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Note verbale dated 11 November 2024 from the Permanent Mission of Italy to the United Nations (Vienna) addressed to the Secretary-General

The Permanent Mission of Italy to the United Nations (Vienna), in accordance with article IV of the Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex), has the honour to transmit information concerning the Italian satellites TuPOD, Eaglet 1, ION-mk01 SCV-001, ION-SCV 002, UNISAT 7, STECCO, FEES, TYVAK-182A, ION SCV-003, LEDSAT, LICIACube, ION SCV-004, COSMO-SkyMed FM2, ION SCV-005, ION SCV-006, LARES 2, GREENCUBE, ASTROBIO, ARGOMOON, ION SCV-007, ION SCV-008, ION SCV-009, ION SCV-0010, ION SCV-011, ION SCV-013, ION SCV-0015 (see annex I).[1]

Furthermore, the Permanent Mission wishes to communicate the following:

- With reference to the satellite GREENCUBE, there appears to be a discrepancy regarding the associated designator on the Secretariat's and the Committee on Space Research's (COSPAR) platforms. Specifically, whereas the Online Index of Objects Launched into Outer Space associates the identifier 2022-080B with the French satellite MTCube-2, COSPAR associates the designator 2022-080B with the GREENCUBE satellite and the identifier 2022-080G with the satellite MTCube-2 (https://cosparhq.cnes.fr/launchlist/);
- The satellite AGILE (COSPAR ID 2007-013A), launched on 23 April 2007 from Satish Dhawan Space Centre, Sriharikota, India, re-entered the atmosphere on 13 February 2024, in the area of the Atlantic Ocean near the northern coast of South America (see annex II);
- The de-orbiting procedure of satellite COSMO-SkyMed 3 (CSK-3 or FM3)-First Generation (COSPAR ID 2008-054A), launched from Vandenberg Air Force Base, California, United States of America at 0228 hours UTC on 25 October 2008, was initiated on 1 May 2022 at 1821 hours UTC and ended on 8 October 2022. Assuming a minimum intensity of the next solar cycle, its re-entry should be completed within 22 years from October 2022.

[1] The data on the space objects referenced in the annexes were entered into the Register of Objects Launched into Outer Space on 2 December 2024.

[2] The Secretariat notes that the international designator for space object MT-CUBE-2 was provided by France (the space object's State of registry) in registration document ST/SG/SER.E/1113.

Annex I

Registration data on space objects launched by Italy*

TuPOD

Committee on Space Research international designator	1998-067KY
Name of the satellite	TuPOD
Launching States	Italy and Japan
Satellite owner	GAUSS s.r.l.
Date and place of launch	9 December 2016; launched from the Yoshinobu Launch Complex, Tanegashima Space Center, Japan, to the International Space Station (ISS) 16 January 2017; released into orbit through the Kibo Experimental Module
Launch vehicle	HTV-6 H-2B-304 rocket
Orbital parameters	
Nodal period	92.44 minutes
Inclination	51.64 degrees
Apogee height	407 kilometres
Perigee height	396 kilometres
Current status	Non-operational. TuPOD re-entered the Earth's atmosphere on 8 September 2017
General functions of the space object	Technology. In-orbit demonstration and development of two TubeSats TuPOD is an innovative system, being at the same time a satellite (a 3U CubeSat) and a deployer platform carrying inside two even smaller TubeSats satellites that were produced in 2016 and launched by the International Space Station (ISS). The TuPOD is a significant undertaking for international space dissemination and represents an innovation since its structure has been completely 3D printed Detailed info available at www.gaussteam.com/satellites/gauss-latest-satellites/tupod/

Eaglet 1

Committee on Space Research international designator	2018-099AJ
Name of the satellite	Eaglet 1
Launching States	Italy and United States of America
Satellite owner	OHB Italia s.p.a.
Date and place of launch	3 December 2018; Vandenberg, California, United States
Launch vehicle	Falcon 9

* The registration data are reproduced in the form in which they were received.

