

# Verification testing of Japan's first medical body area network

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Fujitsu today announced that it has successfully completed the first verification test in Japan for a medical body area network (mBAN). Conforming to IEEE 802. 15.6 standards and using a prototype device with a frequency band reserved for medical applications (400MHz), the test was conducted at Fujitsu Clinic in Kawasaki, Japan.

Conventionally, measuring such vital signs as the [electrical activity](#) of the heart, [brain waves](#), blood pressure, and body temperature for patients in a hospital required hooking them up to wires, visually inspecting the results, and then recording the results in a medical chart. By using mBAN, however, each type of sensor can transmit signals wirelessly to measuring devices. As a result, patient stress caused by being hooked up to obtrusive wires is reduced, as is the assistance required from nurses. Furthermore, the risk of unexpected connection problems with the wires is eliminated, and transcription errors in medical charts are avoided, thus contributing to higher-[quality medical care](#) and improved patient comfort.

Fujitsu has positioned mBAN as a mainstream network for next-generation healthcare and will continue its development efforts in this area.

The verification test was part of a study project commissioned by Japan's Ministry of Internal Affairs and Communications titled, "Studies on advanced frequency application technologies for 400MHz-band medical telemeters."

In respect to the study commissioned by Japan's Ministry of Internal Affairs and Communications titled, "Studies on advanced frequency application technologies for 400MHz-band medical telemeters," the test aimed to conduct research on the reliability and safety of [wireless transmission](#) that medical facilities demand by evaluating the performance of mBAN in actual hospital room conditions.

Research planning was carried out during fiscal 2011 and 2012, while the verification testing occurred February 18-22, 2013.

In the verification test performed in hospital rooms at Fujitsu Clinic, employees acted as patients. The prototype wireless device was attached to various parts of their bodies, and, based on the actual conditions in hospital rooms, the performance of the mBAN system was evaluated in relation to changes in the position of equipment or the posture of the subjects. The test confirmed that the data transmitted from the body sensors was reliable, and that having multiple, independent mBAN in use in the same hospital room does not result in interference, thereby verifying the safety of operating multiple mBANs simultaneously.

mBAN is a transmission standard specific to medical care applications. Standardization was completed in February 2012 by the IEEE. The system achieves low energy consumption by decreasing wireless output, thereby limiting the transmission area to between three and five meters, and through the inclusion of a sleep mode within the transmission protocol. As a result, devices incorporating mBAN transmission modules can achieve long battery life. In addition to the [frequency band](#) reserved for [medical applications](#) (400MHz), the system is also compatible with the versatile ISM band (2.4GHz) and other medical care-specific frequency bands employed by various countries.

Provided by Fujitsu

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