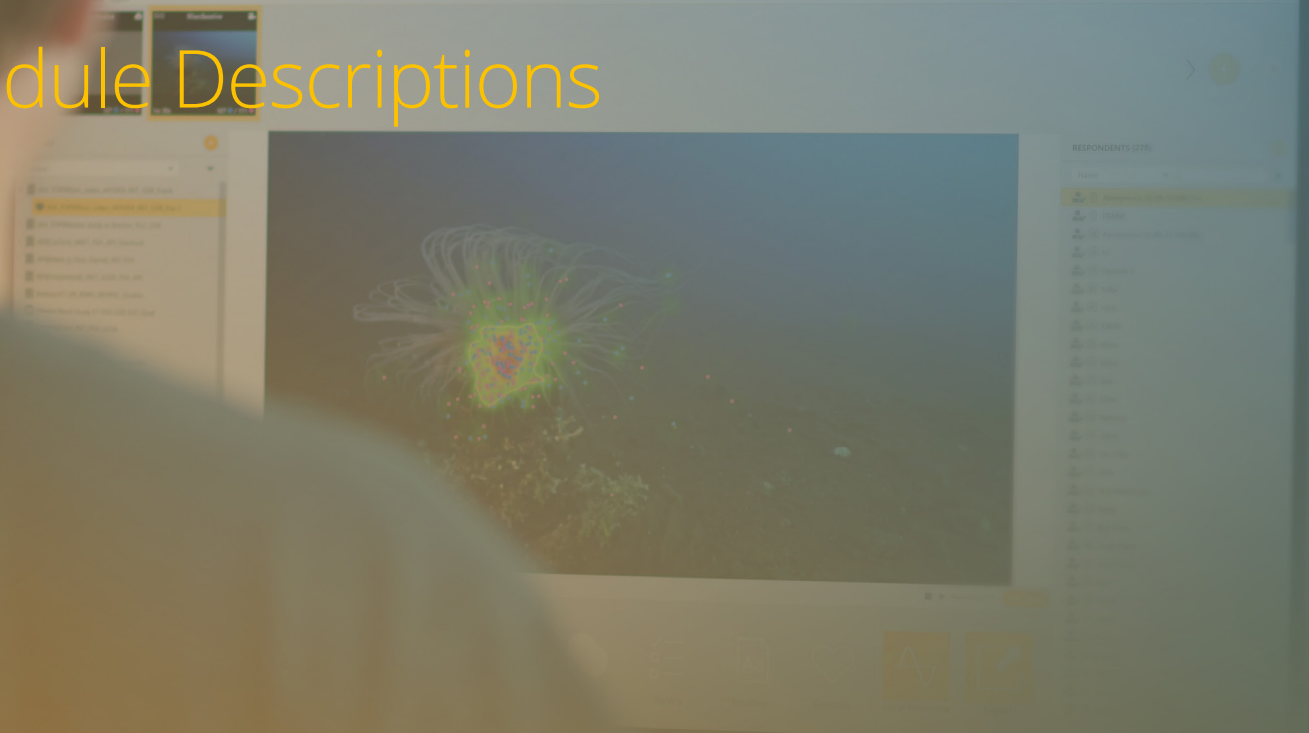




iMotions Software Module Descriptions



Valid as of December 2023

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iMotions Software Modules

Software licenses:

- Individual modules can be activated and deactivated to meet your specific needs.
- Each license enables installation of iMotions software on a single computer.
- Licenses can be used without limitations on respondents, data storage, users, etc.
- You own your data.

Full license software



iMotions Core

Prerequisite to integrate any module. Create studies, display stimuli, complete surveys, record from a camera, import and export all data, connect through API, LSL, and more.



Module: Automated AOIs

Enables the automated tracking of objects over a specified time frame and generates areas of interest around them.



Module: Eye Tracking - Screen-Based

Integrate screen-based eye trackers from most major vendors, carry out analyses such as AOI creation, heatmaps, data segmentation, and gaze mapping to understand visual responses to screen-based stimuli.



Module: Eye Tracking - Glasses

Integrate a range of eye tracking glasses, carry out advanced analysis and automated gaze-mapping to understand visual attention in natural environments.



Module: Eye Tracking - VR

Capture, visualize, analyze, and export eye tracking data from VR eye tracking headsets.



Module: Eye Tracking - Webcam based

Based on state-of-the-art technology iMotions WebET 3.0, for accurate and robust webcam eye tracking.



Module: Affectiva

Collection and analysis of facial expressions using Affectiva module and webcam. Get information such as valence, engagement, landmarks, basic expressions, interocular distance, and head orientation.



