



EU SST
Space Surveillance and Tracking

Ensuring space safety
and sustainability

EU SST Info opportunités 2023

23 octobre 2023

Florian Delmas, Maaïke Doorn, Pascal Faucher, Cassien Jobic, Monique Moury, Pascal Richard

#EUSpace



PROGRAMME OF THE
EUROPEAN UNION

Webinaire appels EU SST du 22 novembre 2023



1. Introduction sur EU SST
2. Les conditions pour répondre aux différents appels à propositions de EU SST
3. Les opportunités à venir

EU SST – Governance

EU SST Partnership:

15 EU Member States

- Austria, Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, Latvia, the Netherlands, Poland, Portugal, Romania, Spain, Sweden



From July 2023
EUSPA as Front Desk



Overseen by
**European
Commission**



What is EU SST?



EU SST:

- Expands towards a **fully-fledged security component** of the EU Space Programme 2021-2027 through a Partnership composed of **15 Member States**
- Has an **inherently dual governance** system in place in which civilian, military and security actors collaborate, which enables to operate effectively taking into account the **security** dimension of the SSA domain

Five strategic priorities:

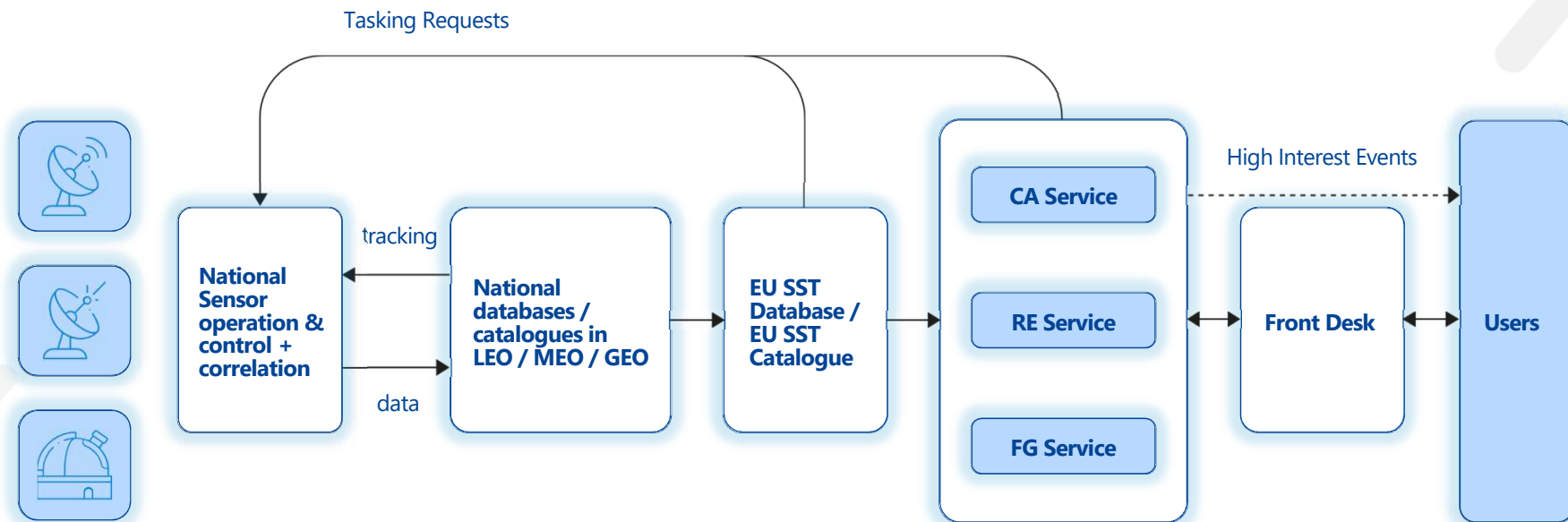
- Are fully **operational** 24/7, we deliver public services to users (CA, RE, FG) to ensure a minimum level of space safety and sustainability
- Perform research and development of SST capabilities to improve the level of performance and **strategic autonomy**
- Foster innovation and **competitiveness** of the European industry and start-ups, we support the consolidation of a commercial ecosystem around SSA, strengthening strategic autonomy in Europe
- Exploit **synergies between civil and defense**, avoid unnecessary duplications, and join forces in order to improve the level of European strategic autonomy
- Engage with **international partners** and contribute to the global burden sharing of the SSA domain through a regional SSA approach

