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Space Sector Watch

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THIS MONTH IN THE SPACE SECTOR...

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CELEBRATING 20 YEARS OF ESPI WITH 40 NATIONS AND A POLICY VISION FOR EUROPE FOR 2040

September was a pivotal month for ESPI. We celebrated **ESPI's 20th Anniversary** and launched our policy vision Europe: **ESPI2040 Space for Prosperity, Peace and Future Generations**. ESPI, the European Think Tank for Space, was founded in 2003 by ESA and the Austrian Forschungsförderungsgesellschaft (FFG). On September 25th, our Anniversary Event took place in the Austrian Parliament, in synergy with the Plenary Session of the European Interparliamentary Space Conference (EISC), whose **Secretariat is operated by ESPI**. The high-level event brought together more than 150 European and international leaders from policy and space from 40 nations, ranging from governmental representatives, parliamentarians, ambassadors, executives of international organisations, 15 heads of national space agencies, and industry, to international guests from ISRO, JAXA, KARI and NASA.

The opening statements were delivered by Leonore Gewessler, Austria's Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) and Josef Aschbacher, DG of ESA, a roundtable on European space policy moderated by Andreas Geisler from FFG and Chair of ESPI General Assembly, with Timo Pesonen, DG at EC's DG DEFIS, Anna Christmann, Federal Government Coordinator for Aerospace, Frank Monteny, Director of General Research and Space at BELSPO, Eric Morel de Westgaver, Director of European, Legal and International Matters at ESA, Riadh Cammoun, VP of Institutional Affairs at Thales Alenia Space, and Geneviève Fioraso, ESPI Advisory Council Chair and Former French Minister for Higher Education and Research. Subsequent a panel discussion on international perspectives included Aarti Holla-Maini, Director of UNOOSA, Ikuko Kuriyama, Advisory at JAXA and Stefan Mair, Director of SWP Berlin. We had the pleasure to sign a number of agreements with **ESA**, the **Italian Space Agency** and Spanish Space Agency and welcomed 4 new members - the Luxembourg Space Agency, Portuguese Space Agency, Beyond Gravity and Exolaunch. Moreover, we agreed to reinforce international cooperation with JAXA, KARI, and SGAC, and announced the establishment of the ESPI Centre of Excellence for Space and Sustainability in cooperation with the Austrian BMK. Concluding remarks were provided by Henriette Spyra, DG Innovation & Technology, Austrian BMK, and Karin Tausz, Managing Director of FFG.

The **ESPI2040** policy vision, featured in statements of Etienne Schneider, incoming Chair of ESPI Advisory Council and former Deputy PM of Luxembourg, and Samantha Cristoforetti, European Astronaut and Member of ESPI AC advocates for a strong Europe as a partner to the world. It emphasises the policy impact of space, proposing measurable goals for 2040 and calling on European policy makers and institutions, industries, start-ups, finance, academia, and scientific communities to engage in an open debate, agree on common goals and translate them into programmes delivering tangible results. In particular, ESPI2040 calls upon Europe to voice a clear political will and implement policy action on 3 levels: Policy Impact, Space Capability and Autonomy, and Foundation. With a growing team of more than 20 experts, ESPI supports ESPI2040 in European and international engagement along 5 lines of research "Green and Sustainable Societies", "Security & Defence", "Exploration & Science", "Space as an Asset" and "Industry, Innovation, Finance, Workforce".

Europe has the capabilities, foundations, and prerequisites to develop into a full space power – as outlined in our **ESPI Executive Brief "Europe as a Space Power"** (based on the **Book "Power, State and Space"**). Finding itself at a unique inflection point, Europe cannot miss the opportunities afforded by space. As also outlined during the ESPI2040 launch, there are two missing elements - human spaceflight & exploration, and security & defence – required for Europe to develop into a space power. In support to this development, ESPI will continue to provide an active forum for the analysis and discussion of Europe's needs, capabilities, and long-term prospects in space. ESPI2040 will be developed further, together with our members and in consultations with other European stakeholders and international partners.

Yours sincerely,

Hermann Ludwig Moeller
Director of ESPI

POLICY & PROGRAMMES

A Moon Race? Global powers vie for influence in the future of space exploration

India as the first nation landing on the Moon's South Pole

Credit: ISRO

Launched from the Satish Dhawan Space Centre in Sriharikota Range on July 14th, **ISRO successfully landed the Chandrayaan-3 Lander Module on the Moon's surface**. India became the first nation to land on the lunar southern polar region ("notwithstanding different definitions of the lunar South Pole") and the fourth in the world to achieve a soft landing on the lunar surface, after the U.S., the former USSR, and China. The achievement conveys India's rising global ambitions and comes at a time of renewed interest in lunar exploration, particularly lunar South Pole, where sources of water-ice have captured the attention of space agencies and private entities worldwide. After reaching lunar orbit on August 5th, the lander module separated from the propulsion module on August 17th; subsequently, it initiated its descent to the surface. On August 23rd, ISRO confirmed the successful touchdown of Chandrayaan-3's lander on the southern polar region as planned. One crucial support function of the mission was **provided by ESA**, ensuring communication from ESA's station in Kourou, French Guiana and from the UK's Goonhilly Earth Station. In September, India celebrated another milestone - launching its first mission to study the sun, the **Aditya-L1**.

Russia failed to land Luna-25 on the Moon's surface

Also in August, Russia launched the Luna-25 mission, Russia's first Moon mission in almost 50 years and its first mission to explore the lunar South Pole region. The mission was successfully launched but it ended in failure as the spacecraft crashed into the Moon after having had encountering problems as it moved into its pre-landing orbit – the failure happened 4 days before the successful Moon landing by India. Luna-25 was originally scheduled for a landing attempt near Boguslawsky crater on August 21st, but **Roscosmos confirmed that an anomaly during a manoeuvre on August 19th led to the spacecraft's impact on the lunar surface**. However, **Russia plans to launch a new mission to the Moon's South Pole in the 2025-2026** timeframe.

China unveils "twin-rocket plan", and South Africa joins China's ILRS project

China announced its plan to land a person on the Moon by 2030, as part of the broader Lunar Exploration Project (Chang'e). **The mission aims to achieve a crewed lunar landing**, enable building blocks for short-term stays on the lunar surface, collect samples, and conduct research. Reportedly, the mission concept involves two rocket launches ("twin-rocket plan"): one will launch a lunar lander, the other will send astronauts in space. Then, in lunar orbit, the lander and the crewed spacecraft will rendezvous, and the astronauts will move over to the lander and then land on the lunar surface. Moreover, **South Africa joins the China-led ILRS project**. Furthermore, with regards to Tiangong space station progress, China's CMSEO chose 4 proposals from CAST, SAST, CAS and AVIC (out of 10) for the **development of a low-cost cargo transportation system for Tiangong**.

Japan's ticket to the Moon club?

Japan launched two missions into space on September 6th, including a lunar lander SLIM (Smart Lander for Investigating Moon) and a powerful X-ray space telescope XRISM (X-Ray Imaging and Spectroscopy Mission) from the Tanegashima Space Center. SLIM, expected to reach lunar space and have its first encounter on October 4th, is tasked with achieving Japan's first-ever soft lunar landing and carries two small probes designed to monitor the lander's status, capture landing site photos, and provide an independent communication system with Earth.

ESA and EU sign agreement on IRIS²

Credit: ESA

On September 21st, **ESA Director General Josef Aschbacher and Director General of the European Commission DG DEFIS signed a 12-year ESA-EU Contribution Agreement for the secure connectivity satellite constellation IRIS²**. This specific agreement builds on the Financial Framework Partnership Agreement signed between the European Commission, ESA and EUSPA in 2021 for implementation of the EU space programme. Under this Contribution Agreement, ESA will ensure development and in-orbit validation of elements for the multi-orbit constellation IRIS² on behalf of the European Commission. ESA will receive an additional budget of €380M delegated from the European Commission to execute its role as the Qualification and Validation Authority of the governmental infrastructure, which aims to ensure that industry will deliver as per the established requirements, and to support the Commission in defining future generation of systems.

The UK rejoins EU's Horizon Europe research programme

Credit: Dan Kitwood/Getty

The UK rejoined the EU's Horizon Europe research programme. The agreement facilitates UK scientists' access to EU funding and promotes closer collaboration with their European counterparts. The UK is expected to contribute approximately €2.34B annually to participate in Horizon Europe, in addition to €154M for association with Copernicus. To address potential profit or loss disparities, both sides have established a "correction mechanism". If the UK receives more in grants than it contributes, its profits will be capped at 8% over two consecutive years. Conversely, if the UK faces a 12% deficit, it can request intervention from a UK-EU Specialised Committee, and a 16% loss would lead to adjusted future financial contributions. The political agreement reached will require approval from all 27 EU member states before formal adoption. This agreement not only enables the UK's participation in Horizon Europe and Copernicus programmes but also enhances the country's role in global research collaboration.

The EU commits to the U.S.-led ASAT test ban

The EU submitted a "joint contribution" for the final meeting of the UN OEWG on reducing space threats end of August in Geneva, **informally joining the U.S.-led ASAT test ban.** In particular, in a document published by the UN OEWG on Reducing Space Threats, a "joint contribution" by the EU included a statement by the 27 EU member states not to conduct destructive direct-ascent anti-satellite (ASAT) tests. Previously, already 5 EU Member States, namely Austria, France, Germany, Italy and the Netherlands joined the initiative bilaterally on national level. The EU made no formal announcement of that commitment beyond this "joint contribution", but the confirmed that it applied to all 27 EU MS. However, this not a commitment by the EU as this potential behaviour would fall outside of the competences of the EU. Also in this document, the EU endorsed norms of behaviour and backed transparency in space activities.

Germany releases new national space strategy and signs Artemis Accords

On September 27th, the **German Federal Cabinet approved the Federal Government's new national space strategy.** The **new space strategy**, replacing the national space strategy from 2010, takes into account the increasing importance of space for our society and focuses on current and future challenges. The particular focus is on advancing private sector initiatives in space (New Space), the use of space applications to combat climate change and responsible and sustainable action in connection with space.

The strategy identifies 9 areas of action for the federal government:

- European and international cooperation
- Space as a growth market - high-tech and New Space
- Climate change, resources and environmental protection
- Digitalisation, data and downstream
- Security, strategic ability to act and global stability
- Sustainable use of space
- Space exploration and science
- International space exploration
- Space in dialogue and attracting talent

Credit: BMWK

The implementation of goals and measures as well as short and medium-term key projects should begin after this cabinet decision. Concrete measures include the creation of Space Innovation Hubs, and the establishment of a national space law.

Moreover, the **German government committed €2M to support the development of an offshore launch infrastructure in the North Sea**, the North Sea spaceport, which aims to enable Germany to launch microlaunchers from German territory. The North Sea offshore spaceport idea and initiative was pushed by the German Offshore Spaceport Alliance (GOSA) formed by Tractebel DOC Offshore, MediaMobil, OHB, and Harren Shipping Services since December 2022 and supported by the microlauncher companies, the German HyImpulse and Rocket Factory Augsburg (RFA), the UK-based Skyrora, and the Dutch T-Minus through MoUs expressing their interest. GOSA aims to primarily rely on private funding for the realisation of the offshore launch platform, which was valued €22-30M over six years development – nevertheless the €2M funding is seen as a significant political signal of the German Government.

Earlier, in September 14th, during an event at the German ambassador's residence in Washington D.C., **Germany signed the U.S.-led Artemis Accords**, becoming the 29th country that signed the Accords. The signatory event was attended by NASA Administrator Bill Nelson and Walther Pelzer, Member of the DLR Executive Board and DG of the German Space Agency at DLR as well as by NASA Deputy Administrator Pam Melroy, Executive Secretary of the U.S. National Space Council Chirag Parikh, the German Federal Government Coordinator of German Aerospace Policy at the Federal Ministry of Economic Affairs and Climate Action, Anna Christmann, and the German Ambassador to the USA, Andreas Michaelis. Mr. Pelzer stated: "Germany and the U.S. have been successful partners in space for a long time. […] The German signing of the Artemis Accords gives a further boost to this joint endeavour to carry out programmes for the exploration of space."


Credit: NASA

EU opens stakeholder consultation on EU Space Law

Credit: European Space Conference

As part of priorities for 2024 outlined by President von der Leyen on the September 13th in the framework of the **State of the Union**, presented Commission priorities for 2024, **the initiative for an EU Space Law (EUSL) was presented.** The European Commission launched a targeted **stakeholder consultation open until November 2nd** on the EU legislative initiative on safety, resilience and sustainability of space activities, the EU Space Law - for which the European Commission could adopt a legislative proposal beginning of 2024. The EU Space Law envisages to set a framework for common EU rules addressing the safety, resilience, and sustainability of space activities/operations.

The EUSL will cover 3 pillars (Safety, Resilience, Sustainability) connected to objectives:

- Safety Pillar: ensuring a safe satellite traffic that tackles the increasing collision and damage risk by space debris.
- Resilience Pillar: coherently protecting the EU and national space infrastructures/ assets against harmful threats (for ex. cyberattacks).
- Sustainability pillar: guaranteeing long-term sustainability of space operations, ensuring the EU's ability to rely on space as an ienabler of services and economic growth.

