International Astronautical Federation News

10/2024 (October 2024)

IAF President's Welcome

Dear IAF Friends,

As we approach the highly anticipated 75th International Astronautical Congress (IAC) in Milan, I am thrilled to welcome you to what promises to be the most significant and impactful event in our organization's history. From October 14 to 18, Milan will transform into the world's space capital, bringing together thousands of experts, scientists, industry professionals, and astronauts for five days of unparalleled exploration and collaboration.

This year's IAC is set to be truly remarkable, with a record-breaking number of nearly 7,000 abstracts submitted for oral and interactive presentations—an extraordinary 30% increase from our previous record in 2022. This incredible response underscores the excitement and enthusiasm for the world's premier global space event, and I am proud to say that 4,000 speakers from 96 countries will take the stage to share their insights and innovations.

Our host, AIDAA, along with co-hosts ASI and Leonardo, have gone above and beyond to ensure that IAC 2024 will be a historic gathering. With 198 sessions for oral presentations and 90 digital screens for interactive presentations, this congress will cover the most critical and cutting-edge topics in the space sector. From sustainable exploration of the Moon and Mars to the use of big data, AI, and robotics in space, IAC 2024 will set the stage for the pivotal theme "Responsible Space for Sustainability."

This year's congress also marks a new level of global diversity and inclusion, with submissions coming from an astonishing 106 countries and 2,295 organizations worldwide. This diversity is further reflected in our selected Plenary Sessions and Highlight Lectures, which will feature everything from lunar exploration and in-situ resource utilization to the role of space in addressing climate change and freshwater crises on Earth.

We are particularly excited about the innovative formats of our Special Sessions, which will include interactive workshops, design sprints, and even games—designed to foster intensive discussions, practical activities, and networking opportunities like never before. These sessions will allow delegates to engage deeply with the most pressing and relevant space topics of our time.

As we prepare to gather in Milan, I want to extend my heartfelt thanks to our hosts and co-hosts for their exceptional dedication and hard work in making this congress a reality. I also want to express my deep appreciation to all of you—our participants—for your commitment to advancing the frontiers of space. Together, we are about to embark on a journey that will not only make history but also shape the future of space exploration.

I look forward to seeing you in Milan this October for what will undoubtedly be a groundbreaking and unforgettable IAC 2024.

Clay MOWRY
IAF President

Connecting @ll Space People

IN THIS ISSUE

IMPORTANT DATES:

- IAC 2024: **14 – 18 October 2024**
- GLEX 2025: **7 – 9 May 2025, New Delhi, India**
- IAF Spring Meetings 2025: **25 – 27 March, Paris, France**
- IAC 2025: **29 September – 3 October, Sydney, Australia**

IAC 2024

14 – 18 OCTOBER 2024 | MILAN, ITALY

All The Stars Align for a Record-Breaking Breaking 75th International Astronautical Congress (IAC 2024) in Milan, 14-18 October

During the week 14 – 18 October 2024 Milan transforms into the world's space capital with the arrival of thousands of experts, scientists, industry professionals, and, of course, astronauts!

The 75th International Astronautical Congress is an event you cannot afford to miss! With the motto "Responsible Space for Sustainability", IAC 2024 is set to be a record-breaking event, featuring more than 150 international exhibitors and 4,000 speakers from 96 countries.

Get ready for five days full of Space, discover the whole IAC 2024 Programme consisting of Plenaries, Highlights Lectures, Technical Sessions, Special Sessions, Interactive Presentations, IAF GNF Sessions, Networking Events and many associated events during the week. The most important topics in the space sector will be discussed: from sustainable exploration of the Moon and Mars, Earth observation in the era of climate change, the use of big data, AI, and robotics in space, to aspects of safety and sustainability of orbits. The carefully curated Technical Programme will be the most extensive to date, showcasing more than 2362 papers across 200 Technical Sessions. Additionally, there will be 5 Interactive Presentation Sessions featuring more than 2,000 presentations, all vying for the prestigious IP Award. The programme also includes 23 top-tier Symposium Keynotes and 18 Special Sessions, spanning the full spectrum of space disciplines.

This diversity is further reflected in our Plenary Programme, which will feature everything from lunar exploration and in-situ resource utilization to the role of space in addressing climate change and freshwater crises on Earth. After careful consideration we are delighted to announce that the IPC Steering Group has selected 7 Plenary sessions and 3 Highlight Lectures to be presented at the IAC 2024 in Milan.

You can find below the list of Plenaries and Highlight Lectures selected:

- PE1: One to One with Heads of Agencies
- PE2: Host Plenary: Responsible and sustainable space exploration: Moon to Mars
- PE3: New lunar frontiers: How the non-space industry is unlocking future markets, proposed by ispace (Industry Category)
- PE4: Value of Resources: Recipe for In-Situ Resource Utilization on Space Frontiers, proposed by JAXA (Exploration Category)
- PE5: Intelligent Space: Big Data, Advanced Algorithms, and Autonomous Robotics in Space, proposed by IAF WD-YPP, SGAC (Next Generation Category)
- PE6: Observing the Earth, Serving our Societies: Space in the Age of Climate, proposed by CNES, ASI, NOAA (Environment Category)
- PE7: New Opportunities benefit Human Space Flight on Earth, in Space and Beyond, proposed by Chinese Academy of Sciences (Emerging Countries/Other Category)
- HLL1: Euclid Mission: unveiling the Universe, proposed by ESA/CNES (Exploration Category)
- HLL2: Viewing the freshwater crisis from space: A world of drought and flood extremes, proposed by NASA-JPL (Environment Category)
- HLL3: IAF World Space Award Highlight Lecture

The IAF Global Networking Forum (GNF) at IAC 2024 will feature 24 sessions filled with crucial discussions and insights on space sustainability and technology, including the latest innovations and strategic approaches in the industry. The IAF GNF session featuring International astronauts on Public Day, 18 October, is a must-see event, promising to deliver groundbreaking perspectives on the future of international cooperation.

The IAC 2024 Special Sessions will feature interactive and creative formats such as fishbowls, workshops, design sprints and interactive games. The sessions will be filled with intensive discussions, powerful presentations, practical activities and unparalleled networking to provide a platform where delegates can engage and share their views on the hottest space topics of our time.

