DHRUVA SPACE

STRATEGIC FRAMEWORK FOR NATIONAL CAPABILITY

SOVEREIGN SPACE INFRASTRUCTURE

FOR DEFENCE & SECURITY

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THE NECESSITY

Why sovereign space capability is no longer optional

01

Space is contested

Adversaries actively develop anti-satellite weapons, jamming systems and cyber tools targeting orbital assets.

02

Dependency is a vulnerability

Reliance on allied or commercial providers creates chokepoints in command, navigation and intelligence.

03

Every operation is space-enabled

ISR, PNT, communications and missile warning all flow through space. Lose that layer — lose operational advantage.

04

The window is narrowing

Orbital slots, spectrum and launch cadence are first-come, first-served. Late movers pay a permanent penalty.

CAPABILITY ARCHITECTURE

Four Pillars of Sovereign Space

Earth Observation & ISR

Indigenous EO satellites for persistent sovereign imagery. All-weather SAR and optical constellations enabling battle-space awareness and change detection.

Resilient PNT Systems

Sovereign NavIC augmentation, anti-jamming architectures and multi-constellation receivers ensuring positioning integrity in GPS-denied environments.

Secure SATCOM & Data Links

Military-grade encrypted GEO, MEO and LEO networks. Protected command links and resilient crosslinks immune to adversarial interference.

Geospatial Intel & Fusion

Integrated GEOINT fusing EO, SIGINT, MASINT and open-source data. AI-enabled pipelines delivering actionable intelligence at machine speed.

DEFENSIVE & OFFENSIVE SPACE CAPABILITY

Building Resilient Space Architecture

PROLIFERATED LEO LAYER

Small satellites for redundancy & rapid reconstitution

MEO / GEO BACKBONE

High-capacity relay & wide-area nodes with hardened uplinks

GROUND SEGMENT

Distributed stations, mobile TT&C, sovereign data centres

CROSS-DOMAIN FUSION

AI/ML analytics integrating space data with air, land & maritime C2

KEY DESIGN PRINCIPLES

- No single point of failure
- Disaggregated payloads
- Hardened against EW & cyber
- Rapid launch-on-demand surge
- **Civil–military integration**

DHRUVA SPACE

Achieving Sovereignty — A Practical Approach

01

OPERATIONAL CAPABILITY

- Military space architecture — define military & commercial elements
- Commercial services to augment sovereign assets

02

TECHNOLOGIES

- Identify key technologies — near & long term
- R&D · academia · industry partnership
- Sustained, ring-fenced funding

03

INFRASTRUCTURE

- Manufacturing & resilient supply chain
- Testing facilities & launch centres
- Sovereign critical components

Policy Support to Facilitate Sovereign Capability

1. National Space Strategy

Enshrine sovereign space as critical national infrastructure — a defence space agency with statutory authority, dedicated budget lines and clear capability ownership.

2. Procurement Reform

Advance contracts, a commercial-services policy, and a dedicated Space Chapter in the DAP with special provisions for space-related procurement.

3. R&D Incentives

Tax credits and matched grants for space-tech R&D. Co-invest through defence innovation agencies to accelerate dual-use technologies into service.

Sovereignty in orbit
begins with policy on the ground.