

800, 900 and 1800 MHz auction

Auction Rules

14 August 2013

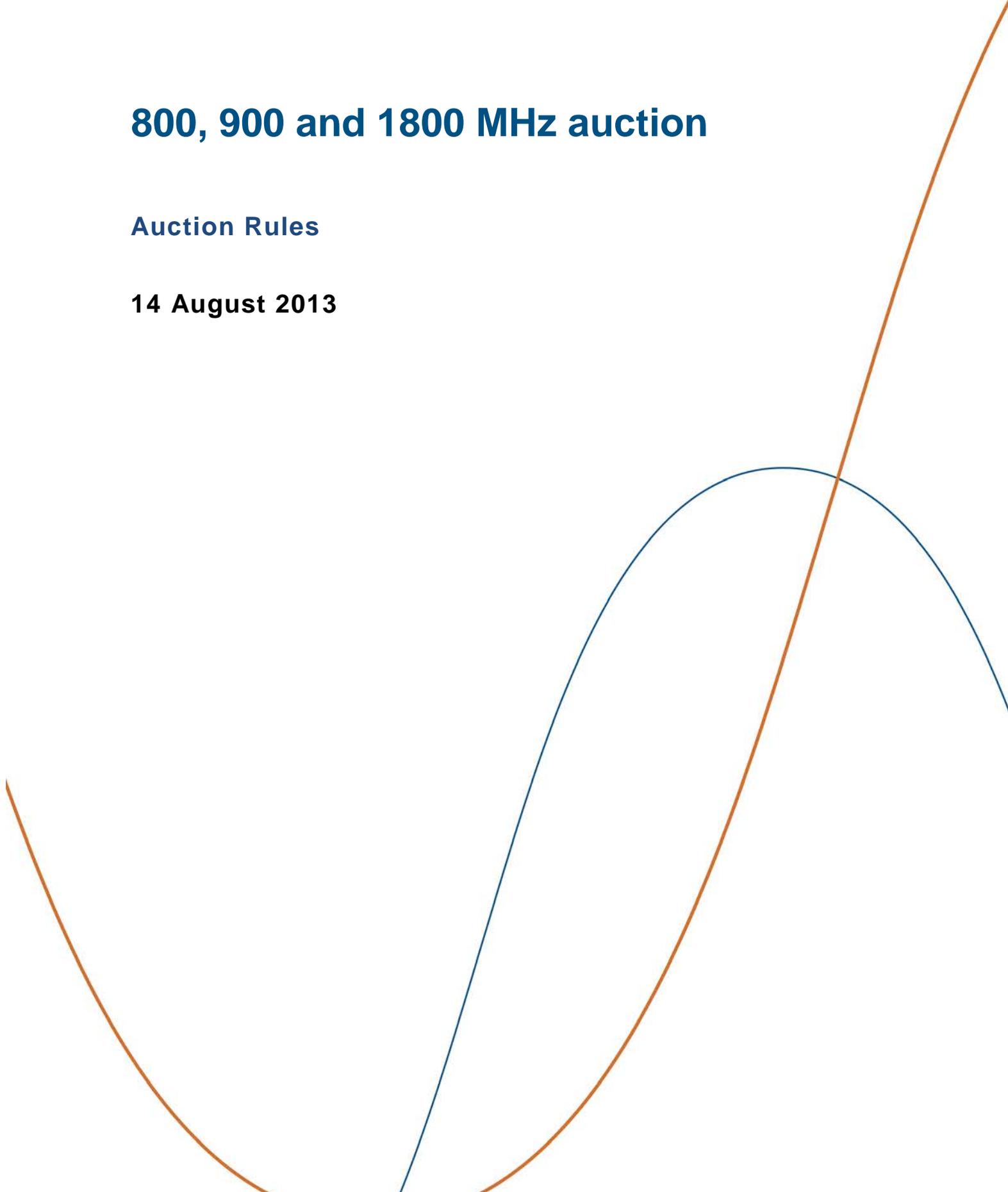


Table of contents

1	Introduction and background	4
1.1	Overall objectives for the auction.....	4
1.2	Overall framework.....	4
2	Spectrum to be auctioned.....	5
2.1	800 MHz	6
	Coverage obligations and usage restrictions	6
	Co-existence between LTE and DTT.....	6
	Spectrum cap	7
2.2	900 MHz	7
	Efficient spectrum management	7
	Spectrum cap	8
2.3	1800 MHz	8
	Efficient spectrum management	8
	Spectrum cap	9
3	Licence terms and conditions	9
4	Participation, liability and legal consequences.....	10
4.1	Registration	10
4.2	Authorised representative.....	11
4.3	Liability for foreseeable situations.....	12
4.4	Legal consequences of registration	12
4.5	Legal consequences of bidding	12
4.6	Breach of auction rules.....	12
5	The auction process	12
5.1	Reserve prices.....	13
5.2	Conduct of the auction.....	13
	Bid submission	14
	Back up procedures.....	14
	Exceptional circumstances	14
5.3	The allocation stage.....	15
	Bids.....	15
	Valid bids	15
	Submission of bids.....	16
	Provision of bid-guarantee to back bid submission.....	17
	Determination of winners	17
	Determination of allocation prices.....	19
	End of the allocation stage and notification of results	19
5.4	The assignment stage	19

Determination of assignment options.....	19
Requirement for a bidding round in the assignment stage.....	22
Bidding for assignment options.....	23
Bids.....	23
Valid bids	23
Submission of bids.....	23
Determination of winning assignment	23
Determination of assignment prices.....	24
End of the assignment stage	25
6 Issue of licences	25
6.1 Payment of licence price.....	25
6.2 Payment under the guarantees.....	25
6.3 Return of guarantees	26
7 Announcement of results/publication of information	26
8 Communication.....	26

1 Introduction and background

The spectrum available for the multi-band auction covers frequencies in the 800 MHz, 900 MHz and 1800 MHz bands¹.

The Government announced in September 2009 that the 800 MHz band would be allocated to modern mobile communication services and mobile broadband services. It was further decided that these frequencies would be assigned by auction. The 800 MHz band is the upper part of the digital dividend, which was freed up after transition from analogue to digital TV broadcasting. The available resources in the 900 MHz and the 1800 MHz bands will be assigned in the same auction procedure.

The Ministry of Transport and Communications (the Ministry) conducted a public consultation on a possible spectrum cap for the 1800 MHz band in 2010². In April 2011, the Ministry consulted on the allocation of frequencies in the 800 MHz band and issues regarding allocation of frequencies in the 900 MHz and 1800 MHz bands³. The consultation closed in May 2011. The Norwegian Post and Telecommunications Authority (NPT) conducted a public consultation on co-existence between LTE networks and DTT in the frequency band 790-862 MHz in December 2011⁴. The documents (in Norwegian only) can be found on NPT's webpage⁵.

