



## **Annex III**

# **Auction rules for the combined award of spectrum in the 800MHz, 900MHz, 1.8GHz, 2.1GHz and 2.6GHz bands**

**Version of 9 November 2011**

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# 1 General

## 1.1 Available lots

- 1.1.1 In total, there are 61 lots, divided into eleven lot categories, available in the auction. Table 1-1 provides an overview of these categories, the number of lots available in each category, and their respective spectrum endowments, reserve prices and eligibility points for the purpose of the application of Rules 3.2.16 - 3.2.21 and 3.3.21.
- 1.1.2 Lots in categories A to J will be awarded first on a generic basis, i.e. lot applications (see Rule 1.2.3) and any bids made in the principal stage (see Section 3) will be made for blocks of spectrum that do not have any specific frequency range assigned to them. The specific frequency assignments are then decided in a separate assignment stage (see Section 4).

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**Table 1-1: Lots available in the auction**

Category	Licence duration	Available lots	Spectrum endowment...	Reserve price...	Eligibility points ...
					... per lot
Category A: 791-821MHz paired with 832-862MHz	1.1.2013 – 31.12.2028	6	2x5MHz	CHF21.3 million	6
Category B: 880-915MHz paired with 925-960MHz.	From 1.1.2015 <sup>1</sup> From 1.1.2016 <sup>2</sup> – 31.12.2028	7	2x5MHz	CHF21.3 million	6
Category C: 1710-1785MHz paired with 1805-1880MHz	From 1.1.2015 <sup>1,3</sup> From 1.1.2016 <sup>2</sup> – 31.12.2028	1	2x10MHz (only 2x8.6 MHz usable from the license award)	CHF16.6 million	4
Category D: 1710-1785MHz paired with 1805-1880MHz	From 1.1.2015 <sup>1</sup> From 1.1.2016 <sup>2</sup> – 31.12.2028	13	2x5MHz	CHF7.1 million	2
Category E: 1900-1920MHz	2012 – 31.12.2028	1	1x5MHz	CHF4.15 million	1
Category F: 1900-1920MHz (	1.1.2017 – 31.12.2028	3	1x5MHz	CHF2.7 million	1
Category G: 1920-1980MHz paired with 2110-2170MHz	2012 – 31.12.2028	3	2x5MHz	CHF8.3 million	2

<sup>1</sup> Latest time for the start of unrestricted utilisation in Switzerland, excluding the regions of Basel and Geneva

<sup>2</sup> Latest time for the start of unrestricted utilisation in Switzerland in the regions of Basel and Geneva

<sup>3</sup> 2x 8.6 MHz immediately from license award

Category	Licence duration	Available lots	Spectrum endowment...	Reserve price...	Eligibility points ...
					... per lot
Category H: 1920-1980MHz paired with 2110-2170MHz	1.1.2017 – 31.12.2028	9	2x5MHz	CHF5.4 million	2
Category I: 2500-2570MHz paired with 2620-2690MHz	2012 – 31.12.2028	14	2x5MHz	CHF8.3 million	2
Category J: 2570-2615MHz	2012 – 31.12.2028	3	1x15MHz	CHF12.45 million	3
Category K: 2010-2025MHz	2012 – 31.12.2028	1	1x15MHz	CHF12.45 million	Not applicable

## 1.2 Lot application

- 1.2.1 As part of their application, and in order to be eligible to participate in the auction, applicants have to complete a lot application form.
- 1.2.2 The lot application form lists all categories, the number of lots within categories, and the reserve prices and eligibility points for lots in each category.
- 1.2.3 In the lot application form, an applicant must specify the number of lots in each category that they are willing to buy at the respective reserve price, subject to the constraints in Section 1.5.
- 1.2.4 The completed lot application form represents an unconditional and irrevocable offer to buy the number of lots specified by the applicant in the lot application form at the reserve prices in the event that the auction does not proceed through a principal stage in accordance with Rule 1.4.3.
- 1.2.5 If a principal stage is required, the applicant's lot application determines its initial eligibility in accordance with Rule 1.4.9.

## 1.3 Bank guarantee

- 1.3.1 Applicants must submit a bank guarantee valid until 31st August 2012. The required amount of the bank guarantee corresponds to 50% of the total value of the lots requested by the applicant on the lot application form at reserve prices.
- 1.3.2 The auction manager may request an extension of the validity of the bank guarantee as well as an increase in the bank guarantee after the completion of any primary round, or following the supplementary round so that the total value of the bank guarantee of each bidder is not less than 25% of the highest bid submitted by that bidder.
- 1.3.3 If the auction manager requests increases in the bank guarantee it will announce the deadline by which the increased bank guarantees have to be provided. Bidding will be suspended until this deadline has expired.

