

# 3-D Audio Solution Sound Alert HMI for In-Vehicle system



Socionext's 3-D acoustic surround technology, which has enjoyed lots of commercial use in gaming market, delivers state-of-the-art UI with sound localization control for in-vehicle applications, such as driving assistance and infotainment system, that can help auto driver perceive intuitive directions and startling signs.

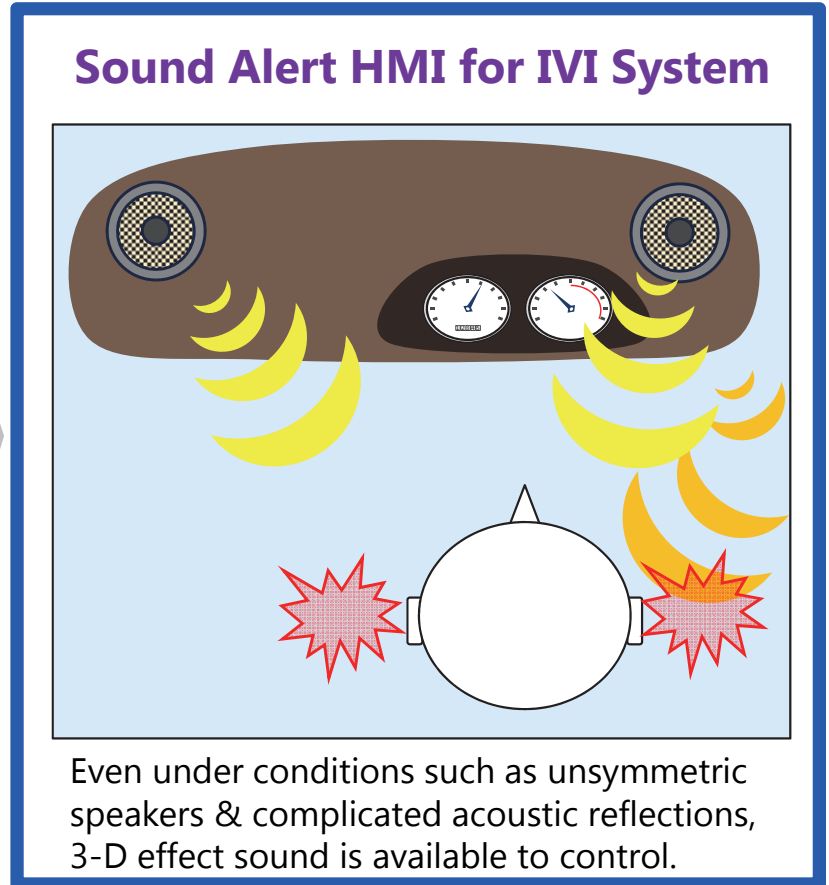
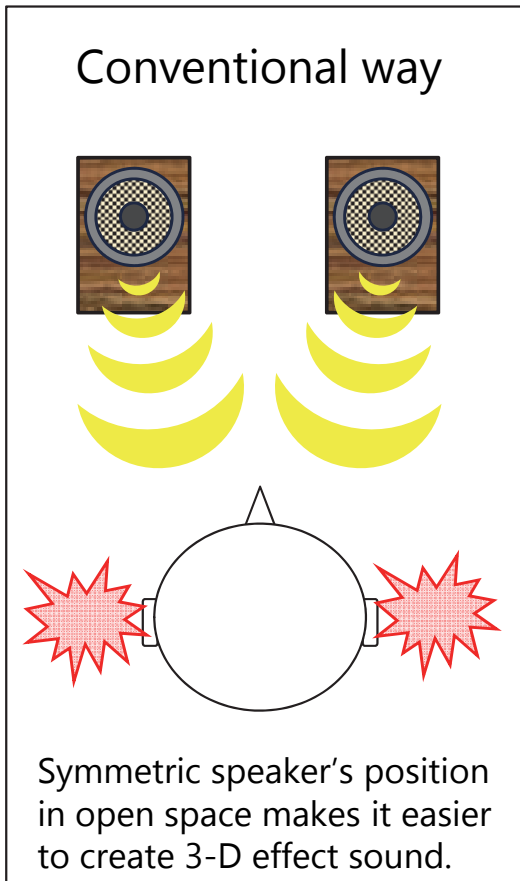
## ■ Key Features

