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Tender for blocks of frequencies Questions - Answers

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1 Auction procedure - General

No.	Question	Answer
1	<p>Calcul des frais : le chapitre 3.9 du document « Mise au concours de blocs de fréquences pour la fourniture en Suisse de services de télécommunication mobiles » distingue entre les redevances (3.9.1), qui correspondent à montant de l'adjudication, et les émoluments pour la gestion et le contrôle technique du spectre de fréquences (3.9.2). Ce dernier émolument n'est pas très clair à nos yeux et nous peinons à le calculer étant donné que le chiffre 3.9.2 renvoie à une « annexe III de la concession », document qui, sauf erreur, n'a pas été publié. Cet émolument est-il calculé purement sur la base de l'art. 9 de l'Ordonnance du DETEC (càd. CHF 50 pour chaque tranche de 12.5 KHz), ou bien l'annexe III susmentionnée va-t-elle impacter ce calcul ?</p>	<p>L'annexe III de la concession contiendra le descriptif technique du réseau de l'opérateur ainsi que les fréquences pour lesquelles un droit d'utilisation a été obtenu. Cette annexe ne peut donc pas être définie à l'avance. S'agissant de radiocommunications mobiles terrestres sur des fréquences de la classe A et pour une utilisation nationale de ces fréquences au moyen d'installations fixes, l'émolument pour la gestion et le contrôle technique du spectre des fréquences s'élève par année et par largeur de bande attribuée de 12,5 kHz à: 50 francs sur des fréquences harmonisées (art. 9 de l'ordonnance du DETEC sur les émoluments dans le domaine des télécommunications, RS 784.106.12).</p>
2	<p>Dossiers de candidature : le document « Mise au concours... » susmentionné comporte des exigences relatives aux dossiers de candidature (chapitre 5). Est-ce que l'OFCOM a en plus de cela des exigences particulières/préférences au niveau de la forme et/ou des modèles de documents à utiliser dans ce contexte. Nous avons déjà pris bonne note des formulaires de demande d'octroi de fréquences et pour la garantie bancaire.</p>	<p>Non, voir aussi le chapitre 4.6 du document principal d'appel d'offres « Mise au concours de blocs de fréquences pour la fourniture en Suisse de services de télécommunication mobiles ».</p>
3	<p>700 MHz: We urge ComCom to take this valid request into account for the upcoming auction and to apply more stringent caps in order to preserve the 3-player market. We ask ComCom to comment in detail on ComCom's considerations that have been taken into account in the past months and in particular what the consideration where that have led ComCom not to follow Salt and Sunrise valid and well-founded arguments to apply more stringent caps in the 700 MHz band.</p> <p>(...) <i>Given the market asymmetry, ComCom cannot simply</i></p>	<p>After several consultations and hearings, the consultation phase is finished now. In the consultation phase, ComCom has very carefully balanced the different propositions. Therefore, only questions regarding the award process based on the published documents will be answered.</p>

	<p><i>rely on the market to deliver an efficient outcome. Without appropriate spectrum caps, there is a high risk that</i></p> <p><i>(i) larger bidders acquire more spectrum than needed because their values for incremental spectrum are inflated by option value and/or anticipated commercial benefits from constraining competitors; and</i></p> <p><i>(ii) smaller bidders acquire too little spectrum because they cannot afford high prices resulting from bidding competition with stronger players that are bidding on the basis of inflated valuations. (...) We do not have any knowledge of how and to what extent our comments have been taken into account and what the considerations of ComCom were that have led to the decision not to apply more stringent caps in the 700 MHz band, as requested by Salt and also Sunrise, and to</i></p> <p><i>even further relax spectrum caps in the 1400 MHz band compared to the draft tender documents. (...)</i></p> <p><i>The simplest way to achieve ComCom's competition goal would be a 2 x 35 MHz cap on sub-1 GHz FDD spectrum. Please note that Salt is not seeking and does not require any protection from a fourth bidder.</i></p> <p><i>Alternatively, there should be a specific obligation on the winner of 2 x 15 MHz as a result of the auction to grant reasonable access (e.g. by ways of MOCN or similar) to the participant that is being awarded only 2 x 5 MHz. Without such a measure, it is ambiguous whether a standalone 2x5 MHz block would have any value.</i></p>	
4	<p>1400 MHz: We ask ComCom to take this valid alternative proposal into account for the upcoming auction in order to preserve the 3-player market.</p> <p><i>We are also very concerned about the proposed spectrum caps for the 1400 MHz band. As it stands, one bidder could acquire up to 75 MHz out of a total of 90 MHz, up from 45 MHz under the previous proposal. This new cap far too high to be meaningful and effective. A tighter cap is required to ensure a fair distribution of spectrum. There are two good options:</i></p>	<p>After several consultations and hearings, the consultation phase is finished now. In the consultation phase, ComCom has very carefully balanced the different propositions. Therefore, only questions regarding the award process based on the published documents will be answered.</p>

	<p>1. Restore the 45 MHz cap on 1400 MHz spectrum (core and outer bands).</p> <p>2. Reduce the cap for the core band from 25 MHz to 20 MHz, and introduce a rule preventing bidders from bidding simultaneously in both the upper and lower outer bands. This would effectively constrain bidders to winning 45 MHz. Our preference is for option 2, as it minimizes the risk of a fragmented allocation and will also will eliminate an option for strategic bidding.</p>	
5	<p>3.4 – 3.8 GHz: We ask ComCom to consider lowering the spectrum cap of 120 MHz to 110 MHz or 100 MHz.</p> <p><i>The 5G capacity requirement should be addressed through an appropriate cap on 3.4 - 3.8 GHz. This band has been identified as the pioneer band for urban 5G deployment, owing to potential to deploy large blocks of spectrum. The largest 5G carrier size will be 100 MHz.</i></p> <p><i>In order to provide competitive data speeds to consumers, it will be important for each operator to deploy a 100MHz carrier – or at least an amount close to a 100 MHz carrier (e.g. 80 MHz). In contrast, other than the value of denying spectrum to a competitor, there is minimal incremental value from an operator gaining more than 100MHz.</i></p> <p><i>Consequently, the best way to ensure competitive 5G provision is to set the caps in a way that ensure that no two operators could prevent a third operator from securing at least 80 MHz. Given the large volume of available spectrum in this band, this goal can easily be achieved without unduly constraining any operator</i></p>	<p>After several consultations and hearings, the consultation phase is finished now. In the consultation phase, ComCom has very carefully balanced the different propositions. Therefore, only questions regarding the award process based on the published documents will be answered.</p>
6	<p>We request more worked examples that specifically address our questions on exit bids listed above. To our knowledge, this specific auction format has not been used elsewhere for spectrum awards. In particular, paragraphs 3.4.10 – 3.4.14, and paragraph 3.7.4 require more detailed explanations.</p>	<p>All admitted bidders will have the opportunity to assist a bidder training prior to the auction where more examples will be presented.</p>
7	<p>Blocks and lots are used interchangeably throughout. For example, Paragraph 3.4.10 refer to blocks while Paragraph</p>	<p>Correct.</p>

	3.4.12 refer to lots. Both paragraphs address the rules on exit bids. There are many other examples throughout Annex II. Please confirm our understanding that there is no distinction between a block and a lot.	
8	Paragraph 3.4.12 has a missing reference. Please confirm our understanding that the correct reference is to Paragraph 3.7.4.	Correct. Please refer to the German version.
9	Table 1 lists all three 1400 MHz categories as C1. Please confirm our understanding that this is a typo and 1400 MHz categories in Table should be labelled C1, C2 and C3.	Correct. Please refer to the German version.
10	Invitation to Tender, Section 3.5: "A licensee is obliged to [...] provide commercial telecommunications service". Is a wholesale carrier mobile data services provider (SCaaS) considered as authorized participant according to your definition of commercial service? We intend to deliver wholesale carrier mobile data services (SCaaS) to the other mobile operators. What constitutes your definition of a commercial service in this scenario?	Yes, a wholesale carrier mobile data services provider (SCaaS) is considered as a potential participant. Commercial telecommunications services can also be wholesale services.
11	Can a candidate meet the requirements set out in Section 3.5 of the Invitation to Tender, i.e. 25% population coverage and the provision of commercial telecommunications service, if (a) its transmission and reception units cover 25% of the population and (b) it does not provide telecommunications services directly to the covered population but to intermediaries, such as MNOs and mobile virtual network operators (MVNOs)?	Yes.
12	Invitation to Tender, Sections 3.5 and 5.7: Please provider further details about how the population coverage is counted (25% requirement). Is the map mentioned in Section 5.7 supposed to be matched with the resident population in the covered areas? If so, how are high density but low-population areas (airports, train stations, city centres, stadiums, etc.) counted?	Yes. The reference for evaluating the covered population will be the resident population dense map with a raster of 100x100 m (https://www.bfs.admin.ch/bfs/en/home/statistics/population/effectif-change/regional-distribution.assetdetail.3262707.html). High traffic density / low population areas like airports, train stations, city centers, stadiums, etc. are therefore not considered in the evaluation.
13	Regarding Section 2.3.4.1 of the Invitation to Tender, this	The details of the limited restrictions will be communicated to the companies participating in the

	new provision introduces excessive uncertainty. Please provide additional information, compatible with military secrecy, which allows the candidates to have a more precise understanding of the nature and scope of the applicable restrictions on frequency usage.	auction after they have been admitted to the auction.
14	Section 5.1.2 of the Invitation to Tender: the word "links" is too vague and limitless. Please explain what is meant by this and what actual links with other companies must be disclosed by the candidate.	Effective competition must be neither restricted nor substantially adversely affected by the granting of a radiocommunication licence (Art. 23 para. 4 TCA). The required information is intended to exclude, for example, two similar national mobile radio licences being granted to the same company or to two companies which are ultimately controlled or influenced by the same owner.
15	Section 5.6.1, footnotes 42 and 44, of the Invitation to Tender: in the various language versions of the documentation, these footnotes do not appear to refer to the adequate documents. Please update these footnotes and provide additional information on the requirements the candidates must meet in that respect.	No, these footnotes are correct. The document under the link of the footnote 44 is only available in German and French. Requirements are based on the referenced documents, no additional information will be provided.
16	Section 3.3 of the Invitation to Tender: what change is expected in terms of the applicable administrative fee?	At present neither an increase nor a reduction of the administrative fees are planned, but that does not mean that a future amendment of an ordinance can be excluded.
17	Relating to the licensee (entity) itself: Given in particular the advent of Brexit and the related uncertainty, will candidates based in the UK (England) be admitted to participate in the auction process?	Yes.
18	Please list the applicable fees for the 3.6 GHz spectrum which any licensee will encounter in addition to the licence fee; and please provide the details (and if possible examples) for their calculation.	In accordance with Art. 9 of the DETEC Ordinance on Administrative Fees in the Telecommunications Sector (DETEC Telecommunications Fees Ordinance; CC 784.106.12) an annually recurring administrative fee corresponding to the awarded bandwidth is payable. For example, for an awarded bandwidth of 2x10 MHz (20 MHz) the following calculation is applied: (20000 kHz/12.5 kHz) x CHF 50 per year. In the above example, the administrative fee to be paid annually would amount to CHF 80,000.00.
19	Ziffer 1.1 – Allgemeines (Fussnote 2): Gemäss Fussnote 2 werden die 15 MHz SDL im 700 MHz Band und die 90 MHz SDL im 1400 MHz Band als ergänzender Downlink zu den	Dieser Hinweis ergab sich aus dem 3GPP Standard für LTE. Die Kombination/Aggregation mit anderen Frequenzbändern wird von der Konzession in keiner Weise eingeschränkt.

