



MOTOROLA

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17 May 2019,

The Manager
Economic Advisory Section
Spectrum Allocations Branch
Australian Communications and Media Authority
PO Box 13112
Law Court PO
Melbourne Vic 8010

Re: Response to "Reconfiguring the 900 MHz band – Options paper

Motorola Solutions Australia Pty Ltd is pleased to provide our comments on the ACMA's reconfiguring the 900MHz band options paper, attached.

Should you have any questions with regards to this response, please contact Greg Bouwmeester on (03) 9847 7595.

Yours Sincerely

A handwritten signature in blue ink, appearing to read 'Bouwmeester', with a long horizontal stroke extending to the right.

Greg Bouwmeester

Motorola Solutions Australia Pty Ltd
10 Wesley Court, Tally Ho Business Park
Burwood East, Victoria 3151



Motorola Solutions' response to the ACMA's paper:

Reconfiguring the 900 MHz band

Consultation closes: 24 May 2019

IFC: 11/2019



Context

Within Australia and internationally Motorola Solutions (Motorola) is a major supplier of radiocommunications equipment and services to governments, emergency services organisations, the mining industry, the energy industry, manufacturing sectors, transportation, tourism, telecommunications carriers and telecommunications service providers.

Motorola has been a leader in the field of two way radiocommunications for 85 years, excelling in the research and development, production, marketing and efficient operation of radiocommunications equipment and systems all over the world. Motorola's brand is indeed synonymous with high quality radiocommunication products and services. As a world-wide operation with close operator links Motorola believes that its accumulated experience qualifies it well to comment on this discussion paper.

Motorola is a strong supporter of standards based technology and spectrum harmonisation with Australia's major markets in Asia, Europe and the Americas. This support helps to ensure that up-to-date radiocommunications equipment is readily available. Use of standards based technology and spectrum harmonisation with other major markets reduces costs for manufacturers and service providers, maximises competition, and results in lower costs for consumers.

The primary commercial interest of Motorola is in the provision of solutions encompassing the design, manufacture and supply of communications equipment, systems and services for the Public safety agencies and other land mobile users. Motorola knows that issues relating to the allocation of radio frequency spectrum impact directly on the demand for its communications products and the issues discussed here are particularly relevant.

Radiocommunications are essential for agencies involved in the defence or national security of Australia, law enforcement or the provision of emergency services. Two-way radio also provides the communication infrastructure for a



wide range of industries ranging from agriculture, mining & construction through to transportation & hospitality.

Motorola thanks the ACMA for the opportunity to comment on the “Reconfiguring the 900 MHz band” options paper. Motorola notes that the reconfiguration of the 900 MHz and the subsequent allocation process is closely associated with the 850 MHz expansion band.

Following an earlier review of the 803–960 MHz band in 2015, 2 x 15 MHz of spectrum adjacent to the existing 850 MHz spectrum licenses (825–845/870–890 MHz) was identified as being potentially available for use in the medium term for mobile broadband. This band (809–824/854–869 MHz) is known as the ‘850 MHz expansion band’. This band also encompasses a land mobile band (see figure below from the original ACMA paper) which is utilised for valuable Land Mobile services not only in Australia but Across ASIA and USA in many countries.

Due to its strong similarity with the proposed reallocation of the 900 MHz band, there is a unique opportunity to allocate the expansion band in the same process as the 900 MHz band. In addition, and as the ACMA is aware through COAG public safety mobile broadband (PSMB) negotiations, there is a request to set aside necessary spectrum for a PSMB network in 700-800 MHz as harmonized by the WRC-15 Resolution 646 and included in the ITU-R Recommendation M.2015.

Motorola strongly supports a 2 x 5MHz PSMB allocation in 814-824/859-869 MHz in line with the 3GPP Band 26 PSMB allocations which are part of the WRC-15 Resolution (along with 700 MHz 3GPP Band 28). Motorola notes that most neighbouring ASEAN countries are implementing PSMB in 3GPP band 26.

Motorola also suggests that as this is possibly the final opportunity to allocate PSMB spectrum that 2 x 10 MHz be set aside for this purpose above 814 MHz (paired).



Further we would like to stress that the broadband allocations in 850 MHz are only allocated above 814 MHz (paired) and that the band 806-814 MHz (paired) is left reserved for highly valuable narrow band LMR/PPDR systems. This is to align the PSMB allocations to Band 26 in order to achieve regional harmonization for PSMB. Note that there are no takers anywhere in the world for Band 27, which has no chipsets and no equipment ecosystem.

Our responses to specific questions are provided below:



1. The ACMA identified a set of outcomes to be achieved from this process—are these appropriate outcomes? Are there any other additional outcomes that should be included in this analysis?

Yes. The ACMA should consider allocating the '850 MHz Expansion Band' above 814 MHz (Paired) while setting 2 x 5 MHz aside for PSMB.

2. Are the reform options presented in this paper appropriate, and are there any implementation issues that haven't been identified?

The reforms are appropriate but should be expanded as outlined above.

3. Stakeholders raised concerns that the mid-2021 clearance date will result in consumer service discontinuity. Does the proposed mid-2024 clearance date provide enough time to create an alternative pathway for the deployment of services at risk?

Motorola finds it difficult to believe that there will still be 2G services deployed in this band now and out to 2021. In some cases there may be a small number of legacy point of sale devices, however the value of and cost to replace these devices is far smaller than the value of the band to new users. Motorola suggests ACMA retain the original 2021 date.

4. Can stakeholders provide up-to-date information on consumer migration to 4G compatible handsets, including estimates of the numbers of consumers yet to migrate, and information on the timing and speed of consumer migration?

No comment.

