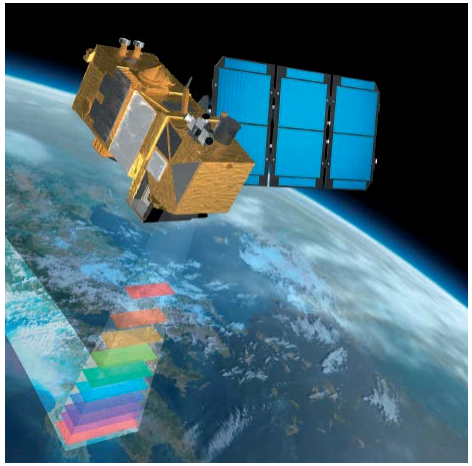
Sentinel-2 Mission Status



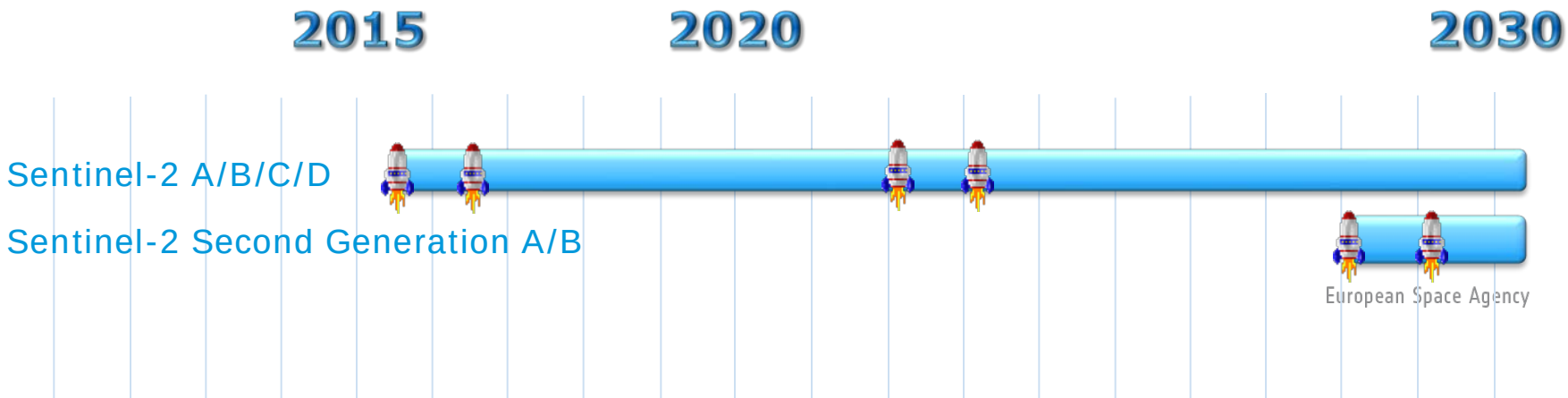
Ferran Gascon

Sentinel-2 Data Quality Manager

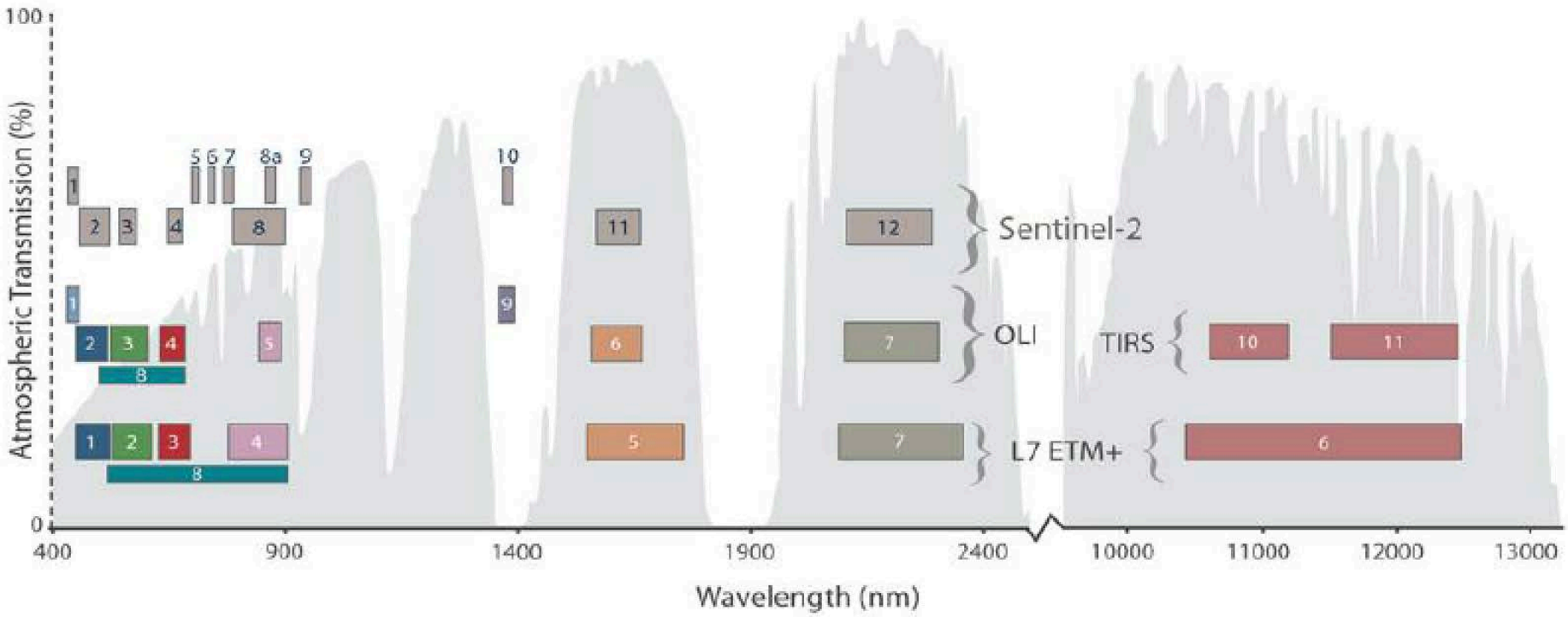
04 November 2015

Mission Overview

- Spacecrafts: 2 operating in twin configuration
- Orbit: Sun-synchronous at 786 km (14+3/10 revs per day), with LTDN 10:30 AM
- MultiSpectral Instrument (MSI): operating in pushbroom principle, filter based optical system
- Spectral bands: 13 (VIS–NIR–SWIR spectral domains)
- Spatial resolution: 10m / 20m / 60m
- Swath: 290 km

