

# SIOVIEW

Documentation  
Software version  
1.2.3

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## 1 Welcome to SIOVIEW

SIOVIEW was designed by Norbert Schall of Deutsche Welle.

The aim of the program is to visualize measured data from the SIOFST program which also has been designed by the author. SIOFST will measure cyclic frequencies and assess the SIO- rating. Additionally the program will deliver MP3 audio samples recorded at the begin of a measurement cycle (typically every 30 minutes).

SIOVIEW can deal now with the received data file usually automatically send via E-MAIL from the measurement system every day.

SIOVIEW will display the assessment of SIO, the distribution of the SIO rating during a measurement interval, and the field strength measured.








SIOVIEW will display the recorded field strength files. These measurements are carried out every 5 minutes and will provide median, 10% and 90% decile if the field strength. SIOVIEW will be able to play the sound sample that is taken at the begin of every 30 minutes measurement interval.

If you have any comments or suggestions, feel free to contact me.

### 1.1 Basic features of the Program

- Extraction of the ZIPPED files received via E-Mail
- Display of the measured SIO - values
- Display of the measured SIO - distribution
- Display field strength over time
- Display of the measured field strength distribution
- Selection of display criteria
- Sorting of the data
- Concentrating the data to facilitate a long – term evaluation
- Audio playback of recorded samples
- Backup archive functions

### 1.2 Conventions used in this manual:

 	Keyboard entries
	left mouse click
	left mouse double click
	right mouse click
 	Shift + left mouse click
6075	example text or input

## 2 Disclaimer

This program and supporting information is furnished by DEUTSCHE WELLE, and is accepted/used by the recipients with the understanding that DEUTSCHE WELLE makes no warranties, express or implied, concerning the accuracy, completeness, reliability, or suitability of this program, of its constituent parts, or of any supporting data.

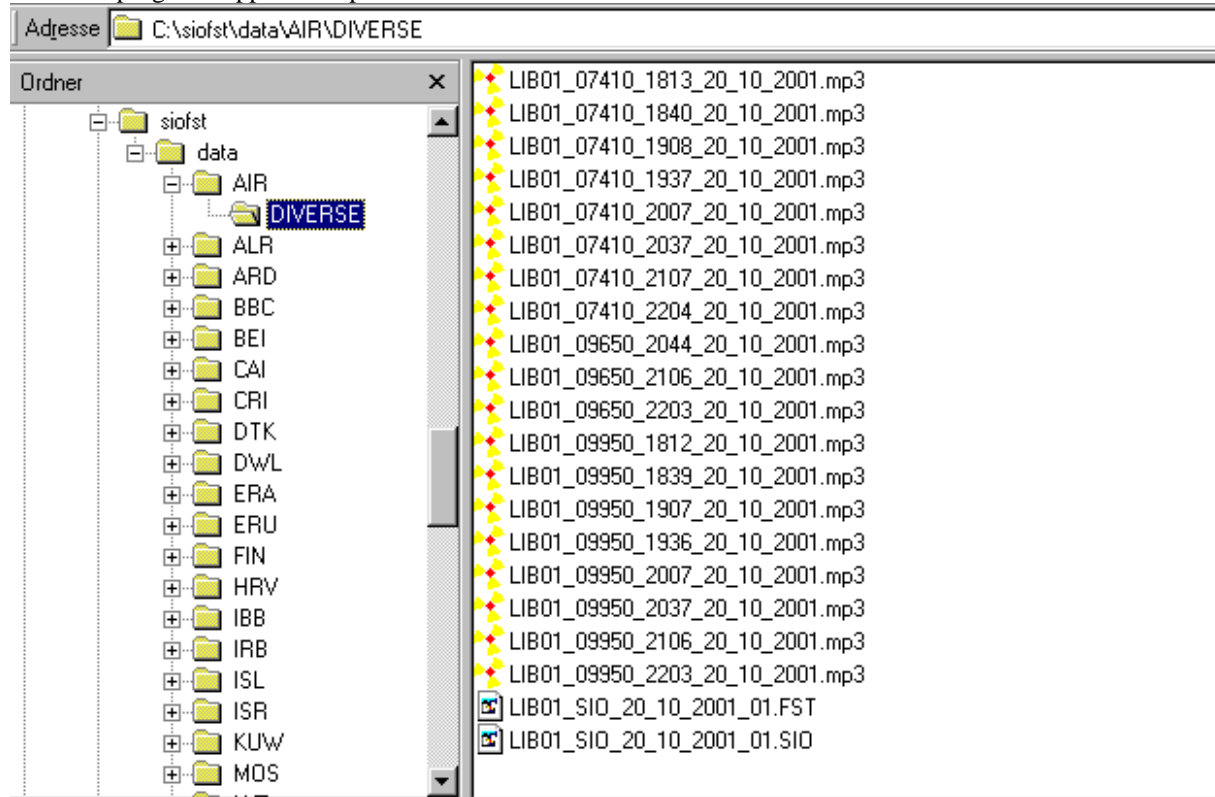
DEUTSCHE WELLE shall be under no liability whatsoever resulting from any use of this program. This program should not be relied upon as the sole basis for solving a problem whose incorrect solution result in injury to person or property.

