

News Release

FOR IMMEDIATE RELEASE

Hitachi Automotive Systems Develops Technology for On-board Stereo Cameras Enabling Highly Accurate Detection of Small Irregularities in Road Surfaces

Tokyo, January 7, 2019 --- Hitachi Automotive Systems, Ltd. announced today that it has developed technology for its in-vehicle stereo cameras that enables highly accurate detection of small road surface irregularities while driving, including holes and small debris.

Moving forward, by combining this detection technology with vehicle suspension systems, Hitachi Automotive Systems plans to develop a drive control system that can adjust vehicle stability in response to road surface conditions. This in turn will contribute to improved driving safety and comfort.

Driving an automobile on an uneven road not only reduces driving comfort, but also causes the vehicle to act in an unstable manner, which can affect safety. Thus, there is a need for a drive control system that can adjust driving stability in response to road surface conditions. Hitachi Automotive Systems has been developing the detection technology required to realize such a control system that can identify tiny changes in road surfaces with a high level of accuracy.

Hitachi Automotive Systems' in-vehicle stereo cameras can sense the distance and location of people and objects such as pedestrians and other vehicles to a high degree of accuracy by calculating parallax information—the difference between the images obtained by the two left and right cameras—with extreme precision. However, to detect irregularities and small debris on a road, the company had to overcome the challenges of preventing false positives caused by dirt and shadows on the road surface, and reduction of detection processing time.

Hitachi Automotive Systems has developed an application that addresses these challenges together with the Research & Development Group of Hitachi Ltd. and the Automotive Products Research Laboratory at Hitachi America, Ltd., the Hitachi Group's North American regional headquarters. Specifically, the application makes it possible to distinguish between actual irregularities and dirt or shadows, with short processing times, by leveraging the unique characteristics of Hitachi Automotive Systems' stereo

cameras, which continuously acquire precise parallax information while also combining and analyzing image information.

Going forward, Hitachi Automotive Systems plans to further develop this drive control system that combines detection technologies with suspension systems to adjust driving stability to match the particular road surface.

Hitachi Automotive Systems will continue to contribute to improving vehicle safety and comfort through advanced driver assistance technologies.

About Hitachi Automotive Systems, Ltd.

Hitachi Automotive Systems, Ltd. is a wholly owned subsidiary of Hitachi, Ltd., headquartered in Tokyo, Japan. The company is engaged in the development, manufacture, sales and services of automotive components, transportation related components, industrial machines and systems, and offers a wide range of automotive systems including engine powertrain systems, electric powertrain systems and integrated vehicle control systems.

For more information, please visit the company's website at <http://www.hitachi-automotive.co.jp/en/>.

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Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
