

## **SUBMISSION TO THE ACMA: PROPOSED REGULATORY MEASURES FOR THE INTRODUCTION OF C-ITS IN AUSTRALIA**

### **TCA's appreciation of the scope of the ACMA draft Class Licence**

The Australian Communications and Media Authority (the ACMA) intend to issue a Class Licence for authorities or persons wishing to operate a C-ITS On Board Unit, a Road Side Unit or Personal Unit. Under the Class Licence, RSUs will need to be authorised or operated, and their use controlled, by a jurisdiction.

The Class Licence effectively allows C-ITS to use the 5.9GHz band of the radiofrequency spectrum, using Dedicated Short Range Communications (DSRC). 5.9GHz DSRC is not the only communications method available to C-ITS, but it has been identified as the method most suitable for the reliable and timely delivery of safety-critical messages – at least for the initial deployments of C-ITS.

The Class Licence is guided by the European standard, ETSI EN 302 571. Using this standard for regulatory purposes has the effect of aligning Australia, where radiocommunications are concerned, with European plans for C-ITS deployments.

This relates to radiocommunications, insofar as the standard is intended to ensure that radio equipment both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference. It does not relate to communications – as the exchange of information – as such.

Within the band, EN 302 571 provides for a total of seven channels: two channels for non-safety critical functions, three channels for safety messaging (including the control channel), and two channels for future use.

The intent is that by using EN 302 571 as the basis for regulatory measures, the 'proposed new class licence would provide greater protection for the safety critical functions of C-ITS due to planning considerations (where no new additional services would be planned for use in the band).'<sup>1</sup>

### **TCA's appreciation of the ACMA's intent and progression of regulatory arrangements for C-ITS**

C-ITS use wireless communications to enable vehicles, roadside infrastructure and personal devices to communicate. They can technically do this using a number of different communications mediums. However, 5.9GHz DSRC has the benefit of enabling full interoperability for the exchange of safety related information, such that other systems know what to expect, and can consistently and securely receive that information for safety (and other) purposes.

DSRC 5.9GHz is the communications method developed and identified as, at present, the only reliable medium for the broadcast of safety-critical messages.

Both Europe and the United States have plans to deploy C-ITS using the 5.9GHz band. Both regions envision C-ITS as delivering significant public purpose outcomes. Accordingly, both have taken steps to ensure that optimum use of the band for safety critical services is a priority.

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<sup>1</sup> The ACMA. 2016. *Proposed regulatory measures for the introduction of C-ITS in Australia. Consultation Paper*, p. 23.

TCA acknowledges the role of the ACMA, the significance of its proposed regulatory measures, and welcomes the opportunity to contribute to the consultation process.

The significance of the draft Class Licence is that it will provide a basic regulatory instrument that will have immediate and long term effects for the communications medium in Australia that has in other regions been safeguarded for the delivery of safety critical services.

Deciding and implementing regulatory instruments concerning 5.9GHz at what is effectively the beginning of C-ITS deployments will shape future outcomes and decisions surrounding the broader C-ITS environment.

Other regions consider that it is feasible to allow non-safety C-ITS applications to use the 5.9GHz band, provided they do not compromise the operation of safety-critical services.

Safety critical services are those services that, to have any utility or public benefit, must be delivered both reliably and on time: a crash avoidance alert that does not arrive on time or intact is as useless as it is dangerous.

At present, 5.9GHz is the only communications medium that can deliver safety critical services with the anticipated and desired level of confidence.

In 2012, Austroads' Spectrum Management and Device Licensing Report stated that 'The required outcome, with respect to the 5.9GHz spectrum, is for 5.9 ITS services to be able to function reliably across the entire national road network in order to deliver safety applications.'<sup>2</sup>

In their Consultation paper, the ACMA writes that the 'proposed new class licence would provide greater protection for the safety critical functions of C-ITS due to planning considerations (where no new additional services would be planned for use in the band).'<sup>3</sup>

### **Purpose of TCA's submission to the ACMA**

Importantly, TCA acknowledges that prior to the release of the proposed Class Licence, it was noted that the ACMA's licence conditions for on-board and personal C-ITS using the spectrum would only address the physical layer of the Open Systems Interconnection (OSI) model, in order to meet the requirements of the *Radiocommunications Act*, and that additional technical, policy and regulatory requirements, may need to be achieved elsewhere, through spectrum management.<sup>5</sup>

Recognising that the Class Licence alone is not intended as a single, regulatory instrument, TCA's submission relates to the provision by regulatory arrangements of management mechanisms, and assurance that use of the spectrum is properly managed – broadly, spectrum management at both national and jurisdictional levels, for policy direction and day-to-day active management, respectively.