EU SST – Operations

Sensor Network

Data Processing

Service Provision



EU SST – Services



Collision Avoidance (CA)

Risk assessment of collision and generation of collision avoidance alerts

Key features

- **User-tailored** service (SCD)
- Hot redundancy scheme involving ES (S3TOC) and FR (FR-SSA) with harmonised service level and single service provider per registered user
- Enhanced **Analysis & Risk Mitigation** support (e.g. covariance estimations, HBR estimations, PoC sensitivity analysis, CAM support)

Fragmentation Analysis (FG)

Detection and characterisation of in-orbit fragmentations

- Provided by IT (C-SSA)
- Short-term notification to **confirm quickly an FG event**
- Medium-term FG analysis based on the orbital parameters of the **catalogued fragments** e.g. Gabbard Diagram
- Long-term FG analysis (**with simulations with breakup model**)

Re-entry Analysis (RE)

Risk assessment of space objects re-entry into the Earth's atmosphere

- Provided by IT (C-SSA)
- Long-term (within 30 days) **re-entry predictions**
- Short-term (a few days) overflight predictions with **ground tracks over customisable areas of interest**



EU SST Financial framework 2023-2026



In July/August 2023 6 new grants have been awarded to the EU SST Partnership :

■ EU Space Programme :

- EUSST2023-26 Provision of SST services and the upgrade of SST assets by the EU SST Partnership

■ Horizon Europe (Work Programme 2022) :

- HE_EUSST_MS_TOP1 New & improved EU SST Missions and Services
- HE_EUSST_AE_TOP2 SST & STM system architecture and evolutions
- HE_EUSST_SB_TOP3 Space-based SST (mission, system and sensors network)
- HE_EUSST_SP_TOP4 SST Sensors and Processing
- HE_EUSST_SD_TOP5* SST Networking, Security & Data sharing - *to be signed*

Actions will be implemented from **July 1st 2023 (M1) till June 30th 2026 (M36)**

Total EU Contribution of 173 MEuros

Approx. 80% will be redistributed through **subcontracting** or **cascading grants**

* Related subcontracts will not be presented.

Opportunities under EU SST 2023-2026



Subcontracting (Subco)

- Implemented by EU SST Partnership
- Foreseen under Space Programme EUSST2023-26 and the 5 Horizon Europe SST Actions
- Obey to general eligibility conditions : "best value for money"
- Comply with applicable national law on public procurement

Financial Support for Third Parties (FSTP) : Cascading grants

- Implemented by CNES (FR) and ASI (IT)
- Foreseen under Space Programme EUSST2023-26 Action
- Ensure objective & transparent selection procedures
- Budget 30 M€
- Financial contribution up to 45 % of total costs of action

Conditions of Participation (Art. 24 EU Space Reg)



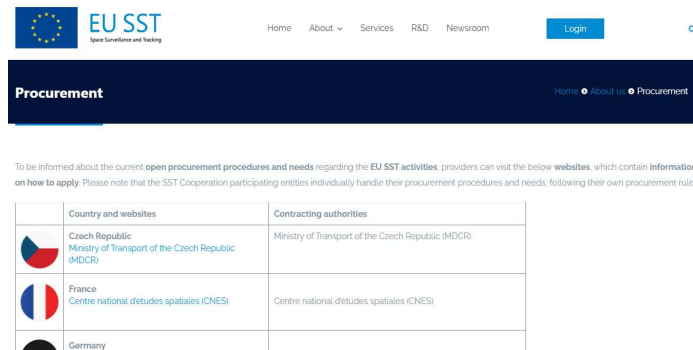
Application of eligibility & participation conditions

