



**WE'RE DIFFERENT.
IN A GOOD WAY.**

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RE: Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band, Canada Gazette, Part I, June 5, 2019 (SLPB-002-19)

It is with pleasure that we are submitting these comments in response to ISED's Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band on behalf of TekSavvy Solutions Inc ("TekSavvy").

We hope that TekSavvy's input will contribute to ISED ongoing efforts to ensure adequate and affordable spectrum is made available to the full range of service providers in rural and remote areas so that all Canadians have access to innovative, affordable broadband services from a diversity of service providers.

Yours truly,

[transmitted electronically]

Andy Kaplan-Myrth
VP, Regulatory and Carrier Affairs

cc: Marc Gaudrault, CEO
Charlie Burns, VP Technology



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Comments for

**Consultation on a Policy and Licensing Framework for
Spectrum in the 3500 MHz Band**

SLPB-002-19

June 2019

Spectrum Management and Telecommunications

Submitted August 2, 2019

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Introduction

1. TekSavvy Solutions Inc. (“TekSavvy”) is an independent Internet and voice facilities-based service provider based in Chatham, Ontario, and Gatineau, Quebec. TekSavvy has been proudly serving consumers with telecommunications services for 20 years, winning numerous awards for the quality of its user experience and for its commitment to fighting for and upholding consumers’ rights online.
2. TekSavvy provides Internet and voice services to over 300,000 residential and business customers in every Canadian province. TekSavvy offers Internet over its own network facilities and through wholesale network access services provided by seven incumbent carriers across Canada. Currently, TekSavvy’s network uses regulated wholesale services on three DSL networks and four cable networks.
3. In addition to wholesale-based offerings, TekSavvy also offers its own facilities-based fixed-wireless network access services within a growing number of underserved communities in southwestern Ontario. TekSavvy is investing significantly in FWA LTE standards-based equipment to expand its service area, improve current 4G service offerings and prepare for the introduction of 5G LTE technology and services. TekSavvy is also building a high-speed fibre broadband network in Chatham-Kent to connect more than 38,000 residences and businesses in the region. TekSavvy recently introduced a television service in some areas and receives regular customer demand for a mobile service offering.
4. Since 2013, TekSavvy has consistently invested to increase the size of wireless and wireline facility-based network infrastructure to better serve its clientele. Wireless technologies are increasingly a key component of its network deployment strategy. In Southwestern Ontario, TekSavvy initiated its fixed wireless access strategy by rolling out broadband access to more than 2,000 rural households.
5. In 2018, TekSavvy celebrated its twentieth year in business and continues its commitment to building on a national reputation for fair play, excellent customer service and strong measures to protect consumer privacy. Values such as open access and net neutrality are at the heart of the TekSavvy model. TekSavvy’s approach is heavily consumer focused, which led to nominations as Toronto’s and Chatham’s best ISP for years running.
6. Access to sufficient, affordable spectrum is a prerequisite for TekSavvy to be able to provide a full range of affordable broadband services to its rural business and residential customers. The complexities of ISED’s spectrum licensing process that translates into difficulties in accessing clean spectrum resources for small ISPs have always been obvious to TekSavvy. Thus, TekSavvy welcomes this initiative by ISED to consult on the policy and licensing framework for spectrum in 3500 MHz Band.
7. TekSavvy will comment on ISED’ questions and develop the above concepts further in subsequent sections of this submission.

Pro-competitive Measures

Q1A—ISED is seeking comments on its proposal to implement pro-competitive measures in the 3500 MHz auction.

8. TekSavvy submits that ISED needs to adopt a combination of robust pro-competitive measures as part of a flexible CA licensing process - for the 3500MHz and future auctions, in order to enable small operators' access to affordable, secure spectrum and correspondingly, allow ISED to meet its rural policy and competitive market objectives as expressed in ISED's statement in paragraph 28 of the Consultation Document:

“there is a risk that competition in the post auction marketplace could suffer without measures to facilitate regional service providers' and WISP's access to spectrum.National mobile service providers (NMSPs) likely have the means and incentive to prevent other service providers from acquiring spectrum licences in an open auction”.

9. The combination of measures should include the use of smaller service areas – specifically, Tier 5 licence areas, significant quantum of set aside spectrum, application of spectrum caps on national incumbent operators, flexible CoLs for smaller operators in rural and remote areas. Flexible conditions of licence are required by smaller operators in the face of the challenges of investment in rural areas.
10. Pro-competitive measures have been successfully applied in previous Canadian spectrum auctions and similar auctions held in other jurisdictions, either in the form of a Spectrum aggregation limit or spectrum set-aside. In particular, set asides have been effective in enabling new entrants to acquire spectrum at a reasonable price and in preventing large incumbents' operators with from acquiring the entirety of spectrum on offer through the use of their superior financial resources. For example, the use of a set aside in the 2015 AWS-3 auction combined with the eligibility criteria for the set-aside requiring that the applicant be a mobile service provider in area of interest enabled a great deal for the eligible set-aside entities, as the price paid by incumbents was in the range of \$3.00/MHz/Pop while set aside eligible bidders paid on average \$0.11/MHz/Pop.

Q1B—ISED is seeking comments on the use of a set-aside, an in-band spectrum cap, or a combination of both, including the amount of spectrum that should be applied for the use of a set-aside, and/or the amount of spectrum that should be subject to an in-band spectrum cap. Provide supporting rationale for your responses.