To this end, and in addition to offering commentary on the Class Licence, TCA seeks clarity surrounding ACMA's assumptions, vision, and plans to ensure reliable use of the spectrum for safety critical services, including those that may be enabled by the ACMA's delegation of responsibilities for spectrum management.

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<sup>2</sup> Austroads. 2012. *C-ITS 5.9GHz Spectrum Management and Device Licensing Regime Report*. Austroads, Sydney: Australia, p. 6.

<sup>3</sup> The ACMA, *Proposed regulatory measures*, p. 23.

<sup>5</sup> Austroads, *Spectrum Management*, p. 22.

## **Benefits of the Class Licence**

TCA acknowledges that by embargoing the 5.9GHz band at an early stage in 2008, the ACMA sent a strong signal to jurisdictions and industry that the value of the spectrum was not just economic, but strongly tied to the public good it could realise.

The embargo also provided time for C-ITS technologies, industry players and government policy position to emerge, and for ACMA to calibrate its regulatory response.

Now that the C-ITS environment has begun to emerge, and deployments are nearing commencement, the release of ACMA's draft licence for consultation is timely.

TCA acknowledges that there are a number of beneficial outcomes that could be realised by the proposed Class Licence and the regulatory approach that the ACMA has pursued.

Chief among these is that with the Class Licence, the ACMA sends a strong signal to policy and decision makers and industry that governments are progressing the C-ITS policy framework, which will need to be developed in Australia.

The ACMA has opted for a 'light touch' approach to regulation. If the Class Licence were implemented as is, there would be few barriers to entry.

The typical processes associated with a class licence (as opposed to an apparatus licence) ease administrative burdens and costs, and do not (typically) incur a licence application fee. This should encourage investment and participation.

## **Risks associated with the implementation of the Class Licence and the lack of clarity surrounding regulatory arrangements for C-ITS**

TCA acknowledges that the ACMA does not intend that the proposed Class Licence alone will realise the outcome of providing protection for the safety critical functions of C-ITS, which Austroads estimates will reduce by 25-35% fatalities and serious injuries, should C-ITS have 100% uptake.<sup>6</sup>

TCA's submission aims to articulate risks associated with the Class Licence in and of itself, and seeks clarity regarding regulatory arrangements for C-ITS.

EN 302 571 technically provides two safety channels, but the Class Licence does not impose any restrictions on how or what C-ITS use these or any of the non-safety channels.

Overseas, Europe indicate no changes in their position on sharing arrangements that prioritise safety critical services, and the US continues to explore how sharing could be achieved without negative impacts to safety critical services.

Adequate sharing of the spectrum in Australia is technically possible. However, the proposed Class Licence does not provide the means to ensure that C-ITS will use the channels to these ends, nor does any existing regulatory instrument.

TCA seeks to understand how, without adequate regulatory, usage oversight and management arrangements for use of the spectrum, safety outcomes will be realised. Indeed, under the current proposal, these may be the result of good intentions, rather than good policy.

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<sup>6</sup> Austroads. 2012. *Cooperative ITS Strategic Plan*. Austroads, Sydney: Australia, p. 1.

There are six areas below that TCA has identified that the ACMA may wish to consider, to better align the application of its regulatory approach with its intent – and, indeed, better align with the approach being adopted in other regions.

1. Congestion is strongly linked to the type of C-ITS and their use of the spectrum. The problem may concern both a lack of definition in the Class Licence of particular C-ITS – that is, what will constitute an On Board, Road Side and Personal Unit – as well as their usage of the spectrum.

