

# **Tobii test of Gaze-To-Word Mapping Tool by Oleg Špakov**

Tested in July 2010 by Måns Östberg

Gaze-To-Word Mapping Tool, GWM, is collection a collection of gaze-to-word mapping engines, text mask creators and translation and word-frequency dictionaries for on-line word-in-focus detection from gaze data while reading a text. It also provides translations when a user gets stuck on word, provided that you can provide a dictionary.

It is implemented as a COM-server in Windows. There are also two testing applications included.

GWM has been developed by Oleg Špakov (<http://www.cs.uta.fi/~oleg/>) at the University of Tampere in Finland.

## Test details

Test performed 2010-07-06 on GWM version 1.22, released on 2009-05-27. The test was performed on the following equipment:

- Eyetracker: Tobii T60 XL, firmware 1.2.21 (should work on all Tobii eye trackers)
- Computer: FujitsuSiemens laptop LIFEBOOK BS034 (2 GB ram, 2 GHz Intel Core2 T7200 CPU at 2 GHz)
- Operating system: Windows XP service pack 3
- SDK: Requires ETU-driver by Oleg Špakov which is based on the Tobii SDK.

## Test Results

The two test-applications mostly works fine. We couldn't get them to provide translations. According to the developer it works on his computer.

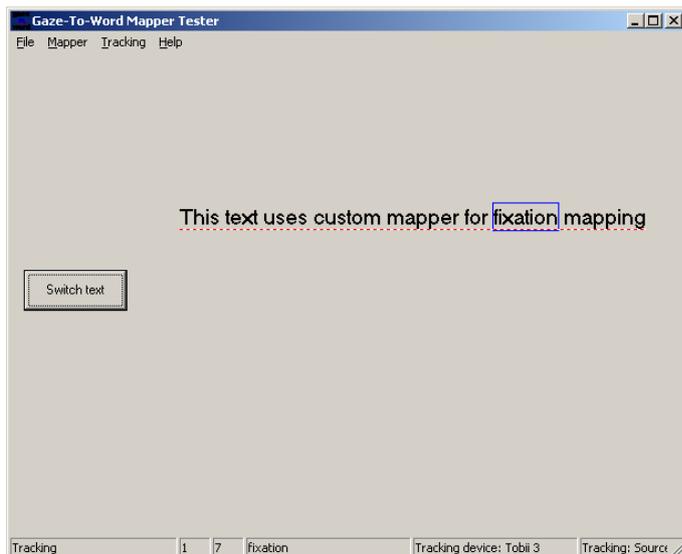
## Overview

Gaze-To-Word Mapping Tool, GWM, is collection a collection of gaze-to-word mapping engines, text mask creators and translation and word-frequency dictionaries for on-line word-in-focus detection from gaze data while reading a text. It also provides translations when a user gets stuck on word, provided that you can provide a dictionary. It is implemented as a COM-server in Windows. There are also two testing applications included.

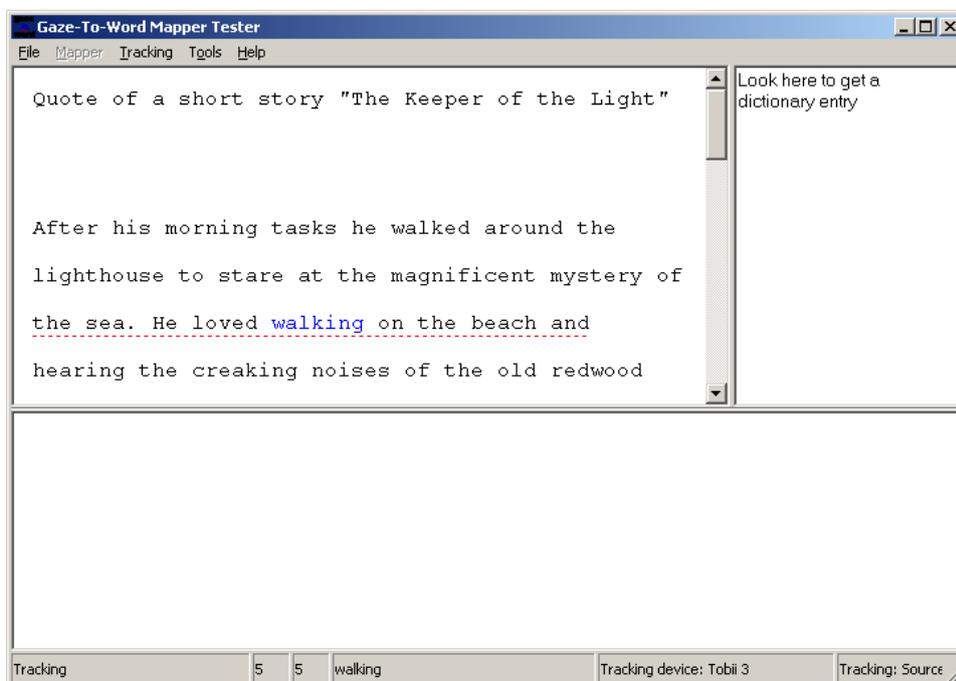
There are two ways to load a text, one for applications using RichEdit and one more complicated where the applications itself needs to create a text mask. GWM can use several mapping engines and combine the results to get the best possible mapping.

