

**BEFORE INNOVATION, SCIENCE  
AND ECONOMIC DEVELOPMENT CANADA**

**IN THE MATTER OF**

**CANADA GAZETTE, PART 1, NOTICE No. SLPB-001-17  
CONSULTATION ON RELEASING  
MILLIMETRE WAVE SPECTRUM TO SUPPORT 5G**

**REPLY COMMENTS OF MOBILEXCHANGE SPECTRUM INC.**

**10 NOVEMBER 2017**

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## **1.0 INTRODUCTION**

1. Mobilexchange Spectrum Inc. (“Mobilexchange”) hereby submits its reply comments to the positions and arguments advanced in the interventions filed by other participants to the present consultation.
2. Mobilexchange is submitting these reply comments in the light of comments submitted by a number of interveners asking Innovation, Science and Economic Development Canada (“ISED”) to expand this proceeding to also include spectrum in the 24 GHz band.
3. Mobilexchange is responding, therefore, in its capacity as an owner of Local Multipoint Distribution Service (“LMDS”) “A” block spectrum licences for certain geographic areas in the 24 GHz band that were auctioned in 1999.
4. In addition, on October 26, 2017 the FCC issued a second report and order GN Docket No. 14-177 <sup>(1)</sup> which, once approved on November 16, 2017, will make available in the U.S. an additional 1700 MHz of high band spectrum for flexible terrestrial wireless use in the 24 GHz and 47 GHz bands (in addition to the previous allocation in the 28 GHz, 37 GHz, 39 GHz, 47 GHz and 64 GHz bands).
5. ISED traditionally developed spectrum deployment policies that are compatible and harmonized with those of the U.S. Mobilexchange, therefore, expects that the LMDS 24 GHz band auctioned in 1999 will be treated under a similar policy to what the FCC is contemplating in the Report and Order. <sup>(1)</sup>

## **2.0 MOBILEEXCHANGE’S POSITION**

6. We strongly support ISED’s intent and objectives to develop a policy that provides additional spectrum resources and convert existing fixed spectrum to flexible use, critically needed by the industry. Mobilexchange urges ISED to act as early as possible to support 5G technology deployment on existing mmWave infrastructure. This will advance Canada’s position as a leader in wireless technologies and will enable Canadians to use earlier 5G technologies which are greatly needed in the digital economy.
7. To enable these objectives it would be necessary to provide the opportunity to existing LMDS licensees to expand their current services to include flexible mobile use to meet the demand for 5G fast mobile broadband, with very low-latency communication services. Early introduction of 5G technologies will have a decisive role in unleashing the full potential of the internet of things (IOT) for consumers and businesses alike.

FCC GN Docket No. 14-177

(1) [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db1026/DOC-347449A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db1026/DOC-347449A1.pdf)

8. Companies like Qualcomm have already unveiled 5G prototypes for smartphone with their X50 modem:

*“Qualcomm has completed the first test of the X50 modem in a smartphone. In the test, the device hit the speed of 1 Gbps (gigabits per second) on the 28 gigahertz mm (millimeter) wave frequency band.”<sup>(2)</sup>*

Additional technology in other bands such as 37-40 GHz where existing operations currently are available for trials can be developed on existing mmWave licences and offer great opportunities for these carriers (such as TeraGo Networks) to lead in the deployment of innovative flexible use on their networks.

9. A strong incentive to investments and deployments in existing mmWave band networks for flexible use will be created with a policy that supports existing LMDS licensees both in 38 GHz and 24 GHz conversion, as soon as possible, to flexible use, with the emphasis on assuring licence renewal beyond 2025, according to compliance criteria of the licences.

10. In light of ISED’s commitment to support competition in the provision of high quality and innovative wireless services to Canadians, the original intent of the 1999 LMDS spectrum auction should be maintained to encourage new carriers and limit allocations to incumbents who already are licenced to over 95% of all wireless spectrum assigned.

**It is imperative to preserve this intent and to allow existing LMDS licensees to exercise the full extent of their licence rights including mobile rights for geographic areas and bands in which they currently hold licences.**

11. Canadian governments have attempted since 1995 to promote competition in the mobile wireless industry. As a result of the incumbents’ (Cablecos and Telcos) market power and access infrastructure domination, almost all new entrants who obtained spectrum in auctions have failed and merged via a buyout into the dominate networks.

