

Solutii open source pentru prelucrarea si reprezentarea datelor geospatiale

Noi perspective in teledetectia satelitara - instrumente si date deschise



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Romanian Space Agency

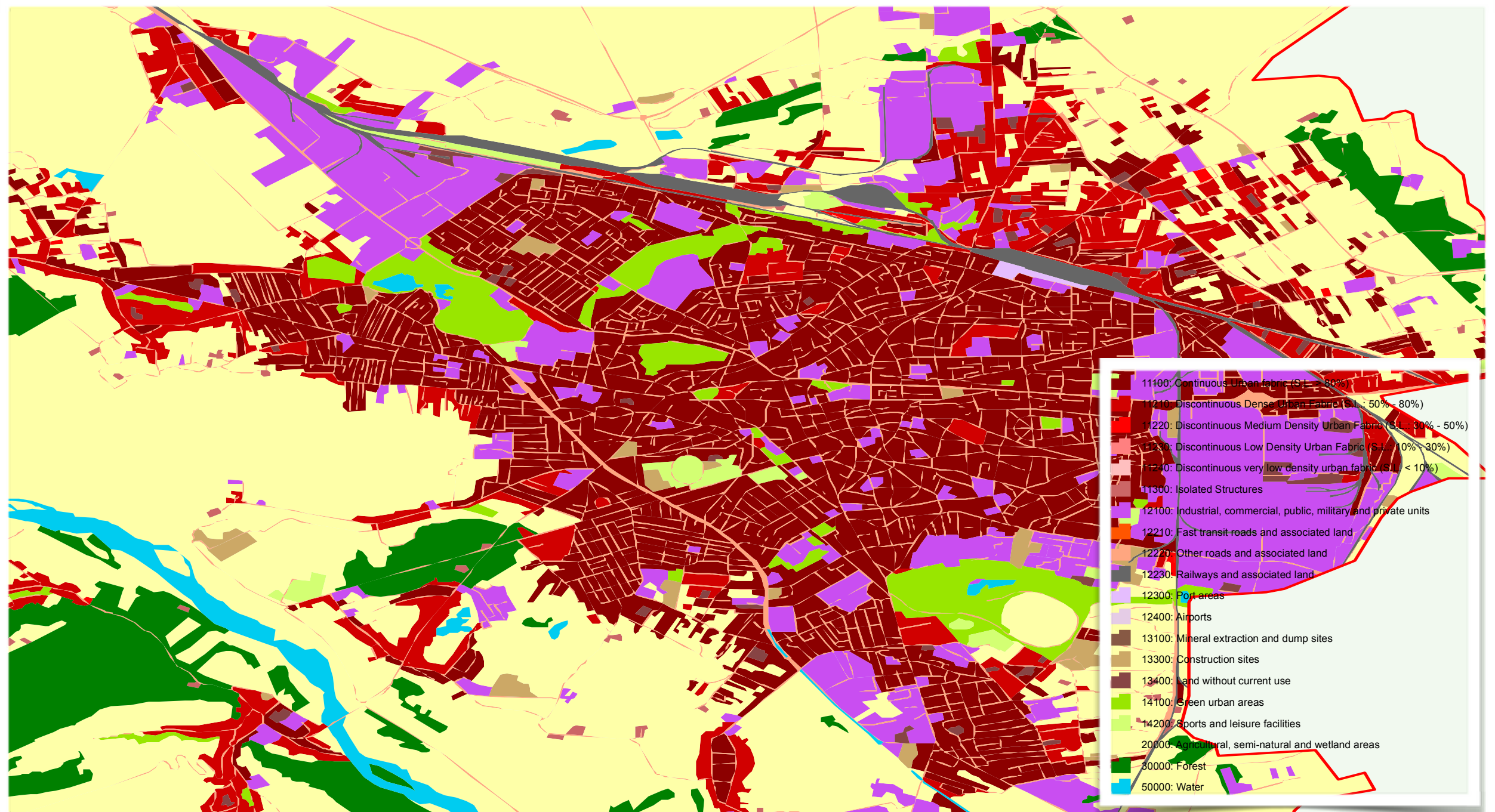
Serviciile copernicus ofera informatii utilizate in numeroase domenii de activitate

