# Annual Report 2024




Agenzia Spaziale Italiana

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# INTRODUCTION

What a year 2024 has been! Summarizing all the key events and milestones of the past 12 months in this opening of the report is no easy task. One thing is clear: 2024 has been an integral part of a phase of continuous growth for the space sector, in which each year the industry achieves new milestones. The drive to push the frontiers of knowledge and technology ever further is a defining feature of our field, and the past year has left strong and significant marks of success.

The events of 2024 have strengthened Italy's role as a leading player on the international stage. Through the Italian Space Agency (ASI), Italy has increasingly established itself as a strategic and key actor in numerous international cooperation programs. The clear and determined vision in managing national resources and initiatives, aligned with the guidelines set by the government and the delegated Authority, has allowed Italy to reinforce its position. Our industry and academia have solidified their central role in delivering technology, innovation, talent, and originality for space programs worldwide. The high-profile Made in Italy space sector is growing stronger and is increasingly valued by our international partners.

From a broader perspective, during last year the involvement of new players, including private ones, in the space market has expanded, in Italy too. The developing business model of the space industry has led to new activities. In January, we witnessed the first commercial mission to the ISS, AX-3, involving an Italian astronaut in collaboration with the national research community. The year came to its conclusion celebrating the 60th anniversary of the launch of San Marco, Italy's first satellite in orbit. Between these two milestones, an entire world of high-level activities unfolded. Among them, I would like to highlight the record-breaking 75th edition of the International Astronautical Congress (IAC 2024), held in Milan in October.

It has also been the year of the Moon. Italy's contribution to NASA's Artemis mission is expected to be crucial, ensuring our nation leaves a lasting mark on the lunar surface. Thanks to ASI's Multi-Purpose Habitation (MPH) module, there will be an actual footprint on the Moon. The green light for this program will allow Italy to build the first lunar outpost to accommodate astronauts on our natural satellite. This lunar commitment has also translated into major opportunities for our industry, which has secured key contracts, further proving its expertise in developing habitat structures for space stations.




In addition, significant milestones were achieved, including the approval of the draft law on Space, increased measures to support startups, space diplomacy initiatives aimed at strengthening a common European space policy, and concrete actions under the Mattei Plan for Space. The topic of launchers was also central, with the return to flight of Vega C and the maiden launch of Ariane 6. The implementation of ASI's National Recovery and Resilience Plan (PNRR) and the progressive realization of the Iride constellation are not just isolated achievements but part of a structured trajectory, pillars of Italy's strategic vision for the space sector. This comprehensive strategy embraces all industry stakeholders and considers the unique ecosystem that defines Italy's space sector. A truly one-of-a-kind network on a global scale. It is an inclusive approach aimed at ensuring that everyone can access the opportunities that space has to offer.

ASI looks at the future with determination, fully aware that space is increasingly a driver of technological and economic progress. All these activities and achievements have been made possible - and will continue to be - thanks to the unwavering commitment of the talented women and men of the Agency, who work tirelessly as part of an extraordinary and determined team.

***Teodoro Valente***

*President*

*Italian Space Agency*

# THE ITALIAN SPACE AGENCY

Founded in 1988, the Italian Space Agency (ASI) is responsible for coordinating and funding all national space initiatives, both at the domestic and international levels. Thanks to intense diplomatic activity, Italy has emerged as one of the world's leading players in the space sector, actively collaborating with major global space agencies - foremost among them NASA and ESA.

Italy is a founding member of the European Space Agency (ESA) and ranks as its third-largest contributor, closely behind France and Germany. This collaboration has enabled Italy to participate in prestigious missions and programs, while also fostering the development of high-level expertise.

ASI's activities are structured along various strategic lines, each having a significant impact on the country's scientific, technological, diplomatic, and socio-economic development. These areas include: space sciences, human spaceflight, exploration, operations, technology, Earth observation, launch vehicles, navigation, and telecommunications.

The Agency promotes the growth of the space economy by reinforcing the Made in Italy space brand, supporting the creation of new companies and highly qualified jobs, investing in research and innovation, and encouraging public-private collaboration. The outlook is promising, with the space economy expanding rapidly. ASI recognizes the importance of human capital and invests in the advanced training of new generations of scientists and engineers, aiming to secure Italy's leadership in the space sector for decades to come.

Thanks to ASI's efforts, today Italy stands at the forefront of space exploration and the creation of a sustainable future for our planet.

## ASI IN NUMBERS

### 451 EMPLOYEES

Thanks to 39 new hires, by the end of 2024 ASI's permanent staff reached a total of 451 employees.

Personnel costs account for only 7% of the Agency's overall budget

### 3 SUBSIDIARIES

**Altec**

**Spacelab**

**e-GEOS**

### 4 LOCATIONS

**Legal Headquarters**
Rome, Tor Vergata

**ASI Space Centre**
Matera

**Broglio Space Centre (BSC)**
Malindi (Kenya)

**Sardinia Deep Space Antenna**
San Basilio, Cagliari

## PARTICIPATIONS

ALTEC

SPACELAB
an Avio-ASI company

e-geos
AN ASI / TELESPAZIO COMPANY

ASI is also a founding member of the E. Amaldi Foundation.

FONDAZIONE E.AMALDI

## OPERATIONAL SECTORS

- SPACE SCIENCES
- LAUNCHERS
- HUMAN SPACEFLIGHT
- EXPLORATION
- OPERATIONS
- EARTH OBSERVATION
- NAVIGATION
- TELECOMMUNICATIONS
- TECHNOLOGIES

# THE SPACE ECONOMY

The space economy is a rapidly growing sector, focused on expanding economic activities in outer space. It encompasses not only traditional operations such as satellite launches and space exploration, but also emerging areas like space tourism, asteroid mining, and in-orbit manufacturing.

In recent years, the entry of private actors has revolutionized the industry by lowering access costs and opening up new commercial opportunities. Technologies developed for space have also found applications on Earth, enhancing fields such as communications, climate monitoring, and natural resource management.

The space economy holds immense economic potential and represents a true revolution in economic development. However, competitive advantages can only be achieved through close cooperation between public and private sectors, European and national institutions, international partnerships with strategic allies, and appropriate regulation of the space sector.

Cybersecurity is also essential, as satellites and other space infrastructure are critical assets that must be protected to safeguard national, European, corporate, and citizen interests.

To promote economic growth, it is also important to support and internationalize industries, with a particular focus on SMEs and startups.

That said, the growth of the space economy raises ethical and regulatory concerns related to sustainability and the fair use of space resources. These concerns highlight the need for more comprehensive regulation of space activities at national, European, and global levels.

In this context, the public sector has a key role to play in encouraging innovative entrepreneurship in the space domain and facilitating private investment by lowering technological and financial barriers to market entry.

