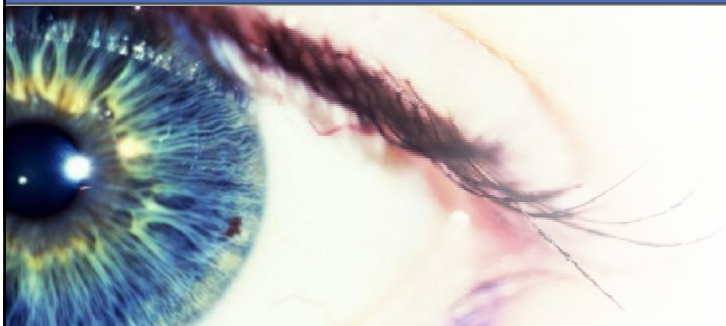


# SMI Eye Tracking Solutions



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Sales Manager  
gilbert.vancauwenberg@smi.de

August 2013

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www.smi-vision.com

## SMI Company Information



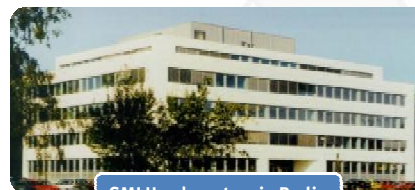
Founded in 1991

Spin-off from FU Berlin

First Commercial System

Company Expertise

35 Employees & Growing



SMI Headquarters in Berlin




- Eye & gaze tracking systems
- High-speed image processing
- OEM solutions

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## SMI Offices & Distribution Partners




**SMI**  
SensoMotoric Instruments



Boston • Nottingham • Moscow • Mumbai • Kuala Lumpur • Seoul • Taipei • Tokyo • Beijing • Sydney  
 Americas • UK • Russia • India • Malaysia • Korea • Taiwan • Japan • China • Australia

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## SMI Eye Tracking Solutions






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Study Design

- Software :
- SMI Experiment Center
- ePrime / Python / Matlab / ...

Data Collection

↔

Analysis & Reporting

- Software :
- Raw data
- SMI BeGaze
- Matlab / SPSS / ...

Live Data Streaming

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## Remote eye tracking



# SMI „RED-m“ and the „RED“ series


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## SMI RED-m – Application Examples



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## System Overview – SMI RED-m System



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- 60/120 Hz
- Binocular
- 130 Grams
- 24 x 3 x 3 cm
- USB Powered
- Laptop

World's **smallest** scientific remote eye tracking lab!

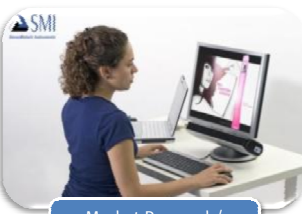


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## SMI RED – Application Examples




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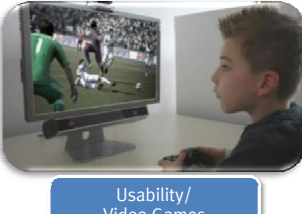
Market Research/  
Copy Testing



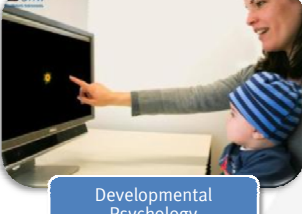
Market Research/  
Sponsoring




Usability/  
Interaction Design



Usability/  
Video Games



Developmental  
Psychology




Neurosciences/  
Co-Registration


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## Remote eye tracking – SMI RED Series



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- 60 Hz ... 500 Hz
- Binocular
- 40 X 20 X 20 cm
- 17 ms up to 4 ms
- 2 ... 9 Points
- Ethernet / TTL
- 22" TFT
- Standalone
- Infant calibration
- Laptop

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## Software – Experiment Center



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**NEW!**

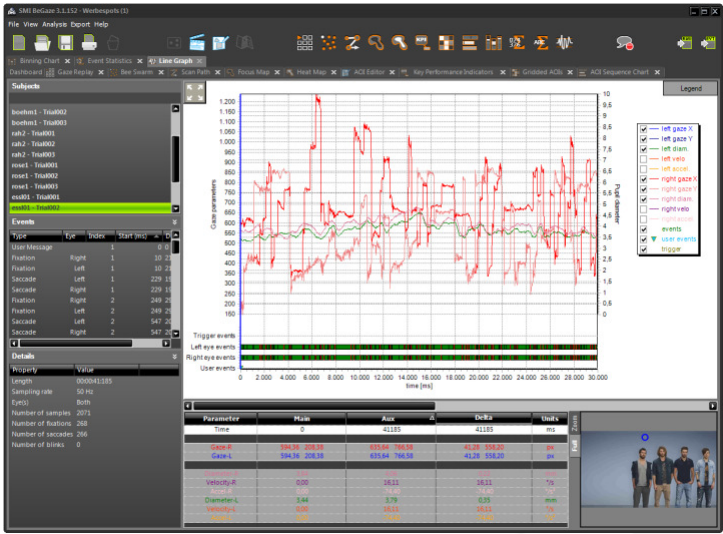
- Text Pages
- PDF Documents
- Questionnaires
- Images
- Web Pages
- Movie Clips
- Screen Recording
- Game Consoles
- External Camera
- EEG Support

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Software – BeGaze



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The screenshot shows the BeGaze software interface. On the left, there is a 'Subjects' list with columns for 'Subject', 'Eye', and 'Order'. Below it is an 'Events' table with columns for 'Type', 'Eye', 'Order', 'Start', and 'End'. At the bottom left, there is a 'Details' section with a table of parameters.

