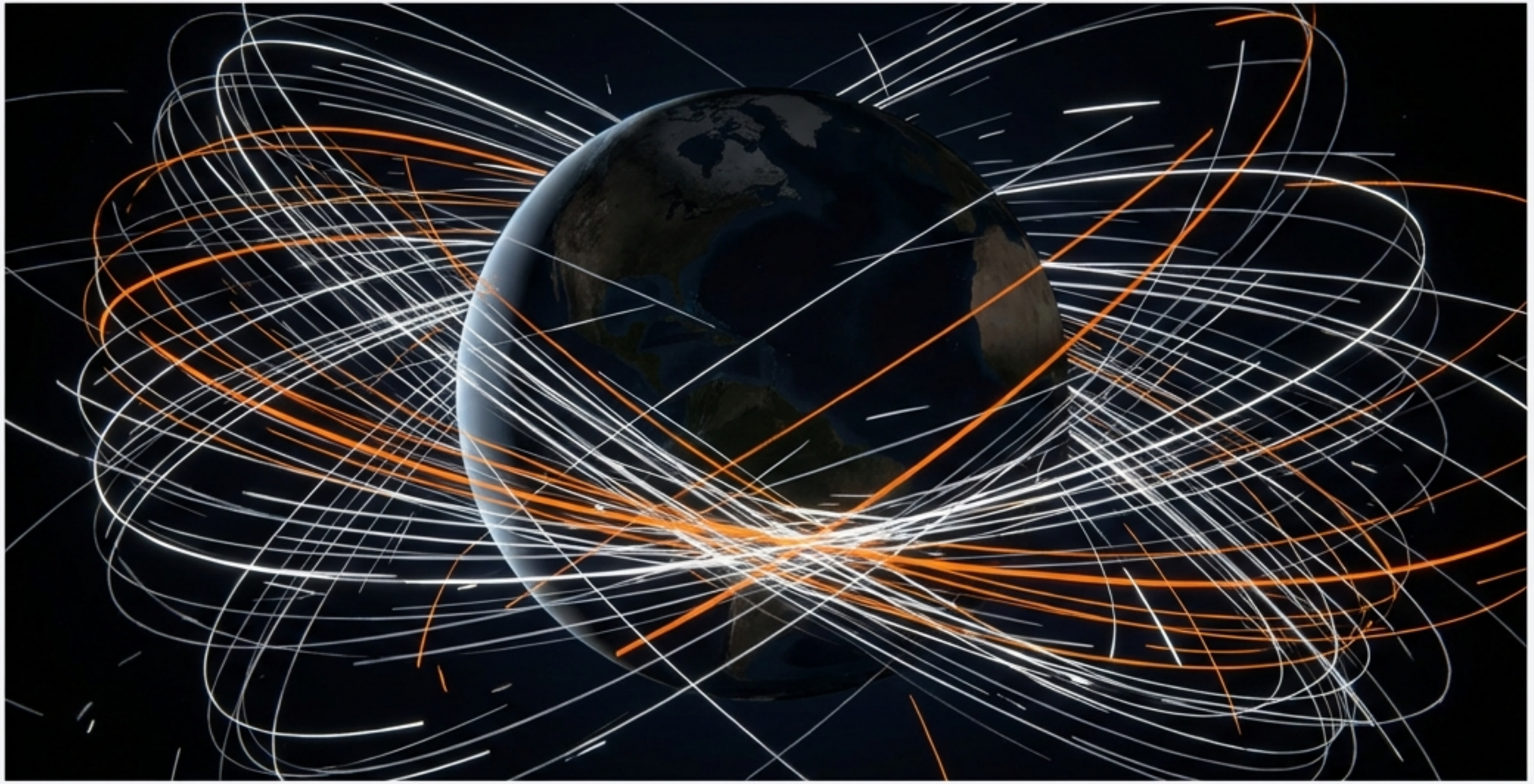
ExoNova: The Mission Control for the New Space Economy

AI-powered collision avoidance to make space safe, open, and accessible for everyone.

The Sky is a Minefield



~28,000 km/h

The speed of orbital debris, highlighting the immense kinetic energy.

1.2+ million

Untracked fragments (1-10cm), each capable of catastrophic damage.

