

# **MAGNETO PLASMA DYNAMIC THRUSTER**

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# About the project



The aim of the project is to develop dedicated propulsion technologies for enhanced reliability and efficiency in satellite operations and future space exploration.

It mainly focuses on developing Magnetoplasmadynamic (MPD) thrusters by tailoring plasma-centric physics. This makes it possible to introduce India's first commercially viable MPD thruster technology, which increases the potential of electric propulsion by bridging the primary technical gaps.

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# Problem Statement



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# Solution Offered



# The Product

# MAYUKHA:

APPLIED FIELD MAGNETO PLASMA  
DYNAMIC THRUSTER



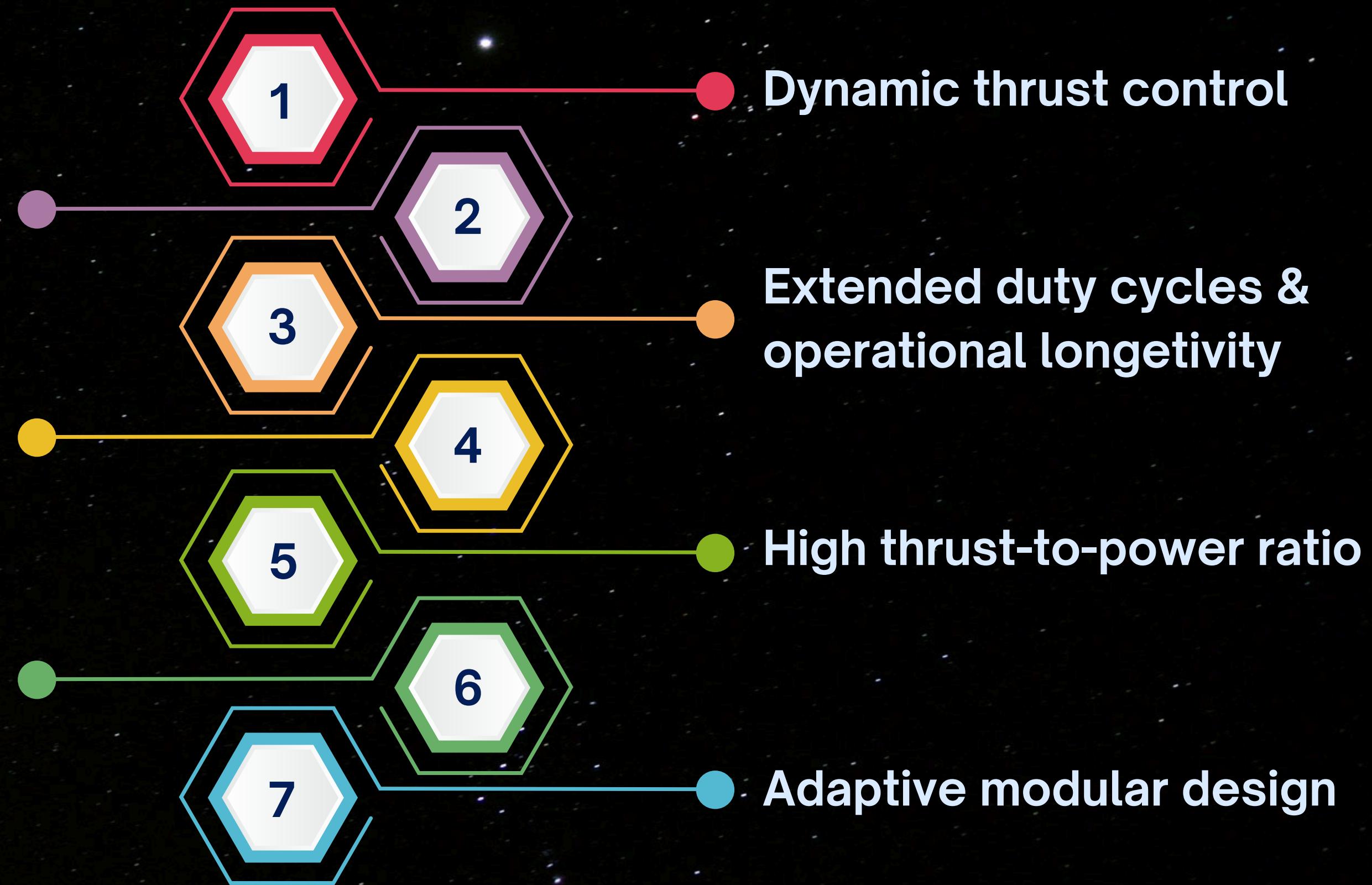
\*\*Proposed Design

# Product Competence

Multi propellant flexibility

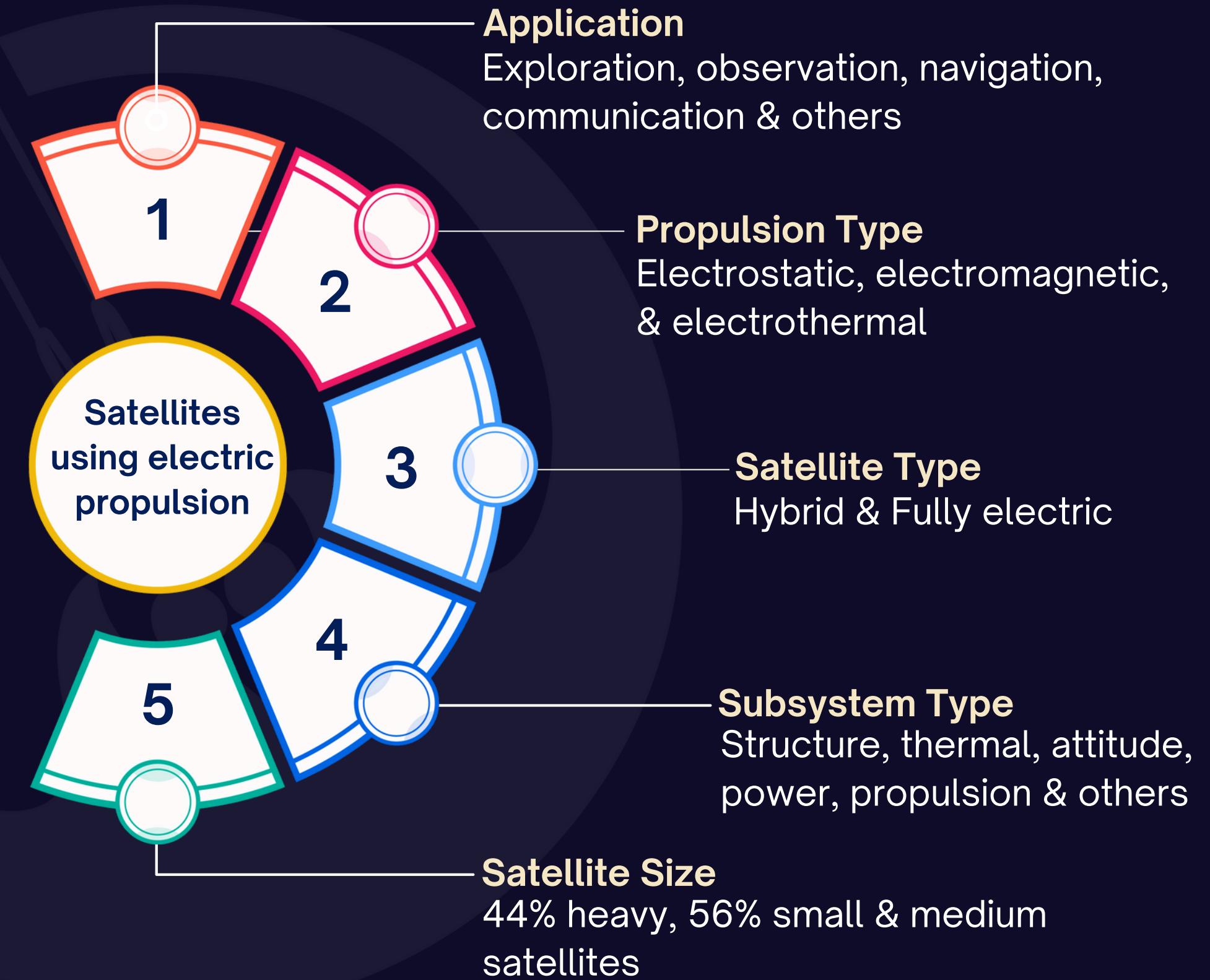
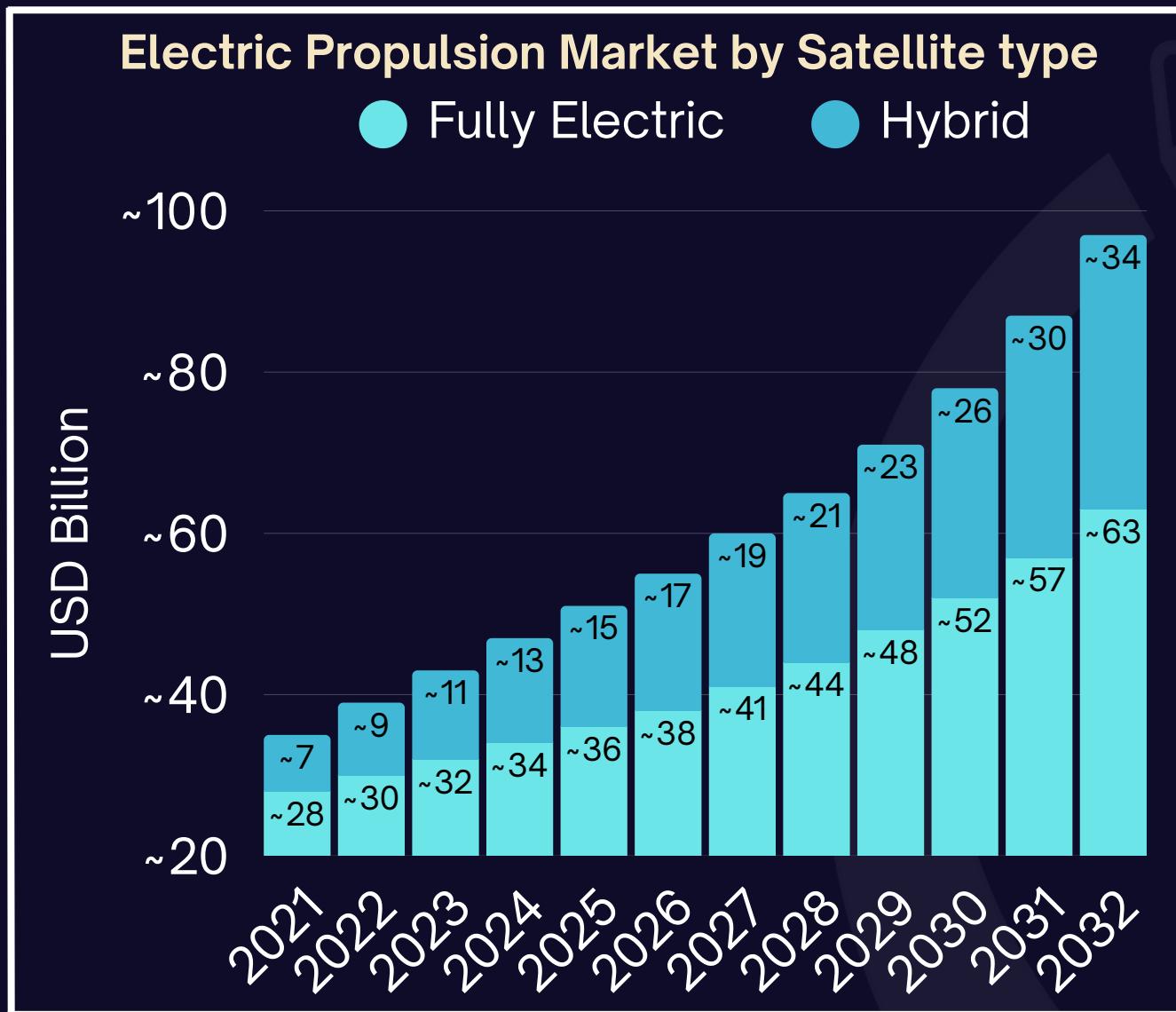
Rapid Response via Low-Latency, High-Power Switching

