The Two Prize Categories

Technology Transfer Success Category

Competition

The key task of this competition is to identify non-space applications out of the ESA technology portfolio for space exploration

Prizes

- EUR 10,000 value cash prize
- Business case promotion to an international audience & markets
- Winner will be on stage with ESA

New Business Innovation Category

Competition

The key task of this competition is to discover business innovations which are connecting space & non-space areas with new approaches, solutions and services related to space exploration

Prizes

- More than EUR 500,000 value in-kind prizes
- Business case promotion to an international audience & markets
- Winner & Overall Winner will be on stage with ESA & Partners

Interested?
Contact us!

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Initiated by esa European Space Agency

Organised by AZO Space of Innovation

SPACE EXPLORATION MASTERS

www.space-exploration-masters.com
The new competition dedicated to Space Exploration for innovative Business Ideas and Technology Transfer Success benefitting Earth.

The Results, 2017

1st Edition

Prize partners

esa European Space Agency · SR Space Resources.lu · ASTROSAT · Huntsville Madison County Chamber Alabama - USA · AIRBUS · Merck KGaA Darmstadt, Germany

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INITIATOR'S INTRO

Space Exploration: Open for Business

A new space era foresees more partnerships with the private sector in a future where space agencies won't be the only actors. May the startups be with us.

The first European space exploration competition is a launch pad to boost business and innovation beyond Earth's orbit. This unprecedented opportunity comes at a time when young companies and bold entrepreneurs are gaining momentum across Europe.

The Space Exploration Masters kicked off with the ambition of strengthening the economic dimension of space exploration. We invited space and non-space industry to come forward with ideas that will help us advance space exploration for the benefit of people on Earth. ESA led the initiative with AZO and world-class industrial and institutional partners. It even attracted a US partner – Huntsville Madison County Chamber – in cooperation with Astrosat, a small company from the United Kingdom. Large private corporations joined in as sponsors of additional challenges.

Nearly 150 proposals from all over the world answered the call. Such a global and diversified response shows how attractive and far-reaching this European initiative is.

Around 30 experts with different backgrounds from agencies, institutions, companies and science centres reviewed the ideas. Interdisciplinary evaluation teams rigorously assessed each entry.

The short-listed candidates had the opportunity to pitch their novel proposals, raising vivid discussions among the experts. The new space is a crossroad of sectors, resources and people, and its dialectical debate is alive in Europe.

We wish to congratulate all applicants for their risk-adverse approach, for being open-minded and ambitious about future endeavours – both on Earth and in space.

Welcome to the future.

Bernhard Hufenbach
Head of Strategic Planning and Outreach Office
ESA Directorate of Human and Robotic Exploration,
European Space Agency (ESA)

ORGANISER'S INTRO

New Space Exploration Players

The need to explore new horizons has always driven humankind. Europe's first and only competition dedicated to space exploration scouts new players to take the next big step towards exploration dreams: The Space Exploration Masters.

AZO launched the innovation competition on behalf of the European Space Agency (ESA) and in cooperation with strong world-class partners. The main focus is to drive forward-thinking entrepreneurs to become a fundamental part of Europe's space exploration activities and collaborate with the most important international space stakeholders. Why? Because, together we can shape our future in space with ground-breaking innovation and make life on Earth even better. For that reason, the Space Exploration Masters identifies the best technology transfer business successes and fosters business innovation around space exploration efforts in Low Earth Orbit (LEO), on Moon, Mars, or beyond – for the benefit of economy and society.

Almost 150 remarkable entries from 34 countries were submitted by 430 participants for seven different prizes in the competitions first year. About 30 experts were entrusted with the evaluation of the submissions. I am excited to see these innovative ideas turn into businesses in the fields of Human Space and Robotic Missions, Space Resources & Industry, Discovery & Space Observation, Spacecraft & Rockets, Propulsion, Deep Space Communication & Navigation, Space Habitats, and Life Sciences – just to name a few.

I want to thank our Space Exploration Masters partners: European Space Agency (ESA), the Luxembourg Ministry of the Economy, Stevenson Astrosat, Chamber of Commerce of Huntsville/Madison County, Alabama, USA, Airbus, Merck KGaA, Darmstadt, Germany, Space Applications Services and SpaceStarters. Their dedicated expertise and support represent the backbone of the innovation competition. I am excited to see it grow bigger and make substantial progress.

New technology, smart use of space resources and In-Situ Resource Utilisation (ISRU) combined with additive manufacturing advance common space objectives. Thereby, circular economy solutions for space and Earth alike will be of high interest.