15,000+

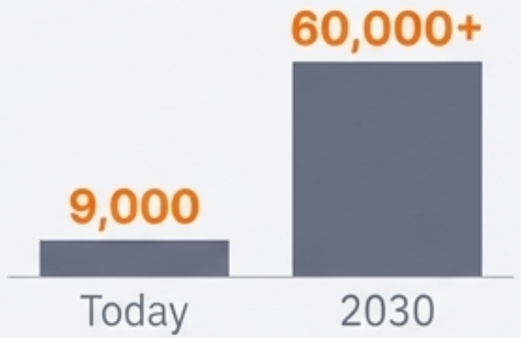
Currently tracked objects.

The Kessler Syndrome Chain Reaction

When two debris objects collide, they create thousands of new fragments, triggering a cascade that could render orbit unusable.

Four Unstoppable Forces Are Creating a Perfect Storm

The Mega-Constellation Explosion



Key players: Starlink, Kuiper, OneWeb, plus Chinese and Indian constellations.

The Regulatory Mandate

esa FCC इसरो ISRO

‘Zero Debris Initiative’

‘Satellites must deorbit within 5 years.’
The message: compliance is no longer optional.

The Commercial Rush

New space startups in Earth observation, communications, and research need market access but lack infrastructure.

The Technology Shift

The market is moving from expensive infrastructure to smart, scalable software.

A System Built for a Bygone Era

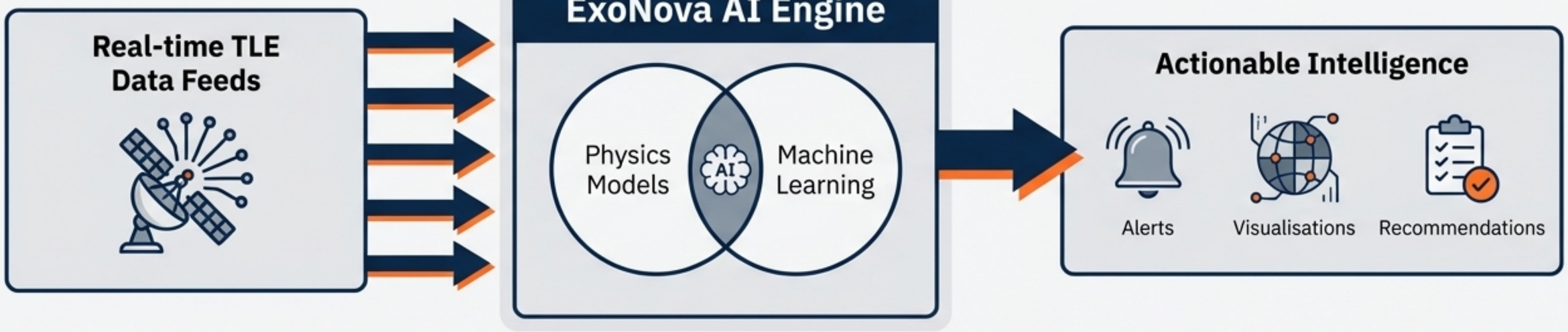
The Old Way (NASA/ESA Systems)	The New Reality (60,000+ Satellites)
 **Closed & Restricted:** Accessible only to their own multi-billion dollar missions.	 **Open & Commercial:** Needs to serve 200+ startups and developing nations.
 **Legacy Technology:** Based on 1970s physics models (SGP4) designed for hundreds, not thousands, of objects.	 **AI-Powered Scale:** Requires autonomous processing of 30,000+ conjunctions daily.
 **Human-Dependent:** Slow, manual analysis that cannot scale.	 **Automated & Real-Time:** Decisions needed in minutes, not hours.

The existing tools are fundamentally broken for the modern space economy.

Introducing ExoNova: Mission-Control Intelligence for Everyone

AI-Powered: Continuously learns and improves prediction accuracy.

Accessible: Open platform for startups, universities, and developing nations.



Cloud-Native: No expensive hardware required; scales on demand.

Actionable: Translates complex data into clear, decision-ready insights.

The AI Advantage: Seeing What Physics Alone Cannot

SGP4 physics models from the 1970s are excellent but incomplete. Our AI learns the error patterns caused by unpredictable variables like atmospheric drag and solar activity.

