO Members and explain the ongoing work and possibilities for further engagement relating to Earth observations and the SDGs.
	+ *Paris Agreement:* The Secretariat continued its engagement process with the UN Framework Convention on Climate Change (UNFCCC), which has led to an increased recognition of GEO´s role in the implementation of the Paris Agreement. As an outcome, GEO was invited by UNFCCC to contribute to the 8th Research Dialogue at the Subsidiary Body of Scientific and Technological Advice (SBSTA), with a focus on regional activities.
	+ *Sendai Framework for Disaster Risk Reduction:* The GEO Secretariat worked directly with the UN Office for Disaster Risk Reduction (UNISDR) in the planning phase for the Global Platform for Disaster Risk Reduction (GPDRR) that was convened on May 22-26, in Cancun, Mexico. The UNISDR is responsible for reporting on progress for the Sendai Framework, and GEO’s presence at the meeting included presentations and an information booth supported by various GEO Members and Participating Organizations, including DLR, ESA, EC/JRC, and NASA. The GEO Secretariat is also working with UNISDR and UNECE locally in Geneva, as well as UNESCAP, to address several aspects of the Sendai Framework and links to Earth observations, as well as ongoing work to develop disaster statistics.

Ivan Petiteville (ESA, SIT Chair Team) attended the GPDRR, and he noted that the first GEO-DARMA workshop was co-located and very well attended.

1. **Systems Engineering Office (SEO) Report**

Brian Killough (NASA, SEO) reported the following:

* The SEO team is preparing for the 2017 IGARSS Conference in Fort Worth, Texas on July 23-28. The SEO will be leading a CEOS Data Cube workshop on the first day (4 hours, free of charge) and will be hosting a CEOS exhibition booth with a focus on Data Cube activities. As of last week, the workshop is full (50 attendees). The SEO is preparing a tutorial package than can be run locally and online (Amazon Cloud) and can be used for future training.
* Brian participated (remotely) in the 1st meeting regarding a Balkans Data Cube on June 17. The plan is to support SDG-related activities for the region. GEO, GEOGLAM, and NASA also participated.
* Brian and Rob Woodcock (CSIRO) participated in a WGISS webinar on June 19 to highlight the Data Cube initiative. The webinar was recorded and can be used for future training opportunities (see WGISS report above).
* The SEO team is actively engaged in the Open Data Cube initiative. Recent advancements and work include: progressing the governance plan, developing plans for the main website ([www.opendatacube.org](http://www.opendatacube.org)), enhancements to the Amazon Web Services demo tool, validation testing of change detection (PyCCD), and a new student project to develop a water detection algorithm for Sentinel-1. There are currently 3 operational country-level Data Cubes (Australia, Colombia, Switzerland), 4 in development (Vietnam, USA, Uganda, Taiwan), and 16 more under review or expressing interest.
1. **Brief Status Updates of *Ad-Hoc* Initiatives**

**SDCG for GFOI**

Stephen Ward (SDCG Sec) reported that GFOI is currently defining what its Phase 2 looks like. The GFOI Leads meet tomorrow in Paris to finalise the Phase 2 definition. Masanobu Shimada (JAXA) and Stephen were both unable to attend, but JAXA has kindly funded Ake Rosenqvist as the alternate representative. Norway has suggested that ESA might be considered as a GFOI Lead, recognizing their continued financial support to the R&D Component (via GOFC-GOLD). SDCG is promoting a GFOI ALERT (Early Warning) concept as a practical contribution to Phase 2. JAXA is also supporting Ake as the CEOS representative on the Methods and Guidance Documentation Advisory Board. Stephen thanked JAXA for their important contributions.

In regard to the September LSI-SDCG-GEOGLAM joint meeting: George Dyke, Matt Steventon, and Stephen have been working on the draft agenda and today shared this with the leadership of those groups.

**CEOS *Ad-Hoc* Working Group on GEOGLAM**

Brad Doorn (NASA, Co-Lead) reported:

* The GEOGLAM *Ad-Hoc* WG is currently preparing its inputs for the September joint meetings, both for the sessions with LSI-VC and SDCG, as well as for its own meetings, and the SIT Technical Workshop.
* Linkages between the Data Cube pilot for the Vietnamese Mekong and GEOGLAM continue to be explored, including along the lines of rice crop monitoring (with algorithms from ESA and CNES), and on the data side with ALOS-2 PALSAR. Potential collaboration (via JAXA) with Taiwan and Indonesia is also envisioned.
* The GEOGLAM Leads have met this week at FAO in Rome, and it is anticipated that the outputs and outcomes of this meeting will influence GEOGLAM’s focus for the September meetings and CEOS Plenary.

**CEOS *Ad-Hoc* Team on Sustainable Development Goals (SDG-AHT)**

Alex Held (CSIRO, Co-Lead) reported on behalf of the SDG-AHT Leads:

* The SDG-AHT is working closely with GEO, joining various teleconferences related to SDG activities.
* A compendium of CEOS Agency SDG activities will be compiled with the aim of understanding which agencies are already active on the SDGs, either independently or with their country’s National Statistical Office (NSO). A survey will be distributed soon.