Discover the full IAC 2024 Programme here

IAC 2024 Final Programmes

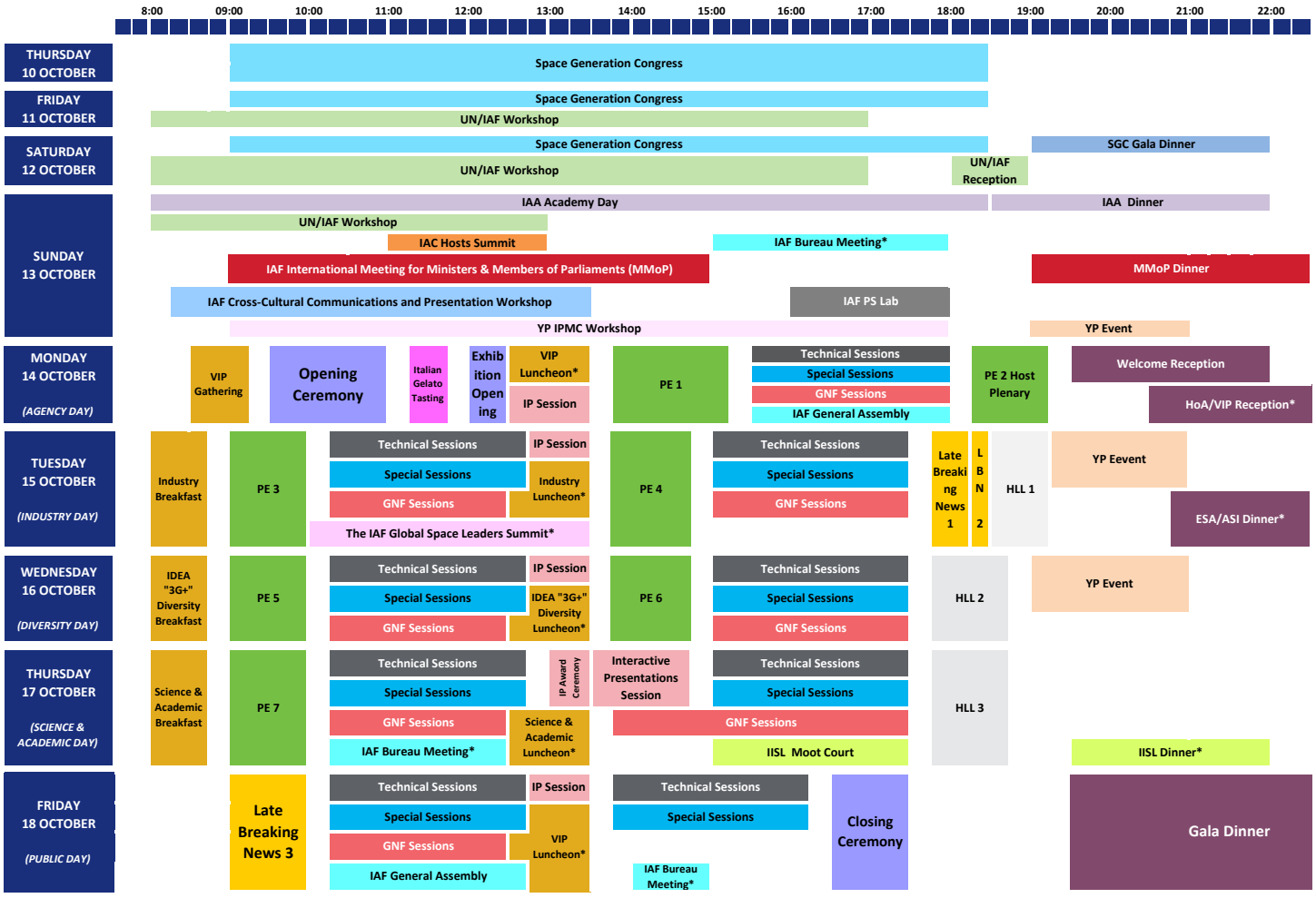
The 75th International Astronautical Congress is starting very soon and we are pleased to share with you the IAC 2024 Final Programmes!

Please note that the Final Programmes are digital and available online on the IAF Website at:
https://www.iafastro.org/publications/iac-publications/

The Final Programmes are divided into five different parts and cover the whole spectrum of the event. Anything you need to know about the IAC can be found in the Final Programmes!

- **Part 1 - General Info & Congress Overview HERE**
- **Part 2 - Public, Plenary & IAF GNF Programme HERE**
- **Part 3 - Technical Programme HERE**
- **Part 4 - Other Events HERE**
- **Part 5 - Exhibition HERE**

IAC 2024 Conference at a Glance



Please Note:

*By invitation only; Pre-Congress events as well as the IISL Moot Court are dedicated to the respective participants

THE IAC 2024 APP

Through the IAC 2024 Congress App you will be able to connect and collaborate with the entire IAF Community and check on the full IAC 2024 Programme. Please download the IAF App now and let us know what you think about it, what could be improved and of course what you love the most.

ANDROID

iOS

GLEX 2025

7 – 9 MAY 2025 | NEW DELHI, INDIA

The upcoming Global Conference on Space Exploration (GLEX 2025) will take place will take place on 7-9 May 2025 in New Delhi, India. GLEX 2025 is designed to encouraging the sharing of programmatic, technical and policy information, as well as collaborative solutions, challenges, lessons learnt, and paths forward among all nations with the desire to explore space. During the 4 years since GLEX 2021 the international space exploration community will have significantly moved forward with their respective exploration planning and programmes and it is therefore timely to take stock of the developments and undertake an outlook to the future of space exploration on a global scale.

GLEX2025
GLOBAL SPACE EXPLORATION CONFERENCE

The GLEX 2025 programme is designed to bring together leaders and decision-makers within the science and human exploration community – engineers, scientists, entrepreneurs, educators, agency representatives and policy makers. It will provide a forum to discuss recent results, current challenges and innovative solutions and it will contain several opportunities to learn about how space exploration investments provide benefits as well as discuss how those benefits can be increased through thoughtful planning and cooperation.

GLEX 2025 - Call for Abstracts

The International Astronautical Federation (IAF), as the Organizer, together with its Member the **Indian Space Research Organisation (ISRO)**, as the Host, and the **Astronautical Society of India (ASI)**, as the Co-Host, are pleased to announce the opening of the **Call for Abstracts of the Global Space Exploration Conference (GLEX 2025)** to be held on **7-9 May 2025 in New Delhi, India**.

The GLEX 2025 programme is designed to bring together leaders and decision-makers within the science and human exploration community – astronauts, engineers, scientists, entrepreneurs, educators, agency representatives and policy makers.

It will provide a forum to discuss recent results, current challenges and innovative solutions and it will contain several opportunities to learn about how space exploration investments provide benefits as well as discuss how those benefits can be increased through thoughtful planning and cooperation.

The distinguished Members of the GLEX 2025 International Programme Committee solicits abstract contributions pertaining to the following topics:

1. **International Cooperation, Challenges, and New Horizons**
2. **Lunar, Mars, Near-Earth Asteroids, Deep Space Exploration**
3. **Space Vehicles for Exploration & Propulsion for Deep Space**
4. **System Engineering and Long-Term Space Travel**
5. **Space Bio-Astronautics, Space Medicine, Life Support Systems**
6. **Micro Gravity Science and Experiments**
7. **Space Resources Utilisation & Space Economy**
8. **Sustainable Space Logistics & Key Technologies**
9. **Navigation, Guidance and Control for Deep Space Missions**
10. **Space Finance, Investment and Insurance**
11. **Space Policy, Sustainability and Legal Aspects**
12. **Space Stations & Challenges**
13. **Ground-Based Preparatory Activities**
14. **AI Impact & Autonomy on Space Exploration**
15. **Empowering the Next Generation of Space Explorers**

Abstracts shall be submitted by **7 November** through the IAF Restricted Area and will be selected for oral and interactive presentations.