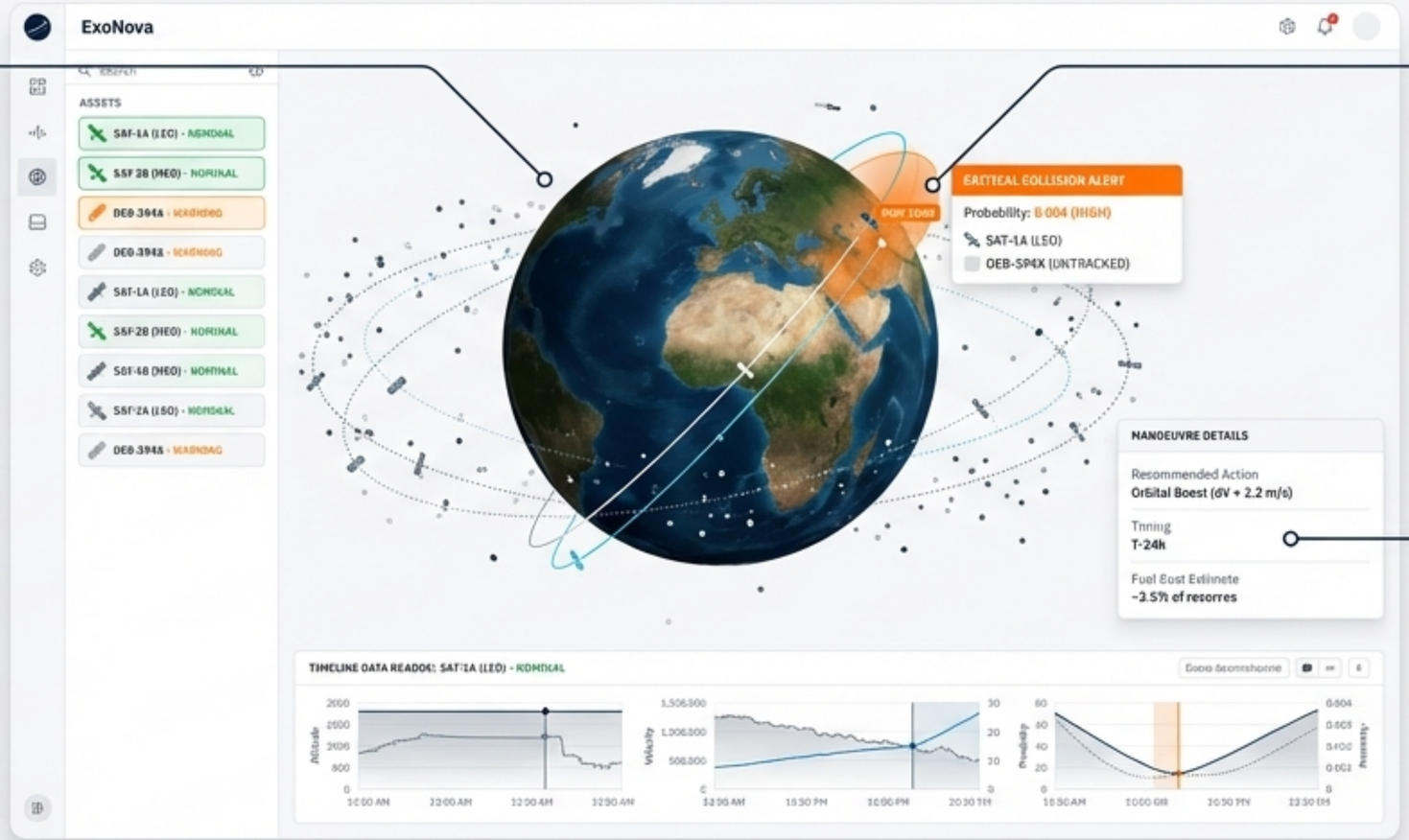
Metric	SGP4 Alone	SGP4 + ExoNova AI	Improvement
24-hour Accuracy	±500m	**±250m**	**2x Better**
False Alert Rate	35%	**7%**	**-80%**
Usable Prediction Horizon	24-48 hours	**5-7 days**	**5-10x Longer**

Business Value: Fewer false alarms means less wasted fuel. A longer prediction horizon means more time for confident, proactive planning.

