

EyeLink ® EDF Access API

Generated by Doxygen 1.8.11

Contents

1	EyeLink EDF Access API	1
1.1	Introduction	1
2	classIntro	3
3	Compling	5
3.1	Windows	5
3.1.1	Visual Studio	5
3.2	Linux	6
3.2.1	Gcc	7
3.3	macOS	7
4	Module Index	9
4.1	Modules	9
5	Class Index	11
5.1	Class List	11
6	Module Documentation	13
6.1	General EDF Data Access Functions	13
6.1.1	Detailed Description	13
6.1.2	Function Documentation	13
6.1.2.1	edf_open_file(const char *fname, int consistency, int loadevents, int loadsamples, int *errval)	13
6.1.2.2	edf_open_file_ex(const char *fname, int consistency, int loadevents, int loadsamples, CONFIG *config, int *errval)	14
6.1.2.3	edf_close_file(EDFFILE *ef)	14

6.1.2.4	<code>edf_set_extra_message_file(const char *fname)</code>	15
6.1.2.5	<code>edf_get_next_data(EDFFILE *ef)</code>	15
6.1.2.6	<code>edf_get_float_data(EDFFILE *ef)</code>	15
6.1.2.7	<code>edf_get_element_count(EDFFILE *ef)</code>	16
6.1.2.8	<code>edf_get_preamble_text(EDFFILE *ef, char *buffer, int length)</code>	16
6.1.2.9	<code>edf_get_preamble_text_length(EDFFILE *edf)</code>	16
6.2	Trial Related Functions	17
6.2.1	Detailed Description	17
6.2.2	Function Documentation	17
6.2.2.1	<code>edf_set_trial_identifier(EDFFILE *edf, char *start_marker_string, char *end_↔ marker_string)</code>	17
6.2.2.2	<code>edf_get_start_trial_identifier(EDFFILE *ef)</code>	18
6.2.2.3	<code>edf_get_end_trial_identifier(EDFFILE *ef)</code>	18
6.2.2.4	<code>edf_get_trial_count(EDFFILE *edf)</code>	18
6.2.2.5	<code>edf_jump_to_trial(EDFFILE *edf, int trial)</code>	19
6.2.2.6	<code>edf_get_trial_header(EDFFILE *edf, TRIAL *trial)</code>	19
6.2.2.7	<code>edf_goto_previous_trial(EDFFILE *edf)</code>	19
6.2.2.8	<code>edf_goto_next_trial(EDFFILE *edf)</code>	20
6.2.2.9	<code>edf_goto_trial_with_start_time(EDFFILE *edf, unsigned int start_time)</code>	20
6.2.2.10	<code>edf_goto_trial_with_end_time(EDFFILE *edf, unsigned int end_time)</code>	20
6.3	Bookmark Related Functions	21
6.3.1	Detailed Description	21
6.3.2	Function Documentation	21
6.3.2.1	<code>edf_set_bookmark(EDFFILE *ef, BOOKMARK *bm)</code>	21
6.3.2.2	<code>edf_free_bookmark(EDFFILE *ef, BOOKMARK *bm)</code>	21
6.3.2.3	<code>edf_goto_bookmark(EDFFILE *ef, BOOKMARK *bm)</code>	22
6.4	EDF Specific Functions	23
6.4.1	Detailed Description	23
6.4.2	Function Documentation	23
6.4.2.1	<code>edf_get_version(void)</code>	23

7	Class Documentation	25
7.1	ALLF_DATA Union Reference	25
7.1.1	Detailed Description	25
7.1.2	Member Data Documentation	25
7.1.2.1	fe	25
7.1.2.2	im	25
7.1.2.3	io	25
7.1.2.4	fs	26
7.1.2.5	rec	26
7.2	BOOKMARK Struct Reference	26
7.2.1	Detailed Description	26
7.2.2	Member Data Documentation	26
7.2.2.1	id	26
7.3	CONFIG Struct Reference	26
7.3.1	Detailed Description	26
7.3.2	Member Data Documentation	26
7.3.2.1	default_rx	26
7.3.2.2	default_ry	27
7.3.2.3	enable_debug	27
7.3.2.4	debug_file_name	27
7.4	EDFFILE Struct Reference	27
7.4.1	Detailed Description	27
7.5	FEVENT Struct Reference	27
7.5.1	Detailed Description	28
7.5.2	Member Data Documentation	28
7.5.2.1	time	28
7.5.2.2	type	29
7.5.2.3	read	29
7.5.2.4	stime	29
7.5.2.5	entime	29

7.5.2.6	hstx	29
7.5.2.7	hsty	29
7.5.2.8	gstx	29
7.5.2.9	gsty	29
7.5.2.10	sta	29
7.5.2.11	henx	29
7.5.2.12	heny	30
7.5.2.13	genx	30
7.5.2.14	geny	30
7.5.2.15	ena	30
7.5.2.16	havx	30
7.5.2.17	havy	30
7.5.2.18	gavx	30
7.5.2.19	gavy	30
7.5.2.20	ava	30
7.5.2.21	avel	30
7.5.2.22	pvel	31
7.5.2.23	svel	31
7.5.2.24	evel	31
7.5.2.25	supd_x	31
7.5.2.26	eupd_x	31
7.5.2.27	supd_y	31
7.5.2.28	eupd_y	31
7.5.2.29	eye	31
7.5.2.30	status	31
7.5.2.31	flags	31
7.5.2.32	input	32
7.5.2.33	buttons	32
7.5.2.34	parsedby	32
7.5.2.35	message	32

7.5.2.36	headInSpaceX_start	32
7.5.2.37	headInSpaceY_start	32
7.5.2.38	headInSpaceX_end	32
7.5.2.39	headInSpaceY_end	32
7.5.2.40	headInSpaceX_avg	32
7.5.2.41	headInSpaceY_avg	32
7.5.2.42	eyeInHeadX_start	33
7.5.2.43	eyeInHeadY_start	33
7.5.2.44	eyeInHeadX_end	33
7.5.2.45	eyeInHeadY_end	33
7.5.2.46	eyeInHeadX_avg	33
7.5.2.47	eyeInHeadY_avg	33
7.5.2.48	headRotationX_start	33
7.5.2.49	headRotationY_start	33
7.5.2.50	headRotationZ_start	33
7.5.2.51	headRotationX_end	33
7.5.2.52	headRotationY_end	34
7.5.2.53	headRotationZ_end	34
7.5.2.54	headRotationX_avg	34
7.5.2.55	headRotationY_avg	34
7.5.2.56	headRotationZ_avg	34
7.5.2.57	headPositionX_start	34
7.5.2.58	headPositionY_start	34
7.5.2.59	headPositionZ_start	34
7.5.2.60	headPositionX_end	34
7.5.2.61	headPositionY_end	34
7.5.2.62	headPositionZ_end	35
7.5.2.63	headPositionX_avg	35
7.5.2.64	headPositionY_avg	35
7.5.2.65	headPositionZ_avg	35

7.6	FSAMPLE Struct Reference	35
7.6.1	Detailed Description	36
7.6.2	Member Data Documentation	36
7.6.2.1	time	36
7.6.2.2	px	36
7.6.2.3	py	36
7.6.2.4	hx	36
7.6.2.5	hy	36
7.6.2.6	pa	37
7.6.2.7	gx	37
7.6.2.8	gy	37
7.6.2.9	rx	37
7.6.2.10	ry	37
7.6.2.11	gxvel	37
7.6.2.12	gyvel	37
7.6.2.13	hxvel	37
7.6.2.14	hyvel	37
7.6.2.15	rxvel	37
7.6.2.16	ryvel	38
7.6.2.17	fgxvel	38
7.6.2.18	fgyvel	38
7.6.2.19	fhxvel	38
7.6.2.20	fhyvel	38
7.6.2.21	frxvel	38
7.6.2.22	fryvel	38
7.6.2.23	hdata	38
7.6.2.24	flags	38
7.6.2.25	input	38
7.6.2.26	buttons	39
7.6.2.27	htype	39