Orbital parameters	
Nodal period	97.168 minutes
Inclination	97.69 degrees
Apogee height	575 kilometres
Perigee height	575 kilometres
Current status	Non-operational
General functions of the space object	1. Earth observation; and 2. Technology EAGLET 1 is a 3U CubeSat satellite which was placed in sun-synchronous orbit at 575 km altitude. It embarks two payloads: a high-resolution optical payload which will acquire panchromatic images; and a payload able to receive and relay to the ground Automatic Identification System (AIS) signals (ship position, track, destination and other data) transmitted by vessels in the area covered by the satellite Detailed information is available at www.ohb-italia.it/nano-sat-eaglet-1-successfully-launched/

ION-mk01 SCV-001 Lucas

Committee on Space Research international designator	2020-061C
Name of the satellite	ION-mk01 SCV-001 Lucas
Launching States	Italy and France
Satellite owner	D-Orbit s.p.a.
Date and place of launch	3 September 2020; Europe’s Spaceport in Kourou, Guiana Space Centre, French Guiana
Launch vehicle	Vega R/B
Orbital parameters	
Nodal period	94.96 minutes
Inclination	97.40 degrees
Apogee height	522 kilometres
Perigee height	512 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations The In Orbit Now – Satellite Carrier Vehicle (ION-SCV), developed by Italian company D-Orbit, is a free flying CubeSat deployer and technology demonstrator. The first mission, ION-SCV 1, was launched on the first Small Spacecraft Mission Service (SSMS) on a Vega launch vehicle in September 2020, carrying 12 Dove cubesats for Planet Labs. Once the commissioning phase (LEOP: launch and early orbit phase) concluded, ION SCV LUCAS started the commercial phase of the mission with the deployment of satellites into a 500 km sun-synchronous orbit (SSO)

	After completing the deployment, ION SCV LUCAS performed in-orbit demonstration and validation (IOD/IOV) of commercial payloads integrated within the platform, including a green propulsion system developed by a third-party company
	CubeSats released by ION-mk01 on behalf of Planet Labs: Flock 4v-15 (North American Aerospace Defense Command identification (NORAD ID) 46528), Flock 4v-16 (NORAD ID 46527), Flock 4v-17 (NORAD ID 46529), Flock 4v-18 (NORAD ID 46597), Flock 4v-19 (NORAD ID 46609), Flock 4v-20 (NORAD ID 46612), Flock 4v-21 (NORAD ID 46596), Flock 4v-22 (NORAD ID 46735), Flock 4v-23 (NORAD ID 46737), Flock 4v-24 (NORAD ID 46738), Flock 4v-25 (NORAD ID 46812), Flock 4v-26 (NORAD ID 46825)
	Detailed info available at www.dorbit.space/origin-september-2020

ION-SCV 002 Laurentius

Committee on Space Research international designator	2021-006CV
Name of the satellite	ION-SCV 002 Laurentius
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	22 January 2021; Cape Canaveral, Florida, United States
Launch vehicle	Falcon-9 v1.2 (Block 5)
Orbital parameters	
Nodal period	95.11 minutes
Inclination	97.22 degrees
Apogee height	537 kilometres
Perigee height	510 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Technology
	ION-SVC-2 is the first flight of the improved propulsive ION mk02 platform. Positioned in a sun-synchronous orbit at 500 km, ION-SCV 002 deployed the 20 hosted CubeSats one by one along the orbit in precise orbital slots, according to customer's specifications. After the CubeSat deployment phase, which lasted approximately one month, ION CubeSat Carrier started the in-orbit validation phase of payloads directly integrated on the platform. At the end of the mission, the spacecraft was decommissioned in compliance with space debris mitigation guidelines
	ION SCV-006 deployed the following CubeSats on behalf of Planet Labs: Flock 4s-41 (NORAD ID 47698),

Flock 4s-42 (NORAD ID 47612),
Flock 4s-43 (NORAD ID 47687),
Flock 4s-44 (NORAD ID 47686),
Flock 4s-45 (NORAD ID 47688),
Flock 4s-46 (NORAD ID 47684),
Flock 4s-47 (NORAD ID 47685),
Flock 4s-41 (NORAD ID 47617)

ION SCV-006 deployed the following CubeSats on behalf of Swarm Technologies, Inc:
SPACEBEE-64 (NORAD ID 48627),
SPACEBEE-65 (NORAD ID 48626),
SPACEBEE-66 (NORAD ID 48628),
SPACEBEE-67 (NORAD ID 48629),
SPACEBEE-68 (NORAD ID 48630),
SPACEBEE-69 (NORAD ID 48631),
SPACEBEE-70 (NORAD ID 48632),
SPACEBEE-71 (NORAD ID 48633),
SPACEBEE-72 (NORAD ID 48634),
SPACEBEE-73 (NORAD ID 48635),
SPACEBEE-74 (NORAD ID 48636),
SPACEBEE-75 (NORAD ID 48637)

