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European Union

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**ESPACE 28
INTER-REP 20**

COVER NOTE

Subject: Update on the European activities of the European Organisation for the
Exploitation of Meteorological Satellites
- Powerpoint presentation (Space WP meeting 1.03.2024)

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Update EUMETSAT activities and European Agenda

Phil EVANS
Director-General

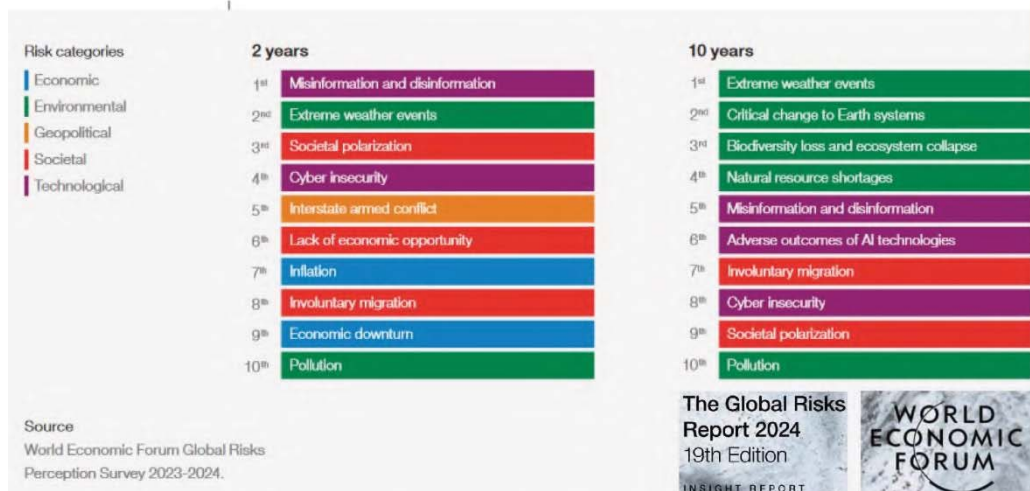
Brussels EU Space Council WG, 1 March 2024





What we observe matters !

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Economic losses and fatalities from weather- and climate-related events in Europe

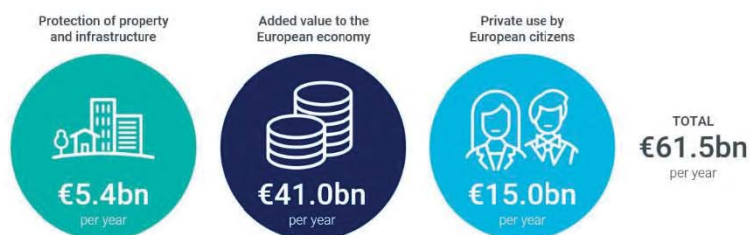


The EU adaptation strategy aims to build resilience and ensure that Europe is well prepared to manage the risks from and adapt to the impacts of climate change, including limiting economic losses and other harm. All regions of Europe face economic losses and fatalities from weather and climate extremes every year. To support policy processes on climate change adaptation, data on these losses must be collected and reported across EEA member countries and in a coherent way over decades.

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PDF

Impact of Metop observations on EU-27 economies



- Between 1980 and 2020, total economic losses from weather- and climate-related events amounted to EUR 450-520 billion (in 2020 euros) in the 32 EEA member countries
- Based on data from two separate sources, fatalities during the same period amounted to between 85,000 and 145,000.



Current operational EUMETSAT satellite systems

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SENTINEL-3A & -3B (98.7° incl.)
Low Earth, sun-synchronous orbit
Copernicus satellites delivering marine data services from 814km altitude

JASON-3 (63° incl.)
Low Earth, non-synchronous orbit
Ocean surface topography mission (shared with CNES, NOAA, NASA and Copernicus)

Sentinel-6 Michael Freilich (66° incl.)
Low Earth, non-synchronous orbit
Copernicus ocean surface topography mission (shared with NASA, NOAA, ESA and Copernicus with support from CNES)

