



Committee on Earth Observation Satellites

SAR-EDU

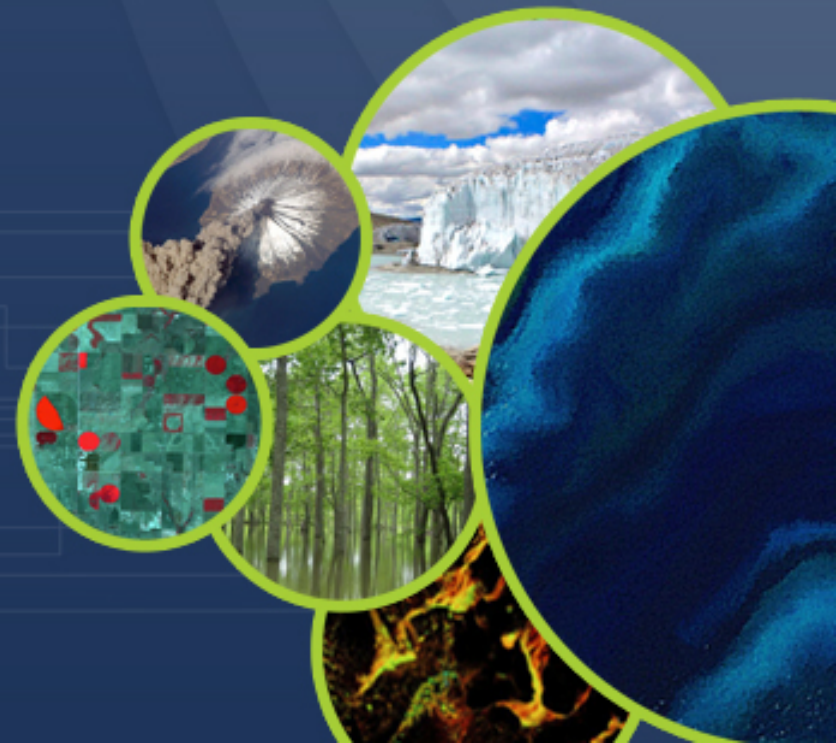
Friedrich-Schiller University Jena

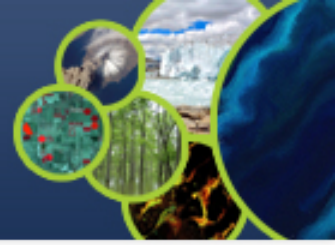
Agenda Item # 31

CEOS 6th Working Group for Capacity Building
and Data Democracy (WGCapD)-6 Annual
Meeting

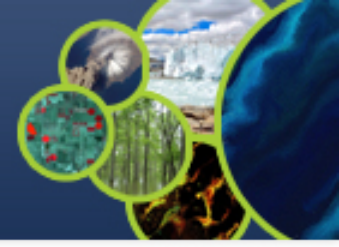
DLR Oberpfaffenhofen, Germany

27th-29th March, 2017



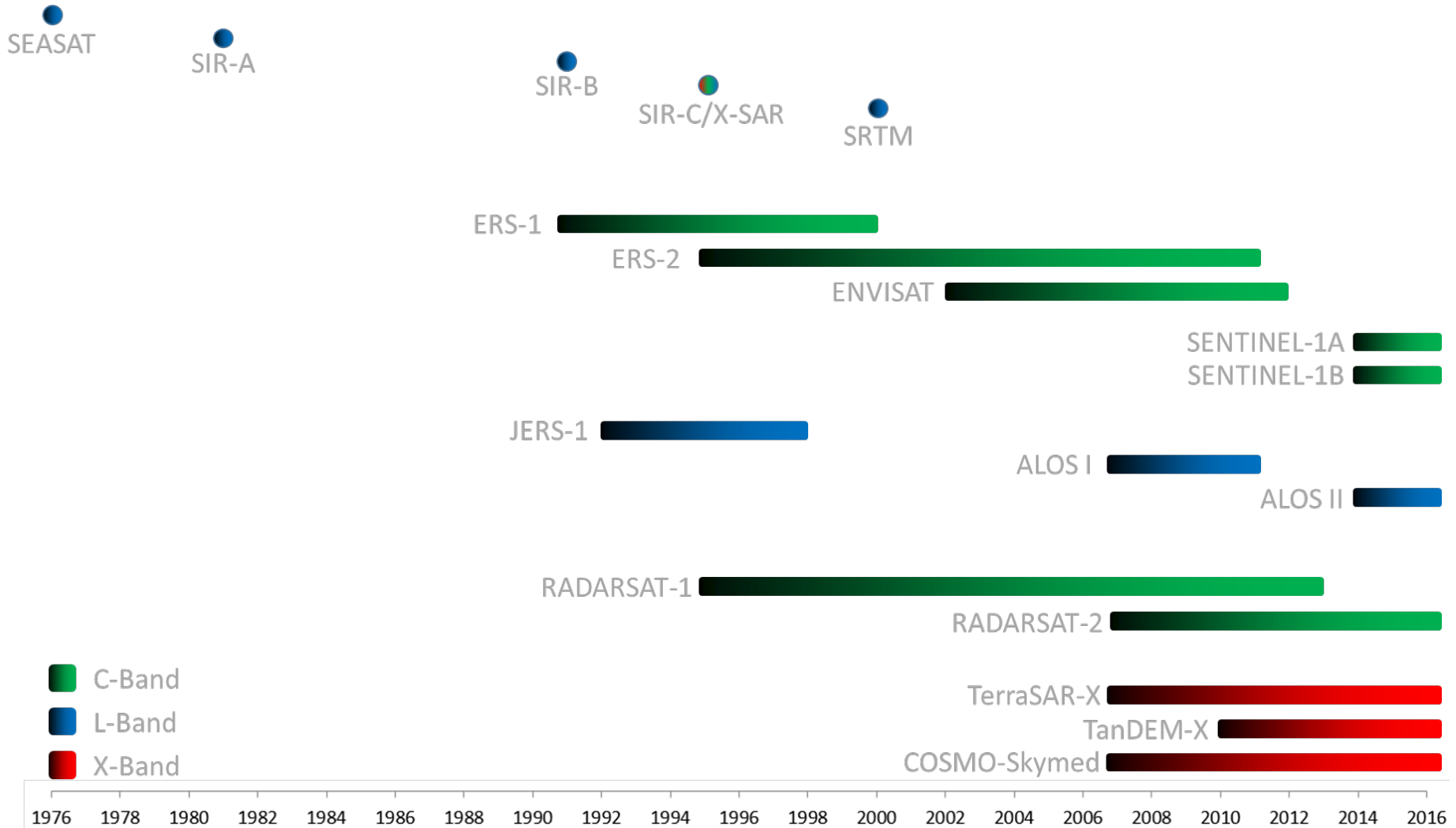
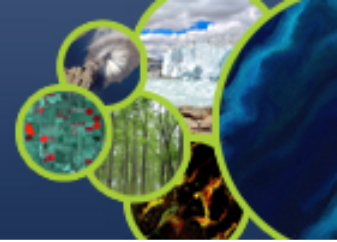


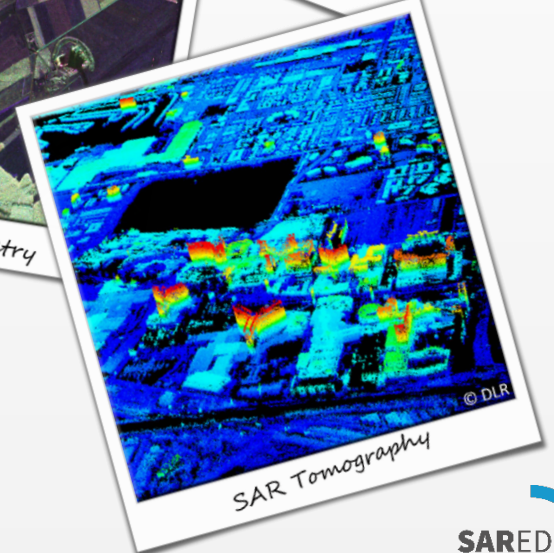
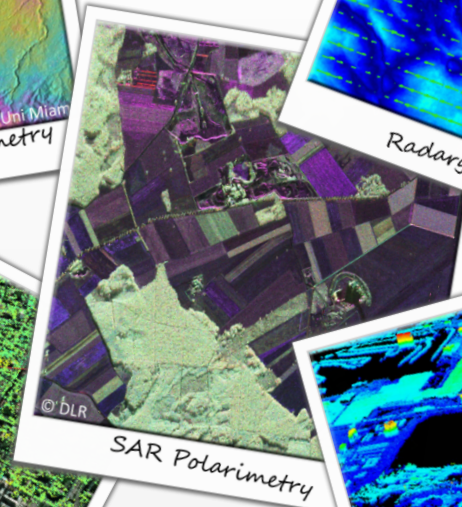
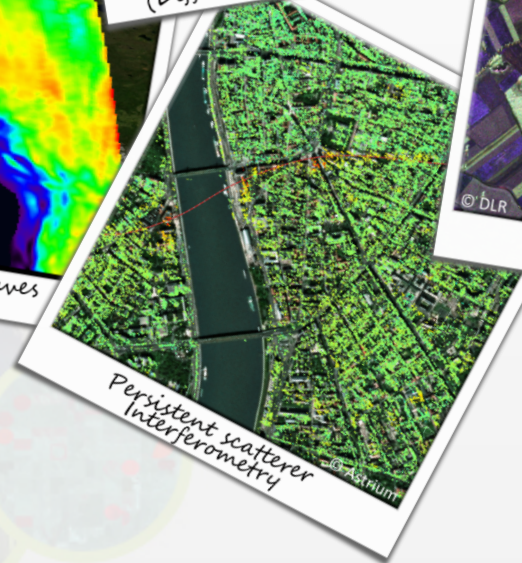
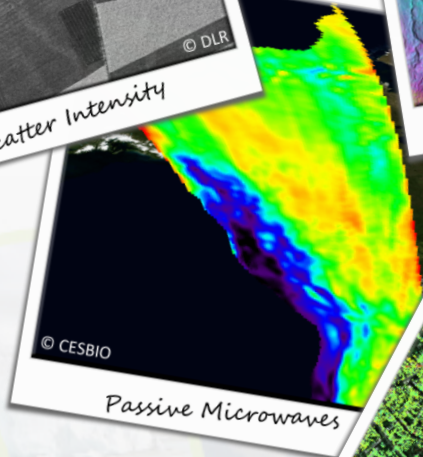
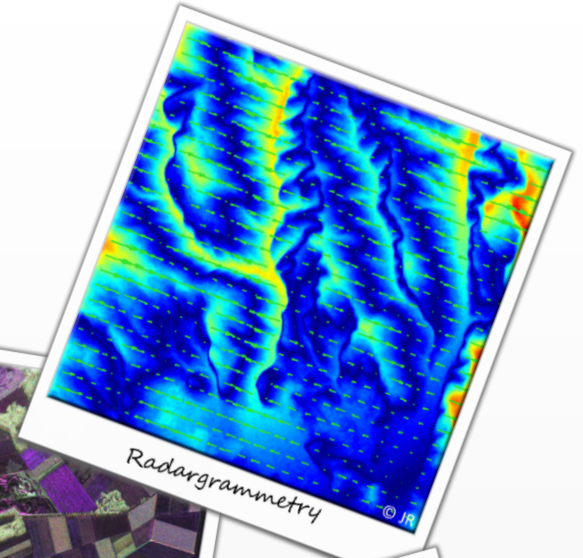
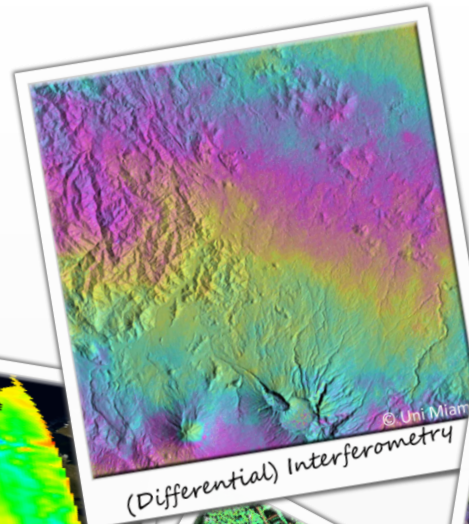
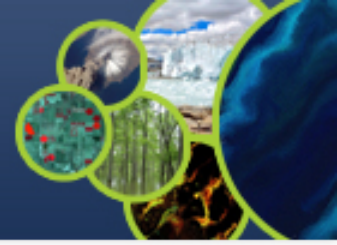
- **The project**
 - Motivation
 - Activities
- **The web portal**
 - Version 1.0
 - Version 2.0
- **E-Learning**
 - Issues & Challenges
 - Future Trends

