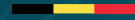




Belgium



The ESA Business Applications Programme Belgium

ESA Business Applications Team

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Implemented by

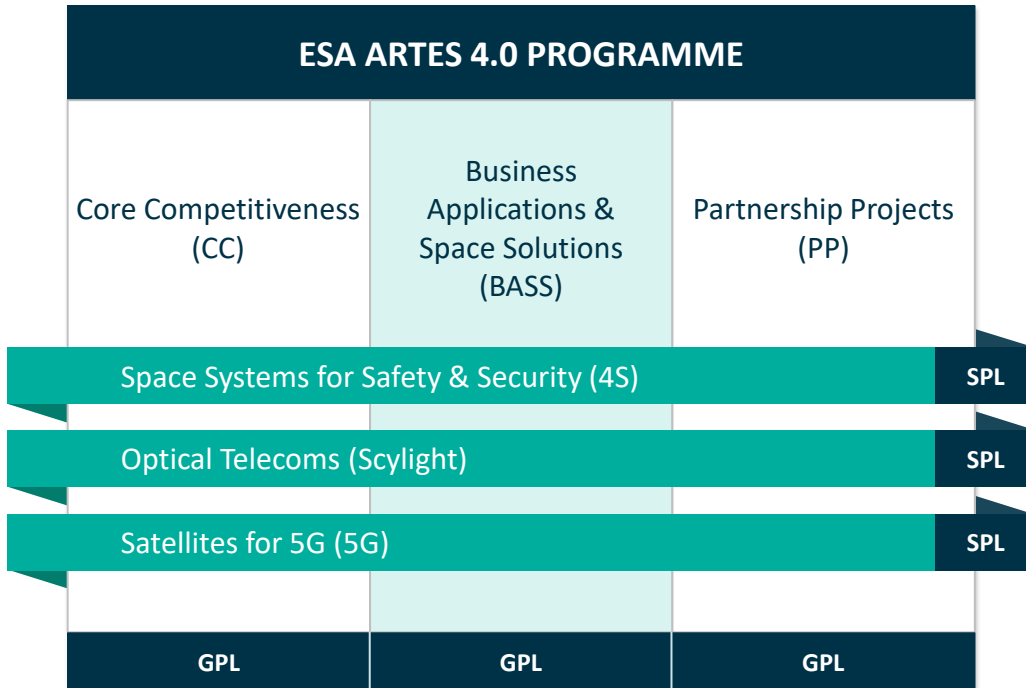


Belgium is investing in you through ESA programmes and initiatives

Members of ESA invest in the agency by selecting a set of programmes through which **ESA reinvests in that country's economy**. This concept is called **Geo-return**. In Belgium, **the ESA BASS programme** falls under the ARTES 4.0 Programme line



The ESA Business Application Programme, where innovation meets opportunity



Business Applications' Objectives

-  **Promotion of space applications**, esp. towards users unaware of the benefits that space can bring
-  Development of **new operational services** for these users
-  **Utilisation of existing space assets** (such as Satellite Communications, Earth Observation, Satellite Navigation, and Human Spaceflight technologies)
-  **Cross-fertilisation across disciplines**, together with the development of a consistent approach across ESA BASS initiatives, to maximise their efficient and cost-effective implementation.

The European Space Agency has established a funding mechanism for space-based applications, focused on non-space sectors