11. According to the Spectrum Licence Site Data information posted on ISED's website as of July 3rd 2019, Inukshuk Wireless Partnership (Inukshuk) deployed 488 distinct site locations in its licence areas which are located across Canada. These sites are significantly less than the required number of sites required to adequately serve residents in those service areas across the country with FWA internet. By contrast, Xplornet shows 1396 site locations, almost 3 times more. Despite this evident failure to properly deploy in its 3500MHz licence area, TekSavvy notes that, based on the ISED Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on

Changes to the 3800 MHz Band posted, Inukshuk would still be eligible to apply to retain an arithmetic average of over 56 MHz of spectrum in 158 of the 172 Tier-4 service areas.

12. Canadian operators have taken advantage of condition of licence defining deployment requirements as spectrum being in use (i.e. transmitting) rather than having to fulfill a service obligation where they would be required to prove that spectrum is actually used to serve customers, with transparent service offers, and reasonable marketing efforts to reach customers. ISED should - in the current and in future licencing frameworks, ensure that incumbents with deep pockets will never again have they option to build a network they don't intend to use because this alternative appears more affordable than having to buy back the spectrum in a future auction process. In light of the burgeoning demands for spectrum and in particular the 3500MHz band, this approach of allowing token infrastructure to be deemed spectrum 'in service' will hinder the development of competitive service providers and correspondingly, result in higher prices and fewer innovative services for Canadian households and businesses.
13. FWA spectrum was auctioned in Canada in 2004, 2005 and 2009, cumulating a total of 50.4M of proceeds for the band between the 3 auctions. This represents a price under \$0.01/MHz/Pop. Even including the 200M capital investment Inukshuk announced on March 31st 2006¹ to the cost of spectrum, it would still amount to les than \$0.05/MHz/Pop, which is under ISED's proposed opening price for the least populated Tier-4 areas of the 3500 MHz auction.
14. Industry Canada allowed the spectrum to be made available at the time at a very affordable price, and it is TekSavvy's view that Inukshuk and its parent companies did everything in their power to game the system, walking on the fringes of meeting the already week deployment requirements, with little emphasis if any on truly attempting to provide FWA service to Canadians. Inukshuk should be required to file its subscriber list in confidence, enabling ISED to judge for themselves.
15. Allowing the same company now to apply for transition to flexible use and retain this valuable and limited Canadian resource that is spectrum after having spent more than a decade sitting on it seems highly unfair.
16. TekSavvy submits that prior to considering pro-competitive measures for the 3500 MHz auction and more specifically, the quantum of spectrum that should be applied to an eventual set aside or a spectrum cap, a policy hearing on the licensing rules regarding spectrum in the 3500 MHz band deemed to be 'in service' should be held. Amongst other subjects, this hearing would consider the inequity of allowing licence holders such as Inukshuk to retain the majority of the spectrum under ISED's proposed take back regime.
17. At the very least, TekSavvy urges ISED to take back the majority of Inukshuk spectrum and make it available in the 2020 3500 MHz auction process. In the scenario that Bell and Rogers are truly interested in acquiring the frequencies for future needs, let them pay fair market value as is the case for other service providers. .In the case that ISED does not retain TekSavvy's suggestions for either a policy hearing or a take back of the majority of

¹ <http://www.bce.ca/news-and-media/releases/show/inukshuk-announces-availability-of-national-wireless-broadband-network>

Inukshuk spectrum by ISED prior to the 3500MHz auction, , TekSavvy submits that an in-band spectrum cap should be applied in such a manner to bar, Bell, Rogers or their subsidiary Inukshuk from participating in the clock round of the 2020 3500 MHz CA auction.

18. TekSavvy also urges ISED to change its existing deployment requirements as part of the CoLs for the 3500MHz auction and incorporate a real service obligation. With the above in mind, TekSavvy submits that ISED should include both an in-band spectrum cap and a set aside as pro-competitive measures as part of an adaptable CA spectrum licensing process in order to enable smaller entities to access the resource. TekSavvy submits that ISED should apply an in-band spectrum cap in the 3500MHz band and correspondingly, claim back lightly used and unused spectrum from current licence holders.
19. The quantum of take back should depend on the amount of spectrum that is not in productive use in actually providing affordable broadband service across the full licence area - as opposed to having nominal coverage with a few towers 'lit' but not actually delivering broadband services. For clarity, TekSavvy submits the spectrum eligible to the transition process to flexible use as per Annex A of the consultation document should be scrutinized and not just approved as a mere formality. ISED needs to ensure that the coverage of existing 3500 MHz sites is not "stretched" by service providers to claim meeting deployment conditions, and ideally, that the spectrum is used to offer viable FWA service to Canadian subscribers. ISED should require licensees to provide as part of the CoLs, detailed coverage and throughput maps, proof of subscriber count and site density analysis. This documentation would provide ISED with proof of actual of deployment on the part of licensees and correspondingly, ensure spectrum is put to efficient use. This would likely result in an increase of the amount of spectrum available for the 3500 MHz auction.
20. Operators with spectrum licences exceeding the 50 MHz spectrum cap limit in certain service areas would not be allowed to acquire additional 3500 MHz spectrum in those service areas. This measure would prevent established, spectrum-rich players from hoarding additional 3500 MHz spectrum.
21. There are a number of existing licensees in TekSavvy's area of interest that are eligible to be issued flexible use licences. As some of them will be set-aside-eligible bidders, the opportunity for new entrants, such as TekSavvy, to obtain enough licences will be reduced if no caps are used, even if a set-aside was applied. Hence, TekSavvy believes a 50 MHz spectrum cap would be reasonable, in order to actively encourage competition from new smaller operators and limit the amount of spectrum existing operators / service providers can accumulate through auctions without active deployment of broadband services to subscribers across the licence area.
22. TekSavvy submits that ISED should designate significant spectrum for set-aside eligible bidders in the 3500 MHz auction, with the quantum varying according to the population density and final amount of spectrum available. Thus, in licence areas with a predominately urban population (30,000 if Tier 5 licensing as per ISED *Decision on New Set of Service Areas for Spectrum Licensing*² , 40 MHz + 50% of the spectrum available

