



Committee on Earth Observation Satellites

WG Capacity Building & Data Democracy (WGCapD)

Dr. Prakash Chauhan, ISRO, WGCapD Chair

Dr. Nancy D. Searby, NASA, WGCapD Vice Chair

Dr Lauren Childs, NASA

CEOS 2019 Plenary

Agenda Item # 5.2

Ha Noi, Viet Nam

14-16 October 2019



Accomplishments: Webinars & MOOCs Supported



✓ CB-41

Collaboration between AHT-SDG and WGCapD to organise SDG-related training and capacity building related to the use of space-based EO to meet the data challenges of the 2030 Agenda for Sustainable Development

SDG Awareness Webinar

Dec 19, 2018

✓ CB-29

Webinar series (5 nos) on Geospatial Technology for Wildfire Management supported by ISRO-NASA-ECMWF started during Oct 1-29, 2019

✓ FDA-5

FDA awareness building and outreach

FDA Awareness Webinar

Sept 4, 2019



CEOS
Committee on Earth Observation Satellites

Please join us for a webinar about the
Committee on Earth Observation Satellites
**Future Data Access &
Analysis Architecture Initiative**

September 4th 11:30a – 1:00p AEST
Sept 4th – 7:00a – 8:30a AEST / 11:30a – 1:00p AEST / 9:30a – 5:00a CEST
Sept 5th – 6:30p – 8:00p PST / 8:30p – 11:00p EDT

To Register & Join, visit: <https://register.earthwebinars.com/register/2312134927714178>
Note: This session will be recorded and posted on the CEOS WGCapD E-Learning website

Background
The CEOS Future Data Access and Analysis Architecture (FDA) initiative has resulted in a range of new approaches for EO data access and analysis being defined globally by CEOS Agencies. Many of the pilot activities are now practical implementations, with new standards for Analysis Ready Data, advanced user programmable, Expedition Platforms and vast amounts of data ready available on cloud platforms with open source analytics tools like the CEOS Open Data Cube. Many of these components allow user algorithms to be brought to the data, rather than having to download and run locally thus opening new opportunities for researchers, industry and government use. The FDA ecosystem is still evolving and a challenge to navigate and the CEOS Working Group are collaborating globally to make it simpler to not only discover EO data but to also exploit it using the various elements of FDA.

Agenda

- Short history of FDA
- Elements of FDA
- Discovery Access, Analytics, Cloud Data
- Re-use/optimization platforms, Service providers (EMSA/AVO), Data/Tools (ODC, PDA Clusters, Platform)
- Interoperability & User ASD and Computer Ready data formats (Geo, netcdf, Cloud, etc)
- Collaboration and collaboration: CEOS WGCapD, ARD Strategic, WGRS, OIG
- CEOS plans for next steps

Speakers: Rob Woodcock (CSRO) & Chris Lynnes (NASA)

This webinar is supported by the CEOS Agency Group in Montreal, Quebec & Geneva, Switzerland
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Working Group on Capacity Building and Data Democracy & Ad-Hoc Team on Sustainable Development Goals (SDGs)
<http://ceos.org/ourwork/workinggroups/wgcapd/>
@CEOSatORG

SDG AWARENESS WEBINAR (SDG 101)

Instructor: Argyro Kavvada, Ph.D.
Session A

<http://ceos.org/>

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✓ CB-28

Conduct global capacity building courses through a multi-lingual MOOC on radar backscatter

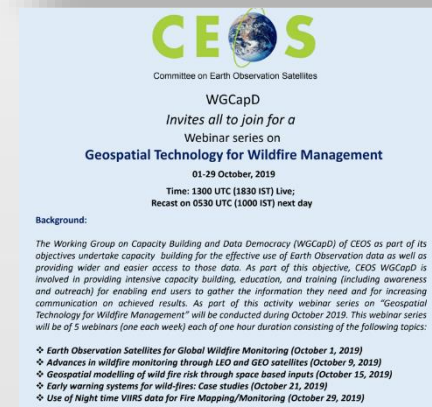
Introduction to Radar Remote Sensing MOOC