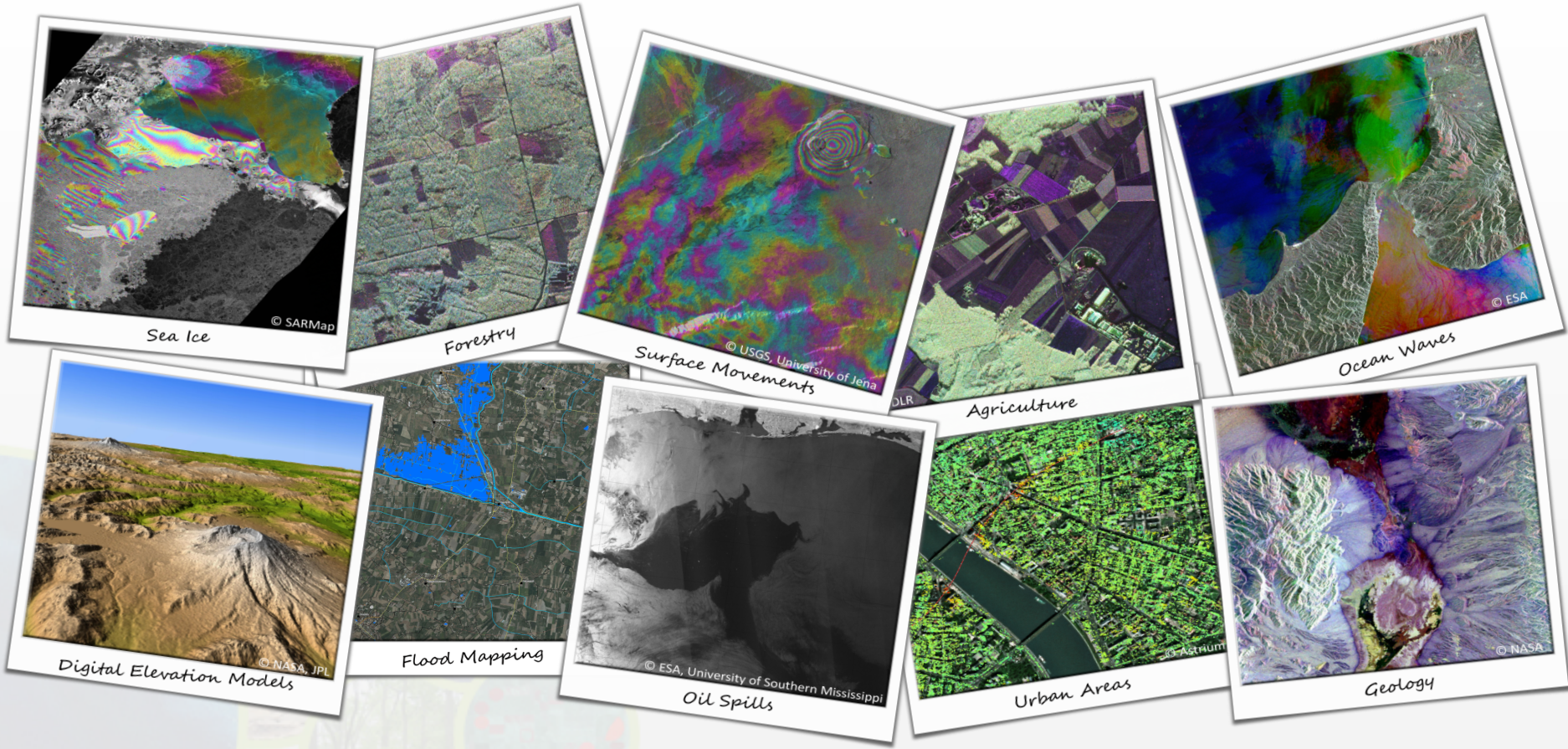
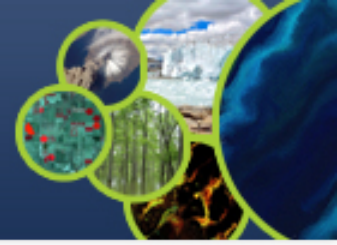


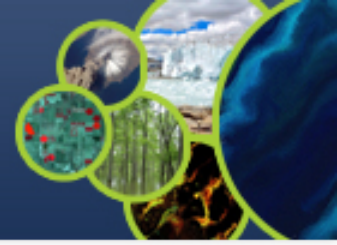
MOTIVATION





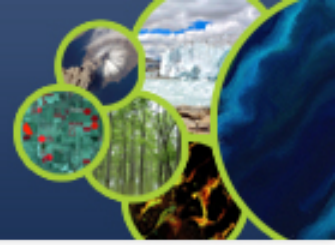






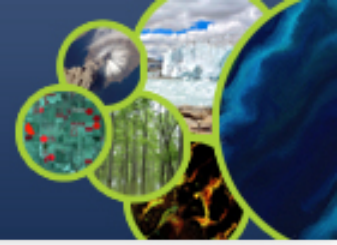
ACTIVITIES







Participants of the Summer School 2013 @ Dornburg Castle

- Established in 2013
- Yearly events
- Focus on Applications
- Interdisciplinary exchange



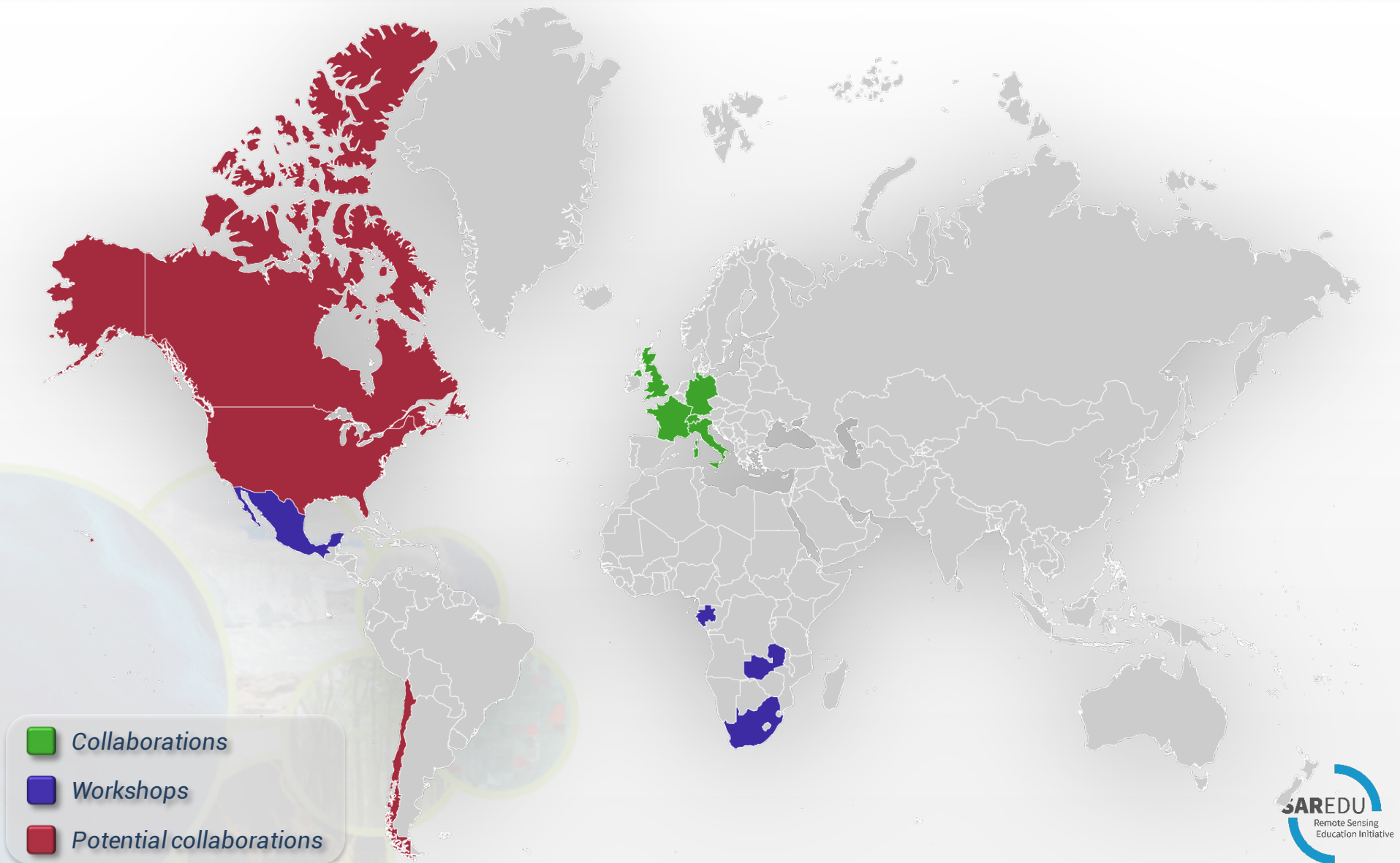
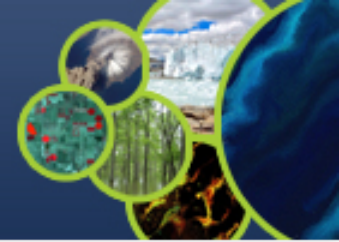





CEOS   UNIVERSITY OF ZAMBIA

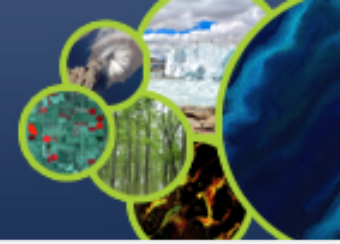
SAR Training Workshop
10 - 14 October 2016
University of Zambia
Presented By:

The CEOS Working Group on Capacity Building & Data Democracy



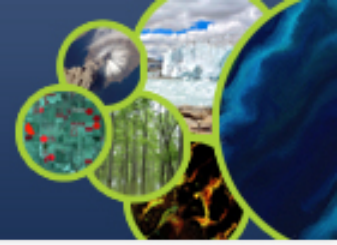
-  Collaborations
-  Workshops
-  Potential collaborations



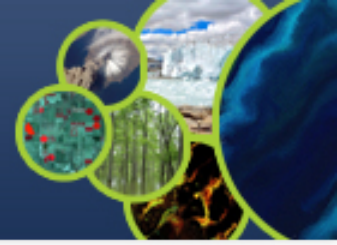
VERSION 1.0

saredu.dlr.de





The screenshot shows the SAR-EDU website interface. At the top left is the URL `/saredu.dlr.de`. The search bar contains `SAR-EDU Webportal`. The navigation menu includes `HOME`, `UNITS`, `RESOURCES`, `ABOUT`, and `CONTACT`. The main content area features four circular icons with dashed borders, connected by a dashed line. From left to right: a document icon labeled `40 Lessons`, a document icon labeled `12 Tutorials`, a filmstrip icon labeled `10 Talks`, and a large SAR-EDU logo icon labeled `62 units`. A blue banner at the bottom of the screenshot contains the text `SAR-EDU remote sensing education initiative`.



