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EGYPT'S STELLAR **BREAKTHROUGH**

Egyptian Space Agency CEO reveals how Egypt is scaling new heights in regional space missions with bold new initiatives and local advancements



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WELCOME



CEOs of most MENA space agencies have been quite elusive. So, it was a real coup to secure an exclusive interview with the Egyptian Space Agency's (EgSA) CEO, Dr. Sherif Sedky, for this edition. Egypt, in particular, has emerged as a formidable leader in recent years, setting the stage for a new era in space exploration and technology. Dr. Sedky has been instrumental in steering the nation's ambitious space agenda. His role in pushing forward Egypt's space initiatives has positioned the country as a major player on both the regional and global stage.

For the less initiated, EgSA is located in Egyptian Space City, an impressive 123 acres of land that also serves as the HQ for the African Space Agency. That's not a coincidence. Egypt has been working closely with the team on the African Development Satellite, a project undertaken in collaboration with Kenya, Ghana, Uganda, Nigeria and South Sudan. The interesting part is that the satellite will be designed, assembled and tested in Egyptian Space City.

Dr. Sedky claims Egypt has successfully localised a significant portion of satellite technology, with almost 60% of its nanosatellites

and 40% of its microsatellites being built on home ground.

EgSA is involved in multiple missions at this time — such as a partnership with UNOOSA and Airbus, the SPINX initiative, and recent missions like NexSat 1 and MisrSat 2.

Equally determined to make a mark is Saudi Arabia. The Kingdom's launches are intended to accelerate its space initiatives and catch up with the rest of its Arab counterparts. To that effect, you will find several stories in our news section from Saudi Arabia, along with a special interview with the CEO of Neo Space Group, an entity launched as recently as this May in the Kingdom.

Alongside this, we have explored a case study in Angola, an audience measurement tool for satellites, and a whole new emerging market for reusable rockets. As the IBC edition, this issue is packed with interesting stories that will keep you well informed. Happy reading.

VIJAYA CHERIAN
 Editor
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06

UPDATE
Industry News

Bayanat and Yahsat launch UAE's first SAR satellite; EOS-X SPACE to launch space flights from Abu Dhabi in 2025; Orbital Space unveils MENA's first privately funded lunar mission; Türkiye launches first indigenous communication satellite; Saudi Space Agency launches space mission design centre; and more

10

COVER STORY - EGYPT
Egypt's Space Odyssey

Dr. Sherif Sedky, CEO of the Egyptian Space Agency, discusses the nation's ambitious space plans with Vijaya Cherian

14

SUSTAINABILITY
Rocketing ahead with slim resources

Can reusable rockets reduce launch costs enough to meet growing market demands and expand access to space? We investigate

18

CASE STUDY - ANGOLA
Bridging the digital divide

Angola partners with ST Engineering iDirect and leverages its Angosat-2 satellite to enhance internet access and connectivity across the country

20

INTERVIEW - SAUDI ARABIA
KSA shoots for the stars

Martijn Blanken, CEO of Neo Space Group (NSG), discusses with Vijaya Cherian the company's vision for advancing commercial satellite operations both locally and globally

24

TECH UPDATE
Satellite audience measurement is here

Badis Khaldi talks about a new tool that enables satellite channels to measure data with the accuracy of digital platforms

28

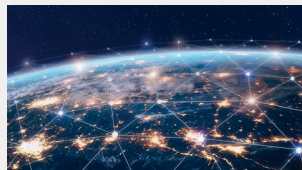
FACTS & FIGURES
Multi-billion-dollar deals

EO satellites set to triple over the next decade, according to Novaspace; and the global satellite market size is estimated to hit \$729.53bn by 2034, says Precedence Research; and more



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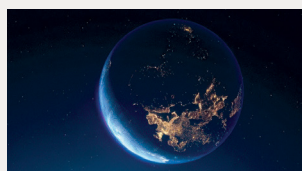
LATEST NEWS



NEWS
FCC reauthorises Globalstar's HIBLEO-4 constellation



APPOINTMENTS
Stephen Beynon to step down as OneWeb CEO



NEWS
Israeli Aerospace Industries signs satellite deal with Morocco



APPOINTMENTS
Exolaunch appoints Robert Sproles as new CEO



ACQUISITIONS
Lockheed Martin to acquire Terran Orbital in \$450m deal

TECH FEATURES



INTERVIEW: Exploring Qatar's Satellite Ambitions



FEATURE: Unlocking AI in Space



INTERVIEW: SPACE42 – The AI Force Awakens

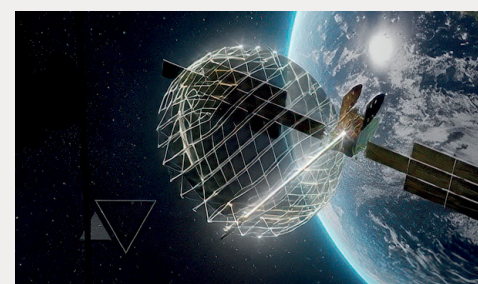
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FEATURED NEWS



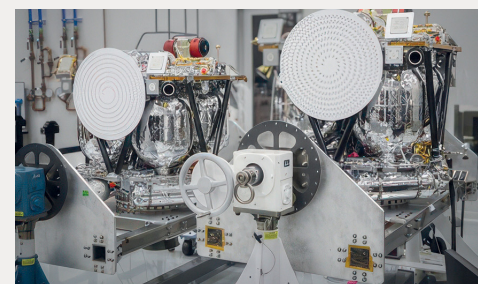
SPACE
MBRSC and MBRU to offer Medical & Research Astronaut Training programme
The programme covered life sciences research that focused on cell culture experiments that will support human space flight missions



SATELLITE
ViaSat-3 F1 satellite enters commercial service
The satellite antenna had an anomaly with its antenna deployment that caused the satellite to deliver around 10% of its expected capacity



OPERATORS
Yahsat reports significant EBITDA and net income growth
Yahsat expects to receive \$1bn in new advance payments during the construction period of the Al Yah 4 and Al Yah 5 satellites



SATELLITE
Rocket Lab completes integration of twin spacecraft for Mars mission
Blue and Gold spacecraft are scheduled to ship to Cape Canaveral in August where they will be integrated with Blue Origin's New Glenn rocket



OPERATORS
Eutelsat Group enters exclusive talks to sell infrastructure assets
The operator is in exclusive talks to sell 80% of the ground station-as-a-service business to a fund run by EQT Partners of Sweden

TRENDING



OPERATORS
Eutelsat and Bayobab sign multi-year LEO satellite connectivity deal



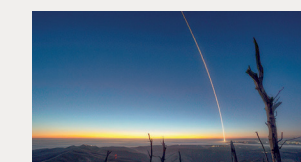
NEWS
Space Intelligence secures Series A from AzurX and Intercontinental Exchange



APPOINTMENTS
Iridium announces retirement of CFO and EVP, names successors



NEWS
Hughes ships over 5,000 ESA terminals for OneWeb



NEWS
Firefly Aerospace signs second multi-launch deal with L3Harris

Bayanat and Yahsat launch UAE's first SAR satellite in partnership with ICEYE

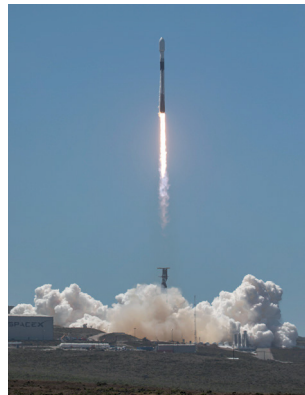
NEW LAUNCH

Bayanat AI PLC, a provider of AI-powered geospatial solutions, and Yahsat have announced the successful launch of their first LEO Synthetic Aperture Radar (SAR) satellite into orbit in August this year, in partnership with ICEYE, a leader in SAR satellite operations for earth observation (EO), persistent monitoring and natural catastrophe solutions.

As part of the UAE's Earth Observation Space Programme, the Bayanat-owned SAR satellite will deliver high-resolution, persistent monitoring

solutions. It will use SAR technology, which helps capture images day and night, regardless of weather conditions or solar illumination. Compared to other new Space SAR satellite services, ICEYE's radar antenna covers a larger geographical area and provides higher-resolution images of smaller areas, providing more value to customers.

Hasan Al Hosani, MD of Bayanat, said: "The launch of our first satellite marks a milestone for both our collaborative efforts and for the UAE. Inaugurating our EO capabilities, including



the debut of our SAR satellite constellation, will further strengthen our position as a leader in AI-powered geospatial analytics."

The satellite launch is the latest achievement from

the ongoing partnership between Bayanat, Yahsat and ICEYE. In 2023, the Earth Observation Space Programme was created to build national satellite remote sensing and EO capabilities within the UAE by building a SAR satellite constellation. The constellation of LEO satellites will provide a consistent data stream for end-to-end solutions for SAR applications. It will cover the entire value chain by leveraging the available synergies in Yahsat's upstream and midstream capabilities and Bayanat's downstream capabilities.

EOS-X SPACE to launch space flights from Abu Dhabi in 2025

NEW LAUNCH

European space exploration company EOS-X SPACE will commence space flights from Abu Dhabi by 2025. The company will begin operations in Abu Dhabi and Seville, Spain, around Q3 2025. The upcoming launch will follow the completion of the development of the Spaceship One manned capsules, with essential validation tests scheduled to take place with military pilots in collaboration with Spain's National Institute for Aerospace

Technology (INTA). EOS-X SPACE is preparing for a crucial second half of 2024 to finalise its entry into the burgeoning space tourism industry, which is currently valued at over \$9bn.

