

To: EZK/AT

From: Christian Koboldt

CC: Roger Salsas

Date: 24 January 2020 [Peter Cramton: 3 February 2020]

Re: Initial response to consultation comments

[Peter Cramton: **My overall assessment.**

I have reviewed the consultation responses as well as the DotEcon memo, “Assessment of consultation responses,” of 24 January 2020. I generally agree with DotEcon’s assessment. Below I indicate my own views in tracked changes.

My views recognize the specific setting of the auction and the Ministry objectives. The primary objective is putting the spectrum to its best use—an efficient allocation of the spectrum. Secondary objectives, in order, are realistic revenues, simplicity, transparency, and freedom of choice.

The advice of DotEcon is the result of careful consideration of the relevant factors that go into advice on the choice of auction format. The advice of DotEcon is sufficiently motivated.]

General arguments about transparency/information disclosure:

Issue

Commenters argue that aggregate demand should be disclosed because not revealing this information prevents participants from making correct bids, can lead to strategic bidding behaviour, is disproportionate (as ‘high’ reserve prices already deal with the risk of unilateral or collusive strategic demand reduction), out of line with international practice and directly contradicts the objective of simplicity and transparency.

In this regard, a question is whether it would be an alternative to disclose the aggregate demand only from a certain moment onwards (e.g. when the aggregate demand drops below a certain limit).

Our assessment

We agree with the arguments put forward in the consultation responses in relation to the benefits of greater transparency being helpful for making the right bidding decisions. For the avoidance of doubt: commenters are not asking for full transparency, where every individual bid decision is disclosed, but for disclosing aggregate demand in each of the lot categories, which would allow them to get a better understanding of how demand evolves as prices change.

[Peter Cramton: I too agree with the arguments put forward in favor of disclosing aggregate demand by category. The commenters are right. Revealing excess demand provides essential information to bidders, especially in the context of a multi-band auction. Bidders need this information to make good decisions about which portfolio of spectrum makes the most sense as the auction progresses.

Much of the value from the excellent price and outcome discovery of the SMRA-clock hybrid is lost if excess demand is hidden. Worse, bidders will react in inefficient ways in response to the lack of information.

Hiding the information will not have the intended affect at discouraging demand reduction and low-revenue outcomes. Indeed, it may induce participants to reduce even earlier and engage in coordination outside of the bidding process.

The step of hiding the identity and number of bidders together with high opening prices provides sufficient mitigation of low-price outcomes. Given that the primary goal of the auction is allocative efficiency, it makes sense to reveal excess demand by category. Realistic revenues will result from the high opening prices.

Of all the issues, this is the one I feel most strongly about. It would be a major mistake not to disclose excess demand. Even if the Ministry puts a strong focus on revenues, the evidence that hiding excess demand would better support a revenue goal is weak.]

The examples provided illustrate how the standard activity rule based on eligibility points and the notion standing high bids –a central feature of the SMRA format that bidders generally like because of the certainty it provides them about their position in case the auction closes – can create switching impediments. This means that bidders will have to form some expectations about likely price developments and market clearing outcomes when making bidding decisions, as they might otherwise end the auction on a suboptimal combination of lots. Making such bidding decisions is easier if bidders have information about aggregate demand.¹

We also agree with the point made by the commenters that setting appropriate reserve prices deals with concerns about tacit collusion and strategic demand reduction more effectively than reducing transparency, as it limits the potential gains that bidders might obtain from such strategic behaviour.

We therefore recommend that the request for disclosing aggregate demand in each lot category round-by-round be taken seriously, without putting much weight on international comparisons, as the decisions in other jurisdictions may reflect rather different conditions and different trade-offs, or on the claim that not disclosing aggregate information is in contradiction to the simplicity and transparency objective (as this is about the simplicity of the rules and the transparency of the process).

We do not consider that there is any merit in disclosing aggregate demand from a certain moment onwards, as this will only cause further issues and increases the chances for complaints after the event, e.g. with bidders claiming that they were disadvantaged as a result of having made certain decisions prior to the change in information regimes which they would not have made if aggregate demand had been available. Such arguments featured prominently in the litigation following the Austrian multi-band auction, and even though ultimately unsuccessful, would suggest that a change in the information provided in the course of the auction is not advisable.

These arguments do not apply to information about the number and identity of bidders, whose disclosure has also been requested by respondents. Knowing who the competitors are is not necessary for using information about aggregate demand to gauge the likely evolution of demand and form expectations about possible market clearing outcomes (even though there might be some small benefit from having that

¹ As an aside, we note that the examples also bring up the issue of aggregation risks an exposure problems, which commenters have claimed to be immaterial – if they were material, a combinatorial auction format would be advisable

information as well). Therefore, we do not see a strong case for disclosing that information prior to the auction to improve bidding decisions.

Arguments about determination of standing high bids

Issue

Standing high bids should be determined by ordering bidders rather than bids, meaning that there would be at most one bidder in each band with partial standing high bids.

Our assessment

We agree with the argument that minimising the number of bidders with partial standing high bids is desirable (although we also note that determining standing high bids by ordering bids rather than bidders would produce the same outcome as in the standard SMRA where multiple bidders can hold partial standing high bids in a lot category).