- When necessary and appropriate to preserve the security, integrity and resilience of the operational UE systems
- Taking into account the objective to promote the EU strategic autonomy [...], while preserving an open autonomy
- Control of eligibility :
 - a) Legal entity is established in a MS and its executive management structures are established in that MS
 - b) The legal entity commits to carry out all relevant activities in one or more MS, and
 - c) The eligible legal entity is not to be subject to control by a third country or by a third country entity.
- Sensitive activities : All (sub)contractors involved in
 - operation and maintenance of the SST service provision function
 - operation and maintenance of the SST processing function
 - operation and maintenance of the SST sensor function
 - development, operation and maintenance of the SST catalogue
 - development, operation and maintenance of new SST service provision functions
- Complete subcontractor chain concerned
- Assessment made by European Commission : compliance & waivers

Practicals : Publication of tenders

EU SST website [Procurement – EU SST](#)

- Links to the **procurement section of the websites of EU SST Cooperation participating entities**



- Reports on new open procedures (News)

Official Journal [TED home - TED Tenders Electronic Daily \(europa.eu\)](#)

All open ITT & Calls for Proposals will be published in both English and MS language

Open calls under EU SST 2023-2026

Work Breakdown Structure for the activities of the Partnership

- ~~WP 1 – Project Management~~
- WP 2 – Program Office / EISF
- WP 3 – Operation of sensors
- WP 4 – Services
- WP 5 – Performance Monitoring
- WP 6 – System Evolution

Programme Office / EISF (WP2)

Objectives WP2

- Coordinating the execution of the programme
- Supervising the transversal activities of the project: dissemination, quality assurance, risk management, users, programmatic KPIs, standardisation, task force and reporting on sensor upgrades.
- Fostering the European Industry thanks to EISF;
- Defining the long-term evolution of the governance of EU SST

Open calls

Title	Subco / FSTP	Partner	MS	Call open	Start date
Commercial data procurement (1st ITT)	Subco	CNES *	FR	10/10/2023	03/2024
Commercial data procurement (2nd ITT)	Subco	CNES*	FR	10/01/2025	07/2025
Innovative optical commercial sensors	FSTP	ASI*	IT	08/01/2024	
Innovative radar and new technology commercial sensors	FSTP	CNES*	FR	08/01/2024	

* Call specifications & selection proposals on EU SST partnership level

Programme Office / EISF (WP2)



COMMERCIAL DATA PROCUREMENT

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
ITT #1	Subco	CNES *	Competitive procedure with negotiation	10/10/2023	08/11/2023	03/2024	15 M€	Several
ITT #2	Subco	CNES*	Competitive procedure with negotiation	01/01/2025	01/02/2025	07/2025	3 M€	Several

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Increased detection capabilities, especially for small objects
- A higher worldwide region coverage using sensors outside of Europe
- An most reactive network
- An increased catalogue accuracy

Scope

WP1 : Surveillance data acquisition

Regular basis
Amount of data proposed by the contractor

WP2 : On-demand data acquisition

On request from EU SST depending on the need (Collision Avoidance, Fragmentation, Reentry, Catalogue)
In addition to surveillance data

Public object solely eligible

Operational Telescopes, SBSS, Radars (mono or bi-static) and Passive Ranging stations solely eligible



Programme Office / EISF (WP2)



INNOVATIVE COMMERCIAL SENSORS (UPGRADE)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Optical	FSTP	ASI *	Call for proposals	01/2024 – 03/2025	Submission date every 4 months	05/2025-06/2025	4 M€	Several
Other technologies	FSTP	CNES*	Call for proposals	01/2024 – 03/2025	Submission date every 4 months	05/2025-06/2025	26 M€	Several

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Sharing the burden related to the development of innovative solutions
- Promoting the European Industry to develop and deploy innovative solutions
- Increasing detection capabilities
- Decreasing the cost
- Increasing measurements accuracy
- Covering more regions of the world

Scope

Co-fund (45%) the development of new solutions implemented by the European industry by supporting :

