

**Recommendation to the 35th CEOS Plenary by
the CEOS Ad Hoc Team on Sustainable Development Goals
(SDG AHT)
for Implementation of SDG Activities post 2021**

Prepared by: The CEOS Ad Hoc Team on Sustainable Development Goals (SDG AHT)

Prepared for: CEOS Principal review and decision at the 35th CEOS Plenary 2021

Executive Summary

At the 34th CEOS Plenary in October 2020, CEOS Principals reached the following decision.

Decision 34-15	Plenary agreed to extend the SDG-AHT for one year, with direction for the SDG-AHT to plan a transition of SDG activities to internal (within CEOS) and/or external entities by the 2021 CEOS Plenary.
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And, the corresponding action was agreed.

CEOS-34-16	CEOS Sustainable Development Goals <i>Ad Hoc</i> Team (SDG-AHT) to prepare inputs (according to the Roadmap proposed) to the 2021 CEOS Plenary outlining the proposed new permanent mechanism.	CEOS Plenary 2021
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As per the Roadmap presented at the 34th CEOS Plenary in 2020, the CEOS Ad Hoc Team on Sustainable Development Goals (SDG AHT), together with other relevant CEOS entities, with the GEO Secretariat and SDG-related activities, has developed a plan to transition its activities into existing entities within CEOS.

After exploring¹ multiple options in consultation with CEOS entities and CEOS Agencies, a ‘Federated approach’ was found to be the most realistic, efficient and responsive for CEOS to continue to play an active role in the 2030 Agenda on Sustainable Development facilitating the access and use of satellite data by all countries, leaving no one behind. This preferred option² was presented at the 2021 CEOS SIT Technical Workshop in preparation for a decision at the 35th CEOS Plenary.

The federated approach includes representatives from several CEOS entities. The CEOS SIT Chair will lead the overall strategic oversight through an SDG Coordination group. This team will also include representatives from the Systems Engineering Office (SEO), the CEOS Executive Officer (CEO), a CEOS-GEO liaison on SDG matters, and a representative from the past SIT Chair Team (also initiator of the former SDG AHT).

The technical implementation will be delegated to the SEO to coordinate SDG deliverables and work plan activities by working with a few lead experts responsible for each SDG deliverable. The lead experts will organise their technical capacity and support using a pool of experts connected to each SDG topic (e.g., current SDG indicator sub-teams members), CEOS existing groups (Working Groups, Virtual Constellations, Ad-Hoc Teams), and SDG-related GEO Work Programme activities.

Each year, during the annual work plan process, the SDG Coordination Group will revisit the list of supported SDGs and associated deliverables, review their sustainment, and discuss inputs and available support from CEOS entities and CEOS Agencies for the coming year.

¹ Main reference: [Future Options Synthesis Paper](#) also available on [CEOS website](#) published in 2021 by the AHT

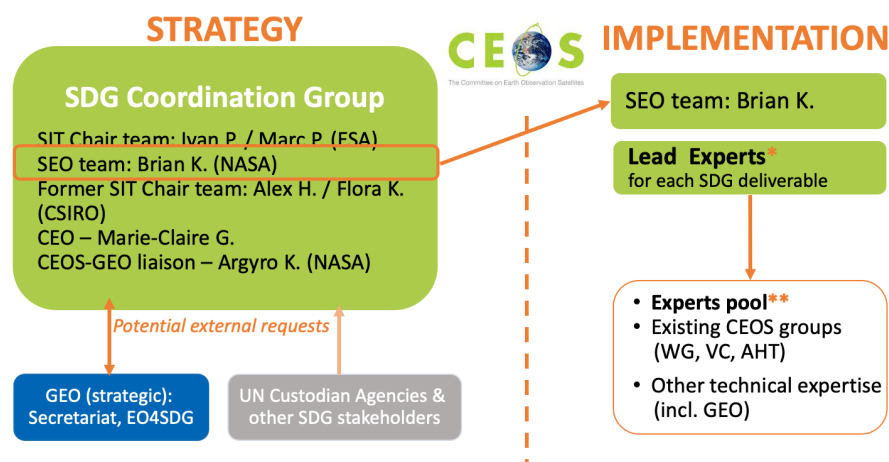
² The *full scale* option which included the creation of a CEOS “SDG Working Group” was dropped after SIT-36: no sufficient support nor resources were offered at that time to establish and sustain such a WG

For consideration at the 35th CEOS Plenary, we recommend:

1. To disband the CEOS Ad Hoc Team on Sustainable Development Goals (SDG AHT); and,
2. That CEOS Agencies adopt a Federated approach for the implementation of its SDG strategy and activities post-2021.

