

**ITU Workshop on
Spectrum Management for
Internet of Things Deployment
(Geneva, 22 November 2016)**

**SRD technologies to deliver IoT applications:
On-going standardization activities in ETSI
and related spectrum management proposals
to CEPT**

Dr Simon Dunkley
LPRC council member

**ITU WORKSHOP ON SPECTRUM
MANAGEMENT FOR INTERNET
OF THINGS DEPLOYMENT**

**GENEVA, SWITZERLAND
22 NOVEMBER 2016**

www.itu.int/go/ITU-R/RSG1SG5-IoT-16

Organised by:

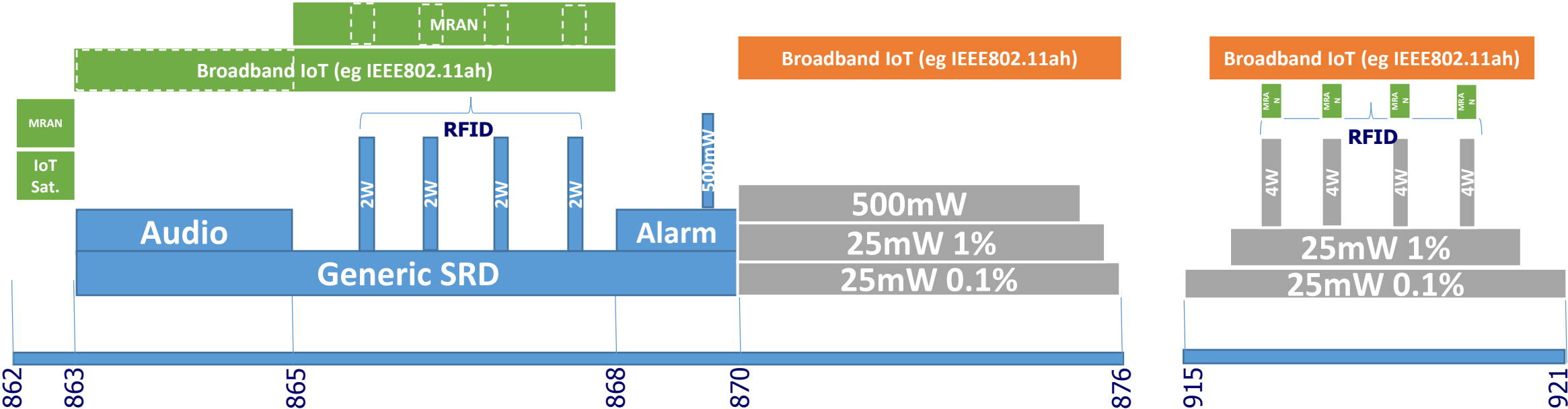


Typical applications supported by SRDs

Class	Applications	Technologies
Personal Area Networks (PANs)	Headsets, device links (e.g. medical/sport to iPhone)	Bluetooth®(2.4GHz)
Home Area Networks (HANs)	Alarms, Home Automation, Smart Lighting (sub GHz)	ZigBee® (2.4GHz), KNX® (868-870MHz) Wideband Networking such as IEEE802.11ah (sub GHz)
RFID	Tag reading, Ticketing, payment cards, car tolls	Sub GHz (4-channel plan) and 2.4GHz
Metropolitan Area Networks (MANs)	Sensing and control applications	Low Power Wide Area Networks (LPWAN – LoRa™ and SigFox) (sub GHz) Wi-SUN (sub GHz) Low speed metering networks (169MHz)
Satellite M2M	Truck tracking, remote sensor reading	Under study at 862-863MHz

Work within CEPT (SE24 & SRD/MG)

- Release and reorganization of sub GHz spectrum
 - Report 200 (release of 870-876MHz & 915-921MHz)
 - Report 246 (WB technology in 870-876MHz & 915-921MHz)
 - Report 261 (reorganization of 862-868MHz)
- Harmonisation of 870-876MHz & 915-921MHz
 - Recommendation to EC in Report 59 (6th Update of standing mandate)



Work within ETSI (TG28)

- Network-based SRDs harmonised standard (EN 303 204)
- Non-specific, wideband, alarms, 169MHz metering SRDs harmonised standard (EN 300 220 family)
- SRDoc for Ultra Narrow Band (UNB) technologies (TR 103 435)
- Low Throughput Networks (i.e. LPWAN): three document under work use case & system requirements, architecture, protocols & interfaces
- New SRDoc WI to examine LPWAN technologies and requirements



Security

- Recent adverse publicity threatens the credibility and viability of the IoT
- Security features must be tuned to LPWAN constraints:
 - low and unbalanced throughput, small payloads
- Example of counter measures (within TR 102 887-2) include:
 - Encryption using asymmetric and symmetric keys
 - Public Key Infrastructure using X509 certificates
 - Firmware upgrades

