

CEOS SEC 216 Report – October 2016

Entity: WGDIsasters

Prepared By: Stéphane Chalifoux (Canadian Space Agency) and Simona Zoffoli (Italian Space Agency)

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 (for reference only)

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

- Pilots (floods, volcanoes and seismic risks) including the activities related to the Supersites are progressing well with regular provision of satellite data. No issue to report.
- GSNL: San Andreas Fault Natural Laboratory proposal still in evaluation by Data Coordination Team (DCT).
- Seismic Hazards Pilot: Response to the Amatrice (Central Italy) earthquake of 24 August 2016, Mw 6.0 (Objective C).
- Volcano Pilot: ALOS-2 is providing broad swath coverage of deformation through the forest, which highlights the extreme usefulness of L-band SAR for certain volcanoes, especially in tropical areas.
- Flood Pilot: Global Flood Monitoring System (GFMS) flood products converted to GIS layers and successfully distributed to end-user via application programming interface (API).
- Recovery Observatory (RO): World Bank is co-chairing the RO and has an important contribution to the Malawi demonstrator (flood). Furthermore, 2 new demonstrators have been discussed, the Nepal (building reconstruction) and the Syria (agriculture recovery).
- Landslide Pilot: Co-lead meeting to discuss further development of study areas and Landslide Pilot Implementation Plan (August 2016), to be presented for endorsement at CEOS Plenary 2016.
- Successful WGDIsasters Meeting # 6 from 6 to 8 September 2016, at CVO (Cascades Volcano Observatory, Vancouver, WA ,USA) - hosted by USGS. 17 attendees and 6 participants by teleconference.
- CEOS Website: Reports and presentations of pilots and RO from our latest plenary meeting in September are available to the public.

Upcoming meetings or events (for reference only)

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

- None

Attachments

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

CEOS SEC 216 Report – October 2016

Entity: WGISS (Working Group on Information System and Services)

Prepared By: Andrew Mitchell – Chair (NASA) / Mirko Albani Vice Chair (ESA)

Updates on issues raised during the last CEOS SEC teleconference

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

- None

Other highlights, activities, actions, projects, collaborations (for reference only)

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

- The WGISS 42nd plenary meeting was held on September 19th to the 23rd in Frascati, Italy at ESRIN (ESA). During this meeting, WGISS held a Cloud Computing Workshop on September 20th at ESRIN. **WGISS is creating a summary report of the workshop.** Topics Discussed:
 - GS evolution and EO Innovation Europe (Henri Laur, Mirko Albani)
 - Thematic Exploitation Platforms and Cloud Computing Activities at ESA (Sveinung Loekken)
 - Cloud Computing and Security (Julien Airaud)
 - JAXA Approach on Virtualization and Cloud Computing (Satoko Miura)
 - ISRO - EO Data Processing Cloud: Requirements and Research Issues (Nitant Dube)
 - Computing in the Cloud at Geoscience Australia (Simon Oliver)
 - NOAA (Martin Yapur)
 - USGS (Kristi Kline)
 - Assessing Applications of Cloud Computing to EOSDIS (Chris Lynnes*)
 - CEOS Data Cube use of Cloud Computing (Brian Killough*)
- In preparation to use common metadata to improve discovery and search results when searching across multiple catalogues, WGISS performed a **comparison of the IDN's Unified Metadata Model (UMM) with WIGOS and CGMS UML Data Models**. The next step is to perform a detailed analysis of mappings: WIGOS->UMM and CGMS->UMM
- Providing **additional comments** to the latest version of the **FDA Study Report**.
- **Consolidating current CWIC/FedEO/IDN overall architecture to quickly address some of the identified open issues** (i.e. end-to-end architecture risks to return the same result twice). Created a WGISS Integrated System team to coordinate and oversee the WGISS Integrated System and Standards on-boarding of CEOS agencies.
- CEOS **OpenSearch Best Practices Version 1.1** and the CEOS **Data Purge Alert Procedure Version 1** were **adopted** on September 22nd
- **Identifying best practices to address the problem of duplicate datasets in brokering systems.** This will help address issues with the GEOSS Common Infrastructure (GCI) user requirements.

