

Space Symposium 2025 - Takeaways

Colorado Springs, April 7-10, 2025

15/04/2025 Edoardo Vittori

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1- Introduction

This document presents the outcomes of a scouting activity conducted during the 2025 Space Symposium. The primary objectives were:

- to initiate the development of a network within the space sector,
- to identify potential investment and broader business opportunities.

While the work done during the Symposium represents a step forward, further progress in this direction will require **expanding the network of industry contacts**, **engaging with key stakeholders** through substantive business discussions, and **establishing a dedicated center within Intesa Sanpaolo** to monitor emerging developments in the space economy and strengthen relationships with strategic players.



1- Space Symposium 2025

The premier international event for space professionals

Conference overview

- Held annually in Colorado Springs since 1984
- Premier U.S. forum for space policy, strategy, and cross-sector collaboration
- A must-attend event for networking, knowledge-sharing, and partnerships
- Organized by the Space Foundation



2025 - the 40th Edition

- Theme: "Building Partnerships to Secure Our Future"
- Emphasis on **global space collaboration** and international cooperation
- **10,000+** attendees, **300+** exhibits, **250+** speakers, participants from 50+ nations, 18 space agencies, 34 military leaders
- Dedicated tracks on:
 - Lunar and Mars missions
 - Artificial intelligence applications in space
 - Explorations in space science and innovation







1- Key Orbital Zones for Space Infrastructure

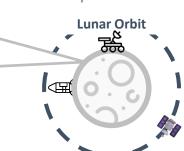
From low earth orbit to lunar missions: strategic domains in modern space development

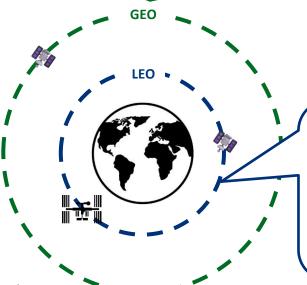
GEO – Geostationary Orbit

- Altitude ~36,000 km above Earth
- Satellites appear stationary to ground observers
- Used for broadband, TV, weather, and global coverage
- Facing competition from LEO networks

Lunar Surface

- Lunar landers are used to reach the lunar surface
- Lunar rovers are used for transportation on the surface







- Altitude ≤ 2,000 km
- Used for Earth observation, scientific missions, and low-latency comms
- Hosts the ISS and will host **private space** stations
- Hosts mega-internet constellations (e.g., Starlink)
- Key domain for internet access, research, and space tourism

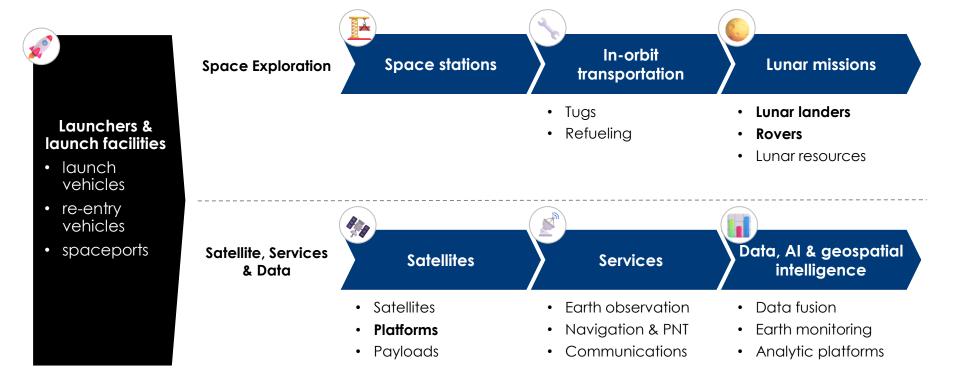
Lunar Orbit

- Altitude ~384,000 km from Earth
- Will host satellites for communication and navigation on the Moon as part of NASA's Artemis program



1- Space Economy Value Chain

How the space economy works: architecture & services flow







2- Companies Competing in Space

There are currently three major areas of competition among companies seeking to secure NASA contracts and establish a strong position in the emerging space economy. These areas include:

