

Response EUWENA to the RSPG

Public Consultation on the Draft RSPG Work Programme for 2022 and beyond

The below is a response from the association EUWENA to the RSPG consultation on the draft work programme for 2022 and beyond.

Since EUWENA was established around the emerging market for private wireless networks, the need for spectrum harmonisation and –availability and the enhancing of a comprehensive eco system for private wireless usage, we felt that a response from the association is appropriate.

Because EUWENA was launched in 2021 and this is the first time EUWENA is responding on a public consultation of RSPG we will first introduce EUWENA and then comment on the RSPG programme as described in document RSPG21-044 FINAL.

1. About EUWENA

EUWENA (European Users of Wireless Enterprise Networks Association¹) was set up in April 2021, following a series of parallel conversations during early 2021 between private mobile networks pioneer, Christian Regnier and critical communications industry experts, Peter Clemons and Koen Mioulet, who recognized the urgent need for a European-level initiative to promote the greater uptake of 3GPP-based private mobile networks. Christian, Peter and Koen were joined from the beginning by Antoine van der Sijs, Christopher Gehlen, Kerim Agdaci, Shaun McGinley and Thomas Hervieu, with the support and attendance of Tony Boyle and Johann Schmid at the inaugural meeting in March 2021.

The founding members all share EUWENA's common values and goals and represent companies from across Europe: AirFrance, Privinnet and LD expertise (France), Quixoticity (United Kingdom), ULWIMO and Strict (Netherlands), Sigma Wireless (Ireland), Opticoms (Germany) and Neutroon (Spain), as well as industry associations, AGURRE (France) and KMBG (Netherlands). It is expected that many more companies and associations will become a part of EUWENA over the coming months and years.

See for more information the EUWENA website: www.euwena.eu

2. Main drivers for EUWENA establishment & spectrum concerns

In recent times, all EUWENA participants have experienced first-hand the challenging, often protracted process of requesting and acquiring spectrum for private wireless network use in their home markets. In a few European countries private and local spectrum for enterprise usage is now available; in a few more countries preparations for private spectrum are ongoing; in many others, no spectrum for private wireless networks has been made available at all yet. In addition, the spectrum that has been made available for private and local networks differs between countries; which is detrimental for the eco system. In addition, this deprives multinational companies of a common ground to establish plant automation and industrial mobility solutions at all their facilities across countries etc This lack of spectrum harmonisation across Europe is one of the main drivers for EUWENA. It is also one of the main concerns for enterprises – notably the mentioned pan European ones – that are establishing private wireless solutions to optimise their processes.

3. The scattered, fragmented usage of wireless in industries.

Some EU countries have allocated shared spectrum or 'private' spectrum as it is popularly called for enterprise wireless networks. This spectrum enables an enterprise or its service provider to deliver high QoS wireless connectivity for its critical operational processes. Examples of this are

- Video control for AGV (automated guided vehicles)
- Plant control via IoT
- Robotics and autonomous machinery
- Data transmission for critical operational processes
- AR and VR for enhance efficiency and customer interaction
- Trunked voice communication for critical processes

They are deployed in a wide variety of sectors ('verticals') such as

- Manufacture and industry
- Logistics and warehousing
- Ports and airports
- Utility grids
- Petro chemical plants
- Health and hospitals
- And many more.

