



BLACKWING

Making Space Accessible with Commercial, American-Made Nanosatellites



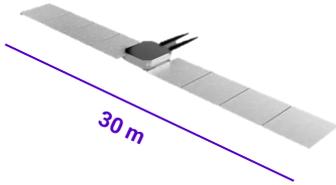
January 2026

The Space Industry is Diverging



Trend: Bigger is Better (Space 2.0)

Bigger, heavier, expensive satellites – great for government, impossible for innovators.



- Mega-class satellites tailor-made for national security
- Massive budgets, long timelines, complex requirements
- Locks out innovators, universities, and early-stage teams

Counter Trend: Smaller is Better (Space 3.0)

Smaller, smarter, affordable nanosatellites – the only practical path for broad American participation in space.



- Affordable, high-capability nanosatellites
- Rapid iteration, lower risk, lower cost
- Only scalable path for broad American participation and commercial growth

Blackwing is building for Space 3.0 where capability scales, cost drops, and access opens.

Space 2.0: Bigger-is-Better Satellite Trend

The U.S. satellite industrial base has shifted to mega-class satellites in response to the militarization of space driven by Department of War programs, and multiplicative increases in upmass enabled by Starship.

This paradigm shift is leaving space startups, research institutions, and universities behind. These entities are at the heart of American innovation, but cannot afford to take the risk of launching new ideas.

Technical and economic barriers to entry discourage new entrants to space, while **U.S. startups are shipping their technology overseas to European small satellite providers** because there is no alternative for affordable, commercial satellite solutions here at home.

This widening market gap is grounding untold American innovation.



Space 2.0: Bigger-is-Better Satellite Trend



LIGHTNING

ROCKET LAB'S SPACECRAFT FOR HIGH-POWER, LONG-LIFE MISSIONS

Rocket Lab's spacecraft designed for a 12+ year orbital lifespan in LEO, delivers high-power and high radiation tolerance, incorporating redundancy in critical subsystems. This ~3 kW bus is ideal for high operational duty cycle telecommunications and remote sensing applications. Lightning can be launched on Neutron and other medium and heavy launch vehicles. Lightning is based on the same design as the custom spacecraft Rocket Lab developed for [ICESat-2](#) and is the basis for the Company's bus for the [Space Development Agency](#).

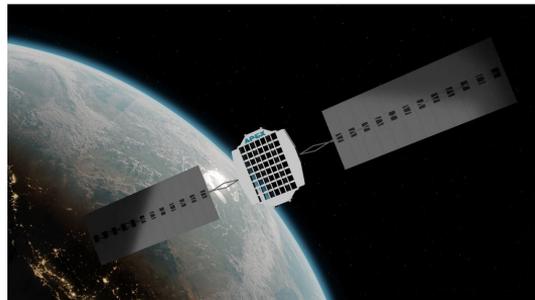
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News

Apex announces Comet satellite bus for constellations

by Jeff Foust May 28, 2025



Muon Space

Press Release

RTX's Blue Canyon Technologies announces new, larger spacecraft

by Blue Canyon Technologies August 11, 2025



LAFAYETTE, Colo. (August 4, 2025) — Blue Canyon Technologies, small satellite manufacturer and mission services provider for RTX (NYSE: RTX), has unveiled its latest spacecraft bus, the Saturn-400. This new, larger satellite offers flexibility and reliability to help customers achieve their mission objectives more effectively.



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EARTH



From agile CubeSats to actionable intelligence

SpaceNews
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AUGUST 7, 2025

Muon Space Unveils XL Satellite Platform, Announces Hubble Network as First Customer

The debut of MuSat XL signals a leap forward in satellite capability, powering Hubble's global BLE network.

[Read More](#)

Commercial

K2 Space raises \$110 million to scale up satellite production

The company is betting on an industry shift toward larger satellites as launch costs decline

by Sandra Erwin February 13, 2025





Moore's Law has led to game-changing innovations in laptop computers, cell phones, drones, and numerous other technologies, all of which have become smaller and more capable over time.

