INNOspace | MASTERS

All about the INNOspace Masters competition round 2025

Energise Our Future – Cross-Industry Innovations Linking Earth and Space

Including all TOP 3 winners 2025

German Space Agency at DLR
Federal Ministry of Research, Technology and Space
INNOspace
esa
AIRBUS
OHB
IQIB


INNOspace Masters
Energise
Our
Future
Competition round 2025

Content

“This competition continues to inspire new thinking, support young companies and researchers, and foster international cooperation.”

Our world is changing – and space innovation is crucial to helping us shape a sustainable, secure and connected future. The INNOspace Masters competition, now in its ninth edition, once again powerfully demonstrates how space technologies and applications can energise progress across industries on Earth and beyond.

With the theme of “Energise Our Future – Cross-Industry Innovations Linking Earth and Space”, the 2025 round of the INNOspace Masters again achieved record-breaking participation: A total of 550 participants from 24 countries submitted an all-time high of 214 project ideas. This impressive response has brought forth a remarkable spectrum of innovations – from AI agents optimising satellite operations, to remote health monitoring technologies and novel materials for radiation protection in space. These pioneering concepts reflect the growing synergy between space and key sectors such as mobility, energy, health and digitalisation.

The strength of the INNOspace Masters lies not only in the bold ideas submitted, but in the collaboration that makes them possible. Our sincere thanks go to our partners ESA, the ESA Business Incubation Centres in Germany, Airbus, OHB, and Mercedes-Benz for their continued commitment and expertise. Together with the German Space Agency at DLR, they have supported the transformation of ideas into real-world innovation projects and market-ready solutions.

We are proud to see how this competition continues to inspire new thinking, support young companies and researchers, and foster international cooperation. On behalf of the German Space Agency at DLR, I congratulate all the winners and participants of this year's competition round – and invite all readers to discover the pioneering projects presented in this brochure. May they energise your imagination and spark new ideas for the future of space and society. Lastly, I would like to express my sincere thanks to IQIB and the DLR Projektträger for the excellent collaboration in successfully delivering this year's competition round.

Dr Walther Pelzer
Member of the DLR Executive Board
Director-General German Space Agency

Energise Our Future: The INNOspace Masters competition round 2025

Full details here

INNOspace Masters is the international innovation competition organised by the German Space Agency at DLR in cooperation with ESA, the ESA Business Incubation Centres in Germany, as well as Airbus, Mercedes-Benz and OHB. Launched in 2015, it is open to companies of all sizes, start-ups, research institutions and universities, as well as individuals from all over the world.

The competition is part of the INNOspace® initiative (p. 24) and promotes ideas for the transfer of technology and expertise from other industries to the space sector (spin-ins/New Space) or from space to non-space sectors (spin-offs).

The overall theme for the 2025 round of the competition was:

Energise Our Future – Cross-Industry Innovations Linking Earth and Space

Under this overall theme, the competition offered six different challenges to participate in. The challenges and their respective winners are presented on the following pages.

