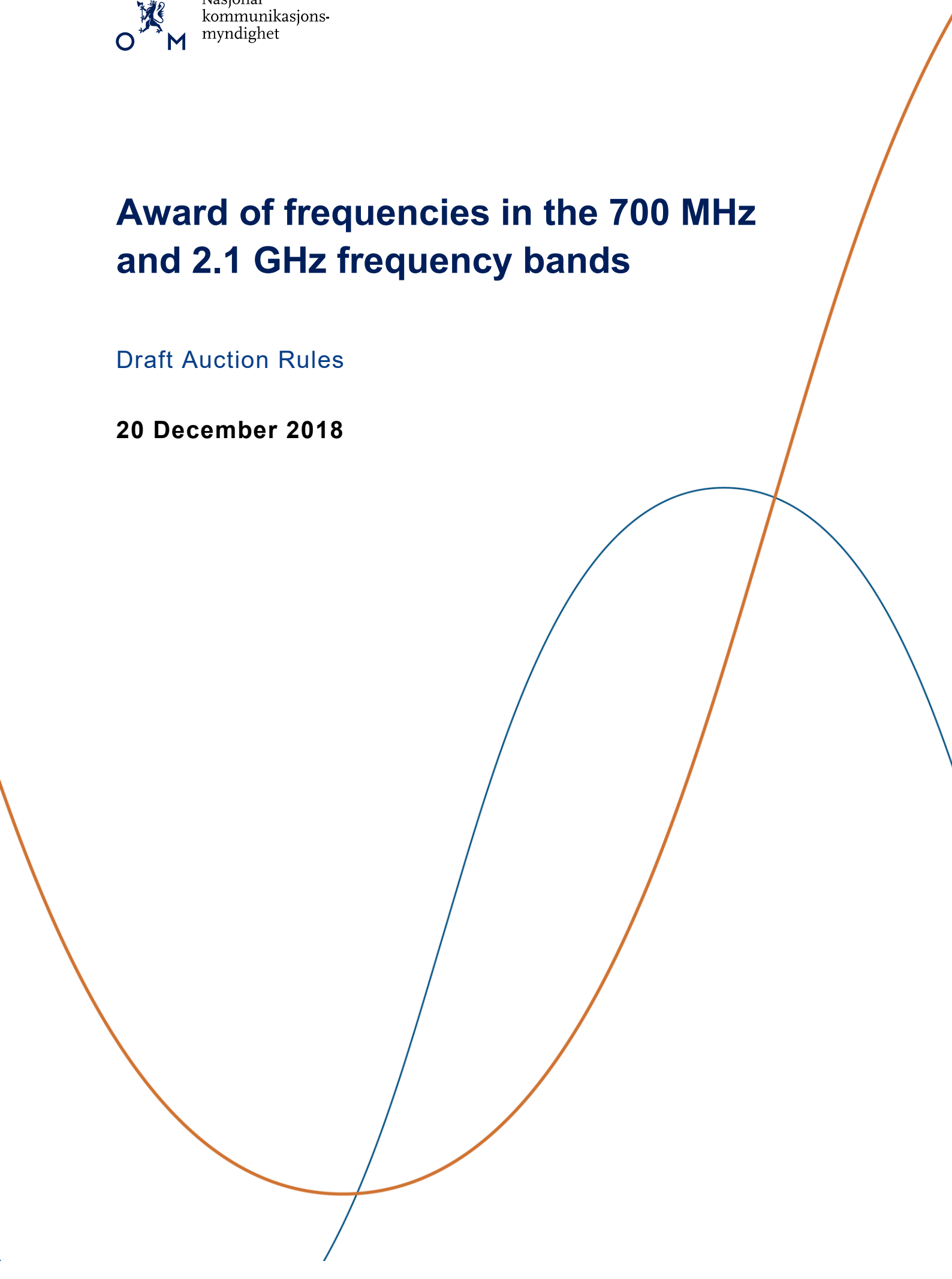


Award of frequencies in the 700 MHz and 2.1 GHz frequency bands

Draft Auction Rules

20 December 2018



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1 Introduction

In this document entitled “Award of frequencies in the 700 MHz and 2.1 GHz frequency bands – Draft Auction Rules”, the Norwegian Communications Authority (Nkom) presents the draft auction rules for the award of spectrum in the 700 MHz¹ and 2.1 GHz² bands (the ‘award bands’). The auction will determine how much of the spectrum available and which specific frequencies will be assigned to each winning bidder, and the price they will be required to pay to be awarded their corresponding licences.

The draft auction rules are released 20 December 2018 for public consultation. The deadline for responding is 13 February 2019.

Once the draft rules are finalised, following any amendments deemed necessary following the consultation, Nkom will publish the final auction rules. The final auction rules will constitute, together with the document entitled “Overordnede rammer for tildeling av 700 MHz- og 2.1 GHz-båndene” (in Norwegian only), published 20 December 2018, the regulations for the award.

All specific dates that follow in this document are tentative proposals. The time schedule may be altered and the process postponed.

2 Overall framework

The document entitled “Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene” (in Norwegian only), published 20 December 2018, states the overall objectives and the overall framework for the award. This includes regulation on auction format, reserve prices,

¹ 703-733 MHz / 758-788 MHz.

² 1920-1980 MHz/ 2110-2170 MHz.

coverage obligations and spectrum cap. The overall framework has been subject to consultation and is set by the Ministry of Transport and Communications and is not part of the consultation of the auction rules.

3 Spectrum available for this award

3.1 Spectrum available for auction in the 700 MHz band

There is a total of 2 x 30 MHz available for auction in the 700 MHz band, available as a contiguous duplex frequency block.

The spectrum available for auction in the 700 MHz band is offered in blocks of 2 x 5 MHz, labelled 700_1 to 700_6, as illustrated in *Figure 1*.

703 MHz / 758 MHz			733 MHz / 788 MHz		
700_1 (2 x 5 MHz)	700_2 (2 x 5 MHz)	700_3 (2 x 5 MHz)	700_4 (2 x 5 MHz)	700_5 (2 x 5 MHz)	700_6 (2 x 5 MHz)

Figure 1 – Frequencies in the 700 MHz band available for auction

3.2 Spectrum available for auction in the 2.1 GHz band

There is a total of 2 x 15 MHz³ available for auction in the 2.1 GHz band, available as a contiguous duplex frequency in the upper part of the band. Telenor Norge AS (Telenor), Telia Norge AS (Telia) and ICE Communication Norge AS (ICE) currently hold licences in the 2.1 GHz band that expire 31 December 2032. These licences are not part of the auction. The spectrum in the 2.1 GHz band is illustrated in *Figure 2*.

³ Currently only 2 x 14.8 MHz is available in the band, but Nkom is considering a potential expansion of the 2.1 GHz band, which would make it possible to assign 2 x 15 MHz in the auction. Whether 2 x 15 MHz or only 2 x 14.8 MHz will be available in the auction will be clarified in the final auction rules.

1920 MHz / 2110 MHz	1980 MHz / 2170 MHz		
Telia 2 x 20 MHz 31.12.2032	Telenor 2 x 20 MHz 31.12.2032	ICE 2 x 5 MHz 31.12.2032	Vacant 2 x 15 MHz

Figure 2 – Frequencies in the 2.1 GHz band – existing holdings and available for auction (marked as vacant)

The spectrum available for auction in the 2.1 GHz band is offered in blocks of 2 x 5 MHz,⁴ labelled 2100_1 to 2100_3, as illustrated in Figure 3.

1965 MHz / 2155 MHz	1980 MHz / 2170 MHz	
2100_1 (2 x 5 MHz)	2100_2 (2 x 5 MHz)	2100_3 (2 x 5 MHz)

Figure 3 – Frequencies in the 2.1 GHz band available for auction

3.3 Coverage obligations

All of the spectrum offered in the 700 MHz band are subject to an obligation to provide coverage to 40 % of the Norwegian population within 5 years.⁵

In addition, two of the blocks offered in the 700 MHz band will be subject to special coverage obligations to be fulfilled before 31 December 2025:⁶

- one block will be subject to an obligation to cover railways; and
- one block will be subject to an obligation to cover main motorways.

There are no coverage obligations attached to the spectrum offered in the 2.1 GHz band.

A second coverage obligation on motorways (the ‘additional coverage obligation’) to be fulfilled before 31 December 2025 will also be offered to winners of spectrum in the auction, in exchange for a discount in the licence price they have to pay.

⁴ If only 2 x 14.8 MHz are available, then two of these blocks will include 2 x 5 MHz, and the third block will include 2 x 4.8 MHz. In this case, the specific frequencies available in the 2.1 GHz band will be 1964,9-1979,7 MHz / 2154,9-2169,7 MHz, and the specific size of each block will be determined within the auction process as explained below.

⁵ Cf. “Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene”, 20 Desember 2018 and draft spectrum licence for the 700 MHz band.

⁶ Cf. “Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene”, 20 Desember 2018 and draft spectrum licence for the 700 MHz band.