Available: Sept 16, 2019



eesa

ECHOES IN SPACE
Introduction to Radar Remote Sensing



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WGCapD
Invites all to join for a
Webinar series on
Geospatial Technology for Wildfire Management

01-29 October, 2019
Time: 1300 UTC (1830 IST) Live;
Recast on 0530 UTC (1000 IST) next day

Background:

The Working Group on Capacity Building and Data Democracy (WGCapD) of CEOS as part of its objectives undertake capacity building for the effective use of Earth Observation data as well as providing wider and easier access to those data. As part of this objective, CEOS WGCapD is involved in providing intensive capacity building, education, and training (including awareness and outreach) for enabling end users to gather the information they need and for increasing communication on achieved results. As part of this activity webinar series on "Geospatial Technology for Wildfire Management" will be conducted during October 2019. This webinar series will be of 5 webinars (one each week) each of one hour duration consisting of the following topics:

- Earth Observation Satellites for Global Wildfire Monitoring (October 1, 2019)
- Advances in wildfire monitoring through LEO and GEO satellites (October 9, 2019)
- Geospatial modelling of wild fire risk through space based inputs (October 15, 2019)
- Early warning systems for wild-fires: Case studies (October 21, 2019)
- Use of Night time VIIRS data for Fire Mapping/Monitoring (October 29, 2019)

Accomplishments: Trainings & Events Supported



- ✓ **CB-33:** Provide SAR and other EO data training in support of VNESC Chair initiative – Workshop in Hanoi, Vietnam: Feb 20-22, 2019

- ✓ **CB-39:** Provide hands-on training on forest monitoring and Orfeo Tool Box for AEM – Training in Guadalajara, Mexico: Feb 26-28, 2019



- ✓ **CB-32:** Provide regional hands-on training in LCLUC topics in GEOSS regions – Training in Johor Bahru, Malaysia: July 25-27, 2019

- ✓ **CB-35:** Provide CB support to AmeriGEO Week 2019 in Peru – Supported Event & 2 Trainings on Water SDGs in Lima, Peru: Aug 9-13, 2019



- ✓ **CB-36:** Provide CB support to AfriGEO Symposium 2019 – Supported Event in Nairobi, Kenya: Aug 13-16, 2019

- ✓ **CB-40:** Provide hands-on training for flood monitoring for Vietnam School of Earth Observation – Training in Quy Nhon, Vietnam: Sept 8-14, 2019

Land Subsidence Training status
in Vietnam to be added

Accomplishments: Infrastructure & Papers

CEOS



✓ Training Calendar

<https://training.ceos.org>

- Calendar is live
- 21 fields
- Current content sources: EUMETSAT and WMO training calendar sites
- NASA and DLR training calendars are in progress and will “feed” the master CEOS training calendar
- Looking for:
 - Feedback on structure & format
 - Additional sources of training events
 - Ad hoc training events to add

POCs:

Andrew Lubawy, SEO

Andrew.M.Lubawy@ama-inc.com

Lauren Childs-Gleason, WGCapD

Lauren.M.Childs@nasa.gov



✓ CB-37: CB White Paper

- White paper describing approaches for capacity building networks supported by others, e.g. UN, can work together
- Completed & submitted to SIT
- Submitted & approved for peer-review publication in the Journal of Space Policy

CEOS Training Calendar List Calendar Login

Text

Start date: 08/27/2019 [New]

End date: mm/dd/yyyy [New]

Language: All Arabic Chinese English French Other Portuguese Russian Spanish Turkish

Training type: All Blended Course Classroom Course Conference Event Week Online Course Online Weather Discussion Other Workshop

Source

Search [Reset] [CSV Download]

Matching Events: 25

Enligne RA-I Applications de la météorologie satellitaire
Aug. 27, 2019 - Sept. 21, 2019
Online Course
This series of courses in French are addressed to the francophone community of forecasters and hydrologists in Mexico, Africa.