Module: EDA/GSR

Collection of EDA/GSR data related to physiological arousal. Automatic peak detection, and other data available.



Module: EEG

Connection to a wide variety of EEG headsets. Collect, visualize, and report signals from the brain.



Module: ECG

Collect, visualize, and export raw electrocardiogram (ECG).



Module: EMG

Collect, visualize, and export raw electromyography (EMG or fEMG) signals.

iMotions Software Modules

Full license software



Module: Voice Analysis

Analyze aspects of voice such as pitch, tone, rhythm, emotion analysis and emotional valence.



Module: Respiration

Capture, analyze, and export respiration data. Apply R notebooks for data filtering and respiration peak detection.

Analysis license software



Analysis Only License - No Data Collection

Enables all analysis capabilities except Affectiva Module. No data collection or post-processing capabilities.

iMotions Software Module Features

The features for each software module are detailed below.



iMotions Core

Prerequisite to integrate any module

Study Design:

- Build advanced study designs by point and click
- Support within- and between-subject designs, randomizations, block designs, etc.

Stimuli Presentation:

- Multimedia capabilities including images, videos, live websites, surveys, mobile phone apps, software interfaces, gaming, VR, etc. Up to 3 camera feeds supported.

Data Collection:

- Respondent management
- Real-time data viewing (raw data & metrics)
- Behavioral observation data from camera, mouse-clicks, and key strokes
- Capture respondent activity with facial and environmental cameras

Markup & Annotations:

- Create live or post-processing markers with annotations

Data Analysis:

- Variety of automated features and easy-to-use tools
- Moment-to-moment visualization of raw and aggregated data
- Summary scores across multiple modalities

Data Import / Export:

- Export raw data, videos, summary metrics and data visualizations on video and static stimuli, etc. Import external data sources for visualization / synchronization

Face / Environment / Scene Camera:

- Includes ability to record respondent's face and / or environment from up to three different camera feeds
- Record and view the scene to define moments of interest

API

- Input / output API: UDP or TCP/IP connection can be used to stream data live into and from 3rd party software/hardware. Integrate almost any device, and send data live into iMotions for full synchronization
- Post Import Data: Upload externally recorded data for analysis within iMotions software (e.g. sensor recordings or video obtained by camera)
- TTL trigger for sending integration signals via other programs for synchronization accuracy
- LSL (Lab streaming layer) integration options for receiving timeline signals real-time from any LSL supported device. Integrate even more devices into iMotions.

Survey

- Program and launch surveys in conjunction with, or separately from biosensor recordings
- Multiple choice, scale, and open-end question types, customizable with rich text, images, and color, etc.



Module: Automated AOs

Prerequisites: iMotions Core & any Eye-tracking module

- AI-assisted object tracking for automated placement of Areas of Interest (AOI)
- Background processing of object tracking
- Seamless coexistence of automated AOIs with manual drawing options for AOIs
- Eye tracking metrics such as time to first fixation, dwell time, respondent ratio, revisits, etc.



Module: Eye Tracking - Screen-Based

Prerequisites: iMotions Core & Eye Tracking Hardware

- Integration with 20+ eye tracking models from a range of vendors such as SMI, EyeTech, GazePoint, Smart Eye etc.
- Advanced analytic tools for screen-based multimedia stimuli (images, videos, websites, games, software interfaces and 3D environments)
- Integrated quality assurance tools
- Real-time gaze replays and automated metrics such as dwell time, respondent ratio, revisits, fixation count, mouse clicks, key strokes, etc.
- Website aggregation supported with Chrome, Firefox and Edge
- Static and dynamic areas of interest (AOIs) and heat maps
- Automated and real-time metrics such as time to first fixation, dwell time, ration, revisits, fixation count, mouse clicks, etc.
- Export all raw data and metrics
- Scene video recording, segmentation, and editing
- Mobile device testing via mobile stand
- Automated gaze mapping on websites, both on screen and mobile phones for fast and automatic analysis



Module: Eye Tracking - Glasses

Prerequisites: iMotions Core & Eye Tracking Glasses Hardware

- Connection to eye tracking glasses such as Pupil Labs Glasses (Core, Invisible and Neon)
- Post-Import glasses data directly from Argus Science ETVision, and Viewpoint VPS
- Live streaming for qualitative insights and advanced analytic tools for insights in real-world environments
- Integrated quality assurance tools
- Individual & aggregate gaze replays for gaze mapped stimuli
- Static & dynamic areas of interest (AOIs) and heat maps, with manual and semi-automated options
- Automated metrics such as Time to First Fixation, Dwell Time, Respondent Ratio, Revisits, Fixation Count,
- Gaze mapping allows for automating aggregate views of in-person shelf testing.
- Raw data including X,Y coordinates on scenes and pupillometry (if data is available from the sensor)