NEWS!

AIDAA
ASSOCIAZIONE ITALIANA DI AERONAUTICA E ASTRONAUTICA

The AIAA/CEAS Aeroacoustics congress took place at the conference centre of the Department of Philosophy, University of Roma Tre, from June 4th to 7th. This exceptional edition broke all previous records in terms of participants, papers presented, and more.

The conference was filled with fascinating technical sessions from top researchers in the field, and the stunning locations in Rome provided the perfect backdrop for fruitful discussions. The event successfully marked the beginning of AerospaceItaly2024!

Many events will be held in October, during the IAC2024 in Milan. Not only Technical Presentations but even Special plenary Sessions, the Global Networking Forum and many others!

In detail, during the Plenary Programme, High-level speakers present the latest trends and insights in space research, technology and exploration. During thematic Plenaries, Highlight Lectures and Late Breaking News sessions, experts discuss and answer questions on the latest space developments.

In addition, the Global Network Forum - which takes place at the International Astronautical Congress every year, provides networking opportunities for students and young professionals, academics, decision & policy makers, the general public and all who contribute to the sharing of knowledge in the global space community.

"Invest in the physical sciences for a brighter future for our world."

Launched in 2020, AIP Foundation inspires transformative philanthropy that empowers physical scientists to make a global impact. The generosity of our donors helps fund scholarships, preserve scientific history, champion diversity initiatives, provide crucial science policy journalism, and drive innovation and discovery in the physical sciences.

Learn how you can help us continue to empower physical scientists by visiting foundation.aip.org.

Equatorial Launch Australia

Equatorial Launch Australia (ELA), winner of 'Launch Business of the Year' at the 2024 Australian Space Awards, is currently expanding the Arnhem Space Centre (ASC) in northern Australia in preparation for launches with South Korean rocket company Innospace scheduled for mid-2025. ELA also signed a memorandum of understanding with Singaporean launch vehicle company, Equatorial Space Systems, for a series of launches of the Dorado family of suborbital rockets.

Following the 2022 launches with NASA, the spaceport is being transformed into a muti-user commercial space launch facility. At full capacity the spaceport will feature 8 orbital Space Launch Complexes (SLC), each including one Horizontal Integration Facility and up to two ASCALP high-tech pads. The SLCs will be utilised by 'Resident launchers' locating at the spaceport for multi-launch campaigns. It will also include a multi-user launch pad for single launches and a sub-orbital launch facility. ELA plans to launch more than weekly from the spaceport at full operation.

Earlier in 2024, ELA released plans for its state-of-the-art HIF buildings and high-tech launch pads. The purpose-built HIF is 40m (L) x 26m (W) x 12m (H) in standard configuration and incorporates advanced space mission-specific features.

Arnhem Space Centre – 2022

ELA's 'game changer' ASCALP launch pad designs are a world-first and allow any NewSpace rocket to be quickly and seamlessly mated with the pivot base of the pad requiring very little notice for configuration change. The company believes this innovative design will help to meet rapid-responsive launch needs in the future.

ASCALP Launch Pad – design

Arnhem Space Centre Horizontal Integration Facility design

Meet SpaceForce - Partners in Excellence

Benefit from the expertise of 3 companies!

SpaceForce is THE dynamic space business line of Sopra Steria, CS Group and HE Space. It combines our longstanding expertise in systems and services for ground and on-board software systems, engineering, consultancy, operation services and end-user applications.

Looking for new ways to boost your space business? Meet our business developers at our IAC stand *(MS-E01b)* and discover how to take your business to the stars with our customised contracting services and end-to-end space solutions tailored to your needs.
Planning the next step in your space career? Discuss career opportunities with our recruitment specialists directly at our stand or during the IAC 2024 Career Opportunity Forum on **Tuesday 15 October**.

With over 40 years of experience in the space industry, our mission is to hire the best space experts in a variety of fields. We are at the forefront of space technology innovation for our established customer network of space agencies like ESA and EUMETSAT, industry partners like Airbus and ArianeGroup, and New Space actors across Europe.

Visit us at our joint stand MS-E01b.

We look forward to connecting with you in Milan!

PolyU and ADA SPACE partner on satellite and space computing technology

The Hong Kong Polytechnic University (PolyU) and ADA Space Co. Ltd. (ADA SPACE) have joined forces to advance space exploration and satellite research, and explore the possibility of establishing a joint remote sensing satellite technology laboratory. The two institutions, both esteemed members of the International Astronautical Federation (IAF), solidified their collaboration with a comprehensive cooperation framework agreement signed on July 17th by Vice President (Research and Innovation) of PolyU Prof. Christopher Chao and CEO of ADA SPACE Dr. Wang Lei.

With over 30 years of profound experience in deep space research, PolyU's involvement in China's space exploration dates back to 2010, with active participation in projects including Chang'e-3, -4, -5, and -6 lunar mission and the Tianwen-1 Mars mission.

PolyU RCDSE's (Research Centre for Deep Space Explorations) latest success was "Surface Sampling and Packing System" onboard China's Chang'e-6 probe.

ADA SPACE is a leading AI satellite internet technology company founded by leading talents from satellite internet research institutions and the internet industry, having successfully completed 13 space missions since its inception.
This academia-industry collaboration is poised to leverage PolyU's research expertise and ADA SPACE's industry experience, jointly contributing to the development of new space technology and economy.

An Aerospace Innovation Research (AIR) Summit organized by PolyU, co-organized by DSEL and supported by IAF will be held on 19th November, 2024 in PolyU, Hong Kong. We welcome experts, government agencies, research institutes and entrepreneurs etc. from all over the world to participate and discuss the development of New Space Economy.

SPACE TECH EXPO
EUROPE

Space Tech Expo Europe

The free-to-attend Space Tech Expo Europe is Europe's largest B2B event for the space industry. This year is set to continue that trajectory, as an additional hall has been added for you to explore.

Get ready to ignite your network and engage with 700+ exhibitors from startups to top industry players, as you discover the latest advancements in space technology. Hear from 150+ thought leaders as they discuss the latest trends and challenges across the Industry Conference, Smallsats Conference, Connectivity Conference and Exhibitor Technology Forum.

That's five halls, four conferences, three days, two minutes to register for your free pass and one unmissable event! Register for free today.

https://www.spacetechexpo-europe.com/register-now?utm_source=IAF&utm_medium=newsletter&utm_campaign=BRE24

INNOSPACE specializes in the design and manufacturing of launch vehicles, as well as providing orbital launch services.

As South Korean first private space launch company, INNOSPACE successfully conducted a test launch in March 2023 from the Alcântara Space Center in Brazil.