Biomass

View Edit



Biomass

Biomass estimation using SAR data



Lesson Description

 30 Oct, 2014 |
  lesson #3201 |
  FSU |
  Chris Schmillius

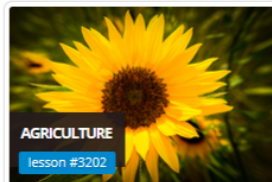
[Applications](#)
[Biosphere](#)

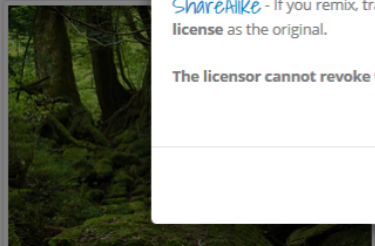
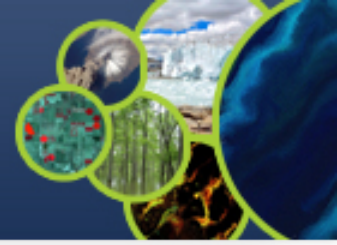
Biomass is a crucial parameter in the estimation and quantification of the global carbon cycle. In this lesson the estimation of above ground biomass from SAR data is presented. Several SAR based estimation techniques are introduced and compared to other biomass measurement techniques. Furthermore, numerous application examples of SAR data in biomass estimations on different scale levels are given.

Download [40.37 MB]

●●●●●●●●
 No votes yet

Related Units





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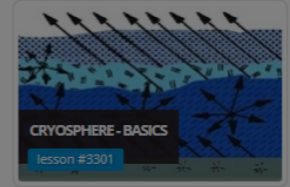
- Attribution** - You must give **appropriate credit**, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
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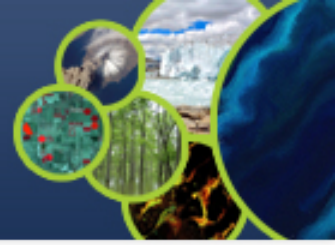
The licensor cannot revoke these freedoms as long as you follow the license terms!

No, Thanks

[Download \[40.37 MB\]](#)

Related Units





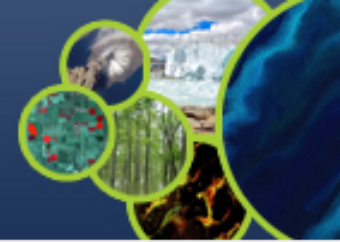
- URL: saredu.dlr.de/

- **Creative Commons Material**

- Technology: Drupal CMS

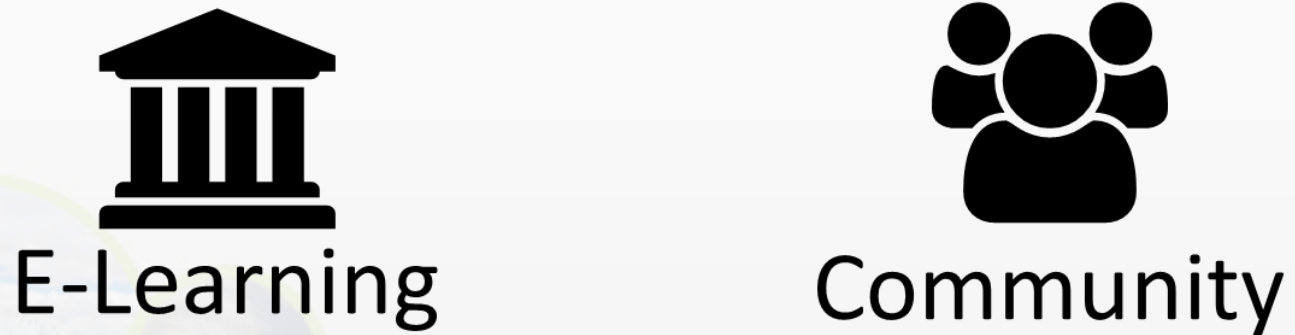
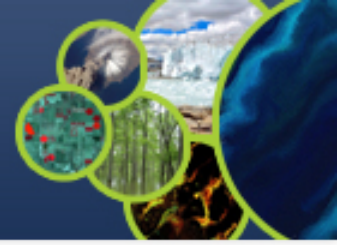
- Responsive Design

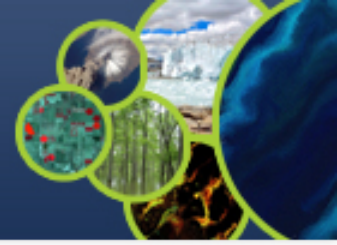




VERSION 2.0







BASICS

MATHE-
MATICS

DATA
PROCESSING

SAR
IMAGING

METHODS

IMAGE
PROCESSING

INSAR

POLSAR

PASSIVE
MICROWAVE

RADARGRA-
MMETRY

APPLICATIONS

ANTHROPO-
SPHERE

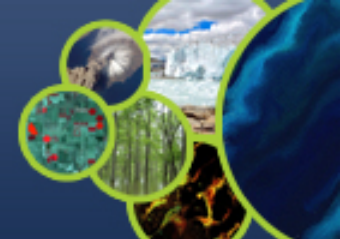
BIOSPHERE

CRYOSPHERE

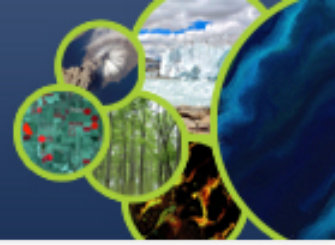
HYDRO-
SPHERE

LITHO-
SPHERE

OCEANO-
GRAPHY

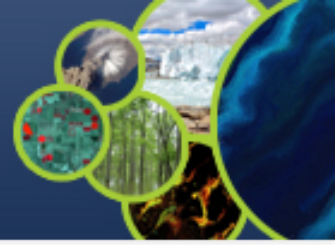


OER



Community

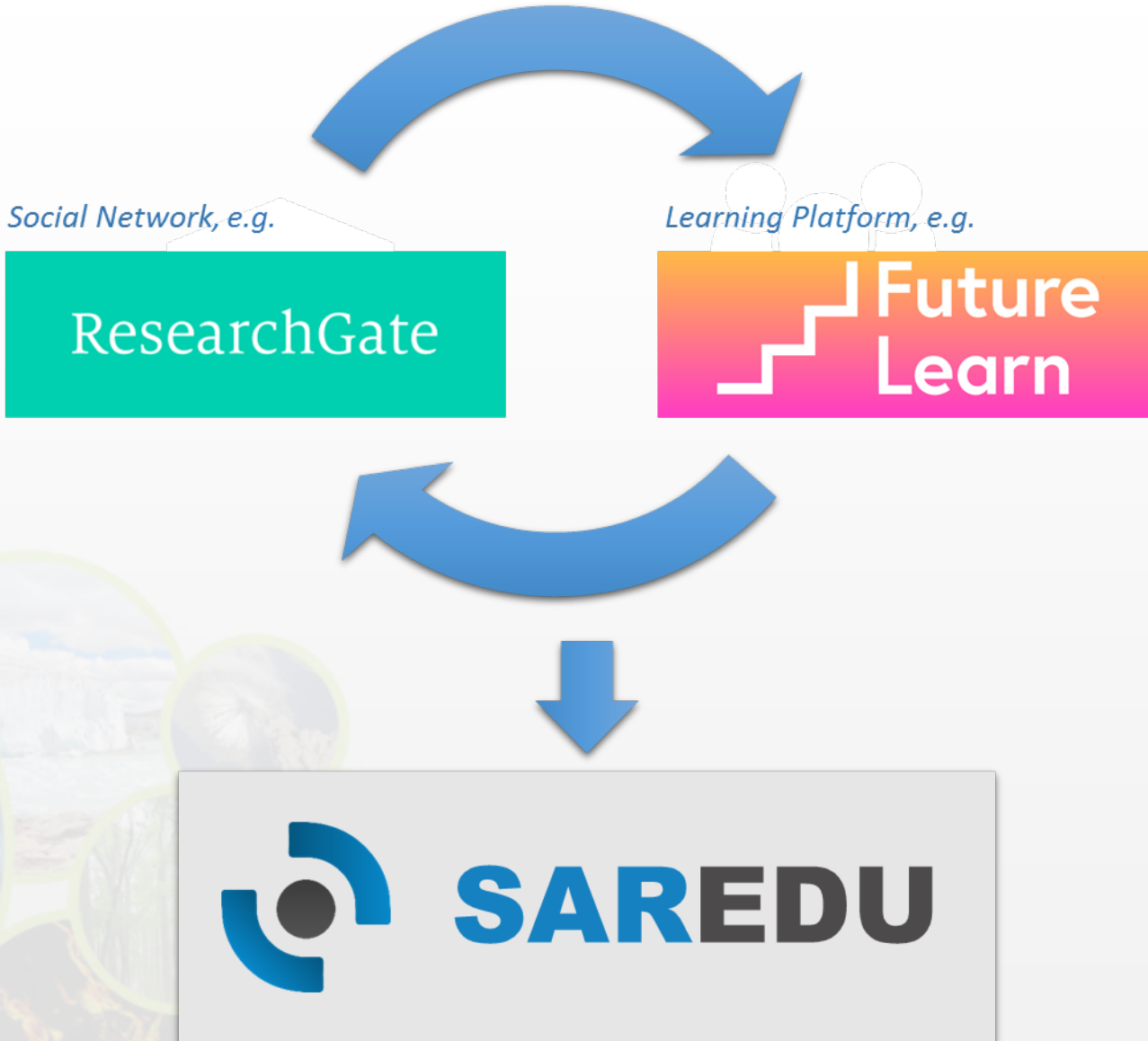
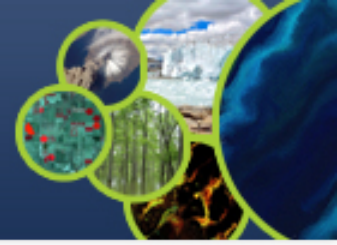
OER

