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Office for Space Technology & Industry, Singapore

Media Release
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Singapore's National Space Office announces new initiatives to drive next bound of development for the space sector

New initiatives include Singapore's first Earth Observation Initiative to deploy sustainability solutions for the region, more funding for space technology and deeper international cooperation on space

1. The Office for Space Technology & Industry (OSTIn) today launched ***Singapore's Space Sector: Next Bound of Development***[1]***,*** a strategy to grow Singapore's nascent space industry and research ecosystem, at the Global Space Technology Convention & Exhibition (GSTCE) 2025.

2. The rapidly growing global space economy is expected to triple in size and reach US$1.8 trillion by 2035, up from US$630 billion in 2023[2]. As a leading global hub for businesses and space-adjacent sectors such as aerospace, microelectronics and precision engineering, Singapore is well-placed to capitalise on global momentum and capture economic value in the space sector. This includes the use of space technologies to enhance communications and connectivity services, as well as to drive innovation in the green and digital economies.

3. The three thrusts of the new strategy are:

a. Growing Singapore's Space Sector

Building on Singapore's existing strengths in business, talent and innovation, Singapore seeks to become a regional leader in space technologies. We will help global and local companies invest in and capture growth opportunities in the region, inject funding to support research and development (R&D) in Singapore and strengthen Singapore's regulatory environment in relation to space activities.
An additional S$60 million will be invested in OSTIn's Space Technology Development Programme (STDP) over the next two years to accelerate innovation in satellite technology, foster capability-building in Singapore's IHLs and RIs and promote the commercialisation of research. Further information on the STDP and the top-up of funding can be found in Annex A.

b. Building International Partnerships

[1] *Refer to: www.space.gov.sg/sg-space-highlights/singapore-space-sector-next-bound-of-development/*
[2] *World Economic Forum, "Space: The $1.8 trillion opportunity for global economic growth", 8 Apr 2024*

Singapore is committed to ensuring the sustainable and safe use of space. This requires the development of international norms and an open, inclusive and rules-based international regime governing space activities. As such, Singapore will continue to pursue bilateral collaboration and participation in multilateral platforms, including convening regional and global discussions on space.

OSTIn is signing a Letter of Intent with the European Space Agency to enhance industry cooperation between the Singapore space ecosystem and our international partners. OSTIn is also working on formalising an engagement to expand cooperation in space technology and industry development with the Indian National Space Promotion and Authorization Centre (IN-SPACe).

c. Developing Space Programmes in Focus Areas

Lastly, Singapore will focus on programmes where space technologies can make a real-world difference. Space technology presents opportunities for Singapore to strengthen our position as a global hub for aviation, maritime, connectivity, and sustainability.

Under this thrust, OSTIn has launched an **Earth Observation Initiative (EOI),** which will use remote sensing satellite technology to analyse and solve sustainability and humanitarian challenges across the region, such as food and water quality, disaster and disease monitoring and forestry and land management. With its near equatorial and Low Earth Orbit satellite capabilities, Singapore is well-placed to support the region with frequent and high-resolution data across a highly dynamic environment to overcome challenges.

The EOI is the first of its kind for Singapore, bringing together intergovernmental organisations, companies, Institutes of Higher Learning (IHLs) and Research Institutions (RIs) to utilise valuable satellite data. The 15 partners and members of the initiative include international and regional organisations – such as the United Nations Office for Outer Space Affairs, the World Bank, the World Economic Forum and Mekong River Commission Secretariat. Through workshops and forums, partners and members can develop practical use cases for Earth observation data and conduct demonstration projects to showcase potential applications. Please refer to Annex B and C for further details on the EOI.

4. “Singapore’s space sector is entering a new phase of growth, driven by global developments lowering the cost of space technology and growing real-world needs. By leveraging our strengths in business and R&D, we aim to develop space technologies that can unlock new economic opportunities, reinforcing Singapore’s role

in the global space economy. We will also strengthen national capabilities for space, and advance partnerships with other space agencies and companies." said Ms Jacqueline Poh, Managing Director, Singapore Economic Development Board.