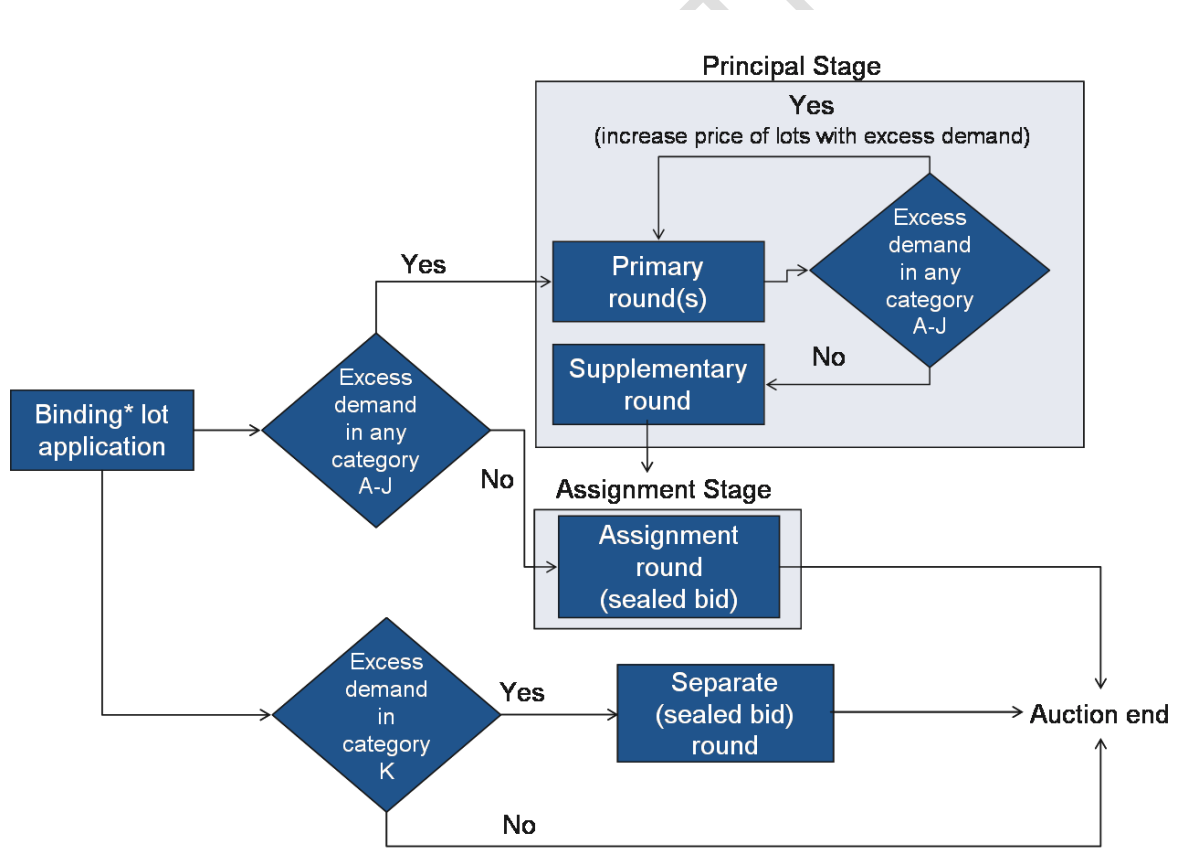
1.3.4 A bidder who fails to provide the increased bank guarantee as requested will be excluded from further bidding. Rule 2.4.1 will be applied to bidders so excluded, and their bids.

## 1.4 Assessment of applications and determination of the need for a principal stage and a separate bid round for 2010-2025MHz

1.4.1 Following the deadline for applications, OFCOM will assess the applications received. Approved applicants are referred to as bidders. A withdrawal of an application is not allowed.

1.4.2 Upon completion of the assessment of applications, ComCom will inform each bidder by a formal decision about the following:

- whether the applicant is eligible to participate in the auction
- whether a principal stage is required; and
- whether a separate bid round for 2010-2025MHz is required;
- the bidder's initial eligibility for the principal stage (if required); and
- whether the bidder is eligible to participate in a separate bid round for 2010-2025MHz (if applicable).



\*\*"Binding" means that if there is no scarcity of frequencies in all the categories being put out to tender (.i.e. if the first stage of the auction does not take place), the applicant must accept unconditionally and irrevocably the frequency blocks applied for at the minimum bid. Otherwise, the information provided in the frequency allocation application (Annex IV) determines the eligibility points, i.e. the extent of the bids which can be made in the auction (cf. section 1.2.4 and 1.2.5).

- 1.4.3 A principal stage is required if for one or more of categories A to J the sum across all bids of lots specified in each bidder's lot application form for the respective category exceeds the number of lots available in that category i.e. if there is at least one category in categories A to J for which demand exceeds supply.
- 1.4.4 If a principal stage is required all categories A to J (with their respective lots) will be included in the auction regardless of whether there was excess demand in the respective category at the application stage.
- 1.4.5 If the principal stage is not required, each bidder will be considered a winning bidder in relation to categories A to J, and the lot application form of each winning bidder determines the number of lots that bidder wins in each of the categories. The base price for each winning bid will be determined as the sum of reserve prices of all lots in the bidder's lot application, and the auction proceeds directly to the assignment stage as described in Section 4.
- 1.4.6 A separate bid round for 2010-2025MHz is required if two or more bidders have included the category K lot in their lot application.
- 1.4.7 If a separate bid round for 2010-2025MHz is not required, the (single) bidder (if any) who requested the category K lot in its lot application form will be considered the winner of this lot. The successful bidder will have to pay the reserve price.
- 1.4.8 The auction manager will announce to each bidder its initial eligibility in categories A to J, and whether the bidder is eligible to bid in any separate bid round for 2010-2025MHz.
- 1.4.9 The initial eligibility of a bidder for the principal stage is determined as the sum of the eligibility points of all lots in categories A to J included in its application form and is calculated by:
- for each of the categories A to J, multiplying the number of lots specified on the bidder's lot application form with the respective eligibility points per lot; and
  - adding up the resultant numbers across all categories A to J.
- For the avoidance of doubt, bidders may bid for any lot in any of the categories A to J during the principal stage within these rules, regardless of whether the lot was included in their lot application form.
- 1.4.10 Only bidders who have included the category K lot in their lot application form are eligible to participate in a separate bid round for 2010-2025MHz.

## 1.5 Spectrum caps

- 1.5.1 Lot applications and bids made in the principal stage are subject to the following spectrum caps:
- total 2x25 MHz over the two categories A (800 MHz) and B (900 MHz); i.e. the category A and B frequencies acquired must not exceed 2x25 MHz in total;
  - 2x20 MHz in category B (900 MHz);
  - total 2x30 MHz over the two categories G and H (2.1 GHz paired)
  - total 2x35 MHz over the two categories C and D (1.8 GHz)
  - maximum 2x135 MHz of the total available FDD spectrum (categories A, B, C, D, G, H and I)

## 1.6 Other information

1.6.1 Before the auction, the auction manager will announce to all bidders:

- the number of extension rights during the auction to be granted to each bidder (c.f. 3.2.29 ff.); and
- the provisional round schedule for the first days of the auction.

