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Submitted by

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THE HUNGARIAN 5G COALITION

Executive brief

5G is fast approaching and it will have a profound impact on almost every industry around the world. To seize the first opportunities in the 5G era and drive business success, hear leading operators, industry players, and consulting firms view the key issues that will shape the world in this new mobile era.

BACKGROUND

The rapid technological developments enable Hungary to attain a sharp increase and get to the fore-front in certain well-chosen areas; the 5G network and developments can represent such an area for Hungary.

5G brings pioneering solutions in social-economic development, represents a breakthrough in the operation of networked objects, transforms economic sectors from industry and agriculture to health (Industry 4.0, precision agriculture, remote diagnostics) and will have a determining role in the safe circulation of autonomous connected cars. As a result of to the high speed, low latency, ultrareliable data connection provided by 5G, public transportation and logistics will be also transformed, likewise the massive spread of smart city solutions.

Due to the globally outstanding standard of Hungarian 4G mobile networks and the several decades of engineering knowledge, market awareness and professional experience acquired in this field, Hungary is well-placed not only to maintain its leading position in mobile telecommunication but to turn it into a competitive advantage by the initiating role it plays in 5G developments, which will have a decisive act in the next phase of digital transformation.

The strong domestic presence of the automotive industry in Hungary, and the open testbed of Zalaegerszeg appropriate for testing autonomous and connected cars makes it possible to test and develop 5G applications in real life circumstances.

5G COALITION IN CONTEXT

About the Digital Success Program 2.0

The intention with the establishment of the 5G Coalition (5GC) was to create a strategic and professional platform for the representatives of the government, the research community, the ICT sector, the car industry and the sectors concerned by the Irinyi Plan with regard to Hungarian 5G innovations and developments.

5GC aims at contributing to the elaboration and implementation of the Hungarian 5G Strategy, to the early creation of a world class 5G test environment and to commencing tests and developments and communicating results as soon as possible.

Therefore, the 5GC - initiated by the Digital Success Program - was formed on 19 June 2017 with the aim to evolve Hungary to become a major European centre of 5G developments and to take a leading role in the region for testing 5G-based applications. 5GC supports Hungary to introduce 5G among the firsts in the world.

The Digital Success Programme called for all partners for the sake of joint work to form the coalition to achieve the ambitious goals. Among the 46 founders are domestic and multinational companies, university and academia, professional organizations, chambers, ministries and government institutions. Since June the 5GC counts already 64 members.

The 5G Strategy of Hungary

5G Coalition together with the strategy writing team (PwC) prepared a detailed Strategy concerning what role Hungary can play in 5G-related innovations, tests, and international co-operation

With the involvement of the 5G Coalition, it was necessary to elaborate a detailed strategy that suggests Hungary's initiative engagement in the 5G-related innovations, development of applications and their testing in the international co-operations emerging in the coming years. The strategy sets a clear vision for 5G, determines clear objectives for Hungary's role in the global transformation. Strategic proposals were formulated in order to clarify the tools to be involved achieving the ambitious goals, and to grant the funding and subsidy for the hoped results which are crucial for implementation:

Main objectives of the 5G Strategy

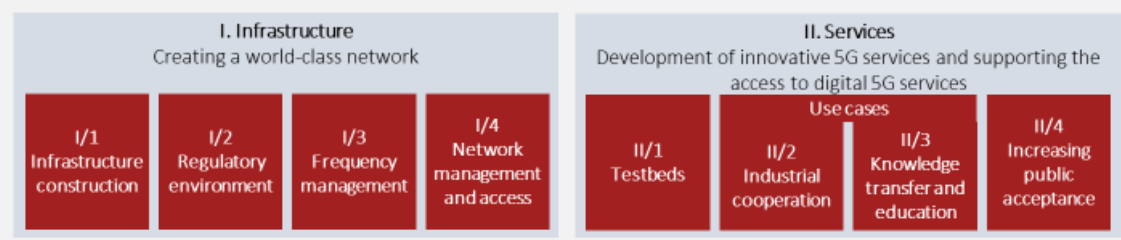
VISION

As the result of industry-wide and social cooperation, Hungary becomes one of the European centers for 5G developments, enhancing the country's competitiveness and innovation potential, as well as supporting the digital transformation of businesses.

