

# **Response to RSPG Opinion on 5G implementation challenges (RSPG 3rd opinion on 5G)**

## 1. About 5G-ACIA

The 5G Alliance for Connected Industries and Automation (5G-ACIA) has been established to serve as the central and global forum for addressing, discussing, and evaluating relevant technical, regulatory, and business aspects with respect to 5G for the industrial domain. It reflects the entire ecosystem, encompassing all relevant stakeholder groups from the OT (operational technology) industry (such as industrial automation, machine builders or end users), the ICT (information and communication technology) industry (such as chip manufacturers, network infrastructure providers or network operators), academia (such as universities or research institutes) and other relevant groups (such as authorities or associations).

The paramount objective of 5G-ACIA is to ensure the best possible applicability of 5G technology and 5G networks for connected industries, in particular the manufacturing and process industries. In this context, 5G-ACIA identifies and articulates the specific spectrum needs for industrial 5G networks and explores new operator models, for example for operating private or neutral host 5G networks within a plant or factory.

## 2. Motivation

The manufacturing industry is currently subject to a fundamental change, which is often referred to as the "Fourth Industrial Revolution" or simply "Industry 4.0". The main goals of Industry 4.0 are —among others— the improvement of flexibility, versatility, resource efficiency, cost efficiency, worker support, and quality of industrial production and logistics.

Nowadays, wireless communication is primarily used for special applications and scenarios (e.g. for connecting standard IT hardware to a production network and similar rather non-critical applications). On the one hand, this is because there was no need for wireless connectivity in the past, due to relatively static and long-lasting production facilities. On the other hand, this is because most existing wireless technologies fall short of the demanding requirements of industrial applications, especially with respect to end-to-end latency, communication service availability, jitter, and determinism.

With the advent of Industry 4.0 and 5G, however, this will change fundamentally since only wireless connectivity can provide the degree of flexibility, mobility, versatility, and ergonomics that is required for the "Factories of the Future"<sup>1</sup>. Thus, 5G will significantly

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<sup>1</sup> 3GPP TR 22.804 V16.1.0

<https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3187>

contribute to revolutionizing the way how goods are produced, shipped, and serviced throughout their whole lifecycle.

The need for a high-performance digital infrastructure is therefore of vital importance. In addition to technological challenges, an appropriate regulatory framework should be in place to allow innovation and opportunities for the manufacturing industry.

5G-ACIA welcomes the possibility to participate in the public consultation on the “*RSPG Opinion on 5G implementation challenges (RSPG 3<sup>rd</sup> opinion on 5G)*” and appreciates the dialogue offered by the Radio Spectrum Policy Group (RSPG).

### 3. Response to the RSPG public consultation

#### 3.1 Defragmentation of the 3.4-3.8 GHz frequency band

5G-ACIA welcomes the opinion of the RSPG regarding the defragmentation of the 3.4-3.8 GHz band (RSPG opinion I). Ensuring sufficiently large contiguous spectrum blocks for 5G, as well as EU harmonization on the spectrum usage conditions, are key elements for a successful deployment of 5G in Europe.

#### 3.2 Connectivity for vertical industries

5G-ACIA shares the view of the RSPG that 5G will play a significant role in providing communications services being suitable to fulfill the specific requirements for verticals (RSPG opinion II.4). Meeting the requirements of the manufacturing and process industry (as 5G vertical) can only be achieved if the European regulatory framework offers the possibility and flexibility to enable the manufacturing and process industry to obtain the required spectrum resources for the provision of services for verticals.

5G-ACIA welcomes the RSPG opinion regarding the various options available to provide 5G connectivity for vertical industries (RSPG opinion II.5). In this regard, 5G-ACIA recognizes that the usage of unlicensed spectrum for industrial applications will not satisfy the more demanding quality requirements e.g. latency and reliability. For this reason, the full potential of wireless technologies in industry has not yet been fully realized.

To satisfy the requirements for the industrial applications, there are several spectrum usage options or combination of those options – all with specific benefits and drawbacks – including the following:

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- Dedicated spectrum for local private industrial networks being realized either by dedicated assignments on a local basis or subleasing from national mobile operators
- Use of dedicated technologies such as network slicing in order to establish dedicated virtual networks on the basis of a mobile operator licensed spectrum.

It is particularly important for the manufacturing and process industry that the RSPG supports the deployment of these connectivity solutions by respective regulatory conditions to enable the applicability of the above-mentioned options in a flexible manner.

5G-ACIA supports the RSPG recommendation to the Member States to consider other spectrum solutions for the needs of vertical industries, such as the manufacturing and process industry (RSPG opinion II.6).

In order to secure the future and in the sense of technological competition, particularly looking into requirements for pan European services for specific verticals, 5G-ACIA supports the RSPG view on the need of technology neutral dedicated European wide harmonised spectrum capable for satisfying the communications requirements of verticals (RSPG opinion II.7).