

→ KICK START ACTIVITY

Augmented / Virtual Reality

Augmented /Virtual Reality Webinar  
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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

## WEBINAR AGENDA

- Introduction
  - Fuel your business
  - What ESA offers
- Space for Augmented / Virtual Reality
  - Background
  - Opportunity
  - Topics of relevance
  - Enablers from space
- Kick-start Activity essentials
  - Introduction to Kick-start Activity
  - Thematic Calls
  - Authorization from National Delegations
  - How to apply
  - The Proposal Template
  - Study Tasks
- 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:



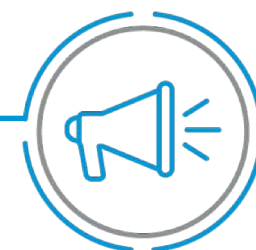
Zero-Equity  
Funding  
(€60k-€2M+)



Tailored Project  
Management  
Support



Access to  
Our Network  
& Partners



Use of the  
ESA Brand for  
Credibility

# AUGMENTED / VIRTUAL REALITY

## BACKGROUND

- **Virtual reality solutions** have been growing rapidly outside of the traditional heartland of entertainment and form an exciting presence in many different sectors as for example education, training, operations, tourism, retail and manufacturing.
- By superimposing digital information directly on real objects, environments and maps, **Augmented Reality** allows people to process the digital and physical information simultaneously, improving their ability to absorb information, make decisions and execute the tasks quickly.
- As in many other sectors, ie, education, marketing, manufacture, healthcare, several **combination of VR/AR applications** can be seen within the fields of tourism, preservation, natural historical heritage industry, etc.
- VR/AR applications are in particular characterised by the key role played by **cutting-edge science and technologies**, moving increasingly to high level of automation and benefiting from satellite technology, tracking and imaging.



Source: <https://www.siemens.com/innovation/en/home/pictures-of-the-future/digitalization-and-software/simulation-and-virtual-reality-trends.html>



Source: <https://www.mobileeurope.co.uk/press-wire/augmented-reality-to-see-2018-boom-as-smartphone-capabilities-grow>

# 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



# TOPICS OF RELEVANCE

Applications	Users and Stakeholders	Potential services
Supporting the businesses in offering L-B AR solutions which allow to engage the customer's visual senses in a far improved and highly immersive shopping experience and therefore boost their businesses.	retail chains, department stores, real estate agencies	Three-dimensional product visualizations and demonstrations, immersive three-dimensional displays
Using applications powered by AR, the traveller not only could research and navigate to the places wishes to visit, but can experience them in a much more meaningful way with digital overlays containing interactive information about the culture or history of the site.	travel agencies, tourist offices, hotels and hotel chains, museum, historic and cultural places and buildings	Three-dimensional visualizations of the environments and places, virtual visits, immersive three-dimensional displays
The AR training, based on a realistic Virtual Reality (VR) training environment, will allow fully immersive training and will be extremely important for the conduction of medical assistance, to improve the capability of Emergency Response teams as police and ambulance	hospitals,, healthcare providers, engineering teams, police, ambulance teams, first responders, demining training companies	training scenarios for operators in VR and AR; augmentation of procedural steps for operators; visualisation of parts; human-robotic operations training scenarios
With the ability to bring people together, regardless of geographical distances, AR/VR will allow teacher and students to work together on tutorial videos and learning applications when they are far away just as well they were in the same room, for example to an underwater coral reef journey.	national institutions, schools, universities, educators, students	Lectures in AR/VR; immersive 3D educational experiences in remote sites, as art, archaeological sites, oceans, etc.





## → THE POWER OF SPACE



### Satellite Navigation

**GNSS** are the main source of geo-referenced locations data. Satellite navigation is instrumental in order to track the location of the user, geo-locate different objects in the VR/AR (e.g. obstacles a ship/plane may encounter), but also to geo-locate different objects in the VR/AR (e.g. obstacles a ship/plane may encounter)



### Earth Observation

**Earth Observation** imagery could be used to provide the maps required by the models and EO data could be used to recreate the remote environment. For example, in case of tourism, EO data could be used to recreate the remote environment.



### Satellite Communication

**Satellite Communications** provide a means to communicate with the coordinating centre to and from remote locations where there is no terrestrial network. For example, Satcom is needed to reach operators in remote places (including schools in Africa, workers on ships etc..).

**5G networks** including terrestrial and satellite components will have a key role for delivering the high amount of data required with low latency, eventually also in real time (support to operations).

# INTRO TO KICK-STARTS

- “Kick-start Activities” are 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).
- Kick-start Activities aim at exploring the **viability of new service/application** concepts and **consolidating the 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 cover letter of the Call for Proposals.

# AUTHORIZATION FROM NATIONAL DELEGATIONS

The **availability of funding** for the 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, dedicated clarifications will be posted in EMITS to provide information on the list of Member States that have already provided their financial support to the Thematic Call.

In case your company/organisation resides in a country which has not provided their financial support to the Thematic Call you are interested in, you need to **contact your National Delegation**. The contact information of the National Delegations can be found at <https://business.esa.int/national-delegations>.