CEOS Training Calendar List Calendar

Advanced Webinar: SAR for Landcover Applications

Start Date: Aug. 28, 2019

End Date: Sept. 4, 2019

City: None

State: None

Country: N/A

Region: N/A

Descriptions:
This webinar series will build on the knowledge and skills previously developed in ARSET SAR trainings. Presentations and demonstrations will focus on agriculture and flood applications. Participants will learn to characterize floods with Google Earth Engine. Participants will also learn to analyze synthetic aperture radar (SAR) for agricultural applications, including retrieving soil moisture and identifying crop types. Relevant UN Sustainable Development Goals: Target 13.1: Strength resilience & adaptive capacity to climate-related hazards and natural disasters in all countries SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Targeted Audience:
The target audience for this training are local, regional, state, federal, and international organizations interested in using satellite imagery for agricultural and flood related applications.

Expected Outcomes:
None

Host:
NASA Applied Remote Sensing Training Program (ARSET)



17 deliverables: 13 in 2019, 4 in 2020, * new this year

COMPLETED

• Global Activities

- CB-28, 30, 31: MOOCs on Radar Backscatter (Q1 2019: Available Sep 2019), SAR applications (Q4 2019: Will go online Nov. 2019), LCLUC (Q4 2019: delayed)
- CB-29: Webinar series on multiple topics, e.g. GEOGLAM, Hyperspectral Remote Sensing and disasters (Q3 & Q4 2019), LCLUC (Q3 2020)

• Regional Activities – Training in GEO Regions

- CB-35, 36: AmeriGEO (Q3 2019: completed), AfriGEOSS (Q3 2019: completed)
- CB-27: AOGEOSS (Q4 2020)
- CB-32: Regional hands-on training in land cover land use change: Malaysia (Q3 2019: July 2019), Thailand (Q4 2019)

• National In-person Training *

- CB-33: SAR & EO data training for VNESC Chair Initiative (Q3: completed 1 of 2 workshops)
- CB-39: hands-on training on forest monitoring & Orfeo Tool Box for AEM (Q1: completed)
- CB-40: hands-on training on flood monitoring for Vietnam School of Earth Observation (Q3: completed)



17 deliverables: 13 in 2019, 4 in 2020; * new this year

COMPLETED

- **CB Infrastructure**

- CB-21: portal-based access to CB and training resources (Q4 2020)
- Training Calendar pilot (completed in Q3 2019)

- **CB Training Materials ***

- CB-38: hyperspectral training resources on line (Q2 2020)

- **WG Collaborations**

- CB-41: with SDG AHT, promote use of EO for SDG's (Q3 2019)
 - Hands-on with AmeriGEO Week on SDG 6.6.1/6.3.2
- FDA-5: FDA's awareness building and outreach (Q3: completed)

- **Broader CB Collaborations**

- CB-37: White paper describing how CB networks, e.g. UN's, can work together with WGCapD (Q2 – completed; provided to SIT; submitted & accepted for peer-review publication)



- Active Agencies in WGCapD:
 - WGCapD Core has 13 Deliverables due this year: CNES, DLR, ESA, INPE, ISRO, NASA, VNSC
 - Annual meeting held in India and virtual participation also included: SANSa, UK's National Center for Earth Observation (UK NCEO), CRECTEALC, GODAN, GEO Sec CD Coordinator, AfriGEO, AmeriGEO, VLab
 - ROSCOSMOS has sent a letter to formally join CEOS WGCapD and identified members
- Future Leadership rotation:
 - Need a new Vice Chair this fall – VNSC has proposed the name of **Dr Pham Thi Mai Thy** a formal letter has been received – *submitted for CEOS Plenary Endorsement*
- Status & Outlook:
 - We have a well-engaged core group and are growing

