AIRSERVICES AUSTRALIA

Airservices Australia's Submission to the Productivity Commission's Draft Report for the 'Review of the Radiocommunications Act and the Role of the Australian Communications Authority'

Airservices Australia is responsible for the provision of safe and efficient air traffic services to aircraft in approximately 11% of the world's airspace. Australia's Flight Information Region includes not only Australia's sovereign airspace, but also significant international airspace over the Pacific and Indian Oceans. Airservices also represents the aviation sector in forums such as this Productivity Commission.

Airservices also participates in international consultative committees and forums on aviation spectrum issues.

Airservices commends the Productivity Commission for some significant draft findings particularly in relation to international services and improving tenure of apparatus licences.

This document provides Airservices' views on various findings in the Draft Report.

Glossary

Safety(-of-life) services (page XXIX)

For consistency, we would suggest the use of the definition from the ITU Regulations or the Australian Radiofrequency Spectrum Plan, viz., "Any radiocommunications service used permanently or temporarily for the safeguarding of human life and property."

Thus the glossary reference could read:
Any radiocommunications service used permanently or temporarily for the safeguarding of human life and property. Emergency service providers which supply these services nationally include police, ambulance and fire services, the Royal Flying Doctor Service and life saving associations. Aeronautical and maritime services are recognised internationally for also providing these services.

Overview

Non-commercial spectrum users (page LIV)

Use of the radiofrequency spectrum is critical for efficient provision of aeronautical services and the safety of aircraft and passengers. Accordingly they require special access considerations.
It is suggested that the DRAFT FINDING 5.2 "Aligning spectrum use to ensure inter-operability of some international services is appropriate where safety-of-life or national security issues are involved" should be reflected in the overview with international safety-of-life services being noted as requiring special consideration along with national security issues.

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Chapter 2 Characteristics of spectrum market

Other spectrum users (page 23-24)

Aeronautical services are recognised internationally to be prime users of the radio frequency spectrum in its provision of safe, rapid and cost-effective aircraft operations. It is suggested that this be recognised in the Productivity Commission Report through a separate paragraph highlighting these users.

Proposed new paragraph: *Australia's aviation industry, including Airservices as the air traffic services provider and Aircraft operators, make extensive use of mobile, fixed, radionavigation and satellite spectrum to provide safe and efficient aircraft operations. The International Civil Aviation Authority (ICAO) specifies the types of services and their standards of performance Airservices must provide to meet its international obligations to the Aviation industry. Airservices operates an extensive airways system including communications, navigation and surveillance facilities around Australia to provide this service. Aeronautical mobile communication services are used during all phases of aircraft flight to provide reliable and immediate air-ground communications between pilots and air traffic controllers as well as advisory services.*
Aeronautical radionavigation services are provided on the ground to guide the aircraft and are used by the air traffic controllers to ensure the appropriate level of aircraft separation. Different navigation systems are used by aircraft depending on the phase of flight and the type of aircraft. Highly accurate and reliable navigation systems are used to allow aircraft to land in poor weather conditions.
For high traffic density areas surveillance radars are used to provide positive control to air traffic controllers, to enable reduced separation of aircraft that would otherwise not be possible.

Ultra-wideband radio and software-defined radio (Box 2.6 page 31)

Airservices disagrees with the comment that UWB devices do not cause "undue levels of interference". The US Department of Transport (DOT) together with the National Telecommunications and Information Administration (NTIA) have been conducting tests on the compatibility between UWB devices and other devices including aviation systems. The results indicate that under some conditions interference to devices including GPS and aviation systems could occur. The NTIA reports are available at http://www.ntia.doc.gov/osmhome/osmhome.html . Due to the strong concern about interference from UWB, technical studies have been initiated within the ITU-R.

Chapter 3 The Commission's approach

Managing Interference (page 38)

Managing interference is one of the major concerns for aeronautical services. This is not reflected in this section of the report. It is noted in the report the comment that "Sufficient severe interference may … in the case of emergency services, (be) life threatening." The comment that "mobile communications can operate effectively with larger amounts of interference" (pg 40) does not apply to aeronautical mobile communications.

The ITU recognises that radio navigation and aeronautical mobile communications services require special measures to ensure protection from harmful interference. The

speed of aircraft, their relative close proximity and their reliance on radio based systems, requires certainty in the performance of communication, navigation and surveillance systems. Not protecting the spectrum allocated for these services and ineffective management of interference will not allow efficient and safe operations.

