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Communication Infrastructure for Multi-purpose Use of Short Range Communication (DSRC)

To realize the multi-purpose use of DSRC (Dedicated Short Range Communications), a communication protocol has been developed that can handle both low-latency and high-efficiency communication, such as providing information to vehicles moving at high speed in a short range wireless communication area and highly reliable, high-capacity communication, such as payment services in parking lots, etc. By realizing domestic and overseas standards and guidelines, it has greatly contributed to the establishment of a communication infrastructure for DSRC application services. It has been adopted for the ITS spot service, which started actual operation in 2009, contributing to the development of ITS.

ITS: Intelligent Transport System

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Yosami Radio Transmitting Station

The Yosami Radio Transmitting Station is the world's largest longwave transmission facility at the time, consisting of eight 250m-height antenna towers installed in Yosami, Aichi Prefecture (Currently Kariya City), and in 1929, the world's first two-way wireless communication between Europe and Japan was realized at a frequency of 17.442 kHz. Due to the characteristics of long waves that reach below sea level, it was used as a communication base with antisubmarines during the Pacific War, and an attack start signal for Pearl Harbor was also transmitted. In 1950, the U.S. military condemned it for communications to submarines, and it was used as a U.S. military communications facility until 1993.

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Advanced Antenna Design Methods

In order to cope with the sophistication and complexity of the role of antennas in wireless communication, research on advanced antenna design methods has been pursued. Achievements such as a high-speed method for calculating the impedance of an antenna near a dielectric have been created. The results of the following methods, etc. have been created: Array calibration method for high resolution DOA estimation, sector beam

synthesis with curvature by generalizing double curved reflector theory and a fast method for calculating the impedance of an antenna near a dielectric.