ANSWERS TO PRODUCTIVITY COMMISSION QUESTIONS

Question 1.

We understand that the first spectrum licenses issued had terms of 10 years, but that virtually all have been extended to 15 years.

- **What process was used to extend the licenses? (For example, the power to vary license conditions under s. 72 of the RC Act?)**
- **How did this process avoid the RC Act ban on re-issuing licences to the same licensee?**
- **How was the extension valued and the charge determined?**
- **What consultation and advertising was undertaken?**

The first spectrum licences were allocated in the 500 MHz band at a time when the longest allowable spectrum licence was 10 years. Subsequently the legislation was amended to allow a maximum period of 15 years.

The ACA and the Government received representations from some 500 MHz licensees to the effect that they were disadvantaged by the shorter licence terms that had applied at the time of the initial allocation. Licensees argued that this shorter licence term was impeding their ability to introduce services under the spectrum licence. They also considered that the Parliament's intention now was for spectrum licences to be available for 15 year periods. However there was no mechanism under the Radiocommunications Act (the Act) to allow for extension of licences.

After receiving these submissions, the ACA consulted with industry and Government about this matter. Following favourable industry comment during consultation, the Authority decided to offer licensees in the affected band the opportunity to surrender their licences and apply for a new (longer term) licence at a pre-determined price.

Licences were re-issued under a pre-determined price determination. Availability of licences was advertised (along with remaining unsold lots from the initial allocation). Preference was to be given under the determination to original licensees in the event of multiple allocations for a lot. Issuing of the licences was subject to payment of an appropriate pre-determined price under s 60 of the Act. The price for the additional 5 years was set at 50% of the amount paid at the original allocation with adjustments for inflation and GST. 500 MHz spectrum licensees entered into individual agreements with the ACA for the resumption of (10 year) licences (under section 89 of the Act).

Not all current 500 MHz licensees took up the offer.

Question 2.

What is the ACA's view on the timing of auctions for re-issue of spectrum licences?

How long before expiry is appropriate (given competing interests of incumbents and new entrants?)

When should winning bids be required to pay for the licence? At the time of the auction or when they take possession?

The important issue is that an auction should be conducted with sufficient lead time to:

- avoid an abrupt cessation of services in the event that an incumbent licensee is unsuccessful in the auction; and
- allow a new entrant to make full use of the new licence period.

Under the current arrangements provided in the Act, auction processes can be commenced only within the final two years of the licence term. Given the potential for slippages in time, there is a risk that, in practice, auctions would be held considerably closer to the end of the licence life.

We believe that conducting an auction two years prior to the expiry of a licence would generally provide an appropriate lead time. To achieve that two year lead time, it would be desirable that sections 78 and 79 of the Act should be amended to give the ACA greater flexibility as to when the processes leading to an auction can be commenced.

In relation to the timing of auction payments by successful bidders, payment provisions should ensure that commitments made by bidders will be fulfilled to ensure the integrity and fairness of the process. In general the risk of fee default is significantly reduced if fees are payable shortly after auction.

Question 3.

The RC Act allows spectrum licensees to negotiate changed boundary conditions. Have licensees taken advantage of this facility to date?

If by changed boundary conditions the Commission means the ability, though commercial agreement, to radiate into a neighbouring licensee's spectrum space beyond the level allowed in the licence core conditions, then a number of such agreements are active between spectrum licensees. The ACA does not allow licensees to alter or ignore core licence conditions relating to boundary radiations.

Question 3(a)

The 2GHz Band spectrum license application information package stipulates a form of agreement for spectrum licensees to agree changes to core conditions (Schedule 4, p. 15.) This states that one party to the transaction can terminate the agreement 'at will.' This seems to limit certainty and run contrary to most commercial agreements. Why was this condition attached to the agreement?

The clause is intended to prevent the question of whether a person is entitled to transmit in any particular spectrum from depending on the rights of one or more parties under a contract. The ACA is neither competent, nor empowered, to conclusively determine contractual issues between licensees and others. In the event of a contractual dispute between licensees and/or others as to boundary conditions, there is potential for use of the spectrum to be alienated, pending court proceedings, and for unrelated parties (eg in other bands) to be adversely affected. To avoid these circumstances, the form of agreement provides for the licensee to terminate, at will, an agreement relating to boundary conditions. The form of agreement does not prevent the parties from providing that early termination will give rise to damages or other redress. The ACA's understanding is that, in practice, parties employ indemnities to protect themselves against premature termination of agreements by a licensee.

