Satellite data providing transparent and independent information

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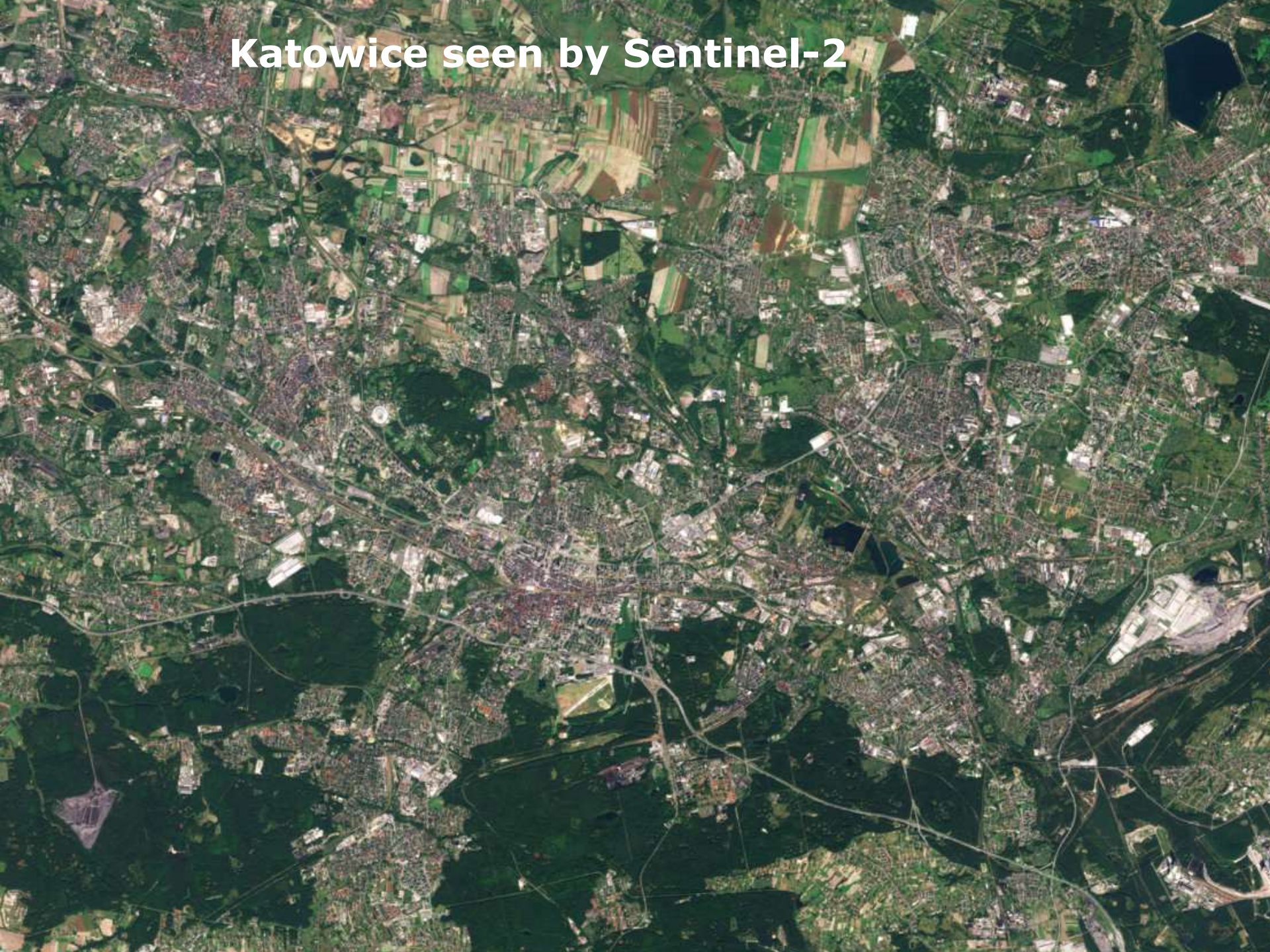
Transparent Forests @ COP-24 | 5 Dec 2018 | Katowice

