



SPACE-BASED POSITIONING
NAVIGATION & TIMING
NATIONAL ADVISORY BOARD

Communications and External Relations

4 Dec 2024

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Congress

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Internal Recommendations

- PNT Advisory Board website separate from GPS.gov - **PENDING**
 - Pends NASA coord and action w/ NCO – funding?
- PNT Advisory Board LinkedIn Account - **PENDING**
 - NASA General Council opinion?
- 75% of PNT Advisory Board meetings in DC area, close to city to enable officials to attend
 - NASA analysis and response - **PENDING**
- Meet with SPG & Space Council's Users' Advisory Group's National Security Subcommittee
 - National security PNT concerns - **COMPLETE**



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19 July 2024

MEMORANDUM

FROM: Thad Allen, Admiral (USCG, Ret), Chair, National Space-based Positioning, Navigation, and Timing (PNT) Advisory Board

TO: Honorable Kathleen H. Hicks
Deputy Secretary, Department of Defense
Co-Chair, National Space-based PNT Executive Committee

Honorable Polly E. Trottenberg
Deputy Secretary, Department of Transportation
Co-Chair, National Space-based PNT Executive Committee

SUBJECT: Report of the 30th National Space-based PNT Advisory Board Meeting and Associated Activities

Madam Co-Chairs,

The National Space-based PNT Advisory Board (PNTAB) held its 30th session on April 24-25, 2024, in Colorado. The meeting was held under the provisions of the Federal Advisory Committee Act, with appropriate public notice and documentation for the public record. At this meeting, the Board reaffirmed the recommendations in my January report and approved three additional recommendations (see Enclosure). The Colorado Springs session was the first of the Board's Protect, Toughen, and Augment (PTA) of the Global Positioning System (GPS) for all users, our framework to organize our advice. The scope of our work continues to broaden to consider the evolving capabilities of Global Navigation Satellite Systems (GNSS), (2) complementary PNT technologies (terrestrial and space-based), and ongoing policy, strategy, and governance challenges presented by global GNSS competition and execution of the PNT. I delayed this report as further context was provided at the EXCOM's Executive Steering Group (ESG) meeting on May 29, 2024, and in subsequent classified briefings by the 2nd Space Operations Squadron (2SOPS).

PNTAB Chair's Bottom Line Up Front (BLUF)

- Reliable and resilient PNT (space-based and terrestrial) faces a broad spectrum of risks and challenges. Regarding GPS specifically and U.S. PNT generally, existing policies, resourcing, and governmental program management are fragmented



**NATIONAL
SECURITY
SPACE
ASSOCIATION**

**America's Asymmetric Vulnerability to
Navigation Warfare:
Leadership and Strategic Direction
Needed to Mitigate Significant Threats**



[White House advisory group blasts US government, DoD inattention to GPS woes](#)

The President's National Space-based Positioning, Navigation, and Timing Advisory Board recommends that the Biden administration create a new "locus of authority and accountability for PNT decision-making beyond DoD GPS program management."

[US leaders have been warned to focus on GPS and PNT to protect the nation](#)



[Experts to PNT leaders: "It's not working!"](#)



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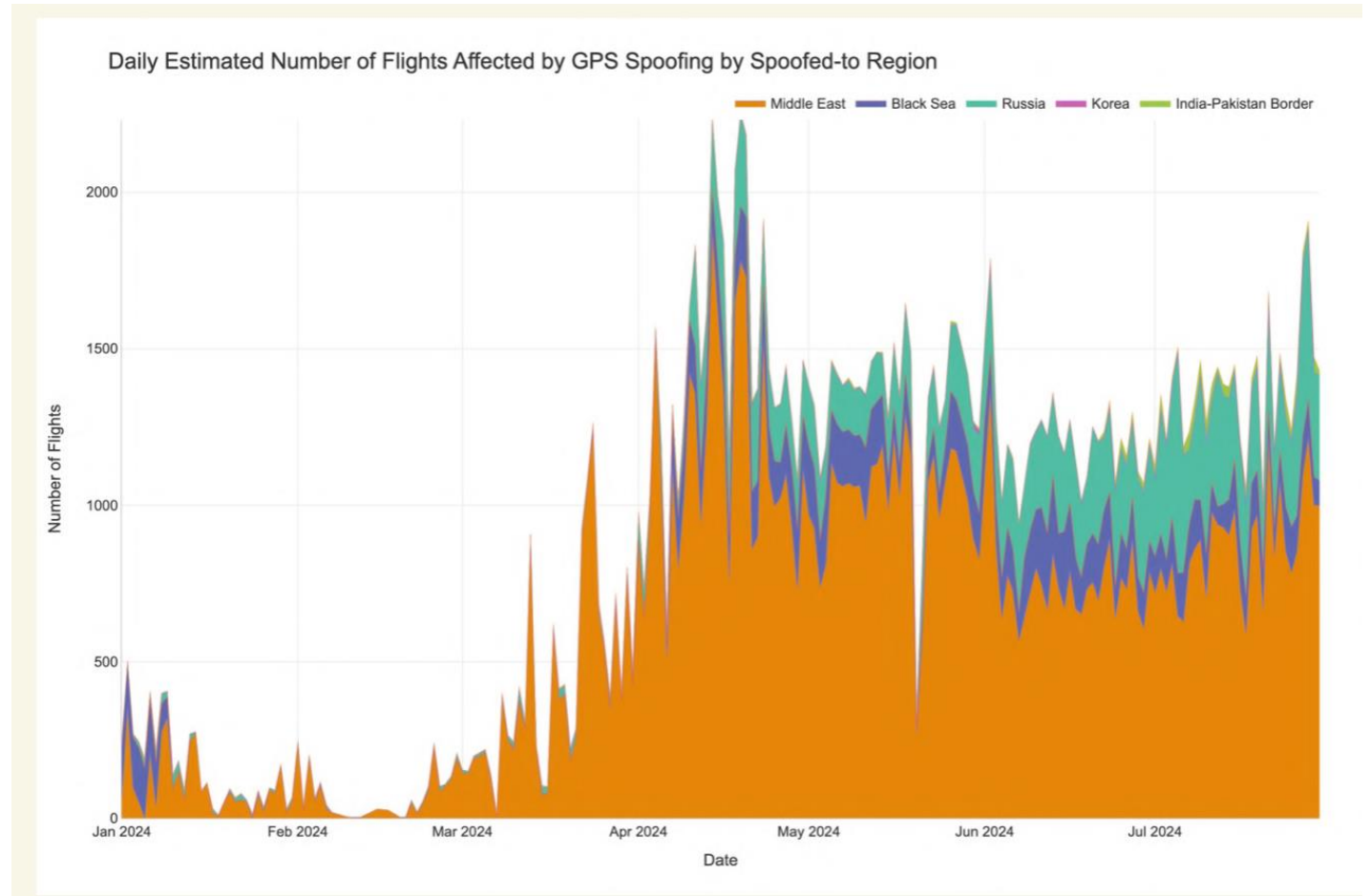
GPS Spoofing

