

WIRELESS CONNECTIVITY FOR INTERNET OF THINGS

Work package 1 has spent significant amount of time in IoT radio connectivity research. Numerous technologies have been investigated during the four years of the program. In this poster, we show an overview of IoT radio connectivity and exemplify selected technologies in the space.

IEEE 802.11ah

- **Battery life:** new power-save mode for IoT
- **Longer range:** compared to legacy Wi-Fi (<1Km) and lower rates from 150 kbps to 8.6Mbps
- **Larger number of STAs:** per BSS >6000
- **IoT program highlights:**
 - Sectorization and Restricted Access Window performance analysis
 - Analysis of system with very large number of stations
 - Duty cycle and use-cases analysis

LTE Release-13 / LTE-M

- **Battery life:** Extended DRX cycles up to 44 min in idle mode
- **Low cost:** New low complexity UE category
- **Better coverage:** Coverage enhancements 15+ dB improvement
- **IoT program highlights:**
 - Influence in 3GPP standardization work and GSMA evaluations of LPWA technologies
 - Academic results and contributions on eDRX
 - Joint research with TUT and Aalto e.g. on:
 - Coverage enhancements
 - M2M random access capacity
 - Contention-based uplink
 - Technology overview

Bluetooth Low Energy

- **Longer range:** range extension
- **New topology:** mesh upcoming
- **IoT program highlights:**
 - Short range radio survey

WirelessHART

Bluetooth®



Personal area
Body area

M-Bus_{wireless}



WEIGHTLESS™



GSM™

NB-IoT

5G



One network A billion dreams



Rural areas
Wide area

City area

Building wide

Local area
Home network