

# Excellent Software - Makes the Difference

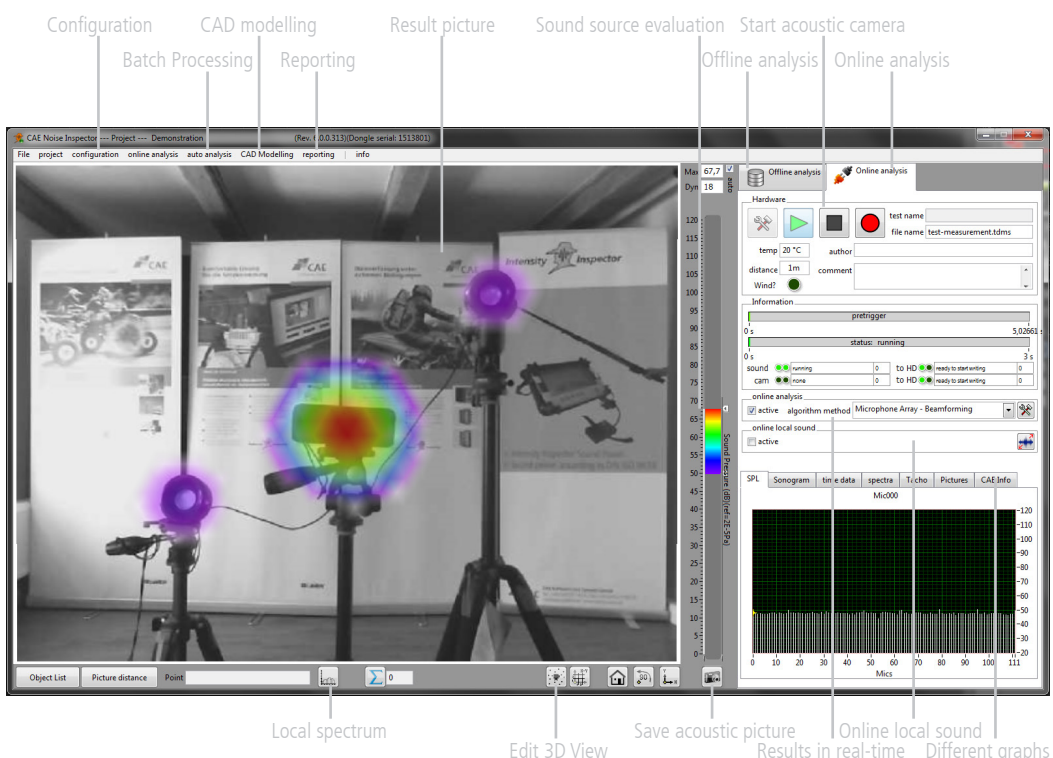
The Noise Inspector software is a turn key solution to visualize sound sources. Acoustic pictures and movies show the user fast and directly where the noise is coming from. The user friendly interface guides the user through the whole process from data acquisition through analysis to reporting. Many well-known and new algorithms for getting detailed pictures are implemented in the software. A comprehensive reporting tool allows the user a fast documentation and visualization of the results.

With the acoustic pictures and movies the next necessary development steps can be started.

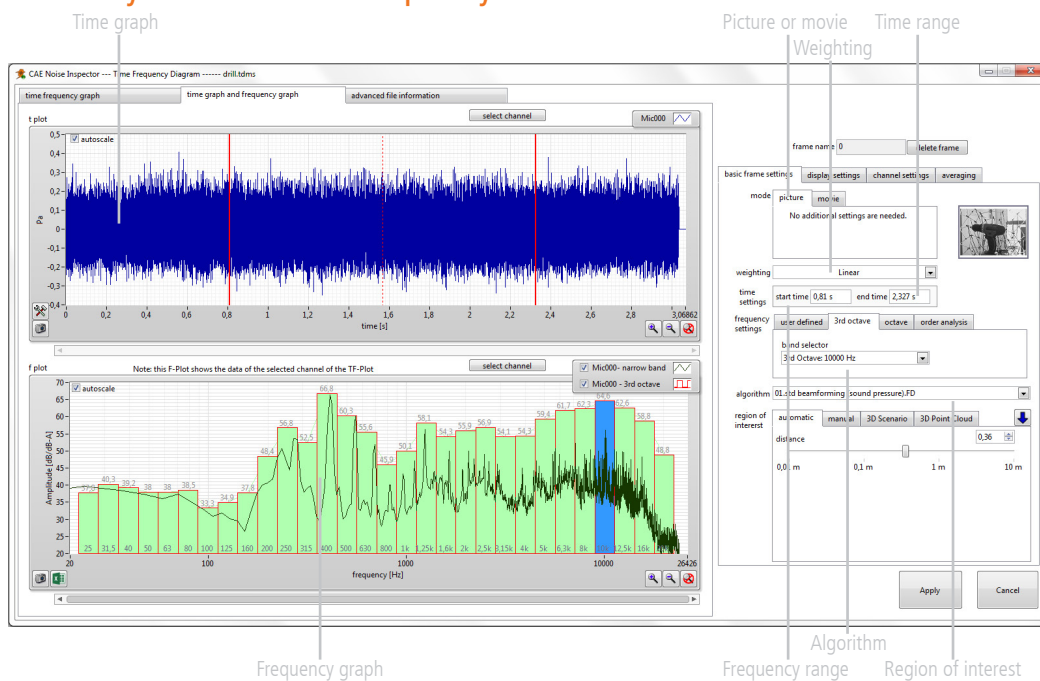
The Noise Inspector Software is not a closed software solution, the export capability allows the usage of the results and measurements on different software platforms. The raw data files and the result files are stored on the hard disc in the TDMS-fileformat from National Instruments and can be read in external software easily.

