

10 Years of Poland in ESA

Telecommunications and Integrated Applications Opportunities CM22

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Applications from space for users on Earth



Underpins the
Digital Economy

Improves
our daily life

Inspires
future
generations



Seamless

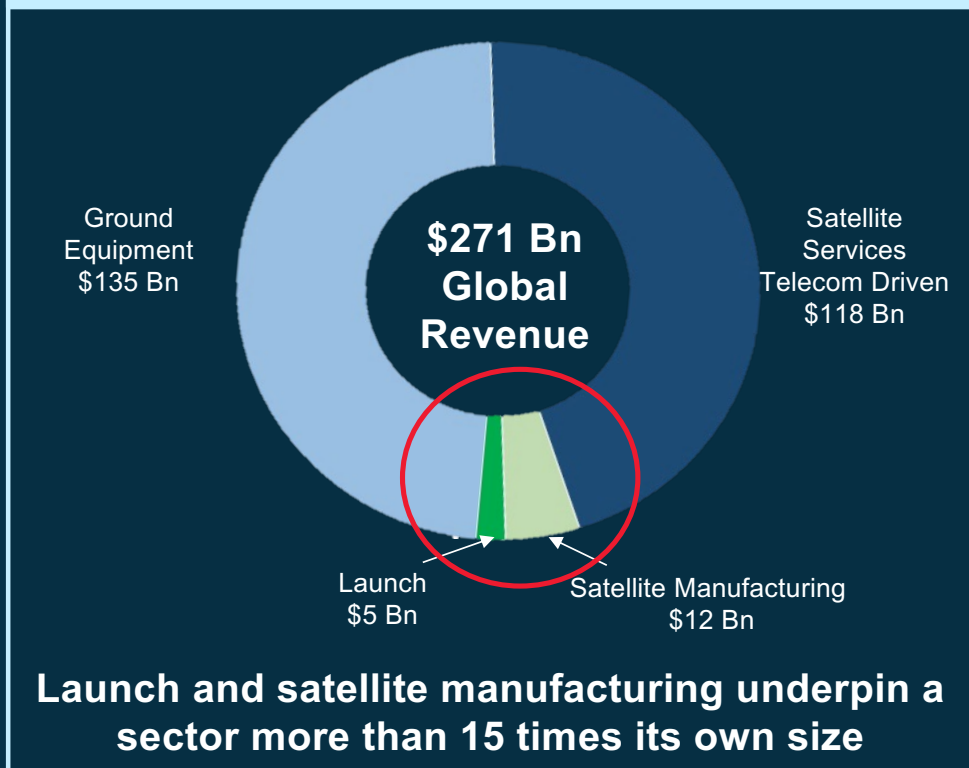
Ubiquitous

Resilient

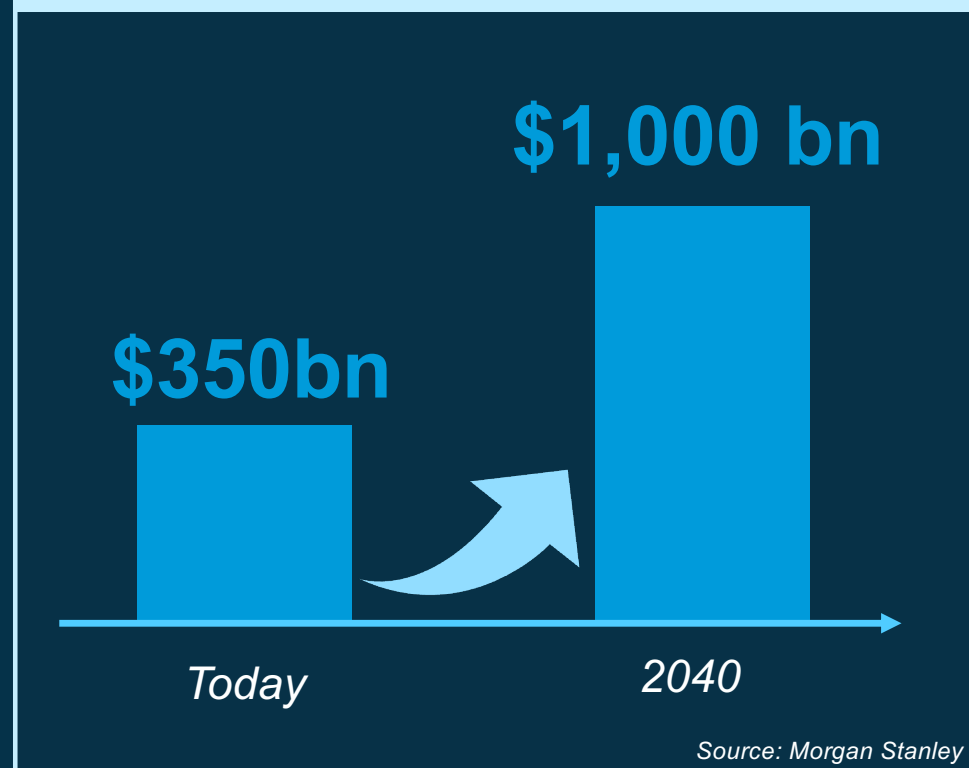
It's all about Connectivity

The Global Satellite Industry

Commercial Space Economy (billion USD)



Total Space Economy (billion USD)