Promoting Research as a Knowledge Management Strategy: Insights from INTI-Lab

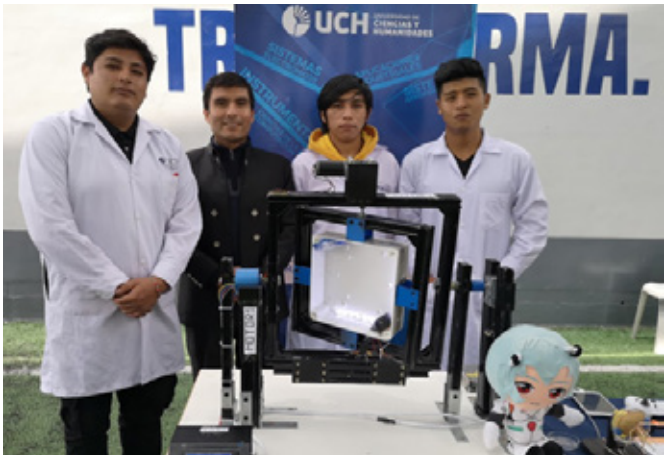
At the Universidad de Ciencias y Humanidades (UCH), the Image Processing Research Laboratory (INTI-Lab) plays a crucial role in advancing scientific research. Established in 2016, INTI-Lab focuses on areas such as signal and image processing, aerospace technology, and artificial intelligence. The lab's mission is to boost UCH's scientific output by engaging faculty and students in research, rapidly expanding from a single member to a large team of contributors.

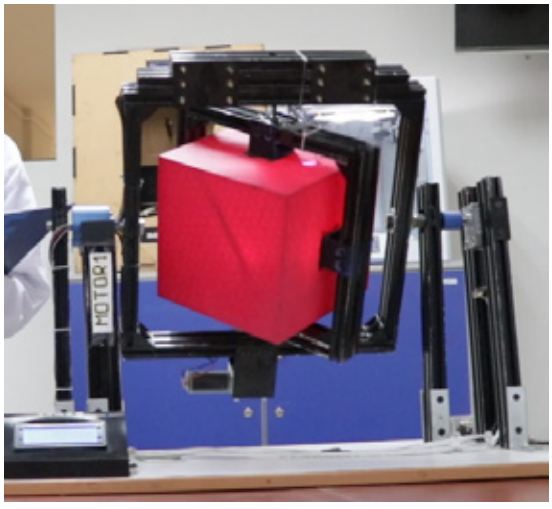
INTI-Lab employs a robust knowledge management strategy, systematically capturing and sharing research insights. A key initiative is the "INTI-Lab Scientific Tuesdays," monthly sessions where researchers present their work, promoting continuous learning and collaboration. This initiative helps spread innovative ideas across projects and fosters a strong internal research culture.

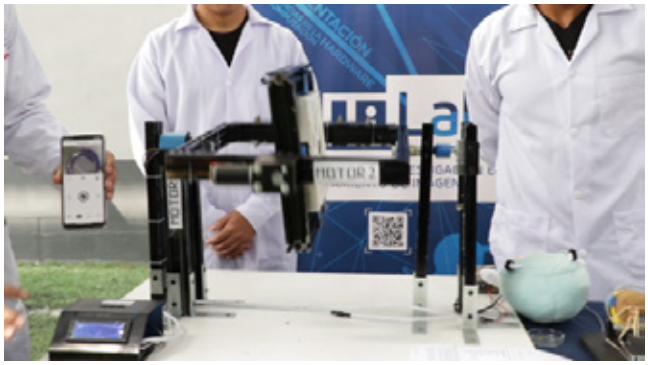
The lab's achievements are significant, including top positions in national and international competitions and extensive media coverage. Its international collaborations enhance academic exchanges and joint research efforts, elevating the lab's global profile.

Involving undergraduate students in research is a cornerstone of INTI-Lab's approach, providing them with practical experience and preparing them for future careers. This engagement enhances student employability and lays the groundwork for advanced studies.

INTI-Lab's model demonstrates how promoting research can serve as a potent knowledge management strategy, advancing academic excellence and addressing real-world challenges. It sets a high standard for other institutions aiming to enhance their research and knowledge management practices.







VENµS Mission: Advancing Earth Observation and Beyond

VENµS (Vegetation and Environment New Micro Satellite) is a pioneering Earth observation mission jointly developed by the Israel Space Agency (ISA) and France's Centre National d'Etudes Spatiales (CNES). Launched in August 2017, this micro-spacecraft project combines scientific and technological missions to significantly enhance Earth observation capabilities.

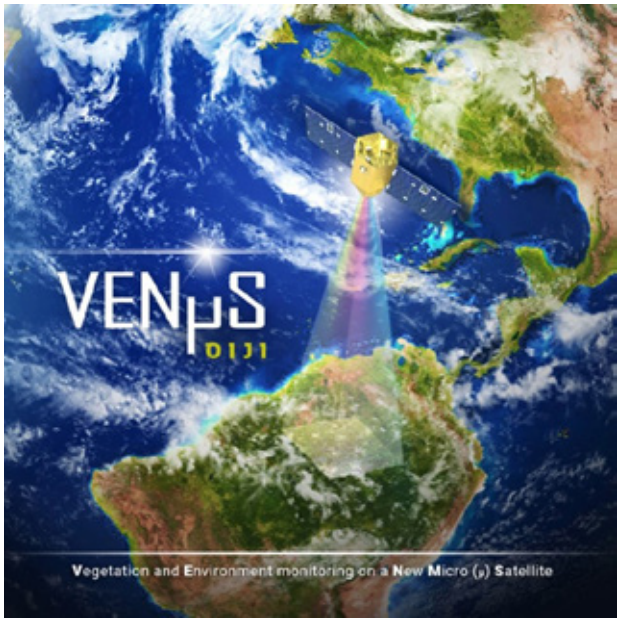
The scientific mission of VENµS involves capturing frequent, high-resolution, multi-spectral images of 150 global scientific sites. These images support crucial studies in agriculture, water quality, and atmospheric research. With features like a 1-2-day revisit time, 4-5-meter spatial resolution, and 12 narrow spectral bands, VENµS provides invaluable data for a variety of applications. The technological mission tests a unique Hall Effect Thruster for space propulsion, contributing to advancements in space technology.

VENµS has operated in three phases:

- **Phase 1 (Nov 2017 - Oct 2020)**: 720 km altitude, 2-day revisit, 5 m resolution.
- **Phase 2 (May 2021 - Jul 2021):** 410 km altitude, 2-day revisit, 3 m resolution.
- **Phase 3 (since Jan 2022)**: 560 km altitude, 1-day revisit, 4 m resolution, focusing on scientific objectives.

The mission involves collaboration among key partners, including Israel Aerospace Industries, Rafael Advanced Defense Systems, Electro-optics – Elop - Elbit Systems, Ben Gurion University, and Cesbio, France.

As VENµS approaches its conclusion in July 2024, it has already produced over 80 scientific papers, underscoring its contributions to Earth observation and technological progress. Building on this successful partnership, ISA and CNES recently launched a new project, **C3iel**, focusing on cloud studies and climate monitoring, further enhancing our understanding of Earth's environment.