The open LabVIEW and Matlab interface provides a simple way for our customers to develop their own algorithms and to integrate these into the Noise Inspector, which is often used for research properties.

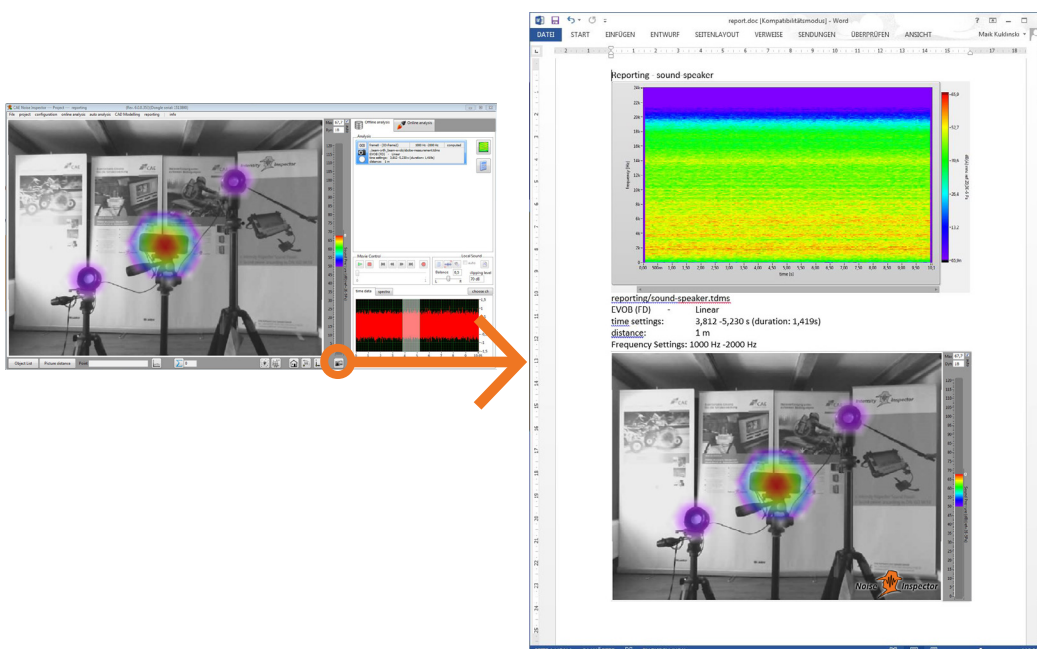
## Main interface of the Noise Inspector



## Pre-analysis in time and frequency domain



## Comfortable reporting tool



# Wide Selection of Algorithms

The Noise Inspector software comes with the largest range of algorithms available on the market. You can choose between standard beamforming or high resolution beamforming algorithms for far field measurements.

If you are facing lower frequency sources the Noise Inspector can be used for acoustic holography measurements or intensity mapping tasks. Also the user is able to design own analysis algorithms and implement them via the LabVIEW interface for plugins.

