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***Consultation on Revisions to the Framework for Spectrum  
Auctions in Canada***

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**Comments**

**of**

**Bell Mobility Inc.**

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## Table of Contents

	Page
1.0 INTRODUCTION.....	1
2.0 SPECTRUM MANAGEMENT .....	6
3.0 AUCTION TYPES AND ATTRIBUTES.....	11
4.0 LICENCE RENEWAL .....	16
4.1 High Expectation of Renewal .....	16
4.2 10-year Terms .....	17
4.3 Renewed Licences May Have Different Conditions of Licence .....	21
4.4 Licence Fees for Renewed Licences .....	21
5.0 OTHER ISSUES .....	26
5.1 Research and Development .....	26
5.2 Tier Areas for Spectrum Licensing.....	27
6.0 CONCLUSION .....	29

## 1.0 INTRODUCTION

1. Bell Mobility Inc. (Bell Mobility) is pleased to submit the following comments in response to Industry Canada's *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, as published in the *Canada Gazette*, Part 1, dated 11 April 2009 (the Consultation Document).

2. The intent of the Consultation is to consult on any revisions that may be required to the 2001 *Framework for Spectrum Auctions in Canada* (the *Auction Framework*) in light of the revised *Spectrum Policy Framework for Canada* (the *Policy Framework*) that was released June 2007. The *Policy Framework* states that Industry Canada will rely to a greater extent on market forces while recognizing the continued need to manage spectrum given that it is a public resource. While the Department is accepting comments on all aspects of the *Auction Framework*, the Consultation Document highlights six areas where specific comments are requested. The six areas are: (i) the appropriate level of spectrum management in Canada; (ii) auction types and attributes; (iii) the use of auctions for satellite licensing; (iv) long-term licence renewal; (v) research and development condition of licence; and (vi) Tier areas for spectrum licencing.

3. In the following comments, Bell Mobility will address the issues raised in the Consultation in the order of their appearance in the document. In Section 2, Bell Mobility provides comments on the appropriate level of spectrum management in Canada. Bell Mobility agrees that the adoption of spectrum auctions for the assignment of licences, and with the use of secondary markets for licences obtained in the auction licensing process, Industry Canada has taken a significant step in the direction of greater reliance on market forces. However, Bell Mobility is concerned that recent Industry Canada decisions have not been consistent with a greater reliance on market forces. For example, entry-assisting policies such as spectrum set-asides were not required in the AWS spectrum auction, and are certainly not required now.

4. Bell Mobility also agrees with the *Telecommunications Policy Review Panel Final Report* which recommended moving toward the establishment of market-based exclusive spectrum rights (i.e. the ability to buy, sell and lease spectrum) and the elimination of barriers to the development of secondary markets in spectrum. While Bell Mobility believes that the current transferability condition should be maintained, the level of activity under this condition may increase if Industry Canada allowed licensees to effect transfers without Industry Canada approval.

5. Bell Mobility also believes that it is essential that bidders be qualified by Industry Canada as meeting the Canadian Ownership and Control rules before being deemed as eligible to participate in a spectrum auction. Once a bidder has paid tens, if not hundreds of millions of dollars to the Government, the Department will be under significant pressure to ensure that the bidder passes the ownership conditions, even if such an outcome is not warranted.

6. Every bidder affects the bidding strategies, final bid amounts and final allocation of spectrum of all other bidders. Due to the impact that their bidding would have had on the bidding process, the only way the Department can account for the effects of removing a bidder is to re-run the auction. Given the significant resource costs for both the Department and the remaining bidders, such an outcome must be avoided.

7. Moreover, the remaining wireless service providers face the additional costs related to commercial transactions and/or transactions required by regulation such as mandated roaming, and tower and site sharing. These efforts will be for naught if a bidder subsequently fails to be qualified to operate as a Canadian Carrier under the relevant laws. As such, other providers should not have to engage in such transactions until the service provider's qualification is approved.

8. In Section 3, Bell Mobility provides comments with respect to auction types and attributes. Bell Mobility continues to support auctions as an efficient market-based means of assigning spectrum licences, through a fair and transparent process to those that value them the most. While Bell Mobility appreciates, and supports, the Department's policy of monitoring the advances in both the theoretical and practical aspects of auction design, at this time we submit that the Department should continue to focus on using simultaneous multiple-round ascending auctions (SMRA), since neither the sealed-bid auction, nor the combinatorial clock auction are better at maximizing openness and minimizing administrative burden than the SMRA.

9. In Section 4, Bell Mobility provides comments on long-term licence renewal. Bell Mobility submits that not only should licensees anticipate a high expectation of renewal at the end of the initial term, they should also reasonably anticipate a high expectation of renewal at the end of each and every subsequent term, assuming compliance with conditions of licence as

well as the absence of a fundamental reallocation of spectrum to a new service or the absence of national policy requirement.

10. Bell Mobility does not believe that a 10-year licence term is sufficient given the development of the Canadian wireless market, and submits that it is now timely for the Department to seriously consider the use of indefinite licence terms. Bell Mobility notes that such a move would be consistent with the actions of other regulators who have either moved to 15 or 20 year licence terms, and who are considering the movement toward indefinite terms. Moreover, even with indefinite licence terms, the authority granted the Minister provides the Department with the ability to amend or withdraw a licence in the unlikely event of a serious non-compliance issue arising or in the event of a national policy requirement. However, if the Department does not adopt indefinite terms, then they should at the very least adopt 20-year licence terms with a permanent high expectation of renewal, assuming compliance with conditions of licence.

11. Bell Mobility recognizes that in rare circumstances conditions of licence may have to be amended (for example, a change in international allocation, a national policy requirement, or to accommodate changes in technology). However, in order to ensure that bidders understand exactly what is being auctioned, such changes should be the exception rather than the rule. Therefore, Bell Mobility does not object to the fact that conditions of licence applied to the renewed licences may differ from those on the existing licences, with such changes being made following a consultation.

12. Bell Mobility disagrees that the establishment of fees are required in order to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource. The implementation of such fees is not regulation in a manner that interferes with market forces to the minimum extent necessary. Bell Mobility notes that one of the purposes of the *Policy Framework* revision was to make the language and intent of the *Policy Framework* consistent with the Governor in Council issued policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC), which required greater reliance on market forces:

On December 14, 2006 the Governor in Council issued a policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC) directing the CRTC to rely on market forces to the maximum extent feasible under the *Telecommunications Act*, and to regulate where there is still a need to

do so in a manner that interferes with market forces to the minimum extent necessary. This renewed Framework reflects this broad policy orientation in the context of existing legislation.<sup>1</sup>

13. Bell Mobility believes that the intent of that statement is directed toward the objective of fully exploiting and maximizing the economic and social benefits Canadians obtain from the spectrum through the full and efficient exploitation of that public resource in deriving positive economic and social externalities for the Canadian public. Thus, Bell Mobility submits that the proceeds of the auction compensate Canadian taxpayers for the use of the public resource and that there is no reason to implement fees at a later date. In fact, such fees actually serve to undermine this policy objective by acting as a drag on further, and accelerated, investments in wireless networks, applications and services.

14. The implementation of fees on an *ex post* basis puts wireless service providers in a no-win situation. If the investment in spectrum turns out to be a success, then the Government receives the auction proceeds plus additional licence fees. If the investment turns out to be a failure, then the Government still receives the auction proceeds. Thus, the Government shares in the success, but bears none of the risk of failure. In other jurisdictions, such as the U.S., "regulatory fees" applicable to wireless licensees are certainly not established through an estimate of the market value of the spectrum licences. This is a fundamental reason why Canadian spectrum fees are approximately 36 times the level of comparable U.S. spectrum fees.

