Musk Announces SpaceX to Build Self-Growing City on the Moon Within 10 Years

February 10, 2026

It is not unbeknown to the public that NASA, for over a decade now, has been working to get humans back on the Moon. This has been a long and challenging journey that has successfully culminated in the Artemis II launch to the Moon this year. On the other side of the aisle, SpaceX and Musk have publicly stood ground on their desire to push the journey just a few kilometers further to Mars instead. However, on 8 February 2026, via X (formerly, Twitter), Musk announced:

"[…] SpaceX has already shifted focus to building a self-growing city on the Moon, as we can potentially achieve that in less than 10 years, whereas Mars would take 20+ years […] That said, SpaceX will also strive to build a Mars city and begin doing so in about 5 to 7 years, but the overriding priority is securing the future of civilization and the Moon is faster."

(emphasis added)

The phrasing matters. Musk did not describe a "base," a "camp," or even a "permanent presence." He chose "self-growing city" a term that, in space systems language, implies a settlement that can expand its own capacity faster than Earth can sustain it through resupply. In other words, the decisive milestone is poised to be the point at which the city can manufacture, repair, and reproduce the core inputs of life and industry on-site, with Earth shifting from a lifeline to a partner.

This emphasis on speed is also crucial. In the expanded

announcement, Musk explicitly contrasted lunar cadence with Martian cadence because the former provides frequent launch opportunities and short transit times allowing rapid iteration, while Mars imposes long windows between optimal departures and months-long transfers. The Moon, in Musk's framing, is simply the faster pathway to the larger objective, reducing the risk that a disruption on Earth can strand an off-world population before it is self-sufficient.

What a "self-growing city" would actually mean

A credible "self-growing" settlement is less a single project than a layered stack of capabilities that compound over time.

First, a survivable envelope or atmosphere. A city would begin with pressurized volume, radiation protection, thermal control, and redundancy. On the Moon that likely means habitats that are either buried, barriered, or shielded with regolith. Engineering for sustained occupancy is necessary to turn temporary infrastructure into long-term habitat.

Second, reliable power at city scale. Early lunar outposts can run on solar with storage; a city that grows needs power that is both scalable and resilient through lunar night, dust, and operational contingencies. That can mean distributed solar fields, large-scale storage, and, notably, nuclear surface power (see more on the plans for this here). The commercial point is that power becomes the first utility market of the lunar economy, and everything else prices off it.

Third, closed-loop life support and food production. "Self-growing" implies that water, oxygen, and consumables are not flown in as a permanent operating model. A settlement can still import specialty components, medicines, and high-value electronics but it cannot depend indefinitely on routine shipments of basic life inputs without remaining fragile by design.

Fourth, industrial metabolism by extraction, processing, and

manufacturing. This is where “city” plays a critical role in an envisioned lunar economy. A lunar settlement that grows must be able to produce increasing quantities of:

- structural materials (regolith-based bricks, sintered surfaces, composites),
- spare parts and tools (additive manufacturing),
- propellants and volatiles if polar ice is exploited, and
- replacement infrastructure (power hardware, pressure shells, mobility platforms).

In practical terms, “self-growing” means establishing an industrial base: each new machine, habitat module, or power unit increases the settlement’s ability to build the next one.

Fifth, governance by logistics. A lunar city will function as a managed system: inventory control, redundancy planning, maintenance cycles, and emergency protocols will be as central as rockets. The romantic imagery of flags and footprints matters less than the operational question of whether the settlement can survive a sustained interruption of Earth resupply.

Why the Moon becomes strategically attractive

Musk’s core argument is speed. The Moon is close enough to allow rapid learning cycles (launch, land, test, fix, repeat) on timelines that resemble industrial development rather than expeditionary exploration.

That matters because establishment of a large-scale settlement will not be a single “mission.” It will be an accumulation of failures and successes: life support anomalies, dust mitigation, thermal shock, power reliability, human factors, medical contingencies. A two-day transit and frequent windows change the economics of failure.

It also matters because NASA’s own lunar return effort remains on a near-term timetable. As of early February 2026, NASA

indicated Artemis II is targeting no earlier than March 2026 following issues identified during a fueling test. Against that backdrop, a public SpaceX narrative that the Moon is the near-term priority signals an alignment with where the most immediate institutional demand sits.

What this shift means for the industry

If SpaceX truly prioritizes a lunar city three effects follow across the market.

1) The lunar economy becomes real and fast.
A city implies persistent demand for cargo, construction, power, comms, navigation, mobility, and surface operations. That demand creates bankable markets for companies that are not launch providers: mining and excavation, robotics, thermal systems, pressure vessel manufacturing, radiation shielding, surface mobility, and autonomous operations.

2) “Cislunar logistics” becomes the main arena of competition.
A high-value advantage of establishing a lunar settlement is cadence. Any actor that can move mass routinely will set the tempo for everyone else. Musk’s own commentary places “millions of tons” and scale at the center of the ambition. The competitive response will not only come from rival launch systems, but from anyone building cislunar transportation, depots, tugs, and surface freight capacity.

3) Regulation, liability, and contract standards will tighten.
A city forces the legal questions to mature. Risk will address launch and reentry, but expand to long-duration habitation, industrial activity, and sustained operations in proximity to other actors. That pushes regulators and contracting authorities toward stricter requirements on safety cases, mission assurance, spectrum discipline, debris and traffic coordination, and insurance coverage tailored to continuous lunar operations.

It also changes the commercial posture of space law. The legal

work shifts towards operational governance rather than mission approval: how activity is coordinated, how safety zones are treated in practice, how responsibility is allocated across operators and contractors, and how disputes are resolved when operations become continuous rather than episodic.

Conclusion

This is not a retreat from Mars so much as a recalibration of sequencing. Musk still describes Mars as a continuing objective, with work beginning in the five-to-seven-year range, but with the Moon as the overriding priority because it is faster.