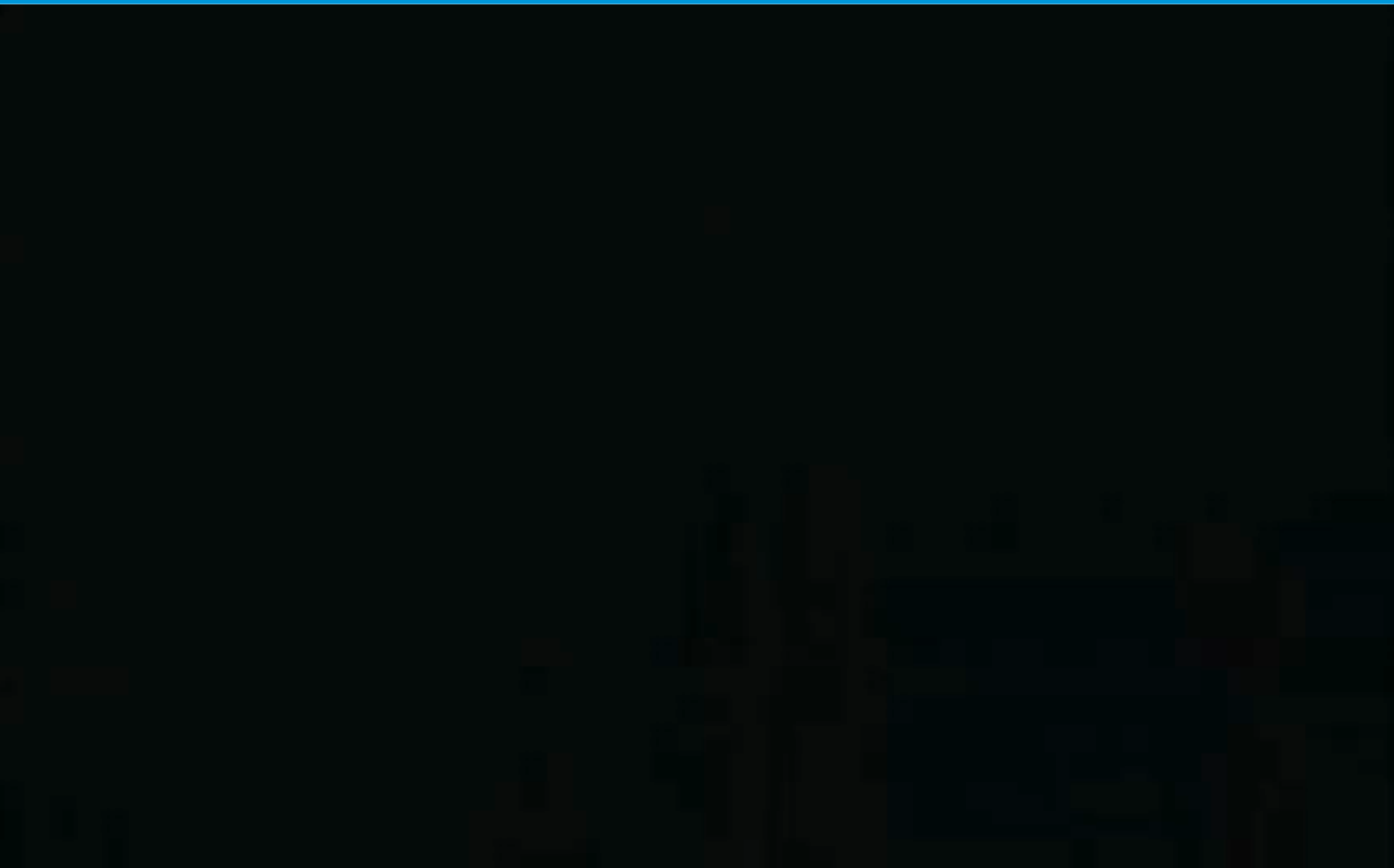


Spectral Bands and Spatial Resolution



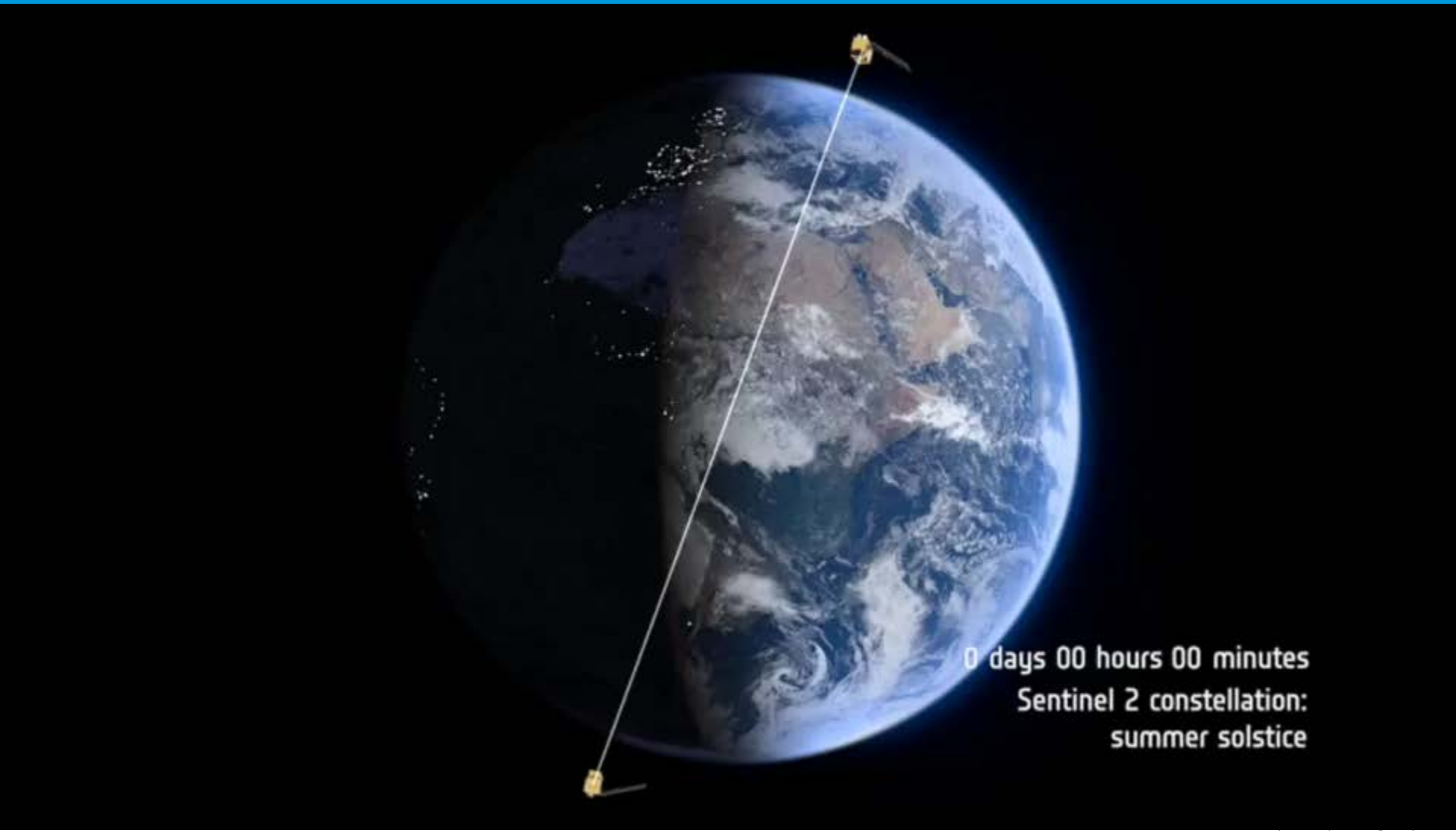
Just prior to launch

The moment of truth...