Abu Dhabi will host the company's largest global facility, which will include a spaceport, shuttle and a major hotel complex on Yas Island.

The planned investment for the Abu Dhabi and Seville facilities is expected to exceed \$230m in engineering and development.

Eutelsat and Bayobab sign multi-year LEO satellite connectivity deal

CONNECTIVITY

Eutelsat Group and Bayobab, a subsidiary of MTN Group, have entered into a multi-year agreement to utilise Low Earth Orbit (LEO) capacity on Eutelsat's OneWeb constellation. This deal aims to address the growing connectivity needs of enterprises and cellular backhaul across Africa, delivering reliable solutions that enhance network performance and improve customer experiences.

Bayobab, a digital and infrastructure service provider in Africa, will use Eutelsat's OneWeb constellation to offer fixed connectivity services. The initiative will expand coverage in rural areas, providing high-quality connectivity with reduced latency. The deployment is expected to be fully implemented across the continent by December 2024, with services already operational in four African countries.

IAI inks deal with Morocco

SATELLITE DEAL

Morocco has signed an agreement with Israel Aerospace Industries (IAI) to acquire two Earth Observation satellites, in a deal valued at approximately \$1bn.

This acquisition is part of Morocco's ongoing initiative to upgrade its space-based intelligence infrastructure. The new satellites, designated as Ofek 13, will replace the existing Mohammed VI-A and Mohammed VI-B satellites.

The Ofek 13 satellites are expected to become operational within five years and will offer significant advancements in reconnaissance technology. Equipped with SAR technology, these satellites will provide high-resolution imaging with up to 0.5-meter precision and will enable the Moroccan government to respond swiftly to potential conflicts, manage natural resources effectively, and address environmental and land use issues.

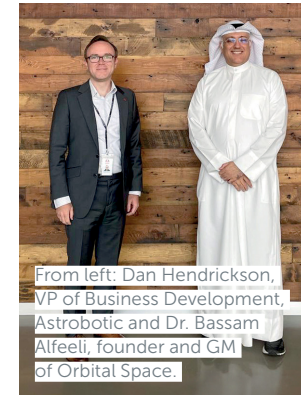
This is part of a broader defence collaboration between Morocco and Israel, which has deepened since the two countries formalised their defence ties in late 2021.

Orbital Space unveils MENA's first privately funded lunar mission

SPACE INITIATIVE

Orbital Space has announced the Orbital Space Lunar Programme, an initiative to send a student-built experiment to the Moon, becoming the first privately funded lunar mission from the Arab world. This project has been undertaken in partnership with Astrobotic, a space robotics and lunar logistics company.

The mission's centrepiece, the Lunar Platform, was chosen through a competitive global selection process judged by experts from Orbital Space, Mohammed Bin Rashid Space Centre (MBRSC), UAE Space Agency and Astrobotic. The winning experiment, created by students from AGH University of Science and Technology in Poland,



From left: Dan Hendrickson, VP of Business Development, Astrobotic and Dr. Bassam Alfeeli, founder and GM of Orbital Space

will analyse interactions between lunar regolith and various materials used for making cables and connectors for future lunar missions.

The Lunar Platform, a student-designed payload, will be deployed from an Astrobotic lander to investigate the abrasive impact of lunar regolith on different material samples. This project aims to

enhance our understanding of lunar regolith interactions with materials for future lunar landers and habitats, while also inspiring educational engagement and preparing the next generation for extended human residence on the Moon.

Astrobotic will carry the Lunar Platform aboard their third lunar mission using a Griffin-class lunar lander, with a target launch date no earlier than Q4 2026.

Through the Orbital Space Lunar Programme, Orbital Space hopes to nurture young minds in the Arab world and globally.

This mission represents a significant milestone in international space collaboration and reinforces the UAE's growing role as a leader in space exploration and education.

Es'hailSat explores broadcasting collaboration with Algeria TV

BROADCAST

Es'hailSat, the Qatar Satellite Company, recently visited Algeria TV to explore potential collaborations in broadcasting TV channels using Es'hailSat's premier satellite services. The discussions focused on how Es'hailSat's advanced infrastructure and expertise could support Algeria TV's broadcasting initiatives. Es'hailSat's robust infrastructure



From left: Adel Selakji, Acting DG of the Public Television Establishment, Algeria, and Ali Ahmed Al Kuwari, President & CEO of Es'hailSat

includes two satellites positioned at 25.5/26° East and a 50,000 sqm

teleport facility, ensuring reliable and high-quality connectivity services.

Türkiye launches first indigenous communication satellite

NEW LAUNCH

SpaceX Falcon 9 rocket launched Türkiye's first domestically produced communication satellite, Turksat-6A, from Cape Canaveral, Florida, early this summer. The satellite, equipped with Ku-Band and X-Band communication

payloads developed by ASELSAN engineers, represents a significant achievement for Türkiye's defence company, ASELSAN. These advanced payloads will provide communication services across Türkiye, Europe and South Asia. ASELSAN, which has been

involved in space technologies since 2000, played a crucial role in the Turksat-6A project by developing and qualifying its own design, assembly, integration and testing processes for space applications. Over 100 ASELSAN personnel contributed to this project, designing payloads using more than 80 space electronic units. The payloads have a power consumption of 5 kW and a total mass of 300 kg.

Following the successful launch and early operations phase, ASELSAN engineers will conduct payload testing for the first time. Turksat-6A is anticipated to begin meeting Türkiye's satellite communication needs this year.



Turksat-6A was launched from Cape Canaveral early this summer.

KSA to host Halo Space's test flight

SPACE TOURISM

In partnership with Saudi Arabia's Communications, Space and Technology Commission (CST), global space tourism company, Halo Space, has announced plans for its next test flight in Saudi Arabia this month. The test will feature Halo Space's life-size prototype capsule, Aurora, which will ascend 30km above Earth. The mission's main goal is to test and validate all critical systems developed over the past three years.

CST has been working with and supporting Halo Space since the beginning

of the year, overseeing preparations for the test flight. Halo Space's decision to establish its flagship operational base and final assembly site in Saudi Arabia underscores the Kingdom's favourable conditions for space exploration activities and support for new business models. CST has also been working with other government entities such as the General Authority of Civil Aviation (GACA) to meet all regulatory requirements for the test flight.

Halo Space's prototype

capsule test flights are a prelude to the launch of manned flights, scheduled to begin in 2025, to be then followed by commercial flights in 2026. The journey, spanning up to 200km horizontally and lasting over six hours, provides passengers with the opportunity to witness the Earth's curvature and the vastness of space.

By 2030, Halo Space aims to make space tourism accessible to a broad audience, with plans to service 10,000 passengers until the end of this decade.

Hughes ships over 5,000 ESA terminals for OneWeb

PARTNERSHIP

Hughes Network Systems has announced the shipment of more than 5,000 HL1120W electronically steerable antenna (ESA) LEO terminals.

The HL1120W terminal features a low-profile, full-duplex, self-aligning design equipped with a built-in modem. Specifically designed for the Eutelsat OneWeb LEO constellation, the terminal utilises a phased array antenna with no moving parts, enabling speeds of up to 195 Mbps down and 32 Mbps up. The terminal ensures seamless connectivity by transitioning from one satellite beam to another every 11 seconds, offering continuous service. These terminals are manufactured at Hughes' new facility in Germantown, Maryland.

Hughes also develops and manufactures the gateway electronics and core modules used in every terminal on the Eutelsat OneWeb LEO system. These gateways are capable of facilitating more than 10,000 beam-to-beam and satellite-to-satellite handoffs per second.

Angola Cables reports record-breaking surge in network traffic

CONNECTIVITY

The rapid rise in digital content consumption, the expansion of cloud computing services and the growing demand for high-speed, low-latency connectivity have led to record levels of traffic across the Angola Cables network.

Fernando Fernandes, CEO of TelCables Nigeria, the local operation for Nigeria and West Africa countries of Angola Cables, said: "This milestone underscores Angola Cables' growing responsibility and responsiveness to customer needs in West African markets, with an emphasis on improved Service Level



Agreements (SLA)."

Rui Faria, Executive Board member and CCO for Angola Cables, noted that many hyperscalers, content providers, and other carriers have been utilising the South Atlantic

configuration of the SACS, Monet, and WACS cables as a reliable redundancy option to connect to destinations in the USA, UK and Europe via EllaLink.

Faria added that the Angola Cables fibre

network now handles over 70% of internet and data traffic to and from Africa. Hyperscalers, streaming platforms, and gaming networks are leveraging SACS, Angola Cables' backbone, and its partner networks to connect to Europe and Asia with lower latency.

Faria emphasised that the surge in traffic is reinforcing Angola Cables' position in both the global and African markets as a reliable network service provider. This growth is enabling the company to expand its services, invest in new technologies, and form strategic partnerships to better serve its customers.

NSSTC reviews final design of Arab Satellite 813

SATELLITE LAUNCH

The National Space Science and Technology Centre (NSSTC) at UAE University recently finalised the design of the Arab Satellite 813. This advanced earth observation satellite will monitor Earth's environment and climate, providing hyperspectral observations in the Visible/Near Infrared (VNIR) and Shortwave Infrared (SWIR) regions of the electromagnetic spectrum, with a focus on the UAE and other member countries of the

Arab Space Cooperation Group (ASCG). Funded by the UAE Space Agency (UAESA) and executed by UAE University, Arab Satellite 813 is a project for enhancing collaboration among ASCG countries in space science and technology.