The Product in Action

Real-Time 3D Visualisation

Track all 15,000+ objects with metre-level accuracy.



Probabilistic Risk Alerts

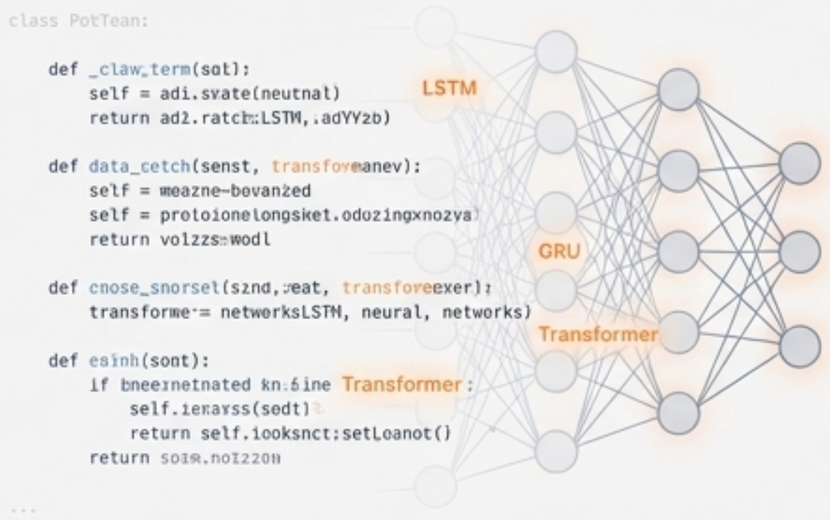
See collision probability, not just distance. Focus only on critical threats (P > 0.0001).

Automated Manoeuvre Recommendations

Receive actionable advice: delta-V required, timing, and fuel cost estimate.

De-Risked: From Production Code to a Physical Prototype

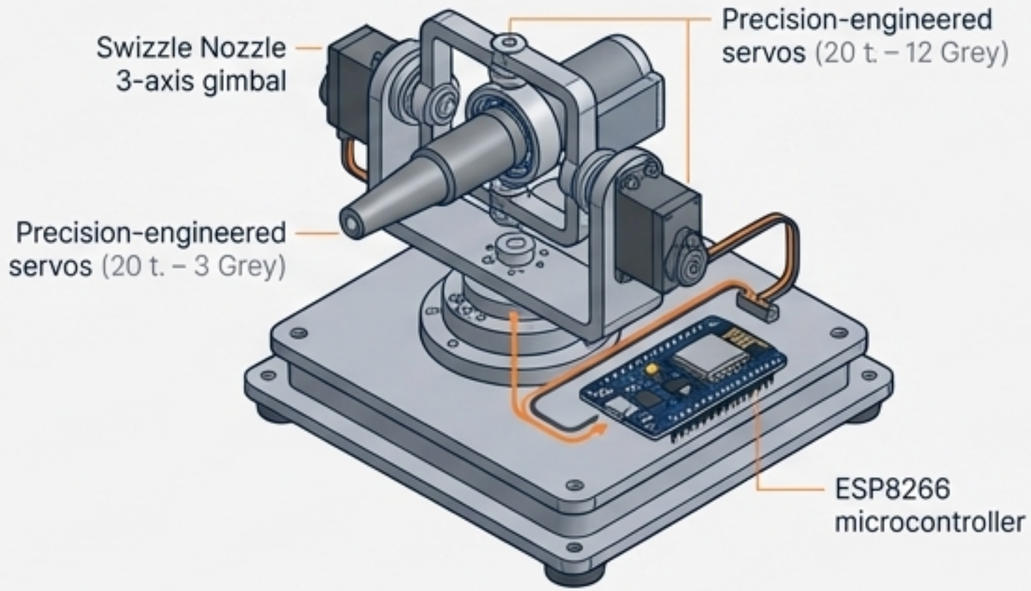
Software Validated
The Brain



IBM Plex Sans Regular (#667085)

- **5,500+** lines of production-grade Python code.
- Successfully deployed and tested on real TLE data from CelesTrak.
- Integrates LSTM, GRU, and Transformer neural networks.

Hardware Proven
The Body



IBM Plex Sans Regular Medium

- Demonstrates closed-loop autonomous control (sense → decide → act).
- Proves AI predictions can be translated into real actuator commands.