Question 4.

The draft report speculates about the potential for issuing spectrum licences over 'encumbered' spectrum. What difficulties or advantages does the ACA see with this process?

We assume that, in canvassing this approach, the Commission envisages that the Act would be amended so that incumbent apparatus licensees are not necessarily cleared, or served with notice of clearance, from the affected band.

We believe that there is merit in the proposal in that it could facilitate the pace at which apparatus licensed bands are moved to spectrum licensing. More importantly, however, the proposal could possibly stimulate the emergence of band managers – i.e. parties who would manage the spectrum for use by others, rather than for their own transmissions. That is a segment of the market which has been slow to develop.

The potential difficulties in the approach canvassed by the Commission lie in the views of the incumbent apparatus licensees as to their level of protection in relation to:

- clearance of the spectrum by the new licensee;
- inappropriate rent levels;
- tenants' right to sub-let spectrum;
- anti-competitive conduct by the new licensee; and
- the special treatment claimed by particular apparatus licensees, for example Defence and the law enforcement community.

While there is a long history of case law in relation to such matters with regard to property that serves to give some understanding to parties of their rights and obligations, no such history exists in relation to spectrum rights. Arguably, the rights of the incumbent apparatus licensees could be diminished by an 'encumbered spectrum licences' scheme, relative to the rights which they currently enjoy under apparatus licence regime. We note that the Trade Practices Act would provide a protection against anti-competitive behaviour. We also note that it would be possible to protect the rights of incumbents along lines similar to those used in real estate markets, for instance, by requiring landlords to provide minimum notice periods for evictions and rent increases. That said, the greater the protection afforded to the incumbent apparatus licensees, the greater the erosion of flexibility to the new spectrum licensee.

One wonders whether a system of encumbered spectrum licences would perhaps run the risk of forcing an outcome (band management) on to the market when the market is capable of reaching that outcome itself without regulatory intervention.

If the objective underlying the Commission's proposal is to encourage the emergence of the band manager market, perhaps the better approach would be for the ACA to issue spectrum licences, under the current re-allocation rules, in bands where the current uses are likely to represent the highest and best uses, i.e. bands which are unlikely to be affected by new technologies.

Question 5

What proportion of the spectrum did the Government/SMA envisage would be licensed under spectrum licences? What proportion does the ACA now think would be appropriate to licence? If the RCA was amended to facilitate conversions in the ways the ACA suggested (and the Commission endorsed), what would prevent the conversion of all wide area apparatus licences into spectrum licences?

We are not aware that the SMA or the government ever considered specifically what proportion of the spectrum might be licensed under spectrum licences.

In a February 1995 discussion paper titled *Implementing Spectrum Licensing*, the SMA stated that "*The SMA proposes to introduce spectrum licensing progressively and only in those bands where it is technically appropriate and where there is benefit in applying this new method of spectrum management.*"

The ACA agrees that there is potential to significantly extend the number of spectrum-licensed bands, although we do not believe it is feasible or useful to quantify the proportion of spectrum which could be licensed under spectrum licences. While it should be possible, from a technical viewpoint, to extend spectrum licences to most bands, the pace of spectrum licensing depends on industry acceptance of the benefits of spectrum licensing and market interest in conversions and reallocations.

If the Act were to be amended to facilitate conversions of apparatus licences to spectrum licences, most wide-area apparatus licences could be converted to spectrum licences, subject to industry acceptance and market interest.

Question 6

Following from the previous question, what barriers exist to converting apparatus licences held by Defence into spectrum licences?

From an ACA perspective, there are no particular barriers to Defence apparatus licences being converted to spectrum licences.

Question 7.

The draft report saw potential in the extension of class licensing to new technologies that can potentially co-exist with limited interference problems.

7(a) Is the limited interference a function of the technology or just the limited roll out to date (for example, wireless LANs?)