5. The encumbered auction option includes an approach whereby incumbent apparatus licences and spectrum licences would potentially 'overlap'. Do stakeholders have any concerns with this proposed approach?

6.

Motorola believes the encumbered auction is the best process available, but the length of the encumbrance should be limited to 2021. We would point out the very disjointed prices that were received for the recent 3.6 GHz auctions where various other issues were in play (caps etc) and so in order to realise the true value of the band the ACMA should minimise any such encumbrances and as far as practical auction a 'clean' band with no predetermined outcome except for 2 x 10 MHz of the expansion band set aside for PSMB.

7. Are there any issues associated with the hybrid option that raise any concerns for stakeholders?



Motorola does not believe the hybrid option will return the highest value use of the spectrum in the medium term.

8. Are there any other mitigation techniques to consider that support reconfiguration of the band into 5 MHz configuration whilst mitigating risks to consumer services?

No comment.

9. The ACMA may progress reconfiguration of 900 MHz independently of the allocation of the 850 MHz expansion band. Would doing so change the view on the optimal approach to reconfiguration?

No. There is a lot to be gained in allocating an additional 2 X 5 MHz LTE spectrum while leaving 2 x 10 MHz aside for PSMB. The bands should be allocated at the same time so that there is no split or ambiguity during future allocation or renewal processes.

10. The ACMA is aware that due to public safety mobile broadband (PSMB) negotiations there is a request to set aside 2 x 5 MHz of spectrum for a PSMB network. While the lot location for this spectrum in the 850 MHz expansion band has not been identified, it is expected that the remaining blocks at the top or bottom of the band would be put to market. Do stakeholders have a view on the relative technical efficiency of the remaining blocks of spectrum for carrier services?

2 x 10 MHz should be set aside immediately above 814 MHz so that a contiguous allocation of LTE spectrum can be made.

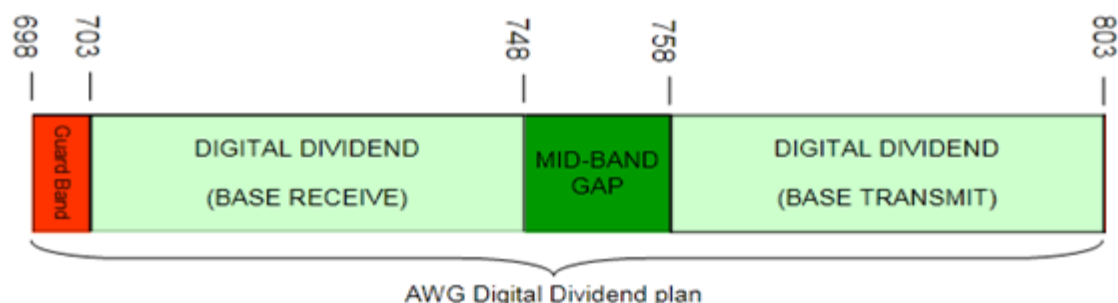
11. The [Draft five-year spectrum outlook 2019–23](#) (FYSO) forward allocation scenarios outlined the feasibility of allocating the 850 MHz expansion band and 900 MHz band at the same time as 26 GHz band, which, at the time of publication of this paper, is expected to be in Q1/2 2020–21. Do stakeholders have a view on the timing of the proposed allocations?

This timing is appropriate.



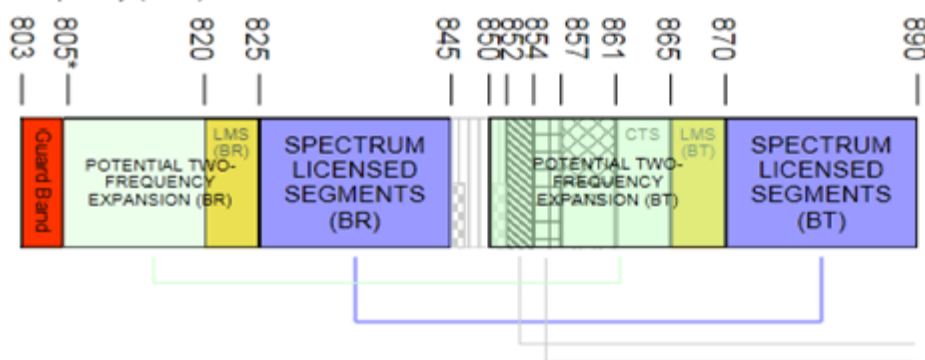
The 700 MHz band (698-803 MHz)

Frequency (MHz)



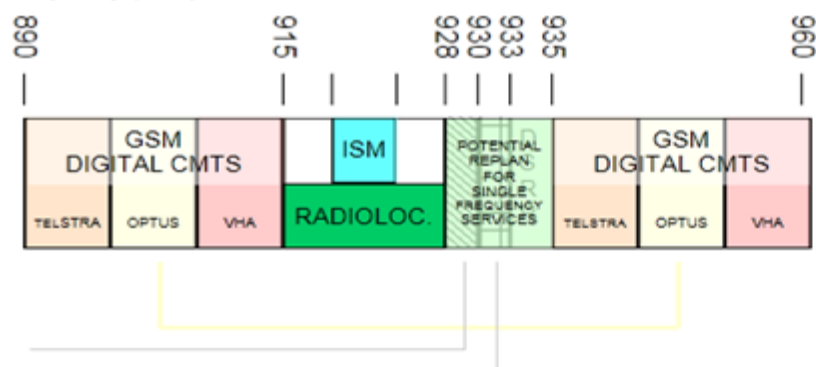
The 800 MHz band (803-890 MHz)

Frequency (MHz)



The 900 MHz band (890-960 MHz)

Frequency (MHz)



* The size of the guard band at the top end of the digital dividend will be considered as part of the review of the 800 MHz and 900 MHz bands.