

**FOR IMMEDIATE RELEASE**

## **Hitachi Automotive Systems and Clarion Developed a Remote Parking System Using Smartphone that Enables Driverless Parking**

**Tokyo, December 22, 2016** ---Hitachi Automotive Systems, Ltd.("Hitachi Automotive Systems"), and Clarion Co., Ltd.("Clarion"), today announced the joint development of a remote parking system that automatically performs parallel and perpendicular parking as well as garage parking and exit from outside the vehicle through remote control using smartphones. The companies are going to introduce the system to vehicle manufacturers to attain early commercialization.

With vehicle manufacturers and related companies accelerating the development of practical autonomous driving, there is also a need to automate vehicle parking operations. The newly-developed remote parking system is an automatic parking system that combines Clarion's SurroundEye®\* camera monitoring system with Hitachi Automotive Systems' vehicle control units and steering and brake actuator control technology to park a vehicle by remote control using a smartphone.

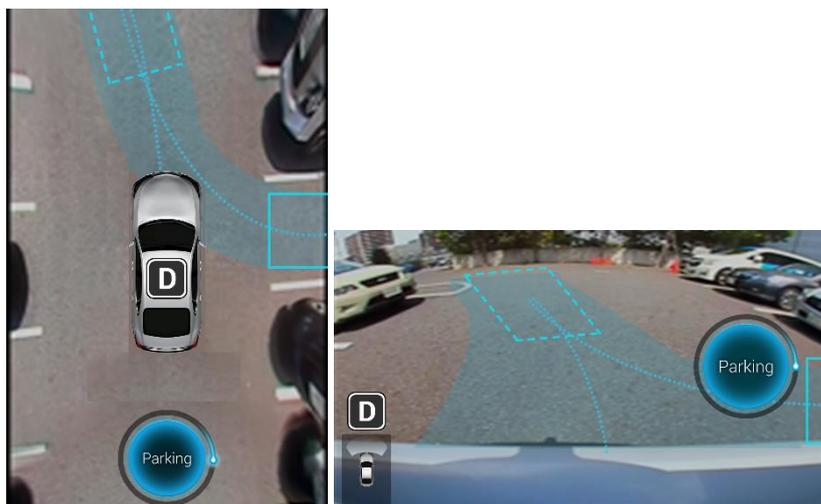
On the smartphone screen, the system provides a real-time image display of what is around the vehicle as well as the route the vehicle is traveling, enabling the driver to operate the vehicle safely through automatic parking while always knowing about the surroundings. In addition, the smartphone applications employ an interface that is easy to use, with various choices such as perpendicular and parallel parking styles. The system makes it possible to park and de-park an unmanned vehicle, which is particularly useful when parking in small spaces such as garages.

The system is also safe, as a vehicle that is being automatically parked or de-parked can instantly be stopped by a screen operation on the smartphone if the driver detects a possibly dangerous situation. The vehicle itself has an automatic stop function that operates when its sensors detect pedestrians or obstacles in the vicinity.

The remote parking system is the result of the fusion of the highly sophisticated image recognition technology and vehicle control technology honed by the two companies, contributing to further improvements in driver comfort, safety, and convenience. Hitachi Automotive Systems and Clarion will continue to contribute to

the development and widespread use of vehicles equipped with advanced safe driving technology by automotive manufacturers.

\*SurroundEye is a registered trademark of Clarion Co., Ltd.



Parking preview screens on the application  
(left: vertical (view from above), right: horizontal (driver's viewpoint))



Vehicle position selection screen  
when exiting a parking space

#### ■ Image data download

Please use the “Clarion Data Bank” to download product images.

Clarion Data Bank <http://www.clarion.com/jp/en/corp/information/press/>

#### **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 management systems, electric power train systems, drive control systems and car information systems. For more information, please visit the company's website at <http://www.hitachi-automotive.co.jp/en/>.

#### **About Clarion Co., Ltd.**

Headquartered in Japan, Clarion Co. Ltd., which has been a consolidated subsidiary of the Hitachi Group since 2006, has been an international leader in car audio and electronics since 1940. The company is engaged in the research, development, engineering, design, manufacturing, sales and marketing of mobile entertainment, navigation, infotainment, communication, safety and security products for the

automotive, marine, recreational vehicle, commercial fleet and heavy industry environments. Clarion has been the recipient of numerous excellence awards for design, innovation, support, manufacturing and product reliability from independent organizations. The company has marketing and sales affiliates in Europe, North and South America, Asia and Australia. Clarion is located on the web at <http://www.clarion.com/jp/en/corp/index.html>

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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.

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