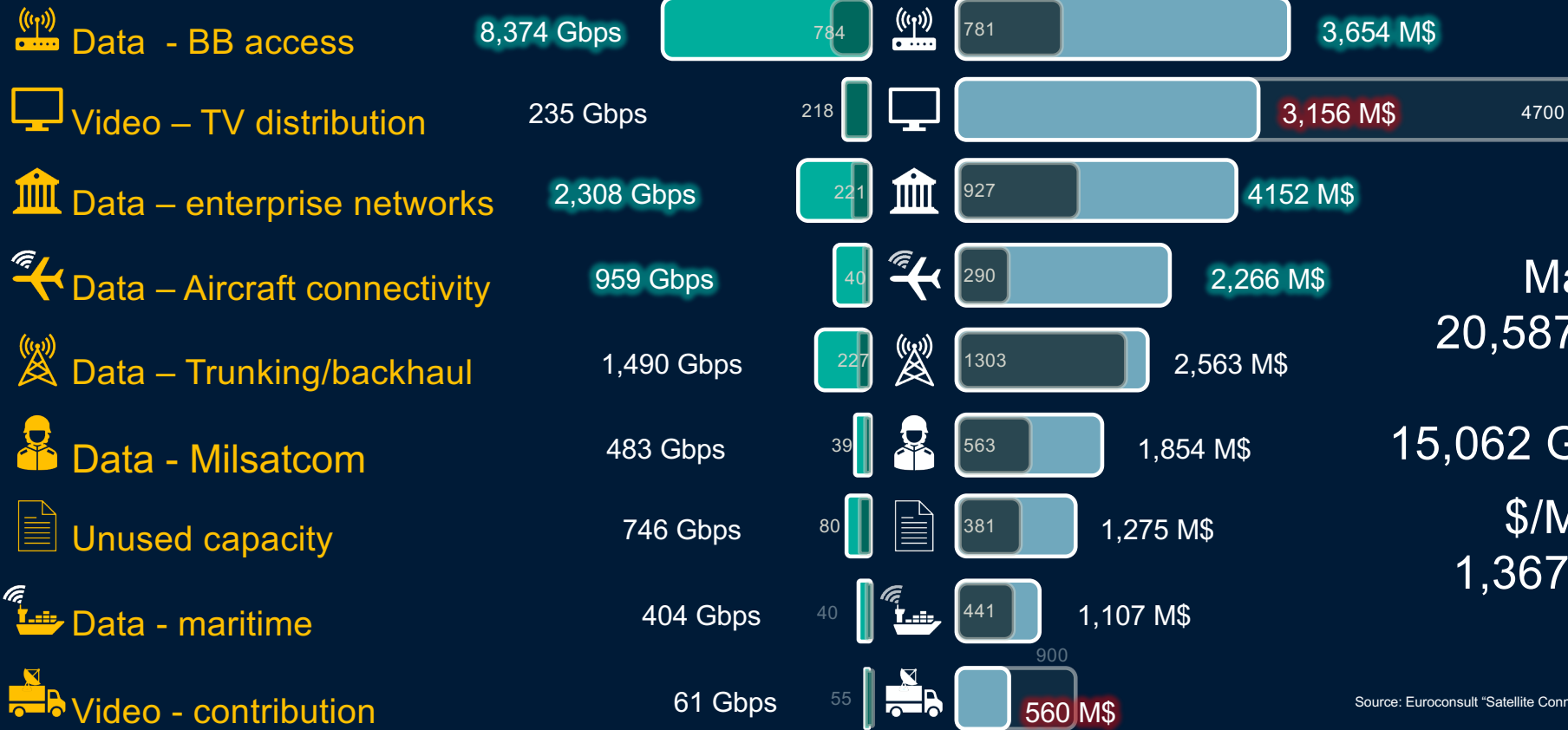
SatCom Market Evolution 2020-2030



CAPACITY DEMAND EVOLUTION 2020 - 2030

BY APPLICATION

BY REVENUE



Market Volume
 20,587 M\$ (+100%)
 Demand
 15,062 Gbps (+759%)
 \$/Mbps/annum