We have not only built the brain but have proven it can command a body.

Unlocking an £800M+ Market by Enabling the New Space Economy

Space Startups

£500M+

200+ companies needing affordable safety.

Developing Nations

£200M+

20+ countries seeking access to space-grade tools.

Defence

£100M+

10+ agencies requiring autonomous situational awareness.

Mega-Constellations

£50M+

5-10 operators needing automation at scale.

Universities

£50M+

100+ programmes for education and research.

Total Addressable Market: £800M+ ($1B+) immediately, growing to £1.6B+ ($2B+) by 2030.

A Scalable & Defensible Business Model

SaaS (Core Revenue)

- Starter
- Growth
- Enterprise

World-class unit economics with an **LTV:CAC** ratio of **25-60x**.

Enterprise Licensing

Custom on-premises deployments for government, defence, and large operators.

£500K - £1.5M per contract.

Data Services

High-margin, aggregated insights for insurance, research, and analytics.

Ancillary, high-margin revenue.

Our model combines recurring SaaS revenue with high-value enterprise contracts and ancillary data streams.

The Go-To-Market Flywheel

Attract (Build the Community)

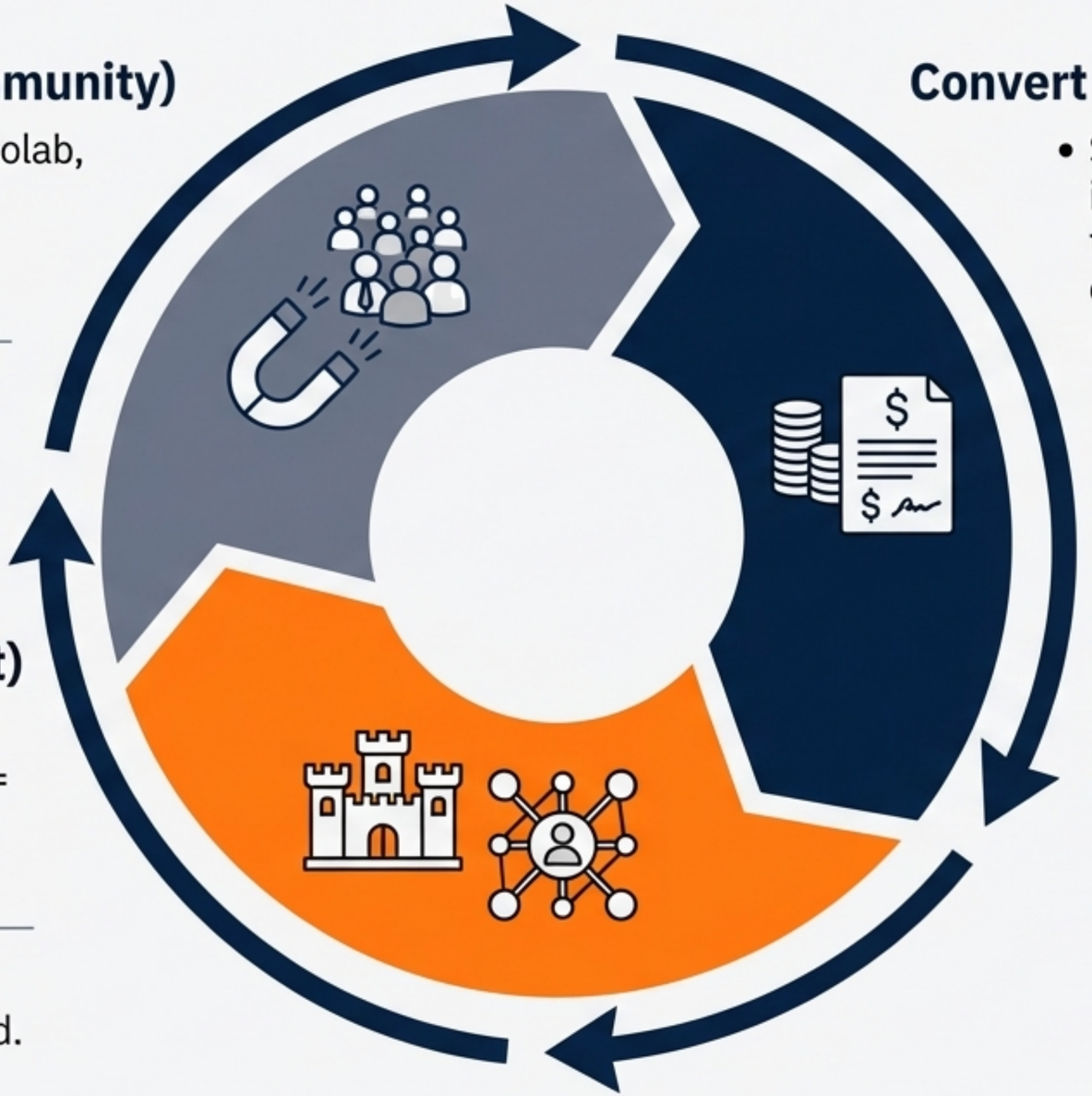
- Freemium tier on Google Colab, open-source components, university partnerships, conference presentations.

