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Spectrum
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Krzysztof Mazurkiewicz
Norwegian Communication Authority
P.O Box 93
N-4791 Lillesand
Norway

Coordination agreement for the 450 MHz band

Dear Krzysztof,

The signed coordination agreement is included together with this letter.

It has been a pleasure to work with you.

Best regards, Jeanette

Swedish Post and Telecom Authority

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Sweden

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Agreement between the Norwegian Communications 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

February 2017

1. Principles and definitions

- 1.1. This agreement covers the coordination of base stations. The user equipment, or terminals, are allowed to be used on non-interference basis.
- 1.2. 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 1.
- 1.3. For this agreement the border is defined as the land border, or where appropriate, a line midway between the Norwegian coastline and the Swedish coastline, due to ratified border agreement between Norway and Sweden.
- 1.4. The latest version of ITU-R P.1546 "Method for point-to-area predictions for terrestrial services in the frequency range 30-3000 MHz" shall be used for predictions of field strength values.

2. Use of frequencies without coordination by administrations

- 2.1. Norway may use the frequency band 462.5 – 467.5 MHz without coordination with Sweden, if the predicted field strength produced by a base station does not exceed the field strength thresholds, defined in Annex 2, at a height of 3 m above the ground at the Swedish border or beyond.
- 2.2. Sweden may use the frequency band 462.5 – 467.5 MHz without coordination with Norway, if the predicted field strength produced by a base station does not exceed the field strength thresholds, defined in Annex 2, at a height of 3 m above the ground at the Norwegian border or beyond.
- 2.3. The field strength values (see 2.1 and 2.2) in this agreement are based on a receiving antenna height of 3 m, 10 % of the time and 50 % of the locations.

3. Coordination procedure

- 3.1. If a frequency 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. 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 coordinated.

- 3.2. The exchange of the coordination information between the administrations 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. In case of harmful interference

- 4.1. A complaint in case of harmful interference shall be based on the median values of measurements of field strength, performed at 3 m of receiving antenna height at least on two different occasions over a range of at least 100 m along the border.
- 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 administrations shall take all possible steps in order to eliminate the interference.

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.

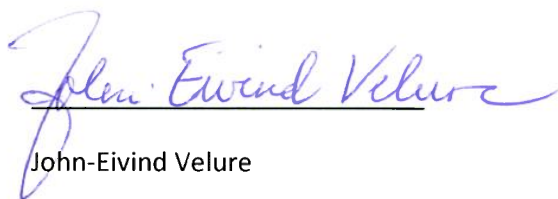
6. Enter into force

- 6.1. This agreement is valid from the date of signing.
- 6.2. This agreement has been drawn in two identical copies, one for Norway and one for Sweden.

Place *Lillesand*

Date *13.2.2017*

For the Norwegian Communications Authority



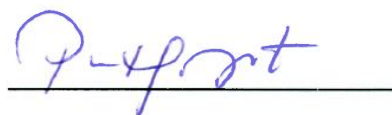
John-Eivind Velure

Director of the Frequency Management Department

Place *Stockholm*

Date *23.2.2017*

For the Swedish Post and Telecom Authority



Pia Högset

Head of section for Spectrum Development,
Spectrum Department

ANNEX 1

PREFERENTIAL PHYSICAL-LAYER CELL IDENTITIES (PCI) FOR LTE

PCI division 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	Norway	Norway	Sweden	Norway	Sweden	Sweden

ANNEX 2

FIELD STRENGTH THRESHOLDS

	Overlapping carriers ^[1,2]	LTE carriers with centre frequencies aligned and non-preferential codes used
Field strength (dBμV/m)	$55^{[3]} + 10 \times \log_{10}(BW^{[4]}/5)$	$29^{[5]} + 10 \times \log_{10}(BW^{[4]}/5)$
<p>^[1] Carriers with not aligned centre frequencies, e.g. LTE</p> <p>^[2] LTE carriers with centre frequencies aligned and using preferential codes.</p> <p>^[3] Value based on ECC REC(15)01</p> <p>^[4] Bandwidth in MHz</p> <p>^[5] Value based on ECC REC(08)02</p>		