

5G Implementation in Europe and CIS

Strategies and Policies Enabling New Growth Opportunities

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National Media and Infocommunications Authority of Hungary



Opening Remarks

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Dear Participants,

It is a great pleasure for me to welcome all our guests on the ITU-D seminar in Budapest.

The 5G is a major European research programme to create leadership in 5G technology.

As part of Horizon 2020, this public-private-partnership is investing more than 4.2 billion Euro, including up to 700 million Euro public investment and at least 3.5 billion Euro private funding, into three phases of collaborative research.

Phase 1 performed fundamental research for the fifth generation of network communications, while Phase 2 used those technologies for the digitisation and integration of vertical industries in Europe.

Phase 3, which is just starting now, will address the development and rollout of a 5G platform across Europe.

The 5G partnership initiative will reinforce the European industry to successfully compete on global markets and open new innovation opportunities. It will “open a platform that helps us reach our common goal to maintain and strengthen the global technological lead”.

5G will not only be an evolution of mobile broadband networks. It will bring new unique network and service capabilities.





Firstly, it will ensure user experience continuity in challenging situations such as high mobility (e.g. in trains), very dense or sparsely populated areas, and journeys covered by heterogeneous technologies. In addition, 5G will be a key enabler for the Internet of Things by providing a platform to connect a massive number of sensors, rendering devices and actuators with stringent energy and transmission constraints.

Furthermore, mission critical services requiring very high reliability, global coverage and/or very low latency, which are up to now handled by specific networks, typically public safety, will become natively supported by the 5G infrastructure. 5G will integrate networking, computing and storage resources into one programmable and unified infrastructure. This unification will allow for an optimized and more dynamic usage of all distributed resources, and the convergence of fixed, mobile and broadcast services. In addition, 5G will support multi tenancy models, enabling operators and other players to collaborate in new ways.

Future European society and economy will strongly rely on 5G infrastructure. The impact will go far beyond existing wireless access networks with the aim for communication services, reachable everywhere, all the time, and faster. 5G is an opportunity for the European ICT sector which is already well positioned in the global R&D race. 5G technologies will be adopted and deployed globally in alignment with developed and emerging markets' needs.

The development of cognitive features as well as the advanced automation of operation through proper algorithms will allow optimizing complex business objectives, such as end-to-end energy consumption. In addition, the exploitation of Data Analytics and Big Data techniques will pave the way to monitor the users Quality of Experience through new metrics combining network and behavioral data while guaranteeing privacy.

The challenge for the 5G is to secure Europe's leadership in the particular areas where Europe is strong or where there is potential for creating new markets such as smart cities, e-health, intelligent transport, education or entertainment & media.

5G has established links to vertical sectors like Factories of the Future, Healthcare, Energy, Media and Automotive.

Based on the above, some conclusions can be drawn for **spectrum demand**.

It is expected that 5G access networks for some services will require very wide contiguous carrier bandwidths (e.g. hundreds of MHz up to several GHz) to be provided at a very high overall system capacity.

To support the requirements for wide contiguous bandwidths, higher carrier frequencies above 6 GHz need to be considered.





The consideration of any new bands for such services will require careful assessment and recognition of other services using, or planning to use, these bands.

Maintaining a stable and predictable regulatory and spectrum management environment is critical for the long term investments.

Research on this spectrum has to take into account long-term investments so that they can be preserved. The exclusive mobile licensed spectrum assignment methods will remain important even if new techniques may be envisaged to improve spectrum utilization under some circumstances.

The start of commercial deployment of 5G systems is expected in years 2020+. The exploratory phase to understand detailed requirements on future 5G systems and to identify the most promising technical options has already started in various trials.

Hungary has started implementing a 5G pilot mobile communication network to be integrated into a 'motor vehicle test area' in Zalaegerszeg, whilst it is cooperating in testing self-driving cars as well as smart transport solutions.

Within the framework of the seminar, it will be possible to review the ideas of operators and spectrum managers which are very important topics for all of the countries.

I wish all participants of the seminar successful and fruitful work. I hope everybody will find the presentations interesting and useful on this meeting.

Thank you for your attention.