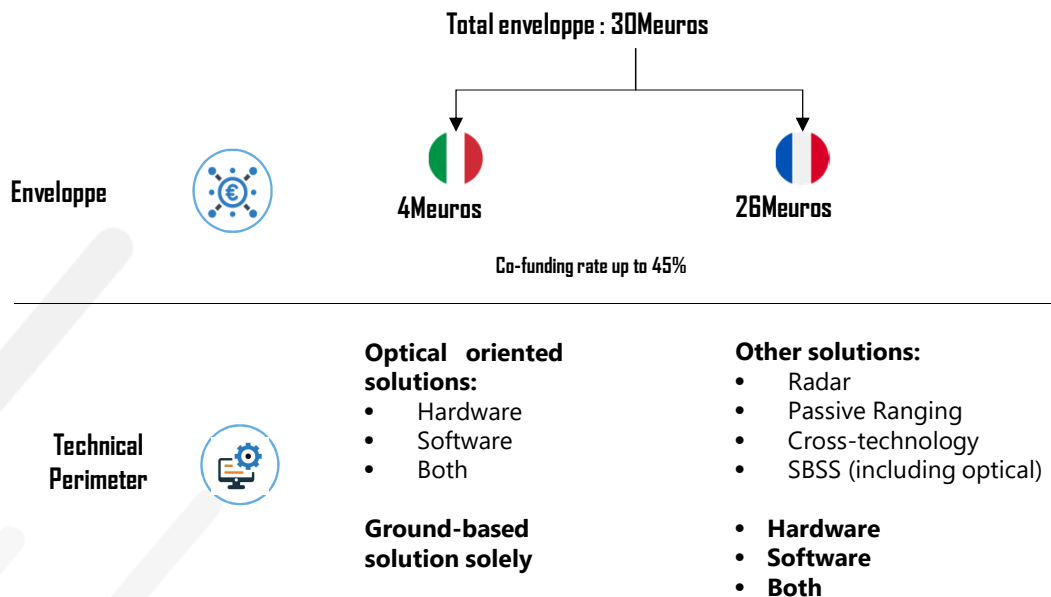
- Already existing and operational sensors / network of sensors upgrades intending to improve performances (accuracy, detection capabilities, timeliness, ...)
- Development of a new cross-technology based sensor
- Improving an already existing and operational sensor / network of sensors, thanks to cross-technology features
- Deployment of sensors outside European VLA
- Development of solutions to decrease the price of data



PROGRAMME OF THE
EUROPEAN UNION

Programme Office / EISF (WP2)

INNOVATIVE COMMERCIAL SENSORS (UPGRADE)



Eligible candidates

- **Single entity**
 - European private company
 - Compliant with Article 24.
 - Data providers
 - Owner of the sensors
- **Consortium special requirements**
 - The prime contractor is the legal responsible
 - The prime contractor shall comply « Single entity » requirements
 - The co-beneficiaries involved shall be European private companies
 - The co-beneficiaries and third parties involved shall comply Article 24
- **Input TRL**
 - Hardware : 6
 - Software : 4
- **Output TRL** : 8 (PreFAR) / 9 (FAR)

Operation of sensors (WP3)

Objectives WP3

- Responsible for all operational activities related to general sensor coordination
- Sensor scheduling
- Connectivity
- Calibration and integration of new sensors in the network

Open calls

GA	Activities	Subco / FSTP	Partner	MS	Call open	Start
SpReg	Connectivity of sensors platform	Subco	POLSA	PL		07/2023
SpReg	Development of background modules for the integrated tool to address the monitoring of sensors	Subco	AEE	ES		
SpReg	Calibration and Monitoring of Sensor (WP3 & WP5)	Subco	AEE	ES		01/2024
SpReg	Operational provision of optical data	Subco	POLSA	ES		07/2023

* Call specifications & selection proposals on EU SST partnership level

Provision of Services (WP4)

Objectives WP4

- Provide operational services according to the following definitions:
 - CA service
 - FG service
 - RE service
- Services will use orbital information and uncertainties generated by the EUSST Catalogue, once available, based on the measurements shared through the EUSST Database.

Open calls

	Activities	Subco / FSTP	Partner	MS	Open Call	Start
SpReg	Collision Avoidance service: Operations and maintenance of the S3TOC (2024-2026)	Subco	AEE	ES		01/2024
SpReg	Collision Avoidance service : Operational activities french OC (2024-2026)	Subco	CNES	FR	10/2023	04/2024
SpReg	Integration of new services	Subco	AEE	ES		06/2024
SpReg	Maintenance and operational Support Database	Subco	DLR	DE		Following current contract
SpReg	Further Development & Integration related to the EUSST Catalogue Maintenance and operational Support related to the EUSST Catalogue	Subco	DLR	DE		Following current contract

