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1. **Executive Summary**

The unprecedented boom of the internet and mobile devices we are currently enjoying in Romania is due to the fact that 4 generations of mobile communications technology have been successfully launched and commercialized in less than two decades.

*Table no. 1 – Technology generations in mobile communications*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Generation** | **1G** | **2G** | **3G** | **4G** | **5G** |
| Typical technology | NMT | GSM | IMT 2000  UMTS | LTE | IMT 2020 |
| Typical services & speed | Voice  14.4 kbps | Voice  64 kbps | Voice & Data  2 Mbps | Data  < 1 Gbps | Data & more  < 20 Gbps |
| Launch in Romania | April 1993 | April 1997 | April 2005 | October 2012 | 2020 |

*source: publicly available information*

5G, the fifth generation of mobile communications, has been envisaged by multitude of analyses, trials, demonstration tests and early commercial launches on all meridians, including trials in Romania, ever since 2017. The excitement about the new technology relies on the latter’s potential and promised performance: communications will be ten times faster, more reliable and efficient for people and for IoT’s connected objects in the next decade. 5G is seen as one of the essential ingredients for the economic transformation anticipated by the Fourth Industrial Revolution and development to the Gigabit Society. New trends in connectivity occur around us every day, bringing about rapid developments to economies and societies.

Unlike other technology generations, 5G is conceived as a disruptive technology that goes beyond consumer internet and the entertainment industry. 5G is designed to best serve innovative industrial uses: self-driving and connected vehicles, cyber-physical systems and programmable robotics, precision farming, smart communities and networks, VR surgery, etc. Therefore, new connectivity scenarios have emerged, whose development will be substantially facilitated by the 5G capabilities, capabilities that are meant to add significant value to existing products and services and to create opportunities for new businesses with extended value chains.

A leader in the development and commercialisation of many of today's widespread technologies, the European Union has set an ambitious calendar for launching and developing 5G, based on coordination between Member States, new frequency spectrum resources, diminishing administrative barriers to network roll-out and a massive R&D budget.

The competitive dynamics of the communications and information technology sectors, of the existing communications network capabilities, and the exposure to the requirements of the Single Market sets the premises for Romania’s fully benefitting from the availability of advanced connectivity technologies. Romania’s relatively good position allows the anticipation of a commercial launch of standardized 5G services in 2020, along with major European economies.

Nevertheless, capitalizing the main 5G benefits, i.e. the productivity gains in (all) economic and social sectors, the emergence of new jobs, etc. requires massive investment, time and a favourable environment for the development of the required digital ecosystems, both in the private sphere and in the public realm.

That is why, supported by MCSI and ANCOM, the strategic planning project brought together the competent institutions in Romania, in order to combine their expertise and jointly identify the most appropriate measures.

By facilitating the implementation of 5G, Romania aims to harness the connectivity achievements to boost the competitiveness of next decade’s Romanian products and services, as well as to improve community life.

This strategy contains the arguments, information and steps the Romanian state needs to take during 2019-2030, in order to foster the development of 5G in Romania, with due regard to the milestones set in the EU Action Plan and providing for the competitive advantages that people and businesses in our country need.

Thus, we pursue the rapid roll-out of services (by 2020), the accelerated capitalization of 5G benefits (5G coverage of all urban centres and major land transport routes by 2025), reducing barriers to 5G network deployment, promoting new uses and stimulating cooperation between actors who can contribute to all of these developments.

In addition to massive spectrum demand in different bands, the new 5G networks will require significant small cell densification, as well as extensive fibre optic capabilities to connect them. A significant expansion of 5G networks is difficult to imagine under the current construction works authorisation regime, so we propose to adapt it to the new realities. We will review the relevant legislative framework and will provide investors and decision-makers with the information needed to accelerate investment processes, co-ordinate and to prebuild the required facilities for 5G in public infrastructure works, as well as the technical guidance required for the administrative territorial units’ land planning for 5G.

We will provide sufficient spectrum resources for the smooth operation of 5G commercial services in the frequency bands that are envisaged for harmonisation in run-up to 5G in Europe: 700MHz and 3.4-3.8 GHz before the end of 2019 and millimetre bands in 2020. We will provide for using the 5G capabilities for public safety and disaster response services, which will become available no later than 2025.

For the technical and commercial validation of 5G-based solutions, we aim to facilitate partnerships for R&D, testing and validation, by identifying and supporting 7 pilot projects of new connectivity uses and facilitating the set-up of an ecosystem that could foster the development of 5G-based business models.

We will also consider the feasibility of providing fiscal incentives for investments in 5G networks and services, in compliance with competition and state aid rules, and we will seek to stimulate smart 5G-based specialization by supporting the financing of those projects with a significant connectivity-related component.

The publication of this document is the beginning of a process that will span the next decade and will continue by the implementation of the action plan/roadmap, the rigorous monitoring of deadlines and the achievement of the proposed indicators, and by investigating any other action that might become necessary within this process.