Electrical Automation

26 March 2021

VDMA response to the Draft RSPG Opinions on

- Spectrum Sharing – Pioneer initiatives and bands (RSPG21-006 FINAL)
- Additional spectrum needs and guidance on the fast rollout of future wireless broadband networks (RSPG21-008 FINAL)
- A Radio Spectrum Policy Programme (RSPP) (RSPG21-014 FINAL)

Motivation

The German Mechanical and Plant Engineering Industry Association (VDMA - Verband Deutscher Maschinen- und Anlagenbau e.V.) is the largest network organization in the European mechanical engineering industry, with around 3,300 member companies. The association represents the common interests of this diverse sector, also with regard to radio technologies, as a user industry.

1. Comments

1.1 General comments

The VDMA highlights the importance of a dedicated spectrum access for vertical industries as a key enabler to give companies a competitive advantage and promote new business models. Wireless connectivity and technology advance are cornerstones to deliver on the value proposition of Industrie 4.0 (modularity, flexibilization of production) and leverage significant efficiency and quality potential in industrial manufacturing. Therefore, a forward-looking spectrum policy gives European companies, often small and medium-sized, the potential to expand the world market leadership in the area of factory and process automation and must therefore always be seen in the context of the global "Industrie 4.0" brand. The same applies to some extent to other industrial and economic sectors (e.g. agriculture).

1.2 Comments on a Radio Spectrum Policy Programme (RSPP)

The VDMA agrees with RSPG that there is no “one-size fits all” solution. Different types of authorization methods and regimes facilitate innovation:

- Many kinds of cooperation models are possible and necessary (from unlicensed spectrum to the use of a network slice in Mobile / Fixed Communication Network (MFCN) or by means of a local licensed network operated and owned by industry).
- Local licenses contribute to this flexibility, but nomadic, time-limit use needs further flexibility, for example to be used in the agriculture.

Section 1 - Introduction:

- The VDMA fully agrees with the goal that the RSPP should support key Union policy areas such as the European Gigabit Society, the European Green Deal, New industrial strategy for Europe and Shaping Europe’s Digital future.

Section 2.2 - Licensing and Spectrum Awards:

- The VDMA underlines the importance of access to licensed spectrum for vertical industries. We see different solutions for the provision of local networks (mobile operators, third parties or local users themselves) which fosters competition and hence innovation.

- For industry, spectrum is only an enabler for a business case, not a business model as such (in contrast to the business model of mobile network operators). In our opinion it is of utmost importance that a local industry user has the possibility to get dedicated spectrum at reasonable cost. The best way for addressing this need is dedicated spectrum for industries, like in Germany or UK.
- For industry, it would be ideal to have a harmonized band for local networks (e.g. easiest cross-border rollout across the EU). However, full spectrum harmonization is not the only way forward. The industry is flexible to use different frequency segments e.g. within the mid-band and the mm-Wave range across Member States as long as these frequency segments are supported by the same chipsets, communication modules and devices, for each specific mid or mm-Wave band, and that such segments are available in all Member States.
- The VDMA supports that RSPG encourages Member States to digitalize processes for spectrum application and granting, especially for local users.

Section 3 - Spectrum needs and supporting EU vision/policies:

- The VDMA highlights that 5G is a main driver in making the value propositions of Industrie 4.0 happen, contributing to a large scale the above-mentioned key policy programme. Therefore, we encourage the RSPG to consider adding a dedicated section to chapter 3 ‘Spectrum needs and supporting EU vision/policies’ for the manufacturing industry or to have it at least explicitly mentioned in section 3.1.

Section 3.1 - Innovative wireless services:

- The RSPG is correct when it states that spectrum in the mm-Wave range is an important building block for industrial vertical use. Nevertheless, it is important to emphasize that also about 100 MHz of spectrum is necessary in frequencies below 6 GHz (as e.g. in Germany 3.7-3.8 GHz) due to coverage efficiency.

Section 3.5 – UAS/drones:

- The VDMA also supports the development of UAS/drones within relevant harmonized ECS bands.

Section 3.6. Sector spectrum needs in response to combat climate change:

- The VDMA agrees with the RPSG on the cooperation to ensure that adequate sprectrum is made available under harmonised conditions to support initiatives to improve energy saving.

