



**Australian Government**

**Department of Defence**

Chief Information Officer Group

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ACMA IFC 07-2020

The Manager  
Spectrum Management Outlook and Strategy Section  
Spectrum Allocations Branch  
Australian Communications and Media Authority  
PO Box 13112, Law Courts, Melbourne, VIC 8010

## **IMPLEMENTATION OF SPECTRUM PRICING REVIEW**

### **References:**

- A. Spectrum Pricing, Review, February 2018
  - B. IFC 07/20 Implementation of the Spectrum Pricing Review, Proposed Guidelines and Focus Area for Change, March 2020
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- 1. Defence appreciates the opportunity to respond to the discussion paper on implementation of selected recommendations of spectrum pricing review 2018 (Reference A).
  - 2. Objects of the current Radiocommunication Act 1992 (Part 1.2) stipulates that management of radiofrequency spectrum must make adequate provision of the spectrum for use by agencies involved in the defence or national security of Australia, law enforcement or the provision of emergency services. ACMA must keep this in mind when making changes to the spectrum pricing.
  - 3. Defence positions regarding each recommendation considered in Reference B are
    - a. Recommendation 1: Defence supports ACMA publishing guidelines on how it approaches pricing decisions. ACMA clients, including Defence, expect transparency in this regard.
    - b. Recommendation 7: Defence supports the review of density areas and power categories. In particular Defence requests a review of the weighting of Australia Wide licences. As mentioned above, regular updates are supportable as long as those do not create uncertainty for costing and internal budget allocations.
    - c. Recommendation 8: Opportunity costing for more frequency bands may be considered as long as the effort justifies the benefits. ACMA should carefully consider benefits of applying opportunity costing to frequency bands identified for systems used for national security, safety-of-life and emergency response. It is difficult to determine the cost of a loss of capability in these sectors. For example, Defence and other Government users have many fixed and mobile radar systems that could be impacted.

4. Answers to the questions raised in Reference B are given in Annex A.
5. My point of contact is Dr Tharaka Dissanayake on (02) 6144 5035 or via email [tharaka.dissanayake@defence.gov.au](mailto:tharaka.dissanayake@defence.gov.au)

Yours sincerely

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**ANNEX:**

- A. Responses to the questions raised in the discussion paper

**RESPONSES TO THE QUESTIONS RAISED IN THE DISCUSSION PAPER**

	<b>ACMA Questions</b>	<b>Defence Response</b>
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
2	Do stakeholders have any views on the legislative and policy environment that may be relevant to the pricing issues outlined in this paper?	Defence is awaiting the changes to the Act. In particular the Objects of the current Act (Part 1.2) stipulates that management of radiofrequency spectrum make adequate provision of the spectrum for use by agencies involved in the defence or national security of Australia, law enforcement or the provision of emergency services. Defence emphasises this must be taken into account in spectrum pricing.
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?	<p>The guiding principles are not detailing how non-commercial spectrum use should be treated. Concepts such as efficiency of spectrum use is not very well defined in absolute terms. When it comes to opportunity cost it is always difficult to put a value to spectrum used for national security, law enforcement, safety-of-life and emergency services. It is very hard to put a monetary value on loss of Defence capability due to re-allocation of spectrum. The same holds true for other non-commercial applications.</p> <p>Defence manages a number of frequency segments, wherein the cost of spectrum management is borne by Defence. This should be taken into account in pricing.</p> <p>Defence supports ACMA conducting market analysis (international auction results) to adjust spectrum prices. However, this should be done with proficiency to compare the like with the like. Although spectrum harmonisation is a key international regulatory objective, there are significant differences between administrations when it comes to allocations. In addition, a same frequency band may be allocated through market based by one administration whereas via administrative mechanisms by another.</p>
4	Does the tax formula generally provide a solid base for incentivising the efficient use of spectrum?	No comment.

5	Do stakeholders have views on:	
	> prioritising the features of the tax formula and other taxes by considering different focus areas	Defence supports the selection of focus areas to make changes. Defence urge ACMA to take into account the value and the impact to national security and emergency services in making changes across all six areas. Defence is happy to assist with any risk assessment conducted to that end.
	> the criteria for prioritising the focus areas	No comment
	> other matters or focus areas that should be considered as part of the ACMA's work program.	No comment
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	Defence capabilities using spectrum above 5GHz are delivered through multi-billion projects and sustained with similar expenditure. The lifespan of these products are measured in decades unlike that of commercial products. Any changes to spectrum allocations can cost in terms of variations and capability loss.
	> how prices of radiocommunications equipment have changed over time relative to spectrum prices	No comment.
	> comparisons with international auctions results or administrative spectrum prices.	International auction results may be an indicator to set Australian pricing. However, the differences in exiting allocations, the economic conditions, government policies and priorities between administrations must be taken into account.

