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Message from the Planner

In terms of global environment and energy policy, automotive systems have a major role to play in the infrastructure of society, with nations around the world strengthening environmental standards. Meanwhile, the growing number of vehicles on the roads, especially in emerging economies, and the aging of the driving population are creating a need for the wider adoption of safe driving assistance systems. Rapid progress is also being made in the use of information technology to improve comfort and convenience and to add value to vehicles.

Given these circumstances, initiatives are being launched around the world aimed at utilizing advances in electronics and electric drive technologies to build highly efficient internal combustion engines and improve the mileage of electric vehicles, at implementing preventive safety through the use of environmental recognition sensors and chassis control systems technology, and at adopting smart practices for the use of electric vehicles that integrate with the electric power and telecommunications infrastructures.

This issue of Hitachi Review describes what Hitachi is doing to combine advanced technical capabilities in the fields of the environment, safety, and information to generate new value for people, vehicles, and society, and to help create a prosperous society.

The opening article was contributed by Dr. Georg Wachtmeister from the Technical University of Munich, a world leader in the field of internal combustion engines. Other articles look at global trends in automotive system technology; provide an overview of the products and technologies used in systems, components, and services supplied by Hitachi; and consider the outlook for the future.

These articles describe specific products and technologies used in these systems, components, and services. In the environmental field, these include engine management system technologies such as those used in gasoline direct injection systems for compliance with stricter standards, motor control system technologies for electric vehicles, highly efficient electric motors, compact inverters, lithium-ion batteries with high output and capacity, and precision sensors.

In the safety field, articles describe advanced vehicle safety control systems and chassis control systems that optimize vehicle driving, cornering, and stopping.

In the information field, articles describe a service that uses smartphones to provide drivers with information from the cloud that is easy to use, safe, and convenient; security technologies; and smart city initiatives.

Another article looks at techniques for the efficient development of software that is safe and highly reliable, including technologies for functional safety and advanced software verification techniques. I hope that this issue of Hitachi Review will provide readers with useful information on the activities of Hitachi.

Planner for this issue
"Automotive System Technologies for Environment, Safety, and Information"

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