Why should satellites be any different?

Space 3.0: The Best Things Come in Small Packages

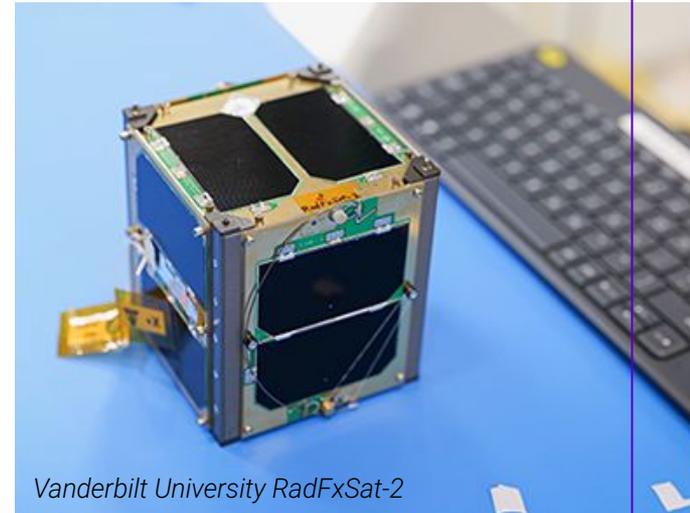


As an alternative to mega-class satellites weighing thousands of pounds, nanosatellites weigh less than 30 pounds at about the size of a couple of loaves of bread or smaller.

High-capability nanosatellites enabled by Moore's Law have **unrealized performance and economic advantages at scale.**

- Enable LEO Proliferation for Earth imaging, remote sensing, IoT, communications, AI/ML, in-space manufacturing, and other emerging technology areas
- Reduced CapEx with more affordable unit pricing and launch cost compared to larger satellite classes—dollars expressed in k's instead of M's
- Reduced OpEx for operational LEO constellation deployment, sustainment, and replenishment

A CubeSat is a common type of nanosatellite, defined using "U" units where 1U = 10x10x10 cm.



Vanderbilt University RadFxSat-2

Opportunity and Total Addressable Market



Market Momentum. The nanosatellite and microsatellite market nearly doubled from \$2.2B in 2020 to \$4.0B in 2024, an ~80% increase in just five years.

CubeSat Surge. CubeSat product revenues reached nearly \$500M in 2024, with analysts forecasting several-fold expansion through 2030. CubeSat growth will continue as these platforms transition from R&D to large-scale commercial use.

Sustained CAGR. Industry studies project ~10-23% annual growth across small satellite and nanosatellite market segments—consistent double-digit expansion.

Multi-Billion TAM. The nanosatellite ecosystem is on track for a \$8-16B TAM by the early 2030s, representing a multi-billion-dollar five-year opportunity window.

Demand for commercial nanosatellite platforms is accelerating. This market has doubled over the last five years, and is poised for continued double-digit growth over the next decade.

Sources: Allied Market Research 2024, Euroconsult Prospects for the Small Satellite Market 2024, Mordor Intelligence 2024, Fortune Business Insights 2024, Straits Research 2024.