Module: Eye Tracking - VR

Prerequisites: iMotions Core & VR headset with built-in eye tracking

- Connection to Vive Pro Eye, or Varjo Aero, VR- or XR- series headsets for built-in eye tracking
- Live streaming VR environments with eye tracking data
- Integrated quality assurance tools
- Live visualizations of eye tracking inside iMotions
- Individual replays
- Gaze-mapping onto static images
- Static image and dynamic AOI's and heat maps
- Live stream X, Y co-ordinates into iMotions



Module: Eye Tracking - Web Based

Prerequisites: iMotions Core & Webcam

- Connection via webcam
- Display dynamic or static gaze paths as fixation points or heatmaps
- Create visualization reports
- Calculate fixation points with Hidden Markov Models
- Access 35 metrics related to eye movements, including amplitude, dispersion, velocity, and more
- Add fully customizable AOIs to images and videos
- View 12 further metrics related to fixations (TTFF, dwell, revisit and more)
- Access fundamental stimuli data and mouse action data
- Export and download all data for further exploration and analysis



Module: Affectiva

Prerequisites: iMotions Core & Webcam

- Connection to Affectiva Module via webcam
- Measure facial expressions towards screen-based or physical stimuli
- Import externally recorded videos for post processing of facial expressions
- Integrated quality assurance tools
- Valence: Positive, negative, or neutral response, adaptive valence
- 7 Basic emotions: Joy, Anger, Surprise, Fear, Sadness, Disgust, Contempt, plus new metrics Confusion and Sentimentality
- Blink detection and blink rate calculation
- Integrated R-notebooks for automated event marker creation, thresholding and aggregation for advanced behavioural coding
- Engagement: Overall expressiveness - is respondent neutral or engaged, adaptive engagement
- 21 Facial Expressions: Attention, Brow Furrow, Brow Raise, Inner Brow Raise, Eye Closure, Nose Wrinkle, Upper Lip Raise, Lip Suck, Lip Pucker, Lip Press, Mouth Open, Lip Corner Depressor, Chin Raise, Smirk, Smile, Blinks, Speaking
- Interocular Distance: Distance between two outer eye corners for estimation of distance from screen
- Head Orientation: Head rotation as yaw (up/down), pitch (left/right), and roll



Module: EDA/GSR

Prerequisites: iMotions Core & EDA/GSR Hardware

- Connection to Shimmer3 EDA/GSR+ sensor, BIOPAC / Bionomadix EDA/GSR sensor, or PLUX Biosignals EDA/GSR sensor
- Potential compatibility with any Lab Streaming Layer (LSL) supported EDA/GSR sensor
- Integrated R-Notebooks for automatic peak detection, signal quality assessment, binned aggregation, and epoching as well as automated event markers of GSR activity for advanced behavioral coding
- Connect multiple EDA/GSR devices on one iMotions software license
- Integrated quality assurance tools
- Collect, visualize, and export raw signals
- Battery level and signal strength visualizations
- Automatic Peak Detection with integrated R-notebooks
- Connect up to 6 Shimmer devices on one iMotions software license



Module: ECG

Prerequisites: iMotions Core & ECG Hardware

- Connection to Shimmer3 ECG sensor, BIOPAC / Bionomadix ECG sensors, or PLUX BioSignals ECG sensor
- Battery level and signal strength visualizations
- Potential compatibility with any Lab Streaming Layer (LSL) supported ECG sensor or Low-Energy Bluetooth ECG sensor like the Polar Belt
- Integrated R-Notebooks for calculating heart rate BPM and heart rate variability via multiple methods
- Collect, visualize, and export raw electrocardiogram (ECG) signals associated with cardiovascular activity



Module: EMG

Prerequisites: iMotions Core & EMG Hardware

- Connection to Shimmer3 EMG sensor BIOPAC / Bionomadix EMG sensors or PLUX Biosignals EMG sensors
- Potential compatibility with any Lab Streaming Layer (LSL) supported EMG sensor
- Integrated R-Notebooks for signal processing, smoothing and normalizing EMG data, and the detection/ characterization of muscle contractions
- Automated event marker generation of muscle activation for advanced behavioral coding
- Collect, visualize, and export raw electromyography (EMG) signals associated with muscular contractions used for facial EMG and / or dynamic human movement research