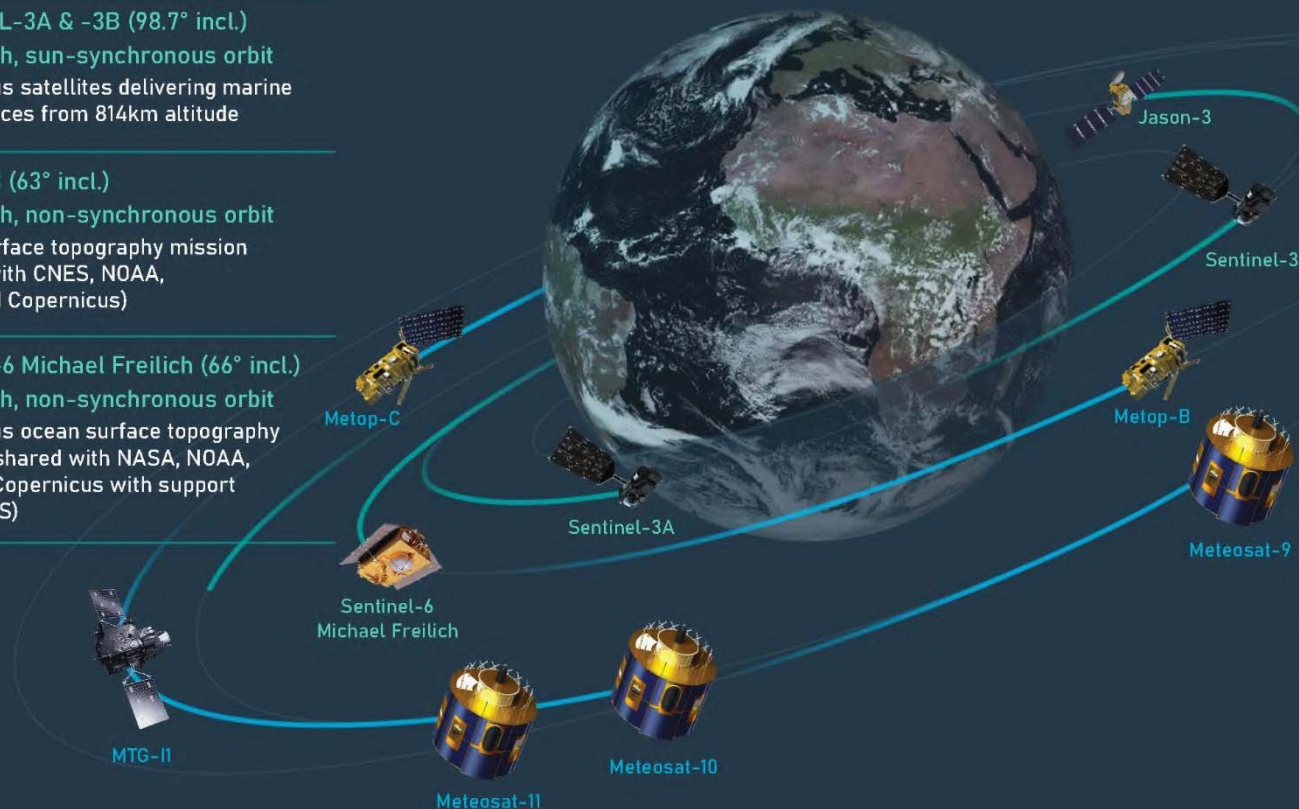
METEOSAT-10, -11
Geostationary orbit
Meteosat Second Generation

Two-satellite system
Full disc imagery mission (15 mins) (Meteosat-11 (0°))
Rapid scan service over Europe (5 mins) (Meteosat-10 (9.5° E))

METEOSAT-9 (45.5° E)
Geostationary orbit
Meteosat Second Generation providing Indian Ocean data coverage

METOP-B & -C (98.7° incl.)
Low Earth, sun-synchronous orbit
EUMETSAT Polar System (EPS)/ Initial Joint Polar System

MTG-II
Geostationary orbit
Meteosat Third Generation imaging mission, currently in commissioning phase





