**Greek Initiative Announcement of Opportunity**

**under the**

**ESA ARTES**

**Space Systems for Safety & Security (4S) Strategic Programme Line**

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# SCOPE

Greece participates to the ESA ARTES’ Strategic Programme Line dedicated to Space Systems for Safety and Security (4S SPL).

In that context, Greek entities are invited to submit outline proposals by December 5th, 2020, in response to the open Call for Proposals AO10285 of the ESA 4S Strategic Programme Line of the ARTES programme.

These Outline Proposals will be assessed and ranked by ESA and their financial support will be potentially confirmed by the Greek Administration in line with the Greek national law.

In support to interested Greek companies, this document outlines:

* + ESA ARTES 4S Background and Rationale
  + ARTES 4S Objectives & Implementation
  + Description of this Greek initiative
  + Greek Governmental Satcom Requirements & Objectives
  + Process and Schedule
  + General Guidelines

# ESA ARTES 4s BACKGROUND & RATIONALE

Our society and economy are increasingly dependent on secure telecommunications networks. These networks often are required for the secure operation of critical infrastructures, governmental services or in transport. They typically depend on terrestrial solutions. For instance, air traffic management relies on the security of ubiquitous IP-based global terrestrial networks. These networks may constitute a systemic point of failure with major safety and security threats, in particular during disruptions caused by natural or human-made disasters or by cyber-attacks.

Terrestrial network solutions may benefit from Satcom infrastructure to reduce vulnerability and to increase the overall resilience. Satcom can provide a secure space component as a self-standing element or in complement to an otherwise terrestrial telecommunications system.

Such an increased role and importance of Satcom is also enabled by a wave of innovation and an increased diversification of the Satcom solutions over the past decade. In that context, ensuring European autonomy is essential. Support to competitiveness will enable industry to benefit from the significant economic opportunity and growing world-wide demand for secure Satcom solutions.

***European Growing Interest in Space and in Governmental Satellite Communications***

The ESA-EU Joint Statement setting out the “Shared vision and goals for the future of Europe in space” provides the goals and objectives for space activities in Europe for the years to come. The need to address the challenges are reflected in the Joint Statement:

• Foster a globally competitive European space sector, by supporting research innovation, entrepreneurship for growth and jobs across all Member States, and seizing larger shares of global markets;

• Maximise the integration of space into European society and economy, by strengthening synergies between civilian and security activities in the field of navigation, communication and observation, including through monitoring borders, land and maritime security conditions;

• Ensure European autonomy in accessing and using space in a safe and secure environment, and in particular consolidate and protect infrastructures, including against cyber threats.

The regulation on the future EU space programme includes the GOVSATCOM component that aims to cover a wide set of application sectors with safety and security emphasis and the development of additional space segments in due time is anticipated.

At CM16, ESA launched the GOVSATCOM Precursor program, an initiative with a budget envelope of 85 MEuro that aimed to support Industry in its efforts to bring to the market new disruptive digital platforms, termed Pooling and Sharing (PSS) systems, with a goal to allow a near real-time seamless matchmaking between Satcom demands and Satcom offers for institutional and commercial users that have specific reliability, availability and security demands. That resulted in four satellite operator initiated projects called PACIS that ran from 2016 to 2020. In addition, two recently completed parallel studies funded by ESA that included participation from Greek industry (Preliminary Design of a Secure Satcom Pooling & Sharing System for Global Markets), focused on defining design requirements and possible different versions of the PSS operations.

To respond to the challenges addressed in the ESA-EU Joint Statement setting out the “Shared vision and goals for the future of Europe in space”, specifically to those related to safety and security, the Director General included the development of an ESA Space Safety and Security initiative in his vision and plan laid out in the Resolution “Towards Space 4.0 for a United Space in Europe” that ESA ministers endorsed at the Council meeting at Ministerial level in December 2016 (CM16). The Resolution further specified that the initiative would be submitted for agreement at the subsequent Ministerial meeting. For Space19+, ESA therefore proposed a new programmatic pillar: Safety and Security including “Space Safety”, “Safety and Security Applications”, and “Cyber-security”. The ARTES Contribution to this resulted in the proposal for the creation of the ARTES Strategic Programme Line “Space Systems for Safety and Security” (4S), that was approved at SPACE19+.