Nanosatellite
Market
Segment

CAGR
10-23%

TAM
\$8-16B



American-Made



User-Friendly



Plug-and-Play



Turnkey Services

Enter Blackwing Space

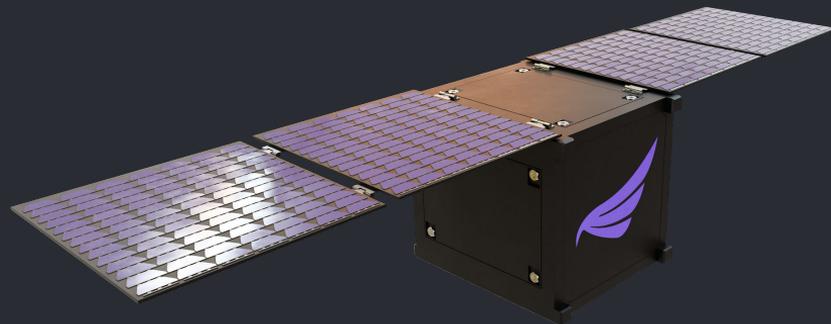


Blackwing Space brings **new vision for reclaiming U.S. leadership in nanosatellite technology** by designing, building, and testing our lines of commercial nanosatellite platforms and core components at our manufacturing facility The Nest in Nashville, TN.

We believe that buying a satellite should look and feel like buying any consumer product, so Blackwing products are sold online as commercial off-the-shelf items with **consistent, transparent, and affordable pricing for all.**

We believe anyone should be able to build and operate a satellite. Blackwing product development applies human-centered design and customer feedback to **enhance user experience and make space technology more accessible.**