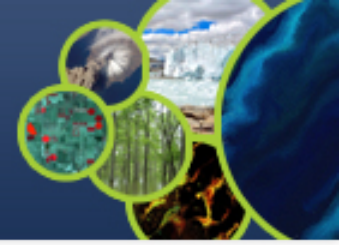


Community

LMS

OER







ONLINE COURSE ON RADAR



History - Basics - Applications

Fall 2017



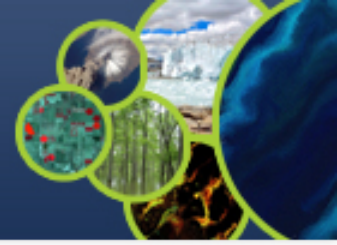
EIOIS

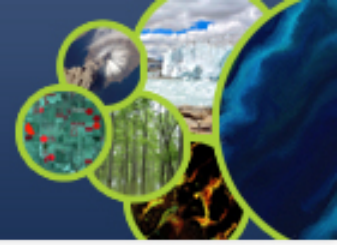


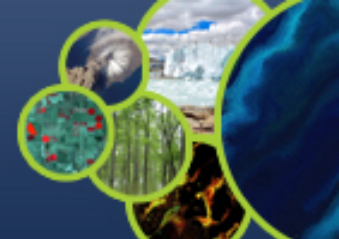
eo-courses.org

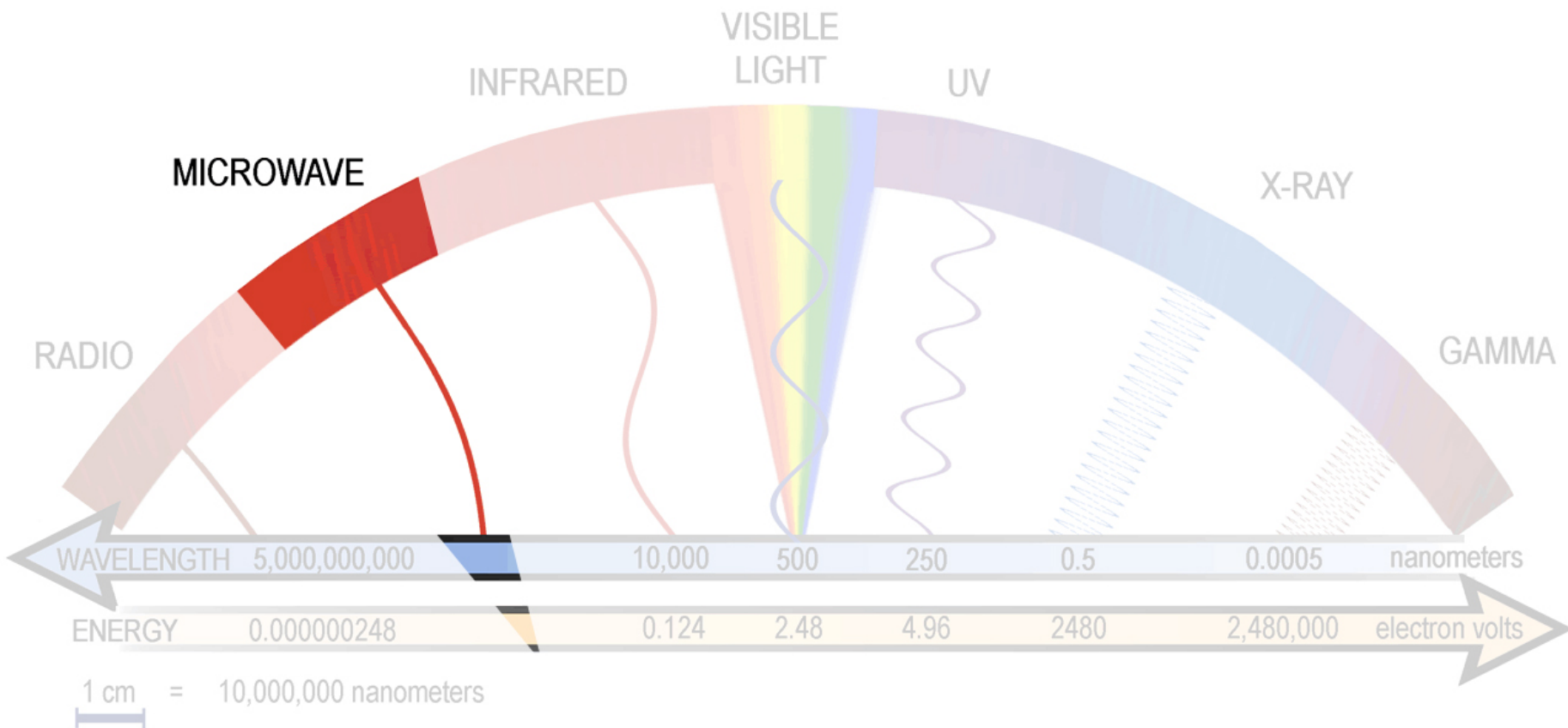
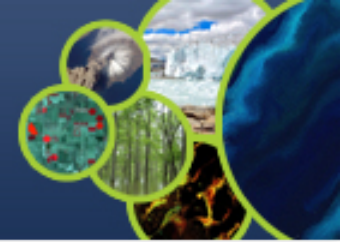


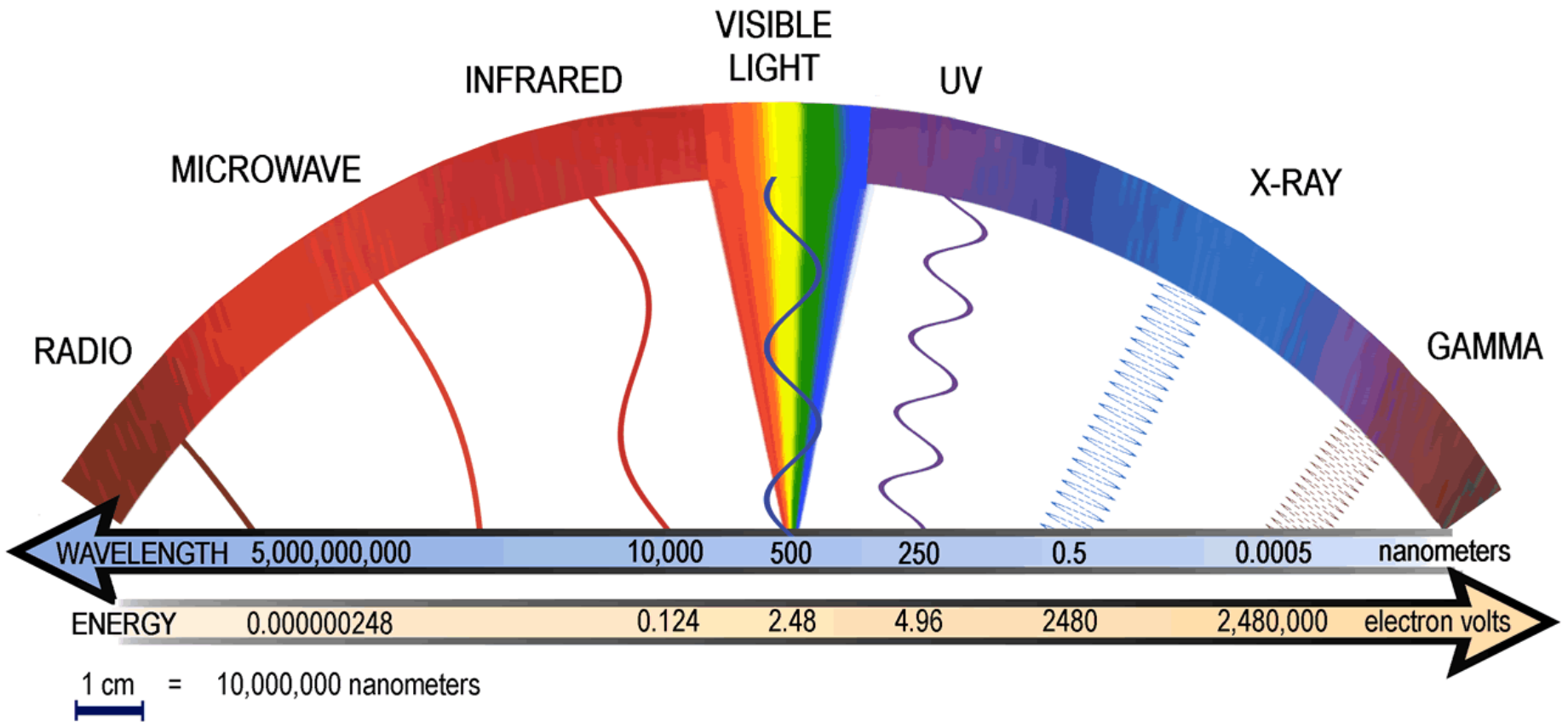
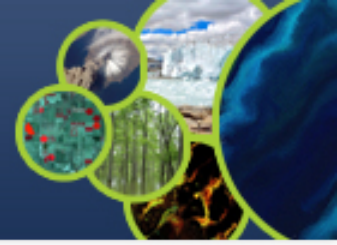
EIOIS

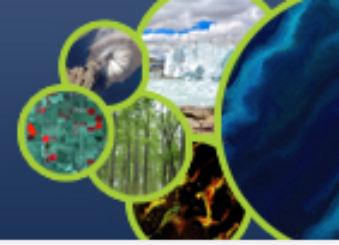






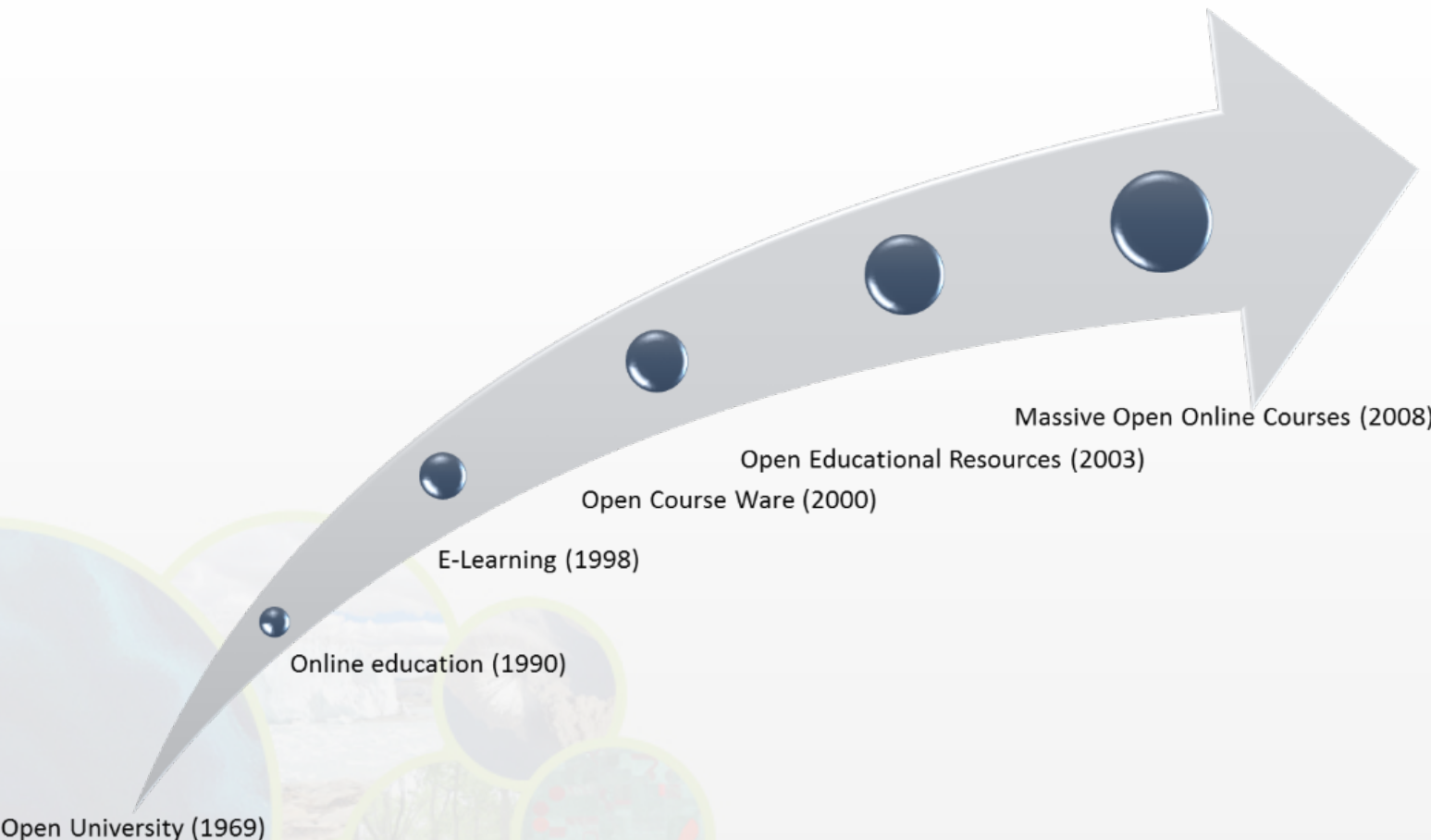
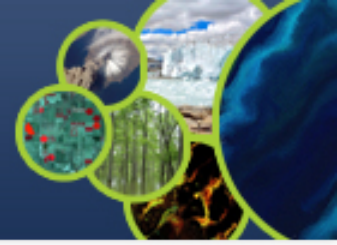






