

→ Kick-Start Activity Predictive Maintenance

<https://business.esa.int/funding/invitation-to-tender/predictive-maintenance-kick-start>

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Kick-Start Predictive Maintenance

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 in writing. They will be addressed during the Q&A at the end of the webinar
- Slides will be made available on the website of the call
<https://business.esa.int/funding/invitation-to-tender/predictive-maintenance-kick-start>

Kick-Start Predictive Maintenance

WEBINAR AGENDA

1. Introduction

- Fuel your business
- What ESA offers
- Funding opportunities

2. Space for Predictive Maintenance

- Opportunity
- Background
- Topics of Relevance
- The Power of Space

3. Kick-start Activity essentials

- Introduction to Kick-start Activity
- Thematic Calls
- Authorization from National Delegations
- How to apply
- The Proposal Template
- Study Tasks

4. Q&A

→ FUEL FOR YOUR BUSINESS

Can you leverage space technology and data for the benefit of life on Earth?



→ WHAT ESA OFFERS

We'll work together to make your idea commercially viable, with:



Zero-Equity
Funding
(€60k-€2M+)



Tailored Project
Management
Support



Access to
Our Network
& Partners



Use of the
ESA Brand for
Credibility

→ FUNDING OPPORTUNITIES

Kick-Start (AO-xxxxx)

The AO number for the theme “Predictive Maintenance” will be **AO-10127**

Customer
Demand

Feasibility
Study
(AO-9305)

Demonstration
Project
(AO-9305)

Operational
Service

Customer Driven
Business Opportunity

Validated
Business Case for
Minimum Viable Service

Validated
Minimum Viable Service

Space for Predictive Maintenance

→ OPPORTUNITY

6 months duration

up to €60K ESA funding (75% ESA co-funding)

Develop and assess new business case for commercially viable services

- Customer Engagement
incl. needs and value proposition validation
- Technical Feasibility Assessment
incl. service and system architecture, space data/technology integration
- Commercial Viability Assessment
incl. business model and plan



→ BACKGROUND 1/2

Organisations are under pressure to **optimise operations** and **reduce costs** for asset maintenance.

Predictive Maintenance is gaining importance in various sectors due to the advantages it offers over routine or time-based preventive maintenance.

Predictive Maintenance techniques determine the **condition of in-service equipment** to predict when maintenance should be performed, **minimising disruption** of normal system operations.

→ reduced down times

→ higher system reliability

Optimum: maintenance activity at **most cost-effective** point in time and before significant performance loss of the equipment



Predictive maintenance solutions elements:

- Automated **condition monitoring** + embedded processing
- Secure + efficient **communication** with supervising systems
- Predictive **modeling** for equipment failure detection
- Maintenance **logistics** based on model results
- **digital twins** for impact simulation

Kick-Start initiative for services that support parts of or predictive maintenance solutions as a whole as well as supporting the transition from other maintenance approaches.

→ TOPICS OF RELEVANCE

Potential in different sectors:

- **Manufacturing:** Early fault detection and diagnosis, intelligent sensor data analysis + maintenance planning.
- **Railways and other transport sectors:** remote condition monitoring, prevention of asset failure + service disruptions.
- **Oil & Gas:** remote condition monitoring, digital twins of offshore equipment for diagnostics, impact assessment and training.
- **Automotive and connected cars:** condition monitoring, maintenance planning, spare part logistics and fleet management.
- **other areas:** energy sector, vessel maintenance in maritime sector, aerospace, construction, and heavy machinery, etc.



