ADVANCED CENTRIC SYSTEMS B.V

PORTABLE MULTIPLE-SENSOR INERTIAL NAVIGATION SYSTEM

Product brochure

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THE PROBLEM

Orientation and navigation are among the most fundamental skills military personnel are required to acquire as part of their basic training.

Dismounted troops must be able to determine their present position, reach a specific destination and conduct their operations relative to the terrain and to other elements on the battlefield, both friendly and hostile. Additionally, they must be able to report their position to the command and control elements, as this is a mandatory prerequisite of situational awareness – which is the key to effective command and control.

On today's battlefields, manual navigation methods (dead reckoning, compass bearing to a charted object, reference to aerial photographs, etc.) are often too inaccurate and time-consuming to be effective. One of the primary navigation techniques currently in use is INS (Inertial Navigation System) – a method based on continuous electronic computation of motion data relative to a known initial point.

Dismounted troops operating on the modern battlefield require a modern, compact, lightweight and efficient navigation system to relieve them of the burdensome task of manual navigation during combat operations.

THE SOLUTION

ACS presents PMS-INS – Portable/Personal Multiple Sensor Inertial Navigation System.

PMS-INS is a man-portable inertial navigation system made up of an Orientation Computer Unit (OCU) and a Multiple Sensor Unit (MSU), designed to enable dismounted troops to determine their present position and to navigate to their destinations and objectives.

PMS-INS is effective under all terrain conditions, including urban and indoors environments.

PMS-INS helps frontline commanders and C2 elements perform the crucial task of battlefield identification – an essential, on-going situational awareness undertaking.

PMS-INS enables users to navigate autonomously even when the GPS navigation aids normally used are disabled or when GPS coverage is unavailable.

KEY FEATURES & MAJOR ADVANTAGES

Key Features & Major Advantages

- Personal autonomous navigation system
- System consists of an orientation computer unit and a multiple sensor unit

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- System provides on-going position & orientation input independently of external systems
- Readily-available navigation aid guarantees functional continuity, accurate coverage, reliable performance and immunity to threats under battlefield conditions
- Fully functional under all terrain conditions, including urban and indoors environments
- MEMS (Micro Electro Mechanical Systems) sensors
- Specifications:
- OCU dimensions: 63mm x 23mm x 93mm
- MSU dimensions: 50mm x 23mm x 58mm
- Weight: less than 500 grams
- Power consumption: less than 10 Watts
- Indoors operation: up to 1 hour
- Horizontal accuracy with GPS: 5m CEP
- Horizontal accuracy without GPS: 2% of distance travelled (since last position update)
- Altitude accuracy with GPS: 3m CEP
- Altitude accuracy without GPS: 1% of distance travelled (since last position update)
- Azimuth accuracy: 1°-2° RMS
- Pitch & roll angle accuracy: 1° RMS

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