7.6.2.28	errors	39
7.6.2.29	eyeInHeadX	39
7.6.2.30	eyeInHeadY	39
7.6.2.31	headMarkerFlags	39
7.6.2.32	headRotation	39
7.6.2.33	headPosition	39
7.6.2.34	headInSpaceX	39
7.6.2.35	headInSpaceY	39
7.6.2.36	unused_headInSpaceX	40
7.6.2.37	unused_headInSpaceY	40
7.6.2.38	hrgx	40
7.6.2.39	hrgy	40
7.6.2.40	ergx	40
7.6.2.41	ergy	40
7.6.2.42	ex	40
7.6.2.43	ey	40
7.6.2.44	emajor	40
7.6.2.45	eminor	40
7.6.2.46	eangle	41
7.7	RECORDINGS Struct Reference	41
7.7.1	Detailed Description	41
7.7.2	Member Data Documentation	41
7.7.2.1	time	41
7.7.2.2	sample_rate	41
7.7.2.3	eflags	41
7.7.2.4	sflags	41
7.7.2.5	state	42
7.7.2.6	record_type	42
7.7.2.7	pupil_type	42
7.7.2.8	recording_mode	42
7.7.2.9	filter_type	42
7.7.2.10	pos_type	42
7.7.2.11	eye	42
7.8	TRIAL Struct Reference	42
7.8.1	Detailed Description	42
7.8.2	Member Data Documentation	43
7.8.2.1	rec	43
7.8.2.2	duration	43
7.8.2.3	starttime	43
7.8.2.4	endtime	43

Chapter 1

EyeLink EDF Access API

1.1 Introduction

The EyeLink EDF Access API is a set of C functions that provide access to EyeLink EDF files. The access method is similar to that of the online data access API, where the program performs a set of `eyelink_get_next_data()` and `eyelink_get_float_data()` calls to step through the data.

The EDF Access API also provides functions for setting bookmarks within an EDF file, and for automatically parsing an EDF file into a set of trials, with functions for stepping through the trial set.

As an example use for the API, the `edf2asc` translator program has been re-written to use the API for EDF data access. The source code for this `edf2asc` program is included with the API distribution.

This is the first release of the EDF Access API and should be considered a beta release.

Please report any functionality comments or bugs to support@sr-research.com.

Chapter 2

classIntro

The EyeLink EDF access API (edfapi.dll) library defines a number of data types that are used for data reading, found in eye_data.h and edf.h. The useful parts of these structures are discussed in the following sections.

Chapter 3

Compling

Ensure that you have copied the library for the operating system you are using to a directory that is in your library path.

3.1 Windows

Under the directory "<Program files (x86)>\SR Research\EyeLink\libs" you will find edfapi.dll and edfapi.lib for 32bit windows and under the directory "<Program files (x86)>\SR Research\EyeLink\libs\x64" you will find edfapi64.dll and edfapi64.lib for 64bit windows

Also, under the directory "<Program files (x86)>\SR Research\EyeLink\includes\eyelink" you will find the following header files:

1. edf.h
2. edf_data.h
3. edftypes.h

In your program you will include edf.h, which contains all the edfapi function declarations. The edf_data.h and edftypes.h contain necessary data structures and types.

3.1.1 Visual Studio

While linking under visual studio you may either include edfapi.lib/edfapi64.lib as one of your source file or pass edfapi.lib/edfapi64.lib as an argument to the linker. For the latter approach, please note the object/library modules settings in the screen shot below.

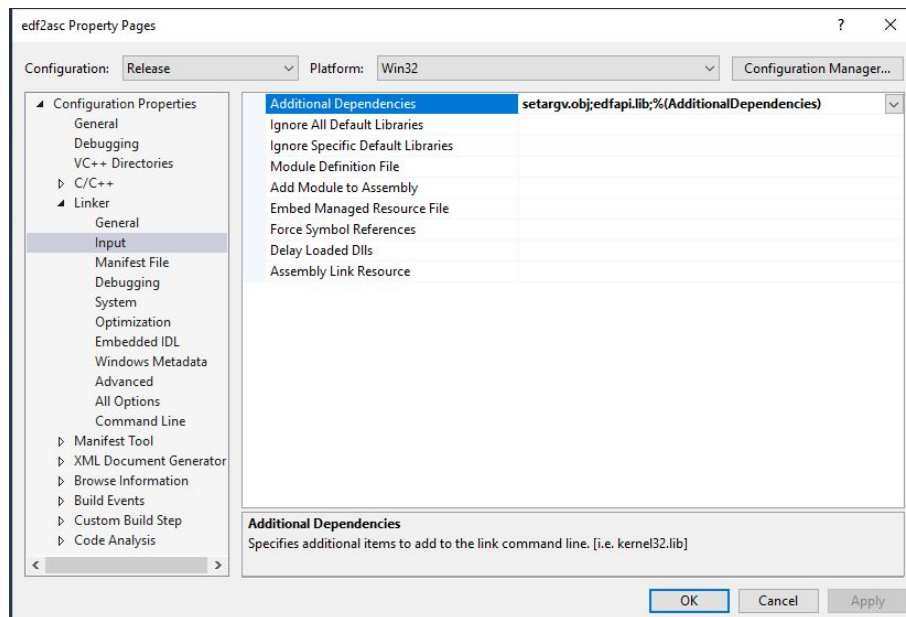


Figure 3.1 Visual Studio 2015 Link Settings for edf2asc

The Includes/Library file search path settings are shown below.

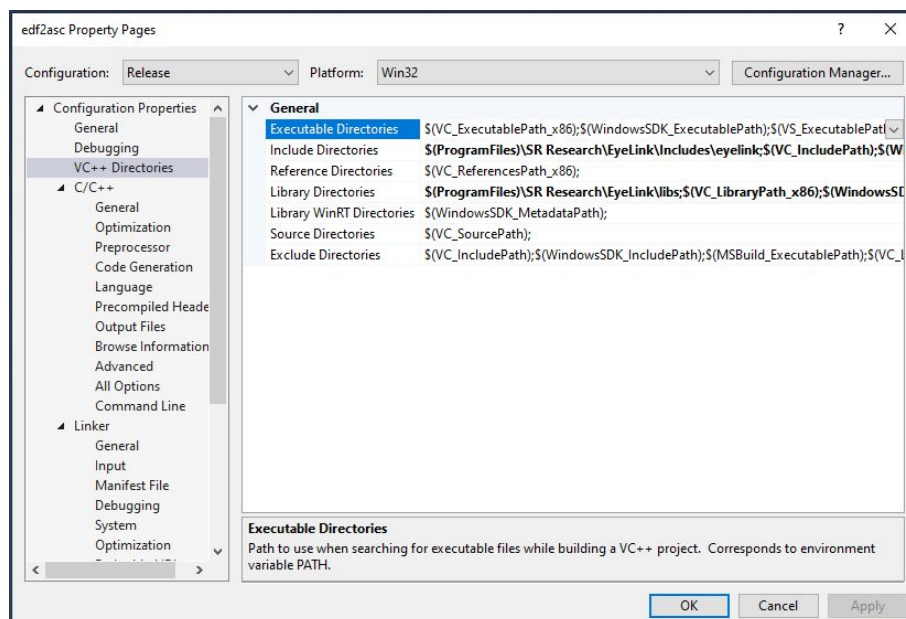


Figure 3.2 Visual Studio 2015 Includes/Link File Search Path for edf2asc

3.2 Linux

Under the directory `"/usr/lib/x86_64-linux-gnu"`, you will find `libedfapi.so` and `libedfapi.a`.

Also, under the directory `"/usr/include/EyeLink"` you will find the following header files:

1. edf.h
2. edf_data.h
3. edftypes.h

In your program you will include edf.h, which contains all the edfapi function declarations. The edf_data.h and edftypes.h contain necessary data structures and types.

3.2.1 Gcc

See Makefile.linux for an example of compiling and linking with gcc compiler under linux platform.

Static compilation:

```
gcc -static <gcc options> -o output_file_name <your sources to compile> -ledfapi -lm
```

Shared compilation:

```
gcc <gcc options> -o output_file_name <your sources to compile> -ledfapi -lm
```

3.3 macOS

The edfapi.framework/Headers installed by default under /Library, contains the following header files:

1. edf.h
2. edf_data.h
3. edftypes.h

In your program you will include edf.h, which contains all the edfapi function declarations. The edf_data.h and edftypes.h contain necessary data structures and types.

