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Public Mobile Inc. Reply Comments Re: *Canada Gazette*, Part I, April 2012, Consultation on a Licensing Framework for Mobile Broadband Services (MBS) - 700 MHz Band, DGSO-002-12

1. Public Mobile welcomes the opportunity to provide reply comments on Industry Canada's proposed licensing framework for mobile broadband services on the 700 MHz band.
2. As we stated in our initial comments, the 700 MHz band is highly prized by wireless operators due to its propagation characteristics, related efficiencies and the device ecosystem that has developed for this frequency band. It is with this in mind that the Department must carefully structure the proposed licensing framework to advance its policy objective of ensuring sustainable competition. We believe the proposals Public Mobile put forth in our initial comments address elements of the proposed CCA format that should be amended to provide the optimal price discovery and ultimately the most efficient allocation of spectrum.
3. We will focus our reply comments on clarifications of previous comments and responding to some of the issues and proposals raised by others who have submitted comments. However, we have not responded to a number of comments and issues which are outside the scope of this consultation. Specifically, proposals have been made by a small number of parties to reconsider decisions that have been made previously by the Department (the band plan,

spectrum caps, etc.) or by Parliament (changes to the Canadian ownership and control regime). As we have stated previously, we remain concerned about the impact of some of those decisions on building sustainable competition and would be happy to have the Department reconsider those decisions, but they are not part of this consultation.

4. Public Mobile's failure to comment on a particular issue that is or could be adverse to Public Mobile's comments viewed as a whole should not be taken by the Department as support of, or acquiescence to, such comments.
5. In these reply comments we will comment on the following issues:
 - 1) Generic Blocks of Spectrum
 - 2) Associated Entities/Prohibition of Collusion
 - 3) Information Disclosure
 - 4) Opening Bids
 - 5) Eligibility Points
 - 6) Activity Rules/Revealed Preferences
 - 7) Supplementary Round
 - 8) Assignment Round
 - 9) Price Rules
 - 10) Spectrum Aggregation Limits
 - 11) Deployment Requirements
 - 12) Lawful Access
 - 13) Research and Development
 - 14) Processes and Deadlines
6. Public Mobile submits that the Department should take some incremental but meaningful steps by adopting our recommended amendments to the framework which will encourage sustainable competition so that smaller players, and not just large and dominant Incumbents, have the opportunity to acquire 700 MHz spectrum.

I. Generic Blocks of Spectrum

7. In our initial comments, Public Mobile submitted that the Department's proposed plan for "generic" licences is flawed, and the plan as proposed will disadvantage certain types of bidders. We asserted that there are significant impediments to operationalizing the Lower A Block (due to interference with broadcasting entities operating on Channel 51 and the lack of a handset ecosystem) that create significant difficulty in determining the true value of the Lower A Block. Unless these are addressed, a competitive advantage will be created in the auction for specific bidders.
8. We submitted that Industry Canada must enforce a migration by any broadcasters using Channel 51 to eliminate interference issues before it finalizes the auction licensing framework with firm deadlines and clearly stated costs (if any) associated with moving an existing broadcaster from Channel 51 to a new channel. We reiterate that only with certainty around the timing and costs associated with resolving the interference issues can all bidders be in a position to value this spectrum and compete in the auction under equally fair terms. (To prevent any game playing by existing incumbent broadcasters who are vertically integrated, the holder of a Channel 51 license that acquires the Lower A Block in the same market should not be permitted to utilize the Lower A Block license prior to the established deadline.)

9. We also reiterate our submission that the proposal to pair the Lower A Block with the Lower B Block will significantly complicate the “generic” quality of the Lower B and C Blocks. The band plan already raises questions about the generic quality of these two licences, given the potential interference issues. However, these issues could be resolved through the auction process in the assignment round. Bidders would be free to value the potential advantages of the Lower B Block over the Lower C Block through the bidding process. The proposal to automatically pair the Lower A Block and the Lower B Block makes this approach impossible.
10. We proposed that if bidders value contiguous spectrum, or prefer the Lower B Block over the Lower C Block on its own merits, then the Department should let such bidders express that preference in the assignment round. Bidders would be required to bid for the Lower B Block where they won the Lower A Block; an expression of the true value of each particular block and a more efficient way to allocate spectrum than the Department has proposed. Similarly, Public Mobile believes the proposal by Rogers to extend the allocation of contiguous spectrum to cover all the licences in the Lower 700 MHz band would be a further step in the wrong direction
11. However, Public Mobile does not support additional changes in the treatment of generic blocks of spectrum. MTS Allstream proposed that the Lower B and C Blocks should not be treated as a generic licence block.¹ Telus further questions the benefit of generic blocks and proposed eliminating them entirely.² While arguments can be made that the various blocks in this auction are not identical, they do, as allocated, meet the criteria of being sufficiently generic for this purpose. The CCA format is designed to generally enhance substitution and price discovery by grouping lots into generic licenses. The more lots that are sold on an individual basis in the primary rounds, the less benefits accrue from faster substitution and price discovery. The fact that generic lots are different does not rule out grouping them as generic lots. Preferences for different generic lots can be expressed in the assignment round.

