



# Orolia Defense Capabilities

For over 50 years, Orolia has been supplying Resilient Position, Navigation and Timing (PNT) solutions across multiple mission critical programs for defense and federal government. As a global leader in PNT technologies, we understand the need to maintain continuous operations in harsh and contested environments, and we are committed to ensuring that military forces have precise, reliable and rugged PNT solutions.

## Resilient Timing

Orolia has been at the forefront of the industry's most advanced timing solutions, with the first and longest standing DISA approved Timing & Sync Device for defense network security and interoperability.

## Threat IDM

With the growing threat to GPS signal integrity from adversarial jamming and spoofing, Interference Detection and Mitigation (IDM) has become a critical requirement for electronic warfare countermeasures.

## GNSS Simulation

Resilient PNT includes vulnerability testing with robust GPS simulation solutions, to ensure that warfighters are prepared to respond confidently to GPS disruptions on the battlefield for mission continuity.

## Capabilities Statement

- Orolia is an experienced contractor for the US federal and civilian government, with thousands of PNT devices deployed across multiple agencies and departments including Departments of Commerce, Defense, Energy, Homeland Security, Justice, and Transportation.
- We play a key role in several contract vehicles including Navy C2, NetCents2 (Air Force), SEWP (NASA), CHESS (Army) and TSSI-OPS TLS (Defense Logistics Agency).
- We have contributed as a subcontractor to all major primes as a core Resilient PNT expert.
- Applications include:
  - Critical Infrastructure
  - Intelligence, Surveillance and Reconnaissance (ISR)
  - Electronic Warfare & Anti-Jamming/Spoofing
  - Communications Networks
  - First Responder Systems
- First DISA Approved Timing and Synchronization Device on Department of Defense Information Network (DoDIN) Approved Products List (APL).

# Resilient Timing

    
The Global Leader in  
Resilient PNT

Orolia's resilient timing solutions include NTP appliances and PTP (IEEE-1588) servers with enhanced resiliency provided by alternative signals and anti-jamming technologies. We are known for delivering highly configurable, rugged solutions for stationary and mobile applications, and partnering with our customers to provide the most cost-effective and easy-to-use solutions for demanding requirements.

## Capabilities

- Time and frequency references in various form factors
- Rack mount
- Low-SWAP rugged mobile
- Embedded cards
- Cyber-hardened with DISA approval
- Microsecond accuracy on networks and devices
- SAASM GPS with defined paths to M-Code
- OCXO, CSAC, and Rubidium oscillators available for precision time-keeping during GNSS outages
- Low phase noise and G-compensated crystal oscillators available for radar and mobile applications
- MIL-STD-810 shock/vibration systems available
- MIL-STD-461 EMI/EMC systems available
- PTP as reference (NO GPS)
- NTP/PTP precise time transfer over Ethernet
- Configurable pulse signals, including IRIG or HaveQuick timecodes
- Serial link Time of Day (ToD) messages

## Applications

- Satellite ground stations
- Air and Ground Missile Defense radar systems (Air, Land and Sea)
- Network timing for C4ISR
- Accurate timing for Electronic Warfare systems
- Satcom on the Move
- Communication networks
- Test ranges
- Sensor support - radars, sonars, optronics, environmental, and electronic warfare
- Ultra-precise timing for Electronic Warfare systems
- Large radar systems

## Featured Products



SecureSync



TSync



Versa Platform

# Interference Detection and Mitigation (IDM)

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Navigation warfare (NAVWAR) is an increasing area of focus for military missions, and it includes a wide range of Electronic Warfare strategies. One of the fastest-growing threats worldwide is GPS/GNSS signal jamming and spoofing. Defense technology must be able to withstand and counter threats to continuous operations.

## Capabilities

- GPS jamming and spoofing detection
- Inline jamming and spoofing protection
- L1/L2 data and situational awareness
- Non-ITAR GPS anti-jamming
- Null steering
- Combat search and rescue
- Alternative PNT signal sources for GNSS outages
- Physical IDM products operating independently along side legacy equipment
- In-line solutions to detect and protect downstream equipment
- Small SWaP-C antenna solutions providing resiliency to jamming and spoofing
- IDM software integrated directly into hardware reducing SWaP-C

## Applications

- Critical infrastructure
- Command and control
- Dismounted warfighters
- Mobile mission systems
- Navigation Warfare
- Unmanned systems
- UAV platforms
- Air traffic control towers

## Featured Products



BroadShield



ThreatBlocker



GPSdome



# GNSS Simulation

  
The Global Leader in  
Resilient PNT

Orolia's GNSS Testing and Simulation Solutions deliver the confidence of knowing how your critical system will perform across a wide variety of GPS/GNSS signal and PNT data limitations, outages, interference and environmental factors.

## Capabilities

- Software-defined flexibility
- Multiple constellations and frequencies
- Turn-key, custom, and software-only solutions
- 1,000 Hz simulation iteration rate
- High dynamics
- Advanced jamming and spoofing scenarios for Navigation Warfare
- Encrypted U.S. military codes (Y-Code, M-Code, M-MNSA)
- Encrypted codes for EU/Allied forces

## Applications

- GPS/GNSS receiver testing in labs and in the field
- Missile defense system testing
- Testing of GPS systems in large radar systems
- Vehicle trajectories with integrated maps
- Manned and unmanned aircraft
- Spacecraft trajectories
- Hardware-in-the-loop (HIL)
  - CRPA and multi-element antenna systems
    - *Test Over-The-Air in an Anechoic Chamber or in a conducted set-up*
    - *Automation tools drastically reduce time and learning curve*
    - *Integrate spoofing, jamming, repeating, and alternate PNT Sensors*

Orolia's Resilient PNT solutions improve the reliability, performance and safety of critical, remote or high-risk operations, even in GPS/GNSS denied environments. With a presence in more than 100 countries, Orolia provides virtually fail-safe GNSS and PNT solutions for military and commercial applications worldwide.

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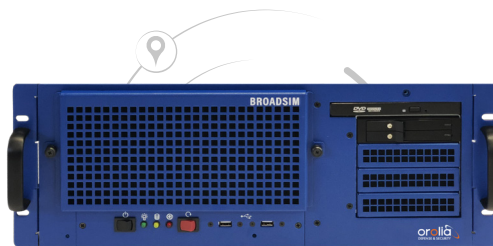
## Featured Products



GSG-5/6



GSG-8



BroadSim