



TrustPoint System/Service Overview

*Prepared for Workshop on Low Earth Orbit (LEO) PNT Systems
supporting International Committee on GNSS (ICG)*

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Agenda

- TrustPoint Company Overview (15 min)
- TrustPoint System/Service Overview (15 min)



TrustPoint Company Overview (15 min)

TrustPoint is developing a next-generation, fully **commercial LEO PNT service**, **operating independently** from GPS and other Global Navigation Satellite Systems (GNSS) to achieve the **performance, security, and reliability** required for autonomous navigation, critical infrastructure, and Low Earth Orbit (LEO) satellite operations.





TrustPoint Company Overview

- Founded June 2020
- Closed Initial Funding Mid-2021 from Blue-Chip Space Investor Data Collective Venture Capital (DCVC)
- Facilities in Northern Virginia (Dulles) and Silicon Valley (Mountain View), USA
- 10 Member Team Led by Proven Executives and Entrepreneurs
- Technology Focus: Satellite Payloads, Signals, and Receivers
- Segment Balance: 20% Government, 80% Commercial

Autonomous Vehicles



National Security



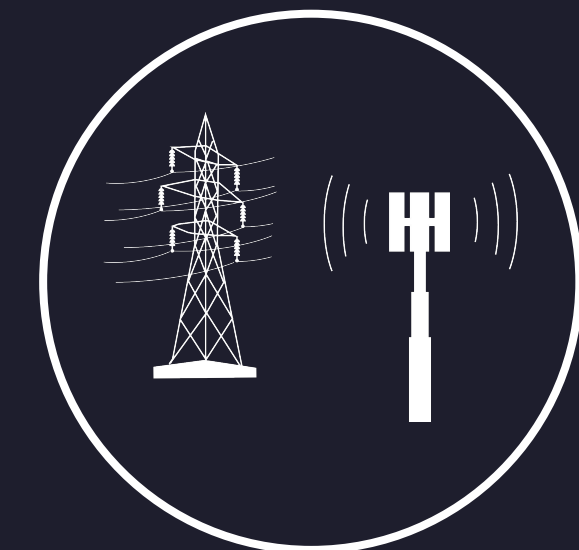
Aviation



Apps & Gaming



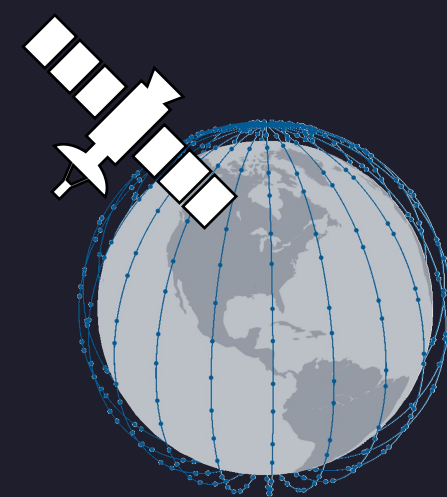
Infrastructure



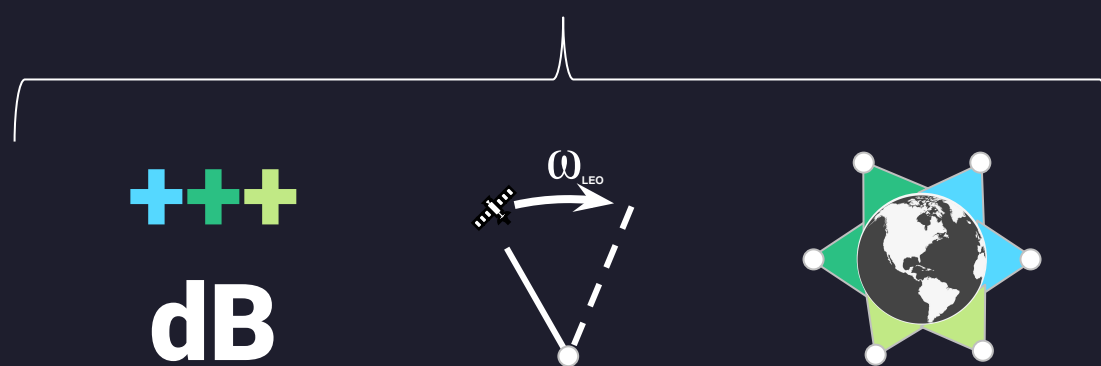
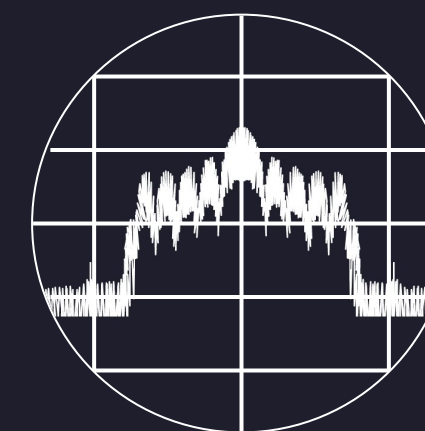


Dual-Use Commercial Solution

Commercial Low Earth Orbit (LEO) Satellite Constellation



Proprietary Signal Processing (Patented)



