



Committee on Earth Observation Satellites

Working Group on Capacity Building and Data Democracy (WGCapD) Initiatives Lessons Learned and Best Practices

National Institute for Space Research – INPE

Brazil

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CEOS Overview



The Committee on Earth Observation Satellites was established in 1984.

Mission Statement

CEOS ensures international coordination of civil space-based Earth observation programs and promotes exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind.



CEOS Overview (cont.)



Satellite Earth Observations to Serve Science & Society

CEOS is committed to coordinating their satellite Earth observation programs and sharing data for a more sustainable and prosperous future.

60 Agencies (32 Members & 28 Associates) operating 143 satellites

Supporting implementation of global agendas

- ✓ 2030 Agenda for Sustainable Development
- ✓ Paris Climate Agreement.
- ✓ United Nations Framework Convention on Climate Change (**UNFCCC**)
- ✓ The Global Climate Observing Systems (**GCOS**)
- ✓ **Sendai Framework** for Disaster Risk Reduction 2015-2030
- ✓ The Intergovernmental Group on Earth Observations (**GEO**)



Organization



At the Working Level...

Virtual Constellations		Working Groups	Ad Hoc Teams
AC-VC • NASA • ESA	OST-VC • CNES • EUMETSAT	WGCV • Chair: NASA • Vice-Chair: CSIRO	SDCG for GFOI • ESA • USGS
LSI-VC • ESA • USGS • GA	P-VC • NASA • JAXA	WGCapD • Chair: SANSa • Vice-Chair: ISRO	GEOGLAM • NASA • CNES
OCR-VC • ESA • NASA • NOAA	SST-VC • EUMETSAT • NOAA	WGClimate • Chair: ESA • Vice-Chair: EUMETSAT	Future Data Architectures • ESA • USGS • CSIRO
OSVW-VC • NOAA • EUMETSAT • ISRO		WGDisasters • Chair: CSA • Vice-Chair: ASI	Sustainable Development Goals • ESA • USGS • CSIRO
		WGISS • Chair: NASA • Vice-Chair: ESA	



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CEOS Committee on Earth Observation Satellites

Viewing Earth Serving Society

[Learn More >](#)

<p>Satellite Earth Observations to Serve Science & Society</p>	<p>New Technology Exploration Webinar</p>	<p>CEOS Volcano Pilot: Monitoring Volcanoes with Satellite Data</p>	<p>The Faces of CEOS: Stephen Briggs (European Space Agency)</p>	<p>Free Webinar: Data Cubes for Large Scale Data Analytics</p>	<p>CEOS Delivers the 1st Open Data Cube Workshop at IGARSS 2017</p>
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Mission: CEOS ensures international coordination of civil space-based Earth observation

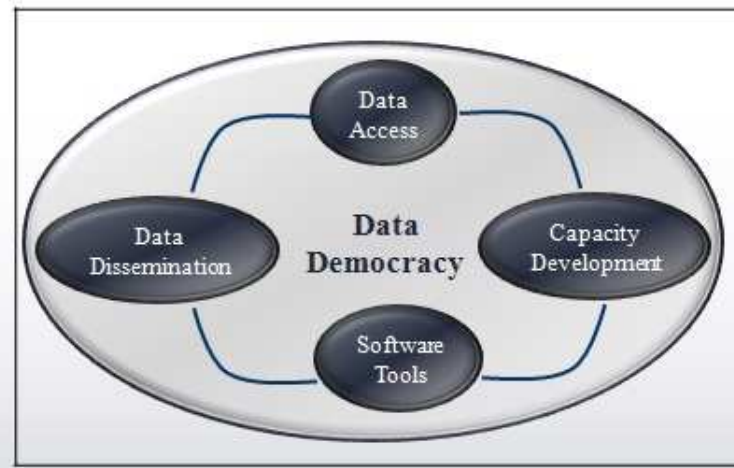
United Nations/Austria Symposium on "Access to Space: Holistic Capacity-Building for the 21st Century"
Graz, Austria, 3 - 7 September 2017



Working Group on Capacity Building and Data Democracy - WGCapD



WGCapD, formed at the 25th CEOS Plenary in **2011**, undertakes a variety of activities based on the 4 pillars of the Data Democracy Initiative:



Effort to increase the capacity of institutions in less developed countries for:

- **Raise awareness** of the value of Earth observation data products and services
- **Help user communities** access data, products, and tools and effectively apply those data to solve real-world problems