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?	Defence supports the tax review for multiple device networks. Traditionally land mobile trunking networks fell into this category. Most modern systems are inherently designed to support multiple devices using multi access protocols. Furthermore, Defence has examples of the same spectrum being re-used to provide different services. Such efficient and smart use of spectrum minimises spectrum denial, which warrants tax discounts.
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:	The current 90% discount point is EIRP 8.3W, which is based on 5W transmitter into a monopole, a handheld radio transmitter. This selection is quite outdated. There is a good case to review this.
	> examples of these services and the denial characteristics of these services	The radiated power and the sensitivity of the receiver determines the service area of a communications network. Receiver characteristics and wanted power level decide spectrum denial for the co/adjacent systems (frequency and space). Coverage areas can be calculated on case-by-case basis, based on which the tax amount is calculated. Tax calculations can thus be linked to both the population in the service area and spectrum denial. Detailed calculations of this nature provide incentives to the licensees to determine optimum power levels for their systems and access spectrum with scrutiny.
	> the information that may be required for the ACMA to be able to apply a discount	See below.
	> views on whether such approaches can be applied across different licence types and bands.	Some types such as land mobile and broadband wireless access qualifies for coverage area and population based tax. For point-to-point services the antenna gain is a factor. Furthermore, the antenna heights and whether it is an indoor/outdoor installation, availability of clutter and terrain shielding

		can be incorporated to the power level for many services.
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?	Defence supports a monitoring framework to measure congestion. However, such monitoring should consider the surge of usage at some geographic areas and low duty cycle usage patterns (i.e. analysis based on long term data collection). Defence spectrum usage is often not "always on". That shouldn't rule out assured access to spectrum whenever and wherever required by a Defence capability.
	> the use of inflation to keep apparatus licence taxes contemporary and whether there are alternative approaches?	Defence support inflation based annual adjustment of taxes. This gives an opportunity for Defence to forward estimate the budget for spectrum licence costs. Similarly, any changes to fees based on other criteria should be conducted within reasonable time frames that Defence can set its annual budgets well ahead of time.
10	Do current spectrum locations or frequency ranges remain appropriate? If not, what changes should be made and why?	Current frequency ranges seem loosely coupled to ACMA band plans at a certain point of history. A review is due to determine whether those divisions are still relevant.
11	What factors should the ACMA consider in determining new spectrum locations or frequency ranges?	The current location weighting assigns a higher value to Australia Wide. However, all licences issued for area wide, including Australia wide, has the condition that no interference must be caused and no protection is afforded. Hence these licences cause no spectrum denial although paying premium rates. ACMA should review this weighting. ACMA should also clarify the weighting applicable to areas defined within licensing framework such as state wide, Australian waters and Australian Aero taking into account the no interference no protection nature of those licences.
12	Do the different tax rates associated with different spectrum locations or frequency ranges influence decisions about deploying radiocommunications equipment?	No Comment
13	How does the value of spectrum change across geographic locations?	No Comment
14	The ACMA also seeks	

	views from stakeholders about:	
	> should density areas be refined for different services/bands?	Yes. See below.
	> 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?	Indeed. One of the key indicators is the demand for licences in a given area. This can be monitored through the ACMA databases. Fees can be adjusted based on the congestion in a given area taking into account the opportunity cost of spectrum assigned. However, there may be areas with restricted access or designated for special use such as Defence training areas, ports and airports. The opportunity cost of spectrum allocated in such areas is zero.
	> whether different pricing constructs, such as \$/MHz/Pop for different licence types should be considered?	Yes. Congestion in Land Mobile band may not be the same for Radar in the same area. Public mobile services are obviously concentrated at high population centres such as state and regional capitals. However, for example, there is no such increased demand at the same locations for radars or aeronautical mobile systems. This should be taken into account in pricing.
	> whether there should be parity in pricing arrangements between services like commercial broadcasting taxes and open narrowcasting taxes?	No comment
	> whether there are other services where the ACMA should be considering providing greater parity in pricing?	No comment
15	Do stakeholders have views on:	
	> the current pricing arrangements for scientific-assigned licences for new technologies?	No Comment
	> the proposal for new short-term scientific-assigned licence trials and alternative pricing proposals?	No Comment

16	Do these proposals promote transparency and ease in calculating taxes?	<p>It does. However, Defence is conscious of the fact that there may be instances the tax calculation should be made slightly more complicated to deliver fairness. Defence also appreciates that calculation of taxes based on localised congestion on service-by-service basis makes the tax formula slightly complex. However, such tax calculation methods aligns better with actual spectrum denial and promotes efficiency of spectrum use. Should ACMA finds it too complex to calculate this simplified criteria such as power level and antenna height bands may be used.</p>
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