SONY

Sony Electronics Inc.

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Innovation, Science and Economic Development Canada
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Re: Consultation on the Technical and Policy Framework for Licence-Exempt Use in the 6 GHz Band,
Canada Gazette Part I, Vol. 154, No. 49
Notice No. SMSE-014-20

To Whom it May Concern:

Sony Electronics Inc. ("Sony")[1] respectfully submits the following response to the above-referenced consultation from Innovation, Science and Economic Development Canada ("ISED") on licence-exempt use in the 5925-7125 MHz frequency band (the "6 GHz Band").[2] Sony strongly supports this initiative, and encourages ISED to move quickly to complete the consultation and issue final rules for the use of these frequencies. In response to the specific questions posed in the Consultation, Sony provides the following:

Q1: ISED is seeking comments on the timelines for the availability of:

c. AFC

[1] Sony Electronics Inc. is a North American research, development, marketing, and sales subsidiary of Sony Corporation. Sony entities design, manufacture, and sell mobile products throughout the world, and have conducted extensive research and testing of next-generation wireless services. Sony Corporation has received an authorization from the U.S. Federal Communications Commission to act as a Spectrum Access Service provider for wireless services operating in the 3.5 GHz band.

[2] ISED, SMSE-014-20: *Consultation on the Technical and Policy Framework for Licence-Exempt Use in the 6 GHz Band* ("Consultation"); http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11643.html.

The availability of Automated Frequency Coordination ("AFC") systems in Canada will depend on how closely the Canadian 6 GHz Band rules align with those in the U.S.[3] Sony estimates that if ISED adopts 6 GHz Band rules that are similar to those in the U.S., AFC systems will be available in the Canadian market 6 months after launch in the U.S.

Q4: ISED is seeking comments on the proposed rules for standard-power RLANs:

a. indoor and outdoor operation would be permitted
b. RLAN access points would only be permitted to operate under the control of an AFC system in the 5925-6875 MHz frequency range
c. maximum permitted e.i.r.p. would be 36 dBm
d. maximum permitted power spectral density would be limited to 23 dBm/MHz use of a vertical elevation mask, with a maximum e.i.r.p. of 125 mW at elevation angles above 30 degrees over the horizon, would be required

Sony supports these proposed rules because they align closely with the equivalent rules in the U.S.

Q5: ISED is seeking comments on allowing access to the additional 100 MHz of spectrum in the 6425-6525 MHz sub-band for standard-power operation.

Sony supports the proposal to allow access to the additional 100 MHz of spectrum in the 6425-6525 MHz sub-band for standard-power operation. This proposal would have no impact on the performance or complexity of an AFC system, because the incumbent licensed services in these frequencies are the same as those that operate in the 5925-6425 MHz sub-band. AFC systems should be able to protect both sub-bands by applying consistent incumbent protection criteria and methodologies.

Q6: ISED is seeking comments on the equipment availability of standard-power RLANs in the 6425-6525 MHz band and the impact on the development of AFC systems for Canada due to a potential lack of international harmonization for that sub-band.

[3] *See* 47 C.F.R. §§ 15.401-15.407.

Sony believes that allowing access to the additional 100 MHz of spectrum in the 6425-6525 MHz sub-band for standard-power operation, and the subsequent lack of harmonization with the U.S. frequency range, will have no impact on the development of AFC systems for Canada. As stated above, AFC systems should be able to protect both sub-bands by applying consistent incumbent protection criteria and methodologies. An AFC system would require only minor technical changes in order to expand the frequencies for standard-power operations by an additional 100 MHz.

Q9: ISED is seeking comments on potential business models for AFC administrators to operate their AFC systems in Canada.

Sony believes that AFC system operators in Canada will adopt business models that are similar to those adopted in the U.S. market.

Q10: ISED is seeking comments on its proposal to permit the approval of multiple, third party AFC systems, taking into account the potential for the development of a sustainable market for AFC systems in Canada.

Sony supports the ISED's proposal to permit the approval of multiple, third party AFC systems. Sony believes that coordination among AFC systems will not be necessary.

Q11: ISED is seeking comments on potential exit strategies if the AFC administrator decides to cease operation in Canada.

Sony recommends ISED to adopt the same procedures for the termination of an AFC system that have been adopted in the U.S. Specifically, if an AFC system ceases operation, it must: 1) provide at least 30 days' advance written notice to ISED; and 2) transfer all registration data to another AFC system operator.

Q13: ISED is seeking comments on the implementation considerations for the operation of an AFC system, specifically:

a. information required from licensed users
b. interference protection criteria for computation of exclusion zones

c. information required from standard-power APs
d. frequency of AFC update of licensee information security and privacy requirements

Sony supports the AFC implementation requirements that ISED has proposed in the Consultation because they are well-harmonized with the equivalent FCC requirements.

Q14: ISED is seeking comments on any additional considerations, limits or general concerns that should be taken into account in setting detailed standards and procedures for AFC operation.

Sony recommends that ISED adopt the following four recommendations, which would improve harmonization with the U.S. 6 GHz Band rules and would facilitate Canadian AFC development and deployment.

First, ISED should provide an API to enable the automatic retrieval of data from the Spectrum Management System database.

Second, ISED should adopt the same propagation models that have been adopted in the U.S.: 1) a free space path-loss model for any separation distance of less than or equal to 30 meters; 2) the Wireless World Initiative New Radio phase II (WINNER II) model for separation distances greater than 30 meters but less than or equal to one kilometer; and 3) an Irregular Terrain Model combined with the appropriate clutter model for separation distances greater than one kilometer. Propagation models should also consider indoor clutter loss.

Third, to address privacy and data security concerns, ISED should specify that AFC systems may only use access point registration data and other operational information for interference protection purposes.

Fourth, ISED should require that standard-power access points provide at least the following information to the AFC system during registration: geographic coordinates (latitude and longitude referenced to North American Datum 1983 (NAD 83)); antenna height above ground level; ISED certification number; and the manufacturer's unique serial number.

Q15: ISED is seeking comments on its proposal to require AFC systems to protect the following types of licensed stations from standard-power APs:

c. radio astronomy stations

To ensure sufficient protection for the Dominion Radio Astrophysical Observatory ("DRAO"), Sony recommends that ISED adopt the same methodology used by the FCC to protect similar sites in the U.S. Specifically, ISED should provide the exact geographic coordinates and antenna height for the DRAO site. Then ISED should require AFC systems to enforce a protection zone based on based on radio line-of-sight, using 4/3 earth curvature and the following formula:

dkm_los = 4.12 * (sqrt(Htx) + sqrt(Hrx)),

where Htx is the height of the unlicensed standard power access point or fixed client device and Hrx is the height of the radio astronomy antenna in meters above ground level.

Respectfully Submitted,

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