Please note that we no longer provide libedfapi.dylib and libedfapi.a for macOS. Also note we no longer provide Makefile for macOS. Please refer to the provided XCode project in CExample folder.

Chapter 4

Module Index

4.1 Modules

Here is a list of all modules:

General EDF Data Access Functions	13
Trial Related Functions	17
Bookmark Related Functions	21
EDF Specific Functions	23

Chapter 5

Class Index

5.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

ALLF_DATA	25
BOOKMARK	26
CONFIG	26
EDFFILE	27
FEVENT	27
FSAMPLE	35
RECORDINGS	41
TRIAL	42

Chapter 6

Module Documentation

6.1 General EDF Data Access Functions

Functions

- PUBLIC_FN [EDFFILE](#) * [edf_open_file](#) (const char *fname, int consistency, int loadevents, int loadsamples, int *errval)
Opens the EDF file passed in by edf_file_name and preprocesses the EDF file.
- PUBLIC_FN [EDFFILE](#) * [edf_open_file_ex](#) (const char *fname, int consistency, int loadevents, int loadsamples, [CONFIG](#) *config, int *errval)
Opens the EDF file passed in by edf_file_name and preprocesses the EDF file.
- PUBLIC_FN int [edf_close_file](#) ([EDFFILE](#) *ef)
Closes an EDF file pointed to by the given [EDFFILE](#) pointer and releases all of the resources (memory and physical file) related to this EDF file.
- PUBLIC_FN int [edf_set_extra_message_file](#) (const char *fname)
- PUBLIC_FN int [edf_get_next_data](#) ([EDFFILE](#) *ef)
*Returns the type of the next data element in the EDF file pointed to by *edf. Each call to [edf_get_next_data\(\)](#) will retrieve the next data element within the data file. The contents of the data element are not accessed using this method, only the type of the element is provided. Use [edf_get_float_data\(\)](#) instead to access the contents of the data element.*
- PUBLIC_FN [ALLF_DATA](#) * [edf_get_float_data](#) ([EDFFILE](#) *ef)
- PUBLIC_FN unsigned int [edf_get_element_count](#) ([EDFFILE](#) *ef)
- PUBLIC_FN int [edf_get_preamble_text](#) ([EDFFILE](#) *ef, char *buffer, int length)
- PUBLIC_FN int [edf_get_preamble_text_length](#) ([EDFFILE](#) *edf)

6.1.1 Detailed Description

6.1.2 Function Documentation

- 6.1.2.1 PUBLIC_FN [EDFFILE](#)* [edf_open_file](#) (const char * *fname*, int *consistency*, int *loadevents*, int *loadsamples*, int * *errval*)

Opens the EDF file passed in by edf_file_name and preprocesses the EDF file.

Parameters

<i>fname</i>	name of the EDF file to be opened.
<i>consistency</i>	onsistency check control (for the time stamps of the start and end events, etc). 0, no consistency check. 1, check consistency and report. 2, check consistency and fix.
<i>loadevents</i>	load/skip loading events 0, do not load events. 1, load events.
<i>loadsamples</i>	load/skip loading of samples 0, do not load samples. 1, load samples.
<i>errval</i>	This parameter is used for returning error value. The pointer should be a valid pointer to an integer. If the returned value is not 0 then an error occurred.

Returns

if successful a pointer to [EDFFILE](#) structure is returned. Otherwise NULL is returned.

6.1.2.2 PUBLIC_FN EDFFILE* edf_open_file_ex (const char * *fname*, int *consistency*, int *loadevents*, int *loadsamples*, CONFIG * *config*, int * *errval*)

Opens the EDF file passed in by *edf_file_name* and preprocesses the EDF file.

Parameters

<i>fname</i>	name of the EDF file to be opened.
<i>consistency</i>	onsistency check control (for the time stamps of the start and end events, etc). 0, no consistency check. 1, check consistency and report. 2, check consistency and fix.
<i>loadevents</i>	load/skip loading events 0, do not load events. 1, load events.
<i>loadsamples</i>	load/skip loading of samples 0, do not load samples. 1, load samples.
<i>config</i>	Currently only used to set the default resolution. In the future, this will be used to pass more configuration parameters.
<i>errval</i>	This parameter is used for returning error value. The pointer should be a valid pointer to an integer. If the returned value is not 0 then an error occurred.

Returns

if successful a pointer to [EDFFILE](#) structure is returned. Otherwise NULL is returned.

6.1.2.3 PUBLIC_FN int edf_close_file (EDFFILE * *ef*)

Closes an EDF file pointed to by the given [EDFFILE](#) pointer and releases all of the resources (memory and physical file) related to this EDF file.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling <i>edf_open_file</i> ().
-----------	--

Returns

if successful it returns 0, otherwise a non zero is returned.

6.1.2.4 PUBLIC_FN int edf_set_extra_message_file (const char * *fname*)

TO BE WRITTEN

6.1.2.5 PUBLIC_FN int edf_get_next_data (EDFFILE * *ef*)

Returns the type of the next data element in the EDF file pointed to by *edf. Each call to [edf_get_next_data\(\)](#) will retrieve the next data element within the data file. The contents of the data element are not accessed using this method, only the type of the element is provided. Use [edf_get_float_data\(\)](#) instead to access the contents of the data element.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This handle should be created by calling edf_open_file() .
-----------	--

Returns

One of the following values:

STARTBLINK the upcoming data is a start blink event.
STARTSACC the upcoming data is a start saccade event.
STARTFIX the upcoming data is a start fixation event.
STARTSAMPLES the upcoming data is a start samples event.
STARTEVENTS the upcoming data is a start events event.
STARTPARSE the upcoming data is a start parse event.
ENDBLINK the upcoming data is an end blink event.
ENDSACC the upcoming data is an end saccade event.
ENDFIX the upcoming data is an end fixation event.
ENDSAMPLES the upcoming data is an end samples event.
ENDEVENTS the upcoming data is an end events event.
ENDPARSE the upcoming data is an end parse event.
FIXUPDATE the upcoming data is a fixation update event.
BREAKPARSE the upcoming data is a break parse event.
BUTTONEVENT the upcoming data is a button event.
INPUTEVENT the upcoming data is an input event.
MESSAGEEVENT the upcoming data is a message event.
SAMPLE_TYPE the upcoming data is a sample.
RECORDING_INFO the upcoming data is a recording info.
NO_PENDING_ITEMS no more data left.

6.1.2.6 PUBLIC_FN ALLF_DATA* edf_get_float_data (EDFFILE * *ef*)

Returns the float data with the type returned by [edf_get_next_data\(\)](#). This function does not move the current data access pointer to the next element; use [edf_get_next_data\(\)](#) instead to step through the data elements.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This handle should be created by calling edf_open_file() .
-----------	--

Returns

Returns a pointer to the [ALLF_DATA](#) structure with the type returned by [edf_get_next_data\(\)](#).

6.1.2.7 PUBLIC_FN unsigned int edf_get_element_count (EDFFILE * *ef*)

Returns the number of elements (samples, eye events, messages, buttons, etc) in the EDF file.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file .
-----------	---

Returns

the number of elements in the EDF file.

6.1.2.8 PUBLIC_FN int edf_get_preamble_text (EDFFILE * *ef*, char * *buffer*, int *length*)

Copies the preamble text into the given buffer. If the preamble text is longer than the length the text will be truncated. The returned content will always be null terminated.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This handle should be created by calling edf_open_file() .
<i>buffer</i>	a character array to be filled by the preamble text.
<i>length</i>	length of the buffer.

Returns

returns 0 if the operation is successful.

6.1.2.9 PUBLIC_FN int edf_get_preamble_text_length (EDFFILE * *edf*)

Returns the length of the preamble text.

Parameters

<i>edf</i>	a valid pointer to c EDFFILE structure. This handle should be created by calling edf_open_file() .
------------	--

Returns

An integer for the length of preamble text.

