

## Space for Aviation Safety Evolution

## Call for proposals

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## WELCOME TO THE WEBINAR!

### Before we start...

- Due to the number of attendees, please **keep your microphones muted** at all times and switch off the webcam function.
- 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.



## AGENDA

- ESA Space solutions
- ESA ARTES 4.0 Space Systems for Safety and Security (4S) Strategic Programme Line
- 4S Announcement of Opportunity “Space for Aviation Safety Evolution”
  - Objectives
  - Areas of application
  - Activities
  - Funding
- How to apply?
- Open Questions & Answers session

## ESA SPACE SOLUTIONS

### The largest space innovation network in the world

- The go-to place for great business involving space to improve everyday life.
- Supporting European start-ups and SMEs to develop businesses using space technology and data.
- Offering funding, business and technical support to help to generate socio-economic benefits.



## ESA SPACE SOLUTIONS OFFERS



Zero-equity funding (from  
€50k to €2M+ per activity)



A personalised ESA  
consultant



Technical support and  
commercial guidance



Tailored project  
management support



Access to our international  
network of ESA and partners



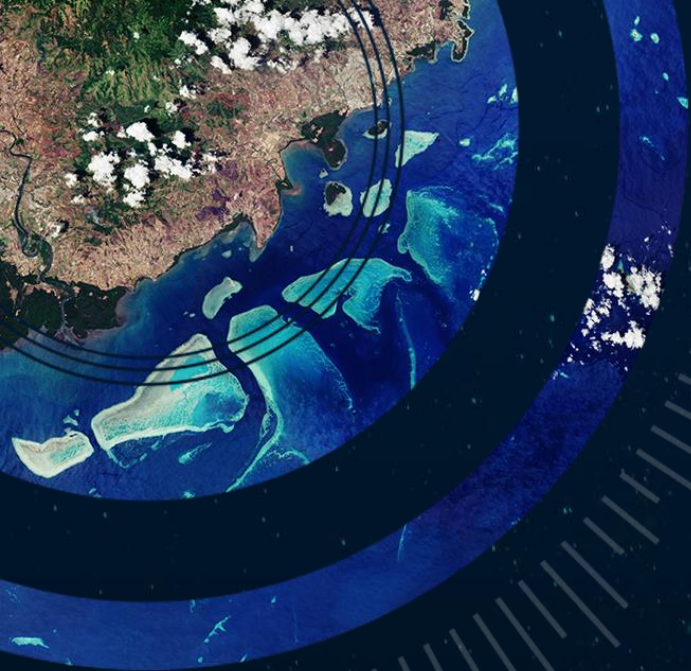
Access to our network  
of investors



Credibility of the  
ESA brand







MARITIME



SPACE WEATHER



HEALTHCARE



TRANSPORT



EARTH OBSERVATION



ENVIRONMENT



AGRICULTURE



SATELLITE NAVIGATION



MEDIA



ENERGY



SATELLITE COMMUNICATION



EDUCATION



AVIATION



HUMAN SPACEFLIGHT TECHNOLOGIES



FINANCIAL

### ARTES 4.0 Space Systems for Safety and Security (4S)

- Next Generation 4S Satcom solutions to **enable a safe and secure digitization**

- ⇒ Resilience
- ⇒ Security
- ⇒ Sovereignty
- ⇒ Complementary to terrestrial networks
- ⇒ Additional capacity, full coverage

- ESA/ARTES/4S to boost **European private and public Connectivity ambitions** via innovation programs and quick in orbit system validation

- ⇒ boost innovation for **industry competitiveness and endeavours** worldwide, including in Europe
- ⇒ trigger and support **public initiatives in Europe**

4S covers the full life cycle of secure Satcom and related downstream applications, across the full range of the ARTES programme, from upstream to downstream activities. This includes preparatory work and product development (Future Preparations, Core Competitiveness), Partner Projects and Business Applications.



# 45 Announcement of Opportunity

## Space for Aviation Safety Evolution



# Objective & Scope

Satellite telecommunications can offer the secure and reliable connectivity required for safety related communications, with a wide coverage including oceanic areas, at high altitudes where ground-based systems are less or not effective, or to increase network resilience when used as a redundant system to terrestrial networks.



Foster the development and showcase of **innovative applications enabled by secure satellite telecommunications**  
(possibly complemented with other space assets)  
in support of **aviation safety evolution**.

Demonstrate the **key benefits that secure satellite connectivity** can bring as of today and for the next decade for aviation safety.

*Involved stakeholders*





## APPLICATION AREAS OF INTEREST



Commercial air  
transport aviation



Remote and virtual  
tower



Air Traffic Management  
Evolution



Uncrewed air  
platforms



ADS-B based  
applications

# APPLICATION AREAS OF INTEREST



## Commercial air transport aviation

Virtual black box

Remote monitoring of aircraft's critical system components

Less on-board pilots / "Single pilot" concept



## Remote and virtual tower

To control the air traffic from remote and at enhancing air traffic services in a highly safety-critical context.



