

Defense Matters

Commanding a PNT Enterprise Vision (Wallowing around rudderless takes us nowhere)

In my efforts to put my thoughts to paper for this article I have considered several different approaches. After numerous attempts, I have decided it is best to simply come at it straight on — the *Bottom Line Up Front* (BLUF) approach is: The Trump administration needs to take charge and develop a new national positioning, navigation, and timing (PNT) policy focused on establishment of a robust, resilient national PNT infrastructure.

The nation is embracing rapid technological change in areas such as autonomous vehicle operations, artificial intelligence, the Internet of Things, and massively large spatial data analyses, all of which have elements of position and time embedded throughout their designs. Yet, the PNT policies to which the nation is currently tied are rooted in the last century, when the Global Positioning System (GPS) was just reaching maturity and before its influence on human activities had fully evolved, along with the diverse PNT Enterprise it has spawned.

The Clinton Directive

With the benefit of 20-20 hindsight, we can evaluate the interagency process that culminated in the issuing of the 1996 Clinton era Presidential Decision Directive (PDD/NSTC-6) that focused on GPS. That singular effort channeled divergent agency views and served as a significant means to motivate the interagency in pursuit of a common goal to make the newly operational GPS the international gold standard for space-based PNT systems.

The Clinton era policy provided a strategic vision for the future management and use of GPS that included a broad range of military, civil, commercial, and scientific interests, both national and international.

The initiative to pull together an interagency team to help structure the policy ultimately helped inspire the agencies to work together to fulfill six key goals:

- 1) Strengthen and maintain our national security;
- 2) Encourage acceptance and integration of GPS into peaceful civil, commercial and scientific applications worldwide;
- 3) Encourage private sector investment in and use of U.S. GPS technologies and services;

- 4) Promote safety and efficiency in transportation and other fields;
- 5) Promote international cooperation in using GPS for peaceful purposes; and
- 6) Advance U.S. scientific and technical capabilities.

The Bush Policy

With that two-decade-old experience as an example of how focused policy leadership can achieve results, one can now also evaluate the Bush era NSPD-39 policy that established a new national policy and superseded NSTC-6.

In contrast to NSTC-6, which raised awareness of GPS as a national asset, the Bush policy, which remains in force today, has not proven to be nearly as successful in motivating the interagency to work together to achieve the prescriptive goals it established. Beyond the ongoing promotion of GPS internationally, the direction to fully exploit its capabilities for homeland security and to protect the services it provides from malicious or even unintentional disruption remains unfulfilled.

As one example receiving considerable attention today, the Bush policy is clear and direct in assigning responsibility to the Secretary of Transportation, in coordination with the Secretary of Homeland Security, to “develop, acquire, operate, and maintain backup position, navigation, and timing capabilities that can support critical transportation, homeland security, and other critical civil and commercial infrastructure applications within the United States.” The Bush policy additionally tasked the Departments and Agencies to “allocate the resources required to fulfill the objectives of this policy.”

But today, nearly 14 years later and two administrations after the end of the Bush Presidency, the only action taken on PNT backups was direction by the Obama administration in 2010 to terminate and order the dismantling of the domestic Loran-C network, which was operated by the U.S. Coast Guard. That action was accepted with enthusiasm by the Coast Guard, and it took an act of Congress in 2014 to halt the destruction of Loran stations until the Bush policy requirement to provide a GPS backup could be satisfied. An enhanced version of the Loran-



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C system (called eLoran) has long been a viable candidate to provide such backup capability.

Beginning with this Congressional action in 2014, and despite additional Congressional interest stimulating agency activity in each year since, the interagency players remain engaged in handwringing and responsibility deflection as each seeks to avoid the resource and management responsibility of providing the GPS backup capability that the national policy requires.

A 21st Century Policy

Returning to the BLUF, the challenge for the Trump administration will be to energize the interagency to re-ignite U.S. leadership in employing applications of the PNT Enterprise for U.S. national benefit. The emphasis for the new end-state policy must expand to address all areas of federally enabled PNT Enterprise capabilities vital to U.S. national

security, critical infrastructure protection, economic prosperity, and scientific interests while continuing to stimulate technical innovations that support U.S. business growth.

Viewing today's U.S. PNT challenges from the perspective of international competition, a new national PNT policy should be formulated with a vision to recapture and broaden the initiatives that the U.S. was able to leverage as part of the 1996 policy direction that "emphasized the acceptance of GPS and U.S. Government augmentations as standards in domestic and international transportation systems."

It is neither surprising nor should it be particularly threatening that U.S. preeminence in space-based PNT is being impacted as other nations and regions are fielding their own GNSS. It has been more than two decades since GPS became operational, and such successful technologies naturally encourage imita-

tion and competition. The U.S. needs to recognize that demands on GPS and the PNT Enterprise as a result of modern technology innovations grow by the day. So, we need to try harder.

Resting on our laurels with GPS as a limited U.S. vision of PNT going forward is not a recipe for continued success. Without redefining the PNT landscape and establishing new, clear purposes and goals, we risk being outpaced by international competition, on the battlefield and in the marketplace. It is incumbent on the Trump administration to take steps now to recapture a national PNT initiative that firmly establishes U.S. leadership of a new, diverse PNT Enterprise. 🌐

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