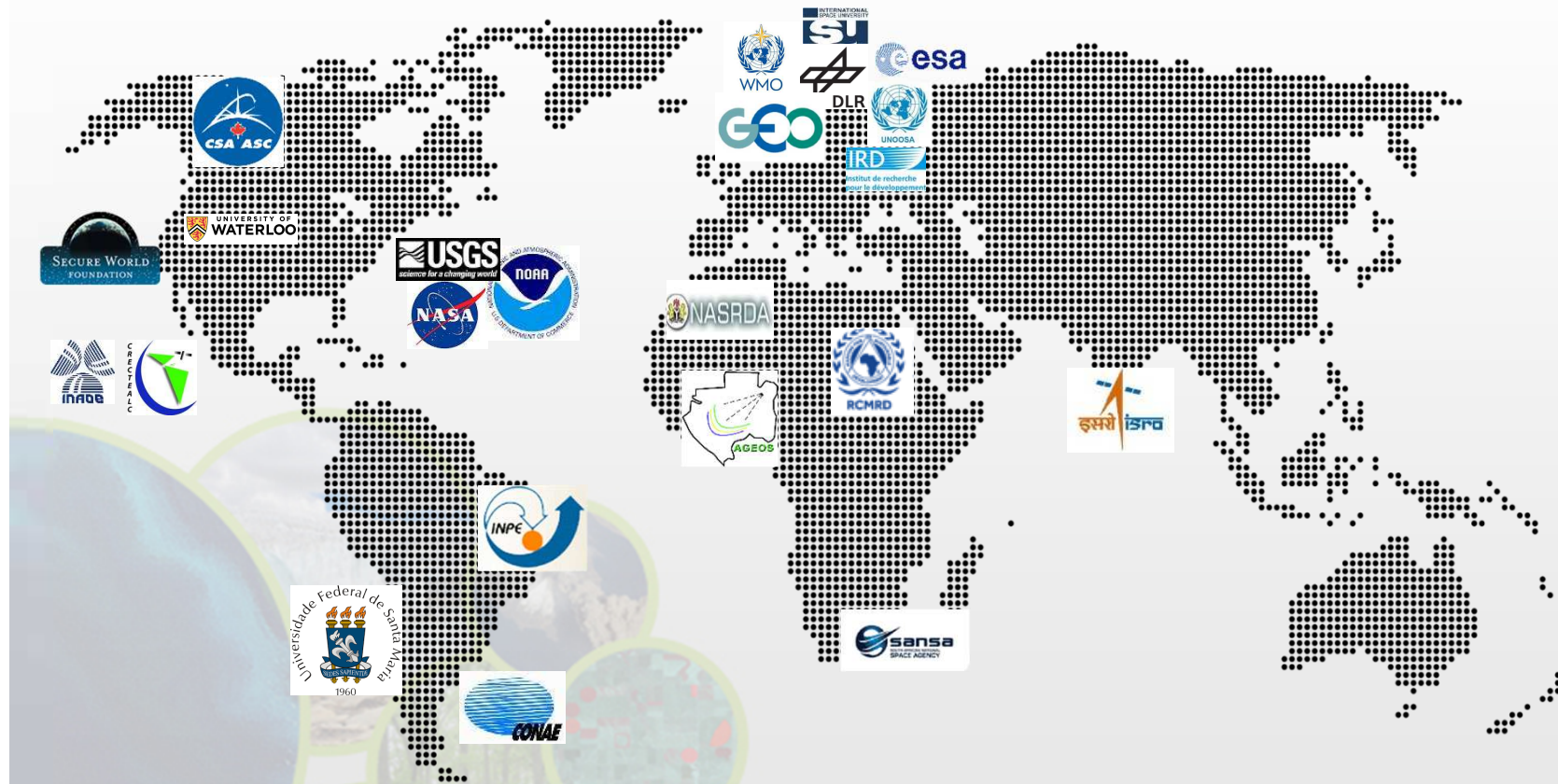
<http://ceos.org/ourwork/workinggroups/wgcapd>



WGCapD: Members and Collaborators



Space Agencies, Associated Members, Universities, NGOs ...
Based on voluntary contributions ...



United Nations/Austria Symposium on "Access to Space: Holistic Capacity-Building for the 21st Century"
Graz, Austria, 3 - 7 September 2017



Main Activities



Organizing and/or participating in → targeted, collaborative training opportunities, events, and workshops in partnerships with local, regionals, and international stakeholders.

