

# ESA Recent EOP Update

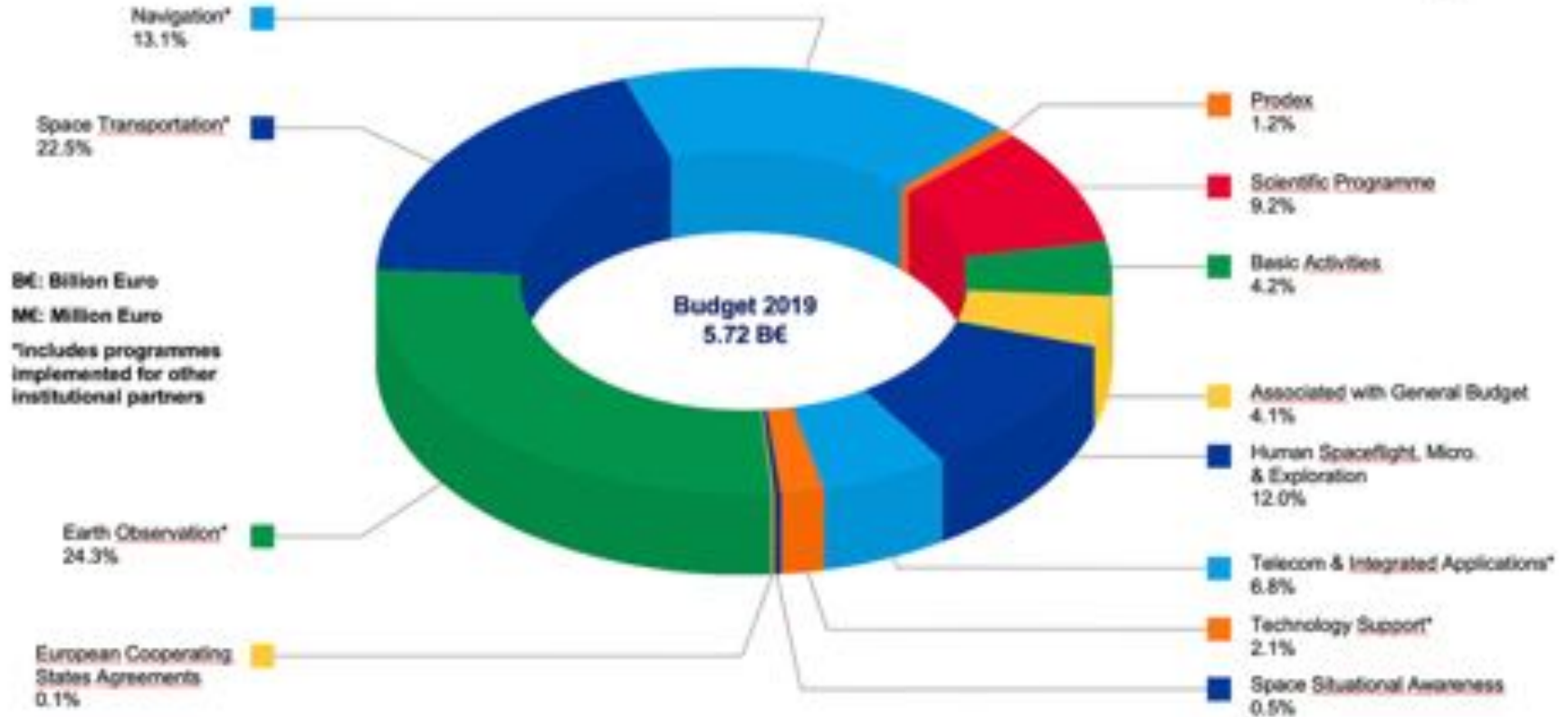
CGMS-47

Sochi, Russian Federation, 23 May 2019

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**ESA Climate Office (EOP-SC)**

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# ESA Budget by Domain for 2019: 5.72B€



