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Hydroflown: MEMS-based Underwater Acoustical Particle Velocity Sensor

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The increasing problems related to homeland security and harbour/infrastructure protection have increased the level of interest on vector sensors. Market surveys carried out during the last three years gave the conclusion that there is a need for a new generation, small size, and low-cost underwater sensors capable of measuring particle velocity in three dimensional plain within a broad frequency band (2 Hz - 50 kHz) and with high angular resolution.
The small size MEMS-based sensors developed by Microflown Technologies BV Inc are the world's only commercially available transducers that are capable of measuring the particle velocity, instead of pressure, in air. The development of a new generation, innovative and low-cost underwater sensors and technologies based on that in-air nano technology is therefore considered. This technology has a great potential to become a revolutionary underwater acoustic sensor using nano-technology, capable of finding many applications like sensors for Autonomous Underwater Vehicles, sensors for directional receivers for underwater acoustic systems, Floating autonomous systems, Sensors for seismic towed arrays for underwater oil and mineral prospecting and harbour and water-side infrastructure protection.
This paper describes how Microflown technology can be adapted to underwater applications.