



29 August 2019

To: Aileen Chia (Ms)
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Director-General (Telecoms & Post)
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Via email: Consultation@imda.gov.sg

Subject: Comments to IMDA consultation paper on proposed policy frameworks for the allocation of 800 MHz, TDD 1900 MHz and FDD 2100 MHz spectrum bands.

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COMMENTS OF ITRON, INC

Itron Inc. appreciates the opportunity to submit the following comments to the Singapore Info-communications Media Development Authority (IMDA) regarding the “IMDA consultation paper on proposed policy frameworks for the allocation of 800 MHz, TDD 1900 MHz and FDD 2100 MHz spectrum bands”. Itron applauds the IMDA on its ongoing work in the area of spectrum management and recognizes the inherent difficulty of balancing the interests of many parties who desire spectrum to deliver valuable services to the people of Singapore.

Summary of Major Points

Short Range Devices (SRDs) operating in the license-exempt 800 MHz and 900 MHz bands have been proven to deliver immense socio-economic benefits to many countries around the world. Recognized analysts have detailed these benefits, claiming that these nascent technologies already account for billions of USD of economic activity with much more to come in the next decade. Singapore has a strong installed base of applications based on these technologies including alarms, RFID, medical, smart city and radio determination.

Because of the excellent propagation characteristics, sub-GHz spectrum is especially important to the critical infrastructure field area networks that enable smart energy, smart water and smart city services. The amount of this spectrum available in Singapore is small compared to that available, for example, in North and South American countries where 26 MHz of license-exempt sub-GHz spectrum has been authorized and is generating very real benefits.



Itron is deeply concerned about proposals that would reallocate a significant piece of this valuable spectrum in Singapore, removing it from use by SRDs. Such an action would seriously damage the realization of the proven economic benefits of SRD applications that utilize this 800 MHz band. Existing users of the 800 MHz and 900MHz bands have – in good faith – deployed critical infrastructure solutions with promised lifetimes of ten years or more. If IMDA was to reallocate these bands, these users would be faced with the prospect of costly replacement of the infrastructure.

Itron believes that Singapore should encourage further development of SRD technologies and applications by releasing additional license-exempt sub-gigahertz spectrum and protecting that previously allocated for this purpose. The suggestion of reallocating the 800 MHz band will surely drive additional traffic to the existing 920-925 MHz band. Itron observes that the adjacent 915-920 MHz band appears to be unallocated and overlaps spectrum allocated for SRDs in many parts of the world including the US (902-928 MHz), Europe (915-921 MHz) and Australia (915-928 MHz).

Therefore, Itron urges the Singapore regulator to: (a) reconsider the reallocation of the 800 MHz spectrum, and (b) release an additional 5 MHz spectrum in the 915-920 MHz band to encourage the development and utilization of a truly global license-exempt band for SRDs. Extending the 900 MHz band in this manner may enable users to realize increased benefits of their investment.

Statement of Interest

Itron is a technology and services supplier for energy and water utilities as well as municipalities around the world, providing the devices and networks that enable these industries to achieve their business and regulatory objectives for critical infrastructure protection. Itron's Advanced Metering Infrastructure ("AMI"), Automatic Meter Reading ("AMR") and Smart Cities sensor/control technologies successfully operate in the various authorized license-exempt sub-gigahertz bands around the world. Itron's 8000 customers have deployed more than 200 million communications modules to over 100 countries around the world.



Comments

Question 1: *IMDA seeks views on the proposed allocation approach for the 800 MHz spectrum band, in particular:*

- (a) Whether the proposed lot sizes allow for meaningful use of the spectrum or if there are other alternative combinations of spectrum lot sizes that should be considered for efficiency reasons;*
- (b) Whether the proposed spectrum right duration is adequate from a business viability and investment perspective; and*
- (c) The reasons for your views on the above.*

Itron has no comment on the specifics of the proposed allocation approach, however Itron would like to reiterate our concern about the economic impact of reallocating the spectrum in the 800MHz band, disabling the use of this spectrum by SRDs.

Question 2: *IMDA seeks views on the proposed allocation approach for the TDD1900 MHz spectrum band, in particular:*

- (a) Whether there is a need for additional filters if the guard band between FDD and TDD systems is 5 MHz, and the specifications of the required band-pass filter;*
- (b) Whether there are known technical frameworks for the co-existence of LTE-based networks operating in 3GPP band 1 and band 33/39;*
- (c) Whether the proposed lot sizes allow for meaningful use of the spectrum;*
- (d) Whether the proposed spectrum right duration is adequate from a business viability and investment perspective; and*
- (e) The reasons for your views on the above.*

No comment

Question 3: *IMDA seeks views on the proposed allocation approach for the FDD2100 MHz spectrum band, in particular:*

- (a) Whether the proposed FROR allocation allows existing 3G mobile network operators to serve the needs of their customers or if there are other alternative combinations of FROR allocations that should be considered; and*
- (b) Whether the proposed spectrum right duration is adequate from a business viability and investment perspective; and*
- (c) The reasons for your views on the above.*

No comment

Question 4: *IMDA welcomes views and comments on the proposed allocation of the spectrum bands in the next allocation exercise, including on the proposed uses and spectrum right durations of the spectrum bands, the proposed “Clock Plus” auction format, the proposed reserve prices as well as the proposed spectrum caps and regulatory obligations to ensure the optimal use of spectrum.*

Itron acknowledges the methodology used by IMDA to determine suitable allocation of spectrum; respectfully we believe that the benefits of SRDs have not been considered in clearing the 800MHz band for cellular services. Itron further acknowledges that licensed spectrum auctions provide significant economic benefit to Singapore, however they do not account for the benefits that can be delivered by license-exempt allocations, the intrinsic value of which has been shown in many studies¹ to be greater for SRDs than any other form of radio service.

¹ Some examples of studies: <https://core.ac.uk/download/pdf/7303115.pdf> , <https://www.wi-fi.org/value-of-wi-fi> and <https://plumconsulting.co.uk/future-use-licence-exempt-spectrum/>



Conclusion

1. Short Range Devices (SRDs) operating in the license-exempt 800 MHz and 900 MHz bands deliver valuable services to the people of Singapore.
2. Sub-GHz spectrum is ideally suited to the field area networks that provide critical-infrastructure protection and services key, to long term economic leadership & development.
3. Itron is deeply concerned about the present IMDA proposal to reallocate a significant piece of this 800 MHz spectrum, removing it from use by SRDs.
4. Itron recommends that Singapore should: (a) reconsider the reallocation of the 800 MHz spectrum, and (b) release an additional 5MHz spectrum in the 915-920 MHz band. This would encourage the development and utilization of a global license-exempt band for SRDs and be consistent with actions taken by regulators in other leading economies in Asia, Europe and the Americas.

Respectfully submitted,

Simon W. Pontin

A handwritten signature in black ink, appearing to read "Simon W. Pontin", is written over a grey, textured rectangular background.

Chief Technology Officer

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