# ESA Vision for EO



## “Taking the Pulse of our Planet”







# Sentinel-3B Launch

Plesetsk  
25 April 2018



# Aeolus Launch

Kourou  
22 August 2018

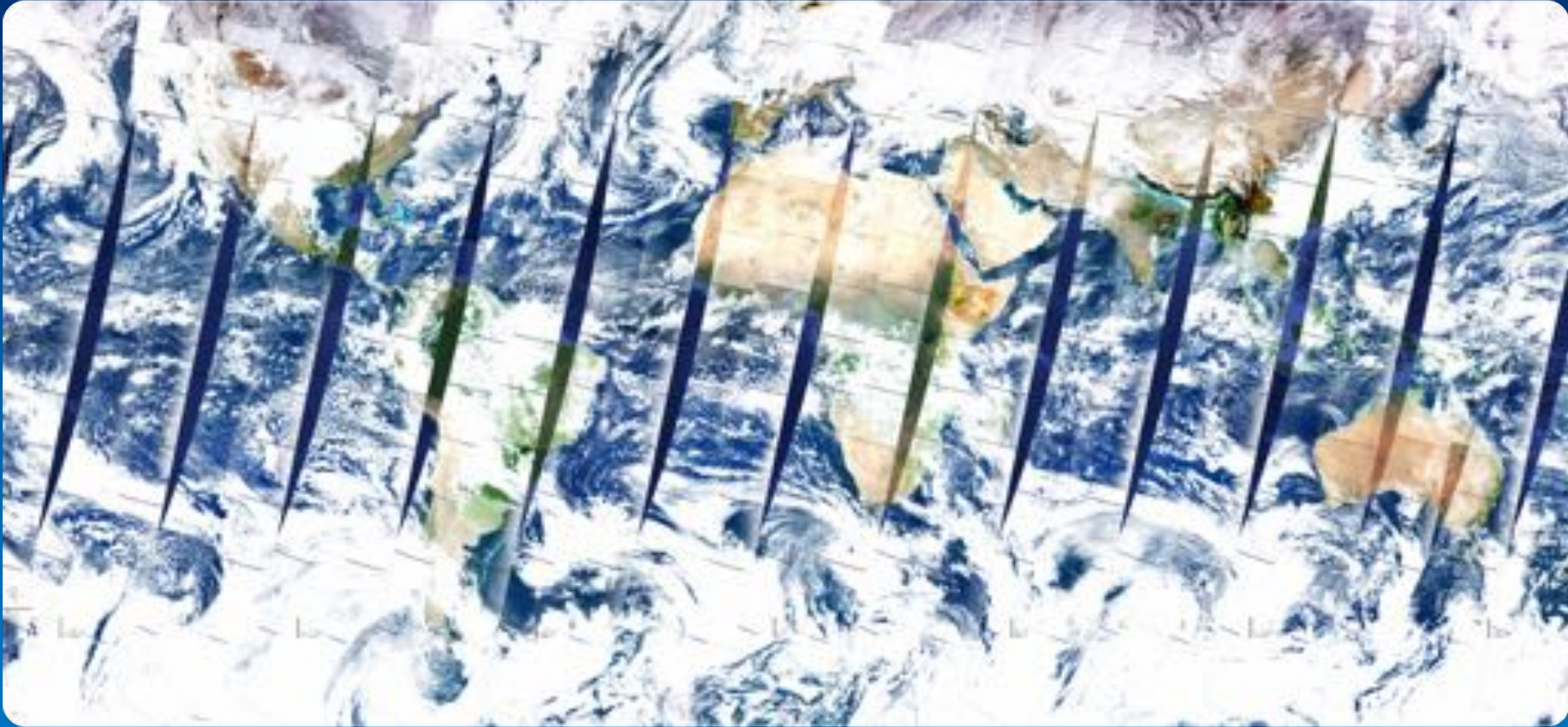


# MetOp-C Launch

Kourou  
6 November 2018



# Sentinel-3B handover to EUMETSAT - 28 Nov. 2018

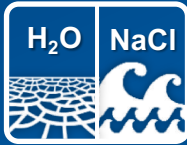


## Flying Missions

GOCE  
2009-2013



SMOS  
2009



CryoSat  
2010



Swarm  
2013



Aeolus  
2018



Science &  
Innovation



4.700+  
Reg. Users

CryoSat and SMOS mission extensions were approved until 2021



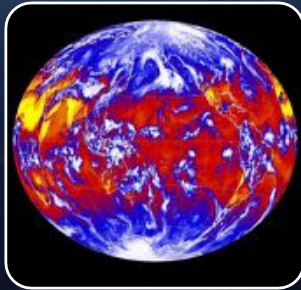
# Earth Explorer 9 – Two Candidates



Launch around 2025

## FORUM

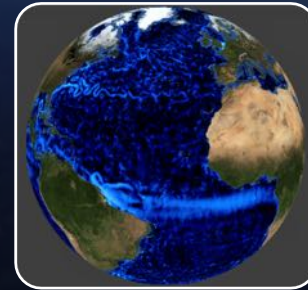
Far-infrared Outgoing Radiation  
Understanding and Monitoring



Benchmark measurements will improve our understanding of the greenhouse effect and contribute to climate change assessments accuracy

## SKIM

Sea-surface Kinematics  
Multiscale monitoring



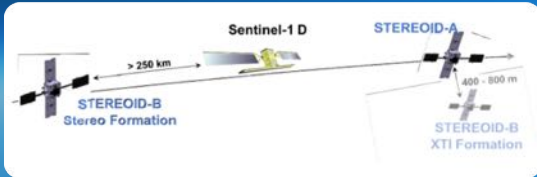
Will carry novel wide-swath scanning multibeam radar altimeter to measure ocean-surface currents with Doppler technique





# Earth Explorer 10 – Three Candidates

## STEREIOD

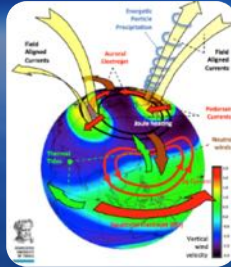


Bistatic SAR as passive followers of Sentinel-1  
