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1 September 2014

The Project Manager
Spectrum Review
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The Wireless Institute of Australia (WIA) welcomes the opportunity to comment on the Spectrum Review.

About the WIA

The WIA is the national organisation of Australian radio amateurs (www.wia.org.au). It is the peak body representing the interests of the Australian radio amateur community nationally and internationally through formal liaison with the ACMA, other government institutions and other organisations.

Founded in 1910, the WIA is acknowledged as being one of the first radio societies in the world, and is the world's oldest national amateur radio society. A key role of the WIA is providing training and licence assessment services for people interested in obtaining their amateur licence, particularly young people.

WIA appointees participate in the work of spectrum management, consultative and standards bodies, including:

- Australian Radio Study Groups in preparatory work for World Radio Conferences (WRCs),
- Australian delegations to WRCs,
- Standards Australia's standards committees, and
- the Radiocommunications Consultative Council.

The WIA is a member of the International Amateur Radio Union (www.iaru.org), which represents the interests of the amateur and amateur satellite services internationally, and is recognised by the International Telecommunications Union. Membership of the IARU is comprised of the national societies of each separate country or territory. The WIA was one of the first 14 national societies to become a member of the IARU when it was formed in 1925.

The IARU is a Sector Member of the ITU Radiocommunications Sector and actively participates in many ITU meetings, including the WRCs. There is an IARU association in each of the three ITU regions across the world; the WIA is a founding member of the Region 3 association (www.iaru-r3.org).

Amateur Radio

Amateur radio is a not-for-profit community activity and its purpose is to advance the knowledge and experimentation in radio technologies through self-training and technical investigations. Radio amateurs communicate nationally and internationally using a very wide range of frequencies and technologies. For these reasons the Amateur Service is a significant stakeholder in spectrum policy decisions.

The Amateur Service represents a large resource of qualified and experienced radio operators and equipment dispersed throughout the community and worldwide. Radio amateurs seek to explore and experiment with new technologies, yet retain an interest in, and continued use of, technologies of the past, albeit in a modern context.

The 14,000 strong radio amateur population in Australia is relatively stable, with younger Foundation grade licensees replacing the numbers of older radio amateurs lost to age. Currently there are approximately 3 million radio amateurs world-wide.

While commercial and defence operations focus on reliable, high signal-to-noise ratio communications, radio amateurs deliberately seek to explore testing and establishing communications under difficult circumstances where weak-signal reception is the norm, rather than the exception. The amateur radio community, globally and in Australia, has built up a commendable record of investigation and achievement in advancing the state of the art with weak-signal communications technologies and techniques.

The amateur radio community stimulates technological leadership within its ranks. Radio amateurs have made significant technical contributions to the understanding and use of electromagnetic propagation, single-sideband radio, high frequency data communication systems, digital radio protocols and communications satellite design, among other things.

It is widely acknowledged and understood that “disruptive” technologies and innovations drive the advancement of technological industries, particularly the IT sector. The same is true for the wireless / radiocommunications sector and amateur radio has played a role over every decade across the past 100 years; increasingly so over the past two decades.

Innovation in the use of radio/wireless technologies in increasingly diverse applications continues relentlessly, both within and beyond the sphere of amateur radio activities, and the WIA sees that it is important to facilitate radio amateurs’ ability to adopt or adapt innovations without unnecessary impediments.

Amateur radio continues to play an important role in disaster communications and has a unique ability to provide radio communication independent of the telephone network or other radio services. Although emergency services in Australia are now well equipped with modern communications infrastructure, amateur radio is likely to be of value in the first few hours of an emergency before other services have time to respond, or as a skilled manpower resource, or as a form of back-up communications resource if all else fails. Use of amateur radio capability is still part of disaster planning in Australia and many other countries.

Recent examples of where radio amateurs provided first-response communications services following natural disasters or emergencies include: the Victorian Black Saturday bushfires of February 2009, the Queensland floods in January 2011, the 2004 Boxing Day Indian Ocean tsunami, and Typhoon Haiyan of 2013 that devastated the Philippines.

Additionally, the WIA believes that, given the correct policy and regulatory settings, there could be an expanding role for amateur radio to play in Australian education and research. Albeit through a fairly

rigorous set of entry criteria, there are many examples from over the decades where amateurs have explored radio communications concepts that have been subsequently developed into successful commercial technologies. If the licensing conditions permitted, amateur radio spectrum could be used to a much greater degree by educational organisations for teaching and research purposes - the so-called 'sand-pit' concept.

1. Simplify the framework to reduce its complexity and impact on spectrum users and administrators, and eliminate unnecessary and excessive regulatory provisions

The WIA generally agrees with the overall direction of simplifying regulation.

At its very core, incorporated in the ITU definition of the service, amateur radio is an experimental personal pursuit and the WIA does not wish to see radiocommunications legislation unnecessarily restrict or otherwise trammel the individual or collective interests and activities of radio amateurs.

In the amateur radio context, regulation has not kept pace with technological change, and conflict often arises between the practical application of new technologies and overly prescriptive, dated regulation and specifications. For example, ambiguities and disparities exist regarding the type of equipment that licensed radio amateurs can possess and operate, remote control of amateur stations and connection of amateur stations to the internet.

The Amateur Licence Conditions Determination is currently under review. The WIA has written to the ACMA arguing for technical neutrality within amateur radio regulation and greater international harmonisation regarding permitted frequencies and transmitter power for the various amateur licence grades.

The WIA believes that a significant administrative efficiency could be achieved through a minimum 5-year licence term for radio amateurs, compared with retaining the 1-year minimum term now prevailing. Additional efficiencies may be achieved if the Amateur Service was licensed under a type of licence administered by the WIA, possibly with a Class-like licence for Foundation grade licensees, for example. However, the WIA would not agree to any arrangement that reduced the rights of individual licence holders or of the Amateur Service.