FINAL REPORT

OF THE GPS SPOOFING WORKGROUP

- Technical Analysis & Impact
- Flight Crew Guidance
- Safety Concerns
- Solutions
- Recommendations

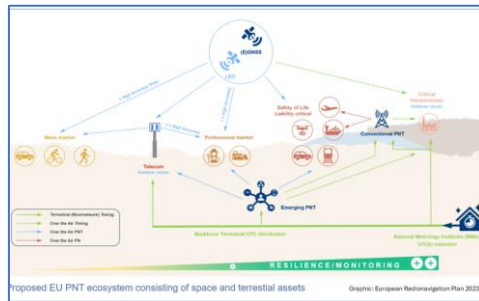
OPSGROUP





China completes national eLoran network

October 7, 2024 - By [Jesse Khalil](#)



Europe moving toward a “timing backbone” and looking for input

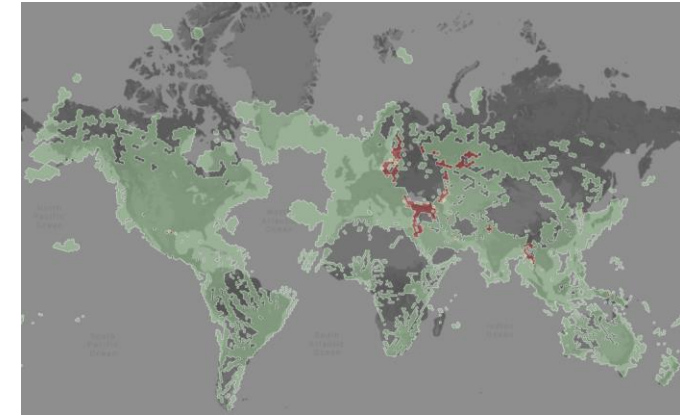
Clock, eLoran, quantum and best practices – UK PNT forging ahead



[Opinion](#)

The urgent need for a national GPS jamming detection system

[Sean Gorman](#) November 27, 2024



[Opinion](#)

America is at risk of high impact GPS jamming and spoofing from space



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Raising Awareness



Could you live without GPS? It's OK, the economy can't, either.



Hudson Institute

**Navigating GPS
Vulnerabilities: Implications
for US Economic and
National Security**



**A Call to Acknowledge and Step-Up:
PNT Governance for a Changed World**



Assured PNT Summit



SPACE-BASED POSITIONING
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Working Draft

Presidential Transition Issue Paper

Lack of PNT Leadership Endangers US

Cause for Action: Positioning, navigation, and timing (PNT) services underpin all the systems and technologies that enable modern life. GPS has become the primary source of PNT and has enabled unprecedented benefits for the U.S. and the world.

The last four years have seen massive increases in threats and disruption of GPS signals around the globe, especially impacting aviation. Additionally, GPS's capabilities are being surpassed by other national satnav systems.

Threats to GPS impact America's national defense, public safety, economic security, and global standing.

The first Trump administration's SPD-7 and EO 13905 sought to address these issues. Yet, there has been little progress fielding improved PNT capabilities.

Ensuring PNT for domestic critical infrastructure, economic competitiveness, and military superiority is a vital national interest. It requires urgent and high-level leadership attention.



Working Draft

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Threats include:

- **National Defense** – degraded combats systems, in homeland degraded outload, logistics, defense industrial based
- **Public Safety** – domestic terrorists disrupt first response to contingencies, civil unrest...
- **Economic Security** – Economy restructured around PNT from GPS over last 40 years. Significant disruption could be devastating
- **Global Standing/ Great Power Competition** – China much more resilient, possible “GPS blackmail,” loss of GPS as “first and preferred” global choice for satnav, impact to nation and global standing of significant disruption.



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Recommendation: The new administration must ensure resilient national PNT capabilities. This will require evaluating the leadership structure and decision-making process including funding for military and civil capabilities.

Public and Private Roles - The U.S. government has been the authoritative source for time and navigation utilities for over 150 years. As technology has evolved, commercial and private entities have become able to establish their own references, add value and help in distribution of authoritative time and location. Government and private sector roles and responsibilities must be carefully considered in light of national and economic security needs.

Other Advice & Recommendations: The Advisory Board has made series of recommendations to the government over the last two years that are still pending action. These are summarized in the attachment.