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### 3 General

The program displays and handles data provided by SIOFST . This data has to reside in the subdirectory \DATA under the programs application path.



**Figure 1**

Figure 1 shows a typical directory structure that is used by SIOVIEW. It is advisable to install SIOVIEW in a directory called "SIOFST". The program, after having been started, will create a sub-directory \DATA under the programs main directory.

If the data, received via E-Mail is being extracted using SIOVIEW a directory structure like it is shown in Figure 1 may be found afterwards.

The directory structure under \data follows the principle : \ORGANIZATION\LANGUAGE

In these directories you will find

- MP3 – files that can be played back by a player or through SIOVIEW
- FST – files which hold measured field-strength data
- SIO – files which hold measured SIO values and references to the sound files.
- FFS – files which hold the measured field strength value over time

The MP3 -file name are constructed from:

- 5 Letter code of the measurement station
- Frequency (kHz)
- Time of the recording (HHMM)
- Day of the recording
- Month of the recording
- Year of the recording

The SIO/FST- file names are constructed from:

- 5 Letter code of the measurement station
- SIO/FST, depending on the measurement FST will only provide field strength values
- Day of the measurement
- Month of the measurement
- Year of the measurement

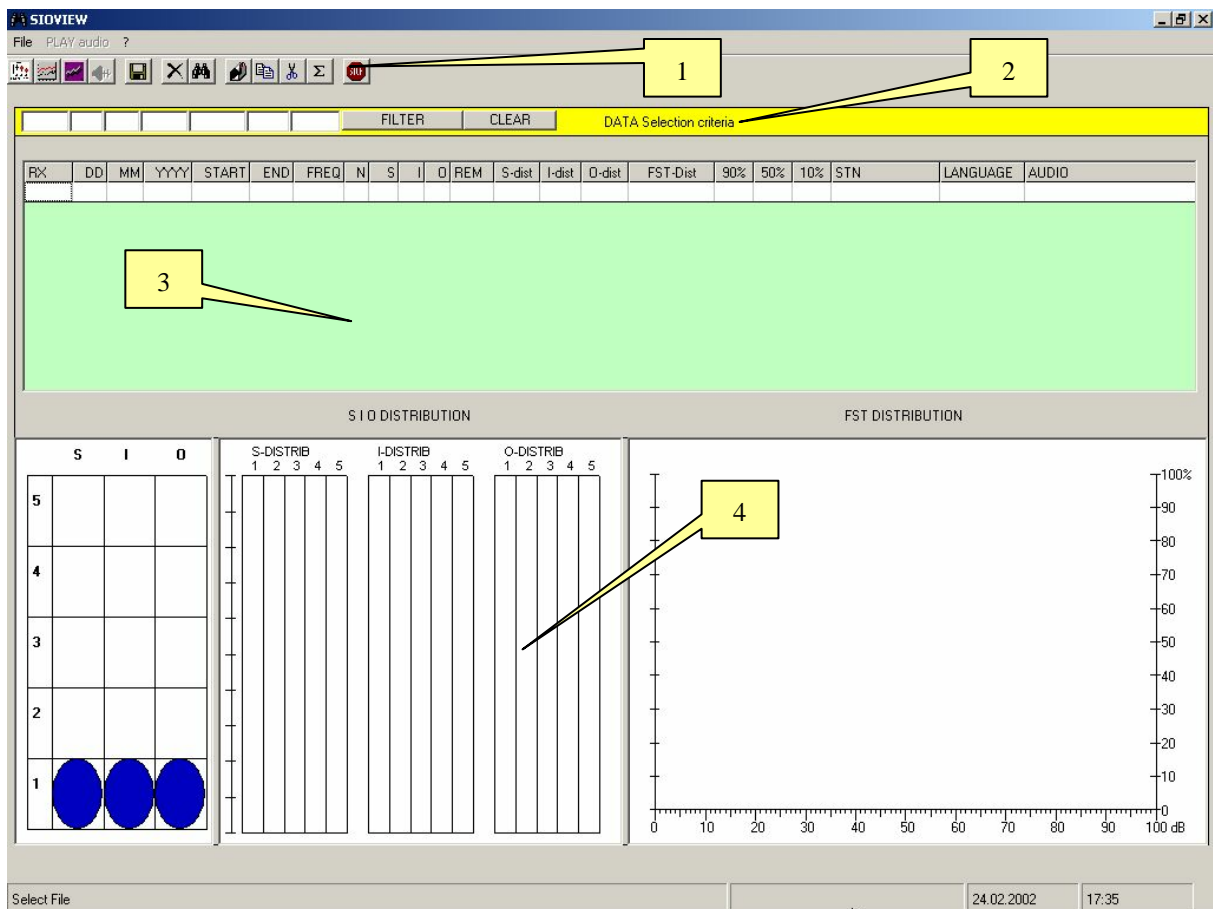
The FFS- file names are constructed from:

- 5 Letter code of the measurement station
- Frequency being measurement
- Day of the measurement
- Month of the measurement
- Year of the measurement

## 4 MAIN-SCREEN

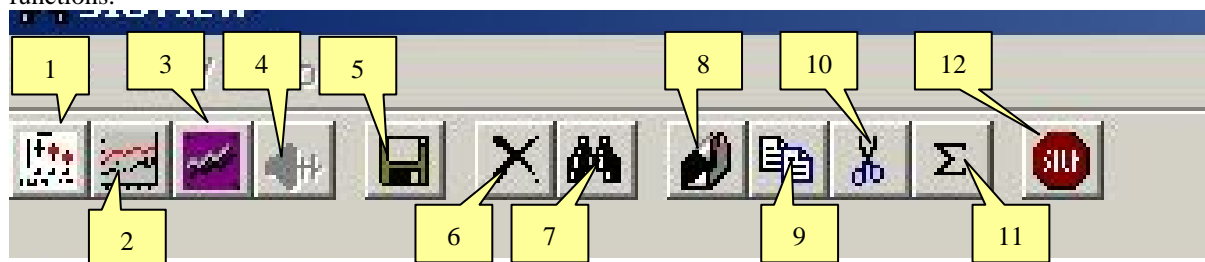
The MAIN-SCREEN is subdivided into 4 segments

1. Control
2. Selection
3. Data
4. Graphical display



## 5 Loading and handling the data

All data handling can be achieved through the menu of the program. The Icons provide a shortcut to these functions.