In April 2013 the Ministry announced the overall objectives and the framework for the auction, and assigned the task of allocating the resources to NPT.

1.1 Overall objectives for the auction

A letter of instruction from the Ministry to NPT dated 10 April 2013 lists two primary objectives for the auction. The first is to ensure that the auction achieves an efficient allocation of spectrum that promotes sustainable infrastructure-based competition in the mobile market and the availability of basic mobile broadband services in Norway. The second objective is to maximise revenue in the auction. In addition, the competitive situation in the market and the reserve price for the frequency blocks are issues that should be considered.

1.2 Overall framework

The Government and the Ministry has decided⁶ the overall framework for the auction.

These decisions include the following:

- 1) The spectrum in the 800 MHz band will be offered in the auction as four 2 x 5 MHz frequency-generic blocks and one 2 x 10 MHz frequency-specific block.
- 2) A coverage obligation to cover 98 % of the population within five years, offering a service with an average downlink net bitrate of 2 Mbps⁷, will be attached to the centre 2 x 10 MHz block of the 800 MHz band.

¹ 791-821 / 832-862 MHz (800 MHz band), 880-915 / 925-960 MHz (900 MHz band) and 1710-1785 / 1805-1880 MHz (1800 MHz band)

² Reference is made to the consultation document from the Ministry dated 29 January 2010.

³ Reference is made to the consultation paper from the Ministry published 5 April 2011

⁴ NPT has published a summary and the conclusions from the consultation procedure, published 18 March 2013

⁵ <http://www.npt.no/teknisk/frekvensauksjoner/planlagte/auksjon-14-790-862-mhz>

⁶ The various decisions have been made by either the Government or the Ministry.

⁷ Reference is made to annex 1 to the 800 MHz licence specifying the coverage obligation.

- 3) A usage obligation to cover 40 % of the population within four years, offering a service with an average downlink net bitrate of 2 Mbps, will be attached to all blocks in the 800 MHz band.
- 4) The 2 x 10 MHz coverage obligation block in the 800 MHz band must be allocated as a necessary condition for any spectrum to be awarded in this auction. If no bid for the coverage obligation block is received, the auction will be annulled.
- 5) Available spectrum in the 900 and 1800 MHz band will be offered as frequency-generic 2 x 5 MHz blocks and will be assigned by auction in the same procedure as the 800 MHz band.
- 6) The auction will be conducted in two stages:
 - the **allocation stage**: consisting of a first price, sealed-bid, combinatorial auction to determine the amount of spectrum allocated to each bidder; followed by
 - the **assignment stage**: conducted as an administrative procedure if there is only one unique assignment option; or if there are several allocation possibilities, a second price, sealed-bid, combinatorial auction will determine the specific frequency positions of the spectrum lots won in the allocation stage (see Section 5.4 for details).
- 7) Licences in all three bands will have a duration of 20 years.
- 8) Licences in the 800 MHz band will be subject to annual spectrum fees (as per the 900 and 1800 MHz bands).
- 9) The spectrum cap in the 800 MHz band will be 2 x 10 MHz.
- 10) The spectrum cap in the 900 MHz band will be 2 x 15 MHz, including existing holdings, see Section 2.2 for detailed explanation of the cap.
- 11) The spectrum cap in the 1800 MHz band will be 2 x 20 MHz, including existing holdings, see Section 2.3 for a detailed explanation of the cap.
- 12) The reserve price for a 2 x 5 MHz block in the 800 MHz is set at NOK 50 million.
- 13) The reserve price for the 2 x 10 MHz block with coverage obligation is set at NOK 40 million.
- 14) The reserve price for a 2 x 5 MHz block in the 900 MHz is set at NOK 50 million.
- 15) The reserve price for a 2 x 5 MHz block in the 1800 MHz is set at NOK 5 million.
- 16) Licences in the 900 MHz band might be re-assigned in 2017 to guarantee contiguous spectrum.
- 17) The placement of the frequencies held by Telenor and TeliaSonera in the 1800 MHz band will be subject to an adjustment during the auction as a part of the assignment stage to ensure efficient spectrum management and that the spectrum allocated to each operator in this band can be allocated on a contiguous basis.

The decisions made by the Government and the Ministry are final and not a part of the public consultation.

2 Spectrum to be auctioned

NPT will award frequencies in the bands 800 MHz, 900 MHz and 1800 MHz in the same auction process.

Where possible, spectrum will be offered in frequency-generic blocks (i.e. without specifying the frequencies that correspond to each lot) in the allocation stage. The specific frequencies assigned to each winner will then be determined in the assignment stage. This minimises the risk of fragmented outcomes.

The exception to this is the 2 x 10 MHz coverage obligation block in the 800 MHz band, whose frequencies have already been specified as part of the Ministry's decision. Therefore, this block will be offered as a frequency-specific lot.

2.1 800 MHz

There will be 2 x 30 MHz of 800 MHz spectrum available in the auction.

As shown in Figure 1, the lots in the 800 MHz band will consist of four blocks of 2 x 5 MHz (lot category A1) and one block of 2 x 10 MHz (lot category A2). As noted above, lot category A1 is frequency-generic, i.e. real placement of the blocks will not be known before the auction, while lot category A2 is frequency-specific. The actual assignment of frequencies to each winner of frequency-generic blocks (A1 lots) will be decided in the assignment stage, see Section 5.4.

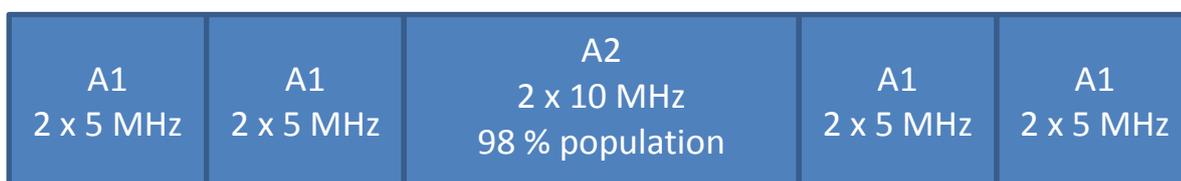


Figure 1: The 800 MHz band

Coverage obligations and usage restrictions

Access to 800 MHz is important for rural and in-building coverage of 4G services. To ensure widespread availability of mobile broadband services, the Government has assigned a coverage obligation to one of the 800 MHz licences, which requires offering a service with an average downlink net bitrate of at least 2 Mbps to 98 % of the population within five years. One of the key objectives of the auction is to allocate the coverage obligation block to ensure availability of basic mobile broadband services in Norway. This coverage obligation will be imposed on the 2 x 10 MHz lot in the middle of the 800 MHz band (A2 in Figure 1 above).