EU investigates agreement to launch Galileo satellites from U.S. territory

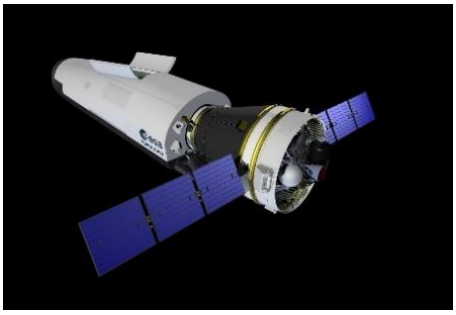
Credit: EUSPA

The EU is discussing and approaching an agreement that **will allow the launch of the Galileo satellites from U.S. territory in early 2024.** The Council of the EU is currently revising the proposal and will likely pass a decision "authorising the opening of negotiations" between the U.S. "laying down security procedures for the launch of Galileo satellites from United States' territory". Due to the loss of the Russian Soyuz and the delay of Ariane 6, the launch from U.S. is a necessary move to keep the constellation in service as it is estimated that the current constellation will no longer be able to ensure continuation of service after mid-2024. Initially, the latest batch of Galileo satellites was planned to be launched and deployed in space in spring of 2022. The agreement is urgent and sensitive at the same time. The agreement aims at protecting the integrity and safety of the satellites and the information (incl. EU classified information) contained, would protect the exchange of provision of classified information between the EU and the U.S., and it would require the U.S. to establish measures to protect the space assets upon arrival on U.S. territory until the satellites are launched into space and deployed in orbit.

Andøya Spaceport aims to expand to the U.S.

Andøya Spaceport aims to expand to the U.S., having appointed Vincent Ciccarelli as its Commercial Director of North America and Asia to be based in the U.S., in order to promote opportunities offered by Andøya Spaceport to launch operators also outside of Europe. So far, Andøya focused on the European market for Andøya Spaceport, which is currently under construction in Northern Norway, where it provides direct access to polar and sun-synchronous orbits for commercial and responsive launches.

ESA's Space Rider scheduled for launch in 2025



Credit: ESA

ESA started the validation and testing phase of the ESA Space Rider programme to prepare for Space Rider's first flight in the third quarter of 2025, when it will stay 2 months in orbit for experiments and technology demonstration. Space Rider is a reusable uncrewed robotic laboratory which will provide an end-to-end integrated space transportation system for commercial customers. In 2020, ESA awarded contracts to Thales Alenia Space Italy and Avio to deliver the Space Rider flight model, including the re-entry module and the AVUM module, and a contract to Telespazio and Altec for the provision of the ground segment.

Poland sign agreement with Axiom Space for future Human Spaceflight Mission

Poland, supported by ESA, and Axiom Space signed an agreement to send a Polish ESA astronaut to space on the Axiom Space mission Ax-3. A similar agreement was signed in April, between Axiom Space and the Swedish National Space Agency. Through this agreement, Poland will be the second country supported by ESA to send an astronaut on a commercial human spaceflight mission with Axiom Space. The Ax-3 mission is planned to launch in January 2024, The ESA astronaut (of Polish nationality) selected for the mission will focus on research and educational outreach in coordination with ESA, who will be the crew provider. Moreover, President of POLSA Grzegorz Wrochna stated that in Poland work is underway to establish a Polish national space mission, for which POLSA made a call for concepts a few months ago and that Poland's plans a presence on the Moon in the next 10 years.

Spain and ESA sign agreement to develop the Atlantic EO satellite constellation

In September, **ESA and Spain signed an agreement for Spain's national €80M Atlantic Constellation ("Constelación Atlántica")**. The constellation which will be comprised of 16 EO small satellites (8 developed in Spain and 8 developed in Portugal, both each contributing €40M) will focus on monitoring the effects of climate change, The constellation will complement Copernicus and will - once operational - provide observations every 3 hours. Moreover, Spain will increase the public contribution to the PERTE programme from €2.2B to €2.71B, whereof €70M will be used to finance Spain's national Space Technology Plan.

Credit: Ministry of Spain

Italian Ministry of Defence registers a multi-orbit large constellation at the ITU

The **Italian Ministry of Defence registered a satellite constellation "ITA-LEO"**, comprised of 19.708 satellites in LEO and MEO orbits in 899 orbital planes carrying S-, X-, and military-Ka brand frequencies, at the ITU. The constellation not only aims at enhancing Italy's national defence and security capabilities but also at being to be part of (and Italy's national contribution to) the European Commission's GOVSATCOM Programme and governmental pillar of IRIS^2.

UK allocates funding for space applications and for International Bilateral Fund

Credit: UK Space Agency

The **UK Space Agency announced a £65M of funding** as part of the National Space Innovation Programme (NSIP) for innovations in space technologies and applications. The first call offers £34M funding for proposals in 2023, the remaining £31M funding will be split in call for proposals in 2024 and 2025, with projects running until March 2027. Furthermore, the **UKSA will provide £15M in funding to further accelerate and boost research and development of satellite Earth Observation technologies**, aimed at supporting environmental services, such as climate monitoring, environmental management, meteorology, agriculture and urban planning. The Earth Observation Technology Programme funding, delivered by the Centre for Earth Observation Instrumentation (CEOI), will be part of a broader £400M package to support the UK's EO sector. This £15M funding will cover (1) Pathfinder projects of up to £75.000, (2) Fast Track projects of up to £250.000, and (3) Flagship projects of up to £3M. Moreover, the **UKSA announced the recipients to receive the first phase of its £20M International Bilateral Fund investments.** This fund is UKSA's first fund to build and enforce international relationships to jointly advance in space research and to catalyse investment in new technologies. It includes (1) Relationships to unlock future economic opportunities for the UK and (2) Science missions and technologies with commercial potential, incl. using superconductors for spacecraft control to STM and satellite launch vehicles. In particular, projects include a **UK-U.S. space propulsion research partnership** between Pulsar Fusion and University of Michigan; a project led by **UK-based Vertical Future in cooperation with Axiom Space, Saber Astronautics, Cambridge University and the University of Adelaide**; a project between the Open University and ISRO for the development of the AXIS instrument, which plays a crucial role in the DISHA mission, analysing space weather effects on Earth's upper atmosphere layers; and a partnership between **In-Space Missions and a regional Asia-Pacific Government**, incorporating Singapore, the Philippines, Taiwan, Thailand and Indonesia, to develop a multi-agency accelerator programme "Faraday Dragon" which will facilitate the export of space technologies and access to space via rideshare missions.

Azerbaijan approves National Law on Space Activities

Credit: APA

On August 4th, **Azerbaijan's President Ilham Aliyev adopted the Law on Space Activities** in order to further develop its national space legislature. The Law on Space Activities regulates the national legal, economic and organisational bases of space activity. It will provide the legal basis for maintaining the registry of space objects at the national and international levels as well as for the certification of space systems, for radio spectrum management and for ensuring environmental protection and space safety.

Japan launched the X-ray space telescope XRISM

On September 6th, **Japan launched two missions into space,** SLIM (Smart Lander for Investigating Moon) and the X-ray space telescope XRISM (X-Ray Imaging and Spectroscopy Mission). XRISM (formerly known as XARM) is a JAXA-NASA mission with ESA participation which aims to investigate celestial X-ray objects in the Universe. The XRISM payload consists of two instruments: (1) Resolve, a soft X-ray spectrometer, and (2) Xtend, a soft X-ray imager.

U.S. advances in Responsive Space Capabilities

Credit: Orbital ATK

August and September saw significant developments and progress in the U.S. in demonstrating Responsive Space Capabilities. The Space Force pushes efforts in tactically responsive space, which is the quick replacement of destroyed satellites in times of war or national emergency. In March, for the first time,for the U.S. Space Force requested budget from the U.S. Congress, proposing a $60M budget for responsive space.

The Space Force's first demonstration of its rapid response capabilities during its Tactically Responsive Launch-2 mission, took place in June 2021. In this mission Martin's, Northrop Grumman's Pegasus XL rocket flew to space, launching the rocket from Lockheed modified L-1011 aircraft Stargazer, within a window of 11 months. The Responsive Space Program is overseen by the Space Systems Command's Space Safari Program Office and the Rocket Systems Launch Program.

Responsive space mission "Victus Nox" launched within 24 hours on a Firefly rocket

On September 14th, the U.S. Space Force **launched a Millennium Space small satellite in the responsive space mission "Victus Nox"** by Firefly Aerospace aboard its Firefly Alpha rocket. Firefly Aerospace demonstrated to the Space Force its capability to prepare a satellite for the Victus Nox mission within a 24-hour time window. "Victus Nox" was specifically designed to showcase responsive space capability, the ability to launch on a significantly shorter timeline than what is typically required for national security missions. Firefly Aerospace and Millennium were chosen for the Victus Nox mission in the previous year. On August 30th, both companies announced that they were on standby, ready to receive an alert notification from the Space Force. Upon receiving the alert, they had a 60-hour window to transport the payload to Firefly's launch site at the Vandenberg Space Force Base, complete fueling procedures, and integrate it with the Alpha rocket's payload adapter.

Credit: Space Force

U.S. NRO contracts Firefly Aerospace and Xtenti for Responsive Space Mission

On August 8th, the **U.S. National Reconnaissance Office announced a contract with Firefly Aerospace and Xtenti for a responsive space mission** scheduled to launch on a Firefly Alpha launcher in 2024. The mission aims to demonstrate responsive space capabilities through various on-orbit deployments of commercial rideshare payloads with Firefly's Elytra orbital vehicle and Xtenti's Fantm-Ride small satellite dispenser. After the deployment, Elytra will perform an on-orbit maneuver, after which Elytra will remain in orbit on standby, ready and prepared to deploy U.S. government payloads on-demand.

Terran Orbital to launch Responsive Space Initiative

Terran Orbital announced the launch of its Responsive Space Initiative in Q4 2024, which aims to enable Terran Orbital to provide military, civil, and commercial customers with satellite buses within 30 days and complete satellite systems with integrated payloads within 60 days. The initiative aims to reduce the time for satellites delivery for critical missions from years to days. Terran Orbital's new facility which will be located in Irvine, CA and become operational in summer 2024, a new product line comprising seven buses available for quick delivery, as well as partnerships with payload suppliers will also be part of the program.

Space Force to release guidelines for commercial satellite use

Credit: Space Force

The **U.S. Space Force will soon release a commercial space strategy**, in particular, guidelines for the military use of commercial satellite service and its integration into military services in order to "achieve competitive advantage through commercial augmentation". For many years, the Space Force has already been relying on satellites of commercial satellites, but the Space Force identified a need to explore ways to better integrate commercial space, especially in the light of on emerging space industry services (incl. rapid-revisit satellite imaging and LEO satellite communications), which require specific guidance according to the Space Force. Chief of Space Operations Gen. B. Chance Saltzman stated that today is a "true golden era for commercial space. […] The speed and innovation offered by the commercial space sector can create a strategic advantage." Saltzman sent the Space Force's **draft Commercial Space Strategy** back to the drawing board, **claiming to move the strategy draft from "aspirational to actionable".** Moreover, during the Space & Cyber Conference on September 12th, Saltzman unveils that **the Space Force will change its organisational structure, launching a new type of unit, which aims to bridge the gaps among operations, engineering, and capability development specialists** and bring them under one roof in order to increase the speed of delivery of maintenance and upgrades to important systems. To date, the Space Operations Command (SpOC) comprises operators in in the space, cyber, and intelligence fields while the Space Systems Command (SSC) comprises engineers and program managers - a separation that delays the rate at which operators provide feedback to developers - and therefore slows down the processes to maintain and improve systems and decreases the Space Force's readiness.

Office of Space Commerce progresses on civil space traffic coordination system

Richard DalBello, Director of the U.S. Office of Space Commerce, announced that the **creation of the Traffic Coordination System for Space (TraCSS)** for civil space safety system responsibilities (relying on commercial and government data) is progressing and that the TraCSS is planned to begin initial services in Q4 of 2024. The U.S. DoD has been in charge of civil space safety but STM is currently still in process of being shifted to the U.S. DoC – a decision that dates back to Space Policy Directive (SPD) 3 in 2018.

NASA launches Crew-7 to ISS and Soyuz returns Crew after 1-year stay

Credit: SpaceX

On August 26th, **NASA launched the Crew-7 mission**, 4 astronauts from 4 countries, in the Dragon spacecraft carried by SpaceX Falcon 9 to the ISS from NASA's Kennedy Space Center in Florida. The Crew 7 astronauts are NASA astronaut Jasmin Moghbeli, ESA astronaut Andreas Mogensen, JAXA astronaut Satoshi Furukawa, and Roscosmos cosmonaut Konstantin Borisov, who will conduct ca. 200 science experiments and technology demonstrations to prepare for missions to the Moon, Mars, and beyond. On September 26th, **ESA astronaut Andreas Mogensen became commander of the ISS** (succeeding Cosmonaut Sergey Prokopyev) for the entire duration of his Huginn mission until early 2024– as the sixth European to take on the role of ISS commander. On September 27th, **the Soyuz MS-23 spacecraft returned** the two Roscosmos cosmonauts Sergey Prokopyev and Dmitri Petelin and NASA astronaut Frank Rubio from the ISS back to Earth, landing in Kazakhstan, after a record stay of more than a year in orbit – initially a 6-month stay was planned.