II. Associated Entities/Prohibition of Collusion

12. The issue of associated entities has received considerable comment from multiple parties. In our initial comments, Public Mobile submitted that given that Bell and Telus have been sharing spectrum and network infrastructure for their existing operations, using Cellular, PCS and AWS spectrum, it is only logical that such sharing will be extended to 700 MHz spectrum. As the definition has been proposed, they are clearly associated entities. As such, the presumption should be that they are required to participate in the auction as a single bidder and be subject to a single spectrum cap.
13. We further submitted that should Industry Canada decide to allow (as proposed in Para. 69 and 70 of the consultation document) Bell and Telus to either participate separately in the auction or to have the spectrum caps applied separately, it must do so very carefully. If the Department is to allow this option for existing, or future, “associated entities,” there must be clearly defined criteria for circumstances that permit two “associated entities” to either participate separately or to have the spectrum caps applied separately. Further, any such request to be exempted from the general policy (which requires those entities to participate through a single bidder) should be public information, including the rationale and justification for providing such an exemption. Such clarity and transparency through public disclosure is important to ensure there is a clear understanding by all bidders of the status of “associated entities” and to ensure that there is a

¹ MTS Allstream Comments Para 13.

² Telus Comments Para 24-9.

level playing field where all bidders understand what is, and is not, permitted between associated entities.

14. Bell and Telus raise concerns in their initial comments where they attempt to obfuscate the definitions around associated entities by tying them to specific agreements specifically related to 700 MHz spectrum. Bell attempts to argue that “significant joint equipment purchases” should not be indicative of association.³ Following Bell’s logic, only agreements that specifically pertain to the rollout of 700 MHz spectrum should be taken into account, and the large body of evidence of network and equipment sharing agreements that create a credible case for treating Bell and Telus as associated, and be required to bid under a shared cap, should be ignored. This is patently unreasonable, and the Department should treat this suggestion as such.
15. Telus echoes Bell’s arguments. “Telus supports the proposal to require disclosure of any of the types of arrangements listed in the examples in paragraph 67 of the consultation provided that disclosure must be limited to arrangements to specifically support the acquisition or use of 700 MHz spectrum.”⁴ Requiring Bell and Telus to submit only forward looking documents regarding association would ignore a body of evidence spanning over a decade that indicates these two parties’ affiliation. Public Mobile implores the Department to consider all agreements between “associated entities” and to weigh them appropriately when determining whether parties should be able to bid using separate spectrum cap allocations.
16. A policy which permits “associated entities” to participate in the auction as separate bidders creates a number of challenges to maintaining the integrity of the auction process. By definition, Bell and Telus have no incentive to bid competitively against each other for spectrum. In the specific circumstances of the 700 MHz auction, they need to have carefully coordinated bidding. If they are also permitted to have separate spectrum caps, they have a strong requirement to bid for, and acquire, adjacent blocks of spectrum. Given the incompatibilities between the Lower 700 MHz paired blocks and the Upper 700 MHz paired blocks, they must have a collusive bidding strategy. Even if they follow the letter of the proposed rule prohibiting collusion, they can only do so by having worked out their joint bidding strategy ahead of time. This will create an auction framework whereby two large bidders only *appear* to be independent entities in the auction. Given that both Bell and Telus will, by necessity, know the bidding strategy of the other, it puts all other bidders at a disadvantage and breaks the spirit – if not the letter – of an anti-collusion policy.
17. However, there is no need to create this conflict or challenge to the integrity of the auction process. If associated entities wish to own spectrum independently, they do not have to participate in the auction separately. Instead, they could simply participate in the auction as a single bidder and have an agreement to divide up the licences post-auction. This wouldn’t create any problems with collusion, would pose no challenges to the auction structure, and could satisfy their operational needs.
18. Moreover, as proposed by the Department, acting as a single bidder is a separate question from asking to have the spectrum caps applied separately. While Public Mobile continues to believe that public policy would be best served if Bell and Telus were to be counted under the same shared spectrum cap, a view that has been echoed by all other potential auction participants (except for Bell and Telus), we recognize the Department may have another view. As with bidding separately, there should be a public process and clear rules which define whether

³ Bell Comments, Para 62.

⁴ Telus Comments, Para 44.

separate caps could apply. Should the government permit separate spectrum caps, they could effectively be applied to the two acting as a single bidder. Doing so would eliminate the problems raised by allowing them to bid separately.