 1,367 M\$ (-76.7%)

Source: Euroconsult "Satellite Connectivity and Video Market" September 2021



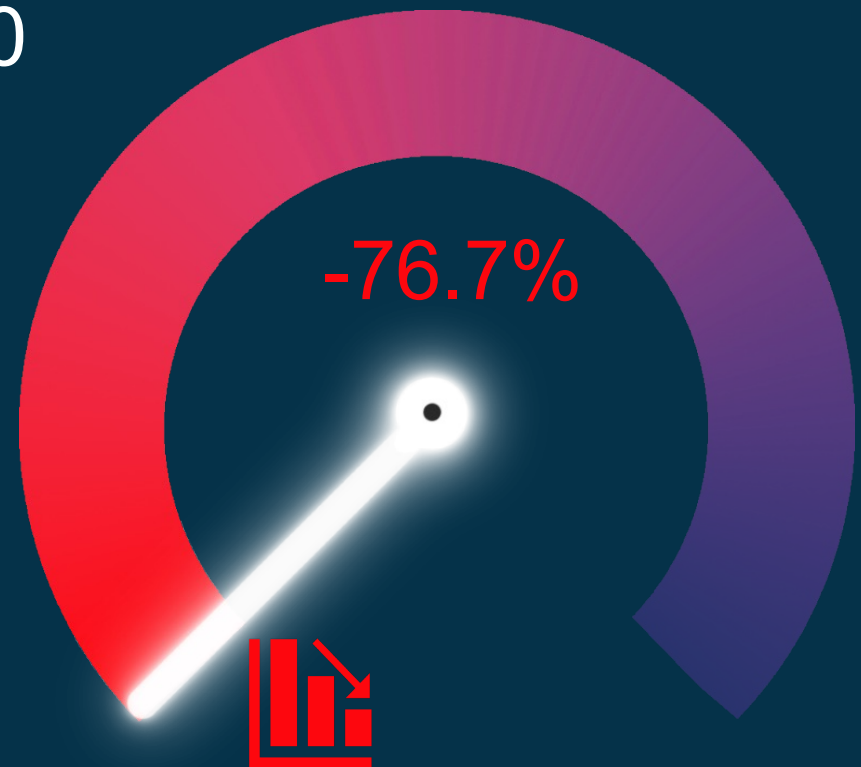
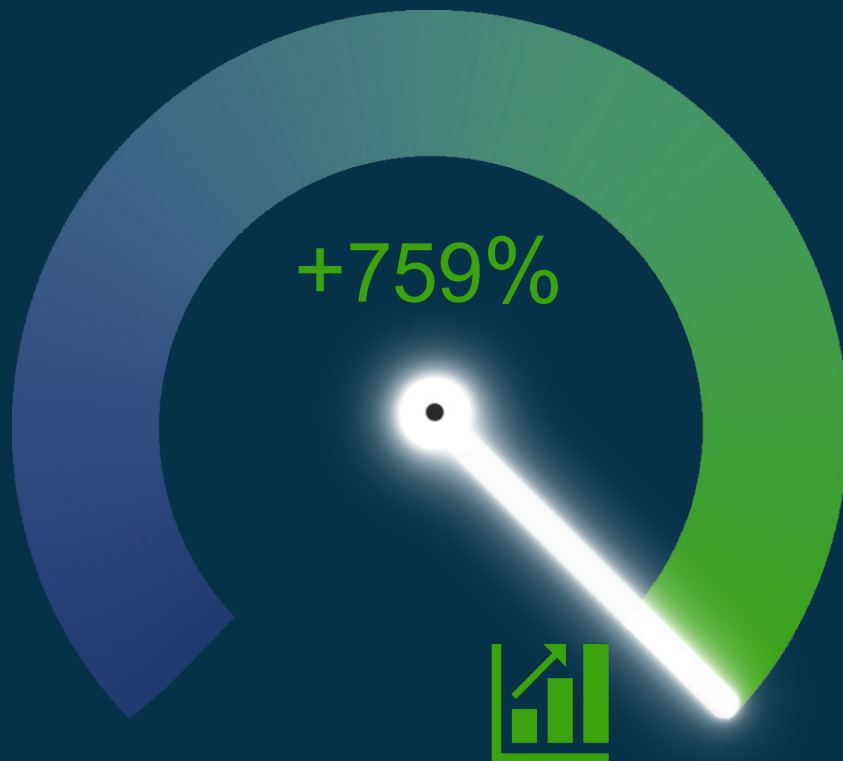
→ THE EUROPEAN SPACE AGENCY