The U.S. and India release Joint Statement

Credit: Kamal Sandesh

On September 8th, **the U.S. and India released a Joint Statement** reaffirming the partnership between the two countries. India's Prime Minister Modi and U.S. President Biden called to "continue the work of transforming the India-U.S. Strategic Partnership across all dimensions" and re-highlighted the relevance of sharing the same values of freedom, democracy, human rights, inclusion, pluralism, and equal opportunities for both nation's success and for the U.S.-Indian relationship. Paragraph 7 is about space and includes:

- Biden expressed congratulations for the successful launch of India's Moon exploration mission Chandrayaan-3 and of India's first solar mission Aditya-L1, both in August,
- Biden and Modi welcomed efforts towards the establishment of a Working Group for commercial space collaboration under the existing India-U.S. Civil Space Joint Working Group. With regards to space exploration cooperation,
- ISRO and NASA started discussions on modalities, capacity building, and training for a joint effort to the ISS in 2024 and affirmed to continue finalising a strategic framework for human space flight cooperation by the end of 2023.
- India and the U.S. intend to increase coordination on planetary defence to protect the Earth and space assets from the impact of asteroids and near-Earth objects. This will include U.S. support for India's participation in asteroid detection and tracking via the Minor Planet Center.

India, Israel, the UAE and the U.S. announce joint Space Venture

Under the I2U2 Group, the governments of India, Israel, the UAE, and the U.S. announced the plan to **create a new joint space venture**. India, Israel and the UAE are all signatories of the U.S.-led Artemis Accords. The project aims to create a space-based tool for policymakers, institutions, and entrepreneurs, using the EO data and space-based capabilities of the 4 countries, in order to boost their efforts in and synergies in use of space for environmental and climate change challenges.

India's Prime Minister Modi offers 5-point cooperation plan to BRICS countries

During a plenary session of the 15th BRICS Summit, **India's Prime Minister Modi proposed a 5-point cooperation plan for further cooperation between BRICS countries** in the 5 areas (1) space, (2) education & skill development, (3) skills mapping, (4) big cats and (5) traditional medicine. With regard to space, he highlighted the ongoing work on the BRICS satellite constellation and proposed to consider creating a BRICS Space Exploration Consortium, under which the BRICS can work in areas like space research and weather monitoring.

Credit: Ruetir

India launched its first mission to study the Sun: Aditya-L1

On September 2nd, India launched its first mission to study the sun, **the Aditya-L1 solar observatory** from the Satish Dhawan Space Centre in Sriharikota Range. It carries 7 instruments to explore the Sun's dynamics and space weather. ESA is also supporting ISRO by providing deep space communication services and validating critical flight dynamics software.

Space-related Developments in the UAE

August and September saw continued boosts and developments in the UAE in space. Including:

UAE to mobilise global tech and space sectors for climate towards COP28

Credit: InterRegional for Strategic Analysis

The UAE's Ministry of Industry and Advanced Technology (MoIAT), the UAE Space Agency, and COP28 through the Office of the UAE Special Envoy for Climate Change (OSECC) partner to enhance coordination between the advanced technology and space sectors and to encourage organisations (companies, global institutions, space agencies) **to share their contributions to tackle global climate change at the Technology and Innovation Hub at COP28**. Moreover, the cooperation aims to facilitate knowledge-sharing to accelerate and boost the development of advanced technology solutions for climate.

UAE Government made $5B commitment for Yahsat

Moreover, the **UAE Government made a $5B commitment in a 17-year deal to buy broadband services from the UAE fleet operator Yahsat** until at least 2043, which pushes Yahsat's consideration to expand into new satellite markets.

UAE and Armenia sign 4 MoUs to strengthen cooperation in various sectors

During the UAE-Armenia Business Forum in Yerevan, the **two countries signed of 4 MoUs,** thereof 3 between the both countries business sectors - and one setting the frame to establish a UAE-Armenia Business Council. The two countries agreed to facilitate economic and trade links and to expand in sectors of common interest, incl. trade, technology, agriculture, food security, tourism & travel, renewables, transport, technological industries, space, and circular economy.

UAE and Indonesia agreed to strengthen economic relations

During the UAE-Indonesia Business Forum in Jakarta, the two countries agreed to **strengthening economic cooperation**, calling on UAE and Indonesian companies to seize the investment opportunities in areas such as renewable energy development, environment and climate change. energy and food security, (air)ports, and national defence and satellites.

UAE hosted delegation from ESA

The **UAE Space Agency hosted an ESA delegation** to discuss ways to intensify collaboration in space R&T. Moreover, ESA presented current projects and the UAE Space Agency presented the UAE's mission to the asteroid belt.

UAE companies expand to Eastern Europe

The UAE defence conglomerate signed 2 agreements with Bulgarian entities, TBS an international trading company and Samel-90, a manufacturer of high-performance electronic communications equipment and systems, as part of a move to expand to the Eastern Europe market. The 3 companies will partner through international trade expansion, knowledge transfer, R&D within areas such as space science technologies, cyber security, and security communication.

NASA select ICEYE for Earth science mission and Endurosat for PADRE mission

NASA awarded ICEYE US Inc the company's first Task Order under a Blanket Purchase Agreement (BPA) with NASA. The agreement funded from NASA's Earth Science Division of the Science Mission Directorate, opens access to NASA to acquire ICEYE's SAR data to evaluate it in NASA's Earth Science Research, Analysis, and Applications portfolios - which will help NASA to advance its Earth Science research objectives. ICEYE sensors provide information for research concerning geology, topography, and climate change. Moreover, NASA selected the Bulgarian company EnduroSat to **partner with NASA and the University of California Berkeley in the NASA CubeSat mission Solar PolArization and Directivity X-Ray Experiment (PADRE)** which aims to study the Sun in hard X-rays (HXRs) from LEO and to enhance the understanding of solar activity and flares as well as space weather. In particular, EnduroSat's 12U satellite, scheduled for launch in 2025, will carry the X-ray polarimeter and Directivity sensor.

ESA announces winners of the 2023 Rising Stars Award

ESA announced the 20 winners selected for the 2023 Rising Star Award under ESA's Rising Star initiative which is coordinated under ESA's commercialisation services department. The Rising Star Initiative is a competition that aims to list the best European space startups and scale-ups. The 20 winners are Arkadia Space, Celestial Space Technologies Gmbh, Dawn Aerospace, Digifarm, Dipteron, D-Orbit, DcubeD, Drift+Noise Polar Services, KP Labs, Lasting Software, Latitude, Maana Electric, Murmuration, Pangea Aerospace, ReOrbit, Space Cargo Unlimited, SuperVision Earth, Ternwaves, The Exploration Company, and Vyoma. They will benefit from receiving increased awareness of their activities especially in the investment community and facilitated access to ESA's commercialisation services department.

In other news

Canada allocated $1.7M funding to support the Canadian space industry for lunar exploration: the funding was awarded to AllSeeing Corp., MDA, the University of Alberta, Pelican MRI, Inc., the Ottawa Hospital Research Institute and Lunar Medical, to support the Canadian space industry for lunar exploration, as part of Canada's provision of Canadarm3 to the Lunar Gateway.

The U.S. and Peru consider construction of a national spaceport in Peru: The partnership is based on the agreement between Peru's National Commission for Aerospace Research and Development (Conida) and the U.S. Space Command from April.

The U.S. and Mongolia release a Joint Statement on the Strategic Third Neighbour Partnership: the statement is comprised of 3 objectives: (1) Deepening Economic Cooperation, (2) Promoting Democratic Principles, and (3) Strengthening Security Cooperation. With regards to space mentioned in (1) Deepening Economic Cooperation, space and technology cooperation will be increased, incl. a bilateral space dialogue, and bilateral cooperation in SSA was discussed.

U.S. Space Force receives Geostationary Operational Environmental Satellite GOES-15 from NOAA: GOES-15 was transferred from NOAA to the Space Force to extend weather coverage of the Indian Ocean region to accurate weather data for improved operations planning in the air, land and sea. GOES-15 will replace GOES-13 which will run out of fuel.

INDUSTRY & BUSINESS

Ariane 6 successfully passes hot-firing test at DLR

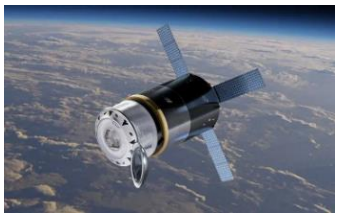
Credit: ESA/DLR/ArianeGroup

On September 1st, the upper stage of the **Ariane 6 launcher underwent a comprehensive hot-firing test at DLR in Lampoldshausen**. This test, lasting for approximately 22 hours, recreated the conditions the upper stage will encounter during its inaugural mission. This collaborative effort between the DLR and ArianeGroup took place at the ESA P5.2 test stand and involved two ignitions of the Vinci engine and two of the APU, offering an intricate simulation of operational scenarios. The upper stage of Ariane 6 is engineered to burn up entirely in Earth's atmosphere after payload deployment, contributing to the avoidance of space debris. The launch of the Ariane 6 rocket has been officially postponed until 2024, as confirmed by ESA. However, the successful outcome of this test brings the European space community a step closer to deploying the Ariane 6 launcher for a range of missions. The next stage involves combined tests of the entire launch system at the European spaceport in Kourou, French Guiana. Following the successful initial test, the long-duration hot fire test set for October 3rd, simulating the entire flight phase of the core stage, **is postponed due to an anomaly affecting its thrust vector control system**, which maintains altitude during flight by adjusting the Vulcain 2.1 engine's position. The delay may impact the previously anticipated Q1 2024 maiden flight of the Ariane 6, with a more precise timeline pending analysis of the long-duration hot fire test results. The rocket's second-stage test is expected to occur in late 2023.

Voyager Space and Airbus partner for Starlab space station

Voyager Space and Airbus Defence and Space joined forces to **create a transatlantic joint venture aimed at developing, constructing, and operating Starlab**, a commercial space station intended to succeed the ISS. The joint venture seeks to meet the growing demand from global space agencies while creating opportunities for commercial users. The mission of this programme is to ensure a sustained human presence and American leadership in LEO. In addition to the U.S. entity, Starlab will establish a European joint venture subsidiary to directly serve ESA and its member state space agencies.

Rocket Factory Augsburg introduces Argo for ESA's space cargo initiative



Credit: Rocket Factory Augsburg

The German startup Rocket Factory Augsburg, leading a consortium, **introduced the Argo space station resupply vehicle and submitted it for consideration to ESA's Commercial Cargo Transportation Initiative (CCTI)**. Launched in May by ESA, the CCTI encourages European industry to develop a space cargo transportation system for the ISS and future commercial LEO missions. The Argo vehicle is designed to transport payloads up to 3.4 tonnes and offers 13 cubic meters of pressurised volume. Companies entering CCTI bids are working toward a demonstration mission that must launch by 2028, with a requirement to deliver a minimum of 2 tonnes of cargo to the ISS and return at least 1 tonne to Earth. Successful completion will lead to service contracts. ESA divided the initiative into three phases: Phase 1.1, including preliminary design and third-party funding, has a €2M budget; Phase 1.2 will de-risk the most critical areas of design and secure additional third-party funding; while Phase 2 is the final step toward the demonstration flight, open to all companies, regardless of Phase 1 participation.

The Exploration Company partners with Axiom Space and Spaceium

Credit: The Exploration Company

The German-French startup The Exploration Company **signed a preliminary cargo delivery agreement with Axiom Space**. Under the agreement, Axiom plans to purchase a full mission from The Exploration Company, expected to take place in the fourth quarter of 2027 - if the startup meets specific objectives by 2025. While SpaceX and Northrop Grumman have been the main providers of such services, The Exploration Company aims to improve its approach and foster European presence. The company is developing a modular and reusable orbital vehicle called "Nyx" designed to transport cargo (and potentially humans) to and from space stations. The company is aiming to conduct an initial demonstration mission using a prototype called "Bikini" in January 2024, with another demonstration prototype called "Mission Possible" scheduled for the fourth quarter of 2024.

Additionally, **The Exploration Company also partnered with Spaceium** for a demo mission aimed at refuelling a spacecraft in orbit. Spaceium is currently developing a modular refuelling, charging, and debris storage station set to launch next year, while The Exploration Company's Nyx craft is designed for refuelling during its months-long journeys around Earth or the Moon.

Axiom and NASA partner for private astronaut mission to ISS

Credit: NASA

NASA and Axiom Space joined forces for the fourth private astronaut mission to the ISS, with a launch date expected in August 2024 from Kennedy Space Center in Florida. The Axiom Mission 4 (Ax-4) is expected to spend up to 14 days docked to the ISS and will lead private astronauts to collaborate with the station crew members and ground-based flight controllers in various in-orbit activities. NASA's partnership with Axiom Space is part of its strategy to create a LEO marketplace where the agency is one of many customers. This strategy frees up resources for NASA's deep space missions like Artemis to the Moon and Mars, while still utilising LEO for training and testing purposes.

