

VMO2 response to Ofcom's Call for Input on Potential spectrum bands to support utilities sector transformation

Non-confidential version

Introduction

We welcome the opportunity to respond to Ofcom's call for inputs (CFI) which provides information about and seeks stakeholder inputs on potential spectrum bands that could support utilities in deploying private networks to meet their future comms needs.

Especially through our involvement in smart metering, we know about the range of comms services that are or could be used to support reliable and energy efficient supply of electricity to people and businesses across the UK. This need or potential opportunity is relevant across all utilities, not just in electricity. All utilities do or will require such services to maintain their assets, to repair faults and to exchange information with their customers, amongst others. Transformation of utilities toward increased reliance on renewables, requirements to dynamically allocate resources, integrate domestic generation and demand for remote automation mean that requirements for such services will change over the coming years.

Given the importance of the transformation process that utilities will undergo, it is timely that Ofcom considers how it can enable utilities to decide on and develop the comms services that meet their needs. Whilst Ofcom should not itself determine the solutions that utilities adopt, it can helpfully contribute by sharing information on the conditions of different solutions, including private networks, to be further developed.

The role of private networks in meeting future comms needs of utilities is unclear

We take a step back before commenting on Ofcom's reporting on individual bands and what this means for potential use for private networks. Whilst private networks may be part of the solution sought by utilities, there are other options for addressing the comms needs of utilities. Alternative options include use of public networks, whether fixed or wireless, which may deliver similar solutions or enable other innovative capabilities. Publication of this call for input must not be interpreted as that private networks are required or integral to a future solution of meeting comms needs of utilities. In contrast, private networks may be seen as part of a range of options that may be suitable in certain circumstances.

Generally, we consider there are advantages to make use of and draw on the capabilities and expertise inherent in public networks. There are competing public networks (in mobile and in fixed) and it cannot be presumed that delivery over private networks supports better outcomes than public networks. Also, to the extent that private networks do not face the same public policy obligations and expectations as MNOs that invest in and run public networks, there is a risk that delivery over private networks is unduly favoured.

Whilst private networks require access to spectrum, this does not mean that there is a need to assign dedicated spectrum to utilities as they already have access to spectrum that is available on a shared basis.

Legitimate expectations of existing licensees must be respected when new use triggers interference risk

Ofcom selected five potential bands by applying the criteria of 1) bandwidths of at least 2x1.4 MHz paired spectrum or a minimum of 5 MHz unpaired spectrum, 2) a broad ecosystem of devices suitable for use by utilities, and 3) wide area coverage. These criteria seem sensible as they account for plausible requirements for spectrum to be used by utilities in deploying private networks. There needs to be enough spectrum, it must be widely available and the existing ecosystem should plausibly supports use by utilities.

Ofcom provides information on factors relevant to potential suitability of bands for use by utilities, including current and potential use, equipment ecosystem, coexistence constraints, and costs associated with deployment of private networks. Reporting information on these relevant factors Ofcom supports informative stakeholder discussion. It does not however – and neither does Ofcom suggest – entail a comparative assessment of bands in terms of suitability by utilities.

The table overleaf reports our comments on individual bands. Our comments focus on the bands of 700 MHz and above as there is no current or prospective mobile use of the 400 and 450 MHz bands.

Band	Comments
400 MHz band	No comments
(NI only)	
450 MHz band	Whilst (partial) replanning may be required to accommodate for new use due to
(GB and NI)	current intensive spectrum use, prospects for use by utilities otherwise may be
	promising as strong propagation and existing ecosystem could support
	widespread, economic deployment.
700 MHz band	Ofcom identifies that interference risk would be limited to 'centre gap' SDL and
(GB and NI)	that future use by utilities may require mitigating the risk of interference from
	SDL to utilities base stations. It suggests that "prospective users would need to
	engage with the 700 MHz SDL band licensee (currently EE) to understand the
	potential for technical and commercial arrangements to manage the risk of
	interference from SDL base stations in that band". Whilst this suggestion is
	reasonable, we want to emphasise that the rights of existing licensees must be
	protected in circumstances where new use gives rise to interference risk. Any
	actions to mitigate interference risk or costs flowing from such actions must not
	be imposed on existing licensees, especially when no compensation is provided.
	This would violate the legitimate expectations that existing licensees have from
	when they acquired their spectrum at an auction or by trading. Whilst it may be
	important for prospective users to reduce uncertainty around future use that
	originates from interference risk this must not be addressed in a way that
	undermines the interests of existing licensees.
800/900 MHz	Spectrum in this band is harmonised for GSM-R across Europe and used for that
(NI only)	purpose by Network Rail in GB. Given we understand NI Rail has no active
	interest in using this spectrum, it is reasonable to consider alternative use of this
	spectrum in that geography. This said, potential use by utilities would be limited
	to NI which implies that this band does not offer a solution for potential spectrum
	need by utilities in GB. Such a solution is unlikely to benefit from scale
	economies as a result.
Unpaired	We have two observations on this band.
1900 MHz (GB	
and NI)	Our <i>first observation</i> relates to Ofcom's Consultation on future use of unpaired
	1900-1920 MHz spectrum. Ofcom proposed revoking the existing licences to
	enable reallocation of spectrum for new uses, and this was driven by its
	provisional view that national infrastructure uses, such as rail and utilities, are

plausibly optimal future applications. We explained in our Consultation response that rail and utilities are not equivalent in terms of use prospects. Harmonisation of this spectrum for rail comms and ongoing work to develop ecosystem in support of this application means that rail comms are a substantially more promising use case compared to utilities. The information that Ofcom now reports confirms our view. Utilities would incur large costs to use this spectrum as it would have to be deployed from a greater number of sites (due to poor propagation) and there is no existing equipment ecosystem that utilities can rely on. This strengthens our view that trading offers the best route for spectrum to be transferred from existing mobile licensees to such new uses. We request Ofcom accounts for these factors in deciding its approach to future use of unpaired 1900-1920 MHz spectrum.

Our second observation is on potential expectations in relation to existing users when interference risk emerges. Ofcom finds that MNOs holding spectrum adjacent to unpaired 1900-1915 MHz spectrum may have to modify their base station equipment where stations are close to new high-power use of the unpaired spectrum. Whilst existing users may have to undertake remedial interaction (eg, through installing filters) or collaborate with new users to mitigate interference, we would be concerned if Ofcom were to put responsibility of mitigating interference that emerges from new use on existing licensees. It is important that existing licensees feel protected in their rights, and how this supports their investment and use of the spectrum they gained the licence for. If mitigation requires actions by existing licensees, they must be appropriately compensated for costs they incur. Where feasible, there could be a preference for new users as opposed to existing users to undertake remedial action. This would align better with the merit of not affecting how existing licensees can use their spectrum subject to them complying with the conditions that apply to the licence of their spectrum.

Finally, it is entirely plausible that if a utilities solution were to emerge that relied on this spectrum, that MNOs would either be incentivised to trade this spectrum to a utility or system provider or to use this spectrum to deliver solutions themselves in support of such solution. It is important that Ofcom does not conflate future use of spectrum with future ownership.