² DGSO-006-19 Decision on a New Set of Service Areas for Spectrum Licensing, July 2019.

in excess of 40 MHz (rounded down to the nearest 10MHz), would be designated as set aside for smaller service providers and in licence areas with a predominately rural and remote populations (as per the rural and remote definitions of the new tier 5 decision), 60 MHz + 50% of the spectrum available in excess of 60 MHz, rounded down to the nearest 10 MHz, would be designated as set aside. This should apply even in the scenario that ISED applies Tier 4 licence areas.

23. The lower quantum of set-aside spectrum in urban areas recognizes the need of national operators for 5G spectrum in urban areas and likelihood that of the 200 MHz potentially available for each of the designated 172 Tier 4 (or 654 Tier 5) service areas in the 3500MHz auction, a larger portion of the spectrum currently licensed 2 would be in productive use in the provision of services to subscribers.
24. Additionally, a larger set-aside in rural and remote areas would enable smaller FWA service providers to acquire enough spectrum to deploy quality service at speeds meeting the CRTC universal service objective of 50/10 Mbps established in December 2016³. The larger set-aside in rural and areas also recognizes that national operators have largely failed to service rural and remote licence areas with affordable, innovative broadband services and perhaps, smaller service providers are better suited to the task. The higher spectrum available for set aside, the greater the likelihood of additional smaller players acquiring spectrum at an affordable price and consequently, being able to provide affordable, innovative broadband services to rural subscribers.
25. As noted by the Department in the consultation document, set asides have been successfully applied in previous auctions to enable smaller operators to acquire spectrum at a reasonable price and prevent larger operators from exercising their superior financial resources to Hoover up all available spectrum.

Q1C—ISED is seeking comments on its proposal to limit the eligibility criteria to bid on set-aside spectrum licences to those registered with the CRTC as facilities-based providers* that are not National Mobile Service Providers, and that are actively providing commercial telecommunication services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3500 MHz auction.

Para 136 *The Tier 5 model used the CCS boundaries to create 511 rural Tier 5 service areas with the following design elements included:*

- *All population centres under 30,000 were subsumed into the surrounding CCS area.*
- *CCS areas containing a population of 7,000 or above became their own Tier 5 service areas. CCS areas with a population below 7,000 were amalgamated together to reach a population target of 10,000 ± 3,000 population with the Tier 4 boundary set as the maximum limit for amalgamation. In rare cases where the service areas had very low-density areas, these population thresholds may not always be adhered to in order to avoid creating very large areas and to allow for more localized use cases.*

3 <https://crtc.gc.ca/eng/archive/2016/2016-496.htm>

26. TekSavvy agrees with ISED's proposal to limit the eligibility criteria to bid on set-aside spectrum licences to those registered with the CRTC as facilities-based providers* that are not National Mobile Service Providers (NMSPs), and that are actively providing commercial telecommunication services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3500 MHz auction.
- However, in addition, TekSavvy submits the following additional restrictions access to set-aside spectrum
 - Regional Mobile Service Providers (RMSPs) should also be restricted
 - As indicated above, NMSP and RMSP operators with spectrum licences exceeding the cap limit in a given service area should not be allowed to acquire more 3500 MHz spectrum in those service areas
27. These measures would prevent established, spectrum-rich players from qualifying for set aside spectrum, ensure on-going availability of secure, affordable spectrum for the smaller facility-based and help to address the imbalance between spectrum rich national and regional service providers.

Q1D—ISED is seeking comments on its proposal that any set-aside licences acquired by set-aside-eligible bidders would not be transferable to set-aside-ineligible entities for the first five years of the licence term.

28. TekSavvy agrees with ISED's proposal to require successful set-aside-eligible bidders / licensees to hold (i.e. not to transfer) set-aside licences acquired to set-aside-ineligible entities for the first five years of the licence term.

Q1E—ISED is seeking proposals for other eligibility criteria along with supporting rationale.

If a spectrum cap is to be applied:

Q1F—ISED is seeking comments on the inclusion of grid-cell and sub-divided licences towards the spectrum cap, and the proposal to allow the return of these licences in order to increase a licensee's eligibility to bid on additional spectrum within the related licence area.

*** An applicant would need to be registered on one of the CRTC lists of facilities-based providers by the date that applications are due.**

29. TekSavvy agrees with ISED's proposal to include grid-cell and sub-divided licences towards the spectrum cap, and the proposal to allow the return of these licences in order to increase a licensee's eligibility to bid on additional spectrum within the related licence area. However, entities returning grid cell and subdivided licences to increase eligibility should not benefit from a transition period and should vacate the subdivided licence immediately after the auction.

License Areas

Q2—ISED is seeking comments on its proposal to use Tier 4 service areas for the 3500 MHz licensing process.