Blackwing Nanosatellite Platforms



Sparrow

1U

Payload

1 kg · 0.5U · 10W OAP

Starting at

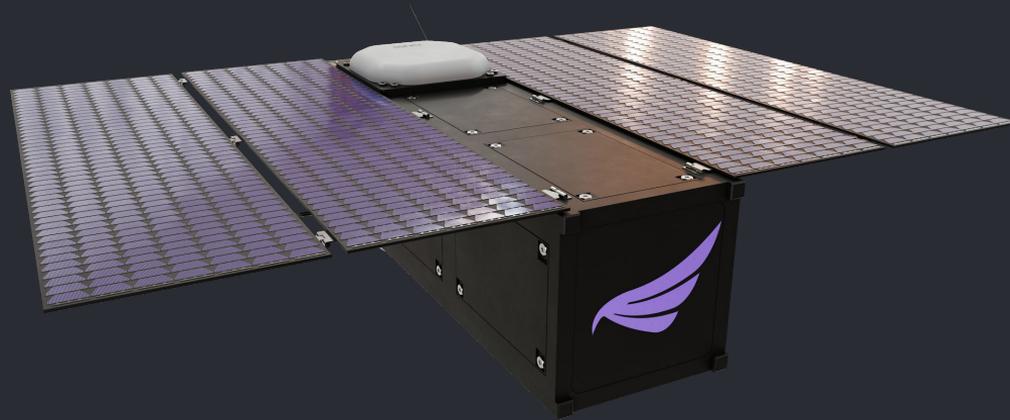
\$10k

Compatible Deployers

SEOPS Equalizer Flex · Maverick Space NLAS · Exolaunch EXOpod Nova

**Price and specifications subject to change.*

Blackwing Nanosatellite Platforms



Kestrel

3U XL

Payload

4 kg · 2U · 30W OAP

Starting at

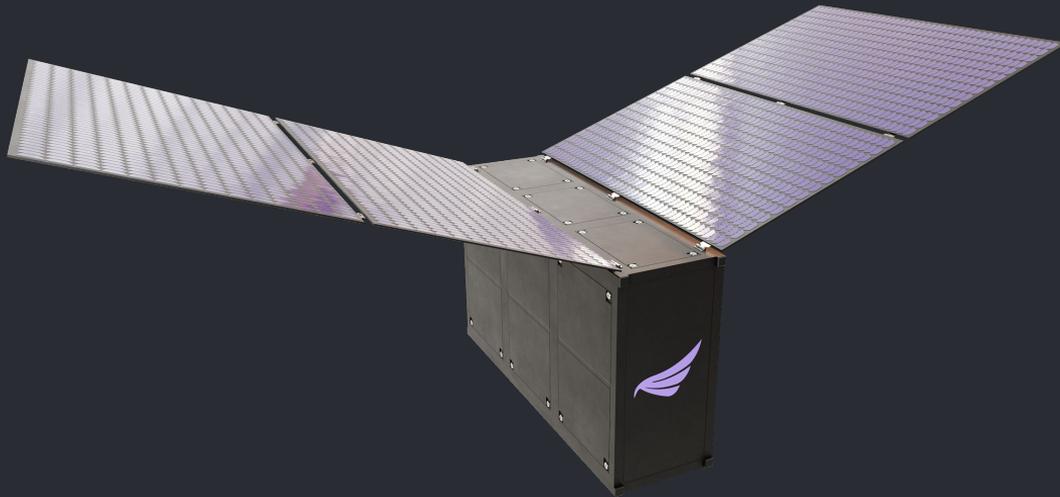
\$50k

Compatible Deployers

SEOPS Equalizer Flex · Maverick Space NLAS · Exolaunch EXOpod Nova

**Price and specifications subject to change.*

Blackwing Nanosatellite Platforms



Osprey

6U XL

Payload

8 kg · 4U · 60W OAP

Starting at

\$100k

Compatible Deployers

SEOPS Equalizer Flex · Maverick Space NLAS · Exolaunch EXOpod Nova

**Price and specifications subject to change.*

Blackwing Product and Service Offerings



Competitors sell hardware. Blackwing Space delivers the entire mission: launch, licensing, operations, and revenue upside.

COMPETITORS

Platform: \$250K - 750K

Payload Integration: \$50K

Launch Services: \$150K - 300K

FCC Licensing: \$50K

Mission Operations: \$25-50K/mo

Total: \$800K - 1.75M (1 year mission)

Lead Time: 18-24 mo

BLACKWING SPACE

Platform: \$10K - 100K

Payload Integration: \$20K

Launch Services: \$50K - 150K

FCC-as-a-Service: \$20K*

Mission Operations: \$5K/mo

Total: \$160K - 350K (1 year mission)

Lead Time: 6-9 mo

The **platform** is how we **start the relationship.**

The **mission services** are where we **scale revenue.**

DRAFT: * Target pricing; actual pricing may vary, ** Preliminary estimates pending final review from legal partners

Sources: Allied Market Research 2024, Euroconsult Prospects for the Small Satellite Market 2024, Mordor Intelligence 2024, Fortune Business Insights 2024, Straits Research 2024.

Contains Blackwing Space Business Confidential and Proprietary Information

Missions and Specifications



Mission Applications



Internet of Things



Commercial GNSS



Earth Observation



Remote Sensing



Artificial Intelligence



Edge Computing



RF Intelligence



Tech Demonstration

TECHNICAL OPTIONS AND SPECIFICATIONS

STRUCTURES

- Lightweight, modular CubeSat frames built with precision for rapid integration.
- Sizes: 1U / 3U XL/ 6U XL formats - roadmap to 12U and 16U
- Material: Aluminum 6061-T6 or PEEK
- Mass: 0.15 kg (1U) – 0.80 kg (6U) including fasteners
- Finish: Hard-anodized or carbon composite shell
- Compliance: Full PC/104 and CubeSat Design Standard

COMMUNICATION

- Versatile multi-band radios for command, telemetry, and payload data downlink.
- UHF (LoRa) / S-Band / Iridium options
- Data Rate: 9.6 kbps (UHF) to 20 Mbps (S-Band)
- Software-Defined Radio (SDR) firmware reprogrammable on-orbit
- Forward error correction + AES-256 encryption for privacy

ANTENNAS

- Deployable and patch antennas for stable communications and GNSS reception.
- UHF (LoRa) • S-Band • Iridium • GNSS L1/E1 options
- Deployable spring or hinge type; integrated ground plane
- Gain: Up to +12 dBi depending on band
- Polarization: Linear / RHCP / LHCP

