

18th Meeting of the CEOS Virtual Constellation for Land Surface Imaging (LSI-VC)
2-5 September 2025

Hosted by the European Commission Joint Research Centre (EC-JRC)

Via E. Fermi, 2749, 21027 Ispra VA, Italy

Room 305, Building 102

Week at a Glance

Day 0 Tuesday, September 2	Day 1 Wednesday, September 3	Day 2 Thursday, September 4	Day 3 Friday, September 5
<ul style="list-style-type: none"> CEOS-ARD Building Blocks and GitHub Development Workshop (<i>side meeting, optional attendance</i>) 	<ul style="list-style-type: none"> Welcome and Introductions Thematic Land Surface Imaging Topics and LSI-VC Subgroup Reports Agency / Company Reports Land Surface Imaging Data Assessment and Procurement 	<ul style="list-style-type: none"> Land Degradation Neutrality (LDN) Analysis Ready Data Standards Surface Temperature CEOS-ARD Specification Future CEOS-ARD Agency / Company Reports 	<ul style="list-style-type: none"> CEOS-ARD Framework Agency / Company Reports Other topics Closing

Meeting Objectives

In addition to discussing the latest updates on land surface imaging EO programmes, thematic activities, and ARD, specific objectives of the LSI-VC-18 meeting include:

1. Confirm a series of decisions and actions regarding implementation of the CEOS-ARD Framework and Specifications as 'building blocks' in GitHub.
2. Take stock of the status of CEOS AFOLU Roadmap implementation and record decisions on the way forward. Consideration is needed on the form of the actions, alignment with agency activities, and identification of leads.
3. Discuss the '*Unlocking Commercial EO Archives for Public Good*' concept note and decide implementation steps.
4. Identify where CEOS-ARD needs to be updated so that it could possibly in future serve as a useful baseline / stage 0 step in the ESA-NASA Joint Quality Assessment Framework and define the position of that baseline / stage 0 'bar'.
5. Confirm official LSI-VC and CEOS-ARD positions on various topics related to standardisation, including the OGC ARD Maturity Report and the progression of OGC and ISO ARD Standards groups, in particular

the OGC ARD SWG to DWG vote anticipated at the OGC 133rd Member Meeting, October 28–31, 2025; and

6. Develop a brief regarding the ISO Analysis Ready Data standards development that can be shared with national standards bodies contacts and share experiences/processes for engaging national standards body representatives to ensure appropriate voting representation.
7. Engage with representatives of the Surface Temperature commercial sector and consider updates to the CEOS-ARD Land Surface Temperature PFS, including whether the Surface Brightness Temperature aspects of the specification should be reinstated and further developed to meet user needs. Other things to be considered include consideration of whether a 'stability' parameter should be added and whether the Sea Surface Temperature community should also be consulted.
8. Discuss the draft '*Future CEOS-ARD Concept Note*' and review results of the community consultations held throughout 2025. Determine if there's anything we've overlooked and whether there are any additional topics or issues that need to be represented in the concept note. Review and discuss headline inputs and proposals for CEOS Plenary and SIT Technical Workshop. Identify any data quality related topics that need further discussion at the joint WGCV-56 and LSI-VC-19 meeting in April 2026.
9. Consider an update to the CEOS-ARD Framework to include a new product level classification / taxonomy.
10. Discuss updates to ensure consistency across the PFS, including general metadata from AR PFS V2.0.
11. Confirm LSI-VC positions on potential new CEOS Virtual Constellation for biodiversity and Synthetic Aperture Radar.
12. Discuss the idea of an ARD workshop alongside SIT-41 (Los Angeles, April 2026).
13. Confirm plans for the LSI-VC-19 meeting, which will be hosted by USGS EROS in Sioux Falls, SD, USA, joint with WGCV-56, during the week of April 20 (the week after CEOS SIT-41).

Agenda

Day 0: Tuesday, September 2

CEOS-ARD Building Blocks and GitHub Development Workshop

Optional attendance.

Location: Room 305 (3rd Floor), Building 102, Via E. Fermi, 2749, 21027 Ispra VA, Italy

09:00 - 09:30: GitHub (30 min)

09:30 - 10:30: Document generation & history (60 min)

10:30 - 10:45: Break

10:45 - 11:30: Specification / Standardization (45 min)

11:30 - 12:00: Metadata specification(s) (30 min)

12:00 - 13:00: Lunch

13:00 - 13:45: Editor (45 min)

13:45 - 14:30: Assessor (45 min)

14:30 - 15:30: AOB / Buffer / Break; Preparation of summary slides for item 1.3 of Day 1

15:30 - 17:00: CEOS-ARD Oversight Group meeting

Participants are asked to read [this document](#) and review the linked references before the side meeting. Please note the proposed decisions which will be discussed and then presented to the CEOS-ARD Oversight Group meeting (15:30 - 17:00) for formal acceptance.