	800 MHz FDD Frequenzen festgelegt. Ist dies eine von der ComCom auferlegte Einschränkung oder dürfen diese SDL Frequenzen grundsätzlich auch zusammen mit FDD Frequenzen in anderen Frequenzbändern kombiniert werden?	
20	Ziffer 2.3.1 – 700 MHz: Können die Mobilfunkkonzessionäre mit einem reziproken Schutz ihrer eigenen Netze hinsichtlich möglicher technischer Einschränkungen zum Schutz der PPDR-Netze rechnen? Sind auch hier, wie analog zur Koordination an Landesgrenzen, Absprachen mit den PPDR-Betreibern möglich?	Die Reziprozität wird in jeden Fall angestrebt. Nutzungsbedingungen an der Grenze sind derzeit durch die ECC/REC/(16)03 vorgegeben. Bi- und Multilaterale Verträge sind jedoch noch ausstehend. Abweichungen von der ECC/REC/(16)03 sind dabei nicht auszuschliessen.
21	Ziffer 2.3.4 – 3.6 GHz: Die Auflagen für die Nutzung des 3.6 GHz Bandes wurden betreffs Schutz des Satellitenfunkdienstes deutlich verschärft. Neben einer Freihaltezone für den Frequenzbereich 3640 – 3800MHz im Wallis sind Auflagen zum Schutz von Satelliten-Bodenstationen für die Stadt Genf festgelegt worden. Diese Einschränkungen bedeuten rund eine Halbierung der Kapazität der künftigen 5G-Mobilfunksysteme im Wallis und drastische Einschränkungen auch für Genf. Dazu haben wir folgende Kommentare und Fragen: a. Die Freihaltezone im Wallis erscheint uns geografisch zu grob und berücksichtigt nicht die topographischen Verhältnisse. Damit erzeugt sie eine unverhältnismässige Einschränkung für einen grossen Teil der Seitentäler des Wallis. Dies sind Gebiete, die für drahtlose Festnetzanschlüsse prädestiniert sind. Wir schlagen eine pragmatische und realistische Grenzziehung der Freihaltezone vor, die z.B. basierend auf Messungen festgelegt werden könnte. Wie beurteilt das BAKOM diesen Vorschlag?	Eine Verfeinerung des Freihaltepolygons wird überprüft, von Messungen wird hingegen abgesehen.
22	b. Gilt das Sendeverbot in der Freihaltezone auch für Sendeanlagen innerhalb von Gebäuden, die typischerweise weniger als 6W ERP aussenden? Falls ja, möchten wir anregen, dieses zu überdenken. Für die Digitalisierung der Industrie sind Sendeanlagen im Innern von Fabrikationsanlagen eine wichtige Komponente.	Ja, das Sendeverbot in der Freihaltezone gilt für alle Sendeanlagen im Bereich 3640-3800 MHz.

23	c. Warum unterscheidet die Tabelle der maximalen Einstrahlungswerte für die Kriterien P1 und P2 die Höhe der Sendeantenne? Wir gehen davon aus, dass die Leistung des einstrahlenden Signals entscheidend für die Störung der SES-Empfänger ist und nicht die Antennenhöhe. Eine Vereinfachung (ohne Verschlechterung) der Regelung sollte aus unserer Sicht geprüft werden.	Für die aufgeführten Satelliten-Empfangsstationen wurden deren Antennencharakteristika mitberücksichtigt. Die Empfindlichkeit der Satelliten-Empfangsstationen von der Waagrechten betrachtet nach oben ist grösser.
24	Ziffer 3.5 – Nutzungsaufgaben: Gibt es eine genauere Definition der Versorgung, z.B. eine minimale Feldstärke oder eine minimal zu erreichende Dienstqualität, die bei der Berechnung der Bevölkerungsabdeckung zu Grunde gelegt werden soll?	Für den Versorgungsnachweis werden keine expliziten Vorgaben betreffend Feldstärke und QoS gemacht. Vielmehr hat die Konzessionärin neben dem Versorgungsnachweis zusätzliche Angaben zu liefern, auf welcher Basis (zugrundeliegender Dienst, zugrundeliegende Übertragungstechnologie, angewandte Berechnungsmethode) diese den Versorgungsgrad bestimmt hat.
25	Ziffer 3.5 – Nutzungsaufgaben: Gilt die Nutzungsaufgabe auch als erfüllt, wenn ein Teil der Auflage mittels Infrastruktur-Sharing erfüllt wird? Wenn ja, bis zu welchem Ausmass ist dies gestattet und welche Formen des Infrastruktur-Sharings sind erlaubt?	Die in Ziffer 3.5 erwähnte minimale Bevölkerungsabdeckung ist über eigene Sende- und Empfangseinheiten zu erbringen. Dazu ist auch die gemeinsame Nutzung passiver Netzelemente (Standort, Mast, Kabel usw.) zulässig, nicht jedoch die gemeinsame Nutzung aktiver Netzelemente. Die gemeinsame Nutzung passiver und aktiver Netzelemente ist für die die Nutzungsaufgaben übersteigende Bevölkerungsabdeckung zulässig. Das Frequenz Pooling ist unzulässig.
26	Main Document, Section 3.4: Is there a risk that frequencies are not available according the time listed in Section 2.1 (time of availability according Section 2.1 "at the earliest")? Which are the consequences in this case? Will ComCom offer a pro-rata discount on the payment set by the auction?	All the frequencies will be available according to the time listed in Section 2.1.
27	Main Document, Section 3.7/4 reserves OFCOM the right to publish a list of sites in operations. Please clarify what the guidelines for the decision by ComCom/OFCOM are to publish the aforementioned list?	The actual guidelines on how to publish the sites on "funksender.ch" will apply. Refer also to section 2.4.1 of Annex V.
28	Main Document, Section 3.12: Why does relinquishment of the license not affect the obligation to pay the auction price? What is the legal basis for this rule?	In accordance with Art. 23 para. 2 of the Ordinance on Frequency Management and Radiocommunication Licences (OFMRL; CC 784.102.1), reimbursement in the event of restriction, suspension, revocation or withdrawal of the licence and in the event of early renunciation of the licence is not possible.
29	Main Document, Section 4.3, indicates the date for submission of questions, however it does not include the date for	The answers are published 3 till 5 weeks after the deadline for the submission of the questions.

	providing the answers on the submitted questions. Please clarify as soon as possible when the answers will be provided by ComCom/OFCOM?	
30	Main Document, Section 4.4: Why is there in general no entitlement to compensation in case of modification, postponement and cancellation of the tender procedure? What is the legal basis for this rule?	The participation at the tender procedure is voluntary. All the expenses incurred by the candidate in connection with the candidature (the costs of preparing and submitting the candidature documents, of any additional clarifications and of further preparation relating to the auction) within the framework of the invitation to tender are to be borne in full by the candidate. Reimbursement on the part of the licensing authority is excluded. In art. 24 FKV, no liability of indemnity is foreseen.
31	Section 4.6.2 of the Main Document refers to „each bidder may submit“, and Section 4.8 states „with the authorisation to take part in the auction, the candidates becomes a bidder“. Please confirm that in Article 4.6.2 is meant with „bidder“ a “potential bidder“?	To be correct, the wording in section 4.6.2 should be "each candidate" rather than "each bidder".
32	Main Document, Section 4.8: What is the evaluation process and what are the criteria on which the evaluation (accepting/rejecting) will take place? If a candidate is excluded, is there a process for appeal? Will reasons for exclusion be fed-back to the candidate?	The decision on admission or non-admission to the auction procedure depends on the criteria described in section 4 of the tender documents. It takes the form of an official decision, with reasons. In case of non-admission, an appeal before the Federal Administrative Court is possible. Recourse to appeal is available by invoking the regular procedure.
33	Will ComCom/OFCOM specify the date by which the authorized bidders will be informed if they are confirmed as designated bidders? Withdrawal of applications is not permitted; however, ComCom/OFCOM does not provide a time frame for announcing the result of the review of the applications which leaves bidders with an open ended obligation. If there is a delay in the auction process, for how long are authorized bidders committed to this obligation?	The precise date of the admission decision will not be notified in advance by ComCom. According to Section 4.6.1 of the tender documents, the submitted candidature is binding in respect of the licensing authority and cannot be withdrawn. ComCom is interested in the rapid allocation of mobile radio frequencies and will drive the process accordingly. The admission decisions will therefore be made as soon as possible after the application deadline closes.
34	How soon after ComCom/OFCOM has designated which candidates are authorized will they inform all authorized candidates how many candidates have been authorized? Not knowing how many bidders will participate means bidders have to prepare more versions of analysis tools, simulation software, training sessions among other, requiring substantial additional costs and allocation of staff and resources, which otherwise would be applied to better serving	This information will not be disclosed.

	Swiss Consumers.	
35	Section 4.10 of the Main Document indicates that ComCom/OFCOM reserves the right to publish the names of candidates, their auction bids and the result of the auction. Does “publication” mean to share with other bidders or also to open this data to the General Public? Please clarify what are the guidelines for the decision and the timing to publish the mentioned information items? What is the motivation to publish the candidates’ auction bids?	"Publication" means to open these data to the General Public. The motivation to publish information is for transparency reasons.
36	Main Document, Section 6: Can candidates withdraw their application in case of (essential) adjustments to the auction rules?	No (chapter 4.6.1 of the main document), but if there were essential adjustments to the auction rules ComCom might consider the possibility of a withdrawal.
37	Main Document, Section 6.1.1, indicates “Further details about the necessary hard- and software will be provided to each qualified bidder in due course”. Please specify “in due course” e.g. a certain minimum period before the start of trial auction and auction?	Yes, the exact planning will be sent to the authorised participants a certain minimum period before the start of the trial auction.
38	Main Document, Section 6.3, indicates “All bids submitted in the clock phase are package bids. That means that a bid can win only as a whole and a bidder cannot win a subset of frequency blocks requested in its bid”. Please clarify if exit bids are excluded from this statement?	Annex II is the relevant document in all matters related to the auction rules. Please refer there for the explanation of how clock bids and package bids will be evaluated. A bidder will never win a subset of its final clock bid, but may win more than the number of lots specified in its final clock bid in one or more lot categories if exit bids placed in these categories were accepted in accordance with the rules.
39	Main Document, Section 6.3.1, indicates “The clock rounds end after a round in which there has been no excess demand for lots in any of the categories”. In Annex II, there is an additional condition mentioned, namely “and the bidding restriction according to rule Annex II 1.3.2. is complied with”. Please clarify what the leading principle to end the auction is?	Annex II is the relevant document in all matters related to the auction rules. The further condition in paragraph 3.1.4 clarifies that there will be a further clock round if two bidders make clock bids for three blocks in category A, resulting in a total demand of six, but another bidder has placed an exit bid for one lot in this category, so that the cumulative cap set out in paragraph 1.3.2 would be violated.
40	Main Document, Section 6.3.2, indicates “if on basis of the demand in the last clock round there would be excess supply (pay-as-bid, see auction rules in Annex II)”. Please confirm that this a reference to the additional bidding phase?	This is not a reference to the additional bidding phase, but a clarification that the price per lot may be lower than the final clock price in any lot category where an exit bid is being accepted.