Componente spatiale, in-situ
si de servicii pentru

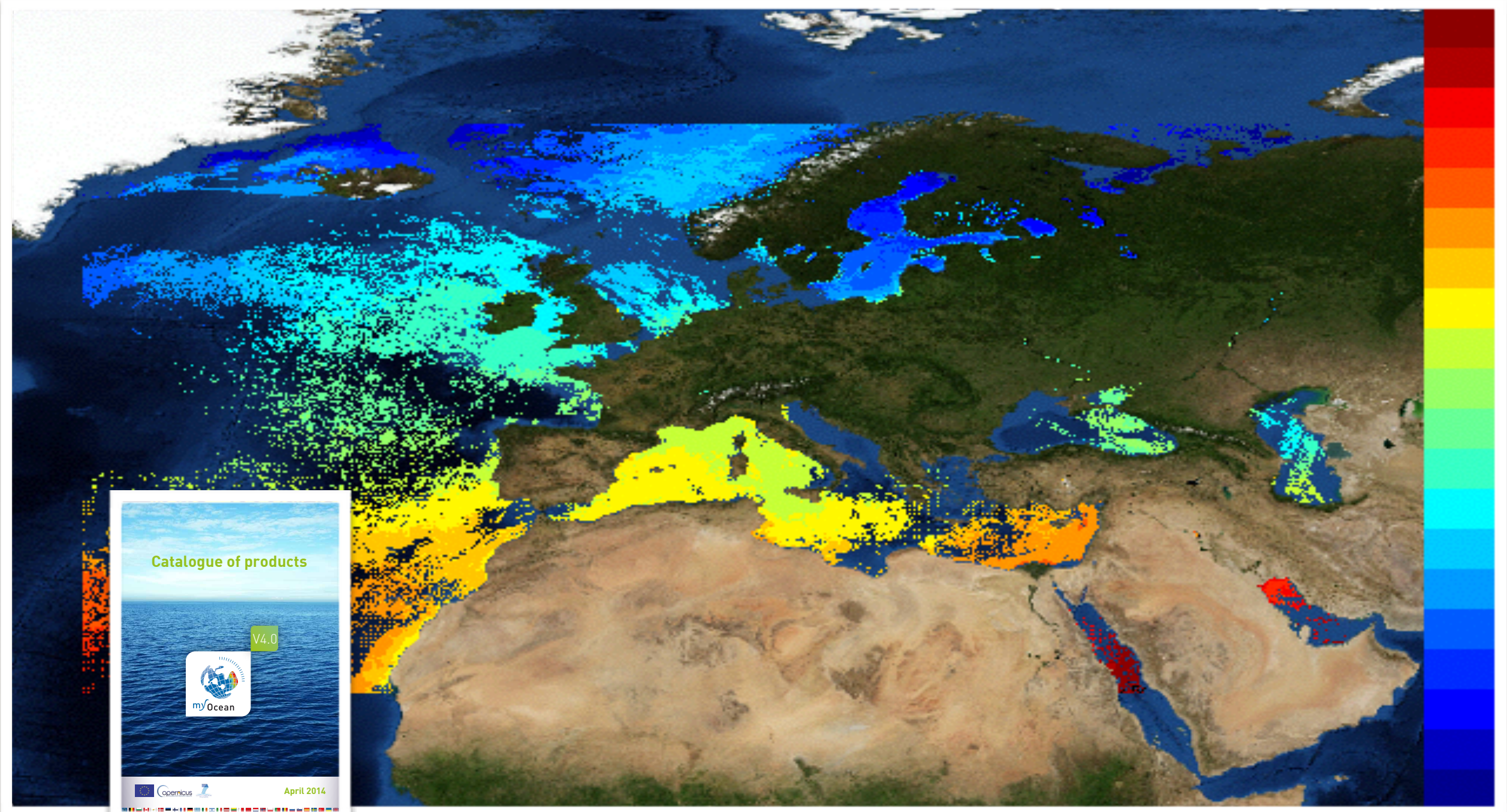
- ❖ Monitorizarea terenului
- ❖ Mediul marin
- ❖ Monitorizarea atmosferei
- ❖ Managementul dezastrelor
- ❖ Securitatea mediului si a populatiei
- ❖ Schimbari climatice



Produse cu acoperire Locala, Europeana sau Globala privind Acoperirea si Utilizarea Terenurilor



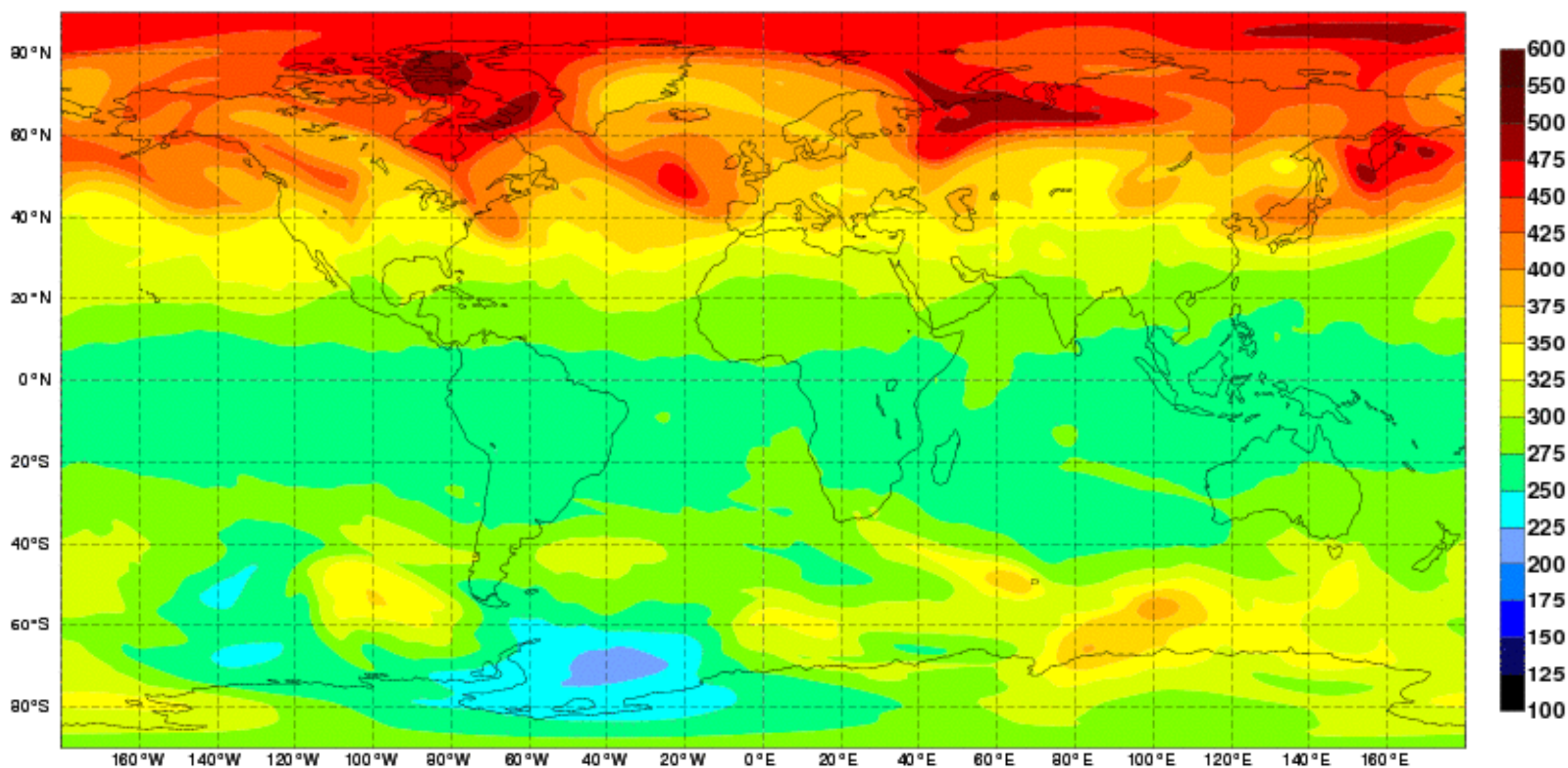
Produse complexe de monitorizare a mediului marin: nivelul marilor si oceanelor, temperatura apei, salinitate, directia si intensitatea vanturilor si a valurilor