The remaining four lots, each 2 x 5 MHz in the 800 MHz band, as well as the 2 x 10 MHz lot, will be subjected to a usage obligation that requires the operators using the blocks to provide a service with an average downlink net bitrate of at least 2 Mbps to 40 % of the population within four years.

There are no other block-specific usage restrictions on any of the 800 MHz blocks.

The obligations are described in detail in the document on coverage obligations called "*Dekningskrav i 800 MHz-båndet*" dated 14 August 2013 (annex 1 to the 800 MHz draft licence).

Co-existence between LTE and DTT

The winners of 800 MHz spectrum licences are required to join an association that will manage and mitigate interference to DTT users. Any costs of interference mitigation shall be shared amongst all 800 MHz licensees. The complete conditions for the co-existence between LTE and DTT are described in the document called "*Krav for å legge til rette for*

sameksistens mellom LTE og DTT” dated 18 March 2013 (annex 2 to the 800 MHz draft licence) with additional specifications in the document called “Krav for å legge til rette for sameksistens mellom LTE og DTT - presisering av vilkår” dated 14 August 2013 (annex 3 to the 800 MHz draft licence).

Spectrum cap

The spectrum cap in the 800 MHz band will be 2 x 10 MHz and will apply to all bidders.

See Section 3 for detailed information on licence terms and conditions.

2.2 900 MHz

There will be 2 x 15.1 MHz of 900 MHz spectrum available in the auction.

Licences currently held by Mobile Norway, TeliaSonera and Telenor expiring on 31.12.2013 shall be included in the auction. These licences comprise a total of 2 x 15.1 MHz of the 900 MHz band. The remaining 2 x 19.9 MHz of spectrum that is not included in the auction is currently allocated to TeliaSonera and Telenor, each having approximately 2 x 10 MHz under existing licences, both expiring 31.12.2017.

As shown in Figure 2, the lots in the 900 MHz band will consist of two blocks of 2 x 5 MHz and one block of 2 x 5.1 MHz (lot category B). These lots are considered to be of equal value.

These lots will be made available as frequency-generic blocks, i.e. the real placement of the blocks will not be known before the auction. The actual assignment of frequencies to each winner of frequency-generic blocks will be decided in the assignment stage, see Section 5.4.



Figure 2: The 900 MHz band

Efficient spectrum management

In the event that one single operator wins all the three blocks available in the auction, it will not be feasible to assign the three blocks as one contiguous 2 x 15.1 MHz block, as the available spectrum is fragmented by the current assignments to TeliaSonera and Telenor.

However, the Ministry/NPT may reassign the specific frequencies in this band when the current licences of TeliaSonera and Telenor expire on 31.12.2017 with the aim to minimise band fragmentation after reallocating this spectrum and ensure efficient spectrum management. This includes, but is not limited to, the provision that if a bidder were to win the three lots available in this band, such an operator would be reassigned its 2 x 15.1 MHz as a contiguous frequency block from 31.12.2017.

Potential costs associated with the re-assigning of spectrum will not be covered by NPT or by the auction revenue.

Spectrum cap

The spectrum cap in the 900 MHz band will be 2 x 15 MHz including existing holdings. This cap will apply to all bidders. To ensure that the spectrum cap does not exclude Telenor (holding 2 x 10.1 MHz) from bidding for the bottom 2 x 5.1 MHz block, the cap is adjusted to 2 x 15.2 MHz.

Due to the spectrum caps and their existing holdings, Telenor and TeliaSonera can only bid for one block each. All other bidders can bid for the maximum possible number of blocks (2 x 15.1 MHz).

See Section 3 for detailed information on licence terms and conditions.

2.3 1800 MHz

There will be 2 x 55 MHz of 1800 MHz spectrum available in the auction. The entire band consists of 2 x 75 MHz. TeliaSonera and Telenor each have existing holdings of 2 x 10 MHz in the band and this spectrum will not be offered in the auction.

The lots will be made available as frequency-generic blocks, i.e. real placement of the blocks will not be known before the auction. The actual assignment of frequencies to each winner of frequency-generic blocks, and to TeliaSonera and Telenor in relation to their existing holdings, will be decided in the assignment stage (see Section 5.4 for further details).

TeliaSonera’s and Telenor’s existing holdings were assigned in 1998 and renewed in 2009. The Ministry renewed the licences in 2009 after a public announcement for licences in the 1800 MHz band where there were no other applicants. The Ministry informed TeliaSonera and Telenor of the renewal in June 2009, and that the issuing of the licences are postponed until after the auction⁸. After the auction the Ministry will issue new licenses to TeliaSonera and Telenor with a 15 year duration. Due to the placement of TeliaSonera’s and Telenor’s existing holdings in this band, the available spectrum is fragmented as shown in Figure 3 below:

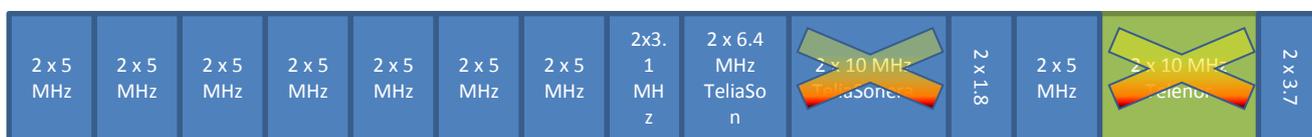


Figure 3: The 1800 MHz band

Efficient spectrum management

To allow for assignment of contiguous spectrum in the auction and to offer the available spectrum in 11 lots of 2 x 5 MHz of equal value, the existing frequencies held by TeliaSonera and Telenor will be subject to a minor adjustment during the auction as a part

⁸ Reference is made to the temporary renewal of the licences given by the Ministry respectively 8 March 2010, 4 March 2011 and 2 January 2012.

of the assignment stage, see Section 5.4 for further details. TeliaSonera and Telenor will be given a reasonable time to comply with the re-assignment.

Furthermore, the Ministry/NPT may reassign the specific frequencies in this band when TeliaSonera's and Telenor's existing licences expire on 31 December 2028 with the aim to minimise band fragmentation after reallocating this spectrum and ensure efficient spectrum management.

Potential costs associated with the re-assigning of spectrum will not be covered by NPT or by the auction revenue.

Spectrum cap

The spectrum cap in the 1800 MHz band will be 2 x 20 MHz including existing holdings. This cap will apply to all bidders.

See section 3 for detailed information on licence terms and conditions.

3 Licence terms and conditions

The spectrum licence will be assigned for use on Norwegian land territory, except Svalbard, Jan Mayen and Norwegian dependencies. The spectrum licence will be valid for 20 years from the date of issue.