E-LEARNING





Open University (1969)

Online education (1990)

E-Learning (1998)

Open Course Ware (2000)

Open Educational Resources (2003)

Massive Open Online Courses (2008)

Figure: Milestones in the open education development (redrawn after Aydin, EDULEARN 2016).

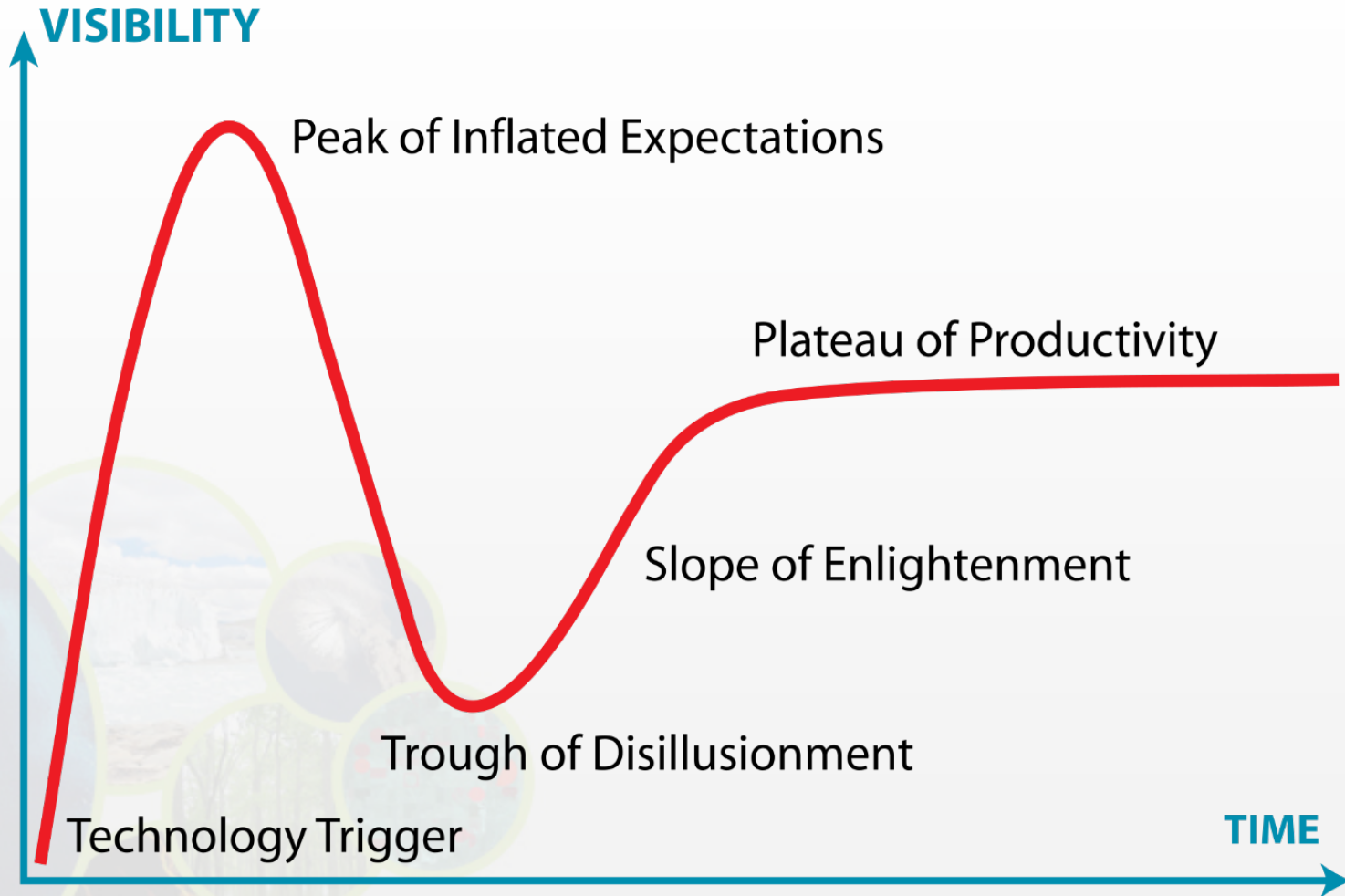
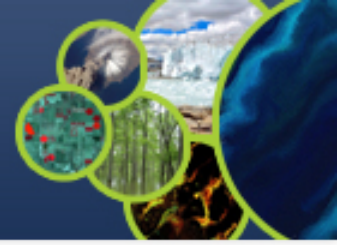


Figure: Hype-Cycle after Gartner Inc.

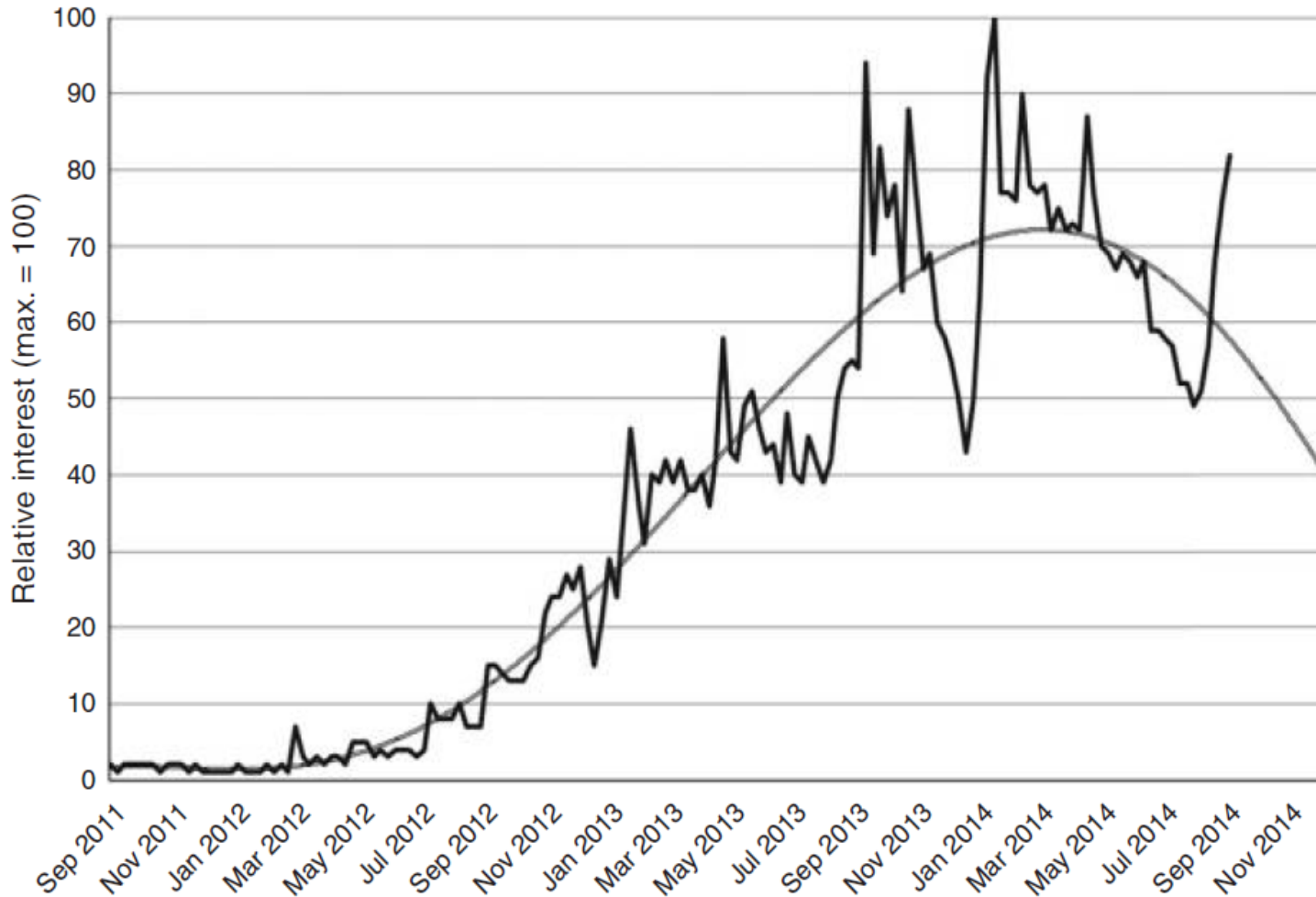
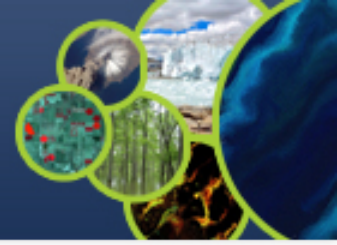


Figure: MOOCs in the Hype Cycle (Poelmans & Wautelet EDULEARN 16)