Chapter 4 Regulatory arrangements

Objects section of the Radiocommunications Act 1992 (page 73)

Airservices would like to clarify the perception in our original submission (sub. 19, pg 1) that aviation should be specifically mentioned in the objects of the Radio Communications Act. We appreciate that this level of detail is not appropriate for the objects of the Act. The concern is that the importance of aeronautical services for Australia is not well represented in the Radio Communications Act as a whole. It is noted that the ACA makes specific allocations in the Spectrum Plan for defence and broadcasting as required in the Radio Communications Act.

It is commended that the Productivity Commission draft report rightly identifies aeronautical safety-of-life services as non-commercial government users of spectrum. Aeronautical safety-of-life services would be considered as providing a public or community service under Section 10 of the Radio Communications Act. Further that for the provision of frequency band plans that subsection 32 (4) b (ii) would apply ("parts of the spectrum to be reserved for provision of public or community services"). The Radio Communications Act is unclear concerning special considerations for public or community service allocations in the Spectrum Plan.

We would support the inclusion of guidance in the Radio Communications Act (through a Report RECOMMENDATION) in regards to allocations in the Spectrum Plan for international safety-of life services to meet international treaties as identified in the Productivity Commission draft report:

DRAFT FINDINGS 5.2 which indicates that "Aligning spectrum use to ensure inter-operability of some international services is appropriate where safety-of-life or national security issues are involved …";

DRAFT FINDINGS 5.4 which indicates that " … there would be a limited role for administratively allocating parts of the spectrum in the following circumstances:

- to allocate spectrum to meet Australia's international treaties and obligations; …"

These draft findings are practical means to support clauses (b) and (h) of the objects of the Radio Communications Acts and recognises "the importance of the ITU and other international bodies in shaping Australia's spectrum planning and management systems" (PC Draft Report page 78). Further that "Australia also is obliged to meet international obligations as a signatory to specific treaties governing international uses of spectrum for aviation and maritime services" (PC Draft Report page 82). It is noted that the Productivity Commission's Act (pg 8) has this idea as a policy guideline but this is not expressed in the Radio Communications Act.

Ch 5 Spectrum allocation

International influences on Australian spectrum allocation (page 83)

Airservices provided in its original submission a list of frequency bands of internationally recognised aeronautical safety services (repeated in a similar form at

the end of this paper). The ITU distinguishes between aeronautical safety services and non-safety services. Airservices would suggest that the report be consistent by using the ITU definition of 'safety(-of-life)' services as indicated earlier in this document (see 'Glossary').

Thus the first paragraph of this section could read:
Safety-of-life services are radiocommunications service used for the safeguarding of human life and property. Aeronautical and maritime services are recognised internationally for providing these services. Emergency service providers which supply these services nationally include police, ambulance and fire services, the Royal Flying Doctor Service and life saving associations. If spectrum use were not co-ordinated internationally, systematic communication would be difficult and potentially life-threatening incompatibility could result.

Ch 6 Licensing

Flexibility of licence types (page 104)

As stated in the draft report "The ACA recently converted apparatus licences into class licences for some maritime and aviation applications where the potential for interference was assessed to be low." Aircraft apparatus licences using a pre-determined set of frequencies were converted to Class licences. It should be noted that the interference considerations for these Class licences are taken into account through international operational practices or standards when the associated ground station apparatus licences are issued.

Ch 8 Managing interference

Rationales for interference management (page 159)

It is noted that the single draft finding (8.1) on managing interference was that "Mandatory standards are justified where they provide a cost-effective means of managing interference". It would be recommended that the observation made by the Commission that "In other cases, the consequences of interference are so serious … that regulations to prevent interference are preferable to attempts to fix the damage after the event" should receive additional emphasis (as a FINDING). The value and consequence of the loss of human life should be a very important factor in the consideration of the management of interference. It is pleasing to note that for the resolution of interference, the ACA states that "safety-of-life services are given highest priority".

Ch 10 Managing spectrum for non-commercial and broadcasting services

Current arrangements (page 213)

As previously noted the Aviation industry makes extensive use of mobile, fixed, radionavigation and satellite spectrum to provide safe and efficient aircraft operations. This would be better recognised through a separate section detailing 'aeronautical services' including as a table the aeronautical safety service bands. Aviation makes use of other spectrum for non-safety-of-life functions (including airliner company and passenger communication) which are not list in the table below.