I am curious to see our Space Exploration Masters participants and winners, amongst other new players, accelerate the common endeavour of international space exploration.

Thorsten Rudolph
Managing Director
AZO Anwendungszentrum GmbH
Oberpfaffenhofen

SPACE EXPLORATION: EXPLORING TOGETHER

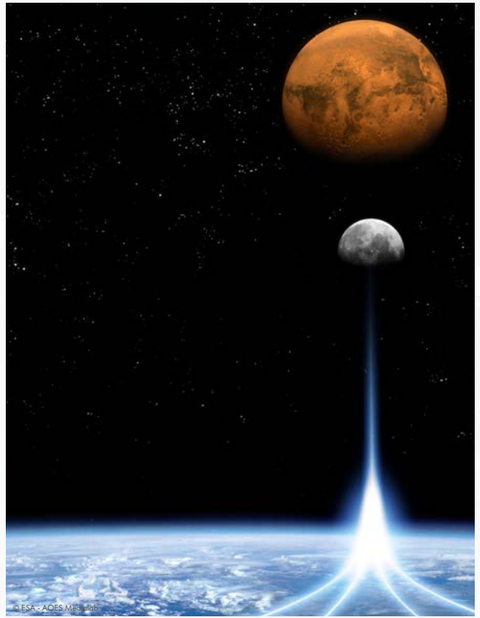
ESA's ambitious plans for the next decade of space exploration will take us from the Space Station to the Moon, a deep-space gateway and a Mars landing.
The vision includes business opportunities for the private sector. This new age of exploration will be achieved not in competition, but through international cooperation.

It is an enormous challenge that no single nation can undertake on its own. We must do it together.

Following the spirit of the Global Space Exploration Strategy, ESA is already working with partners globally to unlock humanity's future in space.

The Global Exploration Strategy is a framework developed by 15 space agencies that focuses on destinations within the Solar System where we may one day live and work.

This strategy reflects an international effort to prepare for space exploration missions beginning with the International Space Station (ISS) and continuing to the lunar vicinity. From the lunar vicinity, missions to both the Moon and Mars are possible.



Europe is setting its sights on the Moon, preparing for a robotic landing in partnership with Russia as early as 2022 that will look for water ice that scientists believe may be present in the dark polar regions.
Such a discovery could open the door to future explorers exploiting resources on the surface – living off the land.

Concrete steps are already being taken.

NASA's new Orion vehicle, with a European service module at its core, will build bridges to Moon and Mars by sending humans further into space than ever before.

ISS partners currently study the concept of a Deep Space Gateway located in lunar orbit to enable sustained human exploration of the Moon and other deep space destinations.
A partnership between humans and robots is essential to the success of such ventures.
Robotic spacecraft are our scouts and proxies, venturing first into hostile environments to gather critical intelligence that makes human exploration feasible.

The next decade will see the ExoMars rover scouting and drilling the surface of the Red Planet to search for signs of past or present life.

It will be the first mission to combine a moving rover with the ability to study Mars – literally – at depth, using its ground-penetrating radar and 2 m-long drill.

We will learn about the evolution of the Solar System and how to survive in difficult environments.
This new knowledge will help us understand Earth better, and enable us to create more sustainable societies here.

ESA Prize jointly with Space Applications Services

PRIZE

The prize is awarded for compelling ideas that benefit from the International Commercial Experiment Cubes Service (ICE Cubes) facility for space exploration purposes.

The winner receives the flight and operation of the Experiment Cube [1U-size] on the International Space Station with a 4-month service, guidelines and mentorship for payload development, a certificate of recognition, and dedicated promotion.

PARTNER

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA's vision positions space exploration as a global endeavour, including missions to low Earth orbit, the Moon and Mars. It also aims to establish marketable space exploration initiatives and to boost socio-economic growth, job creation and added welfare.

ICE-Cubes is a facility to be installed on board of the European module, Columbus, of the International Space Station. This research and technology platform with experimental cubes establishes a frequent and fast-track service in low Earth orbit. ICE-Cubes allows to make the unique environment of microgravity more accessible to all.