15. Bell Mobility notes that, when one takes into account the cumulative effect of annual licence fees as well as spectrum auction payments, Canadian licensees have paid billions of dollars to the Federal Government in spectrum-related fees since the 1980's. This is over and above the billions of dollars in infrastructure investments, taxes paid to all levels of government and payroll charges that are required to operate wireless businesses and provide productivity and security enhancing wireless services to Canada and its citizens.

16. If the Department does implement licence fees at the time of renewal, then Bell Mobility submits that the Department should adopt a cost-recovery regime. Such a move would put Canadian licensees on an equal footing with their U.S. counterparts. However, in order to

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<sup>1</sup> Industry Canada, *Spectrum Policy Framework for Canada*, 2007, page 3.

ensure that bidders understand exactly what is being auctioned, the cost-recovery fees must be determined prior to the commencement of the auction.

17. Finally, in Section 6, Bell Mobility provides comments on the research and development condition of licence; and Tier areas for spectrum licencing. The Department estimates that the research and development licence condition has generated \$1 billion in associated investment since its introduction in the 1980's. Bell Mobility notes that in the Harmonization Consultation it and other carriers identified that the cumulative effect of uncoordinated government fees, taxes and financial obligations related to licensing, originating from several distinct Federal departments and agencies, has placed a significant and onerous financial burden on all licensees. A reduction in this burden would make such funds available for investment in wireless networks, applications and services. Therefore, Bell Mobility supports the Department's proposal to eliminate the condition entirely.

18. Bell Mobility does not support the establishment of a new Tier level, nor do we support the continued use of Tier 4 service areas. The more granular the service area, the more difficult it is to implement the spectrum. Moreover, the problem of frequency coordination at the border of adjacent service areas will be severely magnified as a result of the use of numerous small licence areas. Therefore, Bell Mobility recommends licensing spectrum blocks on a regional basis using the Department's Tier 2 geographic service areas.

19. Concerning the question of whether the block and tier sizes proposed by the Department will allow the entry of new carriers in the market, Bell Mobility does not believe that the technical and band plan design should be fundamentally designed or predicated on the possibility of new entrants. It should instead be designed to deliver spectrum to achieve the maximum spectral efficiency possible, while effectively integrating with existing national and regional systems.

20. To facilitate the use of this submission, Bell Mobility will precede its comments by captioning the Department's specific question to which Bell Mobility's comments are addressed.

## 2.0 SPECTRUM MANAGEMENT

***Comments are sought on the appropriate level of regulation that the Department should use when managing spectrum into the future with respect to the subjects raised in this paper.***

21. Industry Canada has been moving away from a heavy-handed regulatory approach to one that provides greater reliance on market forces:

In the mid-1990s, spectrum auctions were introduced; a significant step in the direction of greater reliance on market forces in the assignment of licences. Similarly, the decision to allow the use of secondary markets for licences obtained in an auction licensing process recognized the benefits of allowing for adjustments in the market. Since that time, Industry Canada has continued to migrate toward a spectrum management regime that is less characterized by command and control regulation and is more reliant on market forces to achieve the greatest economic and social benefits from the usage of the spectrum resource.<sup>2</sup>

22. Bell Mobility agrees that the adoption of spectrum auctions for the assignment of licences, and with the use of secondary markets for licences obtained in the auction licensing process, Industry Canada has taken a significant step in the direction of greater reliance on market forces. However, Bell Mobility is concerned that recent decisions related to the spectrum licences for Advanced Wireless Services (AWS) and other spectrum in the 2 GHz range,<sup>3</sup> is an indication that Industry Canada may no longer be moving in that direction.

23. Given the benefits associated with the auction process, it is important to make sure that the auction rules are not changed to such an extent that it becomes difficult to distinguish the results from those that would occur with other methods of assigning licenses such as a comparative review process. Though some might think it is desirable to protect firms at an early stage of entry, protecting an industry, once engaged, can be never ending. Generally, protected firms do not have an incentive to make the necessary investments that would result in them becoming more effective competitors since they do not face the full competitive pressure from existing firms. Furthermore, the market outcome is not necessarily improved by the addition of

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<sup>2</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 2.

<sup>3</sup> Canada Gazette Notice DGTP-007-07, *Policy Framework for the Auction for Spectrum Licences for Advanced Wireless Services and other Spectrum in the 2 GHz Range*, and Canada Gazette Notice DGRB-002-08, *Conditions of Licence for Mandatory Roaming and Antenna tower and Site Sharing and to Prohibit Exclusive Site Arrangements*.

new firms. The type of firm is more important, since the entry of inefficient firms will reduce the efficiency of the market.

24. In Bell Mobility's view, the circumstances in the Canadian wireless market simply do not warrant interventionist measures. While entry-assisting policies such as spectrum set-asides were not required in the AWS spectrum auction, they are certainly not required now due to the forthcoming entry of Videotron, DAVE, Public Mobile and Globalive.

25. However, to the extent that any of these firms exit the market in the future, then this will be a strong indication that the Canadian wireless market cannot support numerous wireless service providers even when given significant assistance through spectrum auction set-asides, mandatory roaming and mandatory antenna tower and site sharing.

26. Bell Mobility also notes that the spectrum set-asides in the AWS spectrum auction, in combination with the current activity rule – which requires bidders to be active on a specific percentage of their eligibility points in each round of the auction – allowed the new entrants to "park" their points. The problem with "parking" points is described by Ausubel, Cramton and Milgrom (2006):

"Parking" is the main problem created by the current rule: to maintain flexibility, a bidder has an incentive to bid on underpriced products or low-value products with high quantity, rather than to bid on products that it actually wants to buy. The bidder does this for two reasons: 1) to keep the prices on desired products from increasing too quickly, while maintaining the flexibility to expand demand on products for which competitor demands fall off faster than expected; and 2) to maintain the flexibility to punish a rival by shifting bidding for the rival's desired markets if the rival bids for the bidder's desired markets.<sup>4</sup>

27. The "parking" of points by new entrants led to an inefficient increase in the price of the spectrum blocks available to incumbent wireless providers to bid on. The solution is to simply not impose set-asides in the auction design. It is not to restrict bidders from moving from one spectrum block to another in response to changes in price which allows for the efficient aggregation of licences. This allows all bidders the opportunity to bid on relatively cheaper spectrum blocks as they see fit.

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<sup>4</sup> Ausubel, L.M., P. Cramton, and P. Milgrom, (2006), *The Clock-Proxy Auction: A Practical Combinatorial Auction Design*, in P. Cramton, Y. Shoham, and R. Steinberg (eds.), *Combinatorial Auctions*, MIT Press, Chapter 5, 115-138.

28. An additional issue of concern – one that made the problem of points "parking" worse – was the length of the AWS spectrum auction. The auction lasted 331 rounds, and hundreds of millions of dollars were spent as a result of the extended length. Bell Mobility believes that the Department should manage bid increments and auction termination rules in order to ensure a timely end to the auction.