Zero-friction adoption and establish credibility.

Convert (Monetise Engagement)

- Self-service SaaS upgrades, inbound sales from free users, targeted outbound for enterprise.

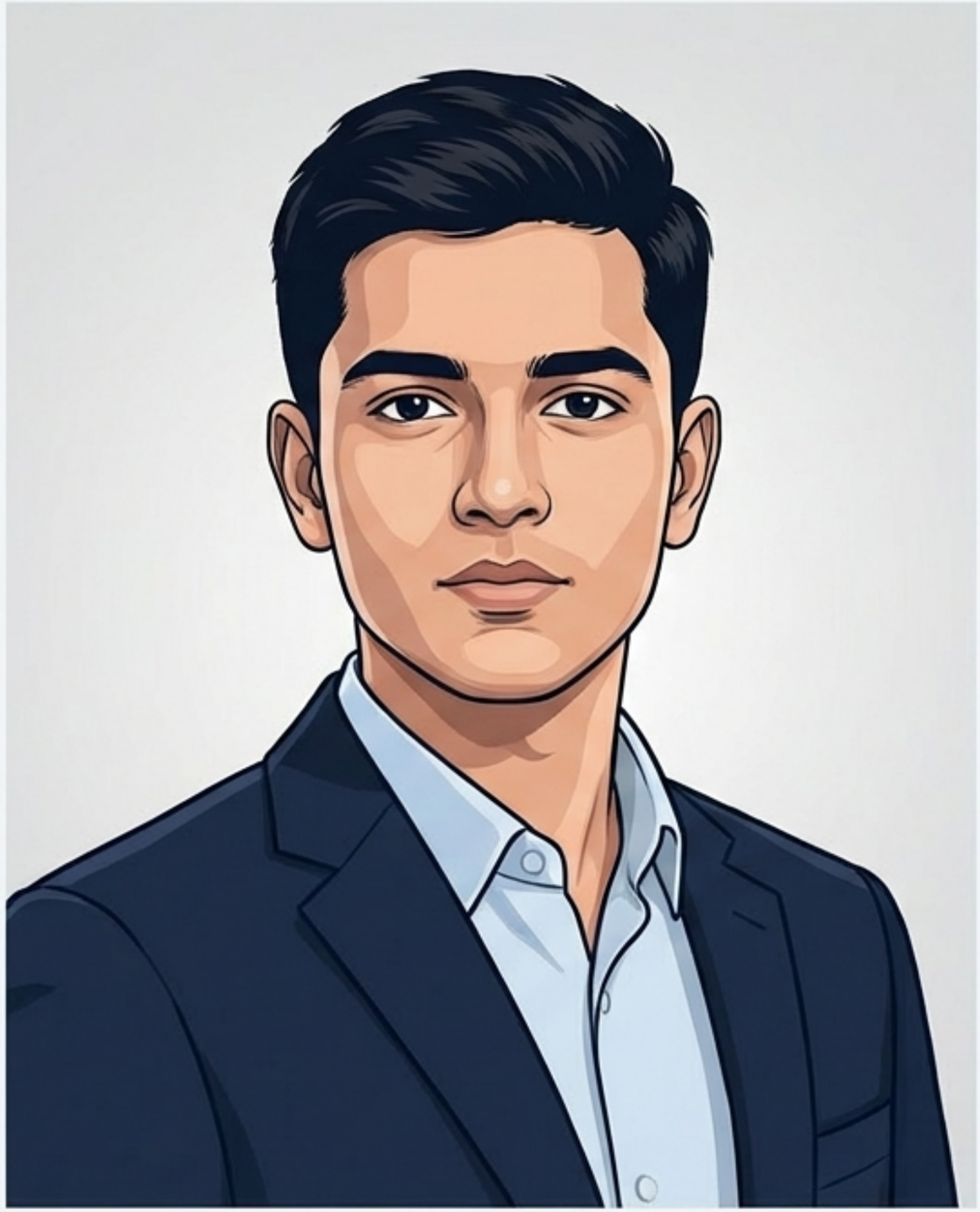
Efficiently convert community usage into revenue.