Bernhard Hufenbach, European Space Agency
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Mauro Ricci, Space Applications Services
mauro.ricci@spaceapplications.com, icecubesservice.com

WINNER

Fenix – Small Propulsion Systems for Small Satellites

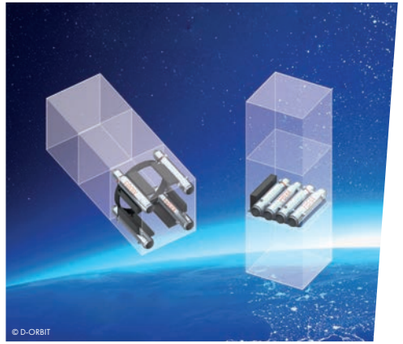
FENIX is a modular micro-propulsion device designed to expand the mission profile of the CubeSat platform. Its independent solid rocket motors enable missions on higher orbits, multiple orbital planes in a single mission, lifetime extension, and deorbiting.

Its baseline configuration includes four solid rocket motors installed along the vertical edges of a 1U CubeSat frame, so the volume within remains available for cylinder-shaped payloads like lenses. Configurations with a larger number of motors are also available.

FENIX enables CubeSat operators to comply with international regulations even in case of missions to 700km orbit or higher, making it the ultimate solution to prevent an accumulation of spent nanosatellites in orbit.

In lower orbits, FENIX enables mission lifetime extension by boosting CubeSats' orbit before they hit Earth's atmosphere.

In interplanetary missions, FENIX opens up the possibility to include rapid orbital injection in the mission profile, and even to land CubeSats on the Moon and asteroids.



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EXPERTISE

"The new game in space exploration is on. European players – e. g. individuals, big corporations, researchers and bold entrepreneurs – answered the call from ESA and Space Applications Services.
The winner excelled at tailoring solutions for innovative propulsion systems. Led by the startup D-Orbit and taking the ICE Cubes' ticket for on-orbit validation, Fenix optimises the space exploration potential, maximises business opportunities and minimises space debris. A win-win proposal for the future."

Bernhard Hufenbach
European Space Agency (ESA)

Richard Aked
Space Applications Services

Luxembourg Prize LuxIMPULSE Award

PRIZE

This award is designed to support a phase 0 / phase A study under the Luxembourg national space programme "LuxIMPULSE" that is managed by ESA, with a maximum contract value of EUR 400,000.

The Luxembourg Ministry of the Economy supports the winner by incubating the company in one of Luxembourg's incubators.

PARTNER

The Ministry of the Economy of the Government of Luxembourg is responsible for the diversification of Luxembourg's economy through the support of innovative activities. Its directorate of Space Affairs defines and implements Luxembourg's national space policy. It represents Luxembourg at the European Space Agency (ESA) and at the bodies of the European Union (EU) regarding space affairs. It also coordinates the new SpaceResources.lu initiative by defining and implementing the different actions of the strategy.

The Ministry of the Economy of Luxembourg announced the SpaceResources.lu initiative with a vision to contribute to the peaceful exploration and sustainable utilisation of space resources for the benefit of humankind. Therefore Luxembourg devised a complete strategy to position the country as a hub for commercial activities targeting the utilisation of space resources.

Mathias Link, The Government of the Grand Duchy of Luxembourg
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Cedric Letsch, The Government of the Grand Duchy of Luxembourg
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WINNER

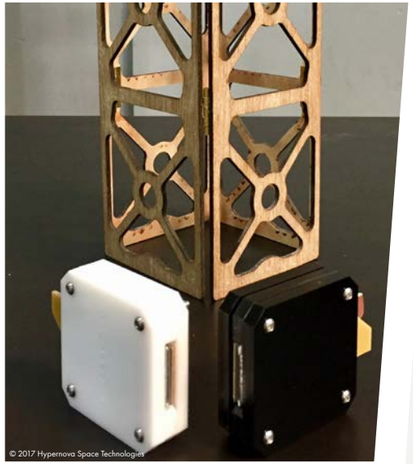
Simple and Scalable Electric Propulsion for Small Satellites and Beyond

Hypernova Space Technologies is an engineering startup focusing on developing innovative space technologies.
The first product line consists of propulsion systems for micro- and nanosatellites.

In the short-term, the propulsion technology provides a new class of affordable and safe propulsion systems to small satellite manufacturers. In the long-term, it enables in-space infrastructure and services, deep-space exploration and gathering of space resources. Specifically, the technology uses stable elements that are abundant on asteroids as fuel for transporting more valuable payloads.