Detailed info available at www.dorbit.space/pulse-january-2021

UNISAT 7

Committee on Space Research international designator	2021-022P
Name of the satellite	UNISAT 7
Launching States	Italy, Kazakhstan and Russian Federation
Satellite owner	GAUSS Srl
Date and place of launch	22 March 2021; Tyuratam (Baikonur Cosmodrome), Kazakhstan
Launch vehicle	Soyuz-2.1a/FREGAT-M
Orbital parameters	
Nodal period	95.42 minutes
Inclination	97.57 degrees
Apogee height	550.8 kilometres
Perigee height	542.2 kilometres
Current status	Operational (in orbit)
General functions of the space object	1. Payload release; and 2. Technology applications UniSat 7 is a technological satellite built by GAUSS Srl with the aim of testing customer equipment in space conditions and deploying Cubesats and PocketQubes in orbit. UniSat-7 features a new octagonal prism satellite platform constructed of reinforced aluminium and carbon honeycomb panels. It is stabilized on three axes. Energy is provided by solar panels mounted on the body. It was employed to test and verify original GAUSS research on astrodynamics, RF, optics, Attitude Determination and Control

	System (ADCS), Attitude and Obit Control System (AOCS), and space debris detection
	CubeSat released by UNISAT 7 on behalf of the Bangkok Christian College, Thailand: BCCSAT 1 (NORAD ID 48041). CubeSat released by UNISAT 7 on behalf of IGP Advanced Projects, Italy: FEES – Flexible Experimental Embedded Satellite (NORAD ID 48082)
	CubeSat released by UNISAT 7 on behalf of the DIYsatellite Group, Argentina: DIY 1 or ArduiQube (NORAD ID 47963)
	CubeSat released by UNISAT 7 on behalf of the BME University, Hungary: SMOG-1 (NORAD ID 47964)
	CubeSat released by UNISAT 7 on behalf of the School of Aerospace Engineering (Sapienza University of Rome), Italy: – Space Traveling Egg-Controlled Catadioptric Object (STECCO) (NORAD ID 47964)
	Detailed info available at www.gaussteam.com/satellites/gauss-latest-satellites/unisat-7/

STECCO

Committee on Space Research international designator	2021-022AG
Name of the satellite	Space Travelling Egg-Controlled Catadioptric Object (STECCO)
Launching States	Italy, Kazakhstan and Russian Federation
Satellite owner	School of Aerospace Engineering (Sapienza University of Rome), Italy
Date and place of launch	22 March 2021; Tyuratam (Baikonur Cosmodrome), Kazakhstan
Launch vehicle	Soyuz-2.1a/FREGAT-M
Orbital parameters	
Nodal period	95.5 minutes
Inclination	97.5 degrees
Apogee height	561 kilometres
Perigee height	538 kilometres
Current status	Operational (in orbit)
General functions of the space object	1. Science; and 2. Technology
	Space Travelling Egg-Controlled Catadioptric Object (STECCO) is a nanosatellite composed by 6 PocketQube units (5x5x5 cm) with a total mass of 0.85 kg and an envelope of 5 cm × 5cm × 30 cm designed and built by the students of the Special Master of Aerospace Engineering offered by School of Aerospace Engineering (Sapienza University of Rome). It was launched in March 2021 and was deployed from the UniSat 7 satellite carrier/deployer
	Detailed info available at https://sites.google.com/uniroma1.it/stecco-sia/home?authuser=0

FEES

Committee on Space Research international designator	2021-022AL
Name of the satellite	Flexible Experimental Embedded Satellite (FEES)
Launching States	Italy, Kazakhstan and Russian Federation
Satellite owner	GP Advanced Projects, Italy
Date and place of launch	22 March 2021; Tyuratam (Baikonur Cosmodrome), Kazakhstan
Launch vehicle	Soyuz-2.1a/FREGAT-M
Orbital parameters	
Nodal period	95.6 minutes
Inclination	97.6 degrees
Apogee height	559 kilometres
Perigee height	535 kilometres
Current status	Inactive
General functions of the space object	Technology The Flexible Experimental Embedded Satellite (FEES) is a self-funded, collaborative project by GP Advanced Projects, Italy aimed at developing a low-cost platform for in-orbit testing and validation of electronics components. The whole satellite, including the electronics boards, is entirely designed and manufactured within the project. The flight was also the validation of this platform and its components. The 0.3 kg satellite is built to a 0.3U CubeSat (10 cm × 10 cm × 3 cm) form factor. The first FEES satellite was deployed from the UniSat 7 satellite carrier/deployer vehicle Detailed info available at: www.gpadvancedprojects.com/fees.html

TYVAK-182A (ELO Alpha)

Committee on Space Research international designator	2018-099AJ
Name of the satellite	TYVAK-182A (ELO Alpha)
Launching States	Italy, France and European Space Agency (ESA)
Satellite owner	Tyvak International Srl
Date and place of launch	29 April 2021; Guiana Space Centre, French Guiana
Launch vehicle	Vega VV18
Orbital parameters	
Nodal period	96.9 minutes
Inclination	97.79 degrees
Apogee height	610 kilometres
Perigee height	610 kilometres
Current status	Operational (in orbit)

