# REAL TIME SOURCE LOCALISATION FOR INDUSTRIAL APPLICATIONS

S. Guidati, HEAD acoustics GmbH
Email: sandro.guidati@head-acoustics.de

Microphone arrays used in industrial contexts are mainly designed for fast setup and basic evaluation (e.g. using delay-and-sum beam forming). The resulting restrictions are mainly a limited dynamic range and restriction to free field environments. Although a wide range of algorithms for advanced evaluation has been developed, only a few of them are implemented in industrial systems. This is mainly due to the fact that these algorithms require considerably longer computation time, expert knowledge and additional hardware. This paper presents techniques for real-time processing of microphone array data including multiband beam forming, coherence/incoherence filtering using additional sensors, e.g. accelerometers, laser vibrometers, artificial heads; and the inclusion of measured source characteristics for application in strongly reverberant environments. The real-time processing offers the possibility of interacting with a source of interest and visualizing online the effect of a modification. Combining the microphone array with the signals of multiple video cameras allows for detecting the distance between the array and a three-dimensional source distribution, resulting in higher accuracy of the localization and quantification. The advantage of real time processing is shown with the example of leckage detection at a passenger car.