

Spectrum department

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Decision to limit the number of licences in the 700 MHz band

The case

Limitation of the number of licences in a frequency spectrum and issue of an open invitation to apply according to chapter 3 section 7 of the Act (2003:389) on electronic communication

The Swedish Post and Telecom Agency's decision

1. The Swedish Post and Telecom Authority (PTS) decides to limit the number of licences in the 700 MHz band to seven.
 - Two licences of 2×5 MHz for FDD (Frequency Division Duplex).
 - One licence for two adjacent frequency blocks of 2×5 MHz, i.e. in total 2×10 MHz for FDD with coverage and deployment obligations.
 - Four licences of 1×5 MHz for SDL (Supplemental Down Link).

Frequency block	Up link band (MHz)	Down link band (MHz)
FDD1	713-718	768-773
FDD2	718-723	773-778
FDD3	723-728	778-783
FDD4	728-733	783-788

Table 1 Frequency blocks FDD: Frequency Division Duplex

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Frequency block	Frequency area (MHz)
SDL1	738–743
SDL2	743–748
SDL3	748–753
SDL4	753–758

Table 2 Frequency blocks SDL: Supplemental Down Link

2. The Swedish Post and Telecom Authority decides to issue an open invitation to apply according to [Appendix 1](#) and that:
 - a) licences shall be allocated in accordance with the award procedures that are determined in the open invitation to apply,
 - b) licences shall be combined with conditions according to [Appendix A to the open invitation](#).
 - c) winning bidders shall pay handling fees in accordance with what is stated in the open invitation.

Reason

Applicable legal provisions

According to the European Parliament's and Council's decision (EU) 2017/899 of 17 May 2017, member states shall no later than 30 June 2020 allow the frequency band 694–790 MHz (hereinafter referred to as the 700 MHz band) to be used for terrestrial systems that can provide wireless broadband services according to harmonised technical conditions that are established by the Commission.

The European Commission has in its implementation decision of 28 April 2016 (2016/687/EU) determined harmonised technical conditions for the 700 MHz band.

Through the Swedish government's decision of 1 June 2017 (ku2017/01429/MF), the 700 MHz band, with the exception of 703–713 MHz and 758–768 MHz, has been made available for purposes other than terrestrial television with effect from 1 November 2017.

According to chapter 3 section 7 of the Act (2003:389) on electronic communication - LEK - the number of licences that are granted within a frequency spectrum may be limited if this is necessary in order to guarantee the effective use of radio frequencies.

According to chapter 3 section 8 of LEK, when the number of licences has been limited according to chapter 3 section 7 of LEK, the assignment evaluation shall occur after an open invitation to apply unless there are special

reasons that indicate otherwise. The evaluation shall occur according to a comparative selection process, according to a bidding process in which the price the applicant will pay for the licence shall be decisive or according to a combination of these processes.

The Swedish Post and Telecom Authority has published rules for selection processes and awarding of licences for spectrum auctions in the authority's regulation (PTSFS 2008:1) on spectrum auctions, amended through PTSFS 2010:5, PTSFS 2016:2 and PTSFS 2018:1.

However, these regulations only regulate *auctions* of licences to use radio transmitters. The PTS regulation (PTSFS 2018:2) on a *combined selection process* for licences to use radio transmitters in the 700 MHz band therefore regulates the combined selection procedure that will be performed in this case in order to award the licence that is combined with conditions for coverage and deployment. According to these regulations, PTS may decide on rules for the combined selection process through a decision to limit the number of licences according to chapter 3 section 7 of LEK and issue an open invitation to apply.

According to the PTS regulation (PTSFS 2017:5) on fees, anyone who applies for a licence to use radio transmitters, where licence evaluation occurs after an open invitation to apply according to chapter 3 section 8 of the Act (2003:389) on electronic communication, may be ordered to pay a handling fee. The amount of the fee and how it is distributed between those who are to pay, shall appear in the regulations or a decision given by the Swedish Post and Telecom Authority in connection with the bidding proceedings in question.

