The MotionMonitor™ is a trademark of Innovative Sports Training, Inc.

**EyeLink® II Eye-tracking & 3D Gaze**

- Track right eye, left eye, 3D gaze, cyclopean eye vectors, and finger position.
- Calibrate using standard EyeLink® II procedures.
- Compute gaze vector/plane intersections using drop-down menus.
- Report data in any reference frame including world, head, or defined planes of any size to represent tables, walls, floor, or computers.
- Track head orientations using active optical systems, passive optical systems, or electromagnetic tracking systems.
- Collect full body kinematics & gaze during gait, balance, or eye-hand coordination studies.
- Include data from EMG, force plates, event markers, and integrated video.
- Combine with stereoscopic displays for tracking virtual objects in neuroscience studies.

The image above shows a subject navigating through obstacles which were defined as vision planes in The MotionMonitor. Data graphs on the right display head rotation, head elevation, left eye intersection with plane 0, left eye intersection with plane 2, and left eye intersection with plane 4.

The most advanced data acquisition and analysis system in the market place offers precise measurement of human motion for applications in…

Real time **data** acquisition, analysis, and 3D visualization.

Turnkey **hardware** solutions. Upgradeable as your needs change.

Research Design & System Engineering **consultation**.
**The MotionMonitor** is a totally integrated 3D acquisition, analysis and visualization system for use in clinical, biomechanical, neuro-control, and sports medicine applications involving the analysis of complex human motion. The MotionMonitor collects data from magnetic trackers by Ascension and Polhemus; passive optical systems by VICON, Motion Analysis Corp & Qualysis; active optical systems by NDI Optotrak, PhaseSpace and Phoenix Technologies; marker less tracking by Organic Motion; Inertial Measurement Units (IMUs); eye-trackers by SR Research’s EyeLink® II; analog devices such as EMG, force plates, and video. Data are fully synchronized and presented in real time with state-of-the-art computer renderings and graphic displays. Data output includes all kinematic and kinetic data including joint forces and moments computed with either a top-down or bottom-up inverse dynamics model. Angle data is available as quaternions, cosine matrices, Euler angles, Grood & Suntay angles or projection angles. The user can specify the reference frame, rotation sequence, and axes layout in post-processing. User-defined data can be generated using standard math notation. Full body biomechanical computer renderings include stick figures, skeletons, and humanoids. Detail renderings include high resolution images of hand, foot, and spine as well as CT or MRI 3-D reconstructions.

The MotionMonitor support team offers a comprehensive package of services designed to meet the unique requirements of each client’s research. Services include turn-key systems design, integration of existing client hardware, maintenance, warranty protection, training, and support following installation. Worldwide, IST has built a dedicated following among university researchers.

### MotionMonitor Turnkey System Specifications:

**Enclosure:** Hardware is configured for Laptop, Desk top or Shock Mounted Rack enclosure. Rack is on casters suitable for shipping; 23 x 23 x 23 inches (58.4 x 58.4 x 58.4 cm). Computer and all hardware components are racked in the enclosure. On-site installation & training and 1 year of unlimited priority support included with system.

**Software:** The MotionMonitor Acquisition, Analysis & Visualization version 8 configured for i) Research, or ii) Physical Therapy Clinics, or iii) Sports Performance Enhancement.

**Computer:** Dell Precision T3500 Convertible Desktop Chassis, Quad Core Intel Xeon W3530 2.80GHz,8M L3,4.8GT/s Processor, 1066MHz, DDR3 ECC SDRAM Memory- 4x1GB, 320GB SATA 3.0Gb/s, nVidia NVS 295 Dual Monitor DVI, Dual Lan, 16xDVD R/W, 1394IEEE card & Windows 7; UltraSharp 21.5" LCD Monitor; Webcam Microsoft H4d-00001 720p HD Wide screen auto focus;

**Event markers** for event identification, motor control experiments and externalization of system timing pulses include LED’s, Light Relays, FSR’s and hand held event markers.

**Preprogrammed configuration of hardware for real-time, interactive collection from:**

- Ascension’s “Flock of Birds”, MiniBirds, MotionStar & trakStar
- VICON, Motion Analysis and Qualisys Passive Optical Cameras
- Northern Digital’s Optotrak 3020 and Certus
- Phoenix Active Optical systems
- PhaseSpace Active Optical systems
- Organic Motion’s markerless cameras
- Polhemus’ Fastrak, G4 and Liberty
- Bertec, AMTI and Kistler force plates
- All analog EMG systems
- Digital support for Noraxon’s EMG systems, including the wireless Telemeyo DTS
- BioSemi EEG systems
- ATI, AMTI and Bertec mini-load cells
- EyeLink II eye tracking systems
- Virtual Reality Displays including SenseGraphic’s Immersive Workbench and World Viz’s Vizard Virtual Reality Toolkit
- SensAble’s Phantom Haptic devices including single and dual haptics
- Single/Multiple Video Cameras

See [www.innsport.com](http://www.innsport.com) for the most up-to-date hardware listings

*Specifications subject to change without notice. Revised 11/7/2011*