

## WGCapD & WGDisasters

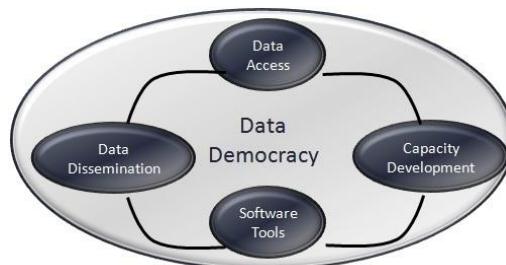
### Distance Education Course - Webinar Series on Remote Sensing Technology for Disaster Management

#### 1. Background

The Committee on Earth Observation Satellites ([CEOS](#)) mission is to ensure international coordination of civil space-based Earth observations programs and promote exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind. CEOS supports effective societal decision-making in the areas of climate monitoring and research; carbon observations, including observations to support the effective monitoring and management of the world's forested regions; food security; disaster risk management; biodiversity; capacity building; data availability and access, and more.

Disaster Risk Management (DRM) continues to gain political, economic, and geopolitical importance as disasters cause increasing human and economic losses. These losses are only expected to grow as a result of increasing global urbanization (expected to double by the year 2050) and an increasing number of extreme events (expected to triple by the year 2100). Several major international organizations such as the [World Bank](#), the United Nations International Strategy for Disaster Reduction ([UNISDR](#)), and the [European Commission](#) are focusing their efforts on responding to crisis events after they've occurred (disaster response). Just as it is important to continue improving space agency support to post-crisis response, it is also critical that space agencies invest in disaster preparedness, prevention and response.

The CEOS Working Group on Capacity Building & Data Democracy ([WGCapD](#)) (formed at the 25<sup>th</sup> CEOS Plenary in 2011) undertakes a variety of activities based on the four pillars of the Data Democracy Initiative, as depicted below:



The WGCapD builds upon this Initiative in an effort to increase the capacity of institutions in less developed countries for effective use of Earth Observation data for the benefit of society and to achieve sustainable development.

This way, the **WGCapD Distance Education Course** is an effort by CEOS Agencies toward:

- Disseminating remote sensing technology among disaster management practitioners with an interest in geospatial technology
- Providing wider and easier access to Earth observation data
- Increasing the sharing of software tools such as open source software and open systems interfaces

- Increasing data dissemination capabilities and transferring relevant technologies to disaster management practitioners

What makes this course unique? **This course is:**

- Offered free of charge
- Provides access to expertise from space agencies around the world
- Links participants to a global network of experts and policymakers
- Creates awareness about international coordination bodies, such as [CEOS](#), Group on Earth Observations ([GEO](#)), United Nations Office for Outer Space Affairs ([UNOOSA](#)), and the [International Charter for Space and Major Disasters](#)
- Provides access to datasets and useful tools available from CEOS Members
- Builds skills on Disaster Management (DM).

The Distance Education Course - Webinar Series consists of a series of introductory webinars that address the use of remote sensing technology for Disaster Management.

## 2. Course Team

NAME	INSTITUTION	ROLE
Hilcéa Ferreira	INPE	Coordinator/Instructor
S.P.Aggarwal	IIRS/ISRO	Coordinator/Instructor
Marie-Josée Bourassa	CEOS CEO	Contributor
Kim Holloway	CEOS SEO	Contributor/Instructor
Guy Aube	CSA	Contributor
Antonios Mouratidis	ESA	Instructor
Ivan Petetiville	ESA - WGDisasters	Contributor
Jesus A. G. Bernal	INAOE/CRECTEALC	Contributor
Claudia Lucaccioni	INPE	Moodle Tutor
Daniel Vila	INPE	Instructor
Alberto Setzer	INPE	Instructor
Fabiano Morelli	INPE	Instructor
Laercio Namikaya	INPE	Instructor
Su-Yin Tan	University of Waterloo and ISU(International Space University)	Instructor
Ana Prados	NASA	Instructor
Amita Mehta	NASA	Instructor
Nancy D. Searby	NASA	Contributor
Phila Sibandze	SANSA	Contributor
Lorant Czaran	UNOOSA	Contributor
Brenda Jones	USGS - WGDisasters	Instructor
Eric Wood	USGS	Contributor

## 3. Webinar Objectives: By the end of this webinar series, students should:

- Understand the use of EO systems in Disaster Management
- Know about data availability through the International Disaster Charter during a disaster
- Know how to utilize satellite data from different sources for DM
- Be able to determine which specific GIS capabilities and kinds of data are required to support emergency management work before, during and post disaster

- Be able to support decision makers as advisor for role of space technology in DM

#### **4. Schedule**

- April 7 — May 26, 2015 (1 webinar per week, always on Tuesdays from 13:00-14:00 UTC)

#### **5. Language**

- The entire distance education course is delivered in English.

