

February 9, 2018  
Aichi Steel Corporation

## Automated Driving Demonstration Testing Starts for a Level 4 Magnetic Marker System Using the MI Sensor for the First Time in Japan

—Implemented by the Ministry of Land, Infrastructure, Transport and Tourism from February 10 at Minami Alps Mura Hase roadside station—

Aichi Steel Corporation (Headquarters: Tokai, Japan, President: Takahiro Fujioka) will participate in the demonstration testing being conducted by the Ministry of Land, Infrastructure, Transport and Tourism from February 10 at Minami Alps Mura Hase roadside station as part of its automated driving service demonstration testing. Demonstration testing including Japan's first level 4<sup>\*1</sup> (advanced automated driving) driving will be conducted, using a magnetic marker system<sup>\*2</sup>, which comprises new technology for detecting vehicle position with high accuracy utilizing the MI sensor, an ultra-high sensitivity magnetic sensor.

From last year, Aichi Steel Corporation has provided the magnetic marker system using the MI sensor for automated driving demonstration testing being conducted throughout Japan. Results have steadily been achieved, as demonstrations aiming for social implementation have been conducted at sites throughout Japan, including Okinawa, Shiga and Hokkaido prefectures, steadily achieving results.

This time, a module using the MI sensor will be fitted to automated driving vehicles (buses) developed by Advanced Smart Mobility Co., Ltd. to conduct demonstration testing. The automated driving buses use road-vehicle coordination technology to drive based on information gathered from various sources, including magnetic markers, GPS and the rider. Acceleration, steering and braking are all performed automatically by the system. Moreover, this driving course not only involves the first instance of level 4 driving for the magnetic marker system, which was not previously conducted in demonstration testing, but also includes demonstrations on extremely narrow public roads.

Most vehicle position estimation technology that is currently being studied uses GPS or image processing technology. However, it is becoming apparent that GPS waves cannot be obtained in tunnels or under viaducts, and that the reliability of imaging processing is insufficient at night and during poor weather. The magnetic marker system is a powerful type of technology that can stably identify vehicle position even in conditions such as these, and could also increase reliability if used to complement other systems.

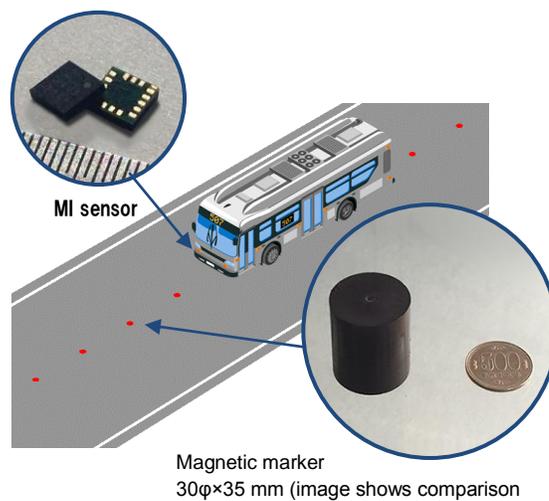
Going forward, we will aim to contribute to next-generation public transportation systems with technology that supports safe and comfortable automated driving through further demonstration testing, as well as strategically proceeding with the development of new uses for the MI sensor, which is contributing to the realization of a next-generation mobility smart society.

\*1 Level 4: Driving operations with the driver not present in the driver's seat.  
(However, limited to divisions in which general vehicles are excluded by traffic regulations)

\*2 Magnetic marker system: An automated driving support system originally developed by our company that uses an MI sensor module affixed to the base of vehicles to measure the fitted vehicle's position with high accuracy from the weak magnetic force of magnetic markers fitted along the road and control steering equipment so that the vehicle passes over the magnetic markers.

[Reference] Outline of automated driving service demonstration testing kick-off ceremony

1. Date/time: From 13 p.m. on February 10 (Sat), 2018 (Demonstration testing: February 10 (Sat) to 16 (Fri))
2. Location: Minami Alps Mura Hase roadside station (1400 Hasehiji, Ina-shi, Nagano)
3. Organizer: Automated Driving Service Regional Implementation Committee based at the Minami Alps Mura Hase roadside station



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