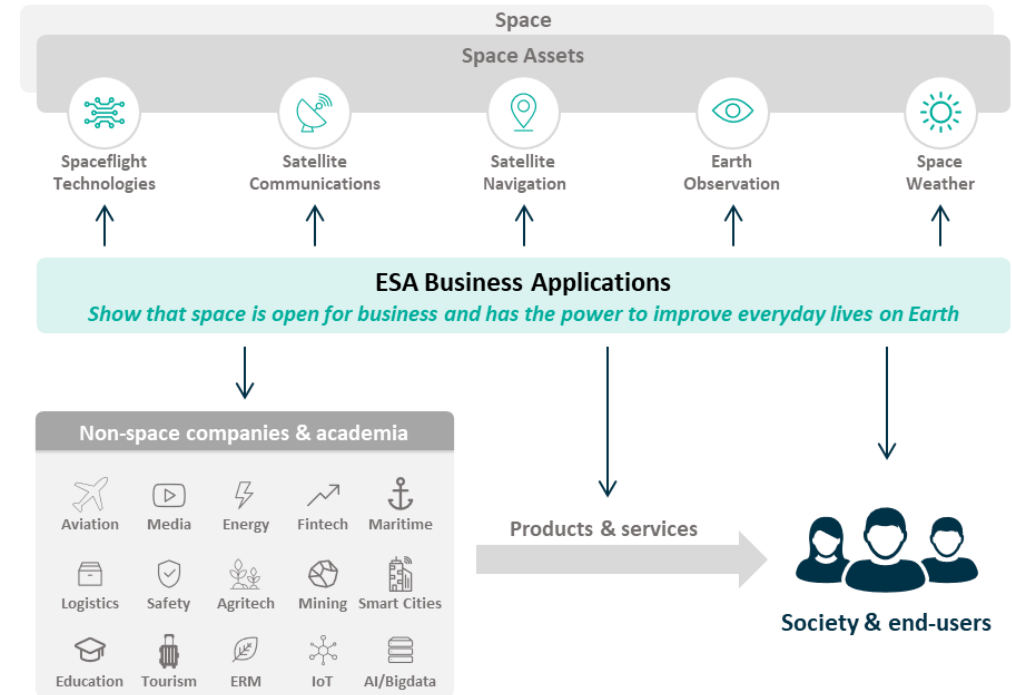
Business Applications Programme

Unlock the potential of the powerful insights from space-related data and assets to benefit everyday life and society



Companies and Institutions

The development of products and services is where companies play an essential and creative role. The Business Applications programme just gives a little push for the last mile



€ Belgium *co-funds* promising feasibility studies or demonstrator projects **up to € 1Mn**

The space industry benefits the entire last-mile delivery value chain



Improve logistics facilities

- Use satellite technology to **monitor and manage inventory levels**
- **Monitor waste and emissions** from the facilities, relevant for European climate initiatives
- **Connect facilities with delivery vehicles** via SatCom

Enhance delivery methods

- Use GNSS and IoT technologies to **develop a fleet of self-driving vehicles**
- **Provide connectivity to drivers in remote areas** via SatCom
- Incorporate **satellite-guided drone delivery** into established delivery systems

Optimise delivery routes

- Use satellite data to **monitor congestion** to determine **fuel- and time-efficient** delivery routes
- Incorporate **environmental impact assessment and** minimise the carbon footprint of delivery
- **Increase safety of drone** take-off and landing phases

Space technology can streamline operations in and around delivery facilities



- **Monitor weather patterns** and the state of nearby infrastructure (e.g., roads, construction sites) that could affect operations
- **Evaluate environmental factors** (e.g., air quality, pollution, vegetation health) around the facilities to determine the climate impact of operations



- **Set up geofences** using GNSS data, triggering alerts when vehicles / shipments enter or leave the facility or specific areas
- **Use GNSS-tracked autonomous robots** to automate and improve logistical processes
- **Track assets** throughout the logistics process, inside and outside of the facility, or across multiple ones



- **Leverage satellite communications** to communicate with drivers and other facilities anywhere around the world, including in rural areas or during emergencies
- **Transfer data** instantly between remote logistics facilities, to assess varying inventory levels and adapt delivery routes and times accordingly



Climate



Geolocation



Communications

Examples

Example of geofenced facility



Image credits: [Nagarro.com](https://www.nagarro.com)

The development of novel delivery methods is facilitated by space technology and data



- **Assess weather conditions and terrain** to ensure the safety of the delivery vehicles and their drivers (if not autonomous)
- **Verify the delivery address** in rural areas



- **Ensure precise navigation** using GNSS data and combine with IoT to develop fleets of self-driving vehicles
- **Provide real-time updates** to the clients regarding the status of their order
- Use GNSS-tracked autonomous drones to facilitate delivery process



