

**Agreement between the Finnish Communications Regulatory
Authority and the Estonian Technical Regulatory Authority
concerning the use of the 3.6 GHz frequency band
(3400 - 3800 MHz) in the border areas**

2018

1. Principles and definitions

- 1.1. The 3,6 GHz band, as referred to in this Agreement, corresponds to the frequencies from 3400 MHz to 3800 MHz, which are harmonized for mobile/fixed (MFCN) communications networks, in accordance with EC Decision 2008/411/EC and EC Implementing Decision 2014/276/EU as well as CEPT ECC DEC (11)06.
- 1.2. This agreement is based on the concept of field strength levels on borderlines in accordance with ECC REC (15)01. In the case when LTE systems are used, preferential PCIs as defined in Annex 1 shall be used when channel centre frequencies are aligned.
- 1.3. This agreement covers the coordination of TDD (Time Division Duplex) and downlink only base stations. User equipment, or terminals, are allowed to be used on non-interfering basis, in accordance with ITU RR 4.4.
- 1.4. For the purpose of this Agreement the Zones referred to in the following paragraphs are defined in Annex 2.

2. Use of frequencies without co-ordination

- 2.1. Finland may use the 3.6 GHz band without coordination with Estonia, if the predicted mean field strength produced by a base station does not exceed $32 \text{ dB}(\mu\text{V}/\text{m})/5 \text{ MHz}$, calculated for 10 % of the time, at a height of 3 m above the ground within Zone E.
- 2.2. Estonia may use the 3.6 GHz band without coordination with Finland, if the predicted mean field strength produced by a base station does not exceed $32 \text{ dB}(\mu\text{V}/\text{m})/5 \text{ MHz}$, calculated for 10 % of the time, at a height of 3 m above the ground within Zone F.
- 2.3. For base stations that are synchronized¹ between Finland and Estonia or deployed as downlink only on both sides of the border, the following applies:
 - 2.3.1. Finland may use the 3.6 GHz band without coordination with Estonia, if the predicted mean field strength produced by a base station does not exceed $67 \text{ dB}(\mu\text{V}/\text{m})/5 \text{ MHz}$ on the borderline of Zone E and $49 \text{ dB}(\mu\text{V}/\text{m})/5 \text{ MHz}$ at a distance of 6 km inside Zone E, calculated for 10 % of the time, at a height of 3 m above the ground.
 - 2.3.2. Estonia may use the 3.6 GHz band without coordination with Finland, if the predicted mean field strength produced by a base station does not exceed $67 \text{ dB}(\mu\text{V}/\text{m})/5 \text{ MHz}$ on the borderline of Zone F and 49

¹ Synchronized TDD base stations operate aligned in time, so that there is no overlap between DL and UL transmission.

dB(μ V/m)/5 MHz at a distance of 6 km inside Zone F, calculated for 10 % of the time, at a height of 3 m above the ground.

- 2.4. In case of other frequency block sizes, a value of $10 \times \log_{10}(\text{frequency block size [in MHz]}/5)$ dB should be added to the field strength values.

3. Co-ordination procedure

- 3.1. If a frequency assignment has to be co-ordinated, the period of co-ordination shall not exceed 45 days from the date of the receipt of a written request and 20 days after a reminder. A request may be sent by e-mail to the administration's official e-mail address. If no reply is received after 65 days after the initial request the frequency assignment shall be considered as co-ordinated.
- 3.2. The exchange of the co-ordination information shall be in electronic form and sent by e-mail or by other electronic means as appropriate.
- 3.3. Preliminary co-ordination may take place between the operators concerned. The results of such preliminary co-ordination must be approved by the administrations.

4. General

- 4.1. A complaint in case of harmful interference shall be based on the median values of measurements of field strength, performed at 3 meter of receiving antenna height at least on two different occasions over a range of at least 100 m along the zones.
- 4.2. In the presence of interference, the report of harmful interference shall be presented in accordance with Appendix 10 of the Radio Regulations. The other Administration shall take all possible steps in order to eliminate the interference.
- 4.3. The latest version of Recommendation ITU-R P. 452 "Prediction procedure for the evaluation of interference between stations on the surface of the Earth at frequencies above about 0.1 GHz" shall be used for prediction of field strength values.

5. Revision and cancellation

- 5.1. This Agreement may be revised upon mutual agreement of the two administrations.
- 5.2. This Agreement may be cancelled with a notice of at least twelve months from any of the two parties.

6. Entry into force

- 6.1. This Agreement shall enter into force from 1 January 2019.
- 6.2. This Agreement has been drawn up in two identical copies, one for Estonia and one for Finland.
- 6.3. This Agreement, when in force replaces the previous Agreement between the Telecommunications Administrations of Estonia and Finland concerning the use of the frequency band 3400 - 3800 MHz, October 2007.

Helsinki
20 June 2018

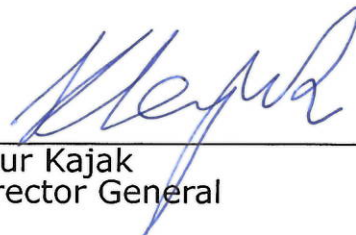
07 Tallinn
... June 2018

For the Finnish Communications
Regulatory Authority

For the Estonian Technical
Regulatory Authority



Jarno Ilme
Director Spectrum Management



Kaur Kajak
Director General

PREFERENTIAL PHYSICAL-LAYER CELL IDENTITIES (PCI) FOR LTE

PCI division, according to Table below, may be used in border areas to improve coverage and service when channel centre frequencies are aligned.

The PCIs are divided between the administrations according to the following table:

PCI	Set A 0 to 83	Set B 84 to 167	Set C 168 to 251	Set D 252 to 335	Set E 336 to 419	Set F 420 to 503
Country	Finland	Finland	Estonia	Estonia	Estonia	Finland

Preferential Physical-Layer Cell Identities (PCI) for LTE

DEFINITION OF PROTECTED ZONES

In Estonia

Zone E

The Estonian coast including the following islands: Saaremaa, Hiiumaa, Vormsi, Naissaar and Prangli

In Finland

Zone F

The South Coast of Finland described by a line drawn between the following islands (coordinates WGS 84):

Jurmo (59° 48' 56" N, 21° 33' 48" E), Russarö (59° 45' 54" N, 22° 56' 51" E), Rönnskär (59° 55' 54" N, 24° 23' 32" E), Isosaari (60° 05' 43" N, 25° 02' 40" E), Pirttisaari (60° 09' 30" N, 25° 26' 29" E) and Haapasaari (60° 17' 10" N, 27° 11' 42" E)