General functions of the space object	1. Technology demonstration; and 2. Commercial Tyvak International launched their sixth nanosatellite, Eutelsat ELO Alpha mission, aboard Arianespace's Vega VV18 from the Kourou launch complex in French Guiana. TYVAK-182A is a prototype for Eutelsat's low Earth orbit (LEO) Internet of Things (IoT) constellation. The 6U nanosatellite is used to assess the performance of LEO satellites in providing narrowband connectivity for objects. Eutelsat ELO Alpha mission also backhauls information from objects located in areas that are not served by terrestrial networks and offer redundancy on existing terrestrial network coverage Detailed info available at https://tyvak.eu/missions/elo-alpha/

ION SCV-003 Dauntless David

Committee on Space Research international designator	2021-059AK
Name of the satellite	ION SCV-003 Dauntless David
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	30 June 2021; Air Force Eastern Test Range, Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9 Transporter-1
Orbital parameters	
Nodal period	95.23 minutes
Inclination	97.53 degrees
Apogee height	536 kilometres
Perigee height	524 kilometres
Current status	Operational
General functions of the space object	1. Commercial; 2. Operations; and 3. Technology demonstration The ION-SCV 003 Dauntless David hosted seven CubeSats to be deployed once in orbit. It also hosted a number of non-deployable experiments CubeSats released by ION-SCV 003 on behalf of EnduroSat: SPARTAN (NORAD ID 48964), QMR-KWT (NORAD ID 48943) CubeSats released by ION-SCV 003 on behalf of ISISPACE Group: Napa-2 (NORAD ID 48963), W-Cube (NORAD ID 48965), Ghalib (NORAD ID 48962) CubeSat released by ION-SCV 003 on behalf of Elecnor Deimos: Nept-1 (NORAD ID 48966) Detailed info available at www.dorbit.space/wild-ride-june-2021

LEDSAT

Committee on Space Research international designator	2021-073D
Name of the satellite	LEDSAT
Launching States	Italy and France
Satellite owner	Sapienza University of Rome, Department of Mechanical and Aerospace Engineering, S5Lab Research Group
Date and place of launch	17 August 2021; Europe's Spaceport in Kourou, Guiana Space Centre, French Guiana
Launch vehicle	Vega VV19
Orbital parameters	
Nodal period	95.35 minutes
Inclination	97.51 degrees
Apogee height	554 kilometres
Perigee height	517 kilometres
Current status	Operational
General functions of the space object	1. Science; and 2. Technology LEDSAT is a 1U CubeSat aimed at demonstrating a LED-based payload for optical tracking from the ground. The satellite was conceived of by the Sapienza University of Rome (S5Lab research team) and the University of Michigan in 2016. In 2017, the spacecraft was selected for the second cycle of the ESA Education Office "Fly Your Satellite!" Programme. The satellite's development was supported by ASI (Italian Space Agency) within the framework of the Italian-Kenyan University Nano-Satellites (IKUNS) Programme. LEDSAT is the second IKUNS satellite to be conceived and developed within the IKUNS Programme and the third to be launched (after 1KUNS-PF and WildTrackCube-SIMBA/IKUNS-3 Detailed info available at www.s5lab.space/index.php/ledsat-home/

LICIACube

Committee on Space Research international designator	2021-110C
Name of the satellite	LICIACube
Launching States	Italy and United States
Satellite owner	ASI (Italy)
Date and place of launch	24 November 2021; Vandenberg, California, United States
Launch vehicle	Falcon 9 Block 5
Orbital parameters	Not available. Interplanetary mission with destination the Dimorphos asteroid
Current status	Non-operational

General functions of the space object	1. Science; and 2. Technology The Light Italian Cubesat for Imaging of Asteroids (LICIACube) is a 6U CubeSat provided by the ASI and was carried along with the Double Asteroid Redirect Test (DART) to Didymos. It was released on 11 September 2022 before the DART impact. The goal of the mission was to follow DART and return post-impact pictures of the Dimorphos asteroid. The scientific objectives were: verify the DART impact; obtain images of the ejecta plume; obtain images of the DART impact site; and obtain images of the far (non-impact) hemisphere Detailed info available at www.ssdc.asi.it/liciacube/