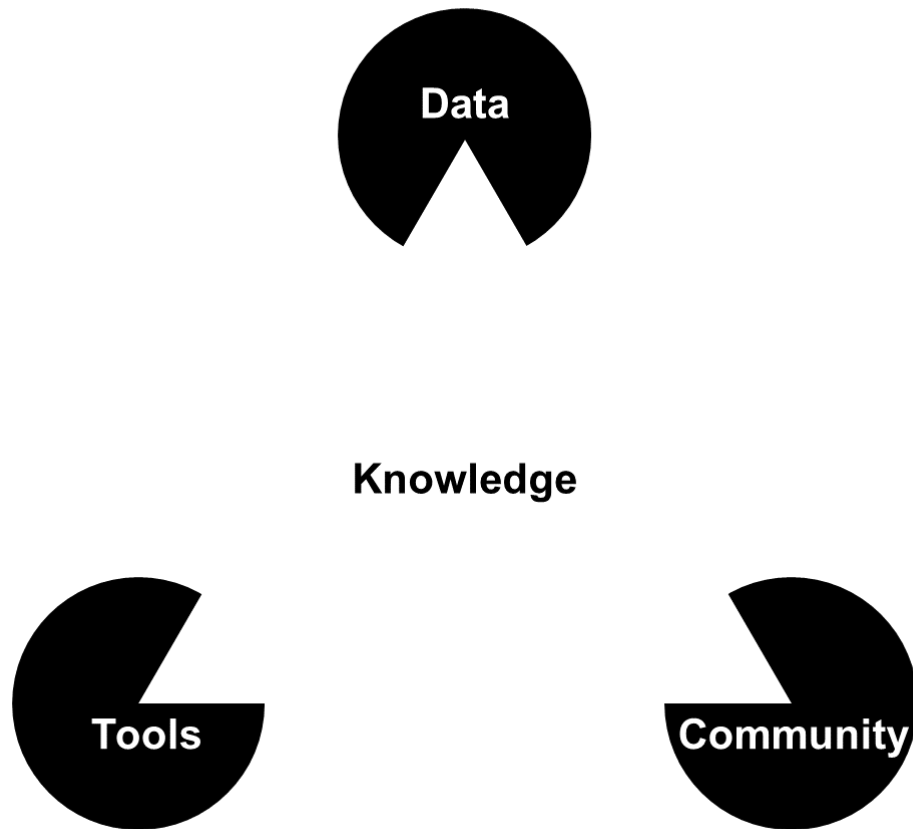
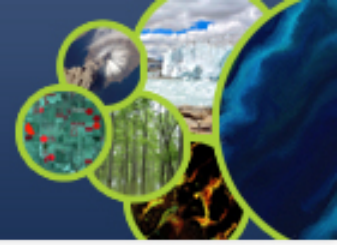
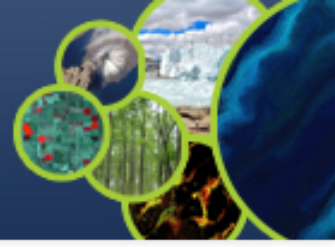
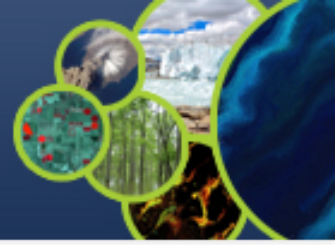


Figure: Trinity of EO Data, Tools and Community to foster new and existing knowledge.

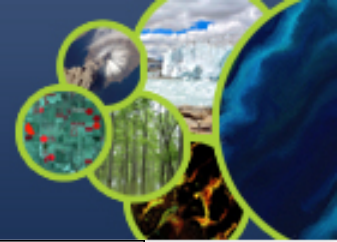


ISSUES & CHALLENGES

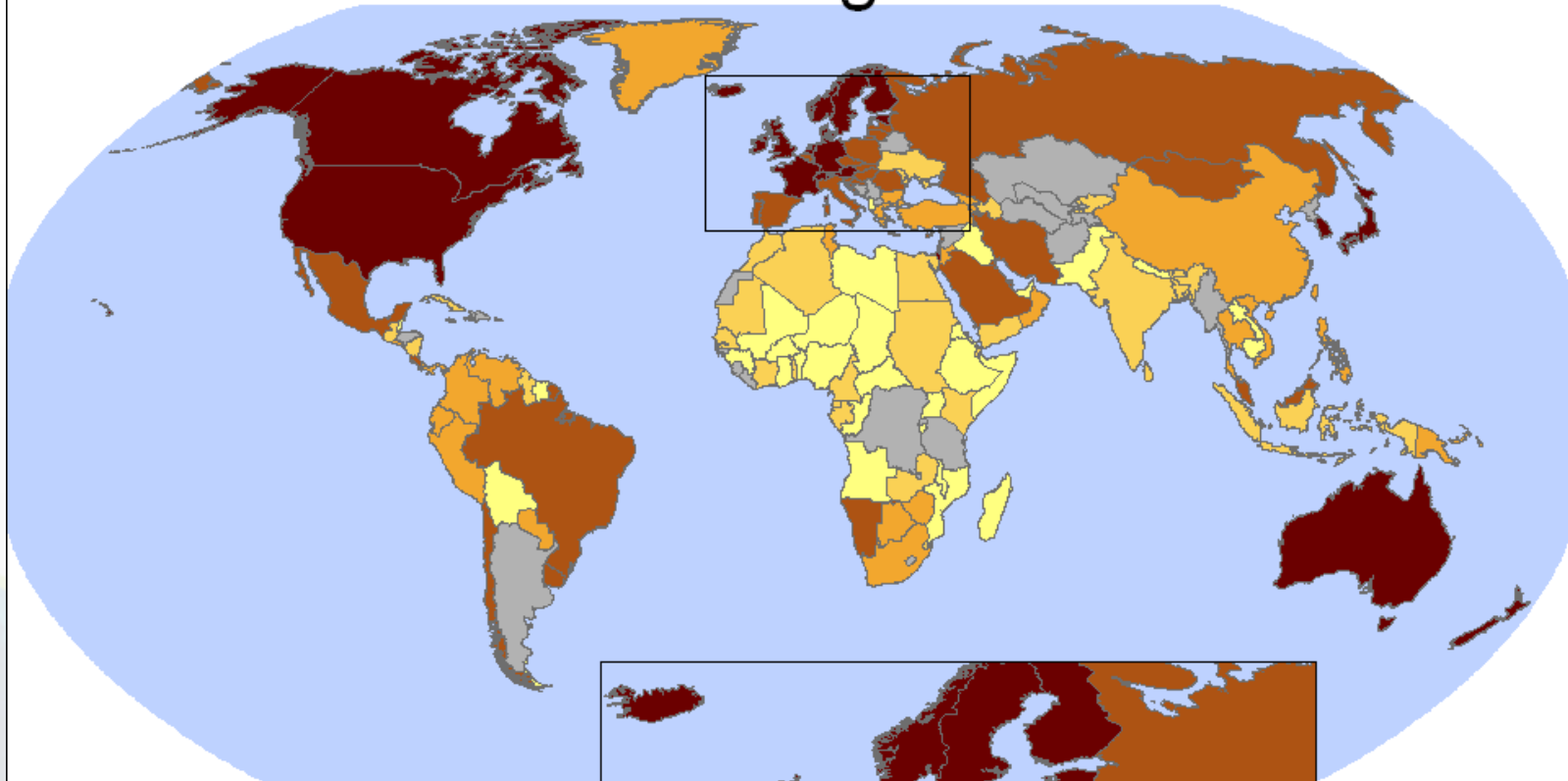




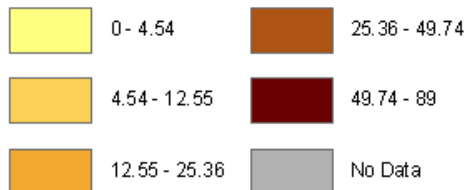
- **Bridging the Digital Divide**
- **Digital Literacy**
- **Engaging the online learner**



The Global Digital Divide



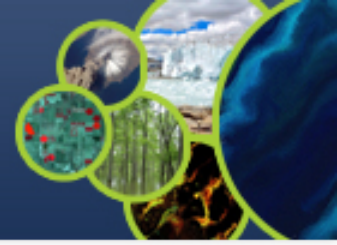
**Computers
Per 100 People**



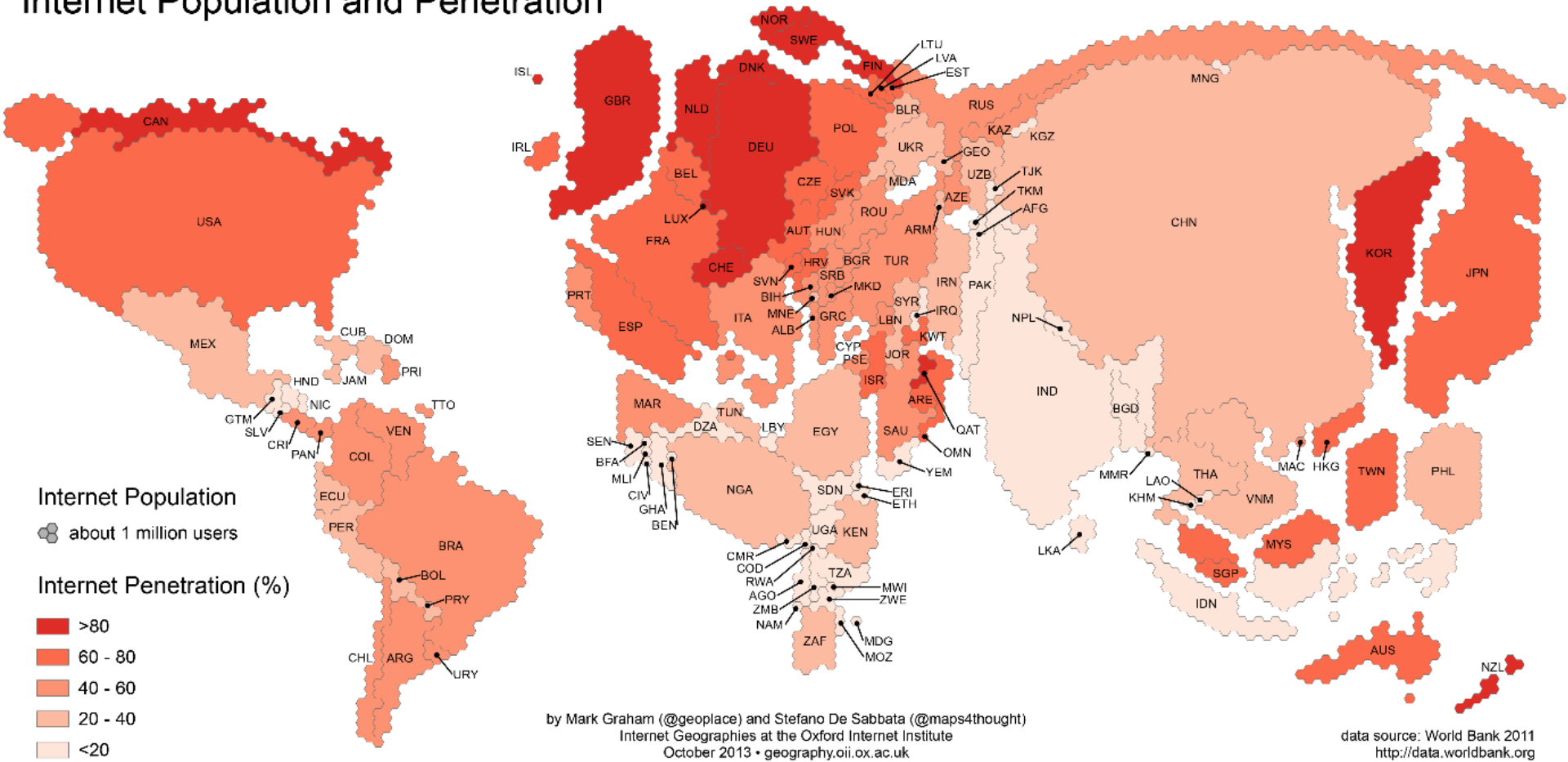
Source:
United Nations
Global Development
Goals Indicators

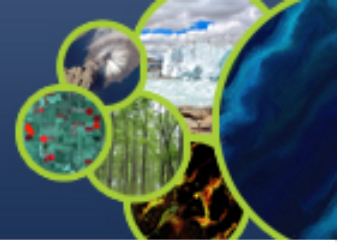
Robinson Projection

Cartography by:
Derek Boogaard



Internet Population and Penetration





IDEA: 'SARbuntu'