Kerry Sawyer (NOAA, SIT Vice-Chair Team) noted that action 224-03 can be closed. Kerry reported that Eric Wood (USGS) will serve as the Americas co-Lead of the SDG-AHT for the next 6 months. NOAA and NASA endorsed Eric’s nomination, and thanked USGS for their contribution.

Jonathon Ross (GA/CEO) asked how the compendium relates to the proposed EO Handbook. Alex noted that they should be complementary.

1. **CEOS Chair Initiatives**

**Future Data Access & Analysis Architectures *Ad-Hoc* Team (FDA-AHT)**

Alex Held (CSIRO, Co-Lead) reported:

* The FDA-AHT has been working on the ‘how’ and ‘when’ of the FDA Strategy, and is developing a narrative paper targeted at CEOS Principals.
* LSI-VC continues to progress the CARD4L Product Family Specifications (PFS), and they are consulting with various experts and groups on the details.
* The FDA Pilots and CEOS Data Cube work is progressing well.
* An FDA side meeting is planned for SIT Technical Workshop.

**Moderate Resolution Sensor Interoperability Initiative (MRI)**

Jenn Lacey (USGS, CEOS Chair Team) reported on behalf of Gene Fosnight (USGS, MRI Lead):

* MRI action items from WGCV-42 included a study of methods to validate uncertainty methodologies for the evaluation of combined multi-sensor surface reflectance products.
* The most recent draft of the MRI Framework document was distributed to the MRI team for review on June 19. The next draft will be released for wider review on July 26. The target for completion of the Framework is SIT Technical Workshop.
1. **CEOS Plenary Preparation**

Frank Kelly (USGS, CEOS Chair) covered some logistics for the meeting. He noted that 22 people have registered to date. 6 of those registered will be doing a tour of EROS in Sioux Falls before moving on to Rapid City. He suggested that people fly out of Rapid City after the meeting.

The agenda for the Plenary is broken down into topical areas based on the CEOS Work Plan. Stephen Ward (CEOS Chair Team) noted that the aim is to maximise discussion time. Sessions will be coordinated by members of the CEOS Chair Team via email in the coming weeks. The Chair Team will be aiming to understand what is for reference, what is for debate, and what the overall objectives are for each item.

Kerry Sawyer (NOAA, SIT Vice-Chair Team) supported the focus on the CEOS Work Plan, and she suggested that the linkages be made very clear.

1. **AOB**

**Open CEOS Leadership Positions**

Frank Kelly (USGS, CEOS Chair) directed everyone to review the table in the agenda. He asked that SEC please let the Chair Team know if there are any possible candidates for the yet-to-be-filled positions.

Ivan Petiteville (ESA, SIT Chair Team) reported that CNES and ESA have reached an agreement for Steven Hosford (CNES) to be hosted at ESRIN and take on the role of CEO for 2 years. There is an official agreement between the agencies, and the administrative details are being worked out.

**2018 Earth Observation Handbook**

Ivan Petiteville (ESA, SIT Chair Team) noted that a new Earth Observation Handbook (EOHB) is in the works, addressing the third key focus of CEOS – the UN SDGs. The outline, prepared by the ESA team in coordination with the SDG-AHT co-Chairs, was recently shared with CEOS SEC. The format will be similar to the climate and disasters editions of the EOHB. Ivan reviewed the outline and reminded SEC to provide feedback by Tuesday the 27th of June.

In response to a question from Jonathon Ross (GA/CEO) regarding paper-free UN conferences/meetings, Ivan noted that the digital version will be available online, and paper versions will be sent directly to key POCs.

**JAXA Personnel/CEOS POC Change**

Chu Ishida (JAXA) reported that Osamu Ochiai will replace Shizu Yabe as the CEOS Point of Contact for JAXA in the coming weeks.

1. **Next Meeting and Adjourn**

Frank Kelly (USGS, CEOS Chair) adjourned the meeting. He thanked everyone for attending and reported that CEOS SEC-226 will take place on the 27th of July 2017.

1. **Appendix – Written Reports**

Please see the attached document for the written reports submitted by:

* Working Group on Disasters (WGDisasters)
* Working Group on Information Systems and Services (WGISS)
* Working Group on Capacity Building and Data Democracy (WGCapD)
* Working Group on Calibration and Validation (WGCV)
* CEOS Executive Officer (CEO)
* Strategic Implementation Team Chair (SIT Chair)
* GEO Secretariat (GEO SEC)
* CEOS Systems Engineering Office (SEO)
* CEOS *Ad-Hoc* Working Group on GEOGLAM (CEOS-GEOGLAM)
* Future Data Access & Analysis Architectures *Ad-Hoc* Team (FDA-AHT)
* Moderate Resolution Sensor Interoperability Initiative (MRI)