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## 2 The auction

### 2.1 Auction structure

- 2.1.1 The auction is a combinatorial clock auction and it proceeds in up to two stages.
- 2.1.2 The first stage is the so-called principal stage, and it determines the number of lots that are to be awarded to each winning bidder in each of categories A to J, and the base prices that have to be paid by winning bidders for their lots. The principal stage, if required, consists of:
- a number of primary rounds, followed by
  - a supplementary round.
- 2.1.3 The second stage is the so-called assignment stage. It determines the specific frequencies in categories A to J that are awarded to each winning bidder and any additional prices that must be paid by bidders for being assigned specific frequencies. It consists of a single round of bidding.
- 2.1.4 These two stages are followed by a separate bid round for 2010-2025MHz. This is a single round second price, sealed bid auction for the single lot available in category K.

### 2.2 Bid submission

- 2.2.1 All bids are submitted through the electronic auction system made available by OFCOM (unless exceptional circumstances prevent bidders from doing so – see Rule 2.2.5).
- 2.2.2 The process for submitting a bid in each of the primary rounds, supplementary round, the assignment round and the separate bid round for 2010-2025MHz is described in the relevant sections below, but in all cases there is a two-step process for submitting bids:
- in the first step, bidders enter their bid in a given form and send this for checking by the electronic auction system; and
  - in the second step, a valid bid is confirmed.
- 2.2.3 The electronic auction system will not allow bidders to submit a bid form that is inconsistent with the rules for the relevant stage of the auction. Once a bid has been checked and has been confirmed as compliant with the applicable constraints, the screen will display a summary statement of the bid. A bidder can then formally submit this bid. Alternatively, the bidder could choose to return to the bid form to revise its bid (in which case the bidder would need to check its bid once more before it can be confirmed).
- 2.2.4 A bidder is deemed not to have submitted a bid until such time as confirmation of a valid bid 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 bid by the auction system, and to alert the auction manager if problems are suspected to have prevented successful receipt of a confirmation.
- 2.2.5 If a bidder is unable to submit a bid using the electronic auction system it should immediately notify the auction manager and seek permission to submit a bid using fax. Permission will be granted at the discretion of the auction manager, and will usually not be given if the auction manager has been notified after a round has

closed. Where notification is received before the end of a round, the auction manager may grant such permission for a single round or for more rounds within a specified period, and will provide further directions for the submission of bids.

## **2.3 Collusion**

2.3.1 See chapter 7.1 of the tender document

## **2.4 Breach of auction rules**

2.4.1 See chapter 7.1 – 7.5 of the tender document.

## **2.5 Communication with the auction manager**

2.5.1 The electronic auction system contains a one-way messaging system, which will be used as the primary method for the auction manager to send messages and notices to bidders during the auction.

2.5.2 Bidders may contact the auction manager by telephone or fax. Further information will be available only for bidders in advance of the auction.

## **2.6 Exceptional circumstances**

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

- postpone the end of a round in progress or the release of results of a round;
- postpone the scheduling of further rounds;
- cancel a round that is either underway or for which round results have not yet been released, and re-schedule the round;
- void one or more rounds and the bids made therein, and resume the auction from an earlier round;
- void all bids received in the auction, and either suspend the auction or start the auction again; and/or
- end the primary rounds early (i.e. while there is still excess demand in one or more categories), and proceed directly to the supplementary round.

2.6.2 The auction manager 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.

## 3 Principal stage

### 3.1 General

3.1.1 The principal stage includes only categories A to J. Any reference to 'categories' in the remainder of this section is to categories A to J only.

### 3.2 Primary rounds

#### Primary round structure

3.2.1 The primary rounds follow a clock auction format. The auction proceeds in discrete rounds, with all bidders making bids within the same fixed time window (subject to the provisions for extensions, described further below).

3.2.2 In any given primary round, one bid for a single package of lots across categories A to J can be made by each bidder, with the bid amount being determined through the prevailing clock prices in the respective categories (i.e. the price per lot in that category set by the auction manager). Bids are submitted for a package of lots, and each bid will only be considered in its entirety and will not be subdivided.

#### Schedule for primary rounds

3.2.3 Primary rounds are scheduled at the auction manager's discretion.

3.2.4 There is no minimum or maximum length for a primary round. However, the auction manager does not anticipate running primary rounds of less than 15 minutes or greater than two hours. Subject to the constraints implied by Rule 3.2.7, the duration between primary rounds is discretionary and may be varied by the auction manager without notification.

3.2.5 All primary rounds will be scheduled between 9.00 and 18.00 hours on Swiss business days.

3.2.6 There is no upper bound on the number of primary rounds per day, although the auction manager does not anticipate running more than eight primary rounds in a single day.

3.2.7 Bidders will be notified of the start time of a primary round at least 15 minutes in advance. With the start time of the next primary round, each bidder will also be informed about:

- the duration of the primary round;
- the clock prices for each category;
- the bidder's eligibility to bid in the primary round (expressed as a number of eligibility points); and
- their number of remaining extension rights.

#### Bid submission

3.2.8 All lots in the categories A to J are available for bidding in each primary round.

3.2.9 In each primary round, an applicant may submit only one bid.

3.2.10 A bid specifies the number of lots in each of the categories that a bidder wishes to acquire at the prevailing clock prices. Subject to the constraints arising from the application of Rules 1.5.1 and 3.2.17 a package may include any combination of lots.

