SPACE FOR INTERMODAL TRANSPORT

Webinar, 12 February 2025

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Prof. Dr. Nils Meyer-Larsen - ISL

Agenda

- ESA introduction
- BASS Programme
- Space for Intermodal Transport Call for Proposals
- ISL – Guest Speaker: Prof. Dr. Nils Meyer-Larsen
- How to apply
- Questions & Answers

We are ESA

EUROPE'S GATEWAY TO SPACE

WHAT	22 Member States, 5000 employees
WHY	Exploration and use of space for exclusively peaceful purposes
WHERE	HQ in Paris, 7 sites across Europe and a spaceport in French Guiana
HOW MUCH	€6.49 billion = €12 per European per year

Business Applications and Space Solutions (BASS)

space-enabled services

Support European companies to develop innovative & commercial applications/services in any market sector, using space asset(s)

https://business.esa.int/

Using any space asset(s) and integrating them with terrestrial assets

Space Technology…	X	… non-Space Technology…	=	… more applications, more value …
Earth Observation		Big Data Analytics		Maritime
Satellite Positioning		VR/AR/XR		Agriculture
Satellite Communication		Artificial Intelligence		Environment
Spaceflight Technologies		Distributed Ledger Technology		Healthcare
Space Weather		Robotics		Financial
		Internet of Things		Transport
		Digital Twins		Education
		Drones		Media
		Cloud Technologies		Energy
		5G (https://artes.esa.int/esa-5g6g-hub)		Aviation

BASS DNA

3x SUSTAINABLE

Support social, environmental and economic sustainability integrated applications

USER-DRIVEN

Promote utilisation of space through partnering with user communities

INDUSTRY COMPETITIVENESS

Strengthen European Industry competitiveness on global markets

ESA SPACE SOLUTIONS OFFERS

- Zero-equity funding (from €50k to €2M+ per activity)
- A personalised ESA consultant
- Technical support and commercial guidance
- Tailored project management support
- Access to our international network of ESA and partners
- Access to our network of investors
- Credibility of the ESA brand

esa
space solutions

Space for Intermodal Transport

Thematic Call

Space For Intermodal Transport - Thematic call

Intermodal transport refers to the movement of passengers or goods using a combination of modes of transportation during the same journey and without any handling of goods when changing modes of transport.

The "Space for Intermodal Transport" call aims to support the study and development of space-enabled commercial services to enhance intermodal freight and logistics, as well as intermodal transport for passengers. It is an exciting opportunity to improve the way we move goods and people.

Stakeholders who have expressed interest include the Smart City Task Force and the Maritime Task Force.

To find out more about the call, please visit this webpage

https://business.esa.int/funding/call-for-proposals-non-competitive/space-for-intermodal-transport

Background

- Urban areas face major problems of congestion, parking, pollution and with passengers' mobility demands set to increase, cities are striving to promote sustainable mobility solutions. Urban intermodality digital platforms can radically improve transport efficiency by integrating multiple transport modes into a more efficient and user-centered mobility offer.

- In relation to freight, intermodal transportation can be highly effective because it can support a faster and safer movement of goods over long distances.

- By coordinating different modes of transportation, ensuring standardization, managing tracking, using adequate infrastructure, and collaborating with stakeholders, the efficiency and effectiveness of intermodal transportation can be enhanced.

Call open from 17 February 2025

Space For Intermodal Transport - Topics

The call offers an unique opportunity for companies to develop new applications /services addressing topics such as:

Environmental Sustainability

Reducing the number of cars and trucks on the road means less traffic congestion leading to lower emissions and improved air quality in urban areas.

Efficiency & Flexibility

Making use of GNSS and IoT devices, can provide near real-time updates on the location of passengers and goods and propose alternative combination of modes of transport.

Safety

Safety of passengers and vehicles requires reliable and seamless communication also in remote areas.

THE POWER OF SPACE

Satellite Communication (SatCom)

- Support seamless data transfer whenever the terrestrial communications are absent or not reliable;
- provide with a faster sharing of large data files containing information on the vehicles;
- connect the vehicles for increased safety, either through V2I communication or integrated connectivity

Satellite Earth Observation (SatEO)

- to collect information on geographical and environmental parameters;
- to monitor pollution levels and associated risks to relevant communities;
- to provide imagery enabling services such as mapping, risk detection, and situational awareness.