Benefits:

- Propulsion enabling constellation phasing, orbital maintenance, precision attitude control, collision avoidance and disposal to avoid creating space debris
- Safe and equitable use, and stewardship of, space resources and technologies for the benefit of humanity



Jonathan Lun
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HYPERNOVA
SPACE TECHNOLOGIES

EXPERTISE

"Picking a winner out of the 49 proposals was certainly a challenge for all of us. In the end, Hypernova's advanced prototype of a plasma thruster struck a chord because it is a technology with a proven track record that neatly fits into Luxembourg's dynamic space ecosystem, including our new SpaceResources.lu initiative. We are looking forward to supporting Hypernova's bid to become the first commercial producer of electric propulsion engines using solid metal as propellant."

Marc Serres
Director of Space Affairs
Ministry of the Economy of the Grand Duchy of Luxembourg

Luxembourg Prize
SpaceStarters Award

PRIZE

The prize is awarded for projects that are ready for early-stage funding and offers a crowd-investing campaign with SpaceStarters worth EUR 30,000 of services in order to prepare the campaign for launch.

The Luxembourg Ministry of the Economy supports the winner by incubating the company in one of Luxembourg's incubators.

PARTNER

The Office of Space Affairs at the Luxembourg Government's Ministry of the Economy defines and implements Luxembourg's national space policy.
It represents Luxembourg at the European Space Agency (ESA) and at the bodies of the European Union (EU) regarding space affairs. It also coordinates the new SpaceResources.lu initiative by defining and implementing the different actions of the strategy.

SpaceStarters – the crowdinvesting platform for space-based innovations – unites expertise in venture capital business with profound space sector market knowledge and enables investors to participate directly in the success of promising companies. SpaceStarters customises the financing model according to the individual company and revenue situation.
No matter if you are a startup, a dynamic growth company or an established market incumbent: It's all about investing at the right time, in the right place and the right technology.

Mathias Link, The Government of the Grand Duchy of Luxembourg
Mathias.Link@eco.etat.lu, www.gouvernement.lu/meco

Uli W. Fricke, FunderNation GmbH
uli.fricke@FunderNation.eu, www.FunderNation.eu

WINNER

Maana Electric – TerraBox & LunaBox

Maana Electric strives to become the first utility company to service customers anywhere in the solar system. On Earth, the burning of fossil fuels is still the least expensive way to generate electricity, although this has an undeniable effect on our planet's changing climate.
As the world's power demand increases by 3% annually, it is pivotal that more sources of green energy are built. TerraBox builds up to 10 megawatts (MW) of fully-functional solar panels per year from the materials locked in common desert sand at a price 60% less than conventional solar farms.

On the Moon, LunaBox puts out up to 1 MW of capacity per year whilst also generating breathable oxygen. Maana Electric aims to power 10 million homes on Earth by 2030 and enable the rapid growth and development of the space resources economy by the mid-2020s.

Joost van Oorschot
Maana Electric
joost@maanaelectric.com
www.maanaelectric.com

Benefits:

- Power generation for 60% less than any other solar farm, using a completely emission-free process.
- To bolster green energy production in developed and developing nations, and to facilitate the development of the space resources economy.

EXPERTISE

"It has been exciting to see the scope and quality of the proposals, covering a wide range of technologies and solutions in the field of space exploration. For the SpaceStarters prize, the selection criteria included a sustainable business model on top of an innovative technical approach. To that end, Maana Electric convinced the jury with its staged approach to demonstrate its technology and business case on Earth before taking the innovative solar technology into space."

Uli W. Fricke
CEO of FunderNation and operator of the SpaceStarters crowdinvesting platform

Marc Serres
Director of Space Affairs
Ministry of the Economy of the Grand Duchy of Luxembourg

ASTROSAT

HUNTSVILLE MADISON COUNTY CHAMBER ALABAMA - USA

Astrosat & Huntsville Prize

PRIZE

The prize is awarded for commercially viable business applications for missions in low Earth orbit that utilise the capabilities of the Sierra Nevada Corporation (SNC) *Dream Chaser*® spacecraft.

EUR 10,000 of business analysis to apply the "Space as a Service" model. EUR 10,000 for a trip to Huntsville for facilitated meetings.

If the winner chooses to establish a presence in Huntsville, one year of office space and 75 hours of business incubation consulting services valued at EUR 15,000 is provided by BizTech.

PARTNER

Stevenson Astrosat is a highly innovative space solutions services company based in Edinburgh, Scotland. Astrosat's core belief is that any societal, business or engineering challenge can be solved or supported by space technologies – Innovation, cooperation and technology transfer are the key. A 5-time winner of the Copernicus Masters and European Satellite Navigation Competition (ESNC) and prime contractor on multiple larger ESA, European Commission (EC) and UK Space Agency contracts, Astrosat is now working with SNC and the International Space Station (ISS) to complement its global customer base.
The Chamber of Commerce of Huntsville/ Madison County, Alabama, USA, is the lead economic development organisation for the aerospace industry hub and home to NASA's Marshall Space Flight Center. Known as The Rocket City, Huntsville is a recognized leader in propulsion for launch and space exploration and has a rich history in space science and applications, dating back to America's first science satellite, Explorer 1.