The competition at a glance

Our challenges 2025

International success: Our facts & figures

This year's
Facts & Figures

550
Participants

214
Ideas

24
Countries

This year's
Participating Countries

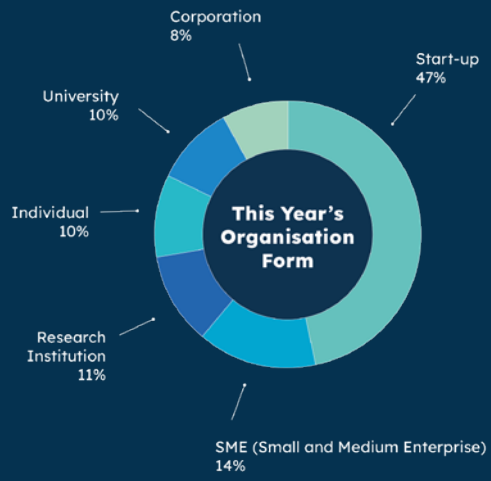
2.549
Participants

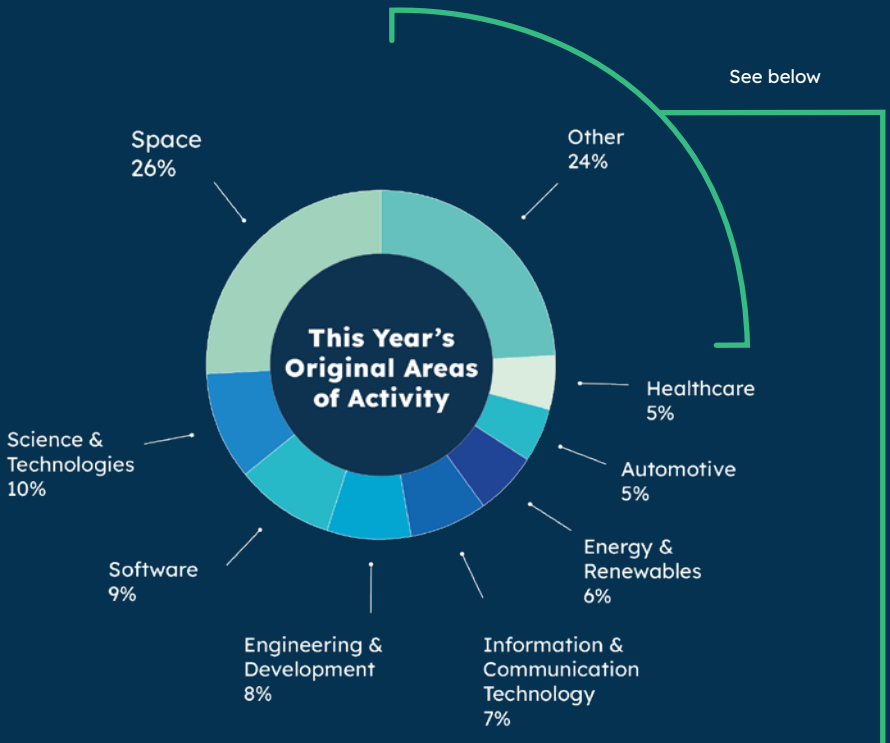
45
Countries

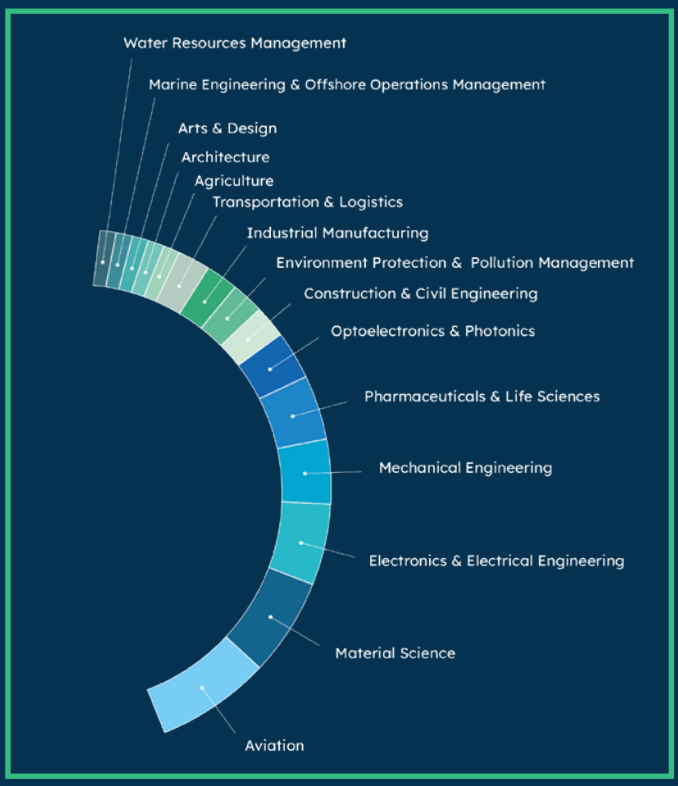
2015–2025
Facts & Figures

1.110
Submissions

14.1 m €
Prize money/funding




See below
This Year's Original Areas of Activity
Space 26%
Other 24%
Healthcare 5%
Automotive 5%
Energy & Renewables 6%
Information & Communication Technology 7%
Engineering & Development 8%
Software 9%
Science & Technologies 10%