Upcoming meetings or events (for reference only)

- Technology Exploration Webinars beginning in December 2016

Attachments

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

WGISS-42 in Frascati, Italy (ESRIN- ESA)



CEOS SEC 216 Report – October 2016

Entity: WGCV

Prepared By: Albrecht von Bargaen (DLR), Kurtis Thome (NASA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Vice-Chair nomination:
finalized with Vice-chair nomination during WGCV-41 plenary meeting
- ToRs finalization: published during SIT-WS for approval at coming CEOS plenary
(see <http://ceos.org/meetings/2016-sit-tech-workshop/> Session 6)

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- none

Other highlights, activities, actions, projects, collaborations (for reference only)

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

- CEOS WGCV plenary 41 at Denki University hosted by JAXA:
Representation of around 20 agencies (KMA and JMA as observers); additional guests invited for topical discussions; dedicated SAR session in combination with CEOS SAR workshop (see below); remarkable progress in all subgroups and tasks noted; CEOS WGCV is now prepared to announce the beta-testing for RADCALNET; special session dedicated to Carbon Action items, current CEOS Chair studies and future Chair study (interoperability), and interaction with WMO/GSICS; Vice Chair nomination (Dr Cindy Ong, CSIRO); highlighting new work plan structure as opportunity to document the activities and their outcomes; web-page concept in relation to CEOS webpage updated to a concrete baseline.
- CEOS SAR workshop with around 90 registered attendees and 60 contributions (see abstract book <http://sarvcv.ceos.org/workshop2016>) from agencies, science, and instrument providers
- “Bilateral” WMO/GSICS members and CEOS WGCV Chairs: (a) Update of mutual understanding of each entities’ work and goals, (b) Identification of interaction on different levels, (c) Definition of concrete interaction tasks
Conclusion: (a) and (b) clarified; (c) CEOS WGCV is observer at GSICS-EP meetings / GSICS/GRDWG Chair is observer at WGCV meetings; clear links between different subgroups (not all!) of both; priority list of concrete combined activities settled.
- Carbon action items: outline of prioritization
- Coming CEOS Chair initiative: discussion of future initiative, especially interoperability
- RadCalNet: Call for Beta-Tester from all CEOS agencies via invitation letter

Upcoming meetings or events (for reference only)

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

- CEOS WGCV / IVOS meeting hosted by University of Arizona, Tucson, March 2017
- CEOS WGCV plenary hosted by USGS, EROS Data Center Sioux Falls, May 2017

CEOS SEC 216 Report – October 2016

Entity: CEO Team

Prepared By: Jonathon Ross (CEO) and Marie-Josée Bourassa (DCEO)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- **GEOSS ‘Think Piece’.** As discussed in session at SEC-215, CEOS has prepared a ‘think piece’ for GEO-XIII on the status and issues relating to implementation of the space segment of GEOSS. The think piece, alongside others on the other components of the GEOSS, is intended to stimulate discussion during a panel session. CEOS will be represented on this panel. The think piece is attached to this paper.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- **CEOS Statement to GEO-XIII.** A draft statement was circulated to SEC, and discussion on the statement is requested during the meeting.
- **Membership applications.** KMA are confirmed to attend and present at the CEOS Plenary. EUSatCen have confirmed they are not in a position to attend at CEOS Plenary, but wish to keep the door open for future discussions.
- **CEOS Website.** All CEOS Entities are reminded that they are encouraged to provide regular, topical, updates to the SEO to support updates to the CEOS Website. The CEOS website is only an effective communication tool if the content is up to date.
- **Calendar updates.** CEOS Entities are reminded to provide regular updates on forthcoming meetings relevant to CEOS. This includes their own meetings, but also external meetings they may become aware of that may require CEOS representation.