Provision of Services (WP4)

COLLISION AVOIDANCE SERVICE : OPERATIONS, MAINTENANCE & EVOLUTION SUPPORT (FR OC)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
CA	Subco	CNES	Competitive procedure with negotiation	10/2023	24/11/2023	04/2024*	Non-disclosed	Selection per WP

*For WP1, start date may be delayed by ~6 months for if reception of the accreditation

Outcomes

- Support to the activities of the French SSA Center, linked to EUSST CA Service (funded by EUSST – main contributor) and FR national activities on Space Traffic Management (funded by CNES)
- CA Service opened to non EU operators since 01/2023, EUSST expects up to 2500 S/C registered by mid-2026
- High level of automation to be implemented, improvements of methods and processes

Scope

- **WP1 System administration :**
 - Maintenance and evolution of the Operational Center
- **WP2 STM Operations and maintenance:**
 - Provision of EUSST CA Service + FR national activities on STM
 - On call activities
- **WP3 Ground Segment maintenance & Evolutions:**
 - Maintenance and Evolutions of the tools used in WP2
- **WP4 – Studies and evolutions of CA algorithms:**
 - Studies of new CA algorithms, pre-mission analysis

Provision of Services (WP4)

COLLISION AVOIDANCE SERVICE : OPERATIONS, MAINTENANCE & EVOLUTION SUPPORT (FR OC)

Allocation

- WP2&3 will be awarded together. Otherwise, selection will be done independently
- A company, or consortium of companies, can be selected by CNES to provide the support for one, two, three or four workpackages.

Eligibility & Security constraints

- **Single entity** : European private company & Compliant with Article 24.
- **Consortium special requirements** : The co-beneficiaries involved shall be European private companies; co-beneficiaries and third parties involved shall comply with Article 24
- **WP1** : Security Clearance required + French Eyes only
- **WP2** : French Eyes only
- **WP3** : No security constraints for work held out of the FR SSA Center.
- **WP4** : No security constraints for work held out of the FR SSA Center

Performance Monitoring (WP5)

Objectives WP5

- Assessing the sensors in terms of measurement quality and contribution
- Assessing the services in terms of timely provision, service quality and consistency
- Security Monitoring of elements at EUSST level
- Compilation of the key parameters complemented by further metrics and statistics to allow an assessment on the evolution of EUSST
- Monitor the measures in place to assure a defined quality of the operational activities in EUSST

Open calls

	Activities	Subco / FSTP	Partner	MS	Open Call	Start
SpReg	Integrated Tool for the Expert Team Performance Monitoring	Subco	DLR	DE	TBD	Open + 5 Months

Performance Monitoring (WP5)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Integrated Tool for the Expert Team Performance Monitoring	Subco	DLR	Call for proposals	TBD	Open + 1 Month	Open + 5 Months	Non-disclosed	Several

Outcomes

- Operational and technical assessment of the EU SST network
- Continuous monitoring software including supervision aspect

Scope

- Carry out the calibration campaigns as agreed in the calibration procedure
- Develop a tool for the continuous monitoring of the operational data provided by the sensors
- Adapt to the evolution of the EU SST DB.
- Implement supervision board for all members of the WP5