- Space Stations
- Lunar Rovers
- Lunar Landers

After engaging in discussions with several of the leading contenders, my personal assessments are as follows:

- Vast most promising in the Space Stations segment
- Lunar Outpost leading candidate in the Lunar Rovers category
- Firefly best contenders in the Lunar Landers competition

The following slides provide a comparative analysis of the key players within each category





2- Space Stations

Multiple companies are building private space stations

Space Station	Haven-1	Haven-2	Axiom	Starlab	Orbital Reef
Company	•	Vast V Λ S T	Axiom AXIOM SPACE	₩ VOYAGER	Blue Origin, Sierra Space SIERRA BLUE ORIGIN SPACE DEETER ORIGIN
Characteristics	Single module Up to 4 astronauts	Modular design with a core module and eight additional modules Up to 12 astronauts	Modular design initially attached to the ISS later transitioning to a free-flying station.	Single module Up to 4 astronauts	Modular design Up to 6 astronauts, expandable to 10
Planned deployment	• 2026 - SpaceX Falcon 9 rocket	2028 - 1 st module launch 2032 - Full station targeted for completion	 2027 - 1st module scheduled for launch, docked with ISS 2030 - transition to a free- flying station 	• 2028 - SpaceX Starship	• 2027 – Partial operations • 2030 – Full operations
Financing	Funded by founder Jed McCaleb, a cryptocurrency billionaire Over \$1bln invested		Awarded a \$140mln contract by NASA in 2020 Additional funding from private investors and commercial partnerships	Received \$160mln from NASA Additional funding from private investors	Received \$130mln from NASA Additional funding from partners



2- Lunar Rovers

Three companies are shortlisted for a ~\$4.6bln NASA contract

RACER **FLEX Reusable Autonomous Crewed Lunar Dawn** Rover Flexible Logistics and Exploration Rover **Exploration Rover** Intuitive Machines INTUITIVE Lunar Outpost Company i i Astrolab i • AVL, Boeing, Michelin, Northrop Grumman. · Lockheed Martin, General · Axiom Space, Odyssey Space Research **Partnerships** Motors, Goodyear, MDA Space

Planned deployment

• 2030 – deployment, depending on who wins the Lunar Terrain Vehicle Service (LTVS) NASA contract. The maximum potential value of the indefinite-delivery / indefinite-quantity, milestone-based contract is \$4.6 billion

Image







2- Lunar Landers

In the US landers are funded through the CLPS (Commercial Lunar Payload Services)

Company

Missions

Intuitive Machines

- IM-1 (Odysseus): Landed tipped over in February 2024, but operated its mission
- **IM-2 (Athena)**: Landed tipped over in February 2025, shutdown briefly afterwards
- IM-3: Scheduled for 2025, aiming to study the Reiner Gamma region with various scientific instruments
- **IM-4**: Planned for 2027, focusing on lunar south pole

Pricing

Funding

- NASA contracts range from \$47M to \$77.5M per mission
- Publicly traded (NASDAQ: LUNR)
- Nasa CLPS contracts

FIREFLY

- Blue Ghost Mission 1: Launched in January 2025, successfully landed in March, carrying 10 NASA-funded payloads
- for 2026, carrying LuSEE-Night radio telescope and ESA's Lunar Pathfinder satellite
- Blue Ghost Mission 3: Scheduled for 2028

i NASA contracts:

- \$93.3M (M1)
- \$112M (M2)
- \$179.6M (M3)
- Privately held
- Nasa CLPS contracts