41	How many opportunities will ComCom/OFCOM give to candidates to provide feedback of issues they find with the auction format, and how much time will ComCom/OFCOM build into the process for remedial changes, testing and consensus?	The consultation phase is finished. The ComCom has not the intention to change the auction format. During the bidder training candidates will have the opportunity to ask questions about the proper application of the auction rules and the auction software only.
42	Application: Candidature documents Main Document, Section 4.6.1/2: Is there a minimum font size?	The minimum font size is 10.
43	Main Document, Section 4.6.1/3: By their signature, the candidates confirm that they are in agreement with all the conditions contained in the tender documents. What is the legal implication of this provision in particular regarding a possible appeal and expressed criticism? What is the subset of all the conditions contained in the tender documents that ComCom/OFCOM require candidates should confirm by their signature? Clearly at the submission of tender documents some (many) aspects of the rules are not finalized. Moreover ComCom/OFCOM's choice to use a prototype allocation format makes it likely that "bugs" and other issues will arise that will require modifications to the conditions, to an even greater extent than with standard already tested auction design. Candidates cannot be asked to confirm they are in agreement with the conditions on which there is still uncertainty and so are not the conditions that will be used in the auction process.	By their signature, candidates confirm that they agree with all the conditions contained in the tender documents. Participation in the award procedure is on a voluntary basis. This does not mean that by signing, the possibility of requesting a legal review of the proceedings at a later date is excluded.
44	Main Document, section 5.3: Which is the motivation of the request of information concerning BORS? What is its relevance and weighting on whether a candidate is accepted or not as an Authorized Bidder?	The primary objective is to sound out the existing bids using the information. The information has no effect on acceptance.
45	Conditions of use of frequencies Main Document, Section 2.3.1, top of Page 9: (700 MHz) What kind of "possible technical restriction" do you mean, notch filter on public operators' side for side band suppression, or exclusion of certain areas where those frequencies	The necessary measures to avoid interferences have to be determined case by case. This could be filters or exclusion areas as mentioned. Antenna discrimination or shielding could be further solutions. Operators are free to examine the best solution. An arrangement between the concerned operators could ease the procedure for establishing mitigation against interference.

	can be used?	
46	<p>Main Document, Section 2.1/Annex I: (1400 MHz) Re Annex 1, Page 3 and 4, coordination is also needed for core bands, however in the Main Document such coordination is only needed for side bands (Footnotes 8 and 9). The only “relay reception station” (Main Document, Section 2.3.2.2) is in Gland and use a frequency outside the core band. All others are in France.</p> <p>Why should core bands (C201-208) be coordinated and to whom, as mentioned in Annex 1? Section 2.3.2.1 (Restrictions in Switzerland) refer to 1438-1441 MHz. What else should be considered to be coordinated?</p>	<p>The mentioned restrictions in Section 2.1, table 1 generally concern the entire L-band. The footnotes 8 and 9 give some more details.</p> <p>The listed radio relay links are those, which in some cases can interfere or be interfered by MFCN in Switzerland because their antennas are close to the Swiss border or directed to Swiss territory. Implementation of measures and co-ordination procedures to avoid interferences will be defined later. The situation could change until the first base stations are going to be on air in the L-band. The co-ordination clause is a general statement and will be in force after the end of 2019.</p>
47	<p>Main Document, Section 3.5: What are the prevailing regulatory requirements concerning network sharing?</p>	<p>The minimum population coverage mentioned in Section 3.5 is to be provided by the operator's own transmission and reception units. Joint use of passive network elements (site, mast, cables, etc.) is permissible for this purpose, but not the joint use of active network elements.</p> <p>Joint use of passive and active network elements is permissible for population coverage which exceeds the usage conditions.</p> <p>Frequency pooling is inadmissible.</p>
48	<p>Main Document, Section 2.3.4.2/Annex I: (3.6 GHz) In Annex I the Valais area between Martigny and Brig is excluded, to avoid interferences towards satellite earth stations. Leuk (Canton of Valais) and Vernier (Canton of Geneva) have such stations. Does this mean operator should expect such exclusion area as well in Geneva?</p> <p>Re last sentence before Figure 4, Page 19 of Main Document the possibility to keep mobiles away from sensitive areas is considered as workaround. Does it mean B43 becomes usable even inside the Valais Vector (according Main Document, Page 20 and Annex I)?</p> <p>If not, would it be possible to open the lower part of B42 in such areas, as a compensation?</p> <p>Would it be possible either to share the rest of B42 and B43 among MFCN or to carry out an extra auction for such regions? Otherwise, certain operators will not be able to offer high capacity 5G services in those regions.</p> <p>If neither of above suggestions is possible, what else could</p>	<p>No, in Vernier/Geneva only the restrictions against blocking of FSS-receivers have to be fulfilled.</p> <p>No, the blocks E08-E15 are not usable inside the Valais polygon and there is no compensation.</p>

	the regulator offer as a compensation?	
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2 Bank guarantee

No.	Question	Answer
49	Est-ce qu'une succursale d'une banque étrangère est habilitée à émettre des garanties en votre faveur dans le cadre d'une réponse à votre appel d'offre pour l'attribution de fréquences de téléphonie mobile ?	Dans le cadre du présent appel d'offres public, la garantie bancaire émise par une succursale en Suisse d'une banque étrangère peut être acceptée à condition que la succursale ait obtenu une autorisation d'exercer en Suisse de la FINMA. La banque doit respecter les dispositions légales de la loi fédérale sur les banques et les caisses d'épargne (RS 952.0 , art. 2). La garantie bancaire doit en outre être libellée au nom de la succursale en Suisse.
50	Unsere Bank hat ihren Hauptsitz im Ausland und betreibt eine Zweigniederlassung in der Schweiz, welche entsprechend eine Bank nach Schweizer Bankengesetz und FINMA reguliert ist. Der Garantiegeber welcher auf der Bankgarantie vermerkt ist, wird aber unser Hauptsitz sein und nicht die Zweigniederlassung. Können sie uns bestätigen, dass der Hauptsitz unserer Bank diesbezüglich ihren Anforderung genügt und als Garantiegeber aufgeführt werden kann?	Die Anforderung in den Ausschreibungsunterlagen, sind tatsächlich so zu verstehen, dass die Bankgarantie auf den Namen der Schweizer Niederlassung ausgestellt sein muss. Die genannte Bank muss von der FINMA bewilligt und das Bundesgesetz über die Banken und Sparkassen einhalten.
51	Ziffer 3.9.3 – Zahlungsfrist des Zuschlagspreises: Um Missbräuchen im Rahmen der Auktion vorzubeugen, muss sichergestellt werden, dass die Bezahlung des Zuschlagspreises innert 30 Tagen nach Eintritt der Rechtskraft der Konzession tatsächlich erfolgt. Welche diesbezüglichen Massnahmen trifft die Konzessionsbehörde abgesehen von der sofortigen Auszahlung der Bankgarantie in der vollen Betragshöhe?	Die Zahlungsmodalitäten wurden basierend auf Art. 23 Abs. 2 FKV festgelegt. Es liegt im Ermessen der ComCom zusätzliche Sicherheiten von den Bewerberinnen für die Zahlung des gebotenen Preises zu verlangen.
52	Ziffer 3.9.4 – Einforderung der Bankgarantie: Können auch mehrere Bankgarantien von unterschiedlichen Banken eingereicht werden, solange die Summe der Beträge sämtlicher eingereichter Bankgarantien mindestens so hoch ist wie das Gebot im Frequenzzuteilungsantrag?	Nein, der ganze Betrag muss von einer einzigen Bankgarantie abgedeckt werden.
53	Ziffer 4.6.2 – Bankgarantie und Frequenzbedarf: Entspricht das Gebot im Frequenzzuteilungsantrag dem ersten Clockrundegebot oder kann das erste Gebot in der Clockphase vom Gebot im Frequenzzuteilungsantrag abweichen?	Das erste Clockgebot kann vom Frequenzzuteilungsantrag abweichen. Der Frequenzzuteilungsantrag ist jedoch ein verbindliches Angebot, welches erst durch das erste Clockgebot erlöscht.

54	Will ComCom/OFCOM communicate in advance of the start of the auction the amount of time they will allow bidders to arrange for increased bank guarantees? The auction rules are not specific with respect to (i) the period available for participants to arrange an extension of the validity and/or (ii) to increase the amount of the bank guarantee, if required by the auctioneer. The Rules only mention that the auctioneer shall communicate the time by which the corresponding increases in bank guarantees should be submitted.	During the auction, the available time for participants to submit an increased bank guarantee will be around 3 working days.
55	Is prior to the Additional Bidding Phase for Unsold Lots an additional Bank Guarantee needed in order to bid for the Unsold Lots? If so, please elaborate about guidelines for size and requirements of the additional Bank Guarantee?	The auctioneer may demand an increase in the amount of the bank guarantee, so that the total amount of each bidder's bank guarantee never drops below 50% of the respective bidder's highest bid. This condition also applies to the additional bidding phase.
56	Annex II, Article 2.2.2: Assuming the initial amount of the bank guarantee is 100, is it correct to assume that an increase can only be requested if the bid value exceeds 200 (50% of the bank guarantee)? If so, what would the increase amount be if the next bid is 250? 25 or potentially more / up to 100% of the current bid level?	In the case when the auctioneer demands an increased bank guarantee, he will demand up to 100% of the current bid level. The amount will depend on the progression of the auction.
57	If a bidder reduces its demand, the total value of its bid could decrease. In such a case can the bidder withdraw their current Bank Guarantee and replace it with a correspondingly lower Bank Guarantee? In such case does the same time window apply?	No. At the end of the auction, ComCom could reconsider this point depending of the results.

