



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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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.

## 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**)

## At the Working Level...

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





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Earth Observation Satellites



## Viewing Earth Serving Society

[Learn More >](#)

Viewing Earth  
Serving Society

Satellite Earth  
Observations to Serve  
Science & Society

New Technology  
Exploration Webinar

CEOS Volcano Pilot:  
Monitoring Volcanoes with  
Satellite Data

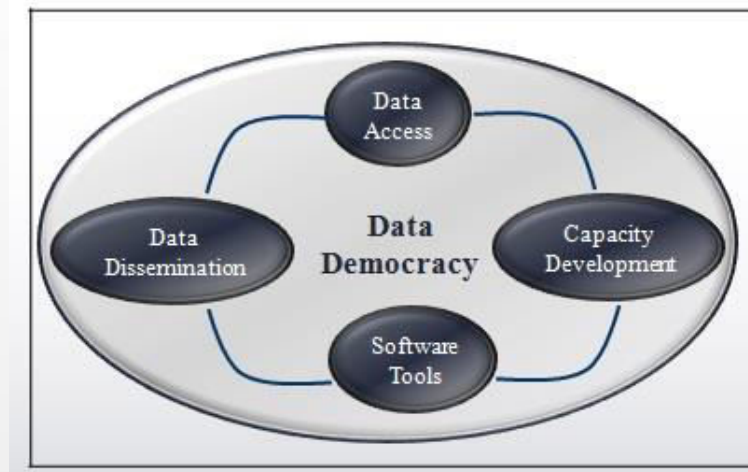
The Faces of CEOS:  
Stephen Briggs (European  
Space Agency)

Free Webinar: Data Cubes  
for Large Scale Data  
Analytics

CEOS Delivers the 1st  
Open Data Cube  
Workshop at IGARSS 2017

Mission: CEOS ensures international coordination of civil space-based Earth observation

**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>

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







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

**ONSITE**

- Workshops

**BLENDED**

- Onsite + Live Broadcast

**ONLINE**

- Long-Term Courses
- Webinars





## 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

## 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



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

### 4 Digital Elevation Model Training 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)

### 5 Synthetic Aperture Radar (SAR) Data Training 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



Estimated # of **Participants**: > 150

**Languages**: English and Spanish

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

- 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

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



Estimated # of **Participants**: > 380

**Languages**: English

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







## 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
- ✓ Linked 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 **develop skills** to aid in many different areas of application



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

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### 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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Windows taskbar: Digite aqui para pesquisar, 05/09/2017, 14:07

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.



## 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.
- ....

Phila Sibanze



Senthil Kumar



Thank You!