30. As stated in the TekSavvy's submission to ISED Service Area Consultation DGSO-002-18, TekSavvy believes that new Tier 5 service areas will be necessary to encourage participation by smaller operators in the 3500 MHz and future spectrum auctions and consequently, their ability to provide affordable broadband services to subscribers in rural and remote areas.⁴
31. The overall cost of spectrum for Tier 4 service areas and correspondingly, the downstream capital costs for deployment and operating costs to cover the larger Tier 4 licence area potentially exceed the financial resources of the smaller operators. Thus, utilization of Tier 4 service areas by ISED will constitute a significant dissuasive factor in the participation of small, rural facility-based operators in the 3500MHz and subsequent auction licensing processes.
32. The current Tier 4 service areas do not consider the unique characteristics of rural areas in Canada and some boundaries are not in low population areas which can cause interference and coordination issues.
33. Tier-5 service areas would greatly help increase spectrum affordability for TekSavvy FWA business, giving it the ability exclude urban settings and acquire the rural spectrum required for its continuous operations.
34. TekSavvy submits that it would be appropriate to apply Tier 5 Service Areas for the 3500MHz auction as defined by ISED in its July 2019 *Decision on a New Set of Service Areas for Spectrum Licensing*. Of the 654 Tier 5 Licensing Areas⁵ ISED defined 511 are rural Tier 5s. Tier 5 service areas are better suited to the financial capacity of rural service providers such as the WISPs and thus, will favour their participation in the auction and correspondingly, the development of innovative services at lower prices for rural subscribers.
35. In the eventuality that ISED stays with Tier 4 Licence areas for the 3500 MHz spectrum auction, TekSavvy recommends that ISED consider Tier 5 Licence Areas in designing future auctions – in particular, the 3800MHz auction which is critically-important to the needs of smaller, rural ISPs.

⁴ TekSavvy's Submission to ISED's Consultation on a New Set of Service Areas for Spectrum Licensing (DGSO-002-18): [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/DGSO-002-18-TekSavvySolutions-comments.pdf/\\$FILE/DGSO-002-18-TekSavvySolutions-comments.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/DGSO-002-18-TekSavvySolutions-comments.pdf/$FILE/DGSO-002-18-TekSavvySolutions-comments.pdf)

⁵ DGSO-006-19 1, at para 136 Tier 5 Licensing Areas definition

Q3A—ISED is seeking comments on its proposal to include all remaining spectrum (including partially encumbered Tier 4 areas) as part of the auction as shown in table A1 of annex A.

36. TekSavvy has no objection to the inclusion of all remaining spectrum (including partially encumbered Tier 4 areas) as part of the auction as shown in table A1 of annex A.

Q3B—ISED is seeking comments on its proposal to consider all spectrum acquired through the auction and only Tier 4 licences that will be issued through the transition process, simultaneously in the assignment round of the auction, in order to determine the specific frequency assignments of all licences in the 3500 MHz band.

37. Service continuity and consideration for the amount of capital invested by current 3500 MHz licensees to provide FWA services to Canadians are certainly among the most important factors justifying ISED's recent decision to allow a portion of the previously acquired 3500 MHz licences to transition to flexible use.
38. The equipment deployed today in the FWA band (3500 MHz) cannot necessarily be reused in other portions of the band. Similarly, equipment deployed in the all come all served WBS band (3650-3700 MHz) might not be usable in the lower portions of the 3500 MHz band. This is dependant on equipment operating parameters such as Bandwidth (BW) or Instantaneous Bandwidth (IBW). For example, some manufacturers of LTE equipment provide radio heads specific to LTE band 42 (3400-3600 MHz) and LTE band 43 (3600-3800 MHz), while others support both 3GPP bands with the same equipment but limit the maximum channel separation between the low end of the lowest channel and the high end of the highest channel used simultaneously (IBW) to 100 or 120 MHz. One thing remains certain: the closer the spectrum assignment resulting from the 3500 MHz auction or the transition to flexible use process will be from existing FWA or WBS spectrum assignment, the smaller the investment required for licences to continue to use the spectrum in the post auction market structure will be.
39. TekSavvy submits that it would be unfair and inequitable for ISED to require existing licensees of 3500 MHz spectrum, to engage in an Assignment round in which they have to commit additional capital to ensure their final frequency assignment is consistent with the capabilities of their equipment. This would also expose the smaller bidders to the mercy of incumbents' 'denial' strategies to force additional capital investment to obtain the required spectrum. Overall, the assignment round participation rules as proposed would be contrary to the service continuity objective discussed above.
40. TekSavvy submits that successful applicants to the transition to flexible use process should be allowed to retain frequencies within their actual spectrum holdings consistently with ISED's new band plan for 3500 MHz band. Therefore, spectrum successfully transitioned to flexible use should be entirely excluded from the Assignment phase of the 3500 MHz auction.
41. In order to maximize spectrum continuity of 10 MHz blocks to be made available for the 3500 MHz auction, ISED should work with applicants to the transition to flexible use, to better match the capabilities of their existing equipment in terms of operating frequencies. For example, the review of the application process could seek 3 preferred options per

applicant as to which sets of 10 MHz blocks of the new band plan they would like to retain if their application is successful. ISED could then analyze options provided from successful applicants and concatenate transitioned blocks from multiple successful applicants into one larger block, ensuring that transitioned spectrum is regrouped as much as possible.

