Gaze & Motion
Assess visuomotor integration

- Integrate mobile eye tracking and motion capture data
- Assess visuomotor learning, performance and rehabilitation
- Rely on most lightweight and proven SMI Mobile Eye Tracking technology
- Compatible with A.R.T, Natural Point, Qualisys, Vicon, WorldViz and others

www.smivision.com
Connect Gaze and Motion to Assess Visuomotor Integration

SensoMotoric Instruments (SMI) offers an integrative solution to connect SMI Mobile Eye Tracking with external motion capture technology while participants enjoy full freedom of movement in real-life tasks.

The Gaze and Motion Package for SMI Eye Tracking Glasses (ETG2w) allows researchers, clinicians and professionals to assess interaction of eye and body movements, e.g. in

- behavioral neuroscience
- biomechanics
- clinical rehabilitation research
- sports training and many more fields.

Behavioral psychologists, neuroscientists and biomechanics researchers can assess hand-eye coordination – how it is learned, how it is optimized, how it is affected by disease, ageing or injury, and how it can be utilized as a rehabilitation tool.

Clinical researchers can use the information to advance behavioral and neurological diagnosis and rehabilitation.

Sports scientists can make complex estimations of athletes’ kinetics, kinematics and performance in indoor and outdoor situations. They can give visual feedback on gaze and motion patterns to help athletes improve their performance.

Craig Chapman, University of Alberta, Edmonton, Canada:

“We recently acquired the SMI Eye Tracking Glasses and have already successfully integrated them with both a Vicon Bonita motion capture system as well as an Optitrak Flex 13 motion capture system. Getting real-time streaming of 3D gaze vector data was, compared to other eye trackers we’ve used, pretty easy. I am especially impressed at the versatility of SMI’s gaze and motion add-on to be integrated with any VRPN compatible tracking system. 3D eye tracking as people interact with real objects represents a major advancement in the methodologies available to human visuomotor researchers.”

Sandro Covi, The Centre for Aviation (ZAV) at the Zurich University of Applied Sciences:

“We have conducted extensive research on the use of head tracking (ART) combined with eye tracking. Using the SMI ETG, we were able to develop software which allows us to run both systems simultaneously and to efficiently process a vast amount of data. In addition, live evaluations of gaze movements are possible.”

Dr. Daniel Lewkowicz & Dr. Yvonne Delevoye Turrell lab. URECA, Université Lille III:

“We used SMI Eye Tracking Glasses together with Qualisys motion tracking to examine how predictive gaze information is conveyed between two humans during real-time social interactions. It was one of the first attempts to combine both kinematics and portable eye-tracking devices in a true interactive face-to-face paradigm. Simultaneous recording of the kinematics of arm, hand and eye movements of two participants allowed us to study both joint action and joint attention in a truly interactive manner.”
Easily Integrate SMI Eye Tracking into Motion Tracking Applications

SMI offers a dedicated Gaze and Motion Package for its Eye Tracking Glasses 2w. The package provides:

- Real-time streaming of 6D gaze vectors
- ETG2w smart recorder with mobile connectivity
- VRPN interface to connect with leading motion tracking

The SMI optical head and motion tracking module for the ETG2w enhances SMI’s mobile eye tracking technology with real-time streaming of 6D gaze vectors in headtracker coordinates.

The ETG2w smart recorder adds wireless connectivity with no compromise on mobility to the Gaze and Motion Package.

And via the VRPN interface standard, the gaze and motion package supports leading head and motion tracking technologies such as A.R.T., Kinect, Natural Point, Qualisys, Vicon, or WorldViz.

Components SMI ETG2w Gaze & Motion Package

<table>
<thead>
<tr>
<th>Component</th>
<th>Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI Eye Tracking Glasses 2 Wireless (ETG2w)</td>
<td>✓</td>
</tr>
<tr>
<td>SMI Head Tracking Installer</td>
<td>✓</td>
</tr>
<tr>
<td>Snap-On Frame</td>
<td>✓</td>
</tr>
<tr>
<td>Standard passive head tracking targets</td>
<td>✓</td>
</tr>
<tr>
<td>Exchangeable with magnetic snap-on, compatible with all passive optical tracking devices running via VRPN</td>
<td>✓</td>
</tr>
<tr>
<td>Network connection between ETG 2w software and Headtracker (Internet NOT required)</td>
<td>✓</td>
</tr>
<tr>
<td>VRPN Software running on a Headtracking PC</td>
<td>✓</td>
</tr>
<tr>
<td>iView VRPN Server with integrated VRPN Software</td>
<td>✓</td>
</tr>
<tr>
<td>ETG2w smart recorder with waist bag</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Note that head tracking devices are not included
SMI Eye Tracking Glasses 2w – Proven Mobile Eye Tracking

SMI Eye Tracking Glasses 2 Wireless (SMI ETG 2w) are designed to record a person’s natural gaze behavior in real time - in a broad range of applications and with outstanding robustness, mobility and ease of use.

The technology has been proven with more than 100,000 participants and has gained the confidence of renowned customers worldwide.

Instant setup and ease of use is paired with unmatched 60Hz binocular eye tracking performance and a high definition scene camera. The Natural Gaze™ head gear provides maximal peripheral perception and binocular vision – important for realistic depth perception and natural visual orientation.

The glasses come with a compact SMI ETG 2w smart recorder based on a Samsung Galaxy Note 4. Via wireless data access, the smart recorder can receive UDP triggers and connect to the VRPN server. The smallest and lightest recorder available on the market today, it provides access to a new level of mobility: The participants can move freely and perform tasks in a natural way.

Via wireless control from a remote computer, operators can observe live gaze traces in a scene video and add live annotations on a user’s behaviour.

The magnetic snap-on corrective lenses for mobile eye tracking studies allow to cover the maximum user population. The SMI ETG 2w also comes with snap-on sunglasses which ensure robust tracking in outdoor situations.

For full tech specs, please refer to SMI Eye Tracking Glasses 2 Wireless and SMI Optical Head Tracking module flyer.

Contact information

SMI Mobile Eye Tracking Connected - Gaze & Motion

www.eyetracking-glasses.com

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