European Utilities Telecoms Council

Response to the Draft RSPG Opinion on Additional spectrum needs and guidance on the fast rollout of future wireless broadband networks.

March 2021

Summary

EUTC is the leading European Utilities trade association for operational telecommunications. It partners with other Utility Telecommunications Associations globally to raise the profile of utility telecoms and co-ordinate activities in global regulatory and standards bodies, notably ETSI and ITU-R.

EUTC welcomes the opportunity to comment on the RSPG Draft Opinion and raises two principal concerns regarding what we perceive as omissions in the current approach.

Utilities need reliable, resilient and cost-effective telecommunications

Modern utility networks – smart grids – require highly available telecommunications networks. Because of the rapidly changing environment with increased focus on CO2 reduction, climate change and sustainability, these additional controls can only be developed quickly and cost effectively using radio.

Although commercially provided radio telecommunications networks provide good services, they are not configured for critical utility operations. Renewable energy locations are often remote where there is little demand for commercial networks, and the electricity sector most needs its communications when there are sustained power outages. Most commercial networks do not standby energy supplies; even when they do have such facilities, they normally only sustain operations for a short time period.

Spectrum Access is key to enable vertical sectors to meet their specialised telecoms needs

These critical utility operational networks – vertical industries – require access to spectrum. Only small amounts of spectrum are required, insignificant to a commercial operator, and they are ideally provided at low frequency, an area of spectrum of little interest to commercial operators but vital for utilities to be able to construct low cost wide-area networks without imposing undue cost burdens on energy and water consumers.

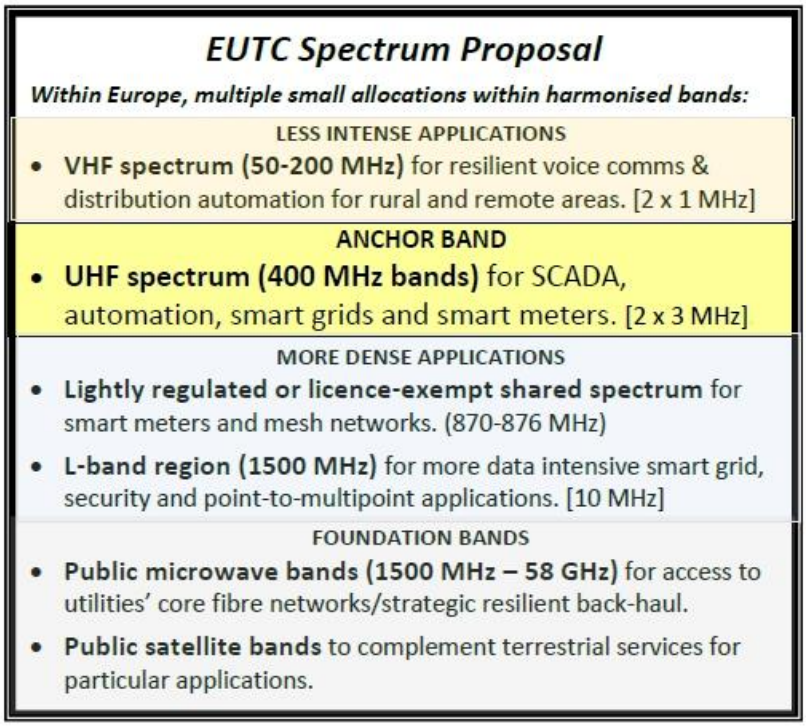
Utilities are already highly regulated industries. Global policy objectives to reduce carbon emissions and mitigate for the effects of climate change warrant telecoms regulators to engage constructively with their utility sectors, especially electricity which is the energy source most governments are looking to in order to facilitate these societal transitions.

EUTC is keen to engage with RSPG to facilitate delivery of these policy objectives.

Concern 1: Lack of recognition of the importance of spectrum below 1 GHz

As explained in more detail in the 'Background' Section below, utilities have a need for access to a small amount of spectrum below 1 GHz for critical operational telecoms requirement either not well served or not served at all by commercial telecoms networks. These requirements are critical for delivering zero-carbon energy networks and mitigation of the effects of climate change by deployment of intelligent energy networks – Smart Grids.

Utilities have been advocating a minimum allocation of 2 x 3 MHz of spectrum in what EUTC has designated its 'anchor band' since 2005. We note that Frequency Range 1 (FR1) of 5G was recently extended down to 410 MHz and may even be extended further downwards to 380 MHz to embrace the spectrum currently used by PPDR in Europe for legacy Tetra systems which ultimately is likely to be refarmed for other technologies in some countries.



EUTC believes that spectrum in the 400 MHz bands should be identified by RSPG as an urgent need for wide-area critical operational networks for vertical sectors such as utilities. In some countries, critical industries already have access to spectrum in this region for their operational telecoms, the favoured technology being 4G/LTE. Although LTE meets current requirements admirably, EUTC is aware through its participation in 3GPP that further enhancements from Release 15, hence 5G, onwards may well be of significant interest to utilities. In particular, security vulnerabilities exposed in earlier releases of LTE will be addressed in later 5G releases. EUTC is concerned that unless these lower frequency bands are identified for 5G and made available to utilities, their ability to protect their operations from increasingly sophisticated cyber attacks will be hampered.

We seek RSPG's urgent assistance in identifying the lower frequency bands for 5G and for them to be made available on a European-wide basis to enable critical industries, especially utilities to develop wide-area mission critical operational telecoms networks for the socio-economic benefit of all European citizens.

Concern 2: Engagement with 'vertical' sectors

EUTC notes in Annex II of the Survey Results Summary the comment that "Due to low interest expressed by verticals most MSs have not considered dedicating spectrum for vertical use."