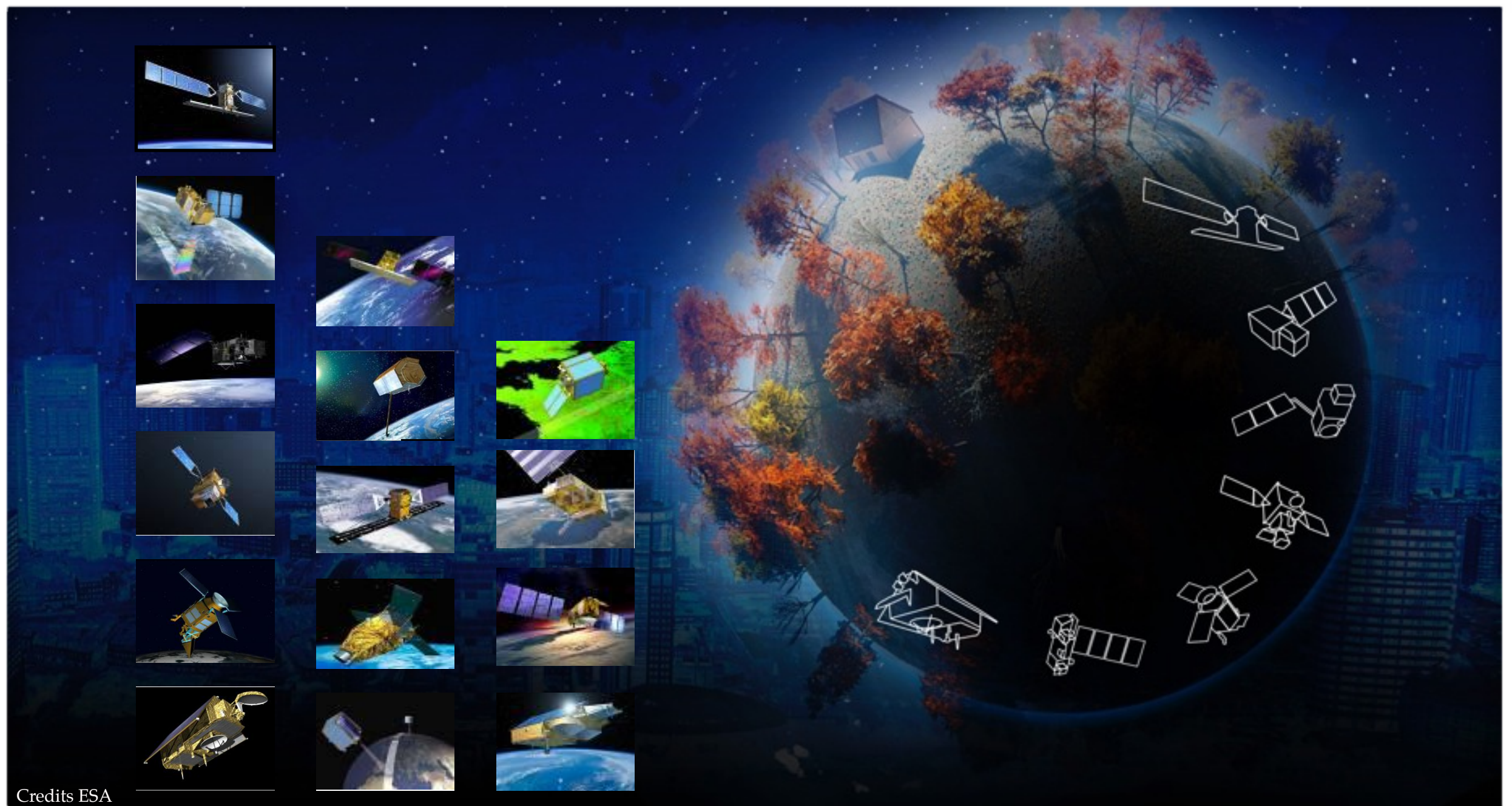
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Monitorizarea atmosferei: compozitia atmosferei, energia solara, radiatii ultraviolete, calitatea aerului