29. Bell Mobility submits that since spectrum auctions are market-based, any intervention in the auction process designed to assist new entrants (e.g. spectrum set-asides), significantly conflicts with the intent and spirit of the *Policy Framework's* enabling guidelines (a) and (d) which state that market forces should be relied upon to the maximum extent feasible, and regulatory measures, where required, should be minimally intrusive, efficient and effective, respectively. Such intervention would, in Bell Mobility's view, perpetuate an antiquated command and control regime and would constitute unwarranted micromanagement of the wireless sector. Market forces, in short, will ensure that those willing and able to put the spectrum to its best use will bid for and acquire spectrum.

30. Bell Mobility also agrees with the *Telecommunications Policy Review Panel Final Report* which recommended moving toward the establishment of market-based exclusive spectrum rights (i.e. the ability to buy, sell and lease spectrum) and the elimination of barriers to the development of secondary markets in spectrum.<sup>5</sup> This is consistent with the *Policy Framework's* enabling guideline (h) which states that spectrum policy and management should support the efficient functioning of markets by facilitating secondary markets for spectrum authorizations.

31. The benefits of market-based exclusive spectrum rights are noted in a study commissioned by the Office of the Minister of Industry and recently posted to Industry Canada's website. The study authored by McLean Foster & Co. in collaboration with noted spectrum management specialists Prof. Martin Cave, Robert W. Jones and Dr. William Lehr (the Cave Study) states:

The goal of tradable licences has several beneficial implications:

1. First, if license ownership may be transferred, then it is continuously possible for market forces to provide incentives for spectrum to be allocated to its

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<sup>5</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 2.

highest value use, and for whatever use it is currently being employed in to reflect its true opportunity cost. This induces high-powered incentives to use spectrum efficiently.

2. Second, the more spectrum that is tradable in this way, the more liquid will be secondary markets and the lower the average opportunity cost or scarcity rents associated with spectrum access rights. Encouraging spectrum prices to be as low as possible, consistent with aggregate demand and supply factors, will enable low-cost access for new applications and services which is an important overall goal of spectrum reform.<sup>6</sup>

32. The benefits of property-like spectrum licences is also noted by Munro (2008):

The case for property-like spectrum licences is straightforward. If a licensee has certainty in spectrum tenure, then it constantly faces an incentive to invest in the complementary infrastructure (antenna towers, system software, etc.) and to provide the best services that will attract and retain customers. If instead a licensee is approaching the end of a licence term and it is uncertain whether the licence will be renewed (or it is certain that it will not), then these incentives to provide the best possible services and to grow its customer base diminish.<sup>7</sup>

33. The Cave Study also notes in one of its key recommendations that Ministerial approval for every trade should not be required:

Tradable licences, where they apply, should become fully transferable (primary users may replace each other), and sub-leasing/sub-division should be possible. Ministerial approval for every trade should not be required and should be replaced by a self-certification process under which those involved in the trades self-certify that they have met all of the government requirements (which could be enumerated as a check list).<sup>8</sup> (emphasis added)

34. Similarly, Bell Mobility is supportive of the current transferability condition which was one of the enhanced spectrum rights associated with the introduction of spectrum auctions in Canada in the late 1990's. While Bell Mobility believes that the transferability condition should be maintained, the level of activity under this condition may increase if Industry Canada allowed licensees to engage in transfers without Industry Canada approval. A self-reporting regime could be established, for eligible licensees, along with the development of an appropriate

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<sup>6</sup> Cave, M., R.W. Jones and W. Lehr, (2007) *Study of Market-based Exclusive Spectrum Rights*, available at [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf/\\$FILE/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market_based_rights-droits_axes_sur_le_marche-eng.pdf/$FILE/market_based_rights-droits_axes_sur_le_marche-eng.pdf).

<sup>7</sup> Munro, I., (2008), *Chicken Little Eats Crow: How the Critics Got It Wrong about Spectrum Auction*, Atlantic Institute for Market Studies, page 20, available at <http://www.aims.ca/library/chickenlittleeatscrow.pdf>.

<sup>8</sup> Cave, M., R.W. Jones and W. Lehr, (2007) *Study of Market-based Exclusive Spectrum Rights*, available at [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf/\\$FILE/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market_based_rights-droits_axes_sur_le_marche-eng.pdf/$FILE/market_based_rights-droits_axes_sur_le_marche-eng.pdf), page 6.

database on the Department's website which could track and list current licensees and their spectrum holdings.

35. Bell Mobility believes that it is essential that bidders be qualified by Industry Canada as meeting the Canadian Ownership and Control rules before being deemed as eligible to participate in a spectrum auction. Once a bidder has paid tens, if not hundreds of millions of dollars to the Government, the Department will be under significant pressure to ensure that the bidder passes the ownership conditions, even if such an outcome is not warranted.

36. Every bidder affects the bidding strategies, final bid amounts and final allocation of spectrum of all other bidders. Due to the impact that their bidding would have had on the bidding process, the only way the Department can account for the effects of removing a bidder is to re-run the auction. Given the significant resource costs for both the Department and the remaining bidders, such an outcome must be avoided.

37. Moreover, the remaining wireless service providers face the additional costs related to commercial transactions and/or transactions required by regulation such as mandated roaming, and tower and site sharing. These efforts will be for naught if a bidder subsequently fails to be qualified to operate as a Canadian Carrier under the relevant laws. As such, other providers should not have to engage in such transactions until the service provider's qualification is approved.

38. Another issue related to the *Auction Framework*, is the allocation of auction proceeds. Currently, the auction proceeds become part of the Government's general revenue, yet at the same time Government agencies demand, for example, expanded lawful intercept capabilities, but say they have no money to reimburse carriers for the cost incurred to do so. Bell Mobility believes that it is now time for Industry Canada to consider changes to the *Radiocommunication Act*. The changes envisioned would enable Government to use auction proceeds for projects and services related to the wireless industry such as increased wireless lawful intercept when deemed necessary, or the expansion of wireless service to unserved rural areas. Given the extent of recent auction proceeds, even a small portion could have a significant positive impact.

### 3.0 AUCTION TYPES AND ATTRIBUTES

***Comments are sought on the various types of spectrum auctions and auction formats to be used by the Department as well as the circumstances under which a particular format or attribute should or should not be applied.***

39. The Department's policy objective, as stated at page 8 of the *Policy Framework*, is "to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource." Bell Mobility continues to believe that auctions which are an efficient market-based means of assigning spectrum licences, through a fair and transparent process to those that value them the most, is the most effective means to achieve this objective.

40. Bell Mobility also agrees with the Department that the benefits and drawbacks of a particular auction design will depend on the specific situation:

Each auction design has its benefits and drawbacks, depending on the situation, e.g. when single or multiple licences are offered, when a single frequency block is offered over multiple areas, when multiple frequency blocks are offered over a single area, or when multiple blocks are offered over multiple areas, etc. The choice of optimal auction format will also depend on the extent to which available licences are seen by bidders as substitutes or complements.<sup>9</sup>

41. As a result, it is important that the Department continue to allow stakeholders to comment on the potential impact of the auction design in a specific situation, and be willing to alter any problematic design element. The process for consultation, comment, reply and final policy regarding the auction design for a particular spectrum auction is described by the Department in Section 5 of the *Auction Framework*. Bell Mobility submits that the process as described in Section 5 of the *Auction Framework* should remain.

42. The primary objective of auctions is efficiency, or assigning the spectrum to those that value it the most. Bell Mobility submits that the most efficient auction design maximizes openness (which we define as transparency and the revelation of information about

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<sup>9</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 5.

valuations<sup>10</sup>) and minimizes administrative burden (which we define by complexity and resource costs from both the Department's perspective and the bidders<sup>11</sup>).