42. TekSavvy further submits that inclusion of open and set aside bidders as a single set of bidders in the assignment round could allow the national and regional incumbent operators to strategically deny spectrum in the upper ranges of the band to smaller bidders by using their superior financial resources to outbid them for those licences. Most of the smaller service providers already operate in the WBS band and thus face significant costs in their RAN equipment if they can't acquire licences in the upper ranges of the 3500 MHz band. The incumbent operators do not face similar costs in deployment of new equipment in the 3500MHz bands. TekSavvy further submits that the upper portion of the 3500 MHz band should be reserved for smaller operators that utilize the WBS bands as the sole basis for their current operations. That is to say, if an operator utilizes both WBS and the lower portion of the 3500 MHz band (3475 to 3600 MHz) or other bands, it would not require adjacency to the WBS band for continuity of operations and therefore should not be eligible for priority access to the upper blocks of the 3500 MHz band.

Q3C—ISED is seeking comments on the proposal that licensees who acquire multiple flexible use Tier 4 licences in a given area, either as a result of the auction or as a result of the transition process, be assigned contiguous spectrum, and that this also apply to partial area licences acquired through the auction.

43. TekSavvy has no objection to ISED's proposal that licensees who acquire multiple flexible use Tier 4 licences in a given area, either as a result of the auction or as a result of the transition process, be assigned contiguous spectrum, and that this also apply to partial area licences acquired through the auction.
44. TekSavvy submits, that if a Spectrum Cap of 50 MHz was to be applied as a pro-competitive measure, the successful applicants to the transition to flexible use that meet or exceed the cap should not be eligible to participate in the 3500 MHz auction for those service areas.

Q3D—ISED is seeking comments on the proposal to classify all partial tier licences as encumbered blocks.

45. TekSavvy has no objection to ISED's proposal.

Q3E—ISED is seeking comments on the proposal to bundle the remaining portions of the encumbered areas offered in the auction as a combined encumbered block of 20, 30, 40 MHz or more, depending on the number of 10 MHz blocks being bundled. In particular the bundle would include the tier areas where existing sub-divided or grid cell licenses are encumbering the majority of the tier. This would apply where the geography of the remaining portions is the same or similar, and/or the remaining area covers a relatively small population. Comments on the proposed list of encumbered service areas where multiple blocks may be combined for the purpose of the auction are also sought.

46. TekSavvy disagrees with the proposal to bundle of encumbered blocks as it would result in a reduction of accessibility to spectrum for small entities, given the higher price of bundled blocks.
47. Additionally, for the same service continuity principle described in answer to Q3B above, TekSavvy believes than encumbered blocks should not be auctioned as generic licences. Service providers benefiting for grid cell allocations or licence subdivisions today often do not have the financial capability to invest in new equipment to relocate their operation to another portion of the band. As a consideration for the capital already invested and to favor service continuity, encumbered spectrum should not be auctioned as generic licences and should be excluded from the Assignment round.

If a spectrum cap is applied:

Q3F—ISED is seeking comments on the proposal that the bundled encumbered blocks would not count towards the spectrum cap during the auction, but that any transfers of the licences post-auction would be subject to the spectrum cap and the conditions of licence as described in section 11.2.

48. TekSavvy believes that the spectrum cap should apply to the unencumbered portion of encumbered blocks the same as it applies to unencumbered blocks. TekSavvy sees no justification to exclude encumbered blocks.

[Auction Format and Rules](#)

Q4A—ISED is seeking comments on its proposal to use generic licences.

If a set-aside is applied (with or without a spectrum cap):

49. As stated by the Department in paragraph 69 of the Consultation document, Generic licences are blocks of spectrum that are sufficiently similar and comparable in value to one another that they can be offered as a single category in each service area. ISED further states that in determining whether licences should be regarded as generic it considers the frequency location in the band, the block size, the encumbrance, and possible technology and interference constraints.

50. As submitted by TekSavvy in its answer to Q3B above, a significant portion of FWA service providers use LTE technology and TekSavvy notes that the 3500 MHz spectrum is overlapping LTE bands 42 and 43 which might call for different radio heads to be used at tower sites depending on vendor. TekSavvy also submits that the upper 50 MHz of the 3500 MHz band (the portion that overlaps band 43) could be aggregated with existing WBS channels to increase bandwidth and improve service by existing WBS users regardless of the LTE vendor providing their equipment. ISED already established in the Consultation document that some spectrum blocks are encumbered, it also proposed that a portion of the spectrum will be transitioned to flexible use and excluded from the Clock phase of the auction, resulting in a variation of the number of unencumbered blocks available for the auction per service area. TekSavvy submits that these variables, when considered together, could seriously impact the relative value of certain blocks, compared to others and the application of generic licences may be detrimental to bidders.
51. TekSavvy submits that ISED should distinguish between 3 categories of spectrum blocks and exclude those transitioned to flexible use entirely from the auction process. Thus, the following 3 categories of spectrum blocks would be offered to bidders in the 3500MHz auction:
- Unencumbered blocks overlapping LTE band 42
 - Unencumbered blocks overlapping LTE band 43
 - Encumbered blocks
52. TekSavvy would support the use of generic licences within each of the categories (product) defined above, as blocks within those categories would meet ISED conditions for the use of generic licences as per the definition provided in paragraph 69 of the Consultation document.
53. As entities making use of the WBS band (3650 MHz) are generally smaller service providers seeking access to affordable spectrum to provide cost effective service to rural Canadians, ISED could assign on a priority basis, unencumbered blocks overlapping LTE band 43 to the set aside and complete the assignment with unencumbered blocks overlapping LTE band 42 in order to attain the desired quantum of spectrum required for efficient operations by smaller rural service providers. If priority assignment of the upper portion of the 3500 MHz band was given to existing bidders who solely rely on WBS spectrum today, then blocks overlapping LTE bands 42 and 43 could be considered a single generic product.