Thursday 24 April 2014 00UTC MACC-II Forecast t+006 VT: Thursday 24 April 2014 06UTC
Total Column Ozone [DU]



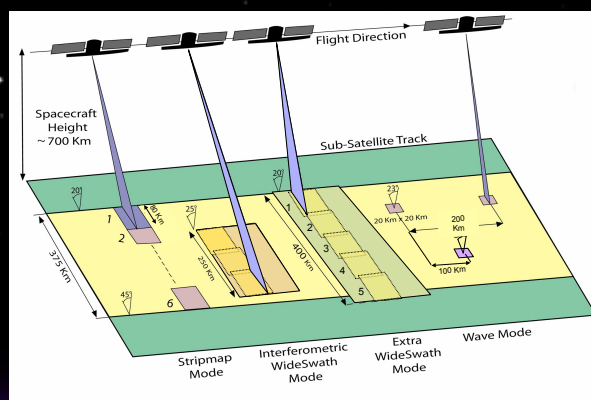
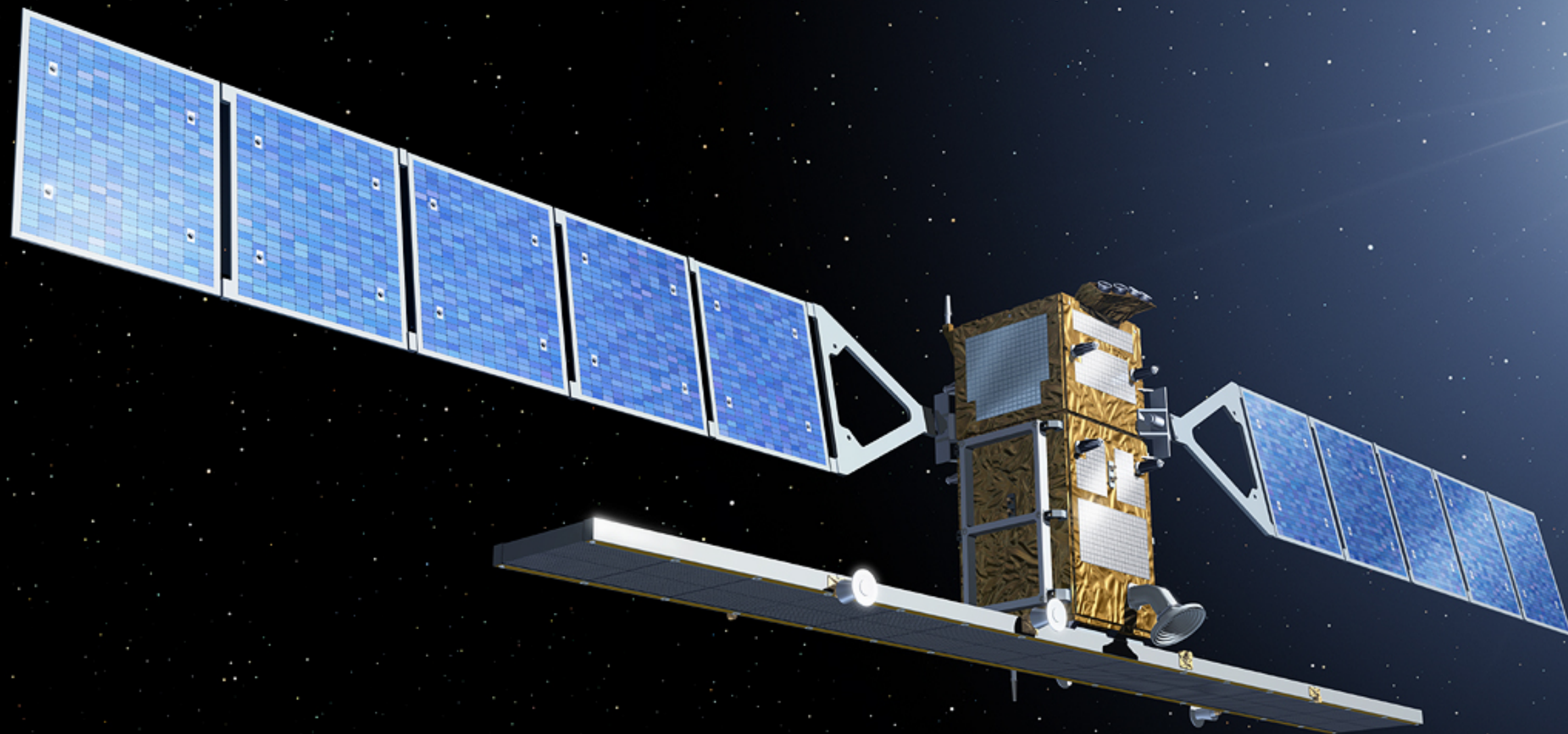
Satelitii Sentinel: inregistrari ale suprafetei terestre, marilor si oceanelor si atmosferei ..



