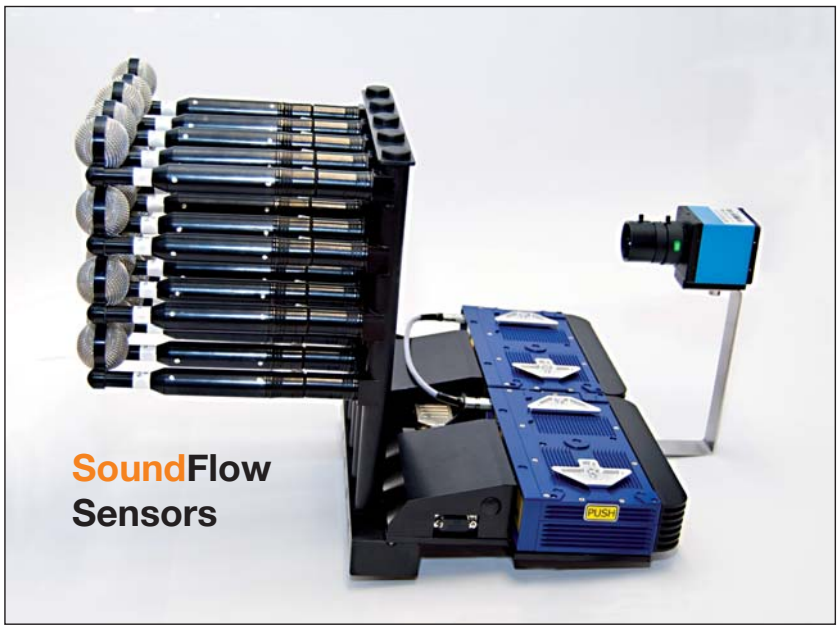
siCamera

Film camera for sound intensity distribution with a probe array (sound intensity camera)



siCamera allows you to directly observe and film the sound flow through a surface. The fast, wide-band camera has a large dynamic range, since the sound field is directly measured and not calculated. As a result, for the first time highly accurate direct observations of the sound emission are possible under various operating conditions.

Large dynamic range

The sound flow is directly determined by the sensor surface with a sensor array, which allows a dynamic signal range of more than 40 dB even with low frequencies. This is considerably more than any other acoustic imaging process has provided so far.

Large frequency range

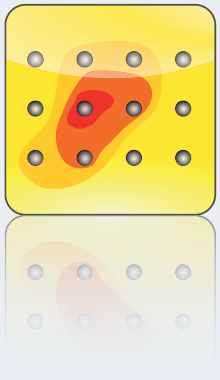
The use of actual sound velocity and sound pressure sensors allows a direct, wide-band measurement of the sound intensity over the entire audio range. The typical accuracy limitations and frequency measuring ranges of conventional sound intensity probes (pressure difference) are no longer a problem.

Documentation of object image and sound flow

The object image is displayed via an optical camera. The sound intensity is shown as a semitransparent colored surface in front of it. This way, the acoustic events can be directly seen and documented on the object structure.

Selectable frequency range

The frequency range that is displayed and replayed can be freely selected for online monitoring and audio replay of the recording, which makes it possible to focus on problem regions.



Applications

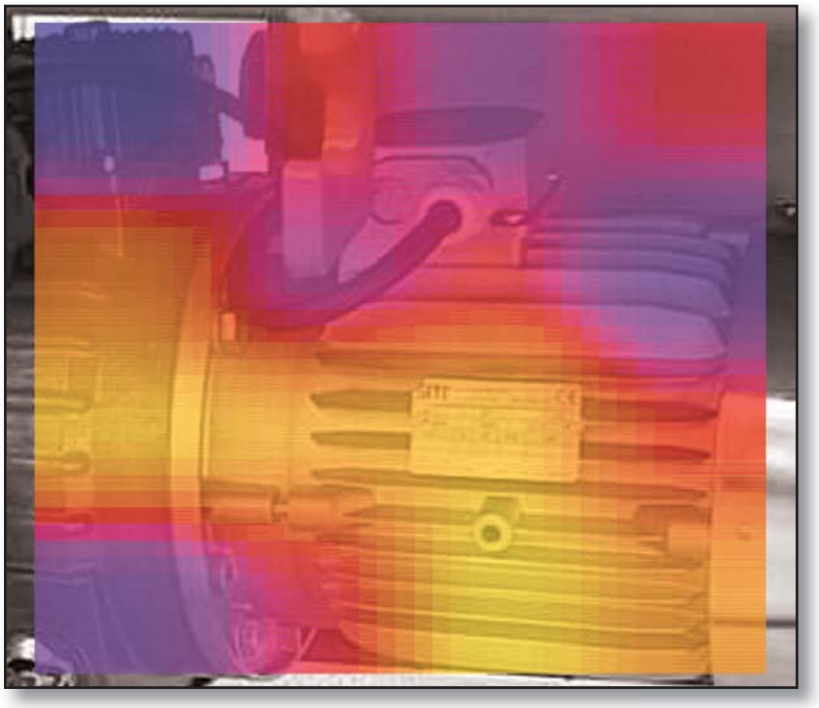
- Acoustic source localization on the object
- Recording and audio replay of the sound emission under varying operating conditions (e.g. run-up)
- Visualization and contact-free measurement of the surface oscillation (sound velocity mode)
- Recording and audio replay of the acoustic signal

Operating conditions

- Direct measurement of the sound flow on a plane in space or on the object
- Alternatively measurement of the sound velocity near the object surface
- Wide frequency range and great dynamic range without switchover or conversion
- Online visualization and recording of even fairly long-term processes possible (machine cycles, traversing movements etc.)

SOUNDTEC

siCamera



Various probe configurations

Probe dimension and number of sensors can be easily configured. Bandwidth and number of probes can be adapted to the requirements and increase with the available computing power.

Easy adjustment and reliable documentation of the operating states

The measuring ranges of all sensor channels are set at the same time using a few central parameters. The data recording format allows memory-saving recording and the selection of an interesting frequency range at a later time. The parameters for the analysis do not have to be taken into account during the measurement.

Sound intensity mapping of harmonic orders

The coupling with RPM pulses allows orders to be displayed in an RPM-synchronous way as a sound intensity map over the RPM.

Presented by:

Special features

- Great dynamic signal range over the entire frequency range
- Recording of superimposed object image and sound intensity distribution
- Display, recording and reproduction of sound pressure, line spectra and third-octave spectra
- Selectable frequency range for audio replay and the sound intensity map
- No secondary maxima in the sound distribution

Hardware-configuration

- Array with our **SoundFlow** sensors (sound intensity and sound pressure sensors) or sensors from Microflown
- Data recording via multi-channel front ends from the **si++Voyager** range
- Analysis and recording on a laptop for mobile use or a Desktop-PC in the lab

Operation

- Probe with handle, CCD camera and sensor array is held directly over the surface to be tested
- Online sound intensity map for direct observation of the sound emission
- Very easy recording and replay of sound, image and sound intensity distribution
- Replay ranges can be defined and time events marked

SOUNDTEC

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