



Space Systems for Safety and Security (4S)

SUPPORT TO PRIVATE INITIATIVES FOR END-TO-END
SATCOM SOLUTIONS OFFERING SERVICES WITH SECURITY,
SAFETY AND/OR SOVEREIGNTY REQUIREMENTS

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Webinar - 19 March 2024

Before we start...

- Due to the number of attendees, your microphones and cameras will be muted/switched off at all times
- You can use the conversation function anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar.

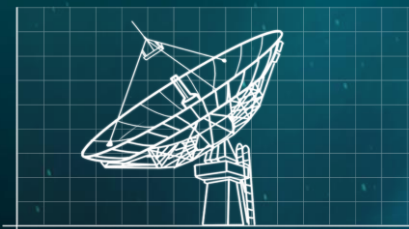


- ❑ Welcome & Introduction

- ❑ ARTES 4.0 **Space Systems for Safety and Security (4S)** programme scope and objectives

- ❑ New 4S funding opportunity in support to **private initiatives for end-to-end satcom solutions offering services with security, safety and/or sovereignty requirements**
 - ❑ Objectives and Scope
 - ❑ Submission & implementation process

- ❑ Q&A session



ARTES 4.0 Space Systems for Safety and Security (4S) Strategic Programme Line

Scope and objectives

Digitalisation of the society and economy & Cybersecurity

Growing impact of disrupted networks on our economy, society, security



Cybercrime is predicted to inflict damages totalling \$10.5 trillion globally in 2025

Source: Cybersecurity Ventures

Transport Safety

A critical application of our communication networks



To get close to zero deaths and zero serious injuries on roads in the EU by 2050.

Source: europa.eu

Crisis and disasters

Guaranteed/continuous/ubiquitous availability of secure communications are required in such situations



40-50 natural disasters occurring in Europe every year affecting hundreds of thousands people

Source: Centre for Research on the Epidemiology of Disasters

INDUSTRY GROWTH OPPORTUNITY

Need to Enhance Trust in:

- Confidentiality and Integrity of our Communications and Data
- Guaranteed availability and security of our Digital Infrastructures Even in Times of Crises or Disaster

The global market for space systems providing safety and security solutions is expected to grow threefold in the next two decades, from around €7.4 billion in 2025 to €22.2 billion in 2040.



TRANSPORTATION

SAFETY

SPACE SYSTEMS FOR SAFETY AND SECURITY

4S

Support institutional and public bodies:
Public PARTNER in building their SatCom Response

Support industry: Industry PARTNER in developing and marketing Next Generation Secure SatCom solutions and services



GOVERNMENTAL

OPERATIONS

police, public safety, emergency services, law enforcement, etc



CRITICAL INFRASTRUCTURE

PROTECTION &

SECURE OPERATIONS



INNOVATION AND

COMPETITIVENESS



CYBER SECURE AND

RESILIENT DIGITAL

INFRASTRUCTURE

4S SCOPE OF ACTIVITIES

End-to-end infrastructures and services development



Key technologies development for secure, robust and resilient satcom & for safety and security applications



Downstream services addressing institutional and private user communities





WE ARE DEVELOPING NEXT GENERATION OF
SECURE SATCOM AND QUANTUM KEY DISTRIBUTION SOLUTIONS

RESILIENCE

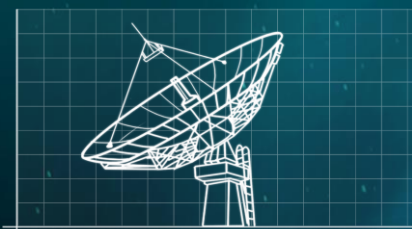
Fast and efficient
response and recovery
in crises & emergencies

SECURITY

Protection against cyber
security threats &
man-made disasters

AUTONOMY

Reduced technology
dependence of ESA
Member States



New 4S opportunity in support to private initiatives for end-to-end satcom solutions offering services with security, safety and/or sovereignty requirements

