



October 13, 2023

U.S. DOT PNT Strategic Plan

Comments prepared in response to listening session held on September 27, 2023
submitted via email

INTRODUCTION

The Open PNT Industry Alliance (OPIA) strengthens economic and national security by supporting government efforts to accelerate the implementation of positioning, navigation, and timing (PNT) capabilities for critical infrastructure. Made up of more than 20 companies, OPIA promotes the broadest possible range of technologies to meet the PNT requirements of critical infrastructure.

The coalition finds that the stated purpose of the U.S. DOT PNT Strategic Plan (*shown at right*) aligns with OPIA's mission, which is to promote open market concepts that preserve industry's long-term ability to harness its collective ingenuity to protect GPS/GNSS with multiple solutions that are technologically advanced, commercially viable, and based on a sustainable long-term funding framework.

The details provided below speak to the ways in which OPIA's views and DOT's objectives can be harmonized in the service of driving the responsible use of PNT and ensuring resilience for U.S. critical infrastructure.

To establish strategies to advance, protect, and coordinate services for civil PNT uses with U.S. Government Departments and Agencies and in coordination with public and private sector stakeholders, as well as international partners.

By developing and publishing this DOT PNT Strategic Plan, U.S. DOT is working to fulfill the following:

- Advance and evolve PNT services, data integrity, and resiliency
- Emphasize that US-based PNT use cases have worldwide breadth and regularly cross borders
- Ensure alignment with the strategic goals in U.S. DOT's Strategic Plan and RD&T Strategic Plan and coordinate alignment across Civil Departments and Agencies
- Offer the broader stakeholder community and future Administrations a better understanding of U.S. DOT's Civil PNT Leadership role and the challenges facing PNT
- Act as a guide for the future planning and budgeting required to ensure a resilient and cybersecure national critical infrastructure, as well as coordination among government agencies and with private sector and academic partners

OPIA BACKGROUND – ADVOCATING FOR INNOVATIVE COMMERCIAL PNT SOLUTIONS

The Open PNT Industry Alliance is a coalition of PNT manufacturers and service providers. The coalition members are dedicated to helping their customers back up and complement GPS by delivering multiple forms of PNT. Collectively, we advocate for partnerships between civil government officials and private sector leaders to implement commercial solutions that provide uninterrupted access to PNT sources that strengthen the resilience of critical infrastructure.

Executive Order 13905 states that it is essential to achieve national infrastructure resilience by backing up GPS with complementary PNT sources and promulgating best practices in cybersecurity through the responsible

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use of PNT. We agree that true resilience requires the widest possible diversity, and that is why one of our main objectives is to make certain that government requirements for PNT are sufficiently broad and include a range of technological solutions.

With the scope, complexity, and severity of disruptions and vulnerabilities evolving continuously, the combination of wide-ranging PNT solutions and emerging technologies offers superior protection to current and future threats by providing a backup to GPS and offering non-GPS forms of complementary PNT that improve national resilience.

Protecting critical infrastructure depends on having multiple technologies to work alongside GPS, safeguard GPS when threatened by disruption, and function in situations where GPS is degraded or denied — and do so with the requisite properties of performance quality and operational resilience. The PNT landscape is expansive enough to allow multiple and diverse complementary systems or approaches as alternatives to GPS with varied attributes to deliver against a complex and ever-expanding set of customer requirements.

Members of the alliance assert that a competitive marketplace is essential to provide full resilience, drive continuing innovation, and deliver cost-effective solutions. We encourage officials to ensure that the U.S. DOT PNT Strategic Plan acknowledges how the most robust GPS backup and protection capabilities and complementary forms of PNT required by critical infrastructure are only possible through an open approach that encourages technology diversity throughout the industry.

[DOT STRATEGIC GOAL #1: Advance PNT Capabilities & Services](#)

The combined intellect of industry should be harnessed in a collaboration between the public sector and private sector to develop solutions at scale. It's this ingenuity within the private sector, spurred by competition and public and private investment, that will drive the emergence of multiple cost-effective GPS/GNSS alternatives that evolve according to technological innovations and market dynamics. Similarly, innovation will address new and still evolving use cases not supported by GPS/GNSS.

Whether considered individually or taken together, OPIA members are driving imaginative R&D initiatives to continually improve performance specifications and expand the range of operational attributes of their PNT solutions. We are interested in joining DOT's effort to bring about the kind of advancements that meet the ever-evolving requirements for complementary PNT within a robust national PNT architecture.