Satellite Navigation (SatNav)

- to enable georeferencing for high precision positioning, tracking and tracing of vehicles and goods through precise positioning, navigation, and timing;
- to enable people flow-monitoring and location-based services to geo-localise points of interest in the maps and to enable geo-fencing and time-fencing features;
- to provide ubiquitous high accuracy position, navigation and timing (PNT) technologies to support accurate and seamless positioning provided by GNSS.

BASS Funding Schemes

Entry point	Type of activity	Total cost of activity & funding
Direct Negotiation	Feasibility studies	Max 500k EUR, 50-80% funded by ESA (can be 100% for research institutions)
	Kick-Starts (KS)	Upto 60k EUR funding, 75% funded by ESA
	Demonstration projects	No max cost, 50-80% funded by ESA (dependent on delegation decision)
Invitation To Tender - ITT (Open competition)	Feasibility studies	Max 200k EUR, 50-100% funded by ESA
	Kick-Starts (KS)	Upto 60k EUR funding, 75% funded by ESA

IPRs remain with companies

Institute of Shipping Economics and Logistics

Institute of Shipping Economics and Logistics

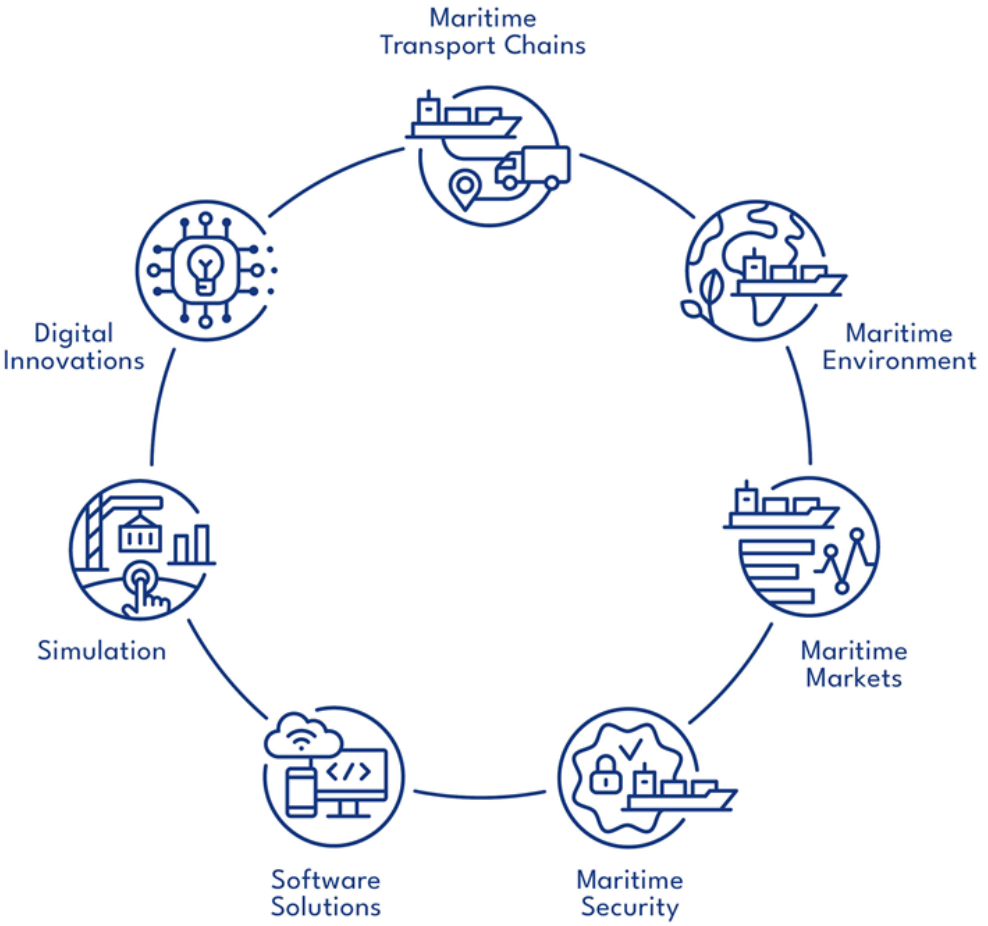
Research, consulting and know-how transfer in maritime logistics

Space-based Maritime Research for ESA

Prof. Dr. Nils Meyer-Larsen, Space for Intermodal Transport Webinar, 12.02.2025

The Institute of Shipping Economics and Logistics

ISL was founded in Bremen in 1954 and has a second office in Bremerhaven since 1997.
By combining tradition and modern science, ISL has positioned itself as one of Europe‘s leading institutions for research, consulting and know-how transfer in maritime logistics.
In its seven competence areas, ISL offers customised innovative processes and solutions in the field of maritime logistics, drawing on a wide range of expert knowledge from its employees.