III. Information Disclosure

19. Public Mobile continues to advocate against the Department's proposal to publicly disclose an unprecedented breadth of information following the conclusion of the 700 MHz auction.
20. It is expected that billions of dollars will be bid in this auction. The full record of bids submitted throughout the course of the auction will reveal considerable commercially sensitive information about bidding strategies and goals that would provide competitors significant insight into a company's strategic direction.
21. In addition, such information is not normally disclosed at the conclusion of CCA format auctions. Other jurisdictions (United Kingdom, Denmark, Austria, Ireland, Netherlands, Switzerland and Australia) have uniformly rejected the idea of information disclosure of this type, either during or after a Combinatorial Clock Auction. The Department's proposal regarding information disclosure is without precedent worldwide, and exposes sensitive strategic decisions to competitors.
22. Sasktel submitted in their comments that the Department should only release pre-auction information on the names of participants, and should not disclose auction deposits and bid points submitted by each bidder.⁵ Public Mobile supports Sasktel's proposal, as the release of pre-auction information such as deposits and bid points would quickly reveal the auction strategy of regional bidders. If a small regional bidder only puts down a small deposit it will signal to all other bidders that that regional bidder is not interested in a larger package of licences, and will allow for larger bidders to frustrate that regional bidder as its licence preference will likely be revealed after the first clock round.
23. Bell suggests that more information should be released to bidders during the clock rounds. "However, the minimal information disclosure proposed for this auction (i.e., disclosing only the aggregate demand at the current clock prices) does not provide bidders with sufficient information to identify the most relevant packages to bid on".⁶ There are at least two reasons to disregard Bell's proposal to provide bidders with more information during clock rounds.
24. First, there is no reason bidders would need more information at that point in the process, over and above the aggregate demand. The clock rounds are intended to allow bidders to update their valuations (i.e. reduce the common value uncertainty) for which they only need the total market demand at different prices. The only certain consequence arising from releasing such information on individual bidding is a significant increase in the risk of collusion. As discussed above, the information primarily has value for associated entities that are trying to jointly coordinate their pre-existing bidding strategy.
25. It is instructive to note that in preparation for the Irish multi-band CCA spectrum auction, the Irish regulator reached the conclusion that additional information would not benefit the auction process:

⁵ Sasktel comments, Para 67.

⁶ Bell Comments, Para 17.

“First, ComReg has designed the Auction to limit the potential for collusion by only providing aggregate information on Bids submitted by Bidders and thus this limits visibility of Bidders individual bidding strategies; Second, interested parties should recall that the EAS provides a history facility, where aggregate demand at other round prices can be reviewed. ComReg therefore fails to see what additional information could be usefully revealed... ComReg considers that there is an appropriate and proportionate balance between the amount of information provided to Bidders and the potential for tacit collusion.”⁷ (emphasis added)

26. Second, Bell’s use of the phrase “minimal information disclosure” must be a misunderstanding of the term. Public Mobile has reviewed several recent CCA spectrum auctions and has not been able to find a single auction that releases bidder specific information during the clock rounds of the auction. It is the standard practice around the world to release information on aggregate demand after each clock round in CCA auctions, but no more.
27. As submitted in Public Mobile’s initial comments for this consultation, the Department seemingly proposes to release more information than is usually released in CCA spectrum auctions. The proposal to release information on bidders’ bids subsequent to the auction essentially reveals the bid strategies and spectrum valuations of participating bidders and thus the proposed rules release too much information rather than too little. Public Mobile reiterates its submission that only winning bidders, packages and prices should be disclosed following the auction, individual bids by individual bidders must remain confidential.

IV. Opening Bids

28. In our initial comments Public Mobile submitted that the prices proposed for opening bids as presented in Table 4 of the consultation document are unjustifiably high. The average opening price per MHz/pop for the paired licences is \$0.48, and the price per MHz/pop is 2.6 times higher in Southern Quebec and Southern Ontario than in most other regions.
29. In addition to the average opening price per MHz/pop being at a very high starting point, the Department has failed to justify the more than two and a half times multiple for areas like Southern Quebec and Southern Ontario. In fact, the experience of the 2008 AWS auction demonstrates the problem with these relative prices.
30. The final prices for various Tier 2 licence areas that resulted for AWS spectrum in the 2008 auction are inconsistent with the proposed opening bids. The highest priced region (on a MHz/pop basis) in that auction was Saskatchewan, 44% higher than the comparable price for Southern Ontario. Yet, the proposed opening bids would not only reverse that, but make Southern Ontario 160% higher.
31. The purpose of the CCA auction is to discover the appropriate prices for spectrum, not to create artificial hurdles before the auction even takes place. Pricing spectrum artificially high to begin an auction creates barriers to participation, particularly for smaller carriers. Also importantly, it introduces artificial distortions in the value of spectrum. Pricing gaps between regions, and between the paired and unpaired licences, could further distort bidding behaviour.