43. Section 6 of the *Auction Framework* provides an overview of the simultaneous multiple-round ascending auction, which as noted in the Consultation Document, continues to be used successfully by the Department and a number of other administrations around the world. The benefits of the SMRA are identified by Cramton (1997):

First, the ascending-bid design allows the bidders to react to information revealed in prior rounds. This reduces the winner's curse, enabling the bidders to bid more aggressively ... . Second, by auctioning a large set of related licences simultaneously, bidders are able to react to prices across licences. Since bidder valuations depend on the collection of licences held, providing this price information on related licences is essential to the formation of efficient aggregations of licences. Some licences are complements, whereas others are substitutes. The simultaneous sale of related licences in an ascending-bid auction gives the bidders the flexibility they need to express these value interdependencies. In addition, it assures that similar licences sell for similar prices. Third, keeping the bidding on all licences open until there are no new bids gives the bidders flexibility in switching among licence aggregations as prices change.<sup>12</sup>

44. Bell Mobility suggests that given the benefits and extensive use of the SMRA for spectrum auctions, the adoption of a different auction framework should only occur if it is better in terms of maximizing openness and minimizing administrative burden.<sup>13</sup>

### **Openness**

45. An additional benefit of the SMRA, also noted by Cramton (1997), is open bidding. Open bidding provides additional information which promotes the efficient assignment of licences:

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<sup>10</sup> Cramton, P., (2002), "Spectrum Auctions" *Handbook of Telecommunications Economics*, Vol. 2, Cave, Majumdar and Vogelsang, (eds.), Elsevier, 605-639, page 609, notes that information about valuations promotes the efficient assignment of licences.

<sup>11</sup> The more complex and resource intensive the auction format, the less straight forward and less transparent the auction will be, and the more likely that bidders will make mistakes and/or develop inefficient bidding strategies.

<sup>12</sup> Cramton, P., (1997) "The FCC Spectrum Auctions: An Early Assessment," *Journal of Economics and Management Strategy*, 6(3): 431-495, at page 432.

<sup>13</sup> This is consistent with the *Policy Framework's* enabling guidelines (e) regulation should be open, transparent and reasoned, and developed through public consultation, where appropriate; and (f) spectrum management practices, including licensing methods, should minimize administrative burden and be responsive to changing technology and market place demands.

An essential advantage of open bidding is that the bidding process reveals information about valuations. This information promotes the efficient assignment of licences, since bidders can condition their bids on more information. Moreover, to the extent that bidder values are affiliated, it raises auction revenues ..., since the winner's curse is reduced. Bidders are able to bid more aggressively in an open auction, since they have better information about the item's value.<sup>14</sup>

46. By its very design, sealed-bid auctions are not open. As noted in the Consultation Document "because of the single round design, there is no opportunity for the price discovery process that occurs in some other types of auctions."<sup>15</sup>

47. With respect to the combinatorial clock auction, even though it has a multiple-round process in the first stage, Bell Mobility submits that since combinatorial clock auctions auction off generic spectrum blocks, it does not fully reveal the information regarding the value of the spectrum frequency. The underlying assumption regarding the use of generic lots is that each lot has an identical value. However, the value of a bid has two dimensions: (i) quantity of spectrum, and (ii) the exact location of the spectrum frequency. The exact location of the spectrum frequency is important because of wireless providers' existing spectrum holdings and existing relationships with other wireless service providers.

48. The auctioning of generic lots in the first stage of the combinatorial clock auction reveals information regarding the valuation of quantity, but does not reveal information regarding the valuation of location. This is problematic because in a combinatorial clock auction bids at every point in the auction process, including the multiple-round first stage, can potentially win.

49. Moreover, Cramton (1997) notes that combinatorial bidding may not be transparent:

Furthermore, allowing package bids would weaken a central advantage of auctions: transparency. A bidder who offered a higher bid for part of a combination might be unable to see why it lost.<sup>16</sup>

50. Therefore, Bell Mobility submits that neither the sealed-bid nor the combinatorial clock auctions are better than the SMRA at maximizing openness.

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<sup>14</sup> Ibid., page 435.

<sup>15</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 4.

<sup>16</sup> Cramton, P., (1997) "The FCC Spectrum Auctions: An Early Assessment," *Journal of Economics and Management Strategy*, 6(3): 431-495, at page 439.

### **Administrative Burden**

51. A significant problem of combinatorial bidding is the complexity it introduces into the bidding process. As Cramton (1997) argues:

If all combinations are allowed, even identifying the revenue-maximizing assignment is an intractable integer programming problem when there are many bidders and licences. ... Increased complexity is a legitimate concern when considering package bids. Although simultaneous auctions with package bids were successful in the laboratory ..., it was far from certain that the FCC could successfully run auctions with package bids under the tight time schedule.<sup>17</sup>

52. The complexity of combinatorial bidding in a sealed-bid (or a generalized Vickery auction) is noted by Milgrom (1998):

The generalized Vickery auction itself is not practical for use in spectrum sales. If there were no restrictions on feasible licence combinations, the number of combinations would be  $2^L - 1$  [where L is the number of available licences]. Most of the sales being conducted presently involve hundreds of licences, and even though in practice most of the combinations can be ruled out as infeasible or irrelevant, the number of potentially important combinations is still infeasibly large.<sup>18</sup>

53. As described in the Consultation Document, a combinatorial clock auction consists of two stages. In the first stage, bidders indicate the number of blocks that they would like to purchase at the announced price. If demand exceeds supply, the price is raised and the bidders again indicate the number of blocks that they want at the new price. The process of price discovery continues until supply is equal to or greater than demand. In the second stage, there is one sealed-bid round where each active bidder submits its best and final offer on the combination of licences that they wish to acquire. An algorithm then determines the most efficient assignment of all licences based on all of the bids submitted.

54. The clock auction in the first stage provides price information which bidders can use to help focus their bids and thus reduce the total number of relevant potential package bids in the second-stage. For example, in Ofcom's 10-40 GHz spectrum auction, Ofcom used a combinatorial clock auction to award 27 available lots in the 10-40 GHz spectrum band. Prior to

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<sup>17</sup> Cramton, P., (1997) "The FCC Spectrum Auctions: An Early Assessment," *Journal of Economics and Management Strategy*, 6(3): 431-495, at page 439.

<sup>18</sup> Milgrom, P. (1998) "Putting Auction Theory to Work: The Simultaneous Ascending Auction," The World Bank Policy Research Working Paper 1986, at page 18. For example, suppose that there are two spectrum blocks available with Tier 2 licence areas (i.e. there are  $2 \times 14 = 28$  available licences). In this situation there are over 268 million potential bid packages.

the first stage, there were 12,935 potential package bids.<sup>19</sup> After the first stage, there then remained 3,667 potential package bids, based on each bidders remaining eligibility points. However, this only consists of package bids that satisfy the eligibility constraints of the bidders at the end of the clock auction in the first stage. Bidders were allowed to place package bids that required greater as well as fewer eligibility points than the number of eligibility points that they had at the end of the first stage. As a result, the number of potential package bids that a bidder must consider when developing their bidding strategy was greater than 3,667. While this is less than the 12,935 potential package bids, it is still a significant number of bids that each bidder must consider.