Water Resources Management
Marine Engineering & Offshore Operations Management
Arts & Design
Architecture
Agriculture
Transportation & Logistics
Industrial Manufacturing
Environment Protection & Pollution Management
Construction & Civil Engineering
Optoelectronics & Photonics
Pharmaceuticals & Life Sciences
Mechanical Engineering
Electronics & Electrical Engineering
Material Science
Aviation

German Space Agency at DLR

German Space Agency at DLR Challenge 2025: “Igniting Applied Research for Cross-Industry Innovations”

The space industry continues to change: More and more new concepts are reaching economic feasibility, creating emerging markets and new opportunities for space industry innovation. At the same time, the space industry integrates new hardware, technologies and concepts from terrestrial industries to further drive its transition. Therefore, the German Space Agency at DLR is looking for ideas and concepts for space spin-ins and spin-offs that lead to technologies, processes, and applications with cross-industry relevance.

The focus of the DLR Challenge is on technology with a pre-commercialisation TRL (Technology Readiness Level). Of particular relevance are collaborative projects from consortia that combine expertise from industry and research. This year’s impulse topics include, but are not limited to:

- Enabling Digital Technologies for Space Industry
- Next-gen Software and AI Applications for Space
- Harnessing the Potential of Microgravity
- Integrated Energy Systems

This year, the DLR Challenge will award 4 projects in 2 categories:

- 2 projects submitted by a research consortium (e.g. led by a university or research institution – integration of industry welcome)
- 2 projects submitted by industry (e.g. led by a SME or company – integration of research also welcome)

Rewards

The 4 winning projects are invited to submit an individual or joint proposal to receive funding from Germany's Space Programme for Innovation and International Cooperation. Verified proposals will receive:

- Up to EUR 500,000 in possible funding for each project over a period of up to 2 years (excluding own contribution)
- This funding is subject to the general funding guidelines of the German Federal Government

Full details here

The two winners of the German Space Agency at DLR Challenge 2025 in the category

„Projects submitted by a research consortium"

1st Place:
Fraunhofer ISE

Fraunhofer ISE

Scan to find out more

TeraPV-4-Space – Utilisation of terrestrial PV manufacturing technology for space applications: The project aims to transfer the low-cost process technology of terrestrial solar cells to III-V space solar cells to enable the next generation of integrated energy systems with manufacturing at scale to fill the supply chain gap in the growing space market.

Fraunhofer ISE
Contact: Jonas D. De Rose, jonas.de.rose@ise.fraunhofer.de

2nd Place:
Karlsruhe Institute of Technology

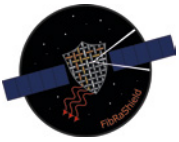
Scan to find out more

EarthGaze – Small and ultralight spectroscopic camera for space applications: Development of a precise, compact, affordable and multifunctional spectroscopic imaging camera based on emerging technology of metasurfaces, which enables a comprehensive characterisation of the Earth's atmosphere.

Karlsruhe Institute of Technology
Contact: Maryna Meretska, maryna.meretska@kit.edu

The two winners of the German Space Agency at DLR Challenge 2025 in the category **„Projects submitted by industry”**

Scan to find out more



1st Place:
Fibrecoat GmbH

Overall Winner 2025 Pioneering Technology

FibRaShield - Shielding humans and electronics from radiation in space: Development of advanced materials using Fibrecoat technology to coat radiation resistant metals onto fibres. The resulting lightweight materials are designed to offer increased protection for electronic components on satellites against harmful radiation.

Fibrecoat GmbH
Contact: Felix Schmidt, felix.schmidt@fibrecoat.de

Scan to find out more

2nd Place:
eemagine Medical Imaging Solution GmbH, Universität Duisburg-Essen, TU Ilmenau

Individualised mobile dry EEG for health monitoring: Development of an easy-to-use, non-invasive dry EEG system supported by artificial intelligence (AI) to enable brain health monitoring which is crucial for human spaceflight as it contributes significantly to the physical and mental health of astronauts.

eemagine Medical Imaging Solution GmbH, Universität Duisburg-Essen, TU Ilmenau
Contact: Frank Zanow, frank.zanow@eemagine.com