ISL Competence Areas

Maritime Markets

Analyses and forecasts within maritime economy

Maritime Security

Security concepts and solutions

Maritime Environment

Sustainability in the maritime sector

Maritime Transport Chains

Optimisation of transport chains and logistics concepts

Simulation

Analyses and optimisation of transshipment processes and freight traffic flows

Digital Innovations

Digitalisation, Artificial Intelligence, IoT and Blockchain

Software Solutions

Conception and development of individual solutions

Institute of Shipping Economics and Logistics

I-PORT Intermodal Freight Transport

Optimising Intermodal Transport in Ports

ARTES20 Feasibility Study + Demonstration Project

Motivation

Today‘s intermodal container transport often suffers from insufficient transparency:

- Delayed arrival of vessels, which is not communicated outside the port
- Delayed arrival of trucks in the port, caused e.g. by traffic jams or bad weather conditions
- Information is often not forwarded to all involved parties

Consequences:

- Unproductive waiting times
- Unsuccessful delivery or pickup attempts
- Delays in the transport process

Source: ISL

Optimising Intermodal Transport in Ports

- Development of services aiming at optimization of intermodal container transport
- Use of satellite-based technologies for enhanced real-time information gathering
- Targeted forwarding of relevant information
- Improved coordination of vessels and trucks
- Reduced delays and waiting times

- Supported by ESA in the Integrated Applications Programme (IAP)