6.2 Trial Related Functions

Functions

- PUBLIC_FN int [edf_set_trial_identifier](#) (EDFFILE *edf, char *start_marker_string, char *end_marker_string)
Sets the message strings that mark the beginning and the end of a trial. The message event that contains the marker string is considered start or end of the trial.
- PUBLIC_FN char * [edf_get_start_trial_identifier](#) (EDFFILE *ef)
Returns the trial identifier that marks the beginning of a trial.
- PUBLIC_FN char * [edf_get_end_trial_identifier](#) (EDFFILE *ef)
Returns the trial identifier that marks the end of a trial.
- PUBLIC_FN int [edf_get_trial_count](#) (EDFFILE *edf)
Returns the number of trials in the EDF file.
- PUBLIC_FN int [edf_jump_to_trial](#) (EDFFILE *edf, int trial)
- PUBLIC_FN int [edf_get_trial_header](#) (EDFFILE *edf, TRIAL *trial)
Returns the trial specific information. See the [TRIAL](#) structure for more details.
- PUBLIC_FN int [edf_goto_previous_trial](#) (EDFFILE *edf)
Jumps to the beginning of the previous trial.
- PUBLIC_FN int [edf_goto_next_trial](#) (EDFFILE *edf)
Jumps to the beginning of the next trial.
- PUBLIC_FN int [edf_goto_trial_with_start_time](#) (EDFFILE *edf, unsigned int start_time)
Jumps to the trial that has the same start time as the given start time.
- PUBLIC_FN int [edf_goto_trial_with_end_time](#) (EDFFILE *edf, unsigned int end_time)
Jumps to the trial that has the same start time as the given end time.

6.2.1 Detailed Description

The EDF access API also provides the following trial related functions for the ease of counting the total number the trials in the recording file and navigating between different trials. To use this functionality, it is desirable that the user first define the trial start/end identifier strings with [edf_set_trial_identifier\(\)](#). [The identifier string settings can be checked with the [edf_get_start_trial_identifier\(\)](#) and [edf_get_end_trial_identifier\(\)](#) functions]. Use [edf_jump_to_trial\(\)](#), [edf_goto_previous_trial\(\)](#), [edf_goto_next_trial\(\)](#), [edf_goto_trial_with_start_time\(\)](#), or [edf_goto_trial_with_end_time\(\)](#) functions to go to a target trial. The recording and start/end time of the target trial can be checked with [edf_get_trial_header\(\)](#).

6.2.2 Function Documentation

6.2.2.1 PUBLIC_FN int [edf_set_trial_identifier](#) (EDFFILE * edf, char * start_marker_string, char * end_marker_string)

Sets the message strings that mark the beginning and the end of a trial. The message event that contains the marker string is considered start or end of the trial.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
<i>start_marker_string</i>	string that contains the marker for beginning of a trial.
<i>end_marker_string</i>	string that contains the marker for end of the trial.

Returns

0 if no error occurred.

Remarks

NOTE: The following restrictions apply for collecting the trials.

- 1.The `start_marker_string` message should be before the start recording (indicated by message "↔ START").
- 2.The `end_marker_string` message should be after the end recording (indicated by message "END").
- 3.If the `start_marker_string` is not found before start recording or if the `start_marker_string` is null, start recording will be the starting position of the trial.
- 4.If the `end_marker_string` is not found after the end recording, end recording will be the ending position of the trial.
- 5.If `start_marker_string` is not specified the string "TRIALID", if found, will be used as the `start↔_marker_string`.
- 6.If the `end_marker_string` is not specified, the beginning of the next trial is the end of the current trial.

6.2.2.2 PUBLIC_FN char* edf_get_start_trial_identifier (EDFFILE * ef)

Returns the trial identifier that marks the beginning of a trial.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
-----------	---

Returns

a string that marks the beginning of a trial.

6.2.2.3 PUBLIC_FN char* edf_get_end_trial_identifier (EDFFILE * ef)

Returns the trial identifier that marks the end of a trial.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
-----------	---

Returns

a string that marks the end of a trial.

6.2.2.4 PUBLIC_FN int edf_get_trial_count (EDFFILE * edf)

Returns the number of trials in the EDF file.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
------------	---

Returns

an integer for the number of trials in the EDF file.

6.2.2.5 PUBLIC_FN int edf_jump_to_trial (EDFFILE * *edf*, int *trial*)

Jumps to the beginning of a given trial.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
<i>trial</i>	trial number. This should be a value between 0 and edf_get_trial_count() - 1.

Returns

unless there are any errors it returns a 0.

6.2.2.6 PUBLIC_FN int edf_get_trial_header (EDFFILE * *edf*, TRIAL * *trial*)

Returns the trial specific information. See the [TRIAL](#) structure for more details.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
<i>trial</i>	pointer to a valid TRIAL structure (note <code>trial</code> must be initialized before being used as a parameter for this function). This pointer is used to hold information of the current trial.

Returns

unless there are any errors it returns a 0.

6.2.2.7 PUBLIC_FN int edf_goto_previous_trial (EDFFILE * *edf*)

Jumps to the beginning of the previous trial.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
------------	---

Returns

unless there are any errors it returns 0.

6.2.2.8 PUBLIC_FN int edf_goto_next_trial (EDFFILE * edf)

Jumps to the beginning of the next trial.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
------------	---

Returns

unless there are any errors it returns 0.

6.2.2.9 PUBLIC_FN int edf_goto_trial_with_start_time (EDFFILE * edf, unsigned int start_time)

Jumps to the trial that has the same start time as the given start time.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
<i>start_time</i>	start time of the EDF trial

Returns

unless there are any errors it returns 0.

6.2.2.10 PUBLIC_FN int edf_goto_trial_with_end_time (EDFFILE * edf, unsigned int end_time)

Jumps to the trial that has the same start time as the given end time.

Parameters

<i>edf</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file() .
<i>end_time</i>	end time of the EDF trial

Returns

unless there are any errors it returns 0.

6.3 Bookmark Related Functions

Functions

- PUBLIC_FN int [edf_set_bookmark](#) ([EDFFILE](#) *ef, [BOOKMARK](#) *bm)
- PUBLIC_FN int [edf_free_bookmark](#) ([EDFFILE](#) *ef, [BOOKMARK](#) *bm)
- PUBLIC_FN int [edf_goto_bookmark](#) ([EDFFILE](#) *ef, [BOOKMARK](#) *bm)

6.3.1 Detailed Description

In addition to navigation between different trials in an EDF recording file with the functions provided in the previous section, the EDF access API also allows the user to “bookmark” any position of the EDF file using the [edf_set_bookmark\(\)](#) function. The bookmarks can be revisited with [edf_goto_bookmark\(\)](#). Finally, the bookmarks should be freed with the [edf_free_bookmark\(\)](#) function call.

6.3.2 Function Documentation

6.3.2.1 PUBLIC_FN int edf_set_bookmark (EDFFILE * ef, BOOKMARK * bm)

Bookmark the current position of the edf file.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file .
<i>bm</i>	pointer to a valid BOOKMARK structure. This structure will be filled by this function. <i>bm</i> should be initialized before being used by this function.

Returns

unless there are any errors it returns 0.

6.3.2.2 PUBLIC_FN int edf_free_bookmark (EDFFILE * ef, BOOKMARK * bm)

Removes an existing bookmark

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling edf_open_file .
<i>bm</i>	pointer to a valid BOOKMARK structure. This structure will be filled by this function. Before calling this function edf_set_bookmark should be called and <i>bm</i> should be initialized there.

Returns

unless there are any errors it returns 0.

6.3.2.3 PUBLIC_FN int edf_goto_bookmark (EDFFILE * *ef*, BOOKMARK * *bm*)

Jumps to the given bookmark.

Parameters

<i>ef</i>	a valid pointer to EDFFILE structure. This should be created by calling <code>edf_open_file</code> .
<i>bm</i>	pointer to a valid BOOKMARK structure. This structure will be filled by this function. Before calling this function <code>edf_set_bookmark</code> should be called and <i>bm</i> should be initialized there.

Returns

unless there are any errors it returns 0.

6.4 EDF Specific Functions

Functions

- PUBLIC_FN const char * [edf_get_version](#) (void)

6.4.1 Detailed Description

6.4.2 Function Documentation

6.4.2.1 PUBLIC_FN const char* edf_get_version (void)

Returns a string which indicates the version of EDFAPI.dll library used.

Returns

a string indicating the version of EDFAPI library used.

