

TMC Develops Collision Avoidance Assist System Effective at High Speeds

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Toyota City, Japan, Nov. 12, 2012 — Toyota Motor Corporation (TMC) announces that it has developed a Pre-collision System (PCS) with collision avoidance assist that is effective in helping mitigate even high-speed^[1] collisions.

The newly developed PCS uses millimeter-wave radar to detect the risk of a rear-end collision with a preceding vehicle, with the system warning the driver via sound and display alerts to prompt braking when such a risk is detected. When the driver applies the brakes, PCS enables deceleration of up to 60 km/h^[2] by greatly increasing the braking force up to twice^[3] that of the average force applied by drivers. If the brakes are not applied, automatic deceleration^[4] of 15 km/h to approximately 30 km/h^[5] is possible^[6].

More than 90 percent of rear-end collisions occur when the difference in speed between the preceding and following vehicle is within 60 km/h^[7]. TMC aimed to develop a system based on real-world collision data, and has, with its newly developed system, achieved rear-end-collision reducing-effects at the highest level in the industry. The new PCS was developed to be used in a wide variety of models, and is to be rolled out starting with soon-to-be-launched models.

To contribute to the elimination of traffic accident fatalities and injuries—the ultimate goal of a society that values mobility—TMC is conducting research and development on individual onboard safety devices and systems based on its Integrated Safety Management Concept^[8], an approach that gives direction to safety technology and vehicle development. TMC is pressing forward with the development of safer vehicles and technologies and is intensifying its wide-ranging traffic-safety initiatives by participating in the development of traffic environments and conducting educational traffic-safety activities.

^[1] Research has shown that a speed of 40 km/h to 60 km/h at the time of a rear-end collision is the range in which the number of fatal and injury-causing accidents increases

^[2] When the driver's car is traveling at 80 km/h and the preceding car is traveling at 20 km/h

^[3] According to analysis of U.S. accident data

^[4] Deceleration when no brake is applied is initiated from 15 km/h

^[5] When the driver's car is traveling at 50 km/h and the preceding car is traveling at 20 km/h

^[6] Full capabilities may not be possible in certain road environments or under certain weather conditions

^[7] Preliminary calculations from traffic accident statistics from the Institute for Traffic Accident Research and Data Analysis (ITARDA)

^[8] An approach to safety—not focused solely on independent safety systems—that seeks to provide the driver with comprehensive support in all aspects of driving

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