12. One of the most critical aspects of sustainability in the mobile wireless industry, in addition to spectrum, is sufficient network build out and connectivity to access infrastructure. Many new entrants over the last 20 years who obtained mobile spectrum in many areas of Canada have failed to deploy high quality infrastructures. This led to their eventual failure and take over.

13. This time there is an opportunity to change this bleak scenario, as LMDS carriers have both spectrum and infrastructure. The policy for diversity of fixed and mobile in mmWave represents a unique opportunity for LMDS fixed mmWave operators who have already invested and built a core network infrastructure, to provide a platform for integration into 5G mobile services for their existing and future customers.

14. Each and every site of today’s mmWave fixed networks can be developed as a hub for small cells 5G deployments. The existing operators in 38 GHz and 24 GHz have, therefore, a unique opportunity to build on their core networks where the spectrum has

<sup>(2)</sup> [Where Qualcomm Stands in the 5G Race](http://marketrealist.com/2017/11/qualcomm-stands-5g-race/)  
<http://marketrealist.com/2017/11/qualcomm-stands-5g-race/>

already been deployed and major investments undertaken. Mobilexchange sees this development as a remarkable opening to allow sustainability in the competitive side of the market. It will create true facilities-based competition in the evolving mobile market in Canada.

It is inconceivable that ISED will set a precedent of reclaiming or modifying area spectrum licences of holders who are meeting their conditions of licence. Such an action would certainly set a devastating precedent. No assurances can then be had that operators can rely on full licence renewal, once they have heavily invested and complied with all licenced conditions.

15. We urge ISED to incorporate into this policy the amendments of LMDS licences to flexible use as soon as possible, as well as to provide assurances of flexible licence term extensions beyond 2025.

### **3.0 GENERAL REPLY COMMENTS**

16. The majority of the parties filing comments agree with the policy objectives of converting mmWave spectrum in 28 GHz, 37-40 GHz and 64-71 GHz frequency bands to “flexible use”.

17. A number of diverse opinions have been filed regarding the treatment of these spectrum bands for existing LMDS uses, new allocations and First Come First Serve (“FCFS”) allocations for both existing licences and new spectrum.

### **4.0 REPLY COMMENTS WITH RESPECT TO INDIVIDUAL INTERVENERS**

#### **18. Bell Mobility Inc. (“Bell”)**

Mobilexchange strongly supports Bell’s third option “*permitting existing Tier 3 licence-holders to deploy 5G on their existing licences*”. We would further recommend that such treatment of mmWave incumbent licensees currently holding Tier 3 licences should incorporate provisions for high expectations of renewal after their ten-year term; significant additional investments into growing the LMDS infrastructure for new 5G innovative services will have been made.

#### **19. Rogers Communications (“Rogers”)**

Mobilexchange strongly opposes Rogers’ comments advocating reduction by 1/3 of the current 38 GHz LMDS licence holders. Many LMDS licences obtained following the 1999 auction have had a very hard time deploying fixed services in light of the tremendous market power and access infrastructure domination that the ex-monopolies, cable companies and telephone companies, had and used in order to prevent the establishment of sustainable competitive infrastructures. Only a few were able to build infrastructure and compete in the marketplace. The majority of the 38 GHz LMDS licences were, therefore, not renewed in 2015. For those who prevailed and will now be able to expand their networks to include 5G mobile services, it would be an unnecessary hardship to lose a portion of their spectrum and have to reconfigure their networks.

As the FCC has recommended for the U.S., it would serve the market better if these LMDS networks over the entire licenced spectrum were encouraged to experiment first and deploy soon afterwards new 5G services in addition to their existing fixed services. Such deployment should occur over their entire area of operations and with their full licenced spectrum allocation.