Class licences are usually allocated under the following process. A new wireless product will be developed or an importer will wish to import a new piece of wireless equipment into Australia. This person will approach the ACA and seek access to spectrum in which the equipment can operate. The ACA will make a judgement on the level of interference that the equipment provides and if it is low interference/low power device, the ACA may decide to class licence it within a certain band. This type of equipment usually operates at low power over a short range which reduces the statistical likelihood of users causing interference to each other. It is a judgement call by the ACA and does not mean that there is no interference caused by this type of equipment, but that the interference is minimal and/or it may be avoided by self-help mechanisms (eg moving a wireless LAN further away from a microwave oven).

7(b) If interference problems emerge, how would they be resolved? Would users (or suppliers of equipment) be required to take out individual licences?

Statistically, there is likely to be interference in some circumstances. If wide-spread interference problems arise, the ACA would review the conditions of the class licence.

7(c) What processes have been followed when varying or revoking class licenses to date?

Section 136 of the Act requires the ACA to undertake consultation about variations and revocations of class licences in a specific manner. The process commences by the publication of a written notice in the Commonwealth of Australia Gazette. That notice must contain specific information, including that interested persons are invited to make representations about the proposed variation or revocation by a date that is at least one month after the date of publication of the notice. (The proposed variation or revocation takes the form of draft legislation.) In addition, the ACA publishes a similar notice on its website.

If the ACA is aware that particular organisations or individuals would have an interest in the proposed variation or revocation, it writes to them inviting them to comment about the proposal. For example, the ACA recently proposed to revoke the Radiocommunications (Cellular Mobile Telecommunications Devices) Class Licence 1999. To replace it, the ACA expects to issue, under subsection 132(1) of the Act, the Radiocommunications (Cellular Mobile Telecommunications Devices) Class Licence 2002. Letters inviting comments about the proposed revocation were sent to the major mobile telecommunications carriers, the major domestic airlines, the Aircraft Owners and Pilots Association of Australia, Airservices Australia and the Civil Aviation Safety Authority.

Once representations have been received, they are analysed and considered. If the representations have the effect of requiring a variation to the draft legislation, the ACA arranges for that to occur and again seeks public representations about the amended variation or revocation, in accordance with statutory requirements. If the representations do not have that effect, they are summarised and provided to the Authority for consideration when the draft legislation is finalised for signature.

The ACA writes to all who provide representations advising them about the outcome of the Authority's consideration.

If the Authority decides to revoke or vary a class licence, a further written notice is published in the Gazette and on the ACA's website. A class licence is a disallowable instrument and is, therefore, tabled in both Houses of Parliament.

7(d) What regulatory approaches have been used overseas for dealing with the emergence of congestion and interference in class (or unlicensed) bands?

Most of the equipment that is in class licensed bands comes from either Europe, the US or Japan. The emphasis in designing the class licence conditions is on prevention (of interference) rather than cure. For commercial and practical reasons, the ACA tries to align its class licensing arrangements with those of the other leading regional administrations. The ACA is unaware of any regulator that has had to change arrangements for an unlicensed band due to congestion.

Question 8

(a) What is the prospect for issuing class licences (or other non-interfering licences) over spectrum licensed space?

Before turning to the substantive issues, it is important to examine the legal issues. There are two means by which spectrum may be allocated by issuing spectrum licences: section 36 (relating to conversions) and section 153 (relating to re-allocations).

Section 138 of the Act however prevents the ACA from issuing a class licence within a part of the spectrum that is designated under section 36. 'Issuing' includes varying an existing class licence in any respect that involves the frequencies covered by the section 36 designation.

If a class licence is in effect before the relevant spectrum is designated under section 36, that class licence may continue. However, it may not be varied once the spectrum is so designated.

Section 138 does not prevent the ACA from issuing (or modifying) a class licence within a part of the spectrum that is declared under section 153B of the Act to be re-allocated by issuing spectrum licences.

The ACA is preparing a submission to the Department of Communications, Information Technology and the Arts seeking to repeal section 138 of the Act to enable class licences to be issued in spectrum designated for spectrum licensing. A copy of that submission will be provided to the Productivity Commission when it is prepared.