Following the successful completion of the design phase, the engineering teams are set to advance to the Assembly Integration and Test (AIT) phase at the NSSTC, according to Salem Butti Salem Al Qubaisi, Director General of the UAE Space Agency.

Saudi Space Agency launches space mission design centre

FACILITY LAUNCH

Saudi Space Agency has unveiled its new space mission design centre. The Concurrent Design Facility (CDF) is part of the agency's broader strategy to elevate Saudi Arabia's role in space research and to build national expertise in this field. The centre aims to enhance the planning and execution of space missions by employing concurrent engineering principles and advanced analysis and simulation techniques. This

approach is expected to cut the time needed for feasibility studies by up to 75% and reduce the cost of designing space systems by up to 50%.

Saudi Space Agency has adopted the Integrated Mission Lifecycle (IML) methodology to guide its projects and programmes. This framework is designed to achieve operational excellence, improve efficiency and provide a standardised approach to managing complex engineering projects.

EGYPT MAKES STELLAR LEAP

Egypt has ambitiously marched ahead this year with several new satellite projects and space initiatives under the leadership of Dr. Sherif Sedky, CEO of the Egyptian Space Agency. In an exclusive interview with Vijaya Cherian, Dr. Sedky shares how Egypt plans to stay at the forefront of the region's space endeavours



What does your role at the Egyptian Space Agency entail?

As the Egyptian Space Agency (EgSA) CEO, I am responsible for steering our nation's space endeavours towards innovation and excellence. My role encompasses overseeing EgSA's strategic vision, ensuring the development and localisation of space technology and fostering international collaborations. We aim to position Egypt as a leader in space technology within the region, contributing significantly to the country's sustainable development goals.

You recently announced three significant satellite projects on which Egypt is taking the lead – the African Development Satellite, the partnership with UNOOSA and Airbus and SPINX. Could you elaborate on each of these projects and Egypt's technical role in them?

The African Development Satellite project involves collaborating with five African Countries –

Kenya, Ghana, Uganda, Nigeria and South Sudan. The satellite studies climate change, marking a significant step in Egypt's leadership in African partnerships.

The design, assembly and testing are all conducted at our facilities in Egyptian Space City, where we leverage our advanced capabilities in satellite technology localisation.

Regarding our partnership with UNOOSA and Airbus, this underscores our commitment to international cooperation in space technology. It aims to enhance our technical capabilities and knowledge transfer in satellite technology. We provide infrastructure for the design, assembly, integration and testing, thereby ensuring high performance and reliability standards.

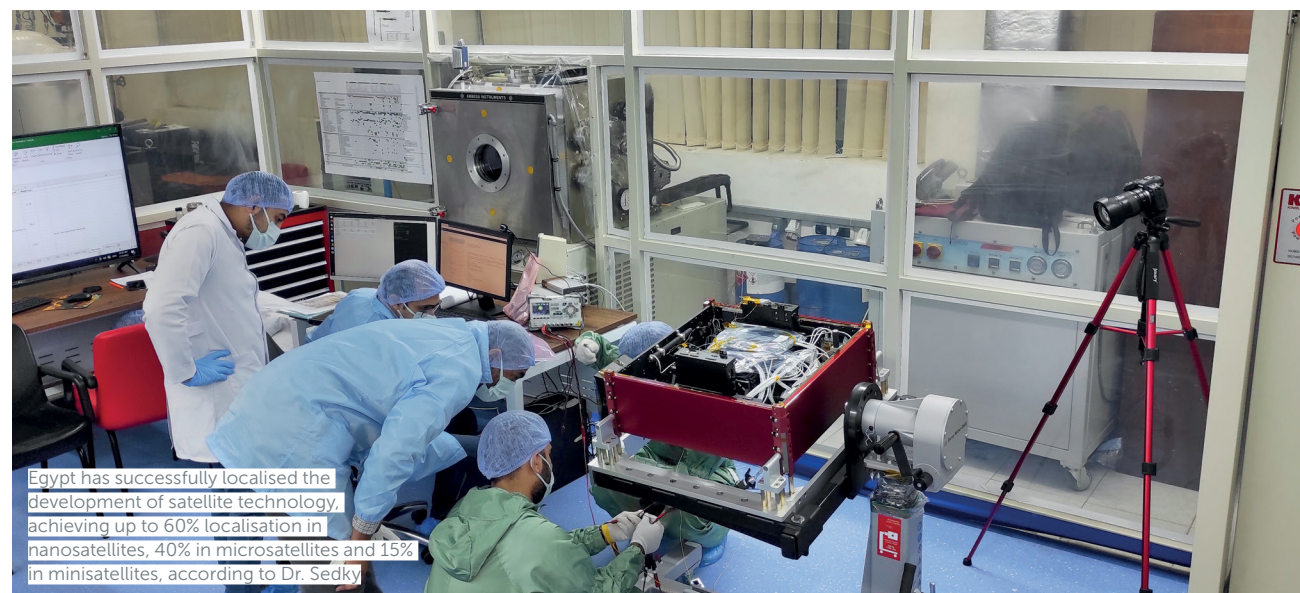
Our SPINX initiative fosters innovation in space technology through research and development. It aims to create a hub for space technology startups and entrepreneurs within Egyptian Space City, providing them with state-of-the-art facilities and technical support.

Could you tell us more about the current capabilities of Egyptian Space Agency, the infrastructure and facilities you have and what kind of components you are now able to build locally within Egypt?

Egyptian Space Agency is headquartered in Egyptian Space City, located near the New Administrative Capital. Spanning 123 acres, this city is a hub for all space-related activities, hosting research labs, assembly and integration facilities, and the headquarters of the African Space Agency. We employ diverse engineers, scientists, and technical experts to advance our space technology capabilities.

Our facilities include one of the largest assemblies, integration, and testing centres in the Middle East and Africa, a concurrent design facility, and specialised testing and characterisation labs. We have successfully localised significant portions of satellite technology, achieving up to 60% in nanosatellites, 40% in microsatellites and 15% in minisatellites.





Egypt has successfully localised the development of satellite technology, achieving up to 60% localisation in nanosatellites, 40% in microsatellites and 15% in minisatellites, according to Dr. Sedky

Could you share any updates or progress on your two recent space missions, NexSat 1 and MisrSat 2?

NexSat 1 was launched from China on February 3. It focuses on climate studies in collaboration with the Academy of Scientific Research. It has achieved a 35% localisation rate. Initial operations were conducted by our German partners and later transitioned to Egyptian control.

MisrSat 2 was launched on December 4 last year. It is operating efficiently, capturing images, and undergoing rigorous testing. It provides comprehensive scans of Egypt, contributing to our sustainable development goals. MisrSat 2 represents a significant milestone in our efforts to localise satellite technology, having been entirely tested within our assembly centre.

Are there any more launches in the pipeline in the next couple of years?

Yes, we have several projects in the pipeline. Our focus remains on completing the localisation of satellite technology that

serves Egypt's sustainable development goals.

We are also exploring opportunities to expand our satellite constellation, enhance our Remote-sensing capabilities and strengthen our international collaborations.

Please tell us about New Space Horizons Conference agenda for this year?

This year, the agenda focuses on emerging technologies,

"The design, assembly and testing are all conducted at our facilities in Egyptian Space City, where we leverage our advanced capabilities in satellite technology localisation"

Dr. Sherif Sedky, CEO, Egyptian Space Agency

international collaboration and the commercialisation of space. We aim to bring together experts, policymakers and industry leaders to discuss advancements and opportunities in space exploration and technology.

What are some key priorities for Egyptian Space Agency in the coming years, and how are you forging ahead with them through partnerships?

Our key priorities include advancing satellite technology localisation, enhancing our research and development capabilities and fostering international partnerships. We are actively collaborating with various countries and organisations to share knowledge and resources, ensuring we remain at the forefront of space technology innovation.

What do you foresee as the current challenges within Egypt and the regional space sector, and how are your initiatives aiming to address them?

One of the main challenges is the high cost of space technology development and

the need for specialised skills. To address this, we are investing in capacity building through our Space Academy, which offers training and education programmes. Additionally, we are working on securing funds and fostering international collaborations to share the financial and technical burden.

How does the Egyptian Space Agency leverage satellite technology for societal and environmental benefits?

We utilise satellite technology to monitor agriculture, water resources, and urban development, providing crucial data for decision-making. Our satellites also contribute to climate studies and disaster management, helping to mitigate environmental impacts and support sustainable development initiatives.

"We aim to position Egypt as a leader in space technology within the region, contributing significantly to the country's sustainable development goals"

Dr. Sherif Sedky, CEO, Egyptian Space Agency

How does the Egyptian Space Agency promote STEM education and inspire the younger generation to pursue careers in space and science?

We have established the Space Academy, which offers educational programmes for school and university students. These programmes include hands-on training, workshops and collaborations with universities to develop curricula that support our space programme objectives. We aim to inspire and equip the

younger generation with the knowledge and skills needed to contribute to the space sector.

I want to emphasise our commitment to regional cooperation and space technology development in Africa. As the headquarters of the African Space Agency, we are dedicated to advancing space science and technology across the continent, fostering collaboration, and sharing our expertise to address common challenges and achieve shared goals. **PRO**



Egyptian Space Agency is headquartered in Egyptian Space City, located near the New Administrative Capital.