In our view, this approach will allow CEOS to continue to play an active role in providing support to access and use of satellite data to SDG end-users who need access to reliable, continuous data and technical guidance, while involving several CEOS members to ensure continuity in this process.

CEOS SDG Strategy post 2021 The SIT Chair will lead the Strategy, and delegate its implementation to the SEO. The SEO will lead the implementation with the Lead Experts to be responsible to deliver the SDG Work Plan activities by organising Experts contributions accordingly.



Note: (SEE Current membership table)
 * **Lead Experts:** current *sub-teams* co-leads (to be reassessed based on resources and Agencies' decision) – will lead SDG deliverables
 ** **Experts Pool:** current *sub-teams* members (= Lead experts to use it and set up their teams to meet their objectives)

This recommended way forward enables CEOS to continue to act as a "Space Enabler on SDGs" in support of GEO and the UN, to serve as the 'space segment of GEO', and to encourage and enable the use of satellite Earth observations, while supporting a critical and high visibility UN framework.

This decision is in part pragmatic, and takes into account limits on the resource commitments that can be made by CEOS Agencies with the objective to maximise impact and benefits with the CEOS resources available. By choosing a Federated approach built on existing CEOS entities, over the creation of a standing Working Group, CEOS would remain open, nimble, and responsive, enabling future change or growth in response to the evolving needs of the SDG user community (e.g. potential support to the New Urban Agenda).

The document that follows lays out the rationale and mechanics of the recommended way forward.

This CEOS SDG Strategy Implementation aims to provide a clear understanding of the proposed option, including key elements:

1. **CEOS commitment.** CEOS Agencies reaffirm the importance of providing accessible satellite data and tools in support of the 2030 Agenda for Sustainable Development (*i.e.* UNSDGs), the 2015 Paris Agreement, and the Sendai Framework for Disaster Risk Reduction 2015-2030.
2. **Recommendation.** Following the 34th CEOS Plenary, the SDG AHT conducted a series of multilateral discussions among key stakeholders in CEOS and GEO, and presented the consensus option at the 2021 SIT Technical Workshop: a **Federated approach** that allows CEOS to continue supporting the SDGs through existing CEOS entities with a '*CEOS Work Plan driven*' coordination mechanism on SDGs, replacing the current SDG AHT.
3. **Justification.** The Federated approach was selected over the option of the establishment of a new CEOS Working Group: the option was explored, but no sufficient support nor resources were offered to establish and sustain the group at present. This may become an option in the future should the workload require and should the resources be identified.
4. **Current SDG expertise.** The SDG AHT '*sub-teams*' will be disbanded, but sub-team leads and members continuing to be aligned with their related Work Plan deliverables. They will be part of the '*SDG Experts pool*' coordinated by the SEO.
5. **Two levels: strategy & technical implementation.** The CEOS SIT Chair will retain the overall strategic oversight and responsibility for SDG support within CEOS. This will entail conducting, supported by the SDG Coordination group, strategic discussions with GEO and other external organisations (e.g. UN Agencies), setting the overall direction and CEOS priority activities on SDGs, the inclusion of agenda items at SIT meetings, facilitation of further coordination across CEOS entities, and providing support to those implementing SDG-related CEOS deliverables.

The SIT Chair will delegate coordination for the implementation of CEOS SDG-related activities to the Systems Engineering Office (SEO).