In this spirit, the Italian Space Agency undertakes various initiatives to support startups and SMEs, such as the ESA BIC Italy Network - a network of national incubators for Italian space startups, currently with five nodes across the country: Lazio, Turin, Brindisi, Milan, and Padua - and the elite SPACEFOUNDERS acceleration program, dedicated to top European space startups in partnership with France's CNES and the University of Munich (UniBW).

ASI has also recently signed a Collaboration Agreement with ISTAT to develop a satellite account mapping the entire Italian space ecosystem. This initiative will enable accurate measurement of the actual value of the national space economy for the benefit of both public and private stakeholders.

Lastly, but no less importantly, ASI supports SMEs and startups through specific calls such as Innovation for Downstream Preparation (I4DP) - a program featuring periodic calls focused on market, public administration, and science applications to foster national downstream development - and STEP, dedicated to the development of enabling technologies in various fields, targeting young innovative enterprises.




the launch of the Iperdrone.0 satellite

# 2024 timeline

**December 16**
On the 4th National Space Day, ASI inaugurates the "Avanguardia San Marco" exhibition

**December 5**
Vega C brings Sentinel 1-C into orbit. Europe's new launcher returns to flight

**December 3**
"Blue and Space Economy" conference in Mumbai. ASI President Valente and Minister Urso attend in the Italian delegation

**October 14**
Record-setting IAC Milan 2024 takes place-the largest edition ever

**October 7**
Launch of the European HERA probe, featuring substantial Italian scientific and technological contributions

**October 1**
Minister Urso visits the Luigi Broglio Space Centre in Malindi

**September 10**
POLARIS DAWN mission enters orbit. ASI's Malindi Centre monitors the first private extravehicular activity (EVA) in history

**September 5**
After 12 years of service, final launch of Vega, passing the baton to Vega C

**August 17**
IPERDRONE.0 enters orbit to test complex operations in space

**July 15**
Italy-Africa Space Conference

**April 23**
Italy-Egypt cooperation agreements are signed

**January 20**
Minister Urso visits the ASI Space Centre in Matera

**January 18**
AX-3 mission launches to the ISS, with Italy on board through Air Force Colonel Walter Villadei and ASI-led experiments

launches

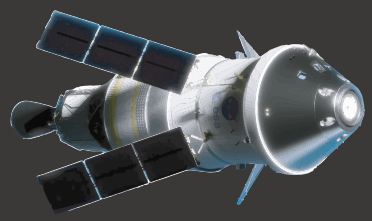
events

missions

# Italy's role in the Exploration

**Mars ROCC**
Rover Operations Control Center on Mars

**LMSCC**
Lunar Mission Simulation and Control Center ASI



**ESM - European Service Module**
ESA

ARTEMIS





**Lunar Ground Station - Italia**
Sardinia Deep Space Antenna (SDSA) - ASI

**Moonlight**
Provide new interoperable Moon Comunications and Navigation Services
ESA

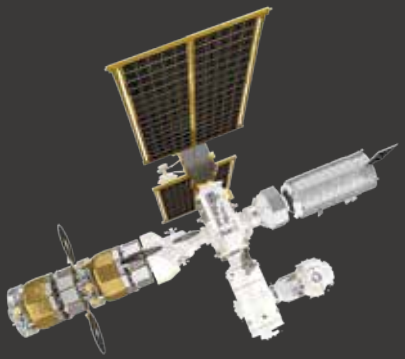
**Robotic mission on the Moon surface** - ASI

**EMM (Earth, Moon, Mars)**
Lunar science platform - ASI





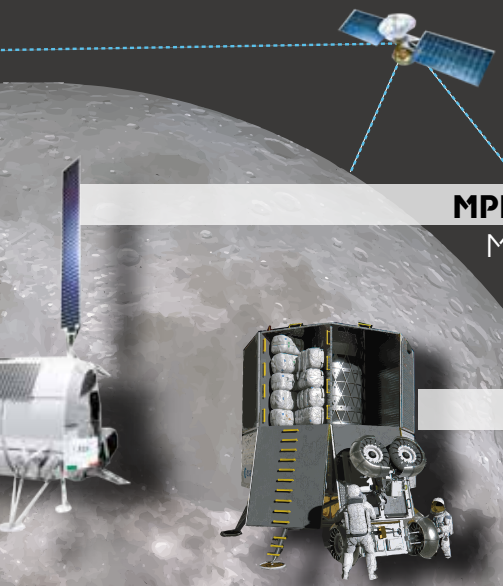
**LUNAR GATEWAY**
**Lunar I-HAB** (International Habitation Module).
**Lunar Link** (Lunar Communication System).
**Lunar View** - the Gateway's window onto the Moon.
**ERM** (European Refueling Module)
ESA



Agenzia Spaziale Italiana

Infogra

# of the Moon, Mars and beyond



**MPH**
Multi Purpose
Habitation Module
ASI - NASA



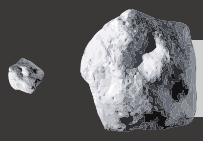
**Argonaut/LDE**
(Luna Descent Element)
European lunar surface lander - ESA



**LUGRE**
Lunar GNSS Receiver
Experiment, on board
of a commercial lander
ASI - NASA

**ORACLE - ISRU**
Oxygen extraction
demonstrator – ASI

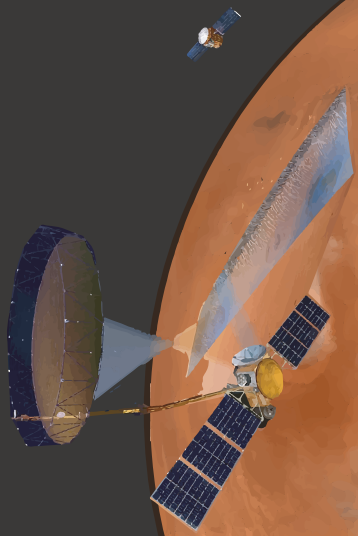
**PROSPECT**
Drill and minilab
to access and evaluate
resources in the
lunar subsurface
ESA



**NEAR EARTH OBJECT ROBOTIC MISSIONS**
Resources prospecting
and extraction,
Planetary Defense
ASI

**Rosalind Franklin Mission**
Searching for traces
of life in the past
of the red planet
ESA - NASA





**Mars Ice Mapper**
Map Accessible Ice on
Mars and provide full
communication asset
to support Moon - to
- Mars evolution
ASI, CSA, JAXA e NASA

**Mars Sample Return**
**ERO** Earth Return Orbiter
**Sample Transfer Arm - Sample Retrieval Lander**.
Relay missions for the recovery of Martian samples ESA - NASA

phic by Manuela Proietti and Raffaele Mugnuolo. Design by Paola Gaviraghi

# THE DIRECTORATE GENERAL

Over the past year, ASI's General Directorate initiated a broad process of renewal and enhancement of its activities, aimed at making the organization more efficient, modern, and aligned with new administrative and operational challenges. This path includes several strategic areas of intervention, covering internal organizational structure, management processes, personnel training, and resource administration, with the goal of improving effectiveness, transparency, and the value of human capital.

