

# Productivity Commission Report on Radiocommunications

## Comments of a minor nature

### Chapter 1

Page 1           The second sentence in the 4<sup>th</sup> paragraph states that the spectrum *is technically defined as the electromagnetic frequencies between 3000 Hz and 300 GHz*. While this definition is consistent with table 2.1 on page 15 of the draft report, it differs with the definition at s.8 (1) of the Radiocommunications Act which defines it as *electromagnetic energy of frequencies less than 420 terahertz*. Since the Radiocommunications Act is the object of review this latter definition is probably the one that should be quoted. The 3 kHz – 300 GHz table appears to be based on ITU, not Australian documentation.

### Chapter 2

Page 13           3<sup>rd</sup> para – first sentence in the first para under the subheading *Defining Spectrum* is circular and should begin *Time varying electrical currents produce ...*

Page 13           To be strictly correct the third dot point in the penultimate para should read – *space – the geographic area of effective signal coverage*.

Page 14           Box 2.1 – the statement in the second para that *low frequency radio signals tend to propagate over long distances while ... high frequency signals tend to propagate over shorter distances* is strictly only true of ground wave propagation on the Earth and not propagation through free space. High frequency or HF (3-30 MHz) is used routinely for international broadcasting and amateur communication because of its sky wave propagation characteristics. Under the right conditions, this enables a relatively low power HF signal to reach around the globe more effectively than an LF (30 – 300 kHz) signal relying on ground wave coverage at similar low power levels. Given that “high frequency” and “low frequency” are names given to particular bands, the Commission’s message might be more effectively gotten across if the word “low” was replaced with “lower” and “high” with “higher.”

Page 14           Final para –the explanation of interference as *the effect of unwanted energy colliding with transmitted signals* is not the right emphasis. It is not simply the collision of signals as such that causes interference (because all signals collide in space) but rather the inability of a receiver to distinguish the wanted signal from unwanted signals. This is crucial to an understanding of interference management and responsibility for its resolution.

Page 15           Second para under table 2.1 makes the statement that *higher frequency bands ... potentially carry more information than lower frequency bands*. While this is true it does not point out that there are technology limitations and propagation characteristics that limit the usefulness of higher frequencies (eg. EHF) for many practical purposes.

Page 15           The final sentence on the page repeats the potentially misleading statement about HF and LF and would be less confusing if the word *high* were replaced with *higher* and low with *lower*.

Page 26        *Mobile communications accounted for...99% of auction revenue [1994-2001]. In 1999-2000 mobile communications accounted for all revenue from auctions.*

In fact mobile communications have amounted for 90% of auction revenue.

Page 33        Even with the footnote, the statement that the re-allocation process for 2.1 GHz in Australia took almost 10 years is misleading. The ten years dates back to the original ITU decision to assign the band for 3G mobile services, and the beginning of the international planning process. The re-allocation process itself took a much shorter time. The 3G Technical Working Group started in March 1999 and the auction was conducted in March 2001. The timing of the allocation was in line with availability of equipment, and the timing of licence start dates (October 2002) preferred by both incumbents and aspiring providers.

Page 35        Box 2.8 3rd paragraph states that “Canberra is one of the few cities in Australia that can access broadcasting over copper wire.” This statement is incorrect.

### **Chapter 3**

Page 40        The final sentence states that *if the transaction and compliance costs of intervention exceed the benefits, then intervention (to manage interference) would be undesirable*. We agree with this as a statement of economic policy. However, in practice in the context of practical spectrum management it does not always provide a workable basis for decision-making because of the difficulty of predicting and measuring the economic benefits of interference management. Non-economic costs and benefits in certain fields for example defence, security services and safety of life services, also need to be taken in to account.

Page 50        The first sentence in the last paragraph states that the *Radiocommunications Act 1992 marked a profound change ... but that ... auctions of spectrum licences started only in 1997*. In this context, the impression is given that it took the ACA 5 years to conduct the first price-based allocation. In fact the *Radiocommunications Act 1992* did not commence until July 1993. The first price-based licence allocation process was conducted by the ACA the following year, (namely, the allocation of MDS apparatus licences in mid 1994) and the first auction of spectrum licences occurred in 1997.