3 Frequencies

No.	Question	Answer
58	Annex I, Page 2: (700 MHz) The head line contains “TDD” next to SDL. Does it mean this band is free for TDD usage too?	No, the headline is mistaken. The blocks B1 - B3 can only be used in SDL mode.
59	Annex I, Page 2: (700 MHz, B1 and B3) Compatibility with PPDR must be guaranteed. Who coordinates the coexistence between the PPDR and Mobile Network Operators?	The coordination has to be done by the mobile operators.
60	Annex I, Page 3: (1400 MHz) The head line contains “TDD” next to SDL. Does it mean this band is free for TDD usage too?	No, the headline is mistaken. The blocks of category C can only be used in SDL mode.
61	Annex I, Page 3: (1400 MHz, C201-208) Coordination is necessary. It is well understood that upper and lower bands suffer from some restrictions. However, the core band should be free to use. Why and with whom should the coordination take place? With whom should it be coordinated, except cross-border?	The blocks C201 – C208 do require only cross border coordination. The coordination is similar to today.
62	Annex I, Page 4: What is ComCom/OFCOM's plan to avoid fragmentation, if someone else than Swisscom get this part of band? Is the requirement for a future refarming like in Band 1 an opportunity?	No refarming procedure to avoid fragmentation of the present frequency assignments is foreseen.
63	Frequency utilisation and coordination at the national boarder. Main Document, Section 2.3.1.1.3: (700 MHz) Since DVB channel 50-53 have the same frequency as uplink band of block A1 and A2 a coordination is hardly possible. Therefor those blocks are not usable in Ticino. Please explain.	For the time being DVB-T emissions from Italy in this part of the frequency band cannot be switched off immediately, see the mentioned dates. However, the emissions do not affect the entire canton Ticino. In some areas operators can use the blocks A1 and A2.
64	Main Document, Section 2.3.4 (Page 18): Which role will ComCom/OFCOM have in defining guidelines and rules on the synchronization of TDD networks? As written in the document, it's not possible at present to state how network	Practical guidance for TDD network synchronization is provided in ECC report 216. The synchronization in cross border relations is partly defined in cross border recommendation ECC/REC/(15)01 where different trigger values for the field strength are defined for synchronized and unsynchronized cases. A further report about guidelines and rules on synchronization in the

	<p>synchronization is to be regulated technically and administratively between the licensees in Switzerland and with the network operators in neighboring countries. Is there an international coordination for TDD networks foreseen and which role will ComCom/OFCOM have?</p>	<p>C-band is under progress (ECC PT1(18)118 C-Band CG SYNCH). However, the coordination has to be done between the concerned Swiss mobile operators. The coordination across the border is similar to the existing cross border coordination process for field strength.</p>
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4 Licenses

No.	Question	Answer
65	License, Section 1.2.2/2: What is the legal relevance and implication of the non-exhaustive (“includes”, “namentlich”) list of applicable acts? What are the consequences of possible infringement of according provisions?	<p>In this respect it is stated that the enumeration of the relevant regulations is not exhaustive, such that other regulations which are not included in the listing might be relevant.</p> <p>Infringement of the relevant regulations may, if necessary, entail statutory supervisory measures by the respective competent supervisory authorities.</p>
66	Main Document, Section 3.4, indicates the licenses for categories A, B, C1, C2, C3, and E will expire on 31.12.2033, whereas Annex II, Table 1.2.4 indicates that the duration each license will be 15 years. Likewise, for category D, Article 3.4 indicates the license will expire on 31.12.2028, whereas Annex II, Table 1.2.4 indicates the duration is 10 years. These two sources would be in alignment only if the frequencies were awarded by 31.12.18. To the extent the licenses are awarded later than 31.12.18, these two sources will be inconsistent. This represents a substantial change in value of the licenses in case of delay – already at Reserve Prices this means, for example, pro-rata CHF 93,333 per month for a 700 MHz FDD block (i.e. a block in Category A). Will ComCom/OFCOM be able to provide definitive information on each license term/duration prior to the start of the auction?	<p>ComCom will guarantee a license duration of 15 years from the granting of the licences for categories A, B, C1, C2, C3 and E.</p> <p>Category D (2.6 GHz block) will expire on 31.12.2028.</p>
67	Main Document, Section 3.5, and License, Section 2.3, indicate for the licensee an obligation to cover at least 50 % resp. 25 % (depending on frequency holdings) of the Swiss population via own infrastructure by 31.12.2024 at the latest. The bidders need to know the date of awarding in order to be able to plan and cost the roll-out to meet the obligation which in turn impacts the value of the spectrum, so please communicate this before the auction starts. Could you please clarify?	<p>The start of the auction is planned for the beginning of 2019. In case of serious delays in the award process, ComCom could reconsider the dates for the fulfilment of the coverage obligations.</p>
68	Main Document, Section 3.6.1, and License, Section 2.4.1 of the License indicate for the licensee an obligation to pro-	<p>The licensees submit their base station data by periodically uploading them to our database. We will give details later directly to the different licensees if necessary.</p>

	<p>vide operating data. The format of the data to be uploaded, as well as detailed procedures, are to be discussed beforehand with OFCOM. Please clarify what is meant with beforehand e.g. explicit notice period.</p>	<p>The actual guidelines on how to publish the sites on "funksender.ch" will apply.</p>
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5 Auction rules

No.	Question	Answer
69	<p>We also request that ComCom announce the list of qualified bidders ahead of the auction. We see no reason why ComCom would wish to keep bidders in the dark with respect to who have qualified. Announcing qualified bidders is the norm in many European countries (e.g. UK, Germany, France, Belgium, Ireland etc.), as it maintains confidence in the auction process.</p>	<p>The purpose of not communicating the number and the names of participants is to prevent collusive behavior and strategic bidding. There are many European countries (e.g. Ireland, Norway, Sweden, the Netherlands and Switzerland in 2012), which have not communicated the number and the names of participants before the auction.</p>
70	<p>Paragraph 2.1.2 states that the application form represents a binding and irrevocable offer to acquire the specified number of frequency blocks. However, if a clock phase is necessary, there seem to be no restrictions on bidders in the first clock round (except initial eligibility and spectrum caps). This implies that a bidder could specify a large package in the application form but submit a bid for a smaller package (even a zero package) in the first clock round, and that this would release the bidder from its binding application bid. Please confirm our understanding.</p>	<p>Correct.</p>
71	<p>Paragraph 2.3.4 states that if a clock phase is not necessary (according to the rules in Paragraph 2.3.3), the procedure continues with the assignment phase. Please confirm our understanding that it is not possible to proceed directly from application phase to the additional bidding phase (as outlined in Section 4), in case there are unsold blocks after the application phase.</p>	<p>Correct.</p>
72	<p>Paragraph 3.4.5 states that if a bidder does not submit a clock bid before the expiry of the clock round or within a round extension triggered by the bidder, automatically it will be assumed that the bidder has submitted a zero bid. Please confirm our understanding that in this case no exit bids will be placed</p>	<p>Correct.</p>

	on behalf of the bidder, and that such a bidder cannot win any blocks in the clock phase, regardless of bidding activity from other bidders.	
73	Paragraph 3.4.11 states that exit bids can be submitted only for lots in categories in which there was excess demand in the preceding round and consequently the clock price has increased. Please confirm our understanding that this does not apply to category A where the price can increase without excess demand (due to the cumulative bidding restriction); hence exit bids can be submitted in category A even if there is no excess demand.	Exit bids can be submitted in category A by one of the two bidders who are collectively bidding on more than five blocks if another bidder has placed an exit bid for a single lot and has been provisionally awarded this block, as the price will go up in this instance.
74	Paragraph 3.4.11 states that exit bids can be submitted only for lots in categories in which there was excess demand in the preceding round and consequently the clock price in the current round has increased. In addition, Paragraph 3.4.13 states that if the price increases in a lot category (implying excess demand on the basis of the clock bids), then all exit bids submitted for this category are void. Please confirm our understanding that these two paragraphs together imply that within each category, any one bidder must have submitted exit bids that are still valid in the same round.	Nothing in the rule creates any obligation on any bidder to submit exit bids. The rules simply state that exit bids can only be placed when the price has increased from the previous to the current round (3.4.11), and become void if the price increases from the current to the subsequent round (3.4.13).
75	Paragraph 3.4.14 states that exit bids cannot be changed and cannot be selectively extended within a category. Please confirm our understanding that a bidder can extend (all) exit bids in one category while voiding (all) exit bids in another category.	Correct.
76	Paragraph 3.9.1 suggests that a bidder will not receive any information on the status of its exit bids (provisionally winning or not) until after the final clock round, with the exception of a single block in category A. However, Paragraph 3.4.13 states that if the price increases in a lot category (implying excess demand based on clock bids), then all exit bids submitted for this category are void. Please clarify precisely what information each bidder will receive each	Bidders will receive information about the exit bids that can be extended on their bid forms.

	round, and please confirm our understanding that each bidder will see an updated list of exit bids (those that haven't been voided) at the start of each bidding round.	
77	Paragraph 1.3.2 refers to a "cumulative bidding restriction", while Paragraph 3.6.1 refers to a "cumulative spectrum cap". Please confirm our understanding that these two terms are used interchangeably, i.e. there is no difference.	Correct.
78	Paragraph 3.4.13 refer to "subsequent auction procedure" in the first bullet point. Please confirm our understanding that this should be replaced by "subsequent clock round".	Correct. Please refer to the German version.
79	Regel 3.4.3 – Gebotsabgabe: Kann ein Bieter auch in der ersten Clockrunde Ausstiegsgebote setzen, falls die Aktivität des ersten Clockgebots geringer ist als die Bietberechtigung des Bieters zu Beginn der Clockrunde, d.h. geringer als die gemäss Frequenzzuteilungsantrag resultierende Bietberechtigung?	Ausstiegsgebote müssen einen Preis spezifizieren, der unter dem derzeitigen Clockpreis liegt. Diese Bedingung schliesst die Abgabe von Ausstiegsgeboten in der ersten Clockrunde aus.
80	Regel 3.4.12 – Ausstiegsgebote: Im vierten Unterpunkt scheint der zweite Satz fehlerhaft, respektive nicht vollständig zu sein. Könnte das BAKOM diesen bitte überprüfen und korrigieren?	Der zweite Satz ist unvollständig. Die korrekte Version lautet: «Diese Beschränkung ist dann relevant, wenn ein Bieter, der seine Nachfrage in einer Kategorie reduziert, gleichzeitig seine Nachfrage in anderen Loskategorien erhöht, insgesamt aber seine Bietberechtigung in der Runde unterschreitet.»
81	Regel 3.6.1 – Kumulative Spektrumskappe: Diese Regel ist nach unserem Verständnis nicht eindeutig formuliert. Wir gehen davon aus, dass die Regel wie folgt zu interpretieren ist: „Die kumulative Spektrumskappe kommt in jeder Runde zum Einsatz, in der nur noch zwei Bieter Clockgebote abgeben, die Frequenzblöcke in der Kategorie A enthalten und mindestens ein anderer Bieter ein Ausstiegsgebot für einen einzelnen Frequenzblock in dieser Kategorie abgegeben hat. Falls die kumulative Spektrumskappe zum Einsatz kommt, bleibt sie in allen folgenden Clockrunden bestehen, solange das Ausstiegsgebot erneuert wird und nicht mehr als zwei Bieter Clockgebote abgeben, die Frequenzblöcke in der Kategorie A enthalten.“ Ist unsere Auslegung dieser Regel korrekt?	Die Auslegung der Regel ist korrekt. Allerdings bedarf es keiner Erneuerung des Ausstiegsgebots, weil dieses zum provisorischen Zuschlag eines Blocks führt.

