



SARAWAK EQUATORIA SPACEPORT

PROJECT PROPOSAL

by OculloSpace

www.ocullospace.com



Who We Are

→ 2023

Our firm is founded

→ 16

Employees

→ 005

Office around the world

→ 10+

Strategic Partners



OCULLOSPACE

OculloSpace is a **space education and innovation company** dedicated to empowering the next generation of space technologists in ASEAN while delivering cost-effective satellite and orbital solutions for real-world applications.

Through project-based learning, **our flagship collaboration with NASA HUNCH**, and **partnerships with agencies such as MYSA (Malaysia) and OSTIn (Singapore)**, we integrate space education into national systems to cultivate future explorers.

Who We Are

Global Recognition



INTERNATIONAL
ASTRONAUTICAL
FEDERATION

Our Strategic Partners



Executive Overview

Sarawak's **equatorial location** creates a unique advantage for orbital launch capability.



Bintulu's near-equatorial position provides rare launch efficiency, reducing energy requirements and enabling access to high-value orbits—creating a foundation for new technologies, industries, and long-term economic impact.



Executive Overview

The Sarawak Equatorial Spaceport aims to deliver the following outcomes:

Efficiency Advantage



Equatorial launch geometry **reduces energy requirements and increases payload capability**, creating a highly competitive and cost-effective launch profile.

National Capability



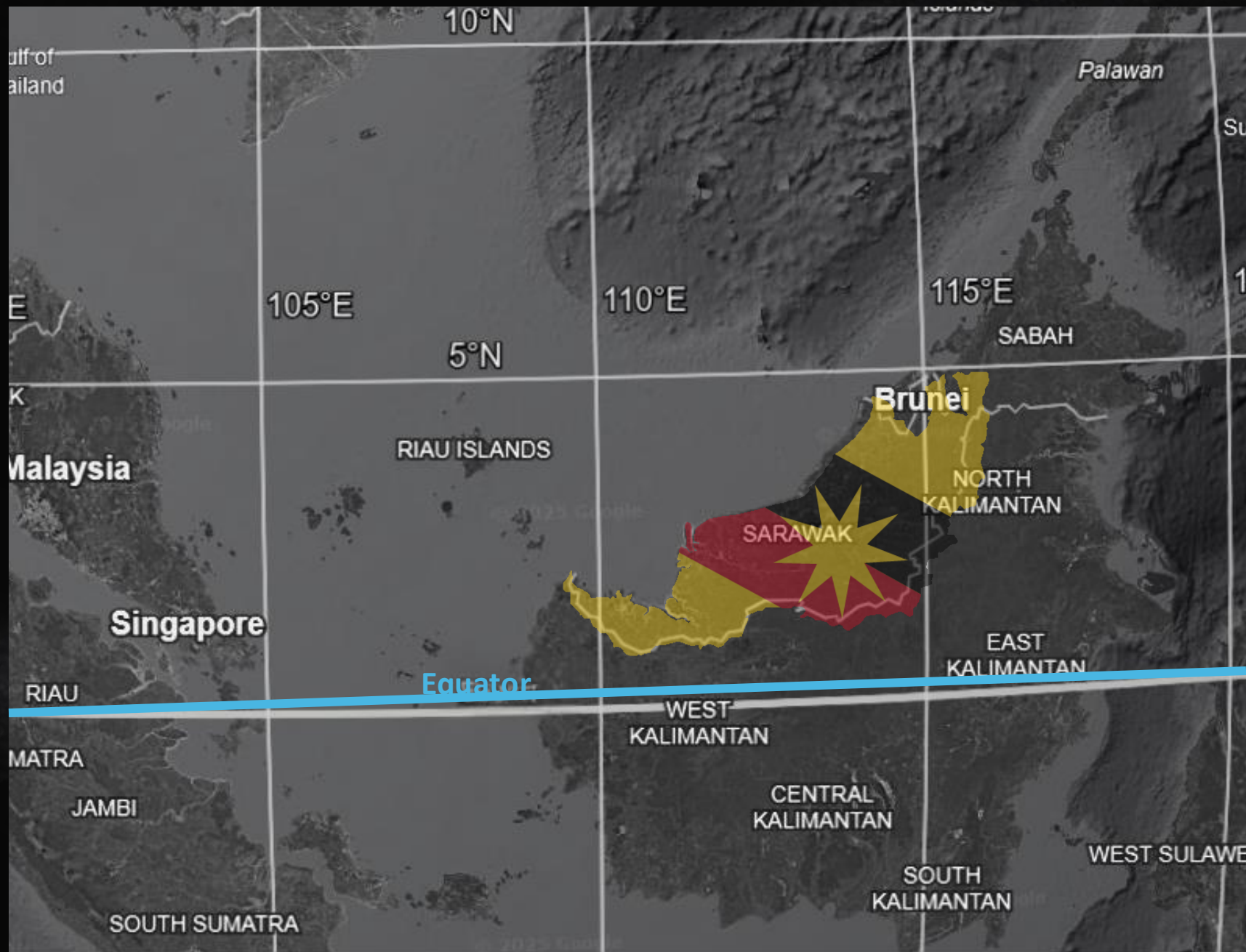
Introduces **Malaysia's first orbital launch infrastructure**, aligned with federal space priorities and strengthening long-term national technological competence.