### **Chapter 4**

Page 63        The first paragraph on this page states that the first spectrum licence auction occurred in the 500 MHz band in 1996. The auction of spectrum licences in the 500 MHz band in fact occurred in 1997.

Page 63        The last paragraph refers to five taxation Acts. There are only four, as the *Radiocommunications (Permit Tax) Act 1983* has been repealed.

Page 65        Paragraph 4 uses the word 'regulations' generically, where it would be more precise to use “subordinate legislation.

Page 66        Strictly speaking, the last paragraph gives a description of *Australian Communications Act* which is too wide. Most of the powers and functions mentioned are covered under the Radiocommunications Act or taxing Acts and instruments made under those Acts.

Page 67 Delete fourth dot point. *Radiocommunications (Permit Tax) Act 1983* has been repealed.

Page 68 In paragraph 3 the use of the word "Regulations" is potentially confusing, as it could be narrowly confined to the *Radiocommunications Regulations 1993*. We presume that it must be referring to Licence Conditions Determinations when it talks about conditions and other subordinate instruments that are not regulations made by Executive Council (GG). Penalties are, however, covered in the *Radiocommunications Regulations 1993*.

Page 68 In paragraph 5, there is no **delegation** of the standards making procedure to Standards Australia (SA). Only drafts are dealt with in s. 163(2) of the *Radiocommunications Act*. The last sentence applies to SA standards, but the ACA modifies them to ensure that the ACA standard is limited to the requirements of the *Radiocommunications Act* and limits set out in s.162.

## **Chapter 5**

Page 86 "Australia would benefit from economies of scale...even in the absence of the Australian Radiofrequency Spectrum Plan."

The statement is true, but the Spectrum Plan still gives useful guidance to industry.

Pages 86 - 92 Coordinating the spectrum

The draft Report does not seem to distinguish between the broad divisions of spectrum use outlined in the Australian Spectrum Plan and the fine divisions of use prescribed in frequency assignments and administrative allocations under apparatus licensing. The former allows research and development service planning and capacity estimation for, say, aeronautical operations as well as allocative efficiency. The Report's points are more applicable to administrative allocations within bands.

## **Chapter 6**

Page 131 "According to the ACA, the re-allocation provisions have operated without complication."

We need to correct the impression we gave in our first submission that these provisions have operated "without complication." While it is true that the provisions have operated as intended, they have not been without complications. They have operated effectively, if slowly, as there have been significant issues with (and opposition from) incumbents and other affected parties.

## **Chapter 7**

Page 138 "Around 40 accredited assigners are allowed to broker secondary trades."

The concept of accreditation is unrelated to that of brokering trades. Nothing in the accreditation scheme either "allows" or "prevents" brokering.

Page 143 "The ACA notes that under apparatus licensing, third party authorisations generally would occur on a time-share basis and have been used infrequently."

In our previous submission, the ACA stated that third party authorisations were used infrequently. While it is difficult to know the true extent of such authorisations as they are not required to be registered with the ACA, subsequent information from our Customer Service Group suggests that they are in fact common.

## **Chapter 8**

Page 171 Civil actions by apparatus licence holders are possible but unlikely because of other remedies available and the difficulty of gathering the required level of proof. Even though evidence is sometimes difficult to gather, it is not impossible.

Page 173 para 4 line 1 “the ACA issued”

Page 175 Development of guidelines regarding the method and nature of response to interference is currently being studied within the ACA

## **Chapter 9**

Page 184 “Arraycomm intends to provide portable wireless data services. It should be noted, however, that while technologies differ the use remains the same — that is, wide area mobile communications.”

There appears to be some misunderstanding regarding the difference between portable and mobile communications. They are different (though related) concepts and uses. Arraycom will provide portable, not mobile services, so the Commission’s statement is incorrect. At any rate, the ACA’s point is that few if any other countries’ approaches would have allowed for all of the Arraycomm, Qualcomm and W-CDMA systems to emerge.