Future-Proof Design for High-Power Systems & Interplanetary Missions



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# Electric Propulsion Satellite Market



- Electric propulsion satellite market to grow at 10.22% CAGR during 2025-2032.
- Demand for small satellites and their constellations.
- Growing defense and commercial launches, fueled by tech investments and government funding for space surveillance.

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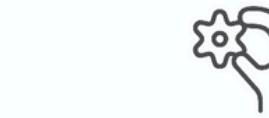
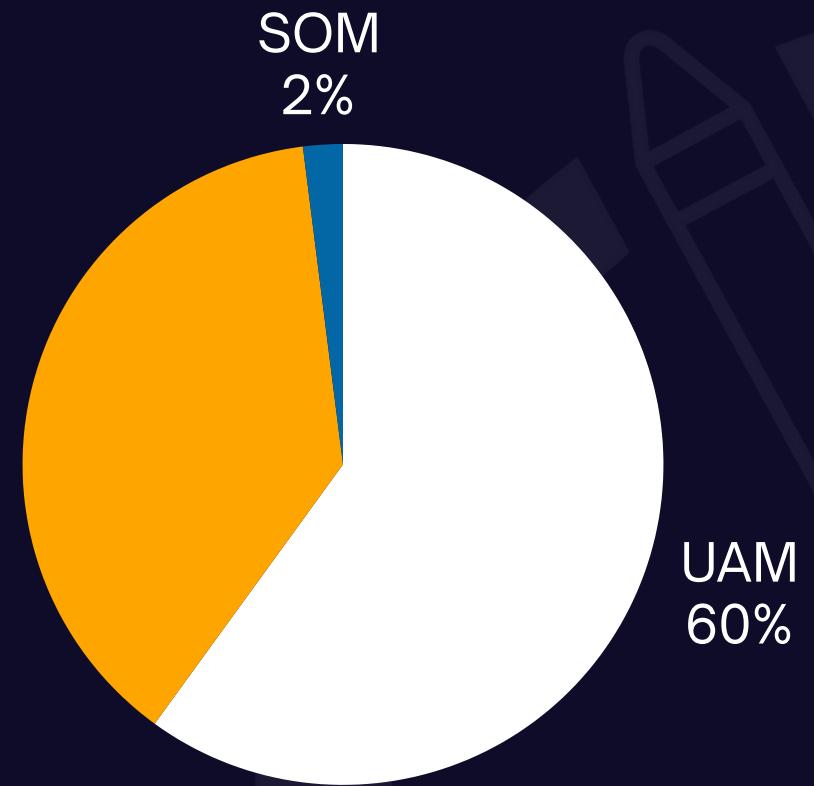
# Market Opportunity Breakdown & Strategy

● Serviceable Addressable Market

● Unaddressed Market

● Serviceable Obtainable Market

- The full market potential for electric propulsion is estimated at USD 30B by 2032, representing the entire opportunity.
- Targeting practical satellite propulsion, our addressable market is about 40% of TAM ~USD 12B.
- With the innovative technology, we aim to capture 3-5% of SAM, equating to approximately 2% of TAM (~USD 480M) as our initial share.
- Legacy chemical propulsion for heavy satellites and emerging deep-space exploration segments remain largely untapped and are yet to adapt to electric propulsion, are put under an unaddressed market.



## Mission as Service Platform

Provides foundational services for mission-driven platforms.



## Open Innovation

Facilitates rapid prototyping through collaborative innovation.



## Technology Demonstration

Showcases technology effectiveness via pilot projects.



## Blockchain Transparency

Ensures performance transparency with blockchain technology.



# Revenue Model

## Monetisation of Subsystems

Monetizing proprietary subsystems through targeted licensing.