⁷ ComReg, “Multi-band spectrum release, response to consultation on the draft information memorandum”, ComReg 12/50, 25/05/2012, paragraph 4.57 and 4.58.

32. Other parties have commented on the need for lower minimum prices/opening bids. There are a multitude of proposals on how the Department should lower prices. Rogers submitted that prices for the Southern Ontario and Southern Quebec regions are disproportionately high and should be lowered;⁸ whereas Telus proposes that all opening bids be reduced by half.⁹
33. Eastlink,¹⁰ Sogetel¹¹ and SSI Micro¹² all put forward inconsistent proposals to reduce bid prices disproportionately in rural areas. While these proposals did consist of lower opening bid prices, none of them improved the Department's proposal because they actually increased the disparities between regions by only lowering opening bid prices for some regions; ostensibly the regions where each respective bidder is interested in bidding. The Department must lower the opening bid prices for all regions, in a consistent manner.
34. We believe that our proposal to reduce opening bid prices to levels consistent with precedents established in the Irish Combinatorial Clock Auction (the Irish auction is for sub-1 GHz spectrum as well) of \$0.11/MHz pop should be adopted by Industry Canada. Applying rates at this level consistently across all licences and all regions maximizes the role of the auction itself. With broad support for lower opening bid prices, we continue to advocate that the Department should let the CCA format and market determine the most efficient prices for spectrum.

V. Eligibility Points

35. In our initial comments, Public Mobile submitted that the potential distorting effect of the eligibility rule is compounded by the proposed distortion in the assignment of eligibility points based on particular regions and licenses. To maintain consistency and to provide bidders flexibility in their package choices, comparable licences and packages of licences should require the same number of eligibility points. Otherwise, bidders are forced to choose between either non-optimal bidding packages or reduced future flexibility.
36. There have been several proposals made to adjust the eligibility points, and there are multiple acceptable solutions. However, there are a few basic principles which are critical to ensuring eligibility points do not become an artificial barrier to bidding flexibility:
- 1) Paired licences within a region should be exactly double the points of unpaired licences within that region (as argued by Rogers¹³ and Telus¹⁴). Otherwise, switching between them becomes impossible
 - 2) Eligibility points should be based solely on the population, not the opening bids. (As shown in Public Mobile's previous comments, the proposal by the Department not only distorts the opening bids, but distorts switching between regions during the auction.)

⁸ Rogers Comments, Para 161.

⁹ Telus Comments, Para 113.

¹⁰ Eastlink Comments, Para 62.

¹¹ Sogetel Comments, Page 26.

¹² SSI Micro Comments, Para 64.

¹³ Rogers Comments, Para 165.

¹⁴ Telus comments, Page 38.

- 37. At a minimum, the eligibility points need to be restructured to meet these two tests. (We note that the eligibility points used in the 2008 AWS auction met both these tests.) However, flexibility in the auction could be further enhanced by greatly simplifying the proposed eligibility points system. This will not conflict with the purpose of eligibility points (to ensure a monotonic reduction in demand as prices increase) and will provide bidders greater flexibility.
- 38. Public Mobile proposed simplifying the eligibility points by reducing (or removing) the differentiation between regions. This will permit bidders to switch more easily between regions in response to variations in demand and pricing. Concretely, Public Mobile proposes to group the regions into three groups, as follows:

Eligibility Point Proposal			
Regional Population	Number of Regions in Canada	Points for Unpaired Blocks	Points for Paired Blocks
Below 2 million	9	1	2
Between 2-4 million	2	3	6
More than 4 million	3	5	10

- 39. There appears to be broad industry support for a revamped eligibility point system. Both Rogers and Telus supported the 2:1 rule for assigning eligibility points to paired and unpaired licences. Further, Rogers also proposed reducing the eligibility points assigned to Southern Ontario and Quebec¹⁵. This is consistent with Public Mobile’s greatly simplified eligibility points proposal.
- 40. Public Mobile continues to believe that a simplified eligibility points system will increase flexibility and increase shifting between regions in the primary rounds, reducing the tendency to bid for packages with many points in order to maintain flexibility in later rounds. Should the Department choose not to adopt our proposed system, the points, at a minimum, need to be adjusted to remove the distortions in the current proposal.

VI. Activity Rules/Revealed Preferences

- 41. Public Mobile, along with most others, supports the Department’s general proposal for a Combinatorial Clock Auction. As discussed above, with a more flexible structure for eligibility points, the basic activity rule requiring 100% utilization is also effective. However, there are some subtle problems with the proposals for application of the revealed preference rule. Specifically, there is an unexplained inconsistency between the revealed preference constraints in the clock rounds and those in the supplementary round. In addition, the rules, as proposed,

¹⁵ Rogers Comments, Para 166.

can create unintentional anomalies that restrict bidding options in a manner which is inconsistent with the revealed preference concept.

