**Proposed RESPONSE TO Innovation, Science and Economic Development Canada Consultation on Releasing Millimetre Wave Spectrum to Support 5G**

**Response**

In the following, please see comments and responses to question relevant to Frequency band 64-71 GHz for licence-exempt use:

Question 8-1: ISED is seeking comments on its proposal to designate the band 64-71 GHz for license-exempt operations on a no-protection, no interference basis.

As ISED acknowledged there is strong interest for new license-exempt (LE) wireless devices for various applications. A large number of applications and use cases are identified for License-Exempt operation at 60GHz mmWave band. More specifically, IEEE 802.11 standard committee has extensively discussed various use cases and related requirements within the framework of development of IEEE 802.11ad and 802.11ay standard specifications. A summary list of key use cases [1] are provided in the following table for your references.

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| UC # | Use Case | Applications and Characteristics |
| 1 | Ultra Short Range (USR) Communications | * Static,D2D, * Streaming/Downloading |
| 2 | 8K UHD Wireless Transfer at Smart Home | * Uncompressed 8K UHD * Streaming |
| 3 | Augmented Reality/Virtual Reality Headsets and Other High-End Wearables | * Low Mobility, D2D * 3D UHD streaming |
| 4 | Data Center 11ay Inter-Rack Connectivity | * Indoor Backhaul with multi-hop\* |
| 5 | Video/Mass-Data Distribution/Video on Demand System | * Multicast * Streaming/Downloading * Dense Hotspot |
| 6 | Mobile Offloading and MBO | * Multi-band * Multi-RAT operation * Hotspot |
| 7 | Mobile Fronthauling | * Fronthauling |
| 8 | Wireless Backhauling | * Small Cell Backhauling * Single hop or multiple hop |
| 9 | Office docking |  |

The need for higher peak data rates, more bandwidth (especially during the busiest hour, which is growing faster than the average hour), reduced latency, and higher sustained throughput are some of the key drivers for the next generation wireless access networks in mmWave bands.

Following FCC authorization of license exempt operation in the extended 66-71GHz band on July 2016, IEEE 802.11 formally extended the 60 GHz mmWave band by defining the new channels and operating classes in IEEE Std 802.11™-2016 [2]. Wi-Fi Alliance certifies products in the 60GHz band under the name WiGig that are now available in the U.S. The certification is expected to be extended to cover the entire 57-71 GHz range.

[Do we want to mention about FCC discussion on usage of 60 GHz on Board Aircraft?]

As ISED recognizes the value of harmonizing spectrum use with other countries and as there are no existing users of this band by any service in Canada, IEEE 802 recommends to allow license-exempt operations in the frequency band 64-71 GHz on a no-protection, no-interference basis.

**References:**

1. IEEE 802.11-2015/0625r03, IEEE 802.11 TGay Use Cases, September 2015
2. IEEE Std 802.11™-2016, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications, Approved 7 December 2016