Chapter 7

Class Documentation

7.1 ALLF_DATA Union Reference

Public Attributes

- [FEVENT](#) *fe*
- [IMESSAGE](#) *im*
- [IOEVENT](#) *io*
- [FSAMPLE](#) *fs*
- [RECORDINGS](#) *rec*

7.1.1 Detailed Description

Any one of the above three data types can be read into a buffer of type [ALLF_DATA](#), which is a union of the event, sample, and recording buffer formats:

7.1.2 Member Data Documentation

7.1.2.1 FEVENT ALLF_DATA::fe

Events, such as saccades and fixations.

7.1.2.2 IMESSAGE ALLF_DATA::im

Messages sent from the Display PC.

7.1.2.3 IOEVENT ALLF_DATA::io

Input/output events from the Host PC.

7.1.2.4 FSAMPLE ALLF_DATA::fs

Gaze sample data.

7.1.2.5 RECORDINGS ALLF_DATA::rec

Information about a recording block in the EDF.

7.2 BOOKMARK Struct Reference

Public Attributes

- unsigned int [id](#)

7.2.1 Detailed Description

[BOOKMARK](#) is a dummy structure that holds a bookmark handle.

7.2.2 Member Data Documentation

7.2.2.1 unsigned int [BOOKMARK::id](#)

TO BE WRITTEN

7.3 CONFIG Struct Reference

Public Attributes

- float [default_rx](#)
- float [default_ry](#)
- int [enable_debug](#)
- char * [debug_file_name](#)

7.3.1 Detailed Description

The [CONFIG](#) structure holds optional configuration information for EDF file processing. User configured parameters or application specif parameters can be passed to edfapi via this configuration.

7.3.2 Member Data Documentation

7.3.2.1 float [CONFIG::default_rx](#)

user defined resolution rx value

7.3.2.2 float CONFIG::default_ry

user defined resolution ry value

7.3.2.3 int CONFIG::enable_debug

enable edf processing debug

7.3.2.4 char* CONFIG::debug_file_name

debug file name

7.4 EDFFILE Struct Reference

7.4.1 Detailed Description

[EDFFILE](#) is a dummy structure that holds an EDF file handle.

7.5 FEVENT Struct Reference

Public Attributes

- UINT32 [time](#)
- INT16 [type](#)
- UINT16 [read](#)
- UINT32 [stime](#)
- UINT32 [entime](#)
- float [hstx](#)
- float [hsty](#)
- float [gstx](#)
- float [gsty](#)
- float [sta](#)
- float [henx](#)
- float [heny](#)
- float [genx](#)
- float [geny](#)
- float [ena](#)
- float [havx](#)
- float [havy](#)
- float [gavx](#)
- float [gavy](#)
- float [ava](#)
- float [avel](#)
- float [pvel](#)
- float [svel](#)
- float [evel](#)

- float [supd_x](#)
- float [eupd_x](#)
- float [supd_y](#)
- float [eupd_y](#)
- INT16 [eye](#)
- UINT16 [status](#)
- UINT16 [flags](#)
- UINT16 [input](#)
- UINT16 [buttons](#)
- UINT16 [parsedby](#)
- LSTRING * [message](#)
- float [headInSpaceX_start](#)
- float [headInSpaceY_start](#)
- float [headInSpaceX_end](#)
- float [headInSpaceY_end](#)
- float [headInSpaceX_avg](#)
- float [headInSpaceY_avg](#)
- float [eyeInHeadX_start](#)
- float [eyeInHeadY_start](#)
- float [eyeInHeadX_end](#)
- float [eyeInHeadY_end](#)
- float [eyeInHeadX_avg](#)
- float [eyeInHeadY_avg](#)
- float [headRotationX_start](#)
- float [headRotationY_start](#)
- float [headRotationZ_start](#)
- float [headRotationX_end](#)
- float [headRotationY_end](#)
- float [headRotationZ_end](#)
- float [headRotationX_avg](#)
- float [headRotationY_avg](#)
- float [headRotationZ_avg](#)
- float [headPositionX_start](#)
- float [headPositionY_start](#)
- float [headPositionZ_start](#)
- float [headPositionX_end](#)
- float [headPositionY_end](#)
- float [headPositionZ_end](#)
- float [headPositionX_avg](#)
- float [headPositionY_avg](#)
- float [headPositionZ_avg](#)

7.5.1 Detailed Description

The [FEVENT](#) structure holds information for an event in the EDF file. Depending on the recording options set for the recording session and the event type, some of the fields may be empty. Contains fields specific to the EyeLink 3.

7.5.2 Member Data Documentation

7.5.2.1 UINT32 FEVENT::time

effective time of event

7.5.2.2 INT16 FEVENT::type

event type

7.5.2.3 UINT16 FEVENT::read

flags which items were included

7.5.2.4 UINT32 FEVENT::stime

start time of the event

7.5.2.5 UINT32 FEVENT::etime

end time of the event

7.5.2.6 float FEVENT::hstx

headref starting points

7.5.2.7 float FEVENT::hsty

headref starting points

7.5.2.8 float FEVENT::gstx

gaze starting points

7.5.2.9 float FEVENT::gsty

gaze starting points

7.5.2.10 float FEVENT::sta

pupil size at start

7.5.2.11 float FEVENT::henx

headref ending points

7.5.2.12 float FEVENT::heny

headref ending points

7.5.2.13 float FEVENT::genx

gaze ending points

7.5.2.14 float FEVENT::geny

gaze ending points

7.5.2.15 float FEVENT::ena

pupil size at end

7.5.2.16 float FEVENT::havx

headref averages

7.5.2.17 float FEVENT::havy

headref averages

7.5.2.18 float FEVENT::gavx

gaze averages

7.5.2.19 float FEVENT::gavy

gaze averages

7.5.2.20 float FEVENT::ava

average pupil size

7.5.2.21 float FEVENT::avel

accumulated average velocity

7.5.2.22 float FEVENT::pvel

accumulated peak velocity

7.5.2.23 float FEVENT::svel

start velocity

7.5.2.24 float FEVENT::evel

end velocity

7.5.2.25 float FEVENT::supd_x

start units-per-degree

7.5.2.26 float FEVENT::eupd_x

end units-per-degree

7.5.2.27 float FEVENT::supd_y

start units-per-degree

7.5.2.28 float FEVENT::eupd_y

end units-per-degree

7.5.2.29 INT16 FEVENT::eye

eye: 0=left,1=right

7.5.2.30 UINT16 FEVENT::status

error, warning flags

7.5.2.31 UINT16 FEVENT::flags

error, warning flags

7.5.2.32 UINT16 FEVENT::input

Host PC digital input flags.

7.5.2.33 UINT16 FEVENT::buttons

Host PC response button-press flags.

7.5.2.34 UINT16 FEVENT::parsedby

7 bits of flags: PARSEDBY codes

7.5.2.35 LSTRING* FEVENT::message

any message string

7.5.2.36 float FEVENT::headInSpaceX_start

Initial x-coordinate of head's "gaze".

7.5.2.37 float FEVENT::headInSpaceY_start

Initial y-coordinate of head's "gaze".

7.5.2.38 float FEVENT::headInSpaceX_end

Final x-coordinate of head's "gaze".

7.5.2.39 float FEVENT::headInSpaceY_end

Final y-coordinate of head's "gaze".

7.5.2.40 float FEVENT::headInSpaceX_avg

Average x-coordinate of head's "gaze".

7.5.2.41 float FEVENT::headInSpaceY_avg

Average y-coordinate of head's "gaze".

7.5.2.42 float FEVENT::eyeInHeadX_start

Initial gaze x-coordinate relative to head.

7.5.2.43 float FEVENT::eyeInHeadY_start

Initial gaze y-coordinate relative to head.

7.5.2.44 float FEVENT::eyeInHeadX_end

Final gaze x-coordinate relative to head.

7.5.2.45 float FEVENT::eyeInHeadY_end

Final gaze y-coordinate relative to head.

7.5.2.46 float FEVENT::eyeInHeadX_avg

Average gaze x-coordinate relative to head.

7.5.2.47 float FEVENT::eyeInHeadY_avg

Average gaze y-coordinate relative to head.

7.5.2.48 float FEVENT::headRotationX_start

Initial head rotation x-axis.

7.5.2.49 float FEVENT::headRotationY_start

Initial head rotation y-axis.

