

I. Introduction

5G refers to a future, the fifth generation of mobile network telecommunications technologies. While research on the technical characteristics and potential uses of 5G is ongoing, 5G is expected to represent a major leap forward from current telecommunications technologies, to revolutionary changes in radio interfaces and spectrum use. On the basis of current trends and potential uses, 5G networks will be faster, always accessible, highly reliable and efficient in handling a very large number of devices (including smart objects in the Internet of Things).

It bolsters a world in which 'anyone and anything will be connected at anytime and anywhere'. On the basis of past generations of mobile technology, the increased networking supported by 5G is likely to stimulate economic growth, not just in the information and communication technology sector, but in many areas of the economy: 5G networks will make new as well as more energy-saving products, services and innovative business models possible.

The EU is providing financial support to 5G research, and has concluded cooperation agreements on 5G development with South Korea, Japan and China. These efforts are intended to contribute to a strong European digital economy, by helping European companies win a significant share of markets related to the new generation of mobile networks. A great contributor and beneficiary will be small- and medium-sized enterprises (SMEs).

II. Critical requirements for the implementation of 5G and the Gigabit Society

1. A new regulatory framework: We need simplification of many rules, which should be future-oriented, pro-investment and pro-innovation driven, with a focus on infrastructure-based competition that offers the potential for *efficient* regulation and allows for a fair long-term return on investments;

2. A clear framework for the development of investment: Predictable, with adequate returns, based on certainty, aimed at long term solutions and 25-years period of licenses. We need to involve and mix private and public financial sources. 5G Action Plan will require financing from the next Multiannual Financial Framework 2020-2027.

3. A new institutional harmonization: Radio spectrum harmonized decisions are necessary, starting from the 700 MHz decisions and implementation in all Member States until 2020. We have no time for further delays. A timely assignment is needed.

4. Avoidance of fragmentation: There are many dimensions of fragmentation - related to territorial differences (urban-rural), to the advancement of the implementation of EU Law. Currently we can observe a different coverage of accessibility of 30 Mbps - 71% homes across the EU. Around 50% of EU homes were covered by networks capable of providing downlink speeds at 100 Mbps. But only 11% of all homes have the subscriptions at 100Mbps+. The existing differentiation between urban and rural areas leads to different business models - a problem that needs to be addressed.

5. A proper road map - which requires a good timetable, well-designed expectations, a list of needed decisions and frameworks, an analysis of possible advantages and targeted actions. The development of integrated solutions, tests and large-scale pilots - is necessary in all sectors and countries at the same time. A standardized roadmap for each sector, relying on industry- led processes is required.

6. Cooperation among all stakeholders: We need an effective collaboration of the various actors: EC, RSPG, BEREC, MS, business, SMEs, cities and regional authorities. The first step is key: A timely implementation of the changes in all National Broadband Plans (with country specific recommendations) - with proper composition of multi-technology approach - FTTH, Wi Fi, G.fast, 2 G, cable, satellite - and adequate regulatory flexibility.

7. Adequate knowledge: It is important to avoid the exclusion of some social groups, especially people living in rural areas as well as elderly generations. In addition - we need to support the development of digital skills and improve digital literacy - it is inevitable as part of the Action Plan for making the opportunities available to all consumers also in regards to new 5G labor environment in the foreseeable future.

8. Establishing the market demand of the new, 5G-based services and products. The clear understanding of what 5G means for consumers and all industries, for all of us - is crucial. The next generation of ubiquitous ultra-high broadband infrastructure will support the transformation of processes in all economic sectors (public sector, healthcare, energy, utilities, manufacturing, transportation, automotive industry, virtual reality (VR), online gaming and so forth, education by using virtual reality tools, and also m2m communication, meaningful for IoT) and

provide agile, elastic and highly personalized services that improve every citizen's life. A list of benefits and advantages for people - as well as of the impacts of 5G is needed.

III. Conclusion

It is time to come together and shape the new era of 5G. For this purpose it is critical to build a sustainable ecosystem by inviting all industry stakeholders - such as manufacturers, telecom operators, universities, industry analysts, system vendors, investors, policymakers and measurement equipment vendors, representing a wide cross-section of interests and expertise - to share their perspectives on how 5G will develop over the next few years as well as the opportunities and challenges involved in the commercialization of these technologies.

The 5G Action Plan presented by EC encourages verticals and SMEs to form a new generation of connectivity. SME-partners will be involved in building the end-to-end ecosystem through testing, verifying and optimizing 5G deployment and contributing to future wireless innovations for 5G and beyond. In turn, SMEs will be early adopters of 5G technology and will build the future market of 5G services. It's one of the reasons the EC set up the 5G Public-Private Partnership (5G PPP) - to support 5G innovation and industry competitiveness. 5G will help bring about many new and enhanced products and services, in which SMEs will play a decisive role.