→ THE POWER OF SPACE



Satellite Navigation

- Condition monitoring of mobile assets
- Logistics planning of maintenance service
- Geo-tagging of in-situ data (e.g. condition of road or railway tracks)
- GNSS timestamps



Earth Observation

- Monitor environmental conditions as input for asset condition modelling (e.g. InSAR for movement of earth surface)
- Damage assessment



Satellite Communication

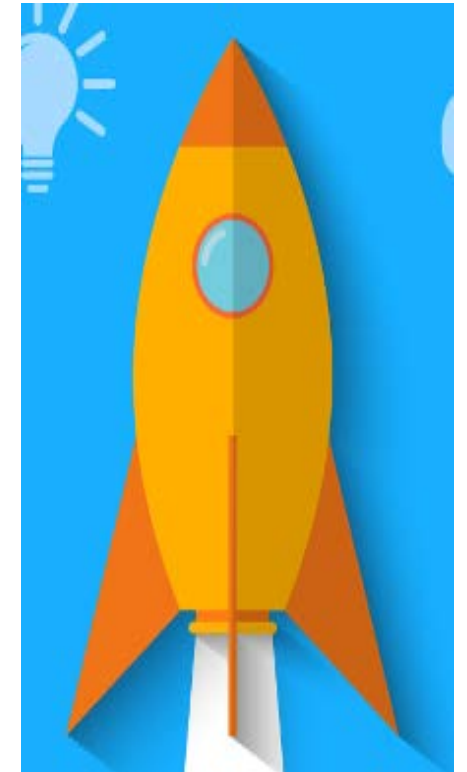
- Reliable and secure communication infrastructure
- Collect condition information from assets in remote locations



→ INTRO TO THE KICK-START THEME

- “Kick-start Activities” is ESA’s funding scheme enabling companies to undertake **short Feasibility Studies (up to 6 months)** that **explore new service and application concepts** making use of space capabilities.
- “Kick-start Activities” offer an instrument to assess the technical feasibility and commercial viability of an idea with **limited initial investment** by companies. As such, this scheme is considered particularly attractive for **SMEs and Start-ups**, granting them an easy entry into ESA Business Applications.
- ESA is committed to a **rapid evaluation** process, for allowing companies to keep the pace in the market.
- Successful Kick-start Activities can be further developed into commercially-viable businesses with follow-up support from ESA Business Applications in the form of **Demonstration Projects** (*)

(*) <https://business.esa.int/funding/direct-negotiation-call-for-proposals/demonstration-projects>



→ THEMATIC CALLS FOR KICK-START ACTIVITIES

- The Thematic Calls for Kick-start Activities are **open to any company or organisation in participating Member States** (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland and the United Kingdom).
 - ⇒ Restricted to organisations not having received already 2 contracts within the last two years under this Kick-Start scheme (but such organisations are free to apply directly to AO-9305)
- Kick-start activities aim at exploring the **viability of new service/application** concepts and **consolidating the customer/user landscape** including derivation of user requirements.
- Kick-start activities resulting from Thematic Calls are funded at **75%** by the Agency for a maximum amount of **60,000 Euro** per activity.
- The Thematic Calls for Kick-Start Activities follow a **competitive tendering procedure**. The evaluation criteria and associated weighting factors are published in the 'Letter of Invitation' of the Call for Proposals.

→ AUTHORIZATION FROM NATIONAL DELEGATIONS

The **availability of funding** for this specific Thematic Call against which you submit your Proposal is an admissibility criteria. Proposals not authorized at the closing date of the Thematic Call will not be admitted for evaluation.

For each individual Thematic Call, information on the list of **Member States** that have already provided their financial support (**pre-authorization**) to this Thematic Call is provided in the cover letter of the tender documents.

In case your company/organisation resides in a country which has not pre-authorized this Thematic Call, you need to **contact your National Delegation** as soon as possible to potentially obtain such authorization. The contact information of the National Delegations can be found at <https://business.esa.int/national-delegations>.

For the Thematic Call on 'Predictive Maintenance' **Austria, Germany, Luxembourg, Norway** and the **United Kingdom** have pre-authorized the funding. **Switzerland** is not supporting any kick-start activity.

→ HOW TO APPLY 1/2

1. Register by completing online questionnaire on **ESA-STAR Registration** on (minimum 'light registration') (<https://esastar-emr.sso.esa.int>)
2. Download the official tender documentation (Invitation to Tender) via **EMITS 'AO-10127'** from **09th December 2019** onwards
3. Create 'Bidder Restricted Area' in ESA-STAR
4. Write your proposal and obtain Letter of Authorization from **National Delegation**, as needed
5. Submit your proposal via 'Bidder Restricted Area' in **ESA-STAR Tendering** by **31st January 2020, 13:00 CET** (Do not wait until the last minute!)