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About the Office for Space Technology & Industry, Singapore (OSTIn)

The Office for Space Technology & Industry, Singapore (OSTIn) is Singapore's national space office. OSTIn is responsible for: 1) Nurturing the development of space technology capabilities to serve national imperatives; 2) Growing a globally competitive space industry in Singapore; 3) Fostering an enabling regulatory environment for Singapore's space activities; 4) Expanding international partnerships and contributing to strengthening the international governance regime for space activities; and 5) Supporting the development of talent for Singapore's space sector and future workforce.

Our mission is to develop the next bound of Singapore's space sector to promote economic growth, advance scientific discovery, and inspire a new generation of innovators. To achieve this, our key thrusts are:

- Thrust 1: Growing Singapore's Space Sector
- Thrust 2: Building International Partnerships
- Thrust 3: Developing Space Programmes in Focus Areas

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Office for Space Technology & Industry, Singapore

Annex A

Space Technology Development Programme (STDP) Factsheet

Background

Space technology is a critical component of modern infrastructure, supporting various applications from communications to Earth observation. Singapore recognises the importance of developing robust capabilities in this sector to enhance its technological competitiveness and support domains such as aviation, maritime and sustainability.

In 2022, the Singapore Government announced the S$150 million flagship Space Technology Development Programme (STDP). The programme aims to develop space capabilities to foster innovation, support research and development, and accelerate the growth of Singapore's space technology ecosystem. The programme supports national priority domains such as aviation, maritime and sustainability, as well as emerging and potentially disruptive technologies.

Top-up of STDP

This year, OSTIn secured an additional S$60 million for its Space Technology Development Programme (STDP), to advance technological innovation and support the development of the space sector.

The STDP comprises three distinct funding archetypes, each tailored to address specific stages of technology development and industry needs:

1. Technology Development Funding Scheme
2. Validation and Experimentation Funding Scheme
3. Space Access Programme Funding Scheme

These schemes offer focused and expeditious support, enabling more flexible, efficient and targeted support to nurture a thriving space technology sector in Singapore.

Strategic Goals for the STDP

The STDP will deliver on three key strategic goals:

1. Accelerate innovation in satellite technology by supporting projects across various stages of development, from concept validation to full-scale technology development. This goal aims to enhance Singapore's capabilities in critical space technologies and applications.

2. Foster collaboration and capability building by encouraging partnerships between industry, Institutes of Higher Learning (IHLs), and Research Institutions (RIs). This approach ensures a robust ecosystem that can tackle complex and multi-faceted challenges in space technology development.
3. Promote practical applications and commercialisation by supporting projects with clear pathways to implementation, whether for national use or commercial markets. This goal aims to translate research into tangible benefits for Singapore's economy and society.

Structure of STDP

The STDP brings together various stakeholders to advance space technology development in Singapore.

- Stakeholders of the STDP include intergovernmental organisations, the Singapore government, industry players, IHLs and RIs. They contribute expertise, resources, and often provide matching funds for projects. Stakeholders play a crucial role in identifying industry needs, proposing innovative solutions, and driving the practical application of developed technologies.
- Funding archetypes within the STDP cater to different aspects of space technology development:
    - The Technology Development archetype supports projects in key technology areas, including niche components and emerging solutions.
    - The Validation & Experimentation archetype supports small-scale, short-term projects for feasibility study, rapid prototyping and concept validation.
    - The Space Access Programme facilitates regular space access to support technology development and obtaining space heritage.

OSTIn serves as the Implementing Agency for the STDP, providing strategic direction and overall coordination. OSTIn's role is integral in aligning the efforts of stakeholders and funding schemes towards common goals and projects that have a clear path to implementation.

Through this approach, the STDP aims to catalyse Singapore's space technology sector, fostering innovation, building capabilities, and driving practical applications that benefit the nation and the wider region.

Some examples of projects that have been funded under STDP to date

- The development of Very Low Earth Orbit satellite technologies that allow satellites to operate in orbits closer to Earth and deliver differentiated capabilities;

- Research aimed at improving above- and below- ground biomass estimation, to enhance carbon measurement, reporting and verification efforts;
- Advancements in space-based robotics manipulators to improve performance, potentially paving the way for future in-space servicing and debris removal activities; and
- Satellite-enabled precision agriculture technologies, enhanced crop monitoring, resource allocation and water management.