The spectrum licence will be technology and service neutral subject to clause 3 in the draft licences. Furthermore the frequencies must be used for terrestrial radio applications capable of providing electronic communications services.

The licence will be tradable, including sale, lease etc. Transfer of a licence must however be approved by and registered with the Ministry.

See Section 2.1 for specific requirements for the 800 MHz licences.

The specific usage restrictions, allowed power levels, spectrum masks etc. are specified in the draft licences.

Administrative charges and annual fees

The licensee is required to pay annual administrative charges and annual spectrum fees. These will be levied from 2014 onwards.

With reference to Section 12-1 of the Electronic Communications Act, the model for administrative charges is laid down in Regulation on Administrative Charges Payable to the Norwegian Post and Telecommunications Authority. Information on administrative charges payable to NPT is available on www.npt.no.

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).

Estimated annual administrative charges based on numbers for 2013⁹ (pr. 2 x 5 MHz)	
800 MHz band	Approx. NOK 240 000
900 MHz band	Approx. NOK 240 000
1800 MHz band	Approx. NOK 210 000

Estimated annual fees (pr. 2 x 5 MHz)	
800 MHz band	Approx. NOK 6 625 000
900 MHz band	Approx. NOK 6 625 000
1800 MHz band	Approx. NOK 6 625 000

4 Participation, liability and legal consequences

4.1 Registration

Registration for the auction opens on 28 October 2013.

Any person or undertaking registered in the European Economic Area (EEA) or Switzerland may register for the auction. Note that the undertaking 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 entities would be treated as a single 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. Bidders may not have more than one bid vehicle; that is, only one person can commit bids on behalf of a bidder.

Bidders must be registered in order to participate in the auction.

To register the bidder must deliver the registration form and the participation-guarantee no later than **15 November 2013, 1500 CET**.

Delivery in person at:

Post- og teletilsynet
Nygård 1
4790 Lillesand

Or

Delivery by mail at:

Post- og teletilsynet
Postboks 93
N-4791Lillesand

If documents are to be delivered in person, appointments for delivery must be made with Mr. John-Eivind Velure or Ms. Randi Wiese Heirung beforehand (telephone number: + 47 22 82 46 00).

⁹ The calculation model for the administrative charges is currently under revision. The revised model will be implemented 1 January 2015.

NPT will only accept registration if documents are received by NPT within the deadline 15 November 2013, 1500 CET. The bidder must ensure that documentation is complete and in accordance with requirements. The bidder assumes the risk of ensuring that documents is received by NPT within the deadline.

NPT decides whether registration has been successful or not based on the rules set out in this document.

Bidders will receive a notification from NPT within three workingdays after NPT receive the necessary documents (see below) confirming successful registration.

Registration involves the following documents:

Registration form (“Registrerings skjema for auksjon av 800 MHz-, 900 MHz og 1800 MHz-båndene”)

The registration form includes requests for information about the bidder and its authorised representative, as well as a number of declarations concerning inter alia collusion.

The registration form is provided in Annex 1.

Participation-guarantee

In order to ensure that those registering for the auction have a genuine interest in the available frequency resource; applicants are required to submit a participation-guarantee as part of their registration for the auction.

The participation-guarantee amounts to NOK 10 000 000 (ten million Norwegian kroner).

The size of the participation-guarantee is in no way related to NPT's expectations concerning the possible value of the frequency resources.

The participation-guarantee is payable on demand, and may be used by NPT in case a declared winner fails to pay for a licence. NPT may also use the guarantee in order to cover penalties or compensation.

Due to the Norwegian State acting as self-insurer central bodies and categories of bodies governed by public law are exempted from presenting a bank guarantee. The NPT decides which bodies fall under the exemption.

The guarantee must be valid until 31 March 2014. It must be issued by a financing institution registered in the EEA or Switzerland, and otherwise meet the requirements stipulated by NPT.

See Annex 2 for the form of the approved guarantee.

4.2 Authorised representative

The receipt of digital certificates, username and passwords by the authorised representative of a bidder, implies that NPT may assume that any bids submitted in the auction are submitted on behalf of the relevant bidder. The bidder must immediately report to NPT any suspicion of loss or breach of confidential security codes.

4.3 Liability for foreseeable situations

Bidders bear all liability for foreseeable situations on the bidders' side such as technical failures, local telephone service interruptions, adverse local weather conditions, unavailability of the authorised representative, the loss or breach of confidential security codes inter alia.

4.4 Legal consequences of registration

By registration to participate in the auction, the bidder agrees to be bound in accordance with the rules set out in this document.

Bidders are obliged not to declare or reveal their registration or participation in the auction in public, see Section 4.6.

4.5 Legal consequences of bidding

Bids are unconditional and irrevocable. Bids remain binding until 31 March 2014. Bidders may be released from their bids by notification from NPT before this date.

Bidders receiving a notification in accordance with the rules are obliged to pay the price of the bid in the manner and to the place of payment stated by NPT.

4.6 Breach of auction rules

Any form of direct or indirect cooperation among bidders or their stakeholders to influence the auction outcome (collusive behaviour) is prohibited. Collusion may consist of the exchange of competitively sensitive or strategic information. Sharing information, including public announcement of registration or participation in the auction, or of bids or bidding strategies are prohibited.

In the event that an individual applicant or bidder breaches the auction rules, at the discretion of the NPT, that applicant or bidder may be expelled from the auction.

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

NPT may, at its discretion, decide to void the bids of a bidder who has been expelled. Voiding of bids may require a recalculation of winning bids and prices.

5 The auction process

The auction will be conducted in two stages:

- an initial allocation stage will determine the amount of spectrum won by each bidder in each band;
- a subsequent assignment stage will determine the exact frequencies assigned to each winner of spectrum in the allocation stage.

The two-stage process aims to maximise the scope for competition for spectrum and minimise fragmentation of assignments to each winner. This is achieved by offering spectrum blocks of a similar value on a frequency-generic basis in the allocation stage, and determining the specific frequencies in the assignment stage once the total amount of spectrum allocated to each bidder is known.

Neither the number of registered bidders nor their identities will be made public. See Section 7 on publication of information after the auction.

The auction will start on **2 December 2013**.

The conduct of the auction will follow the preliminary time schedule below:

Day 1: Allocation stage (bidding phase)

Day 2: Bidders deliver bid-guarantees to NPT/the Ministry

Day 3: NPT verifies the bank guarantees. NPT contact bidders if clarifications are needed.

Day 4: Results from allocation stage will be announced to bidders. The auction process continues to the assignment stage (bidding phase or administrative procedure see section 5.4). Winning/losing bidders will be notified and results will be published on the NPT webpage.