1.3 Comments on Additional Spectrum needs and guidance on the fast rollout of future wireless broadband networks

- RSPG Opinion 2: the VDMA shares the views of the RSPG and understands the reasons behind the heterogeneous way that spectrum needs have been handled at national level. However, we would like to encourage to the Member States to consider the needs of all verticals when assessing and setting priorities for efficient spectrum use.

- RSPG Opinion 3: the VDMA can confirm the interest of the manufacturing sector as vertical industry in mm-Waves. However, it is important to understand that the interest of manufacturing in mm-Waves does not reduce the importance of e.g. mid-bands for our vertical industry.
- RSPG Opinion 5: the VDMA fully agrees that the right balance between different types of authorization methods would facilitate innovation and different technologies.
- RSPG Opinion 6: the VDMA welcomes the initiative for studies of 3.8-4.2 GHz for local vertical applications. We want to highlight that verticals may need at least 100 MHz of continuous spectrum. Although the proposed range is much broader, it has to be clarified if sufficient spectrum will be available. Thus, this initiative should not lead to the exclusion of other frequency ranges for local licenses in below 6 GHz.
- Additionally, we express that it is not necessary to have one “fixed” harmonized band for local verticals throughout all Member States but to have at least 100 MHz in the mid-band range that can be handled by the same chipset (to ensure economies of scale). The same request applies for the 60 GHz range (cf. Annex II.I Bullet 1).
- RSPG Opinion 7: We support and welcome the RSPG recommendation to develop different options to address the vertical needs in the mm-Wave range. The German model on spectrum application and access could be used as a role model for other Member States.
- As an important general remark, we would like to emphasize that, so far, chipsets and hence communication modules and devices supporting IMT technologies for local networks are so far not available. Therefore, we expect a higher demand for dedicated spectrum by verticals in the next years.[1]
- Section II presents the result of the QoS/Quality of Experience (QoE) KPI survey. A reference to "continuity of service" should be added. What is meant by this is that such KPIs are usually measured/displayed across the board over a larger space. In reality, however, the benefit of many mobile communication solutions also depends on whether a minimum performance (which depends on the respective use) can be delivered permanently, i.e. spatially/temporally. Gaps would therefore not necessarily show up in a lump sum figure, but they would affect usage. Similarly, QoS/QoE are related to the individual user experience, thus disregarding the aspect of capacity or load background, which also depends on the respective use case.

1.4 Comments on Spectrum Sharing – Pioneer initiatives and bands

Introduction: the VDMA agrees with the RSPG view that so far Spectrum Sharing in the Union is implemented in a static and conservative way. We welcome the initiative from the RSPG to explore innovative sharing solutions to make a more efficient use of the spectrum. We want to highlight that quality of qervice requirements of vertical industries must be met at any time and that dedicated spectrum for local licenses is the best way to meet these requirements. Please consider out comments to:

[1] Depending on 3GPP Releases and the availability of chips.

- RPSG option 3.: the VDMA welcomes network slicing (Public Network Integrated-Non-Public Network, PNI-NPN, as defined by 3GPP) as one solution for verticals. Nevertheless, we would like to emphasize that network slicing (PNI-NPN) is not possible for all industrial applications e.g. because of privacy, liability, availability issues.
- RPSG option 4.: the VDMA supports the principles of “use-it-or-share-it” as long as priority of local licenses at all time is ensured (as it is the case in Germany).
- RPSG option 8.: the VDMA wants to highlight that access to spectrum is key to boost innovation and efficiency in a wide range of vertical industries such as manufacturing or agriculture.
- RPSG option 17.: the VDMA can confirm that also a multi-tier approach is possible. For industry it is important to have a dedicated spectrum for local licenses along with access to unlicensed spectrum. As long as priority for local licenses at all time is ensured, also a secondary use by MFCN would be possible if there is no use by local licenses in a certain region.
- RPSG option 18.: the VDMA welcomes that the RSPG considers all available spectrum bands as potential candidates for introducing and enhancing spectrum sharing solutions as long as a priority for local licenses at all time is ensured.
- RPSG option 31.: the VDMA supports the approach that local licenses should be granted under a light licensing regime.

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