Driver – The Market Evolution

Data Demand
Gbps → Tbps

Cost per Mbps per year

by 2030

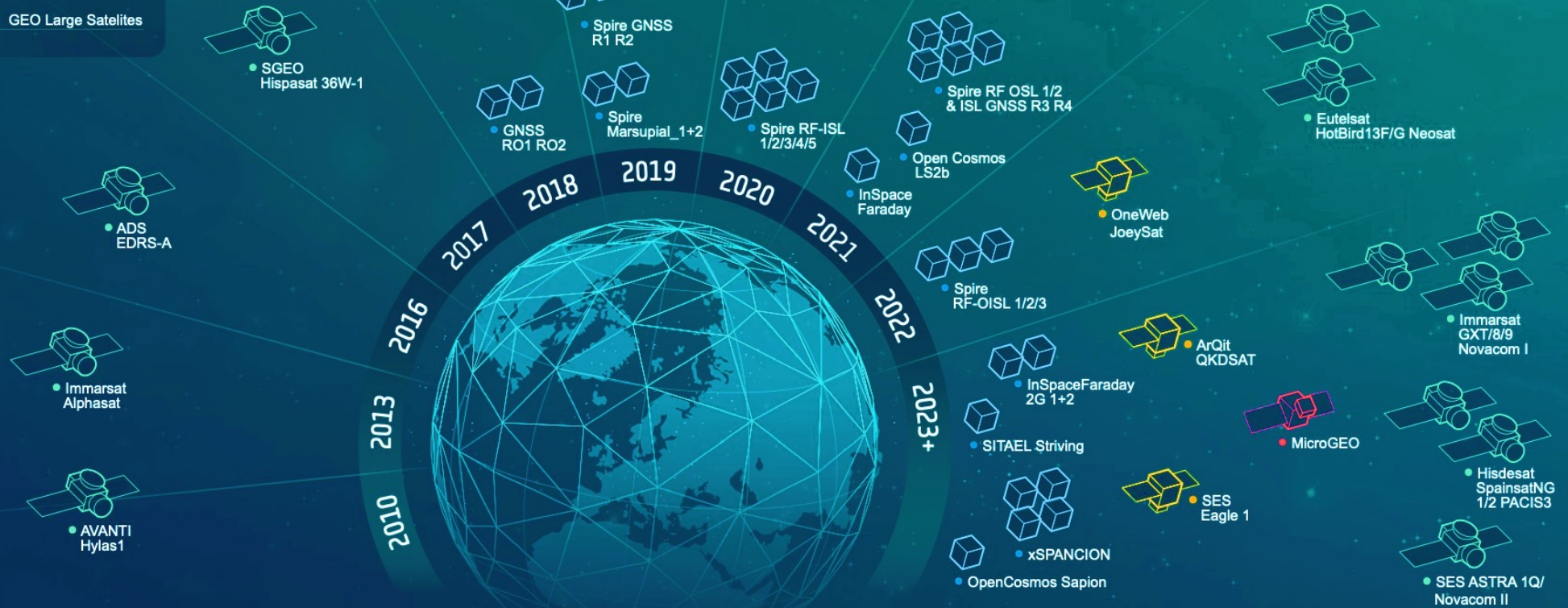


ESA

A Decade of Successes In Telecoms

LEGEND

-  LEO Nano Satellites
-  LEO Micro Satellites
-  GEO Micro Satellites
-  GEO Large Satellites



