GALACTICA

We are more than happy to be back with the fourth GALACTICA newsletter.

After the incredible results in the first call for proposals, the GALACTICA team could not do other thing than continue working on more activities to make this project grow.

As you well kow, **GALACTICA project is a cross-regional partnership** with eight EU countries involved that includes eight innovation clusters from **advanced manufacturing, aerospace, and textile industries,** one investor network and one business incubator and accelerator.

The project **fosters the creation of unidentified or unexplored market opportunities for existent and new companies** in the development of latent and emergent value chains. It will overcome information and market failures by gathering together companies from diverse industrial sectors, R&D organizations, clusters and by bringing to life a set of tools, instruments and triggering initiatives that will create a basis for the establishment of new value chains.

TABLE OF CONTENTS

The scope of the newsletter is to provide updates on project progress and inform you about highlights as well as GALACTICA and other relevant events.

Concluding, all **GALACTICA partners would like to thank you** for your interest in our project, your support on each activity, and your active involvement.

The GALACTICA Consortium.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

SECOND CALL FOR PROPOSALS

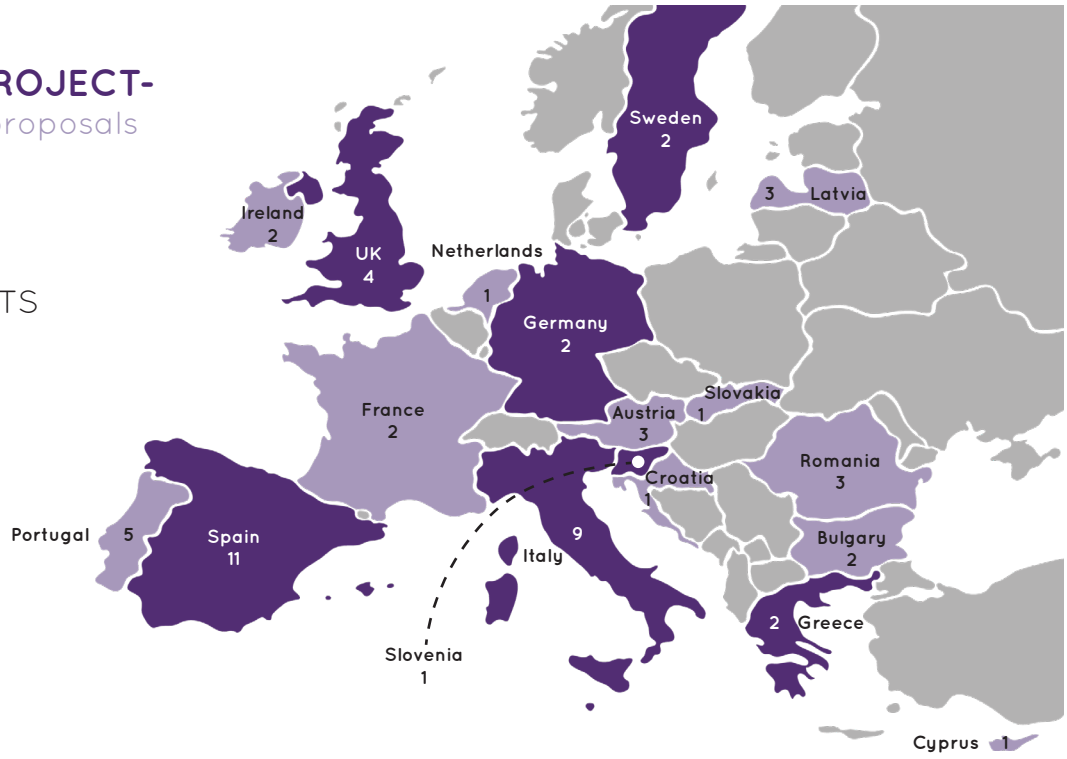
The GALACTICA consortium received 84 proposals, 55 in Orbital Projects and 29 in Pioneer Acceleration, and 25 were propose for funding. There are involved 45 SMEs from the textile, aerospace and advanced manufacturing sectors in those 25 projects, involving 14 European countries.