Parameter	Min	Avg	DC-Bk	Units
Time	0	41285	41185	ms
Case-R	594.50	258.50	456.04	798.50
Case-L	594.50	258.50	456.04	798.50
Velocity-R	0.00	26.33	26.33	°/s
Velocity-L	0.00	32.73	32.73	°/s
Dispense-L	0.00	36.13	36.13	°/s
Dispense-R	0.00	36.13	36.13	°/s

- Gaze Replay
- Bee Swarm
- Scanpath
- Focus Map
- Heat Map
- AOI Editor
- Key Performance
- Gridded AOI
- AOI Sequence
- Binning Chart
- Event Statistics
- Line Graph

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SMI & Emotiv – New Turnkey Solution



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SMI

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**SMI & Emotiv – New Turnkey Solution**



✓ 14 Channels  
✓ 128Hz Sampling Rate  
✓ Bluetooth Transmission

**Emotiv EEG Neuroheadset**




**SMI RED Remote Eye Trackers**




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**SMI & Emotiv – New Turnkey Solution**




**SMI Experiment Center**



Live gaze data

Live EEG signals

**SMI BeGaze**



Heatmap

Emotional state representations

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**Mobile eye tracking**



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# SMI Eye Tracking Glasses

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**Mobile eye tracking – SMI ETG**



**Popular uses cases**



Market Research / POS




Market Research / Ads




UX / Interaction Design



Product Design / VR



MMI / Human Factors



Psychology / Education



Training / Sports

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## Mobile eye tracking – SMI ETG



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**Hardware overview**

- 75 Grams
- UVEX Design
- 1280 x 960
- HDR
- Binocular
- IR Holograms
- 1-Point Calibration
- Automatic Parallax Compensation
- 3D compatible
- 6D compatible
- Sunlight-Proof
- Live Preview
- Real time data streaming
- Mobile Recording Unit
- Audio Recording
- 2 Hours




**SMI Eye Tracking Glasses with automatic parallax**




Target  
Automated parallax compensation  
Moving closer  
0,5 m    1,5 m = calibration distance

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## SMI ETG – Virtual Reality Integration




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VOLFONI®  
CREATIVE 3D TECHNOLOGY




ART


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## SMI ETG – Virtual Reality Integration



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**Hybrid shutter glasses**

**Passive tracking targets**

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## SMI Analysis Concept for mobile eye tracking




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**Analysis concept : how to get quantitative results ?**

Semantic Gaze Mapping


- efficient and validatable
- broad range of use cases
- changing content
- no markers



**EFFICIENT & VERSATILE!**

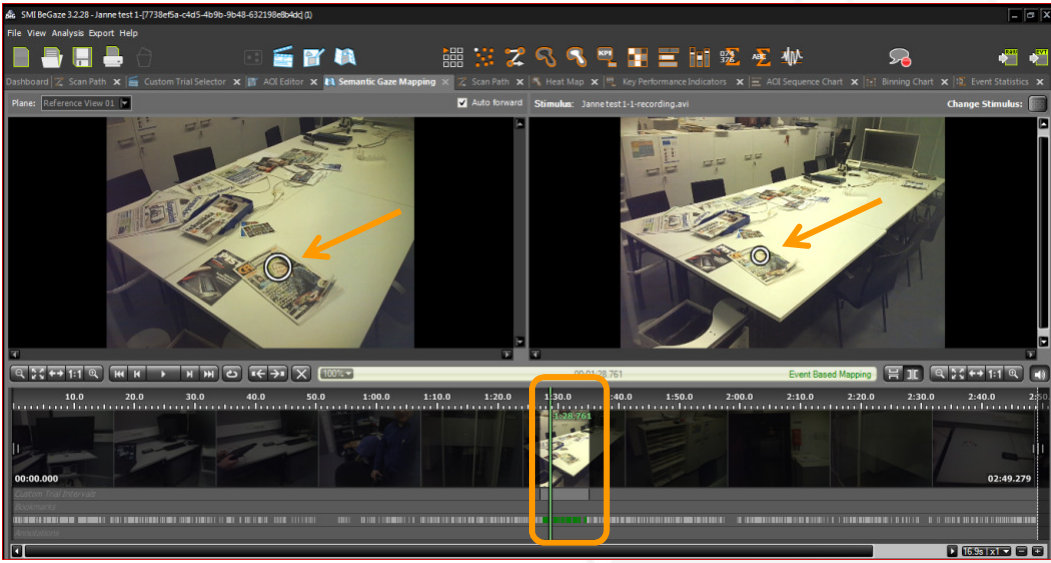
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## SMI Analysis Concept for mobile eye tracking



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**How does Semantic Gaze Mapping work ?**



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# Thank you for your attention

## Now let's get some hands-on experience !

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