One of the main actions was the definition of a new macro-organization structure for the Agency. The aim was to streamline existing departments and improve overall process efficiency. A detailed analysis of current functions and competencies was conducted, resulting in the elimination of 49 organizational positions (about 30% of the total), simplification of operational flows, and the redefinition of key roles to better align objectives with the resources employed. The result is a leaner, more coordinated structure that can respond more promptly to institutional and operational needs.

At the same time, a comprehensive review of internal administrative processes was launched, culminating in the adoption of a new directive on administrative action. This directive is based on the principles of simplification, accountability, uniformity, and goal orientation, and it serves as a practical guide for staff in managing daily tasks. It has helped foster a shared identity culture among ASI personnel, improve internal procedure timelines, strengthen stakeholder relationships, and promote greater participation from all organizational units in decision-making processes.

Another key initiative was the establishment of the Knowledge Management Centre, a true hub for managing and disseminating best practices, experiences, and especially the accumulated knowledge of ASI personnel. Its mission is to preserve the Agency's informational heritage and make it accessible - especially to new hires - through structured training programs. This initiative supports the development of a shared organizational culture capable of driving innovation and enhancing internal expertise.

In line with its commitment to human resources and openness to dialogue, the Directorate General also intensified efforts in labor relations, increasing negotiation sessions to update supplementary agreements for both employees and executives. Ongoing, constructive dialogue with labor representatives has led to measures more attuned to workers' needs, rewarding skills, encouraging merit, and improving overall organizational well-being.

Lastly, one of the most significant developments was ASI's direct management of national and international centers. This change marks an important step toward greater rationalization and integration of activities at all levels. It allows the Directorate General to more effectively operate, better plan resource allocation, and ensure a stronger, more coordinated presence in strategic contexts both in Italy and abroad.

These new initiatives represent a substantial transformation, positioning ASI as a more capable, accessible, and innovative agency—ready to meet future challenges with competence, transparency, and strategic vision.

## ASI DIRECTORATES

**Human Resources**

**Administration and Finance**

**Security, IT Systems, and Digitalisation**

**International Affairs**

**Institutional Communication and External Relations**

**Engineering and Technologies**

**Science and Innovation**



The Italian Space Agency's Rome headquarters opens its doors to the public during the annual Open House Roma event, dedicated to the buildings of the Capital that feature notable architectural characteristics.

# THE ITALIAN SPACE AGENCY CENTRES

## ASI SPACE CENTRE IN MATERA

The Matera Space Centre, dedicated to Professor Giuseppe "Bepi" Colombo, was established in 1983 in Matera, thanks to the joint efforts of the National Space Plan of the National Research Council (replaced by ASI in 1988), in coordination with NASA, and the Basilicata Region. The Bepi Colombo Matera Space Centre is the main ASI facility for space operations and an important site for space research.

## LUIGI BROGLIO SPACE CENTRE MALINDI

The Luigi Broglio Space Centre (BSC) in Malindi (Kenya) is a joint Italy/Kenya space cooperation program. The goal is to achieve a primary position in the fields of Earth Observation, Space Traffic Management, Planetary Protection, Optical and Quantum Technologies for Space Applications, and Downstream, with particular focus on integrated applications.

## SARDINIA DEEP SPACE ANTENNA

The Sardinia Deep Space Antenna (SDSA) operates within NASA's Deep Space Network, with the aim of providing navigation and communication services for Deep Space missions (over 2 million km from Earth) and Near Earth missions (within 2 million km, with particular specialization in lunar missions) for robotic and human exploration, as well as supporting scientific experiments. It will also provide communication and navigation services for European interplanetary probes, in connection with the ESA's ESTRACK network.

ASI Space Centre in Matera



Sardinia Deep Space Antenna
SDSA






Luigi Broglio Space Centre
Malindi



Sardinia Deep Space Antenna
San Basilio (Cagliari)

# SCIENCE AND INNOVATION

The advancement of scientific research is based on knowledge from multiple disciplines, and space research, inherently cross-disciplinary in nature, implements this principle in an exemplary manner, thanks also to the support of strong national and international collaborations.

The challenges we face today are highly ambitious and require the integration of scientific and technological expertise applicable across numerous research areas: from astrophysics to cosmology, from solar system studies to biology, encompassing exploration, engineering, and fundamental physics. The interconnection of disciplines and research methodologies enhances the value of Italy's scientific and industrial community at an international level.

ASI's Directorate of Science and Innovation actively promotes interdisciplinarity and fosters dialogue among the scientific community, academia, and the industrial sector. This is achieved through European funding instruments and investments in culture via significant higher education initiatives.

The country's growth must necessarily be based on the enhancement of new generations, promoting the allocation of scholarships, doctoral programs, and degree awards in STEM disciplines. This ensures support to undergraduates and young researchers, guarantees continuity of expertise in the space sector, contributes to increase Italy's competitiveness and generates public value.



The Directorate of Science and Innovation collaborates closely with relevant communities, both nationally and internationally, and develops thematic roadmaps with two main objectives:

1. identifying key areas of interest by analyzing their current state and future development potential;
2. highlighting any scientific or technological gaps to define appropriate strategic actions.

In this context, the Directorate organizes workshops aimed at understanding, mapping, and engaging national communities and centers of excellence in priority areas. In 2024, meetings were held on topics such as space weather, heliophysics, astrobiology, space food, applied life sciences, and artificial intelligence.

For 2025, new sessions are planned focusing on thematic roadmaps in astrophysics and solar system studies.