3.4 Three-stage process for the assignment of frequency-generic lots, specific frequencies and the additional coverage obligation

The award will consist of three stages.

The first stage is the **lot assignment stage**. It will determine the number of frequency-generic lots that will be assigned to each bidder in each band. For this stage, the blocks in each band are offered as frequency-generic lots; each lot will correspond to a frequency block in the corresponding band, but will not be linked to a specific frequency block. Therefore, in this stage bidders can bid for a number of lots in a given band, but without being able to specify particular frequency blocks within the band.

The second stage is the **frequency assignment stage**. It will determine the specific frequencies that will be assigned to the winners of lots in the preceding stage, under the guarantee that the frequency blocks assigned to each winner within a band will be contiguous.⁷

The third stage is the **additional coverage obligation assignment stage**. It will determine the assignment of the additional coverage obligation. Winners of spectrum will be able to participate in this third stage, and make an offer determining the minimum discount on the price they have to pay for the spectrum they have been assigned in the preceding stages for which they would be willing to take up the additional coverage obligation. Only one additional coverage obligation will be assigned, to the bidder who offers to take the obligation for the smallest discount.

3.5 Frequency-generic lots

We define the following frequency generic lots, which will be offered in the lot assignment stage:

- **A lots**, including four lots labelled **A1**, **A2**, **A3** and **A4**. Each of the A lots consists of a block of 2 x 5 MHz in the 700 MHz band and is not subject to the special coverage obligations;
- **Lot R**, a block of 2 x 5 MHz in the 700 MHz band subject to the obligation to cover railways;
- **Lot M**, a block of 2 x 5 MHz in the 700 MHz band subject to the obligation to cover main motorways; and

⁷ If only 2 x 14.8 MHz are available, this stage will also determine the exact bandwidth assigned to each winner, depending on whether the winner is assigned the 2 x 4.8 MHz block.

- **B lots**, including three lots labelled **B1**, **B2** and **B3**. Each of the B lots consists of a block of 2 x 5 MHz in the 2100 MHz band.

3.6 Contiguous spectrum

Winners of spectrum will be assigned the frequencies they have won in each band as a contiguous duplex frequency range.

In the 2.1 GHz band it is possible that ICE, who already holds 2 x 5 MHz in the band adjacent to the vacant frequencies, may win additional spectrum. In order to provide an opportunity for ICE to ensure that all of the spectrum it holds in this band after the auction is contiguous without excluding the possibility that other potential winners might be able to win block 2100_1, Nkom proposes to allow ICE to opt for the potential reassignment of the specific frequency range that corresponds to the 2 x 5 MHz block it already holds in this band. If ICE opts for this, then it will be guaranteed that all of the spectrum it is assigned in the 2.1 GHz band (including the 2 x 5 MHz of its current holdings and any new spectrum it acquires in the auction) will form a contiguous duplex frequency range, but which will not necessarily overlap with the specific frequency range it currently has assigned. Alternatively, if ICE does not opt for the potential reassignment of the specific frequency range that corresponds to the 2 x 5 MHz block it already holds in the 2.1 GHz band, then any new spectrum it acquires in the auction will form a contiguous duplex frequency range, but will not necessarily be contiguous to the 2 x 5 MHz block it already holds in this band.

An alternative, simpler approach to guarantee congruity of spectrum holdings in the band would be to administratively assign to ICE, if it wins any B lots, the corresponding number of spectrum blocks starting from 2100_1, so that any new spectrum assigned to ICE is contiguous to its current holdings. However, this would mean that in the event that both ICE and any other bidders win 2.1 GHz spectrum, then other winners would not be able to bid for the lower frequency blocks. Nkom is seeking input from interested parties in relation to whether they expect value differences between the different frequency blocks available in the 2.1 GHz band,⁸ and in particular on whether the lower frequency blocks might be preferable to the higher frequency blocks. Depending on the materiality of potential value differences across the blocks available in the 2.1 GHz band, Nkom might amend the proposals for the frequency assignment stage, adopting the simpler approach of directly assigning any spectrum won by ICE in this band next to the block it currently holds.

⁸ Related to the specific frequencies assigned to a bidder, not to potential differences in bandwidth in the event that only 2 x 14.8 MHz are available in the 2.1 GHz band.

Question: Do you consider there to be value differences across the blocks available in the 2.1 GHz band?

3.7 Reserve prices

The reserve prices have been set in the overall framework for the award.⁹

The reserve prices are:

- for each of the A lots, NOK 125 000 000;
- for lot R, NOK 30 000 000;
- for lot M, NOK 55 000 000; and
- for each of the B lots, NOK 25 000 000.

3.8 Maximum discount on the licence price at which the additional coverage obligation might be assigned

The maximum discount on the licence price at which the additional coverage obligation might be assigned (the 'maximum discount') has been set in the overall framework for the award.¹⁰

The maximum discount is NOK 40 000 000.

3.9 Spectrum caps

Spectrum caps establish the maximum total bandwidth a bidder is permitted to acquire in the auction. The spectrum caps have been set in the overall framework for the award.¹¹

There is a cap of 2 x 20 MHz on the total bandwidth that any one bidder is permitted to acquire in the 700 MHz band.

There is a cap of 2 x 35 MHz on the total bandwidth that any one bidder is permitted to hold across the 450 MHz, 700 MHz, 800 MHz and 900 MHz bands (including spectrum acquired in the auction and spectrum corresponding to pre-existing licences). Therefore, the total

⁹ "Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene", 20 Desember 2018. The reserve prices have already been confirmed as part of the overall framework and are not subject to this consultation.

¹⁰ "Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene", 20 Desember 2018. The maximum discount has already been confirmed as part of the overall framework and is not subject to this consultation.

¹¹ "Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene", 20 Desember 2018. The spectrum caps have already been confirmed as part of the overall framework and are not subject to this consultation.

bandwidth of 700 MHz spectrum that a bidder may be able to acquire in the auction will depend on the spectrum it already holds in the other bands over which the cap applies.

There is a cap of 2 x 20 MHz on the total bandwidth that any one bidder is permitted to hold in the 2.1 GHz band (including spectrum acquired in the auction and spectrum corresponding to pre-existing licences). Therefore, the total bandwidth of 2.1 GHz spectrum that a bidder may be able to acquire in the auction will depend on the spectrum it already holds in the 2.1 GHz band.

3.10 Licence terms and conditions

The licence terms and conditions have been set in the overall framework for the award¹² and the draft spectrum licences for the 700 MHz and 2.1 GHz bands.

Spectrum licences will be assigned for terrestrial frequency use on the Norwegian mainland, the internal waters¹³ and out to 70 kilometres from the baseline, with the exception of Svalbard, Jan Mayen and the Norwegian dependencies.

Licences for spectrum in the 700 MHz band will be valid from 1 November 2019 and expire on 31 December 2039. Licences for spectrum in the 2.1 GHz band will be valid from the date they are issued and expire on 31 December 2032.

Spectrum licences will be technology neutral subject to the draft licences. The frequencies must be used for terrestrial radio applications capable of providing electronic communications services. Specific usage restrictions, technical conditions etc. are specified in the draft licences for each band.

The licence will be tradable, including sale, lease etc. according to the Electronic Communications Act Section 6-5.

The licensee is required to pay annual administrative charges to Nkom, cf. Section 12-1 of the Electronic Communications Act. Since the licence in the 700 MHz band will be valid from 1 November 2019, the administrative charges for licences in this band will be levied from 1 July 2019 onwards.¹⁴ For the licences in the 2.1 GHz band these will be levied from

¹² "Overordnede rammer for tildeling av 700 MHz- og 2,1 GHz-båndene", 20 Desember 2018. The licence terms and conditions have already been confirmed as part of the overall framework and are not subject to this consultation.

¹³ Section 3 of Act no. 57 of 27 June 2003 concerning Norway's territorial waters and related zones.

¹⁴ Regulation No. 386 of 20 March 2017 concerning sector fees and charges payable to the Norwegian Communications Authority Section 4.

1 January 2019 or 1 July 2019 onwards, depending on when the spectrum licences are issued.¹⁴

The annual sector fee for the 700 MHz band are expected to be approximately at the same level as the sector fees in the 800 MHz band.¹⁵

Estimated annual administrative charges pr. 2 x 5 MHz (based on number for 2018)	
700 MHz band	Approx. NOK 485 000
2.1 GHz band	Approx. NOK 492 000

Table 1 – Estimated annual administrative charges

With reference to Section 12-2 of the Electronic Communications Act, the licensee is required to pay annual spectrum fees. The spectrum fee is adjusted yearly by Stortinget (the Norwegian Parliament). Annual spectrum fees are payable from the month the spectrum is available for the licensee.

Estimated annual fees pr. 2 x 5 MHz (based on numbers for 2019)	
700 MHz band	Approx. NOK 1 485 000
2.1 GHz band	Approx. NOK 1 373 000

Table 2 – Estimated annual sector fees

4 Overview of the auction process

4.1 Auction process

The auction process consists of three stages:

¹⁵ This requires amendments to the Regulation No. 386 of 20 March 2017 concerning sector fees and charges payable to the Norwegian Communications Authority Section 15. In 2019 the sector fee will be calculated based on the current wording in Section 15 and will be approx. NOK 132 500 for a half year licence.

