

THE NEXT COMPASS

Precision Navigation for the 21st Century

PRECISION. REDEFINED.
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INSIGHT



A few questions first



POSITION
NAVIGATION  Powers the World
TIME

Aviation

Maritime

Drones

Communication

Vehicles

Finance





Countless GNSS Failure and Refusal Incidents

Electronic warfare in the Persian Gulf: How GPS interference is disrupting the Middle East

PUBLISHED THU, MAR 26 2026-4:01 AM EDT

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KEY POINTS

- Since the start of the U.S.-Israel war with Iran on Feb. 28, interference with location-based services has surged across the Persian Gulf.

WATCH LIVESTREAM

[Prefer to Listen?](#)

Iran Officially Replaces GPS with BeiDou System, Marking a Major Shift in Global Satellite Navigation

2025-08-02 17:23:06 1487

Key Takeaways:

- Iran is the first Middle Eastern country to fully transition to BeiDou.
- BeiDou offers Iran enhanced precision and reliability.
- The transition is part of a larger trend, with other nations also moving towards BeiDou.

Nation

BrahMos failed as US shut its eyes in the sky?

DRDO scientists have launched a probe and examining the US satellites role in the failure of the BrahMos missile.

Nation

Over 1900 incidents of GPS spoofing of aircraft reported in two years: Centre tells Lok Sabha

There have been instances of GPS spoofing and interference incidents at Delhi, Mumbai, Kolkata, Amritsar, Hyderabad, Bangalore and Chennai airports.



Solving these problems by building
extremely PRECISE & SECURE PNT



OUR JOURNEY

Led **Avishkar Hyperloop** &
Graduated from **IIT
Madras**



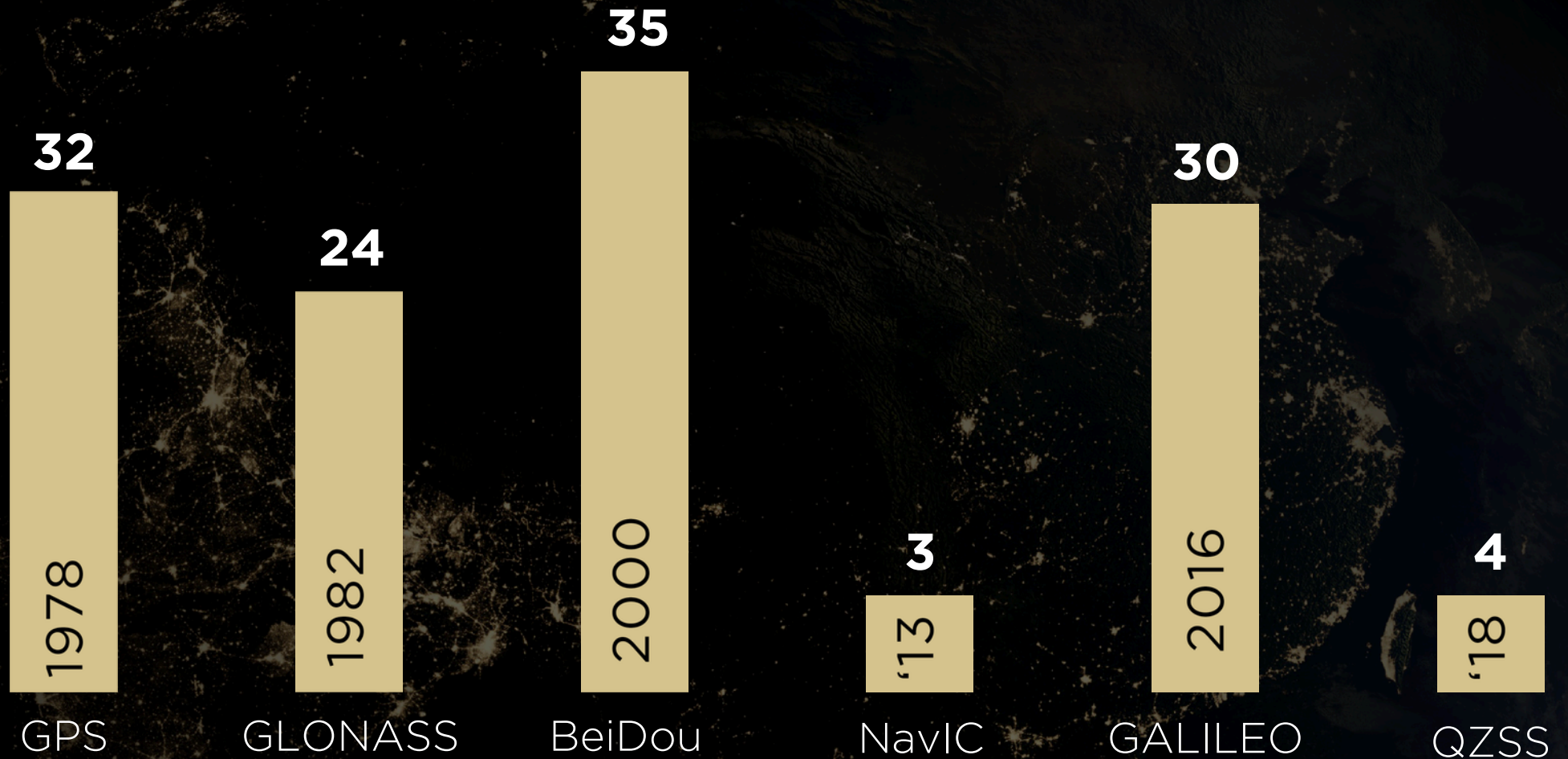
Built **Drone Swarm
Technology from Scratch**
& Performed for **High-
Profile Govt. Events**

