siTracer

Innovative Acoustic Camera for Sound Source Localization



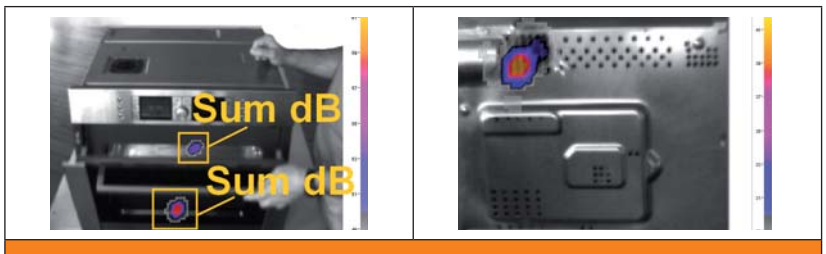
siTracer is an innovative acoustiv camera. It works with the Sound-Identification-Algorithm (SIA) that reaches a full 20 dB(A) dynamic range with only 24 microphones in optimized arrangement.

Standard cameras require many (e.g. 60) microphones for displaying a dynamic range of 8-13 dB. They only deliver a rough locating where a loud sound source is, but they can not provide any further information about the differences between several loud sound sources, due to the small dynamic range and the unsharpness. In addition, extra effort is necessary for focussing on the sound source.

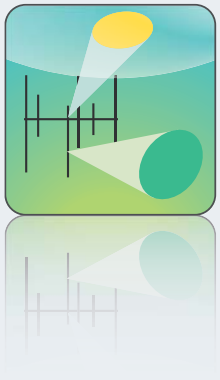
This is different with siTracer:

Through the innovative technique of **siTracer** not only sound sources are automatically localized and displayed in greater detail, but also the sound emission of the localized sound sources is precisely accurately measured.

- **Acoustic autofocus**
- **Area Level Summation**
- **Optimized microphone setting**
- **Measuring accuracy**
- **Slow motion playback**



Left: Area Level Summation on the snap noise of an oven door, a very useful function when you find multiple sound sources.



Applications

Sound source mapping with:

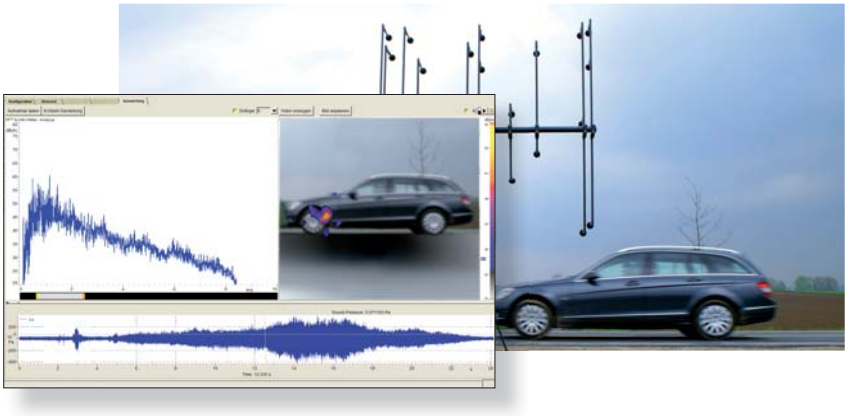
- Vehicles
- Devices
- Aircraft
- Ships
- Buildings

Display

- Multiband sound source analysis in an integrated presentation
- Easy readout of the levels from marked picture areas
- Multiple acoustic autofocus
- Ofline slow motion playbaack up to factor 1025
- Easy generation of videos

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siTracer



Acoustic Autofocus:

As opposed to common acoustic cameras **siTracer** needs no extra focus on the distance to the sound source. The focussing works automatically without any auxiliaries. Additionally siTracer can focus on multiple sound sources at the same time.

Area Level Summation:

Sound levels can be summed up over multiple areas. This is possible because of the unique Sound Identification Algorithm.

Optimized Microphone Setting:

The setting of the microphones in the array of **siTracer** derives from a deliberate pattern of economy and the exact knowledge of the required microphone distances for full coverage of the audible range. Apart from higher dynamics and reduced unsharpness, this allows working with only 24 microphones.

Measuring Accuracy:

Not only does **siTracer** distinctly highlight a loud sound source, it also shows the level of a sound source precisely accurate at the same time. This is possible owing to the applied algorithm and the optimized microphone setting. This option is available by using quater-inch microphones that are calibrated with a standard calibrator.

Slow Motion Playback:

Along with recordings in real time **siTracer** can play recordings in slow motion. A time-streching by a factor of 1024 is possible. The frequency band of interest can be selected subsequently. The slow motion playback reveals especially impulsive or fast moving sounds and their spreading.

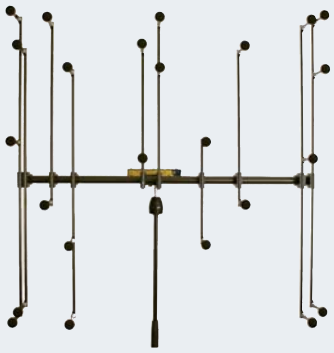
Presented by:

Hardware

- Lightweight frame thanks to carbon fibre and aluminum
- Integrated data acquisition: 24 channel frontend
- Integrated video camera
- 24 standard microphones
- Runs on laptop

Handling

- Easy and fast mounting through plug connections
- Safe transport and storage through aluminium case
- Mobile and stationary application
- Suitable for indoor and outdoor use





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