TRUSTPOINT

Low Cost



High Performance



Security





Features Enabled by our Commercial LEO PNT System

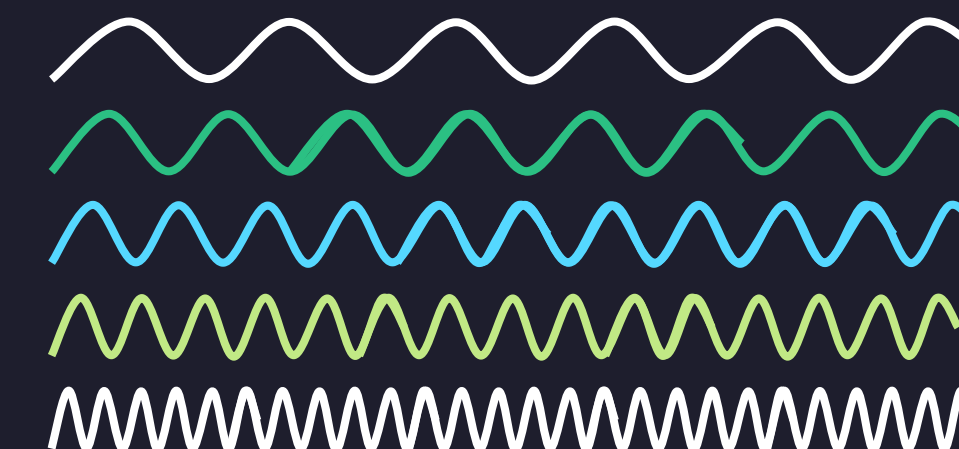
Signal Power

+++ dB

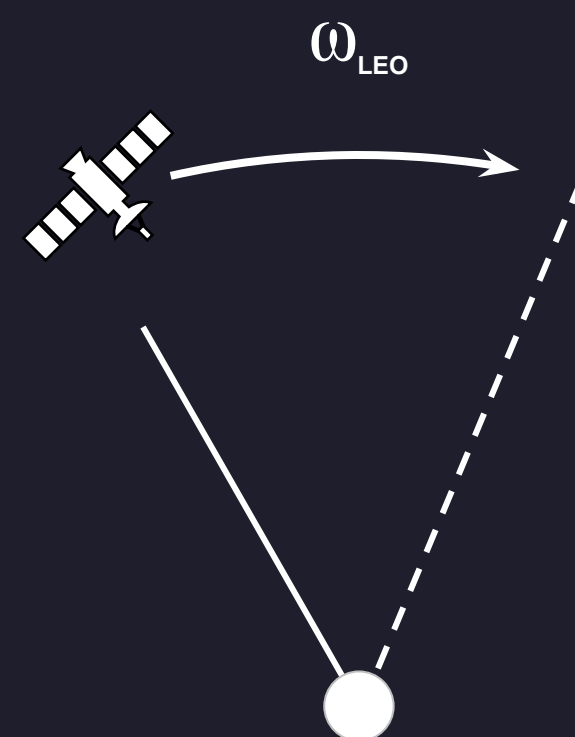
Encryption & Authentication



Frequency Diversity



Angular Velocity



Geographic Differentiation



Advanced Data Elements

011010110110
000101100100
101110001011
001001001001

New Features Enabled by New Infrastructure, Signals, and Commercial Models



Core Market Differentiators

Cost Effective



- Shared Private Investment
- \$250K Satellites
- No New Chip Design

Scalable



- Man Portable
- COTS Receiver Tech
- Commercial Security Approach

Resilient



- 300+ LEO Satellites
- Nodal Independence
- Affordable Upgrades & Replenishment



Planned TrustPoint Services


Space-to-Ground Terrestrial Service

Ground-to-Space LEO Service (LEONS)