[DOT STRATEGIC GOAL #2: Build Resiliency into PNT Services and Capabilities](#)

True resilience can only be attained by introducing and implementing the widest possible diversity of PNT systems, sources, and services. This means that a singular sole-source technology will not only fail to meet the need in terms of reliability and performance but also be unable to evolve the optimal attack prevention and threat response capabilities.

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OPIA holds that the technological landscape is diverse enough to allow multiple alternatives to GPS/GNSS with varied operational characteristics to deliver on the promise of resilience across a complex and ever-expanding set of customer requirements. Our members are ready to work with DOT to advance the pursuit of the critical initiatives defined in the PNT Strategic Plan.

DOT STRATEGIC GOAL #3: Address PNT Cybersecurity

Practicing the responsible use of PNT means not only having backups or complements to GPS in place and ready to go in case of an adverse event but also ensuring that PNT is part of any organization's cybersecurity posture. The U.S. Government has provided resources, tools, and guidance that can help critical infrastructure owners and operators establish and maintain high-performance platforms and systems that are also exceptionally resilient in the face of security threats.

The NIST Foundational PNT Profile gives security professionals within an organization the tools and guidance to identify systems dependent on PNT, identify appropriate PNT sources, detect disturbances and manipulation of PNT services, and manage the risk to these systems. The DHS Resilient PNT Conformance Framework facilitates the development and adoption of expected behaviors in resilient PNT equipment, enabling improved risk management, determination of appropriate mitigations, and decision making by end-users. Likewise, the DHS PNT Reference Architecture incorporates the latest cybersecurity principles (e.g., zero trust) and combines them with PNT resilience concepts.

OPIA endorses DOT's efforts to incorporate security-oriented PNT principles into programs initiated through the PNT Strategic Plan. The members of the coalition stand ready to support DOT and its pursuit of critical initiatives to ensure not only that PNT systems enabling critical infrastructure are protected by cybersecurity measures that conform to the responsible use of PNT, but also that PNT capabilities are themselves included as part of the broader cybersecurity construct for critical infrastructure owners and operators.

DOT STRATEGIC GOAL #4: Ensure Spectrum Availability & Protection for PNT Services

Members of our coalition hold the fervent belief that GPS spectrum must be protected to maintain continuity of operations for those critical infrastructure applications that rely on GPS every day. The alliance has similarly held that any real or potential threats to GPS spectrum must be swiftly and decisively thwarted. Coalition members have a wide range of current and emerging technologies to protect GPS or that require their own spectrum to be fully deployed in the market for the benefit of critical infrastructure owners and operators.

OPIA supports DOT programs and critical initiatives to ensure that GPS and complementary PNT services can enjoy access to the spectrum that they need today and tomorrow and that such spectrum is protected from harmful interference to ensure resilience.

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DOT STRATEGIC GOAL #5: Lead U.S. Civilian PNT Coordination

OPIA has consistently championed the principles and government directives of EO 13905 in the nearly four years since the executive order was issued. We recognize the U.S. Government's lead role in promoting the civilian use of PNT and have remained willing to help support the cause and amplify the message, most notably among critical infrastructure owners and operators with PNT-dependent systems.

The market interests of our members are as diverse as our technologies. That is, the companies that make up the Open PNT Industry Alliance are involved in all manner of working groups, standards bodies, technical and commercial conferences, and other market efforts that have varying degrees of U.S. Government exposure. DOT can count on OPIA and its members to be willing and active private sector partners to aid DOT's fulfillment of this important goal.

SUMMARY

We have expressed our support by stating our alignment with the U.S. DOT PNT Strategic Plan and articulating just a few ways that we can potentially collaborate. The joint aim, of course, is to realize our shared vision for the widespread adoption of PNT to ensure the greatest possible resilience of U.S. critical infrastructure.

The Open PNT Industry Alliance appreciates being recognized in the draft plan as an industry partner and looks forward to working with DOT to achieve its strategic PNT goals.

Very truly yours,



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Open PNT Industry Alliance Members

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Focus Telecom	www.pnt-security.com
Geospatial Alpha	www.geospatialalpha.com
infiniDome Ltd.	www.infinidome.com
Iridium Communications Inc.	www.iridium.com
istlink	www.istlink.com.tr
Jackson Labs Technologies, Inc.	www.jackson-labs.com
NAVSYS Corporation	www.navsys.com
NextNav LLC	www.nextnav.com
OPNT B.V.	www.opnt.nl
Oscilloquartz	www.oscilloquartz.com
OshoCorp Global Pvt. Ltd.	www.oshocorp.com
Parsons	www.parsons.com
ProTrack	www.protrack.co.il
Qulsar, Inc.	www.qulsar.com
Safran	www.safran-navigation-timing.com
Satelles, Inc.	www.satelles.com
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