



Frequency plan for the bands 2500-2690 and 2010-2025 MHz

Introduction

The NPT will award the frequency bands 2500-2690 and 2010-2025 MHz by auction in the autumn of 2007.

According to the CEPT band plan given in ECC/DEC/(05)05, 2x70 MHz is assigned for paired use (FDD) og 50 MHz is assigned for unpaired use (TDD) in the band 2500-2690 MHz. This division between paired and unpaired spectrum is not necessarily in accordance with the Norwegian market demand. Taking this into consideration, NPT wishes to introduce more flexibility in the plan and has decided to expand the amount of unpaired spectrum relative to the plan from CEPT. At the same time NPT tries to design the awards in such a way that the market still will have the possibility to use these extra TDD resources for FDD, by applying for such use after the auction.

In this document NPT explains different parts of the assignment procedure, and asks for comments from interested market players, especially on the issue of spectrum cap.

Frequency band plan for the Norwegian 2.6 GHz auction

For frequency blocks assigned on a regional level, each region will be indicated with a Roman numeral between i-vi. The six regions are:

Region i:	Oslo, Akershus, Østfold, Vestfold, Telemark, Buskerud
Region ii:	Aust-Agder, Vest-Agder, Rogaland
Region iii:	Hordaland, Sogn og Fjordane, Møre og Romsdal
Region iv:	Oppland og Hedmark
Region v:	Sør-Trøndelag, Nord-Trøndelag
Region vi:	Nordland, Troms, Finnmark

The NPT has decided to assign the frequency block 2010-2025 MHz in this auction. This block will be assigned on a regional basis as one single block with a bandwidth of 15 MHz. 2010-2025 MHz is named sub-band A(i-vi), where the Roman numerals i-vi indicate the region.

Sub-band 2570-2620 MHz will be assigned as unpaired spectrum on a regional level. This sub-band is divided into five blocks, named B1(i-vi)-B5(i-vi). Each block has a bandwidth of 10 MHz.

Sub-bands 2540-2570 / 2660-2690 MHz will be assigned as unpaired spectrum on a national level. Each of these sub-bands is divided into three blocks named D1-D3 and E1-E3 respectively. Each block has a bandwidth of 10 MHz.

The duplex sub-band 2500-2540 /2620-2660 MHz will be assigned as paired spectrum on a national level. The sub-band is divided into eight blocks named C1-C8. Each block has a bandwidth of 2x5 MHz.

A national frequency block or a regional frequency block in one of the six regions, is called a **lot**. When bidding in the auction, bids are given on one or several lots.

A figure showing the band plan and the names of the different sub-bands is shown in Annex 1.

Principle for protection of neighbouring frequency blocks

More detailed descriptions of the protection of neighbouring frequency blocks will be presented later. In general, the following will apply for the frequency blocks where TDD is used as duplex method: The bottom 5 MHz of each licence will have heavy restrictions on the level of radiated

Example 1: An auction participant buys both blocks D1 and D2. The bottom 5 MHz of block D1 will have a strong restriction on the level of radiated power with regard to the rest of the blocks D1 and D2.

power.

Block B5 in particular

The top 5 MHz of block B5 will have strong restrictions on the level of radiated power.

Example 2: If an auction participant buys block B5 without buying block B4, the whole of block B5 will have strong restrictions on the allowed level of radiated power.

Example 3: If an auction participant buys both block B4 and block B5, the top 5 MHz of block B5 and the bottom 5 MHz of block B4 will have strong restrictions on the allowed level of radiated power.

Spectrum cap

In this frequency auction, spectrum cap is connected to the maximum amount of spectrum any bidder can get hold of. The use of spectrum cap is an instrument to ensure that the entire available spectrum is not acquired by one single bidder. To determine such a cap is difficult, and one gets in danger of preventing certain actors of implementing their plans to use the spectrum, in the way that the cap does not allow the award of the minimum amount of spectrum deemed necessary. The NPT expects a relatively high level of competition for the resources in this frequency band. Normally, this implies that the use of spectrum cap is not necessary. However, the NPT can not rule out the possibility that one single buyer wants to buy the total amount of available frequencies in this band, and such an outcome could be unfortunate for the market competition. The NPT therefore propose to set a spectrum cap that is relatively large. The spectrum cap should then not impact the licensee's planned use of the frequencies.

For the frequency blocks B1-B5 there is a general cap of 30 MHz. This means that no bidder can buy more than three blocks in each single region.

For the frequency blocks C1-C8, D1-D3 and E1-E3, NPT propose a general spectrum cap of 80 MHz. This means that the bidders can combine their bidding on both paired and unpaired spectrum as long as the total amount of spectrum does not exceed the limit of 80 MHz.