## 20. **Sask Tel (“Sask”)**

Mobilexchange strongly opposes the comments of Sask advocating adoption of Option 1 as modified. ISED’s intent and objectives in releasing mmWave spectrum in support of 5G will be compromised if such a policy is adopted. The intent of “*presents a key opportunity to support competition and the provision of high quality innovation wireless services to Canadians*”<sup>(3)</sup> will be curtailed by penalizing existing LMDS licence holders, through removal of some of their spectrum at renewal and through modifying their geographic areas. Such policy will discourage existing LMDS infrastructure developers from investing in 5G upgrades to the full extent possible on their existing spectrum holdings.

## 21. **Shaw Communication Inc. (“Shaw”)**

Mobilexchange strongly opposes Shaw’s opinion on promoting competition and innovations by dramatically altering LMDS operations on licence renewal by eliminating geographic licencing. In relation to Shaw’s comments on harmonizing with the United States we refer ISED to FCC 15-138, as follows:

***95. We propose to permit existing LMDS and 39 GHz licensees to exercise the full extent of these rights – including mobile rights – for geographic areas and bands in which they currently hold licenses...”***<sup>(4)</sup>

## 22. **TELUS Communications Company (“TELUS”)**

Mobilexchange strongly opposes TELUS comments, particularly their assertion that the use of 38 GHz mmWave LMDS spectrum provides “*relatively inefficient services that can be better served by other bands*”. Companies like TeraGo invested in the 1999 LMDS auction and built their businesses under extreme difficulties over the years, primarily caused by the major wireless carrier market power road blocks. These new entrants’ competitive carriers should not be forced to give up any of their spectrum so that it can be auctioned, as in the past, to the major carriers (TELUS, Rogers and Bell).

As we argued throughout this reply to comments the perseverance of companies like TeraGo in deploying their LMDS spectrum represents a unique opportunity for Canada to achieve international competitive progress.

(3) [ISED Consultation on Releasing Millimetre Wave Spectrum to Support 5G SLPB-001-17](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/slpb-001-17-5G.pdf/$file/slpb-001-17-5G.pdf)  
[https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/slpb-001-17-5G.pdf/\\$file/slpb-001-17-5G.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/slpb-001-17-5G.pdf/$file/slpb-001-17-5G.pdf)

(4) [Federal Communications Commission FCC 15-138](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-138A1.pdf)  
[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-15-138A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-138A1.pdf)

These existing LMDS networks, both rural and urban, represent an extremely important platform for both technical and marketing developments of core LMDS fixed network to a 5G flexible use network. Any changes regarding spectrum quantity or geographic area of operation on renewal (2025) will be destructive to their operation and a disincentive to any further growth.

23. The adoption of option 2 is technically a great disincentive to the use of the LMDS existing network as core network for 5G deployment.

Like any other existing mobile cellular licences, which are all “area” licences, these LMDS flexible use licences must be area licences. Imagine if every cell, in particular the 5G upcoming Multiple Input Multiple Output technology (“MIMO”) and small cells, were licenced as site specific. This approach, which the FCC has rightly rejected, is not workable.

## **5.0 CONCLUSION**

24. It is critical that the ISED facilitate access for the Canadian digital economy to sufficient infrastructure and spectrum that can meet growing demand for capacity and technological advances requiring very high capacity, speed and low-latency. (see November 9, 2017 CRTC Communication Monitoring Report) <sup>(5)</sup>

25. We urge ISED to proceed with the conversion of the entire LMDS bands that were auctioned in 1999 and renewed in 2015 to flexible use as soon as possible. The policy should also include a provision that will assure LMDS flexible licences holders a reasonable expectation for licence renewals in 2025.

26. Mobilexchange fully supports ISED’s approach of harmonizing spectrum use with other countries, particularly the U.S., to the greatest extent possible. In general, greater harmonization fosters innovation, investment, and faster deployment.

27. Delays in allowing existing LMDS 28 GHz and 24 GHz operators to deploy flexible use 5G services on their existing platforms will impede availability of 5G mmWave mobile services to the Canadian market by many months and years-post mmWave Spectrum auctions and subsequent build out of new networks.

Mobilexchange thanks ISED for the opportunity to provide information on these very important topics.

Sincerely,

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(5) [2017 Communications Monitoring Report](http://crtc.gc.ca/eng/publications/reports/policymonitoring/2017/index.htm)  
<http://crtc.gc.ca/eng/publications/reports/policymonitoring/2017/index.htm>