7.5.2.50 float FEVENT::headRotationZ_start

Initial head rotation z-axis.

7.5.2.51 float FEVENT::headRotationX_end

Final head rotation x-axis.

7.5.2.52 float FEVENT::headRotationY_end

Final head rotation y-axis.

7.5.2.53 float FEVENT::headRotationZ_end

Final head rotation z-axis.

7.5.2.54 float FEVENT::headRotationX_avg

Average head rotation x-axis.

7.5.2.55 float FEVENT::headRotationY_avg

Average head rotation y-axis.

7.5.2.56 float FEVENT::headRotationZ_avg

Average head rotation z-axis.

7.5.2.57 float FEVENT::headPositionX_start

Initial head position x-coordinate.

7.5.2.58 float FEVENT::headPositionY_start

Initial head position y-coordinate.

7.5.2.59 float FEVENT::headPositionZ_start

Initial head position z-coordinate.

7.5.2.60 float FEVENT::headPositionX_end

Final head position x-coordinate.

7.5.2.61 float FEVENT::headPositionY_end

Final head position y-coordinate.

7.5.2.62 float FEVENT::headPositionZ_end

Final head position z-coordinate.

7.5.2.63 float FEVENT::headPositionX_avg

Average head position x-coordinate.

7.5.2.64 float FEVENT::headPositionY_avg

Average head position y-coordinate.

7.5.2.65 float FEVENT::headPositionZ_avg

Average head position z-coordinate.

7.6 FSAMPLE Struct Reference

Public Attributes

- UINT32 [time](#)
- float [px](#) [2]
- float [py](#) [2]
- float [hx](#) [2]
- float [hy](#) [2]
- float [pa](#) [2]
- float [gx](#) [2]
- float [gy](#) [2]
- float [rx](#)
- float [ry](#)
- float [gxvel](#) [2]
- float [gyvel](#) [2]
- float [hxvel](#) [2]
- float [hyvel](#) [2]
- float [rxvel](#) [2]
- float [ryvel](#) [2]
- float [fgxvel](#) [2]
- float [fgyvel](#) [2]
- float [fhxvel](#) [2]
- float [fhyvel](#) [2]
- float [frxvel](#) [2]
- float [fryvel](#) [2]
- INT16 [hdata](#) [8]
- UINT16 [flags](#)
- UINT16 [input](#)
- UINT16 [buttons](#)
- INT16 [htype](#)
- UINT16 [errors](#)

- float [eyeInHeadX](#) [3]
- float [eyeInHeadY](#) [3]
- UINT32 [headMarkerFlags](#)
- float [headRotation](#) [3]
- float [headPosition](#) [3]
- float [headInSpaceX](#)
- float [headInSpaceY](#)
- float [unused_headInSpaceX](#) [2]
- float [unused_headInSpaceY](#) [2]
- float [hrgx](#)
- float [hrgy](#)
- float [ergx](#)
- float [ergy](#)
- float [ex](#) [2]
- float [ey](#) [2]
- float [emajor](#) [2]
- float [eminor](#) [2]
- float [eangle](#) [2]

7.6.1 Detailed Description

The [FSAMPLE](#) structure holds information for a sample in the EDF file. Depending on the recording options set for the recording session, some of the fields may be empty. Contains fields specific to the EyeLink 3.

7.6.2 Member Data Documentation

7.6.2.1 UINT32 FSAMPLE::time

time stamp of sample

7.6.2.2 float FSAMPLE::px[2]

pupil x

7.6.2.3 float FSAMPLE::py[2]

pupil y

7.6.2.4 float FSAMPLE::hx[2]

headref x

7.6.2.5 float FSAMPLE::hy[2]

headref y

7.6.2.6 float FSAMPLE::pa[2]

pupil size or area

7.6.2.7 float FSAMPLE::gx[2]

screen gaze x

7.6.2.8 float FSAMPLE::gy[2]

screen gaze y

7.6.2.9 float FSAMPLE::rx

screen pixels per degree

7.6.2.10 float FSAMPLE::ry

screen pixels per degree

7.6.2.11 float FSAMPLE::gxvel[2]

gaze x velocity

7.6.2.12 float FSAMPLE::gyvel[2]

gaze y velocity

7.6.2.13 float FSAMPLE::hxvel[2]

headref x velocity

7.6.2.14 float FSAMPLE::hyvel[2]

headref y velocity

7.6.2.15 float FSAMPLE::rxvel[2]

raw x velocity

7.6.2.16 float FSAMPLE::ryvel[2]

raw y velocity

7.6.2.17 float FSAMPLE::fgxvel[2]

fast gaze x velocity

7.6.2.18 float FSAMPLE::fgyvel[2]

fast gaze y velocity

7.6.2.19 float FSAMPLE::fhxvel[2]

fast headref x velocity

7.6.2.20 float FSAMPLE::fhyvel[2]

fast headref y velocity

7.6.2.21 float FSAMPLE::frxvel[2]

fast raw x velocity

7.6.2.22 float FSAMPLE::fryvel[2]

fast raw y velocity

7.6.2.23 INT16 FSAMPLE::hdata[8]

head-tracker data (not pre-scaled)

7.6.2.24 UINT16 FSAMPLE::flags

flags to indicate contents

7.6.2.25 UINT16 FSAMPLE::input

extra (input word)

7.6.2.26 UINT16 FSAMPLE::buttons

button state & changes

7.6.2.27 INT16 FSAMPLE::hType

head-tracker data type (0=none)

7.6.2.28 UINT16 FSAMPLE::errors

process error flags

7.6.2.29 float FSAMPLE::eyeInHeadX[3]

eye alone gaze x. Uncompensated head gaze. left right, cyclopean

7.6.2.30 float FSAMPLE::eyeInHeadY[3]

eye alone gaze y. Uncompensated head gaze. left right, cyclopean

7.6.2.31 UINT32 FSAMPLE::headMarkerFlags

Flags concerning the visibility of the Marker and quality of signal.

7.6.2.32 float FSAMPLE::headRotation[3]

Head Rotation X first value at index 0, Y second value at index 1 and Z value at index 2

7.6.2.33 float FSAMPLE::headPosition[3]

Head Position X first value at index 0, Y second value at index 1 and Z value at index 2

7.6.2.34 float FSAMPLE::headInSpaceX

head gaze x. one from the perspective of left eye (0), next perspective of right eye (1) the third one is cyclopean

7.6.2.35 float FSAMPLE::headInSpaceY

head gaze y. one from the perspective of left eye (0), next perspective of right eye (1) the third one is cyclopean

7.6.2.36 float FSAMPLE::unused_headInSpaceX[2]

head gaze x. one from the prespective of left eye (0), next prospective of right eye (1) the third one is ccyclopean

7.6.2.37 float FSAMPLE::unused_headInSpaceY[2]

head gaze y. one from the prespective of left eye (0), next prospective of right eye (1) the third one is ccyclopean

7.6.2.38 float FSAMPLE::hrgx

resolution for headInSpace (cyclopean only)

7.6.2.39 float FSAMPLE::hrgy

resolution for headInSpace

7.6.2.40 float FSAMPLE::ergx

resolution for eyeInHead

7.6.2.41 float FSAMPLE::ergy

resolution for eyeInHead

7.6.2.42 float FSAMPLE::ex[2]

pupil ellise x

7.6.2.43 float FSAMPLE::ey[2]

pupil ellise y

7.6.2.44 float FSAMPLE::emajor[2]

pupil ellipse major axis (ef.major)

7.6.2.45 float FSAMPLE::eminor[2]

pupil ellipse minor axis (ef.minor)

7.6.2.46 float FSAMPLE::eangle[2]

pupil ellipse angle (pupil_ellipse_angle[2])

7.7 RECORDINGS Struct Reference

Public Attributes

- UINT32 [time](#)
- float [sample_rate](#)
- UINT16 [eflags](#)
- UINT16 [sflags](#)
- byte [state](#)
- byte [record_type](#)
- byte [pupil_type](#)
- byte [recording_mode](#)
- byte [filter_type](#)
- byte [pos_type](#)
- byte [eye](#)

7.7.1 Detailed Description

The [RECORDINGS](#) structure holds information about a recording block in an EDF file. A [RECORDINGS](#) structure is present at the start of recording and the end of recording. Conceptually a [RECORDINGS](#) structure is similar to the START and END lines inserted in an EyeLink ASC file. [RECORDINGS](#) with a state field = 0 represent the end of a recording block, and contain information regarding the recording options set before recording was initiated.