KBR: Six Decades of Pioneering Space Operations

KBR delivers cutting-edge science, technology, and engineering solutions to governments and companies worldwide. With a rich, 100-year history in mission innovation, KBR helps clients tackle their most pressing challenges while creating sustainable value for the future.

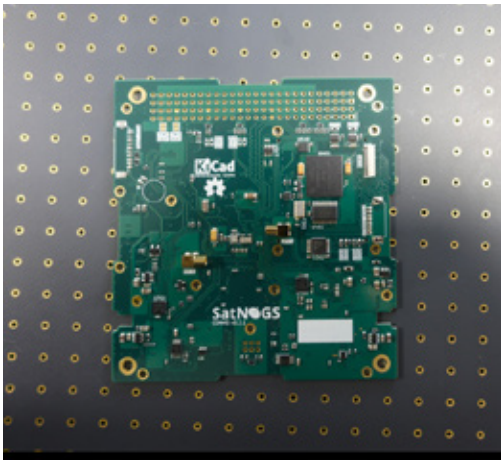
KBR's space operations span more than 60 years, providing aerospace and spaceflight solutions to customers around the globe. Key teammates include NASA, NOAA, the U.S. Air Force and Space Force, the Canadian Space Agency, the European Space Agency, the German Aerospace Center, the Australian Space Agency, the Saudi Space Agency, and commercial clients.
As a pivotal teammate, KBR proudly supports space national security, sustainability, exploration, Earth science, human spaceflight and mission technology. Its mission services aid intelligence operations and engineering for space systems and hardware, launch infrastructure, and orbiting vehicles. This work includes critical metrology and satellite operations to monitor Earth's seismic activity, weather, landscapes, and biological, chemical, and nuclear threats. Support also extends to 24/7 real-time command and control for the International Space Station. Additionally, KBR manages astronaut training and well-being services as a leading health and human performance provider. This involves space medicine, life sciences, biomedical research, high-G and high-altitude testing, spacewalk support and spacesuit management.

Having collaborated with nearly every astronaut since 1968, KBR takes pride in its heritage dating back to the Mercury program. Today, KBR continues to address the most significant space challenges and projects, including the extraordinary James Webb Space Telescope and the historic Artemis Program to return humans to the moon.

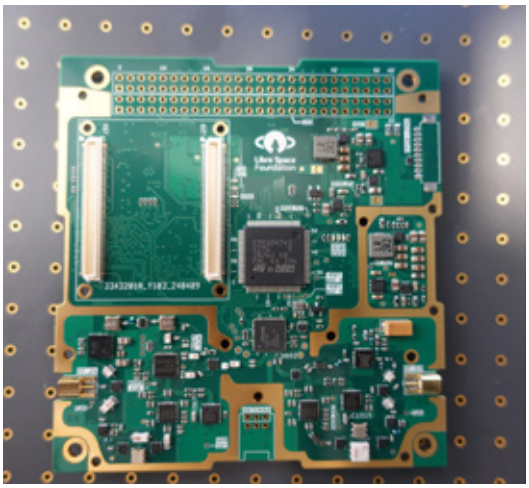
SATNOGS-COMMS

SatNOGS-COMMS is an open-source and open-hardware project designed and developed by the Libre Space Foundation. The SatNOGS-COMMS is a transceiver designed for LEO CubeSats, offering robust communication in both UHF and S-Band frequencies. It is fully compatible with the SatNOGS ground stations and Network, enabling mission control and real-time data visualisation. The system supports various modulation and coding schemes and provides I/Q interfaces for extended software-defined radio functionality. It utilises a ZYNQ 7020 FPGA for DSP processing and an STM32H7 MCU for system management and communication.

More specifically, the modular and extensible architecture of SatNOGS-COMMS enables users to construct and tailor their satellite communication systems to suit their needs. With support for a wide array of modulation schemes, coding techniques, and protocols, SatNOGS-COMMS facilitates communication with a diverse range of satellites. Using the capabilities of the SatNOGS Network, a globally distributed Network of ground stations, SatNOGS-COMMS empowers users to track satellites, receive telemetry data, and exchange information. This collaborative approach fosters community-driven innovation, advances satellite communication technology, encourages participation and significantly contributes to the CubeSat and amateur radio communities.



SatNOGS-COMMS has achieved the highest level of technology readiness (TRL9) after a successful in-orbit demonstration during the Curium One mission on board the Ariane 6's inaugural flight. SatNOGS-COMMS is open-source, the data collected are distributed openly, and this project is integral to the Libre Space Foundation's attempts to help make space open to all humanity.



Łukasiewicz
Institute of Aviation

Polish hybrid rocket ILR-33 AMBER 2K reached space

Engineers from the Łukasiewicz – Institute of Aviation completed a foreign launch campaign which's aim was to prepare the Polish suborbital rocket ILR-33 AMBER 2K to fly to the edge of space. On 3 July 2024 took place their most recent successful test. The rocket, launched from the Andøya Space Sub-Orbital in Norway, reached an altitude of 101 km.

The ILR-33 AMBER 2K is a complete system developed based on space standards. It is the world's first rocket to use one of the most ecological propellants, i.e., hydrogen peroxide with a concentration of 98%+. The solution gives prospects for the application of propellant also in satellite platforms and other long-term space missions.

Green propulsions will be also topic of the 13th Development Trends in Space Propulsion Systems Conference on December 5-6, 2024 in Warsaw, Poland.

Early tests for variable-thrust landing engine

Łukasiewicz – Institute of Aviation successfully demonstrated throttleability of liquid rocket engine utilizing high-test peroxide and ethanol. The finalized phase of the hot fire campaign allowed to demonstrate thrust reduced down to 20% of nominal value. There was also a demonstration of a planned sequence of thrust changes during a single firing.

It is worth knowing that such engine is perfect for the upper stage of smaller launchers, for in-space vehicles, for launcher kick-stages and exploration missions. The ability to modify its thrust makes it also very interesting for landing spacecraft on Earth, the Moon and beyond. TLPD is realized within European Space Agency Future Launchers Preparatory Programme.

Mission Space

Mission Space gears up for 2025 launch of the first commercial payload for space weather forecasting

Mission Space is a Luxembourg-based space weather data & analytics company, providing space weather data intelligence for space actors, industrial infrastructure and global scientific community.

The company is set to begin rolling out its constellation shortly, with the launch of the first satellite planned in Q1 2025. This will allow the company to deploy a satellite constellation to deliver real-time, precise data on space weather phenomena, empowering stakeholders to take timely protective measures.

For hosted payload services, Mission Space has partnered up with DPhi Space, marking a significant milestone in the satellite constellation deployment project.

By collecting space weather data and using advanced machine learning and scientific modeling, Mission Space is poised to produce forecasts that will protect both space and Earth-based assets from solar event hazards.

As to the upcoming milestones, Mission Space has just been selected for Startup Battlefield 200 and will join 199 other participants at TechCrunch Disrupt 2024, TechCrunch's summit conference. The company expects to use this opportunity to enhance satellite operations and the resilience of Earth's infrastructure.