Economic Transformation



Drives **high-tech industry growth** in Sarawak through investment, skilled employment, and development of a sustainable aerospace ecosystem.

Sarawak's Equatorial Advantage



Latitude Advantage (3°N)

- Natural rotational velocity boost of ~1,670 km/h
- Enables up to 15–20% more payload capacity
- Reduced fuel requirements for orbital insertion

Trajectory Flexibility

- Access to equatorial, low-inclination, and ISS-compatible orbits
- Reduced inclination-change manoeuvres (major cost savings)

Safety Through Geography

- Wide, unpopulated ocean downrange
- Flexible launch azimuth options
- Lower environmental and ground risk exposure
- Tropical climate without winter downtime

Rapidly Growing Space Economy

20231

\$509 BILLION



Rocket Launch

\$12B



Space Market

\$462B



Space Economy

\$509B



20302

**\$1000
BILLION**

Sources:

1.Euroconsult 2023 – Space Economy Report

2.The role of space in driving sustainability, security, and development on Earth – McKinsey & Company 2022

The World Desperately Needs More Spaceports

- Growing demand
- Extremely constrained launch capacity
- Very few viable launch sites
- Government sites > 50 years old limited by high density population centres
- Excessive red tape and expense

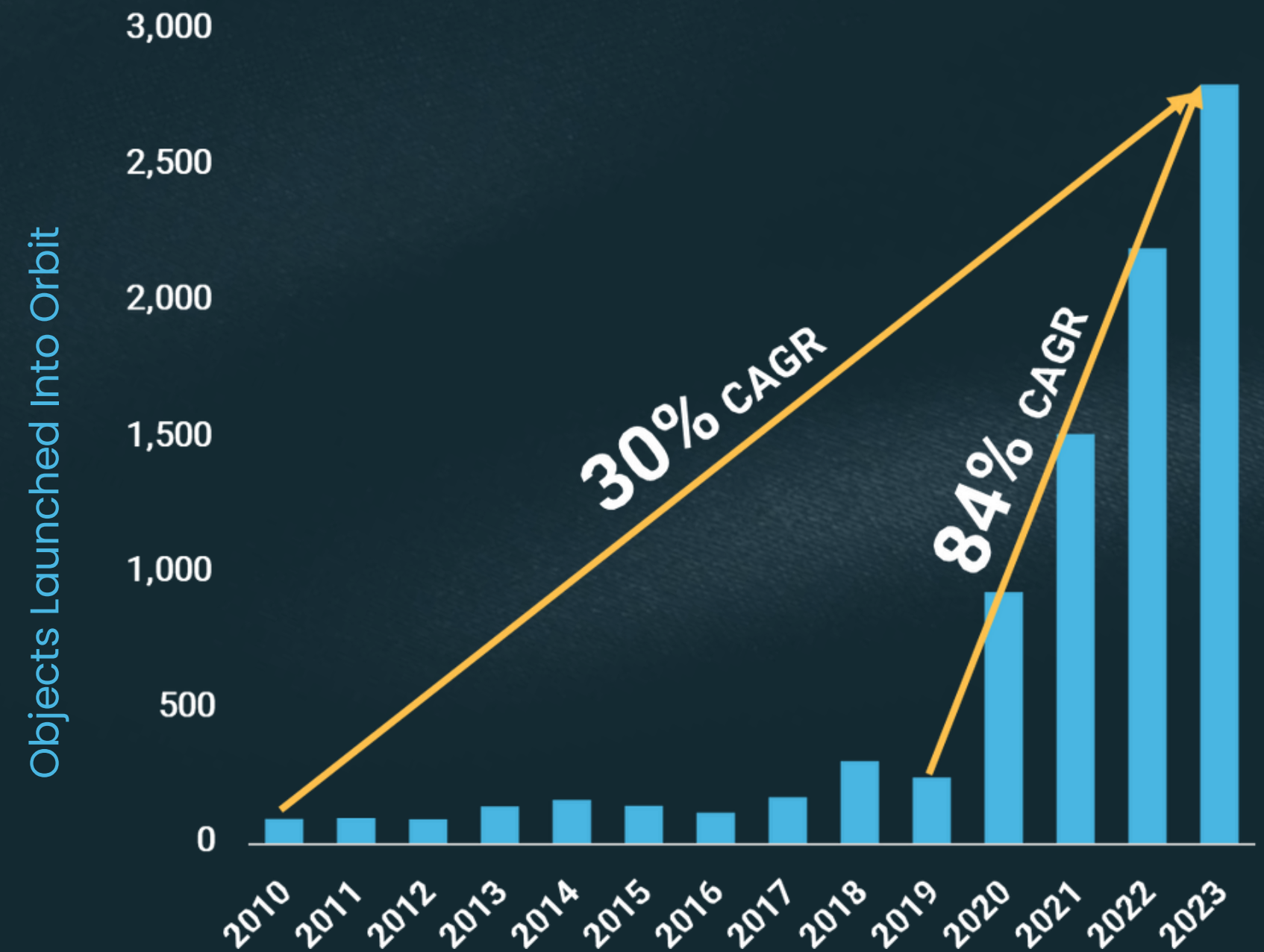
\$12 B

Annual Global Market
for Launch Services

\$24,500

Satellites to be
launched 2022-2031

Rapid Demand Growth



Increasing Satellite Density Underscores the Need for Regional Launch Capability