Lansarea primului satelit Copernicus Sentinel 1

- 3 April 2014
- Kourou spaceport
- Soyuz-2 rocket
- New era of Earth observation





• StripMap Mode

Dual polarization, medium swath, high radiometric performance, very high spatial resolution

• Wave Mode

Sampled StripMap mode, single polarization, low data rate.

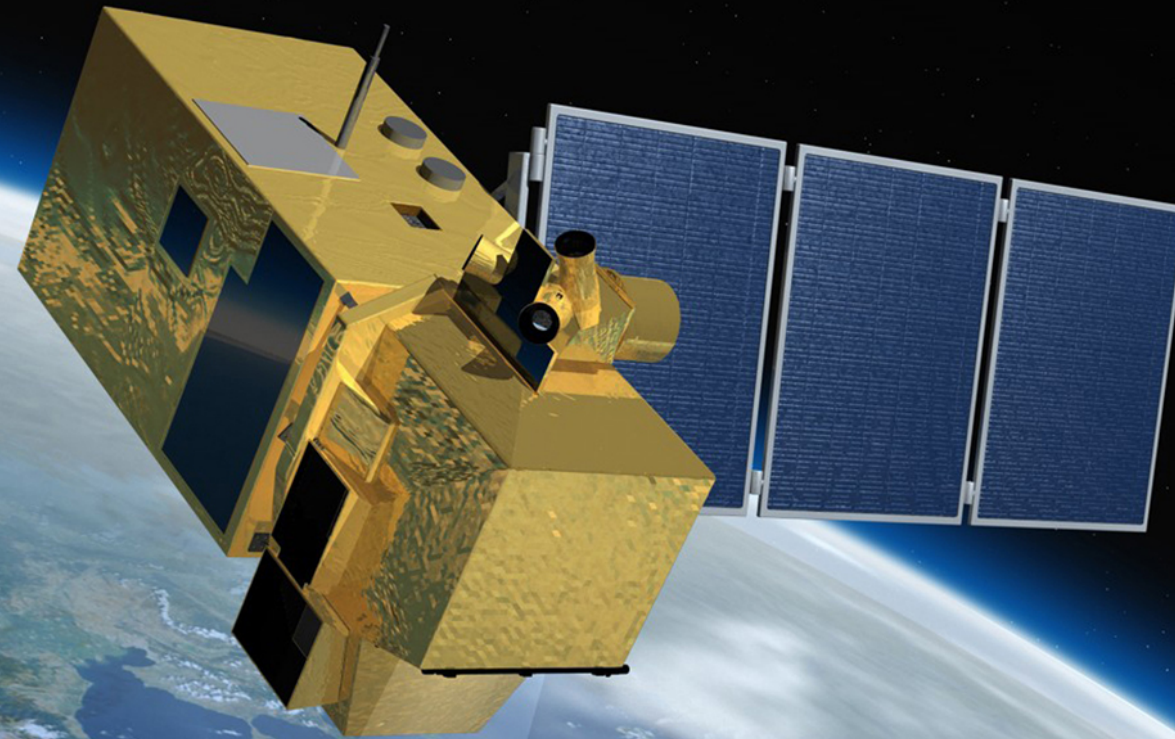
• StripMap Mode

Dual polarization, medium swath, high radiometric performance, very high spatial resolution

• Wave Mode

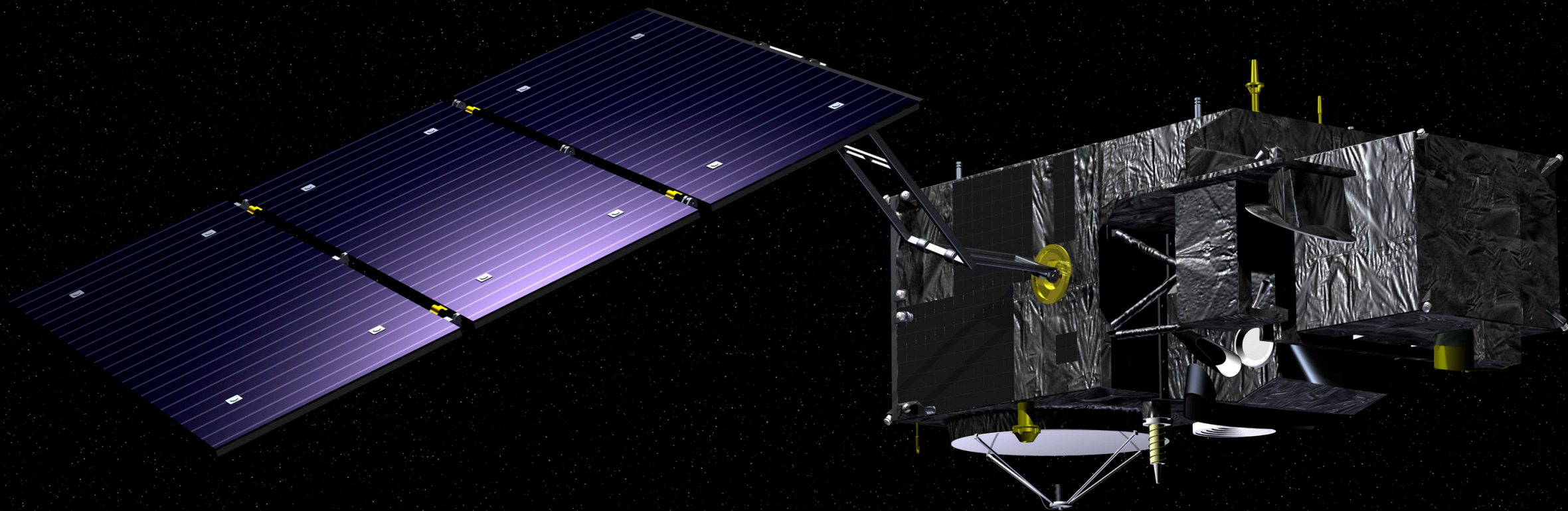
Sampled StripMap mode, single polarization, low data rate.

