The HEAD Noise Event Manager (Code 4963) is a software for interactive evaluation and documentation of brake noise events.

**Overview**

The HEAD Noise Event Manager is a software that allows brake noise events recorded with the HEAD BrakeOBSERVER system solution to be managed, examined, played back, and documented in an easy and flexible way.

Results can be summarized to provide a complete overview at a glance, which allows users, for example, to exert influence on the development and optimization of brake systems at an early stage.

The flexible design of the result report permits the relevant noise generation parameters to be combined in a variety of user-defined ways, so that the resulting diagrams, for example, allow for conclusions about the causes of prominent noise events.

To give an impression of individual noise events, the HEAD Noise Event Manager provides a convenient playback function. At the same time, the sound is analyzed based on the Relative Approach algorithm developed by HEAD acoustics, which resembles the pattern recognition principle of human hearing.

**Features**

- Individual evaluation of measurement data from BrakeOBSERVER, the HEAD acoustics measurement system for the detection of brake noise
- Convenient data management in a user-defined tree structure via drag & drop
- Quick overview of detected brake noise events and the parameters relevant for their occurrence
- Easy management of large amounts of data and quick evaluation of the details of measurement results
- Comprehensive multi-level filtering of the data relevant for the user
- Variable graphic evaluation with various diagram constellations and types as well as statistics
- Analysis based on the Relative Approach algorithm as well as on the impulsiveness analysis
- Various dependencies of brake noise on the relevant parameters can be shown in one diagram

**Playing Back**

- Interactive linking between the brake noise events represented in the table or diagrams and the corresponding audio data for playback and evaluation
- Playback of interior noise of the vehicle and acceleration signals recorded at the brakes
- Interactive documentation of the measurement route with an OpenStreetMap based on GPS information
- Easy generation and printing of multiple-page reports
- Saving and loading of various report templates
- PDF export
Data Management (Session Explorer)

The operational concept of the HEAD Noise Event Manager focuses on the easy and convenient handling of data.

In the tree structure, projects can be compiled via drag & drop. These projects can be saved and reloaded.

In the Session Explorer, the measurements to be included in an evaluation can be selected.

Sound Event Table

The table columns contain all relevant properties of a sound event and all temporally associated parameter values (such as speed, brake pressure) recorded by the BrakeOBSERVER.

Highly convenient and comprehensive table filters allow large amounts of measurement data to be reduced to the information relevant for the user. Basic spreadsheet functions are included as well.

Audio Playback

The playback function allows the user to analyze noise events with his own ears and to get an impression of the sound.

At the same time the playback function displays the results of the Relative Approach analysis, which is also used for the detection of brake squeal with the BrakeOBSERVER software. In addition, the impulsiveness analysis is automatically applied to display impulsive noises.

Based on the signals recorded with BrakeOBSERVER, it is possible to playback either the microphone signal of the interior noise of the vehicle or the signal from the acceleration sensor installed at the location of origin of the noise.
Report Generation

The HEAD Noise Event Manager allows a flexible and interactive report generation with one or multiple-page reports. With the help of the Report Editor, customized report templates can be generated and saved. The current template is fed with data from the Sound Event Table. Templates can be used as often as required to create new reports with just a click of a button. To create a report template, different elements are available, which can be combined freely. These elements may include interactive diagrams, statistic features such as histograms, acceptance diagrams (acceptance diagrams plot the occurrence of noise events versus their noise level including a tolerance threshold for the results), chart statistics, texts, etc.

Users can select interesting events in interactive diagrams. All details are immediately shown in the Sound Event Table, the analysis of the corresponding recording is displayed, and the recording can be played back and listened to instantaneously.

The reports can be used for the documentation of measurement results in a consistent way. In addition, a report created with HEAD Noise Event Manager can be used for a detailed examination of the measurement data of the BrakeOBSERVER measurement data, for example, by comparing and listening to specific sound events from an interactive diagram.

Scope of Supply

- HEAD Noise Event Manager (Code 4963)
  Software for interactive evaluation and documentation of noise events
- Setup DVD
- Dongle

Requirements

- Windows 10 (x64 and x86: Pro, Enterprise, Education; version: 1809; branch: SAC; languages: US, Western European) or:
  - Windows 8.1 (x64 und x86: Pro, Enterprise; languages: US/Western European) or:
  - Windows 7 (x64 und x86: Professional, Enterprise, Ultimate; languages: US / Western European), Service Pack 1
- .NET Framework 3.5
- Core2Duo Processor 2 GHz
- 2 GB RAM
- DirectX 9.0c
- DirectX 9.0c-compliant graphics card with 256 MB; recommended: 1 GB
- HASP dongle driver
- HEAD USB driver (for playback with a frontend from HEAD acoustics)
- In order to install software and drivers from HEAD acoustics, administrator rights are required. To operate the software, only standard user rights are needed.
BrakeOBSERVER system

The BrakeOBSERVER system combination of hardware and software is excellently suited for recording and processing brake events.

Combined with the required frontend MMF III.0, the Panasonic toughbook CF-33 and the TFT touchscreens, BrakeOBSERVER is a complete all-in-one solution, which can be flexibly supplemented with the software HEAD Noise Event Manager for the individual processing and evaluation of the measurement data.

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Example of a BrakeOBSERVER system.

Software BrakeOBSERVER

Frontend MMF III.0 (docking station incl.)

HCP II (10.4” display) and HCP (7” display)

The core of the BrakeOBSERVER system is the detection software, which is capable of distinguishing disturbing brake noise including „Off-brake noise“ from normal operating noise and, thus, can deliver excellent detection results. All audio signals are examined by an algorithm based on the patented Relative Approach method developed by HEAD acoustics. The user obtains excellent detection results and an amount of data to be analyzed and saved that is reduced to the actual relevant brake noise events, including „off-brake noise“.

The multi-channel frontend MMF III.0 with its built-in docking station for the Panasonic toughbook CF-33 is equipped for acquiring the signals necessary for brake examinations.

Customizable connectors for 12 Line/ICP sensors with individual level configuration, 2 pulse sensors, and CAN FD/CAN/OBD-2/FlexRay are provided as well as 6 temperature sensors and 6 strain gauges for measuring brake pressure, humidity, vehicle acceleration etc. Furthermore, HCP II or HCP, 1 GPS receiver, and 2 HEADlab modules can be connected.

The HEAD Control Panels HCP II and HCP are TFT touchscreens that allow users to operate the Driver Display, for example, or to evaluate braking events on a scale.

The smaller HCP 7” display has a suction mount for smooth surfaces, the HCP II 10.4” display has the adjustable HCP-SM suction mount, which can be used for uneven surfaces, too. The HEAD Control Panels are powered via the frontend MMF III.0.

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