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Annex B

Earth Observation Initiative (EOI) Factsheet

Background

Earth observation technology is increasingly recognised as a powerful tool for contributing to sustainable development goals. It offers a cost-effective approach to monitoring, managing and mobilising resources by providing comprehensive, real-time data on a wide range of environmental scenarios. This enables us to track changes in land use, monitor water resources, assess crop health, and predict natural disasters with unprecedented speed and accuracy. The uniqueness of Earth observation lies in its ability to cover vast areas quickly and repeatedly, reducing the need for extensive ground-based data collection and providing valuable insights to inform targeted interventions and policy decisions.

The Earth Observation Initiative (EOI) is a collaborative effort spearheaded by OSTIn. The EOI aims to harness the power of Earth observation to address pressing sustainability and humanitarian challenges across the Asia-Pacific region.

Recognising that the challenges confronting the Asia-Pacific region are too complex and broad for any single stakeholder to address effectively, the EOI brings together a diverse ecosystem of partners, including intergovernmental entities, research institutions, and industry players. This collaboration aims to develop innovative solutions that are deployable, adoptable, implementable, and scalable for the region, making a tangible impact on regional issues.

Strategic Goals for the EOI

The EOI has established three key strategic goals:

- **Address regional sustainability and humanitarian challenges** by focusing on critical impact areas such as food and water quality, disaster and disease monitoring, and forestry and land management. This goal aligns directly with the United Nations Sustainable Development Goals (SDGs), ensuring that the EOI's efforts contribute meaningfully to global sustainability initiatives.
- **Promote international collaboration and scalability** by catalysing the development of cutting-edge solutions that harness Earth observation data, specifically tailored to the unique needs of the Asia-Pacific region. The EOI seeks to foster collaboration between end-users, research entities, and industry to ensure that solutions are not only innovative but also deployable, adoptable,

implementable, and scalable. Furthermore, these solutions should have export potential, addressing similar challenges in other regions.

- **Prioritise knowledge exchange and capacity building** by facilitating workshops, seminars, and training sessions to share insights, best practices, and lessons learned in the field of Earth observation. By building a robust knowledge base, the EOI aims to support ongoing innovation in Earth observation applications, ensuring that the benefits of its work are widely shared and that the capacity for Earth observation technology continues to grow both regionally and globally.

Structure of EOI

The EOI is designed as a collaborative platform that brings together various stakeholders to effectively harness Earth observation technology in addressing pressing sustainability and humanitarian challenges across the Asia-Pacific region.

- **Partners** of the EOI play a crucial role by providing network connections and a deep understanding of regional challenges. They contribute valuable use cases and problem statements, actively participate in knowledge exchange activities, and drive project implementation and adoption within their respective domains. This ensures that the EOI's efforts are grounded in real-world needs and have a clear path to practical application.
- **Members** of the EOI bring specialised expertise in Earth observation technologies, data analytics, and related fields to develop innovative solutions that address partner-identified challenges. They ensure the economic viability and scalability of proposed solutions, keeping in mind the diverse needs of the Asia-Pacific region. Members also collaborate closely on the implementation and deployment of successful projects, ensuring that theoretical innovations translate into practical, impactful solutions.
- **OSTIn** serves as the programme manager for the EOI, providing overall coordination and strategic direction. OSTIn's role is critical in ensuring that projects have a clear path to implementation, aligning the efforts of partners and members towards common goals.

Identified projects will be funded under the Space Technology Development Programme (STDP), a flagship programme under OSTIn.

Further details will be shared by this year when OSTIn calls for proposals under the EOI.

Office for Space Technology & Industry, Singapore

Partners

Please refer to Annex C for quotes from EOI members.

