3D Audio HMI
Sound Processing for Automotive Applications

More Intuitive User Experience & Warning Alerts for Drivers
Socionext’s 3D acoustic surround technology delivers state-of-the-art UI (User Interface) to aid driver safety with sound localization control for in-vehicle applications, such as driver assistance and infotainment systems, to help vehicle operators receive intuitive directions and alerts for unexpected occurrences.

Key Features
- ‘Close-to-Ear’ effect generated by the software helps drivers to feel as if there are speakers just around the ears.
- Off-line processing using ‘3D Authoring Tool’ means no dedicated speaker or DSP is required. This allows its use in a wide range of vehicles at lower cost.
- Robust sound localization technology is available to control any form of in-vehicle speaker configurations or conditions such as asymmetric speaker layout or acoustic reflections.

Applications
ADAS
When other objects approach from the blind area, drivers are able to intuitively perceive its direction with ‘Close-to-Ear’ effect sound. This is also applicable to car navigation systems.

Driver Monitoring System
When a driver unconsciously starts to feel drowsy or tired, the ‘Close-to-Ear’ effect sound can alert the driver to wake up.
Advantage for IVI System

Conventional Method

Speakers are positioned symmetrically for generating 3D sound effects.

3D Audio HMI for IVI System

Enhances the driving experience with 3D audible navigational assistance and warnings even with asymmetrically positioned speaker layout and complicated acoustic reflections in car cabin.

Implementation Workflow

Key Advantages

- Simple off-line processing creates 3D sound effect.
- Socionext offers customer support on the '3D Authoring Tool' for each targeted vehicle model.