Building  **VYOMIC**





How PNT is done today



Coverage

Global

Global

Global

India & 1500km
beyond borders

Global

EU

Country of Origin

USA

Russia

China

India

EU

Japan



Gaps Identified



Positioning
Inaccuracy



Signal Vulnerability
(Easy to Jam/Spoof)



Urban Unavailability
(Multipath Loss)



Geopolitical Risks
(Kargil War 1999)



High Infra Cost
(Bulky & Expensive)



Outdated Satellites
(~15 years life)



The Global PNT Race

Government Push

- **Europe: €156.8 million** allocated to LEO-based PNT Demonstration.
- **Japan Space Exploration Academy:** Plans to Launch **240 satellites** by **2030**.
- **USA: \$27.6M** Awarded to Demonstrate LEO-PNT and GPS-independent Ground Control System (GCS).

Commercial Players

- **Xona Space Systems: Raised ~\$170M** Targeting a **~258-LEO-PNT Satellite Constellation**.
- **Trustpoint:** Developing a **~300-LEO-PNT Satellite Constellation** (CubeSat-based).



TRUSTPOINT



VyomIC's New Age PNT

Building Bharat's first and largest private Global PNT Satellite Constellation

Precise

cm-level &
ns-level
precision

Secure

Jamming &
Spoofing
Resistant

Strong

100x to **1000x**
stronger
signals

Integration

Easy Receiver
Integration via
Firmware
Update

Faster Convergence

TTF < 1
second

October 2026: India's First
Privately Built Complete
PNT Payload

2027: First Two Satellite
Launches

2028: Initial Constellation
With 4 Satellites in Orbit



Why Now?