Although EUTC cannot speak for other 'vertical' sectors, we have consistently argued for access to dedicated spectrum for utilities for over 15 years now, working with ETSI on a Technical Report identifying requirements for utility services. Through EUTC's links with other global utility telecoms associations, EUTC is now collaborating with the Utility Telecom Council America Latina (UTCAL) on a Working Document towards a Report on Utility Communications Systems in ITU-R Working Party 5A.

EUTC believes that there is plenty of interest in 'vertical' sectors in dedicated spectrum for 5G networks which is complementary to the Operator 5G infrastructure, but the mechanisms and processes to enable these sectors to interact with telecoms regulators needs to be enhanced.

EUTC, UTC and UTCAL collaborate to deliver a Utility Telecom Workshop for a regional CITEL (The Inter-American Telecommunication Commission, an entity of the Organization of American States) meeting in Barranquilla in November 2017 as part of the process of developing a Report on Utility Communications Systems for ITU-R.

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 across the world, utilities are constructing their own private radio networks or shared networks in response to societal needs for universally available, reliable, affordable and environmentally sustainable utility services – electricity, water and gas.

Supporting these goals requires increasingly comprehensive and reliable operational telecoms services. Some of these needs are met by fixed networks – fibre, copper and the electrical power cables themselves – but these fixed services must be complemented by radio networks. These dedicated specialist radio networks require guaranteed access to a modest amount of dedicated radio spectrum for their operations. The EUTC Spectrum Proposal is summarised in the earlier table. The 'anchor band', a minimum of 2 x 3 MHz of spectrum in the 400 MHz region is now the focus of many initiatives world-wide by utilities racing to meet the target of a zero-carbon future to avert the worse effects of climate change.

The 2012 EU Radio Spectrum Policy Programme

Utilities were very encouraged when in the 2012 EU Radio Spectrum Policy Programme[1], paragraph 2 of Article 8 declared:

> "The Commission shall, in cooperation with the Member States, conduct studies on saving energy in the use of spectrum in order to contribute to a low-carbon policy, and shall consider making spectrum available for wireless technologies with a potential for improving energy saving and efficiency of other distribution networks such as water supply, including smart energy grids and smart metering systems."

The Commission showed its future looking vision in identifying Smart Energy Grids as a critical requirement to support EU Energy Policy objectives, but the technology has not developed as quickly as was forecast. However, climate policy is now considered by many as the most important issue facing our generation. In the context of the 2012 RSPP, the minimum 2 x 3 MHz of spectrum in the vital 400 MHz anchor band required for smart gird operations is only 0.5% of the 1200 MHz of spectrum which was identified for broadband radio services. Thus, delivering dedicated spectrum for operational utility networks in no way compromises EU objectives for 5G and the provision of universal high speed data services for all EU citizens and businesses.

The privately provided broadband radio technologies are instrumental in facilitating the evolution of traditional grids towards the Smart Grid. As pointed out in ETSI Technical Report TR 103 401[2], Smart Grid services need to rely on a private, reliable (with significant power autonomy), redundant, scalable and high-performance telecommunications network. Private broadband radio technologies such as LTE are key to achieving this challenge which necessarily comes along with the need of broadband spectrum exclusively allocated to utilities. As identified in the ETSI report ETSI TR103 492[3], a minimum 2x3 MHz bandwidth in frequency bands below 1 GHz is required for smart grid services and applications, although an allocation of 2 x 5 MHz would ensure that future challenges can be met within the 400 MHz band without supplementing it with blocks of spectrum in higher frequency bands.

In Europe, over recent years, we have seen spectrum allocations for control of critical infrastructures in the 400MHz frequency band, notably in Austria, Denmark, Ireland, Poland and Germany. Concentrating utility application in a common spectrum range across Europe will encourage, among other things:

- Development of higher volumes of standardised devices to reduce costs to energy consumers;
- Encourage the use of European standards to encourage long productions runs, long term availability of spare parts and avoid 'vendor lock-in';
- Co-ordination of spectrum allocations in multiple European countries to enable utility services to be delivered efficiently in border regions; and
- Assist European vendors to develop innovate products in their home market as a launch platform for world-wide sales.

[1] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32012D0243
[2] https://www.etsi.org/deliver/etsi_tr/103400_103499/103401/01.01.01_60/tr_103401v010101p.pdf
[3] https://www.etsi.org/deliver/etsi_tr/103400_103499/103492/01.01.01_60/tr_103492v010101p.pdf

Climate Change

EUTC is of the opinion that allocation of radio spectrum can make a positive contribution to combatting Climate Change as outlined in their submission to the EU "Radio Spectrum Policy Group's work programme for 2020 and beyond"[4].

The UN Climate Action Summit in New York on 23 September 2019 declared that "Climate change is the defining issue of our time and now is the defining moment to do something about it. There is still time to tackle climate change, but it will require an unprecedented effort from all sectors of society." [Diagram below]. Energy production and use, including the energy used in transport, account for some 80% of the EU's greenhouse gas emissions. Thus, to tackle climate change effectively, Europe will have to largely 'decarbonise' its energy systems by moving away from fossil fuels.

Because of the unique propagation characteristics of spectrum in the 400 MHz region, allocating spectrum in this band for use by utility 'smart grids' will help Germany to manage the challenges of grid development in the 21st century in accordance with European Commission initiatives encouraging the use of Smart Grids in order to deliver more efficient energy generation and consumption as required under the EU Electricity Directive, and fulfil the ambitions set out by the Commission President Ursula von der Leyen in her ambitious European Green Deal Initiative.

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[4] https://rspg-spectrum.eu/wp-content/uploads/2019/10/RSPG19-029final-RSPG_work_programme_20_and_beyond.pdf