



Australia & United States (December 07, 2021).

LOCATA AND URSA NAV ANNOUNCE TECHNOLOGY PARTNERSHIP FOR RESILIENT PNT

Russia's recent threat that it could [blow up all the GPS satellites](#) with its new anti-satellite technology (ASAT) should come as no shock to those following space-related events. In the past, China shot down one of its own Low Earth Orbit Satellites (LEOS) using a medium-range ballistic missile, and the United States used a modified antiballistic missile to shoot down one of its own spy satellites. Blowing up satellites, solar flares, ever increasing hazards from "space junk", and thousands of new satellites in the launch queue all make space a congested and increasingly dangerous place.

Locata Corporation and Ursa Navigation Solutions, Inc. ("UrsaNav") today announced a Technology Partnership specifically aimed at providing resilient PNT (Positioning, Navigation, and Timing) solutions to national governmental and commercial interests globally. Combining Locata's high-accuracy local-area and UrsaNav's very wide-area PNT produces a potent solution which lessens any nations' dependency on easily disrupted and increasingly vulnerable space-based signals.

Locata has for many years been delivering proven centimeter-level positioning and unparalleled picosecond-level timing to the world's most demanding users - including the USAF, NASA, and many globally significant commercial partners. Professional users in demanding industries like ports, mining, the military, aviation, automotive, logistics, indoor positioning, and high-accuracy timing depend on Locata systems every day for their livelihoods.

UrsaNav's eLoran and LFPhoenix™ technologies provide nanosecond-level timing, meter-level positioning, and short-message-service-like data transmissions at distances often exceeding 1,000 miles over land, and 1,800 miles over water. Their Two-Way Low-Frequency Time and Frequency Transfer (TWLFTFT) service is embedded in the PNT signal, providing a wireless timing synchronization conduit between any set of transmission sites. When UTC-synchronized time is injected into any transmission site (i.e., "node"), say from USNO/NIST, NPL, or BIPM, it can then be securely networked to every other node in view. UrsaNav's patented encryption techniques can be applied to the entire signal, or any component.

Combining these already-proven technologies enables development of national-level terrestrial positioning and timing systems which are resilient, sovereign-controlled, and flexible enough to meet both very long haul "backbone" and local high-accuracy Critical Infrastructure needs. With built-in failover capability and overlapping coverage, overreliance on space can be mitigated. Many publicly available reports show both Locata and UrsaNav technologies have been tested by the US and the UK under extreme GPS jamming and spoofing conditions, and yet they continued to provide the PNT their users require.

The credibility of this Technology Partnership has already been undeniably validated in a recent, seminal 1,176-page Report produced on behalf of the European Space Agency (ESA). The [MarRINav Report](#) – funded by ESA and researched over several years by eight top UK/EU bodies – was tasked to recommend technologies which should be adopted by the UK & EU to ensure



uninterrupted maritime commerce, and generally protect their Critical National Infrastructure. The MarRINav experts recommended eLoran (e.g., UrsaNav) and Locata as the nominated terrestrial technologies for protection of UK shipping, ports, and other key critical infrastructure sectors. This is a truly viable *blueprint for the future of civilian-based PNT* which Locata and UrsaNav are actively working to enable. In the United States, Congressional actions continually indicate their preference for a low-frequency component in any resilient PNT solution, such as UrsaNav's eLoran technology.

The partners agree that a system-of-systems approach for resilient PNT must include a GNSS component, a fiber component, and a robust terrestrial wireless component that can be used to distribute solid PNT over nationally controlled radio frequencies.

The interlocking terrestrial capabilities developed by Locata and UrsaNav are unique in the PNT industry, are easily integrated with other PNT solutions, and can operate in standalone, interleaved, or layered modes - the very definition of a system-of-systems approach. Together, they can provide the core technology platform for purely national or cooperative international PNT services.

“Locata has spent over two decades developing high-accuracy, non-satellite-based positioning and timing networks. Our inventions deliver capabilities for modern applications in many critical environments where GNSS systems can never work reliably. We fill in the “GPS holes” said Nunzio Gambale, Co-Founder and CEO of Locata Corporation. “If anyone needs undeniable proof of our capabilities, they should look to the huge Locata network deployed by the USAF over 2,500 square miles (6,500 sq. km) of airspace at the White Sands Missile Range. On that Range, the USAF completely jam GPS over the entire area, yet their ground and aviation applications can continue to obtain cm-level positioning and nanosecond-level time using a Locata-enabled system. If that’s not a textbook definition of ‘independent GPS capability’, I don’t know what is! Our team, in partnership with UrsaNav and others, is now building an enabling technology platform to take this “to national levels”.

“This technology partnership combines two world-class PNT solutions into one seamless system so users can be truly sky-free™. These are proven technologies that are designed to meet the PNT needs of today and tomorrow. When space-based services are available and trustworthy, we should use them; when they are not, we should be prepared so we can ensure continuity of operations, and the safety and security of our infrastructure and our users,” said Charles Schue, Founder and CEO of UrsaNav. “We are delivering low-frequency solutions to our North American, UK, EU, Middle-Eastern, and Asian customers, including service provider and user equipment, and complete national systems.”

Locata’s and UrsaNav’s interlocking technologies fulfill the wireless portion of the system-of-systems template outlined in the MarRINav Report, and provide considerable benefits to secure Critical National Infrastructure – for nations, service providers and users alike.



About.

Locata Corporation has invented, and is now delivering, commercial radio-location technology that gives precise positioning and timing in many environments where GPS is either marginal, or unavailable, for modern applications.

Ursa Navigation Solutions, Inc. (dba "UrsaNav") has been the global leader in the design, development, and delivery of low-frequency PNT solutions, such as Loran-C, Loran-D, eLoran, and LFPhoenix™ since the mid-1970's. Our staff or technology have been included in every Loran-C, Loran-D, eLoran, or LFPhoenix™ site or system implementation in the world.

Contacts.

Locata Corporation
Nunzio Gambale
ceo@locata.com
+1-323-767-6228
www.locata.com

UrsaNav, Inc.
Charles Schue
CSchue@UrsaNav.com
+1.703.623.5212
www.ursanav.com