2. Improve the flexibility of the framework and its ability to facilitate new and emerging services including advancements that offer greater potential for efficient spectrum use, while continuing to manage interference and providing certainty for incumbents

The WIA believes that the ACMA has performed well to date under the constraints of the legislation, and that the ACMA must continue to manage the Australian Radiofrequency Spectrum Plan through its relationship with the ITU-R. However, the WIA is very concerned that the ACMA lacks the resources to adequately enforce regulation that protects the radio frequency spectrum from interference arising from the large number of non-compliant electrical and electronic equipment (predominantly consumer products) entering the country.

Recently our members have experienced substantial levels of interference from electrical and electronic equipment such as solar power installations, low-cost LED lighting and many other consumer items. The WIA believes the ACMA needs to be adequately resourced to protect the spectrum against a rise in the radio noise-floor, which will ultimately affect all spectrum users in some way, regardless of technology.

3. Ensure efficient allocation, ongoing use and management of spectrum, and incentivise its efficient use by all commercial, public and community spectrum users

The WIA supports the intent of efficient spectrum resource allocation and management.

Current licensing provisions allow spectrum to be retained by certain licensees (generally commercial, for-profit) indefinitely, regardless of use. The WIA believes this should be reviewed as the practice helps to create artificial spectrum scarcity, which ultimately puts pressure on public access spectrum, such as the frequency bands allocated to the Amateur Service.

The WIA also believes that new technologies - cognitive radio for example - together with regulatory innovation, such as parameter-based licensing, will help to maximise spectrum efficiency and enable the Amateur Radio Service to continue technological leadership through adopting and adapting disruptive developments that arise in the future.

4. Consider institutional arrangements and ensure an appropriate level of Ministerial oversight of spectrum policy and management, by identifying appropriate roles for the Minister, the Australian Communications and Media Authority, the Department of Communications and others involved in spectrum management

The WIA believes there must be a clear distinction between policy formation and policy implementation, which will be best achieved by maintaining both a well-resourced department and regulator.

As the public's representative, the Minister needs to take oversight of policy direction and ensure that policy development and implementation is consistent with the government of the day's overall strategy. For this reason, the WIA believes that political oversight through the Minister, down through a committee of "technical and societal experts" operating within the Ministers department, is essential to future spectrum policy and management.

5. Promote consistency across legislation and sectors, including in relation to compliance mechanisms, technical regulation and the planning and licensing of spectrum

The WIA believes that spectrum users **only within particular user categories** should be treated equally. We believe that public-use spectrum has an "imputed value" that is difficult to quantify, and needs to be valued quite separately to for-profit commercial service spectrum. The same situation would apply for, say, defence, governmental or emergency services, research, meteorology and safety of life services.

6. Develop an appropriate framework to consider public interest spectrum

The view of the WIA is that public interest or public benefit is difficult to quantify, is constantly changing and is often highly political in nature. Public interest spectrum has an imputed value which cannot be measured by the same set of tools used for commercial services. Certain spectrum bands and uses having an intrinsic or "intangible" value as a social good and not everything can, or should be reduced to monetary value.

The WIA believes that public interest is best approached at the political policy level, through an "expert" representative committee operating within the Ministers department, with strong public representation.

7. Develop a whole-of-government approach to spectrum policy

The meaning of the term “whole-of-government” needs a clear definition and cogent explanation in this context.

The WIA has no comment other than, as spectrum policy affects the whole of government, a whole-of-government approach seems appropriate, including state and territory-based agencies.

8. Develop a whole-of-economy approach to valuation of spectrum that includes consideration of the broader economic and social benefits.

For the reasons stated above, the value of a public resource is not always aligned to price, and owing to the risk of unintended consequences and collateral damage to established social networks, the WIA’s view is that price should not always be used as a tool to assess or promote efficient use or to maximise public benefit.

As noted previously, the WIA believes that the social value of spectrum is difficult to quantify and spectrum reserved for public use or other non-profit activities should not be measured in the same market-oriented way as commercial spectrum.

For instance, in the ongoing re-farming of 400 MHz spectrum, the amateur secondary allocation in the 440–450 MHz frequency band is being used as a temporary resource to locate commercial services for a limited term while other spectrum is being vacated. Amateur spectrum was also used temporarily during the Sydney Olympics to provide additional spectrum for person-to-person communications within the Olympic venues. The value of amateur spectrum as a “spectrum park” for short-term use by other compatible services should not be underestimated. The WIA is willing to consider *ad hoc* future sharing of Amateur Service allocations based on this principle, provided that an end date for temporary sharing is specified at the outset.

Summary

The Amateur Service has a long history of public service, both through emergency communications and as an educational resource.

The public use of amateur spectrum has an imputed value which the WIA believes cannot be measured using a conventional market oriented-valuation approach.

Amateur spectrum usage holds the potential for greater public benefit, especially for non-commercial educational and pure research purposes that might enable innovative technology development while still allowing traditional amateur radio activities.

There needs to be clear delineation between policy development and policy implementation.

Community input into spectrum policy development may best be achieved through a Departmental expert committee responsible to the Minister.

The ACMA needs increased funding to be able to support and enforce existing interference protection arrangements.

The WIA believes administrative efficiencies can be achieved by changing the term of amateur licences, and the WIA as the representative body for amateur radio is ready to take an expanded role in the administration of the Amateur Service.

Thank you for the opportunity to make this submission.

Yours Sincerely

A handwritten signature in black ink, appearing to be 'Phil Wait', written in a cursive style.

Phil Wait
President, WIA.