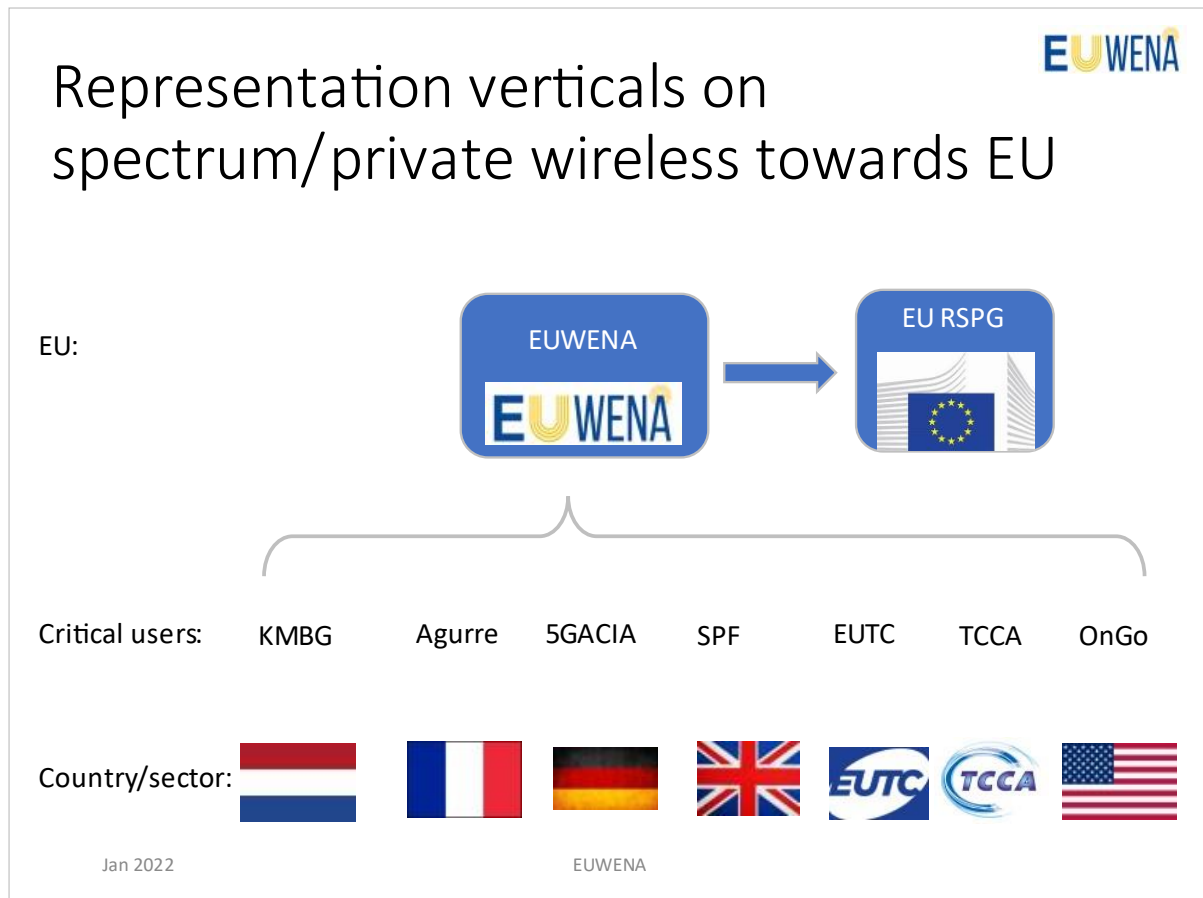
The diversity of use cases and sectors applying private wireless already points at one Achilles heel: the fragmentation of the users. Fragmentation of the private wireless users occurs across verticals, across geographies. Different verticals do not encounter one another systematically let alone exchange spectrum requirements and commonalities across applications. Then again, one can on occasions encounter relevant yet unexpected commonalities. EUWENA aims at overcoming that chasm between users, between verticals and between users and their regulators in articulating spectrum demand and use cases. We refer here to the EU's call for a common voice of the industry; which EUWENA would gladly constitute.

Uniting the national or sector specific associations

Typically, some countries already have national associations representing the verticals with interests in private spectrum or the users of private wireless networks. Likewise, there are already some associations representing these requirements for designated verticals. Without aiming to be complete we mention:

Body	Title and remit	Country or vertical
BTG/KMBG	Kritisch Mobiel Breedband Gebruikers	NL
Agurre	Association Grandes Utilisateurs Radio Resources d'Exploitation	FR
SPF	Spectrum Policy Forum	UK
5GACIA	5G Alliance for Connected Industry and Automation	D
EUTC	European Utilities Telecom Council	all utilities
TCCA	The Critical Communications Association	public safety & critical users

Euwena aims at uniting these associations internationally, look for commonalities and aggregate the demand as well as supply eco system across countries and verticals. In doing so, EUWENA aims at working with all these associations on pan European representation towards RSPG, CEPT and like bodies:



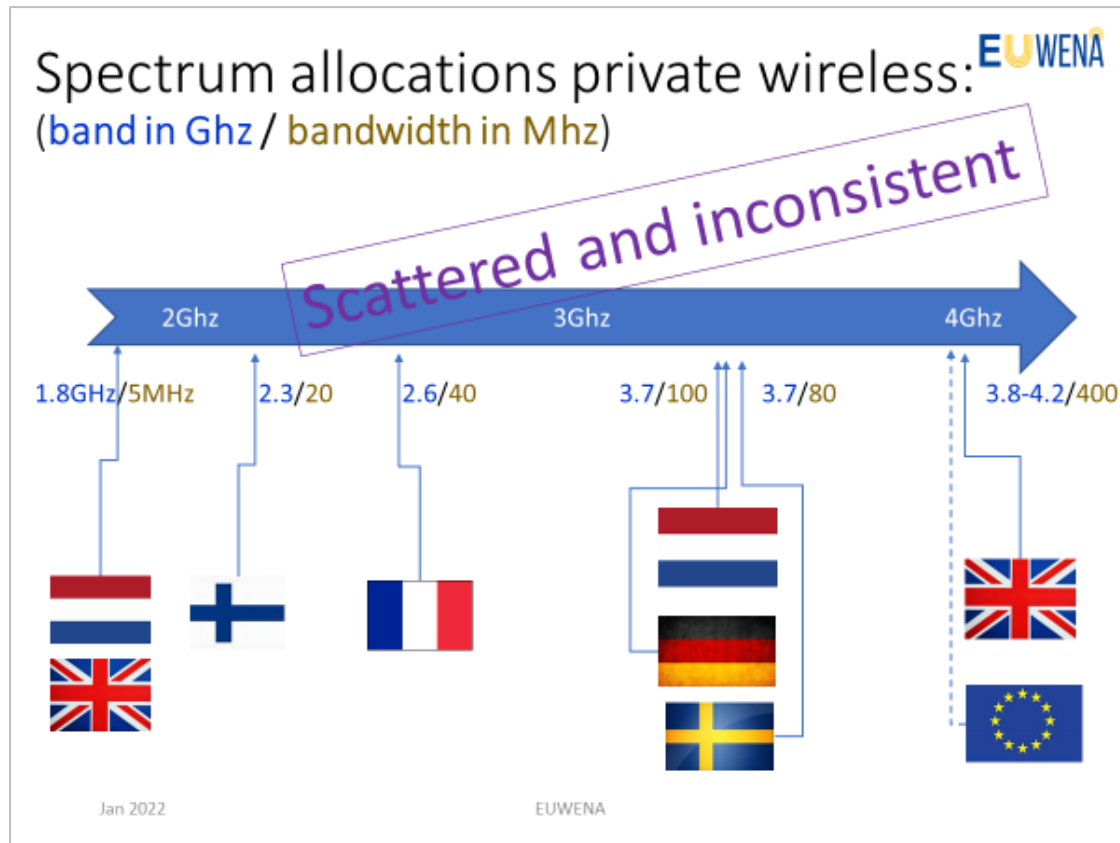
4. The current EU spectrum landscape for verticals

4.1. Spectrum availability

Across Europe, countries have made spectrum available for geographically dispersed, shared usage by verticals. Not all countries have done so, in some a private user is still 'at the mercy' of existing spectrum holders, often MNO's. In some countries multiples of 20MHz have been set aside for enterprise usage; the example that draws a lot of attention being Germany. The Netherlands though, already made (some) shared private spectrum available a decade ago. Other counties have recently followed, notably the UK is now very active too. EUWENA sets out to follow and aggregate all these international developments

A case in point is the USA where a very successful private and shared spectrum regime has been implemented around the CBRS spectrum (Citizen Band Radio Service).

The below image visualises the current availability of private spectrum in EU countries:



The picture clearly displays that the amount of spectrum and the band in which it operates differs vastly between countries. In addition, there are vast differences in tariffing for the spectrum too. Thus, the situation is far from harmonised. That is a predicament for two reasons:

1. Uniformity. A pan European producer, petrochemical corporation¹ or transport company is confronted with different spectrum and solutions per individual country and thus cannot standardise on plant operations solutions.
2. Eco system. In the absence of harmonisation, the availability of equipment and devices may suffer from too low a market size and lack of scale.

Both these plights hinder the establishment of wireless services and networks that propel our industries into the 21st century.

Nonetheless (!), markets like Netherlands and Germany have seen tremendous uptake² in private local licences which demonstrates the demand from industry for high performance business critical networks.