CEOS Committee on Earth Observation Satellites

GEO GROUP ON EARTH OBSERVATIONS

GFOI


Katowice seen by Sentinel-2

A New Generation of Data Sources …

Sent-1A/B | Sent-2A/B | Sent-3A/B | Sent-4A/B | Sent-5/5P | Sent-6/Jason-CS

- Copernicus is a European space flagship programme led by the European Union
- Copernicus provides the necessary data for operational monitoring of the environment and for civil security
- Copernicus consists of an in-situ, a space and a services component, where ESA coordinates the space component
- Data policy: free and open access

➔ **https://scihub.copernicus.eu/**

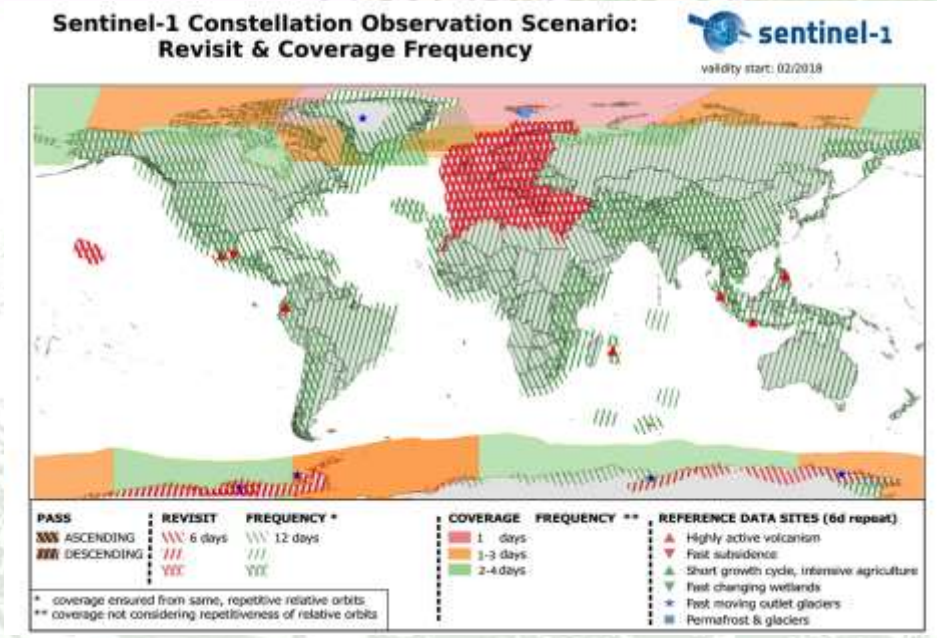
Core Data from COPERNICUS: the Sentinels

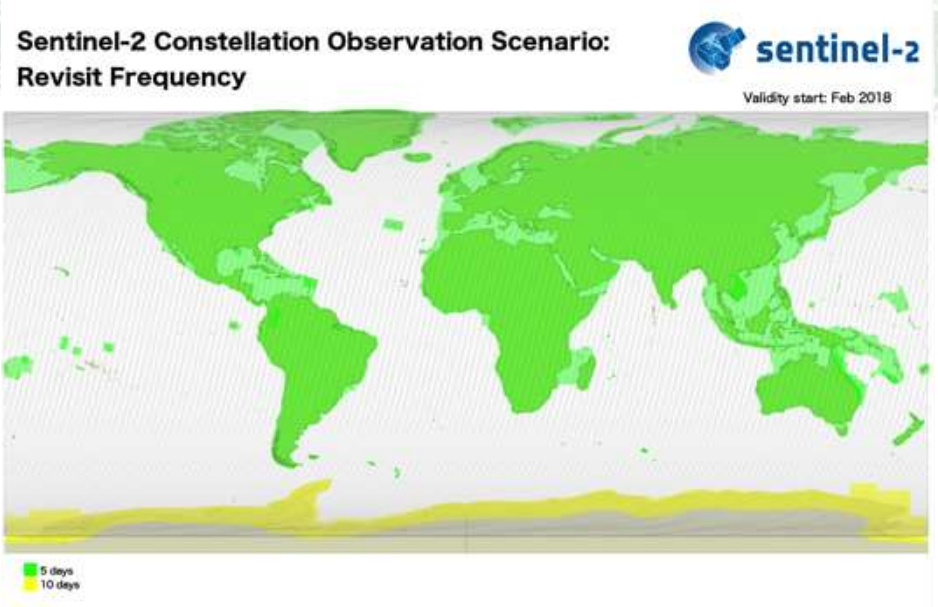
Sentinel-1A / -1B

- night and day radar imaging
- C-band SAR
- 12 days repeat cycle (1 satellite)

