

# SaskTel Reply Comments:

Gazette Notice SLPB-006-17

Consultation on the Spectrum Outlook  
2018 to 2022

March 16, 2018

## INTRODUCTION

1. The following represent Saskatchewan Telecommunications' (SaskTel's, or "the Company's") Reply Comments in response to public submissions regarding SLPB-006-17, *Consultation on the Spectrum Outlook 2018 to 2022* ("the Consultation").
2. As noted in our original comments, SaskTel has participated in the creation of the Radio Advisory Board of Canada (RABC) response to the Consultation. SaskTel neglected to mention that we also participated in the creation of the Canadian Wireless Telecommunications Association (CWTA) submission in response to the Consultation.
3. SaskTel's Reply Comments on this Consultation are meant to clarify our position on certain questions and issues raised by the Department, as well as respond to certain comments made by other parties.
4. Failure to address any particular issue or item, or the Comments made by any other party, should not be construed as agreement with those Comments where such agreement is not in the interests of SaskTel.

## SASKTEL REPLY COMMENTS TO THE CONSULTATION

5. SaskTel has reviewed the comments submitted in response to the Consultation, as posted on the Innovation, Science and Economic Development Canada (ISED) website.<sup>1</sup> Comments were submitted by a number of government agencies (Cape Breton Regional Municipality, Municipality of the County of Antigonish, Municipality of the County of Colchester, Municipality of the County of Richmond, and the Municipality of the County of Victoria), a number of Companies (Bell Mobility, CBC Radio-Canada, Cisco, Cogeco Communications, Corridor Communications Inc., Ericsson Canada, Facebook, Fontur International, Given Imaging, Huawei Canada, Hughes Canada, Intelsat, Iridium Canada, Medtronic, Microsoft, Nokia, Qualcomm, Québecor Média, Rogers, SaskTel, Seaside Wireless Communications, SES, Shaw, Sogetel Mobilité, Sprint, Telesat Canada, TELRAD Networks, TELUS, TeraGo, TerreStar, and Xplornet), a number of Associations (British Columbia Broadband

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<sup>1</sup> URL: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11377.html>

Association, Canadian Cable Systems Alliance / Independent Telecommunications Providers Association, Canadian Electricity Association, Canadian Wireless Telecommunications Association, CanWISP, Dynamic Spectrum Alliance, Eastern Ontario Wardens' Caucus / Eastern Ontario Regional Network, Fire Service Association of Nova Scotia, Global Mobile Suppliers Association, Radio Advisory Board of Canada, and the Wi-Fi Alliance), as well as two individuals (Dr. Gregory Taylor, and Mr. Michael B. McNally).

6. The submitted comments provided an overview of a wireless telecommunications industry that is on the verge of a transformation. Strong growth in demand was noted by all parties for broadband data services, which in turn is driving demand for more satellite-based services and spectrum, additional backhaul spectrum, and additional licence exempt spectrum to meet these growing demands.
7. Rapid evolution to 5G network technologies and services is also very apparent. Next generation 5G networks will be deployed to meet the very high demands predicted for new services requiring Enhanced Mobile Broadband (data speeds up to 10 GB/s), Massive Machine to Machine communications, and Ultra-Reliable Low Latency networks. The 5G network technologies and architectures under development will meet these needs, but more commercial mobile spectrum will surely be required.

### **Spectrum Ranges for 5G**

8. A strong theme from many of the commenters is that additional commercial mobile spectrum will be required not only in low band (less than 1 GHz), but also mid band and high band (a.k.a. mmWave bands) as well. Low band spectrum will be required for wider 5G network coverage, particularly in rural areas. Mid band spectrum will be more suited for urban 5G deployments, and will likely be the first 5G bands to be deployed. The mmWave bands provide very high capacity, but with the penalty of limited propagation distances.
9. SaskTel would like to emphasize again to the Department the importance of making available all three categories of spectrum for the success of 5G deployments, as operators will require spectrum in all three categories to effectively serve consumers in both urban and rural areas in all regions of the country.