'plug&play'
Linux distribution
with free SAR software packages

Obstacle:

Funding
Infrastructure for Distribution



Data

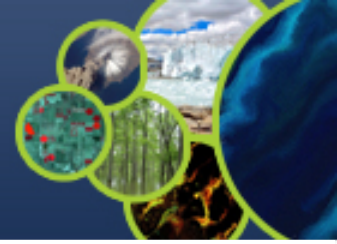
Knowledge



Tools



Community



IDEA: 'Offline Content'

Distribution of
MOOC content via
USB Stick/DVD

Obstacle:

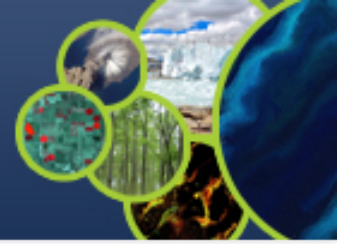
Funding
Infrastructure for Distribution

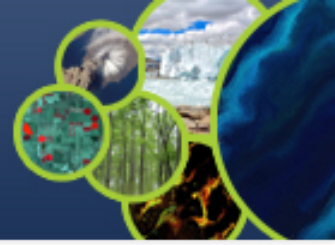
Data

Knowledge

Tools

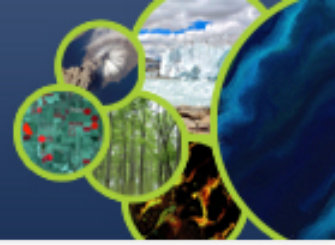
Community





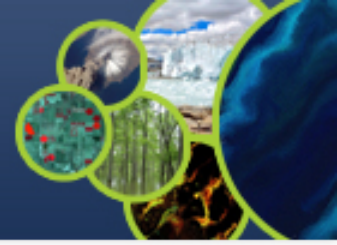
An engaging online course is:

- Clearly and attractively presented (**structure, design**),
- Active and **hands-on**,
- Authentic and meaningful (**real world examples**),
- **Collaborative** (learning as social experience),
- Reflective (learning encourages **self-observation**),
- **Responsive** (to learning abilities and preferences)

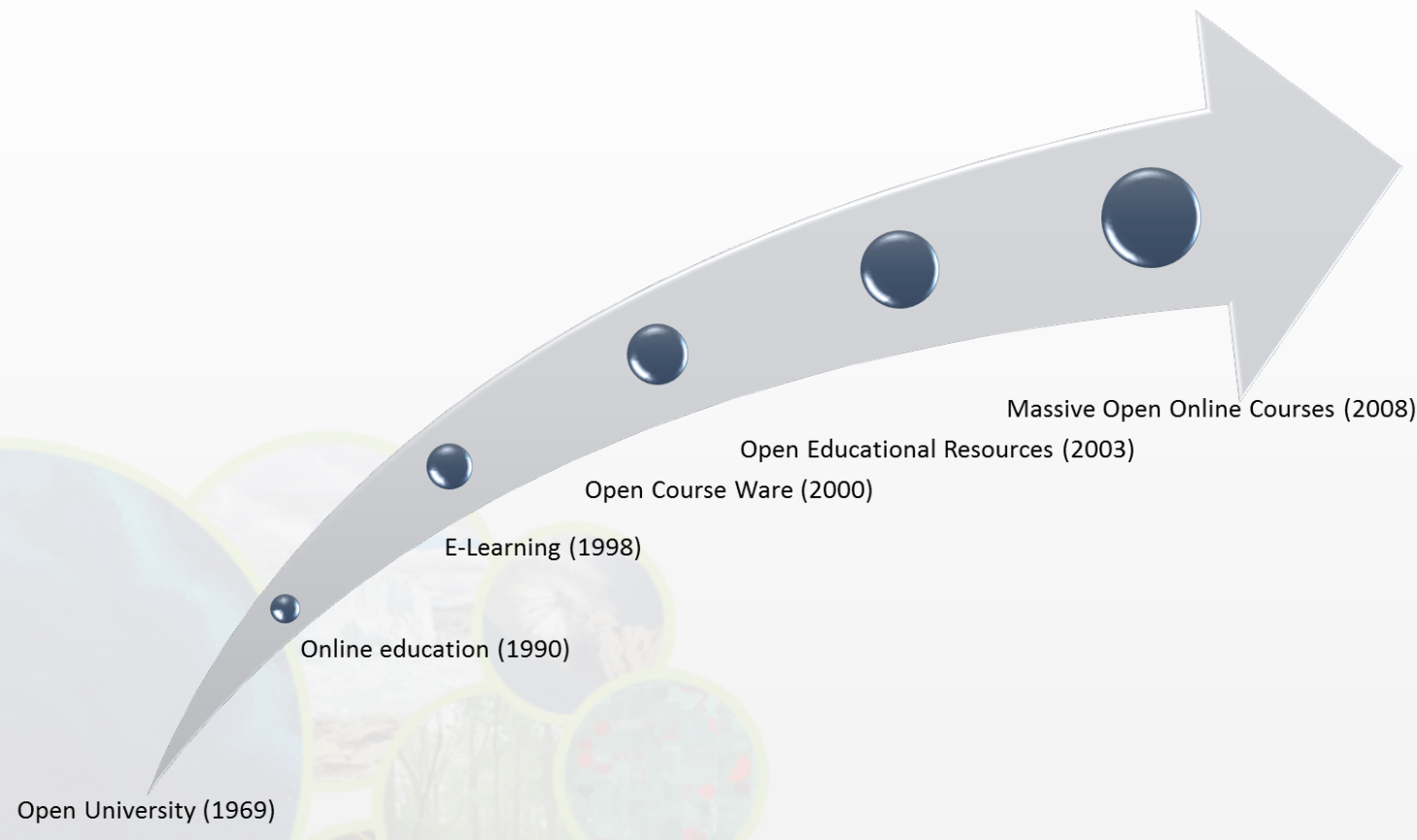


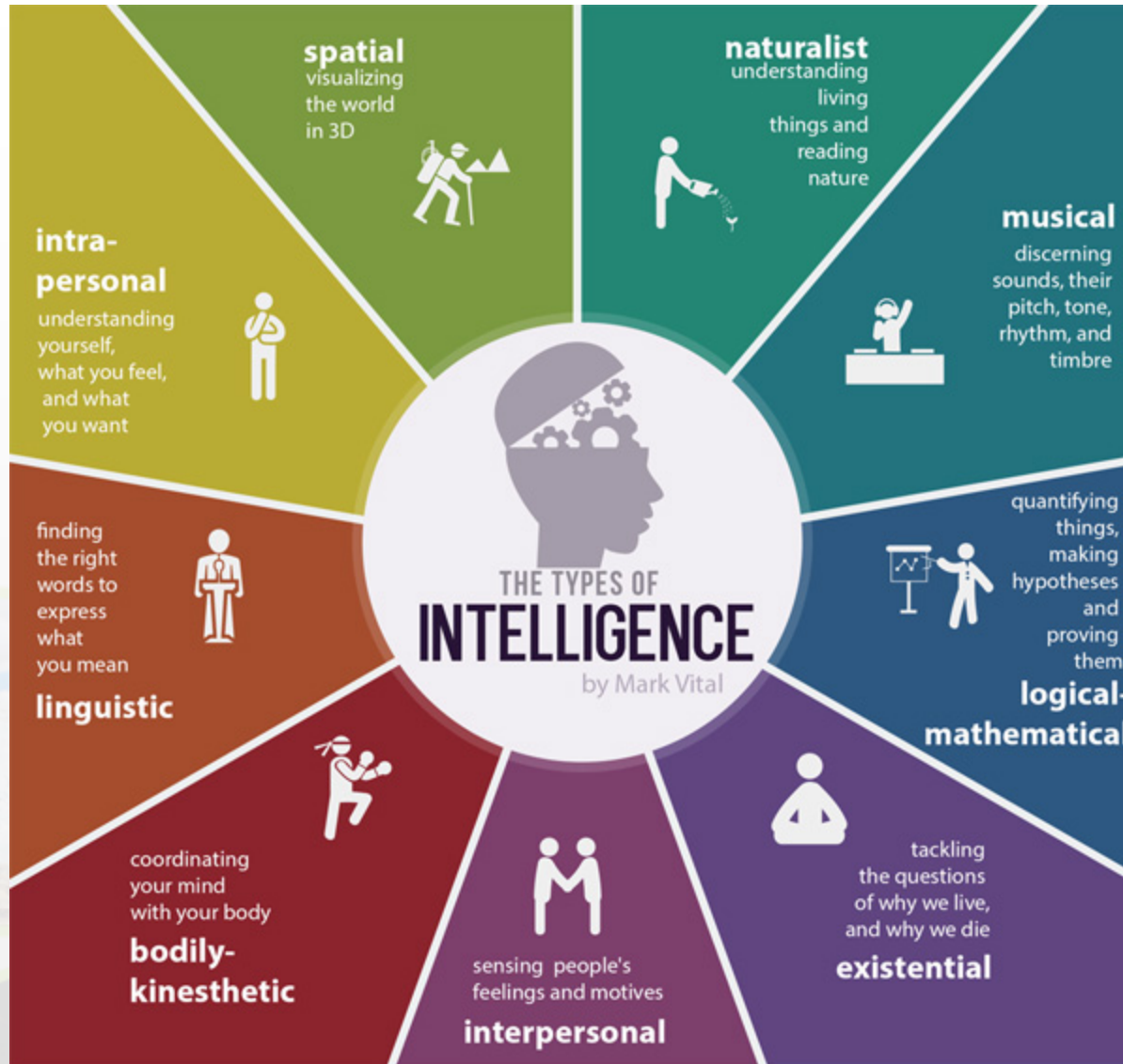
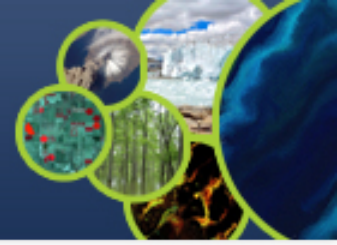
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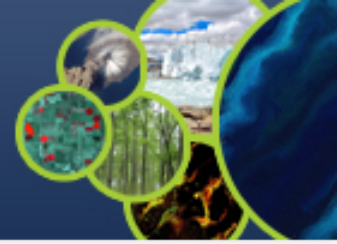
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- **Collaborative** (learning as social experience),
- Reflective (learning encourages **self-observation**),
- **Responsive** (to learning abilities and preferences)



Adaptive Learning







Course Report

User Report

Tin Can Report

Settings

Overview

TOTAL COURSES

3

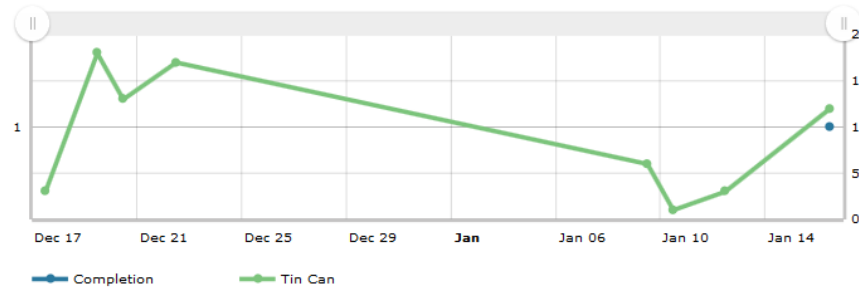
[View Report](#)