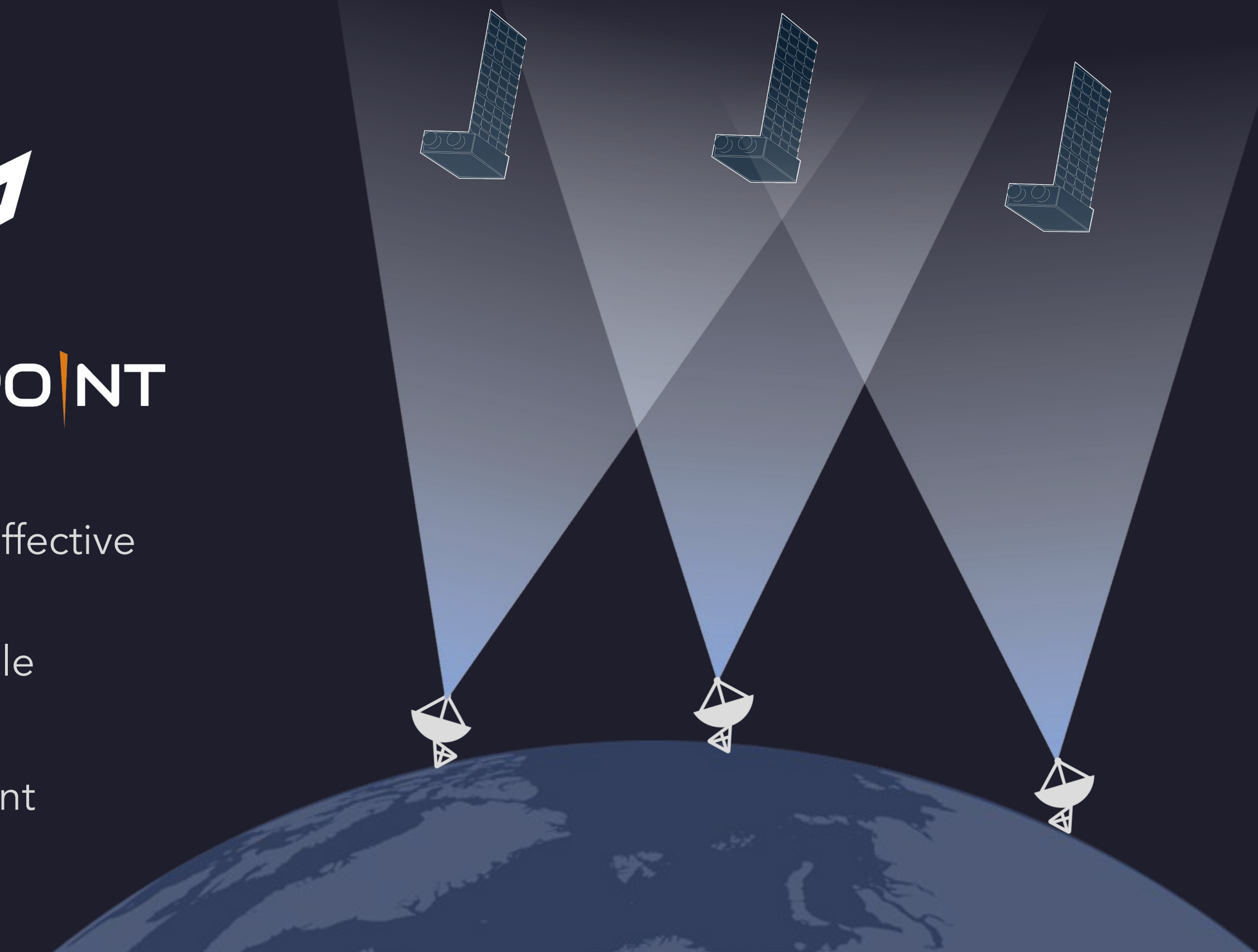