If the Moon becomes the proving ground for genuine self-sufficiency via energy independence, industrial reproduction, and survivable logistics, then the lunar decade will be the architectural foundation for everything that follows.

So that means that we are all heading to the Moon, SpaceX included.

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Russian Spy Satellites Intercepting European Satellite Communications

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European space security officials are increasingly concerned that two Russian “inspector” satellites have been used to collect communications associated with multiple European satellites, including traffic linked to government and military users. This has evidently been a sustained pattern over several years, with the alleged consequence being intelligence collection and a clearer mapping of how European satellite services could be constrained or disrupted in crisis conditions.

Such activity risks compromising sensitive information transmitted by the satellites but could also allow manipulation of the satellite flight paths or even lead to accidents.

What is reported to have happened

The reporting attributes the assessment to European security and intelligence officials who have been tracking two Russian spacecraft commonly referred to as Luch-1 and Luch-2. Officials reportedly believe these spacecraft were able to intercept communications from at least a dozen European satellites. The reporting also notes close approaches to a wider set of satellites over a multi-year period, which, if accurate, would reflect deliberate station-keeping near targets rather than incidental co-location in geostationary orbit.

A key technical qualifier is that interception risk is not uniform. A close look points to legacy vulnerabilities, including the fact that some older satellites may still rely on weak or unencrypted command links, creating exposure not only for confidentiality but also for command authentication and operational integrity.

None of this requires assuming a “weapon” in orbit. Persistent proximity operations, combined with modern signals-intelligence payloads, can be sufficient to collect metadata,

waveform characteristics, traffic volumes, and in some cases content, depending on encryption and link discipline. Even where encryption holds, the collector learns usage patterns, the contours of the ground segment, and system behavior under stress.

Why proximity operations matter commercially

Geostationary orbit is a commercial operating environment. Many satellites carry mixed traffic of commercial connectivity, leased capacity, and governmental payloads or services. That makes “space security” inseparable from commercial service continuity and contract performance.

Three immediate consequences follow.

First, security standards will move from guidance to gating. Encryption, authenticated command and telemetry, and disciplined key management are no longer features that win competitive bids. They are baseline conditions for eligibility, particularly for government and critical-infrastructure customers.

Second, underwriting and financing will harden around cyber-physical risk. The market already prices launch and debris risk. Persistent proximity and interception concerns introduce a more political category: contested-domain operating risk. That tends to produce tighter warranties, more onerous security representations, and narrower coverage around interference events.

Third, customers will demand assurance, not only service levels. Expect procurement language to expand beyond uptime and throughput into incident response timelines, sovereign control of command chains, ground segment resilience, and demonstrable ability to maintain service under interference conditions.

These pressures are intensified by Europe’s parallel policy

direction toward sovereign secure connectivity. In January 2026, public statements from the European Commission described the commencement of GOVSATCOM operations, explicitly framed as secure and encrypted governmental satellite communications under European control.

The legal consequences: duties exist, but enforcement is political

The legal framework for outer space has not suddenly become obsolete. It is, however, strained by conduct that sits *below* the threshold of overt attack while still producing strategic harm.

Under the Outer Space Treaty, States must conduct activities with “due regard” to the corresponding interests of other States, and where a State has reason to believe an activity would cause “potentially harmful interference,” it should undertake appropriate international consultations. This is not a direct prohibition on collection, and it does not neatly capture intelligence operations. It does, however, create a lawful diplomatic pathway: if proximity operations are credibly framed as creating a risk of harmful interference or unsafe behavior, consultations are the treaty-based mechanism to press the issue.

Separately, Article VI’s responsibility principle matters in today’s mixed government-commercial architecture: States bear international responsibility for national activities in outer space, including those by non-governmental entities, and must authorize and continuously supervise such activities. In practical terms, this pushes European regulators toward more explicit security supervision of licensed operators whose systems carry government traffic, and it strengthens the policy case for security conditions in licensing and procurement.

The radio layer adds another legal and regulatory vocabulary.

The International Telecommunication Union radio regime is designed to prevent harmful interference and imposes obligations on administrations regarding stations under their responsibility. If interception evolves into jamming, spoofing, or service disruption, that framework provides process and terminology even when remedies remain political.

The limiting factor across these regimes is attribution and proof. Legal consequences scale with confidence. That reality will drive investment in independent tracking, data fusion, and evidentiary discipline, because sustaining a position in a diplomatic, regulatory, or legal forum matters.

Strategic meaning: below-threshold pressure becomes normal

The most consequential implication is not that satellites can be listened to. It is that space is being treated as a continuously contested domain, and that this contest is increasingly conducted through activity that stays below the threshold of overt interference.

For operators, the lesson is straightforward: resilience must be engineered and contractually demonstrated.

For governments, the implication is equally clear: the line between commercial service and national capability is thin, and it will continue to thin. Hybrid payloads, shared capacity, and multi-use constellations bring efficiency, but they also bring shared exposure.

For Europe, this incident reporting will likely accelerate three tracks already underway: (1) hardening of legacy systems and uplink security practices; (2) procurement and licensing reforms that make security a condition of market access; and (3) sovereign and allied connectivity architectures that reduce single points of failure and impose higher security baselines.

The diplomatic posture should remain measured. The objective

is to reduce strategic ambiguity, raise the cost of intrusive behavior through collective standards and coordinated responses, and ensure that Europe’s commercial satellite market remains credible to the customers who depend on it.

In short, the future will not be defined by a single episode of proximity collection. It will be defined by whether Europe treats this as an intelligence curiosity, or as a governance and market-structure inflection point.

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The Private Sector’s Increasing Control on National Security

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For much of the last century, national security was treated as a sovereign stack: intelligence, armed forces, and state-controlled strategic infrastructure. The private sector mattered, but mainly as a supplier.

