

Prototype for narrowband Internet-of-Things system

June 29 2016



Credit: Aalto University

Researchers at the department of Communications and Networking, School of Electrical Engineering, have implemented successfully a prototype for Narrowband Internet-of-Things system. This is a narrowband version of LTE (Long Term Evolution) system targeting machine-type communications applications with low data rate that

requires low module cost, long battery life time and increased coverage.

Researchers have been developing the NB-IoT system with software-defined radio system implemented in the department. This implementation is for the physical layer of the GSM carrier version of NB-IoT. This is among the first NB-IoT standalone mode implementations.

Aalto NB-IoT implementation uses software-defined radio (SDR) implemented on personal computers and using regular Ubuntu Linux operating system. Aalto's implementation of NB-IoT allows virtualization of the network and providing NB-IoT as a service.

'This opens up new kind of applications where NB-IoT system can be added to some third party products such as those in automation industries, says Professor in the research project', Riku Jäntti.

The Aalto NB-IoT system was tested in Aalto campus area Otaniemi, Espoo, Finland to transmit temperature, humidity and air pressure sensor information from a sensor node to the base station. NB-IoT can be deployed on re-farmed GSM carriers, guard bands of LTE spectrum or using part of operator's LTE spectrum. Aalto has tested the standalone mode on 630 MHz band, on which Aalto has the permission to use, but the system can be easily configured to 900 MHz GSM.

Provided by Aalto University

Citation: Prototype for narrowband Internet-of-Things system (2016, June 29) retrieved 27 April 2024 from <https://phys.org/news/2016-06-prototype-narrowband-internet-of-things.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.