



European Utilities Telecoms Council

Response to the Consultation by the Netherlands Administration on spectrum awards in the 450 MHz band

May 2022

Summary

The European Utilities Telecom Council (EUTC) represents the telecommunications and information technology interests of Europe's electric, gas and water utilities and other critical infrastructure organisations. These organisations rely on telecommunication networks and services to provide the most secure, reliable and cost-effective energy supply in Europe. Utilities need direct access to spectrum in order to operate these essential telecommunications networks.

Allocating spectrum to the utility sector in particular for smart grids contributes to the reduction of carbon emissions and is not uncommon, as spectrum allocations in Ireland, Germany, Poland and other countries have shown. The amount of spectrum required by utilities is limited, approximately around 3 MHz (duplex) and can be found in spectrum bands with no great commercial value and are too small to be exploited successfully by commercial operators, i.e. the 400 MHz-range.

Direct access to dedicated spectrum supports management and digitisation of the rapidly changing energy system and allows for quicker adaptation to renewable energy resources in order to achieve climate targets. Security of energy supply is crucial and of ever growing importance in our digitised society. The smart grids require a highly reliable and safe exchange of data for the purpose of efficient grid management. This includes both data providing information about the status of the grid, as well as data to balance supply and demand on a minute-by-minute, even second-by-second basis in some cases. The choices made regarding the underlying telecommunications infrastructure are long term choices given the investments necessary in the associated energy infrastructure. Using networks operating in spectrum allocated to commercial networks may offer suitable solutions for a number of utility needs, but there are also needs which cannot be fulfilled by commercial mobile networks. Experience shows that these commercial mobile networks do not provide sufficient power autonomy (all '5G-slices' are still dependent on the same power supply) nor do they guarantee the availability and lifecycle of communication technologies, to name some examples. The commercial strategies of the Mobile Network Operators (MNOs) do not support the investment which would be necessary to 'harden' their networks in a way which would make them suitable for operational utility communications. Furthermore, if a utility did support investment by an MNO to 'harden' their network, it would tie the utility into that particular operator for the lifetime of that investment, effectively becoming a vendor lock-in in the same way as if a proprietary technological solution had been selected.

Safe and reliable exchange of data is a fundamental prerequisite for the changing energy field. This necessitates a sufficient level of control over the underlying communication infrastructure; wired and wireless. It is for these purposes that the utilities require direct access to spectrum and the 400 MHz range is most suitable for this purpose and widely available.

Main points

As a follow-up the response the EUTC provided to the 2021 consultation about the 450 MHz-band in the Netherlands, the EUTC would like to provide the Ministry of Economic Affairs and Climate Policy with a number of points for consideration in response to the consultation of the draft Decision on partial license extension.

- As already explained in response to the 2021 consultation a minimum of 2 x 3 MHz of spectrum in the 400 MHz band is needed to meet smart grid requirements.
- The draft Decision, which entails a split of the current 2 x 3 MHz allocation into two separate licenses of 2 x 1.5 MHz, results in inefficient use of spectrum. Trials in the UK have also indicated that it is also not possible to implement some utility use cases in 1.4 MHz 4G/LTE channels.
- Establishing a viable business case in one of the separate (2 x 1.5 MHz) allocations is very challenging, almost impossible. Such a split also contributes to increased risks of interference between the two separate licenses but also vis-à-vis adjacent spectrum users.
- As for the alternative usage of the spectrum outside the utility and critical communications field, experience has shown that success was limited. This is because the capacity of the 400 MHz bands cannot match that available in higher frequency bands: the business cases have been unsustainable and all have ultimately failed. Global successful cases of use of the 400 MHz band focus on Public Safety and utilities: there are no successful purely commercial use cases of spectrum in the 400 MHz band since the decommissioning of the NMT450 service – all the PAMR Tetra networks have failed.
- Access to sufficient and suitable spectrum in the 400 MHz by utilities, especially the energy sector, is a vital facilitator for these industries to meet carbon reduction, security, affordability and sustainability targets.
- The EUTC calls upon the Dutch administration to reconsider the decision to fragment the current license. The EUTC favours a solution which follows the route other European countries have chosen to make sufficient spectrum available (minimum 2 x 3 MHz in the 450 – 470 band) for critical national infrastructure, most importantly the electricity sector in order to self-provide reliable operational communications.



The concept of an intelligent smart grid management scheme

Background

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.

In many countries, utilities have operated their own private radio networks since the 1950s when the electricity sector embraced mobile radio shortly after the Police demonstrated the benefits of mobile radio to speed up responses to incidents. Across the world, utilities are constructing their own private radio networks or shared networks in response to societal needs for universally available reliable, secure, affordable and environmentally sustainable utility services – electricity, water and gas.

Society is increasingly dependent upon its vital infrastructures in general and its electricity infrastructure in particular. The continuous operation of these infrastructures increasingly requires comprehensive and reliable operational telecoms services. Some of these needs are met by fixed networks – fibre, copper and the electrical power cables themselves – but since it is impossible to reach and communicate with all assets via these fixed services they must be complemented by (wireless) radio networks. These dedicated specialist radio networks require guaranteed access to a small amount of dedicated radio spectrum for their operations. The EUTC Spectrum Proposal is summarised in this table. The ‘anchor band’, a minimum of 2 x 3 MHz of spectrum in the 400 MHz region is now the focus of many utility initiatives world-wide by utilities.

<i>EUTC Spectrum Proposal</i>	
<i>Within Europe, multiple small allocations within harmonised bands:</i>	
LESS INTENSE APPLICATIONS	
• VHF spectrum (50-200 MHz) for resilient voice comms & distribution automation for rural and remote areas. [2 x 1 MHz]	
ANCHOR BAND	
• UHF spectrum (400 MHz bands) for SCADA, automation, smart grids and smart meters. [2 x 3 MHz]	
MORE DENSE APPLICATIONS	
• Lightly regulated or licence-exempt shared spectrum for smart meters and mesh networks. (870-876 MHz)	
• L-band region (1500 MHz) for more data intensive smart grid, security and point-to-multipoint applications. [10 MHz]	
FOUNDATION BANDS	
• Public microwave bands (1500 MHz – 58 GHz) for access to utilities’ core fibre networks/strategic resilient back-haul.	
• Public satellite bands to complement terrestrial services for particular applications.	

Making available sufficient and suitable spectrum for utilities does not diminish that available for IMT (International Mobile Telecommunications) which already vastly greater than that allocated to utilities. The EUTC believes that a relatively modest amount of dedicated, preferably harmonised, spectrum must be made available for utility services to support the digitalisation of the utility infrastructures.

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