Sovereign Infrastructure
That is Autonomous



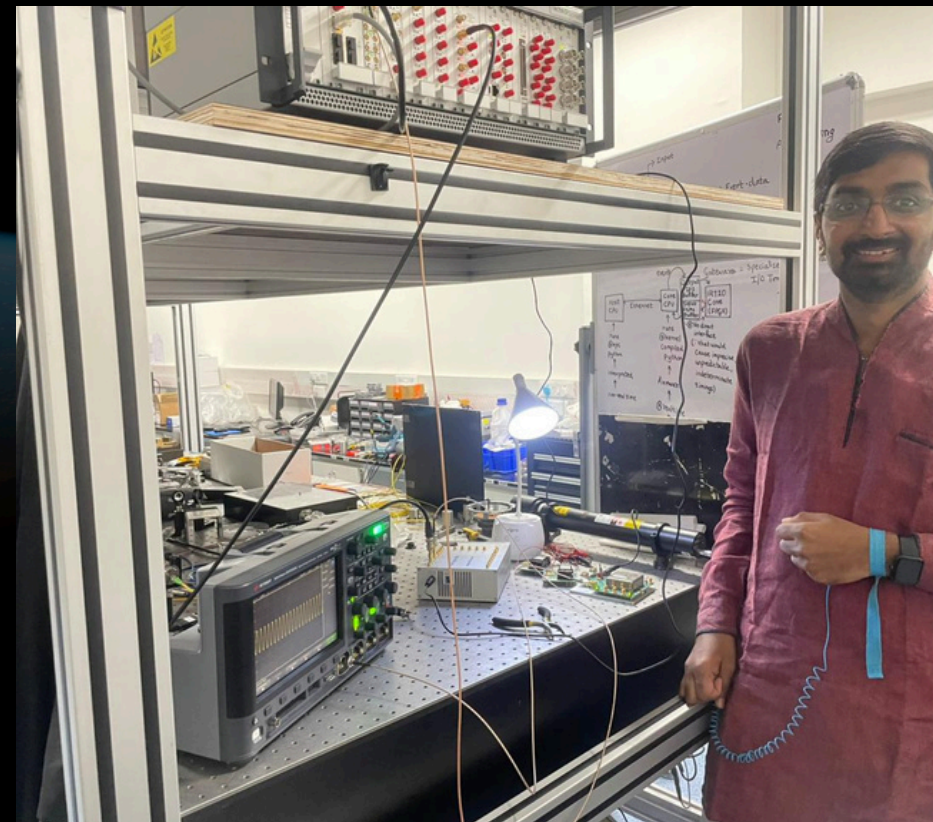
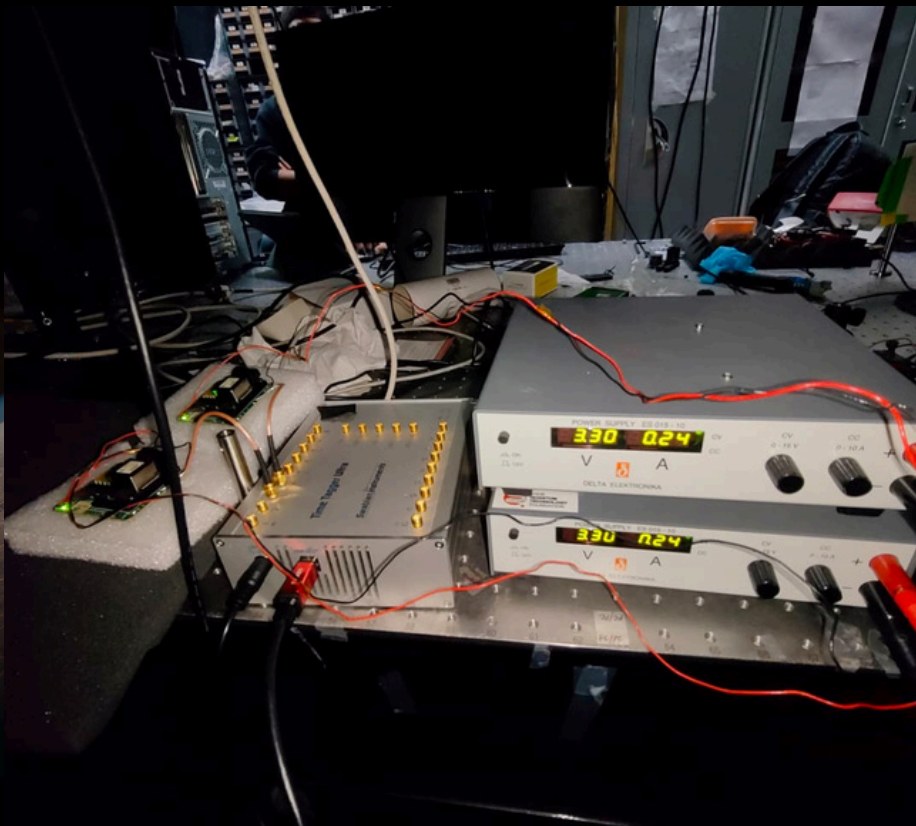
Autonomous Future Demands
Precision & Security





Development at VyomC

- **Atomic Clock:** First Atomic Clock Ensemble Completed; Integration with CSAC & MAC Ongoing.
- **Onboard Precise Orbit Determination (POD):** Version 3 of the Algorithms Completed with Computation Time Reduced from 37 minutes to 24 seconds. Hardware Realization to Begin Now.
- **Signal Generation Chain:** NSGU Architecture Completed; Hardware Development Initiated. PRN Code being Developed In-House.



ATOMIC CLOCK ENSEMBLE TESTING

Aatmanirbhar
Secure | Precise | Reliable



To impact **9 billion devices**



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