## Space hardware testing and validation missions

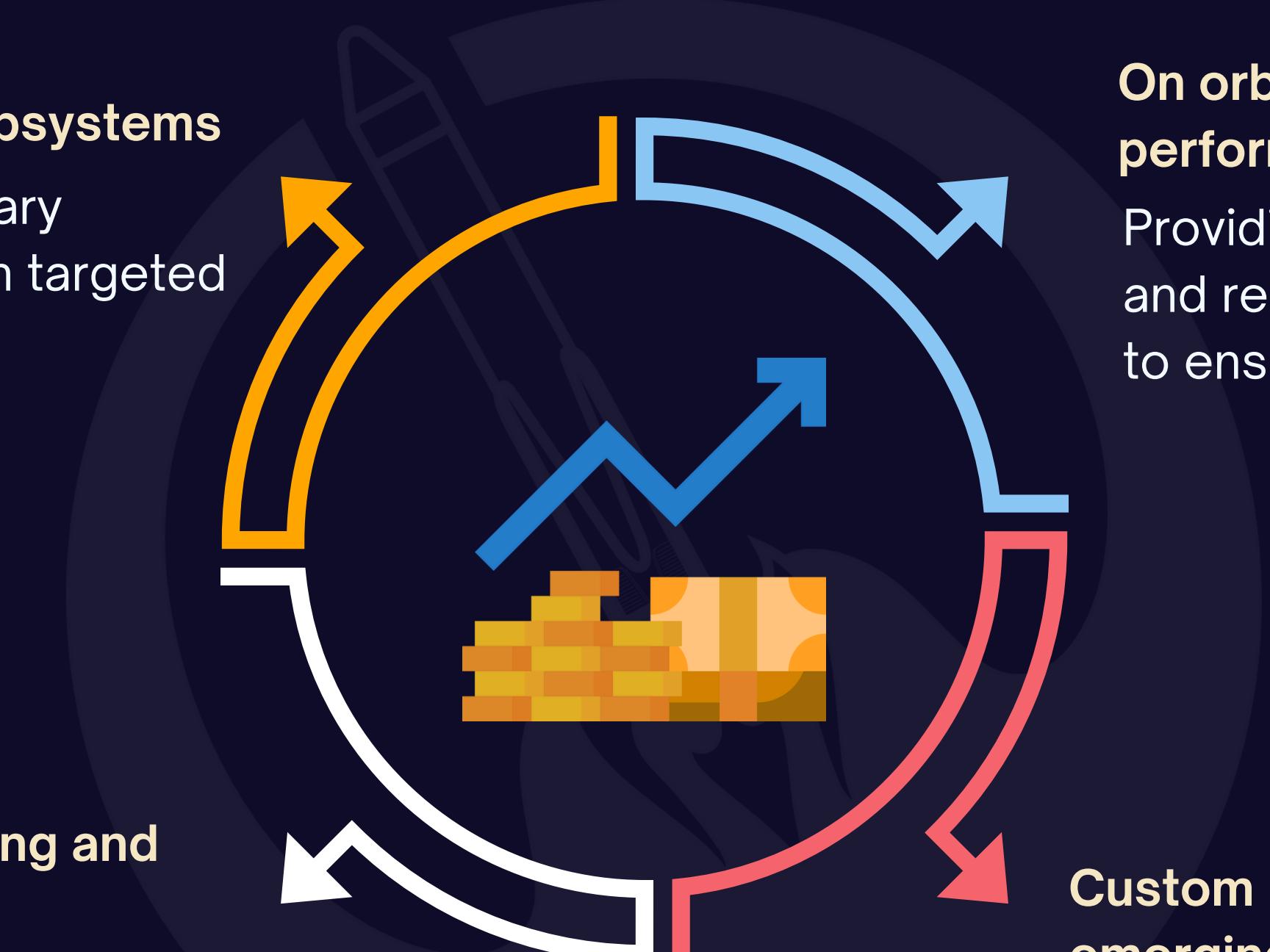
Offering propulsion modules for technology demonstration, testing, and validation missions to academia and private players.

## On orbit propulsion services & performance monitoring

Providing propulsion services and real-time health diagnostics to ensure system longevity.

