



Introduction of 5G

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A Digital Agenda for Europe (2010):

- Broadband access for all to much higher internet speeds (30 Mbps or above) by 2020, and 50% or more of European households subscribing to internet connections above 100 Mbps.“
- *“At national level, Member States will need: **To draw up operational high speed internet strategies.....“***

European Gigabit society (2016):

- All European households, rural or urban, will have access to Internet connectivity offering a downlink of at least 100 Mbps, upgradable to Gigabit speed (objective for 2025)
- Gigabit connectivity for all main socio-economic drivers such as schools, transport hubs and main providers of public services as well as digitally intensive enterprises (objective for 2025)
- All urban areas and all major terrestrial transport paths to have uninterrupted 5G coverage (objective for 2025)
- 5G connectivity to be available as a fully-fledged commercial service in at least one major city in each Member State, building on commercial introduction in 2018 (objective for 2020)

5G for Europe (2016):

- Member States to develop, by end 2017, **national 5G deployment roadmaps as part of the national broadband plans.**



Preparation of a National operational broadband plan

The Republic of Macedonia, as a candidate country for EU membership, has an obligation to adopt a National operational broadband plan that will include a plan for introduction of 5G.

In order to prepare a National operational broadband plan, the Minister of Information Society and Administration in January 2018 established 4 working groups:

- I. Working group for determining the draft measures for encouraging and increasing the citizens' interest for using the broadband **(finished)**
- II. Working group for determining free capacities and their future application in electronic communications networks built with public funds **(finished)**
- III. **Working Group for determining the measures and activities necessary for introduction of 5G mobile technology (ongoing)**
- IV. Working group for ensuring better coordination of the mapping process on the territory of the country with existing and planned future broadband networks **(ongoing)**



Working Group for determining the measures and activities necessary for introduction of 5G mobile technology

Documents

- A Digital Agenda for Europe (2010)
- European Gigabit society (2016)
- 5G for Europe (2016)
- ITU – standards, recommendations regarding 5G
- Radio Spectrum Policy Group – recommendations regarding 5G
- Proposal for a Directive establishing the European Electronic Communications Code, etc.



Ensuring inclusiveness and transparency

In the working groups participate representatives of:

- Ministries,
- Regulatory bodies,
- Operators,
- Universities,
- Chambers of commerce,
- Equipment manufacturers,
- The association of the units of local self-government,
- Independent experts,
- Non-government organizations

Every proposal/activity is published on the web site:

РЕПУБЛИКА МАКЕДОНИЈА
Министерство за информатичко општество и администрација

Пребарување... Барај

НАСЛОВНА ЛИНКОВИ КОНТАКТ МАПА

English

31 јануари 2018

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ГОДИШЕН

Информатичкото општество е плод на промените во користењето на новите информатички и комуникациски технологии. Глобалните комуникации, електронските медиуми и интернетот се придобивки на развиениот свет, објект на истражување и повеќе благодети, развој и демократија.

Добродојдовте на веб-локацијата на Министерството за информатичко општество и администрација.

Проценка на капацитетите за информатичко општество и администрација
Скопје, 29 јануари 2018 година
Во рамките на посебната соработка помеѓу Светска Банка и Министерството за информатичко општество и администрација, Дамјан Манчевски, министерка за информатичко општество и администрација, Оливер Спасовски, ке биде делот на моделот на капацитетите за информатичка безбедност во Република Македонија. Моделот ќе се одржи во периодот од 30ти јануари до 1ви февруари 2018 година.
[Прочитај повеќе](#)

Средба на министерот Манчевски со експертот за Ендру Стот
Скопје, 29 јануари 2018 година
Министерот за информатичко општество и администрација Дамјан Манчевски, одржа работен состанок со Ендру Стот од Велика Британија, кој е автор на како надворешен експерт за подготовка на Стратегијата за отворени податоци. На состанокот разговараа за придобивките од отворените податоци, како механизам за подобрување на работата на институциите.
[Прочитај повеќе](#)

Состанок за ИПА проектот „РЈА – Поддршка на МИОА во модернизацијата на јавната администрација“
Скопје, 24 јануари 2018 година
Министерот за информатичко општество и администрација, Дамјан Манчевски го отвори првот состанок на проектот за модернизација на јавната администрација, финансиран преку првата компонента на ИПА програмата.
[Прочитај повеќе](#)

Заштита на укажувачи
[Анализа за проектот „Оцени ја администрацијата“](#)
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Agency for Electronic Communications (AEC)

Started activities:

- Coordinated use of the 694-792 MHz frequency band by countries in the region.
 - Signed Multilateral Framework Agreement with regulatory bodies responsible for electronic communications in SEDDIF (South Europe Digital Dividend Implementation Forum) members. In December 2017, in Budapest, AEC signed a Framework Multilateral Agreement with the regulatory bodies responsible for electronic communications in SEDDIF members (except Albania), and after that, bilateral agreements with: Montenegro, Serbia, Bulgaria and Greece on the Frequency planning for future terrestrial digital television in the 470-694 MHz frequency band.
- In order to release 694-792 MHz frequency band for 5G, AEC started changing channels in the 470-790 MHz frequency band which are used by DVB-T operators (is planned to be completed by mid-2019).