3.2.11 To enter a bid, bidders select the number lots that they wish to acquire in each of the categories using the drop down boxes provided on the electronic bid form.

3.2.12 The amount of a bid is determined as follows:

- for each category the number of lots in that category included in the bid will be multiplied by the relevant clock price for that category; and
- these values will be added up across all lot categories.

It is not possible for bidders to choose the amount of a bid during the primary rounds.

3.2.13 Bid submission follows the two-step process described in Section 2.2

3.2.14 In the first primary round, each bidder must submit a bid for a package containing at least one lot from any of the categories A to J. In subsequent rounds, bidders have the option to submit a 'zero bid', i.e. to bid for an empty package containing no lots in any of the categories A to J (Note: according to 3.2.18 the current amount of eligibility points will be set to "0" in this case).

3.2.15 If a bidder fails to submit a bid within the round or within an extension period granted to that bidder (see Rule 3.2.29 f.) the auction system will automatically enter a zero bid on the bidder's behalf.

### **Activity rules**

3.2.16 The activity associated with a bid is the sum total of the eligibility points of all lots included in the bid and is calculated as follows:

- for each category A to J the number of lots selected in that category included in the bid will be multiplied by the eligibility points per lot for that category; and
- these values will be added up across all lot categories A to J.

3.2.17 In each primary round, a bidder may submit a bid with an activity level less than or equal to its current eligibility for the categories A to J, and in accordance with the provisions of Rule 1.5.1.

3.2.18 The total eligibility of a bidder for the first primary round is calculated in accordance with Rule 1.4.9. For each subsequent primary round, each bidder's eligibility is equal to that bidder's activity in the previous primary round. Thus, over successive primary rounds, a bidder's eligibility can stay the same or fall, but can never increase.

3.2.19 The electronic auction system will not allow bidders to submit a bid whose activity exceeds the bidder's eligibility or is in violation of the spectrum caps set out in Rule 1.5.1. In this case, bidders will be required to return to the bid form to revise their bid.

3.2.20 The electronic auction system will also warn bidders if their bid would result in a reduction of their eligibility for the next round. In this case, bidders will be able to return to the bid form to revise their bid.

3.2.21 As the primary rounds progress, bidders may switch eligibility between categories of lots. Therefore, it is possible that a bidder's activity in one or more categories may increase, provided that the bidder's activity in other categories is sufficiently reduced.

### **Validity of bids**

3.2.22 Each bid submitted is considered valid and represents a binding commitment to buy the specified package of lots at the specified bid amount.

3.2.23 A bid remains valid until it is replaced by a higher bid for the same package by the same bidder in a subsequent primary or supplementary round, or it is voided by the auction manager pursuant to Rule 2.4.1.

## **Clock prices**

- 3.2.24 In the first primary round, the clock price for each of the categories A to J will be set equal to the reserve price for that category. In subsequent primary rounds, the clock price for a particular category will be increased if in the previous round demand for lots in that category has exceeded supply.
- 3.2.25 Excess demand in a category exists where the number of lots in that category across all valid bids is greater than the number of lots available in that category.
- 3.2.26 For categories in which there is no excess demand, the clock price will remain unchanged.
- 3.2.27 For the avoidance of doubt, it is not possible for the clock price for any category to fall during the primary rounds.
- 3.2.28 In each of the categories A to J, the amount by which the clock price is increased in the case of excess demand is set at the auction manager's discretion, and may vary across categories and across primary rounds. However, the clock price will not increase by more than 100% from one primary bid round to the next. Clock prices will be given in units of CHF 1,000.

## **Extension rights**

- 3.2.29 An extension right allows a bidder additional time in which to submit a bid during a primary round. In the event that a bidder with non-zero eligibility and one or more remaining extension rights fails to submit a bid during a primary round, the round will automatically be extended for that particular bidder, and one of its remaining extension rights deducted. The electronic auction system will automatically extend the time within which that bidder can submit a bid by 30 minutes from the scheduled end of the round.
- 3.2.30 The extension period ends 30 minutes after the scheduled end of the round, or once all bidders who are using extensions have successfully submitted their bids, whichever is the earlier.
- 3.2.31 Bidders who have already submitted a bid during the round cannot take any further action during the extension period; they will be informed that the round has been extended and should wait for the announcement that the extension period has ended.
- 3.2.32 Bidders who have not submitted a bid during the primary round and have no remaining extension rights will not be able to enter a bid during the extension period, and a zero bid will be entered automatically on their behalf.
- 3.2.33 Each bidder starts the primary rounds with two extension rights.
- 3.2.34 Additional extension rights for the primary rounds may be granted either to all bidders or to individual bidders at the auction manager's absolute discretion. Additional extension rights can only be granted in the periods between primary rounds. They cannot be granted during a primary round.
- 3.2.35 Extension rights are provided to bidders in order to protect them from unforeseen circumstances that would prevent them from entering a bid during a primary round. Extensions are intended to provide a safeguard against effects of technical failures, rather than to provide bidders with extra time to consider their decisions.
- 3.2.36 A bidder may notify the auction manager that it is unable to submit a bid during a primary round and is likely to require an extension period; notification is not mandatory but would assist administration of the process.

### **Information available during the primary rounds**

- 3.2.37 Before the start of the first primary round, each bidder will be informed about its own initial eligibility. This information will not be provided to other bidders.
- 3.2.38 At the end of each primary round, the auction manager will release to each bidder information about:
- the aggregate demand for lots in each category; and
  - the bidder's own bids, their eligibility in the next round, the total amount of the bidder's highest bid in the auction to date, and how many extension rights the bidder has remaining.
- 3.2.39 No information will be released about the individual bids submitted by other bidders.
- 3.2.40 The electronic auction system includes a history function that will allow bidders to view and download information about aggregate demand by category, clock prices, and their own bids in previous rounds.