ONSITE

- Workshops, Training Courses

BLENDED

- Onsite + Live Broadcast

ONLINE

- Long-Term Courses
- Webinars



Main Activities – 2013 - 2017



Onsite

- **4 SRTM Workshops**
 - Nairobi, Kenya (May 6-10, 2013)
 - Pretoria, South Africa (Mar 23-27, 2015)
 - Puebla, Mexico (May 25-29, 2015)
 - Kathmandu, Nepal (Sep 19-22, 2016)
- **4 SAR Workshops**
 - Lusaka, Zambia (10-14 October, 2016)
 - Pretoria, South Africa (January 2017)
 - Libreville, Gabon (February, 2017)
 - Tshwane, South Africa (May, 2017)
 - AmeriGEOSS week in Costa Rica (Aug, 2017)
- **Disasters Workshop during AmeriGEOSS week 2016**
- **SAR Technology during AmeriGEOSS week 2017**

Onsite + Live Broadcast

- Civil Security: Understanding the Risks, Preventing Disasters, and Mitigating the Impacts with Earth Observation (EO) Applications and Services - 2015
- One Earth – One Health Workshop: Contributions of Earth Observations (EO) to Public Health Practices - 2017

Online

- Course for University Lecturers in Anglophone Africa – 2013
- Webinar on Disasters - 2015
- Webinar on SAR - 2017

United Nations/Austria Symposium on "Access to Space: Holistic Capacity-Building for the 21st Century"
Graz, Austria, 3 - 7 September 2017



Onsite Activities – 2013 - 2016



**After release of Shuttle Radar Topography Mission,
SRTM-2 30-m data**

4 Digital Elevation Model Training Workshops

- Nairobi, Kenya (May, 2013)
- Pretoria, South Africa (March, 2015)
- Puebla, Mexico (May, 2015)
- Kathmandu, Nepal (Sep, 2016)

5 Synthetic Aperture Radar (SAR) Data Training Workshops

- Lusaka, Zambia (October, 2016)
- Pretoria, South Africa (January 2017)
- Libreville, Gabon (February, 2017)
- Tshwane, South Africa (May, 2017)
- AmeriGEOSS week – San Jose, Costa Rica (August, 2017)



Estimated # of **Participants**: > 240

Languages: English, Spanish and French

Regions: Africa, Latin America and the Caribbean, South and Southeast Asia, including the Hindu Kush Himalaya (HKH) and Lower Mekong regions

**Disasters Workshop during AmeriGEOSS week
2016 (Bogota, Colombia)**

**Sentinel training - S1/S2/S3 during AfriGEOSS
Symposium 2017 (Accra, Ghana)**

United Nations/Austria Symposium on "Access to Space: Holistic Capacity-Building for the 21st Century"
Graz, Austria, 3 - 7 September 2017



Onsite + Live Broadcast Activities – 2015 and 2017



- Civil Security: Understanding the Risks, Preventing Disasters, and Mitigating the Impacts with Earth Observation (EO) Applications and Services – 2015
Quebec, Canada
- One Earth – One Health Workshop: Contributions of Earth Observations (EO) to Public Health Practices – 2017
Montreal, Canada



Languages: English and French

Estimated # of **Participants Onsite** > 120

Estimated # of **Participants Online** > 35

Areas: Disasters and Health

Regions: Africa, Latin America and the Caribbean, South Asia and Australia



Online Activities – 2013-2017



- E-learning Course for University Lecturers in Anglophone Africa – 2013
- Webinar on Disaster Management - 2015
- Webinar on SAR - 2017



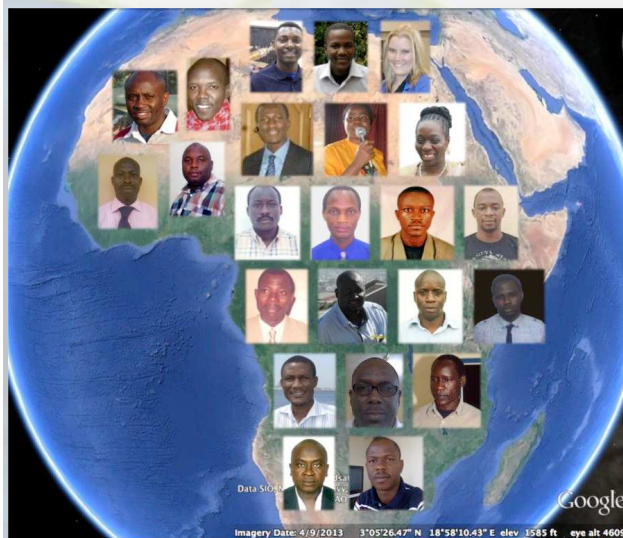
Estimated # of **Participants**: > 150

Languages: English

Regions: Africa, Latin America and the Caribbean, South and Southeast Asia, including the Hindu Kush Himalaya (HKH) and Lower Mekong regions



Pictures



Zoom Meeting ID: 919-678-381

Participants (10)

- HF Hilica Ferreira (Me)
- CT Carrefour technopédagogiq... (Host)
- CT Carrefour technopédagogique - s...
- AS Audrey Simon

Zoom Group Chat

ops, you already did it

from Liliane to Me (Privately) Hello there!!