➔ Recycling is perhaps the most pervasive buzzword on earth. But can it be extended to our activities in space? More players in the satellite and rocket industries are beginning to think so, not least because of recent successes. Maverick engineer Burt Rutan, the designer behind projects such as SpaceShipOne and White Knight One, framed the problem succinctly in a 2012 interview with *The Economist*: “Space travel is the only technology that is ESA dangerous and more expensive now than it was in its first year.

Fifty years after Yuri Gagarin, the space shuttle ended up being more dangerous and more expensive to fly than those first throwaway rockets, even though large portions of it were reusable. It’s absurd.” That’s changing as a slew of companies race to build reusable launch vehicles and stages. Rockets have traditionally been expensive, single-use vehicles that are discarded after launching a satellite into space. Not only is this approach costly, but it is also wasteful. As more satellites – and rockets – are sent up, space operations must become cheaper, more efficient and more sustainable.

Companies like SpaceX and Blue Origin, among those sending the most rockets to space, are leading the charge for total or near-total reusability by designing rockets that can be recovered and relaunched, as they look to rationalise operations costs first and foremost and improve sustainability as a second imperative. “Reusable rockets are seen today as the solution for lowering the launch and transportation cost, so in the next five to ten years all operators will move in this direction if they want to stay in the market,” says Walter Cugno, Vice President Exploration and Science at Thales Alenia Space.

The players behind reusable rockets

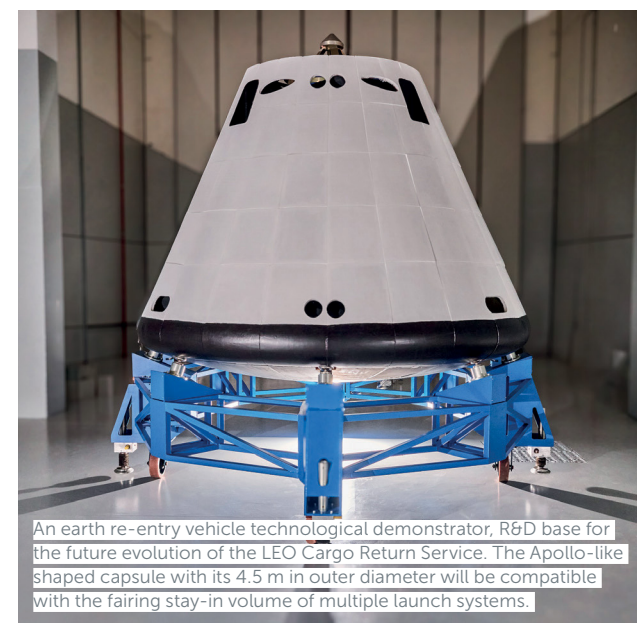
In May, Thales Alenia Space and the Exploration Company in Germany were selected by the European Space Agency (ESA) to develop a re-entry cargo spaceship. The LEO Cargo Return service is designed to transport cargo to and from Low Earth Orbit (LEO). The contracts are valued at 75 million US \$81m, Euractiv reported, and will cover deliveries to the International Space Station (ISS). The company has been working on reusability for a while, with projects including the Intermediate Experimental Vehicle (IXV), the free-flying orbital platform Space Rider, and most recently, the REV1 floating space factory. “Being one of the major companies worldwide in the space exploration field, Thales Alenia Space has, of course, medium- to long-term goals for developing strong transportation capability to support growing utilization on LEO, the moon and beyond. Among other objectives regarding manned and robotic exploration domain, mastering space transportation and logistics is one of our major goals. So, in this field,

different types of vehicles are under development by our company,” Cugno says. “These systems are of course developed with a strong objective of being sustainable. Sustainability is one of the major goals of Thales Alenia Space.” Space X’s Falcon 9 is perhaps the most well-known reusable rocket, with 293 reflights of a total 361 launches. Each Falcon 9 booster can be reused over 10 times, the first one being in 2017. SpaceX is also focused on increasing the frequency of its fully reusable Starship launches (with four complete as of mid-August) as it aims to make space travel as routine as air travel. Blue Origin’s fully reusable New Shepard rocket designed for operational reusability and minimal maintenance between flights, has finished 25 missions, recently resuming crewed suborbital trips. Its New Glenn ship is expected to debut this month. Rocket Lab is taking a more incremental approach with its Electron rocket, the world’s first reusable small rocket, featuring 3D-printed engines. It has had eight launches so far. Satellite launch powerhouse

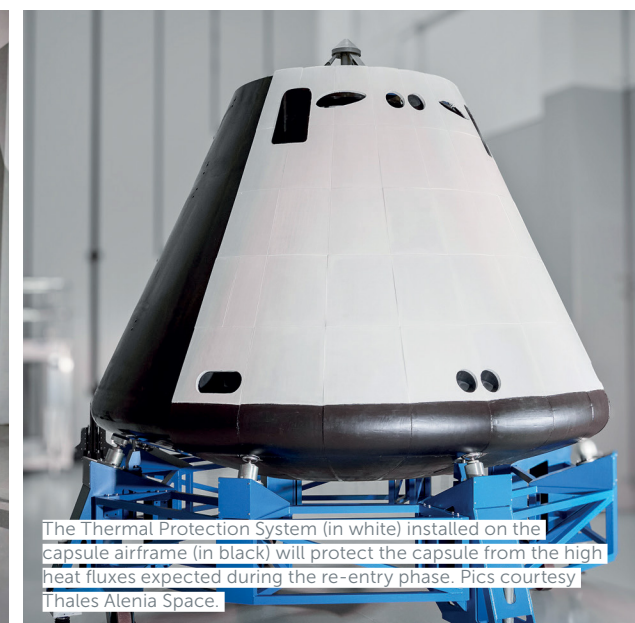
ArianeGroup is also looking at reusability despite much smaller volumes. Its proposed Susie rocket, designed to be a fully reusable spacecraft could be available for cargo operations by 2028. Subsidiary MaiaSpace is developing a reusable small rocket, designed to be capable of delivering around 500kg to LEO. An inaugural flight is planned for 2025. The following year could see the first fully 3D-printed reusable rocket from California-based Relativity Space. Its Terran R aims to meet the needs of government and commercial customers are looking to launch satellites quickly and inexpensively, without waiting for a ride share slot on a large rocket launch to become available. In addition, at least four Chinese aerospace companies are also aiming at reusability, including the China Aerospace Science and Technology Corp, the China Academy of Launch Vehicle Technology, a start-up called iSpace and Space Pioneer with its Tianlong 3 rocket.

A look at launch dynamics

There’s certainly an impressive appetite for launches. Research



An earth re-entry vehicle technological demonstrator, R&D base for the future evolution of the LEO Cargo Return Service. The Apollo-like shaped capsule with its 4.5 m in outer diameter will be compatible with the fairing stay-in volume of multiple launch systems.



The Thermal Protection System (in white) installed on the capsule airframe (in black) will protect the capsule from the high heat fluxes expected during the re-entry phase. Pics courtesy Thales Alenia Space.

from consulting firm Quilty Space predicts that around 20,000 new satellites will launch successfully by the end of the decade – as compared to 487,000 planned government and commercial missions. Low Earth Orbit (LEO) accounts for the majority of new launches – broadband mega-constellations account for 85% of all satellite demand in Western markets, it says. By contrast, there were 223 orbital launches in 2023, of which 211 were successful. That’s up from 186 (178 successes) in 2022. There were only 85 attempts less than a decade ago in 2016. Dallas Kasaboski, Principal Analyst at Analysys Mason, which tracks satellite market intelligence through its Norther Sky Research (NSR) subsidiary, describes the launch market as a “very big opportunity”, principally because of the great volume of satellites that are looking to be launched in the next decade. “From our perspective, we forecast that the total revenue opportunity for satellite launch over the 10 years between 2023 and 2033 is just over US\$201bn,” he tells SatellitePro. “It’s roughly about US\$18bn a year, fluctuating over the decade,” he adds.

The case for reusability
Reusable rockets could address key space industry challenges around cost efficiency, environmental sustainability, and operational flexibility. As against the traditional high cost of manufacturing and launching new rockets and satellites, reusable rockets lower the barriers to entry, allowing for more frequent launches, including from new players. Refurbishing and relaunching a rocket is up to 65% cheaper than building a new vehicle, according to some estimates – with a 30x lower cost overrun. They use less fuel, which also adds to their environmental appeal. SpaceX

“In the next five to ten years, all operators will move in this direction if they want to stay in the market”

Walter Cugno, Vice President Exploration and Science, Thales Alenia Space

director of vehicle integration Christopher Couluris mentioned last year that the Falcon 9 costs \$28m to launch, thanks to reusability. List prices are \$69m. This adaptability is particularly valuable for LEO constellations, where ongoing maintenance and upgrades are crucial. “The need to have the capability for transporting and returning cargo from Earth to LEO and vice versa is becoming a key factor for potential operators and users,” says Cugno, citing growth projections for the orbit and the development of replacement programmes after the ISS ceases operations in 2030. “Having reusable spacecraft will support cost reduction of the service as well as the overall logistics.”

From an environmental perspective, there’s the issue of debris, and carbon emissions. There are now some 132m pieces of space debris objects littering the skies above us, according to the European Space Agency. Reusing rockets cuts down on the need for new launches, reducing the carbon footprint from manufacturing and fuel consumption. Fewer objects in space also means fewer debris. Then there’s speed. Time to launch drops with reusable rockets – not just because costs are lower, but because maintenance is easier. This allows for quicker, more frequent satellite deployments.