Two <500kg spacecraft

### Applications

- Cryosphere
- Oceanography
- Geosphere

## Daedalus



Explore mesosphere, lower thermosphere & Ionosphere

Four cubesats at 120 km altitude

Focus on temperature, heating processes & composition structure

## G-CLASS



Science on daily water cycle

Geostationary C-band SAR

Benefits for weather forecasting, hydrology, mountain cryosphere

**> 215.000**

registered users  
= tip of the iceberg



Land



Atmosphere



Ocean



Climate



Disaster



Security

## 6 operational services



**150 TB** satellite data  
distributed per day



**full, free & open**  
data policy

## 7 satellites flying

S1 S2 S3 S4 S5P S5 S6



## preparing Copernicus 2.0

# Copernicus – Sentinel Status

**S-1**



Radar

**A**

3 Apr. 2014

**B**

25 Apr. 2016

**C**

2022/23

**D**

> 2022/23

**S-2**



High Res.  
Optical

**A**

23 Jun. 2015

**B**

6 Mar. 2017

**C**

2022/23

**D**

> 2022/23

**S-3**



Medium Res.  
Optical &  
Altimetry

**A**

16 Feb. 2016

**B**

25 Apr. 2018

**C**

2023

**D**

> 2023

**S-4**



Atmospheric  
Chemistry  
(GEO)

**A**

2022

**B**

2027

**S-5P**



Atmospheric  
Chemistry  
(LEO)

**A**

13 Oct. 2017

**S-5**



Atmospheric  
Chemistry  
(LEO)