2023 : First Image of MTG-I1

Europe has
started the
deployment of its
new generations
of satellite
systems

MTG – A game
changer for
weather and
climate over
Europe and Arica

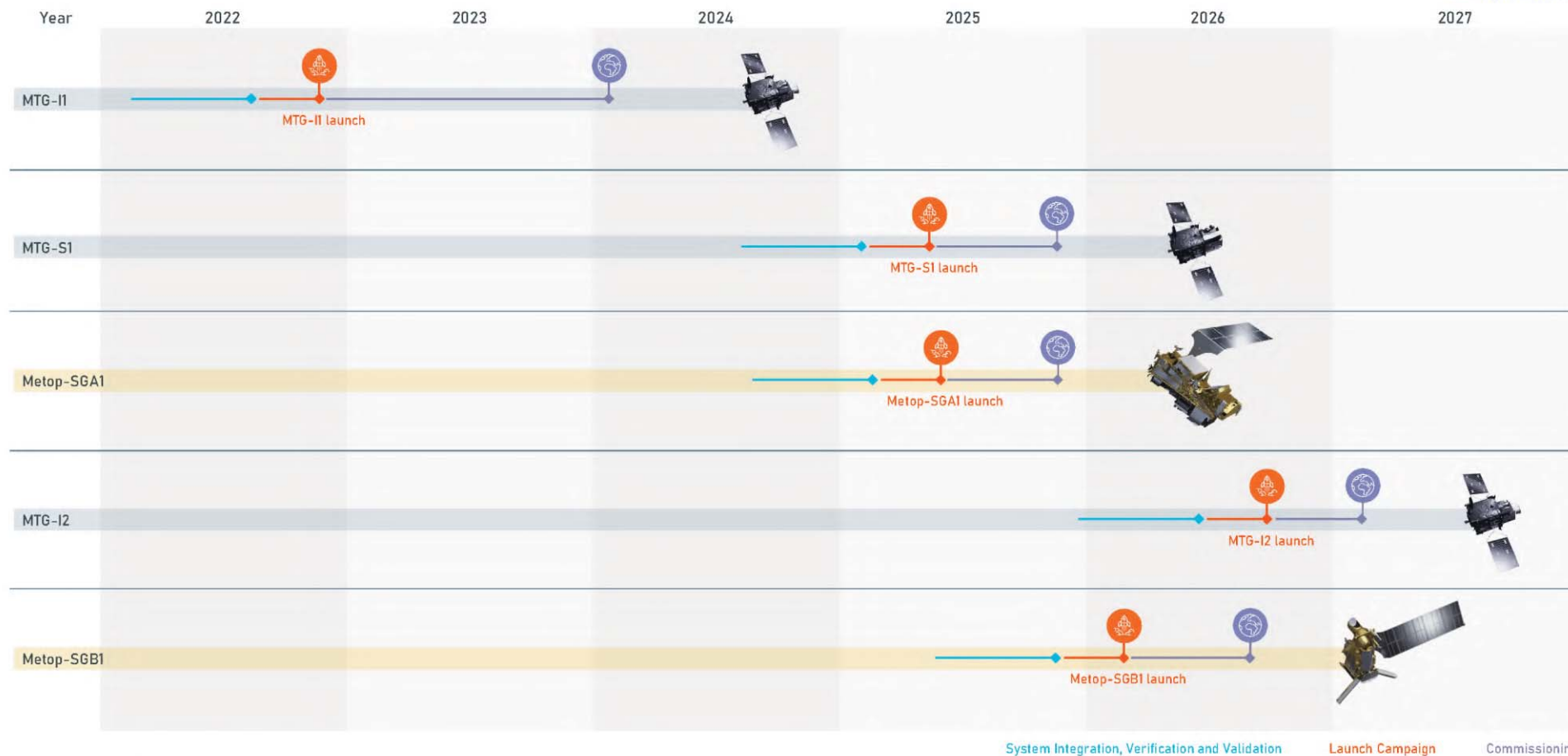
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And it is only the beginning ...

