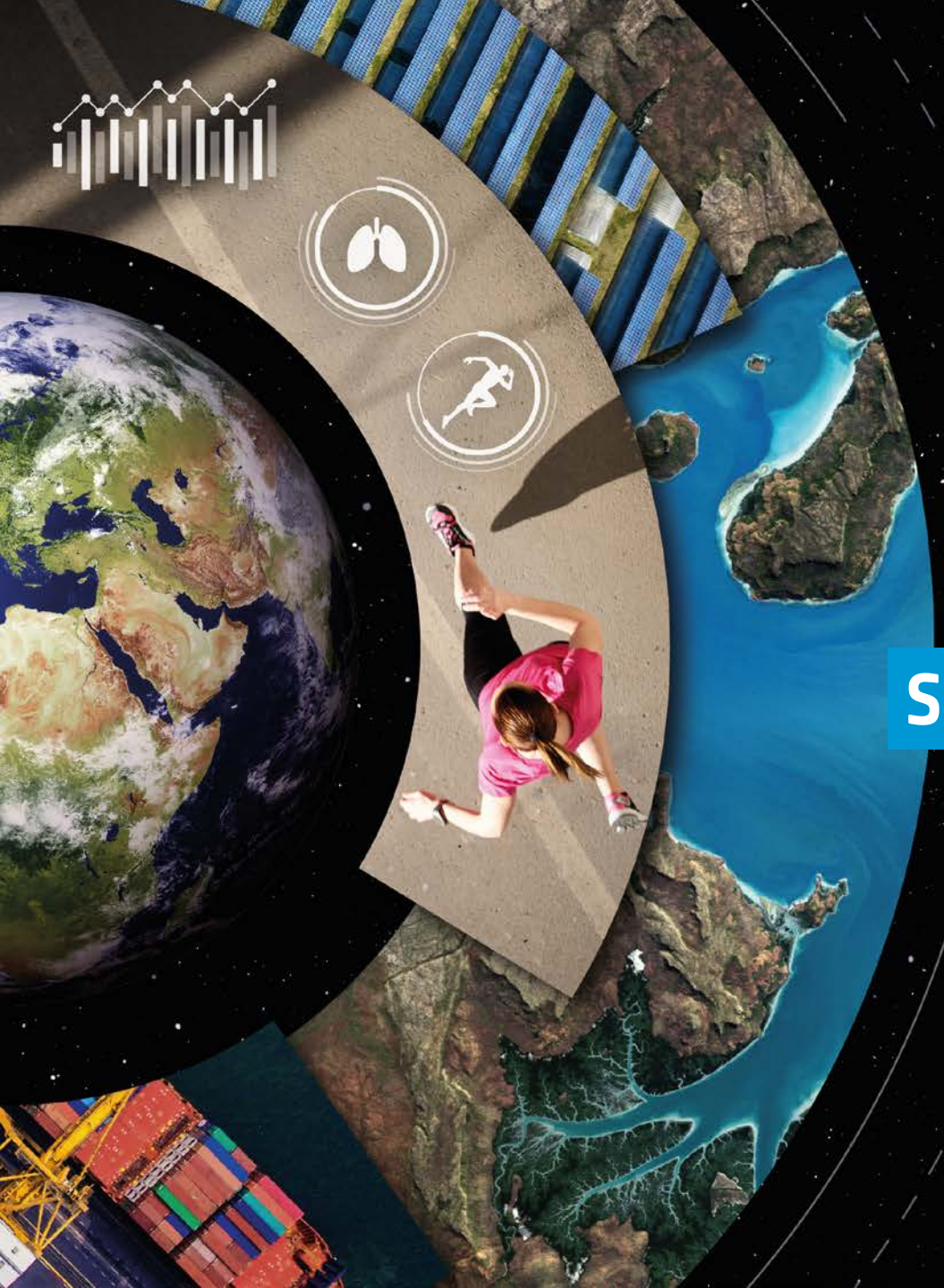


esa | business applications

Services for Smart Airports : Webinar

29/01/2018

Rita Rinaldo , Piera Di Vito (ESA)

