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For immediate release

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Yokohama Rubber developed technology that monitors tire wear using sensing waveforms sent from a sensor inside the tire

Tokyo—The Yokohama Rubber Co., Ltd., announced today that it has developed a technology that detects the wear condition of passenger car tires by analyzing sensing waveforms transmitted by a proprietary signal processing technology from a sensor attached to the tire's inner surface that is being jointly developed with Alps Alpine Co., Ltd.

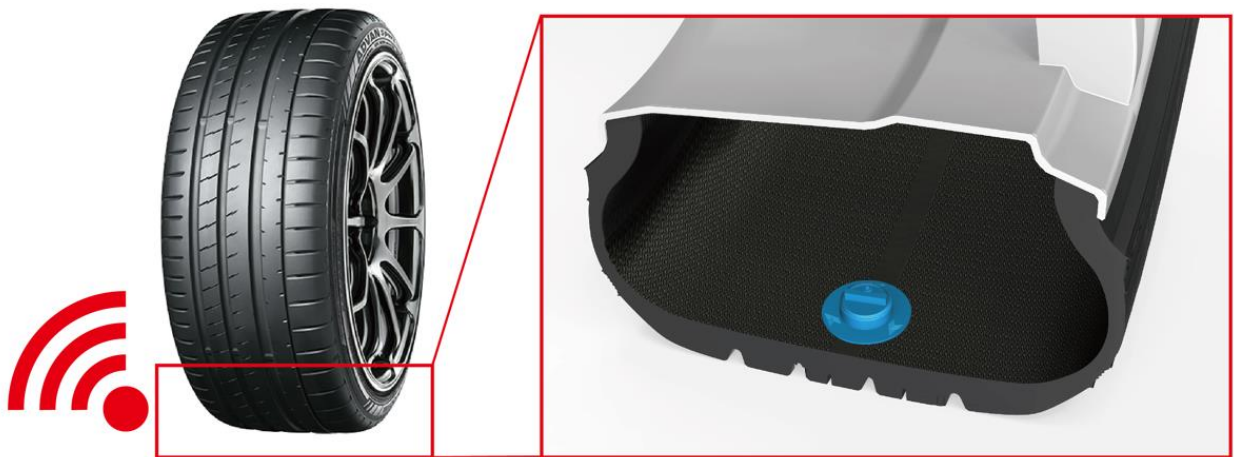
This innovative technology uses these sensors to capture sensing waveforms of a rotating tire's changing shape and then applies a proprietary analysis method to distinguish between new and worn-out tires. The technology enables timely notification to the car owner or a vehicle fleet manager of the need to rotate or replace worn tires, enabling more optimal tire maintenance that will promote safety while extending tires' useful lifespan and reducing their economic and environmental impact. As mobility services shift to self-driving vehicles, the opportunities for drivers and fleet managers to visually check tire wear will become less frequent. The ability to remotely visualization a tire's condition via the cloud will contribute to safer and more sustainable mobility services.

The CASE^{*1} and MaaS^{*2} initiatives included in Yokohama Transformation 2023 (YX2023), Yokohama Rubber's medium-term management plan for fiscal years 2021–2023, include the promotion of a new tire solutions service based on the development of a SensorTire (Internet of Things [IoT] tire) with sensing functionality and stronger, more flexible service capabilities. In February 2021, Yokohama Rubber announced its SensorTire Technology Vision, a medium- and long-term technological development vision for passenger car tire sensors. The aim of this new vision is to provide continued support for the safe and sound movement of people while also addressing changes in mobility demand by seamlessly providing data obtained from IoT tires fitted with sensing functionality to customers using the service, including drivers and passengers as well as operators of a diverse range of automobile-related services. To achieve the goals of this vision, Yokohama Rubber is conducting practical testing with partners from various industries.