To provide translations GWM needs both a frequency dictionary and a translation dictionary. The translations are showed when a user has dwelled on a word for a certain amount of time. That time varies for each word, depending on the frequency dictionaries. The only included dictionary is an English frequency dictionary. There is a tool included to create translation dictionaries.

We have tried the two included testing applications, but we have not tried writing any software with the COM object. Picture 1 and Picture 2 below show the testing applications in action, highlighting the word the user gazes at.



Picture 1



Picture 2

## Get going

The download includes a standard installation executable. It installs the COM-object, a detailed manual for using the COM-object in your own applications and two testing applications without documentation. There is also a GWM with tools package that also includes a tool for creating dictionaries

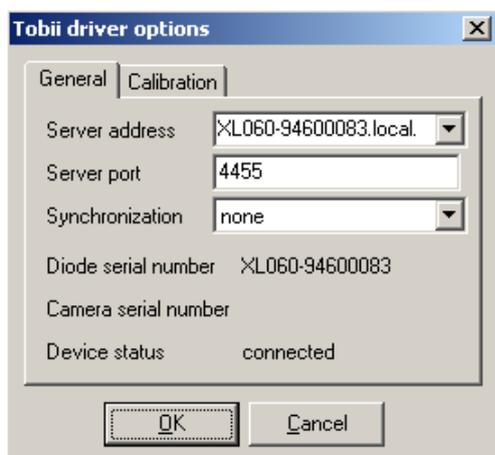
The first thing to do when running the testing applications is to set up the program for your eye tracker. In both programs this is done by selecting "Options..." from the "Tracking" menu, click on the "Options" button. On the "Device" tab you can select which eye tracker device you have, or one of several simulators. "Tobii 3" is for the T/X series of eye trackers, "Tobii 2" is for older eye trackers. When you've selected the right device press the "Device and API-Converter options..." to configure your eye tracker.



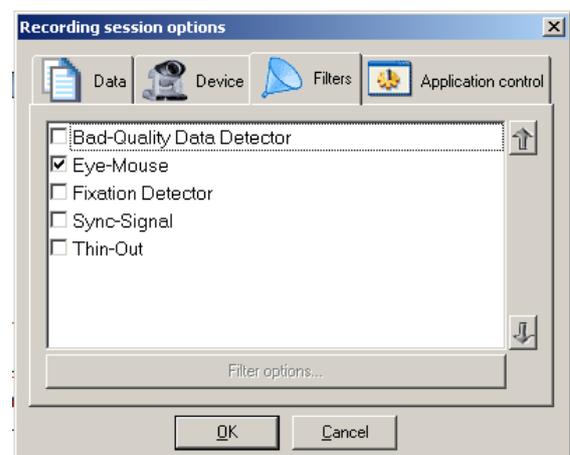
Picture 3 - settings



Picture 4- Tobii 2 settings

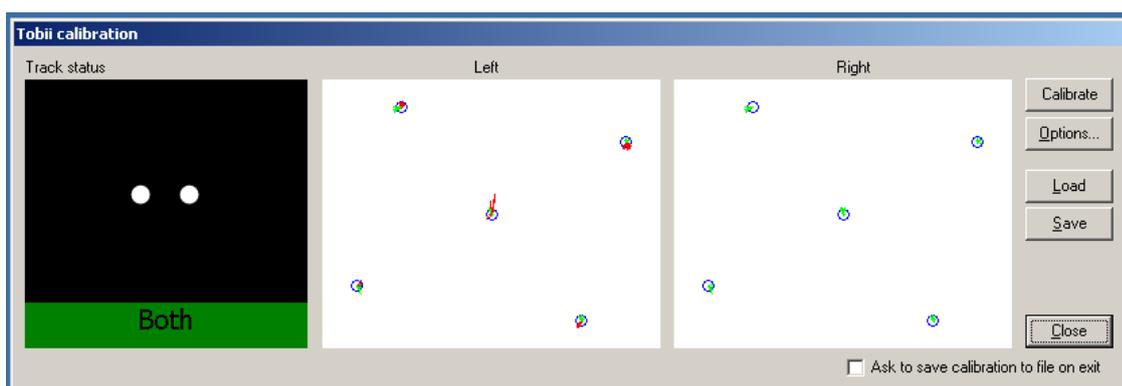


Picture 5 – Tobii 3 settings



Picture 6 - Filters

When you are finished with the options you need to calibrate the eye tracker. Click on “Calibrate” and you get the following screen:



Picture

7 – Calibration windows

Make sure the eye tracker tracks both your eyes and select Calibrate. You also have the possibility to save and load calibrations for different people. When you have finished the calibration you can close the windows and start the tracking by selecting “Start tracking” from the “Tracking” menu.