42. Rogers submitted in their comments that bids on larger packages should be subject to a revealed preference constraint for the relevant eligibility-reducing round, not constraints for all eligibility-reducing rounds.¹⁶ We agree with this point for two important reasons. First, in an environment where bidders update their valuations, enforcing revealed preferences with respect to all eligibility-reducing rounds is too constraining. The activity rule should strike a balance between encouraging truthful bidding and allowing for valuation updating. The current rules have not struck the right balance, as they are too restrictive. Second, the activity rules for the clock rounds and the supplementary round are inconsistent. More specifically, the activity rules require that revealed preferences must be satisfied with respect to different rounds depending on the timing of the bid.
43. The following simplified example can illustrate both this inconsistency and the potentially anomalous outcomes. We assume a bidder is considering four packages, A, B, C and D¹⁷. The bidder bids for package A in round 1, B in round 2, C in round 3 and D in round 4.

Example: Challenges with proposed activity rules

Package	Elig. Pts.	Price in round 1	Price in round 2	Price in round 3	Price in round 4	Price in round 5
A	40	10	15	20	25	25
B	30	8	10	11	12	13
C	20	2	2	4	5	6
D	10	1	1	3	3	5
Bid		A	B	C	D	
Eligibility-reducing round?		No	Yes	Yes	Yes	

¹⁶ Rogers Comments, Para 62.

¹⁷ Note: unlike the examples contained in the discussion paper and the information session, we do not assume each smaller package is a subset of the larger ones. This is very plausible in this case, where a bidder could switch from Lower 700 MHz to Upper 700 MHz blocks or could switch between regions. The examples provided distorted potential outcomes because a subset of a large package will always satisfy the revealed preference constraint relative to that package. In this example if Package C were a strict subset of Package B, the revealed preference rule would always be satisfied.

44. If round 4 is not the final clock round, round 5 will be scheduled. In this fifth round, the bidder *would not be allowed* to bid for package C because package C does not satisfy revealed preference with respect to round 2:

$$\begin{aligned}(\text{Price of C in R5}) - (\text{Price of C in R2}) &\leq (\text{Price of B in R5}) - (\text{Price of B in R2}) \\(\$6 - \$2) &\leq (\$13 - \$10) \\\$4 &\leq \$3\end{aligned}$$

45. On the contrary, if round 4 was the final clock round, the auction would move into the supplementary round. In this case, the bidder *would be allowed* to submit a bid of 6 for package C (if also submitting a bid of 4 for D) because the bidder does not have to satisfy revealed preference with respect to round 2 and a bid of 6 for C satisfies revealed preference with respect to the other rounds. That is, the bidder is more constrained in the clock rounds than in the supplementary round for no apparent reason.
46. More importantly, the revealed preference constraint based on Round 2 doesn't make sense in this circumstance. As implied by the example, the bidder is prepared to pay a premium of 1 for package C, but not 2. That choice should not be influenced by what happens to the price of package B.
47. The result is that bidding is constrained despite the bidder behaving in a perfectly consistent manner. Had the bidder bid strategically in round 4 (bidding for package C in anticipation of additional clock rounds), the bidder would have that option again in round 5. Such an outcome does not encourage truthful bidding and can distort the auction outcome.

VII. Supplementary Round

48. A number of issues have been raised about the supplementary round. A handful of the proposals are, in essence, a criticism of the CCA format – proposing to either eliminate the supplementary round altogether or to redefine it for the limited purpose of handling unallocated licences from the final clock round. In the extreme case, they are essentially proposing a package-based SMRA in the guise of a CCA.
49. If the Department wishes to adopt the CCA format, then it would be a mistake to change that format to meet the desires of individual bidders. The clock rounds in a CCA format are intended to establish a general price level for the items being sold, they do not settle the auction itself. Specifically, the limitation that each bidder may only bid on a single package of licences during each clock round does not permit a full expression of all potential packages and values which a bidder prefers. The supplementary round is critical to the successful completion of a Combinatorial Clock Auction and ensuring the optimal outcome.
50. One valid concern about the proposed mechanism of the CCA format is the handling of unallocated licences at the end of the clock round. As is pointed out in the consultation document, it is possible for a bidder to guarantee winning its final clock package by submitting a single supplementary round bid for that package plus any unallocated licences at their final clock price. While every bidder has this option, the potential cost of such a bid can be relatively more significant for a small bidder over a large bidder. Quebecor put forward several proposals in their initial comments that seek to remedy this potential inequity. As a regional wireless player

we support the intention of Quebecor's proposals;¹⁸ however the solutions they propose create a myriad of new problems.