ION SCV-004 Elysian Eleonora

Committee on Space Research international designator	2022-002K
Name of the satellite	ION SCV-004 Elysian Eleonora
Launching States	Italy/United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	13 January 2022; Air Force Eastern Test Range, Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9 Transporter-1
Orbital parameters	
Nodal period	95.23 minutes
Inclination	97.50 degrees
Apogee height	536 kilometres
Perigee height	523 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations The ION-SCV 004 (ION – Satellite Carrier Vehicle), developed by Italian company D-Orbit, is a free-flying CubeSat deployer and technology demonstrator. The CubeSat carrier hosted several CubeSats deployed in orbit. It also hosted a number of non-deployable experiments CubeSat deployed by ION SCV-004 on behalf of Lockheed Martin: Dodona (NORAD ID 51084) CubeSat deployed by ION SCV-004 on behalf of the Czech Aerospace Research Centre (VZLU): VZLUSAT-2 (NORAD ID 51085)

	CubeSats deployed by ION SCV-004 on behalf of SatRevolution: LabSat (NORAD ID 51086), Stork-1 (NORAD ID 51087), Stork-2 (NORAD ID 51088), SW1FT (NORAD ID 51089) Detailed info available at www.dorbit.space/dashing-through-the-stars-january-2022

COSMO-SkyMed FM2 or CSG2

Committee on Space Research international designator	2022-008A
Name of the satellite	COSMO-SkyMed FM2 or CSG2
Launching States	Italy and United States
Satellite owner	ASI/Ministry of Defense of Italy
Date and place of launch	31 January 2022; Cape Canaveral, Florida, United States
Launch vehicle	Falcon-9 v1.2 (Block 5)
Orbital parameters	
Nodal period	97.16 minutes
Inclination	97.87 degrees
Apogee height	652 kilometres
Perigee height	633 kilometres
Current status	Operational
General functions of the space object	Earth observation (radar) The COSMO-SkyMed Second Generation (CSG) is planned to be a constellation of four satellites, aimed at enhancing the quality and capability of imaging of the original four-spacecraft COSMO-SkyMed constellation (CSK). The satellites, each with a design life of seven years, were developed by the ASI with funding from the Italian Ministry of Defense and the Italian Ministry of Research for both military and civil use. The first two satellites were launched in 2019 and 2022, with the remaining two due to be launched in 2024 and 2025 Detailed info available at www.asi.it/en/2022/10/the-second-cosmo-skymed-second-generation-csg-satellite-becomes-operational-and-strengthens-even-more-the-established-role-and-contribution-of-italy-in-the-field-of-earth-observation/

ION SCV-005 Almighty Alexius

Committee on Space Research international designator	2022-033G
Name of the satellite	ION SCV-005 Almighty Alexius
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.

Date and place of launch	1 April 2022; Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	94.587 minutes
Inclination	97.40 degrees
Apogee height	504 kilometres
Perigee height	493 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations The fifth mission of the ION Satellite Carrier (ION), Spacelust, has been launched on 1 April 2022 at 1224 hours EDT from the Space Launch Complex 40 (SLC-40) at Cape Canaveral Space Force Station (CCSFS), Florida, aboard SpaceX's Transporter-4 mission. ION SCV-005 Almighty Alexius, a versatile and cost-effective orbital transfer vehicle (OTV), was successfully deployed at 1350 hours EDT into a 500 km SSO CubeSats deployed by ION SCV-005 on behalf of the University of Chile: PlantSat (NORAD ID 52188), SUCHAI-2 (NORAD ID 52191), SUCHAI-3 (NORAD ID 52192) CubeSats deployed by ION SCV-005 on behalf of Kleos: KSF2-A (NORAD ID 52194), KSF2-B (NORAD ID 52193), KSF2-C (NORAD ID 52190), KSF2-D (NORAD ID 52189) Detailed info available at www.dorbit.space/spacelust-april-2022

ION SCV-006 Thrilling Thomas

Committee on Space Research international designator	2022-057AF
Name of the satellite	ION SCV-006 Thrilling Thomas
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	25 May 2022; Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	95.10 minutes
Inclination	97.50 degrees
Apogee height	539 kilometres
Perigee height	525 kilometres
Current status	Operational.

General functions of the space object	1. Commercial; and 2. Technology ION SCV-006 Thrilling Thomas, a versatile and cost-effective orbital transfer vehicle (OTV) designed both to precisely deploy satellites and perform technology demonstrations of third-party payloads in orbit, was successfully deployed 1 hour 9 minutes 22 seconds after lift-off into a 525-kilometre SSO CubeSat deployed by ION SCV-006 on behalf of the Brown University: Sbudnic (NORAD ID 52774) CubeSat deployed by ION SCV-006 on behalf of the Aistech Space: Guardian (NORAD ID 52775) Detailed info available at www.dorbit.space/infinite-blue-may-2022