Other highlights, activities, actions, projects, collaborations (for reference only)

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

- **GEO Engagement Strategy.** The CEO circulated the draft GEO Engagement Strategy for comment by the CEOS community. Comments welcome as they will inform discussion at the CEOS Plenary, and potentially the CEOS Delegation’s comments at GEO-XIII.
- **SDGs.**
 - All day SDG side meeting during GEO Plenary. Informational updating. Overview of mechanisms for engagement. Panel discussion with POCs from country level projects. Then Breakout sessions. All welcome to send GI-18 comments and feedback. All CEOS members attending GEO plenary welcome to join and engage.
 - Chu is leading a planning task team to develop a report on the added value of EO for SDGs to be presented at UN Statistical Division March 2017 meeting. CEOS members invited to participate.
 - UN World Data Forum Jan 2017 in Cape Town being planned. Opportunity to bring in private partners.
 - GI-18 working with Global Partnership for SDGs on a Data4SDGs Toolbox. The Data4SDGs Toolbox will help countries to create and implement their own holistic data roadmaps for sustainable development. The Toolbox will address institutional, policy, technical, resources and capacity issues, among other things. Investigating how CEOS can contribute.
<http://www.data4sdgs.org/toolbox>

Upcoming meetings or events (for reference only)

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

- UN World Data Forum planned for Cape Town, January 15-18, 2017 (SDG-related)

Attachments

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

CEOS SEC 216 Report – October 2016

Entity: GEO SEC

Prepared By: Osamu Ochiai (GEO Sec)

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 (for reference only)

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

- GEO-XIII Plenary Documents (partial) are available. Thank you CEOS inputs on the information documents of GEO Flagships and Initiatives, GEOSS Components and 2017-2019 Work Programme.
- The Plenary agenda has been evolved to focus on discussion and to remove the Member and PO statement session. The statements in more visual format will be collected in advance and will be highlighted in an Exhibition booth. The deadline of the submission will be by October 14th.
- Further preparation of the Plenary will be necessary. Panellist in Session2 will shortly be organized by representatives from GEO Flagships and Initiatives and also Foundational Tasks.

Upcoming meetings or events (for reference only)

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

- ConnectinGEO Workshop on Gap Analysis and Prioritization, Oct. 10-11, IIASA Laxenburg, Austria
- ENEON Plenary, Oct. 12-13, IIASA Laxenburg, Austria
- 3rd Biennial Conference of the Southern Africa Society for Disaster Risk Reduction, Oct. 12-14, Elephant Hills Hotel, Victoria Falls, Zimbabwe
- Advanced Geospatial Science & Technology: TeanGEO 2016, Oct. 18-20, Tunis, Tunisia
- 7th Asia-Oceania/2nd AMS-Asia/2nd KMA Meteorological Satellite Users' Conference, Oct. 21-28, Songdo City, Incheon, Korea
- AARSE2016, Oct. 24-28, Kampala, Uganda
- GEO-XIII Plenary, Nov. 9-10, St. Petersburg, Russia

Attachments

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

CEOS SEC 216 Report – October 2016

Entity: SIT Chair Team

Prepared By: Ivan Petiteville (ESA)

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 (for reference only)

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

- **2016 SIT Technical Workshop (SIT TWS):**

About 60 participants from 16 CEOS Members & Associates attended the SIT TWS (Oxford, 14-15 Sep.) as well as the 6 side-meetings and the VC/WG DAY held on 12 and 13 Sep.

The main objectives of the SIT TWS were:

- a) To progress on the strategic decisions taken at the CEOS SIT-31 meeting (ESRIN, April 2016) such as:
 - o Engage the partnerships with UN system, development banks, international programmes, NGOs, ...
 - o Further develop the relationships with GCOS and UNFCCC to support observations for climate indicators following the Paris agreement (COP-21).
- b) To review the status of the various main activities undertaken by CEOS in 2016 and improve the space agencies' contributions to major GEO initiatives (e.g. GFOI – forestry monitoring, GEOGLAM – agriculture monitoring,...) , to the UN SDGs and to the UN conventions.
- c) To prepare the 2016 CEOS Plenary (31 Oct.-2 Nov.) and the CEOS participation in the GEO-XII Plenary (9-10 Nov.) and COP-22 (22nd UNFCCC Conference of the Parties, 7-18 Nov.).

