

**Before the
Government of Canada;
Innovation, Science and Economic Development
Ottawa, Ontario**

In the matter of)
Consultation on a Technical, Policy and) SLPB-005-17
Licensing Framework for Spectrum in)
the 600 MHz Band)

**Comments of
Key Bridge Wireless, LLC**

Key Bridge Wireless LLC (dba “Key Bridge”) hereby submits comments in response to the government’s above referenced consultation. Key Bridge is a U.S. based provider of shared spectrum administration services and related technologies. We presently manage over 14 GHz of shared spectrum inventory in the United States and are a prospective TV-bands white space database administrator under Canadian jurisdiction.

Executive summary

The explosive growth of mobile broadband use has resulted in a widely-recognized spectrum crunch which, if not addressed, will render available wireless spectrum inadequate to meet surging demand for mobile broadband spectrum. The fastest way to expedite mobile broadband deployment and to increase mobile service speed and capacity is to identify and allocate additional spectrum below 3 GHz with a flexible use and licensing model.

Key Bridge supports the government’s efforts to provide access to additional licensed spectrum in the 600 MHz bands and suggests the government’s policy objectives of high-quality services, ubiquitous coverage and affordable prices are not best served by simply reallocating spectrum inventory and selling it to the highest bidder.

In this vein, the government should carefully consider the underwhelming experience of the United States 600 MHz auction which caused nearly a decade of industry disruption, generated a small fraction of expected revenue, was extremely complex to produce, has generated produced little to no technology

or service innovation, will be used almost exclusively to supplement existing cellular broadband capacity, and is unlikely to reduce consumer prices in any material way.

Key Bridge suggests the government should instead consider a more innovative licensing and use framework for the 600 MHz band that creates commercial incentives more aligned with the public interest and government's stated policy objects of fostering a "robust wireless telecommunications industry" to enhance "the productivity of the Canadian economy and its international competitiveness."

To ensure that this spectrum is put to its highest and best use, the government should reconsider and revise its 600 MHz auction proposal in three ways.

First, ISED should authorize and allow a secondary market to emerge in which parties may purchase and sell a spectrum license in the 600 MHz band. The "spectrum crunch" that industry laments is actually caused by a shortage of *affordable licensed spectrum*. The public interest will be best served in this regard with efficient price discovery through a liquid secondary market and not by a one-time block-buster (or failed) auction.

Second, ISED should consider a three-tiered spectrum sharing model for the 600 MHz band similar to the United States Citizens Broadband Radio Service ("CBRS") that includes one or more Spectrum Access System ("SAS") administrators and something resembling an Incumbent tier, a Priority Access License ("PAL") tier and a General Authorized Access ("GAA") tier. Establishing a PAL tier in the proposed model is critical as defined property rights are necessary to justify the costs of innovation and investments in network design and build out.

Third, ISED should preserve and transition existing 600 MHz licenses to the new three-tiered model. In the CBRS model certain primary users such as public services and critical infrastructure could be permanently assigned Incumbent status while existing licensees could be transitioned to an equivalent PAL configuration and current secondary users could be transitioned to GAA. For example, a PAL partitioning scheme could be designed whereby presently licensed broadcast TV stations and other primary users could see no change in their service area protections after a transition to a CBRS Priority Access Tier, while white space and other secondary users in the 600 MHz band may readily transition to something resembling a CBRS General Authorized Access tier.

Secondary markets

ISED should authorize and allow a secondary market to emerge in which parties may purchase and sell spectrum licenses in the 600 MHz band.

Radio spectrum is a finite, heavily regulated resource that forms the core around which wireless businesses are built; spectrum acquisition is typically a one-time event early in a wireless business' life cycle. While any secondary market would thus be characterized by low transaction volume, this does not mean such a market could not efficiently match spectrum resources to their most economic employment. Radio spectrum is public property and made available for private use by lease or license. Any market for spectrum use rights must therefore resemble a commodities or futures exchange where rights are transacted but not the underlying property.