Source: ISL

Consortium

Data Center / Cloud Services

Transport Management Applications

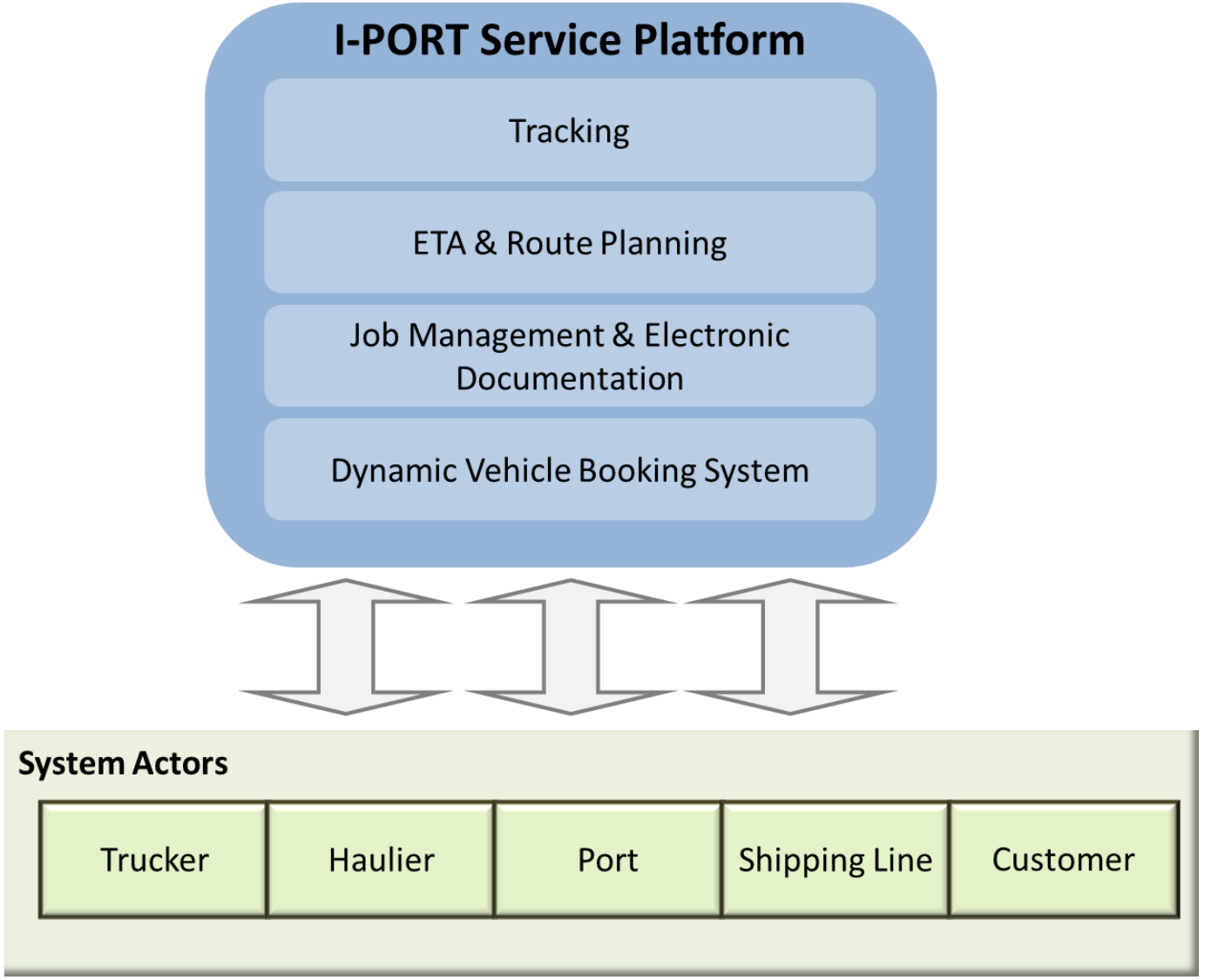
Satellite Data Communications

AIS Vessel Tracking

Port Community System Bremerhaven/Wilhelmshaven

Maritime and Logistics Research and Consulting

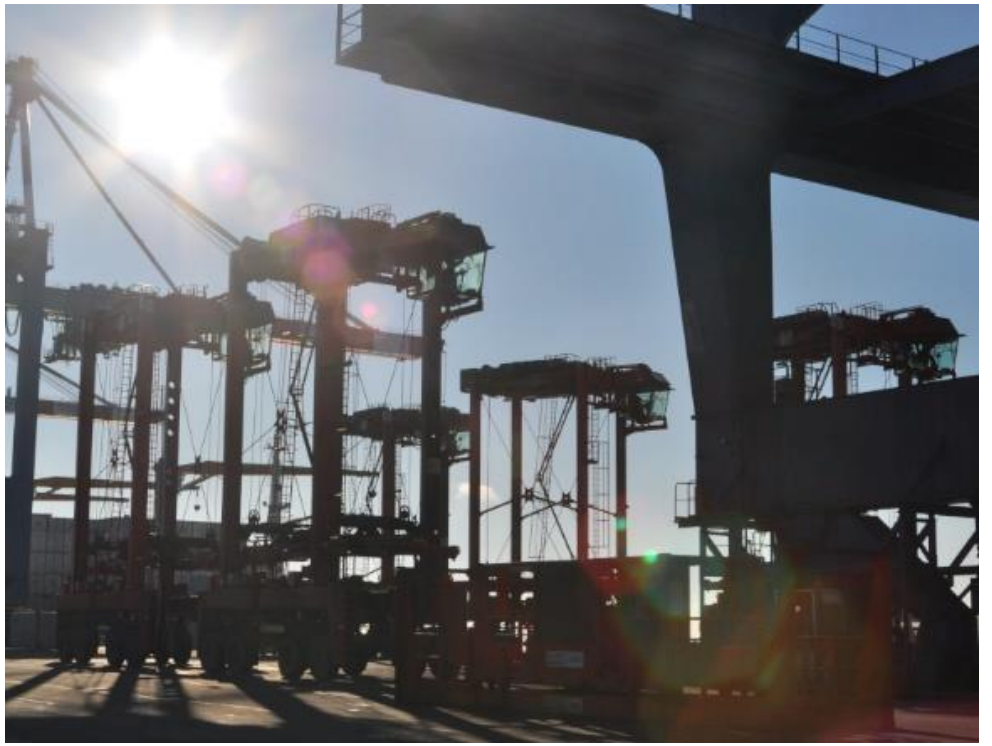
I-PORT Service Platform



Source: I-PORT

Improved Services

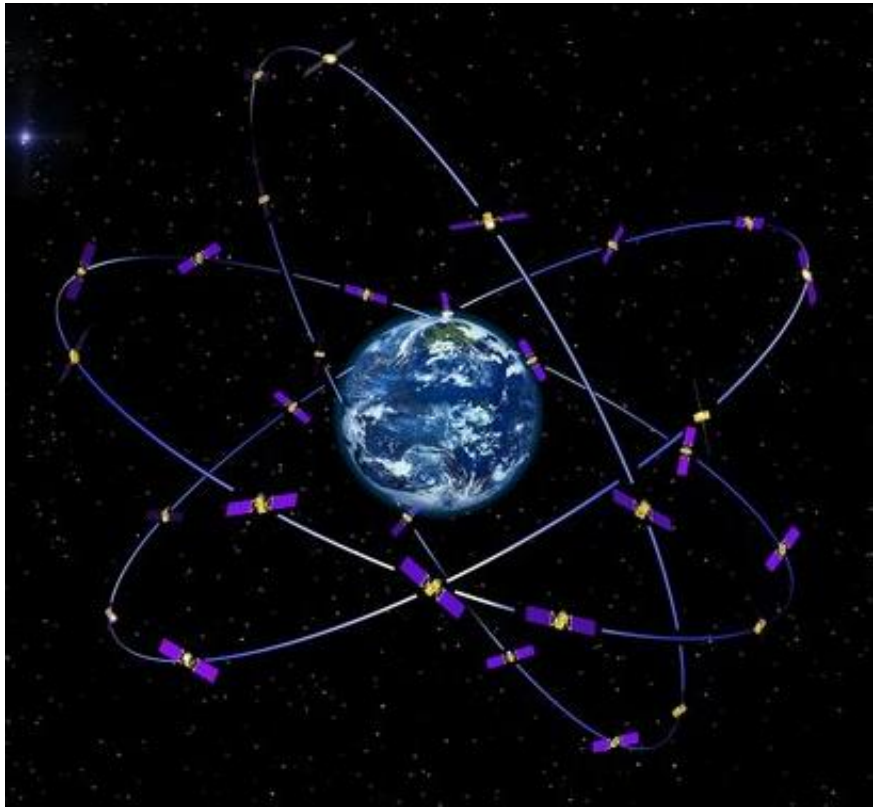
- Vessel tracking using satellite-based AIS
- Tracking of trucks by GPS/Galileo
- Real-time information of arrival times of vessels and trucks at the port
- Delays are recognized early and communicated in a transparent way to all involved parties
- Improved coordination of vessels and trucks, less waiting times and unsuccessful delivery or pickup attempts
- Optimized routing of trucks based on actual traffic conditions
