

# Agreement between the Norwegian Communications Authority and the Swedish Post and Telecom Authority concerning the use of the 700 MHz band (694-790 MHz) for MFCN service

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June 2016

## Coordination agreement between MFCN and MFCN

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This agreement is valid from the date Norway changes from DTT to MFCN in the 700 MHz band. Norway will inform Sweden as soon as a final date of the change of service is set.

### 1. Principles and definitions

- 1.1. The 700 MHz band, as referred to in this agreement, covers the frequencies from 694 MHz to 790 MHz, with the FDD arrangement, including SDL (Supplemental Downlink, up to 4x5 MHz in the duplex gap). The use of other arrangements such as TDD is not covered in this agreement.
- 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. This agreement covers the coordination of base stations. The user equipment, or terminals, are allowed to be used on non-interference basis.
- 1.4. 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.
- 1.5. 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 700 MHz band without coordination with Sweden, if the predicted field strength produced by a base station does not exceed 54 dB( $\mu$ V/m)/5 MHz at a height of 1.5 m above the ground at the Swedish border or beyond.
- 2.2. Sweden may use the 700 MHz band without coordination with Norway, if the predicted field strength produced by a base station does not exceed 54 dB( $\mu$ V/m)/5 MHz at a height of 1.5 m above the ground at the Norwegian border or beyond.
- 2.3. In case of using technologies with other channel bandwidths (BW) than 5 MHz, the predicted field strength E shall be adjusted by a factor in comparison with  $E_0$  as in paragraphs 2.1 and 2.2:  
$$E = E_0 + 10 \cdot \log_{10}(BW/5),$$
 where BW is measured in MHz.

2.4. The field strength values (see 2.1 and 2.2) in this agreement are based on a receiving antenna height of 1.5 m, 10% of the time and 50% of the locations.

### 3. Coordination procedure

- 3.1. Establishment of agreements between operators shall be encouraged to the extent possible. Subject to agreement between operators other technical characteristics can be used, e.g. other field strength limits or propagation models.
- 3.2. Any case of harmful interference shall as far as possible be resolved among the operators concerned. If not resolved, or in case of unequal access to the spectrum band, assistance might be sought from the administrations.

### 4. Revision and cancellation

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

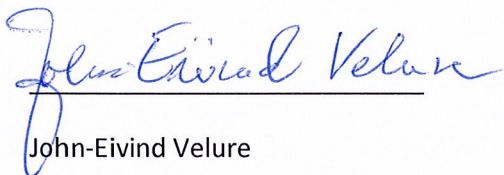
### 5. Enter into force

- 5.1. This agreement is valid from the date Norway changes from DTT to MFCN in the 700 MHz band.

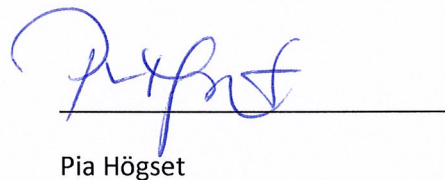
This agreement has been drawn in two identical copies, one for Norway and one for Sweden.

Place *Stockholm*  
Date *16 June 2016*  
For the Norwegian Communications Authority

Place *Stockholm*  
Date *16 June 2016*  
For the Swedish Post and Telecom Authority

  
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Pia Högset

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Spectrum Department, PTS

## ANNEX 1

### 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	Norway	Norway	Sweden	Norway	Sweden	Sweden

Table. Preferential Physical-Layer Cell Identities (PCI) for LTE