

Mitsubishi Electric and NTT DOCOMO to Conduct 5G Trials Aimed at Supporting 5G Launch by 2020

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Overview of trials to be presented during Mobile World Congress 2015

Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it will collaborate with NTT DOCOMO, INC., Japan's largest

mobile communication network operator, on joint experimental field trials of fifth-generation (5G) mobile communication systems and

technologies based on an agreement they reached in December 2014. The trials ultimately pave the way for commercial 5G services

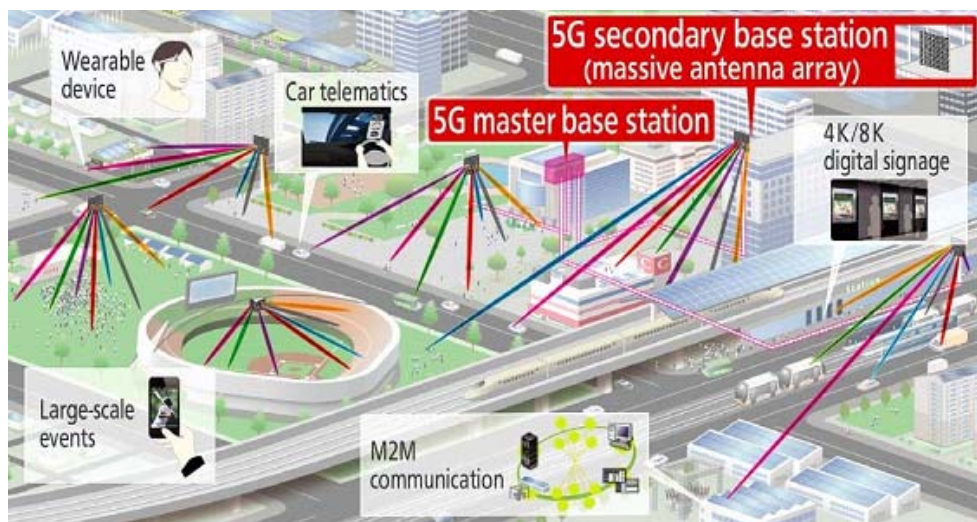
from 2020.

An overview of the trials will be presented at the DOCOMO booth during Mobile World Congress 2015, a major telecommunications exhibition in Barcelona, Spain from March 2 to 5. In addition, the companies will make a joint presentation on April 16 to the Technical Committee on Radio Communication Systems of The Institute of Electronics, Information and Communication Engineers in Japan.

The main targets of the trials will be the achievement of ultra-high-speed mobile communication greater than 10Gbps using spatially multiplexed signals and to increase spatial utilization efficiency by using multielement antenna arrays (see figure). To reach these goals, however, new technologies are needed to reduce and control inter-beam interference among multiplexed beams, which results in lowered transmission speeds.

Mitsubishi Electric and DOCOMO will conduct outdoor trials using multiple antenna arrays operating at 44GHz.

The units will form a virtual antenna array to evaluate performances of massive antenna arrays. Channel characteristics will be analyzed through simulations. Ultimately, they aim to use these massive antenna arrays to verify beam-forming technologies and interference reduction techniques required for 5G.



5G system image

Momentum is gathering for international initiatives to develop 5G as the next-generation mobile standard following LTE and LTE-Advanced. R&D efforts are pointed at developing larger-capacity systems to meet the explosive demand for Internet traffic, which will require ultra-high speeds in excess of 10Gbps and massive connectivity for the nearly countless devices that will be interconnected by the Internet of Things. Mitsubishi Electric is already involved in studies focusing on 5G technologies, including through its participation in the 5G-standardization efforts of the Fifth Generation Mobile Communications Promotion Forum established last September 30.

This is the first time in the world to install Mitsubishi Electric's proprietary black-packaged LEDs in screens at a baseball or soccer stadium. The advanced LEDs, in addition to helping to prevent light reflection, can reduce luminescence in darker lighting and increase luminescence in brighter lighting for improved visibility.

About Mitsubishi Electric Corporation

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,054.3 billion yen (US\$ 39.3 billion*) in the fiscal year ended March 31, 2014. For more information visit <http://www.MitsubishiElectric.com> *At an exchange rate of 103 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2014