

IS-900 Systems

Precision inertial-ultrasonic motion tracking system



IS-900 VETracker used for interaction in large collaborative decision making environments such as Arizona State University's Decision Theater.

Image courtesy of Arizona State University

Commercial and research programs use InterSense's IS-900 inertial-ultrasonic motion tracking systems for flexible, precise and accurate wide area, interference free motion tracking.

Typical applications include:

- Complex product design review
- Data visualization
- Procedural planning
- Virtual prototyping
- Simulation & training

The IS-900 VETracker (Virtual Environment Tracker) is ideal for large immersive 3D environments while the IS-900 SimTracker is ideal for smaller 3D environments. Both systems bring smooth, interference & jitter free tracking to your real-time application. OEM configurations available.

Realism

The IS-900 system offers real time tracking with full movement around objects and structures. In addition, the systems eliminate noticeable jitter and latency. These advantages are due to the hybrid inertial-ultrasonic technology inside our systems. To further optimize realism, we offer a completely wireless solution. A smooth visual interaction in training systems improves simulation effectiveness. Superior predictive algorithms are available to assist in eliminating overall system latency of the application.

Freedom from Electromagnetic & Metallic Interference

Our hybrid inertial ultrasonic technology is immune to electromagnetic & metallic interference, bringing you simplicity, speed and freedom from time consuming re-calibration and re-mapping. In addition, the nature of our hybrid technology provides uniform and consistent tracking throughout your environment.

Flexibility & OEM Configurations

The IS-900 technology was designed specifically to support OEM configurations, such as 6 sided immersive environments, with our low profile emitter configurations. Seamless integration of the components ensure that the system does not interfere with training effectiveness. Our flexible systems, along with our world class consulting services, make deployment of state-of-the-art systems not only feasible, but also economical and fast.

Performance Specifications

Degrees of Freedom	6 (X, Y, Z, Yaw, Pitch, and Roll) with MicroTrax Devices 3 (Yaw, Pitch, and Roll) with InertiaCube2+ or InertiaCube3
Tracking Devices	MicroTrax Head Tracker MicroTrax Wand MicroTrax Hand Tracker (Optional) MiniTrax High Accuracy Head Tracker (Optional) Custom/OEM MicroTrax Devices (ask your InterSense Representative)
Tracking Volume	Up to 20 m ² with 12 SoniStrips (SimTracker maximum) Up to 140 m ² with 84 SoniStrips (VETracker maximum) 2.5 m x 2.5 m x 3.0 m maximum w/ SoniFrame (optional) 1.0 m x 1.0 m x 1.0 m with SoniWing (optional)
Angular Range	Full 360° - all axis
Resolution	0.75 mm (1.5 mm Wireless) 0.05° (0.10° Wireless)
Static Accuracy	2.0 – 3.0 mm (3.0 – 5.0 mm Wireless MicroTrax) 0.25° RMS in Pitch & Roll, 0.50° RMS in Yaw (Wired) 0.50° RMS in Pitch & Roll, 1.00° RMS in Yaw (Wireless) 0.25° RMS in Pitch, Roll and Yaw (Wired High Accuracy MiniTrax) 0.50° RMS in Pitch, Roll and Yaw (Wireless High Accuracy MiniTrax)
Update Rate	180 Hz Nominal (120 Hz Nominal Wireless)
Latency	4 ms Typical
Interface	Ethernet RS-232 Serial Port
O/S Compatibility Software Support	Windows XP/Vista, Linux SDK with full InterSense API ISDEMO control and connectivity software

Physical Specifications

AC Input	100 – 120 V, 200 – 240 V, 60/50 Hz, 6/3 A (auto switching)
Operating Temperature	0 to 50 °C (32 to 122 °F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Standard Cable Lengths	9.4 m (IS-900 to SoniStrips) 10.3 m (IS-900 to Tracking Devices) 1.8 m (IS-900 to Host, RS-232 Serial)
Maximum Cable Lengths	System configuration dependent (ask your InterSense Representative)
Processor Size	1 U rack mounted (44.45 cm wide x 40.64 cm deep x 4.45 cm tall)
Processor Weight	6.8 kg

SoniStrip	Size	Weight
2 ft	61.0 x 3.7 x 2.5 cm	0.4 kg
4 ft	122.0 x 3.7 x 2.5 cm	0.9 kg
6 ft	183.0 x 3.7 x 2.5 cm	1.3 kg

Devices	Size (outside dimensions)	Weight
MicroTrax Head Tracker	10.15 x 1.54 x 1.38 cm	23 g
MicroTrax Wand	17.48 x 10.16 x 5.38 cm	170 g wired (200 g wireless)
MicroTrax Hand Tracker	11.43 x 7.62 x 1.90 cm	56 g
Wireless Transmitter	7.62 x 4.44 x 3.40 cm	65 g
MiniTrax High Accuracy Head Tracker	20.5 x 3.0 x 2.7 cm	38 g

Product Features	SimTracker	VETracker
Standard Tracking Volume	2.5 x 2.5 x 3.0 m	5.0 x 3.0 x 3.0 m
Maximum Tracking Area	20 m ²	140 m ²
Maximum SoniStrips	12	84
Maximum Tracked Devices	4 (Wireless MicroTrax)	7 (Wireless MicroTrax)
Upgradable to wireless	Yes	Yes

Standard Components		
Position Referencing Constellation	4 SoniStrips (or 3 SoniStrips w/ SoniFrame)	6 SoniStrips
Tracked Devices	MicroTrax Head Tracker MicroTrax Wand	MicroTrax Head Tracker MicroTrax Wand

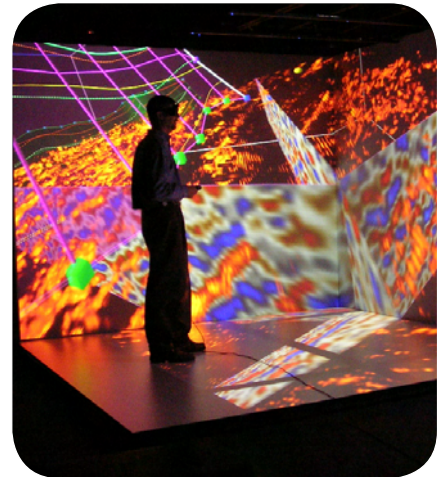
Optional Components (SimTracker and VETracker)

Tracking Area Expansion	SoniWing, SoniFrame, additional SoniStrips (2,4 or 6 ft) or individual SoniPods
Tracked Devices	Wired or Wireless MicroTrax Hand, High Accuracy Head and Helmet Trackers InterSense's InertiaCube2+ or InertiaCube3 (3-DOF only)

Specifications are determined in a controlled and quantified environment and subject to change without notice. Please visit the InterSense website for up-to-date specifications at www.intersense.com

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IS-900 SimTracker used for oil and gas data visualization, analysis and planning.

Source: Fakespace Systems



InterSense Inc.

4 Federal Street

Billerica, MA 01821, USA

T: 781 541 6330

F: 781 541 6329

www.intersense.com