Astrobotic

- Peregrine Mission One: Launched in January 2024 but failed to land due to a propulsion system issue.
- Griffin Mission One:
 Scheduled for launch in late
 2025. Originally intended to
 deliver NASA's VIPER rover;
 after its cancellation, now set
 to deploy Astrolab's FLIP rover
 and other payloads
- Perearine contract: \$79.5M
- Griffin contract: \$199.5M Commercial pricing: \$1.2M/kg
- ! Privately held
- Nasa CLPS contracts

iSpace i space

- Hakuto-R Mission 1: Launched in December 2022; contact was lost during the landing attempt in April 2023
- Hakuto-R Mission 2 (Resilience): Launched in January 2025, with a landing in early June, carrying commercial payloads including a micro rover
- Commercial pricing; specific
 figures not publicly disclosed
- Publicly traded on the Tokyo Stock Exchange
- partnered with the Luxembourg Space Agency

IMI CORPORATE INVESTMENT BANKING



3- Investment Opportunities

This section highlights the companies that meet the following criteria:

- Publicly listed on a stock exchange
- Featured a booth at the Symposium
- Identified as worthy of investment consideration

These companies are Rocket Lab, MDA Space, Redwire, ispace



3- Rocket Lab



Targeting the space economy with launch, satellites & software

Company overview

Rocket Lab is a leading aerospace manufacturer and launch service provider, specializing in small satellite launches with its small-lift **Electron** rocket already operational and the medium-lift, reusable **Neutron** rocket in development, aimed at competing with SpaceX's Falcon 9.

Founded in **New Zealand**, Rocket Lab operates the world's first private orbital launch site and is dual-headquartered in Long Beach, CA and Auckland.

Financials*

- Market Capitalization: ~\$9bln
- 2024 revenue: \$435mln, 78.3% YoY increase
- 2024 EBITDA: \$-145.2mln
- 2024 Backlog: \$1.06bln
- Current share price: \$20, 400% 1Y return

- Second most frequent launcher: With over 60 successful Electron missions, Rocket Lab ranks second only to SpaceX in the number of orbital launches.
- End-to-end space solutions: Rocket lab offers comprehensive services, including satellite manufacturing, launch services, and mission operations software, positioning itself as a full-spectrum space company.
- Strategic contracts: Secured a \$515mln contract with the Space Development Agency, selected to compete for the US Space Force's \$5.6bln National Security Space Launch program, selected by US Air Force for a \$46bln contract and selected by UK Ministry of defense in a \$1.3bln framework.

Data as of 15/04/2025

3- MDA Space



Leveraging Canadian innovation to lead in global space robotics and satellite systems

Company overview

Founded in 1969, MDA Space has evolved into a cornerstone of the global space industry. Following its 2021 IPO, the company is driving a new phase of commercial growth, leveraging decades of mission-critical experience with NASA, the Canadian Space Agency, and private sector clients.

MDA's vertically integrated capabilities and global footprint position it as a key enabler of next-gen space infrastructure.

Financials*

- Market Capitalization: ~C\$3bln
- 2024 revenue: C\$1.1bln, 36% YoY increase
- 2024 EBITDA: C\$198mln
- 2024 Backlog: C\$4.4bln
- Current share price: C\$25, 75% 1Y return

- Strategic Contracts: Secured a \$1.1bln contract from Globalstar to manufacture a low-earth orbit constellation of satellites
- **Global Presence:** Operates in Canada, the UK, and the US, with over 3,400 employees worldwide
- **3 Business Areas** satellite systems, robotics & space operations, geointelligence
- Innovation in Robotics: Leading developer of space robotics, including the upcoming Canadarm3 for the Lunar Gateway Program and the robotic arm for the Lunar Outpost moon rover

^{*} Data as of 15/04/2025

3- Redwire



Powering missions with advanced manufacturing, robotics & avionics

Company overview

Founded in 2020 through the consolidation of several space technology companies, and headquartered in Jacksonville, Florida, Redwire is a leading provider of **mission-critical space solutions** and **high-reliability components** for government, commercial, and civil space programs.

Redwire is a key contractor for NASA and the U.S. DoD, while expanding its footprint in the growing commercial LEO segment.