82	Regel 5.3.1 – Zuordnungsoptionen: Kann der Auktionator gewisse Zuordnungsoptionen auch aus anderen Gründen als den in den Regeln unter 5.3.1 erwähnten ausschliessen (z.B. aus technischen Gründen zur Reduktion von Störungswahrscheinlichkeiten)? Oder können die Bieter auf jeden Fall Gebote auf sämtliche gemäss den nach 5.3.1 zulässigen Zuordnungsoptionen abgeben?	Bieter können auf alle Zuordnungsoptionen bieten, die sich unter Anwendung der Prinzipien in 5.3.1 ergeben.
83	Regel 5.3.1 – Zuordnungsoptionen: Wenn zwei Bieter jeweils Frequenzen im Kernband C2 und im gleichen Seitenband, z.B. C1, in der Clockphase gewonnen haben, erhalten dann beide Bieter die Möglichkeit, auf jeweils eine Zuordnungsoption zu bieten, die für sie zusammenhängendes Spektrum ermöglicht?	Beide Bieter haben die Möglichkeit, auf eine Zuordnungsoption zu bieten, die eine zusammenhängende Frequenzzuweisung über C1 und C2 beinhaltet. Die Zuordnungsoptionen werden über die drei Teilbänder hinweg erzeugt, damit unnötige Bandfragmentierung vermieden werden kann.
84	In Beispiel 2 verletzt Bieter X die Vorgabe für die Spectrum Caps. Könnte das BAKOM dieses Beispiel bitte überprüfen und korrigieren?	Korrekt. Das Beispiel war mit den ursprünglich vorgesehenen Kappen kompatibel, und wurde nach Änderung der Kappen nicht aktualisiert (siehe korrigierte Beispiele am Ende dieses Dokumentes).
85	In Beispiel 3 verletzt der Bieter die Vorgaben für die Spectrum Caps und die Aktivitätsregeln. Könnte das BAKOM dieses Beispiel bitte überprüfen und korrigieren?	Korrekt. Das Beispiel war mit den ursprünglich vorgesehenen Kappen kompatibel, und wurde nach Änderung der Kappen nicht aktualisiert (siehe korrigierte Beispiele am Ende dieses Dokumentes).
86	In Beispiel 4 hat das dargestellte Clockgebot in Runde 2 lediglich eine Aktivität von 13 Punkten anstatt der angegebenen 16 Punkte. Könnte das BAKOM dieses Beispiel bitte überprüfen und korrigieren?	Korrekt (siehe korrigierte Beispiele am Ende dieses Dokumentes).
87	Breitbandkommunikation für die BORS: Inwiefern werden diese Angaben einer Bewerberin Einfluss auf die Zulassung zur Auktion haben? Ist damit zu rechnen, dass es in der Konzession Auflagen geben wird, solche Dienste zu festgelegten Bedingungen anzubieten? Werden Angaben zu möglichen Angeboten der Bewerberin unter Ziffer 5.3 von der Konzessionsbehörde als Pflichten in die Mobilfunkkonzession aufgenommen?	Primär sollen mit den Angaben die bestehenden Angebote sondiert werden. Auf die Zulassung haben die Angaben keinen Einfluss. Tritt eine künftige Änderung der Rechtsgrundlagen ein, kann dies zur Folge haben, dass BORS Dienste zu festgelegten Bedingungen angeboten werden müssen. Aufgrund der laufenden Gesetzgebungsarbeiten in der FMG-Revision kann derzeit noch nicht gesagt werden, ob dies in Form von Auflagen in der Konzession erfolgen wird. Gegenwärtig besteht keine Absicht, mögliche BORS Angebote der Bewerberin als Pflichten in die

		Konzession aufzunehmen.
88	Konzessionsauflagen: Muss die geplante geografische Versorgung in den vorzulegenden Karten auf den neuen Frequenzen allein basieren oder kann diese für bereits im Markt tätige Mobilfunkkonzessionäre auch unter Einbezug der bereits zugeteilten Frequenzen (in den 800, 900, 1800, 2100 und/oder 2600 MHz Bändern) ausgewiesen werden?	Die vorgesehenen Nutzungsaufgaben sind ausschliesslich mittels der neuen zugeteilten Frequenzen zu erreichen.
89	Main Document, Section 1.1: What happens with frequencies not awarded in this auction?	Not assigned frequency blocks will be kept with the license authority. Any further proceeding will be determined at some future date.
90	Main Document, Section 1.1: What is leading "all available frequency blocks", e.g. incl. 1x 390 MHz (TDD) in the 3.6 GHz band, or "1x 300 MHz (TDD) in the 3.6 GHz band"? In case of the latter, when will the remaining 90 MHz in the 3.6 GHz band be awarded?	1x300 MHz (TDD) are available in this auction. It is not defined when the remaining 90 MHz will be awarded, but OFCOM will push to release this band as soon as possible.
91	Main Document, Section 1.3: Will ComCom/OFCOM justify/explain adjustments of auction rules that were considered? Will bidders have the opportunity to ask further questions?	During the bidders training session, participants will have the opportunity to ask further questions regarding the auction rules.
92	In Annex II, Section 4, a potential "Additional Bidding Phase" is included, however in the Main Document, Section 1.3. and 6, there is no explicit reference to the "Additional Bidding Phase". Is something misworded here?	No miswording, but the main document does in fact not make any references to the additional bidding phase. Annex II is the relevant document in all matters related to the auction rules.
93	In Annex II, Section 4, a potential "Additional Bidding Phase" is included with potential impact on prices, in the Main Document, Section 6.1.1, the reference to the price is described as "the total price for the frequencies acquired in the auction is the sum of the prices at which frequency blocks are awarded after the clock phase and the additional prices from the assignment phase". Should this sentence be interpreted "the total price for the frequencies acquired in the auction is the sum of the prices at which frequency blocks are awarded after the clock phase including potential additional bidding phase prices and the additional prices	Total prices are made up of the prices at which the blocks won in the clock phase are awarded (which may be lower than the final clock prices in a category in which exit bids are accepted), the prices at which the bidder wins any blocks in the additional bid phase, if conducted, and the prices for winning assignment options.

	from the assignment phase”, please clarify?	
94	“Auction Procedure” mentions “bidder trial, trial auction, auction”, however there is no specification of number of persons and/or characteristics of the persons, who are allowed to participate in the bidder trial and trial auction. Can we assume that there are no limitations, if any, please clarify?	The number of person for the bidder training and the trial auction will be communicated later directly to the authorised participant. Only the persons who will receive a personal certificate will be authenticated by the system. The number of certificates will be limited. It’s the responsibility of the bidder to name the person who will receive the certificates.
95	Regarding Annex II, Section 3.2, can ComCom/OFCOM confirm what is the minimum time between close of one round and the opening of the next round (e.g., 30 minutes)? ComCom/OFCOM had indicated that it expects to conduct no more than 8 rounds per day, rounds can be as short as 15 minutes, and that bidders would have at least a 15-minute notice before the start of the round, but there was no indication of the time between rounds.	Arithmetically, the minimum time between the close of one round and the start of the next one is determined by the notice period (15 minutes). In practice, some time will be required to process bids and communicate round results, but OFCOM will not fetter its discretion with regard to the timing of rounds.
96	Do ComCom/OFCOM plan to end rounds as soon as all bidders have finalized their bids, even if there is time left in a round? We understand Article 3.8.3 specifies a round extension will end automatically when all bidders who have triggered a round extension have submitted their bids, however no article specifies if a clock round will end automatically when all bidders have submitted their bids.	Rounds will not end before the scheduled end time even if all bidders have submitted their bids before then in order to ensure that the round schedule remains predictable.
97	Annex II, Article 3.8.2 indicates if a bidder with eligibility fails to submit a clock bid within the round time set by the auctioneer, the round is automatically extended, and the bidder will be given an additional 30 minutes to submit its bid, provided that it has an extension right remaining. If the same bidder were to fail to submit a bid during that 30 minutes extension, would the auctioneer automatically apply the bidder’s second extension right, if available?	Extension rights will not be applied cumulatively, i.e. if an extension has expired without the bidder having submitted a bid, no further extension will be triggered.
98	If a bidder submits a zero bid or under Article 3.8.4 of Annex II a zero bid is automatically registered for a bidder, is such a bidder entitled to participate in the Additional Bidding Phase if one takes place?	In principle yes, but it depends on the rules, which will be defined by ComCom, if an additional bidding phase would take place.

99	<p>Bid Submission Regarding Section 3.4 of Annex II, will a bidder be allowed to amend or remove its bid by resubmitting AFTER having submitted its clock bid in a round but BEFORE the round has closed? Further, if a round extension is triggered, will a bidder be able to change its bid submitted during the clock round?</p>	A bid can be amended and changed until it has been confirmed. After confirmation of the bid, no further changes are possible.
100	<p>Please confirm that a bidder is allowed to bid for lots in a category in which it had bid zero in a prior round, provided that it has sufficient eligibility and remains compliant with the cap.</p>	Confirmed.
101	<p>Cumulative Cap in Category A Annex II, Article 3.6.1, states: "The cumulative spectrum cap is applied in the first clock round, in which only two bidders submit clock bids that include frequency blocks in category A and at least one other bidder has submitted an exit bid for a single frequency block in this category." What information if any is provided to the bidder submitting the exit bid and other bidders about the status of any provisional award due to the use of a single lot exit bid in Category A. Will rivals be informed if/when there are two bidders competing for an effective supply of five remaining blocks?</p>	The information provided to each bidder after each clock round is listed in paragraph 3.9.1. The bidder who has been provisionally awarded the lot will be informed about this, but other bidders will not.
102	<p>Suppose, in round n, Bidder X submits an exit bid for a single frequency block in Category A, but there are not two other bidders submitting clock bids in the same round (which means the Cumulative Cap is not triggered). Assume, further, that Bidder X continues to renew its exit bid in each subsequent round. Will the Cumulative Cap be applied in a subsequent round in which two other bidders simultaneously bid for frequencies in Category A?</p>	Yes.
103	<p>Exit Bids Annex II, Article 3.7.4(a), indicates a bidder's exit bids are taken into account only if, together with clock bids in the other categories, they imply an activity level that does not</p>	The round in which the oldest still active exit bid was submitted is the earliest round in which any of the exit bids that have been maintained by the bidder in the last clock round has been placed. Assume that the bidder placed its first exit bid in round n in category X, and that bidding continues with prices increasing in other categories but not in category X, and that the bidder maintains this