55. In theory, bidders would then only focus on a small number of packages based on the information obtained from the clock auction in the first stage. In practice, this is not necessarily the case. For example, in Ofcom's 10-40 GHz spectrum auction, BT submitted 544 bids in the second stage and T-Mobile submitted 106.<sup>20</sup> Furthermore, of the 544 bids made by BT, only 2 were effective in that they were not made redundant by subsequent bids.<sup>21</sup>

56. Furthermore, the above example is an indication of the burden of having to learn a new auction process. In analyzing the outcome of Ofcom's 10-40 GHz spectrum auction, Jewitt and Li (2008) note that "the suspicion of lack of bidder preparedness makes it hard to gauge the potential of the format in situations where bidders have spent more resources in preparing,"<sup>22</sup> and that "a recommendation for any future auctions using similar formats is to invest heavily in helping bidders via a multiplicity of software promptings and other tools."<sup>23</sup>

57. As a result, it is highly likely that both bidders and the Department will face significant administrative burdens with respect to the design and implementation of a combinatorial clock auction. As noted in the Consultation Document this is an important issue that must be considered when choosing a particular auction format:

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<sup>19</sup> Jewitt, I. and Z. Li, (2008), "Report on the 2008 UK 10-40 GHz Spectrum Auction," page 5, available at <http://www.ofcom.org.uk/radiocomms/spectrumawards/completedawards/1040award/extrep/jewitt.pdf>. It should be noted that Ofcom used eligibility points to reduce the total number of potential package bids to 12,935 from the over 134 million package bids that were possible without the eligibility point constraint.

<sup>20</sup> Ibid., Figure 9 at page 10.

<sup>21</sup> Ibid.

<sup>22</sup> Jewitt, I. and Z. Li, (2008), "Report on the 2008 UK 10-40 GHz Spectrum Auction," page 19, available at <http://www.ofcom.org.uk/radiocomms/spectrumawards/completedawards/1040award/extrep/jewitt.pdf>.

<sup>23</sup> Ibid., page 18.

Time and cost implications of different auction types must be taken into account, both from the Department's perspective and bidders'. The complexity of the auction design chosen can affect the resource requirements substantially.<sup>24</sup>

58. Bell Mobility submits that neither the sealed-bid nor the combinatorial clock auctions are better than the SMRA at minimizing administrative burden. Therefore, while Bell Mobility appreciates, and supports, the Department's policy of monitoring the advances in both the theoretical and practical aspects of auction design, at this time we submit that the Department should continue to focus on using SMRA, since neither the sealed-bid auction, nor the combinatorial clock auction are better at maximizing openness and minimizing administrative burden than the SMRA.

#### **4.0 LICENCE RENEWAL**

***Comments are sought on all issues relating to the Department's proposal regarding the renewal process for long-term licences, including:***

- ***that licences continue to have a high expectation of renewal;***
- ***that licences continue to be issued for 10-year terms;***
- ***that the conditions of licence applied to the renewed licences may differ from those on the existing licences, with such changes being made following a consultation; and***
- ***that fees be imposed for renewed licences and be based on an estimation of the market value of the spectrum.***

#### **4.1 High Expectation of Renewal**

59. The *Auction Framework* states that a spectrum licence issued via an auction will have a high expectation of renewal for a subsequent term, unless a breach of licence condition has occurred (including any licence condition on implementation), a fundamental reallocation of spectrum to a new service is required, or an overriding policy need arises.<sup>25</sup> Bell Mobility submits that not only should licensees anticipate a high expectation of renewal at the end of the initial term, they should also reasonably anticipate a high expectation of renewal at the end of each and every subsequent term, assuming compliance with conditions of licence as well as the absence of a fundamental reallocation of spectrum to a new service or the absence of an overriding policy need.

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<sup>24</sup> Note that this is also consistent with the Enabling Guideline (f) in the 2007 *Spectrum Policy Framework for Canada* which states that spectrum management practices, including licensing methods should minimize administrative burden and be responsive to changing technology and marketplace demands.

<sup>25</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 6.

60. In Bell Mobility's view the high expectation of renewal at the end of the initial term and at the end of each and every subsequent term, sends the appropriate signals of stability and certainty to both licensees as well as to the investment markets while at the same time not fettering the Minister's authority or ability to take the appropriate actions in exceptional circumstances.

61. Bell Mobility also believes that it is important that the specific operable licence term should be included in the actual licence issued by the Department. In Bell Mobility's respectful submission it is not sufficient to merely state the expectancy in the associated auction policy or consultation documents. In this regard, it is noteworthy that the *Policy Framework's* enabling guideline (h) states that spectrum policy and management should support the efficient functioning of markets by clearly defining the obligations and privileges conveyed in spectrum authorizations.

#### **4.2 10-year Terms**

62. Bell Canada expressed the view that licence terms should be indefinite in its AWS Comments:

It is time to change the way we think about established radiocommunication carriers with a large customer base. Wireless telecommunications in 2007 is business on a large scale, e.g. \$20 billion invested to date with approximately \$1.5 billion a year invested on an ongoing basis with direct and indirect employment of 25,000 Canadians. The entities providing facilities-based wireless services in Canada today are large, well financed and well managed Canadian corporations. Given the cumulative and ongoing investment in the sector, the costs of licence withdrawal at the end of a licence term of short duration would be both enormous and devastating for the affected firm.

From a customer perspective, is it practical that a spectrum licence could even be withdrawn? What would happen to the affected carrier's customer base, and their business, personal and 911 calls, in such an eventuality? This is not to suggest that the Minister would not have recourse in the event of a substantial issue of non-compliance. As the Consultation Paper notes, the *Radiocommunication Act* provides the Minister with virtually unlimited authority to modify or withdraw the licence. Bell Canada submits however that the financial and customer realities of the Canadian wireless market and industry today are such that the issue of substantial non-compliance is not likely to arise.

Bell Canada believes that it is in the public interest that Industry Canada should promote a stable investment climate in the sector and suggests therefore that the licence term of any AWS spectrum acquired through an open auction be set with an indefinite term.

63. Other spectrum regulators, including the U.S. Federal Communications Commission (FCC) and the U.K.'s Office of Communications (Ofcom), are moving in this direction. Indeed, the Department's recent *Consultation on the Renewal of 24 and 38 GHz Spectrum Licences and Spectrum Licence Fees for 24, 28 and 38 GHz Bands*, Notice No. DGRB-001-08, April 2008 noted, at page 4, in discussing these bands that:

Since the release of the [24/38 licensing] policy in May 1999, there has been a trend towards longer licence terms in a number of countries to provide greater investment certainty. For example, Guatemala, France and Australia provide 15-year terms. The United Kingdom provides 20-year terms for 3G licences and New Zealand provides 20-year terms for cellular spectrum rights. The United States has generally maintained 10-year terms. Longer and indefinite licence terms are generally viewed as providing a more stable investment climate for licensees recognizing the initial investment in spectrum licences and the need to establish networks and recover costs. (emphasis added)

64. Regarding the U.S., it is noteworthy that while the FCC generally maintains a 10-year licence term, for all intents and purposes, unlike Canada, U.S. licences continue to be automatically renewed at term without consultation or debate. The resultant degree of certainty and stability which this approach confers on the U.S. wireless industry is in marked contrast to the increased degree of uncertainty which recent Industry Canada pronouncements, regarding licence renewal have created in the Canadian wireless industry. Most significantly, the uncertainty being created in the Canadian wireless industry now coincides with a period in history when licensees are dealing with business uncertainty on an unprecedented scale as a result of the global economic climate.