Thales Alenia Space and NIGCOMSAT renew SBAS partnership in Africa

Following the successful Satellite Based Augmentation System (SBAS) flight demonstration in Abuja in February 2023, **Nigerian Communications Satellite Ltd, NIGCOMSAT, and Thales Alenia Space renewed their partnership to further develop the SBAS**. Under this agreement, NIGCOMSAT will grant Thales Alenia Space access to the SBAS payload on the NIGCOMSAT-1R satellite, allowing the dissemination of SBAS signals across Africa. SBAS is a high-precision satellite navigation system primarily designed for aviation, enhancing safety and accuracy in navigation. It plays a crucial role in improving flight safety, increasing efficiency, and reducing environmental impact by enabling smoother air traffic and reducing fuel consumption, aligning with the goals of the African Union's Single African Air Transport Market (SAATM). Furthermore, SBAS has far-reaching applications beyond aviation, including precision agriculture, land and maritime transportation, rail safety, oil and gas operations, drone navigation, secure time synchronisation, mapping, surveying, and various mass-market applications.

Credit: NIGCOMSAT

Vyoma and EnduroSat launch commercial SSA venture

Credit: Vyoma

Vyoma and EnduroSat are collaborating, heralding Europe's inaugural commercial venture into in-orbit SSA. By utilising in-orbit optical telescopes, Vyoma will observe satellites and objects in orbit and map orbital dynamics in real-time, ensuring near-zero latency SSA data and services. In tandem, EnduroSat will engineer the ESPA microsatellites destined for LEO. These satellites are endowed with on-board edge computing capabilities for instantaneous image processing and data reduction. The two pilot satellites are scheduled for late 2024, forming the nucleus of a 12-satellite constellation. This constellation's data wealth will elevate global SSA capabilities, bolster space safety, and empower satellite operators with informed decision-making to mitigate space debris and anomalies.

Arianespace wins a contract with Intelsat to launch GEO satellite

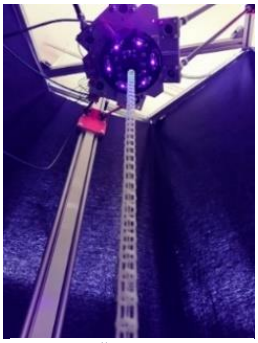
Arianespace secured a contract with Intelsat to launch the IS-45 small geostationary communication satellite in H1 2026, signifying the continued role of such satellites in the commercial launch market. The one-ton IS-45 satellite, ordered from Swiss firm Swissto12, features 12 Ku-band transponders and is based on the HummingSat platform developed with ESA's support. The GEO satellite launch market evolved considerably in the past 40 years, with a shift toward LEO broadband constellations, but companies like Arianespace still view the GEO market as stable, with about a dozen launches per year (about half of market peaks).

Credit: Intelsat

Intelsat receives nearly $3.7B for C-band frequency clearing

Intelsat will receive an amount of nearly **$3.7B in the fourth quarter, following the successful completion of the C-band frequency clearing**. This achievement promises strategic avenues for both the company and its shareholders. The FCC C-Band Transition Order had set a deadline for spectrum clearance by December 2025, offering incentive payments to satellite operators for early completion before December 2023. Intelsat is entitled to accelerated relocation payments amounting to $3.67B. Half of these funds would be allocated to reduce the company's debt in line with established debt covenants. The remaining portion empowers Intelsat to explore various options aimed at creating value and opportunities for all stakeholders.

DCUBED plans in-space manufacturing demonstration



Credit: DCUBED

DCUBED, a German NewSpace hardware manufacturer, is **set to showcase an in-space manufacturing through a demonstration mission scheduled for Q1 2024**. The demonstration involves the creation of a 3D printed truss structure, approximately 30 centimetres tall. Its objective is to validate the viability of in-space manufacturing. This demonstration serves to establish in-space manufacturing capacities for larger space structures, particularly tailored for SmallSat applications. The company also has other projects for the coming years, including an in-orbit truss-structure manufacturing experiment in 2025, and a mission demonstration in 2026 featuring a SmallSat solar array generating multiple kilowatts.

TransAstra wins NASA contract for space debris capture tech

NASA awarded an $850K Phase 2 Small Business Innovation Research contract to space logistics startup TransAstra for the development of an inflatable capture bag to collect orbital debris.

Credit: TransAstra

Originally designed for the Asteroid Redirect Mission, this technology allows for the retrieval of objects without the need for docking or fixtures. TransAstra intends to use the capture bag for cleaning up smaller objects like cubesats, as well as larger items such as spent rocket bodies and defunct satellites. They also propose a system where captured debris is transported to an on-orbit processing plant, reducing costs and propellant consumption.

Amazon faces lawsuit over Blue Origin's Project Kuiper contracts

An institutional investor **filed a lawsuit against Amazon and its board members, including Jeff Bezos, over launch contracts awarded to Bezos' space company, Blue Origin**. The suit, brought by Amazon shareholders, alleges that Amazon's board approved the contracts for Project Kuiper with minimal consideration. The plaintiffs argue that the board failed to protect the negotiation process from Bezos' conflict of interest. The lawsuit questions why SpaceX, a leading launch company, was not considered as a launch provider, despite its renowned reliability. Amazon ultimately selected United Launch Alliance, Blue Origin, and the European firm Arianespace. Blue Origin received a significant portion of the contract value, accounting for almost 45% of the total expenditure, with Amazon having spent approximately $1.7B on the contracts.

Astrobotic wins two NASA contracts for safer Lunar landings

Astrobotic initiated **two NASA Small Business Innovation Research (SBIR) contracts focused on lunar plume-surface interactions (PSI) to improve lunar landing safety**. The first project, 'Floatinator', will create a hot-fire test apparatus simulating lunar gravity by dropping it at controlled acceleration, enabling a deeper understanding of how rocket plumes affect landings on celestial bodies. The second project, the Plume-Surface Interaction Combined Hot-fire Imaging Camera (PSICHIC), will develop a compact imaging sensor combining high-speed and thermal cameras for enhanced PSI data collection. These efforts will contribute to safer lunar landings and informed mission planning for upcoming lunar exploration missions, including NASA's Artemis programme.

PAR Technology secures $900M USSF contract for satellite-based services

PAR Technology Corporation and its subsidiary, PAR Government Systems Corporation, **secured a contract for the Proliferated Low Earth Orbit (PLEO) Satellite-Based Services initiative**, led by the USSF. The contract, valued at $900M over five years, aims to provide satellite-based services and capabilities supporting all domains, from space to air, land, maritime, and cyber, with low-latency offerings. This initiative involves 16 awardees and is managed by the Commercial Satellite Communications Office (CSCO) under the Space Systems Command. The goal is to support U.S. Combatant Commands, defence agencies, federal government entities, and international coalition partners. PAR Government Systems Corporation will collaborate closely with ICEYE U.S., a provider of space-based radar capabilities, to enhance satellite services for various mission applications. This partnership will focus on delivering near-real-time persistent monitoring services to decision-makers within the DoD. Furthermore, Rome Research Corporation (RRC) will be part of this contract. RRC has a history of partnering with DoD customers to deliver satellite communications and space-related services, including 24/7 terrestrial communication systems support, IT support, telecommunications engineering, installation services, and asset management. This collaborative effort between PAR Technology, PAR Government Systems Corporation, and ICEYE U.S. aims to advance commercial sector integration for the USSF, reinforcing their commitment to enhancing national security capabilities.

SDA awards SpaceX, Kuiper, Aalyria Technologies, Momentus and QinetiQ

Credit: SDA

SpaceX, Kuiper Government Solutions, and Aalyria Technologies **have been selected by the U.S. SDA to conduct three-month studies on the potential of commercial systems to augment the military's LEO constellation**. These studies will focus on LEO backhaul services, aiming to assess how commercial systems can improve the resilience and capacity of the Proliferated Warfighter Space Architecture (PWSA). The objective is to improve the resiliency and network capacity of this system by incorporating commercial LEO systems into the architecture. SDA is investing a total of $1.6M in these studies, with each company tasked to explore different aspects of LEO backhaul capability. SpaceX will investigate the feasibility of integrating commercial LEO systems with the PWSA to enhance broadband data transfer between edge and main networks globally. Kuiper Government Solutions will examine how its broadband constellation can contribute to these efforts. Aalyria Technologies will explore mesh communications networks in the context of LEO backhaul.

Additionally, **SDA awarded a contract to Momentus for the Small Business Innovation Research Award** titled "Orbital Service Vehicle Enhancements to Meet DoD Mission Requirements". This award will enable Momentus to adapt its Vigoride Orbital Service Vehicle to fulfil a wide range of DoD payloads and mission criteria. The initial phase of the contract is valued at $746.073, with the option to include an additional $1.196,404 for future work. This aims to enhance the Vigoride vehicle's capabilities, with a focus on achieving Critical Design Review maturity.

SDA also assigned QinetiQ a **$224M contract to offer technical support to SDA**. The contract, lasting five years, involves providing engineering, and professional services to aid the development of the Proliferated Warfighter Space Architecture. The contract type is SETA (Systems Engineering and Technical Assistance), typically used to support major DoD acquisition programmes.

Eutelsat collaborates with Brazil and Asia to enhance connectivity

Eutelsat Communications entered two significant partnerships with Brazil and Thailand. In Brazil, **Eutelsat collaborates with AVS**, a Brazilian service provider and integrator. This partnership capitalises on Eutelsat's 65 West A satellite's capacity, enabling AVS to transmit public channels. By utilising Eutelsat's "Planned C Band" solution, AVS can expand its broadcasting reach without concerns about interference from Brazil's ongoing 5G deployment. This collaboration empowers AVS to expand its broadcasting scope without requiring additional filters to counter the potential interference from the 5G network. Looking towards Asia, **Eutelsat announced a partnership with Space Tech Innovation Limited (STI)**, a subsidiary of Thaicom. Together, they are set to launch a software-defined satellite (SDS) at the 119.5° East orbital slot. This expansion addresses the growing demand for connectivity in the region. Scheduled for delivery in 2027, the SDS is going to provide an additional 50 Gbps of capacity across Asia and, combined with its adaptable coverage and power levels, underscores its ability to deliver reliable services to Eutelsat's clientele in the Asian market.

Geosat plans to launch 11 new high-resolution satellites

The Portuguese space company Geosat unveiled **plans to launch 11 new high and very high-resolution satellites by 2025**. This initiative is part of Geosat's effort to enhance the Portuguese space ecosystem, establish new value chains, and boost the country's economy. The company will also introduce a new global brand communication strategy aligned with the rapid development of the space sector, both globally and in Portugal. These projects also include the implementation of the Portuguese component of the Atlantic Constellation. With these advancements, Geosat aims to position Portugal as a player in the global space sector and provide the nation with autonomy in accessing space-based imagery, crucial for various applications, including agriculture, finance, and disaster management.

Spire Global secures 3 contracts with NASA, GHGSat and NOAA

Credit: Spire Global

Spire Global secured two contracts for satellite data and emission monitoring. Firstly, **Spire has been awarded a $6.5M contract through NASA's Commercial Smallsat Data Acquisition (CSDA) Programme**. This involves providing a range of EO data from its satellite constellation to NASA, supporting scientific research and government agencies. The contract ensures access to 12 months of GNSS science data with a 30-day latency. The data includes GNSS science data for weather forecasting and space weather measurements, among others, and allows data to be available to all U.S. Government-funded research and federal agencies for scientific purposes. Additionally, **Spire Global secured a Space Services contract from GHGSat** to develop and operate four greenhouse gas emission monitoring satellites, focusing on carbon-intensive sectors. This contract contributes to addressing global greenhouse gas emissions more comprehensively, with a launch planned for 2024. In parallel, Spire Global also secured a **$2.8M contract from NOAA for satellite weather data, as part of NOAA's Commercial Weather Data Pilot (CWDP) Ocean Surface Winds Pilot Study**. Spire will provide GNSS-R observation data in near real-time, focusing on ocean surface wind speeds, which will aid NOAA in improving weather forecasts, climate research, and sea-surface wind measurements for applications like marine weather forecasts, hurricane tracking, and more. The 12-month contract, beginning on October 25th, encompasses three phases: Preparation, Data Delivery, and Evaluation, and will also explore GNSS-R applications beyond ocean surface wind analysis.

Airbus selects Safran Passenger Innovations for Ku-band HBCplus system

Airbus selected Safran Passenger Innovations (SPI) as the hardware supplier for its Ku-band HBCplus system. This system enables simultaneous multi-beam operation and features Get-SAT's Electronically Steerable Antenna, which is compatible with both GEO and LEO satellites. The target launch for this system is set for 2026. Additionally, Intelsat and Panasonic Avionics Corporation signed contracts to become Managed Service Providers (MSPs) for the Ku-band multi-orbit system, enhancing the in-flight internet experience for Airbus Family aircraft.

Credit: Airbus

Ball Aerospace wins $486.9M NASA contract

Ball Aerospace was awarded a **$486.9M contract by NASA to construct a hyperspectral infrared sounding instrument for NOAA's Geostationary Extended Observations (GeoXO) initiative**. The GeoXO Sounder (GXS) will gather atmospheric data in real-time, providing three-dimensional profiles of North America's atmosphere. This information will enhance numerical weather prediction models, enabling better forecasts for extreme weather events such as tornadoes and hurricanes. Moreover, it will help monitor pollutants like ozone and carbon monoxide in the air. The GeoXO programme is expected to start in the early 2030s and operate until 2055.