TOTAL USERS

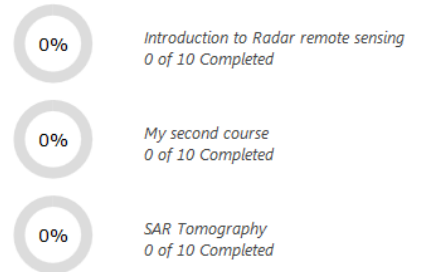
10

[View Report](#)

RECENT ACTIVITIES



MOST COMPLETED COURSES

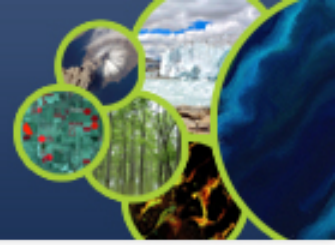


Courses

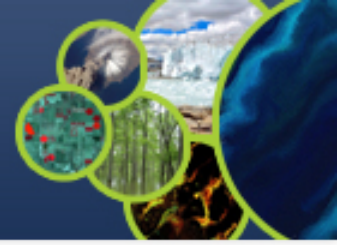
[CSV Export](#)

Search:

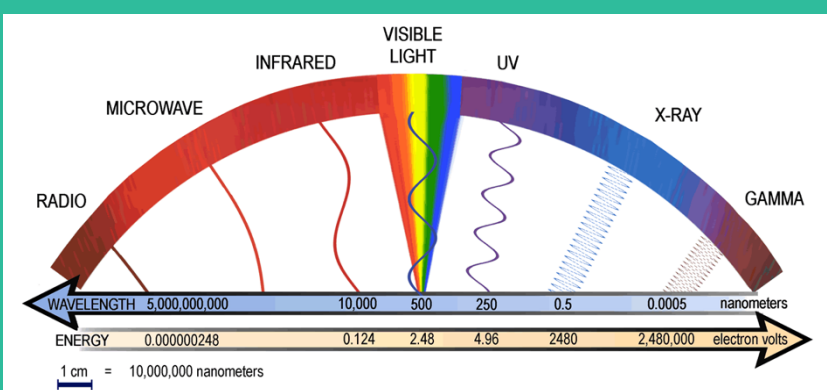
Course	Enrolled	Not Started	In Progress	Completed	Avg Quiz Score	Avg Time to Complete	Avg Time Spent	% Complete
Introduction to Radar remote sensing	10	1	8	1	89%			10%
My second course	10	10	0	0				0%
SAR Tomography	10	9	1	0				0%



Development of adaptive tools and course structures



esa Radar Course

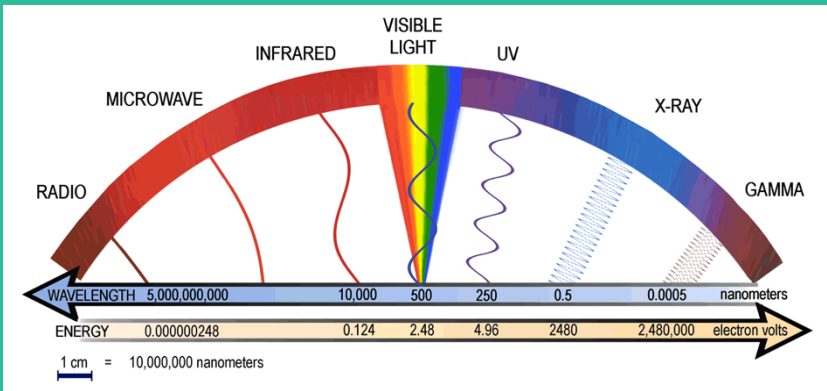
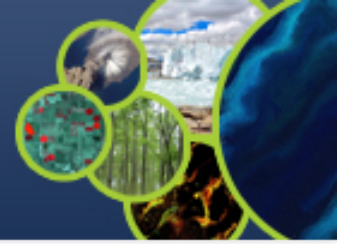


The diagram illustrates the electromagnetic spectrum with the following data points:

Region	Wavelength (nanometers)	Energy (electron volts)
RADIO	5,000,000,000	0.000000248
MICROWAVE	10,000	0.124
INFRARED	500	2.48
VISIBLE LIGHT	250	4.96
UV	0.5	2480
X-RAY	0.0005	2,480,000
GAMMA	< 0.0005	> 2,480,000

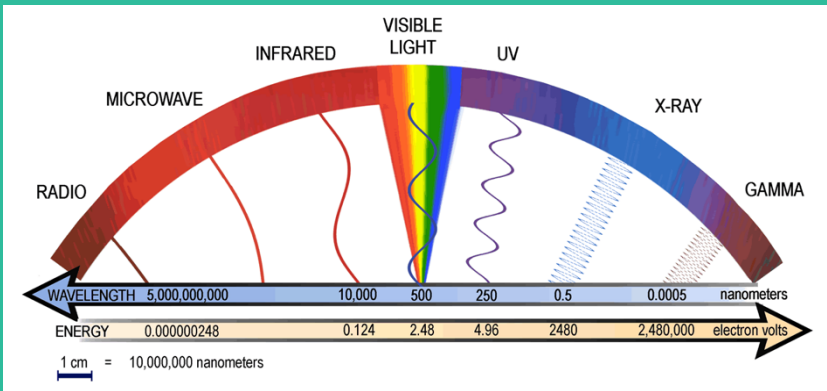
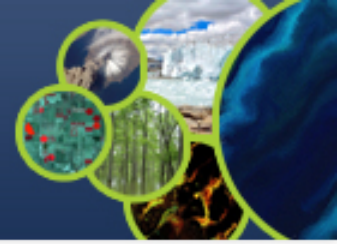
1 cm = 10,000,000 nanometers

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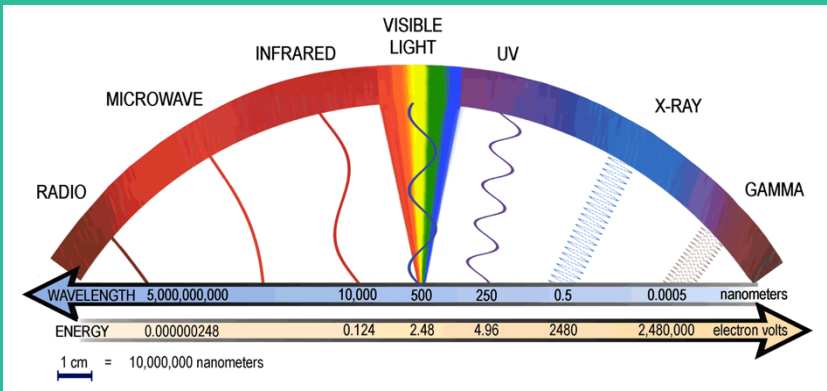
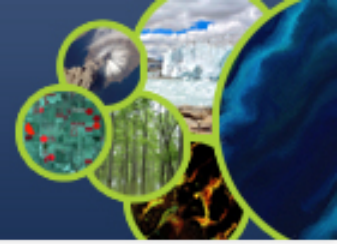
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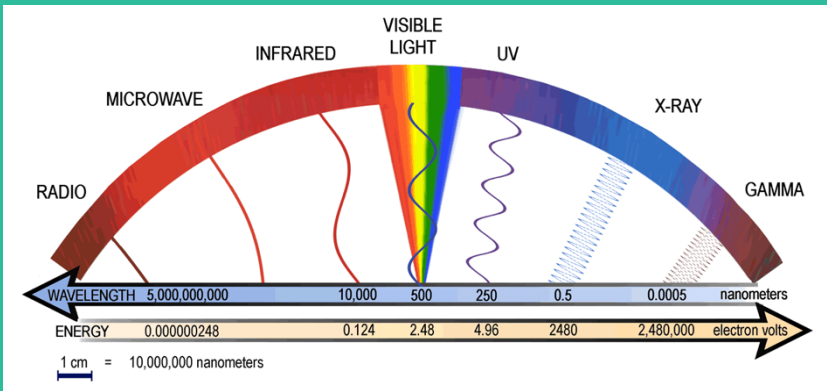
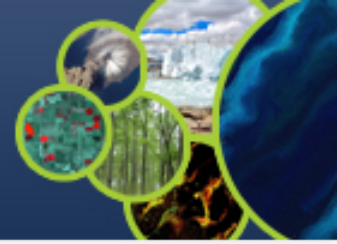


Development of adaptive tools and course structures

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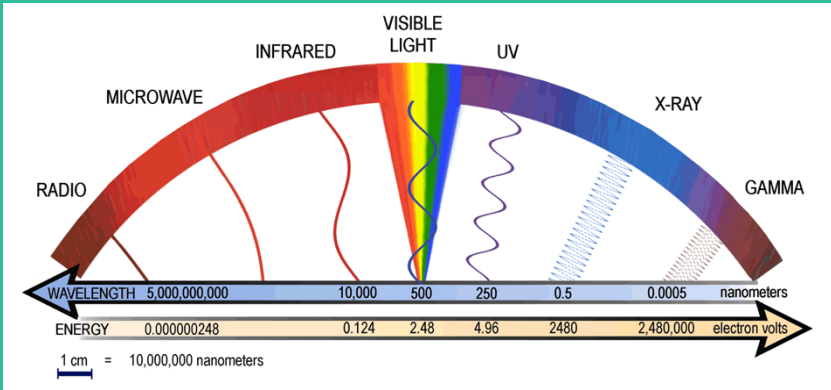
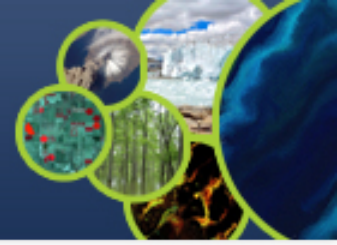
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- Number of views
- Number of interactions
- Interaction rate



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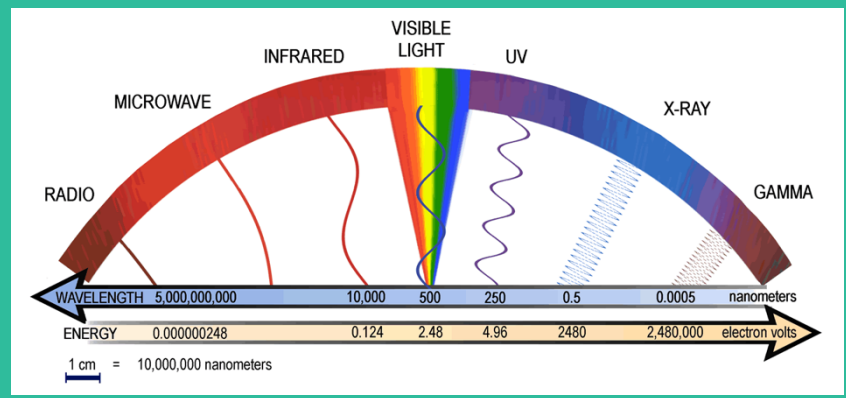


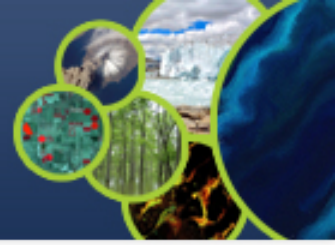
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- Data driven approaches
- User focussed learning experiences



User data protection



Free of commercial interests

FOR A FAIR SELECTION
EVERYBODY HAS TO TAKE
THE SAME EXAM: PLEASE
CLIMB THAT TREE