## Walter Villadei aboard the ISS

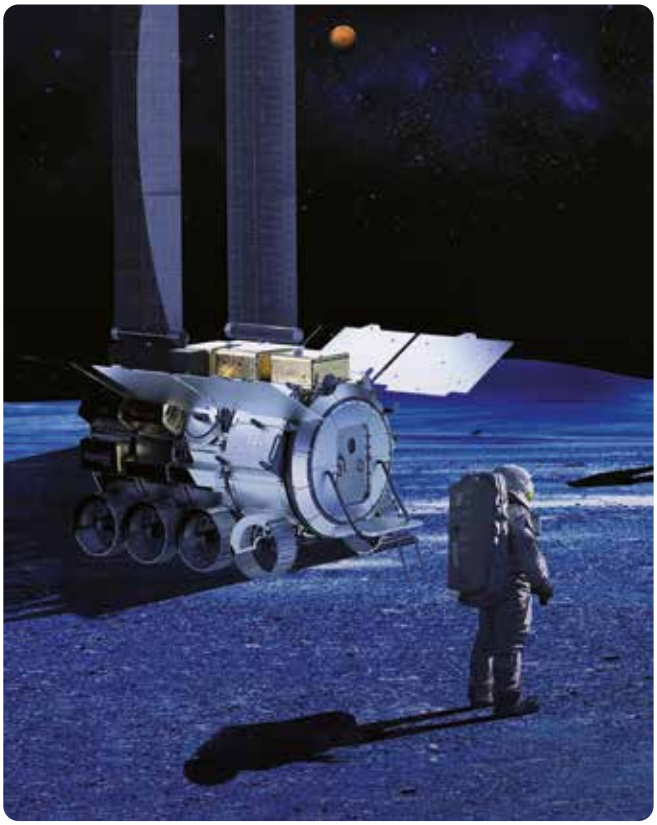
During his three-week stay in orbit for the AX-3 mission—a collaboration between the Italian Air Force and the Italian Space Agency—Colonel Villadei conducted thirteen experiments, of which six coordinated by ASI in the fields of biology and biotechnology (three), human physiology (two), and technological development (one). These activities were made possible thanks to ASI's partnerships with universities, research centers, and industries, amplifying Italy's significant expertise in operational, medical, and technological aspects of space exploration.



## MPH (MULTI PURPOSE HABITATION MODULE)

Thanks to the expertise acquired in designing and developing habitable modules operating in Low Earth Orbit (ISS), Italy has positioned itself as a leading country in the development of habitation modules for lunar exploration. In October 2020, Italy signed the Artemis Accords, through which the Italian Government committed to a shared and sustainable vision alongside other nations: "Artemis Accords, Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes."

Within this framework, ASI and NASA initiated a joint study for the preliminary design phase of the MPH (Multi-Purpose Habitation) module, which is intended to become the first habitation element of the Artemis architecture.



In 2024, the preliminary study phase concluded with the Mission Concept Review (MCR) event, which allowed NASA experts to evaluate the Italian design for the MPH module as mature enough, thereby launching the process for acquiring the MPH module within the Artemis architecture. The module, in addition to providing habitability for a crew of three astronauts, must also be capable of mobility in order to be positioned on the most suitable site in the lunar polar region.

## EMM (Earth, Moon, Mars)

The Earth, Moon, Mars (EMM) project, a joint initiative by INAF, CNR, and ASI, funded by the European Union and approved by the Ministry of University and Research as part of the National Recovery and Resilience Plan (PNRR), aims at developing the necessary physical and knowledge infrastructure to enable the observation and study of Earth and the Universe from a unique vantage point: the Moon.

For ASI, EMM involves two main activity streams: the first is aimed at enhancing the space capabilities of the Sardinia Deep Space Antenna (SDSA); the second focuses on the preliminary study of an infrastructure to be built on the lunar surface to host and operate scientific instruments developed by INAF and CNR for observing the Universe and Earth.

In 2024, both industrial activities under ASI's responsibility began: the Phase A study of the Lunar Adaptive Outpost for Remote Italian Experiments, which will house and power the scientific instruments; and Phase 1 of the contract to enhance the capabilities of the SDSA, which will provide Italy with access to deep space communications.

# ENGINEERING AND TECHNOLOGIES

The Engineering and Technologies Directorate leads and coordinates ASI's programs in Earth Observation, Telecommunications and Navigation, Space Access, and In-Orbit Services.

It also oversees cross-cutting activities, such as technological development and space design, special programs (PNRR, Complementary Fund), and initiatives of strategic interest for the Agency.

A key aspect of this domain is the coordination of the scientific, industrial, and user communities, supporting their strategic and competitive positioning at both national and international levels. It also represents ASI, under the guidance of the Presidency, in national and international boards, implementing their strategic directives.

To this end, the Directorate defines, develops, and manages national and international missions involving Earth Observation, radiofrequency, optical and quantum communications, satellite navigation, space transportation programs, and Space Traffic Management including In-Orbit Servicing. It also develops and implements the Italian Space Agency's technology roadmaps, ensuring technical, programmatic, and financial control over special programs, and drafting internal and external reporting.

Key highlights include the launch of the Iperdrone.0 mission on August 16, 2024. Its goal is to design and develop a vehicle capable of performing orbital operations in preparation for in-orbit servicing, including re-entry on Earth. Another important milestone is microHETSat, the first fully electric satellite made in Italy, funded by ASI as part of ESA's General Support Technology Programme (GSTP).

In the field of downstream and integrated applications, scientific activities have been defined for the LUCE mission (in partnership with the National Institute for Nuclear Physics, INFN) and the LIMADOU EXPO mission (in collaboration with the National Research Council, CNR).

Finally, as part of the Next Generation EU (NGEU) initiative by the European Commission and the PNRR, the Engineering and Technologies Directorate manages the SATCOM, In-Orbit Servicing, FLY EYE, Matera Laboratories, IHS-Hardware and Software Infrastructure programs, the construction of the Space Debris Laser Ranging (SDLR) observatory station, and the Space Factory, a network of Italian factories for the production of next-generation satellites.

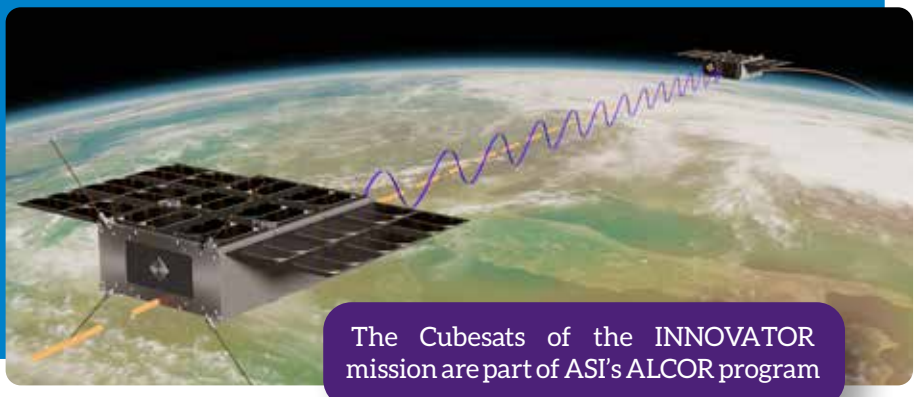
## EARTH OBSERVATION

In 2024, several key engineering milestones and advancements were achieved in the development of various missions:

## THE ALCOR PROGRAM

ALCOR stems from the idea of creating an ongoing program dedicated to nanosatellites, with the aim of positioning Italy's space community as a global leader and technological incubator.