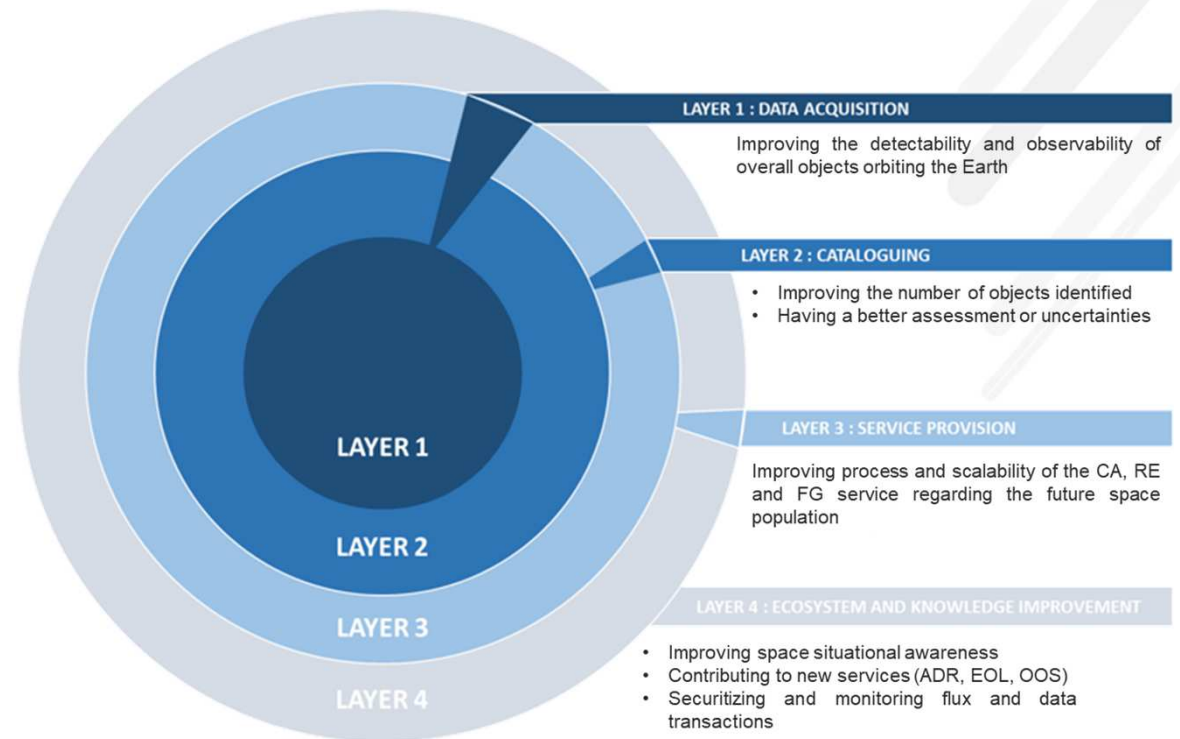
System Evolution (WP6)

Objectives

Expert team System Evolution aims to define the long-term vision of EUSST performance and autonomy through :

- Defining the technical **development plan** aiming to spearhead the continuous improvement of the EUSST ;
- Coordinating all **research and development (R&D)** activities accordingly to the development plan ;
- Conducting **architecture studies and added value analyses** in order to identify sensors that are potent candidates for the EU SST effort, and assessing the performance of the proposed network of assets ;
- Conducting studies and development leading to improve the **space environment knowledge**, and make sure the long-term vision for the EUSST will be scalable ;
- Conducting studies and development leading to improve **the 3 core services CA, RE and FG**.

Development plan



System Evolution (WP6)

Open calls

Title	Subco / FSTP	Partner	MS	Call open	Start date
R&D on analytical propagation model including uncertainties (DB & catalogue)	Subco	DLR*	DE	TBD	Open + 6 Months
Architecture design and added-value analysis	Subco	CNES	FR	11/2023 - 12/2023	04/2024
R&D on CA	Subco	AEE	ES	TBD	Open + 5 Months
R&D on CA	Subco	CNES	FR	01/2024 - 02/2024	06/2024
R&D on laser contribution to cataloguing and operational services	Subco	DLR*	DE	TBD	Open + 6 Months
R&D on manouvre detection and estimation from multiple sources	Subco	AEE*	ES	TBD	Open + 6 Months
Monitoring of rate of compliancy	Subco	DLR*	DE	TBD	Open + 6 Months
R&D on attitude estimation through multiple sources data fusion	Subco	CNES*	FR	07/2024 - 08/2024	01/2025
R&D on radio frequency interference, emission detection & catalog building	Subco	CNES*	FR	01/2024 – 02/2024	07/2024
Horizon Scanning	Subco	DLR*	DE	TBD	Open + 6 Months
Population evolution and building of a new population file	Subco	DLR	DE	TBD	Open + 5 Months
Potential hazardous object identification and space capacity	Subco	AEE*	ES	TBD	Open + 6Month
Architecture study evolution toward numerical twin concept	Subco	AEE	ES	TBD	Open + 5 Months
Architecture study evolution toward numerical twin concept	Subco	CNES	FR	11/2023 – 12/2023	04/2024
SBSS activity	Subco	CNES*	FR	12/2023 – 01/2024	07/2024

