

# ESA Earth Observation

*Towards Capacity Building and Data Democracy*

F. Sarti, P.-P. Mathieu, A. Mouratidis, M. Fea



# OVERVIEW OF ESA CONTRIBUTION TOWARDS...



## 1. ...Capacity Building

- Tools for Education (software, applications, multimedia)
- Web education (websites, internet applications)
- Training courses (periodical & ad-hoc)

## 2. ...Data Democracy

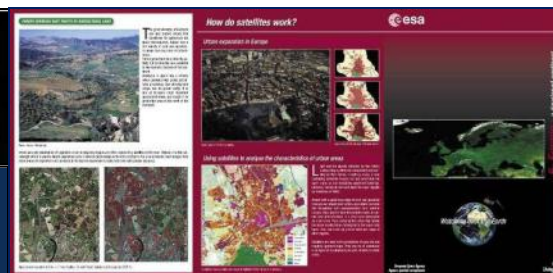
- Distribution of EO data at no cost
- Online data catalogues

*... ensuring also continuity with respect to the previous CEOS WGEdu partnership...*

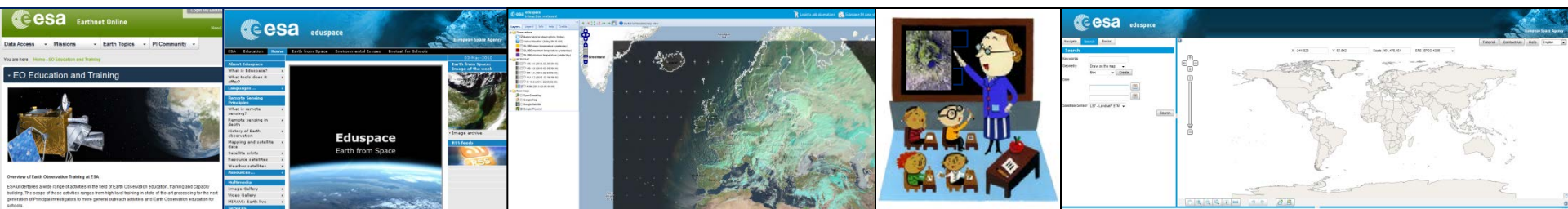
# TOOLS FOR EO EDUCATION



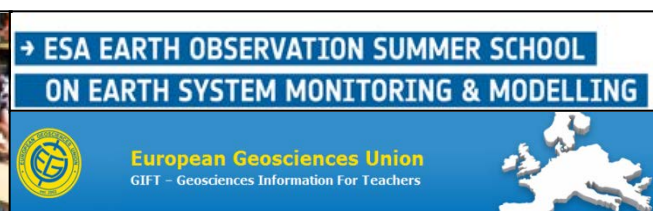
1. LEOWorks 4.0: Image processing and GIS educational software
2. Bilko (LearnEO! project)
3. School Atlas & DVDs
4. Teacher's Pack
5. Educational videos
6. Apps dedicated to EO educational purposes



1. **ESA EO Education website**
2. ESA Eduspace website for secondary education
3. Interactive Meteosat
4. Eduspace image catalogue
5. ESA Kids website for primary education



1. DRAGON training (China)
2. TIGER training (Africa)
3. ESA PECS (Plan for European Cooperating States) courses
4. Advanced training courses (Land, Ocean, Atmosphere, and other)
5. EGU/GIFT
6. EARSeL
7. COSPAR
8. ESA (or ESA-sponsored) EO Summer Schools



1. Participation to CEOS WGCapD-Data Democracy
2. Archive of ESA and TPM data available at no cost (via EOLi,...)
3. Data from the Supersites initiative
4. Charter exercises developed for CEOS
5. ESA collection of software and toolboxes
6. G-POD (Grid Processing on Demand) environment



**esa** EOLi Screenshots

## EOLi "ESA's Link to Earth Observation"

EOLi (Earth Observation Link) is the European Space Agency's client for Earth Observation data acquired by the satellites ENVISAT, ERS, Landsat, IKONOS, DMC, ALOS, SPOT, Kompsat, Proba, JERS, IRS, Nimbus, NOAA, SCISAT, SeaStar, Terra/Aqua.

Using EOLi, you can browse the metadata and preview images of Earth Observation data acquired by the satellites ENVISAT, ERS, Landsat, IKONOS, DMC, ALOS, SPOT, Kompsat, Proba, JERS, IRS, Nimbus, NOAA, SCISAT, SeaStar, Terra/Aqua.