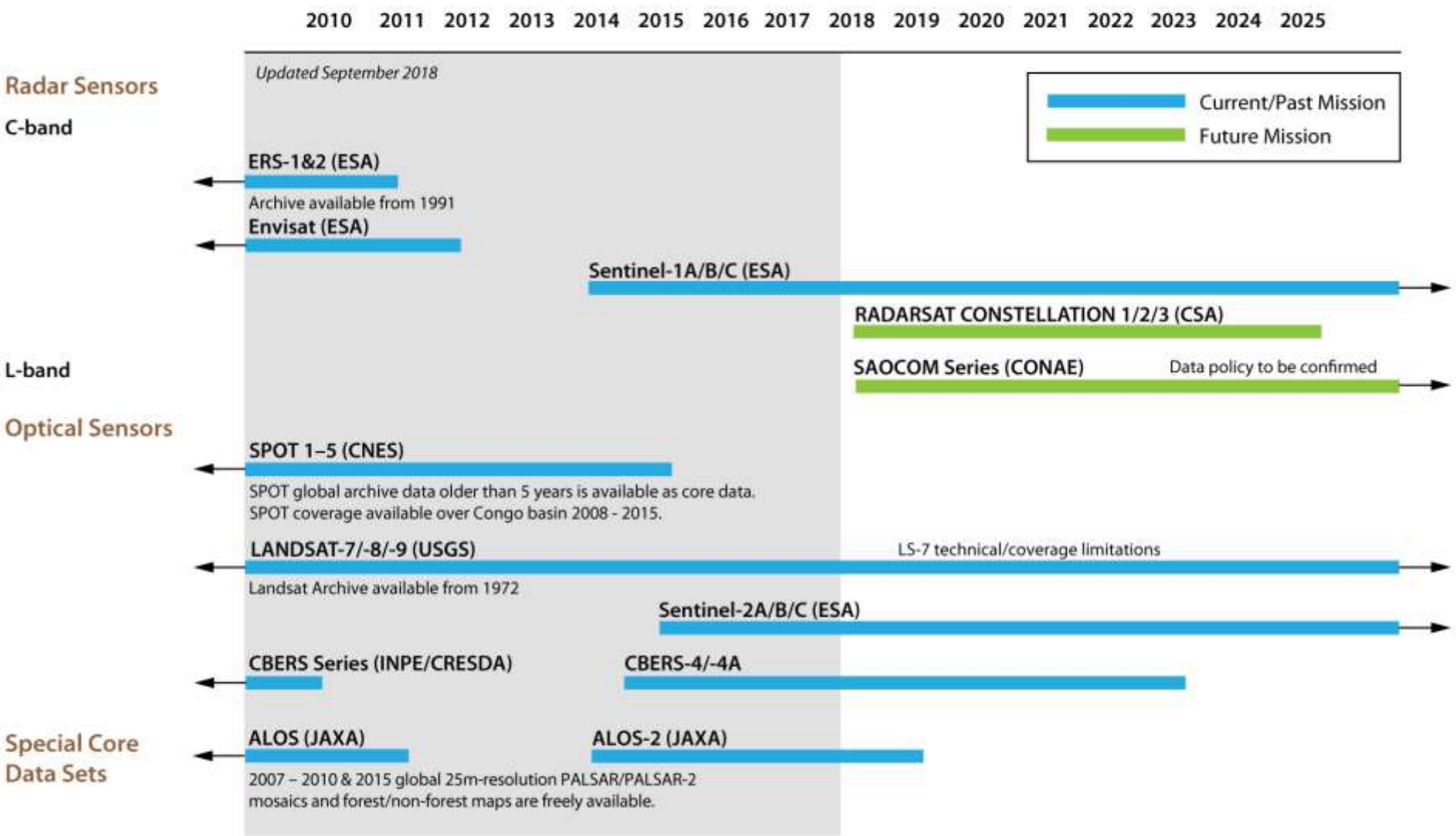
Sentinel-2A / -2B

- multispectral (13 bands)
- 10 days repeat cycle (1 satellite)