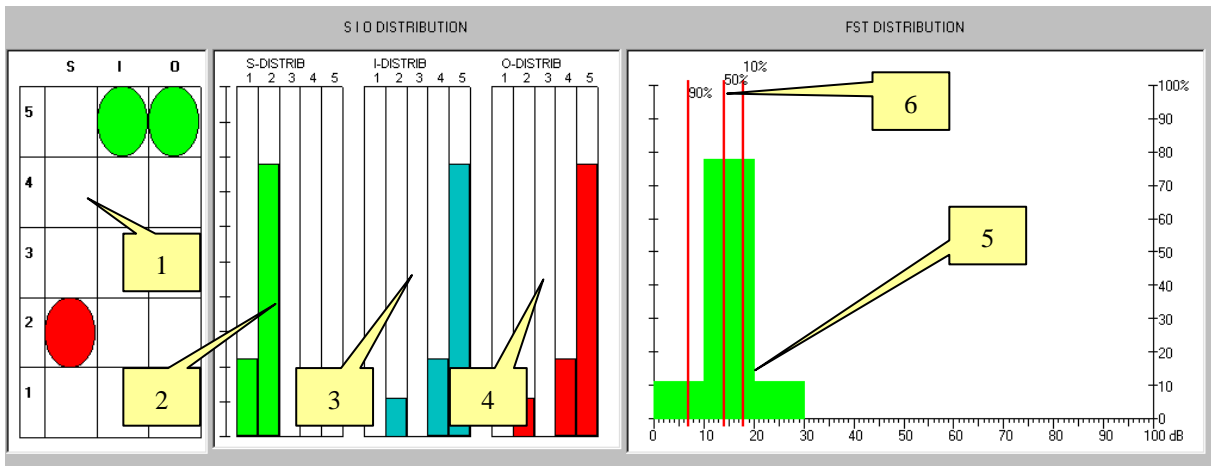
- 1 Load a SIO measurement
- 2 Load a FST measurement
- 3 Load a field strength measurement over time
- 4 Play the audio sample
- 5 Save the actual parameters of the program
- 6 Clear the filter selection
- 7 Load the data filtered
- 8 UNZIP a received Zip –file It will automatically generate the necessary structure
- 9 Copy all data in the subdirectory under \DATA into BACKUP.ZIP
- 10 Move and delete all data in the subdirectory under \DATA into BACKUP.ZIP
- 11 Concentrate all data into “SUMM.SIO”/ “SUMM.FST”files
- 12 EXIT the program

### 5.1 Interpretation of measured SIO data

RE	MM	YYYY	START	END	F	I	O	REM	S-dist	dist	FST-Dist	90%	50%	10%	STN	LANGUAGE	AUDIO		
LIB01	20	10	2001	1700	1730	1205	3	2	2	02900	99440	99440	0291000000	16	23	27	CAI	GERMAN	data\CA

- 1 Identifier for the receiving station
- 2 Day, month and year of the measurement
- 3 Observation interval(UTC)
- 4 Frequency that has been observed
- 5 S I O –rating according to the international SIO scale including remarks  
Following remarks are possible : + - F N (N=NIL F=fading)
- 6 Distribution of the rating during the observation interval normalized to a range from 0 to 9
- 7 Field strength distribution classified in classes of 10 dB and normalized to the maximum from 0 to 9  
Ex: 007900000 : some samples have been in the class 20-30DB, most of the samples have been between 30 and 40DB
- 8 Decile and median value for the measured field strength. 50%= FST median value  
90% = FST value exceeded in 90% of time, 10% = FST value exceeded in 10% of time
- 9 Identifier for station , language and if an audio recording has been provided it is listed in the last column