- the **lot assignment stage** will determine the assignment of frequency-generic lots amongst bidders, and the corresponding 'lot assignment prices', on the basis of a simultaneous multi-round bidding process;
- the **frequency assignment stage** will determine the assignment of frequency blocks to each winner of frequency-generic lots in the preceding stage, and the corresponding 'frequency assignment prices', on the basis of a sealed-bid process; and
- the **additional coverage obligation assignment stage** will determine the potential assignment of the additional coverage obligation to a winner of 700 MHz spectrum in the preceding stage, and the 'additional coverage obligation discount' that will be given to the winner of the additional coverage obligation on its licence price, on the basis of a sealed-bid process;

The total auction price to be paid by each bidder who acquires spectrum in the auction will be the sum of its lot assignment prices and its frequency assignment prices minus, in the event that the bidder is assigned the additional coverage obligation, the additional coverage obligation discount, floored at zero.¹⁶

4.2 Lot assignment stage

The lot assignment stage will follow a Simultaneous Multiple Round Ascending (SMRA) bidding process. Bids will be made over the course of rounds, during which bidders will be able to select the lots they wish to bid for at prices announced by Nkom.

If a bidder does not make a submission in the first round, the auction system will automatically make a default submission on behalf of the bidder for the maximum number of lots it could acquire at the reserve price given the bank guarantee it provided, see Section 6.6 and 10.2.3.

At the end of each round, Nkom will select 'standing high bids' for the lots available and inform each bidder of the standing high bids it holds. If any bids were received in the round, Nkom will call for a new round in which bidders will be given an opportunity to submit higher bids. The lot assignment stage will end after the first round in which no more bids are received.

¹⁶ In the event that the additional coverage discount is greater than the sum of the lot assignment prices and frequency assignment prices for the bidder who is assigned the additional coverage obligation, then the total auction price for this bidder will be zero.

Under exceptional circumstances, Nkom may schedule a final sealed-bid round, see Section 10.2.5, in which bidders would be able to submit their final offers for the lots available, and the highest bids would become the standing high bids.

At the end of the lot assignment stage each lot will be allocated to the bidder holding the standing high bid on the lot, at a price equal to its bid.

4.3 Frequency assignment stage

The frequency assignment stage will determine the assignment of frequencies in each of the award bands.

The frequency assignment stage will provide an opportunity for those bidders who could be assigned different frequency blocks (in correspondence with the lots they have won in the lot assignment stage) to make bids for the different options they might have available.

In the 700 MHz band, the number of blocks that a bidder will be assigned will be equal to the total number of A, R and M lots it has been assigned in the lot assignment stage.

In the 2.1 GHz band, it is possible that ICE, who already holds one 2 x 5 MHz lots in the band, might win additional lots in this auction. ICE can, when applying to participate in the auction, opt for the inclusion of the lot it currently holds in the frequency assignment stage. If ICE takes this option, then:

- there will be four frequency blocks available for the assignment of 2.1 GHz frequencies, and the block currently held by ICE will be labelled 2100_0, the blocks available for the frequency assignment stage in the 2.1 GHz band will be as illustrated in *Figure 4*; and
- the number of blocks that ICE will be assigned in the 2.1 GHz band will be equal to the number of B lots it has been assigned in the lot assignment stage plus one.

1960 MHz / 2150 MHz	1980 MHz / 2170 MHz		
2100_0 (2 x 5 MHz)	2100_1 (2 x 5 MHz)	2100_2 (2 x 5 MHz)	2100_3 (2 x 5 MHz)

Figure 4 – Frequencies in the 2.1 GHz band available for auction if ICE opts to include its current block in the frequency assignment stage

Otherwise, if ICE does not include its current block in the frequency assignment stage, then only three blocks will be available for the assignment of 2.1 GHz frequencies, as illustrated in

Figure 3 above, and the number of lots that it will be assigned will be equal to the number of B lots it has been assigned in the lot assignment stage.

For any other bidders, the number of blocks that a bidder will be assigned in the 2.1 GHz band will be equal to the number of B lots it has been assigned in the lot assignment stage.

The first step will be for Nkom to shortlist the 'candidate plans' in each of the two bands, which are the plans in which:¹⁷

- each bidder is assigned the corresponding number of contiguous frequency blocks, and
- unsold lots are also contiguous.

If more than one plan has been shortlisted for a band, then Nkom will list the alternative frequency assignments that each bidder could be assigned in that band. Nkom will then run a sealed-bid process in which bidders who could be assigned different options are invited to bid for their preferred options. The bidding process will be run simultaneously for the two bands. Nkom will then select the winning band plan and calculate frequency assignment prices, independently for each band, as explained below.

4.4 Additional coverage obligation assignment stage

The additional coverage obligation assignment stage will determine the possible assignment of the additional coverage obligation to a bidder who has been assigned spectrum in the auction, in exchange for a discount on the total price it will be required to pay for its assignment.

Bidders who have been assigned spectrum in the auction will be able to submit their offer for taking up the additional coverage obligation. The offer will specify the minimum discount for which the bidder is willing to take up this obligation. There is no requirement for bidders to bid in this stage.

¹⁷ If only 2 x 14.8 MHz are available in the 2.1 GHz band, then there will be different candidate plans depending on the specific size of blocks. E.g. if there were two winners and no unsold spectrum, each winner would have four different options:

- one in which it would receive frequency blocks at the lower end of the available range and all of these would be of 2 x 5 MHz;
- a second one in which it would receive frequency blocks at the lower end of the available range and one of these would be of 2 x 4.8 MHz;
- a third one in which it would receive frequency blocks at the upper end of the available range and all of these would be of 2 x 5 MHz; and
- a fourth one in which it would receive frequency blocks at the upper end of the available range and one of these would be of 2 x 4.8 MHz.

At most one additional coverage obligation will be assigned. Nkom will rank the bids received from lowest to highest, with any ties broken at random. The bid ranked first (i.e. the lowest offer) will win, and the bidder who has submitted this offer will be assigned the additional coverage obligation, in exchange for an additional coverage obligation discount equal to its offer.

5 Requirements for participation in the auction

5.1 The participants

Persons or undertakings registered in the European Economic Area (EEA) or Switzerland may register for the auction. Note that the undertakings must be registered with an organisation number from The Brønnøysund Register Centre (www.brreg.no) before a frequency licence will be issued.

In cases where persons or undertakings would be treated as a single economic unit, with respect to Article 53 (1) of the EEA agreement (Article 101 (1) of the TEU Treaty), only one of these may register as a bidder. This implies that two or more undertakings within the same corporate group may not register for the auction.

Persons or undertakings may be refused to participate in the auction to prevent activities that may cause a non-insignificant risk of security-threatening activities, based on the Security Act¹⁸ Section 5a.

5.2 Financial situation

A person or undertaking cannot participate in the auction if the person or the undertaking:

- is in suspension of payments
- has entered into debt settlement negotiations/proceedings
- is insolvent or is subject to a petition of bankruptcy or winding-up, or has passed a resolution for a voluntary winding up
- has gone into bankruptcy/liquidation

¹⁸ Act of 20 March 1998 No. 10 relating to Protective Security Services

5.3 Prohibition of collusive behaviour

Agreements or concerted practices which have as their object or effect the prevention, restriction or distortion of competition, i.e. collusive behaviour regarding bidding or bidding strategies, are prohibited under Section 10 of The Competition Act.

5.4 Obligations concerning a public procurement process for next-generation emergency communications network

Nkom refers to the ongoing process of concept study for the next-generation emergency communications network in Norway. Winning bidders of frequency licences in the 700 MHz band are obliged to deliver an offer in a public tender for suppliers of the next-generation emergency communications network.

5.5 Registration

Only persons or undertakings who register in accordance with the provisions set in these auction rules, cf. Section 6, are allowed to participate in the auction.

6 The registration process

6.1 Required registration documents

Valid registration for participation in the auction requires submission/delivery of the following registration documents and information:

- 1) The registration form provided in Annex 1
- 2) Certificate of Registration that states signature requirements and power of procuration
- 3) Description of ownership and organizational structure of the participant, e.g. if the participant constitutes, together with a parent company or a subsidiary or subsidiaries, a company group. Participants must inform Nkom if there are shareholders or companies, that have determinative influence over the participant that originate from or has relations to countries Norway does not have a security agreement with.

4) Credit rating, no older than 3 months and based on the last known annual accounts, conducted by a publicly approved credit institution. An explanation of the rating criteria must be included to elaborate the scores.

5) Bank guarantee with wording conform to the template in Annex 2

6) Written power of attorney for the financing bank/institute issuing the bank guarantee

7) The lots selected by the bidder for its default submission in the first round of the auction, see Annex 3

If ICE applies to participate in the auction, it will also be required to submit a letter signed by an authorised representative specifying whether it wishes to include the frequency block it currently holds in the frequency assignment stage (see Sections 3.6 and 4.3).