## Custom modular solutions for emerging markets

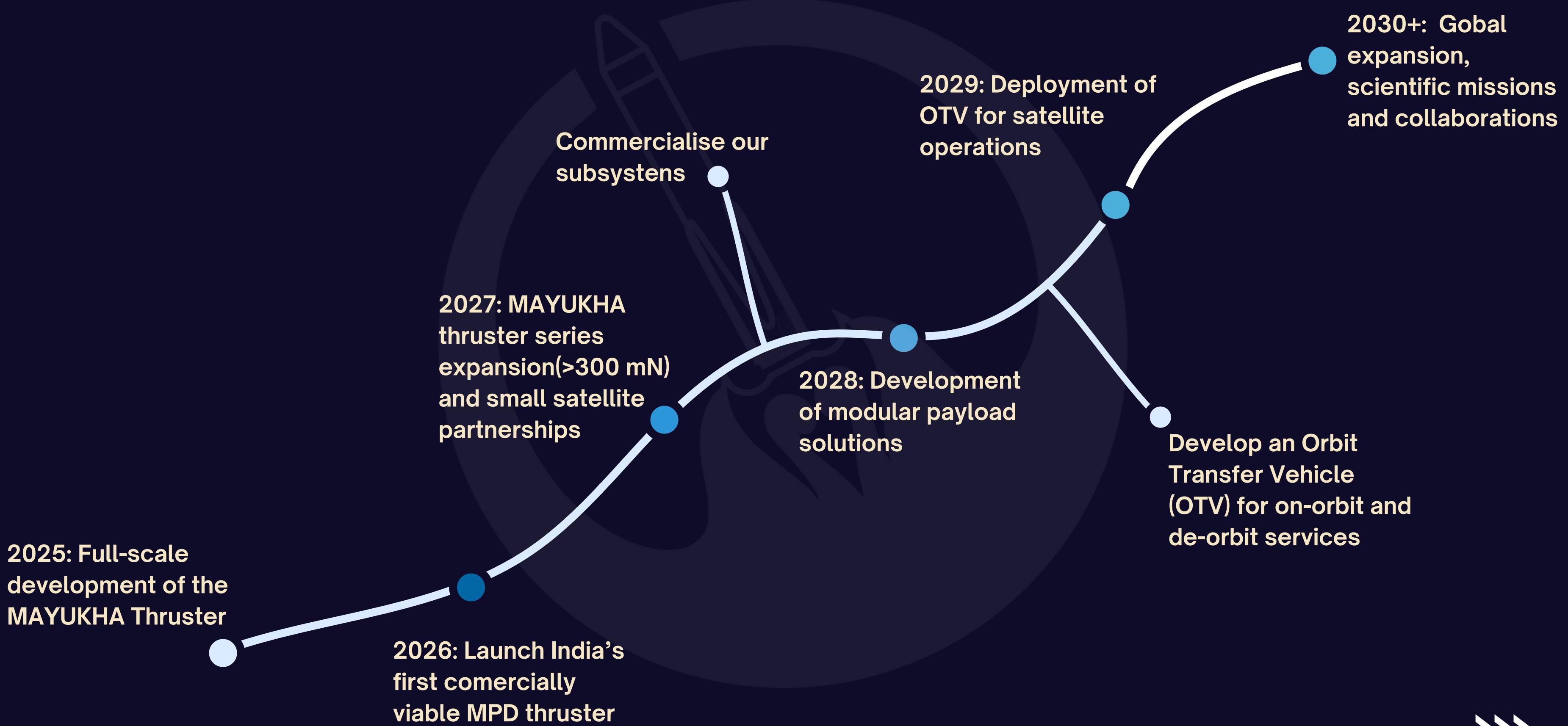
Developing adaptable propulsion systems & custom bus platforms



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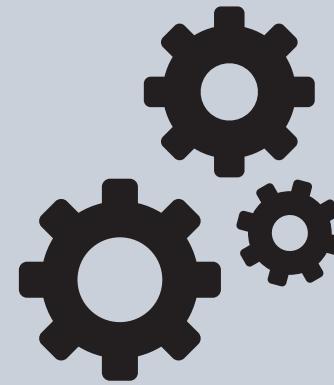