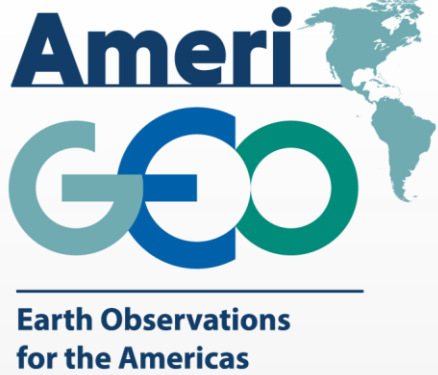


Synergies:

- WGISS – participation in each others' meetings, joint FDA-5 FDA awareness webinar delivered on 4 Sept 2019, participated in WGISS meeting in Hanoi.
- SEO – working jointly on the training calendar pilot
- SDG AHT – joint awareness webinar delivered Dec 2018 and SDG water quality training at AmeriGEO Week delivered Aug 2019
- WGDisasters – joint virtual meeting discussion in March, discussing joint deliverables and opportunities, need to identify next steps / paths forward
- GEOGLAM AHT – overlapping people engaged in both, potential to strengthen further – need to explore opportunities
- GFOI SCDG – same agencies engaged in both, potential to collaborate – need to explore opportunities
- WGClimate, WGCV – have explored synergy but have not (yet) identified collaborative opportunities
- VCs – no engagement

Obstacles/Barriers & Path to Overcome Them:

- Travel constraints prohibit attending other WG/AHT/VC meetings – exploring virtual meetings to discuss work planning



- Overlap of agencies supporting CEOS WGCapD and AmeriGEO
- Support trainings at annual AmeriGEO Week: 1 in 2018, 2 in 2019



- Engaged for multiple years & participate in annual symposium
- AfriGEO Secretariat is now located at RCMRD in Nairobi, Kenya





- **GEOGLAM:** Strengthens global ag monitoring by improving the use of remote sensing tools for crop production projections and weather forecasting to reinforce the international community's capacity to produce and disseminate relevant, timely, and accurate forecasts of agricultural production using EO data
- Includes a component focused on development of capacity to use EO and aims to respond to varying levels of uptake by countries
- **WGCapD Overlaps:** Capacity building efforts focused on use of SAR for rice, damage assessment of crops due to floods, and operational use of EO data for agriculture monitoring using optical and microwave data are relevant to GEOGLAM
- **Opportunities:** Joint capacity development activities in Asia, Africa, and South America. ISRO-IIRS (WGCapD), GEOGLAM, and AsiaRiCE (as well possibly SARI) will plan a training for participants of Asia-Pacific Countries (Nov, 2019) and a webinar series in early 2020
- Explore joint meetings for GEOGLAM and WGCapD for planning future trainings and CB resources together



- **GFOI:** Global partnership for coordinating international support on forest monitoring & MRV for REDD+ and related forums
- Includes a capacity building component which has supported land cover change methods train-the-trainer workshops, open-source tool applications, and improved methods for monitoring and estimating land cover change that include getting started with Google Earth Engine, land use change algorithms such as LandTrendr and CCDC, and platforms such as SEPAL (from FAO), Terra-I (from CIAT), and Collect Earth Online (Silva Carbon & SERVIR)
- Space Data Coordination Group (SDCG) for GFOI AHT – established in 2011, emphasis on data accessibility and usability
- **WGCapD Overlaps:** Supporting MOOCs, webinar series, and regional hands-on trainings focused on LCLUC, SAR, and forest monitoring
- **Opportunities:** Looking for ways to engage and contribute towards GFOI's capacity building activities – explore kick off of discussions at the CEOS Plenary or GEO Week



WGCapD-8 Annual Meeting March 6-9, 2019 Dehradun, India



WGCapD-9 Annual Meeting
March 10-12, 2020
Mountain View, California

Thank You