The pressing need for reliability
All those advantages notwithstanding, reliability remains the most important factor when it comes to launches, Kasaboski says. “Your vehicle needs to work and needs to be proven reliable. Cost is only the second consideration, with availability of launch slots following. A customer might initially choose to launch with SpaceX because of its volume of success, but they may eventually cancel or go



elsewhere if the operator’s schedule doesn’t meet their desired timeframe – as happened in the case of Japanese billionaire and Zozo founder Yusaku Maezawa’s Dear Moon project. For the greatest traction to happen in the market, reusability needs to affect reliability, cost or schedule.”

Sustainability to stakeholders has yet to become a major reason for customers to prioritise reusable rockets. That said, sustainability may be a key consideration for customers with deeper pockets and pressing environmental concerns – for example, certain government organisations. Reusable spacecraft have so far focused on cost considerations. NASA, for example, initially wanted a fully reusable rocket for the moon landing in 1969, but the plan for reusable solid rocket boosters was derailed by their high costs.

A quarter of launch market

As of mid-August, SpaceX had 6,336 satellites in orbit to power its Starlink internet service. Of these, 6269 are working. A total of 6,895 were launched, according to astronomer and astrophysicist Jonathan McDowell, who tracks the mega constellation. The company hopes to eventually have 42,000 Starlink satellites in orbit. At those volumes, reusing launch vehicles makes sense. But even without Starlink, SpaceX dominates the satellite launch market with its competitive pricing. Depending on whether you count the internet constellation or not, the company accounts for between 43% and 70% of all satellites launched over the past three years, Kasaboski says. NSR does not break out data on reusable launch vehicles, but they are likely to comprise a quarter of the market, he says, making an early assessment that needs due diligence. “That’s being conservative. It’s probably actually higher than that,” he says. “And that percentage



“For the greatest traction to happen in the market, reusability needs to affect reliability, cost or schedule”

Dallas Kasaboski, Principal Analyst, Analysys Mason

is going to throw, because most players in the market are looking at developing a reusable vehicle.”

The challenges of reliability remain

Before we get there, however, there’s the vexing issue of technical challenges to full reusability. Despite the technical advancements so far, there remain a number of hurdles to be overcome. As Thales’ Cugno points out, much more needs to happen for fully reusable rockets to become standard. “A change in this direction can only happen if new launch or transportation solutions and relevant technologies are found, making the system much more competitive. “As of today, there is not yet a different solution in the horizon in this short period of time,” he says. In April 2023, SpaceX’s Starship prototype exploded because

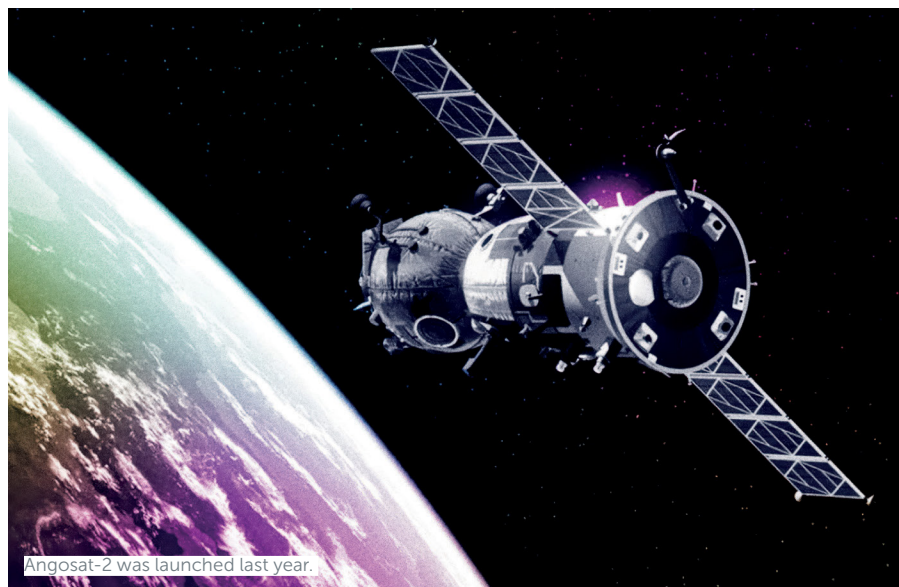
of an engine malfunction. A few months later, another engine issue hit Blue Origin’s BE-4 during acceptance testing. “People assume that Starship is going to succeed, but that isn’t necessarily true,” Zack Cordero, the Esther and Harold E. Edgerton Career Development Assistant Professor of Aeronautics and Astronautics at the Massachusetts Institute of Technology, says in a statement. “There is a real, underappreciated risk that these new heavy lift launch vehicles will continue to fail unless there are fundamental advances in materials technology,” he adds. Most challenges revolve around reliability, including structural integrity and thermal management. Then, reusable rockets must also integrate components and design elements that enable soft, precise landing and docking. There are also propulsion and fuel efficiency challenges. And that’s in addition to environmental concerns include managing emissions and space debris. His research tackles the reliability problem, focusing on extending the lifespan of reusable rockets, while simultaneously reducing the risk of catastrophic failure. His Cordero Lab is working on ignition-resistant materials, oxygen-rich turbopumps and additive manufacturing (or 3D printing) structures, among other solutions. Nevertheless, reusability will be a game-changer. “The new class of reusable launch vehicles is likely to transform the space industry by lowering launch costs and improving space accessibility. This will enable applications such as mega constellations for space-based internet and space-based sensing for things like persistent, real-time CO₂ emissions monitoring,” he says. And of course, NASA. The space agency remains keen on reusability for lunar missions. It plans to use Starship for its crewed Artemis missions to the moon. **PRO**

BRIDGING ANGOLA'S DIGITAL DIVIDE WITH SATELLITE INNOVATION

Despite its wealth of natural resources, Angola has faced significant challenges in diversifying its economy. Now, with Angosat-2 and its partnership with ST Engineering iDirect, the nation is tackling digital disparity and fostering economic growth by enhancing internet access and connectivity

→ Located on the west central coast of Africa, Angola is a resource-rich country with natural harbours and a narrow coastline that transforms into a huge plateau. Though it is a country rich in minerals such as diamonds and gold, it faces some significant challenges. Angola is focusing on the diversification of its economy, moving away from oil and striving to encourage new industries, many of which rely on digital infrastructure.

The Digital 2023 Global Overview report flagged that there were 11.78m internet users in Angola at the beginning of 2023 out of a population of 36.13m. Between 2022 and 2023, there was a rise in internet users of 3.1%. Internet penetration at this point stood at just 32.6%. Internet access is critical to the development of a digital society in Angola for both businesses and individuals. This is coupled with a young population that craves digital services. Internet connectivity remains limited across the country but the promotion of economic development hinges on the country's ability to digitalise.



Angosat-2 was launched last year.

With businesses highly reliant on good connectivity to enable them to improve performance and to connect with the global marketplace, a reliable network is essential.

The Angolan government has recognised the power of satellite connectivity in their quest to close the digital gap that is so prevalent across the country. In 2017, the Angolan government developed

the Angosat-1 satellite, which was launched in 2017 to address the cost of capacity to connect cities and provinces across its large landmass where terrestrial networks are simply cost prohibitive. Unfortunately, Angosat-1 suffered an in-orbit failure. However, with the launch of Angosat-2 in 2023, Angola has developed its own expertise in the satellite sector and this sovereign

satellite has enabled the country to establish initiatives that help to tackle their biggest challenges.

Last year, at World Space Week, the Angolan Ministry of Telecommunications, Information Technologies, and Social Communication (MINTTICS) minister, Mário Oliveira, delivered a speech that confirmed that satellite is now widely used to deliver services to national operators, connecting over 150 remote locations and has helped reduce digital disparity across Angola.

ST Engineering's Role

ST Engineering iDirect has been working in the African region to help to connect the continent for decades. The company has a longstanding partnership with Mercury Telecommunications Services (MST), an Angolan government-owned service provider and integrator.

MST was awarded the contract to deploy the first Ku-band services on Angosat-2, allowing the first five beams covering Angola to be activated for service. However, there were some barriers to deployment that had to be overcome.

The multi-band nature of the satellite, which features a Ku-band uplink and Ka-band down-link configuration, meant that smaller operators found it difficult to use the capacity, yet it was important that all businesses both large and small were able to access it. There were also no existing Ka-band gateways in Angola, so a suitable site had to be located. Additionally, the Angolan satellite market is highly regulated and it can be challenging to secure foreign currency.

In order to bring the project to fruition, MST leveraged its existing iDirect Evolution platform, expanding with additional line cards, licenses and modems.

ST Engineering iDirect and MST had already established a close



The ST Engineering iDirect and MST teams.

partnership that had been built over years of business together. ST Engineering iDirect has consistently offered a high level of support and consultative services to MST. This was in addition to the reputation that ST Engineering iDirect has established in Angola as a proven and highly regarded technology. Furthermore, to ensure a fast turnaround time to meet expectations and ease up logistics, Tinsky Connect, a local partner, was able to deliver the final product.

A Ka-band gateway is now being used by MST at the site of National Space Program Management Office (GGPEN), which was created to manage and monitor the development of the Angolan National Space Program.