Peraton secures $513.5M subcontract from NASA's JPL

Credit: NASA

Peraton secured a **$513.5M subcontract from NASA's JPL which will involve Peraton's support for the Deep Space Network (DSN)**. The DSN connects NASA's lunar and planetary spacecraft with mission control on Earth, ensuring communication across vast distances. Peraton's responsibilities encompass the technical sustainment of four antenna stations, each equipped with large parabolic dish antennas and highly sensitive receiving systems. These systems are important for detecting extremely faint radio signals from spacecraft operating in the far reaches of space. Peraton will provide essential base support functions, including maintenance services ranging from operator to depot levels for the antennas and associated infrastructure. Additionally, the company will oversee the security of the complex, ensuring the protection of critical assets.

Hughes Network Systems secures $500M USSF contract

Hughes Network Systems, a subsidiary of EchoStar, **secured a 5-year contract from the USSF, potentially valued at up to $500M, with an option for a 5-year extension**. The contract provides services for the DoD and various federal agencies and mandates Hughes to procure fully low-latency services from two satellite constellations: OneWeb and EchoStar Lyra. The contract underscores the growing importance of LEO services for government and defence agencies, offering rapid and cost-effective capabilities. EchoStar and Hughes will build 28 new Lyra satellites, with the first slated for launch next year. The contract enables Hughes to provide a comprehensive solution, leveraging both OneWeb's capabilities and EchoStar Lyra's S-band IoT system.

Voyager Space secures $900M contract for cost-effective wartime capabilities

Credit: AFLCMC

Voyager Space secured $900M indefinite-delivery/indefinite-quantity (IDIQ) contract from the Air Force Life Cycle Management Center's Architecture and Integration Directorate (AFLCMC/XA). This contract, facilitated through Valley Tech Systems, Inc., a part of Voyager Space's Defense Segment, is aimed at delivering cost-effective capabilities for wartime operations.

The AFLCMC/XA focuses on developing innovative approaches to enhance multi-domain system capabilities, characterise new technologies, and advance systems through studies, recurring demonstrations, and rapid development. This facilitates rapid prototyping, testing, and capability transitions that yield cost-effective warfighting capabilities. Voyager's Defense Segment, under this contract, will engage in various activities, including modelling, simulation, analysis, software development, advanced synthetic/virtual simulator environments development, and more, all aimed at supporting operational testing and training.

USSF and Astroscale partner for on-orbit satellite refuelling project

Astroscale U.S. entered into an agreement with the USSF for a joint investment in an on-orbit refuelling vehicle. The deal encompasses $25.5M in government funding and about $12M from Astroscale. Within 24 months, Astroscale will deliver a prototype capable of refuelling a satellite in orbit. This project, named Astroscale Prototype Servicer for Refueling (APS-R), employs the rapidly attachable fluid transfer interface (RAFTI) port created by Orbit Fab, a component that is part of the growing market for in-space refuelling. The vehicle's on-orbit demonstration is yet to be determined, but it could involve one of the Tetra-5 small satellites slated for a 2025 on-orbit refuelling experiment backed by the USSF and the Defense Innovation Unit.

SAS and MAG Aerospace partner for USSF's $900M contract

SAS partnered with MAG Aerospace to explore potentials from the **USSF Systems Command's $900M indefinite delivery, indefinite quantity contract (IDIQ) recently awarded**. Together, SAS and MAG Aerospace will leverage their expertise in AI, analytics, and Joint All-Domain Command and Control to assist the Space Force in analysing data generated by its network of radars and sensors in SSA. The IDIQ contract supports Space Command and Control and aims to address the challenge of processing and converting the immense and diverse sensor data produced by Space Force tracking radars and sensors into actionable and real-time intelligence. The collaboration also involves the deployment of the SAS Viya platform in a secure cloud environment by MAG Aerospace for processing IoT data and performing advanced analytics at the tactical edge.

NASA awards $719M contract to KBR's joint venture

NASA awarded KBR's joint venture with Intuitive Machines, the Omnibus Multidiscipline Engineering Services (OMES) III contract worth $719M over five years. This contract will support NASA's Applied Engineering and Technology Directorate at Goddard Space Flight Center. KBR will provide multidisciplinary engineering services for space orbital systems, including electrical engineering, instrument systems, mission engineering, and systems analysis. The OMES III contract supports the Joint Polar Satellite System programme for weather forecasts and NASA's Exploration and In-space Services projects division, focusing on in-space assembly and manufacturing.

Inmarsat Government awarded $900M pLEO satellite contract

Credit: Viasat

Viasat announced that its subsidiary, Inmarsat Government, has been awarded a **$900M Proliferated Low Earth Orbit (pLEO) Satellite-Based Services (SBS) contract** by the U.S. Defense Information Systems Agency (DISA) on behalf of the USSF's Space Systems Command (SSC). This contract is part of the U.S. DoD's strategy to diversify satellite communications and enhance resilience by deploying pLEO constellations, in addition to the existing GEO non-geostationary orbits (NGSO) satellites. This initiative provides combatant commands, defence agencies, federal government organizations, and international coalition partners with a flexible and resilient SATCOM solution.

Zenno and D-Orbit partner to implement superconducting electromagnets


Credit: Zenno Astronautics

The New Zealand based Zenno Astronautics and the Italian company D-Orbit formed a commercial partnership to develop innovative space products and services. **The collaboration will leverage Zenno's superconducting electromagnets for two applications**: fuel-free desaturation of reaction wheels in high-altitude orbits and radiation shielding using superconducting electromagnets. This partnership aims to accelerate the availability of fuel-free space technologies, offering new possibilities for satellite and spacecraft design and mission duration. Zenno's Z01 superconducting magnetic device, designed for spacecraft attitude control, has been integrated into D-Orbit's ION Satellite Carrier, with its first in-orbit validation mission scheduled for launch via SpaceX's Falcon 9 in Q4 2023.

Japan selects Warpspace for SBIR programme

Japan's government selected Warpspace for a **Small Business Innovation Research (SBIR) initiative aimed at creating interoperable optical communication modems and routers**. This programme, integral to Japan's drive for research and development in small businesses and startups, seeks to expedite innovation within the nation. Warpspace revealed its plans to engineer optical communication modems and routers capable of seamless compatibility and interoperability within satellite optical communication networks.

KDDI and SpaceX partner to extend connectivity in Japan

KDDI and SpaceX forged a partnership aimed at extending satellite-to-cellular service across Japan. By using SpaceX's Starlink LEO satellites and KDDI's national wireless spectrum, this collaboration seeks to bolster cellular connectivity in areas that traditional 4G and 5G networks cannot reach, including remote islands and mountainous regions. This endeavour aligns with both companies' shared vision of "connecting the unconnected" and will include previously unreachable regions to cellular coverage. The initial phase, expected to roll out as early as 2024, will focus on offering SMS text services, with plans to expand to voice and data services. Furthermore, KDDI and SpaceX extend an invitation to mobile network operators worldwide to join this ecosystem, providing next-generation satellite-enabled connectivity to their customer bases.

MDA acquires SatixFy's payload division and partners with Telesat

The Canadian space tech firm **MDA acquired SatixFy's payload division in a substantial $60M deal**. Within this arrangement, MDA is set to take ownership of SatixFy Space Systems, a specialised entity known for its expertise in developing satellite payload platforms. As part of this transaction, MDA is also committing an additional $20M in advance payments, aimed at harnessing the capabilities of SatixFy's flagship chipsets.

Credit: Telesat

On the same path, **MDA revealed a partnership with Telesat**. MDA will be tasked with constructing a fleet of 198 cutting-edge satellites for the Telesat Lightspeed LEO initiative. The satellite network aims to improve connectivity by employing advanced technologies like MDA's digital beamforming array antennas and integrated regenerative processors. These advancements enable smaller satellite sizes while maintaining high-performance standards. MDA will now be responsible for constructing the Lightspeed satellites, replacing Thales Alenia Space and resulting in estimated cost savings of approximately $2B. Launches for the programme are slated to begin in mid-2026, with global services set to commence in late 2027, with global service becoming available once the first 156 satellites are in orbit. The Lightspeed programme now secured full funding, incorporating contributions from the company itself, vendor financing, and commitments from Canadian federal and provincial governments. Following the announcement of the Lightspeed global internet network, **Telesat witnessed a significant boost in its stock price**. Telesat's stock surged up to 64% initially before stabilising at around a 50% increase from its previous close at $8.45 per share. Telesat also reported second-quarter results, including $180M in revenue and a net income of $520M, largely attributed to a $260M FCC payment for spectrum clearance. The company reaffirmed its full-year 2023 revenue guidance, projecting between $690M and $710M.

Australia collaborates with OroraTech and ICEYE for wildfire management

OroraTech is expanding its partnership with the Forestry Corporation of New South Wales (FCNSW) to enhance wildfire management in Australia. This collaboration improves early fire detection capabilities, providing FCNSW with bushfire detection and precise fire perimeter locations across its vast estate. The data will be accessible on mobile and desktop devices, with OroraTech offering on-demand tasking services during critical periods.

Credit: ICEYE

In parallel, **ICEYE is entering into a partnership with the Federal Government of Australia**, to provide flood and bushfire hazard data. This collaboration enhances disaster assessment and response strategies, improves resource allocation, and strengthens coordination between national and local entities. ICEYE's Flood and Bushfire Insights leverages Synthetic Aperture Radar imagery from its satellite constellation, enabling the delivery of real-time information. Flood Insights offer structure-level flood extent and depth data within 24 hours of flooding peaks, while Bushfire Insights provides rapid property damage assessments during bushfire events.

SES validates C-band with FCC and launches SES Cruise mPOWERED + Starlink

Credit: SES

SES partnered with the U.S. Federal Communications Commission (FCC) by validating the certification of its Phase II accelerated C-band clearing and relocation initiatives. SES received $2.99B to launch five new satellites to ensure the continued delivery of digital television to nearly 120 million households and vital data services in the upper 200 MHz of the C-band. SES also repacked its C-band downlink services in the U.S., relocated associated Incumbent Earth Stations, upgraded equipment, modified telemetry, tracking, and control operations, and consolidated gateways. Additionally, SES introduced a solution known as **SES Cruise mPOWERED + Starlink**. By integrating Starlink's LEO and SES's MEO services, SES offers cruise operators a unified, high-speed, and secure connectivity experience for ships and passengers, regardless of their location or route. This offering leverages the strengths of MEO and LEO orbits to enhance capacity and reach. SES Cruise mPOWERED + Starlink is set to launch in Q4 2023, setting a new standard for ship connectivity.

EUSI collaborates with Umbra to expand SAR data access

European Space Imaging (EUSI) entered a strategic partnership with Umbra, a leader in advanced space radar technology, **enabling customers to directly access Umbra's Synthetic Aperture Radar (SAR) data through EUSI**. This partnership will benefit remote sensing data users across Europe and North Africa by offering them access to both high-resolution optical and SAR imagery from a single source. Under this agreement, EUSI will oversee global tasking and delivery of SAR imagery to its customers through Umbra's advanced satellite constellation and tasking platform. The introduction of SAR products into EUSI's portfolio offers opportunities across diverse sectors, including emergency response, maritime, and defence & intelligence.

True Anomaly secures $17.4M contract from USSF

The U.S. based True Anomaly secured a **$17.4M contract from the USSF Space Systems Command for the development of SDA capabilities**. These SDA capabilities, collectively referred to as the "SDA Kit," aim to help the Space Force improve its understanding of activities in space and identify potential threats. The 48-month contract will be executed through a Small Business Innovative Research (SBIR) Phase 3 contract. True Anomaly's SDA Kit comprises four key functions. The first is DTID (Detect, Track, ID), designed to locate and track objects in space. The second is Characterization, which utilises collected data, such as the amount of light emitted by a spacecraft, to characterise its activities. The third is TW&A (Threat Warning and Assessment), which uses machine learning to predict changes in an object's behaviour and identify anomalies. The fourth, Data Exploitation and Integration, combines publicly available, commercial, and classified data to forecast events. The SDA capabilities will complement the broader Mosaic platform, an integrated software platform for space operations developed by True Anomaly. The platform will also incorporate data from the company's autonomous spacecraft, Jackal, scheduled for launch in early 2024. These spacecrafts, equipped with three cameras, will conduct proximity operations and in-orbit inspections.

ELA and INNOSPACE partner for multi-launch at Arnhem Space Centre

Credit: ELA

Equatorial Launch Australia (ELA) signed a **multi-year, multi-launch agreement with the Korean aerospace company INNOSPACE for a series of orbital launches from the Arnhem Space Centre** (ASC) in Australia's Northern Territory. Over the next five years, the agreement will involve several INNOSPACE rocket variants carrying payloads ranging from 50kg to 500kg into LEO. The initial launches by INNOSPACE from ASC will begin in early 2025. INNOSPACE will be allocated a dedicated Space Launch Complex (SLC), and each SLC will comprise two customized ASC launch pads, an extensive Horizontal Integration Facility (HIF) for rocket assembly, payload integration, and various support facilities.

Telespazio and Intelsat partner for teleport network in Italy

Telespazio and Intelsat signed a new agreement to expand Intelsat's teleport network in Fucino Space Centre, Italy. The agreement connects Intelsat's data centre in Fuchsstadt, Germany, with Telespazio's Fucino facility, serving Intelsat's IntelsatOne IP/Multiprotocol Label Switching (MPLS) terrestrial network and Epic satellite fleet. This partnership enhances digital infrastructure, broadband, and global satellite transmission capabilities while offering in-country ground facilities for Italian energy and government organisations with regulatory and security requirements for local satellite traffic routing, as well as Media businesses seeking European or global distribution.