Registered bidders will receive detailed information about the conduct of the auction.

5.1 Reserve prices

The reserve prices are shown in the table below:

800 MHz band – lot category A1 (2 x 5 MHz frequency-generic lots, usage obligation of 40 % population)	NOK 50 million
800 MHz band – lot category A2 (2 x 10 MHz frequency-specific lot, usage obligation of 40 % population and coverage obligation of 98 % population)	NOK 40 million
900 MHz band – lot category B (2 x 5 MHz frequency-generic lots)	NOK 50 million
1800 MHz band – lot category C (2 x 5 MHz frequency-generic lots)	NOK 5 million

The reserve prices do not indicate NPT's estimate of the value of the lots.

5.2 Conduct of the auction

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

The auction system will be run in a standard web browser – no specialist software is required. Bidders will need a reliable Internet connection, with a recommended download bandwidth of at least 512 kb/s. Bidders should follow the recommended setup for hardware and software provided in the auction system user manual, which will be provided for registered bidders. Bidders will need to install the digital certificates provided by NPT 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.

Registered bidders will be given an opportunity to test their computers and get familiarised with the auction system in a mock auction run shortly before the real auction.

Bid submission

The EAS will not allow bidders to submit bids that are inconsistent with the rules for the relevant stage of the auction.

Both the allocation and assignment stages feature a single round of bidding, which consists of a specified time window during which each bidder can submit a list of bids¹⁰. Each bidder is allowed to make **one single submission** in a round. This submission should include a list of all bids that the bidder wishes to submit for that stage.

Submitting a list of bids during a round using the EAS requires a two-step process:

- First, the bidder must enter the list of all bids it wishes to submit for that stage (which may be an empty list if the bidder does not wish to submit any bids) into a bid form provided by the EAS. The list of bids can then be sent to the auction server so that it can be checked against the auction rules. If any of the bids in the list is invalid according to the auction rules, then the bidder will be redirected to the bid form, where it will be informed of the bids that failed the validation process, so that it can modify its bids.
- If all the bids in the list are valid in accordance with the auction rules, then the bidder will be provided with the list of bids checked by the auction system, and will be able to confirm that it wishes to formally submit the list of bids that have been checked or, alternatively, return to the bid entry form and (if desired) modify its bids (in which case the bidder would need to check its list of bids once more before it can be formally submitted). Once the bidder has confirmed a list of bids, the bidder will not be able to revise or withdraw any of the bids in its list, or to add any further bids to its list.

A bidder is deemed **not** to have submitted a list of bids unless the confirmation of bids is received by the auction system. Receipt of such confirmation will be communicated to the bidder through the auction system. It is the responsibility of the bidder to check receipt of the confirmation by the auction system, and to alert NPT if it has confirmed a list of bids but did not receive a confirmation receipt.

Back up procedures

NPT may, at its discretion, decide to offer backup procedures for bidding in case that a bidder experiences technical problems (e.g. fax or telephone bidding). However, bidders should not rely on the availability of such backup procedures and should ensure that they have available redundant systems they can use in response to any technical problems they may experience.

Exceptional circumstances

In the case of exceptional circumstances during any stage of the auction, NPT 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 results of the stage
- postpone the scheduling of a round

¹⁰ Note that there are instances where a bidding round is not required in the assignment stage, see Section 5.4 for more details.

- cancel a round that is underway or has already been completed, and re-schedule the round
- void all bids received in the auction, and either cancel the auction or start the auction again

NPT 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.

5.3 The allocation stage

The allocation stage determines how many lots in each lot category are allocated to each bidder. There is a single round of bidding, in which bidders may submit one list containing multiple, mutually exclusive bids for alternative combinations of lots (*packages*).

Bids

Each bid consists of:

- a package (the number of lots in each lot category that the bid applies to); and
- a bid amount (the price the bidder is offering to pay for the lots in the package).

If a bid is selected as a winning bid, then the bidder will be allocated the package specified in the bid, and required to pay a price equal to the bid amount specified in the bid.

Valid bids

Bidders may submit multiple bids for different packages. However, each bidder may submit at most one bid for each package.

Each bid must satisfy the following constraints:

- It must include at least one lot.
- It must be possible to allocate all the lots included in the package without breaching any of the spectrum caps.
- The bid amount must be at least the sum of the reserve price of all lots included in the package (the *package reserve*).
- The bid amount must be in whole 10 000 NOK.

Furthermore, the bidder must provide a bank guarantee covering the highest bid amount it has submitted in the auction. See below for details regarding the submission of this bid-guarantee.

The applicable spectrum caps are as follows:

800 MHz band	2 x 10 MHz
900 MHz band	2 x 15.2 MHz
1800 MHz band	2 x 20 MHz

Taking account of existing spectrum holdings, these mean that the possible combinations of lots that each bidder may bid for in each band are as follows:

Band	Options available to Telenor and TeliaSonera	Options available to other bidders
800MHz	<ul style="list-style-type: none"> • No lots; • One A1 lot; • Two A1 lots; or • The A2 lot 	<ul style="list-style-type: none"> • No lots; • One A1 lot; • Two A1 lots; or • The A2 lot
900MHz	<ul style="list-style-type: none"> • No lots; or • One B lot 	<ul style="list-style-type: none"> • No lots; • One B lot; • Two B lots; or • Three B lots
1800MHz	<ul style="list-style-type: none"> • No lots; • One C lot; or • Two C lots 	<ul style="list-style-type: none"> • No lots; • One C lot; • Two C lots; • Three C lots; or • Four C lots

Submission of bids

NPT will notify registered bidders of the start time and end time for the round in the allocation stage. NPT has discretion over the timing and duration of the round. However, NPT anticipates that the round will take place between **10am and 4pm on 2 December 2013**. Any submissions outside the specified round time will be rejected.

A submission consists of a list of bids. Any of the bids included in the list may be selected as a winning bid, in which case the bidder will be allocated the package specified in the bid for a price equal to the bid amount specified in the bid. However, at most one bid from each bidder can be selected as a winning bid – therefore the bidder is only liable to pay the bid amount specified in at most one of its bids.

Each bidder is allowed one single submission for the allocation stage. Once the bidder has made a submission and the submission is confirmed by the auction system, the bidder will not be able to revise or withdraw any of the bids in the list submitted, or to add any further bids to the list submitted.

The submission of bids will follow the two-step process described in Section 5.2.

If no valid submission is received from the bidder on the auction system during the round, or if the data in the submission is corrupted or invalid, then it will be deemed to not have made any bids. For the avoidance of doubt, a submission will only be valid if it is *received* by the auction system before the end of the round, regardless of the time at which the bidder has sent the submission. Sending data over the internet may take some time, therefore bidders are strongly advised to submit their bids well ahead of the time at which the round will close.