That separation is thinning across the world. In a period defined by gray-zone pressure, cyber disruption, and sustained geopolitical competition, private firms increasingly operate the systems that keep states functional under stress. They design the networks that move data, the platforms that process it, the factories that scale production, and the services that

can be surged in crisis.

This is not a story about governments outsourcing security; states still carry legal authority, coercive power, and strategic responsibility. It is a story about where operational leverage now sits.

Critical Infrastructure and the "Public Risk"

The modern economy runs on privately owned and operated infrastructure that is strategically exposed. Undersea telecommunications cables, which carry the overwhelming majority of transoceanic digital communications, are owned and operated by private companies and consortia. This reality is now being treated as a geopolitical fact, not a technical footnote.

In the **United Kingdom**, this has led to the recognition of the "private ownership of public risk." Under the National Security and Investment (NSI) Act, the UK government now scrutinizes private acquisitions across 17 sensitive sectors, including AI and energy, treating commercial activity as a core national security vulnerability. Even the UK's nuclear deterrent relies on private firms like Lockheed Martin for maintenance, proving that sovereign capabilities are deeply integrated with private industry.

Similarly, in **Europe**, the NIS2 Directive expands cybersecurity obligations to thousands of private organizations. By making these firms legally responsible for risk management and incident reporting, the EU effectively treats the private sector as the frontline of the "sovereign stack".

The Industrial Base as a Security Instrument

Security competition has returned to a basic question: can capacity be produced fast enough, at scale, and under constraint? This question implicates private industry first. Multi-state security groups now emphasize the need to

aggregate demand and use longer-term orders to accelerate industrial capacity.

Australia provides a leading example of building “sovereign capabilities” through private partnerships. To support the AUKUS security partnership, Australia is leaning on private innovation in robotics and quantum technologies. Strategic mergers, such as the Australian firm Penten with the UK-based Amiosec, are now seen as essential to creating global providers of digital security for the state.

Space: A Case Study in Strategic Speed

Space illustrates how commercial services become strategic infrastructure in months, not decades. In recent conflicts, commercial satellite connectivity and sensing became operational necessities. This has triggered a shift in how states like **Canada** view their “digital ambition.” Canadian analysts are increasingly arguing for the modernization of the “sovereign stack” by better integrating private-sector cloud and AI solutions, moving away from rigid, state-only classification frameworks.

Analysis: Future Control and the Security Arithmetic

As we look toward the future, the private sector is fundamentally changing the state’s “security arithmetic”. Private firms do not carry sovereignty, but they carry strategic consequence, creating four recurring dilemmas:

1. **Rule-Setting:** Who sets the rules for access or technical restrictions when private services are used in conflict?
2. **Concentration Risk:** How do states avoid single points of commercial failure without destroying the economics of the private market?
3. **Cross-Border Friction:** How do global firms reconcile operations with sanctions and competing alliance expectations?
4. **Resilience Contracting:** How do governments contract for

resilience and “surge capacity” rather than just peacetime performance?

The future of national security will be defined by “dual-use” infrastructure, private runways, ports, and subsea cables that serve both commercial and military purposes. Intelligence is being redefined as private companies become part of “epistemic communities” integrated into state networks due to their specialized data analytics.

A mature approach treats the private sector as a standing component of national security planning. This requires pre-negotiated surge mechanisms, routine exercises that include industry as an operational partner, and the construction of the legal and technical scaffolding necessary to make private capability reliable when the pressure spikes. In a world of persistent competition, the decisive question is no longer just what the state can do, but how effectively it can command the private leverage it no longer directly owns.

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China Unveils Five-Year Space Strategy: Behind What Beijing is Building and Why it Matters

February 10, 2026

On 29 January 2026, China formally unveiled its next five-year roadmap for its space sector. Led by the China Aerospace Science and Technology Corporation (“CASC”), the plan sets out a coordinated national strategy spanning space tourism, orbital digital infrastructure, satellite megaconstellations, deep-space exploration, and space resource development.

Unlike earlier plans that focused primarily on launch capability and national missions, this roadmap is explicitly commercial. It reflects Beijing’s shift from building space access toward designing a full space economy, integrating transportation, data, communications, computing, and long-term off-Earth operations into a single industrial system.

Below is what China is planning over the next five years and what it means for operators, investors, and governments.

Space Tourism as a Regulated Market

China placed space tourism directly inside its national development framework, committing to achieve operational suborbital tourism within the five-year window, followed by a phased transition toward orbital passenger services.

This matters more for what it enables structurally. Human-rated vehicles drive reusable launch systems, crew safety standards, insurance markets, ground infrastructure, and regulatory frameworks for commercial human spaceflight. By incorporating tourism into state planning, China is signaling that these enabling layers will be built in parallel.

Several Chinese startups are already developing suborbital vehicles, but CASC’s endorsement elevates tourism from speculative private activity to state-supported industry. The practical outcome will likely be accelerated certification pathways, coordinated launch infrastructure, and easier access to capital. In effect, tourism becomes the catalyst for a broader commercial ecosystem.

For international operators, this introduces a new state-backed competitor in a market previously dominated by Western firms.

Space-Based Computing and AI

The most strategically significant element of the announcement is China’s commitment to develop space-based digital infrastructure, including orbital data processing and AI platforms.

These systems envision satellites performing compute-intensive tasks directly in orbit, forming a space-based cloud layer powered by continuous solar exposure and unconstrained by terrestrial energy grids. Rather than downlinking raw data to Earth for processing, China aims to analyze imagery, communications, and sensor outputs in space before transmitting refined products to ground users.

This architecture reshapes the economics of Earth observation, secure communications, autonomous navigation, and defense-adjacent analytics. It also introduces sovereign digital environments beyond traditional jurisdictional boundaries.

Western companies have discussed similar concepts, including SpaceX through its broader constellation strategy, but China is now embedding orbital computing directly into national industrial planning. Over the next five years, this is likely to drive large-scale satellite deployment, new spectrum requirements, and accelerated development of space-qualified processors and networking systems.

