



## Special Feature: Active Safety

### Overview

**Yoshiki Ninomiya**

General Manager  
Strategic Planning Office

To ensure sustainable growth of automobile use as a means of comfortable transportation for people, it is necessary to reduce the number of traffic accidents. There have been efforts in human, road infrastructure, and automobile safeties. For automobile safety, safety systems such as “forward collision warning” and/or “emergency brake” have been generalized. These systems assist in collision or lane departure prevention. In addition, there has been an increasing need for next-generation “Advanced Driver Assistance Systems” (ADAS) which could forestall the occurrence of traffic accidents. The aim of this special feature is to introduce the fundamental technologies required to realize next-generation ADAS.

To develop next-generation ADAS, a function to analyze the characteristics of a situation is necessary for prediction of risk occurrence before the timing of intervention or alarm. It includes outside-looking sensors, such as cameras, “Radio Detection And Ranging” (RADAR), and/or “Light Detection And Ranging” (LIDAR). It also includes a precise positioning system that uses digital map data to obtain information on a distant area or areas hidden from the vehicle. A road environment recognition function has been activated using information obtained from the outside-looking sensors and the precise positioning system, described above. Finally, we realize a risk estimation function based on road environment recognition results.

In this special feature, we focus on dangerous situations involving pedestrians and show the current results for each functional module and the expected future developments.