S/N	Entities
1	**World Bank:** An international development institution established by articles of agreement adopted by its member countries. The Bank's mission is to end extreme poverty and boost shared prosperity on a livable planet. It achieves these objectives by providing loans, concessional financing, technical assistance and knowledge-sharing services to its member countries and through partnerships with other organizations. The Bank has an interest in collaborating with public and private entities to improve the effectiveness of development assistance, thereby contributing to the achievement of the sustainable development goals.
2	**World Economic Forum:** The World Economic Forum is the International Organization for Public-Private Cooperation, dedicated to improving the state of the world. No single entity can tackle global challenges alone. That's why the Forum brings together stakeholders from all sectors of society to scale initiatives, drive meaningful impact, and shape a better future. With over five decades of success, the Forum stands as a trusted platform for high-level collaboration, advancing multistakeholder cooperation for the global good.
3	**United Nations Office for Outer Space Affairs:** The United Nations Office for Outer Space Affairs (UNOOSA) is the office of the U.N. Secretariat responsible for promoting the peaceful use of space and ensuring access to space technology, data, and applications for all countries.
4	**Mekong River Commission Secretariat:** An intergovernmental agency established in 1995 based on the Mekong Agreement between Cambodia, Lao PDR, Thailand and Viet Nam, with its headquarters located in Lao PDR.
5	**Changi Regional Humanitarian Assistance and Disaster Relief Coordination Centre (RHCC):** Changi RHCC facilitates both military-to-military and civilian-to-military coordination in HADR operations. It focuses on supporting the disaster-affected state's military in coordinating assistance provided by foreign militaries, and complements existing disaster management response mechanisms from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre).
6	**Ministry of Sustainability and the Environment:** The Ministry of Sustainability and the Environment (MSE) is committed to providing Singaporeans with a clean and sustainable environment, and resilient supplies of safe food and water. MSE works alongside its three statutory boards – the National Environment Agency (NEA), PUB, Singapore's National Water Agency, and the Singapore Food Agency (SFA) – to achieve this mission

	through innovation, technology, and vibrant partnerships with the private, public, and people (3P) sectors.
7	**Singapore Land Authority:** SLA's mission is to optimise land resources for the social and economic development of Singapore. As the national geospatial and mapping agency, SLA also spearheads Singapore's geospatial development by advancing geospatial data, policies, and technologies to support a safe, sustainable, and smart Singapore.
8	**Maritime and Port Authority of Singapore:** Singapore agency responsible for developing Singapore as a global hub port and international maritime centre, regulating and advancing the industry. It drives digitalisation, decarbonisation, and innovation to enhance maritime safety, port efficiency, and service assurance.

Members

S/N	Entities
9	**A*STAR:** Singapore's lead public sector research and development agency, dedicated to driving mission-oriented research that advances scientific discovery and technological innovation.
10	**Earth Observatory of Singapore – Remote Sensing Lab (NTU):** A flagship lab of the Earth Observatory of Singapore, an NTU research centre, that supports stakeholders and decision-makers by monitoring and mapping hazards, disasters, environmental crises, sea-level rise, and climate change using cutting-edge remote sensing technology.
11	**Centre for Remote Imaging, Sensing and Processing (NUS):** A research centre at NUS that develops advanced capabilities in remote sensing, including the processing and applications of the full range of optical, hyperspectral and synthetic aperture radar imagery data, and geospatial AI, to meet the scientific and operational needs of Singapore and the region.
12	**ST Engineering Geo-Insights:** Joint venture company formed between ST Engineering and DSO National Laboratories, dedicated to tackling real-world challenges from space and transforming raw data for insightful analysis that drives decision making across industries.
13	**Kumi Analytics:** Climate technology company that specializes in applying artificial intelligence to satellite imagery to drive transparency in the carbon markets and enable sustainable and profitable business outcomes.
14	**Arkadiah Technology:** A nature technology company that revives degraded lands through AI-powered restoration. By fusing AI with LiDAR and remote sensing technology, we transform these lands into productive, investable assets while bringing transparency to nature restoration. Our work delivers high-quality

	carbon removal solutions while advancing biodiversity conservation, food security, and sustainable community livelihoods.
15	**Nika:** A climate technology specialising in AI-driven predictive models for the carbon credit market, utilising geospatial machine learning infrastructure.