6. **SDG Coordination Group:** the overall strategic coordination of CEOS engagement on SDGs will be the responsibility of the *SDG Coordination group*, led by the SIT Chair.
7. **Technical implementation.** To coordinate the implementation, the SEO will directly interact with *Lead experts*, who will be responsible for SDG deliverables.
8. **SDG deliverables and contributors.** They will be revisited annually as part of the Work Plan update process. Flowing from the agreed strategy, the deliverables and associated resources will be coordinated by the SEO with inputs to be sought from Lead experts and all relevant existing CEOS entities (e.g., Working Groups, Virtual Constellation, AHTs). As soon as outputs are well delivered, the necessary contributors are no longer required.

1. SDG Federated approach: objectives, rationale, and process

The objectives of the proposed new CEOS coordination on SDGs are to:

- Ensure continuity of CEOS' involvement in supporting the 2030 Agenda for Sustainable Development (i.e. SDGs) in order to promote the uptake and adoption of satellite Earth observations, data, analysis, tools and methods focused on specific SDG Indicators;
- Continue to support GEO in their efforts to promote the value and use of EO satellite data in the SDG community;
- Provide sustained CEOS support by working within existing resource constraints through CEOS Work Plan deliverables, and via the coordination of existing CEOS entities; and,
- Enable clear handling of future external partner requests and interactions on SDG-related topics as required, and following existing CEOS processes.

The SDG AHT was created in 2016 as a temporary measure to coordinate CEOS Agency inputs and satellite data to support the SDGs. Due to its temporary nature, it was agreed at the 34th CEOS Plenary (2020) that another mechanism was to be presented for Principals' consideration and endorsement at the 35th CEOS Plenary (2021).

In 2021, the AHT explored different future options based on CEOS Agency support and strategic directions. A number of discussions were held, including a workshop on SDG AHT Future options in March which resulted in the drafting of a [Future Options Synthesis Paper](#). This assessment concluded there were two options which should be investigated:

- **'Full-scale'**: the creation of a CEOS Working Group dedicated to the SDGs; and,
- **'Federated'**: coordination of existing CEOS resources, entities, and deliverables.

The Synthesis Paper, and these options were further developed and presented at SIT-36. During the assessment, CEOS Agencies expressed a strong desire to continue providing data, tools, and methods in support of the SDG agenda and affirmed support to SDGs as one of GEO's three engagement priorities. However, the establishment of a CEOS Working Group requires long-term commitment of leadership and resources and, when asked, no CEOS Agencies indicated they would be willing to take on the leadership of such a Working Group at present.

Based on this, the 'full-scale' option was ruled out.

There was, however, sufficient desire and support expressed by CEOS Agencies to maintain an active role of CEOS on SDGs and to set up a coordination mechanism based on a *Federated approach*, and using support embedded within existing CEOS entities and the AHT resources. Based on the current CEOS engagement work load (four SDG Indicators, with a fifth under consideration), this coordination mechanism was thought to be sufficient to handle the workload.

In August 2021, the Systems Engineering Office (SEO) came forward with a proposal to host this Federated coordination function. The proposal was further developed in consultation with the SDG AHT co-leads and membership, SIT Chair, and other key members of the CEOS community. The Federated approach was then discussed and agreed at the SIT Technical Workshop where it was confirmed as the recommended option to be taken forward to Plenary.

2. CEOS SDG Strategy: two layers of roles & responsibilities

It is recommended that the SIT Chair retain strategic responsibility for the SDG coordination mechanism within CEOS, and that SIT Chair delegate implementation coordination to the SEO.

The proposed roles and responsibilities of the strategic coordination group and the technical implementation can be summarised as follows:

- **Strategic level: the SIT Chair will provide overall strategic oversight** for the CEOS support to the SDGs, ensuring visibility across CEOS entities via agenda time at regular SIT and SIT Technical Workshop meetings. As a part of its ongoing mandate within CEOS, the SIT Chair Team will be “... responsible for ensuring a structured debate on issues of strategic significance to CEOS”, including working to address issues as they arise from both internal coordination efforts, as well as external queries and requests.