Search

Speed

Debris ☐

Beams ☒

Instruments ☒

Follow Earth ☒

Auto Refresh ☒

Views

Object Type

Perigee

Period

Inclination

Country of Origin

Filters

Perigee


min

max

Hide Menu

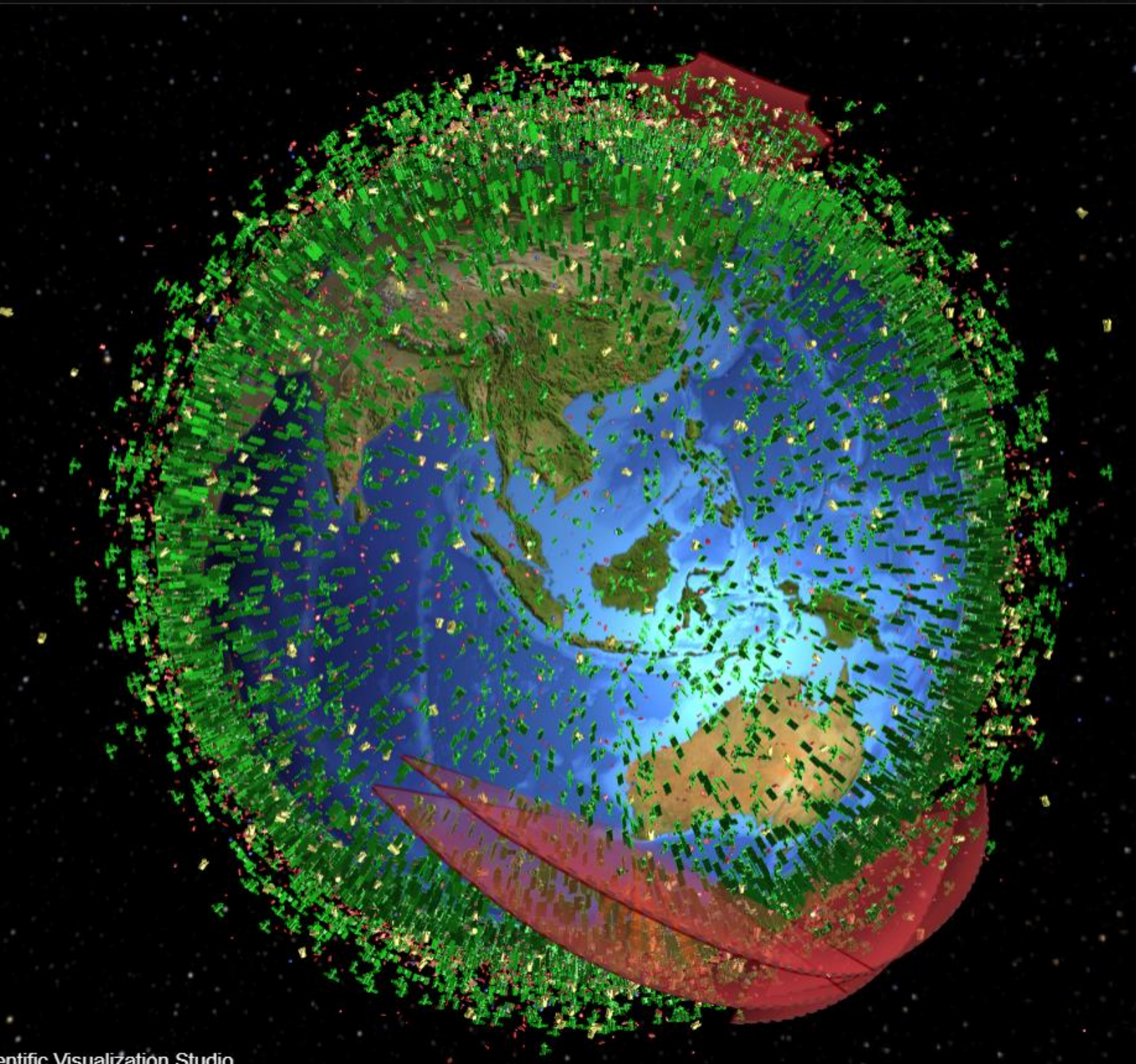
⚠ Special events are not shown

🔗 Copy link to share



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Milky Way images from NASA/Goddard Space Flight Center Scientific Visualization Studio



Object Type

Payload

Rocket Body

Debris

Unknown

Sources:

LeoLabs Inc. <https://platform.leolabs.space/visualizations/leo>

2025-11-24 02:16 UTC

24424 objects displayed

Sarawak Spaceport

→ Medium-Class Launch Vehicles

Supports **two-stage rockets** suitable for commercial satellite deployment.