For regulators and operators alike, orbital computing raises unresolved issues around cybersecurity, liability, data governance, and congestion management.

Deep Space Capability and Talent Development

China is also expanding its deep space ambitions. Just days

before the announcement, the University of the Chinese Academy of Sciences launched a School of Space Exploration focused on advanced propulsion, trajectory modeling, and long-range mission design.

This move institutionalizes deep-space expertise inside China’s technical pipeline, ensuring a steady flow of engineers trained for lunar operations, autonomous spacecraft, and eventual interplanetary missions. The five-year plan frames the coming decade as a window for leapfrog development in deep-space technologies, linking talent cultivation directly to national exploration objectives.

Practically, this supports sustained lunar activity, robotic surface missions, and future crewed operations beyond low Earth orbit, all backed by a growing domestic workforce specialized in space disciplines.

Satellite Megaconstellations and Orbital Real Estate

China’s roadmap also reinforces its aggressive push into large satellite constellations.

Chinese entities have filed extensive applications with the International Telecommunication Union to reserve spectrum and orbital slots for future systems numbering in the hundreds of thousands over the coming decade. These filings secure scarce orbital resources while positioning China to compete directly with existing broadband constellations. Control over spectrum and orbital slots determines who can deploy at scale, who faces interference constraints, and who shapes future standards. China is acting early to lock in access, ensuring its operators retain strategic flexibility as orbital traffic intensifies.

For existing constellation operators, this signals tighter competition for spectrum coordination and growing geopolitical complexity in ITU processes.

Space Resources and the Groundwork for Off-Earth Utilization

While less detailed publicly, the five-year framework references space resource development as part of China's medium-term objectives. This points toward future lunar utilization architectures, including in-situ resource extraction, surface logistics, and energy generation.

Resource development is being planned alongside launch systems, robotics, navigation, and power infrastructure, indicating a long-term vision for sustained off-Earth presence rather than isolated exploration missions.

Over time, this approach supports permanent lunar operations and potential cis-lunar industrial activity.

What This Means

Taken together, China's five-year plan represents a transition from space capability to space ecosystem design.

Tourism accelerates human-rated vehicles. Orbital computing drives constellation growth. Megaconstellations justify launch cadence. Deep-space programs advance propulsion and autonomy. Resource utilization supports permanent operations. Each pillar reinforces the others, forming a vertically integrated strategy for space commerce.

This contrasts with the Western model, where commercial development remains spread across agencies, regulators, and private operators. China is synchronizing state capital, industrial policy, education, and orbital planning into a unified framework.

For commercial actors, this reshapes competitive assumptions across tourism, satellite services, and space-based data markets.

For governments, it underscores the urgency of spectrum diplomacy, regulatory coherence, and international norms

governing orbital infrastructure and space-based computing.

For everyone else, whether in the space industry or otherwise, it signals that by 2030 the world will be operating within an unprecedented, fully globalized space economy.

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The India–EU FTA Reshapes the Economics of Commercial Space

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On 27 January 2026, India and the European Union closed negotiations on a landmark Free Trade Agreement that European Commission President Ursula von der Leyen publicly branded the "mother of all deals" ("FTA"). The scale of the FTA is hard to overstate. The EU estimates that tariffs will be eliminated or reduced on 96.6% of EU goods exports to India by value, while India's trade ministry points to preferential access for 99.5% of Indian exports into the European market. Implementation is expected within roughly a year, following legal review, which is anticipated to take five to six months.

The FTA is not a "space agreement" on its face, but it lays the industrial, digital, and investment rails for a substantial EU–India orbital corridor. And in the summit's formal Joint Statement, they explicitly place space inside the newly signed India–EU Security and Defence Partnership, and they record "productive discussions" at the inaugural India–EU

Space Dialogue held in Brussels in November 2025.

In the modern space economy, the decisive constraints are often diplomatic friction points in standards, in data governance, in procurement eligibility, and in supply-chain trust. Space companies scale when their components, engineers, capital, and data can move predictably across jurisdictions. The India–EU FTA is a trade corridor agreement that also functions, in practice, as a space-enabling agreement. The Joint Statement then gives it strategic ballast by naming space cooperation as part of the broader security and defense architecture and by mandating deeper work through the Space Dialogue across technology domains including earth observation, satellite navigation, space surveillance, and communications.

Start with manufacturing and the upstream stack. Space hardware is still a story of precision industrial inputs: avionics, electronics, advanced materials, test equipment, optics, and specialty chemicals. The European Commission's own sectoral framing of the FTA highlights gains in areas such as machinery and "avionics," which is a quiet but meaningful signal for aerospace supply chains. When tariffs come down and customs processes become more predictable, you make cross-border bill of materials strategies viable. Now move to the downstream stack, where the commercial space opportunity is likely to compound fastest. The Joint Statement elevates the India–EU Trade and Technology Council as the cornerstone for technology cooperation and ties it to work on resilient supply chains and protection of sensitive technologies, alongside collaboration on advanced areas like semiconductors, artificial intelligence, quantum, and 6G. For commercial space, this is core infrastructure. Earth observation analytics, satcom service delivery, on-orbit servicing planning, and space domain awareness toolchains are all data-heavy, model-heavy, and increasingly delivered as cross-border digital services. The more the two sides can converge on

trusted digital ecosystems, interoperable standards, and predictable compliance expectations, the more feasible it becomes to build EU–India "two-home" space ventures that sell into both markets.

The Joint Statement goes further by calling for EU–India Innovation Hubs, an EU–India Startup Partnership, and exploratory talks on associating India with Horizon Europe, the EU's flagship R&D program. That combination matters because commercial space is now a deep-tech financing story. Venture capital follows pathways to customer adoption and non-dilutive R&D leverage. When Indian companies can more naturally co-develop with European partners, and when European primes and scaleups can integrate Indian engineering and manufacturing capacity without the old trade penalties, you widen the funnel for bankable cross-border programs.

