

## Development of safety technology to enable all customers to enjoy driving with peace of mind

If driving conditions are not safe, you cannot enjoy driving. It is for this reason we want to help drivers recognize dangers as early as possible. Mazda is striving to develop industry-leading active safety technology, with a view to its universal adoption.

Data show that around 70% of road traffic accidents are caused by failures to properly perceive danger, and 20% by misjudgments. Eliminating this human error by drivers constitutes an important factor in reducing accidents. In this context, Mazda is focusing its energy on the development of active safety technologies.

A group within the Vehicle System Development Department, led by Koichi Kojima and Hiroshi Omura, is working on the advanced development of active safety (preventive safety) technologies. This technology informs drivers of the presence of danger, encourages them not to enter into dangerous situations, and assists them in maneuvering the vehicle to avoid danger.

The members of this development team are strongly inspired by Zoom-Zoom. For many people, the words "Zoom-Zoom" bring to mind the enjoyment of driving. However, according to Omura, "Drivers should be able to perceive risks clearly, take safe action as quickly as possible, and have the car respond precisely when such action is taken. That's another aspect of the Zoom-Zoom Mazda is aiming for."

Mazda also believes that for such technology to contribute to reducing accidents, it needs to be fitted in vehicles that are widely used throughout society. Says Kojima, "We have to develop a system that can be extended to fit as many different models of vehicle as possible at a reasonable price, so that as many customers as possible will have access to it."

Young engineers, including Takashi Nakagami, Takayuki Moritani, and Hiroko Shiraishi, are working on the development of this new technology, with the goal of its initial commercialization in the early 2010s.

"No one deliberately tries to drive dangerously, but people make mistakes. By developing technologies that prevent human errors, we strive to save our customers from sudden dangers that might come upon them," says Moritani.

Nakagami, who has been working in this field since joining Mazda six years ago, comments that "we emphasize the customer perspective—in other words,

whether or not we ourselves would like to have this sort of system. We want to offer only highly perfected products that are genuinely useful," as he gets fired up for testing the new technology.

Shiraishi is responsible for the human-machine interface (HMI), which accurately and quickly informs drivers of danger. "Development of HMIs requires integrating the requirements of a range of systems, so our development team members sometimes disagree with each other," says Shiraishi. "But in the end it works out because all of us possess the same goals and aspirations."

Omura sums it up: "Only when your safety is assured will you enjoy driving, or want to drive at all." Mazda's ultimate goal is to coordinate driver and car to avoid danger, by creating an "uncrashable car" that integrates human and machine.\* To this end, the Company is striving to develop industry-leading active safety technologies, with a view to their universal adoption, based on research into the driver-car relationship.

\* Coordinated human (driver) and machine (automobile) operations. At Mazda, this does not refer to automated (machine-controlled) driving operations. Instead, it refers to the car's operations while factoring in the characteristics of the human driver, in pursuit of safe performance.



Advanced Vehicle System Technology Development Group,  
Vehicle System Development Department  
From back left:  
Hiroko Shiraishi, Takayuki Moritani, Takashi Nakagami  
Hiroshi Omura, Koichi Kojima