New Movella motion sensor backs up centimeter-accurate position data with high-bandwidth inertial measurements

Xsens MTi-8, a miniature surface-mount sensor from Movella, provides dead reckoning inputs to fill gaps or correct errors in data from RTK GNSS receivers

Enschede, The Netherlands – October 27, 2022 - Movella™, a global innovator of advanced technologies and products that sense, capture, and analyze movement, today launched the Xsens MTi-8, a miniature surface-mount motion sensor which combines centimeter-accurate positioning data outputs with a high-bandwidth inertial navigation system (INS) to enable precise dead reckoning.

The new MTi-8's INS is based on a proven inertial measurement unit – a platform first implemented in the existing MTi-3 and MTi-7 products. The MTi-8 also features an RTK GNSS satellite positioning receiver interface. The interface is compatible with universal NMEA signals, and with u-blox, Septentrio and Trimble data formats.

The MTi-8's on-board INS capability means that RTK satellite positioning data can be enhanced in various ways:

- To maintain real-time position information by dead reckoning in tunnels, under bridges and in other locations in which the satellite and/or RTK signal may be lost temporarily
- To correct intermittently faulty satellite position information when a positioning and/or RTK signal is temporarily lost or distorted
- To increase the update rate of position and velocity data in fast-moving applications. The typical RTK GNSS receiver's update rate is 10Hz. The MTi-8 increases this to up to 400Hz by filling in the gaps between GNSS receiver outputs with INS calculations.

Arnout Koelewijn, Product Manager at Movella, said: 'Unlike a stand-alone RTK GNSS receiver, the MTi-8 provides fast, accurate positioning data at all times in all conditions, as well as giving the orientation measurements which are essential in many applications. The MTi-8 is the new way to supercharge the performance of an RTK GNSS receiver.'

Complete GNSS/INS hardware and software system

The MTi-8 hardware system consists of a 3D gyroscope, 3D accelerometer and magnetometer, and interfaces to an external GNSS receiver and barometer, all housed in a small 12.1mm x 12.1mm x 2.55mm package.

Xsens sensor fusion software generates precisely synchronized measurements of roll, pitch, yaw/heading, velocity and position. The sensor fusion software operates with ultra-low latency to maintain high accuracy at output data rates up to 400Hz.

This makes the MTi-8 ideal for a wide range of slow or fast navigation, stabilization, mapping and scanning applications. It may be used in autonomous vehicles, outdoor mobile robots, and many other products.

Development with the MTi-8 is supported by the Xsens MT Software Suite, which includes:

- MT Manager – a GUI for Windows and Linux® platforms. MT Manager provides tools including a firmware updater and magnetic field mapper.
- Software development kit
- Code examples
- Drivers for LabVIEW, Robot Operating System (ROS) and GO

Movella also provides BASE by Xsens, an online repository of manuals and a knowledge base, as well as a community forum.

The MTi-8 sensor is available worldwide in production volumes from authorized distributors.

For sample requests, product specifications or more technical information, go to xsens.com/mti-8 or email sales@movella.com.

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About Movella

Movella™ is a full-stack hardware, software, and data analytics company created by the consolidation of mCube, Xsens, and Kinduct. Movella is a global innovator of advanced technologies and products that sense, capture, and analyze all aspects of movement. Movella serves the entertainment, sports, health, and industrial automation & mobility markets. Our solutions enable our customers to capitalize on the value of motion by transforming movement data into meaningful and actionable insights. We are creating extraordinary outcomes that move humanity forward by partnering with leading global brands such as Electronic Arts, NBC Universal, Netflix, Daimler, Siemens, and over 500 sports organizations. To learn more, visit https://www.movella.com.

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