LARES 2

Committee on Space Research international designator	2022-080A
Name of the satellite	LARES 2
Launching States	Italy, France and ESA
Satellite owner	ASI (Italy)
Date and place of launch	13 July 2022; Europe's Spaceport in Kourou, Guiana Space Centre, French Guiana
Launch vehicle	Vega-C maiden flight
Orbital parameters	
Nodal period	224,06 minutes
Inclination	70.17 degrees
Apogee height	5,896 kilometres
Perigee height	5,882 kilometres
Current status	Operational
General functions of the space object	Science Developed by the Italian Space Agency, LARES2 (acronym for LAser RElativity Satellite #2) is the second satellite of the LARES group, carrying a laser retroreflector array (LRA). Its main purpose is the precise measurement of the frame-dragging effect of inertial frames, generated by mass-energy currents such as the rotation of a body with mass, as provided for by the theory of general relativity The main scientific purpose of the LARES 2 mission is to significantly increase the accuracy of the frame-dragging measurement in a satellite's orbit around the Earth, as well as the measurement of the Earth's gravitomagnetic field, with an accuracy of few parts per thousand Detailed info available at www.asi.it/en/earth-science/lares-2/

GREENCUBE

Committee on Space Research international designator	2022-080B
Name of the satellite	GREENCUBE
Launching States	Italy, France and ESA
Satellite owner	Università degli Studi ‘Sapienza’/AMSAT Italia
Date and place of launch	13 July 2022; Europe’s Spaceport in Kourou, Guiana Space Centre, French Guiana
Launch vehicle	Vega-C maiden flight
Orbital parameters	
Nodal period	225.27 minutes
Inclination	70.14 degrees
Apogee height	5,844 kilometres
Perigee height	5,838 kilometres
Current status	Operational
General functions of the space object	Science Greencube is a nano-satellite aimed at hosting an autonomous cultivation laboratory, a bioregenerative life support System (BLSS) aimed at cultivating *Brassicaceae* microgreens in space. The main mission is devoted to an experiment in plant growth in a microgravity environment, with a miniaturized life-support system including environmental sensors and a micro-camera (installed internally to the system) to assess the growth status of the plants Initially owned by the Italian Space Agency (50 per cent) and the University of Rome ‘Sapienza’ (50 per cent), as of 29 April 2024, the Italian Space Agency’s share has been reassigned to AMSAT Italia Detailed info available at www.asi.it/2022/07/greencube-attivato-il-micro-orto-spaziale-a-6000-km-da-terra/

ASTROBIO

Committee on Space Research international designator	2022-080C
Name of the satellite	ASTROBIO
Launching States	Italy, France and ESA
Satellite owner	ASI/Istituto Nazionale di Astrofisica (INAF) (Italy)
Date and place of launch	13 July 2022; Europe’s Spaceport in Kourou, Guiana Space Centre, French Guiana
Launch vehicle	Vega-C maiden flight
Orbital parameters	
Nodal period	225.27 minutes
Inclination	70.14 degrees

Apogee height	5,844 kilometres
Perigee height	5,838 kilometres
Current status	Operational
General functions of the space object	Science AstroBio CubeSat (ABCS) is a 3U CubeSat hosting a micro-laboratory based on Lab-on-Chip (LoC) technology for research in astrobiology, life sciences, biotechnology and pharmaceutical technologies. The mini laboratory is able to provide a platform for an automatic bioanalytical experiment in space Detailed info available at: www.asi.it/2022/07/astrobio-una-sfida-ad-alta-quota/

ARGOMOON

Committee on Space Research international designator	2022-156G
Name of the satellite	ARGOMOON
Launching States	Italy and United States
Satellite owner	ASI (Italy)
Date and place of launch	16 November 2022; Cape Canaveral, Florida, United States
Launch vehicle	SLS (Block 1) maiden flight
Orbital parameters	Not available. Interplanetary mission involving a lunar mission in heliocentric orbit. Therefore, no orbital parameters can be identified
Current status	Non-operational. The spacecraft is decommissioned
General functions of the space object	Technology ArgoMoon has been designed to operate in deep space, while taking images of the Moon and Earth surfaces, performing multiple propulsive manoeuvres and communicating with the ground from long distances Detailed info available at www.asi.it/2022/03/missione-artemis-argomoon-il-fotoreporterlunare-made-in-italy-scalda-i-motori-sulla-rampa-di-lancio-per-i-test-finali/

ION SCV-007 Glorious Gratia

Committee on Space Research international designator	2023-001BD
Name of the satellite	ION SCV-007 Glorious Gratia
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	3 January 2023; Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9