Scope and objectives

- Support the development of new **4S end-to-end infrastructures and services** by private actors from ESA MS
- Targeting satcom infrastructures to be **privately owned, deployed and operated**, providing services with **dedicated security, reliability and/or sovereignty requirements**.
- Addressing needs of potential customers **from European and/or non- European institutions, public regulated and private sectors**
- May address services identified by EC **as potential light governmental ('light gov')** services in the **EU IRIS2 programme**
- Expected outcome is the **consolidation and maturation** of the proposed **safety and security missions and underlying infrastructure** (mission and system requirements , system/subsystem baseline consolidation, techno roadmap, development/deployment plan inc. financial and schedule elements, risks mitigation, etc).
- Instrumental in preparing proposals for the following development steps (B2/C/D phase), to be assessed by ESA Member States for the **next ESA Ministerial at Council Level in 2025**.

Missions and systems are to be proposed by Industrial actors in response to their own priorities and business strategy, in accordance with the main requirements of the 4S initiative

Examples of possible missions/systems (non-exhaustive list) :

- Aero C-band system for aviation regulated (safety) communications
- Aeronautical surveillance (based on e.g. ADS-B) possibly combined with VHF communications mission
- UHF communications system for governmental applications (e.g. public safety, crisis management),
- AIS maritime surveillance/VDES connectivity as a key enabler for maritime safety and maritime domain situational awareness, MASS operations, etc
- TN-NTN connectivity solutions for automotive mobility safety use cases
- IoT connectivity systems for monitoring critical assets and infrastructure operations
- RF signal/spectrum monitoring services for wireless telecommunications infrastructure protection.
- RF signals detection and characterisation services for maritime and aviation safety, law enforcement, humanitarian/disaster relief, etc.

Two 4S Calls for proposals




**SUPPORT TO PRIVATE INITIATIVES FOR END-TO-END
SATCOM SOLUTIONS SERVING APPLICATIONS WITH
SECURITY, SAFETY, AND SOVEREIGNTY
REQUIREMENTS**

**TECHNOLOGIES & PRODUCTS FOR SECURE AND
RESILIENT SATELLITE COMMUNICATIONS**

SUPPORT TO PRIVATE INITIATIVES FOR END-TO-END SATCOM SOLUTIONS SERVING APPLICATIONS WITH SECURITY, SAFETY, AND/OR SOVEREIGNTY REQUIREMENTS

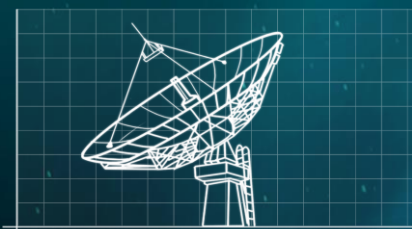
- ✓ Industry initiated proposals for **system studies** aimed at consolidating end-to-end satellite communications **missions and system concepts**
 - ✓ programme of work and objectives are to be defined by industry with the support of ESA, based on proposed mission and system concept maturity and industry's own roadmap and business perspectives.
 - e.g. Phase 0, Phase A or/and B1 system study.

- ✓ Expected outcome of the activity: **mature technical and programmatic baseline** established, expected to be the **core of proposals for potential Phases B2/C/D**
 - ✓ Consolidated mission, system/subsystem requirements
 - ✓ Consolidated system architecture, mission, system elements, external interfaces, etc
 - ✓ Consolidated system development, procurement, deployment and business plans and related technology roadmap, inc. risks, costs, schedule, etc

 preparatory work for timely consolidating by mid 2025 a request for support for following development steps (B2/C/D phase) in view of ESA Ministerial Conference end 2025

