TELSTRA CORPORATION LIMITED

Proposed area-wide apparatus licence consultation paper

Public submission

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EXECUTIVE SUMMARY

We welcome the opportunity to respond to the ACMA's consultation on the proposed area-wide apparatus licence consultation paper (the consultation paper). The consultation paper provides a useful guide for examining how the existing apparatus licensing arrangement works and how it can be further refined to provide a more flexible framework. We broadly agree with the objective of area-wide licence (AWL) type to provide a suitable licensing option for 'small-area' multi-device deployments that is scalable and flexible, enabling its use for authorising different-size geographic areas and frequency bandwidths.

We have some concerns around the practical implications of this new licence type that stem from the default 'no registration' proposal. We strongly prefer a more conservative approach that assumes registration is needed unless it can be demonstrated it would be unnecessary or unduly burdensome for any particular type of use or licensee. Our main concern with no registration is that there will be technical coordination and interference management issues between AWL holders and other licensees of spectrum that could otherwise be avoided. Coordination based on maximum boundary emission levels alone will result in inefficient use of spectrum, possibly leading to coverage gaps along licence boundaries whereas coordination based on registered devices will enable more efficient use of spectrum along the boundaries. Furthermore, centralised registration of devices provides legal certainty for effective coordination and will also enable interference issues to be resolved more quickly.

01 The area-wide apparatus licence concept

We commend the Australian Communications and Media Authority (ACMA) for exploring new ways to improve the current apparatus licensing framework. We broadly support the ACMA's proposal to develop an area-wide apparatus licence (AWL) for transmitters and receivers that provides more flexibility than other existing types of apparatus licences. We believe the key attributes of the AWL as outlined in the consultation paper (i.e. area wide; broad application and scalable[1]) should provide for more efficient deployment of point to multipoint type radio infrastructure. This is especially the case in mm-Wave bands where the large numbers of transmitters involved may make it administratively burdensome to use conventional apparatus licensing. However, in our view, the implementation of the AWL, as currently proposed, may have some unintended practical implications which require careful consideration. Our views are explained below.

[1] The consultation paper, page 7

Application to specific bands

The ACMA has proposed that AWLs will not be limited to a particular frequency band. While we support this proposal, in our view this licence type will probably be more attractive or appropriate for network deployments at higher frequencies (e.g. > 6 GHz) which may involve larger numbers of transmitters and for which conventional apparatus licensing would be too administratively time-consuming and cumbersome. We note that PMTS Class-B apparatus licences are already a type of AWL.

AWLs could also be considered in other spectrum bands, provided the right technical controls are applied. For example, at lower frequencies, the minimum AWL geographic area should be larger, in order to keep any "dead zone" area along the boundary below some target percentage of the overall licence area.

Device coordination and registration

It is important that the risk of interference is properly assessed, understood and managed prior to the issue of an AWL and device deployment. We recommend that a thorough technical planning and assessment process is completed for each AWL. The ACMA has indicated that each AWL may have a number of conditions attached, including the maximum signal level at the boundary/edge of the licence area and/or the maximum Equivalent Isotropically Radiated Power (EIRP) for radiocommunications devices operated under the licence. While this information is helpful, in our view, it is still important that all AWL radiocommunication devices be registered (as they are under PMTS Class B apparatus licences) unless exemption from registration is granted or when the devices are below a particular power threshold and appropriately class licensed.

We do not agree with the ACMA's proposal that by default AWLs do not require device registration. Centralised registration of devices provides legal certainty for effective coordination and will also enable interference issues to be resolved more quickly. For example, in the event of an interference event with an adjacent licence, an AWL with no requirement for device registration could create technical issues - namely, the party experiencing interference may have to go through a more time-consuming investigation process if the source of the interference is an AWL licensee device as they would not have that information readily available to them through the public register.