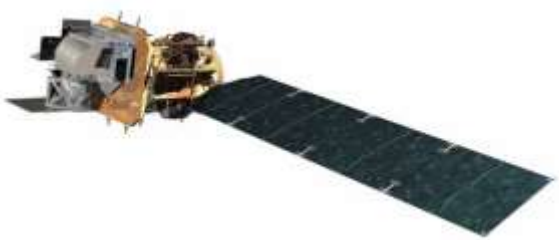




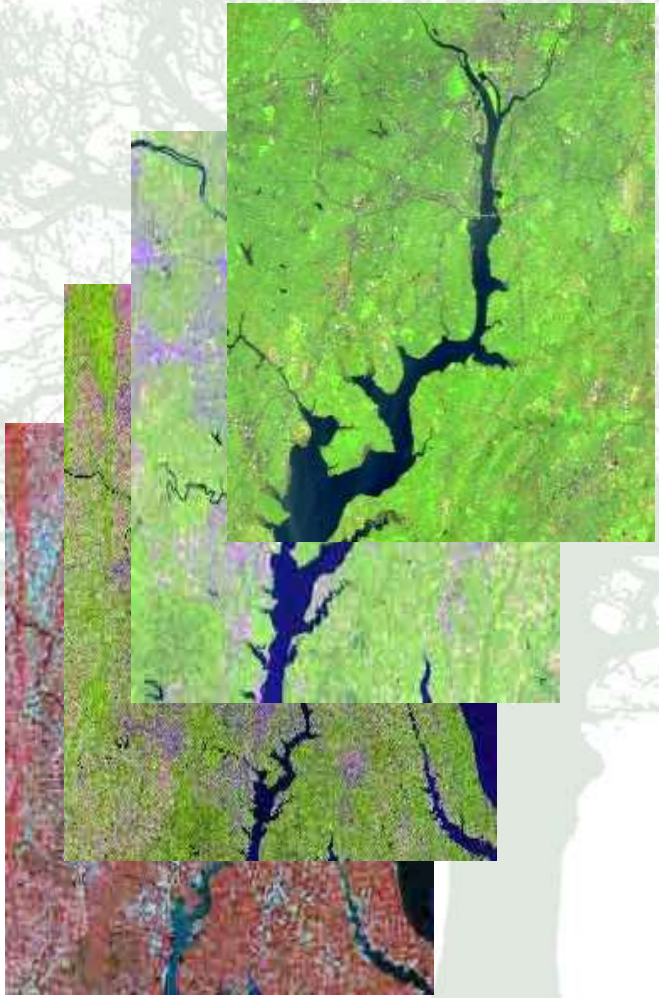
Sub-30m Core Satellite Data For Continuous, Annual, Global Coverage