Steve Lee, Stevenson Astrosat Limited
steve.lee@astrosat.biz, www.astrosat.space

Lucia Cape, Chamber of Commerce of Huntsville/Madison County
lcape@hsvchamber.org, www.hsvchamber.org

WINNER

Plant Germination during Spaceflight to Test for the Adaptability of Crops in long-term Space Missions

Current mission windows, frequencies and configurations limit the ability to grow and evaluate multiple generations of plants in space.

SustainSpace uses the relatively frequent flights of the SNC *Dream Chaser* and its controlled landing to grow several successive generations of plants in a space environment and produce a rapid evolutionary and selection process. This is an iterative process for rapidly evolving and improving populations of plants in the space environment.

The primary targets are users of life support systems in space, but also research institutions, the agriculture industry and STEM education. SustainSpace uses flight-rated, automated plant growth chambers, such as those already developed for NASA or their own.

Mark Ciotola
SustainSpace
San Francisco State University, Singularity University
mark.ciotola@SustainSpace.com
www.sustainspace.com

Benefits:

- Crops better suited to space life support: Faster growing, improved microgravity adaptation, better CO2 and waste usage
- Improved characteristics for future plants grown on Earth in extreme or special conditions
- Higher CO2-absorbing plants to reduce climate change

Sustain Space

SPACE EXPLORATION MASTERS
Overall Winner 2017

EXPERTISE

"Mark and Afshin's proposal for utilising the *Dream Chaser* for developing agricultural assets for space exploration is a novel use of the space plane to deliver an essential component of any future human space exploration. Their experience in genomics and aerospace is evident through a clear and comprehensive technical assessment of current technology and a solid business case for a product which is not easy to market."

Dan Ghatoray, Business & Innovation Analyst
Stevenson Astrosat Limited

"The winning idea from SustainSpace will support space exploration goals and utilize the assets of both *Dream Chaser* and the Huntsville business community. We look forward to hosting their team and helping them advance their research into space-based agriculture."

Lucia Cape, Chamber of Commerce of Huntsville/Madison County

AIRBUS

Merck KGaA
Darmstadt, Germany

Sustainable Exploration Prize

PRIZE

The prize is awarded for ideas that enable a sustainable space environment and human life in space.

All finalists receive a support package including access to experts, application support for a tailored acceleration programme, a pitch to Airbus Ventures and Merck Ventures B.V., and support for the ESA Business Incubation Centre (BIC) Bavaria application.

The winner additionally receives an all-inclusive trip to the X-Innovation Summit in Dubai, as well as a one-day expert workshop.

PARTNER

By using new commercial concepts in the space sector, Airbus establishes itself as European market leader in technology and industrial development. Airbus welcomes the opportunity to connect with external innovators through this competition in order to shape the future of the new space economy together.

Merck KGaA, Darmstadt, Germany is a leading science and technology company in healthcare, life science and performance materials. Around 50,000 employees work to further develop technologies that improve and enhance life – from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions.

Ulrich Kübler, Airbus
ulrich.kuebler@airbus.com, www.airbus.com

Matthias A. Simnacher, Merck KGaA, Darmstadt, Germany
matthias.simnacher@merckgroup.com, www.merckgroup.com

WINNER

Golden Fleece – Metallic Coatings for Intelligent Solar Sails from In-Situ Resources

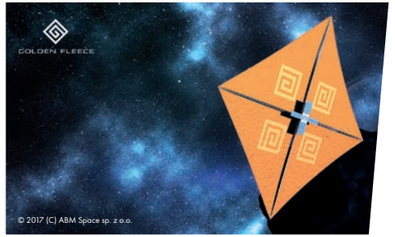
Golden Fleece is an intelligent solar sail concept. Its active structure provides increased control and performance and allows partial integration of spacecraft electronics with the sail base. The target production method assumes coating with nanophase materials extracted in-situ from asteroids. It solves the problem of the absence of volatiles for in-situ propellant production on bodies where only metallic materials are present. It allows overall craft mass reduction and transporting of the raw material in a form of coating to the target location, where it is recycled. Cargo becomes a propellant. The technology is developed for present deep space system integrators, future space mining and exploration integrators, as well as for EX-PL Consortium ARGO FLEET space mining probes. Traditional coating technologies, such as ink jet and spray tech, will be adapted to space conditions. The concept also allows for the efficient production of flexible electronics on Earth, in-situ and in-orbit, including space spare parts, as well as the development of recycling in space.