-ORBITAL PROJECT-

Number of proposals

WINNERS

PARTICIPANTS

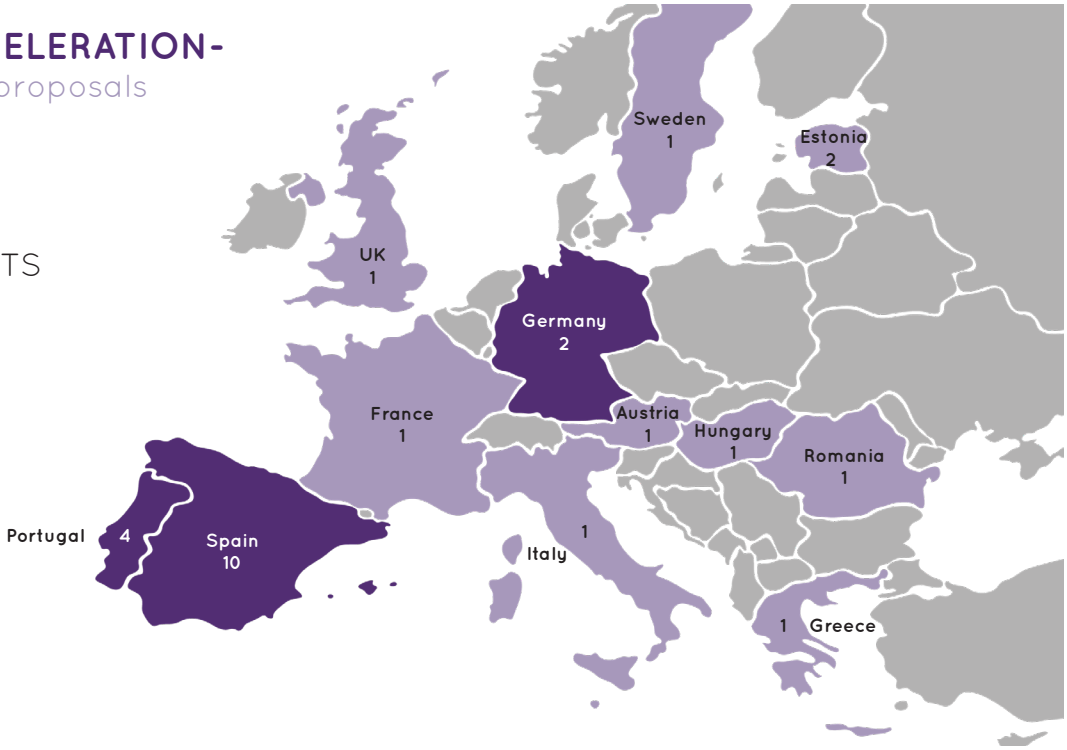


-PIONEER ACCELERATION-

Number of proposals

WINNERS

PARTICIPANTS



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

GALACTICA's 2nd Call for proposals had two different types of funding instruments, in the form of lump-sum vouchers. These had been addressed to SMEs with innovative solutions that could be part of cross-sectoral and cross border value chains in the sectors of aerospace, textile and advanced manufacturing.

Pioneer Acceleration voucher aims to support the exploration of new cross-sectoral value chains with focus on developing a Minimum Viable Product (MVP) by connecting two or more of the sectors.
Orbital Projects voucher supports the implementation of functional prototypes and demonstrators of new cross-sectoral value chains connecting the different sectors of GALACTICA.

In terms of distribution by country, Spain is first in funded SMEs with 20 companies, followed by Germany and Italy with 6 companies each, and United Kingdom with 3.

ORBITAL PROJECT

Country	Total
Spain	12
Germany	6
Italy	6
U.K.	3
Poland	1
France	1
Greece	1
Denmark	1
Slovenia	1
Austria	1
Sweden	1
TOTAL	34 beneficiaries and 11 countries

PIONEER ACCELERATION

Country	Total
Spain	8
Portugal	2
Germany	1
TOTAL	12 beneficiaries and 3 countries

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

LIST OF WINNING PROJECTS
- ORBITAL -

BIMATIARE. Is a project that aims at developing and validating in relevant environment an advanced additive technology for manufacturing of bi/tri metallic interface applied to rocket engines. The use of this technology will enable to manufacture components and combustion interfaces of propulsion systems.

