



Response to the Ofcom Consultation Exploring future use of the unpaired 2100 MHz (1900 - 1920 MHz) spectrum

The European Utilities Telecoms Council (EUTC), representing European electricity and gas generation, transmission and distribution companies welcomes the opportunity to comment on Ofcom's consultation exploring future use of the unpaired 2100 MHz (1900 - 1920 MHz) spectrum.

Summary

EUTC welcomes Ofcom's recognition that "The electricity sector has a requirement for increased operational connectivity throughout the electricity network to support the shift to renewable power generation and the electrification of transport and heating, both of which underpin government objectives to deliver net zero." And that "These future requirements may be best met by the deployment of private wireless networks, for which the availability of suitable and sufficient spectrum may be necessary."



Trial Distribution Network Storage Battery

However, whilst recognizing these needs, EUTC is not convinced that the spectrum identified in this consultation can be used to address these needs due to the technical constraints associated with this spectrum, and the lack of any suitable equipment at present.

EUTC's response to Ofcom's specific questions are below:

Question 1: Do you agree with our provisional view that the current non-use of the unpaired 2100 MHz spectrum for high power mobile services and potential future use of the 1900 – 1910 MHz spectrum for the ESN Gateway, may not be optimal given the possible alternative uses of the spectrum?

EUTC believes that fundamentally, this is an issue for the national administration, but observes that whenever an allocation decision results in spectrum laying dormant for several decades, the basis on which the original allocation was made ought to be reviewed.

We observe that this situation where spectrum remains dormant for decades appears to be similar through Europe, and therefore it may raise questions about whether the whole European spectrum allocation process needs to be reviewed.

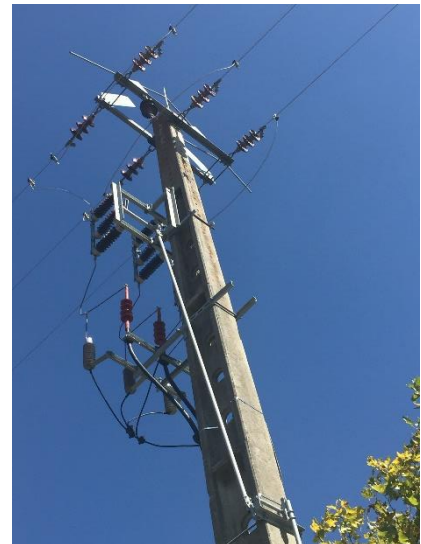
Question 2: Do you agree with our provisional view that of the alternative high power uses of the unpaired 2100 MHz spectrum, national infrastructure uses such as rail and utilities are likely to be the most optimal?

EUTC works closely with other European and international organisations representing critical network users, especially public safety and transportation. Within this context, we are trying to coordinate our spectrum requirements in order to provide guidance to regulators and policy makers to seek alignment of spectrum allocations internationally to ensure appropriate vendor support for the widest possible range of products and a vibrant ecosystem. This offers the optimum pathway to ensure end customers, consumers and citizens receive reliable and flexible essential services at the lowest possible cost.

In this context, a UK allocation to FRMCS (Future Railway Mobile Communication System) of 1900-1910 MHz for railways, matching wider European activity, is likely to be optimal, and is therefore supported by EUTC.

However, in terms of utilities, further work would need to be undertaken to analyse whether an allocation of 1910-1920 MHz to utilities is optimal given the absence of any other use of this spectrum for critical utility operations in other countries to EUTC's knowledge.

In addition, the technical constraints on the 1910-1920 MHz spectrum may severely limit its usage in a utility environment. The consultation acknowledges that "Spectrum may be needed to support nationwide coverage and hence would need to be at sufficiently high power to enable this."



Mobile Operators themselves increasingly depend on sub-1GHz spectrum for wide area coverage to complement their spectrum holdings above 1 GHz. If Mobile Operators have found this the case, it's extremely unlikely that utilities would be able to use this spectrum to achieve nationwide coverage, particularly as utilities require national geographic coverage as opposed to the easier population coverage favoured by Mobile Operators.

Question 3: Do you agree with our assessment that liberalising the spectrum and relying on trading is unlikely to be effective in securing optimal use of this spectrum?

EUTC agrees with Ofcom's analysis and observes that spectrum liberalisation and trading has not delivered optimal spectrum usage in many instances. In several European countries, these strategies have delivered similar outcomes, that is spectrum lying unused for long periods while the spectrum owner has no use for the spectrum, but will not relinquish ownership.

Question 4: Do you agree that revocation of the licences to enable reallocation may therefore be necessary to secure optimal use of the spectrum and that this is objectively justified and proportionate?

EUTC welcomes Ofcom’s analysis that revocation of the licences is necessary to secure optimal use of the spectrum, that this is objectively justified, and proportionate. EUTC observes that this approach is being increasingly considered by regulators in other countries where an organisation is holding spectrum but not using it.