51. Quebecor's first proposal is to restrict bidders to only bid for packages on which it bid in the clock stage.¹⁹ This proposal would give incentives to switch extensively to make sure that all desirable packages are bid for in the clock rounds. An immediate consequence would be a very uneven development in demand during the clock round which would naturally harm price discovery; the main point of having the clock rounds.
52. Quebecor's second proposal is to restrict bidders to only bid on their final package, potentially augmented by unallocated licenses.²⁰ This proposal would give similar odd incentives, and would penalize bidders prepared to switch between alternative packages based on price. Moreover, the prices to be paid would differ from the opportunity cost principle that underlies the price rule because bidders are not able to express their full set of preferences for packages.
53. Quebecor's third proposal is to prevent bidders with no final clock round package from participating in the supplementary round.²¹ This proposal would give incentives to stick to a small package instead of bidding on a zero package, although the price exceeds your willingness to pay, to be allowed to bid in the supplementary round. Apart from creating strange incentives, it would also heavily benefit large bidders that would have competition from smaller bidders cut off in the supplementary round.
54. Quebecor's fourth proposal is to end the auction after the clock stage, followed by a residual auction with sale of unallocated licenses.²² This proposal could distort incentives for bidders that are considering bidding for a zero package. It would also give even further emphasis to preserving the final clock round outcome. In many cases, supplementary round package switching reflects the outcome of rational bidding that all involved bidders are content with – even after seeing the final outcome.
55. Mobilicity has a simpler proposal, which is to eliminate the supplementary round of the auction²³- in essence, to have a form of package-based SMRA. Sasktel makes two related suggestions. First, they suggest that the supplementary round algorithm be altered to guarantee that bidders would win their final clock stage allocation and possibly other packages in the supplementary round.²⁴ Second, they suggest that if their first suggestion is not implemented then the auction should be altered so that bidders in supplementary rounds can only consider value of unallocated spectrum in tiers where they are the high clock round bidder.²⁵
56. The proposals of both Mobilicity and Sasktel, like Quebecor's, are designed to remove the critical role of the supplementary round in the hope that limiting bidding options will serve to benefit certain regional bidders. However, as discussed above, the supplementary round is integral to the CCA auction design. Simply having an ascending clock auction does not permit

¹⁸ Quebecor Comments, Paras 55-60.

¹⁹ Quebecor Comments, Para 55.

²⁰ Quebecor Comments, Para 56.

²¹ Quebecor Comments, Para 57.

²² Quebecor Comments, Para 60.

²³ Mobilicity Comments, Para 17.

²⁴ Sasktel Comments, Para 33.

²⁵ Sasktel Comments, Para 37.

full discovery of the set of packages bidders desire and the prices they are willing to pay. This distorts both the set of winning bids and the outcome of the price rule.

57. Common to all these proposals is the mistaken notion that the clock rounds are intended to produce an auction result, when they are merely designed to establish a price framework and to frame the set of constraints for the supplementary round. The supplementary round is critical to the auction design because it is intended to permit bidders to fully express their preferences and to determine the final winners and prices. If a bidder fails to win its final clock package as a result of the supplementary round, it can only happen because some combination of other bidders is prepared to pay more for that package of licences- and does so in a manner that is consistent with their previous bidding.
58. A more constructive set of proposals has been made by Rogers. The inconsistency related to the revealed preference constraints between the clock rounds and the supplementary round was discussed above. Public Mobile agrees that a consistent set of revealed preference rules should apply to both the clock rounds and the supplementary round. Further, those rules should be designed to maximize bidder flexibility while maintaining the incentive to bid in a straightforward and consistent manner.
59. Rogers also make a series of proposals regarding supplementary round bids. Rogers argues that the final price cap should be removed for packages larger than the final clock package.²⁶ Public Mobile supports this suggestion as it gives bidders more flexibility to bid on larger packages in the supplementary round, a flexibility that will benefit all serious bidders. Moreover, a final price cap can in some cases hinder learnings from the final clock round. If demand for one type of lot changes significantly in the final clock round, bidders may want to update their valuations more than what is allowed by the final price cap. In this respect, the final price cap penalizes a bidder's failure to foresee a sudden drop in demand that causes the bidder to update its valuations.
60. Rogers argues that bids on larger packages in the supplementary round should be subject to a revealed preference constraint for the relevant eligibility-reducing round, but not constrained by subsequent eligibility reducing rounds.²⁷ Public Mobile supports Rogers' proposal as it is more consistent with truthful bidding from bidders that expect to learn from the clock rounds. When considering decreasing eligibility, a bidder has to trade off the benefits of bidding truthfully (to have the most preferred package if the clock rounds end) against the disadvantages of extra constraints imposed on supplementary round bidding. If a bidder is certain of all its valuations, then there are no disadvantages and thus no trade off. However, the clock rounds are intended to facilitate learning. Strict activity rules can place bidders that update their preferences in a number of unfortunate situations: they may regret their previous decisions, they may decrease their eligibility slower or they may decrease eligibility in larger increments. These unfortunate consequences can be reduced by loosening the activity rules as proposed by Rogers. Rogers' proposed rule would also be simpler to work with than the Department's proposed rule which has never been applied before in a CCA format spectrum auction. In addition to encouraging truthful bidding, testing a proposed bid against a single revealed preference constraint is easier and more straightforward to implement.
61. This combination of changes, both to the revealed preference rule during the clock rounds and to the bidding constraints in the supplementary round, enables greater flexibility during the

²⁶ Rogers Comments, Para 61-2.