The twenty ALCOR missions cover all major application domains of the space sector-such as Earth observation, telecommunications, in-orbit servicing, space sustainability, astrophysics, and the exploration of the Universe. They also incorporate all the emerging trends of recent years, including the use of constellations with inter-satellite cooperation capabilities, the deployment of miniaturized propulsion systems, enhanced data transmission capacity to Earth, the use of artificial intelligence, deorbiting systems, new high-tech solutions for deployable antennas, and an increasing use of nanosatellites for space exploration.



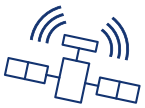
The Cubesats of the INNOVATOR mission are part of ASI's ALCOR program

- the second-generation FM#3 and FM#4 satellites for the COSMO-SkyMed constellation;
- the satellites of the PLATINO missions, particularly Platino-1, MAYA (in collaboration with NASA), Platino-3, and Platino-4;
- NASA's Surface Biology and Geology (SBG) mission, aimed at understanding biological and geological processes occurring on Earth;
- the application-oriented segment of the ALCOR program (see box above).

Under development are the LUCE mission (formerly CALIGOLA), in collaboration with NASA; the second-generation PRISMA hyperspectral mission; and the V2HR mission for ultra-high-resolution imaging. Progress has been also made on the BISS mission within the ALCOR program and on low-frequency SAR (Synthetic Aperture Radar) missions in P-band and L-band.

Lastly, the IRIDE program offers eight macro-services focused on marine and coastal monitoring, air quality, land motion monitoring, land cover, hydro-meteorological and climate data, water resource monitoring, emergency management, and security. One of the program's goals is to foster the development of commercial applications by startups, SMEs, and industry stakeholders. IRIDE is funded through Italy's PNRR.

## TELECOMMUNICATIONS AND NAVIGATION



In 2024, the development of the LuGRE mission was completed, and the mission was successfully launched at the beginning of 2025. Additionally, the Lunar Beacon Call for Proposals was finalized, along with Phase 1 of the ItalGovSatCom program, and the development of high-security PRS (Public Regulated Service) terminals for the Galileo satellite navigation system.

For this system, Leonardo, on behalf of ASI, developed in early 2025 the first and only receiver accredited for use throughout Europe, at its facilities in Genoa.

## SPACE TRANSPORTATION

In 2024, the approval process for the Low Earth Orbit In-Orbit Servicing (IOS) demonstration mission was completed. The mission is scheduled for launch in 2026. Additionally, development was finalized for the MPGE engine-a green propulsion system designed for in-orbit servicing and logistics.

With the return to flight of Vega C, launched by ESA on December 5 from the European Spaceport in French Guiana, and the successful deployment of Sentinel-1C (a satellite of the European Earth Observation program Copernicus), Europe and Italy both returned to Earth orbit, marking a double triumph for space.

### SPACE FACTORY 4.0

The Space Factory 4.0 program, part of Italy's PNRR, is funded by the European Union and managed by the Italian Space Agency. It envisages the creation of a nationwide network of factories, integrated with the production chain, dedicated to the manufacturing of small satellites.

This integrated system of innovative technologies will enable the country to tackle the challenges of the Space Economy and establish itself as an international leader in the satellite constellation sector.

The deployment of the Space Factory infrastructures began with the inauguration of the Argotec SpacePark on October 18, 2024, in Turin. In 2025, this was followed by the opening of the CESI Space division in Milan, dedicated to the production of innovative solar cells, and, on March 31, the opening of the Sitael facility in Mola di Bari. In the coming months, further inaugurations are scheduled for the Thales Alenia Space plant in Rome and the CIRA acoustic testing facility for satellites.

The official logo of the project, designed by ASI, visually represents this ambitious initiative born from the synergy between public and private entities.



# INTERNATIONAL AFFAIRS

Italy, through ASI, plays a key and highly recognized role in the international space community, both within the EU and ESA frameworks and on the broader global scene. It has long established excellent bilateral and multilateral relations through active cooperation with national space agencies across different continents, involving developed, emerging, and developing countries.

The management of ASI's international affairs, led by the IV Directorate for International Affairs, plays a crucial role in coordinating international relations and cooperation, in agreement with the Ministry of Foreign Affairs and International Cooperation (MAECI) and other relevant national Authorities. It represents ASI, and when required, Italy, at both national and international levels, within its mandate.

The Directorate maintains regular relations with counterpart space agencies and implements initiatives to support space diplomacy. It fosters ties with Italian diplomatic missions abroad and foreign missions in Italy through MAECI, coordinates and prepares Italy's participation in ESA activities, and supports Italy's presence within various EU space-related fora.




Third Edition of the India Space Congress – June 26–28, New Delhi

It defines the content of international cooperation agreements together with other ASI Directorates, manages negotiations, and drafts the annual report on ASI's international relations and cooperation for submission to COMINT. It promotes studies and research on international space policy and collaborates with research centers in Europe and beyond.

The Directorate also promotes the internationalization of national companies and coordinates, together with other national Authorities, the participation of the Italian Space System in international missions.



Italy-Africa Space Conference – July 16, 2024

## IAC 2024 MILAN




Co-organized by AIDAA, ASI, and Leonardo with IAF: the largest global space event ever held.

11,200 delegates (35% under 35), over 7,000 abstracts from 2,300 organizations across 120 countries (+30% vs Paris 2022).

197 technical sessions, 2,324 oral presentations, 1,800 interactive presentations, 46,000 views.

Over 500 exhibitors from 46 countries, 7,820 booths, 18 national/regional pavilions, 36 sponsors.

Extensive participation of the national industrial community (large companies, SMEs, start-ups).

ASI coordinated key events: Global Space Summit, Artemis Accords signatories' meeting, 31st UN/IAF Workshop "Space Sustainability", "Moon to Mars" plenary (Valente, Melroy, Cingolani, Carrera).

The IAF General Assembly elected Gabriella Arrigo (ASI) as President for 2026–2028.

### MULTILATERAL PARTICIPATION

G20 Space Leaders (Foz de Iguacu), COP29 Space Leaders Summit (Baku), Italy-Africa Space Conference (Rome), Artemis Accord Meetings (Toronto), UN-COPUOS and subcommittees (Vienna). COPUOS appointed Prof. Teodoro Valente (President of ASI) as Chair for the 2026–2027 biennium.

### 60 EU/EUROPEAN MEETINGS

Monitoring of the EU Space Programme; participation in Committees, Expert Groups, EU Competitiveness Council, EUSPA Administrative Board, Space Council Brussels.

### OVER 120 EXTRA-EU BILATERAL MEETINGS

### 70 ESA TECHNICAL MEETINGS

Monitoring subscribed programmes, national investments, participation in ESA Council and subordinate committees.

in 2024

### 4 COMINT THEMES

Status of CM2022 returns and preparation for CM2025 (Bremen);

Artemis Accords;

ASI activities for the Mattei Plan for Africa;

2024 international relations and cooperation report.