Connecting Europe globally- Space Part of the Solution



Governments

Secure, resilient,
autonomous



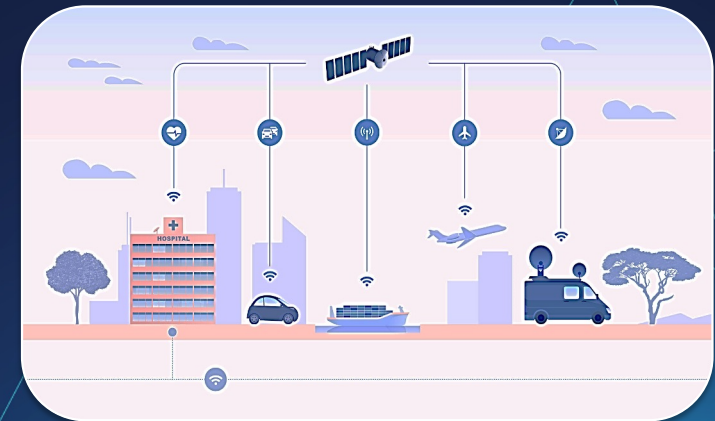
Citizens

Always on, everywhere
Digital equality

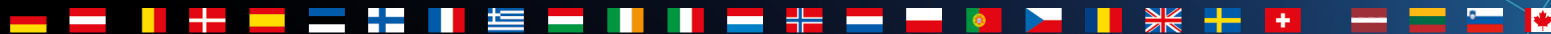


Industry & business

Mobility, Energy, Climate,
Health, Finance,
Education, Entertainment



Underpinned by a responsible use of space for a sustainable future



Growing Importance of Autonomy and Resilience Space Part of the Solution



ESA plays a key catalyser role

Space Systems

Safe & Secured, Innovative and Resilient

- Space System for highly secured services
- Innovation: enhanced authentication and super-secure **Quantum Key Distribution**
- Resiliency: combine space component to terrestrial infrastructures for increased security



Responding to Europe's connectivity needs 2.4 B€ over 4 Programmes at CM22



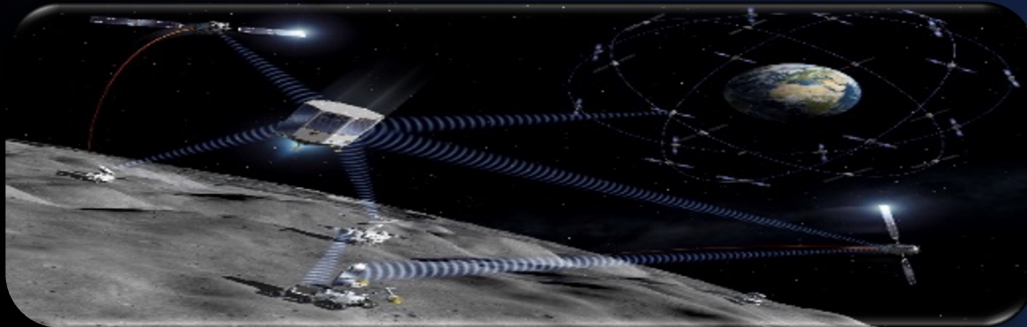
ARTES 4.0 - 1.4B€



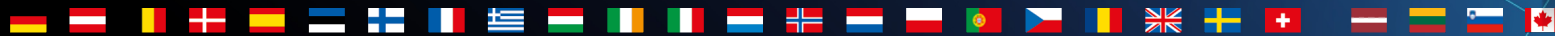
Secure Connectivity - 750M€



Moonlight - 225 M€



Civil Security from Space - 100M€



ARTES 4.0 CM22



Kick Start New & Disruptive Technologies

ESA de-risks highly innovative satellite solutions. It encourages investments of Space companies in the expansion of their product portfolio.



Meeting Public and Commercial Needs

We increase European self-reliance and simultaneously boost technical expertise and market share for European industry.



