

Man-Wearable Platform for Live and Virtual Training and Simulation

Weapon Orientation
Modules (WOM)

Machine Vision
Tracking Systems

Reconfigurable
Open Architecture

Indoor/Outdoor
Position Tracking



Augmented and
Virtual Reality

Real-Time Skeletal
Kinematics

Mobile Processing
Data Management

Hybrid Sensor
Fusion Platform

Man Wearable Platform For Live and Virtual Training and Simulation

Inertial Labs provides industry leading orientation solutions with an uncompromising focus on products that represent the smallest size, lowest power, and lowest cost alternatives for their given class of performance. Our hybrid sensor fusion algorithms allow for the integration of virtually any position and orientation technologies.

In addition to individual sensor systems, Inertial Labs specializes in research and development of integrated systems with specific focus on the needs of the military. With over 10 years of government R&D experience specifically in position and orientation systems, Inertial Labs is delivering technologies for the convergence of live training and tactical operations.

HARDWARE

Inertial Labs Hardware				
Weapon Orientation Modules (WOM/OptoWOM)	Subminiature Orientation Sensors (OS3D/OS3DM)	Linux Based Mobile Processing Units (MPU3D, wgMPU)	Sensor Bus Accessories (GPIO, analog inputs, data logging, bus control, serial interface)	Full Body Motion Capture System (3D Suit)
Man-worn optical positioning system	Pedestrian Dead Reckoning Module	Digital Sextant Sun Tracker Celestial Compass	Hand and Finger Motion Capture System	Coupled Head and Weapon Tracking System
Integrated Hardware Technologies				
GNSS (GPS, GLONASS, Galileo)	Camera Systems	Altimeter, Barometer, Humidity, Temperature, Atmospheric Sensors	Lightweight Handheld Mortar Ballistic Computer (LHMBC)	RFID
Positioners: Ultrasound, Ultra-wideband, Optical	Head Mounted and Heads Up Displays	Instrumented Weapons	Small Arms Trainers	Structured Light Systems
Haptic Devices	Radios – WiFi, Bluetooth, Zigbee	USB Hubs	Laser Range Finders / Laser Target Designators	Biometric Devices

SOFTWARE

Inertial Labs Software				
Linux / Windows Sensor SDK and APIs	Skeletal Control and Kinematics Software	Inertial based skeletal walking and dead reckoning algorithms	Hybrid sensor fusion algorithms (celestial, optical, inertial)	Magnetic Deviation Compensation Software
Demonstration, Test, and Evaluation software	Cursor on Target Weapon Barrel Orientation Software	Human Fall Detection/ Prediction Software	Inertial/Optical Multi-object Position/ Orientation Software	Gesture Recognition Algorithms
Integrated Software Technologies				
Real-time animation plugins for Unity, VBS2, WorldViz, etc.	Biomechanics and human rehabilitation plugins	Real-time casualty assessment (RTCA)	Weapon Ballistics Calculation Software	Dismounted Soldier Training System Software (DSTS)
Motion Analysis Software	Motion Capture Software	Medical Training Systems	Human Health Monitoring	Consumer Game Systems

RESULTING TECHNOLOGY END USES

Live, Virtual, Constructive Training Systems	Medical Rehabilitation Systems	Full Body Motion Capture Systems	Medical Monitoring and Training Systems	Immersive Virtual Reality Gaming Systems
Augmented Reality Gaming Systems	Ergonomics Analysis Systems	Human Performance Evaluation	Indirect Fire Weapons Trainers	Call For Fire Training Systems (CFFT)
Blue Force Tracking	Forward Observer Augmented / VR Training Binocular	Sports science and Motion Analysis System	Industrial Training Systems	Dismounted Soldiers Training Systems (DSTS)