BUSINESS INCUBATION CENTRE

ESA BIC Challenge 2025: “Join the New Space Economy”

The ESA BICs in Germany are looking for teams of ambitious entrepreneurs with innovative business ideas involving space technologies or new commercial concepts for the use of space data. The teams will receive support to turn their ideas into a viable company. Potential innovation areas and use cases are:

- Renewable energy
- Commercialisation of space data
- Innovative space components, sub-systems or advanced sensor systems
- Emerging upstream markets such as space-based manufacturing or satellite servicing and debris removal
- Any other ideas for the space sector or use of space data

Rewards
The 3 winning projects will receive a support package, including:

- 1st Place: 12,000 EUR, 2nd Place: 5,000 EUR, 3rd Place: 3,000 EUR
- Support in applying to one of the German ESA BICs. If accepted, the start-up will benefit from 50,000 EUR in funding
- Access to an Europe-wide network of experts who can provide both technological and business support

Full details here

1st Place:
Astra Labs GmbH

Scan to find out more

Effortless ECSS Compliance – Automating software development documentation in the space industry: A toolkit for software developers of space applications, powered by human-centered AI and specifically tailored to automate the extremely time-consuming tasks mandated to follow by ECSS standards.

Astra Labs GmbH
Contact: Peter Seres, peter.seres@astralabs.de

2nd Place:
Augusta Space GmbH

Scan to find out more

Augusta SPace InteRlacEd antenna (ASPIRE): Development of an aeronautical antenna for all in-flight connectivity providers and for all types of airplanes (from airlines to business jet) for a new, high-performance type of in-flight connectivity.

Augusta Space GmbH
Contact: Matteo Berioli, berioli@augusta-space.com

3rd Place:
Hyposto Energy GmbH

Scan to find out more

Hyposto energy storage solutions for optimising power supply in space missions: Development of lithium-titanium-oxide (LTO) batteries for the space industry (satellite operators, space organisations) and private companies in order to optimise the power supply of satellites and enhance their lifespan and cost efficiency.

Hyposto Energy GmbH
Contact: Christos Vellios, christos.vellios@hyposto-energy.de

BUSINESS
APPLICATIONS

ESA BA Challenge 2025:
"Accelerating Energy Innovation through Space Solutions"

In a drive for a sustainable future, ESA BA supports businesses of all sizes and across all sectors to develop innovative solutions for Earth using space technologies. We are looking for innovative services or applications for sectors such as:

- Infrastructure monitoring and protection
- Grid and storage optimisation
- Heat and urban energy management
- Solar 3.0 advancements

Rewards

The 3 winning projects will be invited to submit an individual or joint proposal to receive funding from the ESA BA programme of up to 75% of their respective project scope, i.e.

- Up to EUR 75,000 zero-equity funding each (for a project scope of max. EUR 100,000)
- Personalised support from a member of the ESA team
- Technical & commercial guidance

Full details here

1st Place:
Lemvos GmbH

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Lemvos – Automated subsea infrastructure surveillance: Development of an end-to-end service utilising an automated, GNSS-guided, satellite-connected Unmanned Surface Vessel (USV) equipped with high-resolution sonar imaging, offering 100% remote monitoring in harbour and offshore environments.

Lemvos GmbH
Contact: Daniel Severinsen, daniel.severinsen@lemvos.com

2nd Place:
Covadonga GmbH

Scan to find out more

BlueSentinel – Space-enhanced monitoring system for maritime navigation and infrastructure protection: BlueSentinel is an innovative, space-enabled maritime surveillance system for detecting and tracking 'dark ships' that builds on proven land-based tracking technology by integrating satellite timing and communication.