# ARTES 4S OBJECTIVES

ESA, through the ARTES Programme, is fully committed to support the European SatCom sector in this effort to put forward competitive solutions in that domain. Importance of responding to institutional and public-regulated needs has been fully recognized: a new Strategic Programme Line for “Space Systems for Safety and Security” (4S) has been launched in 2020. 4S has the double objective to support competitiveness to enable European industry to benefit from the significant economic opportunity and growing world-wide demand for secure SatCom solutions, as well as respond to the growing European societal and institutional needs in Safety and Security. It is also the ambition of 4S to bring ESA support to sectorial public bodies such as Eurocontrol, European Maritime Safety Agency (EMSA) and al in their SatCom-related endeavors, and to European Commission for more specific initiatives such as to EU GOVSATCOM, to the EU Single European Sky and the EU Quantum Infrastructure Flagship initiatives.

# DESCRIPTION OF THE ARTES 4S OPPORTUNITY FOR GREEK INDUSTRY

# 4.1 Background of GreeCom & Objectives Related to this AO

Since 2019, Greece has its own operational governmental satellite communications system interconnecting Government and Security Users. The Greek system is referenced as GreeCom (Greek Governmental SatCom). It has been developed under the authority of the General Secretariat of Telecommunications and Post of the Ministry of Digital Governance responsible for civilian space matters. The civilian part is installed in all high level governmental offices, parliament, civil protection, police and embassies outside Greece. It is based on the exploitation of Greek frequencies and orbital position of the HellasSat satellites. These are operated by Hellas Sat s.a. which is a satellite communications solutions provider offering coverage over Europe, Middle East and Southern Africa. It has operated since 2001 upon licenses provided by Greece and Cyprus. The Greek license was renewed in 2017. HellasSat 2 was launched on 13 May 2003, HellasSat 3 was launched on June 2017 and HellasSat 4 was lunched on February 2019.

Furthermore, Greece engages with the EU, EDA GSA and ESA ARTES and is interested to play an active role in the European Governmental Satellite Communications (GovSatCom).

Greece is also a participant and contributor of Ku-Capacity to the EDA GovSatCom Demonstrator, also launched in 2019. With respect to EC activities, Greece is engaging at the EU level in the EU GovSatCom Network of Users of governmental Satellite Communications and expected demos. Additionally, Greece is promoting the development of multi-purpose technologies, addressing the national priorities and leveraging synergies from the participation in EU and ESA programmes.

The ESA ARTES 4S SPL represents a unique opportunity to evolve and enhance the National Governmental GreeCom Programme around the following strategic lines:

* Enhance its security features
* Enlarge the area of Coverage offering interconnection to Pooling and Sharing with European and Global reach.
* Offer opportunity to develop solutions to address the global secure satcom market, this fostering development and growth
* Allow Greece to prepare its contribution on European level to governmental satcom solutions
* Host an anchor station/hub in the South-East Mediterranean, benefiting from excellent meteorological conditions and with connectivity to satellites supporting middle-east and north Africa,).
* Support and demonstrate solutions for key security applications critical to Greece and its citizens, such as:
  + Needs of Maritime Industry
  + Addressing refuge Crisis and Border Control
  + Fire Prevention and security of the citizens
  + Interconnection of critical services in remote areas (such as Aegean islands)

This activity could be the central anchor around which a number of other Greek safety and Security related activities could be built under the ESA 4S (SAGA) and other European programmes.

Through this specific Initiative the Greek Government aims to work with the Greek industry to build upon the existing infrastructure aiming to:

* Enhance its security features to prepare to interconnect with other satellite systems and users of satcom capacity and services
* Enlarge the area of Coverage offering.
* Investigate how to address the institutional needs of Greece including in areas such as maritime, civil protection, refugee crisis response, border control, fire and disaster prevention
* Demonstrate developments with users in the field

# **4.2 Main principles of this Greek initiative :**

This Greek Initiative Announcement of Opportunity presents an opportunity for both Greek entities to enter into a partnership with ESA on development of innovative technologies / systems / services as addressed by 4S with the specific objective of **the development and evolution of the Greek Governmental Satcom Hub.**

In this partnership, using the appropriate Greek financial support, Greek industry shall typically cover, through co-funding, the technology and market risk associated to innovative developments.

Note that the level of co-funding may depend on the lifecycle addressed in the proposed activities, according to ARTES 4.0 4S rules for Technology & Product development defined in the Call for Proposals AO 10285.

