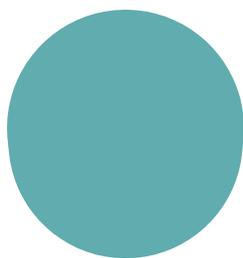


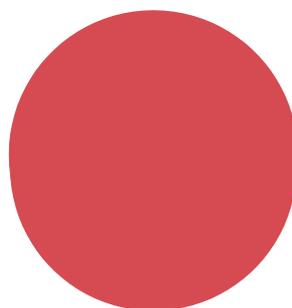


Danish Energy
Agency



Information Memorandum

Annex D



Draft Licence
700 MHz, 900 MHz and 2300 MHz Auction

2018

Annex D: Draft Licence

A draft licence and the associated technical information are indicated below:

- A draft licence to use frequencies in the frequency bands 2300.0-2400.0 MHz (2300 MHz frequency band) and annexes containing technical conditions for using these frequencies, and legal conditions.

[Licensee]**Licence [no.] to use frequencies in the frequency band 2300-2400 MHz**

Following an auction, [name of licence holder] (hereinafter referred to as the licensee) is granted a licence to use the following radio frequencies (band limits):

[xxx-xxx MHz]	Base station transmitting and receiving frequency
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The licence is issued in pursuance of Section 10 of the Act on Radio Frequencies, cf. Consolidated Act No. 1100 of 10 August 2016 (Frequency Act).

Licence terms and conditions

The licence shall enter into force on [date of issue] 2019 and expire on 31 December 2041.

Upon expiry, the licence shall lapse without further notice.

Pursuant to section 10(3), sections 14 and 15 of the Frequency Act, the following terms and conditions shall apply to the licence:

- 1) The frequencies may be used throughout Denmark, which shall mean Danish land territory and Danish territorial waters, cf. Executive Order No. 242 of 21 April 1999 on Delimitation of Danish Territorial Waters (as subsequently amended).
- 2) The maximum transmitting power (EIRP – Equivalent Isotropically Radiated Power) permitted per antenna from a base station: P (e.i.r.p.) ≤ 68 dBm /5 MHz, for the frequency band 2300-2390 MHz.
- 3) The maximum transmitting power (EIRP - Equivalent Isotropically Radiated Power) permitted per antenna from a base station: P (e.i.r.p.) ≤ 45 dBm /5 MHz, for the frequency band 2390-2400 MHz.
- 4) Base station emissions shall comply with the relevant harmonised standard in the ETSI EN 301 908 series applicable to the technology chosen.

- 5) Frequency use in the band 2300-2400 MHz shall be subject to the licensee complying with the technical requirements specified in CEPT ECC Decision (14) 02 of 27 June 2014 regarding "Harmonised technical and regulatory conditions for the use of the band 2300-2400 MHz for Mobile/Fixed Communications Networks (MFCN)", cf. annex 5.
- 6) Frequency use in the band 2300-2400 MHz shall be subject to the licensee coordinating such use with other licensees in the frequency band 2300-2400 MHz, as no frequencies have been allocated for guard bands.
- 7) However, subject to agreement with holders of licences in frequency bands adjacent to this licence, the licensee may depart from the above-mentioned technical requirements which relate to unwanted emissions within the frequency band in question. This is based on the condition that technical terms in relation to other licensees and neighbouring countries are complied with, and that the agreement does not affect frequency users other than the parties to the agreement.
- 8) The licensee shall comply with such agreements as might be concluded any time between Denmark and other countries on the use of 2300-2400 MHz, including coordination agreements with Germany and Sweden, cf. Information Memorandum on the 700 MHz, 900 MHz and 2300 MHz Auction, section 3.6.2. Until coordination agreements with Germany and Sweden are entered into, the requirements in ECC/REC/(14)04, annex 1, shall be respected.
- 9) The licensee shall fulfil the usage requirements specified in annex 1 to this licence not later than 4 April 2022.
- 10) The licensee shall fulfil the coverage obligation specified in annex 3 to this licence not later than 4 April 2022. The coverage obligation shall be fulfilled at the addresses specified in annex 4 to this licence.
- 11) As instalments on the licence price, the licensee shall pay DKK [amount] to the Danish Energy Agency each year on [date of licence issue] during the period from [2020 to 2028 / 2022 to 2030], both years inclusive.
- 12) In case of failure to pay the instalment in due time, interest shall accrue from the due date until the date on which payment is effected, in accordance with the Act on Interest¹.
- 13) The licensee shall provide at any time a demand guarantee in relation to the Danish State, issued by a bank or insurance company which does not control, nor is controlled by, the licensee, nor is controlled by a person

¹ Consolidated Act No. 459 of 13 May 2014 on Interest Accruing on Delayed Payments etc.

who controls the licensee, and which is registered in the European Economic Area and has a minimum long-term debt rating from Standard & Poors or Fitch Rating of at least A or from Moody's Investors Service Limited of at least A2. The guarantee shall at any time be for an amount equivalent to the sum of three annual instalments payable on the licence price, cf. section 68 in the Danish Energy Agency's Decision of 14 June 2018 on 700 MHz, 900 MHz and 2300 MHz auction, cf. annex 2, however in such a manner that the guarantee shall be reduced by the instalments that are paid over the last three years of the repayment period. The guarantee shall be effective from the date of issue of the licence and shall at any time be effective in the period where the following three instalments fall due for payment. Other terms appear from the guarantee payable on demand as signed by the licensee.