Mateusz Józefowicz
ABM Space sp. z o.o.
mateusz.jozefowicz@abmspace.com
www.abmspace.com

Golden Fleece can be adapted to efficient deorbit sails for direct commercialisation on satellite constellations.

Benefits:

- Increased control of solar sails and in-orbit production and repairs
- Reduced mass of deep space probes and Earth satellites by integrating systems, propulsion and cargo container in a single structure
- In-orbit industry relieves pressure on the Earth environment



ABMSPACE

EXPERTISE

"Our prize winner Golden Fleece tackles important areas of sustainable space exploration, relevant for space & Earth: From in-space & additive manufacturing, to stretchable electronics, coatings, and organic photovoltaic – utilising in-situ resources and cross-industry know-how. We are sure that Airbus and Merck can help bring the project to the next level, supporting through experts and coordinated accelerator programmes at both companies. The prize winner's journey starts with the cross-industry X-Innovation Summit in Dubai in November 2017."

Matthias A. Simnacher
Merck KGaA, Darmstadt, Germany

Urlich Kübler
Airbus

esa
space solutions

ESA Space Solutions Prize

PRIZE

The prize is awarded for innovative and disruptive cases of realised technology transfers, so far unknown to ESA, with a tangible business performance in matching one or more of the UN Sustainable Development Goals.

Along with a EUR 10,000 cash prize, the winner receives business case promotion to an international audience & markets.

PARTNER

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA's vision positions space exploration as a global endeavour, including missions to low Earth orbit, the Moon and Mars. It also aims to establish marketable space exploration initiatives and to boost socio-economic growth, job creation and added welfare.

Through ESA's Technology Transfer Programme Europe benefits from Space reaching the non-space sectors.

Frank Salzgeber
European Space Agency
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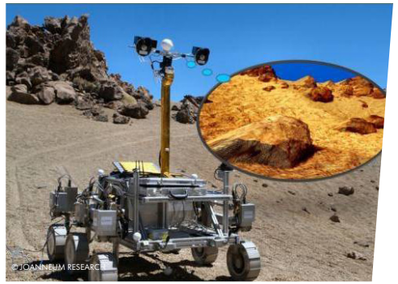
www.spacesolutions.esa.int

WINNER

3D Reconstruction and Visualisation of Geological Formations

When the ExoMars Rover travels across Mars in 2021, its stereo cameras will capture images for the Planetary Robotics Vision Processing (PRoViP) framework by Joanneum Research to create multi-resolution structures and textures in various colours to form a virtual 3D representation of the observed surfaces. With those 3D Digital Outcrop Models being fed into the Planetary Robotics 3D Viewer (PRo3D) by VRVis for virtual exploration and visual analysis, planetologists will achieve a better understanding of the Martian environment and geology.
As successfully demonstrated, the same technology can benefit e.g. the fight against deadly landslides and rock falls on Earth, which are becoming more common due to extreme weather events caused by climate change. Furthermore, geological modelling fosters the sustainability and safety of infrastructure projects such as tunnels under construction and land use planning by providing comprehensive visual information to geologists and decision-makers.

However, it could also be used to let people virtually experience and become educated about Mars, or even allow citizen scientists to help categorise alien landscapes and find ideal areas for future science outposts and In-Situ Resource Utilisation activities.



Gerhard Paar
JOANNEUM RESEARCH Forschungsgesellschaft mbH
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JOANNEUM RESEARCH DIGITAL

EXPERTISE

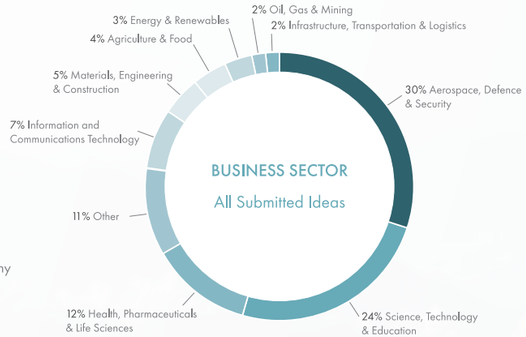
"When the ExoMars rover scouts the Red Planet, a sophisticated system will rely on stereo images to capture structures and textures in a range of colours, and create 3D maps of the surface. Joanneum Research's technology will enhance our understanding of Martian geology. Brimatech (ESA Technology Transfer Broker) facilitates the use of this technology to fight against deadly landslides and rock falls, an increasingly common event nowadays due to extreme weather. It will also let citizens virtually experience, explore and study the Martian landscapes."