Satellite and Instrument

Coverage


0 days 00 hours 00 minutes
Sentinel 2 constellation:
summer solstice

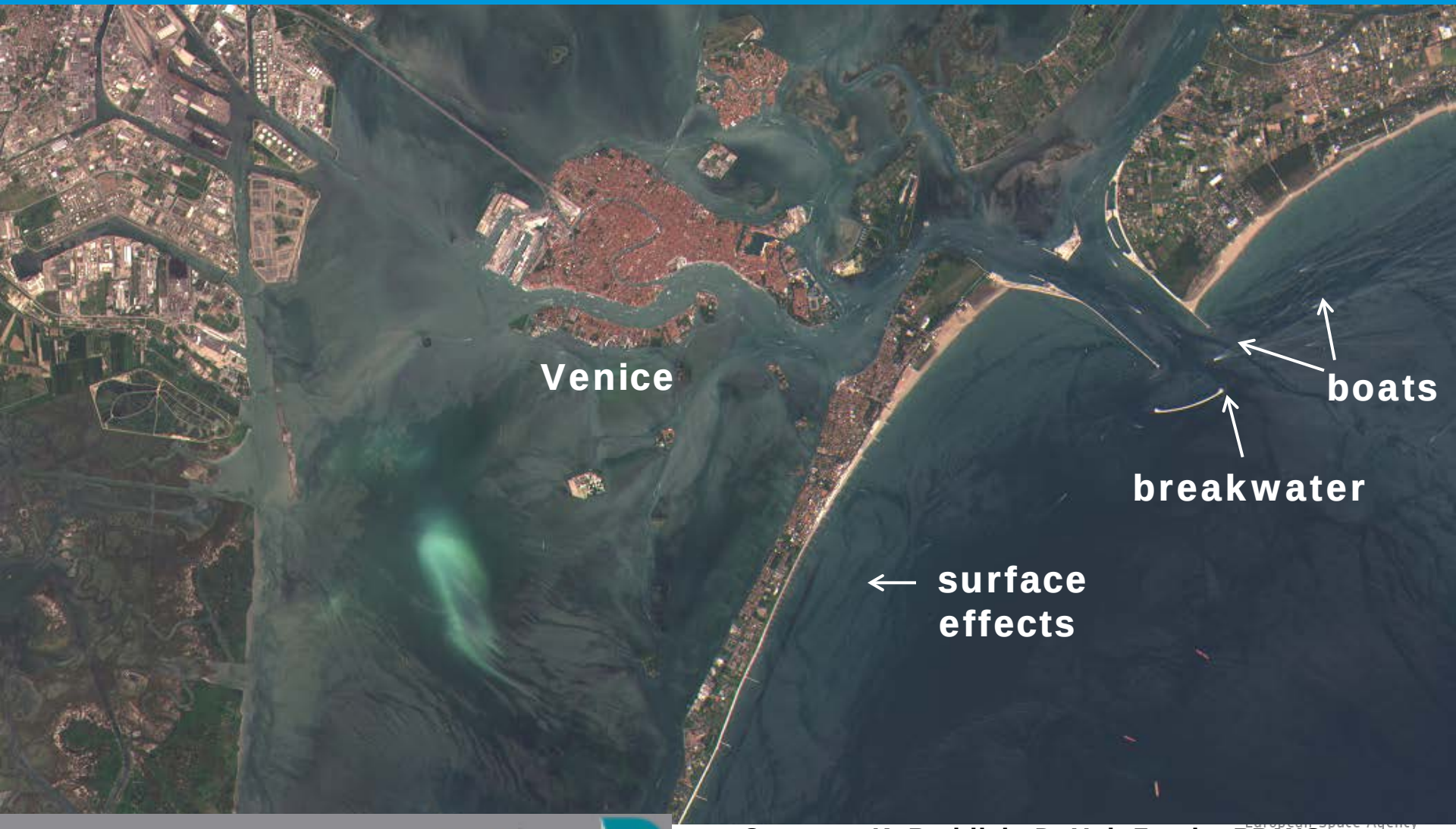
Sentinel-2 Products

Name	High-level Description	Production	Preservation Strategy	Volume
Level-1B	Top-of-atmophere radiances in sensor geometry	Systematic	Long-term	~27 MB (each 25x23km^2)
Level-1C	Top-of-atmosphere reflectances in cartographic geometry	Systematic	Long-term	~500 MB (each 100x100km^2)
Level-2A	Bottom-of-atmosphere reflectances in cartographic geometry (prototype product)	On user side* (using Sentinel-2 Toolbox**)	N/A	~600 MB (each 100x100km^2)

*: The possibility of a systematic global production of L2A is currently being explored.

**: https://sentinel.esa.int/web/sentinel/toolboxes/sentinel-2

First images...