Expand (Create a Moat)

- Leverage network effects (more users = better data = smarter AI), data services, and API integrations.

Increase switching costs and become the industry standard.



A Founder with a Unique Combination of Vision and Execution

Sanchit Yadav

- **Age:** 17
- **Demonstrated Execution:** Shipped 5,500+ lines of production-grade code and a working hardware prototype.
- **Exceptional Learning Velocity:** Self-taught in advanced aerospace, machine learning, and embedded systems.

"The investment isn't just in an idea, but in an exceptional individual who has already proven he can execute at a world-class level."

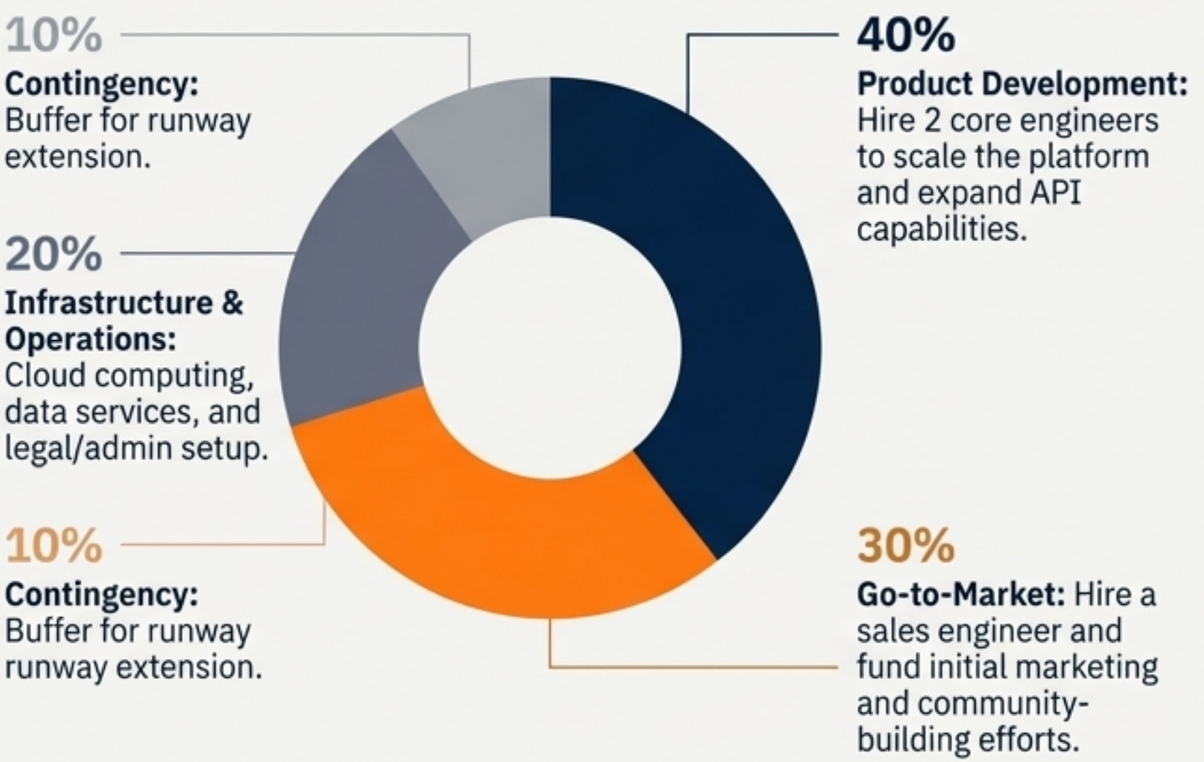
We are actively recruiting a network of seasoned advisors in space operations, AI, and enterprise sales to complement this technical foundation.