(b) Could new spread spectrum technologies co-exist with existing spectrum licences?

All usage of the radiofrequency spectrum generates a degree of interference among the various users. Some interference effects are more harmful than others. The ACA prefers to consider whether different uses of the radiofrequency spectrum are technically able to share similar space. Whether a particular radiocommunications application can share with another radiocommunications application would have to be considered on a case-by case basis, taking into account the operational and technical characteristics of the proposed applications.

In order to determine whether sharing is possible, the ACA would consult with interested parties, including with existing licensees, the 'sponsor' of the new application and the radiocommunications industry generally.

In a technical sense, sharing of spectrum would depend on what radiocommunications applications are operating under the spectrum licences and whether the operational and technical characteristics of the spread spectrum technologies are compatible with those applications.

From a legal perspective, sharing of spectrum depends on whether the operation of the spread spectrum device is authorised under a class licence [see answer (a) above]. Further legal issues would arise if spectrum licences had been marketed as exclusive rights to particular bands. While no such representations have been made, there would be a need for close consultation with spectrum licensees before class licences were issued/varied in the relevant spectrum.

(c) Do spectrum licences have a guaranteed 'floor level' of background noise?

Spectrum licences do not have a guaranteed "floor level" of background noise. A class licence, if it were to operate in spectrum licensed spectrum, could include a condition related to interference mitigation. For example several class licences currently in existence contain a condition that they must not cause harmful interference to a radiocommunications service. A spectrum licence has core conditions that determine the level of interference that they must not exceed at their geographic and spectrum boundary.

(d) Would users of the new technology have to negotiate with the spectrum licensee?

If a class licence has been issued that would authorise the operation of devices using the new technology in the same space as a spectrum licence, operators of devices authorised under that class would be required to comply with the conditions of the class licence. The ACA *may* impose a condition that operators need to negotiate their use with spectrum licensees.

(e) Could this (requirement for proponents of a class licence application to negotiate with a spectrum licensee) restrict the adoption of new technologies?

Under current legislative provisions, yes. For example, the ACA has a proposal before it to authorise low-powered ultra wide band technology for use, for example, as a ground penetrating radar. The Federal Communications Commission in the United States has approved this application for use below 960 MHz or in the frequency band 3.1 - 10.6 GHz. Currently, the ACA is unable to license these devices sensibly by virtue of the provisions of section 138 of the Act.

If the ACA were to attempt to authorise the operation of a device using ultra wide band technology under a class licence, the authorised operating frequency range for the device would have to be interrupted to excise frequencies covered by a section 36 designation (e.g. the 500 MHz band). Under current arrangements, operators would have to negotiate with affected spectrum licensees to operate under third party authorisations (section 68 of the Act).

Question 9

The draft report focused on using conversion and reallocation mechanisms to change spectrum use over time (at least from apparatus licences to spectrum licences.) Can you describe the process of using band plans to change the use of apparatus licences (eg, periods of notice and any rules about reallocating licences to incumbents etc.)?

Frequency Band Plans do not change the use of licences directly. Their function is to divide spectrum into different bands and specify the general purposes for which these bands may be used. These may cover one or more licence types.

Part 2.1 of the *Radiocommunications Act 1992* sets out the process the ACA must follow when making, varying or revoking frequency band plans. This entails:

1. Inviting public comments on the draft plan by publishing a notice in the *Gazette*. The notice must state where copies of the draft plan can be obtained from and where comments can be sent to. There must be a period of at least 1 month for submissions to be made.
2. Considering all submissions received by the date specified in the notice and deciding whether to modify the draft plan in the light of submissions.
3. Publishing the final band plan in the Gazette and tabling of the Plan before both Houses of Parliament (it is as a disallowable instrument).
4. Items 1-2 above may be dispensed with if the ACA considers that the preparation of the plan is a matter of urgency.

The procedures followed in relation to the management of incumbents affected by band plan variation will depend on the situation in the particular band and is determined administratively by the ACA having regard to the objects of the Act and the principles of natural justice as they apply to the particular circumstances. For example, in the case of the band plan developed for the Mobile Satellite Service the ACA will give incumbents a minimum of two years notice to clear the 1980-2010 MHz band.