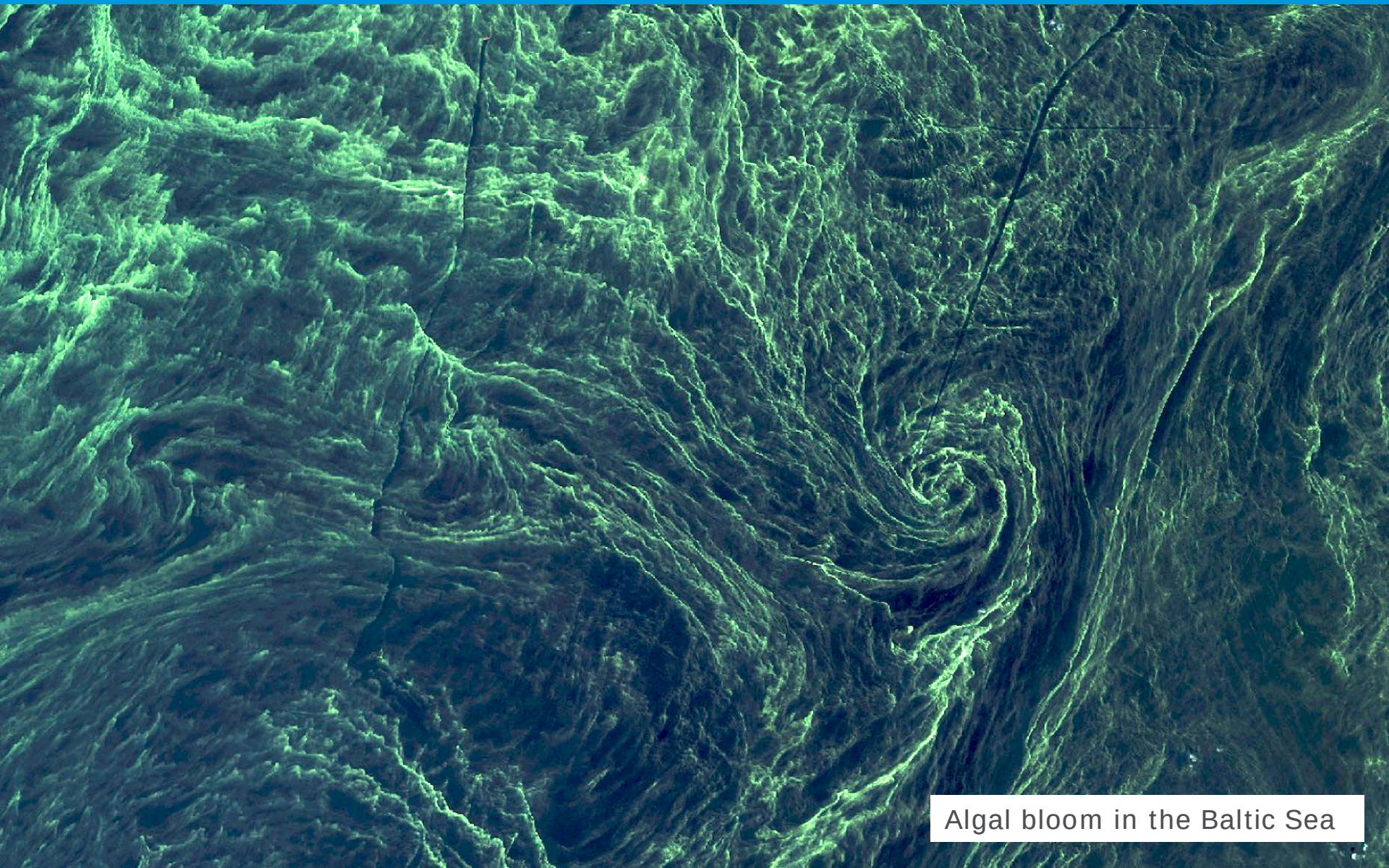
Courtesy K. Ruddick, D. V.d. Zande, RBINS