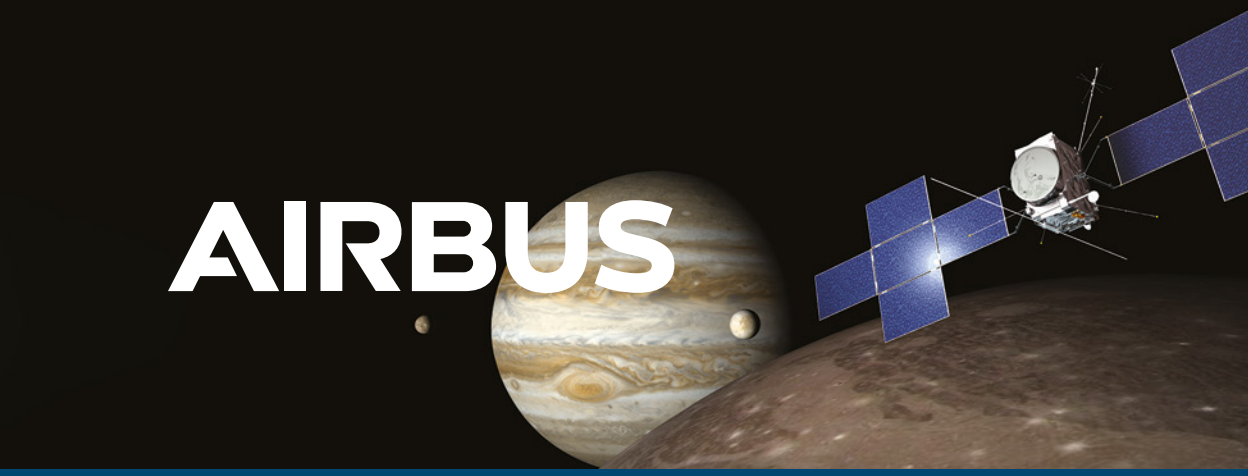
Covadonga GmbH
Contact: Florian Schiegg, florian.schiegg@covadonga.eu

3rd Place:
Preflet GmbH

Scan to find out more

Preflet – The most adaptive AI powered energy manager & avoided emission reporting: An AI-powered platform that integrates and intelligently analyses real-time data from IoT sensors, weather forecasts and satellite imagery to help building managers reduce their carbon footprint and costs.

Preflet GmbH
Contact: Michael Gross, michael@preflet.comm



Airbus Challenge 2025: “Boosting Earth-Space Industry Partnerships”

Airbus is looking for innovators with ideas for exceptional hardware, industrial processes, applications, or business models relevant to space that promise to have a lasting impact on our daily lives. The focus is on smart solutions enabling sustainable and commercially viable innovations linking Earth and space on topics such as, but not limited to:

- Space-based Earth observation and environmental monitoring
- Ubiquitous and secure space-based connectivity solutions
- In-orbit infrastructure and services for a sustainable space economy

Rewards

To enable the 3 winners to realise their ideas, Airbus is accompanying them on their journey with:

- Support from Airbus internal network of experts
- Access to space qualified tools, simulation and test equipment
- Development of a mission proposal (with the aim of a joint application for public funding)
- Opportunity to pitch to Airbus Ventures

Full details here

1st Place:
WeavAir

Scan to find out more

Space-driven remote audit solutions for sustainability: Transforming Environmental, Social and Governance (ESG) data analytics by combining satellite imagery, IoT sensors and predictive AI modelling to create digital twins of buildings and infrastructure that help operators to model climate risks as well as reduce costs and energy consumption.

WeavAir
Contact: Natalia Mykhaylova, natalia@weavair.com

2nd Place:
FlyPix AI GmbH

Scan to find out more

FlyPix AI – Democratising Earth observation for a sustainable future: Whether it's monitoring cities, forests or infrastructure, this SaaS platform provides businesses, municipalities and organisations of all sizes with access to advanced geospatial analytics, enabling them to make smarter decisions faster.

FlyPix AI GmbH
Contact: Ivan Tankoyeu, ivan@flypix.ai

3rd Place:
FFBS – Fashion For Biodiversity Solutions GmbH

Scan to find out more

GeoBioRemediation – Healing our planet from above: An innovative solution that uses space technology and AI-driven analytics alongside proven bioremediation techniques to first detect and then remove heavy metal pollution in soil and water.