Q4B—ISED is seeking comments on its proposal to categorize all blocks won by set-aside-eligible bidders as set-aside blocks.

54. TekSavvy supports ISED proposal to the effect that, in a given service area where a bidder is deemed set-aside eligible, to categorize all blocks won by the set-aside-eligible bidders as set-aside blocks.

Q4C—ISED is seeking comments on its proposal to create separate categories for encumbered and unencumbered blocks, as well as open and set-aside blocks.

55. TekSavvy has no objections to ISED's proposal of considering encumbered and unencumbered blocks as separate categories, and further submits that unencumbered blocks should be further split into two separate categories: those overlapping with LTE band 42 and those overlapping with LTE band 43, thus creating a total of 3 separate categories in the event that TekSavvy's proposed changes to the assignment round are not retained.

If only a spectrum cap is applied:

Q4D—ISED is seeking comments on its proposal to create separate categories for unencumbered and for various encumbered block in a service area.

56. TekSavvy supports the ISED proposed distinction between encumbered and unencumbered products, opposes the bundling of encumbered products into larger blocks and further submits that unencumbered blocks should be separated into 2 different categories: Those overlapping LTE band 42 and those overlapping LTE band 43.
57. TekSavvy also supports ISED's proposal that set-aside blocks be selected from unencumbered products and further proposed that blocks overlapping LTE band 43 be assigned to the set-aside on a priority basis.

Q5—ISED is seeking comments on the use anonymous bidding during the auction.

58. TekSavvy has no objections to ISED's proposal. Combined with separate designation of set aside and open blocks, the use of anonymous bidding will limit the ability of the incumbent operators to game the auction rules and specifically, use their superior financial resources to deny spectrum to smaller operators and new entrants.

Q6—ISED is seeking comments on its proposal to use a clock auction format for the 3500 MHz spectrum auction.

59. TekSavvy is pleased that ISED has proposed to move away from the complex CCA auction format for the 3500 MHz auction. CCA auctions are too complex and expensive for smaller entities and the concept of package bidding, that ISED claims limits the exposure risk, has a negative side effect of favoring larger entities. Specifically, national incumbents have an opportunity to include small population licences in larger packages thus outbidding smaller operators who could not afford larger population licences.
60. What ISED defined as a CA auction in this Consultation document, appears in effect to be a variant of SMRA featuring anonymous bidding and generic products.
61. However, TekSavvy submits that most if not all of the gains on the simplicity scale of moving from CCA to SMRA or CA have been lost by the introduction of complex intra-

round bidding feature, bid queuing and an inflexible goal of ensuring that no blocks remain unsold at the end of the auction.

62. TekSavvy submits that the reasons cited by ISED to justify the introduction of a complex intra-round bidding process are unwarranted and will discourage several smaller entities from participating into the auction. The 2008 AWS-1 SMRA auction was indeed the longest in Canadian auction history. However, there are alternative measures that could be considered in order to shorten the auction and the negative impacts of intra-round bidding and bid queuing features far outweigh any potential advantage in shortening the auction period.
63. ISED's idea with intra-round bidding is to allow the auction manager to use larger bid increments and ensure the auction can be short allowing bidders to express up to 5 levels of demand between the start of round price and clock round price. ISED hopes to prevent the situation where a jump in the clock price overshoots the market clearing price or result in simultaneous bidders reducing demand and leaving spectrum on the table.
64. TekSavvy submits that similar results could be achieved by ensuring that when several bidders stop bidding simultaneously on a given product due to an increase in price resulting in a situation where supply exceeds demand for the product, the eligibility of bidders who reduced their demand is not reduced immediately, allowing them to re-adjust their demand and the subsequent round if they so choose to exercise the option. In the event they don't, and supply exceeds demand for the product 2 rounds in a row, bidders' eligibility would be adjusted accordingly. This functionality would work as a sort of auto waiver.
65. The adjustment of eligibility proposed here could eliminate the need for intra-round bidding and bid queuing greatly reducing the complexity of the auction thus allowing smaller service providers to participate.
66. Bid queuing in itself represent a risk for the bidder, as illustrated by the example provided by ISED in Annex C, section C 12, paragraph 60 of the consultation document. The example of Bidder Z is repeated here for convenience
 - Bidder Z has 600 eligibility points. The activity requirement is 95%. Products A, B, and C have 200, 400 and 600 eligibility points respectively. The bidder currently has processed demand of one block for product A and one block for product B. The bidder submits the following bids: a bid to reduce its demand for A to 0 blocks; a bid to reduce its demand for B to 0 blocks; and a bid to increase its demand for C to 1 block. If all three bids are applied during bid processing, then the bidder's processed activity will be 600 and thus the bidder will maintain its eligibility after this round. However, if the bid to reduce demand for A is applied but the bid to reduce demand for B is not applied due to insufficient excess demand, then the bid to increase demand for C cannot be applied because that would cause the bidder's processed activity to exceed its eligibility for the round. In that case, the bidder's processed activity will be 400 and the bidder's eligibility in the next round will be 421 points (400 multiplied by the reciprocal of the activity requirement and rounded down—i.e. $400 \times 1/0.95$).
67. TekSavvy submits that in this example, Bidder Z faces an "accidental" reduction of its eligibility points (from 600 to 421) due to bid queuing, a situation that could prevent Bidder

Z from acquiring the spectrum it needs to execute on its business plan because of an eligibility point reduction that should not have occurred with a properly crafted auction process. TekSavvy believes that if Bidder Z decides to move 600 eligibility points from products A and B to product C, and has the eligibility points to proceed, auction mechanics should not prevent it to do so, nor should it result in a reduction of eligibility points than Bidder Z did not plan, regardless of the resulting demand for products A and B.