### 6 INTERNATIONAL AGREEMENTS

Spain, United States, Latvia, Egypt, Japan, ESA

### 8 NATIONAL INDUSTRIAL MISSIONS

Norway, United States, Chile, Ireland, Estonia, Belgium, IAC 2024 Milan, ASEAN. Industrial delegations also welcomed from LATAM, Africa, and ASEAN countries.

# HUMAN RESOURCES

Human resources are undeniably the true asset of ASI, and investing in them is part of a project focused on the well-being, motivation, and participation of individuals, sharing initiatives and information, fostering autonomy, creativity, and knowledge exchange.

To achieve this goal, the activity of the Human Resources Directorate is crucial, as it serves as a point of reference and coordination for every member of the Agency, thanks to its dual role of administration and personnel management on one hand, and reporting to the Directorate General on the other.

The enhancement of resources is achieved through the application of motivational levers based on merit and the incentive system.

Through continuous training interventions, listening to needs, and the assignment of tasks and responsibilities, challenging professional development opportunities are provided, promoting career growth.

The choice to place people at the center of the organization also responds to the need to address the new challenges posed by ASI governance in the fields of the National Recovery and Resilience Plan (PNRR), space economy, and digital transformation, where human resources with their high-level professional skills play a key role.

ASI has set the goal of integrating its workforce to nearly 600 units by the end of 2026. This responds to the need to achieve an adequate scale to tackle the significant growth that the Agency is experiencing in terms of number and scope of activities and the resulting increase in tasks and responsibilities needed to fulfil its institutional mandate.

In 2024, an additional 39 recruitments were made, increasing the number of full-time employees to 451.

The ratio between human resources cost and ASI total budget is limited to 7%.



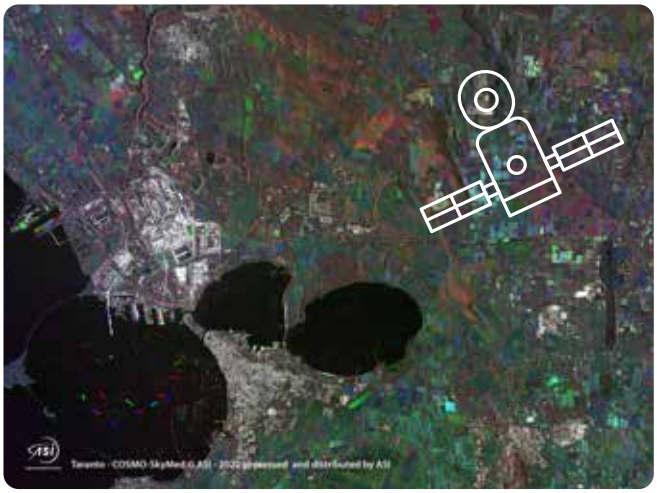
# SECURITY & IT

The recent governmental directives on space and aerospace matters have outlined the path to further enhance this highly strategic sector for the country.

Among these, the culture of defense and security is identified as a crucial factor for the development of the entire sector, with the consequent need to adopt protective measures for both the entire lifecycle of space programs and the know-how developed by the national industry, with the aim of consolidating the Italian competitiveness.

In this regard, the Agency has adopted the "security by design" approach for new space programs as well as for the technological services necessary for its own organization, initiating the modernization of its data centers (multimedia servers, redundant and geographically distributed backups, strategic software, and digital storage devices), also utilizing cloud technology, with the goal of increasing reliability and operational continuity.

Special attention has been given to cybersecurity aspects, with the design and implementation of the ASI Cyber Security Operation Center (C-SOC), dedicated to the prevention, counteraction, and response to cyber threats to its space technological infrastructures. Additionally, the development of the



national Research & Development laboratory in the field of space cybersecurity has been funded.

Infrastructure interventions are still ongoing to enhance the physical security of its facilities located throughout the country (Rome, Matera, Cagliari) and in Malindi.

The Agency has contributed, within its area of responsibility, to national and governmental boards, supranational bodies (EU, ESA, COPUOS), and numerous bilateral collaborations in the space sector.

At the same time, in line with the aforementioned guidelines, meetings continued to raise awareness on security matters for both employees and companies in the relevant industrial supply chain, particularly SMEs and start-ups.



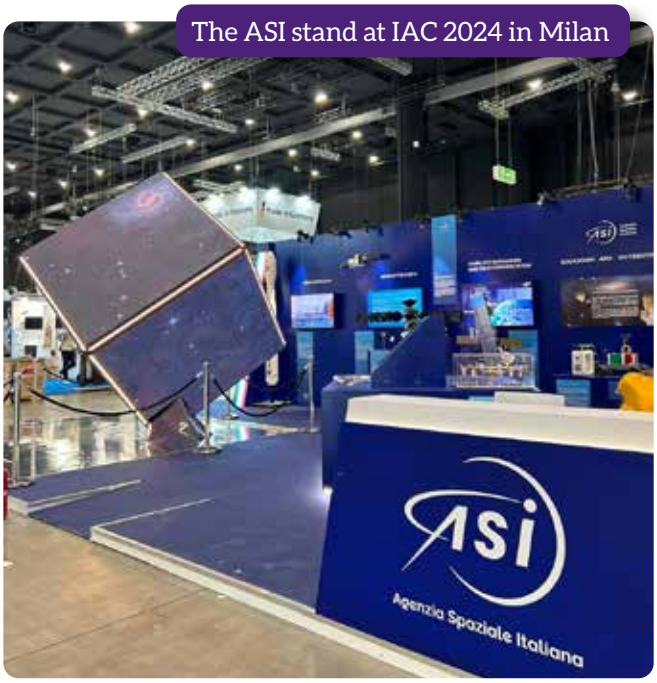
# INSTITUTIONAL COMMUNICATION AND EXTERNAL RELATIONS

## INSTITUTIONAL COMMUNICATION

In 2024, the communication strategy of the Italian Space Agency was consolidated, focusing particularly on increasing its visibility and awareness among key audiences – national and international stakeholders, policymakers, the space and non-space businesses, the research and academic communities, students, the general public, and the media – and on presenting ASI as a carrier of the international value of Italian space excellence. The main event the Agency participated in as a co-organizer, managing the institutional initiatives and communication, was the 75th International Astronautical Congress (IAC), held in Milan from October 14 to 18, 2024: the most important global event in the space sector, organized by the International Astronautical Federation (IAF) and hosted in Italy at Mi.Co. by the Italian Association of Aeronautics and Astronautics (AIDAA), with the significant support and contribution of the Italian Space Agency and Leonardo.




Teodoro Valente, ASI President, on stage at Space Symposium 2024 with Clay Mowry, President of IAF.