ONBOARD COMPUTER

- Automotive-grade avionics for command, control, and payload coordination.
- Current: Modified PyCubed mainboard (flight-proven, open-source)
- CPU: ARM Cortex-M4F @120 MHz - roadmap to M7/A53 > 1 GHz
- Memory: 512 KB Flash / 192 KB RAM - expandable to 1 GB RAM / 64 GB Flash
- OS: MicroPython (FreeRTOS / RTEMS planned)
- Interfaces: USB-C, I²C, SPI, UART, CAN Bus, GPIO, microSD slot
- Power Draw: 0.9 – 3.5 W

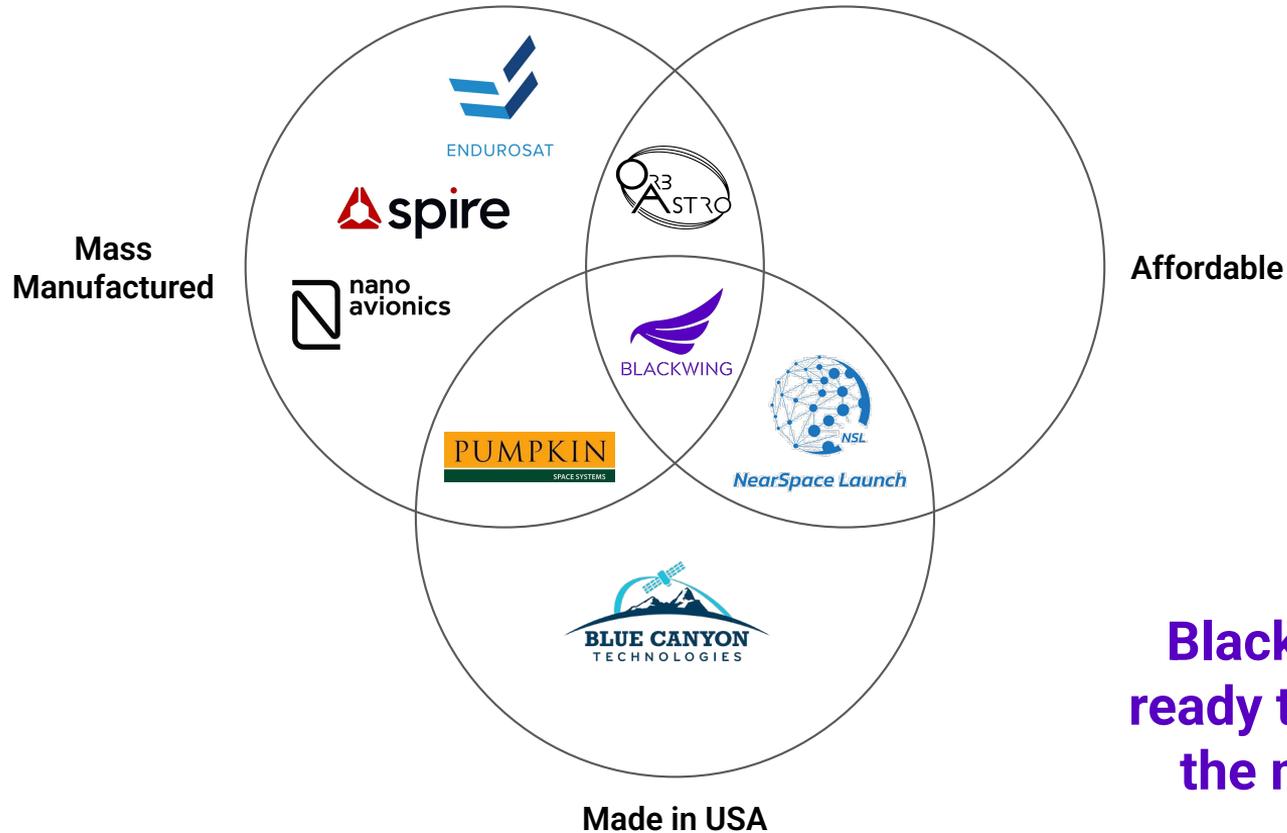
POWER MODULES

- Reliable energy storage and distribution with smart regulation.
- Configurations: 1U–6U with Li-ion or LiFePO₄ packs
- Output: 3.3 V / 5 V / 12 V rails, 30W OAP (3U), 80 W peak
- Charge Efficiency: > 92 %
- Battery Capacity: 40 – 150 Wh
- Protection: OCP, UVLO, Thermal, Redundant FET switching