Lighting up Southern Africa

Today, Angosat-2 offers Angolan institutions and companies access to cost effective satellite bandwidth and enables end users to access reliable connectivity services.

MST has become the go-to service provider for all Angosat-2 Ku-band service offerings, including Virtual Network Operators (VNOs) and single users. The VNO capability

is highly significant as it enables MST to provide services to companies that are effectively their competitors, in a cost-effective way.

The Angosat capacity is mainly utilised for enterprise and hub services, and it is helping the population to connect whilst having a positive effect on the economy.

Previously, when commercial capacity has been used, it has always been paid for in US dollars. However, since the introduction of capacity on the Angosat-2 satellite, it is stipulated that all capacity is paid for in Kwanza, the currency of Angola. This is resulting in a strengthening of the economy as businesses can pay for their satellite services in the local currency.

The growing satellite connectivity is also enabling the Angola to diversify its economy, moving away from oil and instead focusing on other sectors such as agriculture, maritime and earth observation. The Angosat-2 programme has been a positive step for the Angolan satellite communications industry, establishing the country as a space player and bringing significant benefits to the population. **PRO**

SAUDI ARABIA SHOOTS FOR THE STARS **WITH NSG**

In May 2024, Saudi Arabia's Public Investment Fund (PIF) announced the launch of Neo Space Group (NSG), an entity tasked with developing the Kingdom's local capabilities and boosting its position within the global space economy. In an exclusive interview with Vijaya Cherian, newly appointed CEO Martijn Blanken talks about NSG's vision and how it hopes to champion Saudi Arabia's goal of supporting commercial satellite space operations locally and internationally



Tell us a bit about yourself

My background has been in the telecom and tech industry, and I have worked and lived in Europe, Asia, Australia, and now, the Middle East. During my executive career, my roles have mostly focused on delivering

growth while navigating complex international environments. In my previous position, I was CEO of EXA Infrastructure, a pan-European and trans-Atlantic data center connectivity provider. Leading up to that role, I was a senior advisor to I Squared Capital, a large global digital infrastructure investor, and for them I led the

acquisition of EXA. Before that, I was the Group Managing Director of Telstra Enterprise and served on the Executive Committee of Telstra Corporation. During my time there, I was also CEO of Telstra Global, based out of Hong Kong, where it transformed under my leadership into the leading connectivity service provider in the Asia Pacific.

Can you outline your vision for Neo Space Group and how perhaps, it is different from other related entities such as the Saudi Space Agency and the Saudi Space Commission?

Neo Space Group aims to be the national champion for all commercial satellite and space activities in Saudi Arabia,

while also emerging as a global leader in satellite technology and connectivity. Our mission aligns with Vision 2030 by driving innovation, diversifying the economy, and positioning Saudi Arabia as a key player in the global space economy.

While we collaborate closely with the Saudi Space Agency (SSA) and the Communications, Space and Technology Commission (CST), each has distinct roles. The SSA focuses on space activities that are not yet commercially viable, and CST handles regulations and international representation. In contrast, NSG is focused on the commercial space sector, delivering solutions across four key verticals: Satellite Communications, Satellite Navigation and IoT, Earth Observation, and satellite management services.

What are the short-term and long-term goals you hope to achieve for NSG and what are your immediate priorities as CEO?

In the short term, our focus is on translating our vision into a solid execution plan that delivers compelling outcomes for our customers. We're building a world-class team to drive this strategy forward and are keen to secure quick wins to demonstrate our ability to execute. A recent example is our successful bid for the Earth Observation wholesale platform license in Saudi Arabia, which has already sparked market interest.

For the long term, our goal is to establish NSG as a leading global satellite and space technology services company. We have a clear roadmap centered on four key areas: delivering integrated multi-orbit satellite communication services, advancing Earth observation and remote sensing with robust analytics, developing a world-class navigation and narrowband IoT

offering, and launching a space-focused venture capital fund to invest in startups and localize activities within Saudi Arabia.

Given your experience with Telstra and EXA Infrastructure, what opportunities do you see for NSG to disrupt the global space industry?

We have three distinct advantages compared to more established space industry companies. As a new company, we operate from a fresh and open-minded perspective that is not saddled by legacy problems such as declining broadcast revenues or a high debt burden. Furthermore, we clearly understand which space sector areas we should focus on that provide us with the best opportunities to succeed. Thirdly, these factors are all underpinned by the fact that we have the backing of a strong, visionary investor in PIF.

This allows us to build on solid foundations and disrupt the current market status quo in several key areas. We will provide effective communication solutions by merging multi-orbit satellite technology with ground networks when necessary. This is further bolstered by our incorporation of established telecom technologies such as software-defined networking and multi-cloud access platforms. To enhance the geospatial ecosystem, we will have a dedicated platform for data processing and management, which is coupled with highly automated analytics that deliver more impactful real-time customer insights. We will also likely invest in satellites and constellations to meet future regional and global capacity needs. And finally, we use venture capital to support the development of new technologies that can be utilised across different sections of NSG.

What strategies/initiatives are you looking to implement to build partnerships with international space agencies and companies? Does NSG currently have partnerships in place?

We're leading the development of a larger ecosystem through strategic partnerships that enhance our service offerings and market reach. For example, our collaboration with SES on the Open-Orbits platform allows us to provide high-bandwidth solutions to airlines. We're also launching the Earth Observation wholesaler platform I mentioned before in Q1 2025 with a key partner, though we can't disclose who just yet. Additionally, we're exploring investments in satellites and constellations with established players to better serve regional and industry verticals. These partnerships, including our work with SES and Display Interactive, are crucial for helping us grow faster and innovate within the space industry.

With connectivity and communications being a high priority for many satellite/space entities now, how are some of the newer satellite trends (LEO, MEO, software-based satellites, 3D printed satellites) changing the game?

The game is changing fast with two main drivers: cheaper space access and cutting-edge digital technologies. These advances are delivering better user experiences at lower costs and enabling more than just basic connectivity. The space industry is catching up to terrestrial communications, where software-defined networks seamlessly connect people and machines across multiple cloud environments. Soon, satellite-based services will integrate into these networks, allowing for uninterrupted information flow, no matter where you are.

New global standards like 3GPP non-terrestrial networks



are also making it easier to mix different networks, while digital phased arrays are replacing traditional antenna dishes, ensuring constant connectivity in vehicles like cars, buses, and ferries.

Handheld devices are becoming satellite terminals, enhancing safety, remote education, and telemedicine. At Neo Space Group, we're boosting network agility and flexibility, using regional Large Language Models (LLMs) for smarter local management. These innovations are making space-based connectivity more accessible and opening new opportunities in the global space economy.

Would AI have an important role to play at NSG just yet?

Absolutely, AI is integral to all business verticals at NSG, with its most active role in our Earth Observation and Geospatial

"The game is changing fast with two main drivers: cheaper space access and cutting-edge digital technologies"

Martijn Blanken, CEO, Neo Space Group

segments. We've recently secured the permit to operate the geospatial marketplace platform for the Kingdom and are now rolling out the platform. This powerful technology can manage geospatial data from all sensor types, including space, aerial, and ground.

How do you plan to leverage the investment from the Public Investment Fund (PIF) to expand Neo Space Group's capabilities and market presence?

PIF, our shareholder, has committed capital to drive our strategy forward. Simply put, this investment empowers NSG to expand globally. We're focusing on three growth paths: building, partnering, and acquiring. With PIF's backing, we're poised for significant growth, enabling us to enter new markets and enhance our connectivity solutions. We're proud of our Saudi roots and the strong support from PIF, and we're committed to delivering value through innovation and excellence in the global space economy.

Can you discuss the venture capital fund aspect of Neo Space Group and its role in supporting space-related startups?

Like any VC, we focus on growing companies by providing investment, generating business by being a customer, and offering mentorship and access to our network. NSG's VC fund is designed to support innovative local space-related startups. We are in the early stages, actively identifying promising startups to support. Beyond funding, we're committed to being a main driver of the Saudi space economy alongside SSA, KACST, Aramco, and others. Our initiatives will also develop local talent and expertise, as Saudi Arabia becomes a hub for innovation and global collaborations in the space industry. **PRO**