The most prominent recent example is in Brazil where the regulator ANATEL is recovering 450-470 MHz spectrum from Mobile Operators who have retained the spectrum for several years but not used it. EUTC believes this action is justified particularly where there is an alternative societal use of the vacant spectrum which is being obstructed by the failure of market mechanisms to facilitate optimum use of valuable spectrum.

Question 5: Do you have further views / comments that you wish to make in respect of this consultation?

Further technical studies need to be undertaken before any decision can be reached on whether this spectrum would be suitable for utility use; and in that case, which applications it might fulfil.

In parallel, the views of equipment vendors should be sought to understand whether appropriate technology can be developed to meet utility user needs in this band at reasonable cost, and the timescale for production of such equipment in sufficient volumes.

If these studies and further consultations reveal that additional standardisation measures are required, it may be necessary for Ofcom to facilitate and participate in these activities. EUTC observes that in some international fora, progress is difficult without involvement and/or support by an administration.

In assessing potential utility use of this spectrum, EUTC points to its long-standing spectrum ambition in the table illustrated here. The following points arise:

EUTC Spectrum Proposal	
<i>Within Europe, multiple small allocations within harmonised bands:</i>	
LESS INTENSE APPLICATIONS	
<ul style="list-style-type: none">• VHF spectrum (50-200 MHz) for resilient voice comms & distribution automation for rural and remote areas. [2 x 1 MHz]	
ANCHOR BAND	
<ul style="list-style-type: none">• UHF spectrum (400 MHz bands) for SCADA, automation, smart grids and smart meters. [2 x 3 MHz]	
MORE DENSE APPLICATIONS	
<ul style="list-style-type: none">• Lightly regulated or licence-exempt shared spectrum for basic smart grid, smart meters, LPWAN and mesh networks. (862-874.4 MHz & 915-919.4 MHz)• Mid-Band Region (1-5 GHz) for bandwidth intensive smart grid, on-site and point-to-multipoint applications. [10-100 MHz]	
FOUNDATION BANDS	
<ul style="list-style-type: none">• Public Fixed Link bands (1400 MHz – 58 GHz) for access to utilities’ core fibre networks/strategic resilient back-haul.• Public satellite bands to complement terrestrial services for particular applications.	

- It is envisaged that the 'Mid-Band Region' is supplementary to the 'Anchor Band' at 400 MHz for more dense applications. Without an Anchor Band, the viability of a Mid-Band scheme becomes questionable in a 4G/LTE/5G environment.
- The complementarity of these bands becomes especially relevant because Ofcom is contemplating low power use of 1915-1920 MHz, and EUTC is already arguing in 3GPP for higher power concessions beyond that which is currently contemplated in many 3GPP bands. [It is worthy of note that obtaining higher power services in 3GPP specifications is a common goal of Public Safety, Transportation and Utilities.]
- The EUTC Proposal envisages channel bandwidths of 10-100 MHz in the Mid-Band Region, especially as technology advances towards 5G. Because of the power limitation in 1915-1920 MHz, it is likely that the 1910-1920 MHz allocation would have to be split into 2 x 5 MHz channels, which would impede a migration to 5G, thereby foregoing some benefits such as the lower latency promised by 5G.
- If the band 1910-1920 MHz is found to be orphaned and unsuitable for 3GPP technologies, Ofcom could commission studies into potential alternative technology options. Historically, spectrum in the 1400-2000 MHz was used by utilities for point to point links, and in some countries point-to-multipoint systems were deployed in conformance with ETSI specifications. Contributions from vendors with more flexible products designed for utility markets could be sought to understand whether a non-3GPP solution should be considered for this spectrum. Such a non-3GPP solution might be based on existing ETSI or IEE standards.
- Since there appears to be a similar situation with this band throughout Europe, EUTC urges Ofcom to engage through CEPT to assess whether there might be benefits in redesignating this band on a European basis for utility operations. Such an approach would substantially change the standardisation and equipment approach.

The European Utilities Telecom Council (EUTC)

The European Utilities Telecom Council (EUTC) is the leading European Utilities trade association dedicated to informing its members and influencing policies on how telecommunication solutions and associated challenges can support the future smart infrastructures and the related policy objectives through the use of innovative technologies, processes, business insights and professional people.

This is combined with sharing best practices and learning from across the EUTC and the UTC global organization of telecommunication professionals within the field of utilities and other critical infrastructure environments and associated stakeholders.

EUTC includes a number of UK utilities and industrial partners operating in the UK.

CONTACT DETAILS:

Adrian Grilli
 Technical Manager
 European Utilities Telecom Council AISBL (EUTC)
 EUTC, 22 avenue de la Toison d'Or
 1050 Brussels, Belgium
www.eutc.org



Typical utility distribution control room

European Utilities Telecom Council AISBL, 22 avenue de la Toison d'Or, 1050 Brussels, Belgium