The Ask: £400K - £800K to Capture the Market

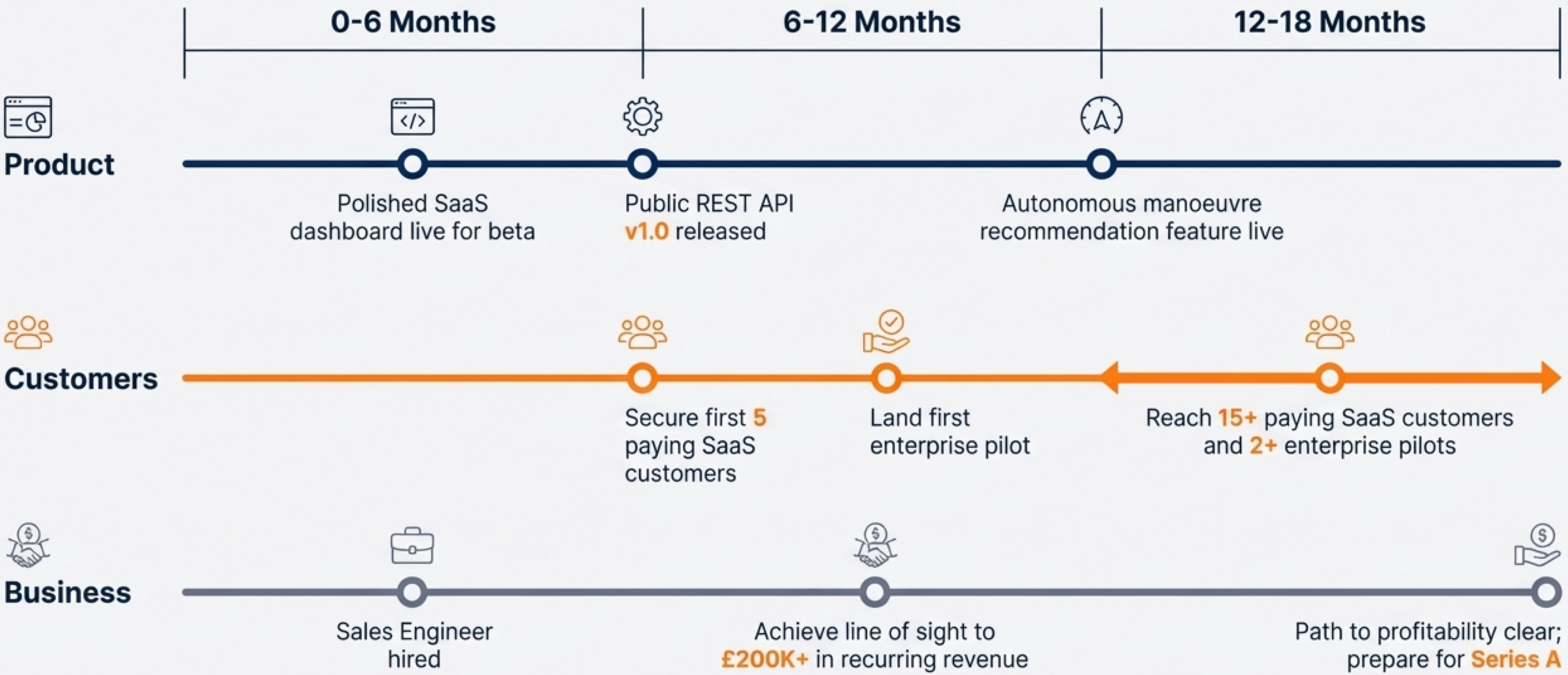
The Ask

Seeking a Pre-Seed / Seed round of **£400,000 - £800,000** ($500K - $1M) for an 18-24 month runway to Series A.

Use of Funds



The Roadmap: From Seed to Market Leader in 18 Months



The Future of Space is Accessible

Space is at an inflection point. ExoNova is the critical infrastructure required to ensure its future is safe, open, and accessible to all.

Sanchit Yadav
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