Copernicus Sentinel data 2015, RBINS processing

highroc.eu

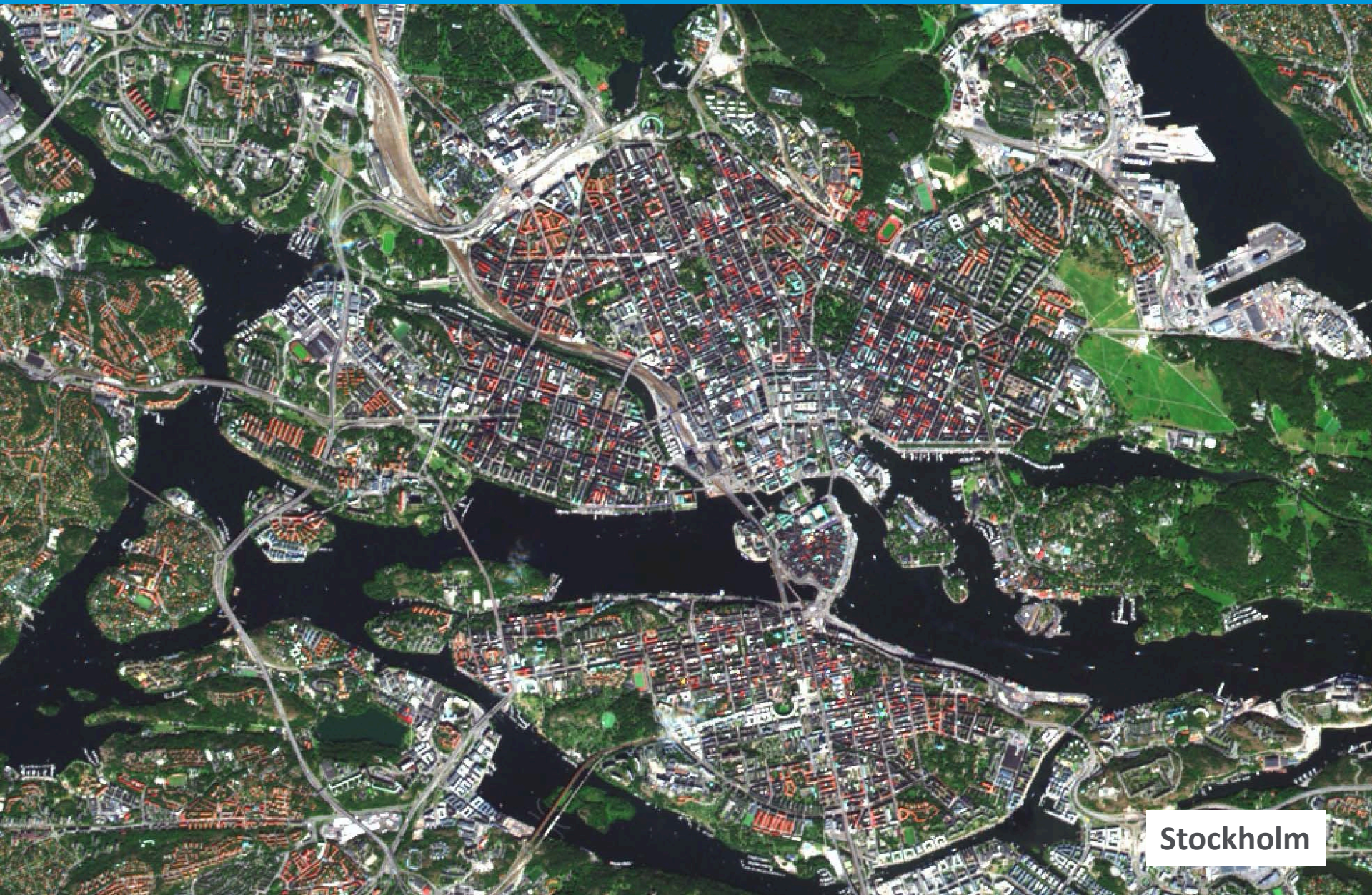
RBINS museum