In addition to the statutory requirements to publish the notices in the Gazette the ACA would publish the notices on the ACA website. The final Band Plan would also be published on the ACA website.

Question 10

What is the rationale for imposing the third party traffic restrictions on Australian amateur radio operators? That is, what function does this restriction serve?

The rationale for imposing third party traffic restrictions on Australian amateur operators is that they are consistent with Australia's obligations to the International Telecommunication Union (ITU) and the long-standing nature of the amateur service.

The ITU Radio Regulations (Volume 1 - Articles) defines the amateur services as: "A radiocommunications services for the purpose of self-training, intercommunications and technical investigations carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest."

Article 25 of the Radio Regulations contains the provisions for the Amateur service. Article 25.3 states that is absolutely forbidden for amateur stations to be used for transmitting international communications on behalf of third parties. This is modified by Article 25.4 that provides that administrations of countries may make special arrangements permitting third party traffic between them. It is also modified by Resolution 644 (Revised WRC 2000) that recognises the importance of the international use of radiocommunications in the event of natural disasters, including the use of amateur radio.

The Australian definition of amateur licence, provided in the *Radiocommunications (Interpretation) Determination 2000*, means a licence issued for a station that:

'(a) is operated for the purposes of self-training in radiocommunications, intercommunication using radiocommunications and technical investigation into radiocommunications by persons:

(i) who do so solely with a personal aim; and

(ii) who have no pecuniary interest in the outcome of the operations of the station; and

(b) is operated on amateur frequencies or amateur frequency bands; and

(c) may participate in the amateur-satellite service.'

That is, the international arrangements for amateurs generally limit communications by amateurs to communication with other amateurs ('intercommunication'). The phrase 'third party traffic', in relation to Amateur radio, refers to a message passed from one Amateur to another on behalf of, or to, another person who is not an Amateur. Third party traffic involving Australian Amateur stations and Amateur stations in other countries may only take place where 'third party traffic' agreements have been established between Australia and the country concerned. Countries which have third party traffic arrangements with Australia are the USA, Canada, Israel, Honduras and Solomon Islands.

Question 11.

What are the likely consequences of removing the restriction? What are the likely costs and benefits of removing the restriction?

The consequence of removing the restriction on third party traffic would be that Australia's amateur arrangements would no longer be consistent with ITU arrangements and this would have an impact on the nature of the Amateur service.

Australia is a signatory to the Constitution and Convention of the ITU. In order to 'remove the restriction' we would need to take a unilateral action. The risks are that such action may effect not only Australia's existing third party arrangements (countries with which we currently have arrangements may withdraw from them), but also the more fundamental freedom of Australian amateurs to communicate with amateurs in countries that allow such communication. It may also have a negative impact on the ability of Australian amateurs to have their qualifications recognised for licensing purposes in countries in which they wish to operate.

Australia is seen to be a good international radiocommunications citizen. It is conceivable that unilateral action in one sphere (amateur service) may also effect Australia's future ability to operate in the wider radiocommunications community (satellite slots, frequency coordination, interference investigation) and to continue to participate effectively in the ITU.

In addition, if amateurs were able to carry unrestricted third party traffic, there is a risk that they would come under the regulatory provisions of the *Telecommunications Act 1997* related to carrier licensing, including the payment of substantial licence fees.

An assessment about 'costs' and 'benefits' related to removing the restrictions on third party traffic would involve making a value judgement about the nature of the amateur service in Australia. The amateur community has not been consulted about such a change. There would, however, be a resource cost to the ACA if it proceeded to change regulatory arrangements for amateurs.

Question 12.

What is involved in establishing third party traffic arrangements with other countries? Is it a complicated or relatively straightforward matter?

The current third party traffic arrangements have been in place for many years – some are regarded as dating from the late '40s; the rest are over 20 years old. Twenty years ago, the responsibility for radiocommunications matters rested with the Department of Communications, so the ACA has no current information about whether establishing these arrangements was straightforward.

However, the ACA has developed reciprocal Amateur licensing arrangements with other countries since its establishment in 1997, as did the Spectrum Management Agency, an ACA predecessor organisation. The processes followed in the development of reciprocal Amateur licensing arrangements would be similar to those required to establish third part traffic arrangements.