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EUM/SCIR/VWG/18/992176, v5C Draft, 10 January 2024



Situation on European launchers

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With such an agenda, the situation of launchers in Europe is an issue for EUMETSAT

Regular interactions with Arianespace, EC and ESA to assess the situation and adopt best strategy for EUMETSAT launch services





New opportunities to complement MTG and EPS-SG in 2025-2040

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- **EPS-Aeolus**, unique European technological expertise to improve Numerical Weather Forecasts. Decision expected in 2025
- **EPS-Sterna**, the first public operational constellation of micro-satellites for meteorology. Decision expected in 2025
- **Ocean altimetry follow-on programme** highly relevant for the detection of global sea level rise and of climate change in cooperation with Copernicus (Sentinel-6 and Sentinel-3 NG Topo). Decision expected in 2026
- **R0 commercial data buy** – Looking at opportunities provided by the private section, rather limited in Europe at the moment





The Economic value of EPS-Aeolus and EPS-Sterna

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There is a clear and compelling socio-economic benefit case for both EPS-Aeolus and EPS-Sterna – delivering additional and more capable satellites, filling gaps and providing global coverage not available by other means.

EPS-Aeolus and EPS-Sterna will further promote Europe's leadership in earth observations from space, pioneering new approaches that will inspire other nations to follow.