As described in the chart below, the **SIT Chair will lead the SDG Coordination group which will be also composed of:**

- a representative from the SEO => responsible for the implementation of the strategy,
- a representative from the former SIT Chair/SDG AHT co-lead => strategic continuity,
- the CEO => external interfaces and fostering bridges across CEOS groups,
- a CEOS-GEO liaison person => relations with GEO work plan activities related to SDG matters, including but not limited to the EO4SDG initiative.



- **Technical implementation level:** the SEO, in close collaboration with *SDG Lead experts*, will provide daily, weekly, and monthly implementation coordination, ensuring SDG-related deliverables are well defined in the CEOS Work Plan, and are progressing and sufficiently resourced. When and as required, the SEO will reach across CEOS at the working level via its regular attendance at almost all CEOS meetings, and work to raise issues to CEOS leadership (via the SIT) when required.

The *Lead experts* will organise the work within CEOS, drawing on a **pool of identified SDG Experts** (=current *sub-teams'* members), or coming from existing Working Groups, Virtual Constellations, or Ad-hoc teams.

The leads shall also engage externally (e.g. with the GEO community) to guarantee excellent quality deliverables, or to ensure a coordination of the response to potential additional requests per existing CEOS processes. The SEO will be integral in assuring visibility of SDG activities across CEOS via its regular participation in all major forums (e.g. CEOS Secretariat,

CEOS Plenary, SIT and SIT Technical Workshops, Working Group and Virtual Constellation meetings, CEOS-GEO Bilateral meetings, etc.).

IMPLEMENTATION

SEO team: Brian K.

Lead Experts*
for each SDG deliverable

- **Experts pool****
- Existing CEOS groups (WG, VC, AHT)
- Other technical expertise (incl. GEO)

This arrangement is consistent with the SEO Terms of Reference ([see here](#)), where the SEO formally reports to the SIT Chair, and fits well with its purpose to provide, “*systems engineering leadership and support to CEOS*”.

At the SIT Technical Workshop 2021, the SEO provided some additional details of their proposed approach to coordination.

More discussions were held, enabling the AHT to refine and clarify some points, including:

- The “**SDG Coordination Group**”, will be composed of approximately 5 individuals to support the SIT Chair Team in providing CEOS strategic directions on SDG. The membership of this group may change as needs dictate, but initially it will include members from the SEO, a SIT Chair representative, a former SIT Chair (as well as AHT co-lead) representative, the CEO, a GEO liaison person, and others as required.
- The “SDG Coordination group” will meet monthly, or more if required, and will report at each major CEOS forum through the SIT Chair report.
- The **SEO will be instrumental** in both areas: while supporting the SIT Chair in coordinating its strategy, it will lead its technical implementation through the Lead experts.
- While the current **SDG AHT ‘sub-teams’** will be disbanded, their deliverables in the CEOS Work Plan will continue on subject to the usual CEOS Work Plan annual update process. Current membership of the sub-teams will be added to the deliverable descriptions (if not already included). The superset of contributors to all CEOS SDG-related deliverables (those numbered SDG in the Work Plan, [click here](#)) will comprise a **pool of SDG Experts**, who will develop and execute the detailed work required for the deliverables, as directed by the SDG **Lead experts (for each SDG indicator)**. As new required contributors are identified, the Leads should identify and add Experts to the relevant deliverable. The pool of experts may vary as deliverables are closed out and as new are added. Working with the **SDG Lead experts** should be a regular part of the SEO’s coordination function. (A list of current sub-team membership is included as an Appendix to this document.)