7.7.2 Member Data Documentation

7.7.2.1 UINT32 RECORDINGS::time

start time or end time

7.7.2.2 float RECORDINGS::sample_rate

250 or 500 or 1000

7.7.2.3 UINT16 RECORDINGS::eflags

to hold extra information about events

7.7.2.4 UINT16 RECORDINGS::sflags

to hold extra information about samples

7.7.2.5 byte RECORDINGS::state

0 = END, 1=START

7.7.2.6 byte RECORDINGS::record_type

1 = SAMPLES, 2= EVENTS, 3= SAMPLES and EVENTS

7.7.2.7 byte RECORDINGS::pupil_type

0 = AREA, 1 = DIAMETER

7.7.2.8 byte RECORDINGS::recording_mode

0 = PUPIL, 1 = CR

7.7.2.9 byte RECORDINGS::filter_type

1,2,3

7.7.2.10 byte RECORDINGS::pos_type

0 = GAZE, 1= HREF, 2 = RAW

7.7.2.11 byte RECORDINGS::eye

1=LEFT, 2=RIGHT, 3=LEFT and RIGHT

7.8 TRIAL Struct Reference

Public Attributes

- [RECORDINGS](#) * [rec](#)
- unsigned int [duration](#)
- unsigned int [starttime](#)
- unsigned int [endtime](#)

7.8.1 Detailed Description

The [TRIAL](#) structure is used to access a block of data within an EDF file that is considered to be a trial within the experimental session. The start time and end time of a [TRIAL](#) are defined using the [edf_set_trial_identifier\(\)](#) function, where a start and end message text token is specified.

7.8.2 Member Data Documentation

7.8.2.1 RECORDINGS* TRIAL::rec

recording information about the current trial

7.8.2.2 unsigned int TRIAL::duration

duration of the current trial

7.8.2.3 unsigned int TRIAL::starttime

start time of the trial

7.8.2.4 unsigned int TRIAL::endtime

end time of the trial

Index

- ALLF_DATA, [25](#)
 - fe, [25](#)
 - fs, [25](#)
 - im, [25](#)
 - io, [25](#)
 - rec, [26](#)
- ava
 - FEVENT, [30](#)
- avel
 - FEVENT, [30](#)
- BOOKMARK, [26](#)
 - id, [26](#)
- Bookmark Related Functions, [21](#)
 - edf_free_bookmark, [21](#)
 - edf_goto_bookmark, [21](#)
 - edf_set_bookmark, [21](#)
- buttons
 - FEVENT, [32](#)
 - FSAMPLE, [38](#)
- CONFIG, [26](#)
 - debug_file_name, [27](#)
 - default_rx, [26](#)
 - default_ry, [26](#)
 - enable_debug, [27](#)
- debug_file_name
 - CONFIG, [27](#)
- default_rx
 - CONFIG, [26](#)
- default_ry
 - CONFIG, [26](#)
- duration
 - TRIAL, [43](#)
- EDF Specific Functions, [23](#)
 - edf_get_version, [23](#)
- EDFFILE, [27](#)
- eangle
 - FSAMPLE, [40](#)
- edf_close_file
 - General EDF Data Access Functions, [14](#)
- edf_free_bookmark
 - Bookmark Related Functions, [21](#)
- edf_get_element_count
 - General EDF Data Access Functions, [16](#)
- edf_get_end_trial_identifier
 - Trial Related Functions, [18](#)
- edf_get_float_data
 - General EDF Data Access Functions, [15](#)
- edf_get_next_data
 - General EDF Data Access Functions, [15](#)
- edf_get_preamble_text
 - General EDF Data Access Functions, [16](#)
- edf_get_preamble_text_length
 - General EDF Data Access Functions, [16](#)
- edf_get_start_trial_identifier
 - Trial Related Functions, [18](#)
- edf_get_trial_count
 - Trial Related Functions, [18](#)
- edf_get_trial_header
 - Trial Related Functions, [19](#)
- edf_get_version
 - EDF Specific Functions, [23](#)
- edf_goto_bookmark
 - Bookmark Related Functions, [21](#)
- edf_goto_next_trial
 - Trial Related Functions, [20](#)
- edf_goto_previous_trial
 - Trial Related Functions, [19](#)
- edf_goto_trial_with_end_time
 - Trial Related Functions, [20](#)
- edf_goto_trial_with_start_time
 - Trial Related Functions, [20](#)
- edf_jump_to_trial
 - Trial Related Functions, [19](#)
- edf_open_file
 - General EDF Data Access Functions, [13](#)
- edf_open_file_ex
 - General EDF Data Access Functions, [14](#)
- edf_set_bookmark
 - Bookmark Related Functions, [21](#)
- edf_set_extra_message_file
 - General EDF Data Access Functions, [14](#)
- edf_set_trial_identifier
 - Trial Related Functions, [17](#)
- eflags
 - RECORDINGS, [41](#)
- emajor
 - FSAMPLE, [40](#)
- eminor
 - FSAMPLE, [40](#)
- ena
 - FEVENT, [30](#)
- enable_debug
 - CONFIG, [27](#)
- endtime
 - TRIAL, [43](#)

- entime
 - FEVENT, [29](#)
- ergx
 - FSAMPLE, [40](#)
- ergy
 - FSAMPLE, [40](#)
- errors
 - FSAMPLE, [39](#)
- eupd_x
 - FEVENT, [31](#)
- eupd_y
 - FEVENT, [31](#)
- evel
 - FEVENT, [31](#)
- ex
 - FSAMPLE, [40](#)
- ey
 - FSAMPLE, [40](#)
- eye
 - FEVENT, [31](#)
 - RECORDINGS, [42](#)
- eyeInHeadX_avg
 - FEVENT, [33](#)
- eyeInHeadX_end
 - FEVENT, [33](#)
- eyeInHeadX_start
 - FEVENT, [32](#)
- eyeInHeadY_avg
 - FEVENT, [33](#)
- eyeInHeadY_end
 - FEVENT, [33](#)
- eyeInHeadY_start
 - FEVENT, [33](#)
- eyeInHeadX
 - FSAMPLE, [39](#)
- eyeInHeadY
 - FSAMPLE, [39](#)
- FEVENT, [27](#)
 - ava, [30](#)
 - avel, [30](#)
 - buttons, [32](#)
 - ena, [30](#)
 - entime, [29](#)
 - eupd_x, [31](#)
 - eupd_y, [31](#)
 - evel, [31](#)
 - eye, [31](#)
 - eyeInHeadX_avg, [33](#)
 - eyeInHeadX_end, [33](#)
 - eyeInHeadX_start, [32](#)
 - eyeInHeadY_avg, [33](#)
 - eyeInHeadY_end, [33](#)
 - eyeInHeadY_start, [33](#)
 - flags, [31](#)
 - gavx, [30](#)
 - gavy, [30](#)
 - genx, [30](#)
 - geny, [30](#)
 - gstx, [29](#)
 - gsty, [29](#)
 - havx, [30](#)
 - havy, [30](#)
 - headInSpaceX_avg, [32](#)
 - headInSpaceX_end, [32](#)
 - headInSpaceX_start, [32](#)
 - headInSpaceY_avg, [32](#)
 - headInSpaceY_end, [32](#)
 - headInSpaceY_start, [32](#)
 - headPositionX_avg, [35](#)
 - headPositionX_end, [34](#)
 - headPositionX_start, [34](#)
 - headPositionY_avg, [35](#)
 - headPositionY_end, [34](#)
 - headPositionY_start, [34](#)
 - headPositionZ_avg, [35](#)
 - headPositionZ_end, [34](#)
 - headPositionZ_start, [34](#)
 - headRotationX_avg, [34](#)
 - headRotationX_end, [33](#)
 - headRotationX_start, [33](#)
 - headRotationY_avg, [34](#)
 - headRotationY_end, [33](#)
 - headRotationY_start, [33](#)
 - headRotationZ_avg, [34](#)
 - headRotationZ_end, [34](#)
 - headRotationZ_start, [33](#)
 - henx, [29](#)
 - heny, [29](#)
 - hstx, [29](#)
 - hsty, [29](#)
 - input, [31](#)
 - message, [32](#)
 - parsedby, [32](#)
 - pvel, [30](#)
 - read, [29](#)
 - sta, [29](#)
 - status, [31](#)
 - stime, [29](#)
 - supd_x, [31](#)
 - supd_y, [31](#)
 - svel, [31](#)
 - time, [28](#)
 - type, [28](#)
- FSAMPLE, [35](#)
 - buttons, [38](#)
 - eangle, [40](#)
 - emajor, [40](#)
 - eminor, [40](#)
 - ergx, [40](#)
 - ergy, [40](#)
 - errors, [39](#)
 - ex, [40](#)
 - ey, [40](#)
 - eyeInHeadX, [39](#)
 - eyeInHeadY, [39](#)
 - fgxvel, [38](#)