A factor hindering secondary markets is the inherent friction of a spectrum transaction; transferring control presently requires contracts, lawyers, government pre-approval and time. Public information about any particular frequency allocation also appears limited to basic details like frequencies, geographic coverage, transmit power limitations, etc. Prospective sellers or buyers must collect other necessary and important information like adjacent transmitters, propagation characteristics and noise floor on their own and at their own expense.

The Government's policy goals, and the public interest, could be dramatically advanced through fostering economic innovation in the wireless industry. A liquid secondary market for licensed spectrum would allow for localized price discovery and could improve the economic viability of rural and suburban wireless service deployments by more correctly allocating costs to value and by more efficiently matching available spectrum with its most viable economic employment. Accordingly, the government should authorize and allow a secondary market to emerge in which parties may purchase and sell spectrum licenses in the 600 MHz band. The government should furthermore consider methods to reduce barriers for convenient price discovery and transaction liquidity.

A three-tiered spectrum sharing model

Broadband infrastructure and services play an essential role in advancing core national interests, including job creation and economic growth, public safety and homeland security, energy efficiency, health-care delivery, consumer welfare, and civic participation. The explosive growth of mobile broadband use, however, has resulted in a widely-recognized spectrum crunch, which if not addressed,

will render available wireless spectrum inadequate to meet surging demand for mobile broadband spectrum. However, the fact also remains that many areas remain unserved with existing spectrum allocations and simply releasing more inventory on to the market will not change the business model or cost basis necessary to deliver ubiquitous coverage or lower prices.

Key Bridge suggests that the public interest would be promoted through the adoption of industry developed, possibly dynamic channel assignments combined with a geolocation database approach similar to that provided for in the U.S. CBRS rules, where the entire band is available on a nationwide basis to support the widest possible range of potential use cases.

Key Bridge further believes that the government's plans for the 600 MHz band should preserve technology and service neutrality. The channelized approach should not be designed to favor one technology over another, and should support channel aggregation for broadband access. All channels should be available for all service users in all geographic areas and that specific channel availability at any location and/or time should be dictated through a geolocation database approach.

Preserve and transition existing 600 MHz licenses

Clearing and reallocating spectrum is not a sustainable model for spectrum policy due to the length of time to implement and extraordinarily high cost of transition. Spectrum sharing results in better utilization of scarce frequency spectrum and Key Bridge suggests that a three tiered CBRS-like model may be implemented in the 600 MHz band in such a manner where existing licensed user rights could be transitioned to a new legal framework with very limited to no upset or impact on service.

The proposed CBRS-like licensing structure could assign a permanent geographic exclusion zone and frequency (or channel) assignment to government and critical safety infrastructure, an equivalent PAL configuration to currently licensed users, and confer GAA status to current secondary users.

Handling unique and unforeseen technical requirements

A Canadian marketplace for 600 MHz licensed spectrum will have many unique and unforeseen technical requirements and constraints requiring careful examination and a standardized approach. To address these and other topics the government should encourage standards making efforts through one or more joint government-industry multi-stakeholder groups. Any standards developed and promulgated by such groups being necessary to receive government permission or authorization to operate in the

600 MHz band should be non-proprietary, publicly available, and developed by an open, collaborative manner.

Revenue to the treasury

Under the envisioned transition to CBRS-like rules and a liquid secondary market for spectrum licenses the government need not convey full economic title to initially assigned PAL licenses. Instead the government could retain rights to all or some fraction of the revenue raised when a transitioned PAL is sold for the first time in a secondary market. The government may further retain rights to a nominal fee or fraction of traded value for all future PAL transactions. Accordingly, the government may receive revenue to the treasury on a continuing basis as PAL licenses are bought and sold over time. By these and other possible mechanisms the public treasury may realize a sustained revenue stream with an equivalent net present value well in excess of any prospective one-time auction.

Conclusion

Key Bridge supports a regulatory framework that directly serves the public interest and not a particular technology, business model or industry. Key Bridge believes that the government's stated policy goals would be better served through a dynamic and liquid secondary market for licensed spectrum and by increased neutrality with respect to the specific uses of the spectrum through a three tiered, CBRS-like licensing scheme.

We appreciate the opportunity to comment on this consultation. We hope the government will find our contribution helpful and constructive.

Respectfully submitted,

/s/

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