- Improved security procedures: Container pickup reference is sent to truck driver‘s smartphone only if the truck has arrived at the terminal
- Facilitation of Dynamic Slot Management at port terminals



Source: ISL

Conclusion

- Huge potential of space-based applications for (maritime) transport and logistics
- Considerable optimization of logistics services possible
- Added value in particular by combining different kinds of services:
  - GPS/Galileo
  - Satellite AIS
  - Satellite communication
  - Earth observation
  - Satellite Radar
  - …
- **We are always open to discuss your ideas!**



Source: ESA

Institute of Shipping Economics and Logistics

I-PORT Intermodal Freight Transport

Thank you very much!

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Contact

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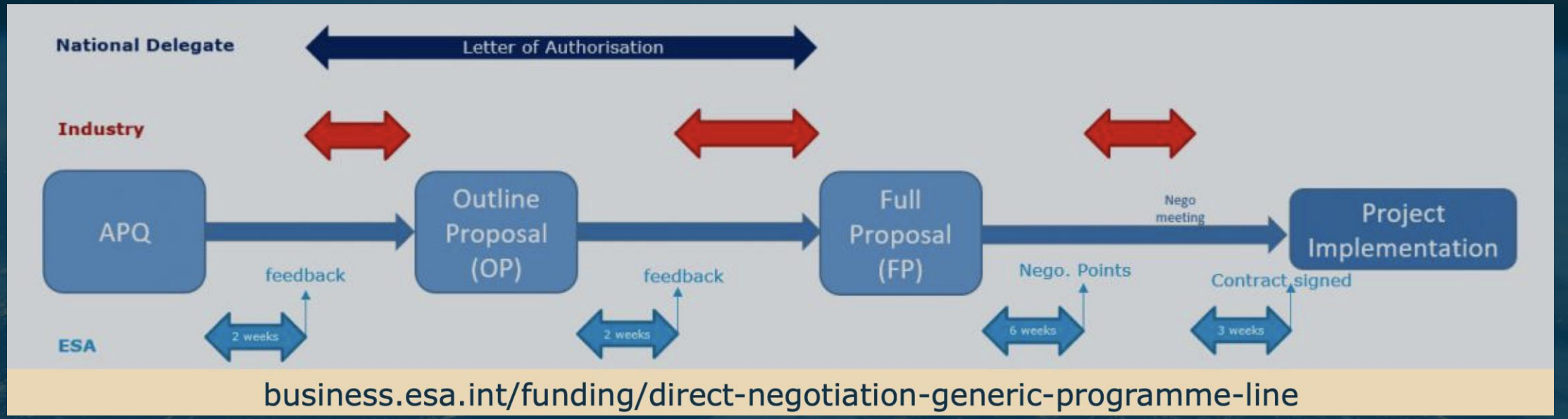
How to apply?