Thank you so much Mrs. Ferreira

from Me to Simon-Pierre Gerard's IP... (Privately) microphone and camera on again... we get echo

to: Simon-Pierre Gera... (Privately) More

Type message here...

400m EO data and information resources in GEOS Portal www.geoportal.org



Uniqueness



Why makes WGCapD's Capacity Building Activities Unique?

- ✓ Are always provided **free of charge**
- ✓ Provide **access to expertise** from space agencies and universities around the world
- ✓ Link participants to a **global network** of experts and policymakers
- ✓ **Create awareness** about international coordination bodies, such as CEOS, GEO, UNOOSA, International Charter for Space and Major Disasters among others
- ✓ Provide **access to datasets and useful tools** available from CEOS Agencies
- ✓ Help attendees **developing skills** to aid in many different areas of application



Lessons Learned and Best Practices

Digital Knowledge Repository for record and archival of teaching material – Free and open (Creative Commons License) at: <http://learningcenter.obt.inpe.br/>

A screenshot of a web browser displaying the 'Learning Center: Education and Training - Remote Sensing and Geospatial Technology' page. The browser's address bar shows 'learningcenter.obt.inpe.br/'. The page features a navigation menu on the left with links to 'Home', 'OBT Website', and 'Divisões' (DPI, DSR, DGI). The main content area includes a 'Who we are' section, a 'Table of Contents' on the right, and lists of educational resources under 'INPE - OBT (in Portuguese)' and 'CEOS - WGCapD'. The Windows taskbar at the bottom shows the date '05/09/2017' and time '14:07'.

start - Wiki OBT

learningcenter.obt.inpe.br/

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article discussion show pagesource old revisions

Learning Center: Education and Training - Remote Sensing and Geospatial Technology

Who we are

The mission of Earth Observation General Coordination of the Brazilian National Institute of Space Research (INPE) is to be the scientific and technological leader in the use of Remote Sensing and Geospatial Technology, fostering knowledge and information about Earth changes and supporting public policies and decision making.

The objective of this Learning Center is to disseminate educational and scientific contents **produced by this coordination**, as well as, the ones generated from our partnership with the Working Group on Capacity Building and Data Democracy (WGCapD) of Committee on Earth Observation Satellites (CEOS)

Here you will have access to learning materials from online and onsite capacity building initiatives: video classes, lectures, presentations and tutorials, in various subjects related to the use of Remote Sensing and Geospatial Technology.

INPE - OBT (in Portuguese)

- Curso Sensoriamento: Aprendizagem Continuada
- Livros Online
- Produção intelectual da Divisão de Processamento de Imagens - DPI

CEOS - WGCapD

- CEOS WGCapD: One Earth – One Health Workshop - 2017
- CEOS WGCapD: Webinar Series on SAR Data Processing and Applications - 2017
- CEOS WGCapD: Training Workshops on Synthetic Aperture Radar (SAR) Data - 2016 and 2017
- CEOS WGCapD: SRTM-2 Digital Elevation Model (DEM) Applications Workshops - 2013-2016
- CEOS WGCapD: Civil Security & EO Workshop - 2015
- CEOS Webinar Series on Remote Sensing Technology for Disaster Management - 2015
- CEOS WGCapD: International e-learning course on Introduction to Remote Sensing Technology - 2013

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Lessons Learned and Best Practices



Lessons Learned Reports from Capacity Building Initiatives are available on the site:

<http://ceos.org/ourwork/workinggroups/wgcapd/e-learning/>
<http://ceos.org/ourwork/workinggroups/wgcapd/training-workshops/>

Document being compiled: → **Training: Methods & Best Practices**

1. Training activities in general, using the five phases of the ADDIE (Analysis, Design, Development, Implementation, Evaluation)
2. General Tips
3. Webinar Tips
4. Summarized Steps for Creating Training Initiatives.



Best Practices Document



Some Highlights

- Pre-training survey - students own skills levels, before training starts. Self-assessment afterwards.
- User Needs → Alumni feedback – post training to learn effectiveness of training undertaken – and future course recommendations
- Institutional networking for Interactive distance learning
- Internet based e-learning courses for different time zone participation
- Online and Blended Trainings usually have higher rates of students' dropout. Engaging students, from the beginning is the best strategy
- Be aware that for free trainings always get more people registered than is actually attended. Therefore, always accept at least 30% more students than you plan to have to the course. That is about the dropout rate e usually have specially for free initiatives.
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2018-2020 - Chairmanship



Phila Sibanze



Senthil Kumar



Thank You!