Day 1: Wednesday, September 3

Location: Room 305 (3rd Floor), Building 102, Via E. Fermi, 2749, 21027 Ispra VA, Italy

Arrival / Teleconference Open <i>Meeting teleconference connection will be open for testing.</i>		08:50	10 min
Session 1: Welcome and Introductions			
1.1	Welcome from Ivan Kulis (EC)	09:00	5 min
1.2	Welcome <i>Peter Strobl (EC-JRC), Matt Steventon (LSI-VC Secretariat) and LSI-VC Co-Leads</i> <ul style="list-style-type: none"> • Opening remarks • Roundtable of introductions • Meeting overview 	09:05	15 min
1.3	Summary of outcomes from 'Day 0' CEOS-ARD Building Blocks and GitHub Development Workshop <i>Matthias Mohr (SEO)</i>	09:20	15 min
Session 2: Thematic Land Surface Imaging Topics and LSI-VC Subgroup Reports			
2.1	Copernicus Land Monitoring Service (CLMS) <i>Andreas Brink (EC) [TBC]</i> <ul style="list-style-type: none"> • Overview of the service and products • <u>Discussion:</u> CEOS-ARD connections 	09:35	30 min
2.2	Wetlands and the Ramsar Convention <i>Ake Rosenqvist (JAXA)</i> <ul style="list-style-type: none"> • Outcomes from Ramsar COP15 and the EO side event • CEOS support for GEO-Wetlands and the Essential Wetland Variables pilot 	10:05	30 min
2.3	CEOS Agriculture, Forestry, and Other Land Use (AFOLU) Roadmap <i>Takeo Tadono (JAXA) / Clement Albergel (ESA) / Neha Hunka (ESA)</i> <ul style="list-style-type: none"> • Status of Roadmap implementation • <u>Discussion:</u> Action refinement and simplification as a next step / future task • GEO-TREES and GFOI 	10:35	30 min
Break and Group Photo		11:05	45 min

Session 3: Agency / Company Reports

Updates on land surface imaging missions and activities, thematic topics, CEOS-ARD assessments and peer reviews, etc.

3.1	KARI <i>Kim Taeheon (virtual)</i>	11:50	20 min
3.2	CONAE <i>Homero Lozza (virtual), Dadamia Danilo (virtual)</i>	12:10	20 min
3.3	U.S. Geological Survey <i>Tim Stryker (virtual)</i>	12:30	20 min
3.4	ISRO <i>P.V. Jayasri</i>	12:50	20 min
Lunch		13:10	50 min

Session 4: Land Surface Imaging Data Assessment and Procurement

4.1	Unlocking Commercial EO Archives for Public Good <i>Maggie Arnold (GA)</i> <ul style="list-style-type: none"> Review and discuss draft concept note: Concept Note CEOS LSI-VC Unlocking EO Archives .docx 	14:00	30 min
4.2	ESA Third Party Missions (TPM) and Copernicus Contributing Missions (CCM) Programme Overviews <i>Peggy Fischer (ESA)</i>	14:30	30 min
4.3	ESA-NASA Joint Quality Assessment Framework and CEOS-ARD Connections <i>Dana Ostrenga (NASA) and Leonardo De Laurentiis (ESA)</i> <ul style="list-style-type: none"> Discussion on leveraging CEOS-ARD to simplify evaluations, reduce duplication of effort, and introduce a common benchmark for data providers <u>Objective</u>: Identify where CEOS-ARD needs to be updated so that it could possibly in future serve as a useful baseline / stage 0 step in the Quality Assessment Framework. <u>Discussion</u>: Defining the position of that baseline / stage 0 'bar'. Follow up to LSI-VC-17-12 / 21 / 22 	15:00	60 min
4.4	Specific ESA EDAP Updates <i>Leonardo De Laurentiis (ESA)</i>	16:00	10 min

4.5	Specific NASA Commercial Satellite Data Acquisition (CSDA) Updates <i>Dana Ostrenga (NASA)</i>	16:10	10 min
	<i>Buffer</i>	16:20	20 min
Session 2 (continued): Thematic Land Surface Imaging Topics and LSI-VC Subgroup Reports			
2.4	LSI-VC GEOGLAM (Agriculture) Subgroup <i>Alyssa Whitcraft (GEOGLAM)</i>	16:40	30 min
Adjourn		17:10	