# Future Plans





# Initiatives with Government



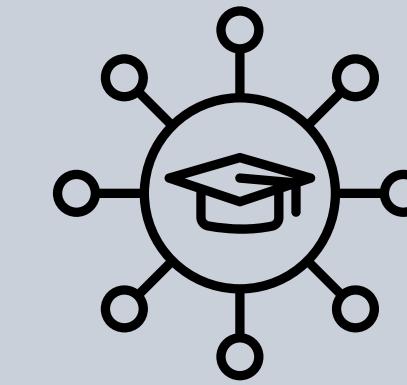
## INDIGENOUS OEM

**Establishing a domestic supply chain for space-grade systems.**



## SKILL DEVELOPMENT

**Collaborating with government programs to train engineers in space technologies.**



## INNOVATION HUBS

**Promoting space education & hands-on training from grassroot level.**





# Courtesy visit to the Hon'ble Chief Minister of Andhra Pradesh, Shri N. Chandrababu Naidu Garu



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# Expert Insights



CHANDRAYAAN -3 MISSION  
AND PROJECT DIRECTORS

DIRECTORS OF  
NASA,ISRO AND INSPACE



Dr. Nambi Narayanan &  
VAANAM Space  
technologies

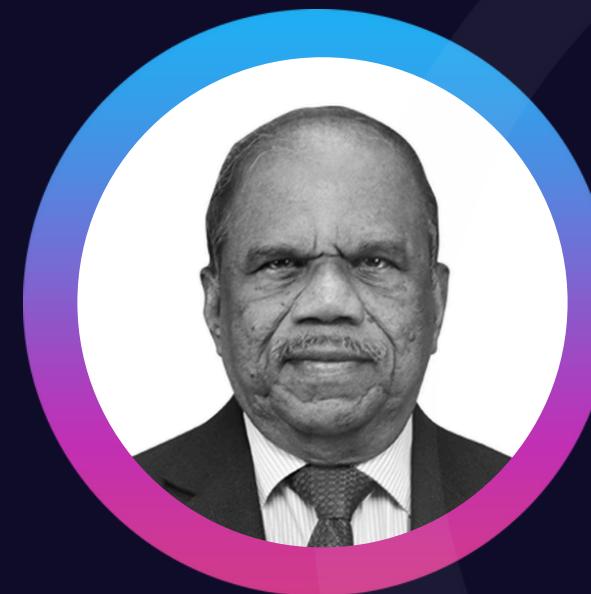




Raudranex Aerospace



# Our Advisory



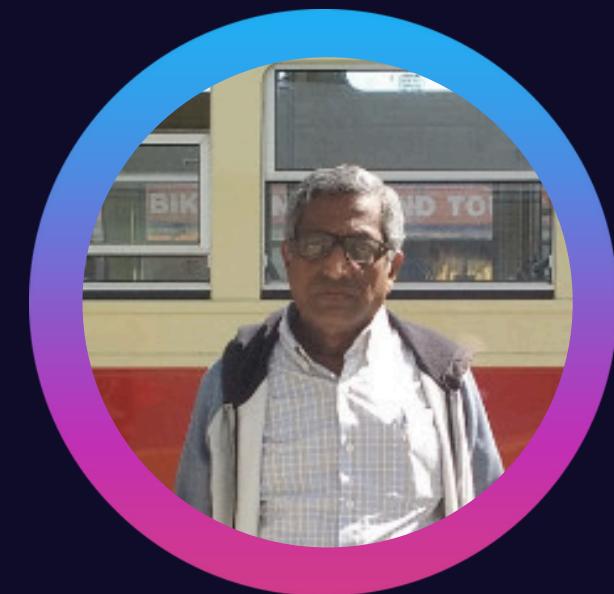
**Padmabhushan Dr.A  
Sivathanu Pillai**

Founder& former CEO  
BrahMos Aerospace



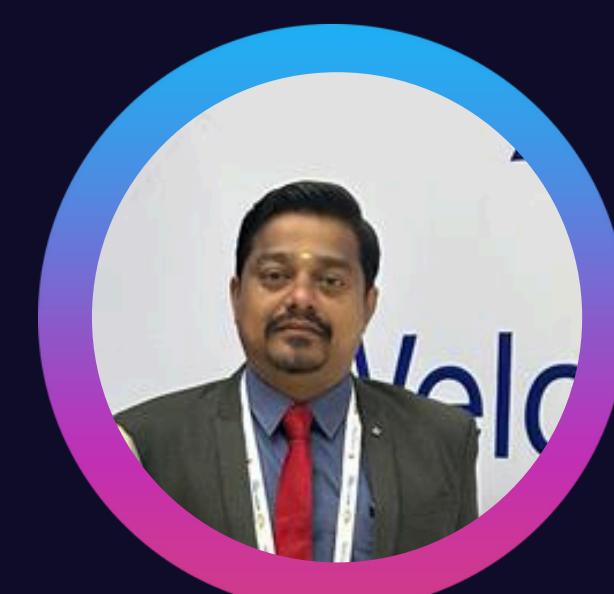
**Dr.PV  
Venkitakrishnan**

Distinguished  
Scientist &  
Director(RTD.) ISRO  
HQ , BANGLORE



**Mr. H N Bhagavan**

Former Mission  
Director ISAC ,ISRO



**Mr.G Dinesh kumar**

Asst.prof Dept of  
Aerospace  
engineering ,HITS



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[www.raudranexaerospace.in](http://www.raudranexaerospace.in)



raudranexaerospace@gmail.com



+91 8978149482

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