- **Leverage satellite communications** for reliable and uninterrupted communications between delivery vehicles, dispatch centres, and customers
- **Facilitating rerouting and rescheduling** by providing customers with regular, accurate updates

Examples

Example of self-driving fleet

- Partnership between Nuro and Uber
- Self-driving vehicles to deliver goods and meals to customers



Image credits: Uber / Nuro



Climate



Geolocation



Communications

Satellite data is key to obtain optimal delivery routes



- **Assess the terrain** (e.g., elevation, road conditions) with Earth Observation satellites to optimise fuel efficiency, carbon footprint reduction, and vehicle performance
- **Determine practicability of chosen routes** (e.g., in rural / less developed countries)
- **Use remote sensing** to determine optimal take-off and landing zones for delivery drones



- **Ensure precise navigation** using GNSS and IoT data to develop fleets of self-driving vehicles
- **Dynamically adjust** delivery routes based on real-time traffic updates
- **Set up dynamic geofencing** to avoid deviating from predefined paths and minimise detours



- **Update delivery drivers** on changing road conditions to make informed rerouting decisions
- **Obtain real-time sensitive status updates via IoT** for packages that require continuous monitoring (e.g., container temperature for vaccine transportation)
- **Communicate with customers** to provide them with real-time information on rerouting and number of stops before theirs, improving transparency and satisfaction



Climate



Geolocation



Communications

Examples

Example of route optimisation

- Elogii uses real-time traffic data for automated route optimisation
- Can also set up geofencing to assign specific rules to ad-hoc zones



Image credits: Elogii

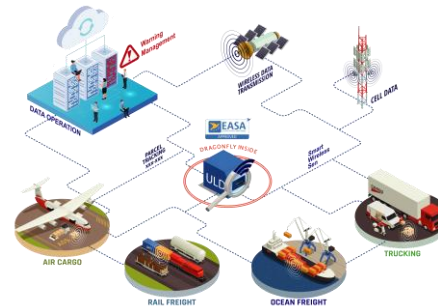
The successes of space applications in the transport & logistics sector



Simplifly aims to streamline and facilitate the express and sustainable transportation of goods using drones



DragonFly is a stand-alone certified solution for goods monitoring, tracking and geolocation by air, sea and land.



Collie AI is a smart algorithm applying machine learning, to look for the most efficient way to transport goods