6.2 Bank guarantee, maximum activity in the first round and requirements to increase the bank guarantee

The bank guarantee is payable on first demand.

The Norwegian State acts as self-insurer, consequently central bodies and categories of bodies governed by public law are exempted from presenting a bank guarantee. Nkom decides which bodies fall under the exemption.

The guarantee must be issued by a financial institution registered in the EEA or Switzerland, and otherwise meet the requirements stipulated by Nkom, see Annex 2.

The guarantee must be valid until [dd.mm.yyyy].

The guarantee must be at least NOK 25 000 000, and will determine the maximum number of lots for which the bidder will be allowed to bid in the first round of the auction. Specifically, the guarantee will determine the 'maximum activity' (see Section 10.2.6) of the bidder for the first round of the lot assignment stage, which will be equal to the smallest of:

- the amount of bidder's bank guarantee divided by NOK 25 000 000, and rounded down to the nearest whole number; and
- the maximum number of lots that the bidder would be able to acquire under the spectrum caps specified in Section 3.9.

The maximum activity in the first round will constrain the maximum number of lots a bidder may be able to bid for in any subsequent round of the lot assignment stage, in accordance with Section 10.2.6, and thus the maximum number of lots it may win.

Bidders may submit more than one bank guarantee. The maximum activity of the bidder will be determined in relation to the total amount across all the bank guarantees provided by the bidder.

During the auction, Nkom may give notice to one or more bidders, requiring them to increase their total bank guarantee to an amount specified by Nkom.

Where Nkom considers that a bidder's bank guarantee is insufficient given the bidders financial exposure in the auction (i.e. the sum of its highest bids on all the lots on which the bidder is active, in accordance with Section 10.2.6), Nkom might require the bidder to increase the total amount of its bank guarantee, to a level not exceeding 100% of its financial exposure. Nkom will specify a deadline, not less than three working days from giving notice, by which time the required bank guarantee must be provided.

In the case of a bidder that is in the course of a restructuring process, Nkom reserves the right to require additional bank guarantees, not exceeding 100% of its financial exposure, as it deems appropriate.

Nkom reserves the right to not schedule any rounds in the period between giving notice of a requirement to increase the bank guarantee to one or more bidders and the time at which the bank guarantee is provided, or once the deadline for providing the additional bank guarantee, whichever occurs earlier.

In the event that a bidder fails to increase its bank guarantee as required, Nkom may, among other things, restrict its ability to make further bids in the auction and/or cancelling some of its bids already submitted.

See Section 11.3 on payment under the guarantee.

6.3 Registration time frame

Registration documents can be delivered to Nkom from [dd.mm.yyyy].

The registration deadline is [dd.mm.yyyy], 12:00 Norwegian time.

6.4 Delivery of documents for registration

Original registration documents must be delivered in person or by courier or sent by mail and received by Nkom within the final date for registration [dd.mm.yyyy], 12:00 Norwegian time.

Please enclose the registration documents in an envelope and mark the envelope " 700 MHz and 2.1 GHz award".

The registration documents cannot be delivered electronically.

Nkom shall be informed in advance if registration documents are to be delivered in person or by courier. Please contact Vibeke Skofsrud (vsk@nkom.no) or Maria Iversen (miv@nkom.no) by e-mail or phone, telephone number; + 47 22 82 46 00.

The address for delivery by courier is:

Nasjonal kommunikasjonsmyndighet
Nygård 1
N-4790 Lillesand – Norway

The address for delivery by regular mail is:

Nasjonal kommunikasjonsmyndighet
Postboks 93
N-4791 Lillesand – Norway

6.5 Valid registration

Only approved original registration documents can be used as registration documents.

Original registration documents must be received by Nkom within the closing date.

The person or undertaking assumes the risk of ensuring that:

- All original registration documents are complete and duly signed and in accordance with requirements
- All original registration documents are delivered and received by Nkom within the closing date on [dd.mm.yyyy], 12:00 Norwegian time

Nkom will assess the registration documents and decide whether a registration is valid or not based on the provisions set in the auction rules. Nkom may allow rectification of minor errors or incorrections. Nkom will not extend the deadline for registration unless extraordinary circumstances occur.

Nkom will notify the person or undertaking whether the registration is considered valid or not within three working days after deadline for registration cf. Section 6.3.

6.6 Principal legal consequences of registration

Person or undertakings that register for participation in the auction accepts and agrees to be legally bound in accordance with the rules set in the overall framework¹⁹ and the auction rules.

Person or undertakings that register for participation must specify a default submission for the first round. The default submission must include at least one lot, and no more lots than the bidder's maximum activity for the first round as determined by its bank guarantee. The default submission will be a bid at reserve for each of the lots specified by the bidder. Upon registration, persons or undertakings that register for participation are committed to participate in the lot assignment stage of the auction and accept to be legally bound by their default submission for the first round.

The default submission can be overridden with a bid for at least one lot in the first round of the auction, and will only apply if the bidder fails to make a submission in the first round.

7 General rules on bidding

7.1 Assumption that bids are submitted on behalf of bidder

The representative(s) stated in the registration form will be considered authorized to act on behalf of the person or undertaking stated as bidder in the registration form.

Nkom will assume that any bids submitted in the auction using the authentication credentials given to the authorised representative(s) are submitted on behalf of the relevant bidder.

7.2 Liability for foreseeable situations

The bidder is liable for all foreseeable situations, such as circumstances on bidder's side, for instance delay, technical failures, breakdowns of the bidder's machinery/equipment, unavailability of the authorised representative(s) and the loss or damage of confidential material and information received from Nkom.

¹⁹ As commented in Section 2.

7.3 Principal legal consequences of bidding

Bids are unconditional and irrevocable. Bids remain binding until [dd.mm.yyyy]. Bidders may be released from their bids by notification from Nkom before this date.

Bidders are liable for the full amount of their licence price as determined in the auction, which will be equal to the sum of its lot assignment prices and its frequency assignment prices, minus the additional coverage obligation discount if the bidder is assigned the additional coverage obligation.

Bidders who receive a notification in accordance with the rules are obliged to pay their corresponding prices in the manner and to the place of payment stated by Nkom, see Section 11.

8 Exclusion from the auction

Breach of rules set in the overall framework and auction rules may lead to exclusion.

If a bidder is excluded from the auction, the bidder will remain liable for its bids and any payment following from these bids in case that the excluded bidder would have become a winner. However, an excluded bidder may not be awarded a licence.

Nkom may decide to void bids of a bidder who has been excluded. Voiding of bids may require a recalculation of winning bids and prices.

9 The auction process

9.1 Time frame

Bidders will receive an auction system user manual before the mock auction scheduled in May 2019. All bidders are obliged to participate in the mock auction.

The real auction will begin on [date] May 2019. The initial bidding schedule for the lot assignment stage will be announced to bidders at latest on the last business day before the start of the auction.

Unless otherwise announced, bidding will be conducted within normal business hours on each business day until bidding has stopped. The actual progress of the auction will be decided on a day-to-day basis and set at the discretion of Nkom.

9.2 Preparations for the bidders

The auction will be conducted over the Internet using an Electronic Auction System (EAS).

Upon qualification, Nkom will provide each qualified bidder with:

- the necessary authentication credentials (digital certificate, user name and login password) to access the EAS; and
- a code and a set of passwords to be used in communication between Nkom and the bidder during the mock auction and the auction.

Nkom will provide these to the authorised representative(s) stated as the bidder's representative in the registration form.

Any loss or damage of received confidential material must immediately be reported to Nkom.

The EAS can run on a standard web browser. No specialist software is required. Bidders will need a reliable broadband Internet connection. Registered bidders will be provided with a user manual for the EAS, which will include recommendations for configuring computers to use the EAS and a list of supported web browsers. Bidders will need to install the digital certificates provided by Nkom for authentication purposes on any computer they may intend to use to access the auction system. Detailed instructions for installing the digital certificates used for authentication, accessing the auction system and submitting bids will be provided in the auction system user manual.

Bidders are obliged to participate in the mock auction where they will have the opportunity to test their computers and familiarise themselves with the auction system.

10 Conduct of the auction

10.1 General rules for all stages

10.1.1 Bid rounds

A round is a fixed time window during which bidders may submit their bids. Rounds are scheduled by Nkom.

Once Nkom has scheduled a round, the following information will be available from the bidder interface of the EAS:

- the time at which the round is scheduled to start;

- the scheduled duration of the round; and
- the time at which the round is scheduled to end.

Nkom may reschedule a round in accordance with Section 10.1.4.

10.1.2 Submission of bids

Bidders may only submit bids during the time window specified by Nkom for each round. Bids must be submitted using the EAS.

