ESA Recent EOP Update

CGMS-47
Sochi, Russian Federation, 23 May 2019

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ESA Budget by Domain for 2019: 5.72B€
ESA Vision for EO

“Taking the Pulse of our Planet”
A successful Track-Record
ESA Developed Earth Observation Missions

Satellites
15 in operation
25 under development
12 in preparation
Sentinel-3B Launch
Plesetzk
25 April 2018

Aeolus Launch
Kourou
22 August 2018

MetOp-C Launch
Kourou
6 November 2018
Sentinel-3B handover to EUMETSAT - 28 Nov. 2018
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

**STEREOID**
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
Copernicus: Global European Leadership in EO

> 215.000 registered users = tip of the iceberg

150 TB satellite data distributed per day

full, free & open data policy

6 operational services
- Land
- Atmosphere
- Ocean
- Climate
- Disaster
- Security

7 satellites flying
- S1
- S2
- S3
- S4
- S5P
- S5
- S6

preparing Copernicus 2.0
### Copernicus – Sentinel Status

<table>
<thead>
<tr>
<th>Sentinel</th>
<th>Description</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1</td>
<td>Radar</td>
<td>3 Apr. 2014</td>
<td>&gt; 2022/23</td>
</tr>
<tr>
<td>S-3</td>
<td>Medium Res. Optical &amp; Altimetry</td>
<td>16 Feb. 2016</td>
<td>2027</td>
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<tr>
<td>S-4</td>
<td>Atmospheric Chemistry (GEO)</td>
<td>2022</td>
<td>2027</td>
</tr>
<tr>
<td>S-5P</td>
<td>Atmospheric Chemistry (LEO)</td>
<td>13 Oct. 2017</td>
<td>2027</td>
</tr>
<tr>
<td>S-5</td>
<td>Atmospheric Chemistry (LEO)</td>
<td>2021</td>
<td>&gt; 2027</td>
</tr>
<tr>
<td>S-6</td>
<td>Altimetry</td>
<td>2020</td>
<td>2025</td>
</tr>
</tbody>
</table>

*Note: The status of S-6 is not specified.*
Nitrogen dioxide over Europe

April - September 2018
Sentinel-5P data
Next-Gen. missions will replace current & expansion missions

2014

Current Sentinels

Sentinel Expansion

Copernicus for Security

Sentinel Next Generation
Copernicus 2.0 – New Monitoring Missions

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)