The ASI stand at IAC 2024 in Milan

## ASI STAND AND INTERNATIONAL EVENTS

The Italian Space Agency attended the following international events:

- European Space Conference (January, Brussels, Belgium);
- 39th Space Symposium (April, Colorado Springs, USA);
- Veneto Space Meetings (May, Venice, Italy);
- Kenya Space Expo and Conference (June, Nairobi, Kenya);
- Farnborough International Airshow (July, London, UK);
- Egypt International Air Show (September, El Alamein, Egypt).

## NATIONAL SPACE DAY

The 60th anniversary of the launch of Italy's first satellite, San Marco, was celebrated on December 16, 2024. On the occasion of the National Space Day, ASI inaugurated the exhibition "Avanguardia San Marco. A photographic retrospective 60 years after the launch of Italy's first satellite."

## EDUCATION AND OUTREACH

Public outreach initiatives were also held at the ASI headquarters in Rome, including:

- European Researchers' Night;
- Open House Rome;

- "Space Cinema", a cinematographic review of 8 space-themed films;
- guided tours for individuals and school groups at the Italian Space Agency centers.

Numerous education and outreach activities were organized, including:

- initiatives dedicated to schools and general public during IAC 2024 Milan, and additional initiatives for teachers, carried out in collaboration with ESERO Italy;
- educational and outreach activities related to the Ax-3 mission with Walter Villadei;
- outreach activities in schools through "Uno spazio di classe" project.



The "Mission Axiom 3. Italian Space Science" event, January 30, at "Luigi Broglio" Auditorium in ASI.

## MEDIA RELATIONS AND COMMUNICATION

The Media Relations activities were aimed at strengthening the visibility of ASI and its programs among traditional and digital media.

ASI's communication activities, divided into Digital Communication and Publishing and Graphics sectors, allowed the Agency to reach a wider audience, thanks to the production of videos, the "Spazio 2050" magazine publication, reports, podcasts, and editorial products, created in-house or in collaboration with specialized publishers.

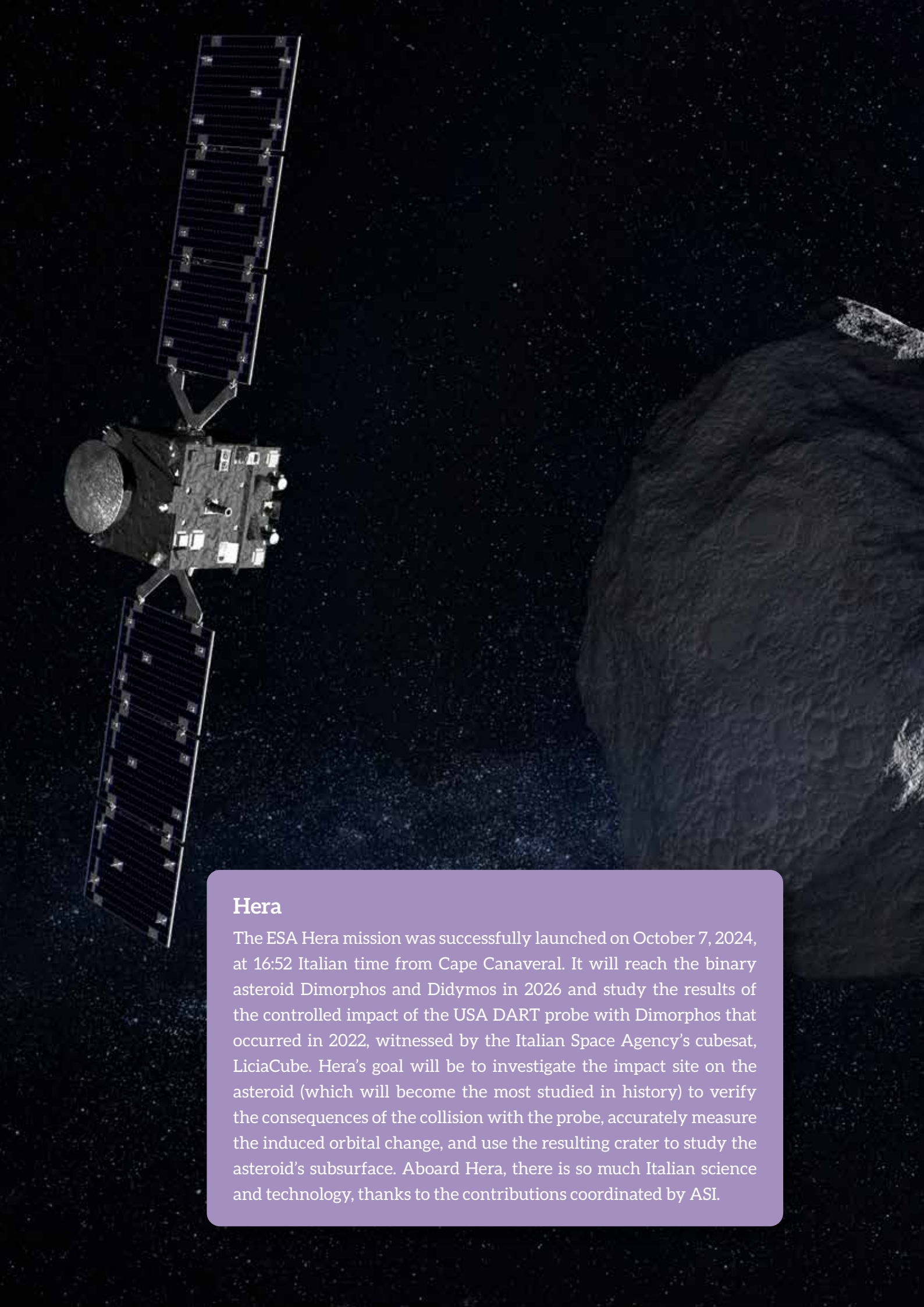



Space news and contents were disseminated through continuous updates on the official website and the daily online newspaper *Global Science*.

ASI's social media platforms increased with the launch of the WhatsApp channel, which had reached 54,605 subscribers by the end of 2024.




**SCAN THE QR CODE TO DISCOVER THE "ASI GALAXY"**



## Hera

The ESA Hera mission was successfully launched on October 7, 2024, at 16:52 Italian time from Cape Canaveral. It will reach the binary asteroid Dimorphos and Didymos in 2026 and study the results of the controlled impact of the USA DART probe with Dimorphos that occurred in 2022, witnessed by the Italian Space Agency's cubesat, LiciaCube. Hera's goal will be to investigate the impact site on the asteroid (which will become the most studied in history) to verify the consequences of the collision with the probe, accurately measure the induced orbital change, and use the resulting crater to study the asteroid's subsurface. Aboard Hera, there is so much Italian science and technology, thanks to the contributions coordinated by ASI.