Investing in the Future of Space

Bringing strategic value to the ESA member states by making telecommunication collaborations happen, stimulating the economy and creating new jobs.



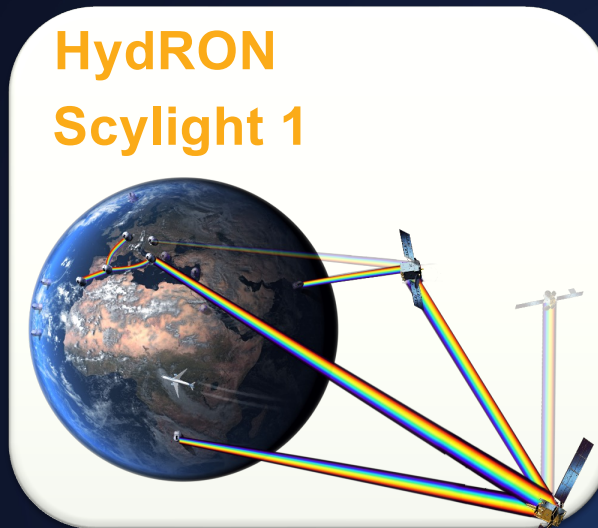
ARTES 4.0 CM22 Strategic Programme Lines



Safety & Security
Space System



Quantum & Optical



5G/6G
Sustainable Connectivity



R&D & Innovation
Incubation & Application
Institutions & Industry



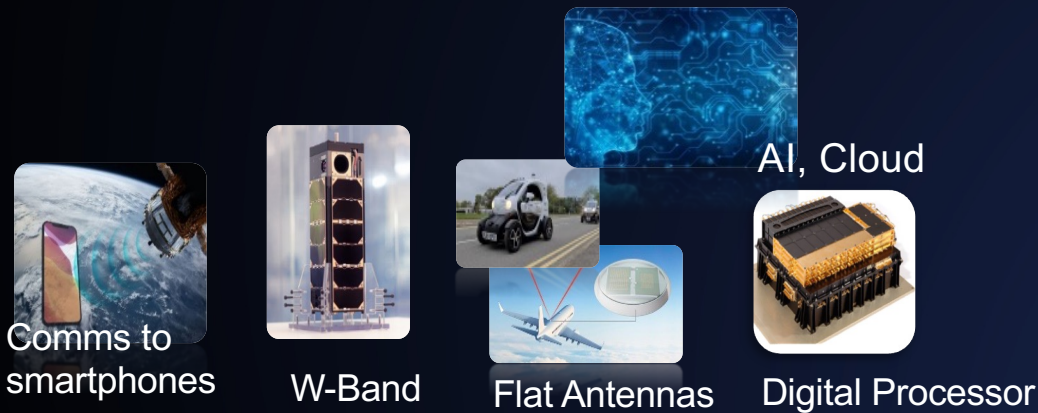
Partners of Member States
Partners of Industry
Partners of Europe



ARTES 4.0 – CM22 industry competitiveness



Core Competitiveness

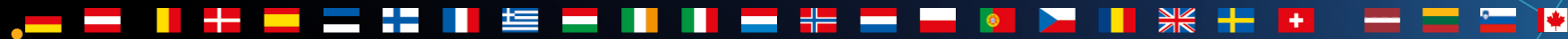


Business Applications & Space Solutions



Poland Specific :