→ Broad Orbital Access

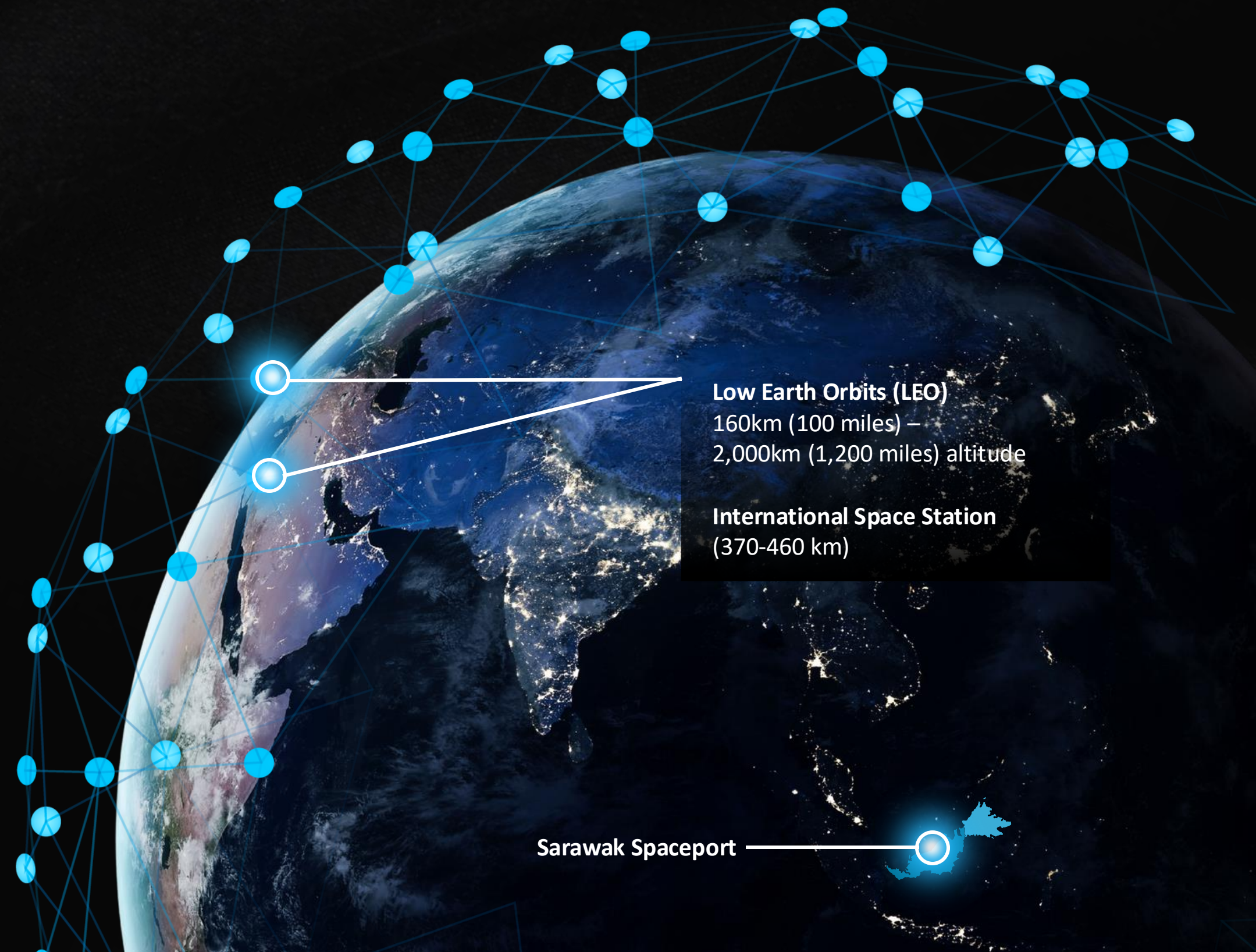
Enables launches to **multiple inclinations** used for Earth observation, regional coverage, and scientific missions.

→ Up to 5-Ton Payload to LEO

Deliver payloads of up to **five metric tons** into LEO, supporting a wide range of satellite applications.

→ Supported Mission Types

- Polar & Sun-Synchronous Orbits
- Mid-Inclination Orbits
- ISS-Compatible Orbit (51.6°)





Sarawak Spaceport Features



Equatorial Location

Our planned location, just **3 degrees north of the equator**, is primed for efficient access to equatorial orbits. With the Earth rotating faster the closer you get to the equator, low-inclination orbits can launch more payload with less fuel spend.