- 14) The licensee shall notify the Danish Energy Agency, or the authority responsible at the time in question, without undue delay in the event that the bank or insurance company that has provided the guarantee mentioned above no longer has the credit rating stated.

Further details

The licence shall be subject to the provisions of Acts and Executive Orders that specify rules for holders of frequency licences. At the time of issuing the licence, the provisions of the following Executive Orders are particularly relevant:

- Executive Order No. 1329 of 30 November 2017 on Licences to Use Radio Frequencies, and
- Executive Order No. 1129 of 1 December 2009 on the Transfer and Return of Certain Licences to Use Radio Frequencies.

The frequencies may only be used in radio equipment that complies with the Act on Radio Equipment and Electromagnetic Matters and rules issued in pursuance thereof, including requirements for the use of radio equipment that complies with the essential requirements and the regulated interfaces.

Under section 21 of the Frequency Act, the licence may be transferred in its entirety without prior approval. Transfer or return of part of the licence shall be subject to approval by the Danish Energy Agency, cf. section 1 of Executive Order No. 1129 of 1 December 2009 on the Transfer and Return of Certain Licences to Use Radio Frequencies.

Under section 5 of Executive Order No. 1329 of 30 November 2017 on Licences to use Radio Frequencies, the licensee shall notify the Danish Energy Agency of its plans to transfer the licence or parts thereof before such transfer takes place. Information about current plans for transfer will be published in the Frequency Register on the Danish Energy Agency's website.

The Danish Energy Agency will collect frequency charges, cf. section 50 of the Frequency Act. The charges are fixed annually in the Finance Act. An invoice for the frequency charge will be sent separately.

The Danish Energy Agency shall revoke the licence if the licensee fails to pay frequency charges due, cf. section 25 of the Frequency Act.

In certain cases the Danish Energy Agency may modify terms in the licence or revoke the licence, cf. section 23 and section 24 of the Frequency Act.

If the licensee grossly violates the Frequency Act, rules laid down in pursuance of the Act, or terms in the licence, cf. section 26 of the Frequency Act, the Danish Energy Agency may revoke the licence.

Upon return of its licence to the Danish Energy Agency, the licensee may terminate future rights and obligations not yet due by paying not later than the date of return an amount equivalent to 30 % of the licence price, or, if payment of a smaller amount of the licence price is outstanding, then such smaller amount. Thus a return of the licence shall not imply that the licence price will be repaid.

The Danish Energy Agency may impose on the licensee the sanctions that follow from the Danish Energy Agency's decision of 14 June 2018 on the 700 MHz, 900 MHz and 2300 MHz Auction, appended as annex 2 to this licence. Annex 2 thus specifies the sanction options that may be adopted in case of violation of the payment terms of this licence and for matters bearing on the auction process if the Danish Energy Agency becomes aware of such violations after issuing this licence, refer in particular to clauses 80-81 and 85-92 in annex 2.

Relevant Acts and Executive Orders may be found on the Danish Energy Agency's website under: <http://www.ens.dk>

No supplement to the licence will be issued if the rules mentioned above are changed.

In regard to matters bearing on the licence, the venue applicable to the licensee shall be in Denmark. If the venue of a licensee is not in Denmark, the agreed venue of the licensee will be the Danish Energy Agency's venue.

Danish Energy Agency, dd Mm 2019

Janni Torp Kjærgaard

/Maria Schmidt Jensen

Annex 1: Requirements for using frequencies in the frequency band [xx MHz]

Terms

Antennas and transmitting and receiving equipment capable of using the frequencies specified in the Licence shall be installed by the licensee not later than 1 January 2021 at a minimum of 100 mast positions. The equipment at the relevant mast positions shall be connected to the necessary telecommunications infrastructure to enable the licensee, via the relevant mast positions, to offer at least one electronic communications service (at the licensee's own discretion) to end-users by using the frequencies specified in the licence.

Supervision

The licensee shall forward, not later than 1 July 2022, a survey to the Danish Energy Agency specifying the mast positions at which antennas and transmitting and receiving equipment have been installed so that at least one electronic communications service can be offered to end-users by using the frequencies specified in the licence. In the survey, the licensee shall indicate the geographical coordinates of the mast positions and the type of the installed transmitting and receiving equipment.

Annex 2: Decision by the Danish Energy Agency of 18 June 2018 on the 700 MHz, 900 MHz and 2300 MHz Auction

[Reference is made to Annex B to the Information Memorandum.]