Our reason for suggesting random ordering of bids was that using random ordering by bidder could result in more information asymmetry and partly undo the effects of keeping information about aggregated demand hidden.

Should the decision be to disclose aggregate demand, we would recommend reverting to the proposed approach to determining standing high bids through ordering by bidder, noting that this would be a further benefit associated with the disclosure of aggregate demand.

[Peter Cramton: I agree completely. This is yet one more reason why it is better to disclose excess demand.]

Disclosure of the use of waivers

Issue

Use of waivers needs to be disclosed to allow participants to assess why aggregate demand falls.

Our assessment

Obviously, this is only an issue if aggregate demand is disclosed.

However, even if a decision to disclose aggregate demand is made, we would not suggest disclosing the use of waivers.

We consider that waivers have the function of protecting bidders against technical problems and allowing them to see if they might be outbid on a partial standing high bid. They should not be used as a strategic instrument to try and signal potential accommodation strategies.

The small increase in uncertainty over the potential reasons for any reduction in aggregate demand should be tolerable.

In this context, we note that, as far as we understand, even in the German auctions, which are otherwise fully transparent, the use of waivers is not generally disclosed.

[Peter Cramton: In an ideal world, waivers are not used (this is one advantage of the standard clock auction). Waivers, if they are allowed, should be used as protection against technical problems—which in this day and time are rare. For this reason, bidders should face a high opportunity cost for the use of a waiver. This is accomplished by limiting the number of waivers to a very small number. My favorite is two. Then a bidder would be quite hesitant to use a waiver, because they would always want to have one available in case of an emergency.]

History has shown that waivers are primarily used for strategic gaming purposes. This use of waivers does not support the Ministry's objectives.

Not disclosing the use of waivers will further limit their use for gaming. I am fine with not disclosing waivers.]

Price increments

Issue

Price increments should be kept small and should be communicated beforehand.

Our assessment

It may be advisable to reduce price increments as the auction proceeds, but the decision should be left to the auctioneer and there should be no commitment to particular increment levels.

Communicating the intended price increments in advance (e.g. on the previous auction day) with an undertaking that any deviation would only be towards using lower increments than communicated is sensible and we generally suggest such openness.

[Peter Cramton: I agree that bid increments should be left to the auctioneer. The auctioneer should announce the increment plan for the day before bidding begins, and ideally shortly after the last round of the prior day.

I recommend increments between 5 and 10 percent of the standing high bid in a SMRA-clock hybrid. This will allow good price and allocation discovery, yet keep the auction moving at a reasonable pace.]

To the extent that bidders request to use the lowest price in each lot category as the price to be paid by all bidders, we note that such a pricing rule could be criticised by bidders who would have decided not to place a higher bid and as a result lost out and claim that they would have increased their bid if they had known that the ultimate price would not increase (e.g. because of budget constraints). Put differently, while using lowest price in a category will benefit some bidders, others are likely to resist. As the difference will be limited to a single price increment in any case, we would suggest sticking with the current pay-as-bid rule, which is clear and means that bidders will be held to their stated willingness to pay.

[Peter Cramton: I agree that pay-as-bid is best.]

Combining bands in the frequency assignment stage

Issue

Some commenters claim that there are linkages between all three bands and that it would therefore be desirable to combine assignment options across all three bands, or proceed sequentially with assigning frequencies in the 700 and 1400 MHz bands first and let bidders place assignment bids in 2100 MHz after the results in the other bands are known.

Other commenters oppose the combination of bands as, for example, a bidder who wins only in one band may have to outbid the assignment bid of another bidder who has won in two bands.

Our assessment

The question is whether there are linkages between the bands in terms of certain combinations of assignments being better than others, or not. If there are, then the

bands ought to be combined. This is eminently possible (and envisaged for the forthcoming Austrian auction) and should be preferred to a sequential approach.

In terms of complexity, assuming that there are for example three bidders, and each bidder winning different amounts of spectrum each, the number of potential combinations of assignment options would be limited (at most 64 options). With some spectrum remaining unsold, this might increase (though at the same time then the scope for asymmetric winnings would be reduced).

If these linkages exist, the argument that bidders who win in only one band are disadvantaged is not correct, as it is entirely appropriate that a bidder who has won in only one band would have to have a preference for a particular position that is sufficiently strong to beat the preference of another bidder which depends on potential concerns over effects across bands.

If these linkages do not exist, there would be no justification for combining the assignment options across bands.

[Peter Cramton: I agree. Given the potentially small number of winners, a simultaneous sealed-bid for all assignment options is computationally easy and still manageable for bidders. This is the preferred approach if there are material linkages among the bands. Since some are claiming there are linkages, it would seem this is the best option. If there are no linkages, then a bidder can translate the unlinked preferences into the full set of options with little effort.]

Request for extension

Issue

Extensions should be available in addition to waivers to deal with technical problems.

Our assessment

We disagree. Waivers provide protection against technical problems (as well as an opportunity to 'wait and see' if a standing high bid is outbid), and there is no need for extensions in addition to waivers.

[Peter Cramton: I agree it is better to waivers or extensions but not both. I have a slight preference for a limited number of waivers. This allows the auction to proceed on a fixed schedule over the day. For a bidding team, this is highly desirable.]