#### **6. Target Region**

- The course is open to participants from all countries.
- All course materials will be provided in English.

#### **7. Audience**

- Disaster Management practitioners with an interest in geospatial technology

#### **8. Prerequisite**

- Elementary knowledge about Remote Sensing, Geographic Information Systems (GIS) and Digital Image Processing

#### **9. Methodology**

- This course is an online distance education program that allows participants to fully engage with program content, their peers, and their instructors via live lectures, question/answer through discussion forums, group work and feedback mechanisms.
- The Learning Platform [Moodle](#) (acronym for modular object-oriented dynamic learning environment) will be used for the course administration, documentation, tracking, reporting and delivery system. It will be hosted at the National Institute for Space Research - INPE ([Moodle Learning Platform](#))
- [Citrix GoToWebinars](#) (GTW) (hosted by INPE) will be used for synchronous communication among teachers and students and live sessions (one 1-hour session per week is foreseen).

#### **10. System Requirements**

For Moodle:

- Recommended Browsers: most browsers will handle the Moodle pages without problem. Some individual modules may require special software or plugins. Minimum recommended browser: Google Chrome 11, Firefox 4, Safari 5, Internet Explorer 8
- Recommended Settings:
  - Make sure that the browser is set to accept cookies.
  - Javascript must be enabled.
- For GTW (please check the following website for [GTW System Requirements](#))

#### **11. Number of Participants:**

- We expect at most 100 participants.

#### **12. Instructors**

- CEOS Members: INPE, ISRO, NASA, CEOS Systems Engineering Office (SEO), ESA, USGS and WGDisasters
- Collaboration with [ISU](#) (International Space University)
- Collaboration with [NASA ARSET](#) (Applied Remote Sensing Training): exchange of training material and instructors.

### **13. Student Assessments**

- Online Quizzes (5 questions) on the key points of each webinar session.
- Note here that these are for self evaluation.

### **14. Certificate of Participation**

- Students who participate in all webinars will receive a certificate.
- Certificates will be issued by the CEOS SEO

### **15. Certificate for Instructors**

- Instructors will receive certificates of participation.
- Certificates will be issued by the CEOS SEO

### **16. Instructional materials**

- Presentations given via PowerPoint
- Recorded online sessions
- Data source and reading material links
- Frequently Asked Questions (FAQ)
- All materials will be made available inside Moodle.

### **17. Copyrights**

- All instructional materials and recorded live sessions will be licensed under a [Creative Commons Attribution-Share Alike 4.0 International License](#)

### **18. Course evaluation**

- Surveys (e.g. [SurveyMonkey®](#)) for the students to evaluate the course.

### **19. Themes for Webinars**

#### **1. Introduction to Webinars Series**

**April 7, 2015**

- Overview of CEOS/WGCapD
- Where CEOS can help: Datasets and Useful Tools: CEOS Visualization Environment ([COVE](#)), the [CEOS Earth Observation Handbook](#)
- International Collaboration for DM: [International Charter for Space and Major Disasters](#)

**Instructors: Hilcea Ferreira / Kim Holloway / Brenda Jones**

#### **2. Introduction to Disasters: Causes, effects, monitoring, mitigation, and management. Methods of hazard, vulnerability, and risk assessment and the role of geospatial data.**

**April 14, 2015**

**Instructor: Su-Yin Tan**

3. Space-based Earth observation systems and their applications for hydro-meteorological disasters (floods)

**April 21, 2015**

**Instructor: S.P. Aggarwal, Ana Prados (NASA) and Amita Mehta (NASA)**

4. Space-based Earth observation systems and their applications for geological disasters (earthquakes, landslides, and volcanoes)

**April 28, 2015**

**Instructor: Antonios Mouratidis**

5. Space-based Earth observation systems for environmental disasters (forest fires)

**May 5, 2015**

**Instructors: Alberto Setzer and Fabiano Morelli**

6. Real Time Monitoring of Global Precipitation from Space: New Technologies Applied to Heavy Rainfall Risk Reduction

**May 12, 2015**

**Instructor: Daniel Vila**

7. Concepts and applications of internet GIS and Sensor Web (network of sensors) for disaster management. Example of an open source tool ([TerraMA2](#) - computational platform for developing Monitoring, Analysis and Alert systems)

**May 19, 2015**

**Instructor: Laércio Namikawa**

8. Rapid mapping and emergency services: Success stories - [International Charter for Space and Major Disasters](#)

**May 26, 2015**

**Instructor: Brenda Jones**