

## **Response to the Public Consultation on Draft RSPG Report: “Assessment of future usage of the frequency band 470-694 MHz within the EU”**

The European Utilities Telecom Council (EUTC) represents the telecommunication interests of European electricity and gas generation, transmission and distribution companies. EUTC welcomes the opportunity to contribute to the RSPG’s Draft Report “Assessment of future usage of the frequency band 470-694 MHz within the EU”.

EUTC is proud that its members are an integral component of the battle to decarbonize European Society in a cost-effective, secure and sustainable manner. Electricity networks play a central role in delivering these goals. This is of course not just a European goal, but a global ambition coordinated through the Conference of the Parties to the United Nations (UN) Framework Convention on Climate Change (COP) in which Europe plays a leading role.



### **Private Broadband Networks**

Private networks have experienced a renaissance in recent years as the 3GPP technology 4G/LTE has seen increasing adoption for both wide-area national networks and large area private sites such as ports, mines, quarries and power stations. This trend is increasing with 5G and is forecast to continue growing with 6G. Although ‘private networks’ may be considered to include virtualization and slicing in MNOs networks, it is also vertical users building their own private networks where they are able to gain access to suitable and sufficient spectrum.



Private on site or ‘campus’ style networks tend to focus on the ‘midband’ spectrum around 3.5 GHz, but the wide-area networks are concentrated in the 400 MHz bands.

### **Vertical Markets**

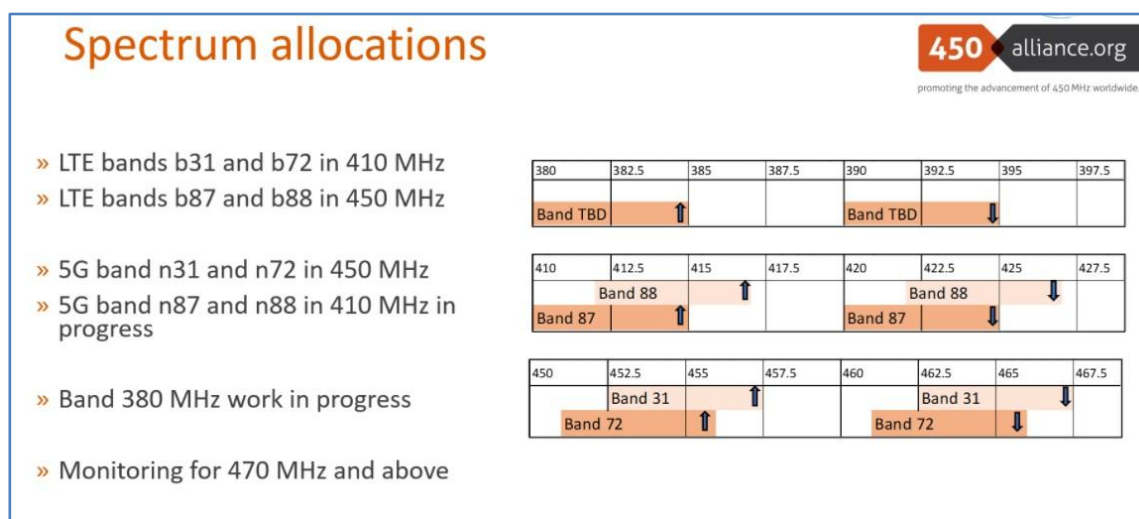
Public Mobile Network Operators (MNOs) generate their revenue from the sale of telecommunications services, whereas ‘Verticals’ derive their revenue from the sale of non-telecommunications products and services – such as energy, water, transportation, industrial products etc. Non-commercial vertical sectors, such as Public Safety, use telecommunications to deliver essential services to the public.

These ‘vertical’ markets have different motivations for their telecoms investments compared to mobile operators. Vertical players can therefore bring much needed capital investment to the mobile broadband market to supplement investment by network operators. This will help to plug the investment gap which has been a significant challenge for the rollout of 5G.

There is also a strong socio-economic dimension to many of these vertical markets – such as utilities, public safety, defence, health, road safety – where the majority of the benefit of the telecoms investments accrues to society as a whole, not the implementer of the technology.