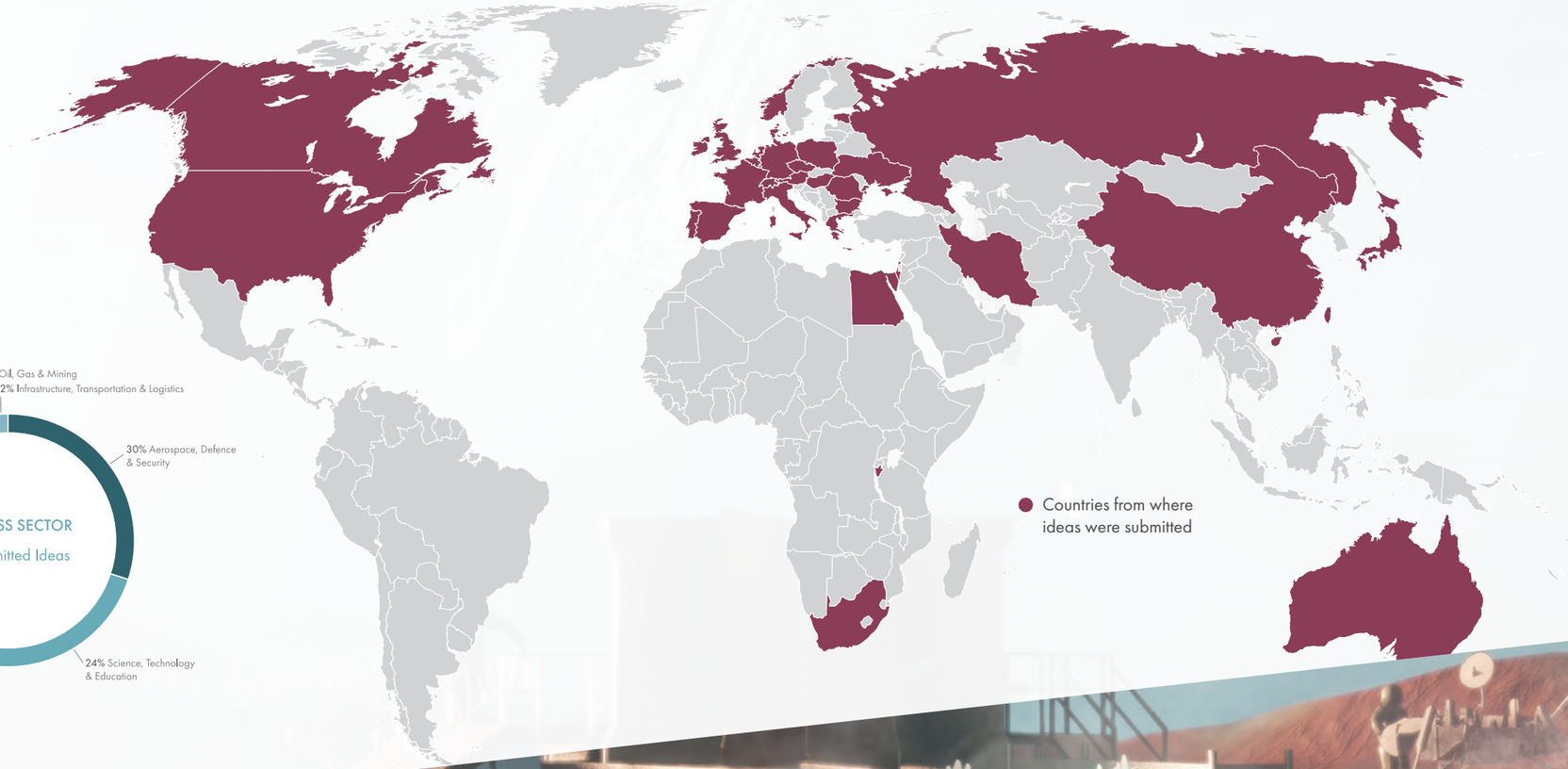
Frank Salzgeber
European Space Agency (ESA)

OVERVIEW PARTICIPANTS

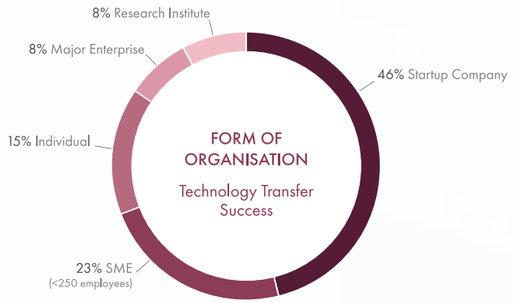
The first edition of the Space Exploration Masters boosts innovative space exploration business ideas that benefit the Earth.

