Tobii Pro Lab
Product Description

tobii pro

1   Introduction

1.1   Overview

This document describes the features and functionality of **Tobii Pro Lab**. It is a powerful, versatile and comprehensive software to support the entire research workflow for eye trackers from Tobii Pro. The software comprise of three modules: Designer, Recorder and Analyzer. Pro Lab is available in three different editions: **Full Edition**, **Presenter Edition** and **Analyzer Edition**. The Full Edition contains all three modules, Presenter Edition contains Designer, Recorder/Stimuli Presentation and a part of Analyzer's functionality, and Analyzer Edition contains only Analyzer.

> **i** This document applies to Tobii Pro Lab. The software is continuously being developed and refined. Please visit www. tobiipro.com for the most recent specifications for the software and for the latest version of this document.

1.2   Modules

1.2.1   Designer

In the Designer module you can create experiments based on time lines consisting of image and video stimuli. You can also edit stimuli presentation settings like display position, background color, presentation time and stimulus advancement methods, i.e. end on a mouse click or key press to adapt your experiment. Here you also have a preview of what the stimuli will look like on the screen.

> **i** The Designer module only works with selected screen based eye trackers from Tobii Pro, not with Tobii Pro Glasses 2.

1.2.2   Recorder

In the Recorder module you can configure eye trackers from Tobii Pro and present image and video stimuli, with high timing accuracy (refer to the document "Timing Guide for Stimulus Display in Tobii Pro Lab"). You can also calibrate the eye tracker and record eye tracking data, mouse clicks and key presses.

> **i** The Recorder module only works with selected screen based eye trackers from Tobii Pro, not with Pro Glasses 2.

1.2.3   Analyzer

The Analyzer module allows you to replay, visualize and analyze your recorded data. It provides data filtering features, visualizations and the ability to export data for presentations and for further processing in third party software. In addition, for Pro Glasses 2 based projects, it also provides manual and automatic fixation mapping.

1.3   License Models

Pro Lab has two different license models; a *perpetual* based license model and a *subscription* based license model. A subscription license gives you access to the latest software versions as soon as they become available if you have a valid subscription contract. With a perpetual license you receive one year of free upgrades. One to four year upgrade contracts are available for perpetual licenses.

> **i** If using the subscription based model, Pro Lab must connect to the internet at least once every 14 days to validate the license. Failure to do this will result in the software ceasing to function.

2 Software Features and Editions

2.1 Designer

Feature	Presenter	Analyzer	Full
Design experiments with multiple timelines, image and video stimuli	●		●
Batch editing of stimuli settings	●		●
Use multiple stimuli advance options, either alone or in combination (i.e. advance on time, key press, mouse click)	●		●
Configure stimulus onset markers (TTL): for synchronization purposes	●		●

2.2 Recorder

Feature	Presenter	Analyzer	Full
Import Tobii Pro Glasses 2 recordings		●	●
Configure eye tracker settings	●		●
Define experiment participants	●		●
Calibrate eye tracker (regular and infant calibration)	●		●
Present image and video stimuli	●		●
Record eye tracking, mouse and keyboard data	●		●
Send stimulus onset markers (TTL) for synchronization purposes	●		●
Moderator view: track status and gaze data live view	●		●
Receive TTL-in markers and the value for synchronization (available for Tobii Pro Spectrum and Tobii Pro TX300 eye trackers only)	●		●

2.3   Analyzer

Feature	Presenter	Analyzer	Full
Create and edit Areas of Interest (AOIs) on images		●	●
Manual fixation mapping to snapshot images (Pro Glasses 2 projects only)		●	●
Automatic fixation mapping to snapshot images (Pro Glasses 2 projects only)		●	●
Log events for behavioral coding		●	●
Times of Interest (define time intervals based on recording and logged events)		●	●
Plot gaze x and y coordinates as well as eye movement velocity over time		●	●
Static heat maps (visualizations on images)		●	●
Static gaze plots (visualizations on images)		●	●
Replay of recordings	●	●	●
Export eye tracking metrics		●	●
Export event and time interval based metrics		●	●
Video export of recordings and recording segments	●	●	●
Export visualizations as images (.png and .jpg)		●	●

2.3.1   Data Export

Feature	Presenter	Analyzer	Full
Eye tracking data to text file (.tsv)	●	●	●

Currently available data export fields:	Available coordinate systems	Screen based eye trackers from Tobii Pro	Pro Glasses 2
Project name		●	●
Export date		●	●
Participant name		●	●
Recording name		●	●
Recording date		●	●
Recording start time		●	●
Recording duration		●	●
Timeline name		●	
Recording fixation filter name		●	●
Snapshot fixation filter name			●
Recording software version		●	
Recording resolution width		●	

Recording resolution height		●	
Recording monitor latency		●	
Recording timestamp		●	●
Eye tracker timestamp		●	
Gaze point X	RCSpx	●	●
Gaze point Y	RCSpx	●	●
Gaze point left X	RCSpx	●	
Gaze point left Y	RCSpx	●	
Gaze point right X	RCSpx	●	
Gaze point right Y	RCSpx	●	
Gaze 3D position left X			●
Gaze 3D position left Y			●
Gaze 3D position left Z			●
Gaze 3D position right X			●
Gaze 3D position right Y			●
Gaze 3D position right Z			●
Gaze 3D position combined X			●
Gaze 3D position combined Y			●
Gaze 3D position combined Z			●
Gaze 3D position left X			●
Gaze 3D position left Y			●
Gaze 3D position left Z			●
Gaze 3D position right X			●
Gaze 3D position right Y			●
Gaze 3D position right Z			●
Gaze direction left X	Normalized coordinates	●	●
Gaze direction left Y	Normalized coordinates	●	●
Gaze direction left Z	Normalized coordinates	●	●
Gaze direction right X	Normalized coordinates	●	●
Gaze direction right Y	Normalized coordinates	●	●
Gaze direction right Z	Normalized coordinates	●	●
Pupil position left X			●
Pupil position left Y			●
Pupil position left Z			●
Pupil position right X			●
Pupil position right Y			●
Pupil position right Z			●
Pupil diameter left		●	●
Pupil diameter right		●	●
Validity left		●	