- fgysel, 38
- fhxvel, 38
- fhyvel, 38
- flags, 38
- frxvel, 38
- fryvel, 38
- gx, 37
- gxvel, 37
- gy, 37
- gyvel, 37
- hdata, 38
- headInSpaceX, 39
- headInSpaceY, 39
- headMarkerFlags, 39
- headPosition, 39
- headRotation, 39
- hrgx, 40
- hrgy, 40
- htype, 39
- hx, 36
- hxvel, 37
- hy, 36
- hyvel, 37
- input, 38
- pa, 36
- px, 36
- py, 36
- rx, 37
- rxvel, 37
- ry, 37
- ryvel, 37
- time, 36
- unused_headInSpaceX, 39
- unused_headInSpaceY, 40
- fe
 - ALLF_DATA, 25
- fgxvel
 - FSAMPLE, 38
- fgysel
 - FSAMPLE, 38
- fhxvel
 - FSAMPLE, 38
- fhyvel
 - FSAMPLE, 38
- filter_type
 - RECORDINGS, 42
- flags
 - FEVENT, 31
 - FSAMPLE, 38
- frxvel
 - FSAMPLE, 38
- fryvel
 - FSAMPLE, 38
- fs
 - ALLF_DATA, 25
- gavx
 - FEVENT, 30
- gavy
 - FEVENT, 30
- General EDF Data Access Functions, 13
 - edf_close_file, 14
 - edf_get_element_count, 16
 - edf_get_float_data, 15
 - edf_get_next_data, 15
 - edf_get_preamble_text, 16
 - edf_get_preamble_text_length, 16
 - edf_open_file, 13
 - edf_open_file_ex, 14
 - edf_set_extra_message_file, 14
- genx
 - FEVENT, 30
- geny
 - FEVENT, 30
- gstx
 - FEVENT, 29
- gsty
 - FEVENT, 29
- gx
 - FSAMPLE, 37
- gxvel
 - FSAMPLE, 37
- gy
 - FSAMPLE, 37
- gyvel
 - FSAMPLE, 37
- havx
 - FEVENT, 30
- havy
 - FEVENT, 30
- hdata
 - FSAMPLE, 38
- headInSpaceX_avg
 - FEVENT, 32
- headInSpaceX_end
 - FEVENT, 32
- headInSpaceX_start
 - FEVENT, 32
- headInSpaceY_avg
 - FEVENT, 32
- headInSpaceY_end
 - FEVENT, 32
- headInSpaceY_start
 - FEVENT, 32
- headInSpaceX
 - FSAMPLE, 39
- headInSpaceY
 - FSAMPLE, 39
- headMarkerFlags
 - FSAMPLE, 39
- headPosition
 - FSAMPLE, 39
- headPositionX_avg
 - FEVENT, 35
- headPositionX_end
 - FEVENT, 34
- headPositionX_start

- FEVENT, [34](#)
- headPositionY_avg
 - FEVENT, [35](#)
- headPositionY_end
 - FEVENT, [34](#)
- headPositionY_start
 - FEVENT, [34](#)
- headPositionZ_avg
 - FEVENT, [35](#)
- headPositionZ_end
 - FEVENT, [34](#)
- headPositionZ_start
 - FEVENT, [34](#)
- headRotation
 - FSAMPLE, [39](#)
- headRotationX_avg
 - FEVENT, [34](#)
- headRotationX_end
 - FEVENT, [33](#)
- headRotationX_start
 - FEVENT, [33](#)
- headRotationY_avg
 - FEVENT, [34](#)
- headRotationY_end
 - FEVENT, [33](#)
- headRotationY_start
 - FEVENT, [33](#)
- headRotationZ_avg
 - FEVENT, [34](#)
- headRotationZ_end
 - FEVENT, [34](#)
- headRotationZ_start
 - FEVENT, [33](#)
- henx
 - FEVENT, [29](#)
- heny
 - FEVENT, [29](#)
- hrgx
 - FSAMPLE, [40](#)
- hrgy
 - FSAMPLE, [40](#)
- hstx
 - FEVENT, [29](#)
- hsty
 - FEVENT, [29](#)
- htype
 - FSAMPLE, [39](#)
- hx
 - FSAMPLE, [36](#)
- hxvel
 - FSAMPLE, [37](#)
- hy
 - FSAMPLE, [36](#)
- hyvel
 - FSAMPLE, [37](#)
- id
 - BOOKMARK, [26](#)
- im
 - ALLF_DATA, [25](#)
- input
 - FEVENT, [31](#)
 - FSAMPLE, [38](#)
- io
 - ALLF_DATA, [25](#)
- message
 - FEVENT, [32](#)
- pa
 - FSAMPLE, [36](#)
- parsedby
 - FEVENT, [32](#)
- pos_type
 - RECORDINGS, [42](#)
- pupil_type
 - RECORDINGS, [42](#)
- pvel
 - FEVENT, [30](#)
- px
 - FSAMPLE, [36](#)
- py
 - FSAMPLE, [36](#)
- RECORDINGS, [41](#)
 - eflags, [41](#)
 - eye, [42](#)
 - filter_type, [42](#)
 - pos_type, [42](#)
 - pupil_type, [42](#)
 - record_type, [42](#)
 - recording_mode, [42](#)
 - sample_rate, [41](#)
 - sflags, [41](#)
 - state, [41](#)
 - time, [41](#)
- read
 - FEVENT, [29](#)
- rec
 - ALLF_DATA, [26](#)
 - TRIAL, [43](#)
- record_type
 - RECORDINGS, [42](#)
- recording_mode
 - RECORDINGS, [42](#)
- rx
 - FSAMPLE, [37](#)
- rxvel
 - FSAMPLE, [37](#)
- ry
 - FSAMPLE, [37](#)
- ryvel
 - FSAMPLE, [37](#)
- sample_rate
 - RECORDINGS, [41](#)
- sflags
 - RECORDINGS, [41](#)

- sta
 - FEVENT, [29](#)
- starttime
 - TRIAL, [43](#)
- state
 - RECORDINGS, [41](#)
- status
 - FEVENT, [31](#)
- stime
 - FEVENT, [29](#)
- supd_x
 - FEVENT, [31](#)
- supd_y
 - FEVENT, [31](#)
- svel
 - FEVENT, [31](#)
- TRIAL, [42](#)
 - duration, [43](#)
 - endtime, [43](#)
 - rec, [43](#)
 - starttime, [43](#)
- time
 - FEVENT, [28](#)
 - FSAMPLE, [36](#)
 - RECORDINGS, [41](#)
- Trial Related Functions, [17](#)
 - edf_get_end_trial_identifier, [18](#)
 - edf_get_start_trial_identifier, [18](#)
 - edf_get_trial_count, [18](#)
 - edf_get_trial_header, [19](#)
 - edf_goto_next_trial, [20](#)
 - edf_goto_previous_trial, [19](#)
 - edf_goto_trial_with_end_time, [20](#)
 - edf_goto_trial_with_start_time, [20](#)
 - edf_jump_to_trial, [19](#)
 - edf_set_trial_identifier, [17](#)
- type
 - FEVENT, [28](#)
- unused_headInSpaceX
 - FSAMPLE, [39](#)
- unused_headInSpaceY
 - FSAMPLE, [40](#)