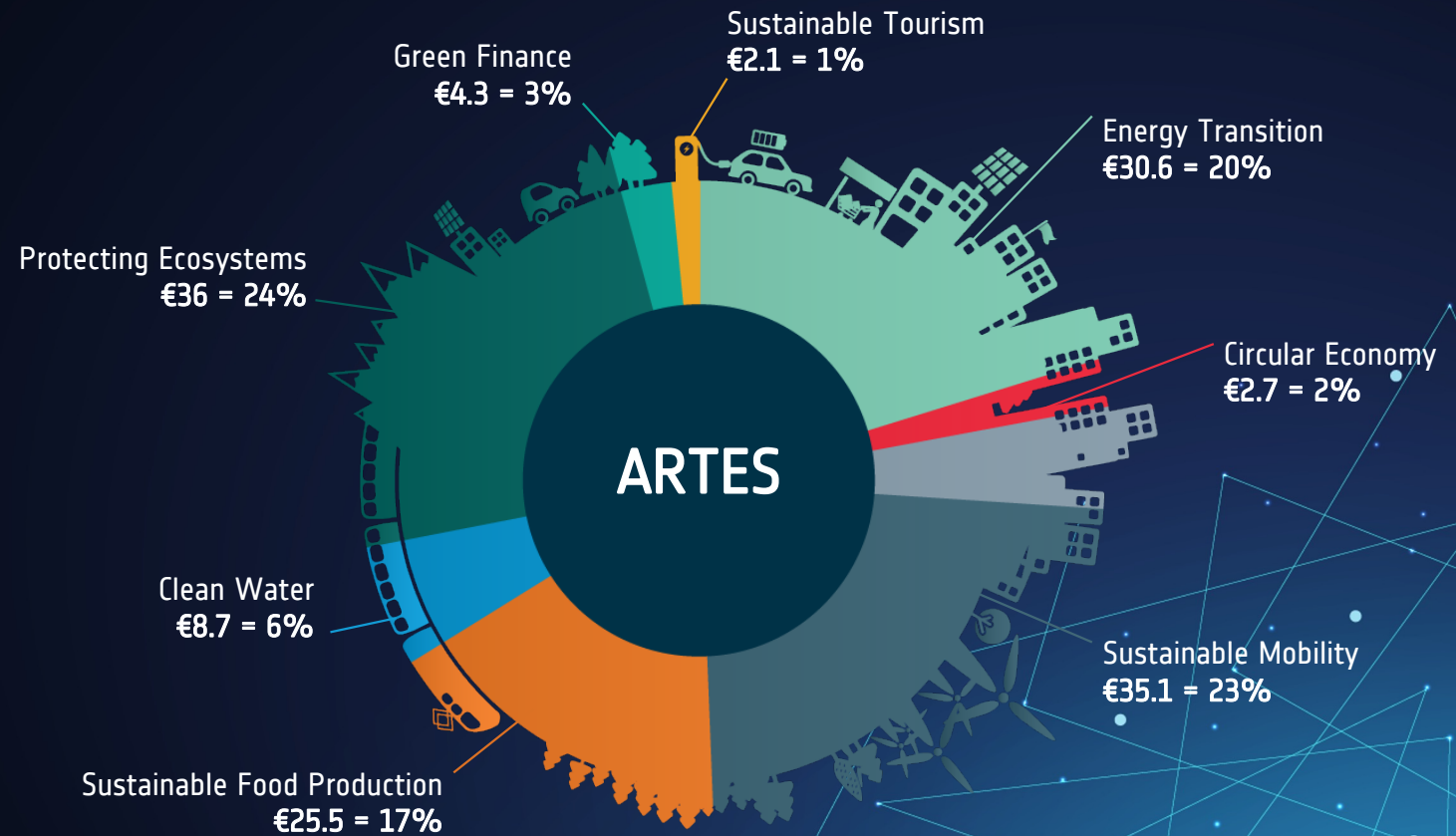
- 38% increase in SMEs
- 79% led to new business opp. / new market segments
- 61% of activities led to Industry new customers
- Average of 6 customers for new products



INVESTMENT IN ARTES 4.0 GREEN APPLICATIONS



Total investment in green applications from National Delegates and Industry amounts to **€150 million** over the past 12 years (€72 million to initiate 144 Green Activities in the last two years).



Total Cost per Topic (Million Euros) - Total cost of feasibility studies and demonstration projects for green applications since 2010



ARTES 4.0 CM22 Partnership Projects



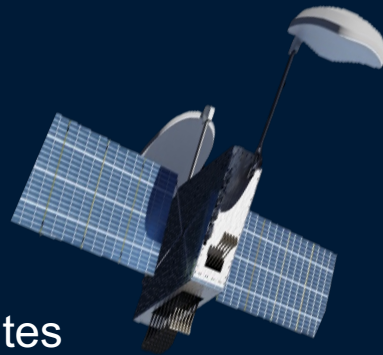
Novacom 1 & Novacom 2

12 satellites sold already- Development Continues

Flexibility – Performance – Competitiveness and manage Obsolescence

Hummingbird

New product line
Micro geostationary satellites
High throughput satellite, up to 40 Gb/sec



