



bai communications

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The Manager  
Economics and Market Analysis  
Australian Communications and Media Authority  
PO Box 13112 Law Courts,  
Melbourne Vic 8010

## IMPLEMENTATION OF THE SPECTRUM PRICING REVIEW

### Proposed guidelines and focus areas for change

BAI Communications Australia (BAI) welcomes the opportunity to provide input on the proposed guidelines and focus areas for change for the implementation of the spectrum pricing review recommendations.

BAI Communications is a neutral host communications service provider in Australia, USA and Canada, and provider of communications services in Hong Kong. In Australia, BAI provides managed services and portal services to broadcasters as well as site access arrangements to telecommunications and radiocommunications operators. In the USA and Canada, BAI Communications companies provide neutral host communications services within the New York City and Toronto subway systems as well as telecommunications, Wi-Fi, and emergency services communications. As an operator in both the broadcast and telecommunication markets BAI Communications has a view across a very broad range of spectrum bands managed and regulated by ACMA.

BAI Communications agrees with the proposed work areas and issues that ACMA is seeking to address in the implementation of the review's recommendations. Also, BAI is a strong supporter of the guiding principles that ACMA has adopted for the allocation of spectrum, namely:

1. Efficient allocation and use of the radiofrequency spectrum
2. Consistency and simplicity
3. Flexibility and adaptability to technology change
4. Transparency in process
5. Recovery of the costs of spectrum management

BAI would offer the following comments in relation to principle 3, which is particularly relevant for the introduction of new technologies such as 5Gmm and IoT services. New 5G technologies will lead to increasing convergence of mobile and fixed wireless services. BAI agrees with ACMA's view that this convergence requires new license types and approaches. BAI is very supportive of ACMA's new Area Wide Licensing as a new type of apparatus license that will facilitate the introduction of new fixed wireless services and new competitive markets for these services. BAI would like to make two general comments on the pricing of these licenses before then answering the specific questions outlined in the consultation paper.

1. BAI believes the AWL licenses provide the opportunity for new allocation approaches to ensure that the ACMA guiding principles of consistency and simplicity, are achieved. In particular, new technology such as beam forming means that the general relationship between transmitter power and range are no longer standardised. BAI believes that moving to an area coverage model and interference boundary conditions for area wide licensing would deliver two key benefits:
  - As the transmitter power is no longer relevant it can be dropped from the criteria for the AWL apparatus license, and
  - The number of devices in an area is also no longer relevant and an unlimited number of devices can be allowed within the AWL zone if interference boundary conditions, both in frequency and spatially, are met.

BAI believes the removal of these criteria will significantly simplify the AWL spectrum allocation and ongoing administration process.

2. In terms of improving consistency and transparency of spectrum pricing, BAI recommends that AWL apparatus licenses should be anchored with a market-based unit price. In most cases it is very difficult, complex, and far from transparent, to use economic analysis to anchor spectrum pricing as described in Appendix D of the consultation paper. Also, the analysis tends to have to be technologically and application specific thereby negating another of ACMA's key guiding principles of technology flexibility. As an example of this market-based approach, the 28 GHz AWL pricing could be anchored to the 26 GHz spectrum auction results in the same geographic zone utilizing the \$/per MHz/square kilometre or \$/per MHz/population achieved in the auction. Also, overseas market pricing could be used as benchmarks if local ones are unavailable.

BAI believes the above recommendations would allow apparatus licensing, in general, to move to the following four key simple criteria:

1. Geographic location
2. Geographic or population coverage
3. Spectral location
4. Spectral coverage (bandwidth)

Finally, BAI believes the most practical way to encourage spectrum sharing is to firstly ensure easy sub-licensing of AWL licenses using clear boundary conditions on the overall AWL zones. Then, secondly, the licensee should address interference issues within the boundaries in a commercially negotiated sub-licensing contract with the sub-licensee. BAI believes this is the most flexible approach, with the least administrative overhead for ACMA and the industry, and it will encourage the development of new commercial, spectrum management services for the industry.

Attached are our answers to the specific questions in the consultation paper.

Kind Regards,

Stephen Farrugia  
Chief Technology Officer  
BAI Communications Australia

## APPENDIX

Below are BAI Communication's comments on the specific issues set out in the consultation paper:

### Question 1

Do stakeholders have any views about the status of the ACMA's role in implementing the recommendations of the Spectrum Pricing Review?