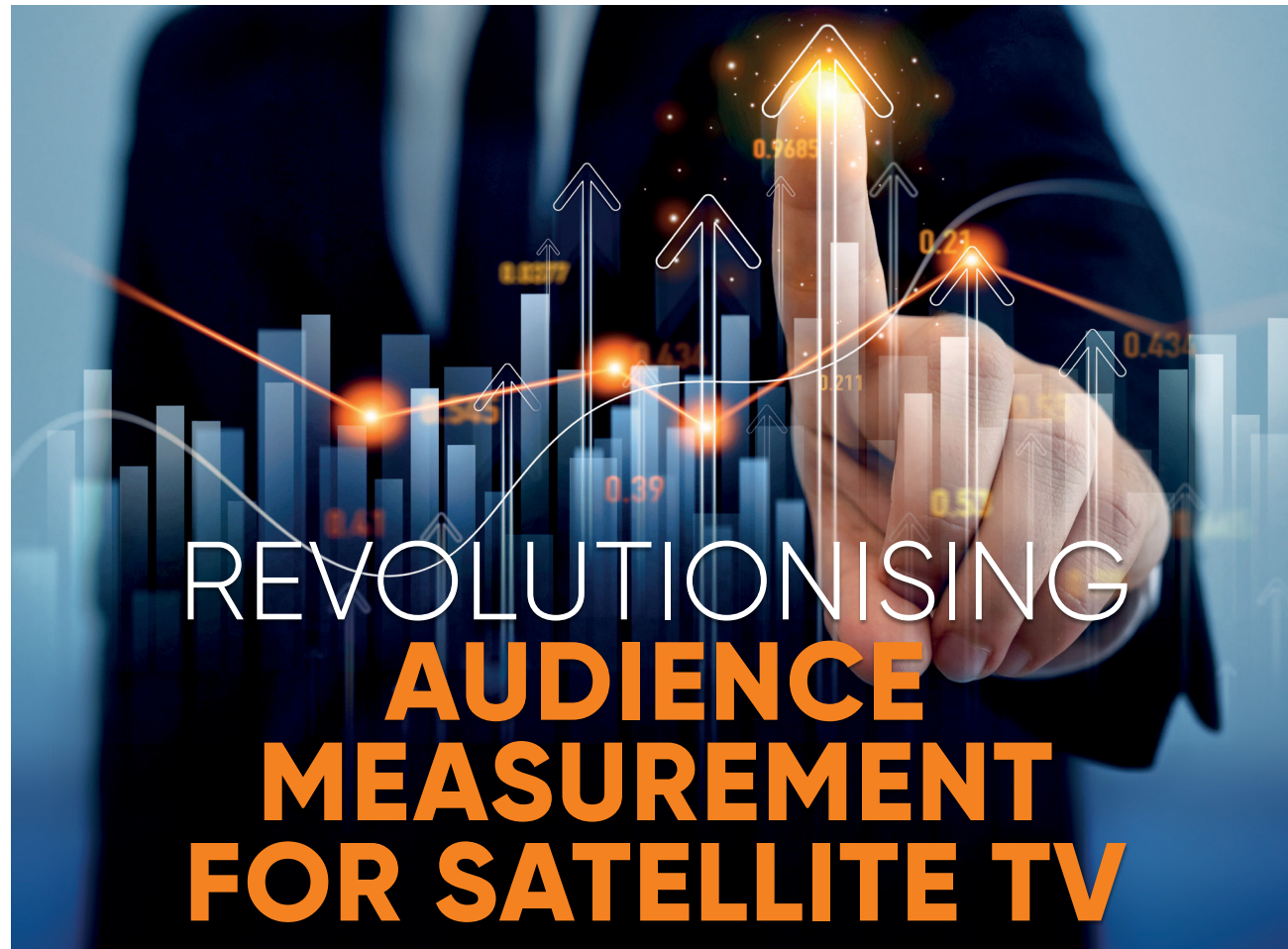


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REVOLUTIONISING AUDIENCE MEASUREMENT FOR SATELLITE TV

Advertisers today are increasingly inclined to invest in streaming services and digital platforms that offer accurate data on who is consuming their content, when and where. Now, satellite channels may also be able to compete in this space with a new audience measurement tool, as Vijaya Cherian learns from Badis Khaldi, the architect behind Audimatic



In the world of entertainment, audience measurement has long posed a significant challenge, particularly for satellite channels. Unlike digital platforms and streaming services, satellite TV lacks a return path, making it difficult to gauge viewership accurately.

With an ever-increasing number of channels and satellite offerings, traditional methods of measurement have struggled to keep pace, leading to a lack of confidence among advertisers who prefer the precise data collected by streaming services. This, in turn, has hindered the ability of satellite channels to demonstrate their true value. Conventional

attempts to measure viewership using proprietary devices from audience measurement companies have proven costly and unsuitable for satellite's regional reach.

Often, these spots are undervalued, particularly for some emerging and innovative channels that do attract an audience but struggle to demonstrate it. Programme scheduling and content

choices are sometimes based on customer feedback from the internet and social media, rather than actual measurements.

Recognising the need for a reliable audience measurement tool for satellite TV, Badis Khaldi, a seasoned professional with a background in both the satellite industry and industrial embedded systems, embarked on developing a groundbreaking solution. His experience working with MENA customers for a major satellite operator led him to note the challenges in valuing viewership, especially during peak times like Ramadan when traditional surveys yielded conflicting results. This experience, combined with his expertise in IT services, fueled his motivation to create a tool that could provide real-time, accurate data on viewership.

"I was working as Regional Director with a major satellite operator for the MENA region at the time. In this region, satellite television is still very prevalent, and there were always two

television channels that were fierce competitors especially during Ramadan. Each tried to outdo the other, and the result was two traditional audience surveys that yielded completely different results. The transition from SD to HD and UHD channels was the other big challenge. We needed a solution that could measure viewership across different resolutions and provide actionable insights to our customers," explains Khaldi.

This led him to develop the Audimatic audience measurement tool, which provides detailed, real-time data on viewer behaviour, capturing metrics such as channel names, frequencies and viewer engagement. The development of Audimatic began in 2021, with an initial focus on IPTV. At CABSAT 2022, Badis unveiled the first version of the solution and it generated considerable interest. However, the real breakthrough came when the tool was adapted for satellite audience measurement, where it collects data from set-top boxes, tracking channel

changes and viewer habits with millisecond-level precision.

"Why do we focus only on Ramadan to increase advertising revenues? Viewers remain potential customers for the remaining 11 months as well. This tool can help them do that," explains Khaldi.

Managing the massive influx of data, however, was a significant challenge. During peak hours, the system handled up to 80,000 simultaneous connections, requiring adjustments to server load and data processing cycles.

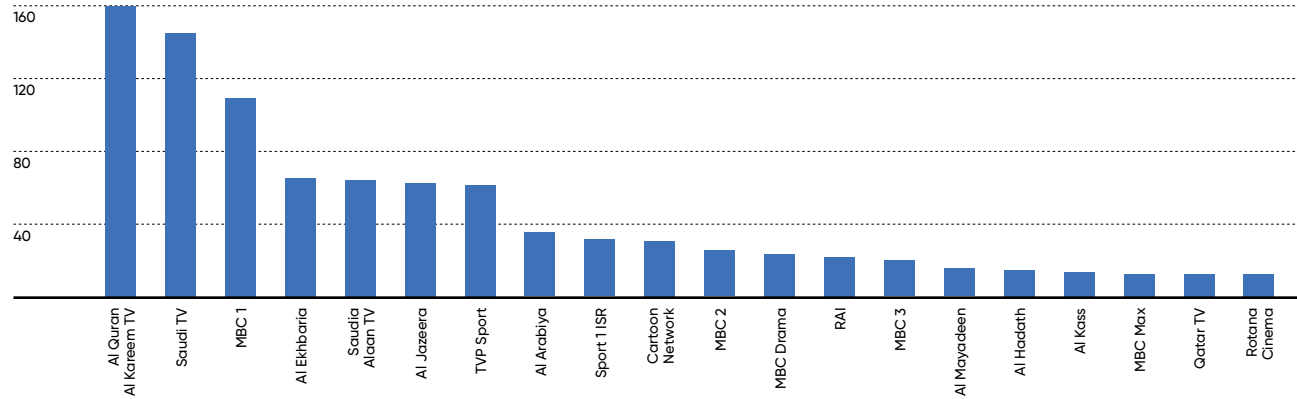
"Our initial data acquisition phase was overwhelming," Khaldi recounts. "We had to refine our architecture and implement a one-second data cycle, which reduced the load, the number of logs, and maintained a higher level of precision for tracking an advertisement or an official speech. We still had to progress and develop the second phase, which is the data restitution. This was done with data scientists and gradually adjusted according to customer needs."

Audimatic leverages embedded

Figure 1: Map display representing the measured satellite set-top boxes around MENA: June 16, 2024



Figure 2: Channel rankings in KSA based on number of watched hours: 6pm to 11pm, June 16, 2024



processes in consumer set-top boxes to collect viewing data. “Clearly, the box must be connected to the internet for one reason or another. The first comment from people is that satellite set-top boxes are not connected to the internet. What they forget is that most set-top boxes produced and sold in the last 10 years have built-in Wi-Fi and Ethernet modules. Even if only 10 to 20% are connected, that still represents hundreds of thousands of receivers providing us with audience data,” explains Khaldi.

The tool’s architecture emphasises simplicity and transparency, focusing on user experience rather than intricate satellite infrastructure.

“It’s the wrong approach to focus on satellite broadcasting infrastructure. What we needed was a user-oriented approach. A viewer who buys an antenna and a set-top box will install it at home, scan the satellites, and see thousands of channels on his receiver. The goal of true audience measurement is to know which of the thousands of channels offered to viewers they are watching, for how long, and on what device.”

Khaldi’s audience measurement tool is designed to work with various set-top boxes and satellite receivers, ensuring comprehensive coverage across different channels and regions. “The strength of satellite TV is its vast channel

selection,” Khaldi notes. “Our tool captures viewership data across all these channels, providing a complete picture of audience engagement. Essentially, when a viewer switches on the device, we collect per second what channel they have chosen, the name of the satellite and the transponder. Each time a channel is changed, it is recorded in the same way. We, therefore, build up a history of the channels watched by each device with the information of the country, city, satellite, transponder, resolution and channel type. Once we have a history for several devices in several cities, we have a panel on which we can build an audience according to the customer’s needs.

