

EyeLink SDL Example Scripts

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The examples bundled with the EyeLink Developers Kit installation demonstrate how to integrate EyeLink eye trackers into your C/C++ projects using the cross-platform SDL (Simple DirectMedia Layer) library. These scripts utilize the core EyeLink C API to handle tracker connection, setup, recording, and data retrieval natively across Windows, macOS, and Linux environments.

Example Scripts

- **simple:** A basic experiment template that demonstrates the standard EyeLink trial loop, recording eye movements while displaying a simple stimulus, and transferring the .edf data file.
- **simpleExample:** An alternative, streamlined introductory template demonstrating the fundamental EyeLink trial loop and recording setup.
- **text:** A text presentation example that demonstrates how to generate text stimuli and send appropriate messages to the .edf file for integration with Data Viewer.
- **picture:** A static image presentation example that displays image files and sends integration commands to ensure the exact image appears as the background during analysis.
- **dynamic:** A dynamic tracking example featuring a moving target to demonstrate continuous display updates while keeping the tracker recording and tightly synced.
- **gcwindow:** A gaze-contingent display example that uses real-time gaze position data to continuously update a "moving window" or scotoma mask on the screen.
- **eyedata:** A real-time data retrieval example that accesses online samples and events (fixations, saccades, blinks) over the Ethernet link during active recording.
- **control:** A template experiment that uses the participant's gaze position to select items from a grid of letters.
- **broadcast:** A network listening example that configures a third PC to silently receive real-time gaze data broadcast over the network without interfering with the primary tracker control.
- **comm_simple:** A basic two-way network communication example that demonstrates sending commands to the Host PC and reading its responses over the link.
- **comm_listener:** A network listening example focused strictly on monitoring the link for incoming messages, button presses, and specific events generated by the Host PC.
- **com:** Another example for gcwindow, but written in the C++ COM (Component Object Model) interface with SDL graphics.
- **Extension:** A plug-in template that you can use as a starting point for implementing custom calibration routines, animated targets, or custom display hooks.
- **asc_proc:** A data processing utility example that demonstrates how to parse and process standard EyeLink .asc (ASCII) files for custom offline data extraction.

(Note: The **shared** folder contains the common C/C++ source files, headers, and SDL utility functions required to compile and run the experiments above. **SDLMain.h** and **SDLMain.m** are included specifically to support SDL initialization on macOS environments. Various **.sln** and **.dsw** files are provided to quickly load and build the suite in different versions of Microsoft Visual Studio).

EyeLink Data Viewer Integration

Beyond marking event times, these examples demonstrate how to send specially formatted messages to your EyeLink Data File (.edf) to include integration with Data Viewer. These messages allow Data Viewer to automatically parse your experiment's structure, including trial start/end times, trial variables, interest areas, and other stimulus information.

Documentation & Resources

- **EyeLink Programmer's Guide:** Documentation for the core C API functions utilized in these examples (accessible via Start Menu > SR Research > EyeLink > Docs).
- **EyeLinkCOM.chm:** Documentation for the COM interface.
- **Data Viewer User Manual:** Contains the complete integration messaging protocol (accessible via Help > Contents > "Protocol for EyeLink Data to Viewer Integration", and also as a download at [Data Viewer User Manual](#)).