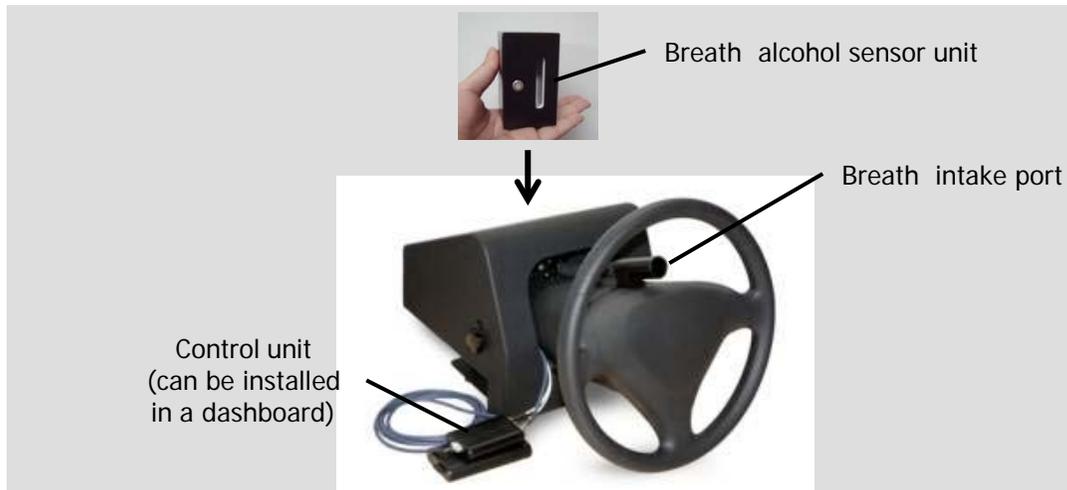


## A compact prototype of a steering-wheel mounted breath alcohol detection system



Steering wheel installation example

Hitachi, Ltd. and Hitachi Engineering & Services Co., Ltd. have developed a prototype of a compact breath alcohol detection system for in-car use. This system will contribute to driving/operation management by preventing drink driving in automotive and other transportation systems.

The developed system is composed of a compact mass spectrometer to detect small water clusters in exhaled breath and an alcohol gas sensor. No special operation was required to measure the breath alcohol level of a driver by designing a dashboard-installable size breath alcohol detection unit and a breath intake port which could be set-up close to the steering wheel.

### ■ Features of the technology developed

The breath-intake port is connected to breath-alcohol sensor through tens of centimeters tube. Further, the total size of the breath alcohol detector and its controller was reduced, using microprocessors.

This configuration allows the breath intake port to be set-up close to the steering wheel and the breath alcohol sensor unit to be installed in a car dashboard.

### ■ Future directions

A feasibility study on performance stability of the system in vehicle interior environment is planned to be carried out.

### ■ A word from the development team

Based on the finding that water clusters propagate to an alcohol sensor through several tens of centimeters-long tube without diffusion, a prototype breath alcohol detection system with a separated breath intake port was developed.