Mission Space has also recently joined forces with Starburst Accelerator, a global initiative focused on fostering innovation in the aerospace sector.

Supporting the International Astronautical Federation's motto "Responsible Space for Sustainability," Mission Space emphasizes the importance of space weather monitoring and forecasting, describing it as a vigilant omniscient guardian of astronautical operations, energy, telecommunications, transportation, agriculture, healthcare, and other key industries of our daily lives.

MOON VILLAGE ASSOCIATION

8th Global Moon village workshop and symposium

The 8th Global Moon Village Workshop and Symposium, organized by the Moon Village Association (MVA) and the Luxembourg Space Agency (JAXA), will take place at the Luxembourg European Innovation Centre on 2nd and 3rd of December 2024. The two day event will discuss various topics including exploration and utilization of the Moon, MVA's ongoing and future activities as well as the findings and achievements of their working groups and committees.

The workshop and symposium will have dedicated sessions on Lunar economy and exploration, and 'general presentation' sessions. Call for presentations are open until the 15th of September - more details can be found here.

3rd PromoMoon initiative

MVA, in cooperation with Yuzhnoye State Design Office announced the winners of 3rd PromoMoon initiative.

The winners will receive B2B mentorship and an opportunity for their work to be featured in a paper to be presented at the International Astronautical Congress (IAC) in Milan, Italy in October 2024.

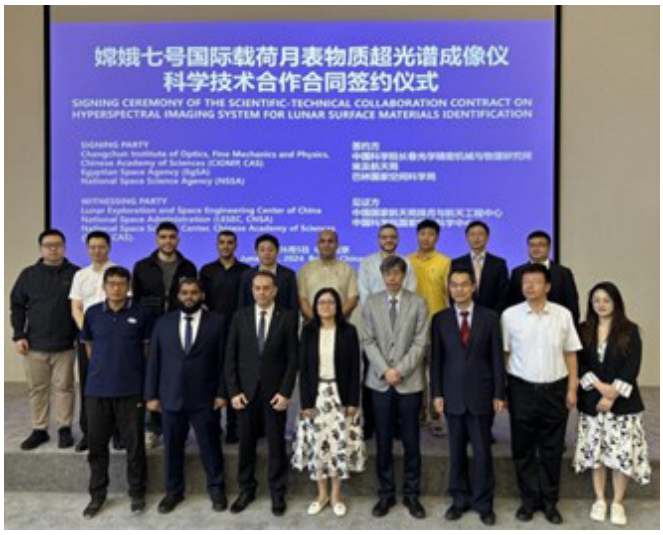
International Moon Day (IMD) 2024

IMD 2024 was celebrated with two main events in Harbin, China, and Rostock, Germany. The Harbin event, co-organized by MVA, Harbin Institute of Technology, and the Chinese Society of Astronautics, included six keynote presentations and two roundtables. It also announced the Innovative University Consortium for Moon Village 2050, starting with 29 Chinese universities and expanding globally. The Rostock event, co-organized with NEUROSPACE, featured four keynote speeches on Lunar Mobility and a demonstration of NEUROSPACE's HiveR rover. Additionally, IMD 2024 was celebrated worldwide with 46 global events in 41 countries.

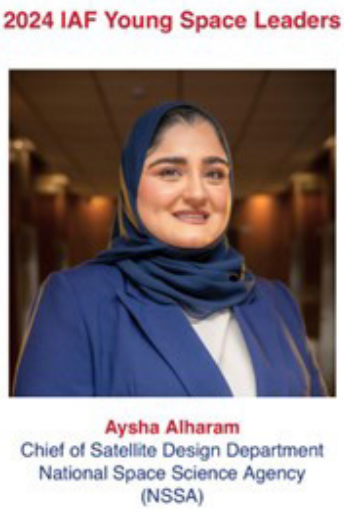
The National Space Agency (NSSA) is participating in IAC 2024 with 21 research papers showcasing the agency's commitment to the research field.

NSSA's Senior Leagal member Sh. Hessa AlKhalifa has been elected as the Vice-Chair of the COPUOS for 2025, marking her the first Bahraini-Arab woman to hold this position.

NSSA's Engineer Ali Alqaraan participated in the CDR Milestone of the Hyperspectral Imaging System Mission in collaboration with China and Egypt held in Beijing.



NSSA's Eng. Aysha Alharam became the first Bahraini-Arab women to be selected as the 2024 IAF Young Space Leaders which attests to the remarkable ability of NSSA's engineers.



NSSA's Eng. Muneera Almalki participated in 2024 SpaceOps Workshop held in Toulouse, France.

NSSA's ICT Director Mr. Husain Abdullatif won the 2024 Leader Award by the World CIO 200 Summit in recognition of his outstanding achievements.

NSSA hosted the 6th International Space Forum at Ministerial Level – The Gulf Chapter (ISF 2024): "Space as a game-changer for diplomacy and economic development in the region" where NSSA's Sh Hesa AlKhalifa and Ms. Roaya Bubshait, were main speakers.

NSSA hosted the two Emirati Astronauts in a public awareness session in collaboration with MBRSC and the University of Bahrain.

Ms. Aysha Almahmeed, NSSA's space data analyst, participated in the UN/Austria Symposium 2024 Climate action: transforming space-based technology projects into sustainable services that support policy-making, presenting her research on Mapping Chlorophyll Levels in Vegetation Across the Kingdom of Bahrain: Insights from Sentinel-2 Time-Series Analysis for Informed Agricultural Management and Sustainability.

ReOrbit builds software-enabled satellites as network nodes. Just recently the company has successfully completed the Preliminary Design Review phase with the ESA for its UKKO Mission, part of the InCubed programme.

For the InCubed activity UKKO - Development and Demonstration of Technologies for Future Earth Observation (EO) Satellites, ReOrbit will perform an in-orbit demonstration as an independent standalone flight opportunity, showcasing the capabilities developed in the avionics architecture and the software stack in space, namely an end-to-end EO value chain between EO payloads and the end users, as well as satellite-to-satellite and satellite-to-ground communication.

ReOrbit will achieve this by onboarding a commercial EO customer optical payload with full operational capacity. ReOrbit will perform the commissioning and validation of end-to-end operations including imaging, onboard data processing and data transfer to customer location. Another important part of this mission is equipping the IOD bus with the optical terminal, accompanied with the necessary autonomy, storage, and data transport capabilities to ensure secure, seamless data transfer from satellite to satellite, or from satellite to ground.

ReOrbit will be exhibiting during the IAC 2024, Stand **MN1-A04c**, and welcomes everyone to stop by and chat about software-enabled satellites for more efficient, secure, and connected missions in LEO and GEO.

Models of small spacecrafts presented at XI Forum of the Regions in Minsk

On June, 27 and 28 the XI Forum of the Regions was held in Vitebsk, Polotsk and Novopolotsk, Republic of Belarus.