How to Apply

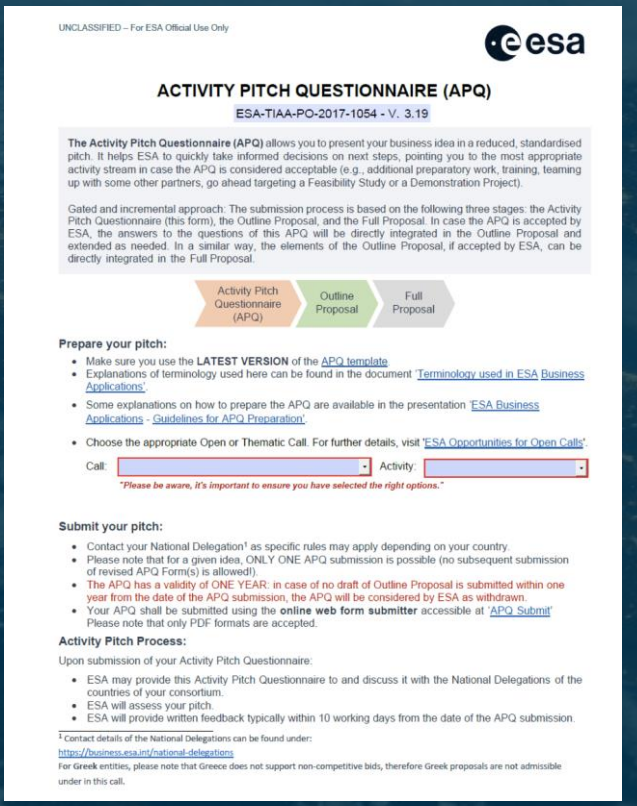


- Incremental procurement approach: APQ is the starting point – max. 8-page document with a standard template to present WHAT, WHY, HOW
- Standard templates for proposals and deliverables before and during activity implementation
- Ambassador Platform available to guide companies in the process

APQ – Activity Pitch Questionnaire

1. (WHO) Company Background Information.
2. (WHAT) do you want to offer your customers and what is the added value?
3. (WHY) Who are the target beneficiaries addressed by your offer, and what are their pains and gains
4. (HOW) do you intend to implement

(OPTIONAL) APQ+ for fast-track application



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ACTIVITY PITCH QUESTIONNAIRE (APQ)

ESA-TIAA-PO-2017-1054 - V. 3.19

The Activity Pitch Questionnaire (APQ) allows you to present your business idea in a reduced, standardised pitch. It helps ESA to quickly take informed decisions on next steps, pointing you to the most appropriate activity stream in case the APQ is considered acceptable (e.g., additional preparatory work, training, teaming up with some other partners, go ahead targeting a Feasibility Study or a Demonstration Project).

Gated and incremental approach: The submission process is based on the following three stages: the Activity Pitch Questionnaire (this form), the Outline Proposal, and the Full Proposal. In case the APQ is accepted by ESA, the answers to the questions of this APQ will be directly integrated in the Outline Proposal and extended as needed. In a similar way, the elements of the Outline Proposal, if accepted by ESA, can be directly integrated in the Full Proposal.

Activity Pitch Questionnaire (APQ) → Outline Proposal → Full Proposal

Prepare your pitch:

- Make sure you use the **LATEST VERSION** of the APQ template
- Explanations of terminology used here can be found in the document 'Terminology used in ESA Business Applications'.
- Some explanations on how to prepare the APQ are available in the presentation 'ESA Business Applications - Guidelines for APQ Preparation'.
- Choose the appropriate Open or Thematic Call. For further details, visit 'ESA Opportunities for Open Calls'.