Validity right		●	
Eye position left X	RCSmm	●	
Eye position left Y	RCSmm	●	
Eye position left Z	RCSmm	●	
Eye position right X	RCSmm	●	
Eye position right Y	RCSmm	●	
Eye position right Z	RCSmm	●	
Gaze point left X	RCSmm, RCXpx	●	
Gaze point left Y	RCSmm, RCXpx	●	
Gaze point right X	RCSmm, RCXpx	●	
Gaze point right Y	RCSmm, RCXpx	●	
Eye movement type		●	●
Gaze event duration		●	●
Eye movement type index		●	●
Fixation point X	RCSpx	●	●
Fixation point Y	RCSpx	●	●
Event		●	●
Event value		●	
Presented Stimulus name		●	
Presented media name		●	
Presented media width		●	
Presented media height		●	
Presented media position X	RCSpx	●	
Presented media position Y	RCSpx	●	
Original media width		●	
Original media height		●	
Gaze point X	MCSnorm	●	
Gaze point Y	MCSnorm	●	
Gaze point left X	MCSnorm	●	
Gaze point left Y	MCSnorm	●	
Gaze point right X	MCSnorm	●	
Gaze point right Y	MCSnorm	●	
Fixation point X	MCSnorm	●	
Fixation point Y	MCSnorm	●	
Recording media name			●
Recording media width			●
Recording media height			●
Media width			●
Media height			●
Mapped gaze data X			●

Mapped gaze data Y			●
Mapped eye movement type			●
Mapped eye movement type index			●
Mapped fixation point X			●
Mapped fixation point Y			●
Automatically-mapped gaze data score			●
Automatically-mapped gaze data X			●
Automatically-mapped gaze data Y			●
Manually-mapped gaze data X			●
Manually-mapped gaze data Y			●
AOI hit			●
Gyro X			●
Gyro Y			●
Gyro Z			●
Accelerometer X			●
Accelerometer Y			●
Accelerometer Z			●

2.3.2   Metrics Export

Feature

Eye tracking metrics export to Open XML (.xlxs) compatible spreadsheet.

Currently available metrics:

Interval Duration
Interval Start
Event Count
Event Count (includes zeroes)
AOI Time-To-First Fixation
AOI Total Visit Duration
AOI Total Visit Duration (includes zeroes)
AOI Average Visit Duration
AOI Visit Count
AOI Visit Count (includes zeroes)
AOI Total Fixation Duration
AOI Total Fixation Duration (includes zeroes)
AOI Average Fixation Duration
AOI Fixation Count
AOI Fixation Count (include zeroes)

3 Software System Requirements

3.1 Minimum System Requirements

- Windows 7 (64–bit or later)
- 1280×768 px screen resolution
- 4th Gen Dual Core Intel i5 2.3 GHz or higher
- 8 GB RAM
- Integrated Graphics Card
- 256 GB 7200 RPM Hard Drive

3.2 Recommended System Configuration

- Windows 10 64–bit
- 1920×1080 px screen resolution
- 6th Gen Quad Core Intel i5 3.0 GHz or equivalent
- 16 GB RAM
- Dedicated Graphics Card
- 256 GB SSD Hard Drive

3.3 High Performance System Configuration

- Windows 10 64–bit
- 1920×1080 px screen resolution
- 6th Gen Quad Core Intel i7 or equivalent
- 32 GB RAM
- Dedicated Graphics Card
- 256 GB SSD Hard Drive

4   Project and Media Limitations

Maximum resolutions for image stimuli: 2560x1440

Maximum resolution for snapshot images: 50MP

Maximum resolution for video stimuli: 1920x1080 at 30 fps

Glasses project size: 500 recordings at 30 minutes each

Screen-based project with images size: 100 Recordings with 400 Images

Screen-based project with video size: 100 Recordings with one 90 minute video or 50 two-minute videos

Note that the performance of the application in general and the stimulus presentation timing in particular are affected by the number and resolution of the media and the overall performance of the computer being used to run the experiment. Please refer to the Timing Guide for Stimulus Display in Pro Lab document (available here http://www.tobiipro.com/learn-and-support/learn/steps-in-an-eye-tracking-study/design/stimulus-presentation-timing-in-pro-lab/) for more details.

Supported image types:

- JPG
- PNG

Supported video containers:

- Mp4 (Recommended)
- AVI

Supported video codecs:

- h264 (Recommended)
- DivX
- Xvid

Supported Audio Codecs:

- Mp3 (Recommended)
- AAC
- AC3
- PCM

5   Preliminary capabilities

Pro Lab will be updated continuously for all users entitled to upgrades. The table below lists some of the key features that will be added in the near future. For more information on coming improvements, please contact us through our Sales channels.

Feature	Date to be released by	Presenter	Analyzer	Full
Moving AOIs	End of June, 2017		●	●
Scene camera stimulus (Support for real world experiments using remote eye trackers)	End of June, 2017	●	●	●
Basic integration of Shimmer3 GSR+ device (Recording and raw data export of GSR data)	End of June, 2017	●	●	●
Full integration of Shimmer3 GSR+ device (Data filtering, Analysis and Visualisation tools)	End of August, 2017	●	●	●

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