Financials*

• Market Capitalization: ~\$710mln

• 2024 revenue: \$304mln, 25% YoY increase

2024 EBITDA: -\$25mln

• 2024 Backlog: \$297mln

• Current share price: \$9.2

- Diverse Product Portfolio: broad range of space infrastructure products, including power generation systems, deployable structures, avionics, sensors, and inspace 3D printing. Its technologies are already operational in orbit, including the Roll-Out Solar Arrays (ROSA) on the ISS and in-space bioprinting systems
- **Strategic Acquisitions:** The company has recently acquired Edge Autonomy, enhancing its offerings in uncrewed aerial systems and defense technologies.
- Future outlook: Redwire is forecasting strong growth in 2025, targeting a 52.9% CAGR in revenue and positive EBITDA exceeding \$100mln

^{*} Data as of 15/04/2025

3- ispace



Investing in a frontier leader of moon transportation and resource utilization

Company overview

Founded in 2010 and headquartered in Tokyo, ispace Inc. is a publicly traded Japanese company specializing in robotic lunar exploration. With offices in the United States and Luxembourg, ispace aims to provide **low-cost**, **high-frequency transportation services to the Moon**, supporting both governmental and commercial missions.

The company has been instrumental in advancing lunar exploration through its HAKUTO-R program, which includes the development of **lunar landers and rovers**.

Financials*

- Market Capitalization: ~¥76bln (\$507mln*)
- 2024 revenue: ¥2.4bln (\$16mln*), 142% YoY increase
- 2024 EBITDA: ¥5.4bln (\$36bln*)
- Current share price: ¥721 (\$5*)

- Innovative Lunar Missions: ispace's HAKUTO-R program has positioned the company as a leader in commercial lunar exploration. Despite the setback of Mission 1 in April 2023, where contact was lost during the landing attempt, ispace has demonstrated resilience and commitment to its mission objectives. Mission 2 is currently on orbit and will attempt a Moon landing in the coming months
- Strategic Partnerships: The company collaborates with international partners, including NASA and the Mohammed bin Rashid Space Centre, to deliver payloads to the Moon, enhancing its global footprint and credibility. Through its office in Luxemburg, it is also in talks with Italian companies to bring payloads on the Moon
- Market Positioning: ispace is well-positioned to capitalize on the growing demand for lunar exploration and resource utilization



4- Investing in Space in Italy

The following two opportunities do not involve direct equity investments but rather represent strategic initiatives to support the **growth of the space sector in Italy**.

- The first opportunity involves financing key projects led by **Thales Alenia Space**, which are considered of strategic importance.
- The second involves joining the **Global Spaceport Alliance** as an associate member an organization that includes the Grottaglie Spaceport, among others.



Alonia 16

4- Thales Alenia Space

Building critical infrastructure for Earth orbit and beyond

Company overview:

Thales Alenia Space is a leading European space manufacturer, formed as a joint venture between Thales and Leonardo.

Headquartered in France, the company specializes in designing and delivering high-tech solutions for telecommunications, navigation, Earth observation, environmental management, exploration, science, and orbital infrastructures.

With over 40 years of experience, Thales Alenia Space operates 17 sites across 10 countries, employing approximately 8,600 people.

Financials

- Ownership: joint venture between Thales Group (67%) and Leonardo (33%)
- 2024 revenue: €2.23bln

- Three strategic, capital-intensive projects are expected to be unveiled in the coming months, presenting an opportunity for Intesa Sanpaolo to join as a financing partner
- Strategic Partnerships: The company collaborates with major space agencies, including the European Space Agency (ESA) and NASA, contributing to significant projects like creating pressurized modules for the ISS and various satellite missions
- Innovative Projects: Thales Alenia Space secured an €862mln contract from ESA to develop Europe's first lunar cargo vehicle, the Argonaut lander, marking a significant milestone in European lunar exploration efforts
- Space Smart Factory, one of the largest digital and reconfigurable facilities of its kind in Europe. The facility will form part of a system of interconnected space factories in Italy. Over €100mln is being invested deriving from ASI via PNRR and from BNP



4- Spaceports: an Ecosystem of Space Activities

The next frontier for strategic investments

What is a Spaceport Today?