	EPS-Aeolus	EPS-Sterna	EPS-Aeolus and EPS-Sterna
Operational lifetime	2032–2042	2029–2042	
Lifetime net present costs	688	641	1,329
Lifetime net present benefits	13,600	32,700	44,200
Benefit to cost ratios	20	51	33

Summary of lifetime net present costs, net present benefits (million Euros at 2024 e.c.) and benefit-to-cost ratios for EPS-Aeolus and EPS-Sterna.

Presented at 2024 e.c.



EUMETSAT

European Agenda

**A strong partner of the space
strategy for Europe supporting
EU political priorities**



EUMETSAT role in Copernicus 2.0 (DG DEFIS)

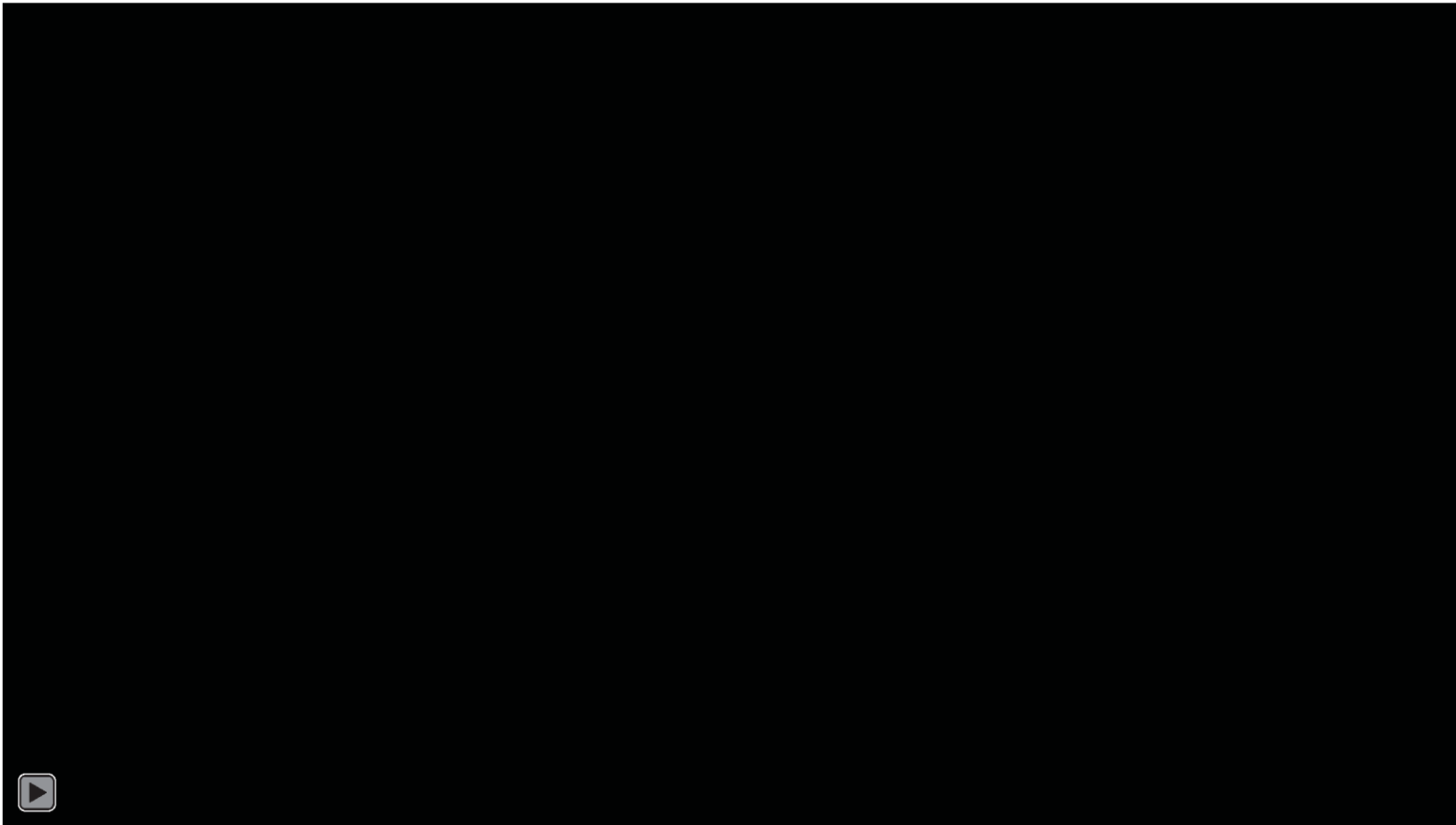
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Copernicus 1.0 (2014–2021)	Copernicus 2.0 (2021–2027)
Satellite Operations	Satellite Operations
<ul style="list-style-type: none">• Jason-3• Sentinel-3A/B• Sentinel-6 MF	<ul style="list-style-type: none">• Jason-3• Sentinel-3A/B/C/ (D)• Sentinel-6 MF/B• Sentinel-4A• Sentinel-5A• CO2M A/B/ (C)
Support to Technical Requirements	Contributions to Sentinel GS developments
<ul style="list-style-type: none">• CO2M, establishing requirements• CIMR, CRISTAL support activities	<ul style="list-style-type: none">• CO2M Ground Segment developments• Sentinel-3 NG OPT [+ S3 NG TOPO, S6 NG]• CIMR, CRISTAL – global topo/ocean/atmospheric processors
Third Party Data Services	Third Party Data Services
Copernicus Data Access Services	Copernicus Data Access Services
Communication	User uptake, communication & awareness