	<p>exceed eligibility “at the beginning of the round in which the oldest still active exit bid was submitted.” Please clarify how this round is determined. Is it the earliest round of all exit bids that were renewed as of the final clock round, or specific subsets of exit bids being considered, or some other criterion? Please explain. Clarifying with an example in which exit bids are placed in multiple rounds would be helpful.</p>	<p>exit bid until the last clock round. In this case, round n is the round in which the oldest still active exit bid was submitted.</p>								
104	<p>Annex II, Article 3.7.4(b), states: “If exit bids by different bidders could be used, or if there are multiple exit bids for one bidder that could potentially be used, the auctioneer identifies the combination of exit bids that generates the greatest total value.” Please define the objective of “greatest total value” in greater specificity.</p> <p>We noted that Example 4 does provide information about greatest total value, but that is for the special case in which only a single bidder’s exit bids are considered (and they were placed in the same round). Can you provide information on how greatest total value is evaluated in the more general case of a multi-bidder setting and provide the formula that is used to compute greatest total value?</p>	<p>“Greatest total value” is the sum of the value of the bids considered, i.e. the sum over all categories of the product of the number of blocks and the bid amount specified per block, which is the clock price for clock bids and the exit bid amount for the corresponding exit bid. The examples given below in answer to the next question should illustrate the application of the criterion.</p>								
105	<p>Must an exit bid, taken together with the clock bids placed in other categories, comply with spectrum caps at the time the exit bid is submitted (e.g., in a similar fashion to how exit bids must comply with eligibility requirements)? If so, please point us to the appropriate section of the rules. The following is an example of an exit bid that appears to violate the combined cap for B & C2:</p> <ul style="list-style-type: none"> In round n, a bidder places a bid for 3 lots in Category B and 2 lots in category C2 (which complies with the combined 5 block cap for the two categories) and bids for 1 block in Category D. In round n+1, the bidder reduces demand to 2 lots in Category B together while submitting an exit bid for 3 lots. It also adds 1 block in Category C2 while dropping its single block in Category D. The exit bid for 3 lots in B plus the clock bid of 3 lots for C2 total 6 lots, exceeds the com- 	<p>These questions relate specifically to the cap on SDL spectrum, which applies across two lot categories.</p> <p>The introduction of this cap requires an amendment of the rules to ensure that exit bids will only be accepted to the extent that they, in combination with accepted clock bids, do not breach spectrum caps (see 3.7.4 a of the revised rules).</p> <p>Compliance with the caps will be checked at the point at which the exit bids that are to be accepted are determined (i.e. in the last clock round). Note that the issue does not arise in relation to any exit bids placed in bands with band-specific caps, as the exit bid quantity can never exceed the clock bid quantity, which needs to comply with the applicable caps.</p> <p>In relation to the example provided in 4.4.4, compliance with the caps means that awarding Bidder 1 both of its exit bids would not be possible, and therefore only the following combinations would be considered:</p> <table border="1" data-bbox="958 1353 2114 1453"> <thead> <tr> <th>Combination</th> <th>B</th> <th>C2</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>Bidder 1: 2@100 Bidder 2: 1@91</td> <td>Bidder 1: 3@90 Bidder 2: 4@100</td> <td>Bidder 1: 470 Bidder 2: 491</td> </tr> </tbody> </table>	Combination	B	C2	Value	I	Bidder 1: 2@100 Bidder 2: 1@91	Bidder 1: 3@90 Bidder 2: 4@100	Bidder 1: 470 Bidder 2: 491
Combination	B	C2	Value							
I	Bidder 1: 2@100 Bidder 2: 1@91	Bidder 1: 3@90 Bidder 2: 4@100	Bidder 1: 470 Bidder 2: 491							

bined 5 block cap for B and C2.
 4.4.4. In addition, do spectrum caps (in particular the combined cap for B and C2) constrain how exit bids are assigned at the conclusion of the clock phase? If so, please point us to the appropriate section of the rules (we found no provision that addresses this case). To clarify, consider the following example, in which certain combinations may not be considered, depending on whether caps are enforced:

Category		B	C2
Supply		3	8
Final Round	Price/lot	100	100
	Bidder 1	2 3@92	2 3@90
	Bidder 2	0 1@91	4
	Bidder 3	0	1
	Total Demand	2	7
	Excess Demand	(1)	(1)

How would the aggregate cap affect the processing of the exit bids?

4.4.5. How would the answer change in the following case, in which Bidder 2 (not Bidder 1) submits the exit bid in the C2 band?

Category		B	C2
Supply		3	8
Final Round	Price/lot	100	100
	Bidder 1	2 3@91	2
	Bidder 2	0 1@92	4 5@90
	Bidder 3	0	1
	Total Demand	2	7
	Excess Demand	(1)	(1)

II	Bidder 1: 3@92	Bidder 1: 2@100	TOTAL 961
	Bidder 2: 0	Bidder 2: 4@100	Bidder 1: 476 Bidder 2: 400 TOTAL 876

The principle of value maximisation suggests that combination I will be chosen. The example in 4.4.5 would accordingly be resolved in favour of Combination I.

Combination	B	C2	Value
I	Bidder 1: 3@91	Bidder 1: 2@100	Bidder 1: 473
	Bidder 2: 0	Bidder 2: 5@90	Bidder 2: 450 TOTAL 923
II	Bidder 1: 2@100	Bidder 1: 2@100	Bidder 1: 400
	Bidder 2: 1@92	Bidder 2: 4@100	Bidder 2: 492 TOTAL 892

106 Is a bidder prohibited from increasing its clock demand (e.g. through a switch from another category) in the same category in which it placed an exit bid in a prior round? Does the answer depend on whether the exit bid has been voided or renewed?

No.

107 We note that Article 3.7.4(c) of Annex II appears to exclude

The exemption in 3.7.4(c) only applies to the provisional award of a block under the cumulative

	<p>conventional exit bids in Category A when discussing the pricing of accepted exit bids. Was this intentional? Can you confirm that conventional exit bids can be made in category A, as in other bands?</p>	<p>cap in terms of determining prices. Conventional exit bids can be made in category A also.</p>																								
<p>108</p>	<p>Annex II, Article 3.4.12, indicates that that $p_{t+1} > p_a \geq p_t$, where p_a is the price of an exit bid, and p_t and p_{t+1} are the prior and current round prices. Please confirm that a bidder is permitted to submit an exit bid for a lower quantity but equal price relative to the prior clock round's bid quantity and price.</p> <p>For example, in the prior round, the bidder places a bid for 5 units in Category E at a price of 100. In the current round, the clock price is 110 and the clock bid is for 3 units. Is the bidder permitted to submit an exit bid for 4 units at a price of 100 (even though it previously submitted a bid for 5 units at the same price)?</p>	<p>Confirmed.</p>																								
<p>109</p>	<p>Suppose the auction ends with excess supply of 1 license in category C1 and one license in category C3. The final clock round prices of C1 and C3 are 100 and bidders A and B do not demand any of those licenses but have the following exit bids:</p> <table border="1" data-bbox="224 930 701 1134"> <thead> <tr> <th>Category</th> <th>C1</th> <th>C3</th> </tr> </thead> <tbody> <tr> <td>Supply</td> <td>5</td> <td>5</td> </tr> <tr> <td>Price/lot</td> <td>100</td> <td>100</td> </tr> <tr> <td>Bidder 1</td> <td>0 1@90</td> <td>0 1@85</td> </tr> <tr> <td>Bidder 2</td> <td>0 1@92</td> <td>0 1@89</td> </tr> <tr> <td>Bidder 3</td> <td>4</td> <td>4</td> </tr> <tr> <td>Total Demand</td> <td>4</td> <td>4</td> </tr> <tr> <td>Excess Demand</td> <td>(1)</td> <td>(1)</td> </tr> </tbody> </table> <p>In case the eligibilities of the two bidders are such that exactly one of each bidder's exit bids can be accepted, which exit bids will be accepted?</p>	Category	C1	C3	Supply	5	5	Price/lot	100	100	Bidder 1	0 1@90	0 1@85	Bidder 2	0 1@92	0 1@89	Bidder 3	4	4	Total Demand	4	4	Excess Demand	(1)	(1)	<p>Application of the maximum value criterion implies that Bidder 1's exit bid for C1 and Bidder 2's exit bid for C3 will be accepted (total value: 179, compared with a total value of 177 from accepting Bidder 1's exit bid for C3 and Bidder 2's exit bid for C1).</p>
Category	C1	C3																								
Supply	5	5																								
Price/lot	100	100																								
Bidder 1	0 1@90	0 1@85																								
Bidder 2	0 1@92	0 1@89																								
Bidder 3	4	4																								
Total Demand	4	4																								
Excess Demand	(1)	(1)																								
<p>110</p>	<p>In the example above, each bidder did not demand any of the C1 and C3 licenses in the last clock round. How would the processing of the exit bids change depending on their demand in the last clock round? How will exit bids be processed if there are more than 2 bidders with exit bids?</p>	<p>If a bidder has placed exit bids in a category where it also has positive demand in the last clock round, we will accept either the final clock bid or the exit bid. For example, assume that Bidder 1 has a final clock bid for 2 blocks in category C1 at the clock price of 100, and has placed exit bids for 3 blocks at 95 and for 4 blocks at 94, and that Bidder 2 has placed a final clock bid for 1 block and exit bids for 2 blocks at 98 and for 3 blocks at 90. No other bids have been placed for these</p>																								

lots. The table below shows the combinations of clock/exit bids we can accept, and the total value of these bids. The chosen combination is shown in bold - so we accept Bidder 1's exit bid for 3 blocks, and Bidder 2's exit bid for 2 blocks.

		Bidder 1		
		2@100 (Clock)	3@95	4@94
Bidder 2	1@100	100 + 200 = 300	100 + 285 = 385	100 + 376 = 476
	2@98	196 + 200 = 396	196 + 285 = 481	Not possible
	3@90	270 + 200 = 470	Not possible	Not possible

If Bidder 2 had placed an exit bid for 3 lots at 95 instead of 90, we would instead take Bidder 1's clock bid and Bidder 2's exit bid for 3 blocks, which generates a value of 285 + 200 = 485. The combination of exit bids will be determined in accordance with 3.7.4 b, irrespective of the number of bidders with exit bids.