Comprehensive strategic purpose

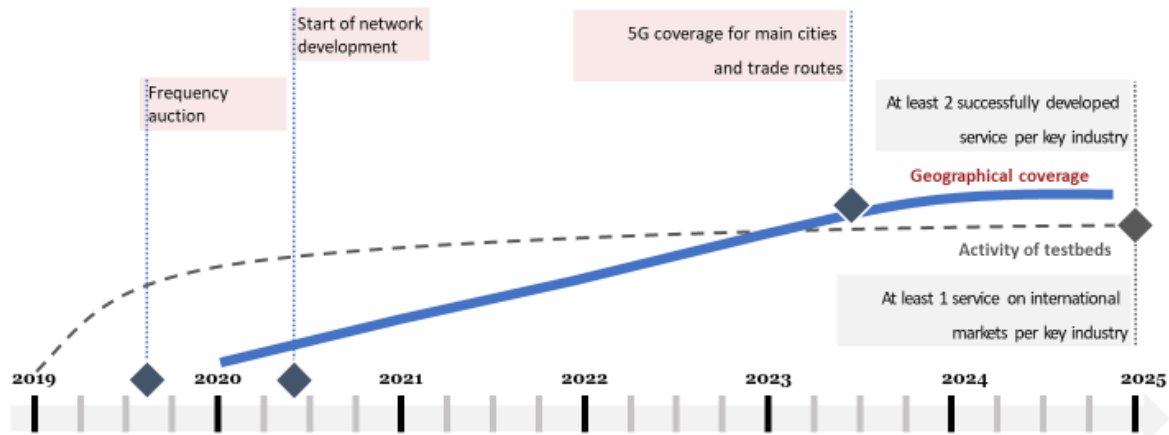
An intensive contribution to the competitiveness of the national economy through being one of the first countries to launch 5G networks and the first to create 5G testbeds in the key sectors.

Pillars



Milestones of the 5G Strategy:

Milestones for the 5G Strategy



Goals

Key priorities of the 5G Coalition

- Evolve Hungary to reach the aimed position as major European center for 5G developments;
- Hungary to take on a leading regional role in testing 5G-based applications;
- Hungary to introduce 5G among the firsts in the world.

The workflow of the 5G Coalition

Professional working groups of the 5G Coalition

The 70 member organisations of the 5GC assigned their experts to 5 professional committees. No less than 145 experts were delegated to jointly work for the success of the national 5G Strategy. The committees are the following with the listed objectives, tasks and activities:

- **Committee on 5G Strategy:** helping the implementation and coordination of subprograms; formulating recommendations for the development of an encouraging regulatory environment, law-making steps, finance; technical assistance of the currently drawn up Hungarian 5G Strategy;
- **Committee on Test environment:** 5G-based solutions of autonomous and connected cars; supporting the technical design of the test environment; involvement of the domestic SME and start-up ecosystem;

- **Committee on Applications and trial systems:** IoT applications and services; smart city solutions; e-Health solutions; industry-logistic solutions; digital agriculture solutions;
- **Committee on International cooperation:** setting up the institutional and procedural framework of cooperation; facilitating and coordinating participation in the initiatives of EU 5G R&D.
- **Committee on Network development and infrastructure:** technical support of the necessary international 5G spectrum harmonization; putting forward proposals for the required spectrum allocation and use, the preparation and the timetable; radio interface and network virtualisation; supporting the provision of infrastructural, technological and human resources.

COMPETENCIES IN HUNGARY

Why should be Hungary the regional centre of 5G developments?

Hungary-based 5G tests and the development of 5G-based applications necessitate close cooperation and efficient coordination from the government, market actors, national economy sectors and the scientific community. The establishment of the 5G Coalition proves to all participants of 5G developments that Hungary is committed to the three key objectives: to become regional leader, to take leading role on 5G-based applications and to introduce 5G for industrial and residential use among the firsts.

The competitiveness of Hungary has been handled as key priority during the last years. Now it is obvious both to telecommunication and technological enterprises, the scientific, and the governmental actors that 5G developments are crucial to regain the regional leader position. Therefore, it is clear for governmental participants that serious actions need to be taken.