- No longer just a launch pad but a tech hub and economic engine.
- Anchors entire ecosystems:
 - Aerospace manufacturing
 - Advanced R&D
 - Testing facilities
 - Workforce development
 - Point-to-point space transportation which will enables global delivery of goods & travel in under two hours

Global Spaceport Alliance (GSA)

- World's leading network of emerging spaceport stakeholders
- Chairs industry working groups and policy forums
- Becoming Associate Member of the GSA would give Intesa Sanpaolo the possibility of increasing its connection to the Space sector

Puglia: Grottaglie Spaceport

- Based in Taranto-Grottaglie Italy's first operational spaceport and part of GSA
- Key assets:
 - Massive runway (3.6 km)
 - New aerospace innovation center & incubator
- Backed by ENAC, and Regione Puglia





5- Conclusions

1 Investments in listed companies

- Rocket lab
- MDA
- Redwire
- ispace

2 Potential PE investments

- Vast (Private Space Station)
- Lunar outpost (Lunar Rover)
- Firefly (Lunar Landers)

3 Other potential collaborations

- Spaceports
- Thales Alenia Space

Next steps

 Introduce or increase the size of the above assets in portfolio, taking advantage of the low entry prices given current market conditions

- Open a dialogue with Vast, Lunar Outpost, and Firefly and be informed of new investment rounds.
- Lunar Outpost is coming to Italy in mid May; we could organize an in person meeting and presentation of the company
- Enroll Intesa Sanpaolo as a Spaceport Associate to have access and stay up to date with the community
- Keep up to date with the new strategic projects from Thales Alenia Space



5- Next Steps

The work conducted during the 2025 Space Symposium represents a step forward which, together with the investments in **SpaceX** and **D-Orbit**, are **opening the door for Intesa Sanpaolo in this rapid growth sector**. To effectively position Intesa Sanpaolo within the growing space economy, the following steps are possible:

• Expand the industry network

Proactively identify and connect with key players across the space ecosystem, including startups, established companies, research institutions, and government agencies

Initiate strategic dialogues

Begin targeted discussions with selected companies to explore concrete investment, financing, and partnership opportunities

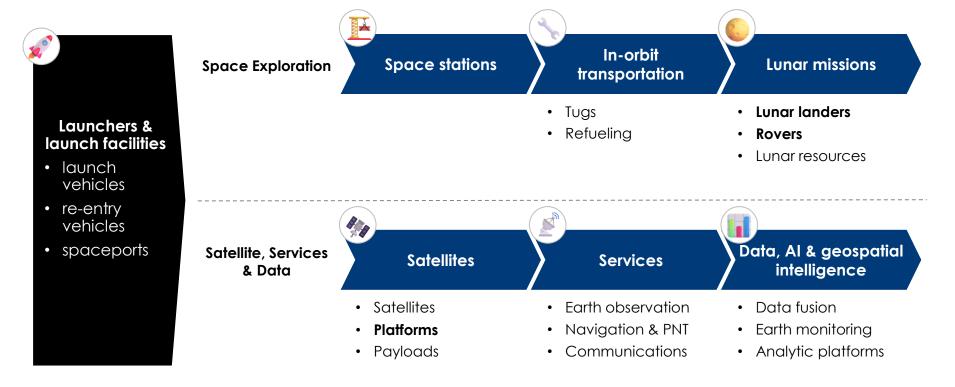
Establish an internal competence center

Create a dedicated unit within Intesa Sanpaolo focused on the space sector, tasked with tracking market developments, evaluating emerging technologies, and coordinating relationship management with strategic stakeholders



6- Appendix

How the space economy works: architecture & services flow







6- Launchers and Launch Facilities

Enabling access to space

Product examples

- Launch Vehicles
- Reentry Vehicles & Capsules
- Spaceports

Business model

- Asset-Heavy: High upfront R&D and infrastructure costs
- Per-Launch Revenue Model: Pay-per-kilogram or fixed price per mission
- Long Sales Cycles: Contracts with space agencies, defense, or satellite operators