- "Close-to-Ear effect" generated by software, encouraging auto driver to feel as if there are speakers just around ears.
- Off-line processing by "3D Authoring Tool", not requiring any dedicated speaker or DSP, that allows its use for a wide range of vehicle models with less expenses.
- Robust sound localization technology is available to control even under in-vehicle conditions, such as unsymmetric speaker layout and acoustic reflections.

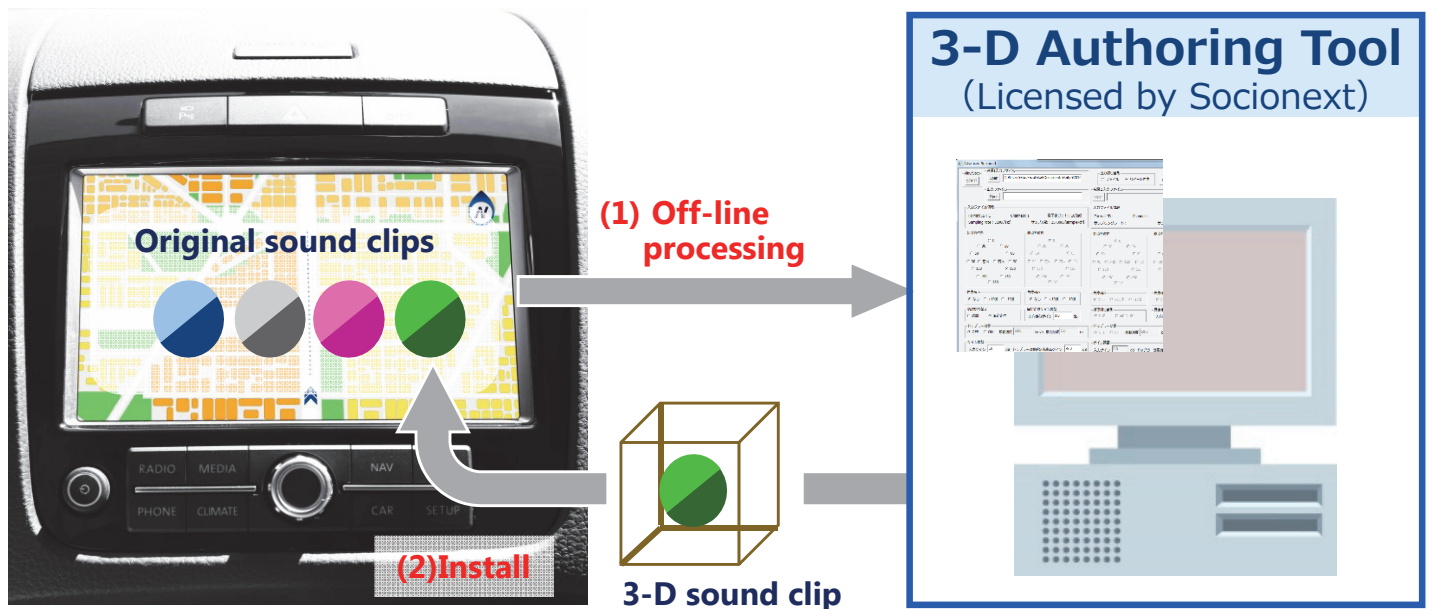
## ■ Applications

- **ADAS** When other objects approaching from blind area, driver can intuitively perceive its direction with "Close-to-Ear" effect sound. Also applicable to car navigation system.
- **Driver Monitoring System** When driver unconsciously feeling drowsy or fatigue, "Close-to-Ear" effect sound can help startle back and wake up.

## ■ Advantage for IVI System



## ■ Implementation Workflow



- Off-line processing simply creates 3-D effect sound.
- Socionext offers tuning support on the "3-D Authoring Tool" for each targeted vehicle model.