4.2. Spectrum in recent RSPG consultations

The RSPG and the EU have recently recognised the plight of the verticals: commissioner Branislav Stanchev has recently held presentations in which he calls for uniformity of spectrum for verticals,

¹ This example was recently publicly presented at a pan European spectrum summit

² Netherlands has already had over 500 systems in the 1800 guard band and close to 200 licences in 3.5 Ghz, Germany has just started licencing local shared spectrum and already displays over 150 applications in 3.5 Ghz. The UK recently displayed some 250+ licences for 3.8-4.2 Ghz

harmonisation of issuing conditions and ... the establishment of a common voice of the (fragmented) verticals! EUWENA aims at being the latter.

In February 2021 the RSPG launched a consultation on three opinion documents:

- a. Draft RSPG Opinion on a **Radio Spectrum Policy Programme (RSPP)**.
A future Radio Spectrum Policy Programme is a means to support key Union policy areas: the European Gigabit Society, the European Green Deal, New industrial strategy for Europe and Shaping Europe's digital future.
- b. Draft RSPG Opinion on **Spectrum Sharing** – Pioneer initiatives and bands
In this Opinion the RSPG investigates the options to promote spectrum sharing, identifies key pioneer initiatives and bands and develops a roadmap for increased spectrum sharing with actions to favour the introduction of innovative and more dynamic spectrum sharing solutions and proposals for coordinated actions.
- c. Draft RSPG Opinion **Additional spectrum needs and guidance** on the fast rollout of future wireless broadband networks
Within this work item, the RSPG further investigates additional spectrum and harmonisation needs (coverage, capacity and innovation) as well as authorisation regimes within the remits of the EECC for successful deployment, taking into account bands identified at WRC-19.

At that time EUWENA was not launched yet, but the following remarks in the opinion documents have sped up the creation of our association where the representation of the verticals' interests on European level on the harmonization of spectrum need for private wireless networks is a key driver:

- In their opinion RSPG recognizes that spectrum demand for verticals has been addressed in the mid-bands in a dissimilar way in MS, due to different national circumstances (e.g. priorities for efficient spectrum use). EUWENA has also recognized this situation, e.g., where countries have been identifying different parts of the 3.5GHz band for private usage. A key result of this is that the creation of international product eco systems in the EU becomes a challenge due to limitations in market volumes for equipment; resulting in an EU market that is divided instead of bundled. Mentioned CBRS spectrum programme and associated eco system displays what a coherent eco system can do.
- EUWENA is happy to see that the RSPG recognizes that there is a demand for vertical use in the mmWaves, and recommends that options should be developed for addressing vertical needs in the mmWaves, in order to facilitate consistent approaches. EUWENA has recognized a very strong demand for vertical use in the mid bands where there is a serious spectrum scarcity. There are technological uncertainties in applying mmWaves bands for critical communications. Applying mmWave in for example large steel-based areas (refineries, warehouses, etc) is as of yet not proven. Pilots and trials should be organized, and their results published to take away these uncertainties.
- EUWENA was quite surprised to read the following conclusion of the survey *“Due to low interest expressed by verticals most MSs have not considered dedicating spectrum for vertical use”*. EUWENA aims at being that “common voice of the verticals” that Branimir Stanchev called for and EUWENA intends to articulate and “express the interest of verticals” which we know definitely exists. .

EUWENA strongly supports the RSPG recommendation to investigate the possible use of the band 3.8-4.2 GHz for private networks and local vertical applications while protecting receiving earth stations and other existing applications and services. Essential here is to ensure harmonized availability across the EU to grow the eco system for infrastructure and device equipment.

In practice we see that EU member states are in best case investigating the 3.8-4.2GHz band for private use on its own and are deviating instead from harmonizing on assigning spectrum and regulations to protect present users of this spectrum band.

In our opinion the work of the RSPG is not ready yet. Our question is: How can the RSPG aid in ascertaining and aligning spectrum allocations for private usage across the EU member states?

4.3. Spectrum and sustainability

An emerging topic and area of attention is that of environment and sustainability. Governments – and notably European governments - are heavily involved with such global endeavors as the Paris and Glasgow climate accords. Verticals, however, are not insensitive to these topics either as their customers and stakeholders demand such orientation, societies hold them accountable, and legislation entices environmentally conscious behavior.