Module: EEG

Prerequisites: iMotions Core & EEG Headset Hardware

- Connection to a variety of leading electroencephalogram (EEG) headsets including Advanced Brain Monitoring, Neuroelectrics Enobio, ActiCHamp and OpenBCI; and potential compatibility with any Lab Streaming Layer (LSL) supported EEG headset
- Collect, visualize and export high-fidelity raw EEG signals
- Access raw signals and automated analysis tools
- Battery level, signal strength, and impedance visualizations
- Integrated quality assurance tools
- Integrated R-Notebooks for the automatic calculation of Frontal Asymmetry, Power spectral density and EEG intersubject correlation
- Connection to a variety of leading electroencephalogram (EEG) headsets
- Access raw signals and automated analysis tools
- Integrated quality assurance tools
- Automatic calculation of frontal asymmetry with integrated R-notebooks
- Built-In Impedance Checker and Benchmark Task Battery for calculation of proprietary BrainState metrics (ABM Headsets Only)



Module: Voice Analysis

Prerequisites: iMotions Core

- Connection to audeERING's devAlce algorithm
- Automated event marker generation of voice detection for advanced behavioral coding
- Integrated R-Notebooks for the summarization of emotional voice data
- Voice activity detection
- Emotion models - both categorical (e.g. happy, sad) and dimensional (e.g. activation, valence)
- Prosody analysis (fundamental frequency, loudness, speaking rate, intonation)
- Speaker attribute model (age and predicted gender)
- Markers can be automatically created when voice is detected
- Collect, visualize, analyze, and export both processed and raw data



Module: Webcam Respiration

Prerequisites: iMotions Core

- Connection via webcam
- Collect, visualize, analyze, and export both processed and raw data
- Apply notch filtering
- Integrated R-Notebooks for automatic breath detection, filtering, and calculation of respiration rate, cycle count, rate and duration



Module: Respiration

Prerequisites: iMotions Core & Respiration Hardware

- Connection to BIOPAC and PLUX Biosignals respiration sensors
- Potential compatibility with any Lab Streaming Layer (LSL) supported respiration sensor
- Collect, visualize, analyze, and export both processed and raw data
- Apply notch filtering
- Integrated R-Notebooks for automatic breath detection, filtering, and calculation of cycle count, rate and duration



Analysis Only License - No Data Collection

(Does not include Affectiva Module)

- Enables all analysis capabilities except Affectiva Facial Expression Analysis Module. No data collection or post-processing capabilities. Only sold as add-on to Core module

Purchase Best-In-Class Hardware

Screen-Based Eye Tracking

EyeTech VT3 - 60 Hz
EyeTech VT3 mini - 60 Hz
EyeTech VT3 XL - 60 Hz
GazePoint GP3 SD 60 Hz
GazePoint GP3 HD 150 Hz
Smart Eye Aurora
Smart Eye Pro
AI-X

Eye Tracking Glasses

Pupil Labs Core
Pupil Labs Invisible
Argus Science ETVision
Neon VPS

EEG Headsets

ABM B-Alert EEG X10
ABM B-Alert EEG X24
Emotiv EEG EPOC + (specific usage license required)
Brain Products actiCHamp EEG
Neuroelectrics ENOBIO
OpenBCI Mark IV
LSL EEG

EDA/GSR Hardware

Shimmer3 EDA/GSR
Empatica E4
BIOPAC MP160
BIOPAC EDA/GSR 100C
BIOPAC Bionomadix 2CH EDA/GSR Amplifier
PLUX

ECG / EMG / Respiration Hardware

Shimmer3 ECG/EMG
BIOPAC MP160
BIOPAC ECG 100C
BIOPAC EMG 100C
BIOPAC RSP 100C
BIOPAC Bionomadix 2CH ECG Amplifier
BIOPAC Bionomadix 2CH EMG Amplifier
BIOPAC Bionomadix 2CH RSP Amplifier
PLUX

iMotions Academy & Resources

- **iMotions Academy:** Personalized online or in-person training programs that help clients become experts with iMotions software and human behavior research. Tailored to different experience levels from beginner to expert.
- **iMotions Help Center:** Find answers to FAQs in more than 150+ online articles and tutorials.
- **iMotions Blog:** More than 300+ posts on our [iMotions blog](#) provide unique information and perspective on human behavior research.
- **iMotions Pocket Guides:** 7 iMotions [Pocket Guides](#) provide detailed information for biosensor modalities like EEG, Facial Expressions, EDA/GSR, Eye Tracking, and more.



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Synchronize, Visualize and Analyze your research in Eye Tracking, Facial Expression Analysis, Galvanic Skin Response, Surveys, EEG and much more in one software platform.

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