→ HOW TO APPLY 2/2

The Letter of Invitation to Call for Proposals is issued on EMITS (<http://emits.sso.esa.int/emits/owa/emits.main>) under 'AO-10127' and includes:

- **Letter of Invitation**
- **Appendix 1:** Activity Description Predictive Maintenance
- **Appendix 2:** Draft Contract
- **Appendix 3:** Tendering Conditions for Express Procurement Procedure - EXPRO/TC
- **Appendix 4:** Proposal Template

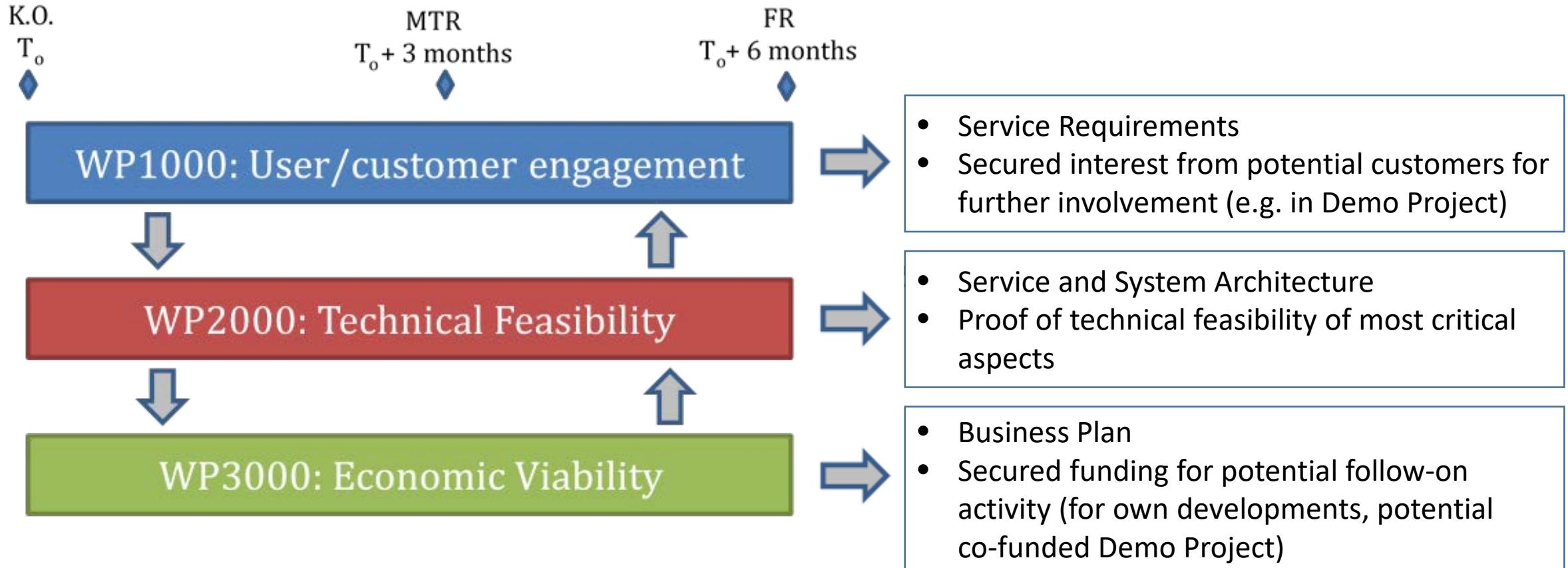


→ THE PROPOSAL TEMPLATE