Page 194 The practice of identifying the SMC as a separate component of fees has been discontinued.

Page 195 Table C.2 which shows that the ACA’s revenue is 400% of costs – compared to 100% in the USA, ignores auction revenue and therefore gives a slightly misleading impression. The FCC auctions many more licences than the ACA, and so captures economic rent which in Australia is captured by licence fees. In addition, we estimate the factor to be closer to 300% in Australia. In 2000-01, ACA’s radiocommunications administration costs were \$39.7m, while revenue from apparatus licence fees and charges was \$119.4m. The ratio of these figures for that year was therefore approximately 3 but the ratio varies with the period chosen, and depends on other factors.

Page 196 A loading of 74 applies to land mobile system, not point-to-multipoint.

Page 196 The suggestion that the K factor is designed to allow fees to be adjusted to meet Government revenue targets is not strictly correct. Whilst the K factor converts relative prices into absolute prices, the Government does not have a revenue target for the annual apparatus licence fees collection. Furthermore the ACA has never increased the K factor to make up for a shortfall in number of licences allocated. The PC also suggests that the use of the K factor and adjustment inhibit transparency.

However, the Commission's suggestion of combining the K factor, the SiGi weights and the adjustment factors together would result in a set of three tables that show price per bandwidth. The ACA thinks that the current practice is more transparent.

Page 198 "it is likely that holders of space licences place a greater burden on the international coordination functions than do fixed link users."

This is true but it should also be acknowledged that there is a degree of specific and direct cost recovery for some of the international coordination functions in the space area.

Page 205 "Inefficiency also would result if shadow prices were based on out of date auction information (box 9.5)." and in Box 9.5: "They argue that the conversion prices charged to the licensees...based on the 1994-95 auction prices of the initial apparatus licences— were considerably below...market values in 2000. They base this assertion on the fact that one converted licence was subsequently sold on the secondary market at a much increased price."

In fact the conversion prices for MDS licences were not based on auction prices. Because these licences had previously been auctioned, and the term of the licences and their renewability had been left somewhat open at that time, the ACA took the view that it was arguable that the "resource rent" for these licences had already been captured by the initial auction process. It was thus agreed that the price for the converted licences would be based on the ongoing value of the licences (ie at the value of the revenue stream from the annual fees). Some licences were not converted, but in effect taken back from the licensees to be used for other purposes. The volatile financial value of licences is exemplified by the fact that the cited licence(s) have apparently been subsequently revalued at zero by the purchaser.

Page 206 "the failing...is that we have not reflected into that licence fee formula what we've learned about spectrum values."

The ACA has discovered that there is little reliable information available about spectrum values and that market prices are volatile (see comment above about MDS conversion fees). Because of this it has been very difficult for the ACA to justifiably vary licence fees even where it has market information at a particular point in time.

## **Chapter 10**

Page 215 The statement that broadcasting licences carry the entitlement to sufficient spectrum to provide "adequate and comprehensive" services is a misleading interpretation. The *Broadcasting Services Act 1992* (BSA)(Part 3, Clause 7) requires that broadcast licensees -

"provide a service that, **when considered together with** other broadcasting services available in the licence area of the licensee, **contributes to** the provision of an adequate and comprehensive range of broadcasting services in that licence area."

Page 215 At the end of footnote 3, add the words "subject to the granting of additional commercial TV licences in single markets as provided under s38A. (BSA)"

Page 226 The second sentence in the third paragraph on this page could be taken to imply (wrongly) that broadcasters do not have to pay for their broadcast spectrum, although such an interpretation contradicts the subsequent sentence. In fact they do have to pay a relatively small fee

Page 242      “These KPIs...do not include the amount of spectrum regulated through particular licence types.” Page 25 of the ACA Annual Report of 2000-2001 includes a specific indicator about the amount of spectrum managed through spectrum licensing.