First images...



Algal bloom in the Baltic Sea

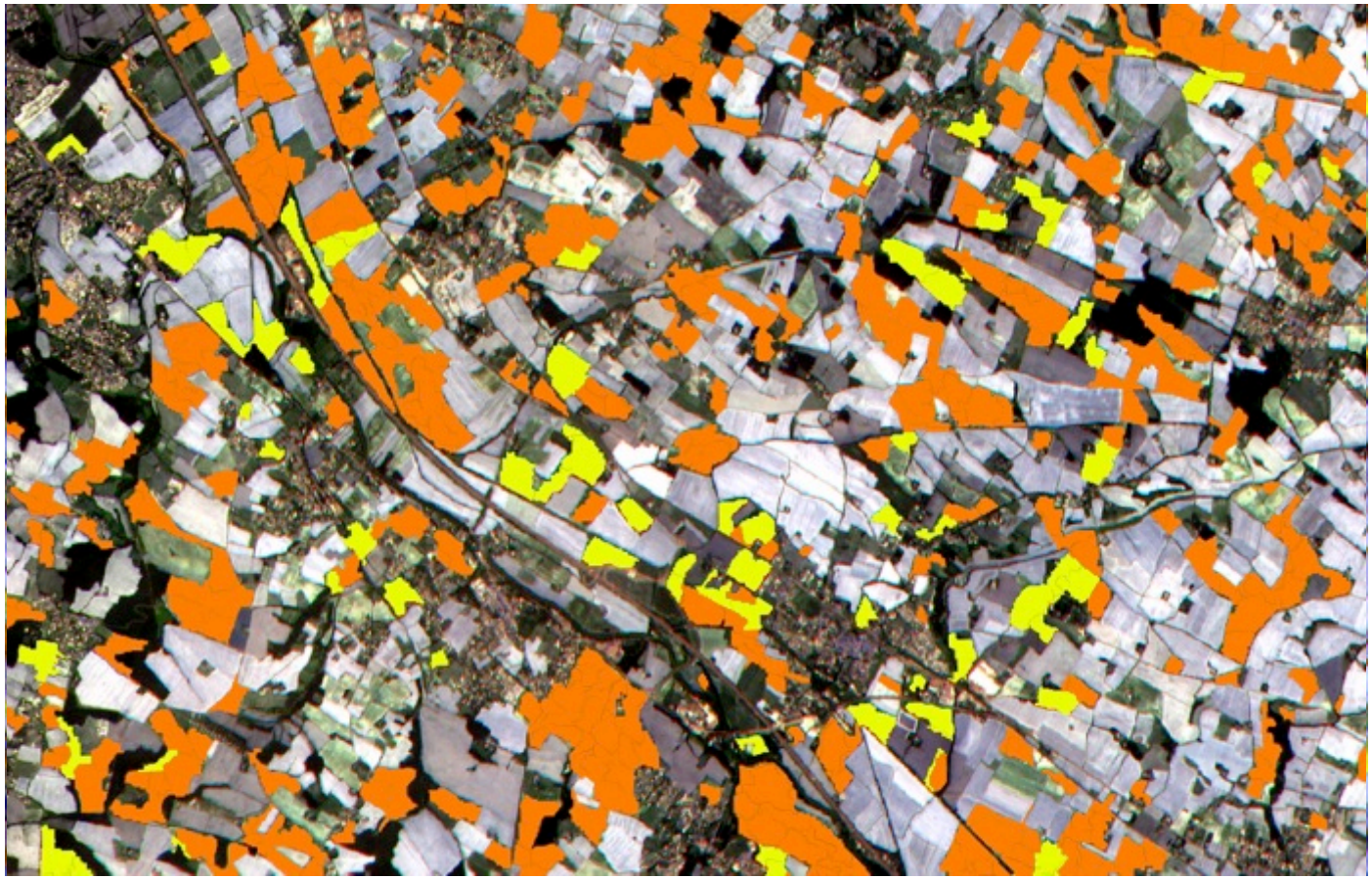
First images...