68. TekSavvy understands the desirability, from ISED perspective and for the Canadian population in general, of ensuring that as much spectrum as possible is assigned to service providers so they can deliver on affordable and efficient FWA or mobile services. However, ensuring that all spectrum for which there was a demand in the initial clock round is awarded at the end of the auction should be balanced with overall auction objectives. The fact that the bid processing software would reject Bidder Z reduction of demand for product B because there is no other Bidder to capture the demand is counter to the objective of ensuring bidders can access affordable spectrum. To build on the previous example, its possible that the price for product C has become more attractive to Bidder Z which could lead to a better return; the auction software should not restrict Bidder Z from obtaining that spectrum.
69. In the example of Bidder Z, not only did the auction software restrict Bidder Z from making choices that would best reflect its business objectives, but it hinders it from pursuing these objectives in subsequent rounds by causing an unwanted an unplanned reduction of its eligibility, in the name of not allowing the demand for product B to reduce below supply. In the scenario that later in the auction, the price of product C exceeds the prices of A and B and Bidder Z would like to return to A and B, according to the proposed rules, its new reduced eligibility would not allow it. TekSavvy submits that the algorithm of the bid processing software should be reviewed to remove bid queuing and intra-round bidding altogether.
70. TekSavvy submits as an alternative, that ISED could establish rules managing the activity rule and Bidders Eligibility in order to achieve similar results and, as pointed out above, ensuring that all spectrum for which there was a demand in round one is awarded at the end of the auction is of course desirable, but this objective should not supersede a fair auction process for bidders.
71. TekSavvy supports the use of a Clock Auction format for the 3500 MHz auction, but believes intra-round bidding and bid queuing should be eliminated, allowing for a much simpler auction process. ISED can compensate by establishing special rules for eligibility reduction if it is concerned that clock round price increase will lead to simultaneous demand reduction from bidders, allowing them to return in the subsequent round. TekSavvy also believes that Bidders should not be restricted to reducing or increasing demand for products during the clock round phase of the auction, as long as their eligibility allows for it.

However, TekSavvy believes ISED should consistently use a single, simplified CA auction format in future auctions as this would allow the smaller operators to familiarize themselves with and thus become more proficient in the bidding process.

Q7—ISED is seeking comments on the proposed structure of the clock stage and on the proposed methodology for calculating processed demands and posted prices after each clock round, as described in annex C.

72. As mentioned in previous sections, TekSavvy objects the concept of intra-round bidding and the processed demand methodology that ensues, proposed by ISED in the Consultation document. TekSavvy believes the Department should go back to a much simpler approach, where the demand is simply the sum of the number of blocks for each product at the end of Clock Rounds. Bidders would be allowed to increase or reduce their demand of specific products based on eligibility and would manage their eligibility by complying to the activity rule posted by ISED or by willingly opting for eligibility reduction.

Q8—ISED is seeking comments on the proposed range of percentage increments.

73. TekSavvy that the proposed range of increment proposed by ISED should be workable for most bidders. ISED could start the auction with an increment in the middle of a range of 5% - 15%, then assess excess demand and adjust increments on a per service area or property basis accordingly. TekSavvy submits that ISED could implement an auto waiver to prevent an eligibility points drop when it suspects bidders reduced their demand simultaneously because of price increase from one round to the next.

Q9A—ISED is seeking comments on the proposed structure of the assignment stage, including the order of the assignment rounds, treatment of existing holdings, the combination of service areas into a single assignment area and parallel bidding.

74. As indicated in its answer to 3B above, TekSavvy submits that successful applicants to the transition phase and grid cell users should understand which blocks they are assigned before the 3500 MHz auction in order to ensure service continuity and minimise investment actual spectrum users need to make to continue to serve customers.
75. As indicated previously, TekSavvy submits that open bidders should not be included with set aside bidders in the Assignment round. The inclusion of open and set aside bidders as a single set of bidders in the assignment round, would allow the national and regional incumbent operators to strategically deny spectrum in the upper ranges of the band to smaller bidders that only use the WBS band, by using their superior financial resources to outbid them for those licences. The smaller operators already operate in the 3650 MHz band and thus face significant costs in their RAN equipment if they can't acquire licences in the upper ranges of the 3500 MHz band. The incumbent operators do not face similar costs in deployment of new equipment in the 3500MHz bands. In the event ISED does not accept TekSavvy proposal to create separate products for unencumbered blocks overlapping LTE band 42 and LTE band 43 as per its answer to Q4A above, TekSavvy submits that Open and Set-aside bidders should be treated separately, giving priority to small regional operators to the upper portion of the 3500 MHz band.
76. Otherwise, TekSavvy submits has no objections to ISED's proposals for structure of the assignment stage, including the order of the assignment rounds, the combination of service areas into a single assignment area and parallel bidding.

Q9B—ISED is seeking comments on the proposal to apply bidder optimal core prices and to use the “nearest Vickrey” approach in determining the assignment prices.

77. TekSavvy has no objections to ISED’s proposal to apply bidder optimal core prices and to use the “nearest Vickrey” approach in determining the assignment prices.

Bidder Participation

Q10—ISED is seeking comments on the proposed affiliated and associated entities rules that would apply to bidders in the 3500 MHz auction.