The participating entity/entities shall:

* provide the respective private co-funding; and
* develop innovative technologies / systems / services.

This Greek initiative may address all steps in a product development relating to the defined topic and may include:

* technology developments up to product phase;
* development of services and applications; and
* full end-to-end system implementation up to pre-operational use.

# GREEK GOVERMNENTAL SATCOM - SYSTEM REQUIREMENTS & OBJECTIVES

The Greek Governmental Satellite Communication System, namely GreeCom, provides reliable communications to key Greek governmental services. It connects high level governmental officials and decision makers, emergency handling centers and administration offices within Greece and abroad. It provides connectivity in areas of Europe, the Middle East, Africa and the Mediterranean Sea.

GreeCom connects a number of Points of Presence (PoPs). Each PoP is equipped with a satellite terminal providing data and voice over IP services to a number of end user terminals. GreeCom is a closed network, with no connection to the Internet or to any other network. It follows centralized architecture principles and implements adaptive, dynamic bandwidth allocation.

The scope of this AO is the enhancement of security, resilience, availability, mobility and functionality of the GreeCom system.

Applicants should submit proposals for the development of technology or products focusing on the GreeCom system in the following areas:

* Pooling & Sharing solutions or interface development
* Data security (e.g. encryption).
* Satcom security (e.g. interference mitigation, suppression etc.)
* Mobility (e.g. small antennas).
* Supporting software
* Interconnection and interoperability with other satellite systems
* Pulling and sharing
* Other ideas within the above mentioned scope.

Preference will be given to integrated system solutions on the above topics.

The applicants should provide a risk analysis assessment of the proposed solution.

# PROCESS AND SCHEDULE

Greek Entities shall submit their Outline Proposals no later than December 5, 2020 to ESA through its ARTES 4S Open call for proposals. The “Outline Proposal Template” can be downloaded on: artes.esa.int/documents

(https://artes.esa.int/sites/default/files/ARTES\_TPD\_OP\_Template\_0.docx)

Selected activities will be implemented under the ARTES 4S Strategic Programme Line and shall be co-funded by the selected entity.

In support to interested companies, the following paragraphs indicate the process to be followed to deliver eligible proposals.

## Step 1: Outline Proposal Submission

Entities interested to reply to this call are invited to submit an Outline Proposal using the template as defined above.

The completed Outline Proposal shall be submitted by e-mail to

[**ARTES -4S@esa.int**](mailto:ARTES%20-4S@esa.int) **by December 5th, 2020**

**The e-mail should have the title “Submission for 4S Greek initiative”.**

**There will be no extension given to this deadline and any proposal received after this date will not be considered.**

ESA will not interact with applicants or provide assistance during the proposal submission stage apart from answering questions related to the process, addressed to the 4s Email.

## Step 2: Outline Proposal Evaluation by ESA

The evaluation process by ESA will be competitive, and each Outline Proposal will be assessed individually on its own merits and within the constraints of the available budget (1.7 M€).

A ranking of all received Outlines Proposals will be submitted to the Greek General Secretariat for Posts and Telecommunications.

## Step 3: Invitation to submit a Full Proposal

The Outline Proposals selected by ESA that also have the support of the Greek Administration based on the ESA ranking and proposal, and in line with the Greek National law will be invited to submit a Full Proposal.

The Greek Administration will support the Proposals (Authorization/Letter of Support in line with the Greek National law) that are the best ranked by ESA, within the limits of the available Greek budget for 4S.

Feedback will be provided to selected applicants to consolidate the selected Outline Proposal as required.

Only minimal summary feedback will be provided to applicants whose Outline Proposal was not selected for further consideration after Step 2.

## Step 4: Evaluation of Full Proposal and contract placement

The Full Proposal will be evaluated by ESA and after successful negotiation a contract may be placed.

# GENERAL GUIDELINES

The submissions and all correspondence relating to it shall be in English.

Any document submitted in reply to the initiative shall become the property of the Agency. The Agency will treat commercially sensitive or proprietary information confidentially and solely for the purpose of the assessment of the response.

Expenses incurred in the preparation and dispatch of the response to the announcement will not be reimbursed. This includes any expenses connected with a potential dialogue phase. The initiation does not bind the Agency in any way to place a contract.