The development of reciprocal Amateur licensing arrangements result from comparative assessments of each country's qualifications and licences, and include the establishment of a formal reciprocal licensing agreement. The ACA is currently in negotiation to finalise a reciprocal amateur licensing arrangement with the Hong Kong Special Administrative Region of the People's Republic of China. The development of the agreement has taken over a year, so far. On the Australian side, it has, from time to time, involved the ACA, the Department of Foreign Affairs and Trade, and the Australian Consulate-General in Hong Kong. Communications between parties are through diplomatic means.

Question 13.

What was the rationale for restricting amateurs connecting to the public telecommunications network? Why is the restriction limited to situations where the station is:

- **an amateur repeater station?**
- **an amateur beacon station?**
- **using automatic mode?**
- **using computer-controlled mode?**

The rationale for restricting connection to carrier's networks is related to the control of an amateur station.

Amateur stations under the direct control of a qualified amateur may connect to a carrier's network provided that they comply with relevant Australian legislation[1]. These stations are usually located in private homes.

The restrictions are applicable to those kinds of amateur station or transmission mode listed above, because their operation is automated (ie , there is little direct human control). Therefore there is an increased risk that non-amateurs could gain access to the Australian amateur bands and that amateurs could gain access to amateur bands to which they are not entitled (ie, they are not appropriately qualified to gain access to those bands).

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1 Among other things, that includes the *Radiocommunications Act 1992* and the *Telecommunications Act 1997*. The equipment that an amateur connects between his or her radiocommunications transmitter and a carrier's network needs to comply with a telecommunications labelling notice made under section 407 of the *Telecommunications Act 1997* and applicable technical standards made under section 376 of the *Telecommunications Act 1997*.

This may enable an inappropriately qualified amateur, in Australia or overseas, to gaining access privileges to which they are not entitled. More problematically, this could enable non-Amateurs to have access, through the public telecommunications network, to the Australian amateur bands. Both outcomes would be in conflict with Article 25 of the ITU Radio Regulations, which requires administrations to take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate an Amateur station.

Question 14.

What effects would removing the restriction have for amateurs operating in Australia? What are the likely costs and benefits of removing the restrictions?

As indicated in the answer to question 13, removing the restrictions on non-manual amateur operation would increase the risk that:

- inappropriately qualified people could gain access to amateur bands to which they are not entitled;
- utility of the Australia amateur bands could be eroded, through increased congestion or inappropriate operation of amateur stations;
- the Australian amateur bands could become attractive to commercial operators, which has the potential to drive out genuine amateur operations; and
- Australia would be in breach of Article 25.6 of the ITU Radio Regulations. The risks of that have been explained in the answer to question 11.

The ACA has not made an assessment of the 'costs' and 'benefits' related to removing the restriction on non-manual access to carrier's networks. Such an assessment would involve making a value judgement about the nature of the amateur service in Australia. The amateur community has not been consulted about such a change.

<u>Carrier Licences</u>

Question 15

There appears to be a link under the *Telecommunications Act 1997* between owning infrastructure such as 'network units' and being a telecommunications carrier. Would a WinLink system be regarded as a network unit (and therefore the provider be deemed a carrier and liable to fees etc?) How do similar commercial systems such as Sailmail avoid these requirements?

The owners of the Winlink system have never made a submission to the ACA regarding its service so we do not have enough information on its operation to make a judgement on whether its operation would require a carrier licence under the *Telecommunications Act*.

That said, s34 of the Act outlines when a base station is part of a terrestrial network for purposes of being a carrier under the Act. Section 34(e) outlines in part that the base station is principally used in premises. The ACA, for purposes of this Act, defines premises as not to include ships.

Question 16

There has been some speculation about the prospects for using wireless technology to provide broadband access, but that it faces regulatory barriers. The need for carrier licences and subsequent fees seem to be telecommunications issues (covered by the Telecommunications Act.) Are there are any Radiocommunications Act issues eg, the extent to which such technologies are allowed for under class licences?

We are unaware of any regulatory barriers under the *Radiocommunications Act 1992* to broadband access using wireless technology, other than those discussed in answer to Question No 8.