### **End of the primary rounds**

- 3.2.41 The primary rounds end after a round in which there has been no excess demand for lots in any of the categories. At this point, the auction manager will announce that the primary rounds have finished and that the auction will progress to the supplementary round.
- 3.2.42 In addition, following the close of a primary round, the auction manager may announce that it is ending the primary rounds early (i.e. while demand is still above supply in one or more of the categories). In this case, the auction will proceed directly to the supplementary round, and there will be no further primary rounds.
- 3.2.43 The auction manager will only terminate the primary rounds early if it believes that proceeding directly to the supplementary round at this time is in the general interest of running an efficient award process.

## **3.3 The supplementary round**

### **Supplementary round structure**

- 3.3.1 The supplementary round consists of a single round of bidding that follows the primary rounds.
- 3.3.2 Bidders may submit a number of bids for packages of lots across categories A to J, subject to any restrictions resulting from the bids they have made in the primary rounds.
- 3.3.3 The supplementary round provides an opportunity for bidders to:
- submit bids for packages of lots that they are willing and eligible to bid for, but on which they did not bid in the primary rounds; and
  - increase their bids for packages that they have bid for in the primary rounds.
- 3.3.4 Unlike in the primary rounds, bid amounts are discretionary and can be freely chosen by the bidder subject to a minimum and in some cases a maximum as determined through Rule 3.3.21.
- 3.3.5 All bids received from bidders in both the primary rounds and the supplementary round are then considered together to determine the winners of the principal stage, and the base prices to be paid by winning bidders.

### **Schedule for supplementary round**

- 3.3.6 The start time and duration of the supplementary round will be announced by the auction manager after the completion of the primary rounds.
- 3.3.7 There will be at least one clear business day between the last primary round and the start of the supplementary round.
- 3.3.8 The auction manager has discretion over the time and duration of the round. However, the auction manager anticipates that the round will take place between 9.00 and 18.00 hours on a single business day, and last for at least 4 hours and no more than 6 hours.
- 3.3.9 A single extension right will be available to all bidders in the supplementary round. The extension period will not be longer than 30 minutes.

### **Bid submission**

- 3.3.10 All lots in categories A to J are available for bidding in the supplementary round.
- 3.3.11 A bidder may submit only one bid form in the supplementary round.
- 3.3.12 A bid form may consist of bids for up to 3000 packages (including those packages on which bids were submitted during the primary rounds). Each package may contain a number of lots in one or more of categories A to J. Subject to the provisions of Rule 1.5.1, and subject to the activity associated with the bid being not higher than the bidder's initial eligibility, a package may include any combination of lots.
- 3.3.13 To complete a bid form, a bidder selects the lots that it wishes to include in each package bid using the tools provided in the electronic auction system.
- 3.3.14 The amount of each supplementary bid is discretionary, subject to the restrictions set out in Rules 3.3.18 to 3.3.21. All supplementary bids must be in units of CHF1,000.
- 3.3.15 Bid submission will follow the two-step process described in Section 2.2. The electronic auction system will not allow bidders to submit a bid form that contains invalid bids. If a bid is rejected by the electronic auction system, the bidder will be able to return to the bid form to revise its bid.

### **Validity of supplementary bids**

- 3.3.16 Each bid submitted as part of a valid bid form is valid and represents a binding commitment to buy the specified package of lots at the specified bid amount.
- 3.3.17 A bid identified as valid under paragraph 3.3.16 remains valid unless it is voided pursuant to Rule 2.4.1.

### **Restrictions on bid amounts for supplementary bids**

- 3.3.18 Bidders may submit at most one supplementary bid for any package of lots for which they submitted a primary bid. Any such supplementary bid must exceed the highest bid made by that bidder in the primary rounds for that package of lots.
- 3.3.19 Bidders may also submit supplementary bids for packages of lots for which they had initial eligibility at the start of the auction, but for which they did not make primary bids. Bidders may submit only one supplementary bid for each such package.
- 3.3.20 All supplementary bids must be no less than the sum of the reserve prices for the component lots within the package.

3.3.21 All supplementary bids must comply with the following constraints:

- Each bidder has a 'final primary bid'. This is the most recent, non-zero primary round bid submitted by that bidder. If a bidder submitted its final primary bid in the last primary round, the supplementary bid the bidder can make for this package is uncapped.
- If a bidder's final primary bid was submitted in any primary round other than the last primary round, then the bidder's supplementary bid for this package is capped according to the prevailing prices for the component lots in the last primary round for which the bidder was eligible to bid for this package (i.e. the round immediately after the one in which the bidder submitted its final primary bid).
- All other supplementary bids (i.e. bids for packages other than a bidder's final primary bid) are subjected to a relative cap. Specifically, the supplementary bid for any other package X has a relative cap calculated as follows:
  - a) the bidder was last eligible to bid for X in round n;
  - b) in round n, the bidder's primary bid was for package Y;
  - c) the supplementary bid for X cannot exceed the bid for Y (i.e. the supplementary bid for Y or the primary round bid if no supplementary bid) plus the price difference between the price of package X and package Y in round n.

Thus, all caps in the supplementary round are effectively linked to the supplementary bid for the final primary bid package.

#### **Winner determination**

3.3.22 Following the close of the supplementary round, the auction manager will determine the combination of winning bids.

3.3.23 The combination of winning bids is the combination of valid bids submitted in the primary and supplementary rounds that, taken together, have the greatest total value, subject to the conditions that:

- In each category, no more lots are awarded than are available in that category; and
- at most one bid is accepted from each bidder.

3.3.24 The combination of bids that meets these criteria will be determined algorithmically.

3.3.25 If more than one set of bids meeting the conditions in rule 3.3.23 have the equal highest value, the set of bids amongst those with the equal highest value that includes the most winning bidders will be declared the winning combination of bids.

