



Intelligent Transportation Systems Overview

Resilient Positioning, Navigation and
Timing (PNT) Solutions for the World's
Mobile Infrastructure

End-to-End Resilient PNT for ITS Applications

Resilient PNT: Mitigate the Threat

Today's intelligent transport systems rely on continuous and accurate positioning, navigation and timing (PNT) signals to provide trusted performance, even in GPS-denied environments. Precise timing, navigation and position synchronization are mission-critical for driverless cars, underground rail, smart city applications, ship bridges, UAVs, and more. Businesses that are developing and using these applications simply cannot afford the risk of failure, where even a microsecond delay or a few centimeters of deviation can mean loss of service or loss of life.

As the use of GPS and other GNSS signals becomes ubiquitous, threats to intelligent transport systems are increasing. Whether from cybersecurity lapses, unintentional interference or intentional jamming and spoofing, the need for continuous, trusted PNT data to protect system integrity has never been greater. So too is the need for alternative signals such as STL, which is a secure, encrypted signal that reaches far deeper indoors than GNSS.

The Orolia Resilient PNT Advantage

Orolia delivers comprehensive Resilient PNT solutions to ITS applications by leveraging the entire GNSS ecosystem.

- Precise PNT data references
- Clock synchronization
- Real-time embedded systems
- Signal distribution
- Wireless networking
- GNSS simulation and reception
- Testing & validation
- Interference detection & mitigation

Our ITS solutions include:

GNSS-based simulators for testing multi-frequency receivers

SecureSync® time and frequency reference platforms for rail/road tunnels, metros, car parks, and datacenters

Intelligent Repeater Systems for real-time GPS location of people or assets in indoor/underground environments

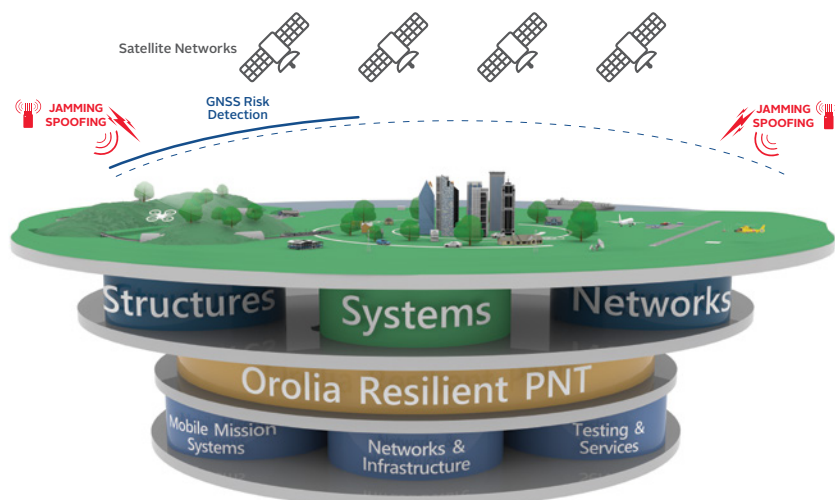
Standard and Rugged PNT in a truck to time sync to other navigation sensors and provide a backup position in a GNSS denied environment

STL for secure PNT data combined with GNSS at sea

BroadShield anti-jamming and spoofing software to assess risk in airports, ports and other control centers, in-vehicle or from the cloud as a service

ThreatBlocker for adding GNSS jamming and spoofing protection into your existing infrastructure

With worldwide sales, support and service, plus more than 70 years of proven performance, Orolia has the knowledge and solutions to simplify your ITS PNT challenges.



Scalable, Cost-Effective PNT for Every ITS Application

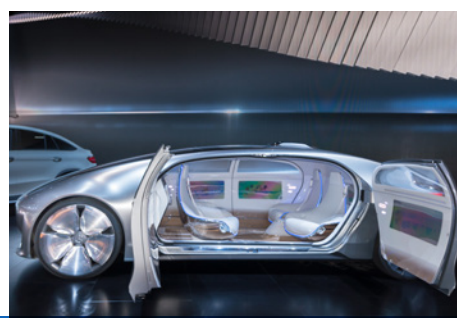
An Integrated, Solution-Focused Approach to ITS Systems

Driver assistance, emergency call systems, telematics, V2V and vehicle-to-infrastructure communications are just a few critical applications for GNSS. Perception sensors such as LIDAR, radar, computer vision, sonar, and advanced control systems are combined, along with absolute sensors as GNSS multifrequency sensors (including correction data services), because the ITS industry requires a greater need for advanced position, navigation and timing solutions.