## Features

### Algorithms for best results

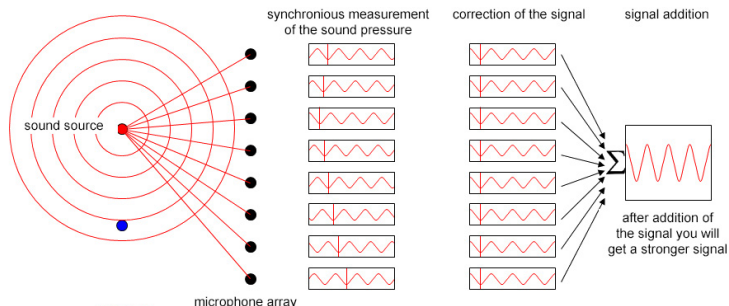
#### from 40 Hz

- SONAH - statistically optimized near field acoustic holography
- Online-SONAH
- Online-Intensity
- Offline-Intensity
- Online 3D Intensity

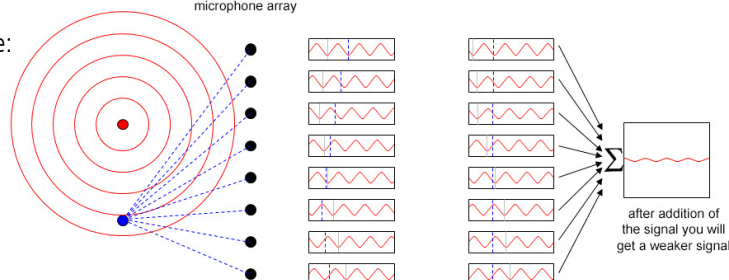
#### from 350 Hz

- Standard Beamforming - very fast and robust
- EVOB (EigenValue Optimized Beamforming)
- Deconvolution algorithms
  - CLEAN SC
  - MUSIC - Multiple Signal Classification
  - Capon
  - DAMAS
  - Orthogonal Beamforming
  - And others
- Online Beamforming
- Online EVOB
- Real 3D beamforming - object is inside of the microphone array
- Rotating beamforming - for fast rotating parts
- user - interface for your own methods

Focusing **on** a sound source:  
After correction of the time of flight between the focus point and the microphone positions all signals will be **in phase**.



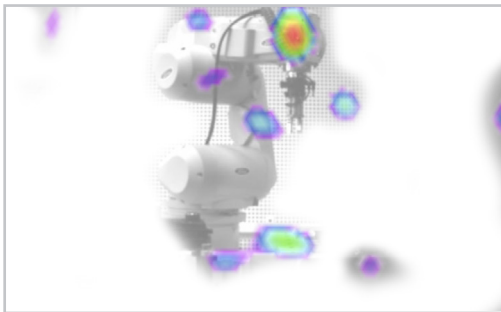
Focusing **beside** a sound source:  
After correction of the time of flight between the focus point and the microphone positions all signals will have a **different phase**.



Theory of Beamforming

# Advanced HD Algorithms

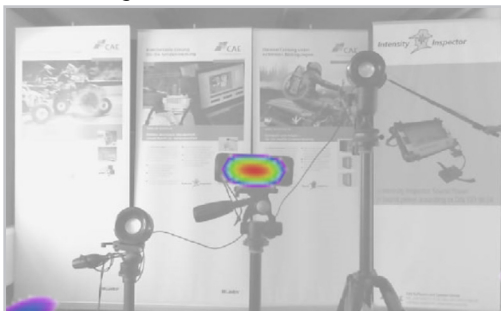
## Comparison



Beamforming



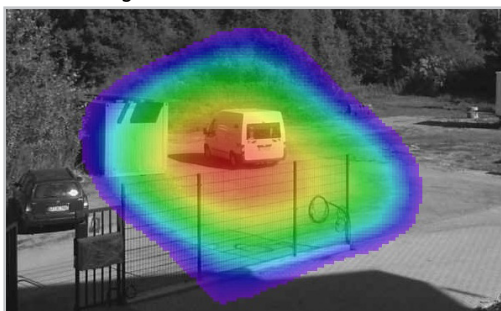
EVOB (EigenValue Optimized Beamforming)



Beamforming



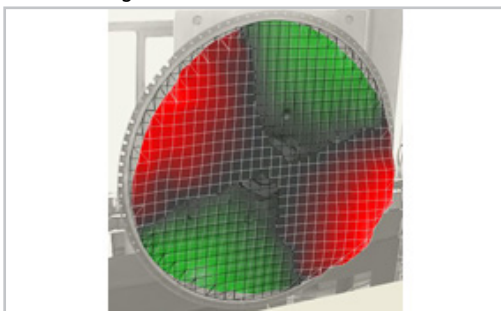
MUSIC



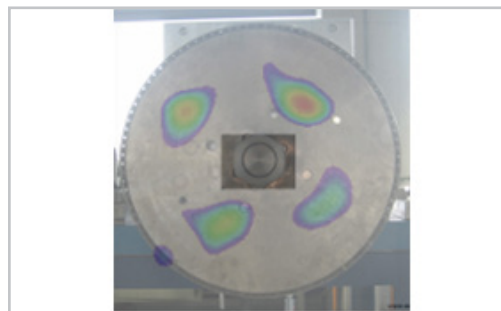
Beamforming



Clean SC



Laser scanning vibrometry



Acoustic holography (SONAH)