3.3.26 If the preceding Rule 3.3.25 does not identify a single winning combination, one of the potential winning combinations identified by Rule 3.3.25 will be picked by the electronic auction system using a process of random selection.

#### **Base price determination**

3.3.27 Each winning bid has an associated base price. A base price is an overall price for the entire package of lots in the winning bid. A separate base price is determined for each winning bid (and thus for each winning bidder).

3.3.28 Base prices are calculated such that each winning bidder, and each group of winning bidders jointly, pay the minimum amount that they could have bid without changing the outcome of the winner determination process.



3.3.29 Base prices are determined jointly for all winners in a single calculation. A unique set of base prices is found by applying the following conditions:<sup>4</sup>

- **First condition:** the base price of a winning bid must be greater than or equal to the total reserve prices of the lots in the package associated with that winning bid, but less than or equal to the winning bid amount.
- **Second condition:** the set of base prices must be sufficiently high that there is no alternative bidder, or group of bidders, prepared to pay more than any winner or group of winners. If there is only one set of base prices that meet the first and second conditions, this determines the base prices for the principal stage.
- **Third condition:** If there are many sets of base prices that fulfil the first and second condition, the set(s) of base prices that minimise(s) the sum of base prices across winning bidders is selected. If there is only one set of base prices satisfying these three conditions, this determines the base prices for the principal stage.
- **Fourth condition:** If there are many sets of base prices that satisfy the first three conditions, the set of base prices that minimise the sum of squares of differences between the base prices for each winner and the individual opportunity cost for that winner is selected.<sup>5</sup>

These conditions characterise a unique base price for each winning bidder that is no more than their winning bid and is at least the reserve price for that package. Finally, if these base prices are not amounts in units of CHF1,000 they are rounded up to the nearest CHF1,000.

#### **End of the principal stage**

3.3.30 Once the auction manager has determined the winning bids and the base prices, the outcome of the principal stage will be announced to bidders. The following information will be released to all bidders:

The number of lots won by the appropriate bidder in each of the categories A to J.  
This information will not be released to other bidders..

3.3.31 In addition, each winning bidder will be told the base price that applies to their own winning bid. This information will not be released to other bidders.

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<sup>4</sup> An algorithmic description of the process for the calculation of base prices is provided on the OFCOM website

<sup>5</sup> The opportunity cost for a winner is defined as the higher of either the sum of reserve prices of the lots included in its winning package or the amount of its winning bid less the difference between the total of all winning bids in the winning combination and the value of bids determined in the same manner but for the case in which all of the bids of the winner were excluded.

## 4 The assignment stage

### 4.1 General

- 4.1.1 The assignment stage includes only categories A to J. Any reference to 'categories' in the remainder of this section is to categories A to J only.

### 4.2 Assignment round structure

- 4.2.1 The purpose of the assignment stage is to determine how the available frequencies in each of the spectrum bands are to be assigned to the winning bidders. Table 4-1 provides an overview of the categories associated with each spectrum band.
- 4.2.2 It is possible that some or all lots in some spectrum bands may be unallocated at the end of the principal stage. Any unallocated lots will be placed contiguously as described below in Table 4-1.
- 4.2.3 The assignment stage consists of a single round of bidding in which bidders submit sealed bids for their preferred frequency assignments in each of the spectrum bands. Even though all assignment bids are submitted simultaneously, assignment bids are evaluated separately for each spectrum band.
- 4.2.4 If there is only one winning bidder in a spectrum band, then no assignment bids are required for that spectrum band. In this case, the single winner will be assigned frequencies in accordance with the rules on the placement of unallocated lots as set out below. No additional price will be due for the assignment of frequencies in a spectrum band where there is only one winning bidder.
- 4.2.5 There are particular procedures for each category, which are described in Table 4-1 below. For the avoidance of doubt, licensees in categories C, E and G may not receive the same frequency assignment for the entirety of the duration of their licences.

**Table 4-1: Assignment procedure and placement of unallocated lots**

Spectrum band	Associated categories	Placement of any unallocated lots	Assignment procedure
800MHz band: 791-821MHz paired with 832-862MHz	Category A	Any unallocated lots will be placed immediately above 791MHz paired with 832MHz	Assignment of the up to six lots awarded in the principal stage for the licence duration.
900MHz band: 880-915MHz paired with 925-960MHz.	Category B	Any unallocated lots will be placed immediately above 880MHz paired with 925MHz. If, as a result of the application of the restrictions in Annex VII, this should result in there being no possible allocation variant, unallocated blocks will be arranged in one or two contiguous blocks above 880 MHz paired with 925MHz and/or directly below 925 MHz paired with 960 MHz.	Assignment of the up to seven lots awarded in the principal stage for the time period from 1.1.2015 <sup>6</sup> and 1.1.2016 <sup>7</sup> to 31.12.2028.
1800MHz band: 1710-1785MHz paired with 1805-1880MHz	Category C and D	Any unallocated lots for the period from 1.1.2014 to 31.12.2028 will be placed immediately below 1785MHz paired with 1880MHz. If, as a result of the application of the restrictions in Annex VII, this should result in there being no possible allocation variant, unallocated blocks will be arranged in one or two contiguous blocks below 1785 MHz paired with 1880 MHz and/or above 1710 MHz paired with 1805 MHz.	The assignment of the category C lot from 2011 to 31.12.2013, is [1767.1-1775.7 MHz paired with 1862.1-1870.7 MHz].  The Assignment of up to 14 lots in categories C and D <sup>8</sup> from 1.1.2015 <sup>6</sup> and from 1.1.2016 <sup>7</sup> to 31.12.2028 is determined jointly.