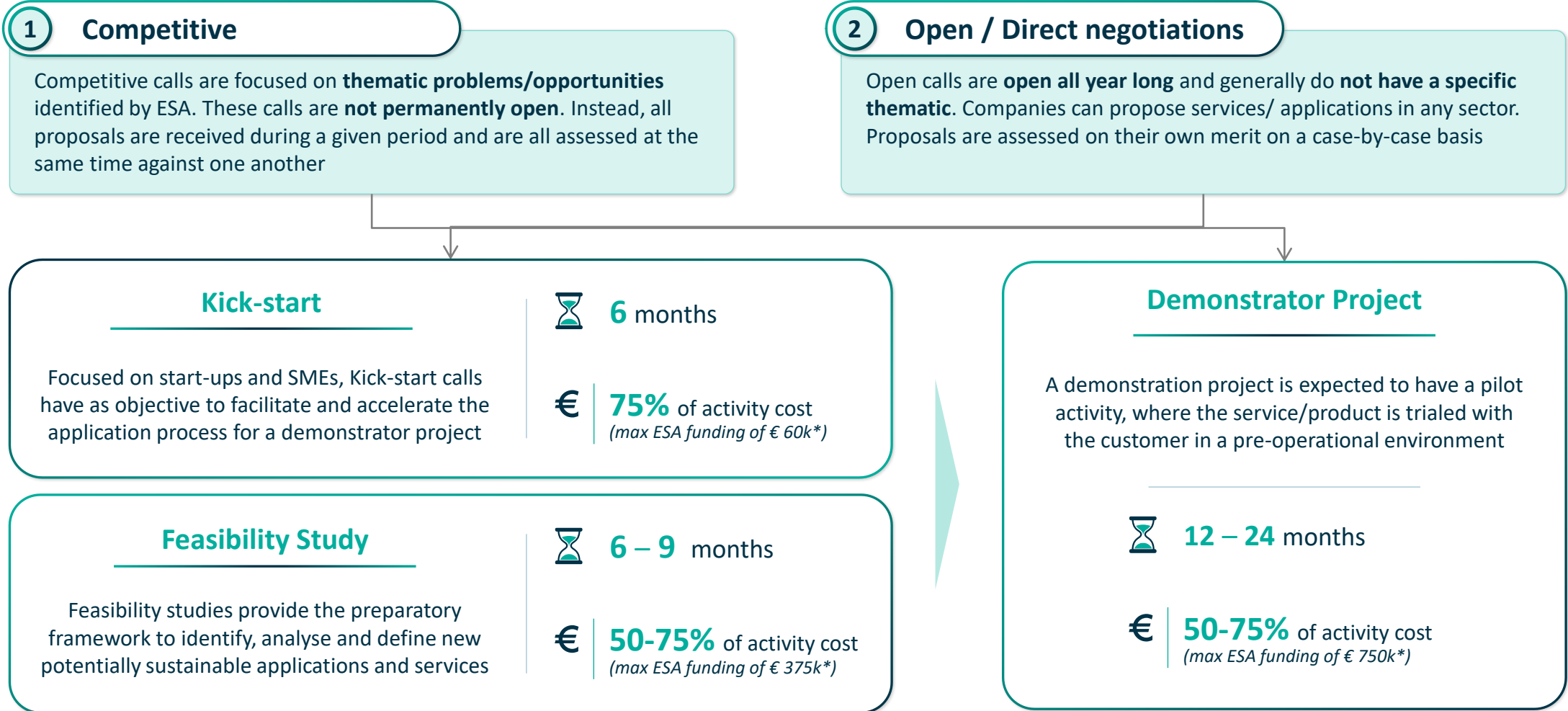
A dataplatform that collects, shares, and learns from each transport



DockFlow

- Climate
- Geolocation
- Communications
- Space exploration

The ESA BA programme supports 2 types of calls in either kick-start-, feasibility study-, or demonstrator project stages



* Funding provided by ESA

Contact us!



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 +32 499 100 288



Apply now & Reach out!