Credit: Telespazio

Pale Blue supplies water vapor thrusters for South Korea nanosatellites

The Japanese startup **Pale Blue entered a contract with South Korea's Yonsei University to supply water vapor thrusters for a pair of six-unit cubesats**. These thrusters will facilitate formation flying for a laser crosslink system between the two nanosatellites in LEO and enable optical communication between them. Yonsei University's mission is focused on demonstrating cutting-edge laser communication and orbital manoeuvring while maintaining formation between the satellites. The water vapor thrusters provided by Pale Blue meet their requirements, offering environmental friendliness and freedom from regulatory constraints.

Oriental Space partners with Wuxi City

Oriental Space and the Liangxi District People's Government of Wuxi City, China, reached a significant deal for the aerospace power headquarters project in Wuxi. The project, with an **anticipated investment of approximately €377M**, will centre on critical sectors such as recyclable and reusable aerospace engine research, development, production, and testing. The focal point will be the Oriental Space "Force" series of liquid rocket engines, with the aim of establishing the capacity to produce 300 liquid rocket engines annually.

Simera Sense, Sodern and CubeSpace sign MoU to enhance EO projects

Credit: Sodern

During the World Satellite Business Week summit held in Paris from September 11th to 15th, CEOs Johann Du Toit of Simera Sense (South Africa), Vincent Dedieu of Sodern (France) and Mike-Alec Kearney of CubeSpace (South Africa) came together to sign a MoU aimed at advancing EO efforts. **This MoU signifies a commitment to collaborate and streamline EO missions**, ultimately improving the efficiency and speed of delivering mission objectives for satellite operators. The partnership seeks to drive innovation and facilitate the provision of vital data for various applications, including environmental monitoring and scientific research.

Australia establishes sub-orbital space launch facility at Koonibba Test Range

Australia established a permanent commercial sub-orbital space launch facility at the Koonibba Test Range, a joint venture between Southern Launch and the Koonibba Community Aboriginal Corporation. The facility will serve for sub-orbital missions to the edge of space and can also facilitate the re-entry of space technology from orbit. Southern Launch already has several missions planned for the Koonibba Test Range, including a mission with the DLR in 2024 and a MoU with UK-based Space Forge for spacecraft re-entry. Once operational, it is expected to annually contribute over $500K to the Koonibba Community. It will also generate employment, investment, and educational opportunities for the region, creating a new industry to support the community.

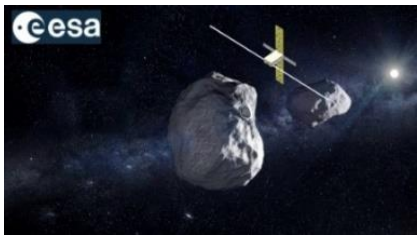
Yahsat expands presence in China, Asia Pacific markets and in Africa

Credit: Yahsat

The UAE's premier satellite solutions **Yahsat is intensifying its presence in China** as part of its strategy to expand internationally, with a focus on the Chinese and Asia Pacific markets. Yahsat's senior commercial team, led by CCO Sulaiman Al Ali, visited Beijing to meet with His Excellency Hussain bin Ibrahim Al Hammadi, the UAE Ambassador to China, who is leading diplomatic efforts to facilitate UAE companies' expansion in China. During the visit, Yahsat's team engaged with Thuraya's service partners, including Zhongyou Century Communications Technology CO. Limited, to explore business opportunities in key sectors, particularly government applications such as search and rescue, as well as enterprise solutions. One of their solutions, MarineStar, is expected to improve connectivity and communications in China's maritime industry. Thuraya also offers broadband terminals for land-based communications, addressing connectivity demands across the country. This reinforced collaboration follows a recent visit by Chinese Embassy officials to Yahsat's Abu Dhabi headquarters, where they praised the company for using its satellite-enabled connectivity solutions to locate and rescue Chinese fishermen lost at sea.

Furthermore, Yahsat's subsidiary YahClick is set to enhance broadband access in Sub-Saharan Africa through a **partnership with Nigerian satellite operator NIGCOMSAT**. The collaboration aims to offer faster and more reliable broadband internet connectivity and will bring speed enhancements, offering 25 Mbps for standard profiles and up to 100 Mbps for dedicated corporate users, facilitating improved access to essential services like education and healthcare.

ESA and GomSpace progress on the Juventas CubeSat for asteroid mission



Credit: GomSpace

ESA and the Danish company GomSpace finalised a Contract Change Notice (CCN) worth €1.5M for the Juventas CubeSat project, an integral part of the HERA mission. The Juventas CubeSat initiative, under GomSpace's leadership and supported by European subcontractors, is aimed at enhancing mission robustness through system level adaptations. The mission involves a 6U nanosatellite, Juventas, carrying a low-frequency radar named JuRa as its primary payload. Juventas will conduct radar and radio-science experiments targeting the binary asteroid's moon, Dimorphos. The nanosatellite's mission involves attempting to land on Dimorphos, measuring landing dynamics, surface properties, and asteroid dynamical characteristics using a gravimeter payload. The mission is also part of the international Asteroid Impact and Deflection Assessment (AIDA) collaboration, which aims to demonstrate asteroid deflection technology for planetary defence.

Anzen Engineering joins ESA's ARIEL mission

Credit: ESA

Anzen Engineering, a Spanish aerospace engineering firm, **announced its participation in the ESA ARIEL mission (Atmospheric Remote-sensing Infrared Exoplanet Large-survey)**. This project seeks to explore the atmospheres of exoplanets, aiming to undertake chemical sampling of over 1,000 exoplanets and studying planetary atmospheres and compositions. Anzen will collaborate with Airbus Defence and Space, working in tandem with ESA, to contribute to the mission's safety. They apply Reliability, Availability, Maintainability, and Safety (RAMS) analyses, directly influencing the satellite's design and development. Anzen also evaluates critical subsystems integral to the space platform, emphasising safety planning and comprehensive documentation, leading up to preliminary and critical design reviews. ARIEL is scheduled for launch in 2029 aboard the Ariane 6 launcher, with a four-year mission duration. Beyond launch day, Anzen Engineering's role in ARIEL extends to ensuring the enduring sustainability of aerospace projects by guaranteeing the reliable and secure operation of aerospace assets throughout each mission.

Space in Africa releases African Space Industry Annual Report 2023

The analytics and consulting firm highlights that the **African space economy is projected to reach $22.6B by 2026**. Moreover, the report states that the African countries budget for space activities was worth $425M, representing an approx. 15% decrease compared with the previous year. The significant decrease is attributed to a plethora of factors, such as fluctuation in the foreign exchange rates and the completion of national space projects.

Dragonfly Aerospace and Neuraspace partner for space sustainability

The South African Dragonfly Aerospace joined forces with the Portuguese Neuraspace **to implement Neuraspace's STM platform**, which utilises AI-based solutions to enhance space sustainability. Dragonfly Aerospace will integrate the STM platform into its EOS SAT-1 satellite to autonomously manoeuvre and avoid potential space collisions, contributing to the reduction of space debris and ensuring mission safety and longevity

In other news

Viasat secures over $80M in contracts: they will develop Active Electronically Scanned Array (AESA) systems for military applications, leveraging AESA phased array antenna technology for improved flexibility and jamming resistance.

SkyWatch launches an imagery product and partnered with Umbra: the aim is to provide comprehensive EO, combining radar and optical images to expand their satellite capabilities.

Western Australian Government allocates $800K to LatConnect 60 for EO data advancement: the company will use this funding to create the EONet60 platform, providing access to high-resolution satellite data across Western Australia.

SES and We Are IT collaborate to provide secure connectivity services: the goal is to enhance government operations and digital services in remote areas of the Philippines.

Benchmark Space Systems launches SmartAIM: it is a propulsion solution for precise satellite maneuvers in congested space which offers autonomous flight from station-keeping to collision avoidance. The company is partnering with Kayhan Space to enhance this project with the first SmartAIM-assisted flights expected in 2024.

HyPrSpace and Precious Payload partner to offer cost-effective OB-1 rockets: they will use hybrid propulsion for smallsat launches, with the maiden launch in 2026.

Solestial and Atomos Space sign an agreement for 20kW of Solestial's radiation-hardened solar blankets: this partnership will advance both companies' missions, with Solestial providing power for Atomos' orbital transfer vehicles on upcoming commercial missions starting in 2024.

Muon Space partners with Exotrail: they will supply electric propulsion systems for climate monitoring constellation, to enhance spacecraft performance and environmental sustainability.

Tunisia's Ministry of Communication Technology partners with Starlink on a three-month pilot project: they want to bring broadband satellite technology to select regions, including Tunis, Ariana, and Gabès. This collaboration aims to expand high-speed satellite internet services to remote areas while establishing regulatory guidelines.

UP42 partners with ImageSat International: they will offer direct access to the EROS NG satellite constellation, providing high-resolution imagery for sectors such as urban mapping, environmental monitoring, and disaster response.

Israel's SpacePharma sends a remote lab to space to conduct medical experiments: they take advantage of microgravity for more in-depth pharmacological study. This mission could lead to advancements in treating degenerative brain diseases and drug production in space.

HyImpulse's HyPLOX-75 hybrid rocket motor qualifies for flight: it is capable of carrying a 250-kg payload to 200 km, with a license granted for launch from SaxaVord Spaceport in Scotland.

Adelaide's Inovor Technologies joins Lockheed Martin's Mentor Protégé Program: it is the third Australian SME to participate in this 12-month mentoring initiative which aims to enhance businesses and facilitate international exports.

HySpecIQ and Bayanat joins forces to develop hyperspectral data applications: AzurX facilitated the partnership, and the aim is to create a Hyperspectral Centre of Excellence in the UAE, enhancing space expertise and targeting various markets.

INVESTMENT & FINANCE

OHB SE reaches agreement for KKR to take the company private and RFA raises €30M

On the 7th of August, the German company **OHB reached an agreement for the private equity firm KKR** to become a minority investor. The agreement includes a voluntary public takeover offer for all outstanding shares at €44 per unit.

Credit: OHB

Accordingly, KKR will buy all OHB's free float, currently representing 30% of the company's total share capital. Additionally, the PE firm will perform a capital injection of €77M into OHB at a subscription price of €44 per share, representing a 10% capital increase.

The voluntary public takeover offer by KKR was welcomed by OHB Management Board and Supervisory Board, and is waiting for the approval of OHB shareholders. **The deal is planned to be completed in spring 2024**. Afterwards, the German company will proceed to de-list from the Xetra stock exchange with the following distribution of shares: 63% owned by the Fuchs family and 37% by KKR.

In the press release, OHB states that it will be easier to implement its long-term strategy as a privately held company. OHB aims to double its annual revenue to €1.5B by 2025 as well as expand its operations in the U.S. According to the CEO, Marco R. Fuchs, the offer was very attractive because its gives liquidity to the company with no perspective of KKR gaining a controlling stake. Moreover, the CEO stated that the company share price in the public market did not reflect its true value and it would take too much time to raise the necessary amount of capital as a public company.

The deal also includes a separate **€30M capital injection from KKR into Rocket Factory Augsburg** (RFA) through a convertible note with a 5% interest rate, which could be converted at €15 per share. With the investment, RFA plans to launch its first RFA One microlauncher from SaxaVord Spaceport in Scotland, scheduled for Q2 2024.

Eutelsat and OneWeb complete combination

Credit: Eutelsat Group

Following the approval of Eutelsat shareholders, the **combination forms the Eutelsat Group**. Eutelsat Communications' headquarters will remain in Paris and listed both in the Euronext Paris Stock Exchange and London Stock Exchange. OneWeb will begin operating commercially as Eutelsat OneWeb and keep its centre of operations in London.

OneWeb's network, which is already operational, will extend its activity to a global level by the end of 2023 and be a part of the combined GEO-LEO service, which Eutelsat Group expects to open new markets and applications for its services. Additionally, Eutelsat Group expects to provide the funding to develop OneWeb's Leo flee, including Gen 2 satellites, which should enter service around 2028.

The estimated capex will be between €725M and €875M per annum on average between FY 2024 and FY 2030, and expected to decrease significantly afterwards. The company expects to reach positive EBITDA between FY 2025 and FY 2026, depending on the capex of Gen 2 satellites.

Axiom Space raises $350M in Series C funding

Credit: Axiom Space

Axiom Space concluded a Series C funding round, securing $350M, increasing its total funding to over $505M. Leading the Series C round were Aljazira Capital and Boryung, with participation from other investors. The funds will be used to further Axiom Space's goal of serving innovators in medicine, materials science, and on-orbit infrastructure. Axiom Space's first module is currently under construction, scheduled for launch to the ISS by 2026. Moreover, the company's contract with NASA to develop spacesuits for use on the ISS and Artemis missions has so far generated $370M in funded task orders, with a maximum value of $1.26B.