Listed companies

Rocket Lab, Virgin Galactic, Momentus, AVIO SpA, Northrop Grumman, Lockheed Martin, L3Harris Technologies Inc, Hanwha Aerospace Co Ltd, MDA Space

Private companies

SpaceX, Blue Origin, Arianespace, Relativity Space, Rocket Factory Augsburg, ISAR Aerospace, Orbex, PLD Space, Exolaunch





6- Space Stations

The in-orbit research laboratory

Product examples

- Space stations and orbital platforms
- Docking systems and airlocks
- On-orbit manufacturing facilities
- Space habitats and logistics modules

Business model

- CapEx-heavy with long-term government or commercial partnerships
- Revenue through hosting fees, leasing modules, tech licensing, and service contracts for logistics, habitation, and research support

Listed companies

Northrop Grumman, Lockheed Martin, **Redwire** Space, Airbus, Thales Alenia Space, **MDA Space**, Boeing

Private companies

Axiom Space, Sierra Space, **Vast**, **Blue Origin**, Voyager, Airbus



6- In-Orbit Transportation

Building, maintaining, and evolving the utility layer of space

Product examples

- Space tugs and orbital transfer vehicles (OTVs)
- Satellite refueling and life extension services
- On-orbit assembly and manufacturing platforms
- Robotic arms and servicing drones

Listed companies

Northrop Grumman, **Redwire**, Lockheed Martin, Momentus

General Business Model

- Service-based models: pay-per-delivery, refuelingas-a-service, or mission extension fees
- Often rely on anchor government contracts, with growing interest from commercial satellite operators
- High upfront tech risk but potential for recurring revenues and industry lock-in

Private companies

D-Orbit, Orbit Fab, Starfish Space, Maxar, Nanoracks, Skycorp, Airbus, Astroscale



6- Lunar Missions

Expanding human and robotic presence beyond Earth orbit

Product examples

- Lunar landers and orbiters
- Lunar rovers and surface mobility systems
- Power and comms infrastructure for the Moon
- Planetary sample return and cargo delivery system

Listed companies

Lockheed Martin, Northrop Grumman, Airbus, **Intuitive**Machines, Redwire, Thales Alenia Space, MDA Space

Business model

- Primarily funded through space agencies (NASA, ESA, JAXA, CNSA) with increasing commercial roles under programs like NASA CLPS (Commercial Lunar Payload Services)
- Early revenues come from government contracts; longer-term models include cargo-as-a-service, surface operations, and infrastructure leasing

Private companies

Astrobotic, Intuitive Machines, **Firefly Aerospace**, ispace, Blue Origin, SpaceX, The Exploration Company, **Lunar Outpost**, Maxar





6- Satellites and Platforms

The engineering, manufacturing, and integration of satellites and payloads

Product examples

- Earth observation satellites
- Communications satellites (GEO/LEO)
- Satellite buses/platforms
- Hosted payloads
- In-orbit servicing vehicles

Business model

- CapEx-heavy upfront with long asset life
- Revenue models include recurring data subscriptions, bandwidth leasing, or service-level contracts with governments and enterprises
- Some players vertically integrate platforms, payloads, and analytics to maximize value chain capture

Listed companies

Planet Labs, BlackSky Technology, Eutelsat Communications, SES SA, Telesat, Iridium Communications, Globalstar, Viasat, EchoStar Corp, Gilat Satellite Networks Ltd, SKY Perfect JSAT Holdings, AST SpaceMobile, Hanwha Aerospace, Avio SpA, Lockheed Martin, Northrop Grumman, Redwire, Umbra

Private companies

Spire Global, Loft Orbital, GomSpace, Satellogic, Airbus, Surrey Satellite Technology, Tyvak International, NanoAvionics