Multiple Orbit Options

Unobstructed ocean trajectories support equatorial and low-inclination launches. Additional inclinations can be achieved through controlled launch azimuth planning.



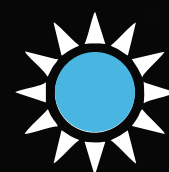
Launch Services

Designed to **offer integrated mission support** from preparation to post-launch analysis. Suitable for commercial, research, and educational payloads.



Dedicated Launch Complexes

Launch complexes can be developed with integration facilities, control access, and dedicated pads. **Configurable for small and medium-class launch providers.**



Stable Weather & Atmospherics

Bintulu's climate provides **consistent conditions** and **year-round launch availability**. This improves scheduling reliability and operational readiness.



Small / Medium Lift Capability

Planned to support small and medium-lift vehicles. **Ideal for the growing satellite deployment and micro-launch market.**

Strategically Positioned to Meet Market Demand

- Planning and Feasibility Phase Initiated
- Scalable “Lease-and-Launch” Business Model

300–350

Acres for Core Facilities

Long-Term

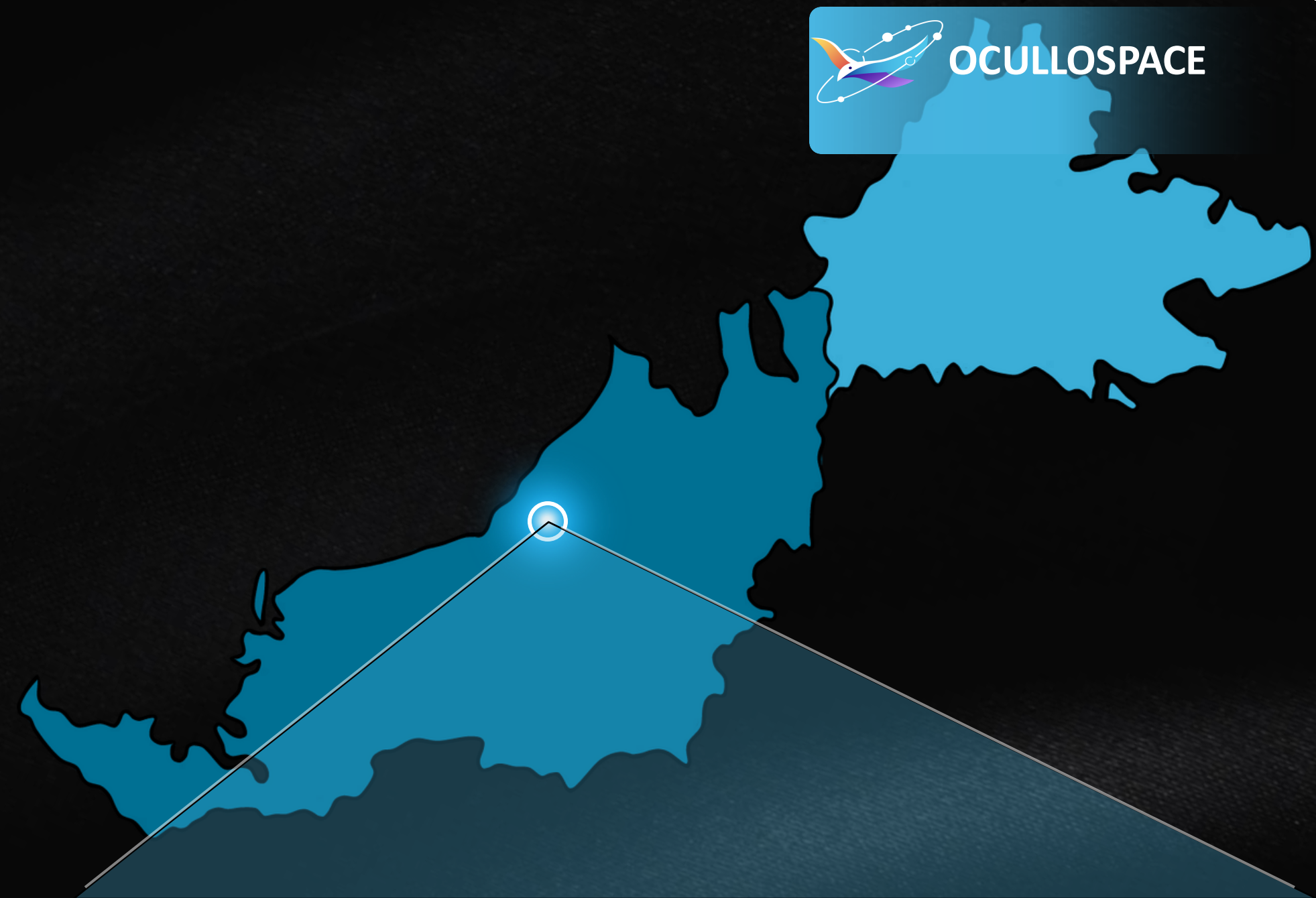
Lease Arrangements

<5,000kg

Small to Medium-Class
Payload Capability

150+

Launch Days



Unparalleled Range of Inclinations

- Can launch satellites into polar, sun sync, and ISS orbits without population overflight issues
- Strategic moat relative to other launch facilities

Upcoming Launch Customer and Client Traction

5 Letters of Intent and Memorandums of Understanding in place

2 Launch customers – launch vehicle developers

 Multiple satellite manufacturers

 Tracking and telemetry services

 Integrated launch services

Small Lift Companies in ASEAN Region



Access to Transportation Infrastructure

- Supported by several regional airports — primarily **Bintulu Airport and Miri Airport**