## JUICE'S SALUTE TO THE MOON AND EARTH IN AUGUST 2024

In 2024, the JUICE mission (Jupiter Icy Moons Explorer) by the European Space Agency (ESA) carried out an important manoeuvre, using both the Moon (on August 19) and Earth (on August 20) to gain gravitational assistance on its long journey to Jupiter, where it will study its fascinating icy moons to uncover new secrets.

This complex manoeuvre (flyby) required immense precision, placing JUICE on a trajectory that will bring it to encounter Venus in August 2025 for a new flyby towards Jupiter.

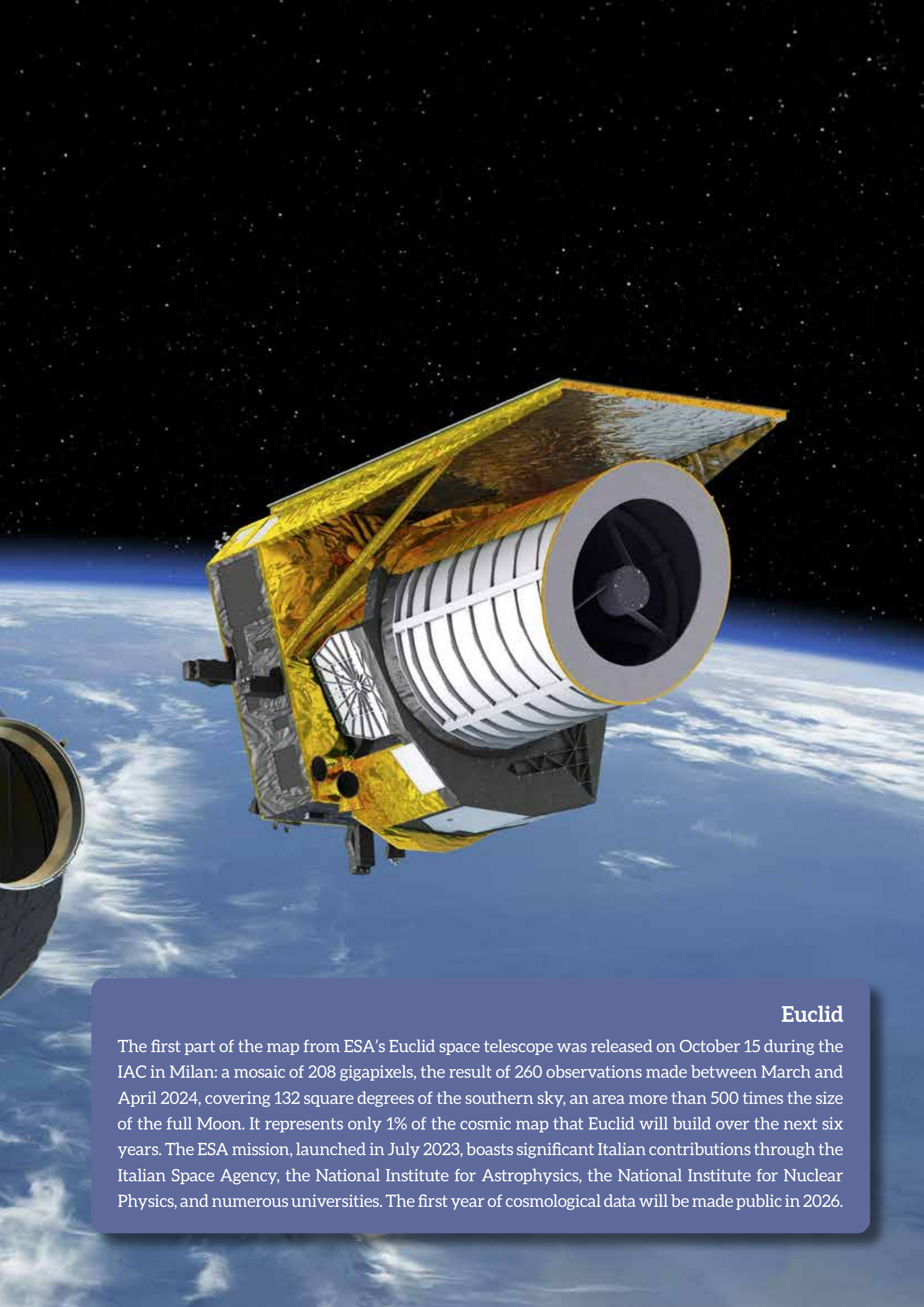
The Italian Space Agency, together with the national scientific community, strongly contributes to the mission by having developed three of the ten instruments aboard: the RIME radar, the JANUS camera, and the 3GM Radio Science instrument, along with the MAJIS spectrometer, developed in collaboration with the French Space Agency CNES.

During the two flybys, the instruments demonstrated their proper functioning, even capturing spectacular images.



**Messier 78**

This image of the Messier 78 nebula is one of the first sent by Euclid, published in May 2024.



## Euclid

The first part of the map from ESA's Euclid space telescope was released on October 15 during the IAC in Milan: a mosaic of 208 gigapixels, the result of 260 observations made between March and April 2024, covering 132 square degrees of the southern sky, an area more than 500 times the size of the full Moon. It represents only 1% of the cosmic map that Euclid will build over the next six years. The ESA mission, launched in July 2023, boasts significant Italian contributions through the Italian Space Agency, the National Institute for Astrophysics, the National Institute for Nuclear Physics, and numerous universities. The first year of cosmological data will be made public in 2026.



## Vega C

Vega C returns to space. The launcher, designed and built in Italy by Avio, successfully put Sentinel-1C into orbit on December 5, 2024, at 22:20. The *made in Italy* Vega-C launcher, capable of carrying payloads of up to 2,300 kg into orbit, returned to success two years after the failure in December 2022.



## Sentinel-1C

With the launch on December 5, 2024, Vega C's VV25 mission placed Sentinel-1C into orbit, the third satellite in the Sentinel-1 constellation for Earth Observation, part of the European Copernicus program.



## Galileo

With the launch on April 28, 2024, the Galileo satellite navigation constellation reached 30 satellites. Galileo is the European Union's global satellite navigation system (GNSS) designed to send radio signals for positioning, navigation, and time measurement. The Galileo system has enormous potential in a variety of sectors, from energy to transportation, from agriculture to finance. Italy has played a leading role since the beginning of the Galileo program, thanks to the Italian Space Agency, which coordinated the involvement of the national industry, particularly the Leonardo group, with Telespazio and Thales Alenia Space.




## Iperdrone.0

Launched on August 15, 2024, the Iperdrone.0 mission, a project conceived by the Italian Space Agency and developed through a consortium of companies including CIRA, Tyvak International, and Kayser Italia, represents the first mission of the Iperdrone program, whose goal is to develop a vehicle capable of performing complex operations in orbit (in-orbit servicing) and safely returning to Earth. Among the many innovative technologies on board are the Perseus cold gas propulsion system and safety systems.




Agenzia Spaziale Italiana

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