Where the strategic layer becomes commercially decisive is the explicit space language in the summit package. The Joint Statement notes the signing of the India–EU Security and Defence Partnership and lists "space" among the cooperation domains. It also specifies, in the implementation agenda, deeper cooperation through the Space Dialogue on earth observation, navigation, space surveillance, communications, and space security. That is the bridge between government-to-government alignment and private-sector "permission to operate." In practical terms, it de-risks three things' investors always consider: (1) whether collaboration will be politically durable, (2) whether sensitive technology boundaries will be managed through predictable rules rather than ad hoc politics, and (3) whether public procurement and institutional buying power can become a customer base for commercial offerings.

The 1-year implementation timeline is important for space ventures because it aligns with product cycles. Space startups that begin structuring now can hit the market as the agreement moves into action, with their supply chains, licensing

posture, and data compliance built for the new corridor. Space founders should also be cognizant of climate and carbon rules. There was no immediate exemption for Indian firms under the EU's Carbon Border Adjustment Mechanism, which took effect on 1 January 2026, but there will be EU financial support aimed at emissions reductions. For space, that is both constraint and opportunity. Satellite-enabled measurement, reporting, and verification services, climate risk analytics, and maritime emissions monitoring become more valuable when trade partners are tightening carbon accounting and supply-chain transparency. In other words, the compliance burden can become a demand engine for downstream space data services.

As the FTA moves towards implementation, the foundations for a shared commercial space ecosystem are now firmly in place. For founders, investors, and operators willing to move early, this corridor offers scale, stability, and a genuine opportunity to build across continents.

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Blue Origin's TeraWave: A New Chapter in Satellite Broadband

February 10, 2026

Blue Origin has announced TeraWave, a high-throughput

satellite communications network positioned for enterprise, government, and data-center customers rather than mass-market consumer broadband.

What is TeraWave?

TeraWave is a planned multi-orbit satellite network consisting of approximately 5,408 satellites in low-Earth and medium-Earth orbit. Its architecture pairs radio-frequency links for broad coverage with optical inter-satellite connections capable of symmetrical data speeds up to 6 terabits per second.

Blue Origin intends to begin deployment in late 2027, leveraging its New Glenn launch vehicle for satellite placement. The constellation will target enterprise, data center, and government customers, rather than mass-market consumer broadband subscribers.

Blue Origin is positioning the network as an enabler for high-capacity applications such as enterprise connectivity, cloud and AI workloads, and redundancy for critical infrastructure.

Competitive Dynamics: Starlink, Amazon Leo, and Market Niches

SpaceX’s Starlink:

Starlink, operated by SpaceX, remains the most advanced and widely adopted satellite internet service, with roughly 9,500 active satellites (as of January 26, 2026) and 6 million plus users globally across consumer, enterprise, and government segments. It provides service in over 100 countries including US, UK, France, Brazil, Japan, Rwanda, Australia, and the list goes on. Its network has set the baseline for low-latency satellite broadband, and SpaceX continues to upgrade capacity with laser links and next-generation satellites.

Amazon Leo (formerly, Project Kuiper):

Alongside these developments, Amazon’s satellite broadband

project, Amazon Leo, is progressing toward full deployment. Amazon has highlighted enterprise-grade terminals with claimed performance up to 1 Gbps down / 400 Mbps up for high-end use cases, alongside lower-profile terminals for broader customer segments. Amazon Leo has approximately 180 satellites in low Earth orbit (as of January 26, 2026) and is authorized by the FCC to deploy roughly 3,236 in total.

Looking Internationally: Constellations in Europe and China

Beyond the US commercial ecosystem, China is quietly assembling its own parallel low-Earth orbit connectivity architecture. State-backed programs such as Guowang and the commercially framed Qianfan (Thousand Sails) are designed to deploy tens of thousands of satellites over the coming decade (see China launch record here). These systems are unlikely to compete directly for Western commercial customers in the near term, but they matter because they accelerate the transition from a single dominant network to a more bifurcated connectivity environment.

Closer to market in the EU, Eutelsat OneWeb remains the most operationally mature non-SpaceX LEO broadband constellation with 600 plus active satellites. With global coverage largely in place and a customer base weighted toward governments, mobility, and enterprise connectivity, OneWeb occupies a pragmatic middle ground between mass-market consumer broadband and bespoke, ultra-high-throughput systems. Their trajectory illustrates how differentiated positioning, rather than raw satellite count, can still carve durable market share.

Strategic Positioning

Blue Origin’s entry with TeraWave signals an acceleration of industry segmentation in orbital broadband:

- Starlink remains the broad consumer and government leader, leveraging scale and established infrastructure
- Amazon Leo aims at consumer and commercial broadband,

benefiting from Amazon’s cloud ecosystem

- TeraWave targets high-end enterprise and data centers, focusing on ultra-high-throughput and symmetrical speeds.
- Eutelsat OneWeb occupies a strategic middle ground, with an operational low-Earth orbit constellation serving government, mobility, and enterprise markets where reliability and sovereign alignment are paramount.
- In parallel, China is building its own large-scale low-Earth orbit system through state-backed and commercial constellations, reinforcing satellite connectivity as strategic infrastructure and introducing a separate, geopolitically aligned ecosystem.

This segmentation suggests maturing in the satellite broadband market where different players carve distinct value propositions rather than compete head-on for the exact same customer base.

Room for Smaller Operators in Orbit

For smaller satellite operators and service providers, these developments create niche and partnership opportunities.