Destination Earth Data Lake (DG CONNECT)

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Other European activities

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DG RTD Call on the use of data from new generations of meteorological satellites in Horizon Europe

DG INTPA Programme to foster the use of MTG data in Africa

DG JRC Coordination on EO Knowledge Centre

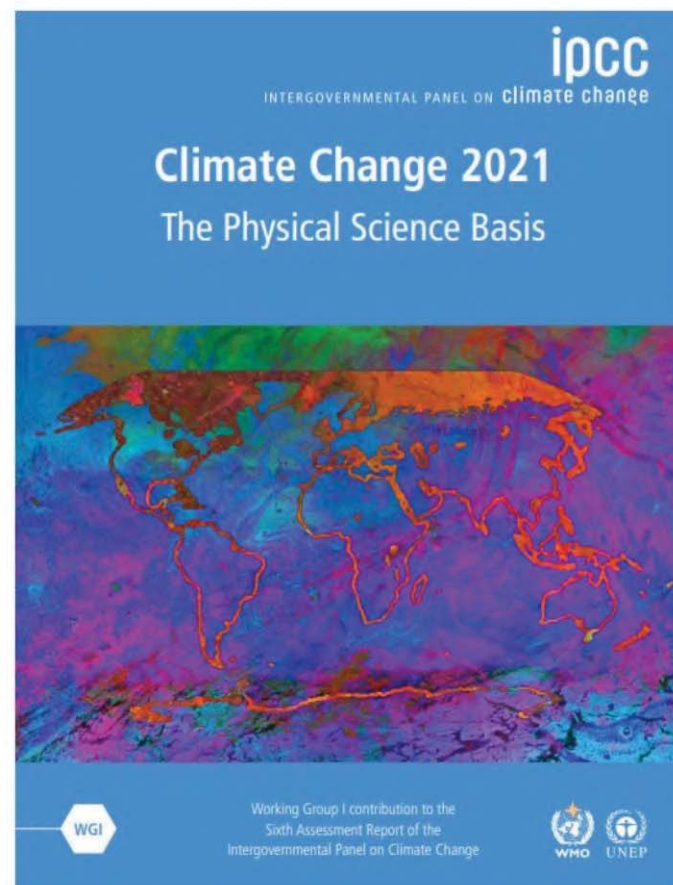
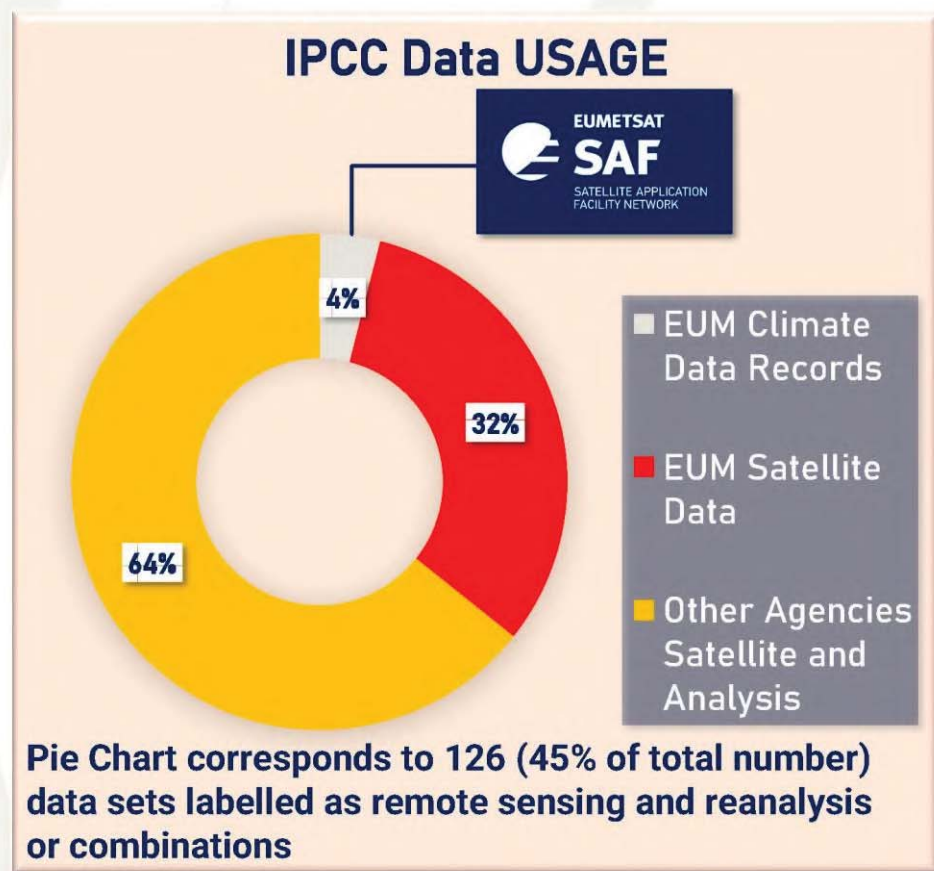
DG CLIMA High relevance of satellite data





A strong contribution to the Green Deal agenda

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EUMETSAT in space weather activities - EC Coordination

EUMETSAT's potential role in the provision of operational space weather data services is currently under discussion with member states

