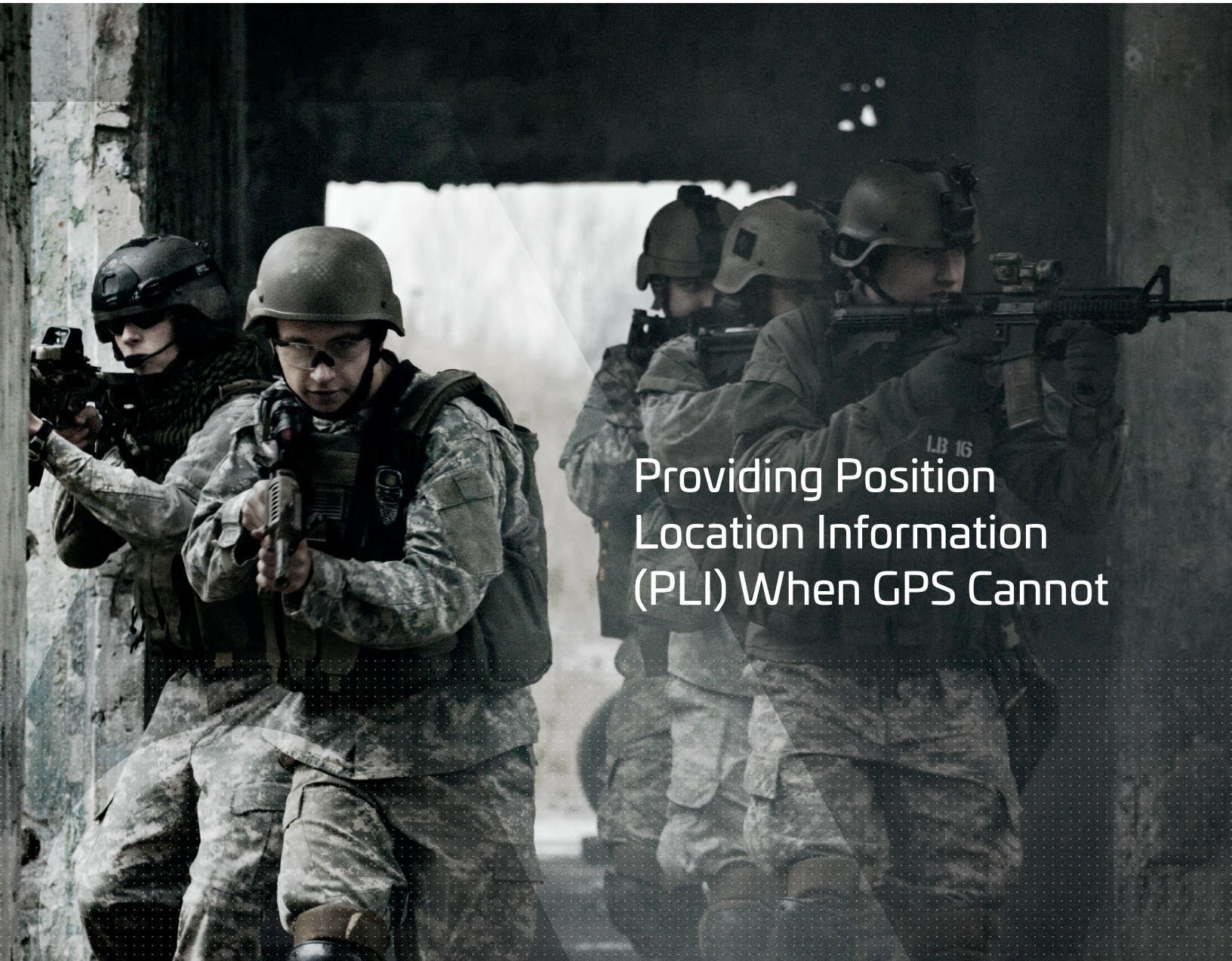


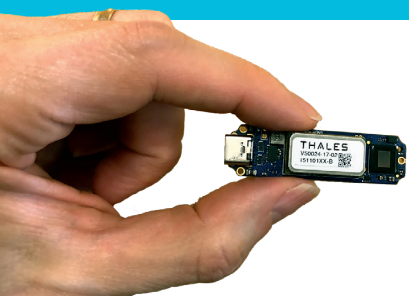
# InterSense® IS-1500® **GPS-Denied Navigator**



Providing Position  
Location Information  
(PLI) When GPS Cannot



# InterSense® IS-1500® GPS-Denied Navigator



The IS-1500 provides Position Location Information (PLI) and head-orientation data to dismounted Warfighters in GPS-denied or GPS-compromised environments, ensuring operational forces have unhindered access to their location. The IS-1500 sensor head collects video and inertial data. A wearable computer tracks natural features in the video (no map matching, unlimited travel distance) and fuses with inertial data and any other sensors (e.g., altimeter, GPS if available) to path-integrate ("dead-reckon") the sensor head's position and orientation. The computer outputs position as Cursor on Target (CoT) messages, which flow across a tactical network and display on ATAK devices, allowing users to locate themselves and their friends in a squad-level Common Operating Picture. Users can also click on the ATAK map to set their starting point or cancel accumulated navigation drift.

## Technical Specifications

### Key Features

- Low SWaP
- Tight Sensor Integration
- ATAK Integration: Intuitive PLI Display, User Update
- IMBITR Integration: Transmits Over Secure Tactical Network
- MOSA: Reads/writes CoT Format

### Physical Parameters (Sensor Head)

**Dimensions:** 65mm x 20mm x 20mm

**Mass:** 36g plus cable

**Power:** < 1.0 Watt typical

**Interface:** USB2 cable (Type C connector)

### Specifications

**Navigation Drift:** < 0.5% of distance traveled (median)

**Loitering Drift:** 1.25 m/hour (median)

**Environments:** Indoors/outdoors dawn to dusk

**Operational Benefits: Real Time, GPS-Denied Navigation**

Better SA, tighter C2

Indoor/underground

GPS jammed

Unmapped environments

Un-instrumented training range

### Upcoming Key Features

- LWIR & low-light navigation investigation, completing mid-2021
- Preliminary results: < 0.5% drift per distance traveled, outdoors, overcast night
- 200Hz output to drive augmented reality
- Simultaneous Localization and Mapping (SLAM)
  - Map an area just by navigating there
  - Zero drift while in a mapped area, even across power cycling
  - Cancel navigation drift upon return to area
  - Have demonstrated real-time SLAM with IS-1500 HW
- Spiral development effort to fuse additional sensors/algorithms, completing early 2022

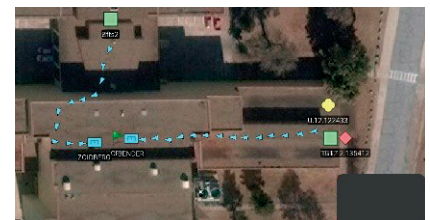
IS-1500 Low SWaP Sensor Head



Wearable Computer



Situation Awareness



Specifications are subject to change without notice.

**Thales Visionix®**

**A Division of Thales Defense & Security, Inc.**

700 Technology Park Drive, Suite #102 | Billerica, MA 01821

P: +1.781.541.6330 | E-mail: [info@thalesvisionix.com](mailto:info@thalesvisionix.com)

[www.intersense.com](http://www.intersense.com) | [www.thalesdsi.com](http://www.thalesdsi.com)



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