- **Established road networks** connect the proposed site to industrial zones, logistics hubs
- **Proximity to Bintulu Port and Miri Port** provides direct access for heavy cargo, maritime logistics, and international shipping operations.



Sarawak Spaceport Development Stage

Stage 1 — Small-Lift Capability

Up to 1,250 kg to Low Earth Orbit (LEO)

- Telemetry and ground tracking station
- Launch pad and support facilities for small-lift vehicles
- Payload integration and testing facility
- Launch Control Centre located ~4–5 km from the pad

Stage 2 — Medium-Lift Capability

Up to 5,000 kg to Low Earth Orbit (LEO)

- Dedicated launch pad and infrastructure for medium-lift vehicles
- Designed to serve commercial medium-lift missions where global launch capacity is limited
- Addresses the increasing bottleneck for medium-lift launch availability worldwide



Stage 1 – Small-Lift Capability (Phased Development)

Phase 01



Feasibility & Regulatory Study

0–12 months

- Government endorsement to initiate feasibility
- Environmental, maritime, and airspace assessments
- Establishment of a Sarawak–Federal Joint Coordination Taskforce
- Planning stage only — no CAPEX commitment from the State

Phase 02



Pilot Launch Operations

Year 1–2

- Designated test zone (land or sea-based)
- Research, suborbital, and educational launch activities
- Validation of safety, regulatory, and operational procedures

Phase 03



Initial Commercial Launches

Year 2–3

- Micro-launch vehicle operations (small payloads)
- University and research satellite deployments
- International demonstration launches

Phase 04



Full Small-Lift Commercialisation

Year 3–5

- Operational small-lift launch site
- Payload processing and integration facilities
- Acquisition of commercial and international customers