1.4 TB / zi



Sentinel-2 mission will combine:

1. Systematic acquisition of all land surfaces and coastal waters
2. High revisit frequency (5 days periodicity, same viewing direction, operations of 2 spacecrafts in twin configuration)
3. Large swath (290km)
4. High spatial resolution (10m / 20m / 60m)
5. Large number of spectral bands (13 in VNIR-SWIR domain)
6. Long mission duration (12 years): constellation of 2 satellites, Sentinel-2A launch in 2013 and Sentinel-2B launch 18 month after

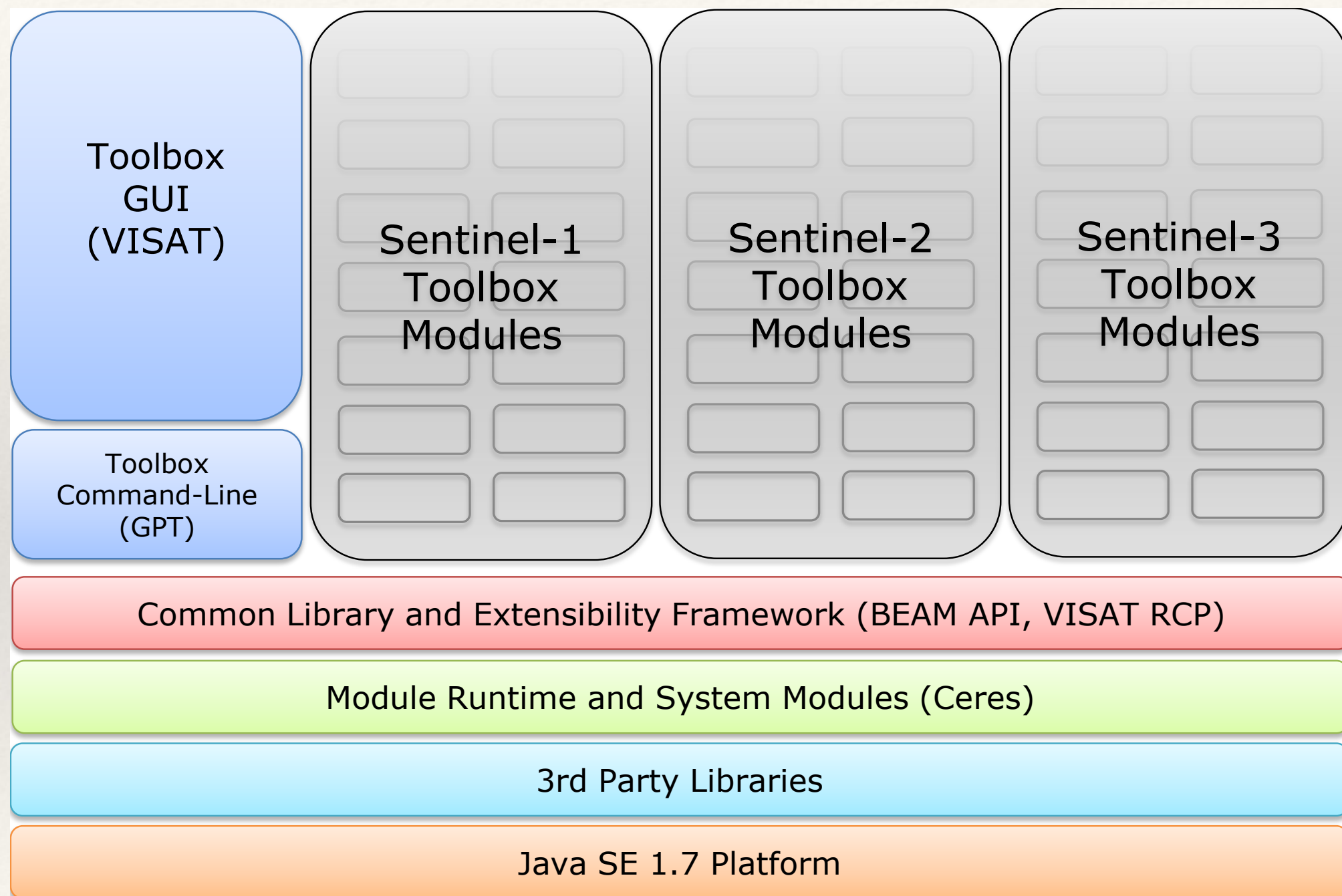


Main Objectives

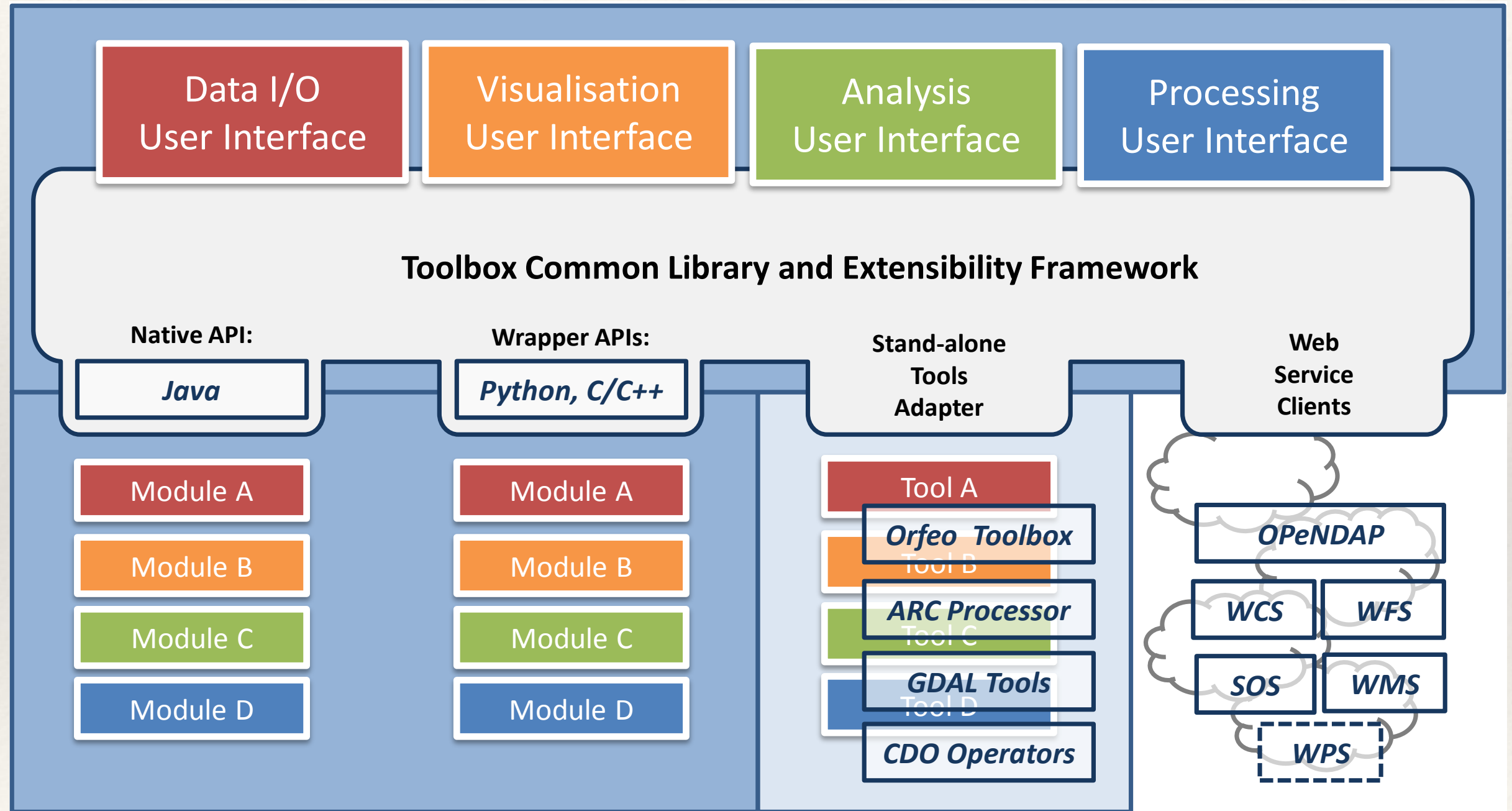
Provide continuity of medium resolution sensors by ensuring the provision of:

- Ocean observations data (i.e. Sea-Surface Height, Sea-Surface Temperature, Ocean Colour)
- Land optical observation products (i.e. Land Colour, Land Surface Temperature)
- Ice topography products (i.e. Sea Ice, Ice sheet interiors, ice sheet margins)
- Land hydrology products (i.e. water surface levels for river and lakes)