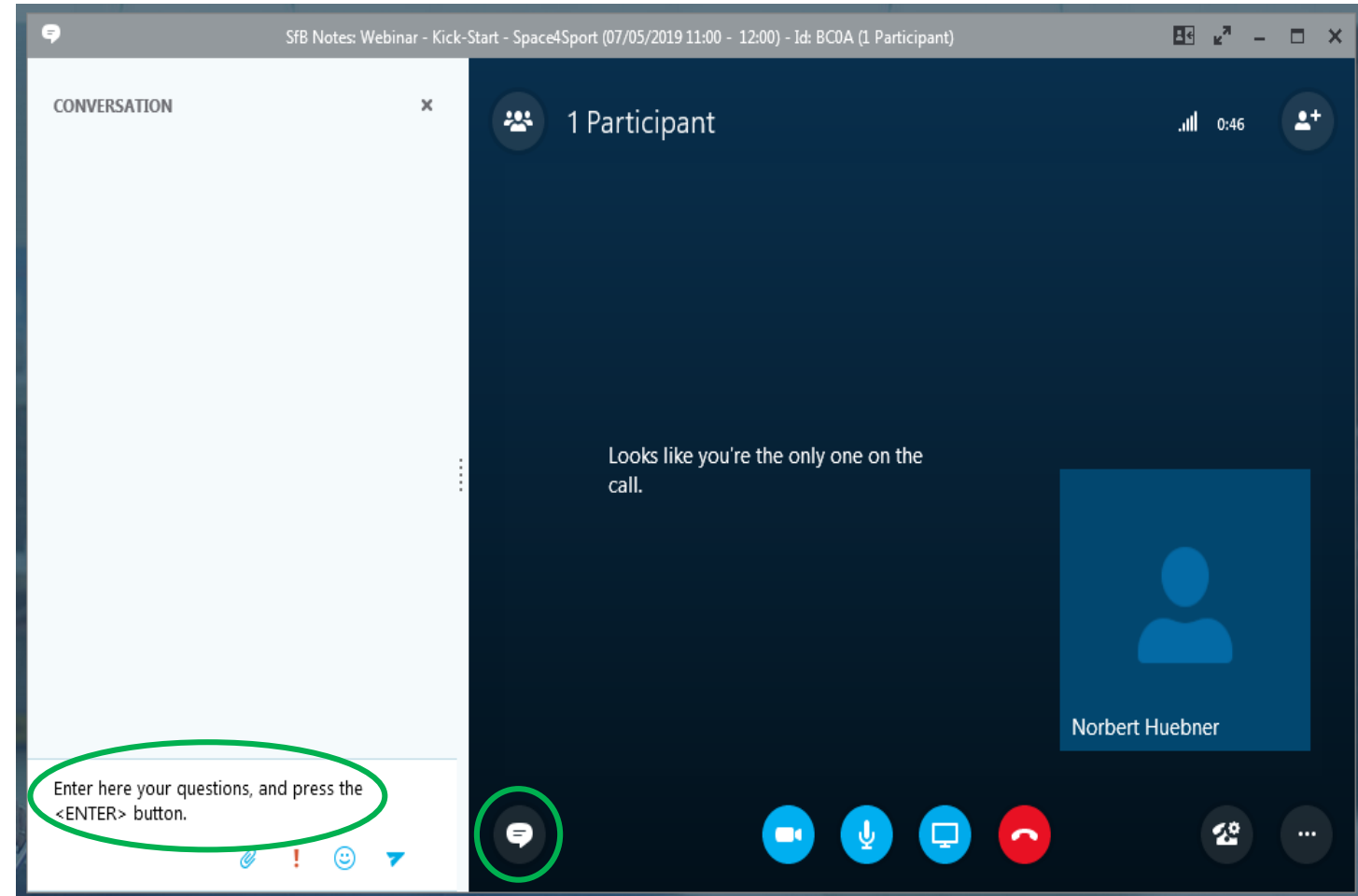
Your Proposal shall include the following information:

- A) Proposal Cover Letter (template)
- B) Detailed Proposal (template)
 - 1) Executive Summary (max 1 page)
 - 2) Business Potential (max 5 pages)
 - 3) Technical Concept (max 5 pages)
 - 4) Team and Resources (max 3 pages)
 - 5) Management (max 4 pages, pre-filled)
 - 6) Financials (max 2 pages)

→ STUDY TASKS



→ Q&A





→ THANK YOU FOR PARTICIPATING

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