6- Communication Services

Enabling global connectivity from GEO to LEO

Product examples

- Geostationary communication satellites
- LEO broadband constellations
- Payloads for military & secure comms
- Ground segment integration
- Inter-satellite links and optical comms

Business model

- Revenue from bandwidth leasing, direct-to-device services, managed connectivity solutions, and government contracts
- Shift toward scalable LEO constellations for broadband
- Capital-intensive but high-margin with long-term recurring contracts

Listed companies

Viasat Inc, Iridium Communications, Globalstar, Eutelsat, SES SA, Thaicom, EchoStar Corp, SKY Perfect JSAT Holdings, AST SpaceMobile, Gilat Satellite Networks Ltd, Amazon (Project Kuiper), Airbus, Hanwha Aerospace, Lockheed Martin, Northrop Grumman

Private companies

Starlink, OneWeb, Mangata Networks, Telesat Lightspeed, Isotropic Systems, **Mynaric**, Kymeta, SES Space & Defense, OQ Technology, Kepler Communications



6- Navigation and PNT Services

Positioning, navigation, and timing: the invisible infrastructure behind mobility, logistics, and defense

Product examples

- GNSS satellite constellations (e.g., GPS, Galileo)
- Satellite-based augmentation systems (SBAS)
- Precise timing modules and atomic clocks
- Navigation payloads for satellites
- PNT-resilient chipsets and receivers

Business model

- Primarily government-funded infrastructure (e.g., GPS, Galileo), with commercial players offering value-added services like precise positioning, navigation modules, timing sync for telecoms, and secure PNT for defense
- Dual-use applications are key for revenue diversification

Listed companies

Lockheed Martin, Northrop Grumman, BAE Systems, RTX, Honeywell, **L3Harris Technologies**, Hexagon AB, Safran, Spirent Communications

Private companies

Orolia, Satelles, Xona Space Systems, GMV, Septentrio, Spirent Federal, iPosi, CesiumAstro, Navigation Solutions LLC



6- Earth Observation and Remote Sensing Services

From pixels to insights: monitoring Earth for climate, defense, and commercial applications

Product examples

- Optical imaging satellites
- Multispectral imaging satellites
- Synthetic Aperture Radar (SAR) satellites
- Thermal and hyperspectral sensors
- Remote sensing data platforms

Business model

- Recurring revenue through imagery subscriptions, data licensing, or analytics-as-a-service
- Dual-use applications across defense, agriculture, insurance, mining, and **climate monitoring**
- Increasing shift toward low-cost constellations and rapid revisit capabilities

Listed companies

Planet Labs PBC, BlackSky Technology, Satellogic, EOSDA (planned IPO), **Lockheed Martin**, **Northrop Grumman**, Hanwha Aerospace

Private companies

ICEYE, Capella Space, **Umbra**, EarthDaily Analytics, GHGSat, OroraTech, Pixxel, SatSure, Albedo, Hydrosat, Kayrros, SpaceKnow, European Space Imaging, Maxar Technologies





6- Data, AI, Geospatial Intelligence

From raw satellite data to actionable insights for defense, finance, agriculture, and climate

Product examples

- Geospatial analytics platforms
- Change detection & anomaly detection tools
- AI/ML models for satellite imagery
- Data fusion engines (EO + non-space sources)
- Predictive intelligence dashboards

Business model

- Data-as-a-Service (DaaS) and Platform-as-a-Service (PaaS) models, often subscription-based or pay-per-analysis
- Customers include defense, hedge funds, insurers, and agriculture players
- Increasing value in fusing EO data with AI for nowcasting and forecasting applications

Listed companies

Palantir Technologies, Planet Labs PBC, BlackSky Technology, C3.ai, Spire Global, RTX, Booz Allen Hamilton

Private companies

Kayrros, Orbital Insight, SpaceKnow, Descartes Labs, Capella Space, SkyWatch, SatSure, Ursa Space Systems, ICEYE, Tomorrow.io, Cognitive Space, RS Metrics, Preligens, UP42, Picterra