**A**

2021

**B**

2027

**C**

> 2027

**S-6**



Altimetry

**A**

2020

**B**

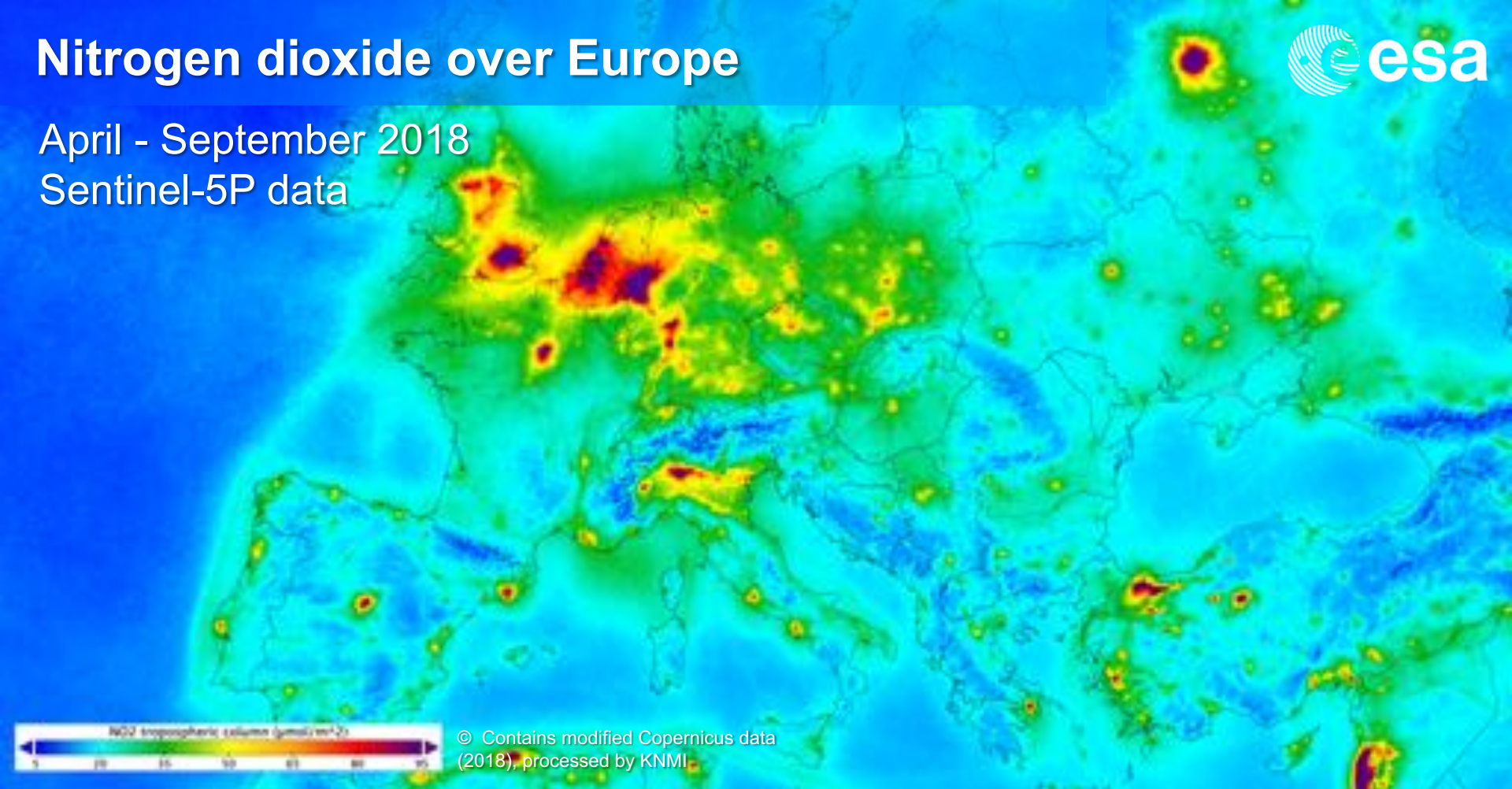
2025



# Nitrogen dioxide over Europe



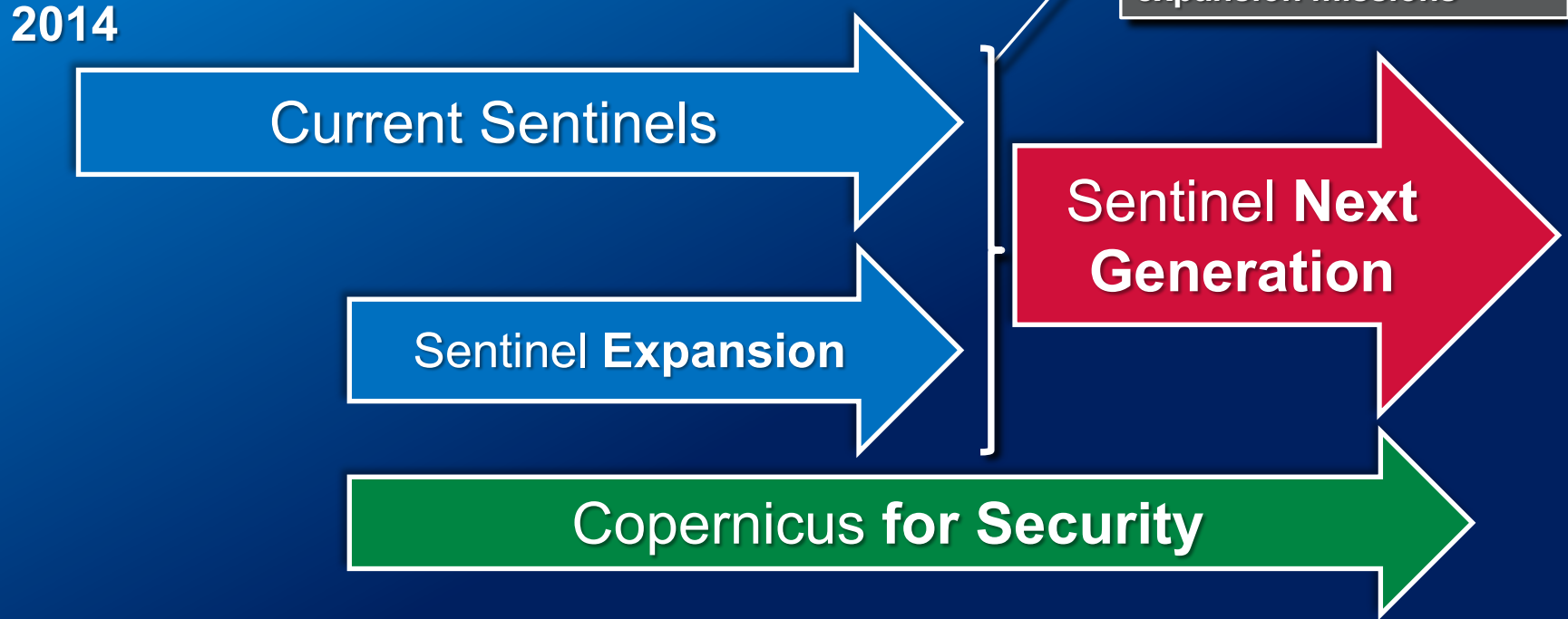
April - September 2018  
Sentinel-5P data



© Contains modified Copernicus data  
(2018), processed by KNMI



# Copernicus Space Component Evolution



## Six High Priority Candidate Missions Progress Status

- Preliminary Requirements Review concluded successfully for all 12 Phase A/B1 studies
- Consolidation of inputs for preparation of ESA ITTs for Phase B2/C/D/E1 contracts



# ESA Climate Change Initiative (CCI)