* Call specifications & selection proposals on EU SST partnership level

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on analytical propagation model including uncertainties (DB & catalogue)	Subco	DLR*	Call for proposals	TBD	Open + 1 Month	Open + 6 Months	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Assessing consequences of propagations and models on catalogue accuracy
- Increasing cataloguing accuracy;

Scope

- Modeling uncertainties in analytical propagation
- Assessing consequences of the error of space weather model in propagated orbits
- Enhancing realism by modeling the error (e.g. solar activity, atmospheric model)

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Architecture design and added-value analysis	Subco	CNES	Call for proposals	11/2023	12/2023	04/2024	Non-disclosed	1
Architecture study evolution toward numerical twin concept	Subco	CNES	Call for proposals	11/2023	12/2023	04/2024	Non-disclosed	
Architecture study evolution toward numerical twin concept	Subco	AEE	Call for proposals	TBD	Open + 1 Month	Open + 5 Months	Non-disclosed	1

Outcomes

- Up-and-running simulation software to assess theoretical performance of EU SST in terms of detection and catalogue
- Technical report regarding added-value of new sensors, including recommendations
- Technical report regarding EU SST gap and development recommendations

Scope

- Improving evaluating process
- Improving decision making process
- Assessing the scalability of the EUSST regarding long-term evolution of the space population
- Implementing synthetic population replicating the real current population observable
- Modeling Network Coordinated Scheduler (COPLA) within simulation chains
- Implementing CA / RE / FG simulation replay modules based on EU SST long-term population file and real data

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on Collision Avoidance	Subco	CNES	Call for proposals	01/2024	02/2024	04/2024	Non-disclosed	Several contracts
R&D on Collision Avoidance	Subco	AEE	Call for proposals	TBD	Open + 1 Month	Open + 5 Months	Non-disclosed	

Outcomes

- Improving CA process and product
- Improving the scalability of the CA service to the space population evolution (launch and in-orbit)
- Improving mitigation recommendations

Scope

- Developing All vs All optimized screening environment
- Developing uncertainties characterization method and algorithms
- Improving risk estimations methods thanks to alternative methods (e.g Hall, LAAS)
- Implementing risk assessment at launch methods (CNES method inheritance) to provide operative recommendations
- Performing Maneuver Computation to provide operative recommendations

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on laser contribution to cataloguing and operational services	Subco	DLR*	Call for proposals	TBD	TBD + 1 Month	TBD + 6 Months	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Improving catalogue methods to include lasers data related to uncooperative objects
- Assessing daylight tracking feasibility
- Assessing transversal improvement feasibility thanks to lasers data

Scope

- Scheduling observation campaign
- SDLR automation scheduler reworks (interfaced to COPLA)
- OD and cataloguing process reworks to manage lasers data for non-cooperative
- Cataloguing process reworks to manage daylight observations

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on manoeuvre detection and estimation from multiple sources	Subco	AEE*	Call for proposals	TBD	TBD + 1 Month	TBD + 6 Months	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Enhancing CA and catalogue capabilities thanks to maneuver characterization (LEOP, Mission, EOL)
- Improving accuracy of EU SST products thanks to highest model fidelity

Scope

- Developing and implementing filtering methods helping for maneuver detection
- Implementing new propulsion model (such as low-thrust model) and strategies (such as station-keeping) for detecting maneuvers
- Assessing different methods feasibility and performances for maneuver detection:
 - Stochastic methods
 - Artificial methods
 - Statistical methods
 - Data fusion based correlation (radar + optical)
 - Assessing data fusion influence on maneuver detection feasibility

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Monitoring of rate of compliancy	Subco	DLR*	Call for proposals	TBD	TBD + 1 Month	TBD + 6 Months	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Preparing potential future EU SST service : Compliancy reporting with Space Debris Mitigation Standards
- Increasing EU SST autonomy regarding this highly strategic topic
- Acting as major stakeholder in STM regulation works

Scope

- Defining useful set of indicators for assessing compliancy
- Defining sources and data fusion process to collect data of interest for assessing compliancy
- Designing Compliancy Monitoring Software