		<p>lots. The table below shows the combinations of clock/exit bids we can accept, and the total value of these bids. The chosen combination is shown in bold - so we accept Bidder 1's exit bid for 3 blocks, and Bidder 2's exit bid for 2 blocks.</p> <table border="1"> <tr> <td colspan="2" rowspan="2"></td> <td colspan="3">Bidder 1</td> </tr> <tr> <td>2@100 (Clock)</td> <td>3@95</td> <td>4@94</td> </tr> <tr> <td rowspan="3">Bidder 2</td> <td>1@100</td> <td>100 + 200 = 300</td> <td>100 + 285 = 385</td> <td>100 + 376 = 476</td> </tr> <tr> <td>2@98</td> <td>196 + 200 = 396</td> <td>196 + 285 = 481</td> <td>Not possible</td> </tr> <tr> <td>3@90</td> <td>270 + 200 = 470</td> <td>Not possible</td> <td>Not possible</td> </tr> </table> <p>If Bidder 2 had placed an exit bid for 3 lots at 95 instead of 90, we would instead take Bidder 1's clock bid and Bidder 2's exit bid for 3 blocks, which generates a value of 285 + 200 = 485. The combination of exit bids will be determined in accordance with 3.7.4 b, irrespective of the number of bidders with exit bids.</p>			Bidder 1			2@100 (Clock)	3@95	4@94	Bidder 2	1@100	100 + 200 = 300	100 + 285 = 385	100 + 376 = 476	2@98	196 + 200 = 396	196 + 285 = 481	Not possible	3@90	270 + 200 = 470	Not possible	Not possible
		Bidder 1																					
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	2@98	196 + 200 = 396	196 + 285 = 481	Not possible																			
	3@90	270 + 200 = 470	Not possible	Not possible																			
111	Article 3.9.1 (pertaining to information reported at end of each round) indicates nothing about information provided on the status of one's exit bids. Will information/status of previously submitted exit bids be reported to the bidder? Also, will information about which exit bids can be extended be reported to the bidder?	For the avoidance of doubt, information about bids placed will include information about exit bids. Exit bids can only be extended in categories where there has been no excess demand, so the information listed in 3.9.1 will indicate what exit bids can be extended.																					
112	Will ComCom/OFCOM provide a solver for exit bid allocation? If so, when the solver will be provided?	Provision of a solver is not intended.																					
113	Price Increments Re Article 3.1.3 of Annex II, are price increments rounded up, down, or to the nearest multiple of CHF 1'000?	ComCom did not determine a rule and will decide at its own discretion.																					
114	Assignment Phase Annex II, Article 5.3.1, bullets 4 and 5 state: "as far as possible, bidders who have been awarded the frequencies in categories C1 and C2 or C2 and C3 respectively are assigned contiguous frequencies in the core band and the respective contiguous sideband," and "any blocks not awarded are placed as contiguous blocks at the upper or lower end of the band." Can you provide guidance how this limits potential frequency block assignments in C1 and C2 in the following situations?	<p>a) Assignment options will be determined without any regard to contiguity of assignments across C1 and C2</p> <p>b) Yes</p> <p>c) The bidder would have the choice between receiving contiguous blocks across C1 and C2 or across C2 and C3. The blocks won in C2 would not be fragmented.</p> <p>d) The assignment options generated would include a contiguous assignment across C1 and C2 for each of these bidders, as well as other assignment options. Whether any of the bidders will opt for the contiguous assignment is a matter for the bidders.</p>																					

	<p>a) No single bidder has been awarded blocks in each of C1 and C2</p> <p>b) Exactly one bidder has been awarded blocks in each of C1 and C2, but this bidder has not been awarded blocks in C3. Is this bidder then guaranteed to be awarded contiguous blocks in C1 and C2?</p> <p>c) Exactly one bidder has been awarded blocks in each of C1 and C2, and this bidder has also been awarded blocks in C3. Is this bidder then guaranteed to be awarded EITHER contiguous blocks in C1 and C2 OR contiguous blocks in C2 and C3? Or, might this bidder be awarded BOTH contiguous blocks between C1 and C2 AND contiguous blocks between C2 and C3, such that its C2 blocks would themselves not be contiguous?</p> <p>d) Multiple bidders have been awarded blocks in both C1 and C2. Is it guaranteed that SOME bidder will be awarded contiguous blocks in C1 and C2?</p>	
115	What restrictions are there for how un-awarded blocks are placed within the C1 band - will they necessarily be placed at the lower end?	Yes.
116	What restrictions are there for how un-awarded blocks are placed within the C2 band?	Blocks that have not been awarded will remain contiguous, but there is no restriction on their placement.
117	How will the blocks in Categories C1, C2 and C3 be grouped in the Assignment Phase?	In the Assignment Phase, the options are evaluated across the entire band in order to minimize fragmentation.
118	Additional Phase for Unsold Lots: What guidelines can ComCom/OFCOM provide about the circumstances in which it will decide to have an additional round? For instance, what if there are unallocated 700 MHz FDD blocks, or if only the 2.6 GHz block goes unsold?	As stated in the rules, the decision about the details of the additional phase will be made based on what happened during the clock phase. No further guidance can be provided at this stage.
119	Would bidders be able to submit bids for packages, so that it could, for example, bid more/less for a package of lots than it bids for the lots individually? How many bids can a bidder submit?	As stated in the rules, the decision about the details of the additional phase will be made based on what happened during the clock phase. No further guidance can be provided at this stage.

120	What eligibility limits and caps would apply?	As stated in the rules, the decision about the details of the additional phase will be made based on what happened during the clock phase. No further guidance can be provided at this stage.
121	Will the information in the end and beginning of each round be available in downloadable format such as CSV, pdf, xml etc.	The system will provide both downloadable data and PDF reports.
122	Will the bidding system allow uploading bids in a simple format or bids must be entered manually?	Clock bids and exit bids as well as assignment bids will have to be entered in the user interface; should an additional bidding phase be required, there will be an option to upload package bids.
123	Example 4 has errors in point totals. Can you provide a corrected version of the example?	Correct. Please see the updated examples at the end of the document.
124	Like most other clock auctions, this auction has no provisional winners after each round. In all other standard clock auctions either (a) all bids count, or (b) more commonly and probably more preferred, a bidder is not allowed to redeploy points across categories if doing so would leave a previously fully subscribed category with excess supply. Further, the rules indicate that the round processing will allow bidders to shift demand across categories without regard to the possibility that such shifts will result in excess supply when there was excess demand in the previous round. Will the round processing prevent such shifts, as is common in most other clock auctions without provisional winning bids?	No.
125	The spectrum caps in Category E ensure three winners, and each will get at least 60 MHz of spectrum. All MNOs seem to require more than 60 MHz. On the other hand, the caps in Categories A and C2 are likely to result in only two winners gaining adequate spectrum in those two bands. In Category A, the cap of 3 blocks with an overall conditional two bidder cap of 5 blocks appears very likely to result in one bidder winning one or zero blocks. In the C2 category, the 5-block cap (including the unrelated Category B) allows a 4 – 4 or 5 -3 split with one bidder winning none of the usable core blocks (all three MNOs indicated that one block in Category A is not sufficient to justify nationwide deployment). Thus, a plausible outcome is for one bidder to end up with no usable spectrum in Categories A, C2 and only	There is no post-auction policy on consolidation. ComCom is aware of the possibility that a bidder can leave the auction with less and/or less valued spectrum than the others, as this is possible in all the auction formats. ComCom has very carefully decided over the award procedure by taking into account the consultation results and the hearings. E.g., there are bidding restrictions to prevent extreme results.

	<p>60 MHz in Category E. Categories B, C1 and C3 may have limited or no value for many years due to lack of equipment availability. Are Authorities (ComCom/OFCOM, WEKO) aware that the auction might end with one MNO impaired. What is the post-auction policy on consolidation when the auction leaves one incumbent MNO impaired?</p>	
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6 Software

No.	Question	Answer
126	<p>Software</p> <p>How many rounds of iteration of the auction software and for each iteration, how many weeks for candidates to test and validate the next version of the auction software do ComCom/OFCOM envisage?</p> <p>Even auctions using standard designs/procedures have substantial enough “bugs” and problems that lead to the delay of the auction process. Given ComCom/OFCOM have chosen to use a prototype design/process, it is likely that even more problems will emerge once candidates are (finally) able to test ComCom/OFCOM software. This is already amply demonstrated by the exceptionally large number of comments during consultation; the many questions of clarification during the present “questions of clarification” process; the obvious inconsistencies in the Main Document and between it and the Annexes; the errors in the worked examples in ComCom/OFCOM tender document.</p>	<p>The candidates have not the possibility to test and validate the versions of the auction software.</p>
127	<p>Will an expert in Game Theory be present during ComCom/OFCOM’s candidate-training sessions? Is ComCom considering several iterations of training sessions? If so, how many weeks does ComCom/OFCOM envisage between the training-sessions to iterate its auction process as a result of its learnings from these “real-world” training sessions?</p>	<p>Yes, an expert will be present.</p> <p>There is only one training session, ComCom does not consider to hold more sessions.</p>

7 Beispiele

Die Beispiele 1-3 wurden verändert, damit sie die geltenden Spektrumsuppen berücksichtigen. Das Beispiel 4 wurde ebenfalls richtiggestellt. Die Änderungen sind gelb hinterlegt.

Beispiel 1: Clockrunden ohne Ausstiegsgebote

Das folgende einfache Beispiel zeigt den Verlauf der Clockrunden mit drei Bietern (X, Y und Z) ohne die Abgabe von Ausstiegsgeboten.

- In der ersten Clockrunde besteht ein Nachfrageüberschuss in den Loskategorien A, B und E und die Preise für diese Kategorien steigen
- In der zweiten Runde reduziert Bieter Y seine Nachfrage in Kategorie A und wechselt von Kategorie B zu Kategorie C2. Ausserdem reduziert Z seine Nachfrage in der Kategorie B auf null. Es besteht weiterhin ein Nachfrageüberschuss in A und E, aber nicht mehr in B. Dafür übersteigt nun die Nachfrage in C2 das verfügbare Angebot
- In der dritten Runde reduziert Z seine Nachfrage in A und C2, und verwendet die frei gewordenen Bietpunkte, um die Nachfrage in E zu erhöhen. X reduziert die Nachfrage in E. In allen Kategorien ist jetzt die Gesamtnachfrage gleich dem verfügbaren Angebot und die Clockrunden enden.

Loskategorie		A	B	C1	C2	C3	D	E
Angebot		6	3	5	8	5	1	15
Bietpunkte		2	1	1	1	1	1	2
Runde 1	Preise	100	50	50	50	50	50	100
	Gebot X	3	3	5	2	0	1	6
	Gebot Y	3	3	0	2	0	0	5
	Gebot Z	2	3	0	2	5	0	5
	Gesamtnachfrage	8	9	5	6	5	1	16
	Nachfrageüberschuss?	J	J	N	N	N	N	J
Runde 2	Preise	110	55	50	50	50	50	110
	Gebot X	3	3	5	2	0	1	6
	Gebot Y	2	0	0	5	0	0	5
	Gebot Z	2	0	0	2	5	0	5
	Gesamtnachfrage	7	3	5	9	5	1	16
	Nachfrageüberschuss?	J	N	N	J	N	N	J
Runde 3	Preise	120	55	50	55	50	50	120
	Gebot X	3	3	5	2	0	1	4
	Gebot Y	2	0	0	5	0	0	5
	Gebot Z	1	0	0	1	5	0	6

Gesamtnachfrage	6	3	5	8	5	1	15
Nachfrageüberschuss?	N	N	N	N	N	N	N

Die Bieter gewinnen die folgenden Pakete zu den folgenden Preisen:

	Preis/Block							Preis
	120	55	50	55	50	50	120	
Bieter	A	B	C1	C2	C3	D	E	
X	3	3	5	2	0	1	4	1,415
Y	2	0	0	5	0	0	5	1,115
Z	1	0	0	1	5	0	6	1,145

Beispiel 2: Clockrunden mit Anwendung der kumulativen Spektrumskappe

Im Unterschied zum vorherigen Beispiel startet Bieter Z mit einem Gebot auf einen Block in der Kategorie A und gibt ein Ausstiegsgebot für diesen Block zu 105 ab. Dadurch würde der Nachfrageüberschuss in Kategorie A eliminiert, und es wäre kein Preisanstieg erforderlich. Aufgrund der kumulativen Spektrumskappe steigt der Preis für diese Kategorie aber gleichwohl an. Gleichzeitig wird dem Bieter ein Los in dieser Kategorie provisorisch zugeschlagen (1@105).