<sup>6</sup> Latest time for the start of unrestricted utilisation in Switzerland, excluding the regions of Basel and Geneva

<sup>7</sup> Latest time for the start of unrestricted utilisation in Switzerland in the regions of Basel and Geneva

<sup>8</sup> These 14 generic lots will be concretised by the 15 physical frequency blocks C/D1 – C/D 15 according to Annex II.

Spectrum band	Associated categories	Placement of any unallocated lots	Assignment procedure
2.1GHz unpaired band: 1900-1920MHz	Category E and F	Any unallocated lots for the period from 1.1.2017 to 31.12.2028 will be placed immediately below 1920MHz.	The assignment of the category E lot from 2011 to 31.12.2016, is [1900.1-1905.1 MHz].  The Assignment of up to four lots in categories E and F from 1.1.2017 to 31.12.2028 is determined jointly.
2.1GHz 1965-1980MHz paired with 2155-2170MHz.	Category G	Any unallocated lots for the period from 2011 – 31.12.2016 will be placed immediately below 1980MHz paired with 2170MHz.	The assignment determines placement of up to three lots from 2011 to 31.12.2016 in 1964.9-1979.7 MHz paired with 2154.9-2169.7 MHz.
2.1GHz : 1920-1980MHz paired with 2110-2170MHz	Category G and H	Any unallocated lots for the period from 1.1.2017 – 31.12.2028 will be placed immediately above 1920MHz paired with 2110MHz.	The Assignment of up to 12 lots in categories G and H from 1.1.2017 – 31.12.2028 is determined jointly.
2.6GHz band: 2500-2570MHz paired with 2620-2690MHz	Category I	Any unallocated lots will be placed immediately below 2570MHz paired with 2690MHz.	Assignment of up to 14 lots awarded in the principal stage for the licence duration.
2.6GHz unpaired band: 2570-2615MHz	Category J	Any unallocated lots will be placed immediately below 2615MHz.	Assignment of up to three lots awarded in the principal stage for the licence duration.  The common winner of the assignments at 2600-2615MHz (J3) and 2500-2505MHz and I1 (2620-2625MHz)) will also be awarded 2615-2620MHz, which is subject to given restrictions on its usage.

### 4.3 Schedule for assignment round

- 4.3.1 The start time and duration of the assignment round will be announced by the auction manager after the completion of the principal stage.
- 4.3.2 There will be at least one clear business day between the supplementary round and the assignment round.
- 4.3.3 The auction manager has discretion over the time and duration of the round. However, the auction manager anticipates that the round will take place between 9.00 and 18.00 hours on a single business day, and last for at least 2 hours.
- 4.3.4 A single extension right will be available to all bidders in the assignment round. The extension period will not be longer than 30 minutes.

## 4.4 Bid options for the assignment round

- 4.4.1 Winning a certain number of lots within one of the categories A to J in the principal stage entails both a right and an obligation to purchase one of the corresponding frequency assignment options presented to that bidder in the assignment bid round.
- 4.4.2 Bidders are invited to submit bids for specific frequency assignment options as determined by the auction manager as follows:
- 4.4.3 For each of the spectrum bands where there are two or more winning bidders, the auction manager will determine a set of frequency assignment options available to each bidder. Specifically, for each bidder in each spectrum band, the auction manager will identify an exhaustive list of packages of contiguous frequencies consistent with the following conditions:
- the number of lots in each option equals the number of lots that the bidder won in the principal stage;
  - any option for assigning frequencies to a particular bidder is consistent with all other winners in the same spectrum band receiving contiguous spectrum; and
  - Unallocated blocks of frequencies within a frequency band will be arranged in the spectrum as described in Table 4 1.
- 4.4.4 The auction manager also reserves the right to limit the assignment options to ensure an equal distribution of preferential channels in the 900MHz and 1800MHz bands, if possible.

## 4.5 Bid submission

- 4.5.1 In the assignment round, participating bidders should submit a bid form, according to the two-step process described in Section 2.2.
- 4.5.2 For each bidder, their bid form will provide a list of all frequency assignment options available to them in each of the spectrum bands for which further bidding is required. Each bidder may submit an assignment bid for every option listed on their bid form.
- 4.5.3 The amount of each assignment bid is discretionary. Assignment bids must be in whole CHF. The minimum bid for each frequency assignment option is zero. There is no upper limit.<sup>9</sup>
- 4.5.4 For frequency assignment options for which no bid is received automatic bids of zero will be generated. If a bidder fails to submit a bid form in the available time, then it will be deemed to have made a bid of zero for every frequency assignment option in every spectrum band where it was eligible to bid.

## 4.6 Validity of assignment bids

- 4.6.1 Each bid submitted as part of a valid bid form represents a binding commitment to pay an additional price (i.e. a price above the bidder's base price) for the specific frequencies assignment that is less than or equal to the bid amount

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<sup>9</sup> Note that all bidders eligible to participate in the assignment round are guaranteed to win the amount of spectrum in each of the categories A to J that they won in the principal stage. Bids will affect which of the possible frequency assignment options will be implemented, and any additional prices to be paid. Bids for different assignment options with the same bid amount indicate that the bidder is indifferent between these options. It is recommended (but not obligatory) that bidders submit a bid of zero CHF for their least favoured option(s) in every category where they are eligible to bid.

4.6.2 An assignment bid identified as valid under paragraph 4.6.1 remains valid unless it is voided in line with the provisions in paragraph 2.4.1.

## **4.7 Winner determination**

4.7.1 Following the close of the assignment bid round, the auction manager will proceed to determine the winning bids for each of the categories A to J.

4.7.2 For each of the categories A to J, the winning assignment bids are the combination of valid assignment bids of greatest total value amongst all valid assignment bids submitted, subject to the conditions that:

- exactly one bid is accepted from each bidder;
- each bidder is assigned the same amount of spectrum in each category as they won in the principal stage;
- each bidder receives contiguous frequencies per category;
- the frequency ranges included in the winning assignment bids do not overlap; and
- any unsold lots are contiguous and placed in line with the provisions in Table 4-1.