Agency for Electronic Communications

Proposals :

- The tender for granting authorization for use of radio frequencies from the 694-790 MHz frequency band, to be announced in the second half of 2019 and the authorization to be valid from 01/07/2020.
- The tender for granting authorization for use of radio frequencies from the 3.4-3.8 GHz frequency band, can be announced immediately (if there is a request from an operator).
- Initial price and size of the blocks of spectrum which will be granted to an operator.
- To enable the allocation of sufficiently large blocks of spectrum it is necessary to modify the existing authorizations from the 3.4-3.8 GHz frequency band.
- Start with replanning of a 26 GHz frequency band for its usage for 5G.



Operators

Proposals :

- Amending the regulation in order to ensure quick and easy obtaining of permission for construction of 5G infrastructure, joint use of infrastructure, coordination of construction works, etc.
 - the operators have already submitted proposals for amending the regulation.
- Adoption of regulation that will ensure simple placement of small cells in urban areas, roads and railway corridors.
- Greater involvement of vertical sectors, IT industry and local governments in the development of 5G.
- The price for use of blocks of spectrum should be significantly reduced.
- EU funds for 5G demo events to be allocated to operators.
- EU funds to be available for 5G rollout (e.g. rural areas).



Operators

Unresolved issues:

- The size of the blocks of spectrum that should be given to use to the operators.
- The type of authorizations for use of radio frequencies (national, regional, local authorizations)
- Deadline for announcing the tender for granting authorization for use of radio frequencies from the 694-790 MHz frequency band.
- Deadline for announcing the tender for granting authorization for use of radio frequencies from the 3.4-3.8 GHz frequency band.



Universities

Proposals:

- Amending the regulation for construction, antenna installations, joint use of infrastructure, etc.
- In order to ensure the development of 5G, the operators should be able to use the free optical capacities built with public funds .
- Government support for securing synergies between operators, vertical sectors, IT industry and the academic sector.
- Introduction of an additional service in AEC for measuring the radiation of the base stations and publicly publish of data from the measurement .



Universities

Proposals :

- Supporting projects for raising the level of digital skills among citizens.
- For service and application development, operators need to allow software access to the network slices through appropriate APIs.
- Providing net neutrality at the network slice level.
- Development of cyber security, in particular the definition of new regulations that would cover aspects of the Internet of Things (IoT)



Chambers of commerce

Proposals :

- Simplified conditions for use of the radio frequencies for the purpose of testing 5G.
- Support for funding pilot projects to test the 5G potentials and develop new 5G based services.
- Fund for Innovation and Technological Development to offer support for the development of 5G based services with application in practice.
- Greater promotion of the 5G potentials in the vertical sectors and the IT industry.
- An open model for the development of 5G services and applications, with the opportunity for a PPP model with revenue sharing.



Inclusion of vertical sectors and IT industry

- On May 10, 2018, a Public debate was held on the benefits of introducing 5G technology.
- The public debate was organized by the Working Group for 5G, the Ministry of Transport and Communications (in charge of the regulation for construction) and the Ministry of Information Society and Administration.
- Participants from the vertical sectors and the IT industry took part in the public debate, which highlighted their views and suggestions regarding the development of 5G.



Summary

- For particular crucial issues regarding the development of 5G there is a general consensus and starting from now the implementation has started (coordinated use of the 694-792 MHz frequency band by countries in the region, release of the 5G spectrum, amendment of regulation for construction, adoption of regulation of placement of small cells, greater inclusion of vertical sectors, etc.).
- For certain issues (the date of announcement of the tenders, the size of the blocks of spectrum that should be given to use to the operators, the type of authorizations for using blocks of spectrum, coverage obligations, license durations, etc.) there are different views and require further discussion. For these issues, consideration should also be given to the adoption of a proposal for a European Electronic Communications Code.
- For some issues, additional consultations will be needed (for example, government support for the development of 5G networks, services and applications); for some things there is still no information (for example, the cost of 5G equipment).



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Thank you for your attention