TECHNOLOGIES & PRODUCTS FOR SECURE AND RESILIENT SATELLITE COMMUNICATIONS

- ✓ Industry initiated proposals for **early development of technologies and products critical** for the development of infrastructures providing satellite communication services for applications with safety, security and/or sovereignty requirements
- ✓ Encompassing **ground, space, user segment and/or system development activities,**
- ✓ Addressing any **ARTES development phases** (definition , technology, product, demonstration phases)



New 4S opportunity in support to private initiatives for end-to-end satcom solutions with security, safety and/or sovereignty requirements

Submission & Implementation

- ✓ Activities to be implemented in the frame of ARTES 4.0 'Technologies and Products for C&G, Optical and Quantum Communication – ScyLight, **Space Systems for Safety and Security (4S)** and 5G/6G and Sustainable Connectivity **Standard Call for Proposals**' (AO 4-40001)
 - Tender action package available on [esa-star Publication](#)
- ✓ Based on a **non-competitive process**
 - Each proposal is to be **evaluated independently**, based on its own merit (direct negotiation).
 - ESA can place as **many contracts** as good proposals received if supported by their respective national delegations
- ✓ Only proposals from companies or organisations – be it as Prime or as Subcontractor – residing in ESA Member States participating in the ARTES 4.0 4S programme can be considered :

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxemburg, Netherlands, Norway, Poland, Portugal, Romania, Spain, Switzerland, United Kingdom and Canada.

Submission process : main steps

❑ 2 Steps: submission of an **Outline Proposal** followed by submission of a **Full Proposal**

- ❑ Outline Proposal templates are available at [Documents | ESA CSC](#) (use “Templates for Co-Funded Technology and Product Developments”).
- ❑ Outline Proposals shall be submitted to ARTES-4S@esa.int
- ❑ In case of a positive assessment from ESA, the bidder is invited by ESA to submit **via esa-star** its Full Proposal along with the **Authorisation of Funding from the relevant National Delegation(s)**



- ✓ This initiative opened in **February 2024** for an **initial duration of one year**.
- ✓ Outline Proposals can be submitted **at any time**.
- ✓ Industry aiming at performing **preparatory work** for consolidating a **request** for additional support at the occasion of the **ESA Ministerial Conference 2025** in view of the following development steps (**B2/C/D phases**) are invited to submit their **outline proposals for system studies** before **15 May 2024**, proposing **results before June 2025**.
- ✓ Industry may contact ESA (at ARTES-4S@esa.int) for further information or questions all along the process

- ✓ Consortium technical and commercial experience in related system, technology, product and/or service development.
- ✓ Credibility of the technical solution and relevance wrt. 4S opportunity's scope and objectives, quality and completeness of programme of work.
- ✓ Credibility of the business case.
- ✓ Adequacy of deliverables, schedule and risks management.
- ✓ Adequacy of cost and funding, value for money.

✓ ESA will co-fund the activity on behalf of its Member States.

✓ The maximum amount of co-funding will depend :

- Activities phases
- type of entities
- relevant National Delegation's decision

Development Phase	ESA maximum Co-Funding Level		
	Non-SME	SME	Universities or Research Institutes with no commercial interest in the product or system
Definition Phase	50%	80%	50% [up to 30% Development Phase cost]
Technology Phase	75%	80%	100% [up to 30% Development Phase cost]
Product Phase	50%	80%	50% [up to 30% Development Phase cost]
Demonstration Phase	50%	80%	50% [up to 30% Development Phase cost]

Formal authorisation from the National Delegation(s) of the companies involved **is required** at the time of submission of the **Full Proposal**.

- Full Proposals submitted without the Authorisation of Funding will not be admitted for evaluation.

Please initiate discussions with your National Delegate(s) as early as possible, preferably before Outline Proposal submission to ESA.

Contacts of the National Delegations can be found at [National Delegations | ESA CSC](#)

Q&A session

Please use the 'chat' function



THANK YOU FOR YOUR TIME AND INTEREST

Artes-4S@esa.int

SECURITY

AUTONOMY

RESILIENCE

Space Systems
for Safety and Security

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