SUAI students participated in the section Innovations in Higher Education: Experience and Prospects of Cooperation dedicated to the achievements of university science, and presented two projects of the Institute of Aerospace Instruments and Systems: models of a small CubeSat 3U spacecraft and a CubeSat 3U mock-up with a solar panel deployment and orientation system. The model, created by SUAI students is a detailed layout of the CubeSat 3U nanosatellite, which is as close as possible to the real ICA. Thanks to this, various laboratory experiments and tests can be carried out, and new designed systems can be debugged as part of the satellite. It is also possible to debug processes as part of an entire constellation of satellites, namely data transmission between them, recognition of position relative to each other, their mutual orientation and navigation. The model allows to practice skills in the field of nanosatellite programming and PCB soldering. As for the layout, it is a CubeSat 3U nanosatellite equipped with a solar panel deployment system. It allows to orient towards the Sun and ensure maximum efficiency of solar panels. In addition, several solar panels can be placed on one device, which allows it to receive more energy. The position of the batteries can rotate in two axes.

Space Industry Association of Australia

IAC 2025 Sydney sponsorship and exhibition bookings open on 14 October!

Following a successful virtual global IAC 2025 Sydney Sponsorship and Exhibition Prospectus Launch on 13 and 14 August 2024 in three time zones, the Prospectus went live at https://prospectus.iac2025.au Over 280 people registered for the calls. If you missed it, you can watch it here: https://www.youtube.com/watch?v=nGWgtJ1DFDI&t=1s.

At the top tier, two exclusive invitation-only Premier Sponsor opportunities are available, one for a government/space agency and one for an organization/industry. These two opportunities are followed by Platinum, Gold, Silver, and Bronze opportunities, as well as a suite of A La Carte sponsorship opportunities and exhibition space.

Offerings remain largely in line with IAC 2024 Milan, aside from the addition of Sponsor breakfast and lunch seminars which will be able to accommodate programming for space-enabled industries including: resources; construction; manufacturing; health; Smart Cities; agriculture; financial services; ICT; utilities; and emergency management.

Applications for IAC 2025 will officially open on DAY 1 of IAC 2024 Milan on Monday, 14 October 2024.

Exhibition space will be allocated on a "first come, first served" basis, with priority given to Premier, Platinum, Gold, Silver, and Bronze partners (until the priority window deadline of 29 November 2024).

All allocations of purchased exhibition space after 6 December will be offered by availability at the date of application only.

Sponsors are welcome to suggest additional sponsorship ideas to better match their objectives for IAC 2025.

Please contact IAC 2025 Sydney Congress Secretariat, Thomas Howden, sponex@iac2025.org to discuss your proposal.

SpaceLand

The SpaceLand group has organized the world's first non-governmental zero-gravity, Moon-G and Mars-G research flights back in 2005, open to the public, supported by U.S. partners and NASA. Since then, SpaceLand has set multiple world records, including flying the oldest man ever in microgravity, 93-year-old Cesare Massano, 11-year-old Kim Marco Viberti and the first 100% disabled woman for biomedical and ICT experiments in 0-G, Elma Schippa. These flights have included a diverse range of research requested also by science groups led by a Nobel Prize Laureate.

Upcoming flights will accelerate SpaceLand's human longevity extension research projects.

Besides, SpaceLand's innovative Mars Habitat design is currently under evaluation by the European Space Agency (ESA). This unique habitat concept aims to utilize In-Situ Resource Utilization (ISRU) technologies and quickly build shelters on Mars through a novel shirt-sleeved procedure, making it a sustainable and cost-effective solution for human habitats on Mars[1]. The design is not only crucial for future planetary exploration but also holds significant potential for improving housing on Earth.

The engineering concepts and technologies developed for the SpaceLand Mars Habitat are being considered for their potential also to revolutionize housing solutions for millions of slum-dwellers on Earth. These eco-friendly, low-cost and fast-paced construction methods could provide affordable and sustainable housing, using local soil and simple procedures, addressing the urgent need for straightforward construction methods to erect saluber habitations not only for Mars settlements but also for better living conditions in urban slums on our planet.

In the wake of all of these potentially game-changing initiatives, SpaceLand continues to expand its reach with new partnerships: recent collaborations include agreements to conduct yearly zero-gravity, Moon-gravity, and Mars-gravity parabolic flights from Switzerland, Italy, Mauritius and Singapore. These open flight campaigns serve both STEM user communities, industry, academia and tourists, furthering SpaceLand's mission to make space research, technology innovation and education accessible to All, with no gender, generation, geography boundaries, bringing significant advancements in both space exploration and humanitarian efforts on Earth.

The on-going evaluation of the SpaceLand Mars Habitat by ESA and its potential applications for slum-dwellers highlight SpaceLand's commitment to leveraging Mars-bound Space technologies for the betterment of humanity with particular focus on the least fortunate inhabitants of our planet. Info: www.SpaceLand.it

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SPARTAN SPACE

The Marseille-based startup Spartan Space and the prominent sports manufacturer Decathlon, along with the Institute of Space Medicine and Physiology (MEDES), has initiated a project to develop a European intravehicular space suit technology under a co-funding of CNES.

Spartan Space, a French startup specializing in manned spaceflight technologies and life support systems, has the role as the principal contractor in this project, showcasing their technological prowess and commitment to advancing European space capabilities. Decathlon, known globally for its expertise in sports textiles, is branching out into space technology, bringing its innovative textile solutions to the development of the space suit. MEDES contributes its 35 years of experience in space physiology and medicine, ensuring the suit meets the standards of performance and safety.

This partnership highlights a strategic collaboration where each entity brings unique expertise for crafting a technologically advanced space suit designed for intravehicular activities (IVA), crucial during key mission phases like launch and landing. The project underscores a significant step towards reinforcing European sovereignty in space exploration, with CNES at the helm, steering the project towards a prototype delivery by the end of 2024.

Sebastien Barde, Deputy Director of Exploration and Manned Flights at CNES, expressed enthusiasm about the collaboration, emphasizing the project's alignment with France's ambitions to contribute to European space missions. The involvement of Spartan Space and Decathlon not only enhances the technological base of the space suit but also reflects a robust synergy aimed at propelling French and European capabilities to new heights in space exploration.

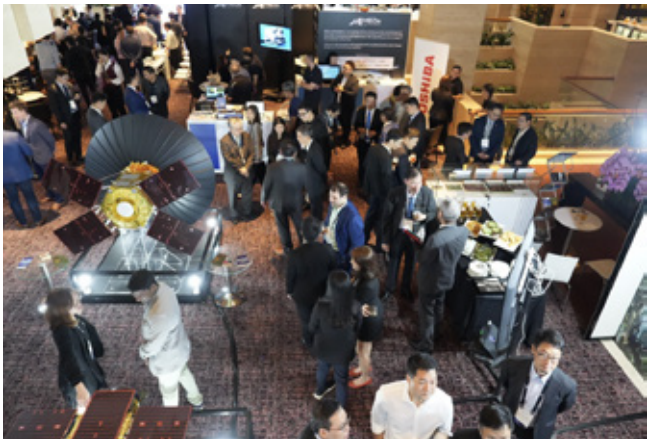
Singapore Space & Technology Ltd

Office for Space Technology & Industry, Singapore

Singapore Space and Technology Limited (SSTL) is excited to announce the 17th edition of the Global Space Technology Convention and Exhibition (GSTCE), set to take place on February 26 and 27, 2025, at Sands Expo & Convention Centre, Marina Bay Sands, Singapore.