- For new **SDG-related external requests**, the External Request Process Paper (ERPP, [here](#)) will likely be the most relevant. For broader or more integrated requests, the New Initiatives Process Paper (NIPP, [here](#)) may also be applicable. These Papers include predefined roles for the CEOS Chair and Secretariat, SIT Chair, CEO, and SEO, and as such the SIT Chair and SEO are well positioned to support and coordinate any required strategic analysis and an assessment of the resources required for the implementation of any CEOS response. While originators of these requests may be varied, examples might include GEO activities, SDG Custodian Agencies, and countries. A rise in external requests to the point where CEOS capacity to respond via this mechanism is exceeded should be monitored (i.e. reported by SEO to SIT) as an indicator that a broader CEOS response to the SDG user community may be required.
- **CEOS Work Plan Deliverables & responsibilities:** With a given CEOS Work Plan Deliverable ([SDG-20-06](#) shown below), a lead individual should be identified as the ‘Responsible User’. As well, individuals, CEOS entities, and Agencies who have agreed to support the deliverable should also be referenced, along with relevant external communities (e.g. GEO Initiatives, Custodian Agencies). In the example below (SDG Indicator 15.3.1, Land Degradation), Neil Sims (CSIRO) will follow GEO LDN processes and activities ensuring that CEOS can play its unique role in providing satellite data and information. Neil will also interact with the CEOS entities and/or Agencies working to implement the CEOS contribution related to this SDG indicator.

View Deliverable ← Back

SDG-20-06: Satellite data requirements for SDG Indicator 15.3.1 (Land Degradation Neutrality)

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Number:	SDG-20-06
Title:	Satellite data requirements for SDG Indicator 15.3.1 (Land Degradation Neutrality)
Status:	Open
Creation Year:	2020
Completion Date:	2021 Q4 (78 days remaining)

Description:

Detailed assessment of the satellite data requirements for the production of SDG Indicator 15.3.1 (Land Degradation Neutrality) including satellite observation requirements; availability of legacy data; long-term data continuity; gaps in geographical coverage; availability of ARDs; etc.

Link to GEO Work Programme: EO4SDG; GEO LDN

External Reference:

Responsible Users: Neil Sims

Responsible CEOS Entities: SDG AHT Land Degradation Sub-team

Contributing Agencies: CSIRO, ESA, GA, JAXA, NASA

Progress Reports:

Neil Sims | 2021-08-13 01:51:32 UTC

The revised Good Practice Guidance document for 15.3.1 is due to be released soon. That document contains some updated dataset recommendations for each of the sub-indicators. An advanced copy of the updated GPG can be accessed here (https://www.unccd.int/sites/default/files/relevant-links/2021-03/Indicator_15.3.1_GPG_v2_29Mar_Advanced-version.pdf), with the final edited version due in late Aug early Sep. We will summarise the key recommendations from the final version and report that as a CEOS document shortly after its release.

Comments:

| 2020-09-04 21:09:34 UTC

Task Team currently being formed. More contributors will come.

Actions:

Created: 2020-09-04 21:09:34 UTC

Last Updated: 2021-08-13 01:51:32 UTC

3. The SDG Coordination Group: internal and external considerations

- **The importance of bridging gaps and creating synergies**

The new mechanism aims to foster cross-cutting discussions between existing CEOS entities and Agencies, as well as among key stakeholders, including with the GEO community and external thematic experts. For instance, the “SDG Coordination group” shall enable CEOS to highlight the link between water-related ecosystems (e.g. wetlands and peatlands) and the Global Stocktake, and create opportunities to combine water and carbon satellite data.

The SDG AHT has tried hard to increase cross-collaboration between CEOS groups during its tenure. In order for this to continue and improve, a strong focus from the SIT Chair on this aspect will be necessary to ensure that relevant CEOS entities work towards the same larger priorities. This proposed federated approach under the SIT Chair strategic leadership is critical to ensure collaboration between CEOS Entities.

- **CEOS Agencies: how can they be involved?**

The “SDG Coordination Group” will approach CEOS Agencies as specific requests arise and to seek their endorsed commitment as needed. The requests will be worked into the CEOS Work Plan and its defined deliverables.

- **Individual SDG experts: who are they?**

The *sub-teams co-leads* are responsible for current Work plan SDG deliverables, and thus will be the initial “Lead experts” in the proposed mechanism.

The *sub-teams members* are contributing to the current SDG deliverables, and thus will form the initial “Experts pool”.

CEOS Agencies will be invited by the “SDG Coordination Group” to nominate individual experts (either from an existing CEOS entity, or as part of the “Experts pool”) when they have identified a need to contribute to one or more specific SDG deliverable(s). When the deliverable is completed, the individual is released from his or her duty on SDG. However, if they wish to remain active and be requested to work should any new SDG activity arise, they may request to be listed in the SDG “Experts pool”.