Orbital parameters	
Nodal period	95.186 minutes
Inclination	97.503 degrees
Apogee height	531 kilometres
Perigee height	516 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations Second Star to the Right, the seventh commercial mission of ION Satellite Carrier is the first mission carrying to space two IONs on a single launch. This mission included also the in-orbit demonstration of third-party hosted payloads During the mission, ION SCV007 and SCV008 deployed a total of nine satellites CubeSat deployed by ION SCV-007 on behalf of the Clyde-Space: AIS-1 also known as KelpieSat-1 (temporary NORAD ID 99282) Detailed info available at www.dorbit.space/second-star-to-the-right-january-2023

ION SCV-008 Fierce Franciscus

Committee on Space Research international designator	2023-001AU
Name of the satellite	ION SCV-008 Fierce Franciscus
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	3 January 2023; Cape Canaveral, Florida, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	95.186 minutes
Inclination	97.503 degrees
Apogee height	531 kilometres
Perigee height	516 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations Second Star to the Right, the seventh commercial mission of ION Satellite Carrier is the first mission carrying to space two IONs on a single launch. This mission included also the in-orbit demonstration of third-party hosted payloads During the mission, ION SCV007 and SCV008 deployed a total of nine satellites

	CubeSats deployed by ION SCV-008 on behalf of the ISIS: Tausat-2 (NORAD ID 55073), SharjahSat-1 (NORAD ID 55104) CubeSats deployed by ION SCV-008 on behalf of Spacemind: FUTURA-SM1 (NORAD ID 55105), FUTURA-SM2 (NORAD ID 55106) CubeSats deployed by ION SCV-008 on behalf of Astrocast: Astrocast FM1.12 (NORAD ID 55109), Astrocast FM1.15 (NORAD ID 55110), Astrocast FM1.16 (NORAD ID 55111), Astrocast FM1.17 (NORAD ID 55112) Detailed info available at www.dorbit.space/second-star-to-the-right-january-2023

ION SCV-009 Eclectic Elena

Committee on Space Research international designator	2023-014BC
Name of the satellite	ION SCV-009 Eclectic Elena
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	31 January 2023; Vandenberg, California, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	91.7718 minutes
Inclination	70.009 degrees
Apogee height	340 kilometres
Perigee height	330 kilometres
Current status	Non-operational. The spacecraft is decommissioned
General functions of the space object	1. Commercial; and 2. Operations The eighth commercial mission of D-Orbit orbital transfer vehicle (OTV) ION Satellite Carrier (ION), Starfield, is the first one in a mid-inclination orbit ION SCV-009 Eclectic Elena is a versatile and cost-effective OTV designed to precisely deploy satellites and perform orbital demonstrations of third-party payloads hosted onboard CubeSats deployed: ADEO-N3, NEA®, Bunny, and StardustMe SD-1 Detailed info available at www.dorbit.space/starfield-january-2023

ION SCV-0010 Masterful Matthaeus

Committee on Space Research international designator	2023-054Q
Name of the satellite	ION SCV-0010 Masterful Matthaeus

Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	15 April 2023; Vandenberg, California, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	94.8311 minutes
Inclination	97.411 degrees
Apogee height	502.141 kilometres
Perigee height	493.486 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations ION SCV-010 Masterful Matthaeus is the 10th commercial mission of a proprietary orbital transfer vehicle (OTV) ION Satellite Carrier (ION) ION SCV-010 Masterful Matthaeus is a versatile and cost-effective OTV designed to precisely deploy satellites and perform orbital demonstrations of third-party payloads hosted onboard CubeSats deployed: Kepler-20, Kepler 21, Clyde ELO-3, Visiona VCUB1, Clyde Wyvern-1 Detailed info available at www.dorbit.space/guardian-april-2023

ION SCV-011 Savvy Simon

Committee on Space Research international designator	2023-084AB
Name of the satellite	ION SCV-011 Savvy Simon
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	12 June 2023; Vandenberg, California, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	95.139 minutes
Inclination	97.510 degrees
Apogee height	531.712 kilometres
Perigee height	515.559 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations ION SCV-011 Savvy Simon is the 11th commercial mission of a proprietary orbital transfer vehicle (OTV) ION Satellite Carrier (ION)

	ION SCV-011 Savvy Simon is a versatile and cost-effective OTV designed to precisely deploy satellites and perform orbital demonstrations of third-party payloads hosted onboard CubeSats deployed: Outpost, AlbaPOD 1 (that released UNICORN-2I, SATLLA-2I and ISTANBUL), AlbaPOD 2 (that released MRC-100, HADES-B (URESAT), HADES-C (ROM-2)), SPEI SATELLES, ELO-4, Wyvern-2, AIS-2 Detailed info available at www.dorbit.space/above-the-sky-june-2023