MVRPT. This project is the integration of Magos gloves into VRflow platform. This collaboration will push the VR pilot training even further, by providing a more effective and productive training method, since pilots can interact via their fingers, as they would in the real world.

CIRCULAR FUNCTIONAL CLEAN TECH TEXTILES. Circular economy polyamide textile reclamation via clean technological innovation to remove elasthane and optimise the reuse of strong polyamide textile chains. This new material will create a new product category turning a waste problem into a new advanced textile material with a number of social, economic and environmental benefits for European textile manufacturing.

C_BOAT. This project proposes a new solution that integrates an innovative tissue in 3D printing process to produce seamlessly co-printed textile-mechanical parts, allowing the production of a sliding joint co-molded on the fabric.

ACTIVESST with this experiment we aim at advancing the state-of-the-art of cooling solutions for aerospace garments by developing an active thermal load management system for space suits, preventing health threatening situations that may lead to mild or even potentially fatal health issues.

INCEPTION. Presents a cost-effective and fully European combustion chamber solution, based on the use of ceramic materials and especially developed via additive manufacturing processes that combined with Lithoz's expertise, know-how and state-of-the-art own-developed and proprietary equipment and materials, are a perfect match for Arkadia Space's requirements and the scope of the project.

AEROSENSE. Smart compression shirt that provides advanced vital sign monitoring in real-time, with condition-based health predictive analysis for General Aviation & new Aerospace applications. AEROSENSE involves the integration and manufacturing of textile wearable providing six vital signs telemetry data for the general aviation and space industries.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

LIST OF WINNING PROJECTS
- ORBITAL -

REALTIME-SHMACS develops a smart textile tape with embedded fiber optics solutions wither higher accuracy and flexibility for applications in structural health monitoring of composite aeronautic structures, considering both the use of multi-point/distributed sensors.

NOC-STRUT. This project aims to develop a functional demonstrator of an innovative, lightweight, mechanically and thermally stable, 'seamless Pitch-based continuous carbon-fibre Noobed Tubular 3D Fabric reinforced silicon carbide ceramic strut for an optical bench application based on typical space telescope requirements.

FLWRTECH is a patented, high performing, hypoallergenic and animal free replacement for traditional animal and petroleum based synthetic down produced by Pangaia Grado Zero. The cellulose-based insulation material is made out of dried wildflowers mixed with a biopolymer formed by the polymerization of lactide in a mechanical process used to produce puffer jackets.

ASCHO. The Ascho project aims to improve comfort and health by building innovative seating solutions to support individual body physics in the aerospace, aviation, and automotive industry.

THEAMS. This solution combines nanoparticles, additive manufacturing and two-phase devices to transform the satellite structures into extremely effective heat conductors that will significantly decrease the temperatures observed over the satellite electronic equipment.

RESYNT. The project considers the case of a textile tuscanian company, active in the recovery of cotton fiber from post-consumer textile. The aim of the project will be to study the valorisation of this currently discarded fraction taking consideration of some important facts.

SOLARCUBE is an off-the-shelf, origami-inspired lightweight and a compact solar panel aimed to solve the limitation of conventional solar panels for space applications. SolarCube is characterized by an exceptionally high stowed-to-deployed surface ratio which allows it, along with the spacecraft itself, to greatly reduce the overall size and weight.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

LIST OF WINNING PROJECTS
- PIONEER ACCELERATION -

ABEP KREIOS SPACE. The objective is to optimise the compression rate, efficiency and weight of an air intake through the application of Advanced Manufacturing methods. This propulsion system will enable the Very Low Earth Orbits by compensating the drag present in these orbits and allowing the satellites to operate for up to 10 years.

CERTBLOC dynamically creates a digital twin of a textile value chain from real- time production data. The data owner has full control over what they share with whom, giving each actor a different presentation of their value chain.

