SNS COLLEGE OF ENGINEERING

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Department of Information Technology

Course Name – 19IT503 Internet of Things

III Year / V Semester

Unit 3 – EVOLVING IoT STANDARDS & PROTOCOLS

Topic 7 - WPAN Technologies for IoT/M2M

WPAN Technologies for IoT/M2M

- 3GPP2 – Cellular Technology – GSM, UMTS, LTE
- 6LoWPAN - IPv6 over low-power area network IEEE802.15.4
- ANT/ANT+ - low-power proprietary wireless technology introduced in 2004 by the sensor company Dynastream. ANT's goal is to allow sports and fitness sensors to communicate with a display unit
- Bluetooth Bluetooth is a PAN technology based on IEEE 802.15.1. It is a specification for short-range wireless connectivity for portable personal devices initially developed by Ericsson.
- DASH7 - A long range low-power wireless networking technology from 10m to 10km, max-200kbps
- IEEE 802.15.4j (TG4j) MBAN – Medical body area network
- Infrared Data Association (IrDA) – used for very short range communication
- ISA100.11a - ISA SP100 standard for wireless industrial networks developed by the International Society of Automation (ISA) to address all aspects of wireless technologies in a plant.

WPAN Technologies for IoT/M2M

- NFC (Near Field Communication) - A group of standards for devices such as PDAs, smartphones, and tablets that support the establishment of wireless communication when such devices are in immediate proximity of a few inches.

- NIKE+ Nike+R is a proprietary wireless technology developed by Nike and Apple to allow users to monitor their activity levels while exercising.

- RF4CE (Radio Frequency for Consumer Electronics) - RF4CE is based on ZigBee and was standardized in 2009 by four CE companies: Sony, Philips, Panasonic, and Samsung. RF4CE's intended use is as a device RC system, for example for television set-top boxes.

- Satellite systems Satellite communication plays a key role in commercial, TV/media, government, and military communications because of its intrinsic multicast/broadcast capabilities, mobility aspects, global reach, reliability, and ability to quickly support connectivity in open-space and/or hostile environments.

- WiMAX - WiMAX is defined as Worldwide Interoperability for Microwave Access by the WiMAX Forum, formed in June 2001 to promote conformance and interoperability of the IEEE 802.16 standard.

WPAN Technologies for IoT/M2M

- Wireless Meter-Bus (M-BUS) - The Wireless M-Bus standard (EN 137514–4:2005) specifies communications between water, gas, heat, and electric meters and is becoming widely accepted in Europe for smart metering or AMI applications. Wireless M-Bus is targeted to operate in the 868 MHz band (from 868 MHz to 870 MHz).

- WSN (Wireless Sensor Network) - A sensor network is an infrastructure comprised of sensing (measuring), computing, and communication elements that gives the administrator the ability to instrument, observe, and react to events and phenomena in a specified environment.

- WirelessHART (aka IEC 62591) – Wireless HART is a wireless sensor networking technology based on the highway addressable remote transducer protocol (HART).

- Zigbee – The core ZigBee specification defines ZigBee's smart, cost-effective, and energy-efficient mesh network based on IEEE 802.15.4

- Z-wave - Z-wave is a wireless ecosystem that aims at supporting connectivity of home electronics, and the user, via Remote Control (RC). It uses low-power radio waves that easily travel through walls, floors, and cabinets.

THANK YOU