PTS' assessment

Block sub-division so as to guarantee the effective use of frequencies

The harmonised band plan according to the Commission decision (2016/687/EU) for the 700 MHz band is based on frequency blocks of 5 MHz. A block size of 5 MHz is an accepted and standardised smallest building block for radio networks for mobile broadband and telephony. In summary therefore it is PTS' assessment that 5 MHz blocks give the best prerequisites for the effective use of the 700 MHz band and that the number of licences in the band shall be based on such a sub-division. The individual bidders in the auction thus also have the opportunity to ensure that their own needs are met and can choose to bid for one or more licences.

One of the licences is combined with conditions for coverage and deployment. It has been decided that the frequency spectrum for this licence will include two adjacent frequency blocks of 2×5 MHz each so that the prerequisites for the conditions being fulfilled shall be as favourable as possible. The coverage

obligation aims to contribute to reach the mobility objective of the government's broadband strategy, *Sverige helt uppkopplat 2025 – en bredbandsstrategi*¹. The wider frequency range for this specific licence compared to the other licences is considered a way to make it sufficiently attractive given the burden associated with the coverage obligation. Furthermore, 2×10 MHz provide for a sufficiently high bit rate within the geographical areas covered by the coverage obligation.

Selection procedure

PTS' assessment is that a selection procedure shall apply. The 700 MHz band is harmonised internationally and has good propagation characteristics. It may therefore be assumed that the demand for frequencies in this band may exceed the available frequency spectrum in this band. According to the PTS spectrum strategy (PTS-ER-2014:16), in the first instance a bidding procedure shall be used in which the price (bid) that applicants are willing to pay for a licence is decisive: i.e. an auction.

Since one of the licences is combined with conditions for coverage and deployment, the selection process for this licence shall be formulated as a combined selection process according to the PTS regulation (PTSFS 2018:2) on a combined selection procedure for licences to use radio transmitters in the 700 MHz band. The award shall be made in the way described in the open invitation (Appendix 1).

A spectrum auction with several bidding rounds, also called an SMRA (Simultaneous Multiple Round Auction), means that the bidders are informed of how other bidders value the licences in the auction. In choosing the auction format, the assessment is that an SMRA is the most appropriate format for the award, partly because the auction covers several types of licences including one combined with conditions for coverage and deployment.

PTS and the market also have good experience of SMRAs with transfer rights in auctions involving high values. This auction format has previously been used for spectrum auctions for the 2.6 GHz and 800 MHz bands.

Lowest bid

In auctions with several bidding rounds it is appropriate to set a lowest bid as a starting point for bidding so as to prevent the auction from taking too long. PTS' assessment is that the lowest bid for FDD licences shall be SEK

¹ Reference number: N2016/08008/D

100 million for the licences that has no coverage requirements and SEK 200 million for the licence that is combined with coverage requirements. The lowest bid for each SDL licences has been determined to SEK 50 million.

Lowest bids at this level are judged to represent a reasonable balance between the risk of unnecessary delays and expenses for both bidders and PTS and the risk that the lowest bid exceeds a bidder's initial valuation of the frequencies and thus stops it from participating in the auction.

Spectrum cap

A spectrum cap of 40 MHz shall be applied to the auction in accordance with Appendix 1. The spectrum cap applies regardless of whether licences for Frequency Duplex Division (FDD) or Supplemental Downlink (SDL) are acquired. Thus a bidder can be awarded a maximum of 40 MHz in total in the auction.

This decision has been made by Deputy Director General Catarina Wretman. In the final processing, the Heads of Departments Jonas Wessel and Karolina Asp, Head of Unit Karoline Boström and Press Officer Peter Ekstedt took part. The project manager Morgan Westring has been the rapporteur. The deputy project manager Anna-Maria Lann also attended the presentation.

According to chapter 8 section 20, second paragraph of LEK this decision may only be appealed in connection with an appeal on a decision to issue a licence to use radio transmitters.