



EM FIELD LEVELS AND 5G ROLL OUT PLAN *MONTENEGRO* CASE

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LEGISLATION ON EM FIELD EXPOSURE

- ▶ ICNIRP - *International Commission on Non-Ionizing Radiation Protection - Guidelines on limiting of exposure of time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)* from 1998
- ▶ **Law on protection against non-ionizing radiation** ("Official Gazette of Montenegro", No. 35/13), that started to apply from 01. 07. 2015.
- ▶ **Law on assessment of impact on environment** ("Official Gazette of Montenegro", No. 80/05, 52/16) – on going public consultations on its new draft until 27. 11. 2017.
- ▶ Set of by-laws issued on the basis of these laws, which are relevant for the Agency for Electronic Communications and Postal Services activities related to EM exposure
 - **Rulebook on the limits of exposure to electromagnetic fields** ("Official Gazette of Montenegro", No. 6/15)
 - **Rulebook on the method of first and periodical measurements of the level of electromagnetic fields** ("Official Gazette of Montenegro", No. 56/15)
 - **Rulebook on the types of sources of electromagnetic fields for which the license for the use of sources of electromagnetic fields is obtained** ("Official Gazette of Montenegro", No. 42/15)
 - **Rulebook on the types of overtaken significant sources of non-ionizing radiation for which the study is being developed** ("Official Gazette of Montenegro", No. 42/15)



LEGISLATION ON EM FIELD EXPOSURE

- ▶ The protection from EM radiation in Montenegro is primarily within the competence of the Ministry of Sustainable Development and Tourism - MORT and the Environmental Protection Agency - EPA
- ▶ The responsibilities of the Agency for Electronic Communications and Postal Services – EKIP related to this issue are directly defined in Article 127 of the current Law on Electronic Communications (*RITT equipment and elements of electronic communications networks can be used in a manner and under conditions that ensure that parameters of electromagnetic fields in a given location must not exceed limits defined by the law regulating protection against non-ionizing radiation both Montenegrin as well as international standards applicable in Montenegro*) and indirectly, Article 102, paragraph 3 (*the Agency shall not issue approval for the use of radio frequency, if the operation of a radio device might cause harmful effects on the operation of other electronic communications systems or equipment, as well as the environment and human health*) and Article 119 paragraph 1 (*the Agency may modify the authorization for use of radio frequencies if harmful interference or excessive radiation can not be remedied otherwise*)
- ▶ In the procedure of issuing an authorization for the use of radio frequencies, including defining of technical and operational conditions under which radio base stations could be used in public mobile electronic communications networks, EKIP must verify that the prescribed limits of exposure to the EM field are met



LEGISLATION ON EM FIELD EXPOSURE

- ▶ Regarding occupational and general public exposure EM field limits in the national legislation in most frequency ranges are almost equal as those specified in the ICNIRP guidelines. A few frequency ranges have more stringent values than those given by ICNIRP.
- ▶ However, domestic legislation in Montenegro defines areas of increased sensitivity on exposure to EM fields, such as: public residential or business buildings intended to be used for dwelling or work, also schools, preschools, maternity hospitals, buildings, tourist facilities, children playgrounds, as well as land plots that are defined by spatial planning documents to be used for aforementioned purposes. The prescribed limits, for example for levels of electric field, are double stringent in the domestic legislation than those given in ICNIRP guidelines
- ▶ In practice, all indoor levels must be under limits given for the areas of increased sensitivity, while values for outdoor coverage falls under comparison with general public exposure values
- ▶ Conducted measurement campaigns frequently measured significant lower values, than those obtained by calculations
- ▶ Current calculation methodology is based on very strict assumptions such as very intensive traffic loads on specific location, which means all carriers active in all bands, all operators, at the same time, the same directions etc



LEGISLATION ON EM FIELD EXPOSURE

- ▶ Every change on the existing site must go under same procedure as green-field installations with the EKIP, EPA and relevant municipality
- ▶ The operator must also plan their networks taking into consideration the sites in use and EM fields generated by competitors in the neighbourhood
- ▶ Montenegrin legislation encourages site and infrastructure sharing and cooperation between operators, by stipulating this obligation in Law on Electronic Communications and developing set of by-laws acts on infrastructure sharing
- ▶ This encouragement is only up to the level when such kind of infrastructure sharing do not endanger the site regarding the mast statics and environment regarding EM field levels
- ▶ Operators are still able to densify their networks since no areas with high level of exposure are identified
- ▶ Increase of public opposition to radio-base station instalments in urban and suburban areas
- ▶ EKIP has frequently been asked by public to intervene (site inspections, measurements etc)



LEGISLATION ON EM FIELD EXPOSURE

- ▶ Permits for radio-base station instalments are issued by municipalities taking into account the authorisation issued by EKIP and opinion given from multi-expert commission formed by EPA on the evaluation of the influence that base station might have on the environment
- ▶ Due to multidisciplinary issues that need to be dealt by several institutions, for green field instalations it takes 7-9 months to obtain the permits, although deadlines given by the laws are shorter
- ▶ The reasons to refuse to issue a permit are mostly due to non-existing of radio base station site in the detailed spatial plan, which is always the case with radio base stations having the status of temporarily object - breach of planning regulations - municipality descision
- ▶ The reason was never due to exceeding radiation limits so far
- ▶ On decision taken by municipality or EKIP there is a possibility to appeal to the Administrative Court, while on the decisions taken by EPA the appeal is submitted to the MORT