The NPT propose to leave block A outside the spectrum cap. This means that block A still can be bought even if a bidder has reached the limit of 80 MHz + 30 MHz in the frequency band 2500-2690 MHz.

Question 1: *Should there be a spectrum cap in this auction? If so, how should this spectrum cap be defined?*

Auction principle

The auction will be a version of a simultaneous multiple round auction with the possibility of switching, i.e. bids can be transferred between lots according to some specific rules.

The auctioneer (NPT) decides the bid increments for each round in the auction, and the auction participants decide whether they will bid on the different items (lots) by ticking a check box in the web based interactive auction software. The switching of bids will be allowed between lots in the blocks B1-B5 within the same region, and between lots in the blocks C, D and E. Complete auction rules will be published later.

Example 4: An auction participant has committed bids on the blocks D1 and D2 (unpaired spectrum) after round 1. He wishes to switch these bids to paired spectrum in block C. In round two, this can be done by withdrawing the bids on blocks D1 and D2 and place new bids on for instance blocks C1 and C2. After this has been done, the bidder's committed bids have changed from 20 MHz of unpaired spectrum to 2x10 MHz of paired spectrum.

Participation in the auction

The procedure for registration as a bidder in the auction will be published in the auction rules. However, NPT wants to point out a main rule having impact on who is allowed to take part in the auction.

Any person or undertaking may register as a bidder. In cases where persons or entities have such a relationship between them that they would be treated as a single unit for the application of Article 53 (1) of the EEA agreement (Article 81 (1) of the EC Treaty), only one of them may register as a bidder. Bidders can not have more than one bid vehicle, i.e. only one person per bidder can be logged on to the auction system at any given time.

How to respond to this consultation

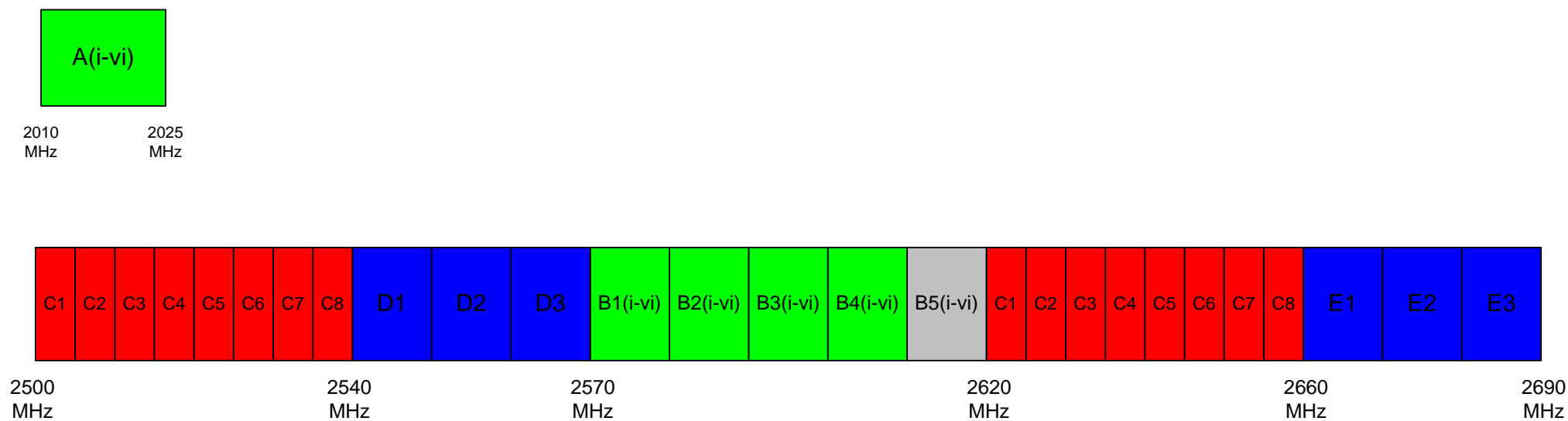
Views on this document shall be sent to the following e-mail address: 2.6GHz.auction@npt.no, with any attachments in word-format. Fill in "Consultation 2.6 GHz" in the subject field.

The deadline for this consultation is 18 May 2007.

The NPT will make all answers available on our webpage, www.npt.no. If someone wishes that the whole answer, or parts of it, should not be published or furthermore should be exempt from public disclosure, this should be clearly stated in the communication to the NPT.

Questions regarding this document and anything else concerning the 2.6 GHz auction can be sent to 2.6GHz.auction@npt.no.

Annex 1. Frequency band plan, 2010-2025 MHz / 2500-2690 MHz



C1-C8 are paired spectrum, national licences.

D1-D3 and E1-E3 are unpaired spectrum, national licences.

A and B1-B5 are unpaired spectrum, regional licences, with the regions numbered i-vi.