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Exploring the future use of the 1880–1920 MHz band

Submission to ACMA by Bravo Charlie Broadcast Comms Pty Ltd.

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Bravo Charlie Broadcast Comms Pty Ltd is a Melbourne based equipment rental company founded in 2020 by Brendan Drinan and James Fowles.

We supply rental equipment the Live Television Broadcast, Theatre and Entertainment industries with DECT low power intercom communications and Push to Talk Cellular (4G/5G) point to point communications.

Most of our DECT rental jobs we supply an average of 30 beltpacks (nodes) per job. The beltpacks are connected to a matrix intercom system via DECT Access points, which a further connected to a matrix intercom via an IP Network.

Our DECT communications are manufactured by RTS Intercoms a subsidiary of Bosch Security Systems incorporated in the USA.

The RTS system allows a maximum of 40 low power beltpacks (nodes) to operate in wideband mode, by using two channels of DECT carriers to make the required bandwidth to operate the G722 codec. The system also allows for a maximum of 80 beltpacks to operate in narrowband mode (one carrier) in the G726 Codec, however this is often avoided because of the lower quality codec.

There are currently four major manufacturers of DECT communications to the industry, being Clear- Com, Green Go, Riedel, and RTS. All these manufacturers operate in the Australian/European DECT band of 1880-1900Mhz. Some of these systems only operate in wideband mode, limiting their use to 40 beltpacks.

DECT for communications is still considered a new technology. RTS's system was only released just four years ago, with an expected life cycle of over 20 years.

As ACMA have operated the DECT band as a Class Licence we agree with ACMA it hard to estimate the actual use in Australia. However, there is such demand now for DECT communications we opened our business in August 2020 to supply the market with DECT. And we are far from the only company doing this. We estimate there are currently hundreds if not thousands of DECT nodes being used around the country as large communication systems, probably to the point of being a larger user of the DECT band than its original intended purpose of cordless telephone communications.

As a business, we have strategically avoided any use of the overcrowded UHF 470-520Mhz UHF band for point to point communications as this band is heavily congested and does not provide higher fidelity communications that broadcasters now require.

ACMA have been actively trying to reduce the number of users in the UHF band, and with good reason as we agree that UHF heavily oversubscribed. A result of this is we and many users have moved to DECT as the only current and realistic alternative for constant TX and low power point to point communications.

To further avoid using UHF spectrum, we have provided our clients with cellular 4G “Push to talk radios” that run on the Telstra 4G Network. However, we have found these are limited in usefulness because they do not operate as constant carrier TX (that is, like duplex mode in traditional UHF radio), can have long latency between calls and can be unreliable when used when cellular becomes saturated with too many users, such as during sporting events with large crowds. It remains a challenge to use cellular communications for mission critical TV and live events. We believe there needs to be a lot more development of these systems to become a viable option to completely move to cellular.

Bravo Charlie Broadcast Comms Pty Ltd submits

if DECT band 1800-1900Mhz is removed in Australia:

For TV, Theatre and Live Entertainment productions there would be no other alternative other than returning to the heavily congested UHF Band impacting other users outside our industry and going against the policy of ACMA trying to reduce users in that band.

It would also financially destroy our business, as we have invested hundreds of thousands of dollars in DECT communications. If removed it would make our entire fleet of DECT equipment obsolete. If the DECT band is Auctioned off to another industry, we further submit that ACMA compensates current operators to move back to UHF with the proceeds of the Auction.

if the DECT band is relocated:

It would leave Australians out step with the Europe and North America, meaning manufactures of DECT would unlikely make equipment just for the Australian Market.

It would make our current equipment obsolete.

if the DECT band is reduced:

It would reduce the number of beltpacks available. Most of our jobs require 30+ beltpacks. This is further compounded when two or more operators of DECT communications work within proximity to each other (for instance a TV Outside Broadcast using a DECT system and a lighting Company is also using another DECT system in the same room). This could again push more users onto UHF.

Evolving Technology:

We are unaware of the major manufactures outlined above looking to move or support DECT-NR for low power point to point communications.

Cellular 4G/5G Push to Talk, while still evolving, are not yet ready to provide mission critical communications for the reasons outlined above.

Future Certainty:

We would like to see certainty around the use of DECT. We believe ACMA should continue the use of the 1880-1900mhz band for class licence DECT users for at least another 20 years.

We also submit these responses to the Issues for Comment part ACMA Discussion paper:

1. What is the relevance of the Personal Handy-phone System (PHS) and should this use be retained?

We agree there is little use of PHS in the DECT band, however there is now a major use of intercoms systems operating on the same PHS standard.

2. What is the interest in the use of new technologies to provide a service?

a) How much spectrum is required to provide the service?

As there is little or no planning to move the intercom DECT users to any new system, this makes spectrum planning difficult. However, we require at least 40 beltpack nodes in wideband mode to be connected to one system.

b) What interservice considerations need to be undertaken for the service to be deployed?

We would like to see any new system deployed backward compatible with the current DECT standard.

c) What are the deployment scenarios for the service?

Major Television Broadcast, Live Events and Theatre.

3. Are services still using DECT or are they transitioning to DECT-2020 NR?

We are a major user of DECT. We have thousands of dollars of DECT intercoms in use today. There is little or no planning that we are aware of to transition to DECT NR or NG-DECT.

4. Are there any applicable coexistence scenarios not identified? Are there any scenarios that are unlikely to be practically achievable (and hence the associated planning scenario should be discounted), or are there any that are readily achieved?

Part of the DECT standard allows 'frequency hopping' so the system finds free spectrum in the band to use. This is transparent to the user (i.e the user can't choose or force a channel to be used). This could possibly allow for coexistence with other uses, however the new service would need to be tested and made backwards compatible with the current DECT standard.

5. What are possible planning scenarios and industry views on the overall future use of the 1.9 GHz band and its services:

a) How much spectrum is required (distinguishing between the minimum viable and desirable) to provide the service?

We need all of the 1880-1900Mhz to be viable.

b) Is there a clear geographical delineation – for example, metropolitan or regional – for the service?

DECT is more likely to be used in Metropolitan areas, however regional cannot be ruled out.

c) Is there or will there be equipment readily available for the service?

For DECT NR - No.

We would like to thank ACMA for listening to our concerns with this discussion paper. We would be very happy to continue discussing and consulting with ACMA on future uses of the DECT 1.9 Band.

Yours Sincerely,

A handwritten signature in blue ink, appearing to be 'B. Drinan'.

Brendan Drinan
Director

A handwritten signature in blue ink, appearing to be 'J. Fowles'.

James Fowles
Director

Bravo Charlie Broadcast Comms Pty Ltd.