²⁷ Rogers Comments, Para 62d.

bidding process and serves to remove unnatural constraints that could discourage honest bidding.

62. Public Mobile reiterates its position that the proposal to submit phantom bids from Industry Canada breaches one of the fundamental principles of CCA auctions, namely that prices must be determined for packages and not for individual frequency blocks and may lead to unsold blocks and thus inefficient use of spectrum

63. In paragraph 56 of Annex B in the consultation document, the Department states that:

“In addition, a reserve bid for every licence, at the opening bid price, will be included in the determination of winning bidders at the end of the allocation stage. This process will act as though Industry Canada is a bidder in the auction, placing a bid on every licence at the opening bid price. The inclusion of a reserve bid for every licence is to ensure that the incremental value that a bidder would be prepared to pay for an additional licence is at least the opening bid price of that licence.”

64. A consequence of implementing the Department’s proposed rule in paragraph 56 of Annex B is that there may be unsold frequency blocks, even though there are willing buyers. This is even more likely in the context of high opening bids, as referenced above. In addition, as demonstrated in our initial comments, it can discourage bidders from honestly revealing their full set of preferences. The minimum price should apply to the package and not as an incremental price per licence.

65. There has been no evidence in other parties’ initial comments that disagreed with Public Mobile’s submission regarding this proposed rule. As we discussed previously, two unfortunate consequences can arise from this proposal. First, Industry Canada may win licenses even though some bidders were willing to buy them; this is not an efficient spectrum allocation. Second, Industry Canada may increase prices for some bidders, distorting the competitive pricing of spectrum that the CCA format would otherwise guarantee. The proposal essentially introduces Industry Canada as a bidder in the auction which is not in the interest of Canadians or the efficient allocation of spectrum.

66. Finally, Rogers argues that bidders should be allowed to submit up to 2,000 supplementary round bids instead of a maximum of 500 bids.²⁸ Public Mobile supports Rogers’ proposal as it allows bidders to better express their preferences. The proposed structure of 4 generic lots and 14 regions creates more than 6 sextillion potential packages to bid on. Letting a technical feature, such as a limit on the number of packages that can be bid on, constrain the bidders in expressing their preferences makes no practical sense. As a point of reference, in the Irish CCA format bidders only have up to 33,000 packages to bid on, but are nonetheless able to bid on up to 3,000 packages in the supplementary round.

VIII. Assignment Round

67. In our initial comments, Public Mobile did not address the mechanics of the assignment round as we believed, and still believe, the Department’s proposals were satisfactory.

²⁸ Rogers Comments, Para 65.

68. The only significant proposal regarding this round is a suggestion from Rogers about assigning contiguous spectrum across the entire Lower 700 MHz band.²⁹
69. As discussed above, the Department's proposal would have the impact of distorting bidding for the Lower B/C licences by favouring one licence winner over the other in the event that the A block licence has also been won. Rogers proposals add additional complexity to this rule and with additional contiguity constraints would only make the initial proposal less efficient.
70. As we have submitted in our proposals around generic spectrum, we believe that the strength of the CCA format is efficient and true price discovery. We submit that having chosen this auction format, the Department ought to let the format prove its worth in efficiently allocating spectrum. Further rules around assigning contiguous spectrum do not encourage truthful price discovery, but rather rig the auction in favour of large wireless providers who could end up paying less than they would have if the CCA format was allowed to function properly.

IX. Price Rules

71. Public Mobile supports the proposal of "nearest Vickrey weighted by size", namely to divide the extra collective opportunity cost in proportion to package sizes. However, Public Mobile proposes that package size be measured by the bidder's winning package evaluated at the *final* bid prices. Using final bid prices will provide a more fair allocation of the extra costs, if the allocation is based on the actual bids (showing the market value of the packages) rather than the somewhat arbitrary opening prices. This is the fairest way to split the costs of winning between small regional players that only win small packages and large national players that win large packages.
72. In its comments, Rogers suggests using "nearest Vickrey" prices instead of "nearest Vickrey weighted by size" prices.³⁰ Rogers' main argument against the "nearest Vickrey weighted by size" is that it is not fairer and that the incentives created for large bidders will ultimately harm small bidders.³¹ We believe that Rogers' statement is mistaken.
73. Despite Rogers' claims, to use an un-weighted "nearest Vickrey" price is grossly unfair to smaller bidders. Large, national bidders would end up with additional costs that are much less, proportionally, than smaller regional bidders. As Public Mobile discussed in our initial comments, the Department's proposal to use "nearest Vickrey weighted by size" is the correct concept, but the Department's proposal uses the wrong weighting.
74. Opening bids are uncertain estimates of the relative values of different blocks. Rather, Industry Canada should make use of the price information that the auction has generated, namely the final winning bids. These bids represent how much bidders are actually willing to pay for their packages and thus naturally serve as a better measure of package sizes than the somewhat arbitrary opening prices. Therefore, we suggest using "nearest Vickrey weighted by size" where the weighing is done according to final bids, not opening prices.