Call: Activity:

"Please be aware, it's important to ensure you have selected the right options."

Submit your pitch:

- Contact your National Delegation[1] as specific rules may apply depending on your country.
- Please note that for a given idea, ONLY ONE APQ submission is possible (no subsequent submission of revised APQ Form(s) is allowed!).
- The APQ has a validity of ONE YEAR: in case of no draft of Outline Proposal is submitted within one year from the date of the APQ submission, the APQ will be considered by ESA as withdrawn.
- Your APQ shall be submitted using the **online web form submitter** accessible at 'APQ Submit' Please note that only PDF formats are accepted.

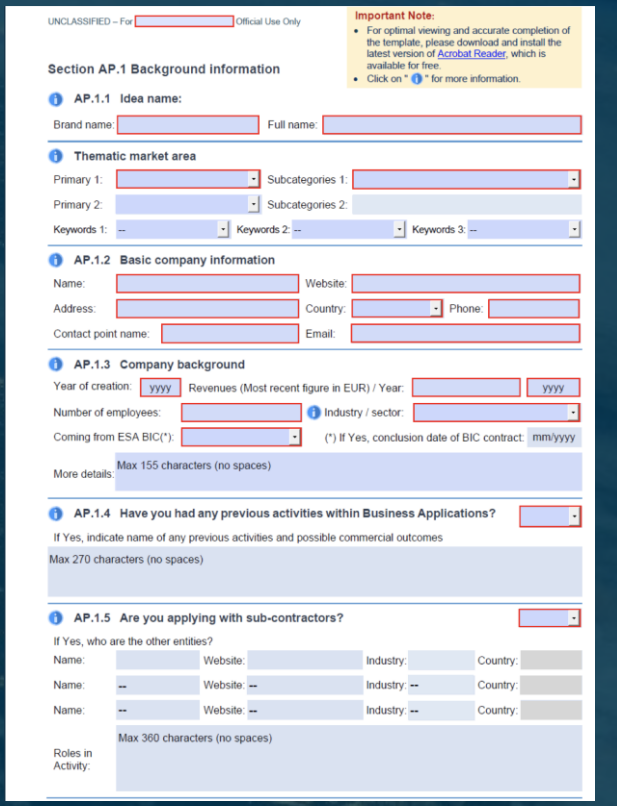
Activity Pitch Process:

Upon submission of your Activity Pitch Questionnaire:

- ESA may provide this Activity Pitch Questionnaire to and discuss it with the National Delegations of the countries of your consortium.
- ESA will assess your pitch.
- ESA will provide written feedback typically within 10 working days from the date of the APQ submission.

[1] Contact details of the National Delegations can be found under: https://business.esa.int/national-delegations

For Greek entities, please note that Greece does not support non-competitive bids, therefore Greek proposals are not admissible under in this call.



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Important Note:

- For optimal viewing and accurate completion of the template, please download and install the latest version of Acrobat Reader, which is available for free.
- Click on " " for more information.

Section AP.1 Background information

AP.1.1 Idea name:

Brand name: Full name:

Thematic market area

Primary 1: Subcategories 1:

Primary 2: Subcategories 2:

Keywords 1: -- Keywords 2: -- Keywords 3: --

AP.1.2 Basic company information

Name: Website:

Address: Country: Phone:

Contact point name: Email:

AP.1.3 Company background

Year of creation: yyyy Revenues (Most recent figure in EUR) / Year: yyyy

Number of employees: Industry / sector:

Coming from ESA BIC(*): (*) If Yes, conclusion date of BIC contract: mm/yyyy

More details: Max 155 characters (no spaces)

AP.1.4 Have you had any previous activities within Business Applications?

If Yes, indicate name of any previous activities and possible commercial outcomes

Max 270 characters (no spaces)

AP.1.5 Are you applying with sub-contractors?

If Yes, who are the other entities?