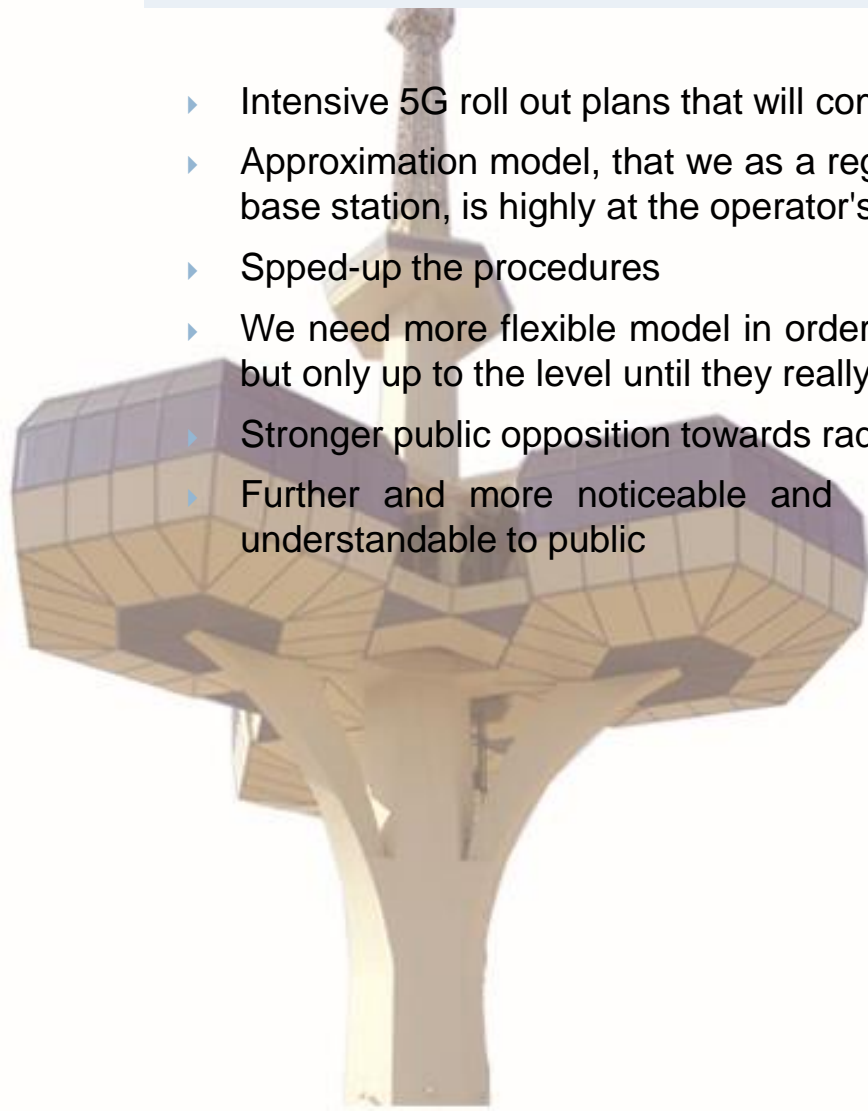
TOWARDS 5G

- ▶ As a regulator we support introduction of 5G
- ▶ After conducting the Study on usage of 694-790 MHz, 1452-1492 MHz, 2300-2400 MHz, 3400-3600 MHz and 3600-3800 MHz for mobile broadband, Ekip started preparing necessary distribution plans which will be adopted by the end of 2017
- ▶ **Current usage:**
 - ▶ **694-790 MHz** – no assignments in Montenegro, after successful re-planing of DTT in lower bands, although conducted monitoring measurements in 700 MHz identified strong presence of signals coming from neighbouring countries in bordering areas
 - ▶ **1452-1492 MHz** – one one-way communication link in fixed service, which could easily be migrated to other frequency bands
 - ▶ **2300-2400 MHz** – one-way temporarily point-to-point links in mobile service intended for transmission of TV signal together with accompanying audio signal intended for broadcasting - SAP/SAB applications
 - ▶ **3400-3600 MHz** – one block assigned to one WIMAX operator until 2022
 - ▶ **3600-3800 MHz** – no assignments



CHALLENGES

- ▶ Intensive 5G roll out plans that will come
- ▶ Approximation model, that we as a regulator use now, for calculating the critical distance from a base station, is highly at the operator's expense - worst case scenario
- ▶ Speeded-up the procedures
- ▶ We need more flexible model in order to relax operators regarding the limits of EM field levels, but only up to the level until they really represent an environmental hazard
- ▶ Stronger public opposition towards radio-base station instalments in densely populated areas
- ▶ Further and more noticeable and more transparent education on EM exposure issues, understandable to public





Thank you for your attention

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