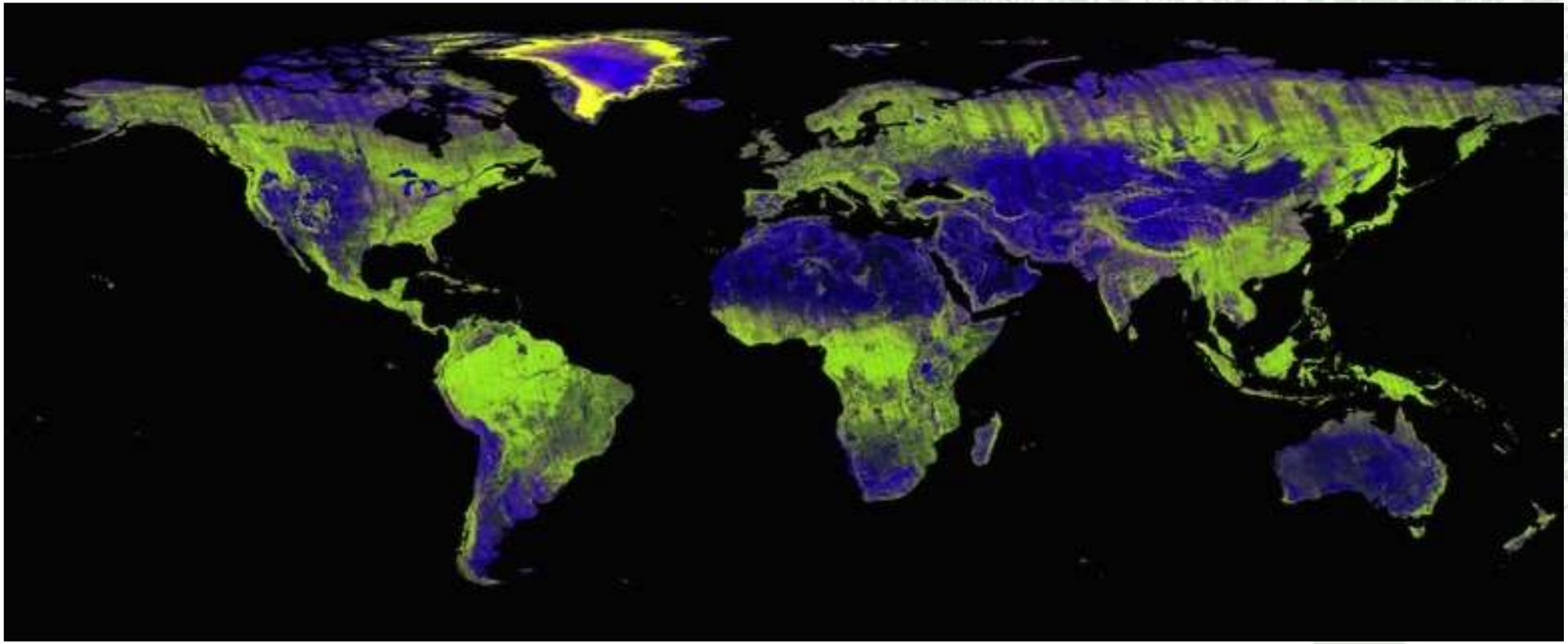
USGS/NASA Landsat



- 40 + years of Landsat programme
- In orbit Landsat 7 & 8 – acquisitions close to 100% of observation capacity over land
- Landsat 9 (fully Class-B rebuild of Landsat 8) for launch in Dec 2020
- Landsat 10 (Class B full spectrum) to launch ~2027-2028