The iconic Marina Bay Sands in Singapore.
Image Credit: Marina Bay Sands

This year's event attracted over 1,000 thought leaders from nearly 400 organisations across 36 countries, establishing it as one of Asia's premier space events. It welcomed strong participation from Australia, France, Germany, Japan, South Korea, the UAE, the UK, and the USA.



The upcoming GSTCE theme, "Commercialising Space – New Frontiers in Disruptive Innovations," will focus on how space technology is transforming industries and driving economic and societal benefits.

GSTCE 2025 offers expanded thought leadership, doubled exhibition space, and more in-depth workshops. Topics will include AI, Cybersecurity, Space Law, and innovations in Maritime, Satellite Communications, and Smart Cities. The event will also opens opportunities for non-space sectors such as Real Estate, Finance, Oil & Gas, Aviation, Agriculture, and Logistics.

Mr Jeremy Chan, Chairman of SSTL and Mr Kong Hwee Tan, Executive Vice President of EDB.

Under the Singapore Economic Development Board (EDB), the Office for Space Technology & Industry (OSTIn), also known as Singapore's national space office, will be the Strategic Partner for GSTCE 2025. OSTIn's involvement reflects its commitment to advancing the nation's space sector and fostering innovation. By bridging the gap between industry and government, OSTIn plays a crucial role in expanding the growth of Singapore's space ecosystem.

GSTCE 2025 tickets are now available at www.space.org.sg/gstce. Secure your spot and join us in shaping the future of space technology!

AACII

Congratulation for the magnificent success with the sensational new satellite!

History was been written by the launch of Prof. Dr. Klaus Schilling Telematik Würzburg and Prof. Dr. Harald Weinfurter Technical

University Munich here in the picture with Ulrike Trapp, AACII Congress. It was an amazing opportunity after years of research, the leap into space: the small satellite QUBE built in Würzburg may only be the size of a shoebox, but it will achieve even greater things. The satellite will carry out pioneering work on the use of quantum technologies in orbit. QUBE started its journey from Vandenberg in California. At the launch party in Würzburg.

"Together for a better world" is the motto of the Aerospace Aviation Congress Interdisciplinary International (AACII) which will be held on Wednesday, February 12th, 2025 in Nuremberg, Germany. The Congress is open to innovative companies that are scientists and engineers, astro-cosmonauts and professionals involved in exploring the technological challenges and business opportunities. Satellites, such as QUBE, will be one of the key topics.

TECHNISCHE UNIVERSITÄT WIEN

The Executive MBA Program in Space Architecture from TU Wien Academy is a unique educational experience designed for professionals who want to explore the future of architecture and engineering beyond Earth. The program focuses on the design and development of habitats and systems that can support human life in space, combining cutting-edge technology with innovative architectural solutions.

This part-time program provides participants with a comprehensive understanding of space architecture, addressing challenges such as sustainability, human factors, and the harsh conditions of space environments. Through collaboration with experts from leading space agencies and institutions, students gain both theoretical knowledge and practical insights.

One of the key features of the program is the Learning Journey to Houston, where participants will have the opportunity to visit NASA and engage directly with professionals working in the space industry. This hands-on experience enhances their understanding of the complexities involved in space exploration and habitat design.

Graduates of the program are well-prepared to contribute to the fast-growing space sector, with opportunities in architecture, engineering, and space exploration agencies worldwide.

More information:
https://www.tuwien.at/ace/programme/mba-programme/space-architecture

Viterbi School of Engineering, USC
Liquid Propulsion Laboratory

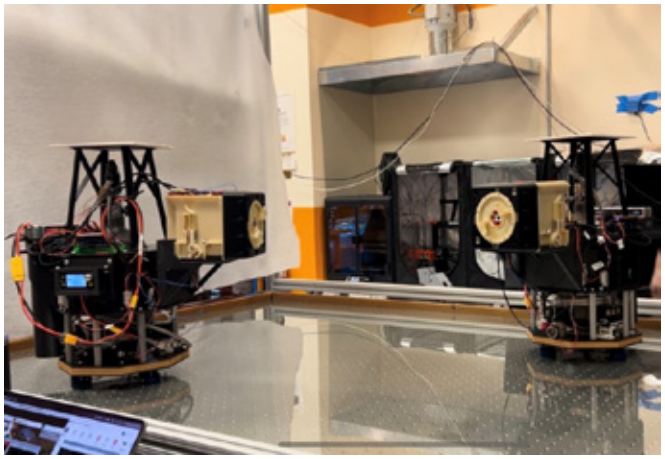
The Viterbi School of Engineering's Liquid Propulsion Laboratory (LPL) at the University of Southern California (USC) designs, builds, and tests industry-grade liquid propulsion rocket engines. On April 27th, 2024, the student-operated LPL marked another significant achievement with the successful execution of hotfires. Tests were conducted for two distinct propulsion systems: J&J and Balerion Dev 2.

While J&J engine tests were not entirely successful, they demonstrated the highest number of propellant cycles that LPL has been able to achieve in a single day with 3 attempts. This is definitive proof of increased efficiency in testing. LPL successfully hot-fired Balerion Dev 2, a 3D-printed regeneratively- and film-cooled engine producing a thrust of 2,250 lbf, or 10 kN. This long-awaited moment for the engine in development for several years marks a major milestone for the student team.

These recent hotfires provided a wealth of data to analyze and will drive future rocket engine development by LPL.

Viterbi School of Engineering, USC
Space Engineering Research Center

The Viterbi School of Engineering's Space Engineering Research Center (SERC) at the University of Southern California (USC) focuses on disruptive space engineering, research and education for Astronautics students which includes hands-on building, testing and flight demonstrations of satellites. Recently, a Falcon 9 rocket launched CLINGERS, a student-built prototype to be tested on board the International Space Station (ISS). This "Compliant Low-Profile Independent Non-Protruding Genderless Electronic Rendezvous Sensors," or CLINGERS, is a mechanical coupling system that can be attached to any type of vehicle or platform to make an automatic connection. The photograph shows testing of floatbots with CLINGERS.



On the Space Station, CLINGERS will be mated with NASA's Astrobee free flying experimental platform inside the ISS and serve to provide commands to the platform to test its dynamics in 6 degrees of freedom. The operation of a combined mechanical docking system with embedded onboard sensors has multiple potential applications that include transferring data, refueling a spacecraft, and assembling machinery from different parts on orbit.

INTERNATIONAL ASTRONAUTICAL FEDERATION

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- Book **complimentary meeting facilities** during IAF events
- Have **privileged access to sponsorship** opportunities at IAF events

Join Us

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