Submitting bids using the EAS involves the following two steps:

- First, the bidder must enter the bids it wishes to submit in the round into a bid entry form provided by the EAS. The completed form needs to be submitted to the auction server, where the bids will be checked against the auction rules. If the set of bids is invalid, the bid entry form will be reloaded with an error message informing the bidder of the reasons why the set of bids entered is invalid.
- If the set of bids is valid, the bidder will be provided with a bid confirmation form, pre-filled with the set of bids checked by the auction system. The bidder will then have the option to confirm the bids that have been checked or revert to the bid entry form (where the bids may be modified and then re-submitted for checking). Once the bidder has confirmed a set of bids in a round, it cannot amend or withdraw any of the bids submitted, nor submit any further bids in that round.

Bids are only taken into consideration if the confirmation has been received by the auction server within the specified round time (including any extension period that may apply to the bidder as set out in Section 10.1.3). Confirmations received outside this time window will be rejected.

Once the auction server has received the bid confirmation form from the bidder, the auction system will provide an acknowledgement page to the bidder, setting out the details of the bids submitted. This acknowledgement page will be displayed on the bidder's interface until the round ends, allowing the bidder to verify that the auction server has received the bid confirmation form. It is the responsibility of the bidder to check the acknowledgement page provided by the auction system, and to alert Nkom if it believes that it has not been able to successfully submit its bids due to a technical error in the EAS.

10.1.3 Round extensions

If the scheduled end time of a round (in any of the auction stages) is reached and a bidder has not made its bids in the round in accordance with Section 10.1, then the round will be automatically extended by up to 30 minutes (the 'extension period'), if the bidder is granted an extension.

All bidders who do not submit a bid in a round and are granted an extension will be allowed to submit bids during the extension period. Bidders who are not granted an extension will not be allowed to submit bids during the extension period.

The extension period may be less than 30 minutes if all bidders who have been granted an extension submit their bids before the extension period reaches its maximum duration of 30 minutes.

Each bidder will begin the auction with two extensions rights for the lot assignment stage.

In the first round of the lot assignment stage, a bidder will be granted an extension if it has not made its bids in the round in accordance with Section 10.1.

In any subsequent round of the lot assignment stage, a bidder will be granted an extension if:

- it has at least one extension right remaining;
- it has not made its bids in the round in accordance with Section 10.1;
- its maximum activity in the round is strictly greater than zero (see Section 10.2.6);
and
- the number of lots on which it holds a standing high bid at the start of the round (see Section 10.2.4.2) is strictly less than its maximum activity.

A bidder who is granted an extension will have an extension right deducted from its pool of remaining extension rights.

Bidders are encouraged to make a submission for every round of the lot assignment stage whilst their maximum activity is greater than zero (see Section 10.2.6), in order to prevent accidental round extensions. Notice that after the first round this may be a submission without bids if the bidder does not wish to make any new bids.

In the frequency assignment stage and in the additional coverage obligation assignment stage, a bidder will be granted an extension if it is eligible to submit a bid, but has not made a bid in the round in accordance with Section 10.1.

10.1.4 Exceptional circumstances

In the case of exceptional circumstances during any stage of the auction, Nkom has the discretion to:

- reschedule a round that has been scheduled but has not yet started;
- postpone the end of a round in progress or the release of round results;
- postpone the scheduling of a round;
- cancel a round that is underway or has already been completed;
- grant additional extension rights to a bidder;

- exclude one or more bidders from the auction; and/or
- cancel the auction.

Nkom determines whether a situation of exceptional circumstances has arisen. Exceptional circumstances could include, for example, widespread technical failure or concern about possible collusion amongst bidders.

10.2 Lot assignment stage

10.2.1 Overview

The lot assignment stage determines the assignment of frequency-generic lots. It takes place over multiple rounds of bidding.

Under ordinary circumstances, Nkom will only schedule 'ascending price rounds', for which Nkom sets the price for each round on offer and bidders specify the lots for which they wish to make bids at these prices. The mechanics for bidding in ascending price rounds are set out in Section 10.2.4. The lot assignment stage will then end after the first ascending price round in which no bids are received.

However, under extraordinary circumstances, Nkom may, after any number of ascending price rounds, schedule a 'final sealed-bid round'. The mechanics for bidding in the final sealed-bid round are set out in Section 10.2.5. The lot assignment stage will then end after the final sealed-bid round.

In each round, bidders may submit bids for the frequency-generic lots on offer subject to the activity constraints outlined in Section 10.2.6. A bid made in the lot assignment stage is a price offer for a frequency-generic lot.

10.2.2 Lots offered in the lot assignment stage

In the lot assignment stage the spectrum is offered in the frequency-generic lots defined in Section 3.5, summarised below.

Lot	Description	Reserve price
A1	2 x 5 MHz in the 700 MHz band, not subject to the special coverage obligations	NOK 125 000 000
A2	2 x 5 MHz in the 700 MHz band, not subject to the special coverage obligations	NOK 125 000 000
A3	2 x 5 MHz in the 700 MHz band, not subject to the special coverage obligations	NOK 125 000 000
A4	2 x 5 MHz in the 700 MHz band, not subject to the special coverage obligations	NOK 125 000 000
R	2 x 5 MHz in the 700 MHz band subject to the obligation to cover railways	NOK 30 000 000
M	2 x 5 MHz in the 700 MHz band subject to the obligation to cover main motorways	NOK 55 000 000
B1	2 x 5 MHz in the 2100 MHz band	NOK 25 000 000
B2	2 x 5 MHz in the 2100 MHz band	NOK 25 000 000
B3	2 x 5 MHz in the 2100 MHz band	NOK 25 000 000

10.2.3 Default submission in the first round

In the event that a bidder does not make a submission in the first round of the lot assignment stage, Nkom will consider its default submission instead (specified by the bidder upon registration in accordance with Section 6) when determining round results.

The default submission can be overridden with a bid for at least one lot in the first round of the auction.

10.2.4 Ascending price rounds

10.2.4.1 Making bids in an ascending price round

Together with the round schedule, Nkom will announce the round price for each of the lots on offer. During the round, bidders may bid for the lots on offer at their corresponding round prices.

At the scheduled round start time, the EAS will present the bidder with the bid entry form for the round, which will contain a list of all the lots on offer and their round prices. A bidder may then bid on a lot at its round price by selecting that lot in the bid entry form.

The bidder should include all lots for which it wishes to bid in that round in the bid entry form, and make its submission in accordance with the procedure described in Section 10.1.

In the first round, each bidder must bid for at least one lot. Therefore, in the first round the bidder will not be allowed to submit a form that does not contain any bids. If the bidder does not actively make a submission with a bid for one or more lots, then its default submission, specified on application, will be its submission for the first round.

In subsequent rounds there is no requirement for the bidders to make bids. Therefore, from the second round onwards bidders will be allowed to submit a form that does not contain any bids; bidders can submit this form if they do not wish to make any new bids in the round and do not want to use an extension right. Bidders are encouraged to do this to avoid unnecessary delays in the auction.

10.2.4.2 Determination of standing high bids after an ascending price round

At the end of each ascending price round, Nkom determines the standing high bid on each lot as follows:

- if only one bid was received for the lot in the round, then this bid becomes the standing high bid on the lot;
- if two or more bids were received for the lot in the round, the standing high bid on the lot will be chosen at random from amongst these bids;
- if no bids for the lot were received in the round, but there is already a standing high bid on the lot, then this bid remains the standing high bid on the lot; and
- otherwise, there is no standing high bid on the lot.

Example 1: Determination of standing high bids

Suppose that there are three bidders (bidder 1, bidder 2 and bidder 3).

In the first round:

- bidder 1 bids on lots A1, A2 and R;
- bidder 2 bids on lots A3, A4 and M; and
- bidder 3 bids on lots A2, A3 and A4.

The determination of standing high bids after the first round would be as follows.

- lot A1: one bid was received for this lot (submitted by bidder 1); this bid becomes the standing high bid on lot A1.
- lot A2: two bids were received for this lot (submitted by bidder 1 and bidder 3), so one of these two bids is selected at random as the standing high bid on lot A2. Suppose that bidder 1's bid is selected as the standing high bid on lot A2.
- lot A3: two bids were received for this lot (submitted by bidder 2 and bidder 3), so one of these two bids is selected at random as the standing high bid on lot A3. Suppose that bidder 2's bid is selected as the standing high bid on lot A3.
- lot A4: two bids were received for this lot (submitted by bidder 2 and bidder 3), so one of these two bids is selected at random as the standing high bid on lot A4. Suppose that bidder 3's bid is selected as the standing high bid on lot A4.
- lot R: one bid was received for this lot (submitted by bidder 1); this bid becomes the standing high bid on lot R.
- lot M: one bid was received for this lot (submitted by bidder 2); this bid becomes the standing high bid on lot M.
- lot B1: no bid was received for this lot, so there is no standing high bid on lot B1.
- lot B2: no bid was received for this lot, so there is no standing high bid on lot B2.
- lot B3: no bid was received for this lot, so there is no standing high bid on lot B3.

In the second round:

- bidder 1 does not submit any bids;
- bidder 2 bids on lot A1; and
- bidder 3 bids on lots A1, A3 and A4.