Day 2: Thursday, September 4

Location: Room 305 (3rd Floor), Building 102, Via E. Fermi, 2749, 21027 Ispra VA, Italy

Arrival / Teleconference Open <i>Meeting teleconference connection will be open for testing.</i>		08:50	10 min
Session 5: Land Degradation Neutrality (LDN)			
5.1	GEO Land Degradation Neutrality (LDN) Flagship <i>Neil Sims (CSIRO)</i> <ul style="list-style-type: none"> • Potential LSI-VC contributions to LDN • Decision trees in the Good Practice Guidance (GPG) • Pacific Islands • Challenges related to hyperarid regions, NDVI, low soil carbon stocks • OGC GRI SWG 	09:00	40 min
Session 6: Analysis Ready Data Standards			

6.1	<p>Discussion on topics related to the standardisation of 'Analysis Ready Data' and formulation of CEOS positions/strategies: <i>Dave Borges (SEO)</i></p> <ul style="list-style-type: none"> • Need a decision on how to address the OGC ARD Maturity Report • Confirming an official CEOS-ARD position on OGC and ISO ARD standards efforts (19176-1) • <u>Objective</u>: Develop a brief regarding the ISO Analysis Ready Data standards development that can be shared with national standards bodies contacts. • CEOS representation in ISO meetings and country ISO contacts and voting representation • <u>Decision</u>: OGC ARD SWG to DWG potential vote – Preparation for the OGC 133rd Member Meeting in Boulder, Colorado, October 28–31, 2025. 	09:40	60 min
	<i>Buffer time</i>		20 min
Break		11:00	20 min
Session 7: Surface Temperature CEOS-ARD Specification			
7.1	<p>Background on the Surface Temperature (ST) CEOS-ARD Product Family Specification <i>Darren Ghent (University of Leicester) and Harvey Jones (LSI-VC Secretariat)</i></p> <ul style="list-style-type: none"> • Development and uptake • Landsat Collection 2 LST • Past removal of Surface Brightness Temperature (SBT) • WGClimate, LST Essential Climate Variable, 'Stability' requirement • Commercial sector developments • CEOS Agency developments 	11:20	20 min
7.2	<p>Copernicus Land Surface Temperature Monitoring (LSTM) Mission Update <i>Ferran Gascon (ESA)</i></p>	11:40	20 min
7.3	<p>SatVu <i>Daniel Evans</i></p> <ul style="list-style-type: none"> • Company background, HotSat-1, calibration work, Copernicus Contributing Mission process • Surface Brightness Temperature (SBT) products • Feedback on CEOS-ARD spec 	12:00	20 min
7.4	<p>Constellr <i>Andreas Brunn</i></p> <ul style="list-style-type: none"> • Company overview, constellation specs, product offerings 	12:20	20 min

7.5	<p>Ororatech</p> <p><i>Josephine Wong / Anastasia Sarelli / Julia Gottfriedsen</i></p> <ul style="list-style-type: none"> Company overview, constellation specs, product offerings 	12:40	20 min
7.6	<p>Discussion:</p> <ul style="list-style-type: none"> Do we revive a SBT CEOS-ARD spec? Is there a user base and case, particularly in the context of the commercial sector? Perhaps follow the lead of the SAR PFS (i.e. integrating both in the same doc with [LST] and [SBT] designators). Should the ST PFS also include Sea Surface Temperature? (SST-VC connection) Need to make the distinction between SBT and microwave brightness temperature products? LST Essential Climate Variable and inclusion of a 'Stability' parameter (ref: LSI-VC-15 discussion) Updates to be consistent with Aquatic Reflectance PFS v2.0 (i.e., adopt latest thinking on general metadata and requirements descriptions) 	13:00	20 min
Lunch		13:20	60 min
Session 8: Future CEOS-ARD			
8.1	<p>Overview of the Future of CEOS-ARD Initiative</p> <p><i>Ferran Gascon (ESA, CEOS-ARD Oversight Group Lead)</i></p> <ul style="list-style-type: none"> Motivations, objectives Timeline 	14:20	15 min
8.2	<p>Overview of "Future of CEOS-ARD Survey" Results</p> <p><i>Matt Steventon (LSI-VC Secretariat)</i></p>	14:35	15 min
8.3	<p><u>Discussion:</u> Draft Future of CEOS-ARD Concept Note</p> <p>The Future of CEOS-ARD – Consultation Paper and Concept Note for CEOS Plenary 2025</p> <ul style="list-style-type: none"> Review and discuss headline inputs and proposals for CEOS Plenary and SIT Technical Workshop <u>Objective:</u> Determine if there's anything we've overlooked. Are there any land surface imaging topics or issues we want to make sure are represented in the concept note? <u>Objective:</u> Identify data quality topics for joint WGCV-56 and LSI-VC-19 meeting. 	14:50	60 min
8.4	<p>EarthDaily</p> <p><i>Miriam Cabero, Chris Rampersad (virtual)</i></p> <ul style="list-style-type: none"> Company overview, constellation specs, product offerings EarthDaily Threshold assessment progress <u>Discussion:</u> Addressing EarthDaily flagged issues with Goal level 	15:50	40 min