### 5.2 Graphical presentation of SIO measurements



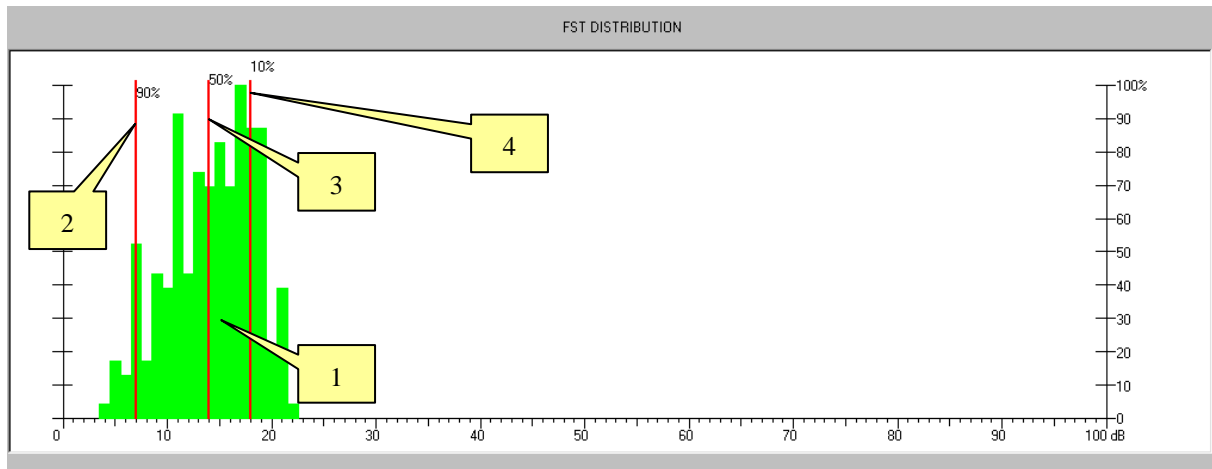
- 1 SIO rating of the selected data
- 2 Distribution of the S- rating during the measurement period
- 3 Distribution of the I- rating during the measurement period
- 4 Distribution of the O- rating during the measurement period
- 5 Distribution of the Field strength during the measurement period classified in 10dB classes
- 6 90%,50%, 10% values are shown as a vertical line, the associated value can be read from the X-axis

### 5.3 Interpretation of measured FST data

RX	DD	MM	YYYY	START	END	FREQ	S	I	O	REM	S-dist	I-dist	O-dist	FST-Dist	90%	50%	10%	STN	LANGUAGE	AUDIO
TEST1	21	10	2001	1530	1600	06060														
TEST1	21	10	2001	1530	1600	06075														
TEST1	21	10	2001	1530	1600	06060														
TEST1	21	10	2001	1530	1600	06075														
TEST1	21	10	2001	1530	1600	06060														
TEST1	21	10	2001	1530	1600	06075														
TEST1	21	10	2001	1530	1600	09545														
TEST1	21	10	2001	1600	1610	06060														
TEST1	21	10	2001	1600	1610	06075														
TEST1	21	10	2001	1600	1610	09545														
TEST1	21	10	2001	1610	1620	06060														

- 1 Identifier for the receiving station
- 2 Day, month and year of the measurement
- 3 Observation interval(UTC)
- 4 Frequency that has been observed
- 5 Other fields are not used

