

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

Answers from Finland

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?

Answer: No.

- 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)?

Answer: We have cross-border agreements for the frequency band 3400 - 3800 MHz with Sweden and Estonia and there is activity to draft a trilateral coordination agreement between Finland, Norway (non EU) and Sweden to include all MFCN bands and base this agreement on the latest ECC cross-border recommendations. The current agreements do not require the use specific frame structures nor common source of synchronization. No reported difficulties with synchronization with legacy MFCN networks.

- 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)?

Answer: Cross-border agreements include different field strength values for synchronized, non-synchronised cases as well as for situations where channel centre frequencies are aligned or not aligned, these values are based on ECC Recommendation. Furthermore, these agreements include procedures to measure the interference and how to report the interference to the neighbouring administration.

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 ...)?

Answer: We have a coordination agreement for the frequency band 3400 - 3600 MHz with the Russian Federation. This is a technology and service neutral agreement concluded in year 2010. This agreement does not include any elements regarding synchronization and frame structures. We have not yet concluded a coordination agreement for the upper part of the C- band, i.e. 3600 - 3800 MHz. However, we have agreed upon services that will be covered by this agreement as well as power flux density values to be used but such an agreement have not been signed yet.

Cross border negotiation difficulties (EU and non EU)

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

Answer: No major difficulties, rather business as usual considering that the use of radio frequencies often differs from the use in EU member states. Regarding Russia, we have not yet reached final agreement in the band 3600-3800 MHz , since coordination Agreement has not been signed.

Could such difficulty impact 5G deployment and why?

Answer: All neighboring countries affect the deployment of 5G more or less. As a rule, the impact on deployment is usually smaller when the neighboring country uses the frequency band for the same service and same type of application. In case of the band 3600-3800 MHz and Russia, since we do not have a signed coordination Agreement, we still have some 'safety margins' in use in the eastern parts of Finland, which restrict the use of 5G networks in that area to some extent.