65. In this regard, the Consultation Document acknowledges the importance of "long-term certainty" and stability in the market when it notes that:

The Department recognizes the significant investments made by licensees to establish networks and the importance of long-term certainty that the industry requires to provide a stable investment climate.<sup>26</sup>

66. Consequently, Bell Mobility does not believe that a 10-year licence term is sufficient given the development of the Canadian wireless market. Bell Mobility submits that it is now timely for the Department to seriously consider the use of indefinite licence terms for wireless service providers operating as licensed Canadian radiocommunication carriers. Bell Mobility

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<sup>26</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 7.

notes that such a move would be consistent with the actions of other regulators who have either moved to 15 or 20 year licence terms, and who are considering the movement toward indefinite terms.

67. Moreover, even with indefinite licence terms, the authority granted the Minister under the *Radiocommunication Act*, including Section 5(1), provides the Department with the ability to amend or withdraw a licence in the unlikely event of a serious non-compliance issue arising or in the event of a national policy requirement.

68. However, if the Department does not adopt indefinite terms, then it should at the very least adopt 20-year licence terms with a permanent high expectation of renewal, assuming compliance with conditions of licence. The Cave Study supports this view in its findings:

We have considered both very long-term licences, which safeguard investment in assets over a term of 30-40 years, and long-term licences for, say, 15-20 years, which give the regulator the opportunity to recover spectrum at intervals when it is desirable to do so.

On balance, very long-term arrangements are more favourable on the grounds that they give better investment incentives and involve a clearer definition of licensee's rights.<sup>27</sup>

69. Bell Mobility strongly supports the authors' conclusions regarding the favourability of longer-term licences, though we vary slightly from the authors in that in our view, even in a circumstance where very long-term licences were issued, the Minister has more than sufficient legislative authority to recover spectrum in any circumstances which would warrant such an action in the national interest. For example, Bell Mobility notes the recent experience in Canada regarding the recovery of portions of the 2.5 MHz band.

70. Bell Mobility believes that moving to indefinite (or even 20-year) licence terms with the current authority granted the Minister under the *Radiocommunication Act* to amend or withdraw a licence is consistent with the following *Policy Framework* enabling guidelines: (a) market forces should be relied upon to the maximum extent feasible; (d) regulatory measures should be open, transparent and reasoned, and developed through public consultation where appropriate; (f) spectrum management practices, including licensing methods, should minimize

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<sup>27</sup> Cave, M., R.W. Jones and W. Lehr, (2007) *Study of Market-based Exclusive Spectrum Rights*, available at [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf/\\$FILE/market\\_based\\_rights-droits\\_axes\\_sur\\_le\\_marche-eng.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/market_based_rights-droits_axes_sur_le_marche-eng.pdf/$FILE/market_based_rights-droits_axes_sur_le_marche-eng.pdf), page 7.

administrative burden and be responsive to changing technology and market place demand; and (h) spectrum policy and management should support the efficient functioning of markets by clearly defining the obligations and privileges conveyed in spectrum authorizations and reallocating spectrum where appropriate, while taking into account the impact on existing services.

71. The Consultation Document notes that one of the main issues of interest at the time of renewal is the extent of implementation achieved by licensees. Bell Mobility notes that Ofcom has, in recent consultations, dispensed with mid-term implementation requirements for auctioned spectrum. As noted in the *Auction Framework*, "a spectrum auction is a market-based tool that allows the Government to identify those entities who value the spectrum the most and who will therefore be assumed to put that spectrum to its most efficient use."<sup>28</sup>

72. Bell Mobility submits that those who pay the most for the spectrum have the incentive as well as the technical, financial and business capacity to best manage the spectrum. To the contrary, artificial micromanagement, such as implementation requirements, imposed on licensees who acquire spectrum through an open auction can force licensees to make unnecessary and inefficient technological and capex investments simply to meet an interim implementation date.

73. The fact that the spectrum is paid for up-front, as was noted numerous times in the Department's 1995 consultation concerning the implementation of spectrum auctions in Canada, is an enormous motivator not to hoard spectrum. Shareholders, having invested their capital, will demand a return as soon as possible. This view is supported in the *Auction Framework*:

With a well-functioning, secondary market, implementation of service or roll-out requirements will generally not be required to address competitive issues. Concerns regarding anti-competitive spectrum warehousing can be addressed through other means such as setting appropriate market sizes, employing spectrum aggregation limits, and/or bidder eligibility restrictions, where required. Further, given that a market-based mechanism will be used to assign the licences, the winning bidders and their investors will be highly motivated to recoup their investment by bringing innovative services into the market as quickly as possible.<sup>29</sup>

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<sup>28</sup> Industry Canada, *Framework for Spectrum Auctions in Canada 2001 (Issue 2)*, page 1.

<sup>29</sup> Industry Canada, *Framework for Spectrum Auctions in Canada 2001 (Issue 2)*, page 8.

74. Bell Mobility submits that the reality is that strict adherence to corporate governance standards and duties to shareholders provide much more of an incentive to put spectrum to use than could any condition of licence. As a result, the Department should not propose mid-term implementation requirements as a condition of licence. This is consistent with the *Policy Framework's* enabling guideline (a) market forces should be relied upon to the maximum extent feasible.

#### **4.3 Renewed Licences May Have Different Conditions of Licence**

75. As noted above, Bell Mobility strongly believes that there should be indefinite licence terms, though even with indefinite licence terms, we recognize that in rare circumstances conditions of licence may have to be amended (for example, a change in international allocation, an overriding policy issue, or to accommodate changes in technology). However, in order to ensure that bidders understand exactly what is being auctioned, such changes should be the exception rather than the rule. The importance of certainty with respect to what is being auction is noted in the *Auction Framework*:

Understanding exactly what is being auctioned is very important for bidders to develop business plans, secure adequate financing and develop a bidding strategy. While upholding the status of radio spectrum as a public natural resource, it is important to provide bidders, and subsequently licensees, with a well-defined set of licence attributes so as to enhance their abilities to secure financing; to invest in their networks; and, to provide the best possible services to Canadian consumers.<sup>30</sup>

76. Therefore, Bell Mobility does not object to the fact that conditions of licence applied to the renewed licences may differ from those on the existing licences, with such changes being made following a consultation.

#### **4.4 Licence Fees for Renewed Licences**

77. The Consultation Document states that "in general, fees established by the Department for spectrum authorizations have as their goal to promote the efficient assignment of resources and earn a fair return for the Canadian public for the privilege of access to spectrum, which is a public resource." However, this is exactly what the auction process accomplishes. As indicated by Cramton (2002):

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<sup>30</sup> Industry Canada, *Framework for Spectrum Auctions in Canada* 2001 (Issue 2), page 5.

There is substantial agreement among economists that auctions are the best way to assign scarce spectrum resources ... auctions ask an answer to the basic question "who should get the licenses and at what prices?"<sup>31</sup>

78. The *Auction Framework* also recognizes this benefit of auctions:

Auctions are also procedurally efficient and provide a means for Canadian taxpayers to be compensated for the use of this public resource.<sup>32</sup>

79. Bell Mobility disagrees that the establishment of fees are required in order to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource. The implementation of such fees is not regulation in a manner that interferes with market forces to the minimum extent necessary. Bell Mobility notes that one of the purposes of the *Policy Framework* revision was to make the language and intent of the *Policy Framework* consistent with the Governor in Council issued policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC), which required greater reliance on market forces:

On December 14, 2006 the Governor in Council issued a policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC) directing the CRTC to rely on market forces to the maximum extent feasible under the *Telecommunications Act*, and to regulate where there is still a need to do so in a manner that interferes with market forces to the minimum extent necessary. This renewed Framework reflects this broad policy orientation in the context of existing legislation.<sup>33</sup>

80. Bell Mobility believes that the intent of that statement is directed toward the objective of fully exploiting and maximizing the economic and social benefits Canadians obtain from the spectrum through the full and efficient exploitation of that public resource in deriving positive economic and social externalities for the Canadian public. Thus, Bell Mobility submits that the proceeds of the auction compensate Canadian taxpayers for the use of the public resource and that there is no reason to implement fees at a later date. In fact, such fees actually serve to undermine this policy objective by acting as a drag on further, and accelerated, investments in wireless networks, applications and services.