To address those objectives, a series of measures has been defined to stimulate future opportunities for CEOS Agencies and to tackle specific challenges:

- **Future partnerships** with UN, development banks, NGOs will be set up using the convening power of GEO, on a project by project basis. In addition, it was decided that CEOS Agencies should share their individual experiences.
- **CEOS and GEO governance:** the presence of CEOS in both GEO Programme Board and GEO Executive Committee has proven to be key to influence the strategic decisions of GEO. CEOS has agreed to propose again the same representatives for 2017 onwards.
- **Future Data Architecture (FDA):** significant progress on big data-related items such as data cube, ARD, .. was noted. The work plan of future activities presented by SEO was well received; it will be proposed to Plenary for endorsement .
- **SDGs:** the on-going CEOS' analysis of the SDGs shows that EO satellites can contribute significantly to the monitoring of the implementation of the SDGs through a series of

indicators. Given the work ahead of the CEOS agencies, the creation of an Ad Hoc SDG team will be proposed to the CEOS Plenary. In the meantime, a small team led by CSIRO needs to quickly review the GEO 2017-2019 Work Programme contents in relation to the SDGs.

- **Non-Meteorological Application (NMA):** following the presentation of the NMA report, CEOS Principals agreed to continue working towards the operational delivery of NMA geophysical products to achieve quasi-global consistent coverage that underpin downstream products.
- **GFOI and GEOGLAM:** participants reviewed the progress status of those major GEO initiatives significantly supported by CEOS including some important issues such as the short-coming lack of funding to support the operations of the SDCG. A call for support has been launched to CEOS Agencies.
- **Water Strategy:** the CEOS report in response to the GEO Water Strategy will be finalized for the CEOS Plenary. The major issue is that the GEO water framework is still evolving with new requirements expected from the “water community”.
- **Carbon Strategy:** CEOS has defined a series of 30+ actions in response to the GEO Carbon Strategy. In order to obtain quick results in the short-term, CEOS Principals have decided to focus on 5 to 7 actions presented during the workshop. It has also been decided to continue engagement in support of the GEO Carbon initiative and to pursue the CEOS-CGMS coordination on CO₂ via an expanded role of the ACC-VC with additional membership.
- **Passive Microwave Radiometers (PMW) for SST:** following a recent gap analysis by the Sea Surface Temperature Virtual Constellation (SST VC), a series of recommendations will be submitted to the CEOS Principals for endorsement. The analysis highlights the uncertain future of SST observations at high latitudes which require 7 GHz channel PMWs, with a negative impact on operational analysis and forecast.
- **Polar Sea-Ice VC:** the participants in the 44th CGMS meeting (June 2016) suggested to better coordinate the polar observations from space in particular with the creation of a Polar Sea-Ice VC. CEOS examined the request but concluded that further iterations were needed with the Polar Space Task Group after which a possible sea ice VC might be proposed.
- **3rd GEO Programme Board meeting:**
 - The SIT Chair and the CEO have participated in the 3rd GEO Programme Board meeting (Geneva, 7-8 Sep. 2016). The GEO PB members reviewed the various GEO activities proposed in the GEO 2017-2019 WP to be endorsed at the coming GEO Plenary.

Upcoming meetings or events (for reference only)

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

- The 32nd CEOS SIT meeting will take place on 25-27 April 2017 at ESA HQ in Paris (France). The 2017 SIT TWS will be held in Europe on 11-14 September 2017.

Attachments

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

CEOS SEC 216 Report – October 2016

Entity: CEOS Representatives to GEO Programme Board

Prepared By: Stephen Briggs (ESA), Ivan Petiteville (ESA), Jonathon Ross (GA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- **Re-nomination for GEO Programme Board.** Following discussions at SEC-215 and at the SIT Technical Workshop, the CEOS Chair Representative has re-nominated CEOS for the 2017-2019 GEO Programme Board. Briggs (primary representative), Petiteville and Ross (alternates), have been nominated. ExCom will now propose a slate of nominees to GEO-XIII for ratification, at which point CEOS will know if it continues on the GEO Programme Board.
- **Presence of a ‘space task’ in the future GEO Work Programme.** The Programme Board’s Foundational Task sub-group has concluded its work and made recommendations to ExCom. The recommendations include:
 - o A distinct ‘space task’, as well as an ‘in situ’ task. Both are ‘community led’, the space task by CEOS. The in-situ task will have different sub-tasks for ocean, atmospheric and terrestrial. This reflects the particular challenges in the latter.
 - o ‘Descoping’ of a number of Foundational Tasks, including the ‘GEO Knowledge Base’
 - o That some activity shift from a Foundational Task to an Initiative, including an initiative focussed on future evolution of the GCI.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- Nil.

Other highlights, activities, actions, projects, collaborations (for reference only)

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

- Nil.

