



POSITION STATEMENT

May 12, 2020, statement of Dr. Michael O'Connor, CEO of Satelles, Inc., in response to a U.S. Department of Homeland Security report on PNT that was submitted to U.S. congressional committee leaders on April 8, 2020 and released by DHS on May 6, 2020

Satelles is pleased to see the recent [*Report on Positioning, Navigation, and Timing \(PNT\) Backup and Complementary Capabilities to the Global Positioning System \(GPS\)*](#) delivered to Congress by DHS.

This important report highlights the urgent need for GPS backup for critical applications, and it identifies and characterizes a variety of solutions that are available to meet this need today. The report also describes the essential role of the Federal Government in urging industry to implement multiple technologies, without making the mistake of providing or selecting a single PNT solution.

DHS goes on to define a baseline requirement for timing services accuracy for critical infrastructure. Not only does Satelles meet or exceed the precision timing specifications stated by DHS, but also our solution provides national coverage (including Alaska, Hawaii, and U.S. territories) and is commercially available now.

We applaud the Federal Government's efforts to avoid disruption of our national critical infrastructure in those sectors that depend on PNT services, and we fully agree with the recommendations and findings of this thorough report, including:

- ▶ **Many out-of-domain solutions exist today.** DHS notes that "critical infrastructure systems that would cease to operate without [the primary PNT domain of] GPS do so because of design choices, cost factors, increasing efficiency, or other considerations—not because of a lack of available additional means to navigate, determine location, or synchronize." As DHS goes on to say, "there are smart, market-oriented solutions that will contribute to enhanced resilience that the U.S. Government should continue to promote, enable, and stimulate." STL is just one of these currently available PNT platforms, and its TRL 9 maturity (the highest technology readiness level) is validated by its use right now in banks, major stock exchanges, data centers, and other businesses in the United States and overseas.
- ▶ **Each critical infrastructure sector has different needs, but there are certain baseline requirements.** We believe that a heterogeneous backup to GPS is in the public interest, so we agree with the report's statement that "DHS could not identify generic specifications for a national backup" because "[t]he position and navigation functions in critical infrastructure are so diverse that no single PNT system, including GPS, can fulfill all user requirements and applications." However, as DHS explains, "a minimal acceptable precision of anywhere between 65-240 nanoseconds [...] supports all critical infrastructure requirements." The report states that this range "is expected to meet future requirements, including 5G." Based on the precision of timing references used by receivers, STL currently delivers timing accuracies between 50 to 240 nanoseconds, proving that it is ready to meet timing requirements that strengthen the resilience of critical infrastructure.
- ▶ **The Federal Government should neither provide nor select a single PNT solution; rather, it should encourage diversity and invest in multiple technologies.** With regard to any kind of government preference for a particular PNT system, DHS states that "the government would have to consider the repercussions of such a system in the marketplace" because "[a] free government system would negatively impact commercially available PNT systems by directly competing with them." Our long-held view is that a truly resilient and globally available GPS backup capability is only possible with an open,



technology-neutral approach that encourages diversity. We agree with DHS that “[t]he Federal Government should encourage adoption of multiple PNT sources [by] critical infrastructure owners and operators [and] focus on facilitating the availability and adoption of PNT sources in the open market.”

- ▶ **Commercial implementation will not happen without directives and requirements from the U.S. Government.** “[W]ithout regulatory requirements or positive benefit-cost equations, adoption of non-GNSS services is unlikely,” DHS states in its report, adding that “business decisions, the lack of a Federal mandate, and potentially an underappreciation of the risk associated with GPS dependence are factors in the lack of resilience to GPS disruption.” We agree that an action plan is needed, which is why we are delighted to see that the findings of the report are aligned with [a recent presidential executive order on PNT](#). DHS directs that “[w]hatever the source of the PNT, it is incumbent on users to apply the principles found in Executive Order 13905, Strengthening National Resilience Through Responsible Use of Positioning, Navigation, and Timing Services [to] reduce the risk associated with the disruption or manipulation of PNT services.”

We look forward to working with civil government officials and private sector leaders to implement precise timing solutions that provide uninterrupted access to PNT sources that protect critical infrastructure and strengthen our national resilience.

Dr. Michael O’Connor
Chief Executive Officer
Satelles, Inc.

Headquarters: 1835 Alexander Bell Dr., Suite 240, Reston, VA 20191

Website: <https://www.satellesinc.com>

Twitter: <https://twitter.com/satellesinc>

LinkedIn: <https://www.linkedin.com/company/satelles/>