78. TekSavvy has no objections to ISED’s proposal regarding affiliated and associated entities rules that would apply to bidders in the 3500 MHz auction.

Q11—ISED is seeking comments on the proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3500 MHz auction.

79. TekSavvy has no objections to ISED’s proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3500 MHz auction.

Conditions of Licence for flexible use spectrum licences in the 3500 MHz band

Q12—ISED is seeking comments on its proposal to issue new flexible use spectrum licences in the 3500 MHz band with a 20-year licence term and the proposed wording of the condition of licence above. Licence terms for all flexible use licences, regardless of when they are converted from fixed to flexible use, will terminate on the same date as licences issued through the auction process.

80. TekSavvy agrees with the proposed 20-year term and has no objection to the proposed wording of the conditions of licence.

Q13—ISED is seeking comments on the proposals on the condition of licence related to transferability and divisibility, and the proposed wording above.

81. TekSavvy currently has no objections to ISED’s proposal regarding the condition of licence related to transferability and divisibility but notes that the Department has proposed

apparent restrictions to flexible use by allowing licence owners to determine whether spectrum is used for mobile or fixed applications and consequently, licensees would face different licence conditions with each use.

82. TekSavvy is in favor of licence conditions that facilitate the use of spectrum by smaller FWA operators, However, TekSavvy believes, in light of potential upcoming changes to the Canadian Regulatory Framework - in particular as it comes to mobile wholesale access, that the Department needs to introduce a smooth and flexible transition process to allow service providers to transition spectrum from fixed to mobile use, in order to ensure they do not automatically fall in breach of their licence conditions as they migrate to mobility services.

Q14—ISED is seeking comments on the proposed deployment condition of licence as stated above as well as on the proposed levels of deployment.

83. TekSavvy agrees with ISED with the principle of proposed deployment conditions, as they should facilitate the deployment of FWA service in rural Canada and help ensure that spectrum acquired by urban service providers for 5G deployments will be put to use quickly to the benefit of the Canadian population. More stringent deployment conditions for mobile use versus fixed use should also help smaller service providers to access the resource as it might deter larger mobile service provider from hoarding spectrum in rural areas.
84. TekSavvy notes that the Department did not address the case where spectrum is used for both mobile and fixed access simultaneously in a given service area. Technology evolution and migration toward 5G will undoubtedly lead to situations where spectrum is used for both fixed and mobile applications in the same area or on the same site. Not all 5G capabilities and application are known to this day.
85. TekSavvy is also concerned that incumbent operators might claim to acquire spectrum for fixed use to limit their capital investment or transmit “fixed service” without making the service readily available to the population until such time they are ready deploy mobile services.
86. TekSavvy submits that deployment conditions should be paired with a real service obligation to ensure that service providers with strong financial capabilities are not tempted to light up a few towers per service area to be deemed having meet their deployment conditions has it has been the case in recent history. The Department states, in paragraph 27 of annex H, under General Deployment Requirements, that “*Licensees will be required to demonstrate to the Minister of Innovation, Science and Economic Development that **this spectrum has been put to use to actively provide service, as specified in annex F, within 5, 10 and 20 years of the initial licence issuance date (TekSavvy emphasis).*** TekSavvy notes however, that annex F contains a table showing percentages per service area of the population that should be covered 5, 10 and 20 years after licences have been awarded, but does not contain any definition or reference to the terms “*put to use to actively provide service*”.

Q15—ISED is seeking comments on the proposed conditions of licence outlined in annex H that would apply to flexible use licences.

87. TekSavvy agrees in general with the licence conditions defined in annex H. However, as stated in its response to Q1B and Q14 above, TekSavvy believes that real service obligations should be included in the licence conditions along with corresponding information on key service parameters, in order to ensure licence owners are actively using the spectrum to provide service to the Canadian population, instead of deploying a few towers per service area and claim to meet their deployment requirements. The key information would include subscriber numbers, revenues, proof of marketing efforts and proof of service availability. In the case service providers deem part of the information required too sensitive, they could file in confidence to ISED, as long as the department has the possibility of validating the information.

Q16A—ISED is seeking comments on its proposal to amend all FWA conditions of licence based on the proposed conditions of licence in annex I.

88. TekSavvy generally agrees with ISED's proposal to amend all FWA conditions of licence. This will facilitate the efficient use of the spectrum resource. TekSavvy however submits that these amendments should only be applied until the transition process to flexible use of the 3500 MHz spectrum is successful or denied, at which date the licence conditions of the 3500 MHz spectrum being auctioned (defined in annex H), should apply to successful transition applicants.

Q16B—ISED is seeking comments on its proposal to apply this amendment on June 5, 2019, plus one year—June 5, 2020.

89. Based on TekSavvy's response to Q16A above, TekSavvy sees no reasons why ISED should delay the application of this amendment by one year but has no objection to the delay.

Q17—ISED is seeking comments on the proposed opening bids as presented in annex D.

90. TekSavvy submits that the opening bid or reserve price as presented in annex D reflects the use of Tier 4 licensing areas for spectrum which are too expensive for smaller operators to acquire, deploy and operate in.

Q18—ISED is seeking comments on the proposed eligibility points for spectrum licences in the 3500 MHz as outlined in annex D, and pre-auction deposits as outlined above.

91. TekSavvy has no objections to ISED's proposed eligibility points for spectrum licences as presented in annex D.

Q19—ISED is seeking comments on the proposed renewal process for spectrum licences in the 3500 MHz band.

92. TekSavvy has no objections to ISED's proposed renewal process for spectrum licenses in the 3500 MHz band.