The determination of standing high bids after the second round would be as follows:

- lot A1: two bids were received for this lot (submitted by bidder 2 and bidder 3), so one of these two bids is selected at random as the standing high bid on lot A1. Suppose that bidder 2's bid is selected as the standing high bid on lot A1 (replacing the previous standing high bid from bidder 1).
- lot A2: no bids were received for this lot, so the standing high bid on lot A2 remains unchanged (bidder 1's bid from the previous round).
- lot A3: one bid was received for this lot (submitted by bidder 3), this bid becomes the standing high bid on lot A3 (replacing the previous standing high bid from bidder 2).
- lot A4: one bid was received for this lot (submitted by bidder 3), this bid becomes the standing high bid on lot A4 (so bidder 3 raised its standing high bid on the lot).

- lot R: no bids were received for this lot, so the standing high bid on lot R remains unchanged (bidder 1's bid from the previous round).
- lot M: no bids were received for this lot, so the standing high bid on lot M remains unchanged (bidder 2's bid from the previous round).
- lot B1: no bids were received for this lot, which did not have a standing high bid, so lot B1 remains without a standing high bid.
- lot B2: no bids were received for this lot, which did not have a standing high bid, so lot B2 remains without a standing high bid.
- lot B3: no bids were received for this lot, which did not have a standing high bid, so lot B3 remains without a standing high bid.

10.2.4.3 Round prices and price increments for ascending price rounds

For each round, Nkom will specify the round price for each lot:

- if no bids have been received for the lot, its price will be the reserve price on the lot (this case applies to all lots in the first round);
- if any bids have been received for the lot in any preceding round, its price will be the highest bid received on the lot²⁰ plus a strictly positive bid increment determined by Nkom. Therefore, the round price for a lot cannot be lower than the highest bid received for the lot in any preceding round.

10.2.4.4 Information available at the end of each ascending price round

At the end of each round, Nkom will inform each bidder of:

- the lots on which it holds the standing high bid;
- for lots that have received bids in any preceding round, the highest bid received for the lot; and
- its activity in the round just finished (as defined in section 10.2.6).

10.2.5 Final sealed-bid round

10.2.5.1 Requirement of exceptional circumstances and notice to bidders

Under exceptional circumstances, and after all bidders have been notified in advance, Nkom may schedule a final sealed-bid round. This final sealed-bid round might be scheduled after a number of ascending price rounds.

²⁰ The amount of the highest bid received on a lot will be equal to the amount of the standing high bid on the lot, unless there is no standing high bid on a lot due to exclusion of the bidder who held the standing high bid on the lot.

10.2.5.2 Making bids in the final sealed-bid round

In the final sealed-bid round, bidders may specify the amounts of their bids (in whole NOK) and whether each of the bids applies to an A lot, lot R, lot M or a B lot. However, bidders who bid for A or B lots cannot indicate specific lots (A1 to A4, or B1 to B3) for these bids.

At the scheduled round start time, the EAS will present the bidder with the bid entry form for the round, which will contain an input field for each lot available. There will be one input field for the R lot, one input field for the M lot, four input fields for A lots (labelled generally as A lots without specifying A1 to A4), and three input fields for B lots (labelled generally as B lots without specifying B1 to B3).

For each type of lot (R, M, A and B) there will be a minimum bid amount, equal to the smallest standing high bid on that type of lot, or the reserve price on the lot if there is no standing high bid on the lot. Thus, for A lots the minimum bid will be the lowest of the standing high bids for A1, A2, A3 and A4 (or the reserve price for an A lot if any of these lots does not have a standing high bid). Similarly, for B lots the minimum bid will be the lowest of the standing high bids for B1, B2 and B3 (or the reserve price for a B lot if any of these lots does not have a standing high bid).

A bidder may bid for lots by specifying the bid amounts in the corresponding input fields of the bid entry form. Bids must be in whole multiples of one thousand NOK, and must be at least the minimum bid for that type of lot.

Bidders who hold the standing high bid on a lot will have the corresponding input fields pre-filled with their standing high bid amounts. The bidder will then be able to increase its standing high bids or leave them unchanged (however, it will not be able to delete or reduce its bid). The bidder may also be able to specify additional bid amounts in the remaining input fields.

Bidders will not be allowed to submit their bid form, if the total number of bid amounts entered in the bid form exceeds their maximum activity for the round.

The bidder should include all the bids it wishes to submit in the final sealed-bid round in the bid entry form. The bidder should then submit its bids in accordance with the procedure described in Section 10.1.

10.2.5.3 Determination of standing high bids at the end of the final sealed-bid round

At the end of the final sealed-bid round, Nkom will rank all the bids (including bids actively submitted by bidders and default bids for bidders who have not made a submission) for each type of lot (R, M, A and B), first by bid amount and in the event of a tie at random. Nkom will then select the standing high bids, as follows:

- for lot R, the bid for this lot that has been ranked first (if any);
- for lot M, the bid for this lot that has been ranked first (if any);
- for lot A1, the bid for A lots that has been ranked first (if any);
- for lot A2, the bid for A lots that has been ranked second (if there are more than one bids for A lots);
- for lot A3, the bid for A lots that has been ranked third (if there are more than two bids for A lots);
- for lot A4, the bid for A lots that has been ranked fourth (if there are more than three bids for A lots);
- for lot B1, the bid for B lots that has been ranked first (if any);
- for lot B2, the bid for B lots that has been ranked second (if there are more than one bids for B lots); and
- for lot B3, the bid for B lots that has been ranked third (if there are more than two bids for B lots).

10.2.6 Activity constraints

A bidder is active on a lot if:

- the bidder holds the standing high bid on the lot at the beginning of the round, and/or
- the bidder submits a bid for the lot in the round.

The activity of a bidder in a round is defined as the number of lots on which the bidder is active.

Example 2: Calculation of activity

Suppose that at the beginning of a round a bidder holds the standing high bid on lot A1.

Even if the bidder does not make any bids, it will be active on one lot (lot A1). Therefore, if the bidder does not submit any bids, then its activity will be one.

If the bidder submits a new bid for the A1 lot, it will simply continue to be active on this lot. Therefore, if the bidder only makes a new bid for lot A1 in this round, then its activity will still be one.

If the bidder makes a new bid for a lot which is not A1, then the bidder will *also* be active on this lot, so this will imply further activity. For instance, if the bidder makes only a new bid for lot A2 this round, its activity will be two. Similarly, if it makes new bids for two lots, for example A2 and R, then its activity will be three.

In the first round of the lot assignment stage, the activity of a bidder must be at least one.

A bidder's maximum activity in the first round is determined with reference to its bank guarantee, in accordance with Section 6.2.

A bidder's maximum activity in any round of the lot assignment stage after the first round is equal to its activity in the preceding round.

Example 3: Activity constraints

Suppose that a bidder's maximum activity in the first round is two, so it cannot bid for more than two lots in the first round. If the bidder bids for two lots in the first round, its activity in the first round is two. Accordingly, its maximum activity in the second round is two, so it cannot be active on more than two lots in round two. Suppose that the bidder is standing high bidder on one lot in round two and does not make any further bids. In this case, its activity in the second round (and thus its maximum activity for round three) is one. This means that the bidder will not be able to be active on more than one lot for the remainder of the auction, and thus that the bidder may be allocated at most one lot.

The EAS will block the submission of a set of bids that would violate the activity constraints.

If a bidder does not submit any bids in the first round in accordance with Section 10.1, its default submission provided by the bidder when registering to participate in the auction (see Section 6) will apply.

10.2.7 End of the lot assignment stage

The lot assignment stage will end after:

- the first ascending round in which no bids are received in accordance with Section 10.1; or
- the final sealed-bid round, if scheduled by Nkom in accordance with Section 10.2.5.

At the end of the lot assignment stage, each bidder will be allocated the lots on which it holds standing high bids after the final round of the lot assignment stage, and will be required to pay a total price equal to the sum of these standing high bids; this total price will be referred to as the **lot assignment price**.

The auction will then proceed to the frequency assignment stage.

10.2.8 Information available at the end of the lot assignment stage

At the end of the lot assignment stage, Nkom will inform each bidder of the lots it has been allocated and its lot assignment price.

10.3 Frequency assignment stage

10.3.1 Overview

The frequency assignment stage will determine the specific frequencies assigned to bidders who have been assigned lots in the lot assignment stage. The process is run separately for the two bands, but simultaneously. Nkom will first calculate the possible assignments of blocks in each of the bands and assess whether any bidders have alternative options. Where bidders have alternative options for any of the bands, then a single round will be run, in which bidders will be able to make one submission with any bids they wish to make for their preferred options. Nkom will then calculate the winning assignment plan and any additional frequency assignment prices that bidders may be required to pay.

10.3.2 Frequency blocks available in each band

There are six frequency blocks available in the 700 MHz band (700_1 to 700_6).

