

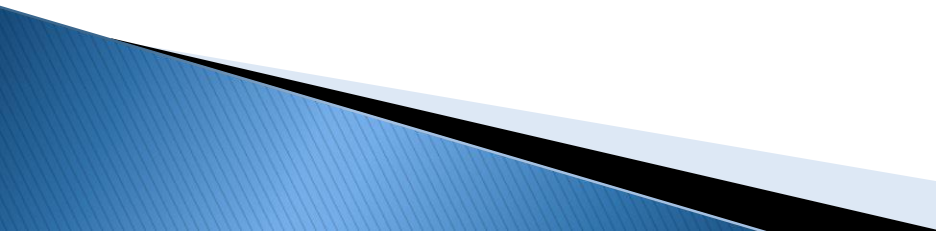


Spectrum Requirements for Utility Networks Current Activities Within Tech UK

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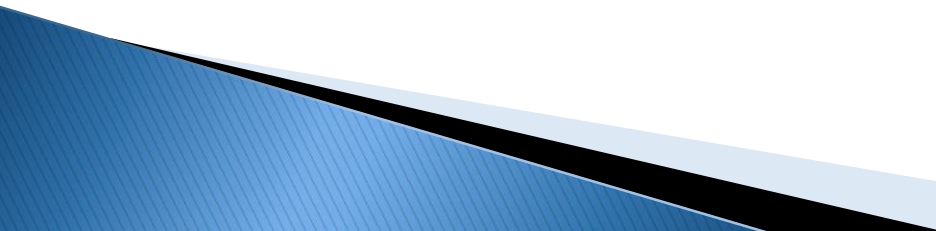
Spectrum Requirements for Utility Networks

- **Tech UK have been facilitating open stakeholder meetings and workshops (December 2016, May 2017 and July 2017) to gain understanding of –**
 - **Additional number of devices expected in the network**
 - **Anticipated data throughput of these devices**
 - **Proportion of ‘critical’ devices which may need dedicated network**
 - **Proportion of less critical devices which may be adequately served with a publicly provided service**
 - **This informs the type of telecommunications technology which may be suitable to deliver connectivity which in turn dictates those parts of the radio spectrum which may be most useful**
 - **Current engagement with JRC, ENA, Ofgem, Ofcom, 450 MHz alliance, UK DNOs, equipment vendors and several European utility telecoms forums.**
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Spectrum Requirements for Utility Networks

- **Initial findings -**
 - **New devices deployed at the edges of the network will required between 100kb/s and 3Mb/s**
 - **Desire to reuse as far as possible existing infrastructure (due to legacy hilltop coverage)**
(which in turn points towards use of spectrum in the 'sweet spot' 400 MHz range)
 - **Requirement for harmonised spectrum in order that minimum two interoperable vendors exist**
 - **Regardless of implementing narrowband or broadband systems (or both) there is good alignment with**
EUTC desire to allocate minimum of 2x3 MHz FDD pair)
 - **Higher frequencies (than 400 MHz) could be utilised – but are less able to immediately satisfy the increasing connectivity needs due to**
 - **Poorer in-building penetration**
 - **Requirement for additional infrastructure to cover the same geographic area**
 - **Higher frequency bands more suitable for use where density of devices is highest (urban).**
However the most immediate need for enhanced communication is generally outside urban areas.

Spectrum Requirements for Utility Networks

- **Ideal band (used by dozens of other EU states) for smart grid comms would be 450-470 MHz.**
 - **Unfortunately not immediately available for use in the UK due to legacy band misalignment and fragmentation issues (as confirmed in recent Ofcom consultation on UHF 1 & 2)**
 - **However, MOD spectrum release programme includes 406-430 MHz – potential alternative**
 - **MOD industrial engagement to analyse potential uses for this band and mechanism for sharing**
 - **Trials underway at the moment with this spectrum using both narrow and broadband technology**
 - **Further work required by Tech UK Spectrum group in order provide clear statement of requirements from all UK DNOs regarding spectrum requirements in order to advance full time access to spectrum and create a market large enough to attract equipment vendors**
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Spectrum Requirements for Utility Networks

- ▶ Current UHF allocations for Utilities in other EU states (supporting a mix of Narrow band & wideband (DMR, scanning telemetry, CDMA, Wimax and LTE deployments))