Name: Website: Industry: Country:

Name: -- Website: -- Industry: -- Country:

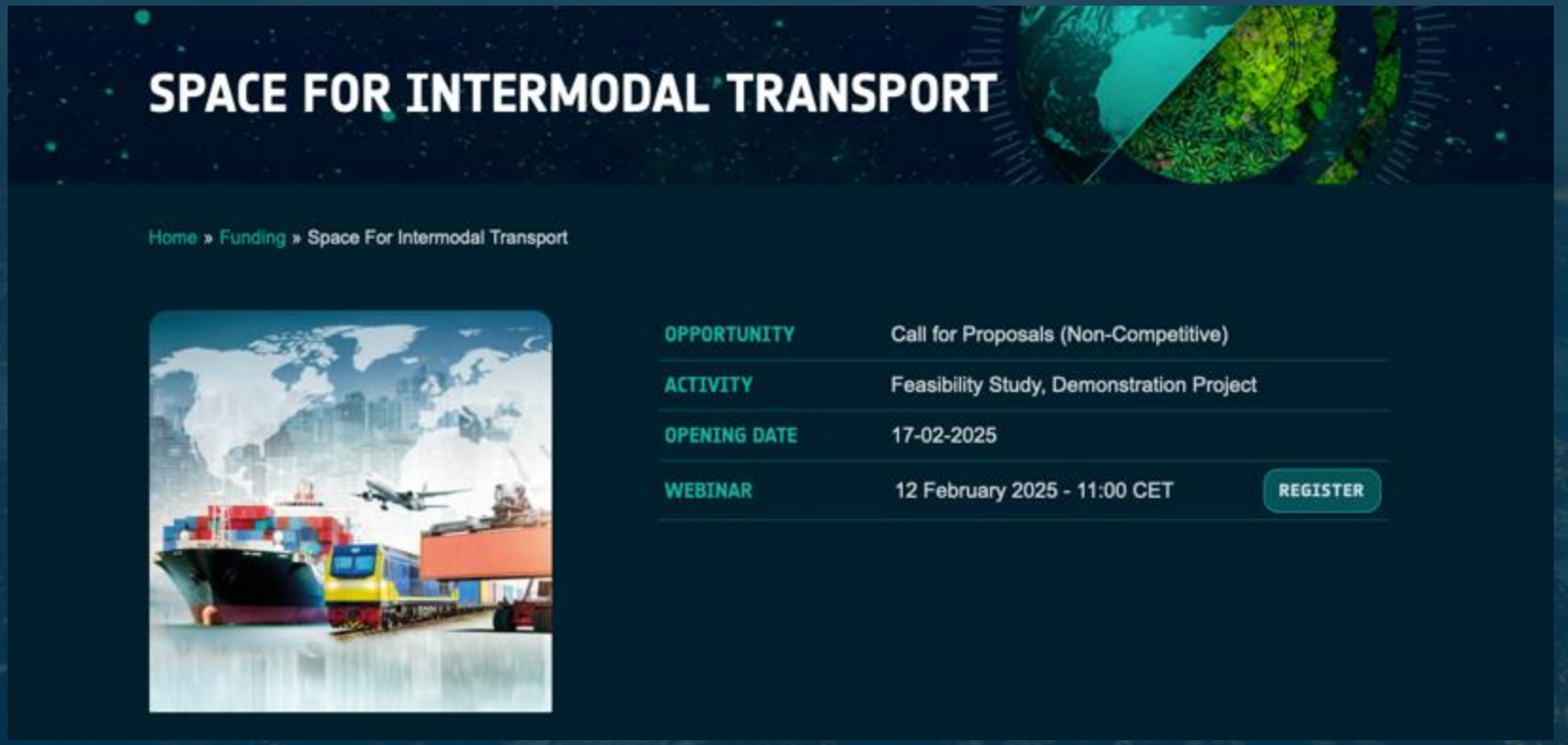
Name: -- Website: -- Industry: -- Country:

Roles in Activity: Max 360 characters (no spaces)

Authorisation from National Delegation

1. The authorization form the National Delegation will be required for the submission of the Full Proposal (third step in the application process), thus it is a good idea to initiate a dialogue with your National Delegation early on.
2. Please note that funding is open to consortiums, however all organisations and businesses must be located in an ESA member state participating in the programme BASS
3. To date, these countries include Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Hungary, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, United Kingdom, Lithuania, or Slovakia.
4. The contact information of the National Delegations can be found at https://business.esa.int/national-delegations

Where to find the information



https://business.esa.int/funding/call-for-proposals-non-competitive/space-for-intermodal-transport

THANK YOU!
Q&A

For more information please contact:
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