Office for Space Technology & Industry, Singapore

Annex C

Quotes from EOI Partners and Members

Partners

SLA

To be attributed to Mr Colin Low, Chief Executive, Singapore Land Authority

"SLA's strategic partnership with OSTIn on the Earth Observation Initiative marks a significant step in accelerating geo-enabled solutions to support Singapore's sustainability agenda. Building on SLA's experience in utilising space-based technologies and data for geospatial projects, the collaboration will drive innovative solutions and deepen regional cooperation to address challenges brought about by climate change."

UNOOSA

To be attributed to Mrs Aarti Holla-Maini, Director, UN Office for Outer Space Affairs

"UNOOSA's participation in OSTIn's Earth Observation Initiative is a natural extension of our mission to promote international cooperation in the peaceful use of space and in particular, to act as a gateway between space services and applications and those countries and communities who need them most. The EOI's focus on innovative and scalable solutions enables us to leverage space technology to address urgent sustainability and humanitarian challenges in the Asia-Pacific region and beyond."

Members

A*STAR

To be attributed to Dr Sun Sumei, Executive Director, Institute for Infocomm Research (I2R)

"A*STAR Institute for Infocomm Research is proud to support OSTIn's Earth Observation Initiative, driving impactful collaborations across research, industry, and government. By leveraging our expertise in AI, imagery analytics, and satellite technology, we aim to deliver innovative, scalable solutions for sustainability and humanitarian efforts across Singapore and the Asia-Pacific."

Centre for Remote Imaging, Sensing and Processing, CRISP (NUS)

To be attributed to Dr. Lim Kim Hwa, Director

"The Centre for Remote Imaging, Sensing and Processing (CRISP) is proud to lend its expertise and support to the OSTIn Earth Observation Initiative. With over three decades

of experience in remote sensing research and applications, CRISP is committed to contributing valuable knowledge and innovation to this transformative initiative.

CRISP looks forward to collaborating closely with other like-minded members of this initiative to drive advancements in Earth observation technology of mutual interest, pushing boundaries and achieving new heights. Through these collaborations, we aim to harness the power of Earth observation to address global challenges, uncover new opportunities, and foster sustainable development for the future."

Earth Observatory of Singapore – Remote Sensing Lab (NTU)

To be attributed to Dr. Yun Sang-Ho, Director

"Satellite technology is transforming the way we understand and manage our planet. The launch of the Earth Observation Initiative is more than just a ceremony. It is a commitment to collaboration, innovation, and progress. By integrating expertise across sectors, we can maximise the potential of Earth observation data to address global challenges and drive meaningful impact."

Office for Space Technology & Industry, Singapore

Annex D

Other Space Industry Announcements at GSTCE

For further information on these announcements, please refer to the press releases that will be issued by the respective organisations.

ST Engineering Geo-Insights x Leolabs

As part of a collaborative effort between the Government of Singapore and industry to pursue a safer space environment and advance space sustainability for the region, ST Engineering Geo-Insights will be partnering a leading Space Situational Awareness solution provider, LeoLabs, through a Memorandum of Understanding (MOU) and will work towards establishing a Space Situational Awareness Centre in Singapore to provide services to the region.

Unseenlabs Regional Office

A French leader in space-based radiofrequency detection for maritime use cases, Unseenlabs is announcing the establishment of a regional office in Singapore, the first one outside of France.

Transcelestial x ST Engineering Satellite Systems

Taking a bold step to revolutionise space communication, Transcelestial is partnering ST Engineering Satellite Systems to demonstrate in-space inter-satellite link capabilities. The partnership combines Transcelestial's expertise in laser communication terminals with ST Engineering Satellite Systems' capabilities in satellite design and manufacturing. This initiative aims to redefine how satellites exchange data in orbit and is supported by OSTIn.

Zero-Error Systems Product Launch

Specialising in high-reliability semiconductor for Power & Data management solutions, Zero-Error Systems (ZES) is announcing the release of ZSOM™-F01, a Radiation Hardened by Design (RHBD) platform. This will be able to extend satellite longevity by 3x through its radiation-tolerant capabilities. This is supported by OSTIn.