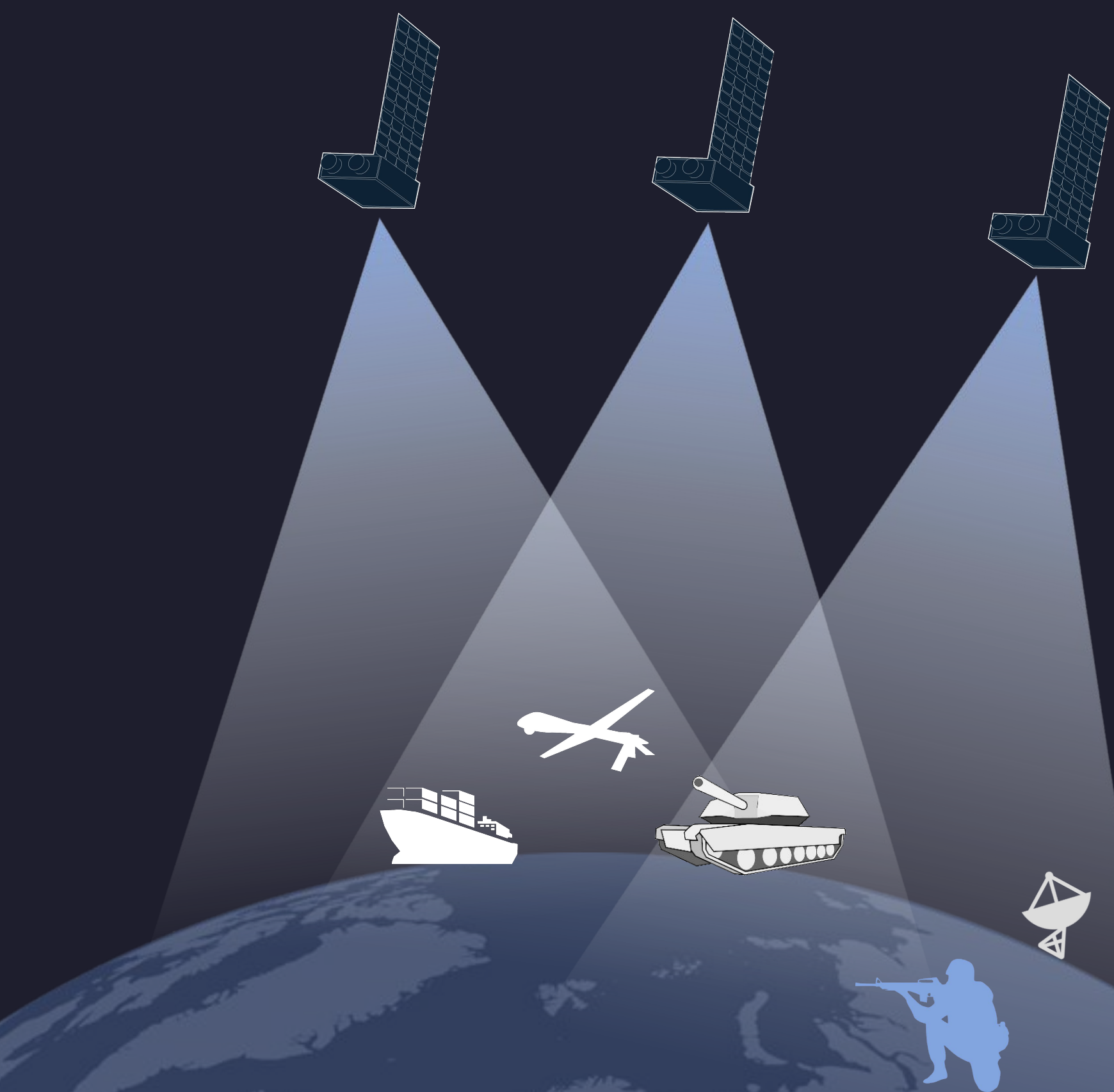


