

## Questionnaire on cross-border agreements (EU and non EU) in the 3.4-3.8 GHz band

### 5G / MFCN cross-border agreements:

- Do you have some MFCN use which is not in conformity with EU decision (xx) and when this legacy use is expected to switch-off?

There is only such MFCN use in this band in Hungary that is in conformity with the Decision (EU) 2019/235.

- What are the status of cross-border agreements applicable to 5G/MFCN in the 3.4-3.8 GHz with each of neighbouring countries (EU and non EU)? Do these agreements include elements regarding synchronization and frame structures? Is there a difficulty regarding the synchronisation with legacy MFCN networks (e.g. WiMax)?

Technical arrangement between the national frequency management authorities of Austria, Croatia, Hungary, Serbia, the Slovak Republic and Slovenia on border coordination for terrestrial systems capable of providing electronic communications services in the frequency band 3400-3800 MHz was concluded in 2015. The field strength threshold values related to both the synchronised and non-synchronised operation were included in this Technical arrangement (based on the 2015 version of the ECC/REC/(15)01), but no compulsory frame structure or synchronisation parameter to be used was specified in it. Operators may conclude so called operator arrangements with regard to the use of certain radio parameters of the network including synchronisation elements of networks concerned.

With regard to Romania and Ukraine there is a formerly concluded agreement on frequency coordination for fixed wireless access systems in the 3400-3600 MHz frequency band, but there is no agreement on cross-border coordination of MFCN. The process has been initiated with Romania, but no arrangement has been concluded yet. As of Ukraine, special services are operating in this band.

- How the risk of interference from 5G base station to 5G base station at the border is addressed? Is there any procedure for the case when real interference occurs (e.g. method of measurement, exchange of information, common measures, etc)?

Based on the Technical arrangement between the national frequency management authorities of Austria, Croatia, Hungary, Serbia, the Slovak Republic, Slovenia on border coordination for terrestrial systems capable of providing electronic communications services in the frequency band 3400-3800 MHz (Geneva, 2015 November) in the case of harmful interference, the data necessary to evaluate and treat the harmful interference given in Annex 3 of the ECC Recommendation ECC/REC/(15)01 (version 2015) shall be exchanged between Signatory Authorities concerned.

Concerning handling of harmful interference a two-step procedure is applied:

1. As the first step, in the case of harmful interference, the characteristics of stations including the necessary geographical separation shall be adjusted based upon following line calculations:

Field strength line calculations shall be carried out between the base and/or terminal stations and the receiver points of the border line and 6 km line regarding thresholds values in the relevant sections of the Technical arrangement, and depending on radio service (fixed and/or mobile) the relevant propagation models included in the Harmonised Calculation Method (HCM) shall be used.

2. As the second step, if harmful interference still occurs despite the above adjustment, measurements shall be carried out according to international/mutually agreed procedures.

#### **5G / others services cross-border agreements:**

- Could you describe the elements of cross-border agreements regarding the coexistence between 5G and other services in the 3.4-3.8 GHz band, (concerned services, coexistence method, expected impact on 5G deployment ...)?

The Technical arrangement signed in 2015 covers the cross-border coordination of MFCN but also contains the operational and protection conditions of formerly licensed fixed service systems with procedural rules. Only those fixed service stations can claim protection until the license expiry date that had been included (with the relevant operational parameters) in the Annex 2 of the relevant Technical Arrangement.

#### **Cross border negotiation difficulties (EU and non EU)**

- Do you meet any difficulty in current cross border negotiations (EU and non EU)?

No progress in the conclusion of missing arrangements with Ukraine and Romania has been made so far.

- Could such difficulty impact 5G deployment and why?

It could be a problem to achieve 5G coverage in the affected border areas if no agreement between administrations is concluded or the band is used for other services in neighbouring countries and protection of these services has to be assured. The existence of the bi- or multilateral agreement between administrations is also a precondition for the so called “operator arrangements” with regard to the use of certain radio parameters of the network including synchronisation elements of networks concerned.