

# *Space19*

A 3D isometric cube with a white face in the center featuring a dark blue circle with a white plus sign. The other faces of the cube are colored: top (grey), left (teal), right (blue), front (red), and bottom (yellow).

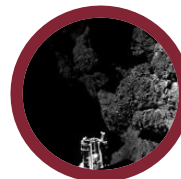
ARTES 4.0

Telecoms and Integrated Applications Directorate

# ESA in Space 4.0



- Over 50 years of experience
- 22 Member States
- Over 80 satellites designed, tested and operated in flight
- Eight sites/facilities in Europe, about 2300 staff
- 5.75 billion Euro budget (2017)
- All areas of space activities covered



space science



human spaceflight



exploration



earth observation



space transportation



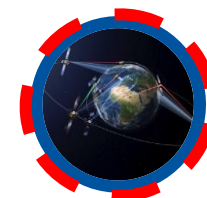
navigation



operations



technology



telecommunications

# Telecoms and Integrated Applications ARTES 4.0

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# Digital Transformation is happening in many business sectors

Digital Transformation (DT) is the integration of information and communications technology (ICT) into all areas of a business, fundamentally changing how businesses operate and deliver value to customers



# Connectivity is enabling Digital Transformation



## **A<sup>4</sup>** - Access to data:

- ☐ **Anytime**
- ☐ **Anywhere**
- ☐ **Anything** (M2M/IoT)
- ☐ **Any volume/speed**

## Connectivity

- ✓ Ubiquitous
- ✓ Resilient
- ✓ Secure

**Connectivity is an essential commodity**



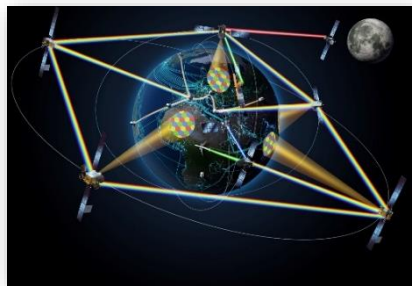
# ARTES OPPORTUNITIES



4S Secure Satcom for  
Safety and Security



Optical Fibre  
in the Sky



5G for next  
Gen Comms



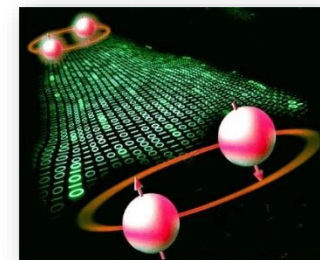
## Digital Transformation



GovSatCom



NOVACOM  
Next Gen Satcom  
Systems



SAGA  
Security and  
Cryptographic  
Mission

SUNRISE  
Ph 2



IRIS  
IOC & FOC



mm wavelength Communication	Digital Processing	Optical Communication	Smart Antenna	Smart Manufacturing



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European Space Agency

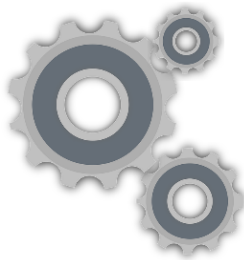
- ✓ **Mercury - Satellite for 5G (S45G)**

Cutting edge technology at the frontiers of knowledge and with technological challenges yet to be mastered. Foster Industry capabilities to answer to the upcoming markets and to provide solutions to European strategic needs.