Annex 3: Coverage obligation for using frequencies in the frequency band [xx MHz]

Terms

Licensees shall ensure provision, not later than 4 April 2022, of a mobile voice service and a mobile broadband service with an outdoor download bit rate of at least 50 Mbit/s and an upload bit rate of at least 5 Mbit/s. [At selected addresses it is sufficient to ensure provision of a mobile voice service and a mobile broadband service with an outdoor download bit rate of at least 30 Mbit/s and an upload bit rate of at least 3 Mbit/s.] The coverage obligation shall apply to at least 98 % of the addresses included in the coverage obligation specified in the licence, cf. annex 6. Coverage may be provided assuming that any end-customer at the address is using fixed equipment for receiving the connection, if the licensee is generally marketing such product at a reasonable cost for the end-customer.

The coverage obligation can be fulfilled by using frequencies governed by this licence or other frequencies available to the licensee. The coverage obligation may be fulfilled via national roaming agreements or via bilateral agreements between licensees. If a licensee chooses to fulfil a coverage obligation at an address via another licensee, a concrete agreement between the licensees on coverage at the address must be available.

In quite exceptional cases where a licensee cannot ensure provision of a mobile voice service or a mobile broadband service in accordance with the requirements above for reasons outside the control of the licensee, including environmental, preservation-related or quite exceptional radio planning conditions, the Danish Energy Agency, subject to application and after having received proper documentation, may relax the terms requiring coverage for specific addresses.

In case the Danish Energy Agency, in connection with the disposal of frequency bands other than the 2300 MHz band, issues frequency licences subject to coverage obligations, the Agency may relax the terms for coverage, cf. clause 3, including cases in which the areas correspond wholly or partly with coverage areas in other frequency licences, or where other frequency licences specify higher requirements for offered broadband bit rates etc.

Supervision and documentation for fulfilling the coverage obligation

The licensee shall provide documentation that the coverage obligation is fulfilled. This implies that the licensee shall forward documentation that it is possible to provide an outdoor download bit rate of at least 50 Mbit/s and an upload bit rate of at least 5 Mbit/s when using the broadband service. [At selected addresses the licensee shall forward documentation that it is possible to provide an outdoor download bit rate of at least 30 Mbit/s and an upload bit rate of at least 3 Mbit/s when using the broadband service.]

Documentation of compliance with the coverage obligation shall consist of coverage calculations/simulations supplemented with measurements confirming such calculations/simulations. When preparing calculations/simulations, the licensee can use the method that it finds most suitable, taking into account the technology used and the implementation of the network. Calculations may for example be made using the same model as that used for calculating the coverage reported for the use of Tjekditnet.dk to the Danish Energy Agency.

Either the licensee can provide documentation for the functioning of the network with chosen technical parameters, or it can simulate the grade-of-service that it can deliver in the network with the chosen technical parameters and other operational parameters. These parameters are, for example: Transmitting power, propagation model, link budget, geographical distribution of users, number of simultaneous users, usage pattern etc. Furthermore it may be assumed that a possible end-customer is using fixed receiving equipment placed at a height of 4 m above ground level and has a directional antenna placed optimally if the licensee is marketing such product, see above.

Calculations/simulations shall be verified by concrete measurements. The measurements in question shall be made in a radio-related environment (i.e. ground conditions), over distances and with equipment matching the conditions applicable in relation to the user. Information about the calculation model, measurement results and degree of correlation between the calculation model and measurement results shall be included in the material that the licensee shall submit to the Danish Energy Agency in connection with the supervision. Thus the licensee shall make a sufficient number of measurements to be able to verify the results of the calculation model, and measurements may be made gradually as the infrastructure is rolled out.

If the coverage obligation is fulfilled via a bilateral agreement, the licensee shall in addition to the abovementioned documentation also forward the bilateral agreement. The agreement shall consequently be enclosed as part of the material, which the licensee forwards to the Danish Energy Agency in connection with documenting fulfilment of the coverage obligation.

The licensee shall forward a list of those addresses not to be covered. For each address the licensee shall substantiate the reason for not covering the addresses in question. The list including the substantiation will be published at the Danish Energy Agency's website.

The licensee shall provide documentation for the fulfilment of the coverage obligation not later than 1 July 2022.

Annex 4: Addresses subject to coverage obligations in the Licence

[Reference is made to annex J to the Information Memorandum for coverage obligations associated with the 2300 MHz frequency band.]

[Reference is made to annex K to the Information Memorandum for additional coverage obligations.]

Annex 5: Technical conditions for base stations for terrestrial systems capable of providing electronic communications services within the frequency band 2300-2400 MHz

Technical conditions for using the frequency band 2300-2400 MHz appear from annexes 1 and 2 of CEPT ECC Decision (14) 02 regarding "Harmonised technical and regulatory conditions for the use of the band 2300-2400 MHz for Mobile/Fixed Communications Networks (MFCN)".

In annex 2, section A2.1.1, as regards the frequency band 2300-2390 MHz, the in-block e.i.r.p. limit must not exceed 68 dBm/5 MHz.

In annex 2, section A2.1.1, as regards the frequency band 2390-2400 MHz, the in-block e.i.r.p. limit must not exceed 45 dBm/5 MHz.

In annex 2, section A2.2, the requirement for an upper limit of in-block power of 25 dBm does not apply. The requirements appear from the relevant harmonised standard in the ETSI EN 301 908 series chosen for the technology.