## 5.4 Graphical presentation of FST measurements



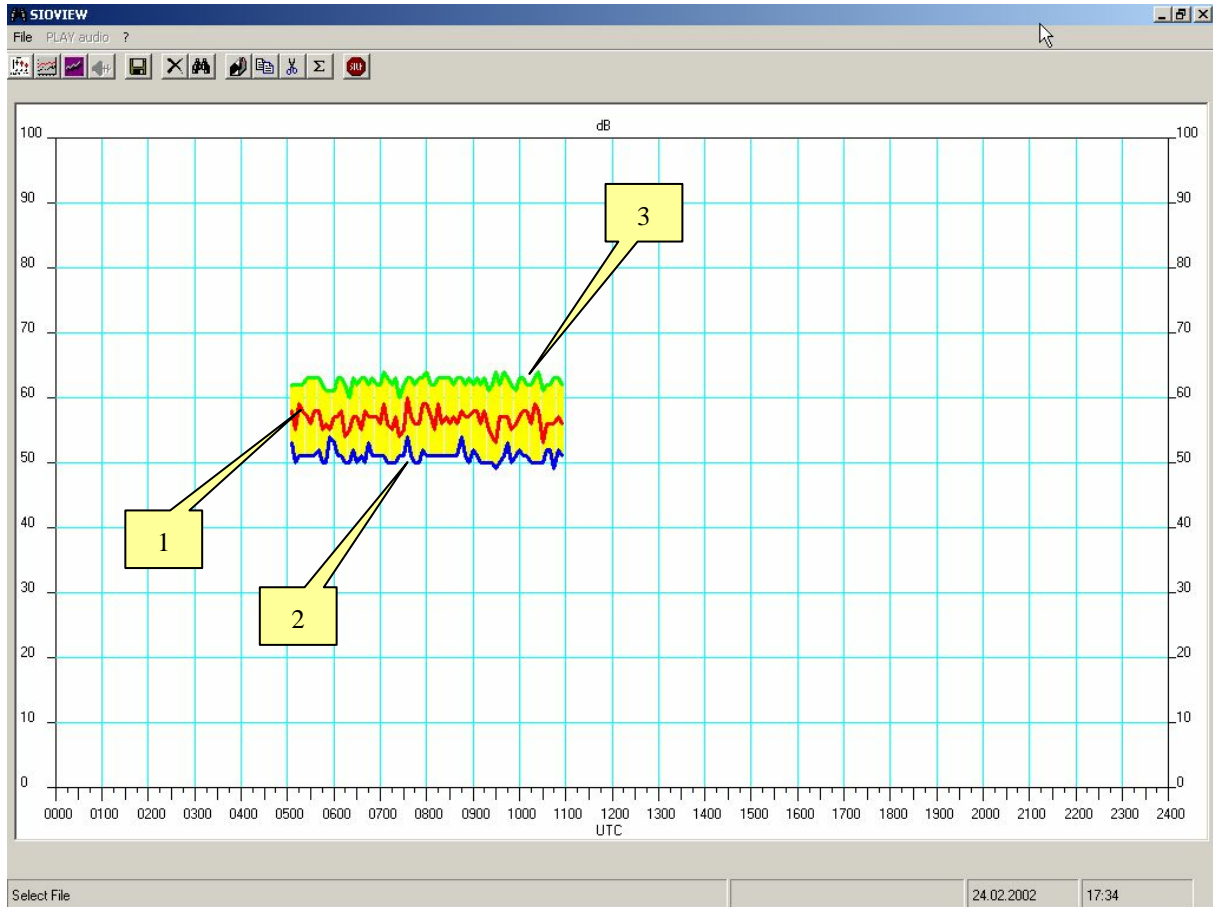
- |   |  |
|---|--|
| 1 | FST distribution relative to the maximum occurrence of one class         |
| 2 | 90% value of FST , e.g value that is exceeded 90% of time                |
| 3 | 50% value of FST , e.g value that is exceeded 50% of time (median value) |
| 4 | 10% value of FST , e.g value that is exceeded 10% of time                |

## 6 Selecting a subset of data

RX	DD	MM	YYYY	START	END	FREQ	<S	I	O	REW	S-dist	I-dist	O-dist	FST-Dist	90%	50%
LIB01	20	10	2001	1500	1530	07440	2	3	3		49000	09:00	09900	2900000000	07	1








- |   |  |
|---|--|
| 1 | on the data in the data grid will bring the entry to the selection window                |
| 2 | The selection criteria can also be entered manually                                      |
| 3 | After having completed the selection of criteria <b>FILTER</b> to load the data selected |
| 4 | <b>CLEAR</b> erases the filter criteria and loads the whole data.                        |

## 7 Display of field strength over time



- 1** Median value of field strength
- 2** 90 % decile value of field strength
- 3** 10 % decile value of field strength

## 8 Keyboard shortcuts

KEY/Mouse	Action
	(on the data grid) selects a criteria into the criteria windows
 	(on the data grid) set to optimum column width
 	( on the data grid) To play the audio-sample if available
	( on the data grid) To select the entry to be displayed
	( on the data grids first line) Sort the column descending/ascending

## 9 Files used by SIOVIEW

SIOVCFG.PAR	Parameter file holding the information about the last sub-directory being used.
SIOVCOL.PAR	Parameter file containing the column width information to display the data grid
SIOVIEW.EXE	The program
BASS.DLL	Run time module that is used for the playback of the audio samples

## 10 Revision history

Version 1.1.60  
Initial release

Version 1.2.3  
Added support for field strength over time display