Data is collected in real-time and processed to ensure accuracy and reliability, with redundancy built into the system to validate collected data. “My experience in aeronautics and other critical industries has helped me a lot. To ensure the safety of an aircraft, the measurements must be redundant, as must the

“With an audience measurement tool like this, every channel can determine their true position”

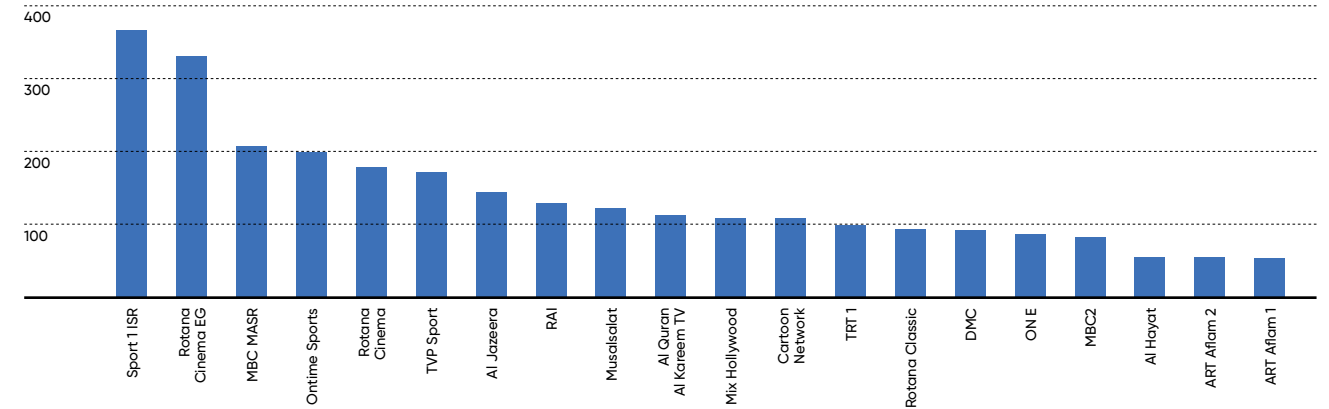
Badis Khaldi, Audimatic

servers. Likewise, here each set-top-box sends the logs to two different databases. Another server compares the logs and ensures that the data has been collected and recorded in the same way. All the data is stored in GMT, and we created a virtual zapping channel to compare with the recorded production and check the integrity of the process,” Khaldi explains.

Audience measurement on satellite channels can truly change the face of entertainment. “A channel that had consistently flat viewership except for one period each day experienced a spike four times its usual audience. This was due to a programme by a producer and young artists that audiences loved. The channel was unaware of this and couldn’t leverage it with advertisers. With an audience measurement tool like this, every channel can determine their true position and then define their strategy for improvement. Channel directors and advertising agencies must invest in such technologies and integrate data scientists who rely on measurements to adapt their offerings to their clients,” Khaldi explains.

Impressively, the tool is scalable. “Our tool will always record the chosen channels’ historical viewership on the user’s set-top box. And no matter which country the viewer is in, the system will work in the same way

Figure 3: Channel rankings in Egypt based on number of watched hours: 6pm to 11pm, June 16, 2024



and continuously,” adds Khaldi.

One of the biggest challenges today is not so much the data as being able to analyse the data accurately and in a timely fashion. Khaldi says the company has addressed this successfully.

“Initially, we developed online visualisation, but this was expensive in terms of resources and calculation time. As the panel grew, with over 300,000 set-top boxes connected to date, we kept this function for internal system supervision. With the multitude of different requests and visualisations depending on the client and what data they wanted to cross-reference, we calculated every evening on dedicated data warehouse data base servers all intermediate data needed to display the results. We also standardise the same client requirements over all countries, and we calculate them in advance every night so they will be available the next day. A new customer with a new way of comparing figures will need from us to reformulate his question with the right SQL queries and deliver him the dashboard figures the next day. This is nothing for those used to the timeframes of traditional surveys.”

Looking ahead, Audimatic plans to expand its capabilities further. Upcoming features include enhanced data visualisation tools, automatic ad counting

and AI-driven insights. The team is working on integrating program names into audience data and developing AI models to better understand viewer behaviour and preferences.

“We’re also exploring the potential of AI to enhance our data analysis,” Khaldi reveals. “Our goal is to provide even more granular insights and support our clients in optimising their strategies.”

Currently, Audimatic is focused on the MENA region and Europe,



with plans to expand to other markets. The tool’s scalability ensures it can handle the growing number of channels and viewers as the satellite TV industry evolves. Strategic partnerships and collaborations are also being considered to enhance the tool’s capabilities and market reach.

Khaldi advocates for industry-wide standards for audience measurement, highlighting the disparity between IPTV and satellite data collection. He envisions a more standardised approach that could address the challenges faced by satellite broadcasting and improve the accuracy of audience data.

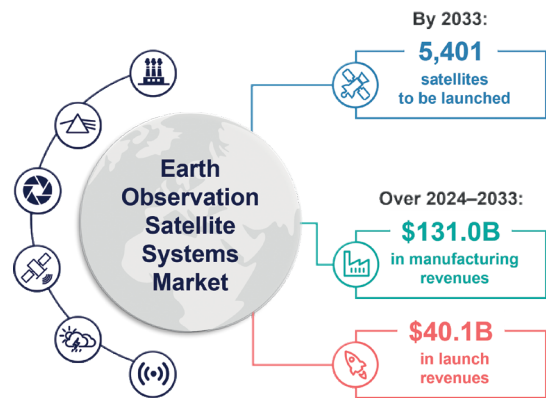
“My tool has highlighted the need for better standards in satellite broadcasting,” he concludes. “By establishing open systems and sharing data, we can enhance the entire industry and ensure a more accurate measurement of viewership.”

Audimatic represents a significant advancement in audience measurement, offering a solution that addresses the unique challenges of satellite TV while providing valuable insights for broadcasters, advertisers, and content creators. As the tool continues to evolve, it promises to reshape the landscape of audience measurement and drive greater precision in understanding viewer engagement. **PRO**

EO sats to triple over the next decade: Novaspace

The global Earth Observation (EO) satellite market will undergo substantial growth over the coming decade, with the number of EO satellites in orbit expected to almost triple as the manufacturing market grows by 40% and the value of the launch market increases by 55%.

The latest Earth Observation Satellite Systems report from Novaspace predicts 5,401 EO satellites will be launched between 2024 and 2033. This is up from 1,864 launched



over the previous decade and marks a 190% increase. Market growth is being driven by technology

miniaturisation, enabling a new breed of EO satellites to carry a diverse array of instruments. These

range from Very High Resolution (VHR) to Very Very High Resolution (VVHR) Multispectral, Synthetic Aperture Radar (SAR), Hyperspectral, Greenhouse Gas (GHG) monitoring, Electronic Intelligence (ELINT)/RF, to Meteorcean sensors.

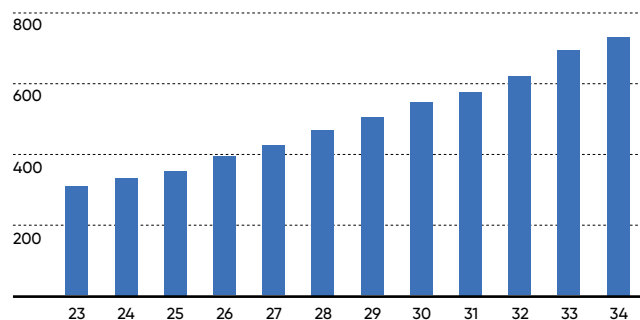
Manufacturing revenues are projected to reach \$131.0bn and launch revenues expected to hit \$40.1bn within the decade, increases predominantly driven by government customers.

Global satellite market size estimated to hit \$729.53bn by 2034: Precedence Research

The global satellite market is projected to be worth \$334.83bn in 2024 and is expected to reach \$729.53bn by 2034, expanding at a CAGR of 8.1% from 2024 to 2034. North America held the largest market share in 2023. The Asia-Pacific region is anticipated to experience the fastest

CAGR during the forecast period from 2024 to 2034. Additionally, the small satellite segment is projected to grow at the highest CAGR between 2024 and 2034. In terms of application, the commercial communications segment held the largest market share in 2023.

Satellite Market Size, 2023-2034 (USD Billion)

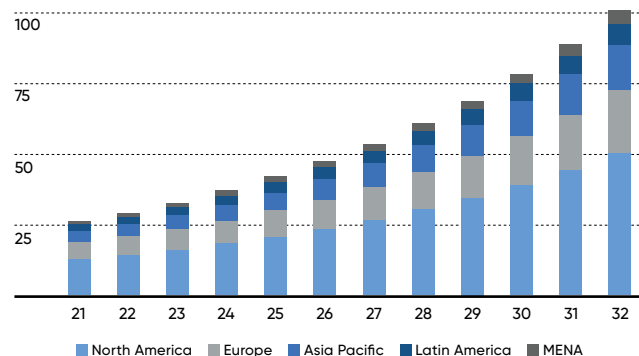


LEO sat market value to rise to \$102.9bn by 2034: Polaris Market Research

The LEO satellite market, valued at \$33.37bn in 2023, is expected to grow from \$37.73bn in 2024 to \$102.9bn by 2032, with a CAGR of 13.4%. The growth is driven by LEO satellites' benefits, including reduced latency, high data transfer rates, and lower costs. These satellites require

a larger constellation for continuous coverage and must be paired with advanced receiving equipment for seamless handoffs. LEO satellites' shorter transmission distances support high data rates, making them ideal for IoT applications and efficient data collection.

LEO Satellite Market Size, 2021-2032 (USD Billion)



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