

## Sonitor 3D Positioning System

Sonitor 3DPos is a unique system for exact indoor object positioning and motion tracking.

Small, wireless Tags transmitting ultrasound signals are attached to objects. From a set of microphones the Tag positions are calculated in real time. The system also estimates position errors and the velocity vector, enabling us to predict where the Tag is moving. The positions are available through a PC interface.

### Key features:

- 4 positions per second divided evenly among the Tags (e.g. 1 Tag - 4 updates/second or 4 Tags - 1 update/second)
- An accuracy of 2-3 centimetres in x-, y- and z-direction
- A set of 8 microphones covers an area of 5x5 metres
- Several microphone sets are combined to cover larger areas

Sonitor 3DPos is easily integrated into the customer's software using an DLL plug-in with Windows API provided by Sonitor. System output is time-tagged positions and estimated velocity vectors and positioning errors.

The picture on the right hand is a snapshot from the three dimensional visualization of Sonitor 3DPos. Positions are shown as orange spheres with curves between them. The large wireframe box represents the room the positions were recorded in, which is of size 3.48 x 3.55 x 2.5 metres. The 8 small wireframe boxes are the microphones that record sound from the tags.

Ultrasound as a signaling medium will not interfere with electronic equipment, it is immune to electromagnetic radiation and it is not affected by magnetic materials.

### Applications

- Motion control and training
- Motion tracking for augmented reality guidance in nuclear power plants, space ships etc.
- Wireless access control for computers and control panels in laboratories etc.
- Safety barrier for people entering hazardous areas with e.g. moving machines on oil rigs etc.
- Automatic camera direction and zoom control for surveillance, video conferences etc..
- Computer and camera aided remote assistance during maintenance and servicing on oil rigs etc.

