

Canada Gazette, Part I, June 12, 2010, Notice No. DGSO-001-10 – Decisions on the Transition to Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan,

As amended by

Canada Gazette, Part 1, July 3, 2010, Notice No. SMSE-013-10 – Extension to the Comment Period for Part B of the document: Decisions on the Transition to the Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan

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1.0 INTRODUCTION

1. SSI Micro Ltd. (“SSI”) is pleased to provide these comments in response to the consultation initiated by Industry Canada (the “Department”) in *Canada Gazette*, Part I Notice Nos. DGSO-001-10¹ and SMSE-013-10² and the accompanying Public Consultation Paper³ (collectively, the “*Consultation Paper*”).

2. In this submission, SSI is providing its comments with respect to those issues raised in the *Consultation Paper* that bear on its operations.

2.0 CONSULTATION ON BAND PLAN

2.1 Background on SSI’s Operations

3. Before responding to the specific questions posed in the *Consultation Paper*, SSI wishes to provide relevant background information relating to its operations in order to set the context for its responses.

4. SSI currently holds two MCS licences in the NWT and Nunavut that it employs to bring Internet service to 54 of the most remote communities in Canada. Conversion to BRS will require SSI to return some of its MCS spectrum to the Department. In addition, whatever band plan is adopted by the Department for BRS in the interest of international harmonization will result in channels that are narrower than the 6 MHz MCS channels presently employed by SSI. These two factors taken together will significantly reduce the operational efficiency of SSI’s network. For example, a narrower channel width will

¹ *Decisions on the Transition to Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan*, June 4, 2010.

² *Extension to the Comment Period for Part B of the document: Decisions on the Transition to the Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan*, June 30, 2010

³ Industry Canada, Spectrum Management and Telecommunications, DGSO-001-10, *Decisions on the Transition to Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan*, June 2010.

require the addition of approximately one more base station for every 12 base stations in use in order to maintain current capacity. The loss of returned spectrum associated with conversion to BRS will translate directly into reduced throughput.

5. In the case of Yellowknife, SSI's network is already employing the entire MCS spectrum allocated to SSI. Therefore, conversion to BRS will result in degraded service to customers with a consequential loss of customers. Due to the small geographic area of Yellowknife, SSI's ability to alleviate the situation through the reuse of spectrum is limited and may not be practicable at all. Deploying new infrastructure to address the problem is not financially feasible.

6. In the case of three other locations, namely, Iqaluit, Rankin Inlet and Cambridge Bay, SSI would be able to accommodate the proposed loss of spectrum and narrower channels associated with BRS in the short-term, but these constraints will severely limit SSI's ability to add customers and provide new services in these locations going forward. In addition, smaller channel sizes associated with BRS may also require the addition of base stations in order to maintain the capacity of the SSI network in these three locations in the near term and such an upgrade is prohibitively expensive due to the remote locations of these communities.

7. The smaller channel width associated with BRS may also require the installation of additional base stations in other NWT and Nunavut communities served by SSI in order for the existing capacity of the SSI network to be maintained. As discussed above, such an upgrade is prohibitively expensive due to the remote locations of these communities.

8. Finally, if a BRS band plan would require SSI to operate in frequency division duplex ("FDD") rather than time division duplex ("TDD") mode SSI's operations would be crippled, since such a change would require a complete replacement of the equipment that SSI employs to provide its services. Such a change is not economically feasible for SSI, given the characteristics of the markets SSI serves, already discussed above.

9. For all of these reasons, SSI urges the Department to make its band plan determinations sufficiently flexible to accommodate the unique constraints faced by SSI in its operating territory.

2.2 Responses to the Questions Posed in the Consultation Paper on the Frequency Band Plan

Question 8.1: The Department seeks comment on its proposal to adopt the Option 2 model of the band plan for BRS in the band 2500-2690 MHz.

10. SSI concurs with this proposal. As noted by the Department, all of the incumbents involved in the Stakeholder Proposal Development (“SPD”) process for a BRS band plan endorse Option 2. This is not surprising given the advantages of option 2 described in the *Consultation Paper*, the most important of which are: (1) permitting global harmonization which would enable economies of scale for equipment and international roaming; (2) facilitating equipment compatibility with other mobile bands licensed in Canada on a paired basis; and (3) accessing a wider range of services and applications which would be developed on a global basis.

Question 8.2: The Department also requests comment on whether the operation of TDD systems should be permitted in the FDD portion, and if so, under what conditions.

11. SSI recommends that the operation of TDD systems should be permitted, since SSI’s operations are all TDD-based and forced conversion to FDD will be disruptive to SSI’s ability to provide service. For the reasons set out in section 2.1 of this submission, it is not economical for SSI to replace its TDD equipment with FDD equipment.