Thus, it is important for EUWENA to mention its support for RSPG's Climate Change initiative & its increased prominence within ETSI, 3GPP, practically all vertical industries.

Spectrum has a role to play here too! Generous allocations of usable spectrum for local private networks that are sufficient for enterprises and industries to carry out their digital transformations will play a significant role in increasing energy efficiency and allowing such industries to reduce their carbon footprints, as well as keeping sensitive data on-site, improving compliance with GDPR regulations.

5. The RSPG work programme 2022 and beyond

In the work programme 2022 and beyond we see many important subjects that the RSPG has addressed in their plans.

We have understood that the RSPG has proposed the 3.8-4.2 GHz band for local private networks in previous Work Programme(s) and now in the harmonization process been passed on to the European Commission/CEPT for executing this proposal and advice for member states.

We are convinced that the RSPG has an important role in the harmonization of spectrum within the EU and especially on spectrum for verticals and private mobile broadband networks. We hope with our suggestions and remarks that the RSPG can give an answer on the question in the previous paragraph.

As climate change/climate action begins to play an important role within all organizations, especially European Commission & member states, RSPG is also addressing this subject in the work programme 2022 with Climate Change initiatives.

EUWENA misses the following subjects and activities in the work programme 2022 and beyond:

- **Mobile connectivity for digitisation of enterprises in the EU.** Mobile connectivity in the enterprise market is a main driver for digitization. The enterprise market and its verticals have specific requirements on mobile connectivity services compared to the (horizontally oriented!) consumer mass market. In a healthy market freedom of choice is a prerequisite. In EU countries that have issued relevant spectrum for private networks and verticals it has been proven that the digitization process is accelerating substantially. We see that in these front runner countries, also mobile network operators are accelerating with developing

specific services for this market segment, due to the fact that there is competition of private networks. In the future plans, RSPG has an important role in addressing this subject to all EU countries and also take care that this need will evolve towards more spectrum need.

- **Competitive position.** Outside the EU there is competition in the digitization process. In the US and far east developments are speeding up. Europe aspires and thinks that it is a front runner in the digitization process on world level. For enterprises we see in regions outside Europe much more harmonization of spectrum and - due to that acceleration - in digitization compared to the scattered situation in Europe. This puts Europe and European companies at a competitive disadvantage relative to other regions of the world
- **Novel actors.** As for these private networks; there are multiple actors that can provide the desired services of which MNO's are definitely one; yet EUWENA sees the vast range of required solutions and services for verticals as a void that MNO's alone aren't likely to fill.
- **Climate ambition.** Related to the climate change initiatives. Generous allocations of spectrum for local private networks that are sufficient for enterprises and industries to carry out their digital transformations will play a significant role in increasing energy efficiency and allowing such industries to reduce their carbon footprints, as well as keeping sensitive data on-site, improving compliance with GDPR regulations.

Our suggestions to the 2022 RSPG work programme are as follows:

- **Common bands.** Identify for EU harmonisation a number of frequency bands that should be allocated for private usage within the EU. Ideally such frequency bands should also be available on a global scale to support multi-national enterprises with global activities and to enlarge the eco system of infrastructure equipment and user/terminal devices
- **Synchronisation.** Develop an approach that allows flexibility in the synchronization of private, local TDD networks with a purpose to properly support the varying uplink – downlink ratios as seen for different verticals/enterprises/use cases. Such approach should optimize spectral efficiency and avoid the one-size-fits-all limitations.
- **Protection adjacent usage.** Develop a recommendation for harmonised protection measures for satellite operation in the 3.8-4.2GHz band with a purpose to enable the use of local private networks in that band in all EU member states.
- **Representatives.** Make use of interest groups to develop a better understanding of the various critical communication needs of enterprises and other organizations, to counter the inevitable fragmentation of these markets.
- **Use EUWENA.** Solicit the input and feedback from the – unfortunately fragmented – verticals by actively soliciting input from the mentioned associations and notably EUWENA

6. Closing remark

With this we encourage RSPG to take their spectrum policy role in the EU for verticals. EUWENA, as a representative body of European private wireless users and -experts is available for further input and reflection, either through its chairman or secretary. RSPG is welcome to use Euwena as a 'voice of the industries' in this sense.