Loskategorie		A	B	C1	C2	C3	D	E
Angebot		6	3	5	8	5	1	15
Bietpunkte		2	1	1	1	1	1	2
Runde 1	Preise	100	50	50	50	50	50	100
	Gebot X	3	3	5	2	0	1	6
	Gebot Y	3	3	0	2	0	0	5
	Gebot Z	1	3	0	2	5	0	5
	Gesamtnachfrage	7	9	5	6	5	1	16
	Nachfrageüberschuss?	J	J	N	N	N	N	J
Runde 2	Preise	110	55	50	50	50	50	110
	Gebot X	3	3	5	2	0	1	6
	Gebot Y	3	0	0	5	0	0	5
	Gebot Z	0 (1@105)	0	0	2	5	0	5
	Gesamtnachfrage	6	3	5	9	5	1	16
	Nachfrageüberschuss?	J*	N	N	J	N	N	J

Runde 3	Preise	120	55	50	55	50	50	120
	Gebot X	3	3	5	2	0	1	5
	Gebot Y	2	0	0	5	0	0	5
	Gebot Z	0 (1@105)	0	0	1	5	0	5
	Gesamtnachfrage	5	3	5	8	5	1	15
	Nachfrageüberschuss?	N	N	N	N	N	N	N

* Ein Nachfrageüberschuss besteht hier, weil aufgrund der Anwendung der kumulativen Spektrumschuppe nur noch fünf Blöcke für Bieter X und Y zur Verfügung stehen.

Die Bieter gewinnen die folgenden Pakete zu den folgenden Preisen:

	Preis/Block							
	120	55	50	55	50	50	120	
Bieter	A	B	C1	C2	C3	D	E	Preis
X	3	3	5	2	0	1	5	1,535
Y	2	0	0	5	0	0	5	1,115
Z	1 @ 105	0	0	1	5	0	5	1,010

Der von Bieter Z zu entrichtende Preis beinhaltet den Zuschlag eines Loses in Kategorie A zum Ausstiegsgebot von 105.

Hätte der Bieter kein Ausstiegsgebot auf einen Block in der Kategorie A abgegeben, sondern hätte beispielsweise einen Wechsel in die Loskategorie E vorgenommen, dann wäre die kumulative Spektrumschuppe nicht zur Anwendung gekommen.

Beispiel 3: Clockrunde mit einfachen Ausstiegsgeboten

Im folgenden Beispiel betrachten wir die Aktionen eines einzelnen Bieters (bei gegebener aggregierter Nachfrage der anderen Bieter).

- In der ersten Clockrunde gibt der Bieter ein Gebot auf zwei Lose in der Kategorie A, drei Lose in der Kategorie B, zwei Lose in Kategorie C2 und sechs Lose in der Kategorie E ab. Das Aktivitätsniveau dieses Clockgebots ist 21.
- Angenommen, die Gebote der anderen Bieter seien so, dass es nur in den Kategorien A und E einen Nachfrageüberschuss gibt, und demnach die Preise steigen.
- Es sei angenommen, der Bieter reduziere seine Nachfrage in diesen beiden Kategorien und biete nun mehr nur noch auf einen Block in der Kategorie A und auf vier Blöcke in der Kategorie E. Das Aktivitätsniveau dieses Gebots ist nun 15. Der Bieter hat seine Aktivität reduziert und kann nun Ausstiegsgebote abgeben. Genauer gesagt kann der Bieter angeben, bis zu welchem Preis er an zwei Blöcken in der Kategorie A interessiert wäre, und bis zu welchen Preisen er weiterhin sechs Blöcke in der Kategorie E nehmen bzw. die Nachfrage auf fünf Blöcke reduzieren würde. Es sei angenommen, dass der Bieter die unten stehenden Ausstiegsgebote abgibt.
- Weiterhin nehmen wir an, dass die anderen Bieter ihre Nachfrage unverändert beibehalten. In diesem Fall endet die Clockphase, da es in keiner Kategorie mehr einen Nachfrageüberschuss gibt. In den Kategorien A bis D entspricht die aggregierte Nachfrage aus den Clockgeboten genau dem Angebot. In der Kategorie E gibt es aber nun einen Angebotsüberschuss. Weil der Bieter eine Nachfrage für die Anzahl der Lose spezifiziert hat, die Angebot und Nachfrage ausgleicht, wird das entsprechende Ausstiegsgebot für fünf Lose akzeptiert, und alle Bieter gewinnen ihre Lose in dieser Kategorie zum Preis des akzeptierten Ausstiegsgebots, d.h. 106, anstelle des Clockpreises (110).

	Loskategorie	A	B	C1	C2	C3	D	E
	Angebot	6	3	5	8	5	1	15
	Bietpunkte	2	1	1	1	1	1	2
Runde 1	Preise	100	50	50	50	50	50	100
	Clockgebot (Aktivität: 21)	2	3	0	2	0	0	6
	Gebote der anderen Bieter	5	0	5	6	5	1	11
	Gesamtnachfrage	7	3	5	8	5	1	17
	Nachfrageüberschuss Angebotsüberschuss?	+1	0	0	0	0	0	+2
Runde 2	Preise	110	50	50	50	50	50	110
	Clockgebot (Aktivität: 15)	1	3	0	2	0	0	4
	Andere	5	0	5	6	5	1	10
	Gesamtnachfrage	6	3	5	8	5	1	14
	Nachfrageüberschuss/ Angebotsüberschuss?	0	0	0	0	0	0	-1
	Ausstiegsgebote	2 @ 105						

Der Bieter gewinnt das folgende Paket zu den folgenden Preisen:

Preis/Block							Preis
110	50	50	50	50	50	106	
A	B	C1	C2	C3	D	E	Preis
1	3	0	2	0	0	5	890

Variation A: Hätte der Bieter kein Ausstiegsgebot für fünf Blöcke abgegeben, sondern lediglich ein Ausstiegsgebot für sechs Blöcke gelegt, dann wäre es nicht möglich, das Ausstiegsgebot zu akzeptieren. In diesem Fall würden die Clockrunden mit den Clockpreisen enden, und ein Los in der Kategorie E bliebe am Ende der Clockphase unvergeben.

Variation B: Hätte ein anderer Bieter seine Nachfrage nach Losen in der Kategorie E von drei auf zwei Blöcke reduziert und ein entsprechendes Ausstiegsgebot für das zusätzliche Los abgegeben, dann entscheidet der Wert der Ausstiegsgebote darüber, welche Ausstiegsgebote akzeptiert werden. Hätte der andere Bieter beispielsweise ein Ausstiegsgebot für das zusätzliche Los in Höhe von 105 abgegeben, dann würde sowohl dieses Ausstiegsgebot als auch das Ausstiegsgebot unseres Bieters für fünf Lose

akzeptiert. Der Endpreis für Lose in dieser Kategorie wäre dann 105. ¹ Hätte der andere Bieter das Ausstiegsgebot allerdings zu einem Preis von 103 abgegeben, dann würde dieses nicht akzeptiert, sondern das Ausstiegsgebot unseres Bieters für sechs Lose würde verwendet, um Angebot und Nachfrage auszugleichen. ²

Beispiel 4: Ausstiegsgebote mit Nachfrageerhöhung in anderen Kategorien

In diesem Beispiel reduziert der Bieter seine Nachfrage in den Loskategorien A und E, und erhöht gleichzeitig seine Nachfrage über die anderen Loskategorien. Weil der Bieter in der Summe Bietberechtigung verliert, kann er Ausstiegsgebote abgeben und spezifizieren, bis zu welchen Preisen er eine größere Menge an Frequenzblöcken in denjenigen Kategorien nehmen würde, in denen er seine Nachfrage reduziert. Diese Ausstiegsgebote können allerdings nicht alle befriedigt werden, weil dies aufgrund der Nachfrageerhöhung in anderen Kategorien dazu führen würde, dass das Gewinnergebot des Bieters seine Bietberechtigung übersteigt.

Angenommen, der Bieter gebe die nachfolgenden Clockgebote und Ausstiegsgebote ab, und die anderen Bieter reduzieren ihre Nachfrage so dass die Clockphase mit einem Angebotsüberschuss in den Kategorien A und E endet.

Loskategorie		A	B	C1	C2	C3	D	E
Angebot		6	3	5	8	5	1	15
Bietpunkte		2	1	1	1	1	1	2
Runde 1	Preise	100	50	50	50	50	50	100
	Clockgebot (Aktivität: 20)	2	1	0	3	0	0	6
	Gebote der anderen Bieter	5	3	5	5	5	1	10
	Gesamtnachfrage	7	4	5	8	5	1	16
	Nachfrageüberschuss Angebotsüberschuss?	+1	+1	0	0	0	0	+1
Runde 2	Preise	110	55	50	50	50	50	110
	Clockgebot (Aktivität: 16)	1	0	0	3	3	0	4
	Andere	4	3	5	5	2	1	9
	Gesamtnachfrage	5	3	5	8	5	1	13
	Nachfrageüberschuss/ Angebotsüberschuss?	-1	0	0	0	0	0	-2
	Ausstiegsgebote	2 @ 105						5 @ 105 6 @ 104

Angesichts des Angebotsüberschusses (und unter der Annahme, dass keiner der anderen Bieter ein Ausstiegsgebot abgegeben hat) könnten die maximalen Ausstiegsgebote des Bieters akzeptiert werden, d.h. zwei Blöcke in A und 6 Blöcke in E. Zusammen mit den sechs Blöcken in Kategorie E würde das Aktivitätsniveau eines solchen Gewinnergebots (22) allerdings die Bietberechtigung des Bieters (20) übersteigen.

¹ $(3 \times 105 + 5 \times 106 = 845) > (2 \times 110 + 6 \times 104 = 844)$

² $(3 \times 103 + 5 \times 106 = 839) < (2 \times 110 + 6 \times 104 = 844)$

Akzeptiert man das Ausstiegsgebot in der Kategorie A, dann kann der Bieter maximal fünf Blöcke in der Kategorie E erhalten. Akzeptiert man das Ausstiegsgebot für sechs Blöcke in der Kategorie E, dann kann der Bieter nur sein Clockgebot in der Kategorie A erhalten.

Welches dieser Gebote akzeptiert wird hängt davon ab, welches den größeren Gesamtwert erzeugt (wobei wir alle Kategorien, in denen in beiden Fällen das Clockgebot des Bieters zum Zuge käme, vernachlässigen können). Das ist in diesem Fall das Gebot, das alle Lose in der Kategorie A zuteilt.

		A	B	C1	C2	C3	D	E	Gesamtwert
6E @ 104	Menge	1	0	0	3	3	0	6	734
	Preis	110	55	50	50	50	50	104	(1034 mit C2 und C3)
2A @105, 5E @ 105	Menge	2	0	0	3	3	0	5	735
	Preis	105	55	50	50	50	50	105	(1035 mit C2 und C3)