Rather than attempting to replicate the scale of megaconstellations, smaller operators are well positioned to succeed by targeting underserved regions and highly specific vertical markets. Specialized constellations focused on applications such as Internet of Things, environmental monitoring, or regional connectivity can integrate alongside larger networks, providing capabilities that mass-market systems are not optimized to deliver. This layered ecosystem allows niche providers to remain commercially viable while benefiting from the broader infrastructure being deployed by Starlink, Kuiper, and TeraWave.

As large constellations expand globally, demand will grow for localized ground infrastructure and relay capabilities.

Operators with regional gateways, sovereign landing rights, or advanced ground systems may find meaningful opportunities as connectivity partners, providing routing, redundancy, or regulatory-compliant access points for larger networks. These partnerships are particularly valuable in jurisdictions with strict data localization requirements or limited terrestrial backhaul.

Many enterprise customers operate in environments where standardized connectivity products fall short. Industries such as mining, maritime, energy, and defense often require bespoke service-level agreements, secure routing, redundancy architectures, or interoperability across multiple constellations. Smaller operators can compete effectively here by offering tailored solutions and closer customer integration.

Conclusion

Blue Origin’s TeraWave initiative deepens the competitive landscape of satellite broadband and highlights the industry’s shift from a narrative dominated by Starlink to a multi-node ecosystem of specialized networks. The broader implication is that satellite internet is evolving beyond consumer broadband into a layered global infrastructure, where diversity in technology, markets, and operational models will define competitive advantage going forward.

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Nuclear Reactors on the Moon: NASA and Dept. of Energy Take First Step with MOU

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On 13 January 2026, NASA and the US Department of Energy (“DOE”) announced a memorandum of understanding to develop a lunar surface nuclear reactor by 2030, a milestone that could fundamentally change the strategy for sustained human presence beyond Earth. The joint initiative aims to deploy a fission surface power system capable of producing safe, continuous electrical energy on the Moon, regardless of solar availability or lunar night cycles. This effort directly supports NASA’s Artemis campaign and future missions to Mars, while reinforcing a broader national space policy focused on technological leadership.

Unlike solar arrays or batteries that depend on sunlight or limited stored energy, a nuclear reactor could offer continuous, high-density power for habitats, scientific instruments, resource processing systems, and communications infrastructure. Early concepts envision reactors producing tens to hundreds of kilowatts, enough to support a small lunar base and potentially expandable for larger installations. Uch power would also support life-support systems and fuel production for deeper space missions, capabilities that solar power alone cannot reliably sustain during the 14-day lunar night.

The policy backdrop for this technical push is the December 2025 *Ensuring American Superiority in Space* Executive Order

(read more here). The order articulates a comprehensive national strategy to affirm US leadership in space and directs federal agencies to coordinate goals that extend beyond simple exploration. Among its provisions is a specific call for deploying nuclear reactors on the Moon and in Earth orbit, with at least one lunar surface reactor ready for launch by 2030.

This policy reflects a pivotal shift in space strategy, away from episodic missions with limited infrastructure toward a persistent lunar economy. Continuous, abundant power transforms what is feasible on the Moon. It enables high-energy activities such as using lunar ice to produce water, oxygen, and rocket propellent (in-situ resource utilization) and supports long-duration research facilities that could operate independently of Earth-based power. Robust energy also creates opportunities for private sector participation in lunar services and infrastructure development, aligning with the Executive Order's broader emphasis on commercial engagement in space.

Technical challenges, however, remain significant. Designing a reactor that can be safely launched, remotely deployed, and operated in the harsh lunar environment requires innovation in thermal management, radiation shielding, and autonomous control. Fission systems are inherently complex, and mission success depends on rigorous testing and validation on Earth followed by robust safeguards against accidental radiation exposure. Beyond engineering, international treaties like the Outer Space Treaty impose obligations to avoid harmful contamination and to ensure that space activities benefit all of mankind, adding a geopolitical dimension to nuclear deployment.

Even so, the potential rewards are substantial. A reliable nuclear power source on the Moon could act as a foundation for a sustainable cislunar economy, anchoring science stations, commercial outposts, and refueling hubs that extend human reach to Mars and beyond. It would signal a transition from exploration missions subject to short stays and limited infrastructure to an era of long-term habitation and industrial activity off Earth.

For NASA and its partners, this is about staying on the Moon and exploiting that experience as a springboard deeper into the solar system. If all goes well, the Artemis III astronauts could be scouting spots for installation of the nuclear reactor during their lunar surface exploration. As NASA and DOE progress toward their 2030 goal, the integration of nuclear power into lunar strategy will be watched closely by governments, commercial entities, and international partners. How the US executes this initiative under the Executive Order framework will shape the next decade of lunar exploration and the broader geopolitical and economic landscape of space.

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The Rise of the Shareholder State: When Sovereignty Joins

the Cap Table

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For the better part of the last thirty years, the global consensus on industrial policy was defined by a specific, somewhat detached architecture. Governments, wary of being accused of "picking winners," generally limited their interventions to the periphery of the market. They offered tax credits to spur R&D, provided grants to subsidize manufacturing, or established regulatory sandboxes to encourage innovation. The state acted as a gardener; watering the soil, perhaps pruning a few hedges, but largely trusting the private sector to decide what grew.

That era is over. As we settle into 2026, we are witnessing a profound mutation in the DNA of industrial policy. Driven by the fracturing of the geopolitical order and the rise of dual-use technologies, the state is no longer content to be a mere benefactor or regulator. Today, governments are stepping directly onto the playing field, transitioning from grant-makers to shareholders. We are entering the age of the Sovereign Venture Capitalist.

This shift represents a fundamental rewriting of the social contract between the public sector and private enterprise. In my three decades advising sovereign states, Fortune 500 corporations, and international organizations, I have observed the gradual tightening of the nexus between national security and economic competitiveness. However, what is occurring now is not a tightening; it is a fusion.