12. Since SSI does not intend to install FDD equipment for a considerable period of time, SSI does not anticipate having to manage the coexistence of its own FDD/TDD systems. Any interference will come from having to co-exist with other operators, should such operators decide to enter the market. In the case of this relatively low probability event, 5 MHz guard bands may be necessary in most cases. In some cases, other less intrusive technical solutions may be possible and these should be investigated and implemented where feasible. Fortunately, given SSI's licensed territory which is not adjacent to any U.S. border areas, harmonization with the U.S. band plan will not be necessary. SSI should be allowed to take advantage of the increased flexibility that not having to deal with border harmonization issues provides when it comes to the use of its BRS spectrum.

Question 8.3: The Department is seeking comment on whether the guard band blocks of 2570-2575 MHz and 2615-2620 MHz should be held in reserve by the Department or whether they should form part of the unpaired block (TDD).

13. In SSI's view the two guard band blocks should form part of the unpaired block. This would give existing operators the flexibility to maximize the use of the unpaired spectrum, which in SSI's case is critical as described above. Accordingly, this approach would enable SSI to use its BRS spectrum with maximum efficiency, at least until technical conditions are such (e.g., as a result of the use of adjacent spectrum by another operator, which may take some time) that the use of a guard band is actually required.

Question 8.4: If the guard bands are held in reserve, should they be considered for use by licence-exempt wireless systems.

14. As noted above, SSI does not believe that the guard bands should be held in reserve. However, if this does occur, they should not be used for any other purpose as this will only increase the likelihood of interference.

2.3 Responses to the Questions Posed in the Consultation Paper on the Mapping of Incumbents into the Option 2 Band Plan

Question 9.1: The Department seeks comment on its proposal to mandate the exchange of 20 MHz of the MDS spectrum held by Industry Canada for 20 MHz of the MCS spectrum licensed to the MCS incumbent as indicated in Figure 5 of the *Consultation Paper*.

15. The exchange of spectrum should not be mandated as described in question 9.1 in order to provide operators maximum flexibility in the use of BRS spectrum. This approach will be crucial for SSI given the difficulties and costs associated with replacing wireless equipment in the Northwest Territories and Nunavut.

Question 9.2: The Department seeks comment on whether government intervention is required where there are different MCS and MDS incumbents in the same geographic area.

16. Since SSI does not face this situation, SSI has not developed a response to this question.

Question 9.2: The Department seeks comment on the challenges faced by more than one operator in making efficient use of the TDD block. Should the Department rely on market forces or should it develop specific technical rules to facilitate coexistence between two or more operators and alignment with the Option 2 Band Plan?

17. Although SSI does not currently face this situation, that could change at some point in the future. SSI is of the view that reliance on market forces should be sufficient to enable coexistence between two or more operators and alignment with the Option 2 band plan. There is no need for *a priori* regulation. Technical rules can be applied based on

existing standards relatively quickly in the future to address any limited situation in which operators are not be able to resolve this issue among them.

Question 9.2: The Department seeks comment on its proposal to mandate the exchange of 20 MHz of the MDS spectrum for 20 MHz of the MCS spectrum as indicated in Figure 10 of the *Consultation Paper*.

18. This question was posed by the Department to address the specific allocation of MCS and MDS spectrum that exists in Manitoba. Since SSI does not face this situation, SSI has not developed a response to this question.

Question 9.3: The Department is seeking comments on the timing aspects related to the physical migration of the existing network facilities to the new band plan, including the timing required for the completion of all transactions regarding spectrum exchanges.

19. Due to the obstacles it faces as described in section 2.1 of this submission, SSI requests the maximum time available for migration of existing network facilities to the new band plan. Ideally, the migration should not have to be completed before March 31, 2021 in order to avoid disruption to SSI's network and customers. Absent BRS, that date would be the end of SSI's MCS license renewal term.

3.0 CONCLUSION

20. As noted in section 2.1 above, SSI's operating territory is challenging in its nature, size and low population density resulting in very high costs of operation. Accordingly, SSI urges the Department to be mindful of the constraints faced by SSI when the Department implements a BRS band plan, and especially when it determines the migration path and time period for migration to the new band plan.

21. An impractical plan, migration path or time frame for the migration to the new band plan could cripple SSI's operations, which will eliminate the only source of high-speed Internet access in approximately eighty per cent (80%) of the communities located in the Northwest Territories and Nunavut.

22. In addition to shutting down high-speed Internet in the majority of communities, such a catastrophic impact on SSI would also severely inhibit the only facilities-based competition to corresponding services provided by Northwestel Inc. in the remaining communities.

23. Such an outcome would reduce consumer choice significantly to the detriment of the productivity and competitiveness of the Canadian north.

24. For all of these reasons, SSI urges the Department to adopt the proposals contained in this submission, at least in the Northwest Territories and Nunavut.