- 4.7.3 The combination of bids that meets the conditions in Rule 4.7.2 will be determined algorithmically. Each bidder will have one winning assignment bid in each spectrum band in which they have won lots in the principal stage. The winning assignment bid may be an automatically generated bid of zero for an assignment option on which the bidder has not submitted an assignment bid.
- 4.7.4 If more than one combination of assignment bids meeting the conditions in Rule 4.7.2 have equal highest value, one combination will be selected by the electronic auction system at random.

## 4.8 Determining additional prices

- 4.8.1 In each spectrum band where there were two or more winning bidders, additional prices will be determined.
- 4.8.2 Additional prices are determined in each spectrum band jointly for all winners in a single calculation. A unique set of additional prices is found by applying the following conditions:<sup>10</sup>
- **First condition:** the additional prices are required to be positive or zero.
  - **Second condition:** the set of additional prices must be sufficiently high that there is no alternative bidder or group of bidders prepared to pay more than any winner or group of winners. If there is only one set of additional prices that satisfies the first two conditions, this determines the additional prices for that spectrum band.
  - **Third condition:** If there are many sets of additional prices that fulfil the first and second condition, the set(s) of additional prices that minimise(s) the sum of additional prices across winning bidders is selected. If there is only one set of additional prices satisfying these three conditions, this determines the additional prices for that spectrum band.
  - **Fourth condition:** If there are many sets of additional prices that satisfy the first three conditions, the set of additional prices that minimise the sum of squares of differences between the additional prices for each winner and the individual opportunity cost for that spectrum band for that winner is selected.<sup>11</sup>

These conditions characterise a unique additional price for each winning bidder in each spectrum band that is no more than their winning assignment stage bid. Finally, if these additional prices are not amounts in whole CHF, they are rounded up to the nearest whole CHF.

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<sup>10</sup> An algorithmic description of the process for calculating additional prices is provided on the OFCOM website.

<sup>11</sup> The opportunity cost for a winner is the amount of the winning assignment bid of that bidder less the difference between the total of all winning assignment bids in the winning combination and the value of bids determined in the same manner but for the case in which all of the bids of the winner were set to zero (i.e. the case in which the bidder is assumed to be indifferent with respect to all assignment options).

### **End of the assignment stage**

4.8.3 Once the auction manager has determined the winning bids and the additional prices, the outcome of the assignment stage will be announced to bidders. The following information will be released:

- Each bidder will be informed about the specific frequency ranges assigned in each of the bands in which it has won lots in the principal stage. This information will not be released to other bidders.
- Each winning bidder in each of the bands will be told the additional price that applies to their own winning bid. This information will not be released to other bidders.

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## 5 Separate bid round for 2010-2025MHz

### 5.1 General

- 5.1.1 The separate bid round for 2010-2025MHz follows a single round, sealed bid format. All eligible bidders can submit one bid for the lot in category K within the same fixed time window (subject to the provisions for extensions, described further below).
- 5.1.2 The round is separate from the principal and assignment stages conducted for categories A to J.

### 5.2 Schedule for the 2010-2025MHz round

- 5.2.1 The start time and duration of the 2010-2025MHz round will be announced by the auction manager after the completion of the assignment round for categories A to J.
- 5.2.2 The auction manager has discretion over the time and duration of the round. However, the auction manager anticipates that the round will take place between 9.00 and 18.00 hours on a single business day, and last for at least 1 hour and no more than 4 hours.
- 5.2.3 A single extension right will be available to all bidders in the round. The extension period will not be longer than 30 minutes.

### 5.3 Bid submission

- 5.3.1 In the 2010-2025MHz round, bidders should submit a bid, according to the two-step process described in Section 2.2.
- 5.3.2 A bid specifies the highest amount a bidder is willing to pay to win the single lot in category K.
- 5.3.3 The amount of each bid is discretionary. Bids must be in whole CHF. The minimum bid amount is the reserve price. There is no upper limit.
- 5.3.4 If a bidder does not want to increase its bid above the reserve price, bidders have the option to submit a 'zero bid'.

### 5.4 Validity of bids

- 5.4.1 Each bid submitted is considered valid and represents a binding commitment to buy the 2010-2025MHz lot at the specified price.
- 5.4.2 A bid identified as valid under Rule 5.4.1 remains valid unless it is voided in accordance with the provisions in Rule 2.4.1.

### 5.5 Winner determination

- 5.5.1 Following the close of the separate bid round for 2010-2025MHz, the auction manager will proceed to determine the winning bid. The winning bid is the highest, valid bid submitted.
- 5.5.2 If there is more than one bid with equal highest value, the winning bid will be selected by the electronic auction system at random.

## **5.6 Price determination**

- 5.6.1 If there is only one bidder, the price to be paid for the category K lot by the winning bidder is the reserve price.
- 5.6.2 If there are more bidders, the price to be paid is the amount of the second highest bid. In the event that more than one bid has the highest equal value, the price to be paid is the highest value.

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## 6 End of auction

### 6.1 Closing of auction

6.1.1 Once the auction manager has determined the winning bids for categories A to J, the additional prices for the assignment stage, and the winning bid for category K the results of the auction will be announced to all bidders.

6.1.2 The following information will be released to all bidders:

- the identity of the winning bidders;
- the frequency ranges awarded to each winning bidder; and
- the awarding price to be paid by each winning bidder, including a breakdown of the base price and any additional prices for categories A to J and if relevant, the price for the lot in category K.

### 6.2 Awarding price

6.2.1 The awarding price for each winning bidder will be the sum of their base price plus any additional prices for the specific frequencies assigned to them (from the assignment stage) plus the price for the lot in category K, if relevant.