ESA's ScaleUp Invest confirms first companies to join the programme

ScaleUp Invest, the ESA commercialisation programme aimed at accelerating the growth of the private space industry, welcomed the first companies: Isar Aerospace, Rocket Factory Augsburg, Orbex, Aerospacelab, and Space Cargo Unlimited. ScaleUp intends to bolster NewSpace advancements by encouraging firms to adopt more risks, enter the market more swiftly, attract private and institutional investors, and introduce business innovations. This could encompass technical consultancy, access to facilities, and in-orbit demonstration and validation. The initiative is composed of two distinct components. Element 1 (INNOVATE) aims to boost innovation and commercialisation in Europe by providing services to support companies from the initial business idea stage to market readiness. Element 2 (INVEST) helps companies take greater risks, enter markets more swiftly, and attract private and institutional investors.

Sierra Space raises $290M in a Series B investment round

Sierra Space raised **$290M in its Series B funding round** led by three Japanese investors, MUFG, Kanematsu Corporation and Tokio Marine & Nichido and with the participation of current existing investors. The company stated that it currently has a backlog of $3.4B in contracts. With the latest funding, Sierra Space will expand its global partnerships and transition its Dream Chaser spaceplane from development phase to be mission ready for NASA cargo resupply flights to the ISS.

Eutelsat partners with Karista

Eutelsat Communications and the French Karista partnered to enhance investments in space technology. Eutelsat joined Karista's Spacetech fund as a subscriber, which provides seed and Series A investments ranging from €1M to €5M. Through this partnership, Eutelsat aims to foster innovation in the space ecosystem, particularly in France and Europe and aims to drive the growth and development of space technology start-ups across Europe.

Mapbox secures $280M in Series E funding round

The U.S.-based company MapBox, secured **$280M in a Series E investment round** led by Softbank Group to accelerate its efforts to integrate AI in its business segment dedicated to the automotive industry. The company uses satellite and aerial data in its location data platform to help develop mobile apps and coordinate company's logistics.

Credit: MapBox

Ball Corp sells aerospace business to BAE Systems for $5.6B

Ball Corporation announced the sale of its aerospace business to the British BAE Systems for $5.6B in cash. With the deal, Ball Corporation will focus on its aluminium packaging business, allowing it to accelerate low-carbon initiatives, reduce debt and position the company to accelerate capital return to its shareholders. The transaction, subject to regulatory approvals and customary closing conditions, is expected to close in the first half of 2024.

Credit: BAE Systems

Leaf Space secures €20M in funding and €15M from EIB in Venture Debt

Leaf Space, an Italy-based GSaaS provider, **completed a capital increase securing €20M in funding** and a €15M loan from the EIB through Venture Debt, reaching a total of €35M. The capital increase was made possible by an array of investors, including CDP Venture Capital and Neva. With the funding, the company will bolster its global network of ground stations and expand its footprint across various regions worldwide. Leaf Space also intends to support new frequency allocations for remote sensing satellites, simplify its service offerings, among other objectives.

Impulse Space secures $45M in Series A funding round

Impulse Space secured $45M in a Series A funding round. RTX Ventures, the venture capital arm of RTX, led the round. This funding will support Impulse Space's ongoing missions, including LEO Express-1, a GEO refuelling mission, and an upcoming mission to Mars. It will also contribute to the development of Impulse's largest vehicle, Helios, which allows for direct missions to Geostationary Equatorial Orbit without the need for a Geostationary Transfer Orbit. The Series A funding round also saw participation from investors like Founders Fund, Lux Capital, Airbus Ventures, and Space Capital.

Sidus Space acquires Exo-Space

The U.S.-based **Sidus Space acquired Exo-Space**, an American company specialised in AI for space applications. Under the agreement, Sidus acquired Exo-Space's assets through a combination of cash, stock options, and performance bonuses. This acquisition reflects Sidus's strategy to venture into the AI sector and broaden its offerings in Earth and Space Observations services.

DISH Network and EchoStar announce all-stock merger

Credit: Dish Network

DISH Network Corporation and EchoStar Corporation **announced an all-stock merger**, to be completed until de end of the year. The deal will generate cost and revenue synergies, enhance free cash flow generation, and drive long-term value creation.

In particular, the merger will allow EchoStar's $150M Lyra LEO constellation to **access Dish's U.S. S-band spectrum licences**. The constellation, to be comprised of 28 small satellites, is scheduled to enter operation in 2024 with the deployment of the first satellites. The company will also use its S-band capability to enter the direct-to-unmodified-device market for areas without terrestrial connection. Moreover, EchoStar will use the merger to diversify its business, reducing its reliance on the satellite consumer broadband market to seek more profitable market segments.

SWISSto12 secures €26.2M funding for geostationary SmallSat HummingSat


Credit: SWISSto12

SWISSto12 secured €26.2M working capital facility from UBS Switzerland AG. This funding will enable SWISSto12 to meet growing demand for its geostationary SmallSat HummingSat. The company's partnership with ESA secured over €30M for the development of HummingSat, the first SmallSat designed for geostationary orbit. Recent developments include contracts to supply HummingSats to major satellite operators such as Intelsat and Inmarsat. The company now has over €200M in back orders from customers across its RF products, subsystems business, ESA partnership, and HummingSat contracts.

Nationstar Aerospace raises €67.9M in Series C funding

In the first half of 2023, **Nationstar Aerospace secured over €67.9M in Series C funding**, with Hongtai Fund leading the investment. Additional support came from Taishan Urban Construction Group, Qingdao Haifa Group, Jiaxing Jiaxiu Group, Ceyuan Capital, and Wuhu Industrial Investment. This financing round will facilitate the company's technology research and production capacity expansion.

GHGSat raises $44M in Series C1 funding round

GHGSat secured a **Series C1 $44M funding round comprised of equity and debt**. Major equity participants include Fonds de solidarité FTQ, BDC Capital, the Government of Québec, Climate Investment, and the Japan Energy Fund. Regarding the debt portion of the deal, Bank of America Securities acted as the placement agent, and the Bank of Montreal provided debt facilities. This funding will accelerate GHGSat's expansion, allowing for increased satellite and airborne measurement capacity.

SatSure secures $15M in equity capital and venture debt

SatSure, an Indian firm specialising in satellite EO data and analytics, **concluded a Series A funding round, securing $15M in equity capital and venture debt**. Leading the investment were Baring Private Equity Partners, Promus Ventures, with participation from Omidyar Network India and xto10X. SatSure previously received strategic investments from top private sector Indian banks in February 2023. The recent funding round will support the company's plan to launch a fleet of four high-resolution optical and multispectral satellites in the fourth quarter of 2025.

GITAI raises $15M in Series B Extension round


Credit: SWISSto12

The Japanese company **GITAI secured an additional $15M in its Series B Extension round in a mix of venture capital and debt facility**. GITAI initially raised $17M for its Series B round in 2021, followed by the $30M earlier this year. The investment saw the participation of entities such as Green Co-Invest Investment, Pacific Bays Capital, and Mitsui Sumitomo Insurance Venture. The debt facility was provided by MUFG Bank. The funds will serve for expanding GITAI's business presence in the U.S., continue its space robotics development, and supporting lunar surface demonstrations.

In other news

ReOrbit raises $7.4M in Seed Funding: Helsinki-based space technology provider, ReOrbit, raised $7.4M in Seed Funding round, with Inventure VC leading the investment. The funds will accelerate their development strategy, focusing on international expansion and innovative space systems.

Avio invests €2.5M in aerospace startup T4i: The minority investment agreement with T4i, a University of Padua spin-off specialising in propulsion systems, entails a €2.5M capital increase. T4i will use the investment to meet the quality requirements for Avio's VEGA platform.

Tomorrow.io raises additional Series E funding: The U.S.-based company raised an additional $22M, in a round led by Lumir, MoreTech Ventures, and others. The fund will be allocated alongside the initial Series E raised in June of this year to complete the company's constellation.

Australian startup HEO secures $8M in Series A funding round: With the funding, the company aims to expand its space-based sensor technology for commercial in-orbit inspection and space situational awareness.

Kayhan Space raises $7M in a seed extension: With the investment, the American company will develop its space traffic coordination software, Pathfinder 3.0, expand its team and customer base. The round was led by EVE Atlas and Space Capital.

Krucial secures $3.7M for international expansion: The Scottish firm secured over $3.7M in additional funding as it expands into international markets. This investment was led by the Scottish National Investment Bank.

India-based Manastu Space raises $3M in a pre-Series A round: The fund was led by Capital 2B, BIG Capital, and E2MC and aims to advance Green Propulsion, enhance Collision Avoidance System, and expand in-space services.

VIDA secures €3M funding from Cusp Capital: The Munich-based company will use the funding to expand its operations, enhance its product offerings, and strengthen its global presence. The investment round was led by venture capital firm Cusp Capital.

U.S.-based Antaris raises $3.5M in additional seed funding: The funding round, led by Streamlined Ventures was secured in view of the upcoming launch of the technology demonstration satellite JANUS-2.

Prewitt Ridge secures $4.1M in seed funding: The U.S.-based company aims to advance its Verve requirements management and digital thread platform for streamlined data connectivity and faster development in industries like aerospace and defence.

Delos Insurance secures $7.3M in seed extension round: The U.S.-based property insurance provider for customers in high catastrophe risk regions will use the funds to expand its presence in the California insurance market. The funding round was led by IA Capital Group.

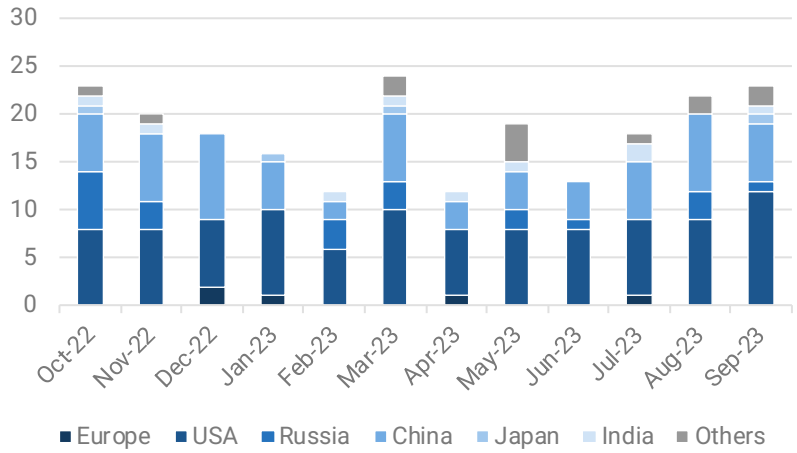
Satim secures $2M in an investor round led by Cultivation Capital: The company aims to advance its AI-driven satellite SAR object detection and classification technology for military, government, and commercial maritime sectors.

LAUNCHES & SATELLITES

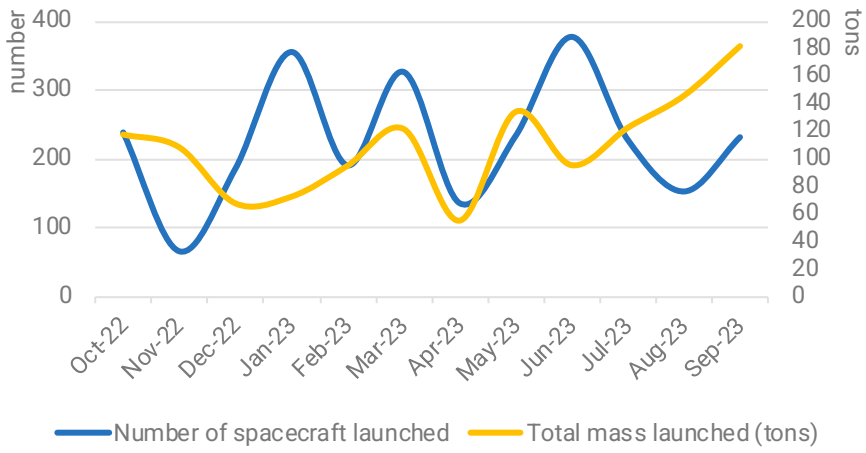
Global space activity statistics

August - September 2023	USA	China	Russia	India	Japan	Others	Total
Number of launches	21	14	4	1	1	4	**45**
Number of spacecraft launched	339	33	4	1	2	4	**383**
Mass launched (in kg)	287 446	18 140	17 725	1475	3030	454	**328 270**