**3500 MHz**

10. Another very strong theme emerged from those commenters providing input into specific frequency bands for commercial mobile was the extreme urgency to initiate studies and consultations on the 3400-4200 MHz band (or portions thereof) with the goal of releasing this spectrum for commercial mobile services as soon as possible. This band is rapidly being developed globally for 5G mobile services, and almost all commenters indicated this band was of the highest priority for release.
11. SaskTel would like to emphasize to the Department the urgency and importance of releasing this band for commercial mobile services. It is expected to be one of the first, if not the first, 5G band to be deployed.
12. SaskTel also recognizes the importance and large number of incumbent C band satellite users, as well as other incumbent users in the band such as Fixed Wireless Access (FWA) systems.
13. SaskTel recommends that the entire 3400-4200 MHz band be included in the Department's studies and planning efforts. Studies of this band must be completed expeditiously in order to create a transition plan, and/or a sharing plan to allow for the introduction of commercial mobile services in this band. SaskTel also understands that these planning studies and consultations will take some time to complete, hence the need for these studies to be expedited.

**Potential Frequency Bands for Future Release**

14. In the table below SaskTel highlights potential frequency bands for future release as described in the Consultation. The table gives a relative priority ranking for each band based on the relative importance of the spectrum and the relative need for timely release of the spectrum.

Frequency Band	Service	Priority Level	Rationale
600 MHz (614-698 MHz)	Commercial Mobile	2	US FCC has already auctioned spectrum, deployments beginning.
800 MHz (814-824 and 859-869 MHz)	Commercial Mobile	2	Already deployed in US, adjacent to existing 3GPP band 5. Studies and transition planning needs to be expedited.
900 MHz (896-960 MHz)	Commercial Mobile	3	Ecosystem uncertain at this time.
L Band (1427-1518 MHz)	Commercial Mobile	3	Potential future band for mobile.
AWS-2	Commercial Mobile	4	Ecosystem uncertain at this time.
AWS-3 (1695-1710 MHz unpaired)	Commercial Mobile	4	Ecosystem uncertain at this time.
3500 MHz (3400-4200 MHz)	Commercial Mobile	1	Global 5G band, likely to be first 5G band in mid band spectrum.
24.25-27.5 GHz	Commercial Mobile	4	Wait for WRC-19 decisions.
28 GHz (27.5-28.35 GHz)	Commercial Mobile	2	US FCC is moving forward with this band.
38 GHz (37-40 GHz)	Commercial Mobile	2	US FCC is moving forward with this band.
64-71 GHz	Licence Exempt	3	

15. For the frequency bands not listed above but shown in Tables 6 and 7 of the Consultation, or discussed elsewhere in the Consultation, SaskTel sees these bands as a low priority at this time. SaskTel either sees these bands as being less

important, or there is currently uncertainty in the direction being taken either regionally or globally with these bands. In the case of uncertainty, the Department should continue to monitor US FCC and ITU developments in these bands.

16. SaskTel would recommend that the Department wait for decisions to be made, or at the least a very clear direction having been set, by the US FCC or the ITU (e.g. WRC-19) before putting efforts into releasing any spectrum band.

## **CONCLUSION**

17. SaskTel has reviewed the Department's Spectrum Outlook in the Consultation, including assessments of spectrum bands and candidate spectrum bands for future release. In our reply comments we have highlighted some issues of particular importance that have emerged from this review, as well as providing some clarity to our original comments.
18. The urgent need to immediately initiate studies and consultations on the 3400-4200 MHz band, and releasing this spectrum for commercial mobile services as soon as possible, was emphatically stated by many of the commenters.
19. SaskTel has also provided a table to clarify and highlight the frequency bands of top priority to SaskTel for future release.
20. SaskTel thanks the Department for the opportunity to provide input into these crucial matters. It is our hope that our reply comments will provide the Department with a fuller view of the issues identified in the Consultation, and provide input and guidance for the Department's decisions and plans regarding future spectrum bands for release.