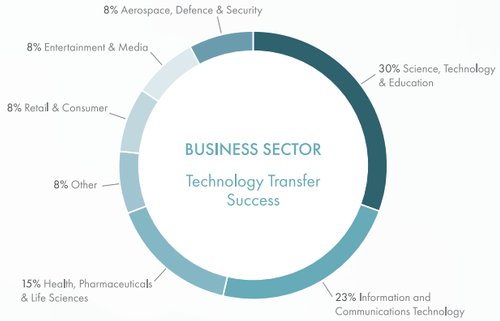
The great results of almost 150 entries by 430 participants from 34 countries worldwide showcases the exciting future of space exploration. Take a look at the organisation forms and business sectors of the participants.

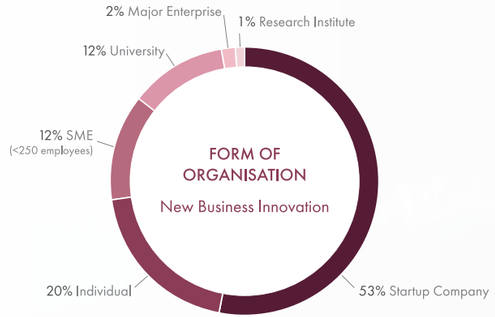


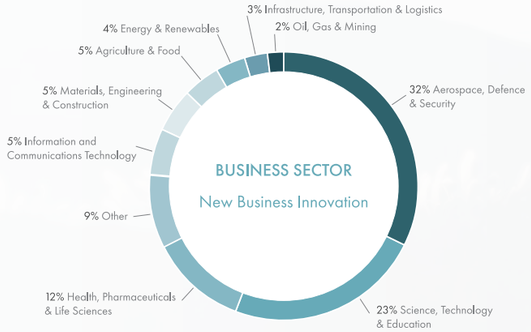


OVERVIEW CATEGORIES









THE EXPERTS

ESA Space Solutions Prize

Dr Iacopo Baroncini, European Space Agency (ESA)
Giancarlo Caratti, European Commission (EC)
Dr Vincent Ryckaert, IMEC
Frank Salzgeber, European Space Agency (ESA)

ESA Prize jointly with Space Applications Services

Richard Aked, Space Applications Services
Dr Andreas Borggräfe, RHEA System B.V. for ESA
Veronica La Regina, RHEA System B.V. for ESA
Mauro Ricci, Space Applications Services
Hilde Stenuit, Space Applications Services

Luxembourg Prize

Pedro Baptista, European Space Agency (ESA) / LuxIMPULSE
Diego De Biasio, Technoport SA
Dr James Carpenter, European Space Agency (ESA)
Dr Patricia Conti, Ministry of the Economy
Uli Fricke, FunderNation / SpaceStarters
Veronica La Regina, RHEA System B.V. for ESA
Prof Jean-Louis Schiltz, Schiltz & Schiltz/ uni.lu
Dr S. Pete Worden, SpaceResources.lu Initiative/Breakthrough Prize Foundation

Astrosat & Huntsville Prize

Lucia Cape, Huntsville/Madison County Chamber
Marco Caporicci, European Space Agency (ESA)
Paul Galloway, Teledyne Brown Engineering
Dan Ghatoray, Astrosat
Dr Fraser Hamilton, Astrosat
Lee Jankowski, Teledyne Brown Engineering
Veronica La Regina, RHEA System B.V. for ESA
Steve Lee, Astrosat
Larry Lewis, BizTech
John Roth, Sierra Nevada Corporation

Sustainable Exploration Prize

Didier Alary, Airbus
Goetz Anspach von Broecker, Airbus
Munyaradzi Arnold Chivasa, Merck KGaA, Darmstadt, Germany
Sabine Hofmann, Merck KGaA, Darmstadt, Germany
Bernhard Hufenbach, European Space Agency (ESA)
Ulrich Kübler, Airbus
Hong Wa Poon, Merck KGaA, Darmstadt, Germany
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