

Ofcom Discussion Document – Spectrum Roadmap

Introduction

Ofcom has focused the provision of spectrum access to Mobile Operators and WiFi providers over the last 20 years. It is important that Ofcom does not lose sight of the spectrum access needs of other platforms / systems, e.g. Energy Network Operators, Broadcasting, Transport, PMSE, etc. To this end we are very supportive of the work underway in Ofcom's 'Spectrum for Utilities' study and our response centres on the importance of ensuring that appropriate spectrum access is afforded to other users in order to support Government policy, i.e. the 'Net Zero' transition.

Background – JRC Limited

JRC Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications. JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry & tele-control services and network operations. JRC created and manages a national cellular plan for co-ordinating frequency assignments for a number of large radio networks in the UK. As critical systems users, the Joint Radio Company (JRC) welcomes the opportunity to respond to this consultation on behalf of the electricity and gas network operators. JRC highlights that communication networks are dependent on access to resilient and robust electricity supplies. As the smart grid evolves, existing monitoring and control systems will need to be significantly expanded and extended. This expansion in the operational communications needs of the energy utilities will require access to additional spectrum.

JRC Response

JRC welcomes the opportunity to respond to Ofcom's latest Discussion Document on Spectrum Strategy. JRC is a supporter of Ofcom's initiatives to improve connectivity for all – especially in relation to improved economic output for UKPLC, home working and associated climate impact of reduced need for commuting etc.

JRC continues to be concerned that the proposals to increase sharing in numerous frequency bands should be fully considered and technically assessed from the perspective of likely impact to performance degradation of incumbent users of systems operating in those bands – including JRC's Members. In the context of utility systems which are used to monitor and control critical national infrastructure and require overall system availability of over 99.999%, any degradation to the performance of these systems is likely to have a detrimental impact on the power industry's capability to monitor and control its assets, with subsequent impact on operational reliability and restoration times in the event of faults.

JRC would like to comment specifically on a small number of areas in the Spectrum Roadmap -

- i) The spectrum for utilities project is key to the future decarbonisation of the UK's energy sector. JRC are closely involved with the work items and studies currently underway with BEIS, Ofcom, Ofgem & DCMS. JRC's most recent publications in this area can be found here –
 - a. [ICT-Gemserv-Economic-Study-Press-Release.pdf \(jrc.co.uk\)](#)
 - b. [Economic rationale for enabling Smart Grid functionality of the UK energy system via a Private Radio Frequency-based enhanced Operational Communications Solution \(jrc.co.uk\)](#)
- ii) In the table of user classes it is surprising that while several groups such as maritime, aeronautical, amateur & PMSE are identified, the utility sector is not. Potentially this is due to categorisation criteria applied within Ofcom. Many JRC allocations will straddle several categories such as fixed links, business radio and satellite. Given the many tens of thousands of systems which are licenced on behalf of the energy utility sector by JRC, a dedicated category for the utility sector would be welcomed in future Ofcom publications.
- iii) The closure of the 26 GHz band to new fixed links and eventual revocation of the licences for 5G / 6G services will result in costly migrations being required by several utility companies. Given the lack of progress globally of 5G services in the millimetric frequency bands, JRC considers that the decision to close and clear the 26 GHz band may prove to be unnecessary, or at the very least premature.
- iv) JRC notes Ofcom's comments around future uses of 1.4 GHz Supplemental Downlink Spectrum. JRC members are currently going through a significant migration process to clear all remaining point to point links out of the 1.4 GHz band. We are surprised that although spectrum regulators in Ireland, Spain and France appear to have moved away from the concept of SDL in the 1.4 GHz band and have even extended the use of this frequency band for fixed links, Ofcom has continued to assume that there is significant demand for SDL in this band. We would encourage Ofcom to continue to compare the approach of EU regulators with regard to this spectrum allocation.
- v) JRC are supportive of Ofcom's suggestion to increase the use of measurement techniques to enhance efficient use of spectrum resource. This approach would allow refinement of some propagation models which are either out of date or too conservative. Additionally, the identification of available spectrum for additional allocations would benefit significantly from field measurements demonstrating actual channel occupancy. Many systems remain licenced even though they have been decommissioned. This gives a false impression of actual channel occupancy. Some frequency bands may not actually be nearly as congested as Ofcom's records would indicate. A combination of careless renewal of licences no longer in use and also the very low percentage use (time, geography or both) in some bands is potentially causing inefficient use of a valuable spectrum asset. Measurement programmes could also be helpful in refining the modelling of interference into the UK from mainland European countries in the reverse-aligned 450-470 MHz range.

- vi) Ofcom's proposals to focus on improved receiver characteristics are positive. Many systems employ poor quality receivers (especially with regards to filtering and rejection) which makes them unnecessarily susceptible to interference. With higher quality receivers it is possible to improve potential co-existence of systems – including adjacent, and even co-channel, narrow band and LTE based systems. However, JRC would encourage Ofcom to allow sufficient time for any changes to be introduced and also to seek to understand the costs involved.

- vii) Where technology migration of any incumbent user is deemed necessary, Ofcom investigate the establishment of a 'migration fund' to facilitate transfer of systems from one band to another – or alternative connectivity options.

** Ultimately the cost of any technology change in the energy utility sector is funded by bill payers – who are already under increasing pressure due to the well-publicised energy price rises. JRC would remind that such a fund was previously in operation to assist with the PMSE sector's migration from the 700 MHz band.*