	assessment: Followup: EarthDaily & CEOS-ARD Call – 31 July / 1 August 2025 <ul style="list-style-type: none"> • <u>Discussion:</u> Perspectives on data quality: Clouds, radiometric accuracy points 		
Session 3 (continued): Agency / Company Reports <i>Updates on land surface imaging missions and activities, thematic topics, CEOS-ARD assessments and peer reviews, etc.</i>			
3.5	CATALYST <i>Griffin Williams</i>	16:30	20 min
3.6	Landsat Collection 3 update <i>Chris Crawford (USGS)</i>	16:50	20 min
Adjourn		17:10	

Day 3: Friday, September 5

Location: Room 305 (3rd Floor), Building 102, Via E. Fermi, 2749, 21027 Ispra VA, Italy

Arrival / Teleconference Open <i>Meeting teleconference connection will be open for testing.</i>		08:50	10 min
Session 9: CEOS-ARD Framework			
9.1	CEOS-ARD Framework update to include a new product level classification / taxonomy (Peter Strobl) <ul style="list-style-type: none"> • Ref: LSI-VC-17-04 • Providing clarification of higher level product accommodation in CEOS-ARD • <u>Decision:</u> Confirm LSI-VC proposal for updated CEOS-ARD Framework to go to the CEOS-ARD Oversight Group for final approval 	09:00	20 min
9.2	Optical CEOS-ARD PFS Requirements Consolidation updates <i>Chris Barnes (USGS)</i> <ul style="list-style-type: none"> • Discuss updates to ensure consistency across the PFS, including general metadata from Aquatic Reflectance PFS V2.0 • Review of GitHub issues of relevance and plan for their disposal 	09:20	20 min

9.3	Discrete Global Grid System (DGGS) <i>Ferran Gascon (ESA)</i> <ul style="list-style-type: none">Ref: LSI-VC-17-20<u>Discussion</u>: Adoption of a CEOS/LSI-VC Best Practice related to the ESA DGGS selection?	09:40	30 min
9.4	Surface Reflectance Quality and Consistency <i>Josh Sixsmith, Medhavy Thankappan (GA)</i>	10:10	20 min
	<i>Buffer time</i>	10:30	30 min
Break		11:00	20 min
Session 3 (continued): Agency / Company Reports <i>Updates on land surface imaging missions and activities, thematic topics, CEOS-ARD assessments and peer reviews, etc.</i>			
3.7	JAXA <i>Takeo Tadono (JAXA)</i>	11:20	20 min
3.8	GISTDA <i>Prayot Puangjaktha</i>	11:40	20 min
3.9	ESA <i>Ferran Gascon (ESA)</i>	12:00	20 min
3.10	Marble Imaging <i>Gopika Suresh & Meghna Sengupta</i>	12:20	20 min
	<i>Buffer time / additional reports</i>	12:40	20 min
Lunch		13:00	60 min
Session 10: Other Topics			
10.1	<u>Discussion</u> : Confirm LSI-VC positions on potential new CEOS Virtual Constellation for biodiversity and Synthetic Aperture Radar	14:00	20 min

10.2	<p><u>Discussion on future events:</u></p> <ul style="list-style-type: none"> • Discuss the idea of an ARD workshop alongside SIT-41 (Los Angeles, April 2026). • Confirm plans for the LSI-VC-19 meeting, which will be hosted by USGS EROS in Sioux Falls, SD, USA, joint with WGCV-56, during the week of April 20 (the week after CEOS SIT-41). 	14:20	20 min
Session 11: Closing			
11.1	<p>Wrap up</p> <p><i>LSI-VC Secretariat and Co-Leads</i></p> <ul style="list-style-type: none"> • Action and decision review • Closing remarks 	14:40	20 min
Adjourn		15:00	