The frequency blocks available in the 2.1 GHz band depend on whether ICE has opted to include the block it currently holds in this band in the frequency assignment stage (see Section 4.3):

- if ICE has opted to include the block it currently holds in this band in the frequency assignment stage, there will be four blocks available (2100_0 to 2100_3);
- otherwise there will be three blocks available (2100_1 to 2100_3).

10.3.3 Frequency blocks to be assigned to each bidder

The frequency blocks to be assigned to each bidder in the 700 MHz band correspond to the number of lots of spectrum in that band that the bidder has been assigned in the lot assignment stage, i.e. the total number of A, R and M lots assigned to the bidder.

The frequency blocks to be assigned to ICE in the 2100 MHz band depend on whether ICE has opted to include the block it currently holds in this band in the frequency assignment stage (see Section 4.3):

- if ICE has opted to include the block it currently holds in this band in the frequency assignment stage, the number of blocks it will be assigned in this band will be equal to the number of B lots it has been assigned in the lot assignment stage plus one;
- otherwise, the number of blocks ICE will be assigned in this band will be equal to the number of B lots it has been assigned in the lot assignment stage

For any other bidder, the number of blocks it will be assigned in the 2.1 GHz band will be equal to the number of B lots it has been assigned in the lot assignment stage.

10.3.4 Identification of candidate plans

Nkom will identify the **candidate plans** for each band, which are those assignments of blocks in which:

- each bidder receives the corresponding number of contiguous frequency blocks in that band;
- all the unsold frequency blocks in the band are also contiguous.

In order to identify the candidate plans for each of the bands, Nkom will group any unsold lots in that band and then create all the possible orders in which winners and unsold could be placed in the band.²¹

Example 4: Identification of candidate plans

Suppose that in the 700 MHz band two bidders (bidder1 and bidder2) have each won two lots and two lots remain unsold. The candidate plans for this band are obtained by creating all the possible orders of the winners and unsold in the band, i.e.:

- plan i: bidder1 (blocks 700_1 and 700_2), bidder2 (blocks 700_3 and 700_4), unsold (blocks 700_5 and 700_6);
- plan ii: bidder1 (blocks 700_1 and 700_2), unsold (blocks 700_3 and 700_4), bidder2 (blocks 700_5 and 700_6);
- plan iii: bidder2 (blocks 700_1 and 700_2), bidder1 (blocks 700_3 and 700_4), unsold (blocks 700_5 and 700_6);
- plan iv: bidder2 (blocks 700_1 and 700_2), unsold (blocks 700_3 and 700_4), bidder1 (blocks 700_5 and 700_6);
- plan v: unsold (blocks 700_1 and 700_2), bidder1 (blocks 700_3 and 700_4), bidder2 (blocks 700_5 and 700_6); and
- plan vi: unsold (blocks 700_1 and 700_2), bidder2 (blocks 700_3 and 700_4), bidder1 (blocks 700_5 and 700_6).

10.3.5 Bidding process for the frequency assignment stage

A bidding process is only required if any bidder has more than one frequency option for any of the two bands. Such bidders are the **assignment bidders**.

The bidding process will consist of a single sealed-bid round in which each assignment bidder will be allowed to submit a single set of bids for its alternative frequency options. Bids

²¹ If only 2 x 14.8 MHz are available in the 2.1 GHz band, then Nkom will generate additional plans reflecting the possibility that different bidders might be assigned the 2 x 4.8 MHz block.

for different frequency options for a given band are mutually exclusive – the bidder will be assigned exactly one option for each band.

By submitting bids for some or all of its frequency options, an assignment bidder may be able to obtain a frequency option that it prefers over its alternative frequency options. However, this may be subject to the assignment bidder paying a ‘frequency assignment price’, calculated as described in Section 10.3.5.3. Where applicable, frequency assignment prices will be charged in addition to the bidder’s lot assignment price.

Assignment bidders are not required to submit bids in the frequency assignment stage. An assignment bidder who does not submit any bids for its frequency options still be assigned one of its frequency options and will not have to pay a frequency assignment price for this.

10.3.5.1 Making bids in the frequency assignment stage

A frequency assignment bid is the maximum price, in whole NOK, that the assignment bidder is offering to pay to be assigned a specific frequency option. Assignment bidders will be assigned exactly one frequency option in each band in which they have been assigned lots; therefore bids for alternative frequency options for the same band are mutually exclusive.

At the scheduled round start time, the EAS will present each assignment bidder with the bid entry form that lists the bidder’s frequency options in each of the bands where it has been assigned lots. Assignment bidders who have more than one frequency options in a band can enter bids for these different options.

An assignment bidder does not need to enter a bid for all the frequency options for which it can bid. The bid for frequency options for which the assignment bidder does not enter a bid will be zero. The assignment bidder may still be assigned one of these options, but in this case its frequency assignment price will be zero.

Assignment bidders should enter all the bids they wish to submit into the form, and make their submission in accordance with the procedure described in Section 10.1.

10.3.5.2 Determination of winning frequency assignment plans

The **total value** of a candidate plan is the sum of the bids from each assignment bidder for the frequency option it would be assigned in this candidate plan.

The winning frequency assignment plan must achieve the maximum total value across all of the candidate plans for that band. If several candidate plans achieve the maximum total value for a given band, then one of these will be randomly selected as the winning frequency assignment plan for that band.

Example 5: Determination winning frequency assignment plan

Following from the previous example, suppose that for the 700 MHz band we receive the following bids:

- bidder1: NOK 1,000 for blocks 700_1 and 700_2, NOK 0 for its other options; and
- bidder2: NOK 10,000 for blocks 700_1 and 700_2, NOK 0 for its other options.

In this case the value of the candidate winning plans would be:

- plan i: $\text{NOK } 1,000 + \text{NOK } 0 = \text{NOK } 1,000$;
- plan ii: $\text{NOK } 1,000 + \text{NOK } 0 = \text{NOK } 1,000$;
- plan iii: $\text{NOK } 0 + \text{NOK } 10,000 = \text{NOK } 10,000$;
- plan iv: $\text{NOK } 0 + \text{NOK } 10,000 = \text{NOK } 10,000$;
- plan v: $\text{NOK } 0 + \text{NOK } 0 = \text{NOK } 0$; and
- plan vi: $\text{NOK } 0 + \text{NOK } 0 = \text{NOK } 0$.

Therefore, the winning plan is either candidate plan iii or candidate plan iv. Suppose that plan iii is selected at random as the winning plan.

Now suppose that we receive the following bids instead:

- bidder1: NOK 1,000 for blocks 700_1 and 700_2, NOK 0 for its other options; and
- bidder2: NOK 10,000 for blocks 700_5 and 700_6, NOK 0 for its other options.

In this case the value of the candidate winning plans would be:

- plan i: $\text{NOK } 1,000 + \text{NOK } 0 = \text{NOK } 1,000$;
- plan ii: $\text{NOK } 1,000 + \text{NOK } 10,000 = \text{NOK } 11,000$;
- plan iii: $\text{NOK } 0 + \text{NOK } 0 = \text{NOK } 0$;
- plan iv: $\text{NOK } 0 + \text{NOK } 0 = \text{NOK } 0$;
- plan v: $\text{NOK } 0 + \text{NOK } 10,000 = \text{NOK } 10,000$; and
- plan vi: $\text{NOK } 0 + \text{NOK } 0 = \text{NOK } 0$.

The winning plan in this case is candidate plan ii, in which both bidders get their preferred option.

10.3.5.3 Determination of frequency assignment prices

Frequency assignment prices are calculated for each band separately.

The **minimum price for an assignment bidder** in a given band is:

- the maximum total value across all candidate plans that would be achieved if all the assignment bids from this assignment bidder were set to zero; minus
- the sum of bids made by each other assignment bidder for the frequency option it is assigned in the winning frequency assignment plan.

The **minimum price for a group of assignment bidders** in a given band is:

- the maximum total value across all candidate plans that would be achieved if all the assignment bids from all the assignment bidders in the group were set to zero; minus
- the sum of bids made by each assignment bidder not in the group for the frequency option it is assigned in the winning frequency assignment plan.

The frequency assignment prices for each band, consisting of one price for each of the assignment bidders with more than one option in that band, are in whole NOK and must satisfy the following conditions:

- the frequency assignment price for each assignment bidder is at most its bid for the frequency option it is assigned in the winning frequency assignment plan;
- the frequency assignment price for each assignment bidder is at least its minimum price;
- the sum of the frequency assignment prices for each group of assignment bidders must be at least the minimum price for the group;
- the sum of the frequency assignment prices across all assignment bidders is the smallest across all possible frequency assignment prices for that band that satisfy the conditions above; and
- the sum of squared differences between each assignment bidder's minimum price and its frequency assignment price is the smallest across all possible frequency assignment prices for that band that satisfy the conditions above.

Example 6: Determination of frequency assignment prices

Following the previous example, consider the case where bids were:

- bidder1: NOK 1,000 for blocks 700_1 and 700_2, NOK 0 for its other options; and
- bidder2: NOK 10,000 for blocks 700_1 and 700_2, NOK 0 for its other options.

and the winning plan is candidate plan iii.