Scientific Users with a registered account can order or download products of various processing levels.



# A constant ESA objective: - *ease access to Earth Observation data*



1. ESA EO data policy: open and free of charge
2. Constant upgrade of ground segment for easier access to data through Internet for Near Real Time (NRT) data and for archived data
3. Development of alternative ways to provide EO data:
  - data/algorithm toolboxes → e.g. BEAM, GUT, etc...
  - processing on demand → e.g. G-POD
  - Earth science platforms → e.g. Geohazard Supersites
4. Large effort in maintaining data quality (processing algorithms and subsequent reprocessing)
5. Need to preserve “old” data for future use (LTDP)



**ERS and Envisat**



**Earth Explorers**  
(GOCE, SMOS, CryoSat)

## ESA data policy:

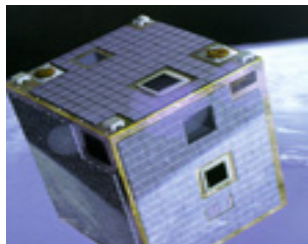
- for most EO data: *free of charge*, after user registration
- for few EO data: *free of charge*, with data quota defined after analysis of user project proposal (e.g. SAR products)



**Sentinels**

## Full and open access to all users

[Joint Principles for a Sentinel Data Policy approved by ESA;  
overall GMES policy to be issued by EC]

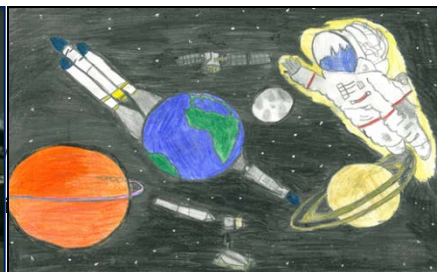


**Contributing missions (to  
GMES) and  
Third Party Missions**

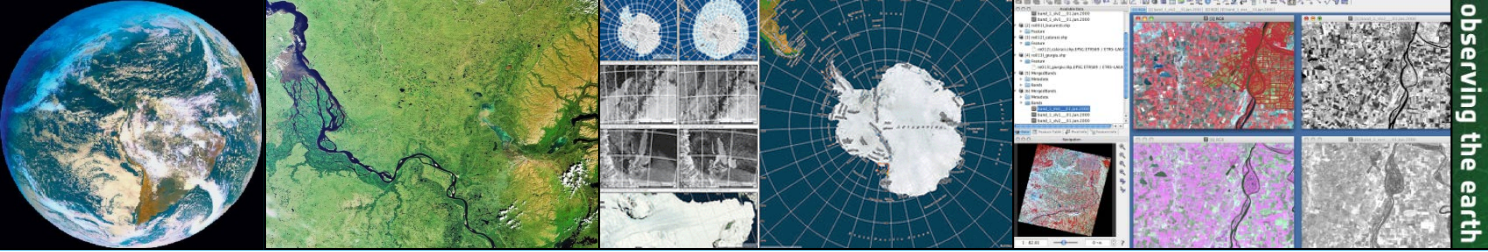
**Data Policy of individual data providers**



1. ESA Web TV
2. Open Days in ESA main EO establishment (ESRIN)
3. School events in ESA/ESRIN and ESA/ESTEC
4. Education stand and training sessions @ major conferences (IGARSS 2012, Living Planet Symposium 2013) jointly with DLR and National Space Agencies
5. ibooks



- ESA education portal: [www.esa.int/education](http://www.esa.int/education)
- ESA EO Education webpage: <http://eo-edu.eo.esa.int>
- Eduspace: [www.esa.int/eduspace](http://www.esa.int/eduspace)
- Interactive Meteosat: [http://www.asrc.ro/imeteosat\\_beta/map\\_view.php](http://www.asrc.ro/imeteosat_beta/map_view.php)
- ESA software and toolboxes: <https://earth.esa.int/web/guest/software-tools>
- Leoworks 4: <http://leoworks.asrc.ro>
- LearnEO! project: <http://www.learn-eo.org/about.php>
- Science Education via EO for High Schools (SEOS): <http://www.seos-project.eu/home.html>
- EOLi client: <http://earth.esa.int/EOLi/EOLi.html>
- Eduspace image catalogue: <http://maps.eo.esa.int/EduSpace2/index.jsp?nocombo=true>
- Grid Processing on Demand (G-POD): <http://gpod.eo.esa.int>
- Long Term Data Preservation (LTDP): [earth.esa.int/gscb/ltdp](http://earth.esa.int/gscb/ltdp)



***Thank you for your attention!***

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