Mission Areas

Mobile Systems

Solutions to keep mobile systems on track and on time, plus multi-constellation simulators for vulnerability testing to ensure reliability and safety.



Networks and Infrastructure

High-precision time servers and anti-jamming/spoofing detection software to synchronize critical networks and infrastructure operations while protecting system integrity.



Testing and Services

Professional consulting to free up your time and resources, from defining the right timing architecture to performance testing and certification. Including engineering services, testing, training, security and audit.

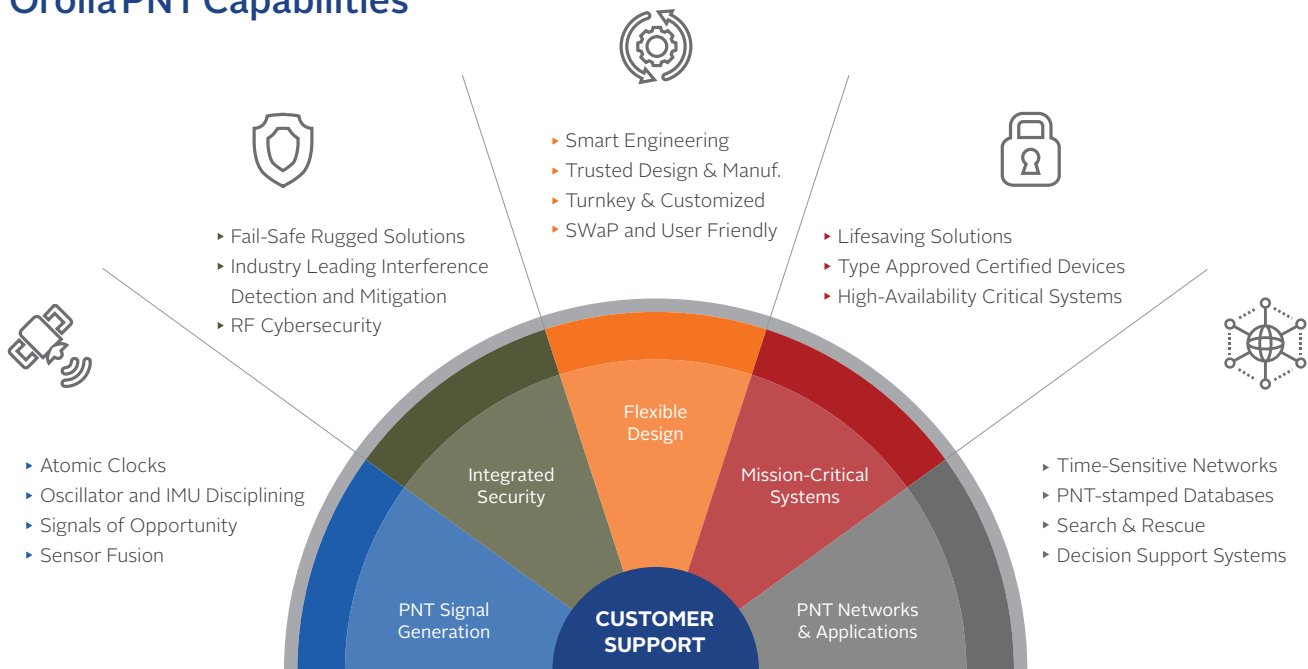




About Orolia

Orolia is the world leader in resilient positioning, navigation and timing (PNT) solutions that improve the reliability, performance and safety of critical operations, even in GPS-denied environments. With locations in more than 100 countries, Orolia provides virtually fail-safe GPS/GNSS and PNT solutions to support commercial applications worldwide.

Orolia PNT Capabilities



Meeting requirements at the best value with a flexible, configurable and scalable open architecture approach.

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