LEO Next Generation

Develop commercially-driven generic LEO satellite European solutions

AIDAN NEXT

Ground & space segment elements for GEO satcom systems and ubiquitous internet connectivity

Project Green

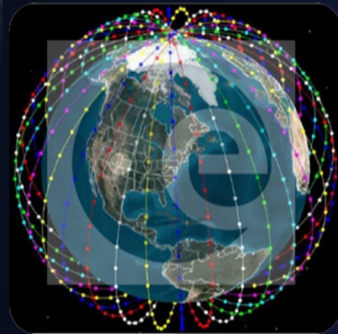
New, open-architecture and sustainable LEO constellation, multi mission capabilities



CM22 - ESA Programme related to EU Secure Connectivity



A Resilient, Sovereign, space-based infrastructure for
EU SECURE Communication SERVICES



ESA Partnership with COM and Industry
for the development and validation of
End to end Space-Based Solutions



Leverage on ARTES
Partnership Project model, Technology & Innovation
and ESA expertise
for EU SECURE CONNECTIVITY



Teaming up with EC and partnering with industry

for a more secure and sovereign Europe

Strong security, resilience and autonomy requirements



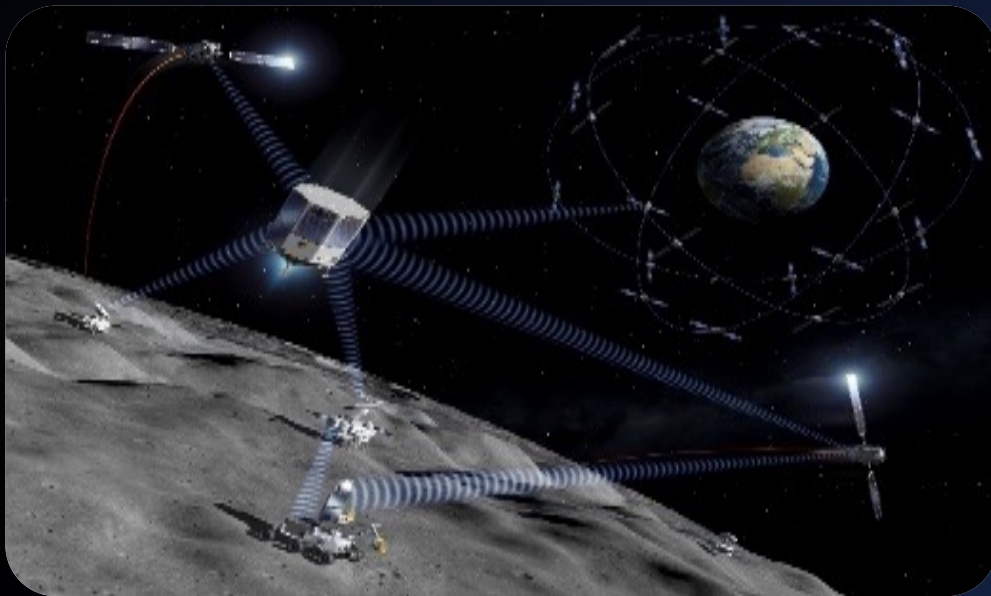
- Need for an ambitious Space Based Development & Validation Programme confirmed
- Public-Private Partnership with established players and new entrants/SME/start-ups
- Schedule 2023- 2027
- Preliminary Market Consultation - 46 responses



Moonlight - We're going back and staying on the Moon



Bringing communication & navigation services to the Moon
ESA supporting development and anchor customer



Public Private Partnership
Private sector as service provider
Dedicated constellation of satellites
around the moon

RFI
ITT

Response 28 Oct
Dec 2022.



Civil Security from Space

ESA Stimulating Answers to Civil Security Events/Crises



Humanitarian crises

Geopolitical Instability

Climate Impact

Vulnerable Critical Infrastructure

Cyber crime

Europe is facing a set of expanding, evolving security challenges

There is a need to enhance the means to act for European citizens security



Earth Observation



SatCom

22 RFI responses
Industry Day - 08 Nov in ESTEC



Thank you

 @ElodieViau @ESATelecoms @Space4Europe @Partner_InOrbit

 Elodie Viau, ESA Space Solutions

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