Launch activity over the year

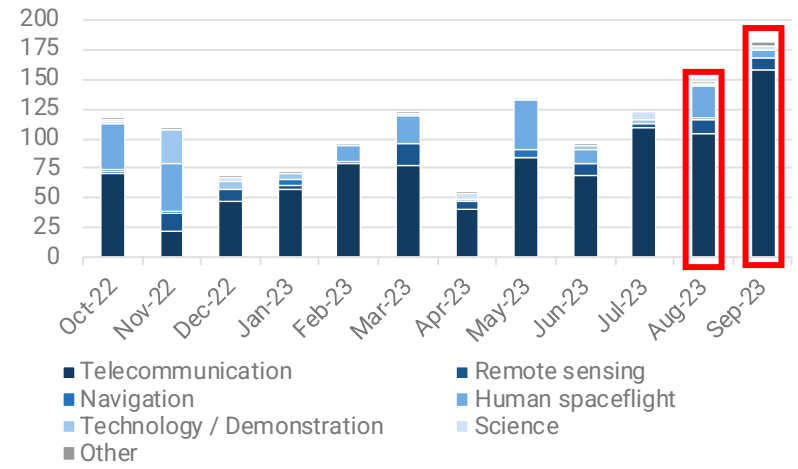


Evolution of the number of launches per launch country



Evolution of launch activity over the year 2022-2023

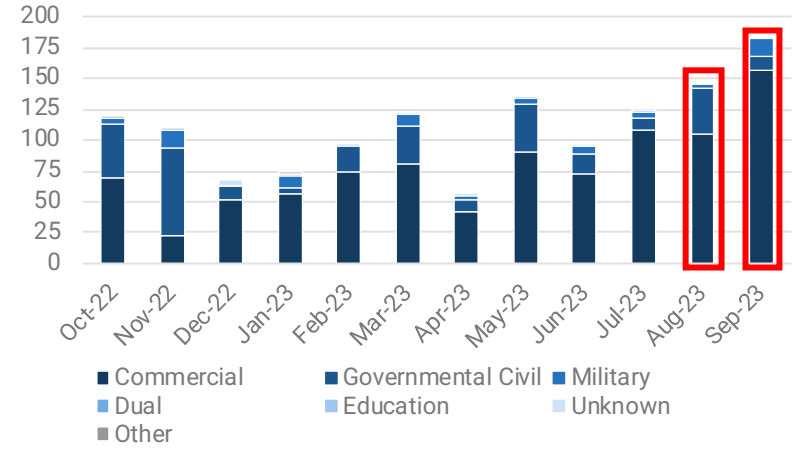
Satellite missions and markets



Evolution of the total mass launched (tons) per mission (Oct. 2022-Sep. 2023)

Aug. - Sep. 2023	Telecom	Remote sensing	Nav.	Human Spaceflight	Tech/ Demo	Science	Other
USA	262 463	2466		19 547			3300
China	545	17 535			30		30
Russia			1645	14 330		1750	
India						1475	
Japan					730	2300	
Others		124					

Total mass (kg) launched by mission and customer country



Evolution of the total mass launched (tons), per market (Oct. 2022-Sep. 2023)

Aug. - Sep. 2023	Commercial	Governmental Civil	Military
USA	260 593	19 547	7636
China	960	8350	8830
Russia		16 080	1645
India		1475	
Japan		3030	
Others			124

Total mass (kg) launched by market and customer country

Launch Log

Launch date	Launch country	Launcher	Spacecraft name	Main customer	Customer country	Prime manufacturer	Manufacturer country	Mass (kg)	Mission	Market
02/08/2023	USA	Antares-230+	Cygnus CRS-19	NASA	USA	Northrop Grumman	USA	7492	Cargo Transfer	Gov. Civil
03/08/2023	USA	Falcon-9 v1.2 (Block 5)	Galaxy 37 / Horizons 4	Intelsat	USA	Maxar	USA	5063	Telecom	Commercial
03/08/2023	China	CZ-4C	FY 3F	NSMC	China	SAST	China	2250	Meteorology	Gov. Civil
07/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
07/08/2023	Russia	Soyuz-2-1b Fregat	Kosmos 2569 / Glonass-K2 13L	Ministry of Defense of the Russian Federation	Russia	ISS Reshetnev	Russia	1645	Navigation	Military
08/08/2023	China	CZ-2C(3)	HJ 2F	CRESDA	China	DFH Satellite Co.	China	500	Earth Observation	Gov. Civil
08/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (15 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
10/08/2023	China	Ceres-1 (3)	Diwei Zhineng Yingji 1	Dicelsus	China	Dicelsus	China	30	Tech/Demo	Commercial
			Xi'an Hangtou (4 spacecraft)	Xi'an Aerospace	China	Unknown (China, Private)	China	30 (each)	Telecom	Commercial
			Xiguang-1 01	Xiopm Space	China	Xiopm Space	China	30	Earth Observation	Commercial
			Xingchi 1B	Unknown (China, Private)	China	Unknown (China, Private)	China	30	Unknown	Commercial
10/08/2023	Russia	Soyuz-2-1b Fregat	Luna 25	Roscosmos	Russia	Lavochkin	Russia	1750	Planetary Science	Gov. Civil
11/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
12/08/2023	China	CZ-3B/G3	Ludi Tance 4-01	Ministry of Emergency Management	China	CASC	China	3200	Earth Observation	Gov. Civil
14/08/2023	China	Kuaizhou-1A	HEAD 3 (5 spacecraft)	HEAD Aerospace	China	SAST	China	45 (each)	Telecom	Commercial
17/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
20/08/2023	China	CZ-4C	Gaofen 12-04	CNSA	China	SAST	China	2400	Earth Observation	Gov. Civil
22/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (21 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
23/08/2023	Russia	Soyuz-2-1a	Progress-MS 24	Roscosmos	Russia	RKK Energia	Russia	7280	Cargo Transfer	Gov. Civil
23/08/2023	North Korea	Chollima-1	Malligyong 1 (2)	NADA	North Korea	NADA	North Korea	100	Earth Observation	Military
24/08/2023	New Zealand	Electron KS (R)	Capella 11 /Acadia 1	Capella Space	USA	Capella Space	USA	165	Earth Observation	Commercial
25/08/2023	China	Ceres-1 (3)	Jilin-1 Kuanfu-02	Chang Guang	China	Chang Guang.	China	230	Earth Observation	Commercial
26/08/2023	USA	Falcon-9 v1.2 (Block 5)	Crew Dragon USCV-7	NASA	USA	SpaceX	USA	12055	Crew Transfer	Gov. Civil

27/08/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
31/08/2023	China	CZ-2D(2)	Yaogan 39-01 (1, 2 & 3)	PLA	China	DFH Satellite Co.	China	750 (each)	Earth Observation	Military
01/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 Spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
02/09/2023	India	PSLV-XL	Aditya-L1	ISRO	India	ISRO	India	1475	Space Science	Gov. Civil
02/09/2023	USA	Falcon-9 v1.2 (Block 5)	Tracking Layer Tr.-0 WFOV (3 & 4)	SDA	USA	SpaceX	USA	1068 (each)	Early Warning	Military
			Transport Layer Tr.-0 A-Cl. (11 spacecraft)	SDA	USA	Lockheed Martin	USA	200 (each)	Telecom	Military
03/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (21 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
05/09/2023	China	Ceres-1S	Tianqi (21, 22, 23 & 24)	Guodian Gaoke	China	Guodian Gaoke	China	50 (each)	Telecom	Commercial
06/09/2023	China	CZ-4C	Yaogan 33-03	PLA	China	SAST	China	1040	Earth Observation	Military
06/09/2023	Japan	H-2A-202	SLIM	JAXA	Japan	JAXA	Japan	730	Tech/Demo	Gov. Civil
			XRISM	JAXA	Japan	JAXA	Japan	2300	Astronomy	Gov. Civil
10/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
10/09/2023	USA	Atlas-5(551)	Silentbarker (1, 2 & 3)	NRO	USA	Unknown (USA, Private)	USA	1000 (each)	SSA	Military
10/09/2023	China	CZ-6A	Yaogan 40 (A, B & C)	PLA	China	SAST	China	750 (each)	Signal Intelligence	Military
12/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (21 satellites)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
15/09/2023	Russia	Soyuz-2-1a	Soyuz-MS 24	Roscosmos	Russia	RKK Energia	Russia	7050	Crew Transfer	Gov. Civil
15/09/2023	USA	Firefly Alpha	Victus Nox / TacRS-3	US Space Force	USA	Millennium	USA	300	SSA	Military
16/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
17/09/2023	China	CZ-2D(2)	Yaogan 39-02 (A & B)	PLA	China	DFH Satellite Co.	China	750 (each)	Signal Intelligence	Military
			Yaogan 39-02C	PLA	China	SAST	China	750	Signal Intelligence	Military
19/09/2023	New Zealand	Electron KS	Capella 12 /Acadia 2	Capella Space	USA	Capella Space	USA	165	Earth Observation	Commercial
20/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
21/09/2023	China	Ceres-1 (3)	Jilin-1 Gaofen-04B	Chang Guang	China	Chang Guang	China	95	Earth Observation	Commercial
24/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
25/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (21 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial
26/09/2023	China	CZ-4C	Yaogan 33-04	PLA	China	SAST	China	1040	Earth Observation	Military
27/09/2023	Iran	Qased	Noor 3	Islamic Revolutionary Guard Corps	Iran	Islamic Revolutionary Guard Corps	Iran	24	Earth Observation	Military
30/09/2023	USA	Falcon-9 v1.2 (Block 5)	Starlink (22 spacecraft)	SpaceX	USA	SpaceX	USA	800 (each)	Telecom	Commercial

LAUNCH HIGHLIGHTS

Increased launch activity towards Moon

Credit: ISRO

August and September saw multiple space exploration missions launched towards both the moon and the sun. On August 10th, **Russia launched its Luna 25 mission on a Soyuz-2.1b rocket from the Vostochny Cosmodrome**. The goal of the mission was to demonstrate landing technology in the lunar south pole region as well as investigating lunar regolith. On August 20th Roscosmos announced that Luna 25 has crashed into the surface of the Moon after an anomaly during an orbital maneuver had occurred. India on the other hand did manage to **successfully land it's Chandrayaan-3 lunar lander in the lunar south pole region on August 23rd**, after a 5 week trip following the launch on July 14th. Additionally, **Japan launched its SLIM moon lander and the XRISM space telescope** on September 6th on the same H-2A rocket from the Tanegashima Space Center. While XRISM will stay in LEO, SLIM is supposed to demonstrate a precision landing on the moon. It is planned to land on the lunar surface in early 2024.

Responsive space mission "Victus Nox" launched on a Firefly rocket

The U.S. Space Force has confirmed the **successful launch of a Millennium Space small satellite on September 14 by Firefly Aerospace** using their Firefly Alpha rocket. This mission called "Victus Nox" was specifically designed to showcase the ability to launch on a significantly shorter timeline than what is typically required for national security missions. On August 30, both companies announced that they were on standby, ready to receive an alert notification from the Space Force. Upon receiving the alert, they had a 60-hour window to transport the payload to Firefly's launch site at the Vandenberg Space Force Base, complete fueling procedures, and integrate it with the Alpha rocket's payload adapter. The responsive space program is overseen by the Space Systems Command's Space Safari Program Office and the Rocket Systems Launch Program. The last responsive space mission was launched in June 2021 using a Northrop Grumman Pegasus rocket.

Two Electron launches for Capella space, only one successful


Credit: Firefly Aerospace

Rocket Lab's forty-first Electron mission, conducted on behalf of Capella Space, encountered a setback when issues arose shortly after the rocket's stage separation, approximately two and a half minutes after liftoff. This marks the fourth mission failure experienced by Rocket Lab, the first since May 2021. In response, the company has announced that its upcoming mission, originally scheduled for launch before the end of the third quarter, will be postponed in order to address the root cause of the recent failure. Rocket Lab's Electron rocket is the second most frequently launched US rocket after SpaceX's Falcon 9. **The company had previously deployed another spacecraft for Capella on August 24th.** Capella builds and operates a constellation of space-based radar Earth observation satellites equipped with synthetic-aperture radar that can penetrate clouds and work at night.

Space Force and NRO launch GEO observation satellite

Credit: Northrop Grumman

The U.S. Space Force and the National Reconnaissance Office (NRO) successfully launched their latest space observation satellites as part of a mission codenamed "Silent Barker." This joint mission took place on September 10th, using a United Launch Alliance Atlas V rocket from Cape Canaveral Space Force Base. Once these satellites become operational, their primary objective will be to monitor objects and potentially suspicious activities within GEO. The need for enhanced space surveillance, especially in the geosynchronous orbit, has become increasingly important for both the Space Force and the NRO due to concerns about potential aggressive actions by adversaries of the US. Although specific details about the mission remain classified, the Space Force has intentionally acknowledged the existence of Silent Barker as a measure to discourage disruptive activities in space.

First failure for Chinese Galactic Energy's Ceres-1 launcher

Chinese commercial space launch company Galactic Energy encountered its first launch failure during its 10th launch attempt. The Ceres-1 solid rocket that took off from Jiuquan on September 21, carried the Jilin-1 Gaofen-04B satellite for Changguang Satellite Technology (CGST), a commercial remote sensing company. Galactic Energy released an official statement acknowledging the loss of the rocket and its payload approximately six hours after liftoff. The launch service provider is currently conducting an investigation to determine the specific causes of the failure. This mission marked the company's first significant setback after a series of nine successful launches, which commenced in November 2021. Galactic Energy had been actively conducting a concentrated series of launches using their Ceres-1 rocket, encompassing four missions between July 22 and September 5. **This included the historic first launch from a mobile sea platform by a Chinese commercial launch service provider** on September 5th, which deployed four IoT communications satellites.

Credit: Galactic Energy

SpaceX sets two launch records

On September 3, the company successfully deployed 21 of its Starlink internet satellites into orbit atop a Falcon 9 rocket, launching from NASA's Kennedy Space Center. This marked **SpaceX's 62nd orbital mission of 2023, setting a new record** for the most launches conducted in a single year, surpassing the previous record established also by SpaceX in 2022. Moreover, later this month, on September 20th, SpaceX's Falcon 9 rocket achieved another significant feat by setting a reuse record. During the launch of another batch of Starlink satellites from Cape Canaveral, **a particular Falcon 9's first stage completed its 17th liftoff and landing**. This surpasses the previous record of 16 liftoffs held by two different Falcon 9 boosters.

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