FFBS – Fashion For Biodiversity Solutions GmbH
Contact: Chandra Prakash Jha, prakash@fashionforbiodiversity.com

OHB Challenge 2025:
"Design the End-to-End Space Solutions of the Future"

OHB is looking for fresh ideas on how to design space system architectures and solutions based on end-to-end value chains. Whether through increased on-board computing, seamless connectivity via inter-satellite links or a LEO economy, the future space systems will look very different from those of today. OHB is looking for disruptive ideas on how to create or enable these future systems, such as:

- Novel Space Technologies
- Satellite-enabled Applications
- AI and Machine Learning Applications
- Ground Segment Innovations
- Sustainable Space Solutions
- Sustainable Business Model

Rewards

The 3 winners gain the opportunities to jointly shape space for a better future with the support of OHB, including:

- OHB Venture Capital support opportunities
- Depending on the ranking specific hours of expert support
- Support from relevant experts from the OHB Group
- Opportunity of a joint technology development programme
- Cooperation opportunities at European level through companies in the OHB Group
- Invitation to meet the OHB Group and the space community at a fair

Full details here

1st Place:
Quasar Satellite Technology

QUASAR SAT

Scan to find out more

Parabolic Dish Killer – Dual use all sky RF digital phased array: The world's first true digital multibeam phased array with unique all-sky capability, whose ground station supports dozens of beams simultaneously for both SATCOM and SDA missions from a single compact aperture.

Quasar Satellite Technology
Contact: Richard Singh, richard.singh@quasarsat.com

2nd Place:
SPAIDER SPACE

Scan to find out more

SPAIDER AI – AI agents for space innovation: Development of autonomous AI agents specifically for the aerospace industry that combine state-of-the-art artificial intelligence with in-depth aerospace expertise to transform the way workflows related to space missions are designed, managed and executed.

SPAIDER SPACE
Contact: Loveneesh Rana, loveneesh.rana@spaiderspace.com

3rd Place:
UptimAI s.r.o.

Uptim.ai

Scan to find out more

PADS – Persistent Anomaly Detection System: An advanced, AI-based system that automatically monitors and analyses spacecraft data in real time to ensure highly reliable anomaly classification accuracy and to reduce false alarms.

UptimAI s.r.o.
Contact: Adam Trčka, adam.trcka@uptim.ai

Mercedes-Benz car2space Challenge 2025: “Space up your Drive”

Mercedes-Benz is looking for smart innovation for future mobility enabled by space solutions, e.g.

- Power Innovations & Connectivity
- Efficiency-focused Solutions
- Earth Watch, Navigation & Mapping
- Software & Hardware Innovations
- Outside-the-Box Innovations

Rewards
Leveraging the Zeitgeist of fascination for the space age, make a difference in our everyday lives and co-create the future of exciting and accessible consumer experiences.

- Opportunity to learn about how to meet consumer needs (“downstream”)
- Implement a Proof of Concept co-funded by Mercedes-Benz and supported by inhouse experts
- Opportunity to pitch Proof of Concept to company executives and receive coaching, mentoring and support for creating an automotive product and/or service
- Opportunity to learn about potentials of technology transfer and an industrial scale-up opportunity
- Access to and support from experts at Mercedes-Benz Research and Development departments

Full details here

1st Place:
YANK TECHNOLOGIES, INC.

Overall Winner 2025 Ready-for-Market

YANKTECH

Scan to find out more

Wireless charging of rovers from landers in space: Magnetic Resonant technology for wireless energy transmission over distances of up to half a metre, which works efficiently even with extreme misalignments and thus enables new use-cases for wireless energy transfer.

YANK TECHNOLOGIES, INC.
Contact: A. Edward Saenz de Viteri, edward@yanktechnologies.com

2nd Place:
fiveD

fiveD RADAR IN A NEW DIMENSION

Scan to find out more

From Space to Street – Transferring SAR to transform automotive sensing with realistic radar simulation: A purpose-built simulation platform to virtually test how Synthetic Apperture Radar-based technology can dramatically improve perception in challenging driving scenarios – e.g. in complex urban environments or on fast-moving motorways.

fiveD
Contact: Michael Stelzig, michael.stelzig@five-d.ai

3rd Place:
ivilion GmbH

ivilion

Scan to find out more

ivilion – Multifunctional structural cooling for EVs: A multifunctional cooling structure for Electric Vehicles that simultaneously acts as a cell holder, thermal management system, and structural element of the battery pack, enabling significant cost savings and improving energy density at pack level.

ivilion GmbH
Contact: Jannik Bühring, jannik.buehring@ivilion.com

Smile for the camera

The winners, partners and the INNOspace Masters team at the Masters' Summit in Bonn on 8/9 July 2025.