## **Spectrum for Mission Critical Networks**

Frequencies below 1 GHz are essential for wide-area networks requiring geographic coverage, and penetration into harder-to-reach areas, for example, below ground. For these private network applications, we foresee continuing exploitation of spectrum in the 400 MHz bands. The spectrum bands currently in use in the 400 MHz region generally only have capacity for allocations of between 2 x 3 MHz and 2 x 5MHz bandwidth. This bandwidth can accommodate current requirements, but does not allow any capacity for growth and deployment of new techniques as requirements increase and new applications are devised. This is especially true in the case of utilities where carbon reduction targets and sustainability obligations are mounting increasing pressure whilst at the same time climate change is stressing utility networks in ways not previously experienced.



Growth in 400 MHz private networks is particularly pronounced outside of Europe, and we hope that European Regulators will act swiftly to ensure that European consumers, industry and manufacturers will not be disadvantaged through restrictions on access to private spectrum to enable these resilient mission critical networks to grow.

## **Harmonisation of spectrum in 410-430 MHz and 450-470 MHz for mission critical services**

EUTC has historically made a case for harmonisation of spectrum access for utilities in the 400 MHz bands as this is the 'sweet spot' blending coverage and capacity for mission critical applications. 6G may provide the impetus for rationalization of services in the 400 MHz bands to facilitate the harmonisation of spectrum access for mission critical services, but there is insufficient spectrum available in the 400 MHz to enable these mission critical services to continue to grow over the period 2030-2040.

## **2 x 10 MHz of spectrum in 470-694 MHz identified for Mission Critical Services**

Taking into account the complexity of spectrum access below 1 GHz for mission critical services, and the likelihood that the needs for these applications will continue to grow for the benefit of all of society, if spectrum in the band 470-694 MHz is to become available for IMT type services from approximately 2035, in EUTC's opinion, it would be wise to reserve 2 x 10 MHz of this spectrum for mission critical applications, including utilities.

The precise amount of spectrum required by each country varies according to national preferences, and parameters such as population density, geography and utility market structure, but the release of spectrum for utility operations in the 470-694 MHz band would offer a 'once in a lifetime' opportunity to harmonise spectrum for utility operations across the whole of Europe to reduce costs to consumers and create a massive European market for specialist telecoms manufacturers as a launch platform for lucrative world markets.

### **Integration of non-terrestrial networks**

Utilities often integrate non-terrestrial elements into networks. This enhances resilience and facilitates coverage in geographic areas which are difficult and/or expensive to provide coverage from terrestrial base stations.

Opportunities to incorporate dedicated UHF spectrum into this mix are an especially attractive option because of its ability to penetrate through vegetation, into buildings and below ground more effectively than higher frequencies. UHF spectrum is also less affected by rain attenuation than higher frequencies. This is important as utility networks are especially stressed under storm conditions when their integrity is most essential.

470-694 MHz spectrum would be eminently suitable for utility applications as data rate requirements for critical services are lower than for most other commercial applications which would not be able to provide acceptable data rates in this band. Utility installations also usually have more space for larger antennas than many other applications enabling higher gain antennas to be deployed, significantly improving the link budget.

### **Strategic Spectrum Matters**

EUTC's concerns in terms of strategic spectrum matters include three major policy areas where spectrum policy must support other EU objectives, specifically:

- **Energy Transition and Climate Change:** as outlined in previous consultations, the energy transition envisages major changes in the sources of energy supply, especially in the volume of intermittent and unpredictable generation and the whole architecture of the energy network. At the same time, electrification of heat and transport require massive growth in the amount of energy which must be supplied. Climate change also places greater strains on the energy networks due to severe weather events both affecting energy supply and demand, together with a greater potential for physical damage to energy network infrastructure.
- **Resilience:** as society becomes more interconnected and reliant on a secure supply of electricity, energy network resilience becomes increasingly vital, but energy network operations are themselves critically dependent on reliable operational telecommunications. Establishing resilient telecoms networks is simpler and cheaper below 1 GHz, the 500 MHz region offering the best combination of capacity together with large cell sizes and physical penetration.
- **Cyber Security:** although physical security is an important element in securing energy networks, the increasingly connected nature of these networks by means of advanced telecommunications creates opportunity for hostile forces to disrupt energy supplies on a potentially a massive scale, and also undermine stable and fair energy markets.

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### ***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.*



Typical utility distribution control room

*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.*

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