First images...

Toulouse area (France) - Sentinel-2 – 06 July 2015

New red-edge band to discriminate summer crops : maize vs sunflower



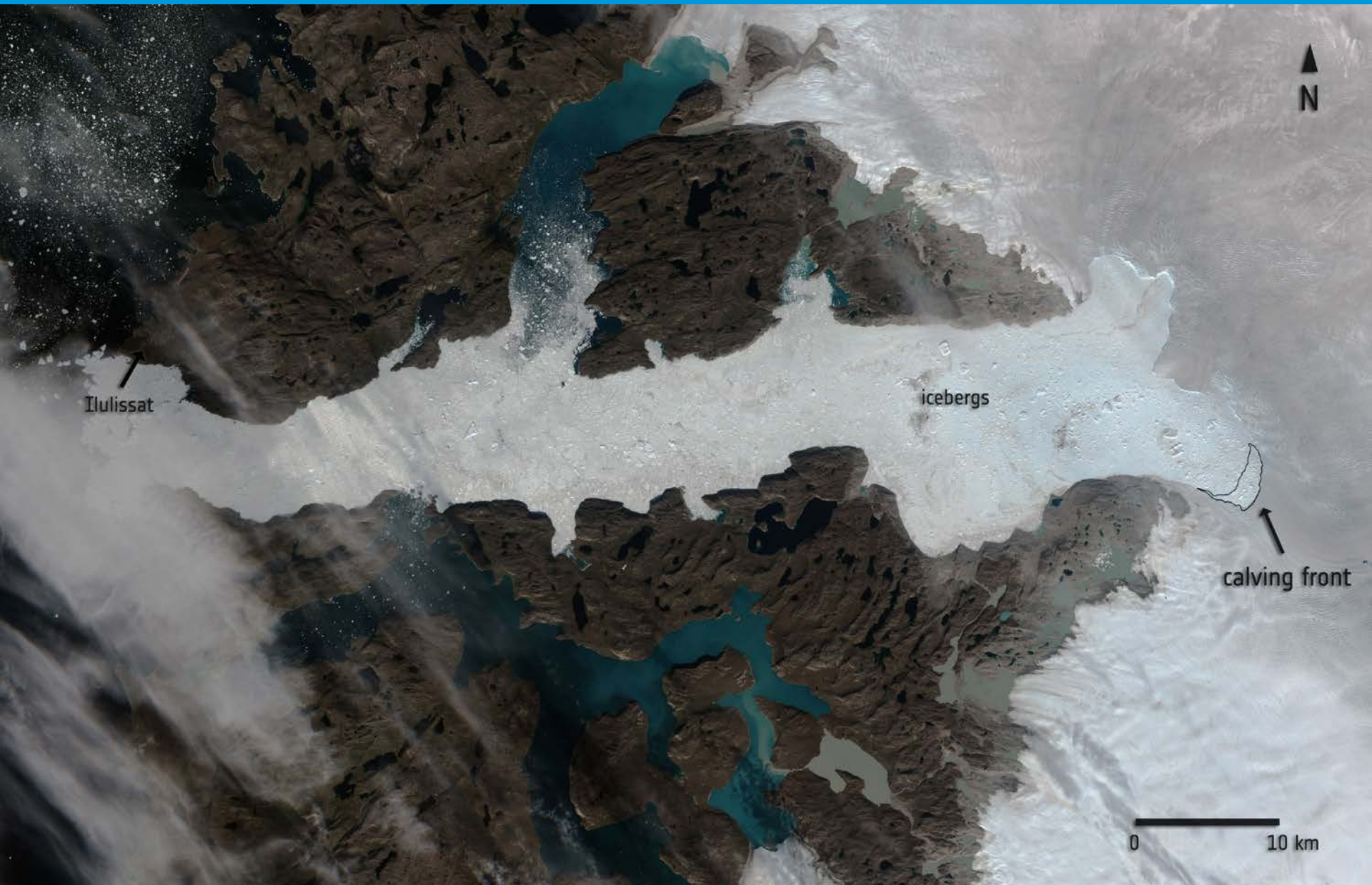
Summer Crops Map – 6 July 2015

- Sunflower
- Maize

Courtesy: S2AGri, UCL, Cesbio, ESA

First images...

First images...



First images...