Upcoming meetings or events (for reference only)

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

- GEO Programme Board #4. 7 November. St Petersburg, Russia.

Attachments

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

CEOS SEC 216 Report – October 2016

Entity: SEO

Prepared By: Brian Killough (NASA)

Issues requiring discussion/decision during CEOS SEC teleconference

- None

Updates on issues raised during the last CEOS SEC teleconference

- None

Upcoming meetings or events

- Brian Killough will be meeting with GA and USGS in Canberra on October 27-28, in advance of the CEOS Plenary. Our meeting at GA will focus on the Data Cube activities of the 3 groups in order to enhance collaboration and optimize our development approaches.

Other highlights, activities, actions, projects, collaborations

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

- Brian Killough has had several meetings with World Bank as they continue to have interest in the CEOS Data Cube activity. The SEO is planning to add several new small Data Cubes to their prototype list for testing. These include an expanded Lake Chad cube for historic water analyses, a small cube for the Pacific island of Tonga, and a small cube for Togo (coastal west Africa). These latter two cubes will be used to test the WofS water detection algorithm and coastal erosion algorithms.
- Brian Killough has had several discussions with David Green (NASA Disasters Lead) and Dalia Kirschbaum (NASA GSFC researcher) about testing the SLIP-DRIP landslide algorithm using the CEOS Data Cube. This project would test the use of multiple datasets and the use of the cube for near real time landslide monitoring applications.
- The SEO continues to make progress on Data Cube core technology. A new online (Amazon Web Services) prototype has been released for limited testing. The SEO also continues to work on change detection software (CCDC and BFAST) and GIS tool (ArcMAP and QGIS) integration with the Data Cube.

CEOS SEC 216 Report – October 2016

Entity: SDCG for GFOI

Prepared by: M. Steventon (SDCG SEC)

Updates on issues raised during the last CEOS SEC teleconference

- None.

Issues requiring discussion/decision during current CEOS SEC teleconference

- None.

Other highlights, activities, actions, projects, collaborations (for reference only)

- The London briefing (6 Sep) and SDCG-10 (7-9 Sep) in Reading were very productive. The Germany-Norway-UK relationship looks very promising and GFOI could offer significant policy pull as well as an assurance framework for their 25 target countries. The minutes from SDCG-10 are being finalised and will be posted online when ready at: <http://ceos.org/meetings/sdcg-10/>
- We await the result of the GFOI review and its impact on future funding for the GFOI Office and Methods and Guidance Documentation (MGD) Component.
- The SDCG secretariat is without funding past November 2016. SDCG will seek to continue independent operation as a CEOS group for GFOI – with the recognition that lack of secretariat capacity will significantly impact output in 2017.
- SDCG continues to advocate a GFOI end-to-end country demonstration, which would include implementation of the MGD, SDCG's Space Data Services, and SEO developed tools (e.g. Data Cube). SDCG is keen to get clarity on the strategy for promotion and uptake of the MGD.

Upcoming meetings or events (for reference only)

- SDCG-11 and GFOI Plenary 2017: early April in Ho Chi Minh City, Vietnam. Exact dates TBC.
-

Attachments

More information at <http://ceos.org/sdcg> and www.gfoi.org.

CEOS SEC 216 Report – October 2016

Entity: WSIST (Water Strategy Implementation Study Team)

Prepared By: Chu Ishida (JAXA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Disposal of WSIST after one year extension (to be decided at the CEOS Plenary)

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- ditto

Other highlights, activities, actions, projects, collaborations (for reference only)

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

- The draft CEOS Water Constellation FS report is being finalized to submit to the CEOS Plenary for endorsement.
- Water Constellation FS side meeting at the SIT Technical Workshop was held on Sep 12 to discuss the FS report draft and way forward. The SIT Technical Workshop discussed the recommended CEOS Plenary decision that next steps for the FS recommendations and remaining CEOS Water Strategy actions (C2-C9) be considered by SIT-32 in April 2017.
- Coordination with CEOS SEC for the disposal of WSIST started.

Upcoming meetings or events (for reference only)

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

- WSIST telecon#11 for the final coordination of the draft report. (week of Oct 11)
- Side meeting at CEOS Plenary (TBD)

Attachments

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

None