The catalyst for this change is the realization that in critical sectors; specifically **defense, artificial intelligence (AI), quantum computing, and space** exploration. The timeline of traditional procurement and the passivity of subsidies are insufficient. The speed of innovation in the

private sector vastly outpaces the bureaucratic machinery of the state. Furthermore, the capital intensity required to scale these deep technologies often exceeds what traditional VC markets, obsessed with short-term metrics, are willing to tolerate.

From Market Fixer to Market Maker

Consequently, we are seeing the emergence of state-backed investment vehicles that do not merely offer loans, but take direct equity stakes in startups. The United States, long the bastion of free-market orthodoxy, has become a leading practitioner of this new doctrine. The “equitization” of the CHIPS Act funding, most notably the government’s move to secure equity warrants in semiconductor champions like Intel, was the crossing of the Rubicon. It signaled that if the taxpayer is to underwrite the existential risk of reindustrialization, the taxpayer must also capture the strategic upside.

This logic is rapidly extending to the quantum frontier. The Department of Commerce’s negotiations with quantum pioneers like IonQ and Rigetti to swap federal funding for equity positions demonstrates a new strategic calculus: “Quantum Supremacy” is not a commodity to be bought; it is a national asset to be owned.

This is not an American idiosyncrasy; it is a global contagion. In Europe, the rhetoric of “strategic autonomy” has operationalized into hard capital. France’s Definvest and French Tech Souveraineté funds are actively taking stakes in dual-use champions, from space antenna manufacturers like Anywaves to sovereign cloud providers. Germany shattered its own post-war taboos by acquiring a blocking stake in defense electronics firm Hensoldt. And the NATO Innovation Fund, now deploying its €1 billion into startups across the Alliance, represents the multilateral evolution of this trend; a “closed-loop” innovation economy funded by, and for, the

state.

The Governance Paradox

The rise of the “Investor-State” introduces profound considerations. When a government becomes a major shareholder in a defense AI startup, it effectively fuses the regulator with the regulated.

- How does the DOJ or the European Commission impartially police an antitrust case involving a company where the Treasury holds a board observer seat?
- What happens to the fiduciary duty to maximize profit when it conflicts with the sovereign duty to maximize national security?
- If a state-backed quantum firm fails to meet safety standards, will it be allowed to fail, or will “too big to fail” morph into “too strategic to fail”?

The Diplomatic Cap Table

Furthermore, this shift weaponizes the capitalization table. A startup’s “investor relations” strategy is now indistinguishable from its foreign policy. Accepting sovereign equity is a double-edged sword. It offers “patient capital” and a guaranteed customer, but it also locks the company into a specific geopolitical orbit. A defense AI company with the Pentagon or a European Ministry of Defense on its cap table may find its exit options severely restricted. Selling to a foreign acquirer becomes a diplomatic impossibility rather than a business decision.

For the emerging industrialist, the message is clear: The government is no longer just the referee. It is now a player, a partner, and occasionally, the most demanding shareholder in the room.

We are leaving the age of laissez-faire innovation. As governments build their portfolios, from the Gulf's sovereign wealth funds transforming into active deep-tech investors to the U.S. Commerce Department's equity warrants, they are reshaping the global economy into a collection of competing national portfolios. Navigating this convergence requires not just business acumen, but a diplomatic sophistication that understands the new rules of geoeconomic statecraft. The state has pulled up a chair, and it has placed its chips on the table.

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The Constellation Gold Rush: FCC Approves 7,500 Starlink Satellites and China Applies for 200,000 Satellites with ITU

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The constellation boom is here and it is a regulatory, spectrum, and orbital-capacity land grab that is playing out two venues that matter more than most operators admit: the Federal Communications Commission (market access, spectrum rights, operating conditions) and the International Telecommunications Union (international spectrum filings and

priority). Starlink is the proof of concept. China's latest filings are the proof that the next phase will be geopolitical.

Start with the blunt metric: low Earth orbit is getting crowded fast. A recent analysis cited more than 11,700 active satellites as of May 2025, a multiple-hundreds-percent increase from 2018, and attributes much of the change to megaconstellations. In the United States' own regulatory record, the scale is even clearer: SpaceX is operating roughly 9,400 Starlink satellites, described as about two-thirds of all active satellites. This is not "growth." This is a new baseline.

Starlink's next regulatory phase: authorization at scale, with conditions

On January 9, 2026, the FCC approved SpaceX's plan to deploy an additional 7,500 second-generation Starlink satellites, taking SpaceX's authorized total to roughly 15,000 satellites. The Commission did not greenlight the full vision (SpaceX had sought authority tied to nearly 30,000 Gen2 satellites), citing the untested nature of the Gen2 models, and instead issued a partial approval with milestones.

Those milestones matter commercially. The FCC's decision structure is effectively a gating mechanism: launch and operate 50% by December 2028, complete by December 2031, and complete deployment of the first-generation tranche by November 2027. For investors, suppliers, and competitors, those dates become de facto market timing signals. For downstream customers (governments, carriers, and enterprise buyers), they become service-availability cues.

The details inside the FCC's order also reveal where the U.S. market is moving: more flexibility on frequencies, and explicit accommodation for direct-to-cell style services (described as direct-to-cell connectivity outside the U.S.

alongside higher throughput ambitions). The FCC's own "partial grant" summary confirms the scope: additional frequencies and new orbital shells as part of the Gen2 upgrade architecture.

For operators and new entrants, the lesson is straightforward. The FCC is still willing to authorize at megascale, but it is pairing that scale with (i) performance and deployment deadlines, (ii) collision-avoidance and debris posture expectations, and (iii) ongoing oversight leverage. You cannot treat licensing as a one-time hurdle. You need to treat it as a lifecycle compliance program.

China and the ITU: filing is strategy, not paperwork

The ITU side is where the constellation boom becomes a strategic contest over priority. In the final week of December 2025, Chinese entities filed submissions covering more than 200,000 satellites with the ITU, according to reporting tied to ITU records.

