

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 the commission implementing decision and when this legacy use is expected to switch-off?

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)?

A multilateral agreement has been signed with Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland but is not entered into force (the date of entry into force was not confirmed since 5G synchronisation issue is not treated in this document, thus the application of the agreement is not valid).

HCM agreement applies by default for IMT terrestrial services (including 5G). The field strength value of 41 dB μ V/5MHz/m at 10m must be respected according to this agreement. HCM countries are Austria, Belgium, the Czech Republic, Germany, France, Hungary, the Netherlands, Croatia, Italy, Liechtenstein, Lithuania, Luxembourg, Poland, Romania, the Slovak Republic, Slovenia, Switzerland.

- Do these agreements include elements regarding synchronization and frame structures?

No, such elements have to be included in bilateral agreements.

- Is there a difficulty regarding the synchronisation with legacy MFCN networks (e.g. WiMax)?

No, in France, Arcep has defined the frame structure to be used by all MFCN network s in the band and which ensures the compatibility between 5G and LTE, legacy MFCN networks are based on LTE. In the past, there was no cross-border interference involving legacy networks, due to their limited coverage.

- How the risk of interference from 5G base station to 5G base station at the border is addressed?

This has not been addressed yet with our neighbours. Problems are expected along the borders with neighbouring countries which do not use the 3DSUU4D frame structure.

Is there any procedure for the case when real interference occurs (e.g. method of measurement, exchange of information, common measures, etc)?

Only general procedures such as in HCM.

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 ...)?

Discussions are on-going with Germany and Switzerland regarding the protection of their earth stations receiving in the 3.4-3.8 GHz band (co-channel) and above 3.8 GHz (adjacent band, for earth stations close to the border).

Cross border negotiation difficulties (EU and non EU)

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

Yes, since some administrations give freedom to the operators to negotiate the frame structure between themselves, it is difficult to address the synchronization issue in the cross-border agreement between administrations.

- Could such difficulty impact 5G deployment and why?

Yes, harmful interference between base stations is expected at the border that will affect the network performances of concerned parties in the absence of a common frame structure and until the "DL blanking" feature is developed and implemented in equipment