**For the Thematic Call on 'Augmented / Virtual Reality' **United Kingdom** and **Norway** have already pre-authorized the funding.**

## → HOW TO APPLY 1/2

1. Register by completing online questionnaire on [ESA-STAR Registration](https://esastar-emr.sso.esa.int) (minimum 'light registration') (<https://esastar-emr.sso.esa.int>)
2. Download the official tender documentation (Invitation to Tender) via [EMITS 'AO 8872'](#) from 15<sup>th</sup> January 2019
3. Create 'Bidder Restricted Area' in ESA-STAR
4. Write your proposal and obtain Letter of Authorization from [National Delegation](#), if needed (see below)
5. Submit your proposal via 'Bidder Restricted Area' in [ESA-STAR Tendering](#) by 25<sup>th</sup> February 2019 13:00 CET (Don't wait until the last minute!)

Germany and Norway have pre-authorized the funding. Companies residing in other participating members states have to request a letter of authorization.

## → 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 8872' and includes:

- **Cover letter**
- **Appendix 1:**  
List of Thematic Calls for Ideas (including the calendar of the Thematic Call for Ideas and specific information on the themes)
- **Appendix 2:**  
Draft Contract
- **Appendix 3:**  
Tendering Conditions for Express Procurement Procedure - EXPRO/TC
- **Appendix 4:**  
Proposal Template



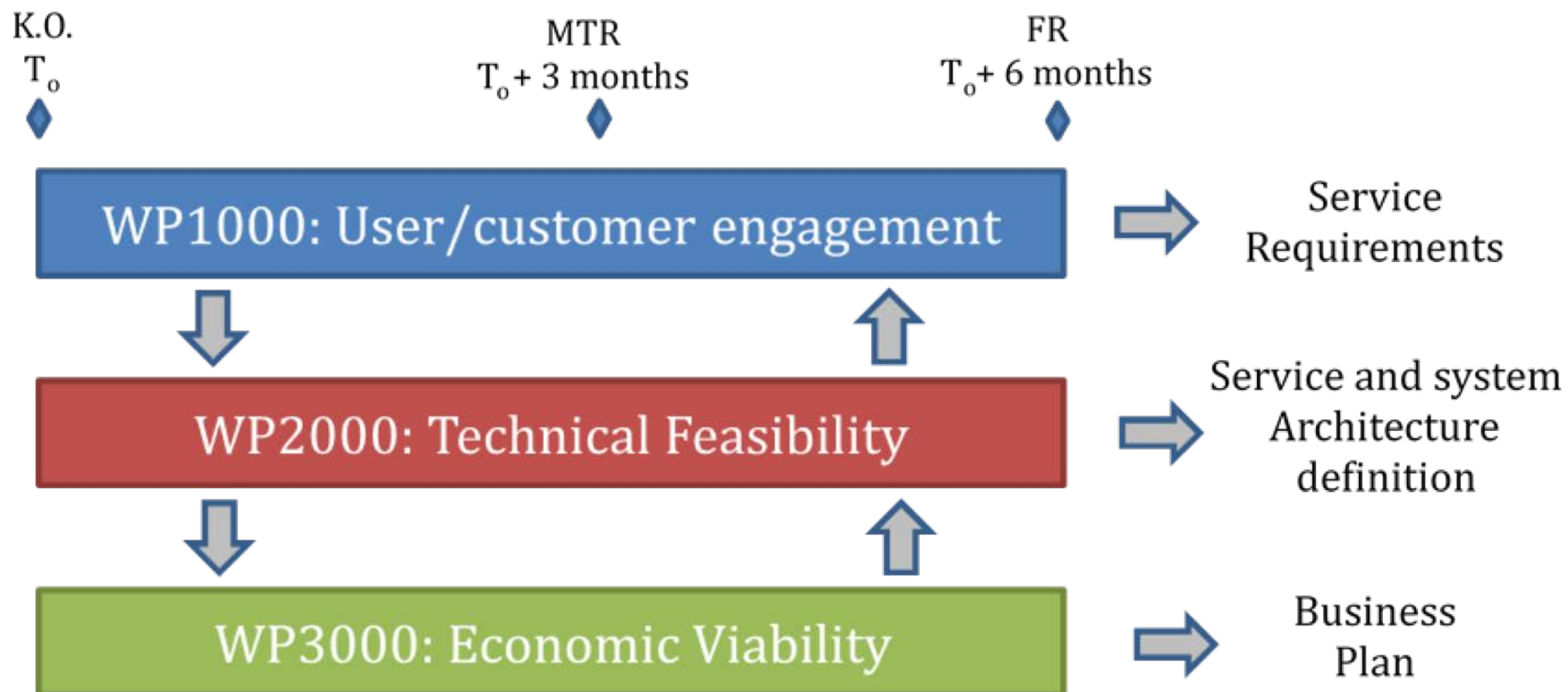
## → THE PROPOSAL TEMPLATE

Your Proposal shall include the following information:

- 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)
- 6) Financials (max 2 pages)

# Kick-Start Activity

## → Study Tasks







A large circular graphic in the center of the slide. It features a central image of the Earth from space. Surrounding the Earth are several semi-circular segments containing different images: a bar chart with an upward trend, a pair of lungs, a person running, a port with shipping containers, a landscape with solar panels, a coastline, and a person in a pink shirt. The entire graphic is set against a dark background with a starry space pattern and a dashed white circle.

→ THANK YOU FOR PARTICIPATING