ALOS-2 PALSAR-2 Global Mosaic

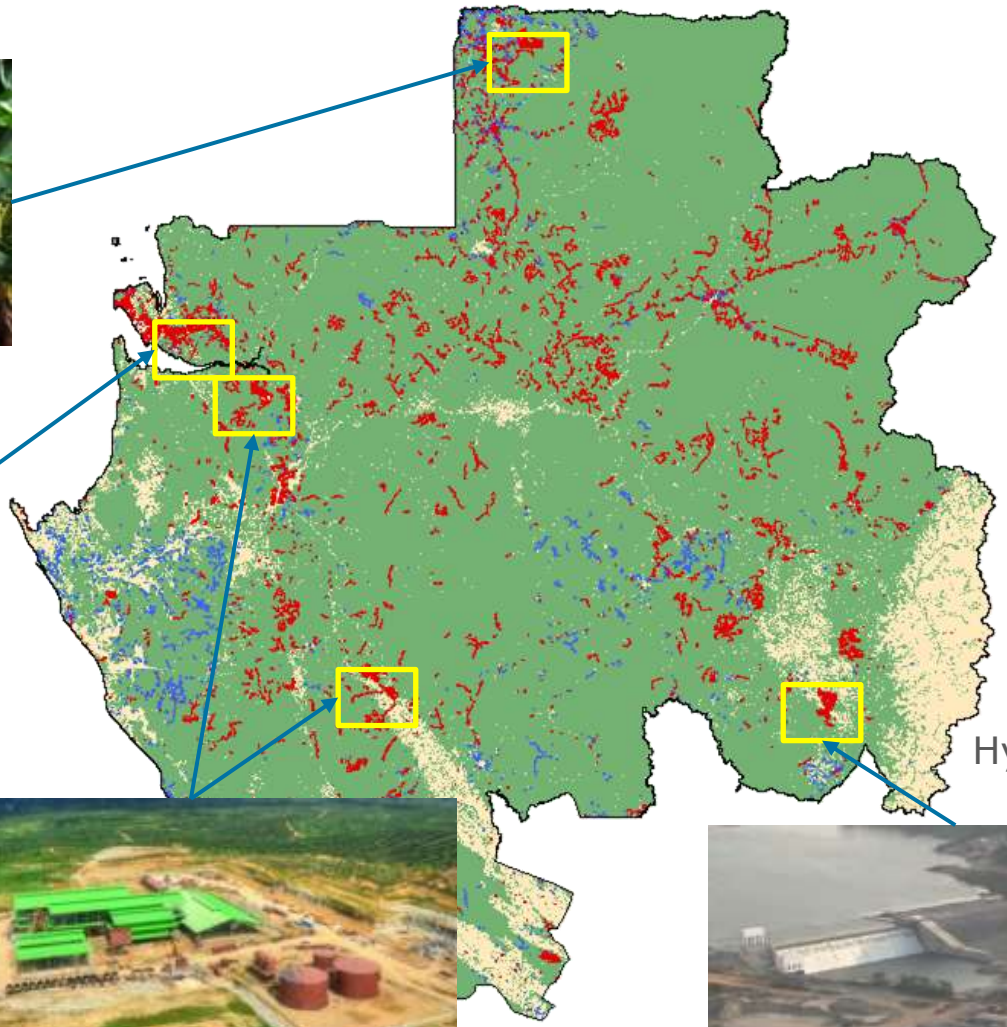


Annual mosaics of PALSAR-2, 25 m resolution, freely available

Gabon Land Cover 2015 and change 2010-2015

Rubber Plantation

Special Economic Zone

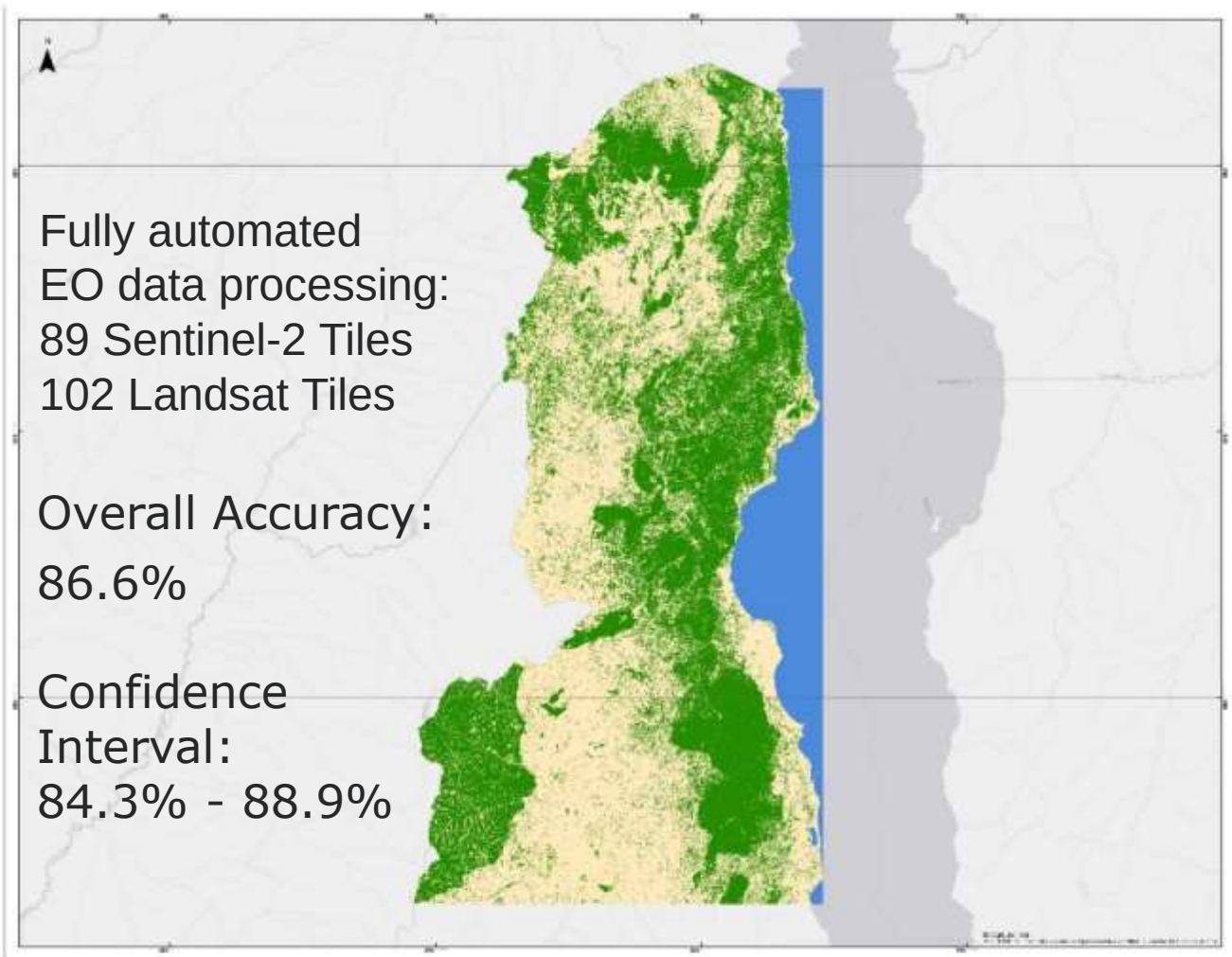


