

Before
INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA
Ottawa, ON K1A 0H5

In the Matter of)	
)	
Consultation on a Licensing Framework for)	Canada Gazette, Part I
Residual Spectrum Licences in the 700 MHz, 2500 MHz,)	July 15, 2017
2300 MHz, PCS and 1670-1675 MHz Bands)	Notice No. SLPB-003-17

REPLY COMMENTS OF NOKIA

Dear Senior Director:

1. Nokia respectfully submits Reply Comments in response to the Consultation¹ from Innovation, Science and Economic Development Canada (ISED) on a Licensing Framework for Residual Spectrum Licences in the 700 MHz, 2500 MHz, 2300 MHz, PCS and 1670-1675 MHz Bands, published in the Canada Gazette, Part I, on July 15, 2017 (“SLPB-003-17” or the “Consultation”).
2. Nokia is an innovation powerhouse, offering unparalleled leadership in the technologies that connect people and things. We are weaving together the networks, data, and device technologies to create the universal fabric of our connected lives. Nokia works across ecosystems and is a trusted partner for our carriers, governments, and enterprises. Nokia has made pioneering advancements in reducing the footprint of mobile base station infrastructure, from compact yet full power macro sites down to the full range of small cell solutions, which are expected to be critical to enabling 5G deployment and the Internet of Things (IoT). Nokia also offers the industry’s most comprehensive portfolio of services for integrating heterogeneous networks (“HetNets”), encompassing analysis, optimization, deployment, and management.

¹ [Consultation on a Licensing Framework for Residual Spectrum Licences in the 700 MHz, 2500 MHz, 2300 MHz, PCS and 1670-1675 MHz Bands](#), July 15, 2017 (“Consultation”).

3. To ensure that the record of this Consultation is accurate and up to date, Nokia wishes to provide information regarding the equipment ecosystem in the 1670-1675 MHz frequency range (also known as the “I Block”). Based on the comments submitted in this Consultation to date, it appears that there has been little development of I Block spectrum in Canada. This is not the case in the United States, where the spectrum is currently used to deliver video programming throughout the country via a network of terrestrial base stations manufactured by multiple vendors.²
4. Plans are underway to further develop the 1670-1675 MHz band. Specifically, in December 2015, Ligado Networks filed an application with the Federal Communications Commission seeking approval to provide terrestrial service using its L-band spectrum together with its leased spectrum in the 1670-1675 MHz frequency range. Ligado has stated that it intends to use the combined spectrum to provide advanced satellite and terrestrial data services to its customers and to support emerging demand in the Internet of Things market.³ This application is currently pending before the FCC.
5. Going forward, Nokia is developing LTE base station equipment for the 1670-1675 MHz band for use in commercial mobile broadband services and applications. Nokia understands that other manufacturers are also developing base station equipment and user devices for the band. In the case of Nokia’s base station equipment, customer delivery for trials started summer 2017.
6. Nokia also has actively participated in the study of the 1670-1675 MHz band for the use of 4G-LTE within the 3GPP (3GPP TR 36.844). The next step is to complete the band standardization exercise.
7. Given the development work that is currently underway in relation to I Block spectrum as well as within the 3GPP, Nokia supports the inclusion of I Block spectrum in ISED’s

² See <http://www.modeovideo.com/>.


³ See *Ex parte* presentation of Ligado to the FCC in IB Docket No. 11-109; RM-11681; IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091, p. 2; available online at: <https://www.fcc.gov/ecfs/filing/1060526183070>.

proposed residual spectrum auction. While the equipment ecosystem for this spectrum is still evolving, Nokia is actively involved in the development of equipment for this frequency band, as are other manufacturers.

8. Given the developing equipment ecosystem, Nokia believes that the I Block licences referenced in Table 5 of SLPB-003-17 are ripe for inclusion in ISED's proposed residual spectrum auction. However, if ISED concludes that this spectrum should not be included in the auction, the Department may wish to consider making this spectrum available for licensing on a first come first serve ("FCFS") basis so that it does not continue to lie fallow. In particular, if the Department determines that the demand for I Block spectrum is not sufficient to warrant inclusion in a spectrum auction, then a FCFS licensing approach may be more appropriate.
9. We wish to thank the Department for the opportunity to submit these reply comments in SLPB-003-17, and look forward to the Department's decision on the auction of residual commercial mobile spectrum.

Respectfully submitted,

Nokia



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