Purpose of ESA

"To provide for and promote, for exclusively peaceful purposes, cooperation among European states in **space research** and **technology** and their **space applications.**"

Article 2 of ESA Convention

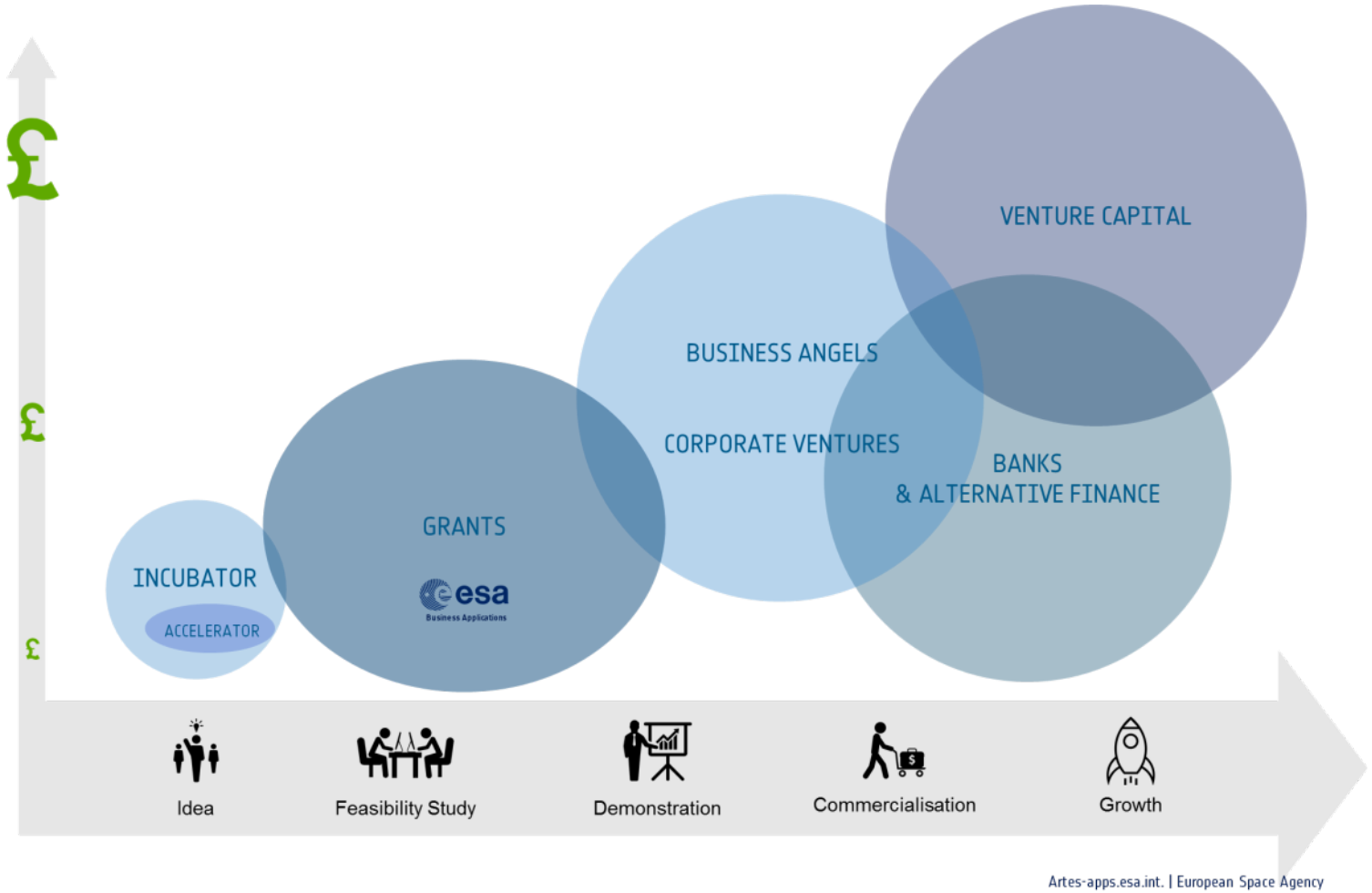
ESA facts and figures

- Over 50 years of experience
- 22 Member States
- Eight facilities in Europe, about 2300 staff
- 5.75 billion Euro budget (2017)
- Over 80 satellites designed, tested and operated in flight