Development of large agri-business and infrastructure projects

Oil Palm Plantations

Hydropower Dam

Malawi – Forest Cover Maps for 2016



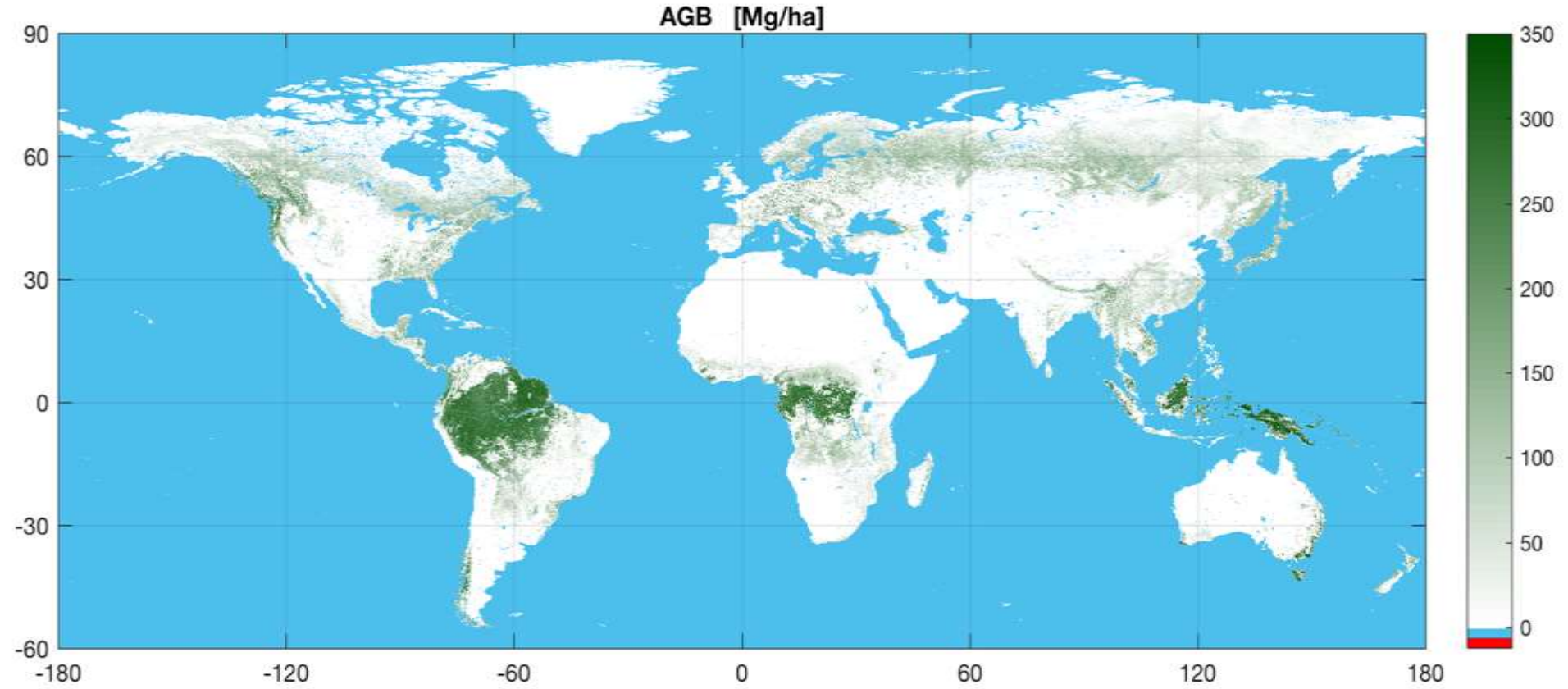
Monitoring of Expansion of Rubber Plantation with Sentinel-2 / Sentinel-1