In addition, coordination based on registered devices will enable more efficient use of spectrum along the AWL boundaries whereas coordination based on maximum boundary emission levels will result in inefficient use of spectrum, possibly leading to coverage gaps along the boundaries. For example, if an applicant wished to deploy a transmitter using a conventional apparatus licence or spectrum licence outside the area of an AWL, there may be situations where a coordination

study would show they could coexist based on what has actually been deployed within the AWL. But without the knowledge of what has been deployed within the AWL and based only on the maximum emission levels permitted at the boundary of that AWL, coordination may fail. Generally, licensees on both sides of the boundary would not be able to use their spectrum as efficiently near the boundary if there is no registration information which they can use to coordinate with each other and therefore operate closer together at the boundary.

The ACMA has proposed that "should a licensee not be required to register a device, the AWL LCD will require licensees to provide information about radiocommunications devices operated under the licence upon written request"[2]. The draft Licence Conditions Determination (LCD) specifies that the relevant information is the location of all area-wide stations operated under the licence and the maximum total radiated power for each station (excluding mobile stations as defined).[3] Although, this is a useful condition to include in the AWL LCD to aid in the management and resolution of interference issues, having to ask a licensee for more information slows down both coordination and interference resolution processes and is unlikely to provide the same degree of legal certainty that the ACMA's register provides. Furthermore, this effectively means that an AWL licensee would need to keep their own records of station and device information from the start, not only for their own network management, but also to be in a position to promptly answer a request for those details from the ACMA or any other person. Therefore, if AWL licensees need to be keeping up-to-date detailed station and device information, it would not add any incremental record-keeping burden to also make this information available on the public register.

Therefore, we strongly recommend a more conservative approach be taken which assumes that registration is needed, unless a technical planning assessment demonstrates that it would be unnecessary. Such an approach would also be consistent with the current apparatus licencing framework, enable more efficient use of the spectrum and improve the management of interference issues.

Geographic Boundaries

We support the objective of having a scalable licensing framework that can be adapted to various uses, with different size geographical areas. However, we caution against arbitrary geographical boundaries that have the potential to lead to coverage gaps resulting in inefficient spectrum utilisation.

We suggest that AWLs should be based on the existing HCIS grid, although we recognise that HCIS boundaries often cut right through towns and populated areas. The consequence of this is

[2] The consultation paper, page 9; and as reflected in the draft Licence Conditions Determination in sub-section 7(1).
[3] Draft Licence Conditions Determination, sub-sections 7(1)(a) and (b).

that a licensee who wants an AWL for a specific town may need to acquire a number of HCIS squares to cover that town, rather than just get a licence for, say, a 10 km radius around that town. In some cases a single HCIS Level 1 square would do the job while in other cases, if the locations of the HCIS boundaries were 'poorly' located, four or more HCIS Level 1 squares might be required. There may be other ways of dealing with this issue, or other constructs not based on HCIS that are workable, so we are open to alternatives also being considered.

At higher frequencies, AWL areas as small as HCIS Level 1 could be contemplated whereas at lower frequencies, such as below 1 GHz, the minimum licence area may need to be restricted to HCIS Level 3 or 4. Depending on the final AWL construct, a new HCIS level may even need to be defined to cater for licences that do not need to cover an area as large as HCIS Level 1.

02 Proposed amendments to the apparatus licensing framework

Draft Radiocommunications Legislation (2019 Measures No.1) Instrument 2019

As explained in section 1 above, in our view registration should be the default position for AWL unless there is an exemption granted or the devices are below a certain power threshold and appropriately class licensed as in the case of PMTS Class B licences at present. Therefore, we do not support the amendment of the Register of Radiocommunication Licence (RRL) Determination to include the new subsections 10(4A), (5A) (6A) and (7A).