ROBOCORK. The project is focused on the fabrication using sustainable materials of the fuselage and textile cover of a bioinspired flapping wing aerial robot prototype (ornithopter) with outstanding properties regarding weight, flexibility of design, mechanical properties, and recyclability.

MERGEPRODYE. The aim is to develop a special device that can be installed in existing garment washing and dyeing machines to implement a process that can currently only be carried out in bath.

rCF. This project has been able to develope the first high drapability fabric made with 100% recycled carbon fibers. The designed fabric can be used for all those applications where high mechanical strength properties are not required.

RFID-SHELVING-SYSTEMS. Maccion aims to come up with a novel and disruptive approach lying on RFID tracking technologies that will reduce item-level inventories and lead times by 25%.

SENSING MATS. Is a project that aims to enable edge computing applications in air crafts to help airplane manufacturers and airlines introduce non-intrusive plug and play smart occupancy cabins to the market.

MANUALTWIN propose to connect aerospace and advanced manufacturing sectors by demonstrating an artificial intelligence system that uses the skeleton and hand tracking capability already developed by Infinite Foundry (IF).

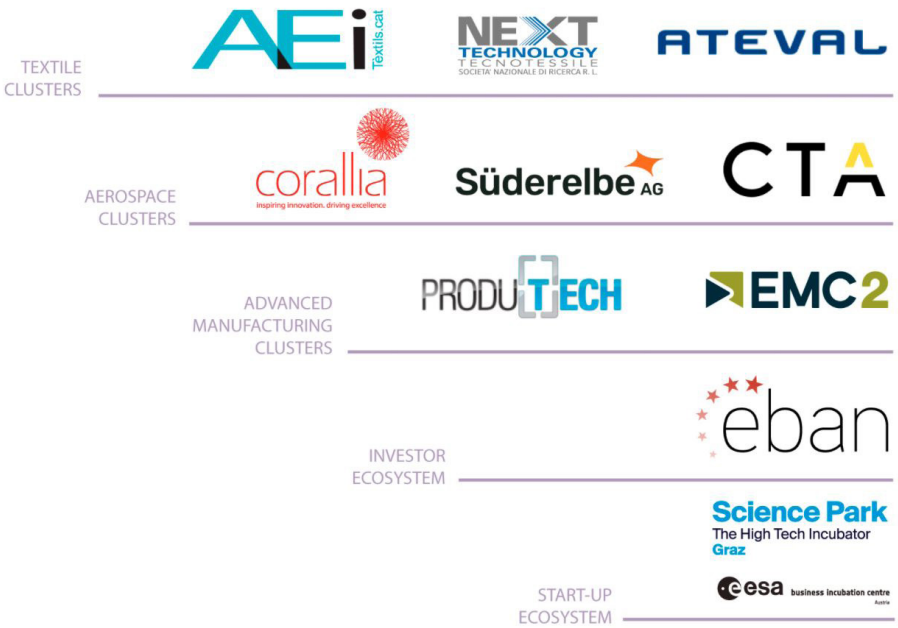
SMART-TEXTILE-SORTING. An innovation based on semi-automated textile sorting that relies on a combination on computer vision technology, intelligent conveyor belts, high precision textile cutting machines and high-skilled manual inspection.

IMPACT PROTECTION USING GREEN COMPOSITES. Is an impact absorption material, flexible, ease to apply, good thermal characteristics and light, which improves the level of protection against bird strike, by increasing the strength of the wing, which will has direct consequence in reduce their maintenance.

RTracking4Textile. This project aims to improve the use of IoT technologies for tracking and tracing in the textile sector along with the implementation of deep leaning/AI to avoid duplicate or incorrect label readings.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336

MEET THE PARTNERS



CONTACTS

For more information, please contact:

Project Coordinator
Josep Casamada – AEI TÈXTILS
projectes@textils.cat

Dissemination and Communication Manager
Julia Vercher - ATEVAL
julia@ateval.com

Follow GALACTICA on Social Media

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 872336