Sentinel 2, 26 Dec 2015

Radar

Sentinel 1, 14 Jan 2017

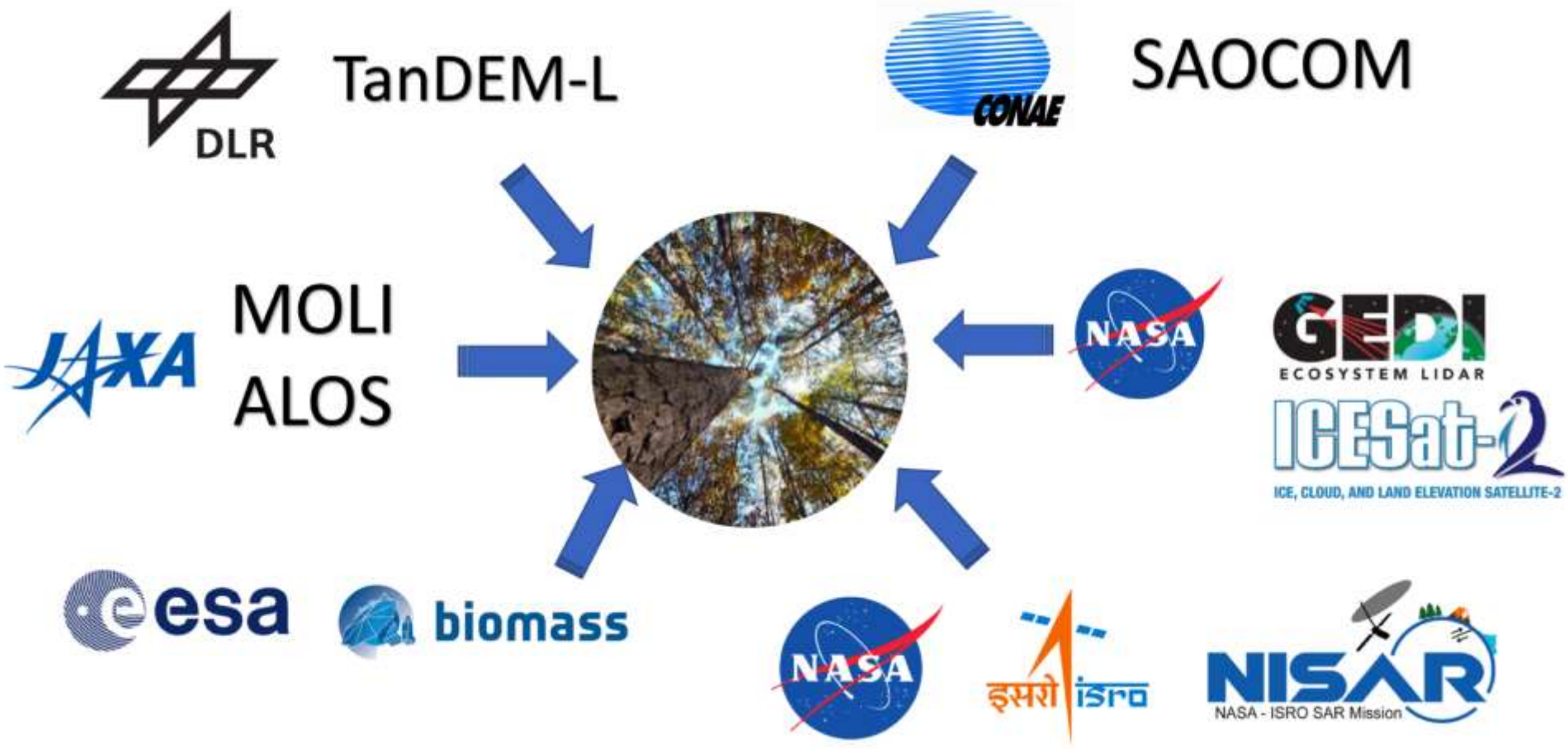
Forest Aboveground Biomass



Global AGB (Mg/ha) at 100m resolution in 2010

➔ http://globbiomass.org/products/global-mapping/

Golden Age for Biomass



Take Home Message

- Satellite data provide **transparency** and enable **comparability** in forest monitoring;
- Today **globally all forests** are covered multiple with optical and radar sensors annually enabling operational forest monitoring world-wide;
- EO data availability is secured for the **next decades**, where wall-to-wall mapping can be based on a **free and open data policy**;

➔ **GFOI is ready to share and collaborate**