The proposed text and table is provided below:

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Aeronautical services

Aviation industry makes extensive use of internationally agreed aeronautical spectrum for ground-based and aircraft systems in the bands indicated in Table 10.X.

Aeronautical services are recognised internationally to be prime users of radio frequencies without which aircraft operations would neither be safe nor be capable of meeting the global demand for rapid and cost-effective transport. The prominent safety-of-life element, present during all phases of an aircraft's flight, is accorded special treatment internationally, through agreed measures, to protect its radio services from harmful interference. Aeronautical spectrum use is divided into two main functions: ground-air communications and radio navigation. The aeronautical mobile (route) service, the aeronautical radio navigation service and their satellite service counterparts are important components in the mobile and radio navigation family of spectrum users with exclusive allocations normally made on a worldwide basis. The future will also see the gradual introduction of satellite-based services in accordance with the communications, navigation and surveillance/air traffic management (CNS/ATM) policies approved by the ICAO Council.

Table 10.X Aeronautical Safety Service Bands

Band	*Use*
160-285 kHz	Non-Directional Beacons
315-405 kHz	
2.1-28 MHz (various bands)	Aeronautical Mobile (R) and (OR) Service
74.8-75.2 MHz	Instrument Landing System Marker Beacon
108-118 MHz	Radionavigation Aids - VHF Omnidirectional Range, Instrument Landing System Localizer, Terrestrial Augmentation for RNSS
118-137 MHz	Aeronautical Mobile Communications
121.45-121.55 MHz	Aeronautical Emergency Location
242.95-243.05 MHz	Aeronautical Emergency Location
328.6-335.4 MHz	Instrument Landing System Glide Slope
960-1 215 MHz	Aeronautical Radionavigation Aids - Distance Measuring Equipment, Tactical Air Navigation, Radar Beacons, Secondary Surveillance Radar, Airborne Collision Avoidance System, Radionavigation Satellite Systems
1 215-1 400 MHz	Aeronautical Radar
1 215-1 260 MHz	Radionavigation Satellite Systems
1 545-1 555 MHz (s-E)	Aeronautical Mobile Satellite Communications
1 559-1 610 MHz	Radionavigation Satellite Systems, Terrestrial and Satellite-Based Augmentations for Satellite Navigation Systems
1 646.5-1 656.5 MHz (E-s)	Aeronautical Mobile Satellite Communications
2 700-2 900 MHz	Radar (Aeronautical Radionavigation)
4 200-4 400 MHz	Airborne Radio Altimeter
5 000-5 250 MHz	Microwave Landing System, Radionavigation Satellite Systems
5 350-5 470 MHz	Airborne Weather Radar
8 750-8 850 MHz	Airborne Doppler Radar

9000-9500 MHz	Precision Approach Radar
13.25-13.4 GHz	Airborne Doppler Radar
15.4-16.6 GHz	Airport Surface Detection Equipment, Weather Radar, Aircraft Landing System, Radar Sensing and Measurement System
24.25-24.65 GHz	Airport Surface Detection Equipment
31.8-33.4 GHz	Airport Surface Detection Equipment

Emergency and safety-of-life uses (page 212-213)

Emergency and safety-of-life are related but different concepts. An "emergency" is an "unforeseen or sudden occurrence especially of danger demanding immediate action"[1]. A "safety(-of-life)" service is for the "safeguarding of human life" (ITU definition). Different organisations are responsible for these functions.

As indicated in other sections, aeronautical services are recognised internationally as providing a vital safety-of-life function. It would be suggested that the statement "other services that have potential safety-of-life issues (such as maritime and aeronautical services)" (page 212) be replaced with "maritime and aeronautical services that provide safety-of-life functions."

Also under the sub-heading "Other services" it would be suggested that the statement "Other services, such as aeronautical and maritime services, do not provide emergency services, but often may be confronted with safety-of-life issues" be replaced with "Other services, such as aeronautical and maritime services, provide safety-of-life services meeting international standards and procedures. Emergency and distress responsibilities are also serviced to meet international treaties."

Ch 10 Managing spectrum for non-commercial and broadcasting services

Non-commercial users of spectrum (page 233)

Aeronautical services though non-commercial users of spectrum pay for apparatus licences at the ACA published rates. Airservices is not requesting subsidies or exemption from these licence charges. It recognises that certain costs are involved in provision of interference management, which are derived from licence fees.

[1] Australian Collins Dictionary