TRUSTPOINT

 Cost Effective

 Scalable

 Resilient



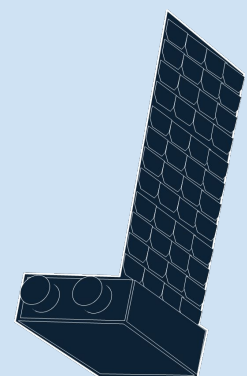


TrustPoint System/Service Overview (15 min)



TrustPoint System Overview

Space Segment



Satellite Bus

17:23:16.221 UTC



Time & Orbit Determination



Software-Defined Payload



Amps & Antenna

Ground Segment



TT&C Stations



Monitoring Stations

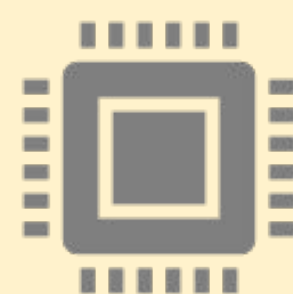


LEONS Stations

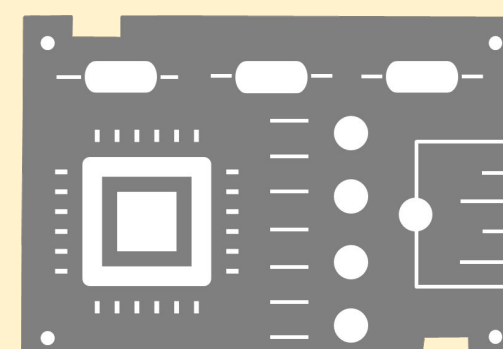


Virtual Ops Center

User Segment



Receiver IC



Rx Modules



User Antennas

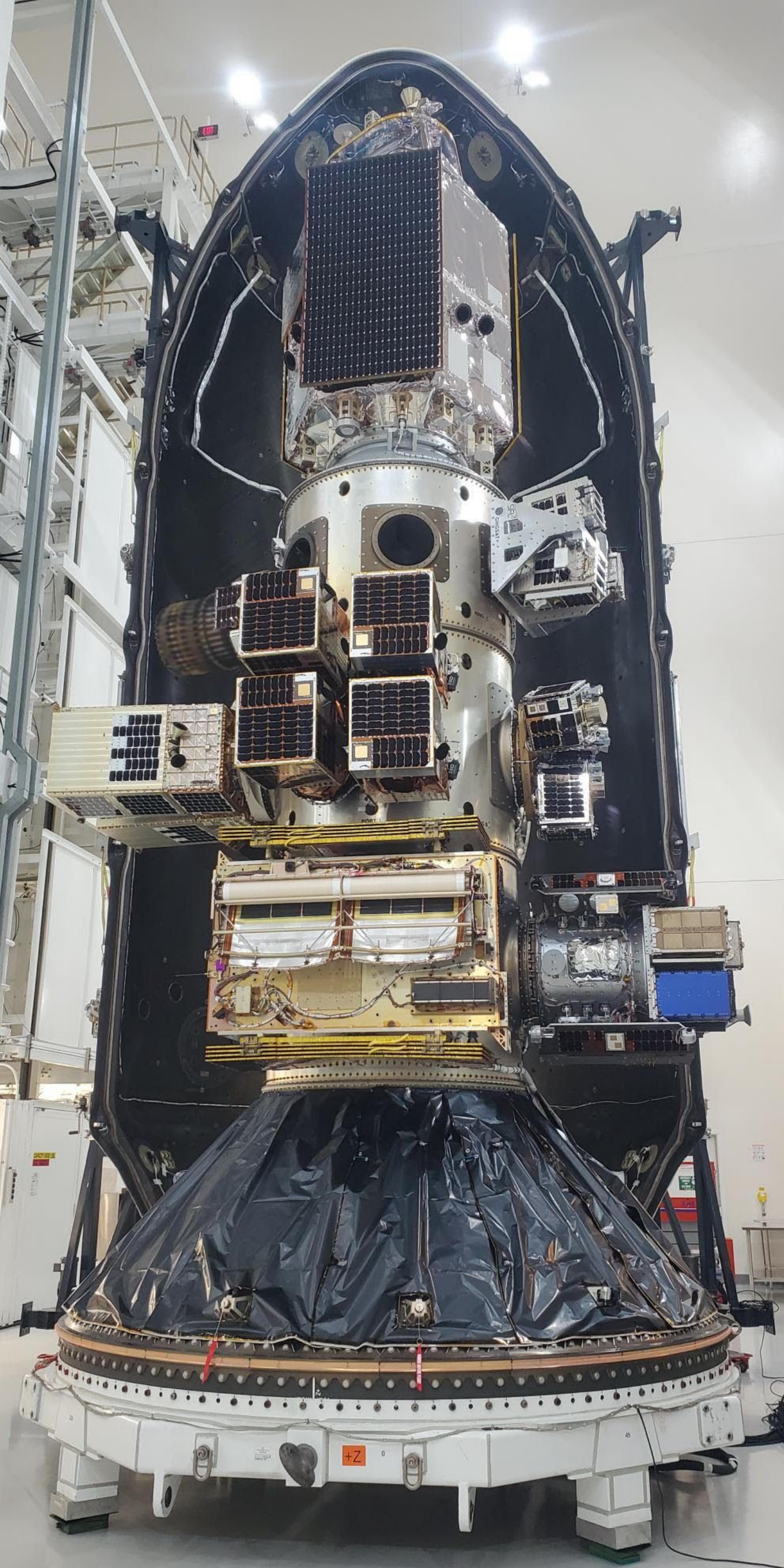


User Cloud



TrustPoint System Rollout

	Phase 0	Phase 1	Phase 2	Phase 3
System:	 +2 Satellites	 +32 Satellites	 +64 Satellites	 +288 Satellites
Coverage:	Global 4 Contacts Per Day	Global Hourly Contacts	Global Persistent	Global Persistent and Resilient
Services:	GPS Augmentation Secure Synchronization Timing Service Positioning Service	GPS Augmentation Secure Synchronization Timing Service Positioning Service	GPS Augmentation Secure Synchronization Timing Service Positioning Service	GPS Augmentation Secure Synchronization Timing Service Positioning Service



Launched April 15, 2023

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TrustPoint Service Summary

- Frequency → Focused on C-band Service (~5 GHz)
- Accuracy → <1 Meter Accuracy, Maturing to <10 cm Over Time
- Signal Power → Similar Power Flux Density to Heritage GNSS Systems
- TTFF → Rapid Signal Acquisition Approach
- Interoperability → Designed to Integrate with Heritage GNSS Solutions

• Spectrum Plans

- TrustPoint has filed for a license for RNSS/RDSS allocations above L-band
- TrustPoint does not intend to operate at L-band to offer operational resilience with our service given prevalent L-band jamming and spoofing



Thank You for Your Time!

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