

## Defense Matters

Resilient PNT –The Missing Ingredient?

# A New U.S. DoD Arctic Strategy

*Definition: “Strategy” – A plan of action to achieve an overall aim*

In mid-July the Department of Defense (DoD) released the 2024 DoD Arctic Strategy as an update to an earlier strategy released in June 2019. The previous strategy was directed by the John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019.

### Setting the Stage

The forwarding memorandum, directed to the Senior Pentagon Leadership, Combatant Commands, Defense Agencies and DoD Field Activity Directors, is signed by Secretary Lloyd Austin, and “directs the Department to enhance its Arctic capabilities, deepen engagement with Allies and partners, and exercise our forces to build readiness for operations at high latitudes.”

The END STATE objective of the strategy is for the DoD, in cooperation with Allies and partners, “to preserve the Arctic as a stable region in which the U.S. homeland remains secure and vital national interests are safeguarded.”

Secretary Austin’s memo indicates that the DoD’s Arctic strategy supports the 2022 National Security Strategy as well as the 2022 National Strategy for the Arctic Region. It implements the 2022 National Defense Strategy through a “monitor-and-respond” approach to preserving stability in the Arctic.

The strategy, as highlighted in the referenced documents, supports the premise that the Arctic is becoming more economically and militarily significant based on three specific occurrences: a growing cooperation between the People’s Republic of China (PRC) and Russia; the enlargement of NATO; and a reduction in sea ice (due to climate change) making the region more accessible to shipping.

### Preserving Freedom of Navigation

As with earlier versions, the 2024 update continues to highlight as one key focus area the preservation of navigational rights and the freedom of movement of shipping in the region.

The strategy states that the DoD will continue to monitor potential threats to freedom of navigation and will “protect the global mobility of U.S., Allied, and partner forces by conducting Arctic maritime exercises, operations, and transits, in coordination with these nations, as appropriate.”

In the section defining the **Strategic Environment**—clearly added with full awareness of operational realities be-

ing experienced in the Baltic, Ukraine, Middle East, and Far East today—it is anticipated that future Russian threats are likely to include GPS jamming. These forecast jamming encounters are characterized as being “lower-level destabilizing activities” when compared to other activities such as nuclear, conventional, and special operations threats. To say the least, this is an interesting statement to include in the underlying plan, but no additional attention is given to dealing with this anticipated threat. More on that to follow.

In order to achieve the **END STATE** objective, the strategy indicates that the DoD will “monitor-and-respond” through three lines of effort. The three lines of effort are:

1. **Enhance** the Arctic capabilities by continuing to invest in sensors, intelligence, and information-sharing capabilities. DoD will enhance its understanding of the Arctic operating environment and its ability to manage risk. Additionally, DoD will review existing equipment and infrastructure and develop options to sustain a monitor-and-respond approach;
2. **Engage** with our Allies and partners; Federal, State, and local authorities; Alaska’s Native tribes and communities; and industry in order to strengthen integrated deterrence and increase our shared security; and
3. **Exercise** presence in the Arctic by training both independently and alongside Allies and partners to demonstrate interoperability and credible joint capabilities while supporting homeland defense and global power projection operations.

Each of these lines of effort is further explained by listing examples of focus areas where specific emphasis will be applied in planning to execute the strategy. For example, under the heading of **Enhance**, the DoD will: improve and modernize sensors for missile warning and all-domain awareness; improve tactical and strategic communications above 65 degrees North latitude; invest in manned and unmanned aerial ISR systems; improve



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modeling of the Arctic's atmospheric and oceanographic environment; and maintain infrastructure that will be important for personnel recovery and search and rescue missions in a region where positioning and navigation are more challenging than at lower latitudes.

### Risk Management

In developing a strategy, it is prudent to surmise that the plan it envisions should always consider the risks that may be encountered during the course of its implementation. However, no strategy can be expected to perfectly anticipate all the challenges that will be met as a mission unfolds.

With that said, there will always be risks that arise from inaccurate predictions. The reality is that threat assessments may prove to be either over- or under-estimated. When encountered, foreseen risks can be hedged and managed when they arise. But unforeseen risks that arise from inaccurate predictions, or from risks that are discounted, can be the most damaging to achieving the strategic objectives.

One significant risk that seems to have been discounted is in the plan's reference to the likelihood of encountering GPS jamming and the attendant loss of continuous, reliable positioning, navigation, and timing (PNT) information. The plan is hauntingly silent on how to accomplish the mission if such a situation is confronted and resilient PNT is not accessible.

Reliance on GPS as a single source of PNT, with no acknowledgment that having access to other reliable sources of PNT in the Arctic, could very well be the Achilles' heel to the strategy's ultimate success.

For a strategy to be successful, it is vital that the plan it envisions is executable despite the threat environment it may face.

It is clear that the authors of the Arctic strategy did not appreciate the significance of potential loss of GPS service and the impact such loss would have on the lines of effort described above.

Resilient PNT is essential to maintaining communications and command and control, to conducting ISR and autonomous vehicle operations, and for operations in general in potential navigation warfare environments.

The strategy speaks to maintaining necessary infrastructure; however, neither the U.S. nor our allies have maintained legacy terrestrial capabilities across the northern regions which could provide essential position and timing backup service should GPS be jammed by an adversary. In fact, within the last five years, the U.S. and other NATO nations with Arctic responsibilities have actively dismantled viable GPS backup infrastructure available from Loran technology. No other terrestrial backups remain in the Arctic regions, and now lacking such effective backups for GPS in the Arctic, the plan is woefully shortsighted. It presents undue risks not only to achieving the economic and national security goals of the plan, but also increases the threat to loss of life.

### Confronting Challenges

While this column was being drafted, the Government Accountability Office (GAO) released a September 2024 Report to Congressional Committees titled, *GPS MODERNIZATION Delays Continue in Delivering More Secure Capability for the Warfighter* (GAO-24-106841). In the report, the GAO found that the Space Force continues with GPS modernization, but significant work and challenges remain. Specifically, potential delays to delivering future satellites could risk having 24 M-code-capable satellites in continuous operation through the 2030s; ground control segment modern-

ization has completed some key testing, but further testing and demonstrations are needed before the DoD can accept the system; and after years of delay, the first complete increment of M-Code user equipment—microchips and cards that process GPS M-code signals—is still not being fully fielded across the Joint Force.

### Positioning, Navigation, and Timing Alternatives

The U.S. has been admiring the challenge of developing a terrestrial-based backup for GPS for more than 20 years. These discussions have for all practical purposes been focused on areas within the lower 48 states rather than the remote areas in the Arctic region, but with the opening of Arctic sea lanes, this region is now in play too.

If the Arctic Strategy is to be successful, added energy and resources must be factored into how PNT other than GPS will be made available to the DoD as well as by the Allied partners and agencies that are identified as partners in the plan.

To continue to ignore the fact that GPS jamming can be anticipated as a known destabilizing activity across the Arctic region, and yet without taking steps to address it, is knowingly and willfully wrong. 