There are two important nuances here.

First, ITU filings do not equal satellites in orbit. They are claims over spectrum and orbital resources under ITU Radio Regulations, and they can be used to reserve future operating flexibility, establish coordination positions, and shape the negotiation terrain with other administrations. The commercial implication is that spectrum risk is increasingly being "front-loaded" years before launch, and sometimes decades.

Second, the filings are arriving in a context of openly expressed safety and congestion concerns. The same reporting cycle ties China's actions to broader arguments about Starlink's collision risk and orbital crowding. That framing matters because it foreshadows the next wave of regulatory tools: more aggressive coordination demands, tougher market-access conditions, and reciprocal restrictions justified by safety or interference concerns.

In other words, the boom is shifting from “who can build and launch” to “who can secure durable rights, protect market access, and survive coordination disputes.”

What this boom is really creating: a full-stack opportunity cycle

A megaconstellation world creates opportunity far beyond manufacturing satellites. If the FCC is willing to authorize scale but only with enforceable milestones and evolving debris expectations, there is immediate demand for counsel that can architect applications, milestones, and operational compliance so the constellation remains financeable. China’s ITU posture signals a coming era of contested filings and coordination leverage. Operators will need serious representation to audit filing strategy, anticipate coordination friction, and defend priority positions before disputes harden into market-access denials. Even rivals are recapitalizing and replenishing to stay in the game; for example, Eutelsat has placed major orders to expand and maintain OneWeb while governments support European alternatives. That creates a second-order market in ground infrastructure, terminals, gateway licensing, cybersecurity, and government procurement.

The practical takeaway

This boom is not just “more satellites.” It is a race to lock in spectrum rights, regulatory permissions, and operational credibility before orbital carrying capacity becomes a hard constraint. The winners will not be the operators who launch the most spacecraft. They will be the operators who can (i) win approvals, (ii) survive coordination, (iii) maintain safety and disposal performance, and (iv) keep market access open across jurisdictions that are increasingly willing to weaponize spectrum and safety narratives.

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China’s 2025 Space Launch Record: A Peek Behind the Curtains

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China’s space prram in 2025 offers a clear picture of how the country now approaches access to orbit: methodically, at scale, and with long-term strategic intent. China has been steadily focused on operational consistency. The result is a launch cadence that now rivals many other national programs.

How many launches?

Publicly available tracking data indicates that China conducted approximately 90 orbital launches during 2025. This is second only to the United States, and far ahead from the other states that conducted launches in 2025.

While final tallies vary slightly depending on classification methodology, the overall conclusion is consistent across sources: China sustained a near-weekly launch cadence for an entire calendar year. That level of activity places it firmly among the most active spacefaring nations and reflects a system that has moved into sustained industrial execution.

What are the launches for?

It is important to know that China has two headline

megaconstellation efforts, each planned for 10,000+ satellites: Guowang (national network) and the Shanghai-based Thousand Sails. These constellations are intended to provide broadband communications and strategic redundancy and are widely understood as national infrastructure projects rather than purely commercial ventures. A significant portion of China's launches were done to support these large-scale satellite constellations; China conducted approximately 15 launches to Guowang deployments in 2025 alone.

Alongside its constellations, China continued its steady cadence of national security launches. Payloads associated with the Yaogan series and other classified missions were placed into orbit throughout the year. In December 2025, for example, a triple-launch sequence was executed and included a classified Yaogan payload and another classified spacecraft on a separate vehicle. This illustrates China's integration of "military space" into its launch cadence and emphasized the scale and dual-use nature of its orbital activities. China now treats defense-related access to space as a continuous operational need.

Human spaceflight and station logistics also remained stable with China demonstrating its emergency capabilities. China had planned three missions to its Tiangong space station in 2025: the crewed Shenzhou 20 and Shenzhou 21 missions (launched in April and October, respectively) and the Tianzhou 9 cargo spacecraft (launched in July). However, in around early November during routine checks, and just before departure back to Earth to return the three astronauts, an external crack was found on the Shenzhou 20 spacecraft viewport window likely caused by space debris. The spacecraft was deemed not safe to carry the astronauts through the heat of reentry. This resulted in emergency protocols being initiated. The three astronauts returned to Earth safely in the Shenzhou 21 spacecraft which had arrived to Tiangong while the Shenzhou 22, which was already on emergency standby at the Jiuquan

station, was readied in approximately 16 days and launched to Tiangong uncrewed. This was the first reported major human spaceflight emergency for China and it responded in an orderly manner.

Beyond Earth orbit, China continued to invest in scientific and exploratory missions. The launch of Tianwen-2 in May, China's ambitious asteroid sample-return and comet-exploring mission, underscores Beijing's intent to maintain a presence in deep space exploration alongside its more commercially oriented activities. Tianwen-2 is expected to arrive at a near-Earth asteroid classified '469219 Kamoʻoalewa' in July 2026 and reenter Earth in late 2027.

One of the most consequential developments in 2025 was progress towards partial launch vehicle reusability. In December, LandSpace conducted what was widely described as China's first, commercial full reusable rocket test profile (orbit plus attempted recovery) and is openly targeting booster recovery as a commercial milestone. Simultaneously, Space Pioneer is currently working on Tianlong-3, its own iteration of a reusable vehicle. China's first state-owned reusable rocket designed by the Shanghai Academy of Spaceflight Technology, the Long March 12A, debuted in late December but recovery of the first stage of the rocket failed. If these efforts mature, they will place a downward pressure on launch costs and increase the competitiveness of Chinese providers in the global market.

Conclusion

China's 2025 launch record ultimately reflects a space program that has moved into sustained execution. The year's activity shows a system designed for continuity, where launch cadence, payload diversity, and operational reliability are treated as baseline expectations. Taken together, the data points to a mature ecosystem capable of supporting national security, commercial expansion, and long-term strategic objectives

simultaneously.

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