Instrumente de procesare - sentinel toolboxes

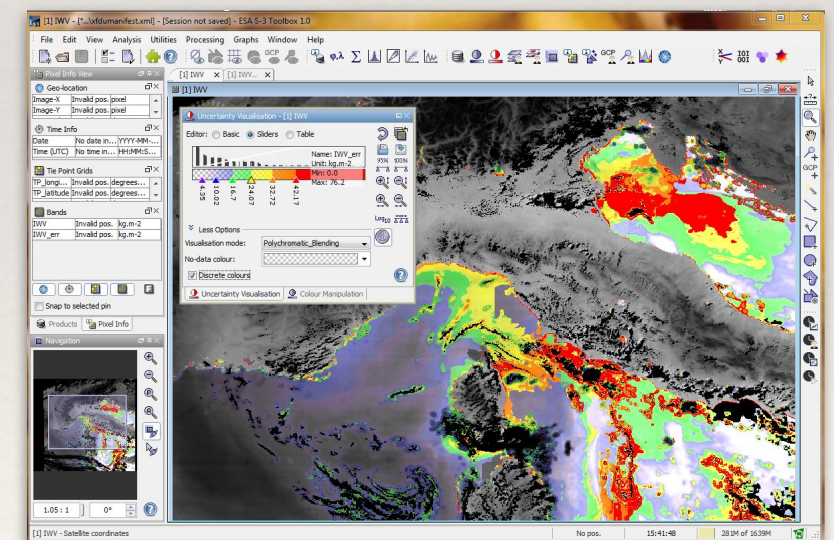
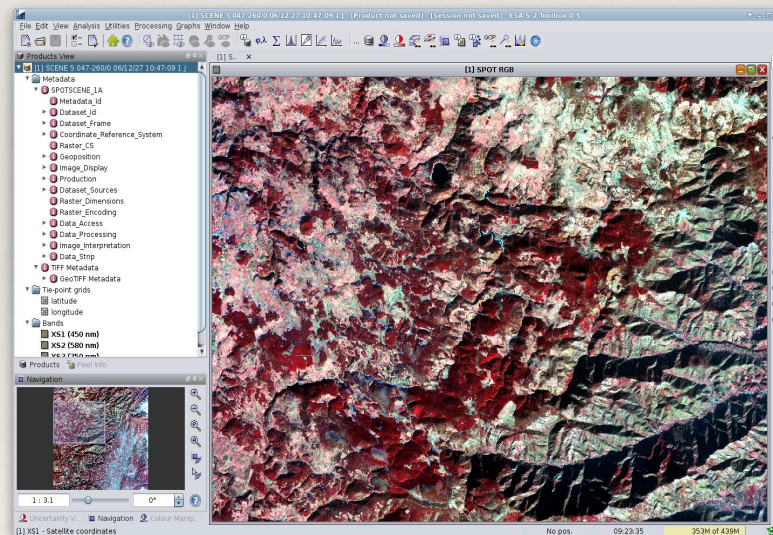
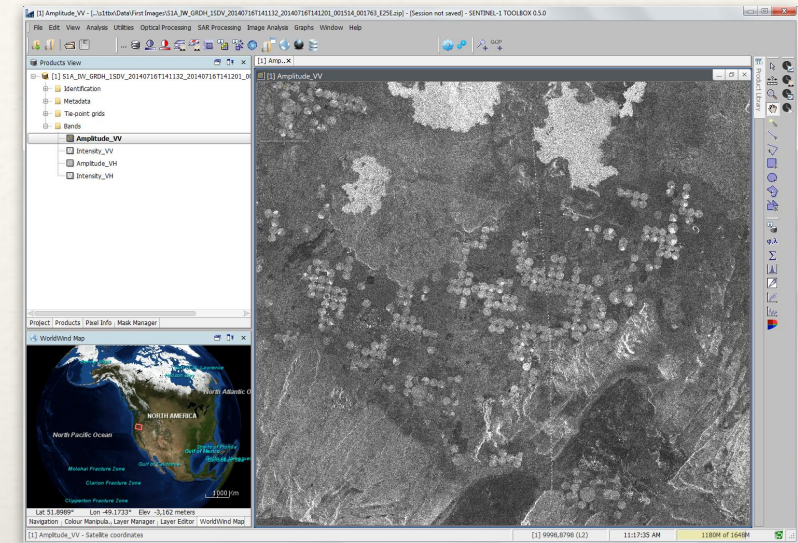


Instrumente de procesare - sentinel toolboxes



Instrumente de procesare - sentinel toolboxes

- Distributia Sentinel Toolboxes a demarat pe 29 septembrie 2014
- Pachete de instalare pentru S1, S2 si S3
- Distributiile viitoare - un singur pachet de instalare
- Website - pachete de instalare, date, tutoriale, forum utilizatori: <http://earth.esa.int/web/sentinel-tbx/toolboxes>
- <https://github.com/senbox-org>
- Summer schools



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Sentinel Toolboxes - caracteristici si functionalitate

- ❖ Speckle filtering
- ❖ Calibration
- ❖ Ellipsoid / terrain correction
- ❖ Registration, co-registration and reprojection
- ❖ Interferometry
- ❖ Atmospheric correction
- ❖ Radiance to reflectance
- ❖ Temporal synthesis
- ❖ Biophysical products
- ❖ Water processor
- ❖ Crop mapping processor
- ❖ Cluster
- ❖ Spectral unmixing
- ❖ Binning
- ❖ Graph processing
- ❖ Sensor specific plug-ins
- ❖ Mosaicking



Referinte

Thomas Beer. 9-10 Octombrie 2014. The Copernicus Space Component: Sentinels Enter the Operational Phase @ Copernicus Services in the Sentinel Era, Benefits for Eastern Europe Conference

Chris Stewart. 9-10 Octombrie 2014. Tools for Scientific Exploitation of Sentinel Data @ Copernicus Services in the Sentinel Era, Benefits for Eastern Europe Conference

Va multumesc pentru atentie !



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