SOLAR PANELS

- High-efficiency solar power generation tailored for demanding nanosatellite payload.
- Fixed or double Deployable arrays (1U–6U)
- Triple-junction GaAs cells > 29 % efficiency
- Output: 15 – 90 W (depending on area/orientation)
- Integrated sun sensor and temperature telemetry
- Deployable hinge / tape-spring / burn-wire options

Competitive Landscape: Nanosatellite Platforms



Blackwing is ready to disrupt the market.

Go-to-Market Strategy (1/2)



1. Market Segmentation & Positioning

- a. **Commercial Startups:** Technology demonstration flights, on-orbit testing and validation of new payloads
- b. **Universities & Research Labs:** Affordable, modular satellites for fundamental research and experiments
- c. **Corporate R&D Teams:** In-space manufacturing platforms to test advanced materials, bioprocesses, and electronics in microgravity
- d. **Defense/Dual-Use:** Seeking ITAR-compliant, small-scale flight heritage supporting USG space programs

2. Product & Service Portfolio

- a. **Core Platforms (1U–6U):** Ready-to-fly, turnkey nanosatellites for rapid mission delivery
- b. **Core Components:** Subsystems of the Core Platforms offered as standalone products
- c. **As-a-Service Suite:** FCC, Ground Station, and Mission Operations-as-a-Service options

3. Channel Strategy

- a. **Direct Channels**
 - i. **Founder-Led Sales** to early adopters (VC-backed startups, Techstars, Y-Combinator, etc.)
 - ii. **Web Configurator:** Allow customers to select products and receive instant cost transparency
- b. **Partner Channels**
 - i. Collaborate with **launch brokers** (SEOPS, etc.) and **mission integrators** for bundled services
 - ii. Build a **network of domestic suppliers** to promote Made-in-USA space reliability
 - iii. Leverage **partner and supplier ecosystem** around our SDKs, APIs, and payload modules

Go-to-Market Strategy (2/2)



4. Marketing & Awareness

- a. **Brand Messaging:** Strong brand awareness around Blackwing core principles and differentiators
- b. **Thought Leadership:** Publish case studies on affordability, American manufacturing and dynamism
- c. **Network and Event Marketing:** Host private dinners and happy hour events across nation, targeting startup founders, ecosystem partners, and VCs (targeting their portfolio companies)
- d. **Social Media Marketing:** Amplify activity, messaging, and events via Blackwing website, LinkedIn, X, and Instagram
- e. **Exhibit Marketing:** Speaking engagements and targeted exhibitor presence at key space industry events, with a focus on cost-effective visibility
- f. **Ambassador Program:** “Birds of the Feather” evangelists spread awareness and identify client, partner leads

5. Lead Generation & Customer Acquisition

- a. **Inbound Marketing:** Capture leads using web configurator with “Reserve Your Platform” CTA tied to early-access pricing
- b. **Partner Referrals:** Leverage launch brokers, mission integrators, and accelerator programs to source qualified prospects
- c. **Targeted Outreach:** Build curated lists of early-stage startup founders and university programs launching CubeSat-class missions, and engage these entities on product and service offerings

6. Partnerships & Ecosystem Development

- a. **Strategic Alliances:** Collaborate with U.S. component suppliers, launch providers, and ground station networks
- b. **University Partnerships:** Co-develop educational or research payload missions while supporting STEM pipeline
- c. **U.S. Government:** Pursue SBIR/STTR, GSA Schedule, and partnerships with NASA or AFRL for validation flights
- d. **Developer Ecosystem:** Encourage third parties to build compatible subsystems via open-standards architecture and SDKs

Evidence of Traction



Market Momentum. The nanosatellite and microsatellite market nearly doubled from \$2.2B in 2020 to \$4.0B in 2024, an ~80% increase in just five years.