CEOS Agencies should communicate any staff changes to the “SDG Coordination Group”.

- **The need to nurture a close partnership with GEO on SDGs**

The relationship with GEO is fundamental to the SDG process. Many past discussions allowed the SDG AHT to clarify CEOS scopes of activity within this landscape. It has been agreed that GEO engages closely with UN custodian Agencies and countries to better understand and help with reporting methods, needs and EO requirements.

CEOS, as the “space arm” of GEO, will continue to support GEO by producing a satellite data supply analysis, mixed with a requirements analysis, to improve SDG reporting for targeted SDG indicators.

The SDG AHT has been continuously working in close partnership with GEO, through EO4SDG (initiative on SDG) but also via most of GEO initiatives and flagships when CEOS expertise has been needed. From now on, with this new overarching approach, CEOS intends to preserve its relationship with GEO on two levels: strategically, the SDG Coordination Group will liaise with GEO on this topic, while delegated Lead experts responsible of CEOS SDG deliverable, will reach out and interact with GEO groups to work on specific deliverable tasks and reinforce impacts of Earth observation data towards the 2030 Agenda.

4. Proposed next steps

Pending the Federated approach’s approval, the SDG Coordination Group will meet shortly after to further discuss the strategy and organise their work for 2022.

The Lead experts and the SDG Experts will also be contacted to confirm their willingness and availability to lead and contribute to the current SDG deliverables.

The SEO will lead an updated assessment of the combined resources that CEOS is currently dedicating to SDG activities, including a mapping of SDG Indicator support to the CEOS Work Plan and CEOS entities. The results will form the basis of inputs to the CEOS Work Plan 2022-2024 preparation, and to be presented at SIT-37 (March 2022).

Appendix: Current AHT SDG membership (sub-teams)

The SDG AHT is led by Marc Paganini (ESA), Alex Held (CSIRO), and supported by Flora Kerblat (CSIRO) until the 35th Plenary.

Last year, 3 sub-teams were created to carry out analysis of specific indicators: water, urban and land degradation. The COAST is also producing a satellite data supply and requirements analysis for SDG 14.1.1 (marine pollution).

Sub-teams	Water (6.6.1)	Urban (11.3.1)	Land degradation (15.3.1)	COAST (SDG 14.1.1)
Co-leads (proposed Lead Experts)	Aurélien Carbonniere (CNES), Marc Paganini (ESA)	Argyro Kavvada (NASA), Nale Mudau (SANSa)	Neil Sims (CSIRO), Uta Heide (DLR) supported by Flora Kerblat (CSIRO)	Emily Smail (NOAA, GEO Blue Planet)
Contributors (recommended to form one pool of SDG Experts)	Alice Andral (CNES), Argyro Kavvada (NASA), Nima Pahlevan (NASA), Brian Killough (SEO/NASA), Luca De Felice (EC JRC), Chu Ishida (JAXA), Ko Hamamoto (JAXA), Norman Muller (GA), Flora Kerblat (CSIRO), Emily Smail (NOAA), H. Kim (WMO), Doug Cripe (GEO), + Experts from GEO Wetlands (9), AquaWatch (2), GLOWS (1)	Brian Killough (SEO/NASA), Garik Gutman (NASA), Bob Chen (CIESIN and GEO Human Planet), Greg Yetman (CIESIN), Peter Caccetta (CSIRO), Flora Kerblat (CSIRO), Alexander Baklanov (WMO), Thomas Kemper (JRC and GEO Human Planet), Yifang Ban (KHT and GUOI), Mattia Marconcini (DLR), Marc Paganini (ESA)	B. Killough (NASA), N. Mueller (GA), M. Paganini (ESA), C. Ishida (JAXA), Ko Hamamoto (JAXA) + GEO LDN Experts and co-leads	COAST and GEO members GEO Blue Planet Working Group that collaborates with CEOS on space data needs for specific projects.