SHORT-TERM

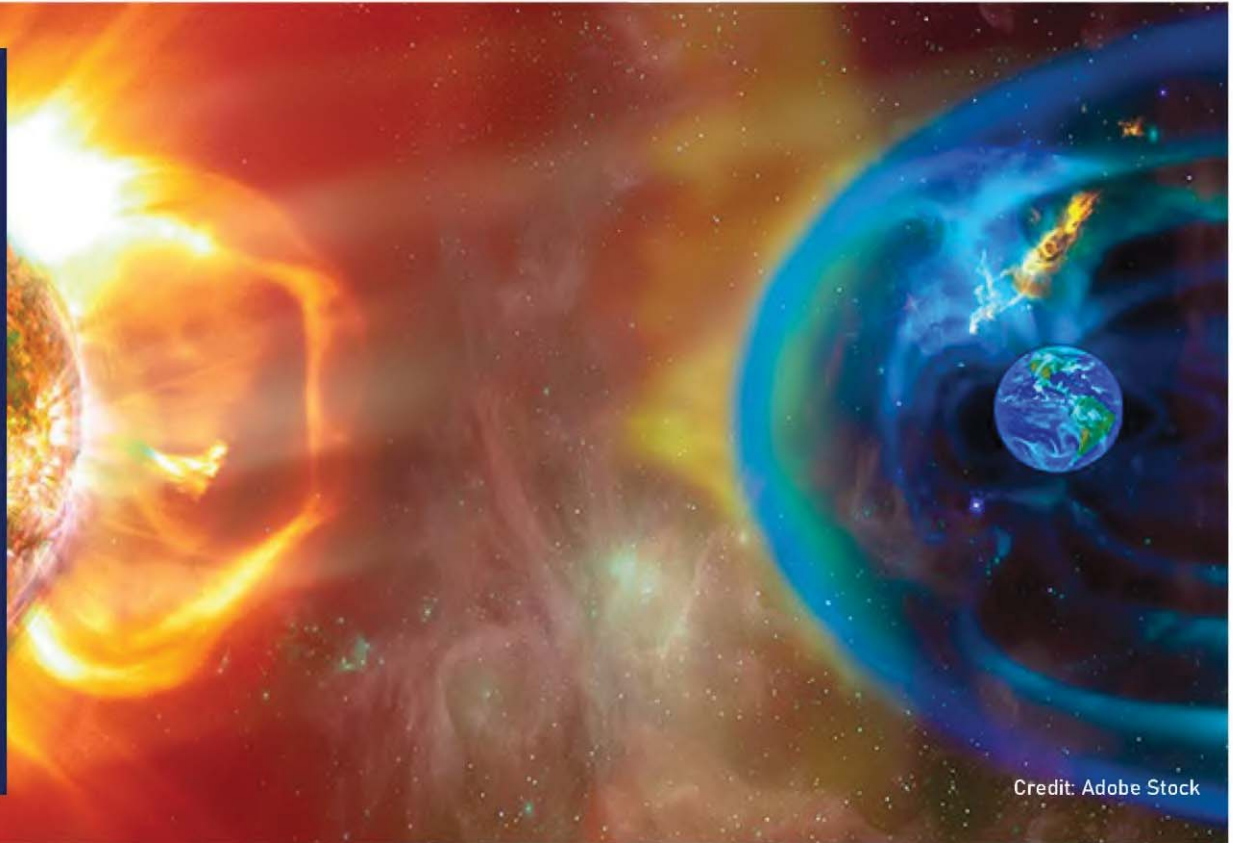
Data hub for global data exchange

MEDIUM TERM

- Processing and NRT delivery of data from sensors on EUMETSAT satellites
- Role in operational transition of ESA Space Weather Service Network

LONGER-TERM

- Possible support to ESA L5 mission ("Vigil" launch 2027)
- Consideration of space weather observations as part of M4G and EPS-TG user requirement process



Credit: Adobe Stock



Current European Space Agenda priorities

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EUMETSAT is prepared to contribute to discussions on priorities of the EU Space Agenda, and assess the potential impact of EU initiatives on operational agencies :

- New Space Law focus on safety, resilience and sustainability of space activities
- New Data Economy Framework : AI/ML, etc.
- Mid Term review of EU Space Programme
- Focus put on security and defence
- EU launcher initiative
- Next MFF for programmes in which EUMETSAT is involved : Copernicus, DestinE, Horizon Europe,...





EUMETSAT

Take Away



Take Away with you ...

www.eumetsat.int

- An operational agency at the heart of Europe, operating systems driven by strong user requirements, delivering data that significantly impact societies and economies
- A partner which has started to renew its observing infrastructure in LEO and GEO orbits in the next 5 years, keeping a world leadership in weather and climate, with innovative satellites developed by European industry with ESA
- An innovative organisation seeking to take benefit of new space, new digital and AI/ML technology for improving future services to users
- A strong partner supporting the implementation of EU policies (Green Deal, EU Digital Agenda, EU Africa partnership,...) and of the Space Strategy for Europe through Copernicus, DestinE, Horizon Europe,...



Thank you!
Questions are welcome.