Provision of bid-guarantee to back bid submission

Once the bidding round for the allocation stage has ended, each bidder is required to provide a bank guarantee amounting to the highest bid amount in the list of bids it has submitted.

NPT will send a formal notification after the end of the allocation stage to each bidder detailing the amount (equal to the bidders highest bid) of the bid-guarantee they are required to provide.

The bidder must deliver the guarantee to the Ministry or to NPT. According to the preliminary time schedule for the conduct of the auction the bid-guarantees must be delivered on day 2 of the auction, the day after the allocation stage. NPT will give the bidder further instructions and a time for delivery.

NPT may void all bids submitted by any bidder who has failed to provide this guarantee.

The bid-guarantee is payable on demand, and may be used by NPT in case a declared winner fails to pay for a licence. NPT may also use the guarantee in order to cover penalties or compensation.

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

The guarantee must be valid until 31 March 2014. It must be issued by a financing institution registered in the EEA or Switzerland and otherwise meet the requirements stipulated by NPT.

See Annex 3 for the form of the approved guarantee.

Determination of winners

Once all submissions and bid-guarantees are received, NPT will determine winners of the allocation stage.

A feasible allocation of lots amongst bidders consists of a selection of bids such that:

- at most one bid is selected from each bidder;
- all the lots included in the bids selected can be awarded given the available spectrum; and
- the package specified in one of the winning bids contains the A2 lot.

If there is no feasible allocation, then no spectrum will be awarded. In this case, plans for any subsequent award processes will be made after the auction.

The *total value* of an allocation is the total bid value of selected bids. The winning allocation is the feasible allocation that maximises the total value across all feasible allocations. This is illustrated in Example 1 below.

Suppose that four bidders participate in the auction. Suppose we receive one bid from each bidder, as follows:

Bidder	Lots in package				Amount
	A1	A2	B	C	
<i>Bidder 1</i>	0	1	0	4	<i>NOK 10m</i>
<i>Bidder 2</i>	2	0	1	2	<i>NOK 25m</i>
<i>Bidder 3</i>	2	0	2	2	<i>NOK 40m</i>
Bidder 4	0	0	0	4	NOK 15m

The feasible allocation that maximises total bid value is the combination of Bidder 1's, Bidder 2's and Bidder 3's bids (italicised in the table above). This combination of bids yield the highest total value of NOK 75m and is the winning allocation.

Note that the combination of Bidder 2's, Bidder 3's and Bidder 4's bids would have yielded a higher total bid value of NOK 80m, but this allocation is not a feasible allocation as the A2 lot is not allocated.

Example 1: Winner determination

In the event of a tie amongst multiple feasible allocations of equal highest total value, the allocation with the greatest number of winning bidders amongst the ties will be the winning allocation.

If ties still remain after the application of the above criterion, the allocation that minimises the number of unsold lots amongst the remaining ties will be the winning allocation.

If ties still remain after application of the above criteria, the winning allocation will be selected at random from amongst the remaining ties.

Example 2 below provides an illustration of these tiebreak rules.

Suppose again that four bidders participate in the auction. Suppose we receive one bid from each bidder, as follows:

Bidder	Lots in package				Amount
	A1	A2	B	C	
Bidder 1	0	1	0	3	NOK 15m
<i>Bidder 2</i>	2	0	1	2	<i>NOK 25m</i>
<i>Bidder 3</i>	2	0	2	2	<i>NOK 40m</i>
Bidder 4	0	1	0	4	NOK 15m

There are two feasible allocations that yield an equal highest total value of NOK 80m:

Allocation 1: Bidder 1's, Bidder 2's and Bidder 3's bid

Allocation 2: Bidder 2's, Bidder 3's and Bidder 4's bid

Therefore, the tiebreak rules are applied to select a winning allocation.

In both of these allocations, there are three winners of spectrum each. After the application of the first tiebreak criterion, ties remain. The second criterion of the tiebreak rules is then applied to select a winning allocation. In Allocation 1, there are four unsold C lots. In Allocation 2 there are 3 unsold C lots. Therefore, under the second tiebreak criterion, Allocation 2 will be the winning allocation (italicised in the table above).

[Example 2: Application of the tiebreak rules](#)

Determination of allocation prices

Each winning bidder will be required to pay an allocation price for the lot/lots it has been allocated equal to the bid amount it has specified for its winning bid.

End of the allocation stage and notification of results

At the end of the allocation stage, NPT will notify all bidders of the following:

- the identity of the winners of lots in the allocation stage; and
- the number of lots allocated to each winner.

Information about the winning bid amount corresponding to each winning bid will not be provided at this stage.

The auction will then proceed to the assignment stage.

5.4 The assignment stage

The assignment of specific frequencies to winners of spectrum from the allocation stage will be determined in the assignment stage. Telenor's and TeliaSonera's existing 1800 MHz frequencies will also be re-allocated in the assignment stage. Frequency assignments will be determined with the aim to minimise the fragmentation of assignments to each bidder in each frequency band.

Determination of assignment options

The determination of assignment options will be done separately for each frequency band in accordance with the following rules.

800 MHz band

Figure 4 shows the 800 MHz band divided into 2 x 5 MHz frequency blocks. These blocks are labelled a_1 through to a_6.

	a_1 2x5 MHz	a_2 2x5 MHz	a_3 2x5 MHz	a_4 2x5 MHz	a_5 2x5 MHz	a_6 2x5 MHz	
Downlink (MHz)	791	796	801	806	811	816	821
Uplink (MHz)	832	837	842	847	852	857	862

Figure 4: Frequency blocks in the 800 MHz band

The A2 lot is frequency-specific, the winner of the A2 lot will therefore be assigned the frequency blocks a_3 and a_4.

The assignment options for winners of lots in category A1 are determined by applying the following rules sequentially:

1. In the event that there are any unsold A1 lots:
 - If one A1 lot is unsold, then block a_1 will remain unassigned.
 - If two A1 lots are unsold, then blocks a_1 and a_2 will remain unassigned.
 - If three A1 lots are unsold, then blocks a_1, a_2 and a_6 will remain unassigned.
 - If the four A1 lots are unsold, then blocks a_1, a_2, a_5 and a_6 will remain unassigned.
2. Any winner of two A1 lots may be assigned either:
 - blocks a_1 and a_2 provided that neither of these two blocks has been excluded from assignment in accordance with the rules for unsold lots above; or
 - blocks a_5 and a_6.
3. Any winner of a single A1 lot may be assigned any of a_1, a_2, a_5 or a_6 provided that the block has not already been assigned to another bidder or excluded from assignment in accordance with the rules above.