Partner Momentum. A strategic in-kind transport investment of up to \$300,000 has been offered by a leading launch broker and mission integrator and is now under active negotiation. The relationship would include a reciprocal reseller framework for shared launch access and revenue opportunities.

Customer Momentum. In active discussions with more than five prospective customers (space startups seeking technology demonstrations), several of whom have expressed intent to partner or purchase following platform readiness and mission fit.

Ecosystem Momentum. Actively building relationships with in-space manufacturing ventures, payload developers, and local contract suppliers interested in participating in upcoming missions and component production. Several are exploring in-kind participation in the pre-seed round through services, materials, or payload integration support.

Funding Momentum. Establishing an SPV to facilitate small-check angel, friends and family participation in the initial pre-seed round, with over a hundred thousand dollars in soft commitments.

Financial Strategy, Status, and Fundraising



Current Stage. Blackwing Space is in the early fundraising phase, engaging a network of investors, industry partners, and venture capital firms to support initial platform development and early flight heritage missions.

Progress. Initial outreach has generated strong interest from partners, angels, and early-stage VCs, with several exploring participation in the upcoming pre-seed round. The company is also in active discussions with potential strategic partners exploring in-kind or co-investment to accelerate platform readiness.

SPV (Special Purpose Vehicle) Formation. An SPV is being established to enable small-check angel and partner participation, providing a structured mechanism for early contributors to invest in the company's pre-seed phase.

Funding Plan. Following SPV close, Blackwing will formally launch a pre-seed round targeting \$5M to fund key milestones including completion of the prototype nanosatellite and inaugural *Baby Bird* demo mission.

Use of Proceeds. Funds will be allocated across product development (40%), launch and testing (25%), business development and partnerships (20%), and regulatory/compliance and operations (15%).

Blackwing Space Team



Paul Anderson, Ph.D.

Founder and CEO

TYCHEE



15 years industry experience in end-to-end space mission design, analysis, integration, test, and operations. Chief Engineer at Tychee Research Group. Designed, built, launched demo satellites for TrustPoint's commercial LEO GNSS system. Integrated CubeSat satellites on Virgin Orbit's LauncherOne rocket. **Mission-driven, technically-oriented, people-focused.**



Oliver Muoto

Co-Founder and COO

615vc



20+ years building and scaling startups. Serial entrepreneur with multiple successful exits. Early-stage investor and advisor in space startups (Melagen Labs, Satlyt). Led business development, marketing, and fundraising across venture-backed companies from seed stage through acquisition. **Mission-driven, community and network-minded, ecosystem-builder.**

Nashville: A Future Deep Tech Hub



Strategic Location & Logistics Hub. Central U.S. position with major interstates, rail, and air cargo access enabling rapid national supply chain connectivity.

Advanced Manufacturing Ecosystem. Deep expertise from automotive, aerospace, and defense sectors, 900+ Tier-1/Tier-2 suppliers, skilled manufacturing workforce.

Cost & Incentive Advantage. Lower operating costs vs. coastal hubs, zero state income tax, robust ECD incentives for R&D, capital equipment, and jobs creation.

Growing Tech & Innovation Culture. Expanding tech ecosystem led by LaunchTN, Vanderbilt University, and Oak Ridge National Lab partnerships fostering hardware innovation and research collaboration.

Accessible Talent Pipeline. Engineering talent from Tennessee and Georgia universities, plus nearby Huntsville feeds a strong mechanical, electrical, aerospace talent base.

Livability & Retention Edge. Nashville's affordable housing, trendy cultural scene, and business-friendly climate support long-term talent recruitment and retention.





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