The minimum price for bidder1 is calculated as follows:

- if all bidder1's bids are set to zero, the maximum value across all candidate plans would still be NOK 10,000 (achieved with plan iii or plan iv);
- the sum of bids by other bidders for their options in the winning frequency assignment plan is also NOK 10,000;
- therefore, the minimum price for bidder1 is NOK 0.

The minimum price for bidder2 is calculated as follows:

- if all bidder2's bids are set to zero, the maximum value across all candidate plans would be NOK 1,000 (achieved with plan i or plan ii);
- the sum of bids by other bidders for their options in the winning frequency assignment plan is NOK 0;
- therefore, the minimum price for bidder2 is NOK 1,000.

Therefore, the price for bidder2 in this example is NOK 1,000. In this case only one bidder can get its preferred option, and its frequency assignment price is the smallest amount that would have been necessary to outbid the other bidder, who wanted the same frequency blocks.

Now consider the second case in which bids are:

- bidder1: NOK 1,000 for blocks 700_1 and 700_2, NOK 0 for its other options; and
- bidder2: NOK 10,000 for blocks 700_5 and 700_6, NOK 0 for its other options.

and the winning plan is plan ii.

The minimum price for bidder1 is calculated as follows:

- if all bidder1's bids are set to zero, the maximum value across all candidate plans would be NOK 10,000 (achieved with plan ii or plan v);
- the sum of bids by other bidders for their options in the winning frequency assignment plan is also NOK 10,000;
- therefore, the minimum price for bidder1 is NOK 0.

The minimum price for bidder2 is calculated as follows:

- if all bidder2's bids are set to zero, the maximum value across all candidate plans would be NOK 1,000 (achieved with plan i or plan ii);
- the sum of bids by other bidders for their options in the winning frequency assignment plan is NOK 1,000;
- therefore, the minimum price for bidder2 is NOK 0.

In this second case the price is zero for all bidders, as their preferences for assignment options are compatible.

10.3.6 End of the frequency assignment stage

At the end of the frequency assignment stage, Nkom will inform each bidder of:

- the frequencies it will be assigned in each band in which it has won lots; and
- the frequency assignment price (if any) it has to pay for each of the bands.

The auction will then proceed to the additional coverage obligation assignment stage.

10.4 Additional coverage obligation assignment stage

10.4.1 Overview

The additional coverage obligation assignment stage will potentially assign the additional coverage obligation amongst bidders who have been assigned spectrum in the auction and who make an offer to take up this obligation. At most one additional coverage obligation will be assigned.

Only those bidders who have been assigned one or more lots in the auction are allowed to make bids in the stage. In this Section we refer to these bidders as 'eligible bidders'.

The process consists of a single round, during which eligible bidders can submit their bid. The bid indicates the minimum discount for which the bidder is willing to take up the additional coverage obligation, up to NOK 40 000 000. The lowest bid will win (with ties broken at random). The winner will be given a discount equal to its bid.

10.4.2 Bidding process for the additional coverage obligation assignment stage

The bidding process will consist of a single sealed-bid round in which each eligible bidder will be allowed to submit a single bid. Eligible bidders are not required to make a bid.

10.4.2.1 Making bids in the additional coverage obligation assignment stage

A bid in this stage indicated the minimum discount, in whole NOK, for which the bidder offers to take up the additional coverage obligation. Bids must be at least NOK 0 and cannot exceed NOK 40 000 000.

At the scheduled round start time, the EAS will present each eligible bidder with the bid entry form, which will provide an input field for the bidder to enter its bid.

Eligible bidders are not required to make a bid, in which case they should submit their bid form without entering an amount in the input field. Notice that entering zero in the input field

would indicate that the bidder is willing to take up the additional coverage obligation without a discount.

Eligible bidders who wish to submit a bid must do so in accordance with the procedure described in Section 10.1.

10.4.2.2 Determination of winning bid

Nkom will rank all the bids it receives, from lowest to highest, with any ties broken at random. It will then select the bid ranked first (the bid which offers to take the additional coverage obligation for the lowest discount) as the winning bid. The bidder who has submitted this bid will be assigned the additional coverage obligation.

If no bids are received, the additional coverage lot will remain unassigned.

10.4.2.3 Determination of additional coverage obligation discount

The additional coverage obligation discount will be equal to the winning bid.

10.4.3 End of the additional coverage obligation assignment stage

At the end of the additional coverage obligation assignment stage, Nkom will inform each eligible bidders of whether it has been assigned the additional coverage obligation, and it will inform the bidder who has been assigned the additional coverage obligation of the additional coverage obligation discount.

The auction will then end.

10.5 End of the auction

At the end of the auction Nkom will inform all bidders of:

- The identity of the winning bidders
- The frequencies assigned to the winning bidders
- The lot assignment price and frequency assignment price to be paid by each bidder
- The identity of the bidder who has been assigned the additional coverage obligation (if any)
- The additional coverage obligation discount (if any)
- The total price that each bidder has to pay for its assignment

The award process will then proceed to the payment and issuing of licences.

10.6 In the event of unsold spectrum – reservation for reassignment

If one or more lots remain unsold when the auction ends, Nkom reserves the right to reassign frequencies assigned in this auction. Reassignment/adjustment of placement of frequencies will be done to ensure efficient spectrum management and to ensure that any unsold spectrum can be allocated and assigned on a contiguous basis. Nkom aims on an overall basis to ensure that each licensee in each band can be assigned contiguous frequencies. Any potential costs incurred by licensees arising from a possible reassignment of frequencies will need to be borne by each licensee and will not be covered by Nkom or by the auction revenue.

11 Payment and issuing of licences

11.1 Notification

After the auction has been concluded, winning bidders will receive a notification from Nkom. The notified winning bidders shall pay the lot assignment and/or frequency assignment price(s) in full within ten - 10 - business days after Nkom submitted the notification.

11.2 Payment of bids

Payment shall be made to:

Nasjonal kommunikasjonsmyndighet
Postboks 93
N-4791 Lillesand
Norway

DNB - acc.nr. 7694 05 01632

In case of international money transfers, the following additional information must be included:

IBAN: NO 79 7694 05 01632
SWIFT: DNBANOKKXXX
Bank: DNB

11.3 Cover under the bank guarantee

In case of non-payment, delayed or incomplete payment of the lot assignment and/or frequency assignment price(s), Nkom has the right to demand payment under the guarantee to cover the price(s) in full or any unpaid portion of the price(s).

If delayed payment is caused by events constituting force majeure under Norwegian law, Nkom will prolong the deadline for payment accordingly.

Nkom may claim damages under the guarantee.

11.4 Return of the bank guarantee

The guarantee is returned to the bidder in the case where:

- the application to register for the auction is rejected;
- the auction procedure has been completed and the bidder had no licence assigned;
or
- the auction procedure has been completed and the bidder had a licence assigned and paid the full amount of the lot assignment and/or frequency assignment price(s).

11.5 Issuing of licences

The licence will be issued when a winning bidder has paid the price it is liable for its assignment, including its lot assignment price and its frequency assignment price for each band where applicable.

12 Announcement and publication of results

After winning bidders have been notified with the result of the auction, Nkom will make a public announcement with the following information:

- The identity of the participants in the auction
- The frequencies assigned to the winning bidders
- The lot assignment price and frequency assignment price to be paid by each bidder
- The identity of the bidder who has been assigned the additional coverage obligation (if any)
- The additional coverage obligation discount (if any)
- The total price that each bidder has to pay for its assignment

All participants and licensees in the band will be notified before Nkom makes the public announcement.

The participants in the action shall not announce or publish information about the auction before Nkom has made the above-mentioned public announcement.

Nkom will not publish information about losing bids.

Public disclosure of identity of participants and bids is subject to Norwegian Public Administration Act and the act relating to public access to documents in the public administration (Freedom of Information Act). Nkom will also assess the grounds for confidentiality for bid data and identity of participants if there are requests for disclosure.

13 Communication with Nkom

13.1 Questions made in writing

Questions concerning the auction rules and the auction process can be addressed to Nkom. All interested parties are entitled to submit questions to Nkom. Questions and other communication should be made in writing to 700GHz-2.1GHz-auction@nkom.no with a copy to vsk@nkom.no and miv@nkom.no.

Questions should be submitted in Norwegian with an English translation. The estimated response time to questions could be up to five working days. Nkom reserves the right not to answer questions received within the last five working days before the auction.

Nkom will publish all questions submitted and Nkom's answers on Nkom's website. The identity of the party who submitted the question will not be published.

13.2 Telephonic communication during test auction and real auction

A dedicated phone number at Nkom will be provided for qualified bidders for use during the mock auction and the real auction in case a bidder needs to contact Nkom, for example if the bidder should experience technical problems.

Nkom will provide bidder's representative(s) with caller codes for both the mock auction and the real auction. When contacting Nkom, the caller will need to state a code according to Nkom's request in order to identify the caller as the bidder's representative.