We enable and support the development of business applications that uses any space assets for services on Earth

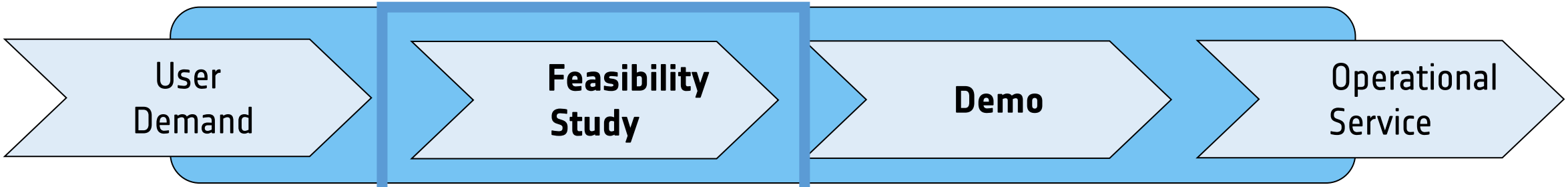
What we offer
ARTES Applications

- FINANCIAL SUPPORT
- TECHNICAL & BUSINESS EXPERTISE
- ESA BRANDING & PROMOTION
- NETWORK & PARTNERSHIP BUILDING



How is this implemented?

ESA Business Applications Involvement



User with demand but no contact to industry

Contact with ESA:

- iap.esa.int
- conferences
- ambassadors
- call for user ideas

Funding by ESA:

- 100% - ESA initiated activities in close collaboration with users / customers
- 50% [1/2] - Partner / industry initiated activities in close collaboration with users / customers
- 75% Kick-Start Activities:
  60 k€ per activity
  theme calls by ESA

Funding by ESA:

- 50% [1] – Partner / industry initiated activities in close collaboration with users / customers

Support etc.

1] Funding for SMEs up to 75%,
decision of funding level by national delegations

2] For Feasibility Studies only:
Work carried out by universities and research institutes and justifying no further commercial interest in the final solution may be funded 100% by the Agency

Business Applications Feasibility Study

SPACE BASED SERVICES FOR SMART AIRPORTS

SMART airports : ensemble of solutions, devices and services that optimize and automate the usage of airways and airspace infrastructures, checkpoints, passengers-luggage-cargo control system, info points and internal communications of the airports and also smart connections with technologies similar with the smart cities.

Smart airports will be :

a) distributed – secure entry gates located within cities offering choice for baggage/drop collection;
b) environmentally friendly ;
c) interactive, in the sense that optimized airport management will exploit predictive data analytics, passengers will personalize their journey experience and baggage will be tracked end-to-end.

SMART Airports: ENABLERS from Space

SMART airports will rely on reliable and secure communications such as LTE and 5G, which will become the preferred mobile ultra-broadband technology platform capable to meet the need for continued enhancements in communication coverage, capacity and redundancy, security, low latency, class-of-service prioritizing capabilities and 24/7 reliability for mission-critical operations. Such networks will integrate different technologies, including terrestrial and satellite communications.

Satellite Communication and Satellite Navigation assets will be crucial to airport safe operations and in particular when assets such as UAVs are involved.

Satellite Earth Observation data are required for services monitoring airports' conditions in case of emergency events and in post-disaster conditions as well as services for the implementation of "greener" operations.