900 MHz band

Figure 5 shows the 900 MHz band divided into 2 x 5 MHz frequency blocks, which are labelled b_1 through to b_7. Blocks b_3 and b_4 and blocks b_6 and b_7 are existing licences currently assigned to TeliaSonera and Telenor respectively.

	b_1 2x5.1 MHz	b_2 2x5 MHz	b_3 2x4.9 MHz	b_4 2x4.9 MHz	b_5 2x5 MHz	b_6 2x5 MHz	b_7 2x5.1 MHz	
Downlink (MHz)	880.0	885.1	890.1	895.0	899.9	904.9	909.9	915.0
Uplink (MHz)	925.0	930.1	935.1	940.0	944.9	949.9	954.9	960.0

Figure 5: Frequency blocks in the 900 MHz band

The assignment options for winners of lots in the 900 MHz band are determined by applying the following rules sequentially:

1. If a bidder wins three B lots (note that this excludes Telenor or TeliaSonera due to the spectrum cap), then this bidder will be assigned blocks b_1, b_2 and b_5.
2. If a bidder wins two B lots (note that this excludes Telenor or TeliaSonera due to the spectrum cap), then this bidder will be assigned blocks b_1 and b_2.

3. If one B lots remains unsold, then block b_1 will remain unassigned unless there is a bidder who has won two B lots, in which case block b_5 will remain unassigned.
4. If two B lots remain unsold, then blocks b_1 and b_2 will remain unassigned.
5. If Telenor wins one lot, then it will be assigned block b_5.
6. If TeliaSonera wins one lot, then it may be assigned any of b_2 or b_5 provided that the block has not already been assigned to another bidder or excluded from assignment in accordance with the rules above.
7. Any other winner of a single B lot could be assigned any of b_1, b_2 and b_5 provided that the block has not already been assigned to another bidder or excluded from assignment in accordance with the rules above.

1800 MHz band

Figure 6 below shows the whole 1800 MHz band (2 x 75 MHz) divided into 2 x 5 MHz blocks, which are labelled c_1 through to c_15. Both Telenor and TeliaSonera have existing licences in this band, holding 2 x 10 MHz each. These existing frequencies will be reassigned in the assignment stage to minimise fragmentation of the band and allow Telenor and TeliaSonera to win 1800 MHz spectrum that is contiguous to their existing holdings.

	c_1 2x5 MHz	c_2 2x5 MHz	c_3 2x5 MHz	c_4 2x5 MHz	c_5 2x5 MHz	c_6 2x5 MHz	c_7 2x5 MHz	c_8 2x5 MHz	c_9 2x5 MHz	c_10 2x5 MHz	c_11 2x5 MHz	c_12 2x5 MHz	c_13 2x5 MHz	c_14 2x5 MHz	c_15 2x5 MHz	
Downlink (MHz)	1710.0	1715.0	1720.0	1725.0	1730.0	1735.0	1740.0	1745.0	1750.0	1755.0	1760.0	1765.0	1770.0	1775.0	1780.0	1785.0
Uplink (MHz)	1805.0	1810.0	1815.0	1820.0	1825.0	1830.0	1835.0	1840.0	1845.0	1850.0	1855.0	1860.0	1865.0	1870.0	1875.0	1880.0

Figure 6: Frequency blocks in the 1800MHz band

The assignment options for winners of lots in category C are determined by applying the following rules that determine Telenor’s assignment options, TeliaSonera’s assignment options, the placement of unsold lots and assignment options of all other bidders of category C lots sequentially.

Telenor’s assignment options

If Telenor wins any C lots, then this new 1800 MHz spectrum allocated to Telenor will be located at the top of the band. The frequencies assigned to Telenor in relation to its extended licence will be located immediately below any new spectrum assigned to Telenor, or at the top of the band if Telenor has not won any spectrum (blocks c_14 and c_15).

Telenor’s assignment options will follow the following rules, applied sequentially. If Telenor wins:

- no C lots, its existing frequencies will be moved to blocks c_14 and c_15;
- one C lot, it will be allocated blocks c_13, c_14 and c_15 with its existing frequencies occupying blocks c_13 and c_14; and
- two C lots, it will be allocated blocks c_12, c_13, c_14 and c_15 with its existing frequencies occupying at blocks c_12 and c_13.

TeliaSonera’s assignment options

The frequencies assigned to TeliaSonera in relation to its extended licence will be located immediately below the frequencies assigned to Telenor in relation to Telenor’s extended licence. If TeliaSonera wins any C lots, then the spectrum corresponding to the C lots allocated to TeliaSonera will be located immediately below the frequencies assigned to TeliaSonera in relation to its extended licence.

For instance, if Telenor wins two C lots and TeliaSonera wins 1 C lot:

- Telenor will occupy blocks c_12 through to c_15; and
- TeliaSonera will be allocated blocks c_9, c_10 and c_11, with its existing frequencies occupying blocks c_10 and c_11.

Placement of unsold lots

Any unsold C lots will form a contiguous block located at the bottom of the band.

Assignment options of all other winners

The spectrum assigned to any other winner of C lots can be located anywhere else in the band provided that:

- all the spectrum allocated to this winner forms a contiguous block; and
- it is possible to allocate all the spectrum won by other winners as a contiguous block given the rules concerning Telenor's, TeliaSonera and assignment of unsold C lots described above.

For example, consider a continuation of the above example where Telenor wins 2 C lots and TeliaSonera one C lot with these bidders occupying blocks c_9 through to c_15. There are two other winners – Winner M with two C lots and Winner N with four C lots. There are two unsold lots which will be located at blocks c_1 and c_2. The rules above guarantee that both Winner M and Winner N will win contiguous spectrum. Therefore, assignment options available to Winner M are:

- blocks c_3 and c_4; or
- blocks c_7 and c_8.

Correspondingly, assignment options available to Winner N are:

- blocks c_5 through to c_8; or
- blocks c_3 through to c_6.

Requirement for a bidding round in the assignment stage

In some instances, there might be a unique assignment option that satisfies the rules set out above. In this case, no assignment stage bids are required and frequencies will be assigned directly. The unique assignment in each band will be the winning assignment and the auction will proceed to the end of the assignment stage.

However, where there are more than one assignment option in any band that satisfy the rules set out above, bidders will be invited to bid for their respective alternative assignment options (determined in accordance with the rules specified above) in a single round of bidding.

Only those bands for which there are alternative assignment options will be open to bidding. Only bidders who have more than one assignment option in any of the bands will be able to submit bids in the assignment stage.

Where a bidding round is required, NPT will notify registered bidders of the start time and end time for the round. NPT has discretion over the time and duration of the round. However, NPT anticipates that the round will take place shortly after the end of the allocation stage.