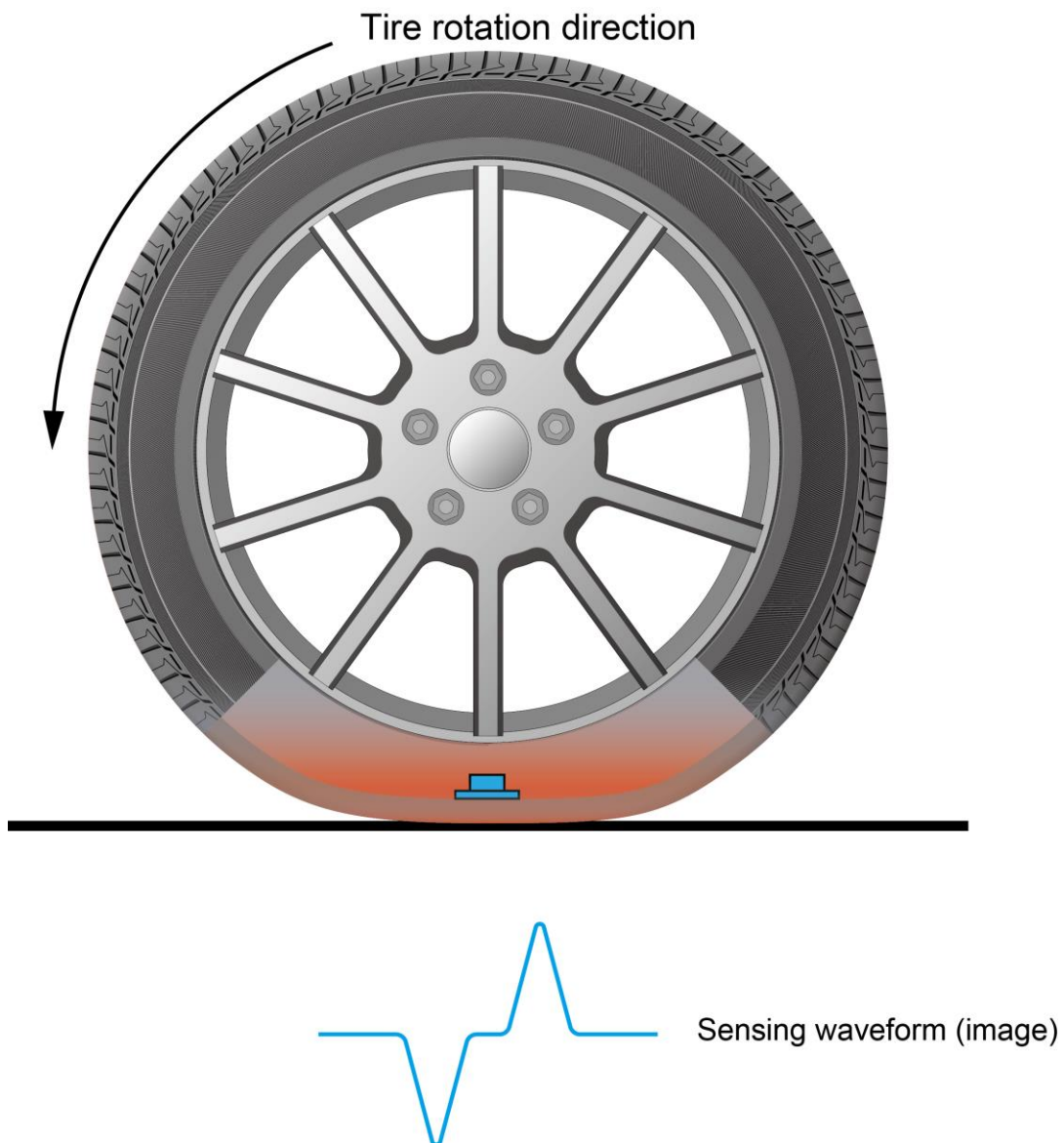
^{*1}: An acronym for Connected, Autonomous, Shared & Services (short for car-sharing and related services, or in some cases sharing only), and Electric (for e-cars).

^{*2}: Mobility as a Service. The provision through packaged search, reservation, payment, and other related functions of optimal combinations of public transport and other mobility services for addressing the mobility needs of local residents and of travelers.

■ Image of a sensor attached inside a tire (being developed with Alps Alpine)



■ Sensing image generated by tire sensor



■Image of service using Sensor Tire Technology

Main effects :

Eliminate traffic congestion in urban areas

Improve traffic safety

Improve mobility convenience