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on attitude estimation through multiple sources data fusion	Subco	CNES*	Call for proposals	07/2024	08/2024	01/2025	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Improving event predictions thanks to attitude
- Improving space situational awareness and object characterization
- Supporting ADR, OOS and EOL activities

Scope

- Implementing data fusion environment to collect and process cross-technologies data (optical, radars)
- Assessing AI-based attitude estimation feasibility (CNES previous studies inheritance)
- Assessing adaptive optics based attitude estimation feasibility
- Implementing analysis environment :
- Providing attitude regime analysis to support ADR operators
- Providing long-term analysis for End Of Life activities, especially assessing compliancy with EoL requirements

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
R&D on radio frequency interference, emission detection & catalog building	Subco	CNES*	Call for proposals	01/2024	02/2024	06/2024	Non-disclosed	Several

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Improving interference event predictions thanks to RF
- Improving space situational awareness and object characterization
- Preparing potential future new EU SST service

Scope

- Implementing algorithm dedicated to extract third party emissions from ground station antenna logs
- Developing the database hosting observations and object frequency analysis
- Developing emission predictions environment
- Developing automated RFI detection

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Horizon Scanning	Subco	DLR*	Call for proposals	TBD	Open + 1 Month	Open + 6 Months	Non-disclosed	1

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Fostering European cooperation
- Assessing continuously European Industry capabilities and development plan identifying evolution of space commerce
- Monitoring the international SSA ecosystem

Scope

- Collecting continuously information regarding the SSA ecosystem
- Benchmarking SSA market to identify trends and development plan
- Building SSA potential development scenarios
- Making recommendations for future EU SST development plan and schedule

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Population evolution and building of a new population file	Subco	DLR	Call for proposals	TBD	Open + 1 Month	Open + 5 Months	Non-disclosed	Several

Outcomes

- Enhancing EU SST autonomy regarding space population awareness
- Mastering space environment
- Contributing to other EU SST services to improve long-term studies realism

Scope

- Defining space environmental indexes
- Building EU SST space population catalogue
- Defining long-term scenarios taking into account :
 - Effect of incremental number of object increasing
 - Effect of satellites spiraling-up / down
 - Effect of satellite defects
 - Effect of fragmentations

System Evolution (WP6)

	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
Potential hazardous object identification and space capacity	Subco	AEE*	Call for proposals	TBD	Open + 1 Month	Open + 6 Months	Non-disclosed	Several

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Enhancing EU SST autonomy regarding space population awareness
- Mastering space environment
- Contributing to other EU SST services to improve long-term studies realism

Scope

- Defining space environmental indexes
- Quantifying the potential of any mission to degrade the orbital environment
- Implementing Long-term statistical / stochastic propagation
- Assessing the accumulated risk for a satellite (or constellation) overall the duration of the mission
- Analyzing space capacity and consequences of future mission

System Evolution (WP6)



	Type	Entity	Procedure	Call open	Call deadline	Start	Budget	# contracts
SBSS activity	Subco	CNES*	Call for proposals	12/2023	01/2024	07/2024	Non-disclosed	Several (2 Consortia)

* Call specifications & selection proposals on EU SST partnership level

Outcomes

- Benchmarking technology capabilities and performances for SBSS applications
- Optimized on-board / on-ground approach
- Breadboard emulating a SBSS mission

Scope

- Task 1:
 - Benchmarking technology capabilities and performances for SBSS applications
 - Building-up a breadboard to test the system in near real conditions
 - Lossless algorithm design and implementation
 - On-board / On-ground optimal task delegation
- Task 2:
 - Designing the optimal optical observation strategy contributing to SST
 - Identifying the best observation / observed objects configuration as function of (non-exhaustive list) :
 - Sub GEO -> GEO
 - GEO -> MEO
- Task 3:
 - Simulating complete SBSS mission (satellite + ground segment) to face the different constraints
 - Assessing on-board cross technology based solutions (non exhaustive list):
 - Optical + Passive RF
 - Optical + Laser



PROGRAMME OF THE
EUROPEAN UNION



EU SST
Space Surveillance and Tracking

Ensuring space safety
and sustainability

Merci de votre attention



PROGRAMME OF THE
EUROPEAN UNION