We also note that, in the event that the ACMA proceeds with the default position of no mandatory registration requirement for AWL devices, the proposed amendments to the RRL Determination (in Schedule 3 of the draft *Radiocommunications Legislation (2019 Measures No.1) Instrument 2019)* mean that a requirement for registration could be imposed through two different sources i.e. either the LCD prescribing registration for that category of AWL licence or a condition in the specific AWL licence itself. While this may provide the ACMA with maximum flexibility, it creates the risk of inconsistent application of the obligation to register devices. It will also negatively impact transparency of how the obligation to register is being applied. Aspirant licensees wishing to deploy in an area would need to refer to both the LCD and to all individual AWL licences to determine whether devices need to be registered. As mentioned earlier, we think the simpler approach is to retain default registration as a requirement and to exempt AWL licensees from registration on an exceptional basis. Those exceptions would be determined using consistent policy guidelines that are also reflected in the LCD.

Finally, as a general matter, we observe that in the past the ACMA has made it easier for stakeholders to provide comments on proposed amendments to regulatory instruments by supplying marked-up versions of the existing instruments showing the proposed changes, in addition to providing the formal variation instruments. We think this is good practise for consultations, and it would have been helpful in this case rather than requiring us (and other

submitters) to conduct the exercise of reviewing the existing instruments, in order to fully understand the changes being proposed. We encourage the ACMA to provide a marked-up version in future consultations.

03 Appendix A: Response to the ACMA's issues for comment

This appendix contains our responses to the four specific issues posed in the discussion paper.

1. Do you think the proposed characteristics of the AWL type will support your current or intended network deployments? Are there any other kinds of deployments that you believe the AWL type should support?

Yes, this licence type could be very attractive for network deployments at high frequencies (e.g. > 6 GHz) outside of spectrum licenced areas, which may involve large numbers of transmitters for which it would be too administratively time-consuming and unwieldy to use a conventional apparatus licensing approach. In some ways, the proposed AWLs are similar to the PMTS Class-B apparatus licences. AWLs could also be a licensing option in other spectrum bands provided the right technical controls are applied. For further explanation please refer to 'Device coordination and registration' in Section 1.

2. Which bands and/or geographic areas do you believe would be conducive to the use of an AWL?

AWLs probably have more applicability to high frequency bands (> 6 GHz), as the propagation distances for point to multipoint or mesh type applications are not large and the number of transmitters within a specific area is likely to be much greater than at lower frequencies. Hence it is feasible to have a licence covering a relatively small geographic area without necessarily resulting in spectral inefficiency due to the creation of large "dead zones" near the boundary of that geographic area. Having said that, AWLs are not necessarily inappropriate for lower frequency bands. However, the lower the frequency, the minimum geographic area which should be licensed for an AWL should be larger, in order to keep the "dead zone" area below some target percentage of the licensed area.

3. What technical and other matters do you believe the ACMA should consider in deciding to use AWL licensing in a particular band?

As mentioned in the body of our submission, we believe AWLs should require device registration unless exemption is granted, or the devices are below a particular power threshold and appropriately class licensed. We are not comfortable with the ACMA's proposal that by default AWLs will not require device registration. Centralised registration of devices provides legal certainty for effective coordination and will also enable interference issues to be resolved more quickly. For example, in the event of an interference event with an adjacent AWL, conventional apparatus licence or spectrum licence licensees an AWL with no requirement for device registration could create technical issues. For further explanation please refer to 'Device coordination and registration' in Section 1.

4. Do you have any other comments on the AWL concept?

We caution against arbitrary geographical boundaries that have the potential to lead to coverage gaps resulting in inefficient spectrum utilisation. We propose the basis of an AWL construct should be the ACMA's existing HCIS, although we are open to other approaches. Depending on the frequency band and reference technology being considered of the AWL, licence areas as small as HCIS Level 1 could be contemplated whereas an AWL at a low frequency, such as < 1 GHz, may require minimum licence areas of HCIS Level 3 or 4, depending on the associated technical framework for that specific AWL. Further explanation is provided in 'Geographic Boundaries', Section 1.