Bidding for assignment options

In the event that a bidding round is required, NPT will notify each bidder of:

- their assignment in any band in which their frequency assignment is uniquely determined by the rules above (if any); and
- the alternative assignment options (if any) available to the bidder in other bands.

Bidders may choose not to submit bids on any or all assignment options. In this case, the bidder will be deemed to have made a zero bid on all assignment options for which it did not submit a bid.

Even though all assignment bids are submitted simultaneously, assignment bids are evaluated separately for each frequency band.

Bids

Assignment bids for options in a frequency band are independent of the bids for options in other frequency bands.

Each bid consists of:

- a frequency range that is compatible with the amount of spectrum allocated to the bidder in that band in the allocation stage; and
- a bid amount (the maximum price the bidder is willing to pay, on top of the price already paid for its allocation, for that specific frequency range).

The assignment options available for bidding to each bidder will be provided in a bid form. For each assignment option, the bidder should specify a bid amount or leave the bid amount blank for a zero bid.

If a bid is selected as a winning bid, then the bidder will be assigned the frequency range specified in the bid, and may be required to pay a price no greater than the bid amount specified in the bid.

Valid bids

Bidders may only submit bids for the assignment options provided in the bid form.

Bid amounts must be in whole 1000 NOK.

Submission of bids

A submission consists of a list of bids for each one of the assignment options available to the bidder. The submission of bids will follow the two-step process described in Section 5.2.

Any submissions outside the specified round time will be rejected.

Each bidder is allowed one single submission for the assignment stage. Once the bidder has made a submission, the bidder will not be able to revise any of the bids submitted nor make additional bids.

Determination of winning assignment

A feasible assignment in a frequency band consists of a selection of assignment options such that:

- exactly one assignment option is accepted from each bidder; and

- the frequency ranges included in the winning assignment bids do not overlap, that is, any available block is assigned to one winner only.

We define the *total value* of an assignment as the sum of bid amounts of the selected assignment options.

For each band, the winning assignment is the selection of assignment options that maximises the total value across all feasible assignments in that frequency band. This winner determination process will select exactly one assignment option from each winner of spectrum in the band in order to maximise the total value across all feasible assignments.

If there is only one feasible assignment that generates the highest total value, this will be the winning assignment.

In the event of any tie amongst multiple feasible assignments of equal highest total value, the winning assignment will be selected at random from amongst assignments of equal highest total value.

Determination of assignment prices

An assignment price will be determined in each band for each bidder who was eligible to bid for alternative assignment options in that band.

The assignment prices are based on the concept of opportunity cost, and reflect the value loss from denying losers the frequencies they valued most.

The opportunity cost of assigning each group of bidders (including groups comprising a single bidder) their winning assignment is given by the value that the remaining bidders are not able to enjoy, as a result of not being assigned their preferred frequencies. This can be calculated as the difference between:

- the highest total value that could be achieved across all feasible assignments in a scenario where the bid amounts for all the assignment options from the bidders in the group are set to zero; and
- the value of the original winning assignment, excluding the bid amount from all winning assignment options from the bidders in the group.

Assignment prices are determined jointly for all bidders in a given band and are set to ensure that:

- each group of bidders jointly pays an aggregate price that is no less than the joint opportunity cost of assigning that group of bidders its winning assignments; and
- subject to the previous condition being met, the total sum of assignment prices is the smallest possible.

If more than one set of assignment prices meet the previous conditions, then the assignment prices will be the set of prices that minimises the sum of squared difference between the individual opportunity cost of assigning each bidder its winning assignment and its assignment price. The resulting assignment prices are rounded up to the nearest 1000 NOK.

For the avoidance of doubt, the assignment price for any bidder cannot exceed the bid amount that the bidder specifies for its winning assignment option (or zero if the bidder does not specify a bid amount for its winning assignment option).

End of the assignment stage

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

- the frequencies assigned to the bidder in each band;
- the assignment price (if any) they have to pay for their frequency assignment in each band.

NPT will inform all bidders of:

- the identity of the winners of spectrum in the allocation stage;
- the lots allocated to each winner;
- the frequencies assigned to each winner in each band;
- the frequencies assigned to TeliaSonera and Telenor in relation to their extended licences in the 1800 MHz band; and
- the total licence price for each winner.

The auction will then end, and the award process will proceed to the issuing of licences.

6 Issue of licences

After the auction has been concluded, winning bidders will receive a notification from NPT. The notified bidders shall pay their total licence price (that is the sum of their allocation price and assignment price) in full within ten - 10 - working days after NPT submitted the notification. Upon receiving payment, NPT will notify the Ministry. The issue of the licences will hereafter be executed by the Ministry.

The licences will be valid until 31 December 2033.

6.1 Payment of licence price

Payment shall be made to:

Post- og teletilsynet

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

6.2 Payment under the guarantees

In case of non-payment, delayed or incomplete payment of the licence price, NPT has the right to submit requests for payment under the bid-guarantee and the participation-

guarantee and to cover any unpaid portion of the bidder's bid by means of administrative enforcement.

If delayed payment is caused by events constituting Force Majeure under Norwegian law, NPT will prolong the deadline for payment accordingly.

6.3 Return of guarantees

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

- The application to register for the auction is rejected
- The licensing procedure has been completed and the bidder had no licence assigned
- The licensing procedure has been completed and the bidder had a licence assigned and paid the full amount of the licence price.

The rules for bid-guarantees only apply for registered bidders. The bid-guarantee is returned to the bidder in the case where:

- The licensing procedure has been completed and the bidder had no licence assigned
- The licensing procedure has been completed and the bidder had a licence assigned and paid the full amount of the licence price.

7 Announcement of results/publication of information

After the auction, NPT will make a public announcement as soon as possible with the following information:

- The number of bidders that participated in the action
- The identity of the winning bidders
- The licence price to be paid by each winning bidder
- The frequencies assigned to the winning bidders

Furthermore, after the licences are issued by the Ministry, NPT may publish all bid data including the identity of losing bidders and all the bids they submitted in the auction, to ensure transparency and objectivity in the process.

Public disclosure of 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).

8 Communication

Questions concerning the auction rules and the auction process should be addressed to NPT. Communication should be made in writing, by post or e-mail, to:

Post- og teletilsynet
Postboks 93
N-4791Lillesand

Email: 800-900-1800auction@npt.no

Questions should be submitted in Norwegian with an English translation. All interested parties are entitled to submit questions to NPT. NPT will produce an anonymous version of all questions and the answers will be published on NPT's website. The estimated response time to questions could be up to five working days.

A dedicated phone number will be provided for registered bidders for use during the auctions in case a bidder needs to contact NPT for example if the bidder should experience technical problems.