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<sup>31</sup> Cramton, P., (2002), "Spectrum Auctions" *Handbook of Telecommunications Economics*, Vol. 2, Cave, Majumdar and Vogelsang, (eds.), Elsevier, 605-639, page 607.

<sup>32</sup> Industry Canada, *Framework for Spectrum Auctions in Canada 2001* (Issue 2), page 1.

<sup>33</sup> Industry Canada, *Spectrum Policy Framework for Canada*, 2007, page 3.

81. Bell Mobility also notes that licence fees over and above what was paid in the spectrum auction are not conducive to investment and in fact that funds used to pay fees are funds that are not available for infrastructure investments. The CWTA estimates that in 2008/2009 Canadian licence fees will amount to approximately \$130 million for the industry. Conversely, however, applying the FCC's cost-recovery model (i.e. \$0.18 per active wireless number) the CWTA estimates that Canadian carriers would pay less than \$4 million dollars in annual regulatory fees. In addition to regulatory fees which are restricted to cost-recovery levels, comparable U.S. wireless licensees also benefit from the investment certainty and stability conferred on their industry as a result of automatic licence renewal.

82. The Cave Study, commissioned by the Department and recently posted to its website, supported this contention when it noted at page 68 that:

... spectrum revenues have far exceeded the costs of the spectrum management program. For the six years from fiscal 1998/99 to 2006/07, program expenditures totalled some \$549.8 million while program revenues for the same period totalled \$3.011 billion, made up of \$2.078 billion from licence fees, \$888.3 million from auctions (revenues which are amortized over ten years) and \$44.4 million from equipment certification.

83. Bell Mobility notes that, when one takes into account the cumulative effect of annual licence fees as well as spectrum auction payments, Canadian licensees have paid billions of dollars to the Federal Government in spectrum-related fees since the 1980's. This, moreover, is over and above the billions of dollars in infrastructure investments, taxes paid to all levels of government and payroll charges that are required to operate wireless businesses and provide productivity and security enhancing wireless services to Canada and its citizens.

84. The Consultation Document also states that " ... fees be imposed for renewed licences and be based on an estimation of the market value of the spectrum."<sup>34</sup> Bell Mobility strongly disagrees with this statement. The implementation of such a fee is essentially a recalibration of fees from zero to some undetermined market value. The problem of uncertainty which arises with a recalibration of fees is already noted in the *Auction Framework*:

The natural day-to-day variations of the marketplace for all resources — be they minerals, timber or spectrum — show the difficulty in trying to assign a valuation derived from a past market transaction to today's or tomorrow's situation. The

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<sup>34</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 9.

Department recognizes that re-calibration of incumbents' fees could create significant uncertainty for licensees who acquired their licences in good faith under the fee regime in existence at that time. Uncertainty created by re-calibration would damage established businesses that had made plans and secured financing under the rules of the day. These uncertainties could have a major impact on the availability of financing, investment in new technologies, and the provision of new services.<sup>35</sup>

85. The concern about imposing fees over and above the auction proceeds is also supported by Munroe (2008):

More troubling is the proposal to impose a new licence fee for renewal, on top of the bid prices originally paid in the auction. So long as these licences are subject to the forces of supply and demand in the secondary market, the imposition of new fees will do nothing to improve allocative efficiency. That leaves cost recovery or resource rent capture as arguments for imposing renewal fees. The reserve prices for the 24 & 38 GHz auction were established on a cost recovery basis. The total of the reserve prices for all 354 licences was just under \$10 million. As the auction produced more than \$170 million in revenue, it is hard to argue that the government's costs have not been covered, even if one splits hairs by saying that the \$10 million accounted only for the initial 10-year term. As for the resource rent capture argument, given the difficulties that licensees have had in acquiring suitable equipment and launching services, it seems unlikely that things unforeseen at the time of the auctions have led to the development of windfall gains thereafter. More generally, if after any auction the value of spectrum rises relative to what was paid in the original bid price, this value will tend to be crystallized in stock market or secondary market transactions, so there is no way for the government to "capture" it via a new licence fee.

The more uncertainty that the government injects into future licence terms, the greater will be the disincentive for licensees to invest in new and better technology and service offerings (and the lower will be the initial auction revenues for such licences). Just as an auction market can determine the optimal distribution of licences initially, a secondary market (unencumbered by regulatory risk) can ensure an efficient distribution over time. The natural reluctance of politicians and bureaucrats to "let go" must be overcome and spectrum licences should be made perpetual.<sup>36</sup>

86. The implementation of fees on an *ex post* basis puts wireless service providers in a no-win situation. If the wireless industry's investment in a particular spectrum frequency turns out to be a success, then the Government receives the auction proceeds plus additional licence fees. If the investment turns out to be a failure, then the Government still receives the auction proceeds. Thus, the Government shares in the success, but bears none of the risk of failure.

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<sup>35</sup> Industry Canada, *Framework for Spectrum Auctions in Canada* 2001 (Issue 2), page 4.

<sup>36</sup> Munro, I., (2008), *Chicken Little Eats Crow: How the Critics Got It Wrong about Spectrum Auction*, Atlantic Institute for Market Studies, page 20, available at <http://www.aims.ca/library/chickenlittleeatscrow.pdf>.

87. While in a different context, the issue is well articulated by Malcom Andrew:

The current regulatory regime thus offers incumbent telcos a 'coin flip' any rational economic actor would presumably prefer not to make: if their risky investments in new technology turn out to be an 'incomplete success,' they and their shareholders are left holding the proverbial bag; if the risky investments turn out to be a (complete!) success, the regulator's technology "sharing" rules rule out big rewards sufficient to warrant the requisite risk-taking in the first place. It is a clear case of 'heads you lose' and 'tails you don't win,' so why bother?<sup>37</sup>

88. This is not just an academic argument. When the investment is not successful, the Department has decided not to implement fees at renewal. In Notice No. DGRB-001-08, *Consultation on the Renewal of 24 and 38 GHz Spectrum Licences and Spectrum Licence Fees for 24, 28, and 38 GHz Bands*, the Department states:

Industry Canada notes that at the time of the 24/38 GHz auction in 1999, interest in wireless technologies and the potential for high-speed Internet was extremely high. These bands were anticipated to be instrumental in delivering these services. As a result, the 24/38 GHz auction generated significant interest and revenues. Developments since that time have demonstrated that the spectrum has not fulfilled the expectations of the licensees and the value of the spectrum today is not considered to be represented by the bids made during the auction.<sup>38</sup>

89. As a result, the Department decided to grant a five-year extension with no applicable fees.<sup>39</sup> While the Department did not apply fees, they also did not return a portion of the auction proceeds.