Visit our website



space-business.be

Thank you



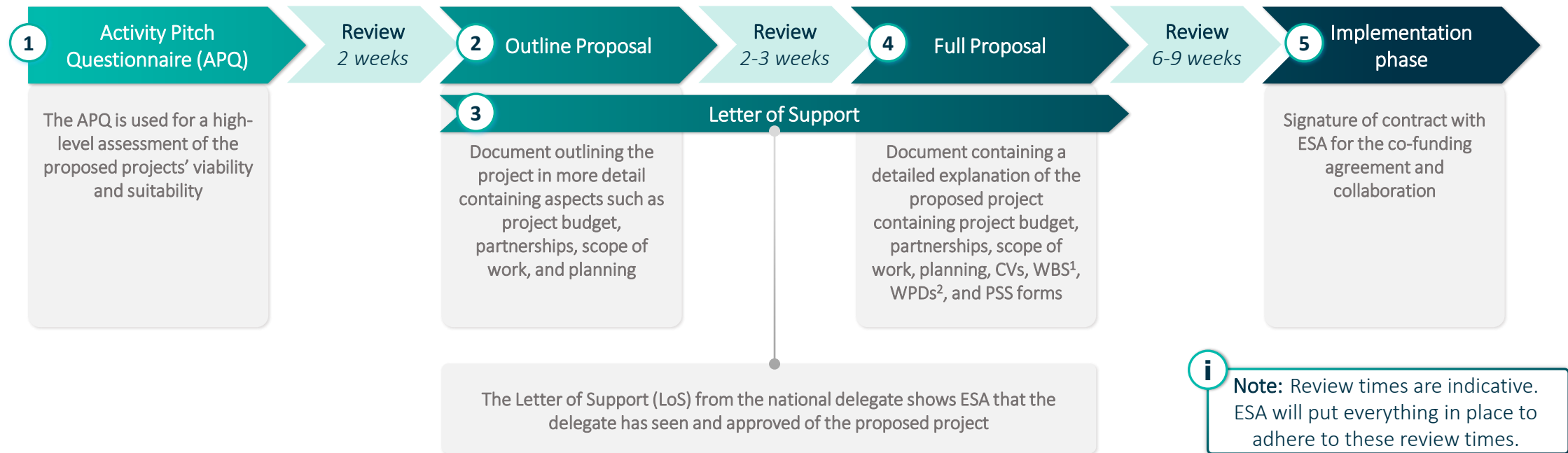
Belgium



Implemented by  **space-tec**
PARTNERS

What is the application process for open calls in general?

Open calls are open all year long and are open to any thematic chosen by companies (thematics are proposed on the [BASS website](#) as a source of inspiration)



1: WBS = Work Breakdown Structure; 2: WPD = Work Package Description

Funding scheme for open calls

The ESA Business Applications Programme provides the opportunity to co-fund a company's activity to a certain extent, depending on the company size and the type of project that is envisaged



Type of project	Co-funding by ESA	ESA Co-funding percentages of activity cost			Industry Co-funding
		Small & Medium Enterprises ¹	Non-SMEs	Universities & Research institutes ²	
Feasibility Study	Up to € 375k	Up to 75%	Up to 75%	Up to 100% of institute's cost and Up to 30% of activity cost	Remaining part of the cost to carry out the activity
Demonstrator Project	No fixed maximum amount set	Up to 50%	Up to 50%	Up to 80% of institute's cost and up to 30% of activity cost	

Note 1: The co-funding amount will be a percentage of the eligible activity cost requested by the applicant

Note 2: ESA provides co-funding level in terms of 'up-to' in its programmatic rules, and it is the ESA Delegation of the given Member State to which the industry/institutes belongs that defines the exact percentage within that range. The case of BELSPO is presented here

1: Based on EC recommendation (2003/361/EC) – summary of this in annex ([here](#)); 2: With no commercial interest in product/service

Is your company considered an MSME in Europe?

M

Micro Companies



< 10



≤ € 2 Mn



≤ € 2 Mn

S

Small Companies



< 50



≤ € 10 Mn



≤ € 10 Mn

M

Medium companies



< 250



≤ € 50 Mn



≤ € 43 Mn



Staff headcount



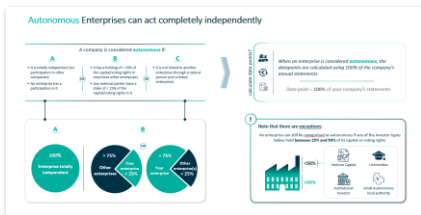
Turnover



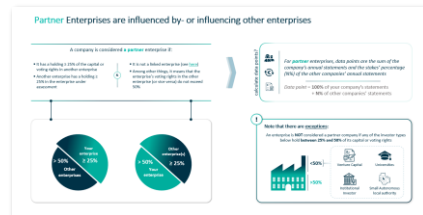
Balance sheet total

Additional considerations for data point calculations

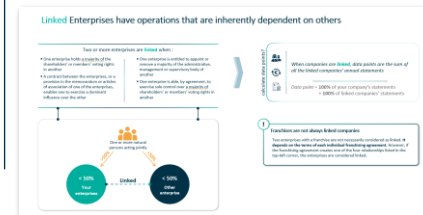
Autonomous companies



Partner companies



Linked companies



i Not sure? Assess your company status through the European commission's [Entrepreneurship and SMEs Portal](#)

Only companies in eligible Member States of the ESA BASS Programme can apply

Eligible Member States for the ESA BASS

	Belgium		Italy
	Czech Republic		Lithuania
	Denmark		Luxembourg
	Estonia		Norway
	Finland		Poland
	France		Portugal
	Germany		Romania
	Hungary		Sweden
	Ireland		United Kingdom