²⁹ Rogers Comments, Paras 32-5. Rogers proposes various rules around assigning contiguous spectrum between the unpaired D/E licences and the Lower B/C Block in addition to greater complications around the assignment of the Lower A Block.

³⁰ As in our first consultation response, we will refer to "nearest Vickrey" as an equal sharing of costs and to "nearest Vickrey weighted by size" as a sharing relative to package sizes.

³¹ Rogers Comments, Para 68.

X. Spectrum Aggregation Limits

75. In our initial comments, Public Mobile submitted that we believe the spectrum caps proposed by the Department are insufficient for the purpose of ensuring long-term sustainable competition. We further submitted that there needs to be additional actions to free up additional spectrum and to ensure new entrants have access to additional spectrum. Without such efforts, the spectrum options for smaller carriers will remain limited and will constrain growth and competition in the wireless market.
76. However, we have no issue with the proposed language in the COLs regarding spectrum aggregation limits as it appears to adequately reflect the recent policy decision. We believe proposals to make changes to this policy are outside the scope of this consultation. While we would be happy to have the Department reconsider some of those decisions and take steps to better enhance sustainable competition, such actions would require a separate consultation process.

XI. Deployment Requirements

77. Public Mobile did not address coverage issues in our initial comments; however, various parties proposed amended general and rural coverage requirements for coverage requirements.
78. Public Mobile believes that the Department's proposed rural and general deployment requirements as proposed in paragraphs 113 to 125 of the consultation document strike an appropriate balance and should be adopted as proposed.

XII. Lawful Access

79. Public Mobile did not address the Department's proposed Lawful Access requirements in our initial comments.
80. Public Mobile would like to refer the Department to the CWTA's comments in paragraphs 18-23 of their submission on this specific proposal. In summary, we agree with the CWTA's statement that:

The Department's proposed change to the lawful intercept COL would impose substantial new obligations on licensees, at a time when parallel legislation addressing similar areas of operation is before Parliament. CWTA submits that such new changes would be more appropriately made via federal legislation or the pending revision to the Solicitor General's standards that Public Safety Canada is proposing.³²

XIII. Research and Development

81. Public Mobile did not address the Department's proposed Research and Development requirements in our initial comments.

³² CWTA Comments, Paras 18-23.

82. Public Mobile would like to refer the Department to the CWTA's comments in paragraphs 7-17 of their submission on this specific proposal. In summary, we agree with the CWTA's statement that:

The time to eliminate this regulatory relic is long past, and CWTA strongly recommends it be removed from existing cellular, PCS and AWS licences, and that it not be imposed on 700MHz or 2500MHz licensees. If the Government is serious about reducing red tape for business, then there is simply no reasonable rationale for maintaining it.³³

XIV. Processes and Deadlines

83. Various parties have addressed practical issues related to auction processes and deadlines.

84. On the issue of the release of auction software/bidding tools and algorithms, there appears to be industry consensus that all the relevant tools must be released as soon as possible and, at a minimum, three months before any auction is to take place. It is of the utmost importance that parties are able to get comfortable with, modify and integrate any tools the Department will incorporate into the auction well before they need to be used. Rogers raises the concern that the winner and price determination tool might require a software licence.³⁴ Public Mobile would like to echo Rogers' concern that Industry Canada must solve any licensing issues well before the auction and ensure that all parties have full access to any software proposed for the auction.

85. Public Mobile would like to further suggest that bidders should be able to run any program or tools supplied by the Department on a Windows-based PC, or alternatively that Industry Canada set up a web-based solution that allows bidders to confidentially upload bid files and see results directly online. It is important that any software released by the Department be able to be used by bidders without any encumbrances; be they license or technology related.

86. Public Mobile would like to support various proposals put forward regarding practical processes and deadlines that the Department should implement to ensure a smooth running auction. The Department should adopt Rogers' proposal concerning extension rights,³⁵ exceptional circumstances,³⁶ and Bell's proposal that the Department should hold a mock auction at least three weeks in advance of the auction date.³⁷

End of Document

³³ CWTA Comments, Paras 7-17.

³⁴ Rogers Comments, Para 105.

³⁵ Rogers Comments, Para 90.

³⁶ Rogers Comments, Para 92

³⁷ Bell Comments, Para 125.