90. However, when the investment in spectrum is successful, the Department claims that it seeks to "earn a fair return for the Canadian public,"<sup>40</sup> while noting that "high mobility spectrum, such as cellular and PCS, is a very valuable resource and expectations suggest continuing growth and profitability in this sector."<sup>41</sup> Thus, these recent consultations are an indication that the policy regarding the application of fees will allow the Government to share in the success of wireless service providers' investment, while bearing none of the risk.

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<sup>37</sup> Andrew, M., (2001) *Legislative and Regulatory Considerations Affecting Broadband Deployment*, prepared for the National Broadband Task Force.

<sup>38</sup> Canada Gazette Notice DGRB-001-08, *Consultation on the Renewal of 24 and 38 GHz Spectrum Licences and Spectrum Licence Fees for 24, 28, and 38 GHz Bands*, page 13.

<sup>39</sup> Canada Gazette Notice DGRB-002-09, *Decision on the Renewal of 24 and 38 GHz Spectrum Licences and Spectrum Licence Fees for 24, 28, and 38 GHz Bands*, page 11.

<sup>40</sup> Canada Gazette Notice DGRB-002-09, *Consultation on the Renewal of Cellular and Personal Communications Services (PCS) Spectrum Licences*, page 7.

<sup>41</sup> Ibid.

91. In other jurisdictions, such as the U.S., "regulatory fees" applicable to wireless licensees are certainly not established through an estimate of the market value of the spectrum licences. To the contrary, the FCC's current approach, as the Department noted in its 24/38 GHz Renewal Consultation and as addressed above, is to restrict spectrum fees to a level sufficient to recover the FCC's cost of managing the associated spectrum. This is a fundamental reason why Canadian spectrum fees are approximately 36 times the level of comparable U.S. spectrum fees.

92. Therefore, if the Department does implement licence fees at the time of renewal, then Bell Mobility submits that the Department adopts a cost-recovery regime. Such a move would put Canadian licensees on an equal footing with their U.S. counterparts. However, in order to ensure that bidders understand exactly what is being auctioned, the cost-recovery fees must be determined prior to the commencement of the auction.

## **5.0 OTHER ISSUES**

### **5.1 Research and Development**

***Comments are sought on the continued need for the condition of licence requiring that licensees invest a percentage of their adjusted gross revenues in R&D.***

93. The Consultation Document states that:

Industry Canada continues to recognize the need for the government "to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services." The Department notes, however, that two recent reports, the *Telecommunications Policy Review Panel Final Report* and the *OECD Telecommunication Regulatory Institutional Structures and Responsibilities*, cautioned against the mix of regulation and industrial development strategy. Other areas of Industry Canada are recognized as being well placed to further this policy objective.<sup>42</sup>

94. Bell Mobility raised similar concerns in its comments in response to the pre-auction consultations leading to the 2001 PCS Auction. The concerns were raised again in our

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<sup>42</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 10.

comments in response to the Department's Harmonization Consultation (2003) and the AWS Licensing Consultation (2007).

95. The Department estimates that the licence condition has generated \$1 billion in associated research and development investment since its introduction in the 1980's. Bell Mobility notes that in the Harmonization Consultation it and other carriers identified that the cumulative effect of uncoordinated government fees, taxes and financial obligations related to licensing, originating from several distinct Federal departments and agencies, has placed a significant and onerous financial burden on all licensees. A reduction in this burden would make such funds available for investment in wireless networks, applications and services. Therefore, Bell Mobility supports the Department's proposal to eliminate the condition entirely.

## 5.2 Tier Areas for Spectrum Licensing

***Comments are sought on the establishment of a new Tier level that would differentiate urban and rural areas or whether other mechanisms could achieve the same purpose more effectively.***

96. The Consultation Document states that "the Department has received comments in recent consultations suggesting that a new Tier level be established wherein metropolitan areas would be licenced separately from the surrounding area, resulting in a differentiation between urban and rural areas."<sup>43</sup> Bell Mobility does not support the establishment of a new Tier level, nor do we support the continued use of Tier 4 service areas. The more granular the service area, the more difficult it is to implement the spectrum. Moreover, the problem of frequency coordination at the border of adjacent service areas will be severely magnified as a result of the use of numerous small licence areas.

97. Border areas, between alternate service providers, can be classified as areas with greatly reduced spectral efficiency since part of the spectrum is unused in order to not create interference into the neighbouring system or suffer the effects of interference from neighbouring systems. To maximize spectral efficiency, it is recommended that the number of licences around border areas be minimized to the greatest extent possible. This implies that service areas should have the greatest amount of geographic area so that border areas constitute a small percentage of the total area.

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<sup>43</sup> Canada Gazette Notice DGRB-001-09, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, page 10.

98. Typically, a service provider must expect to coordinate spectrum usage with a neighbouring service provider in an area extending at least 25 km from the border. This border area would constitute the majority of Tier 4 service areas in the more densely populated areas of the country, and in some of the smaller Tier 4 service areas, the border area would constitute the whole of the service area.

99. Bell Mobility believes that a broader licensing approach has served Canada well, especially when compared to the fragmented licensing approach and resulting problems experienced in the U.S. (e.g. coverage gaps, customers triggering unintended roaming fee due to hand-off between different licensees). The Tier 2 service areas are based on Statistics Canada census divisions, and result in 14 areas covering all of Canada. Bell Mobility also submits that Tier 2 regional spectrum blocks would provide the greatest degree of flexibility for those requiring spectrum for expansion or to meet capacity constraints in certain areas. Further, as the Department noted in its 2000 PCS Auction Final Policy, regional spectrum blocks can also be aggregated by those wishing to provide national services.

100. Concerning the question of whether the block and tier sizes proposed by the Department will allow the entry of new carriers in the market, Bell Mobility does not believe that the technical and band plan design should be fundamentally designed or predicated on the possibility of new entrants. It should instead be designed to deliver spectrum to achieve the maximum spectral efficiency possible, while effectively integrating with existing national and regional systems.

101. Since large contiguous service areas are more suitable for mobile service than small non-contiguous service areas, auctioning Tier 2 service areas will eliminate the undesirable situation where a participant obtains the licence in a number of small non-contiguous service areas. Participants will have the assurance of obtaining a licence for a large service area or nothing, either scenario being more preferable to a patch-work collection of small licence areas. This reduction in uncertainty will make the spectrum blocks more valuable in the eyes of all participants.

102. Bell Mobility submits that to the extent that the Department insists on accommodating a Tier service area that addresses the difference between urban and rural areas, then the Department should use the existing Tier 3 service area. The development of a new Tier service area will create unnecessary costs to both the Department and Industry participants, especially

since existing network infrastructure was developed, and implemented based on the existing Tier service areas.

103. Bell Mobility submits that the Department should licence spectrum on the basis of Tier 2 service areas. This would be consistent with the Policy Framework's enabling guidelines (f) spectrum management practices, including licensing methods, should minimize administrative burden and be responsive to changing technology and market place demands; and (h) spectrum policy and management should support the efficient functioning of markets by ensuring that appropriate interference protection measures are in place.

## **6.0 CONCLUSION**

104. Bell Mobility appreciates Industry Canada's ongoing goal of greater reliance on market forces to achieve the greatest economic and social benefits from the usage of the spectrum resource, and the opportunity to provide its comments regarding the Department's review of the current *Auction Framework* in light of the revised *Policy Framework*. Bell Mobility believes that the Department's *Framework for Spectrum Auctions in Canada* should continue to be based on, and support, the Enabling Guidelines as described in the Department's *Spectrum Policy Framework for Canada*.

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