*No Comment*

### Question 2

Do stakeholders have any views on the legislative and policy environment that may be relevant to the pricing issues outlined in this paper?

*No Comment*

### Question 3

Do stakeholders have comments on the ACMA's draft spectrum pricing guidelines including the relevant spectrum pricing decisions, guiding principles and process for changing prices?

*No Comment*

### Question 4

Does the tax formula generally provide a solid base for incentivising the efficient use of spectrum?

*No Comment*

### Question 5

Do stakeholders have views on:

- prioritising the features of the tax formula and other taxes by considering different focus areas
- the criteria for prioritising the focus areas
- other matters or focus areas that should be considered as part of the ACMA's work program.

*No Comment*

### Question 6

What are the relevant price points to undertake an opportunity cost analysis of taxes for services above 5 GHz? Examples of relevant information may include:

- how prices for products and services have changed over time
- how prices of radiocommunications equipment have changed over time relative to spectrum prices
- comparisons with international auctions results or administrative spectrum prices.

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### Question 7

How can taxes be designed to account for multiple devices? Under what circumstances do stakeholders believe that one tax should relate to many devices and/or there should be 'discounts' for multiple devices authorised under one licence?

*BAI believes the AWL licenses provide the opportunity for new allocation approaches to ensure that the ACMA guiding principles of consistency and simplicity, are achieved. BAI believes that moving to an area coverage model and interference boundary conditions for area wide licensing delivers many benefits. In particular, the number of devices in an area is no longer relevant and an unlimited number of devices can be allowed within an AWL zone as long as interference boundary conditions, both in frequency and spatially, are met. This significantly simplifies the ongoing license management process, especially in an IoT world containing potentially billions of devices.*

### Question 8

While the current low power discount provides for a significant reduction in taxes of 90 per cent, the ACMA is interested in considering further incentives to promote the greater sharing of spectrum.

Do the lower potential denial areas of different services provide a case for considering different or additional low power discounts? In responding, please provide:

- examples of these services and the denial characteristics of these services
- the information that may be required for the ACMA to be able to apply a discount
- views on whether such approaches can be applied across different licence types and bands.

*No Comment*

### Question 9

Do stakeholders have comments on:

- the proposal to monitor bands for potential changes in taxes and the balance and precision required in monitoring and pricing spectrum?
- the use of inflation to keep apparatus licence taxes contemporary and whether there are alternative approaches?

*No Comment*

### Question 10

Do current spectrum locations or frequency ranges remain appropriate? If not, what changes should be made and why?

*No Comment*

### Question 11

What factors should the ACMA consider in determining new spectrum locations or frequency ranges?

*No Comment*

### Question 12

Do the different tax rates associated with different spectrum locations or frequency ranges influence decisions about deploying radiocommunications equipment?

*No Comment*

### Question 13

How does the value of spectrum change across geographic locations?

*It is unclear why Wollongong is included in the Sydney High Density area. By most definitions, this is a regional area with lower population density. This seems particularly unusual when larger centres such as Newcastle, Adelaide and Perth are categorised as Medium Density.*

### Question 14

The ACMA also seeks views from stakeholders about:

- should density areas be refined for different services/bands?
- rather than having density areas, do models of congestion (like that used in the 400 MHz work) potentially better reflect demand for services and the value of spectrum? If so, what features would such a model have?
- whether different pricing constructs, such as \$/MHz/Pop for different licence types should be considered?
- whether there should be parity in pricing arrangements between services like commercial broadcasting taxes and open narrowcasting taxes?
- whether there are other services where the ACMA should be considering providing greater parity in pricing?

*No Comment*

### Question 15

Do stakeholders have views on:

- the current pricing arrangements for scientific-assigned licences for new technologies?
- the proposal for new short-term scientific-assigned licence trials and alternative pricing proposals?

*BAI supports lower fees for scientific licences as these expand the knowledge base and allow the testing of innovative new spectrum uses. BAI agrees that these should be calculated on a denial basis or administrative cost to the ACMA. The reduced fee for short term scientific licences is a good option to ensure the spectrum is used efficiently.*

### Question 16

Do these proposals promote transparency and ease in calculating taxes?

*BAI supports the provision of information to potential licensees as to how the tax will be calculated is very important. Providing a calculator which can't be relied upon is unlikely to be of additional value.*