## Air Traffic Management Evolution

Air Traffic Management digitalization

U-space services

High Altitude Traffic Management



## Uncrewed air platforms (UAVs)

Safe and Secure Command, control, monitoring and tracking

Drones, UAVs, UAM platforms and HAPS operations



## ADS-B data based applications

Improvement of Airport & Airspace Capacity Efficiency and Safety

Reduction of crew workload and improvement of aircraft health monitoring through better awareness of aircraft data

Tracking drones and UAVs



# WHAT WE ARE LOOKING FOR?

## Call for Proposals for **demonstration projects**

1. **Address one (or more) application area(s) and propose to design, develop and demonstrate one (or more) service(s) relevant for this (these) areas.** Other applications areas may be proposed by Tenderers, if identified by representative stakeholders of relevance for their operations
2. **Be customer/user driven** (i.e., involve in the project representatives from users' communities)
3. **Shall set-up a pilot trial/demonstration to verify and deploy** in a pre-operational environment the proposed service(s) **with the involvement of the engaged users/customers**
4. Prove the **benefit of including safe and secure satellite telecommunications systems** for the proposed service(s).
5. Include the **potential service provider** as part of the tendering team



# FUNDING

	Non-SME*	SME*	Universities & Research Institutes**
Demo Project	Up to 50%	Up to 80%	Up to 80%

\*SME's are fulfilling the criteria defined in the European Commission Recommendation of 6 May 2003 (2003/361/EC) or as updated .

\*\* with no commercial interest in product/service. The funding of Universities or Research Institutes shall not exceed 30% of the total allowable cost

ESA will bear up to the above defined percentage of the acceptable project cost, and the remainder has to be financed by industry, institutions and users participating in the activity, and may be in cash or in-kind.

**The applicable funding level of the individual prime- or subcontractors is subject to authorisation by the involved National Delegation(s).**

# How to apply?



## ELIGIBILITY

Funded participation to 4S Strategic Programme Line is open to any company and/or organisation residing in the following Member States:

**Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Spain, Switzerland, and the United Kingdom**



# APPLICATION PROCESS



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## Tender Process

1. Registration (minimum 'light registration') on ESA-STAR Registration (<https://esastar-emr.sso.esa.int>)
2. Download the documentation associated to this Announcement of Opportunity **AO 10989**
3. Prepare your Outline Proposal using the provided template
4. Submit your **Outline Proposal** to ESA ([ARTES-4S@esa.int](mailto:ARTES-4S@esa.int) , cc : **Contract Officer**) and to your **ESA National Delegation(s)\***.
5. The Tenderers **whose Outline Proposal is positively evaluated**, will be invited by the Agency to prepare a Full Proposal.
6. Submit your **Full proposal** via esa-star using the provided template (with the **Letter of Authorization** from bidding team's national delegations. Without this letter, the proposal will not be eligible).

\*The contacts of the National Delegations can be found at <https://artes.esa.int/national-delegations>

ESA UNCLASSIFIED



## DEMONSTRATION PROJECT: OUTLINE PROPOSAL CONTENT

### 1. The Team

- Background, experience and connections
- Including participating entities to the demonstration trials

### 2. The Idea

- Solutions to be deployed, technical maturity, innovation, space assets
- Pain and gains for the users

### 3. The Business Case

- Business opportunity
- Business strategy

### 4. The Activities

- Starting point prior to start, key activities, cost & duration, key resources, risks

Deadline: 12/11/2021

- There is a Template
- Be concise and factual
- Read the documentation!!

The bidder shall confirm that the Outline Proposal has been sent to the National Delegation.

Submit by sending at  
[ARTES-4S@esa.int](mailto:ARTES-4S@esa.int)



## DEMONSTRATION PROJECT: FULL PROPOSAL CONTENT

- 1. Service Value Proposition**
  - Service Description & Selling Points
  - Customers segments, Key Resources and Partners
- 2. Technical Proposal**
  - System/Service Architecture, Space Assets, Implementation
  - Pilot trials, Letters from Users
- 3. Management And Administrative Proposal**
  - Experience, facilities, management, Key personnel, CVs
- 4. Implementation Proposal**
  - List of Deliverables, Work Breakdown Structure, Work Packages Description
- 5. Financial and Contractual Proposal**
  - Cost & price, PSS forms, Milestone Payment Plan, Insurance Waiver, Contract conditions...

Deadline: 28/02/2022

- There is a Template
- Be concise and factual
- Read the documentation!!

- + Letter of Support from the engaged User(s)
- + Letter of Authorization from ND

Submit through ESA-star

## Open Questions & Answers Session

Thank you for your attention