# ARTES

## Implementing Tools



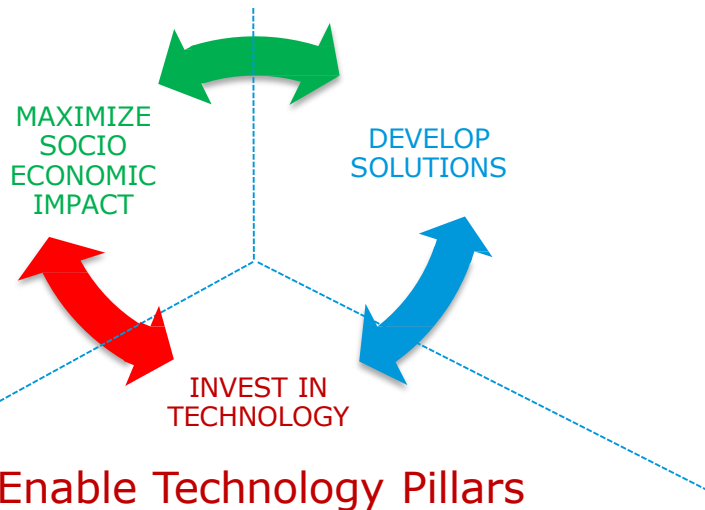


# ARTES Growth - Vision of Satcom Future



## Focus on Growing Services

- ✓ 5G and fully integrated services
- ✓ Safety and Security,
- ✓ Connectivity and Autonomous Transports,
- ✓ IoT, Broadband, Smart backhauling,
- ✓ Digital Radio,
- ✓ Integrated Media Delivery,
- ✓ Governmental
- ✓ Integrated applications (NAV, EO, TEL),



## Develop Disruptive Solutions

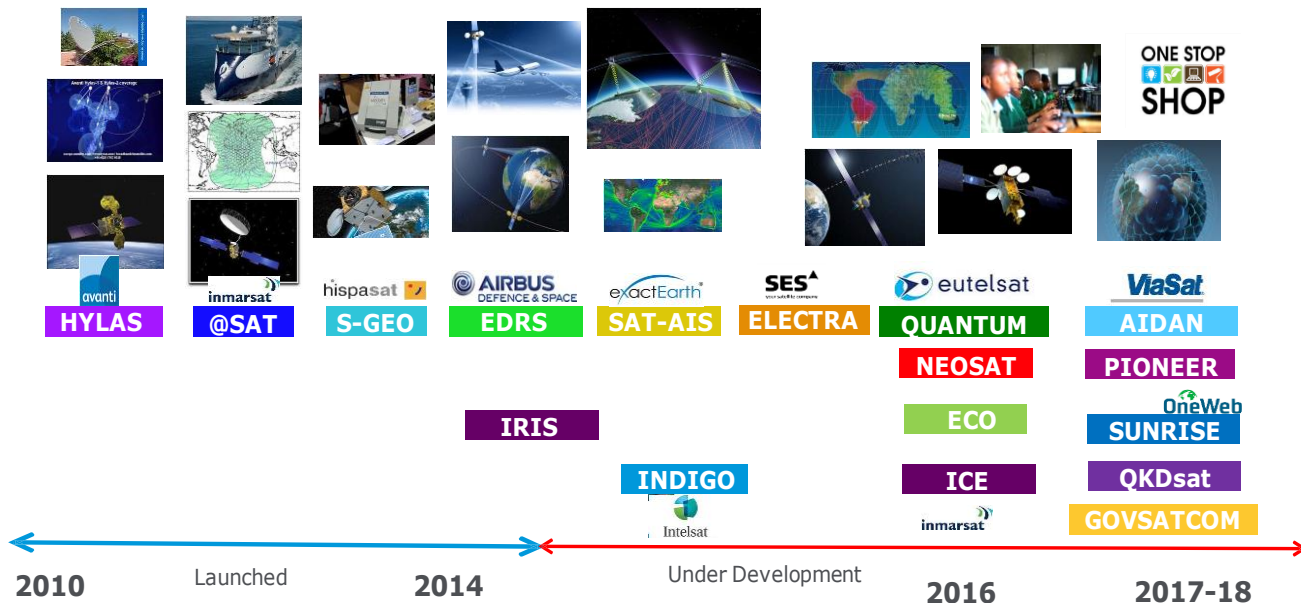
- ✓ Flexible, scalable
- ✓ Multi-network (terrestrial, XEOs, HAPS, RPAS, NAV, EO),
- ✓ Frequency agnostic including optic,
- ✓ Safe and cyber-secured,
- ✓ Multi-use (civil, governmental, commercial)
- ✓ Shift from partitioned ground and space into full integrated system,
- ✓ Drastic reduction of cost of ownership of Satcom solutions



# ARTES Public Private Partnerships



- **Always open opportunity** for partnerships with Industry
- Also an attractive vehicle for national **Flag-ship programs**
- **New programs under preparation** for Space19+



# THANK YOU

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