The INNOspace Masters team (from left to right): Dr Arne Sönnichsen (IQIB), Project Lead Janusz Heitmann (German Space Agency at DLR), Rebekka Freitag-Li, Nina Wünsche, Daniel Plaßmann (DLR Projektträger)

The partners and some team members of the INNOspace Masters (from left to right): Dr Andreas Kanstein (Centrum für Satellitennavigation Hessen (cesah), ESA BIC), Nadine Krawietz (Airbus Defence and Space), Janusz Heitmann (German Space Agency at DLR), Rebekka Freitag-Li (DLR Projektträger), Egbert van der Veen (OHB System AG), Dr Anja Simon (German Space Agency at DLR), Jakob Altaylar (Anwendungszentrum GmbH Oberpfaffenhofen (AZO), ESA BIC), Alexander Satanowsky (Mercedes-Benz AG), Anke Freimuth (German Space Agency at DLR, ESA BA), Dr Arne Sönnichsen (IQIB), Tina Ehardt (Mercedes-Benz AG), Andreas Linmann (Airbus Defence and Space), Dr Vladislav Janecek (Airbus Defence and Space), Niklas Voigt (OHB System AG)

The two 2025 Overall Winners

YANK TECHNOLOGIES, INC., Josh Yankowitz (Overall Winner “Ready-for-Market”).

Fibrecoat GmbH, Felix Schmidt, Katharina Kipp, Severin Luhr, Alexander Lüking (Overall Winner “Pioneering Technology”)

The INNOspace® initiative

Full details here

INNOspace Masters is part of the INNOspace® initiative launched by the German Space Agency at DLR in 2013.

The initiative is part of the Space Programme for Innovation and International Cooperation of the Federal Ministry of Research, Technology and Space (BMFTR) and of the German government's High-Tech Strategy 2025. It promotes cross-sectoral innovation through the transfer of know-how and the exploitation of new markets.

The INNOspace® initiative comprises the following instruments, which are implemented in close coordination with the BMFTR and various federal states:

- Intersectoral conferences to initiate cooperation projects
- INNOspace Masters innovation competition in cooperation with ESA, the German ESA BICs, Airbus, OHB and Mercedes-Benz AG
- Technology and cooperation networks "Space2Motion", "Space2Agriculture" and "Space2Health"
- Expert and user workshops on new markets
- Promotion of innovation and transfer projects with funds from the Space Programme for Innovation and International Cooperation
- The mobile exhibition INNOspace-EXPO "ALL.täglich!" effectively raises public awareness of space applications in everyday life

The INNOspace networks

Since the launch of the INNOspace® initiative in 2013, the activities have been expanded with complementary modules and networks:

Space2Motion

Space2Motion is the first German network to systematically link the aerospace and automotive sectors. Launched in 2013 under the INNOspace® programme, it fosters cross-sector collaboration and the transfer of technologies between space and mobility sectors. Key topics include lightweight materials, hydrogen propulsion, EEE components, and digital engineering. **www.space2motion.de**

Space2Agriculture

Space2Agriculture connects the space and agriculture sectors. It promotes technology transfer through cross-industry collaboration, supports the commercialisation of innovations, and identifies the potential of space technologies and services for sustainable agricultural applications. **www.space2agriculture.de**

Space2Health

Space2Health connects the space and healthcare sectors to drive innovation through shared technologies and expertise. The network unites actors from both Space and MedTech industry, research, and policy to explore applications in diagnostics, AI, sensors, and health data as well as to facilitate knowledge exchange regarding validation and certification in both industries. **www.space2health.de**

INNOspace MASTERS

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German Space Agency at DLR

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Competition organised by:

Institut für qualifizierende Innovationsforschung und -beratung GmbH

Dr Arne Sönnichsen
Email: arne.soennichsen@iqib.de

DLR Projektträger

Rebekka Freitag-Li
Email: rebekka.freitag-li@dlr.de