Feasibility Study Overview (1/2):

Objectives:

- Identify, define and assess technically and economically potentially sustainable services for Smart Airports based on the exploitation of at least one space asset.
- Identify and reduce technical and commercial risks related to the implementation of these services
- Consolidate user /customers requirements and engage with relevant customers and other stakeholders for further involvement
- Propose recommendations and define a roadmap for service(s) implementation and demonstration, and prepare a potential follow-on demonstration project

Possible application domains (not restrictive): Move towards greener airports, , Enhance the passenger journey and experience , Enhance Identity Management, Improve operational efficiency and resilience, Smart Cybersecurity , Provide Advance airport security systems, Increase safety of operations in and around airports

- Services having the potential to be implemented operationally and become sustainable by 2018-2023 (preliminary business case identified)
- Involvement of at least one space asset (SatNav, SatCom, SatEO)
- Study focused on a reduced number of services (max.3)
- Customer/user-driven study (user involvement required)
- Contractor team should be interested in developing and commercialising considered services and have relevant capabilities. Involvement of potential service provider in the project team will be an asset.

Feasibility Study Overview (2/2):

Main Tasks:

- User/customer consolidation and user requirements definition
- Service and System Definition
- Viability analysis (economic and non-economic aspects)
- Implementation roadmap

- 100% funding, up to €250k
- Duration: 9 months
- Several parallel contracts possible

Users and Stakeholders Involvement (1/2)

ICAO, CANSO, Eurocontrol and IATA have agreed to support the ESA study and to provide guidance to the team for the services of their interest.

A plethora of users including air navigation service providers (ANSPs), air traffic control (ATCs), airports, airlines, remotely piloted aircraft systems (RPAS) operators, first responders and insurances is expected to benefit from applications developed for SMART airports.

Application domains (non exhaustive):

- Enhance the passenger journey and experience;
- Enhance Identity Management ;
- Improve operational efficiency and resilience;
- Smart Cybersecurity;
- Provide Advance airport security systems;
- Increase safety of operations in and around airports;
- Move towards greener airports.

Bidders interested in receiving input from CANSO, ICAO, IATA , Eurocontrol are asked to mention it in their proposal. Bidders may also target other application domains/services and engage with different potential stakeholders.
Engagement with potential customers/users is mandatory (letter(s) of interest to be provided in the proposal)

Users and Stakeholders Involvement (2/2)

- ESA has established cooperation with the ICAO's Integrated Aviation Analysis (IAA) Section, which has developed two prototype tools:
  - Crisis Monitoring Dashboards : crisis monitoring tool prototype for airports during crises such as extreme weather, natural disasters and terrorist attacks. The dashboards can show, in real time, multiple indicators related to on time, delayed, cancelled and re-routed flights at affected airports.
  - Global Hazard Register Map: prototype map of airports across the world based on the data in the Global Hazard Register. Clicking on each airport shows the hazard(s) at that airport in real time, in one of the identified categories: environment, organization, technical and human.

ICAO IAA is available to provide such tools together with technical input and support on the air navigation and safety aspects to the Industry(ies) committed to develop sustainable services using it, following a successful feasibility study(ies). A suitable business model shall be developed during the study.

Bidder shall express their interest in accessing to the ICAO tools in the proposal.

Funding eligibility

- Open to any organisation, residing in any of those states that subscribed to the ARTES IAP programme (to date: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, The Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland and the United Kingdom)

- **Letter of Authorisation from bidding team's national delegation(s) is needed and must be submitted as part of the Bidder's proposal. Without this letter, the proposal is not eligible.**

- The contacts of the National Delegations can be found at https://business.esa.int/national-delegations

Call for Proposal

- The Call for Proposals will be issued on 29th January 2018 on EMITS (http://emits.sso.esa.int/emits/owa/emits.main)

- Follow updates in EMITS and ESA business application website https://business.esa.int/ & subscribe to the newsletter!

- The proposal submissions shall make use of the new ESA-STAR system which will allow the submission of proposals electronically

- Companies shall register beforehand by completing the online questionnaire on the "ESA-STAR registration" website (https://esastar-emr.sso.esa.int /)
    - For general information about how to do it, see the "esa-star" Registration User Manual http://esamultimedia.esa.int/docs/business_with_esa/CG-EM-ORR-S-16_End_User_Manual_v1.2.pdf

OPEN QUESTIONS & ANSWERS SESSION

In case of further questions and comments (before tender opening), please contact Piera.Di.Vito@esa.int