ION SCV-013 Ultimate Hugo

Committee on Space Research international designator	2023-174AW
Name of the satellite	ION SCV-013 Ultimate Hugo
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.
Date and place of launch	11 November 2023; Vandenberg, California, United States
Launch vehicle	Falcon 9
Orbital parameters	
Nodal period	95.101 minutes
Inclination	97.481 degrees
Apogee height	520.840 kilometres
Perigee height	518.801 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations ION SCV-013 Ultimate Hugo is the 13th commercial mission of a proprietary orbital transfer vehicle (OTV) ION Satellite Carrier (ION) ION SCV-013 Ultimate Hugo is a versatile and cost-effective OTV designed to precisely deploy satellites and perform orbital demonstrations of third-party payloads hosted onboard CubeSats deployed: Clyde Intuition 1, Apogeo PICO-1, Odysseys, AlbaPOD1 (that released UNICORN-2J), AlbaPOD2 (that released UNICORN-2K, HADES-D, ROM-3), Cryptosat, Spire COO11, Clyde Wyvern3, Clyde VDES Detailed info available at www.dorbit.space/cosmic-wander-november-2023

ION SCV-0015 Daring Diego

Committee on Space Research international designator	2023-185H
Name of the satellite	ION SCV-0015 Daring Diego
Launching States	Italy and United States
Satellite owner	D-Orbit s.p.a.

Date and place of launch	26 November 2023; Vandenberg, California, United States
Launch vehicle	SpaceX
Orbital parameters	
Nodal period	95.849 minutes
Inclination	97.643 degrees
Apogee height	563.396 kilometres
Perigee height	555.620 kilometres
Current status	Operational
General functions of the space object	1. Commercial; and 2. Operations ION SCV-0015 Daring Diego is the 15th commercial mission of a proprietary orbital transfer vehicle (OTV) ION Satellite Carrier (ION) ION SCV-0015 Daring Diego is a versatile and cost-effective OTV designed to precisely deploy satellites and perform orbital demonstrations of third-party payloads hosted onboard CubeSats deployed: Deimos ALISIO-1, AlbaOrbital pocket cubesat2 (that released Unicorn-2N and MDQUBESAT-2), AlbaOrbital pocket cubesat1 (that released Unicorn-2M, Unicorn-2L), Tuberlin NanoFF cubesat2, Tuberlin NanoFF cubesat1 Detailed info available at www.dorbit.space/beyond-december-2023

Annex II

Additional information concerning space objects previously registered by Italy*

COSMO-SkyMed 3 (CSK-3 or FM3) – First Generation

Committee on Space Research international designator	2008-054A
Name of the satellite	COSMO-SkyMed 3 (CSK-3 or FM3) – First Generation
Launching States	Italy and United States
Registration document	ST/SG/SER.E/606
Satellite owner	ASI/Ministry of Defense of Italy
Date and place of launch	25 October 2008; Vandenberg, California, United States
Launch vehicle	Boeing Delta II
Orbital parameters	
Nodal period	97.16 minutes
Inclination	97.9 degrees
Apogee height	624 kilometres
Perigee height	621 kilometres
General functions of the space object	Earth observation COSMO-SkyMed 3 carries a synthetic aperture radar that operates in X-band for Earth observation and monitoring
Current status	Non-operational
Date when the space object was no longer functional	2 May 2022
Date of placement into disposal orbit	6 October 2022
Disposal orbital parameters and physical condition	
Nodal period	96.483 minutes
Inclination	97.8854 degrees
Apogee height	603.024 kilometres
Perigee height	577.362 kilometres
Physical condition	The re-entry should be completed within 22 years from October 2022, assuming a minimum intensity of the next solar cycle

AGILE

Committee on Space Research international designator	2007-013A
Name of the satellite	AGILE
Launching States	Italy and India

* The registration data are reproduced in the form in which they were received.

Registration document	ST/SG/SER.E/538
Satellite owner	ASI
Date and place of launch	23 April 2007; Satish Dhawan Space Centre, Sriharikota, India
Launch vehicle	ISRO/Antrix PSLV-C8
Orbital parameters	
Nodal period	95.1 minutes
Inclination	2.5 degrees
Apogee height	552 kilometres
Perigee height	536 kilometres
General functions of the space object	Science and gamma-ray and X-ray astronomy
Current status	Non-operational. Decayed on 13 February 2024, in the area of the Atlantic Ocean near the northern coast of South America
Date when the space object was no longer functional	-
Date of placement into disposal orbit	-
Disposal orbital parameters and physical condition	
Nodal period	-
Inclination	-
Apogee height	-
Perigee height	-
Physical condition	-