Mission steps

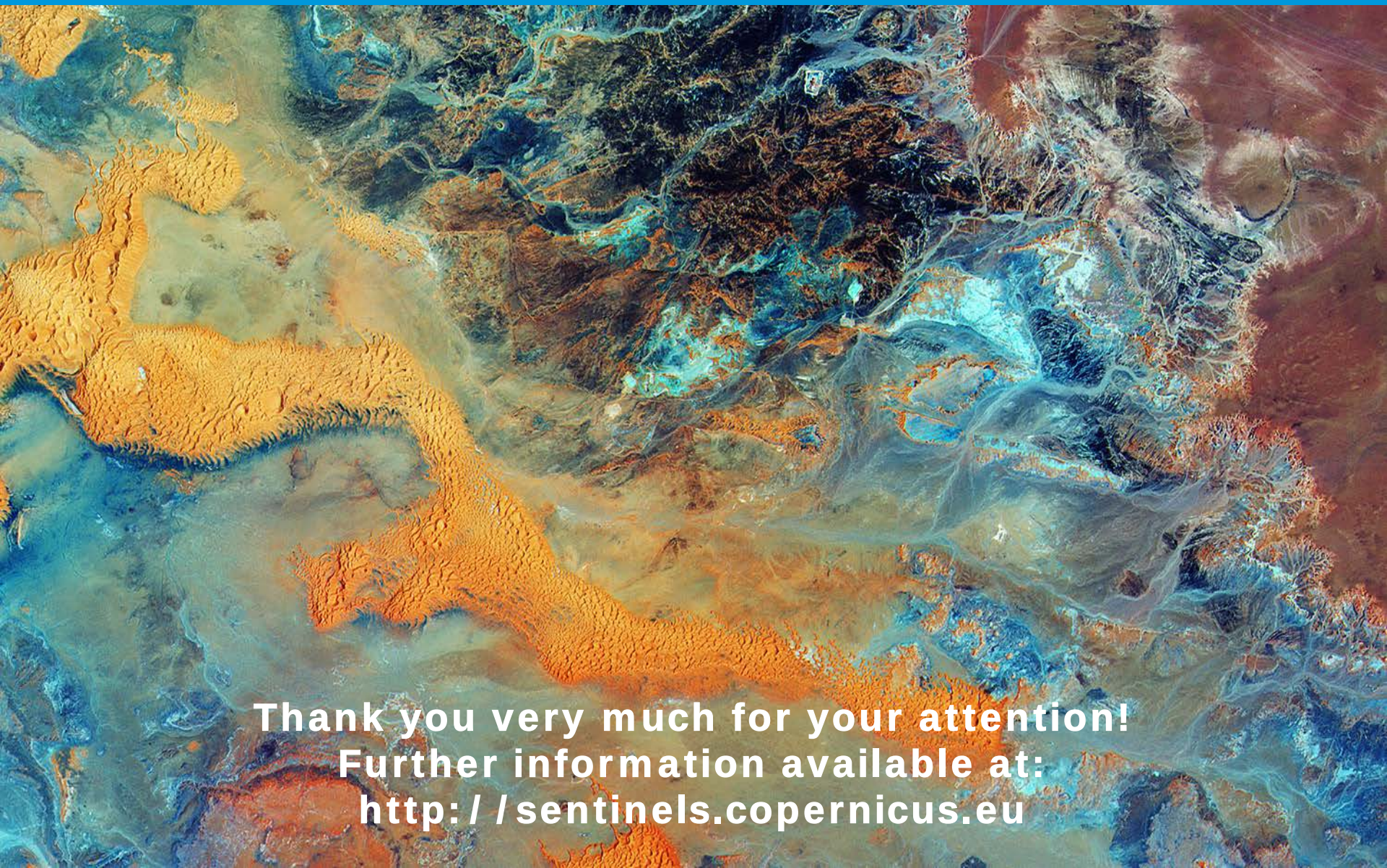
- ✓ Sentinel-2A has been launched 23 June 2015 from Kourou with Vega
- ✓ 1st image acquired 100 hours from launch - published 27 June 2015
- ✓ 1st key application presentation to the press @IGARSS 27 July 2015 by ESA and European Commission
- ✓ 11 August 2015: L1C sample products released
- ✓ Expert session 29-30 Sep 2015: first data assessment by selected experts
- ✓ 15 October 2015: In-orbit Commissioning Review
- ✓ 16 October 2015: hand-over of space segment responsibility from Project Manager @ESA/ESTEC to Mission Manager @ESA/ESRIN

- ✓ opening of data access to all users (via scihub.esa.int) – planned mid-November
- ✓ Continued ramp-up phase, with gradual increase of acquisition and processing capacity and further improvement of products quality
- ✓ Full operational readiness of S2A is planned for IOCR+9 months, ~ Jul 2016
- ✓ Sentinel-2B expected for launch in Q4 2016
- ✓ Sentinel-2 C/D units procurement started

Uniqueness of Sentinel-2

1. Systematic acquisition of all land surfaces and coastal waters.
2. High revisit frequency (5 days periodicity, same viewing direction).
3. Large swath (290*km*).
4. High spatial resolution (10*m* / 20*m* / 60*m*).
5. Large number of spectral bands (13 in VNIR-SWIR domain).
6. Free and open products.

Sentinel-2 Mission



Thank you very much for your attention!
Further information available at:
http://sentinels.copernicus.eu