Agreement between the Finnish Communications Regulatory Authority and the Swedish Post and Telecom Authority concerning the use of the frequency bands 452,5 - 457,5 MHz and 462,5 - 467,5 MHz for Land Mobile Service Stations in the border areas

April 2016

1. Principles

1.1. This Agreement is based on the concept of field strength levels and, in the case when LTE systems are used, preferential PCIs as defined in Annex 2.

1.2. This Agreement covers the coordination of base stations. User equipment, or terminals, are allowed to be used on non-interfering basis, in accordance with ITU RR 4.4.

1.3. For the purpose of this Agreement the Zones referred to in the following paragraphs are defined in Annex 3.

2. Use of frequencies without coordination

2.1. Sweden may use the frequency band 462,5 - 467,5 MHz without coordination with Finland, if the predicted mean field strength of each cell of a base station does not exceed the field strength thresholds defined in Annex 1 at a height of 3 m above surface within zone F, as defined in Annex 3.

2.2. Finland may use the frequency band 462,5 - 467,5 MHz without coordination with Sweden, if the predicted mean field strength of each cell of a base station does not exceed the field strength thresholds defined in Annex 1 at a height of 3 m above surface within zone S, as defined in Annex 3.

3. Coordination procedure

3.1. If a frequency assignment has to be coordinated, the period of coordination shall not exceed 45 days from the date of the receipt of a written request and 20 days after a reminder. If no reply is received after 65 days after the initial request the frequency assignment shall be considered as coordinated.

3.2. The exchange of the coordination information shall be in electronic form and sent by e-mail or by other electronic means as appropriate.

3.3. Preliminary coordination may take place between the operators concerned. The results of such preliminary coordination 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 border of 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 field strength values in this Agreement are based on a receiving antenna height of 3 m, 10% of the time and 50% of the locations.

4.4. The latest version of Recommendation ITU-R P.1546 "Method for point -to area predictions for terrestrial services in the frequency range 30-3000 MHz" shall be used for field strength calculations.

5. Revision and cancellation

5.1. This Agreement may be revised or cancelled as desired by one of the administrations with a notice of at least twelve months.

5.2. This Agreement may be revised or cancelled without notice, if mutual understanding is reached between the administrations.

6. Entry into force

6.1. This Agreement shall be in force from date of signing.

6.2. This Agreement has been drawn up in two identical copies, one for Sweden and one for Finland.

6.3. This Agreement, when in force replaces the previous Agreement between the Finnish Communications Regulatory Authority and the National Post and Telecom Agency, Sweden concerning the use of the frequency bands 453,000-457,475 / 463,000-467,475 MHz for Land Mobile Service Stations in the border areas (Helsinki, Stockholm, 2007).

Place HELSINKI	Place STOCKHOLM
Date 15.4.2016	Date 22/4 - 2016
For the Finnish Communications Regulatory Authority	For the Swedish Post and Telecom Authority
Jarno Ilme	Jonas Wessel
Director of Spectrum Management	Director of Spectrum Department

ANNEX 1 - FIELD STRENGTH THRESHOLDS

	Overlapping carriers [1,2]	**LTE carriers with centre frequencies aligned and non-preferential codes used**
Field strength (dBµV/m)	$55^{[3]}+10x\log_{10}(BW^{[4]}/5)$	$29^{[5]}+10x\log_{10}(BW^{[4]}/5)$

[1] Carriers with not aligned centre frequencies, e.g. LTE

[2] LTE carriers with centre frequencies aligned and using preferential codes.

[3] Value based on ECC REC(15)01

[4] Bandwidth in MHz

[5] Value based on ECC REC(08)02

ANNEX 2 - PREFERENTIAL PHYSICAL-LAYER CELL IDENTITIES (PCI) FOR LTE

PCI division, according to Table 2 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 to83	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	Finland	Sweden	Sweden	Sweden

ANNEX 3 - Definition of protected Zones

Definition of protected Zones

In Finland

Zone F

The land border between Sweden and Finland.

The coastline of Finland.

At Ahvenanmaa/Åland:

- A line between Norrskär (60° 32' 24" N, 20° 12' 30" E), Ådskär (60° 21' 03" N, 19° 31' 17" E), Västerön (60° 14' 17" N, 19° 28' 30" E), Askö (59° 59' 20" N, 19° 59' 19" E) and Kalskär (59° 47' 51" N, 20° 57' 50" E)

At Vaasa/Vasa:

- A line between Mickelsöarna (63° 28' 30" N, 21° 44' 40" E), Lappöarna (63° 22' 03" N, 21° 11' 00" E) and Bergö (62° 58' 41" N, 21° 06' 59" E)

At Oulu/Uleåborg:

- Hailuoto (65° 02' 23" N, 24° 33' 04" E)

In Sweden

Zone S

The land border between Finland and Sweden.

The coastline of Sweden.

At the coast of Uppland and Stockholm archipelago:

- A line between Argos grund (60° 37' 42" N, 18° 21' 47" E), Simpnäsklubb (59° 53' 34" N, 19° 04' 46" E), Söderarm (59° 45' 10" N, 19° 24' 21" E), Svenska högarna (59° 26' 38" N, 19° 30' 06" E) and Huvudskär (58° 47' 46" N, 18° 34' 13" E)

Note: Geographical coordinates in WGS 84.