Illustrative Spaceport Concepts

Space Launch Complex



Illustrative Spaceport Concepts

Rocket Integration Facility



Illustrative Spaceport Concepts

Launch Mission Control

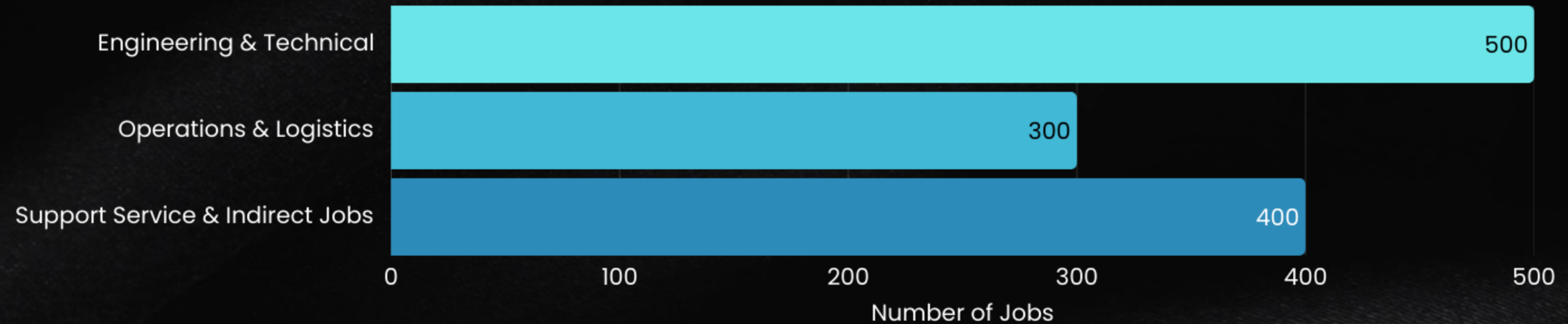


Economic Projections

1200

Direct & Indirect Job Created

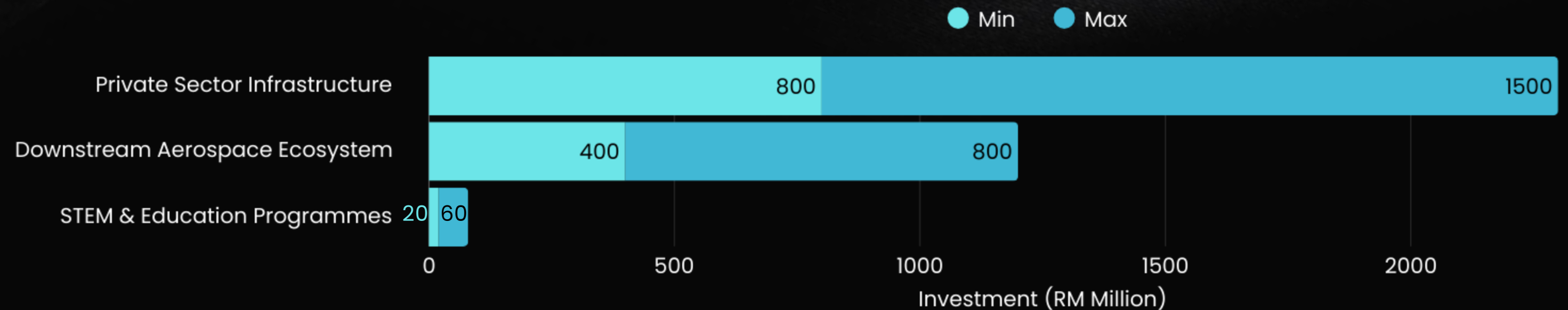
Direct and Indirect Job Creation Estimates



2.36B

Total Projected
Investment over 10
Years

Investment Potential Over 10-Year Horizon



Investment Highlights

High Market Demand

- Strong global demand for new launch sites
- Asia-Pacific small-lift companies seeking equatorial access
- No existing equatorial launch site in ASEAN

High Return Potential

- “Lease and Launch” business model generates high return on invested capital
- Starting in Phase 1 with small-lift launch partners (up to 1,250 kg payload to LEO)
- Expansion toward medium-lift capability

Low Initial Capex

- Phased development strategy
- Infrastructure scaled to operator demand
- Opportunities for private and joint funding

Strategic Geographic Advantage

- Located at ~3°N with equatorial efficiency
- Direct access to high-value orbits
- Limited global competition for equatorial sites


Strong Partnership Potential

- Alignment with federal and state priorities
- Collaboration with universities and industry
- Support for STEM and innovation ecosystem



THANK YOU FOR YOUR ATTENTION

We welcome any questions or clarification.

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 www.ocullospace.com