The 5G Coalition identified the most important objectives such as:

- cooperation between government, authority and market players
- integration of all possible partners
- determination for implementation
- spectrum requirements: spectrum fees, appointment of pioneer frequency bands, involvement of new frequencies
- deregulation: reduction of ex-ante control
- clear vision, professionally sound strategy
- creating a favourable environment for investment and innovation
- easier administration, cheaper fees, of network building
- predictability and non-discrimination

The endeavour of 5GC Members is to contribute to increase the social awareness, understanding, acceptance and recognition of successful 5G solutions through the cooperation of the best of their knowledge and experience in the course of their professional work, encourage via their activities the setting up and strengthening of the domestic 5G ecosystem.

|| HUNGARIAN ARTIFICIAL INTELLIGENCE COALITION

In order to better tackle potential challenges posed by the rapid developments in the field of artificial intelligence technologies and applications Hungary has established an **Artificial Intelligence Coalition** in November 2018.

AI COALITION IN CONTEXT

The purpose of the organization is to serve as a platform for all relevant AI stakeholders who wish to voice their views, suggestions or doubts, and to serve as a public forum for those who are looking for networking and cooperation opportunities with other public and private entities interested in AI development, research and application.

GOALS OF THE AI COALITION

- providing a constant professional and cooperation forum among the AI developers, the market and state participants representing the AI user side, as well as the academic and professional organisations;
- developing a Hungarian AI Strategy, with the aid of which the AI-based technology development and its application will be able to achieve results in a favourable economic and regulatory environment, is necessary to be developed with the professional contribution of the AI Coalition;
- analysis of the social and economic impacts related to the spread of AI

Hungary believes that by giving the opportunity to identify relevant challenges and solutions to the entities directly concerned, it is possible to have the most practical insight into the needs of the actual community with regards to issues relating to application, technology, education, regulation and international cooperation.

Therefore the AI Coalition is established on the voluntary intention of its Founding Members, and is first and foremost a cooperation forum without an organised legal form, based on the voluntary professional work of its members.

MEMBERS OF THE AI COALITION

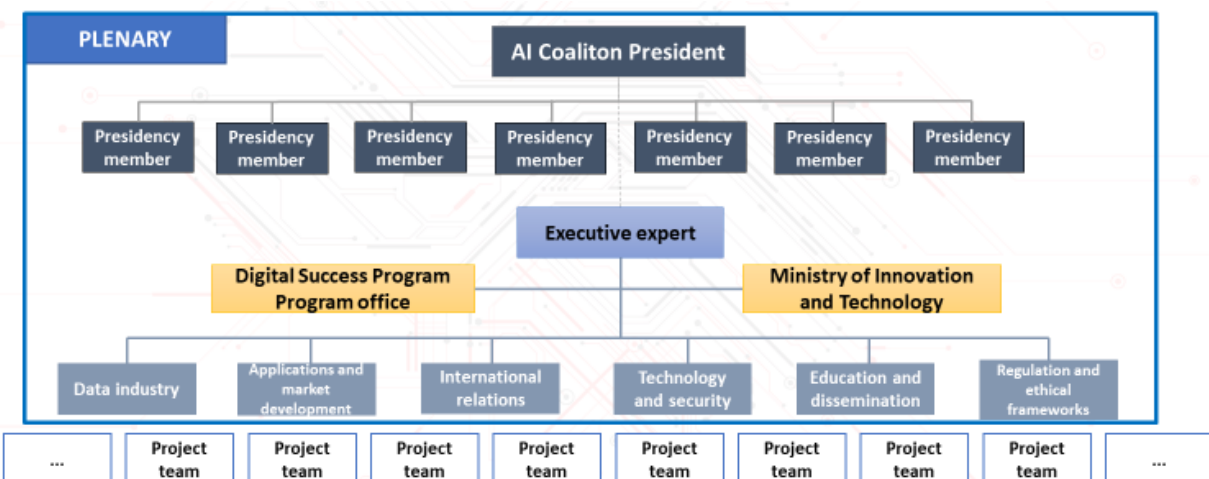
AI Coalition						
Researchers	Developers		End users			
			Private		Public	
Research organizations, Universities, Academia	Hungarian multinational corporations present in Hungary	SMEs, Hungarian multinational corporations present in Hungary	Hungarian SMEs, Government agencies, public service providers			

In terms of organizational structure it is currently foreseen that the AI Coalition has a **Plenary Session** for the representatives of all its member entities, and operational activities are delegated to **thematic working group subdivisions** to which members can nominate representatives on a voluntary basis.

The organization is led by a collective **Presidency of 8 members** elected by the plenary Session.

The AI Coalition currently has **166 member organizations**, with 125 of those being founding members.

STRUCTURE OF THE AI COALITION:



Administrative tasks related to the Coalition are jointly carried out by the **Ministry for Innovation and Technology and by the Digital Success Program**.