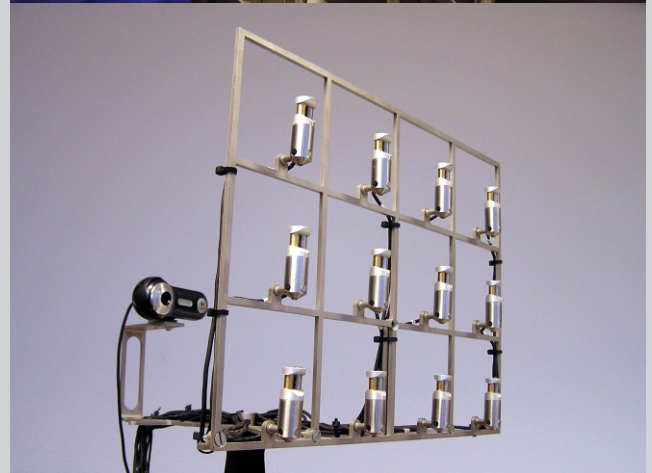


Rattle noise on carseats: low frequency, transient noise localization

The acoustic optimization process of the seat often requires testing in non-anechoic condition and with strong background noise and reflecting walls. The frame of the seat is mounted on the 6 dimensional axis hydraulic shaker, a random low frequency excitation simulates the behavior of the seat during a driving condition. Mapping the sound source on the seat frame or related components in such a condition with reflections and background noise is not possible by using only sound pressure microphones based techniques. The Microflown is the only sensor that can measure directly the particle velocity, which it is not affected by the background noise and reflections. The particle velocity at the surface equals the vibration of the structure, so a complete solution in term of noise mapping and vibration measurement is now available. The near field Microflown camera can measure directly the particle velocity distribution and intensity at the array level. Transient events like squeak and rattle noise can easily being located, even at low frequencies, on the frame of the seat. Also the noise from components like the electrical engine actuator can be mapped.



Application features

- ✓ Sound intensity and particle velocity mapping, even in real time
- ✓ Measurements do not need a anechoic room or anechoic conditions
- ✓ Broad banded method 20Hz - 20kHz
- ✓ Low frequent transient noise localization and visualization
- ✓ High spatial resolution