Safety-critical messages are primarily broadcast by and useful for vehicles (On Board Units) and infrastructure (Road Side Unit). The definition of a ‘Personal Unit’ (defined as ‘a C-ITS transmitter that is designed or intended to be held by, or carried on, a person’ in the Class Licence) may not be sufficiently robust.

Using the Class Licence as it is currently written, a mobile (smart)phone may feasibly satisfy the definition and requirements of a Personal Unit, and there will be far more mobile phones able to use the spectrum – and devouring bandwidth – than vehicles and pieces of infrastructure.

Without clear and proper definitions, there is a risk as to who can deploy and operate in the spectrum, and how they can operate with regard to application-level use of the channels

There will be no shortage of practical alternative mediums for C-ITS, including 3G, 4G and onwards, although the low latency capabilities of the 5.9GHz spectrum obviously makes it attractive for commercial, non-safety applications. Ambiguity surrounding what and how devices can use the spectrum does not help this matter.

2. Government-endorsed and publically advertised intended use of the spectrum does not automatically guarantee its use for safety-critical purposes. Unlike Australia, the US has been unambiguous in its messaging and progression of using the 5.9GHz band for safety-critical purposes.

Nonetheless, on 8 September it was reported that – in the US – a firm government position (advanced by the USDOT) on use of the 5.9GHz spectrum does not deter competing commercial interests:

[T]he cable television and high-tech industries want to take away a large share of the radio airwaves the government dedicated for V2V (Vehicle to Vehicle) communications, and use it instead for super-fast Wi-Fi service.

The biggest issue [...] is due to the fact that the Federal Communications Commission regulates spectrum and sympathizes with wireless proponents, while NHTSA [National Highway Traffic Safety Administration] regulates auto safety and has long made V2V a top priority. The White House, which is currently reviewing NHTSA's proposal to require the technology in new cars, is caught between two of its goals: greater auto safety and faster wireless service.<sup>7</sup>

If reliable use of the spectrum for safety critical purposes can be jeopardised in the US, who have a clear position, there is a need for Australia to monitor and learn from the US situation, to implement robust regulatory, usage and oversight arrangements, and to send a clear message regarding the intended use of the spectrum.

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<sup>7</sup> Business Wire. 8 September 2016. Security Innovation Dispelling Misconceptions about V2V Technology Safety and Privacy with White House Officials. Available at <http://www.businesswire.com/news/home/20160908005169/en/>

This policy context is important. ETSI EN 302 571 contains within its Scope section the mandates and decisions relating to harmonised use of three channels of the seven channels for safety-related applications. That is, the enabling standard is bolstered by a policy framework.

Australia does not yet have this policy context, and the extent to which its development may be informing the ACMA's regulatory approach or assumptions is unclear.

3. Without proper regulatory arrangements, it is likely that congestion would be impede the operation of safety critical functions: safety applications may compete – unsuccessfully – for bandwidth with non-safety applications, resulting in delayed receipt of, or unreliability surrounding, time-critical safety messages.

4. While the importance of spectrum management has been noted elsewhere, there is a lack, both within the Class Licence and surrounding documentation, of clarity as to whether the ACMA intends or assumes that there will be active spectrum management, by the ACMA itself or by others.

TCA notes that, by not addressing ongoing assurances surrounding in-service operation of C-ITS, the ACMA's stated intent, and the safety outcomes envisioned, may be jeopardised.

5. This may also have cascading effects for future compliance frameworks – in their development, effectiveness, administration and clarity for the market. They risk duplication, onerous requirements, and lack of strategic goals.

The ACMA's Class Licence should endeavor not to stifle the development of these compliance frameworks, but it, along with the ACMA's broader regulatory position and approach, should provide guidance as to the role and responsibilities the ACMA intends to assume, delegate, and leave to others, in order to ensure that safety outcomes can be realised.

6. EN 302 571 contains within it a number of normative standards i.e. standards which C-ITS must comply in addition to EN 302 571. The Consultation Paper gestures to these, although TCA believes that it could be made clearer whether their compliance is assumed by the ACMA and, if so, whether this should be noted more explicitly in the Class Licence.

## **Conclusion**

C-ITS offers numerous benefits, including productivity, efficiency and environmental. However, safety is the most significant benefit of this technology, and has been recognised as the main driver for deployment. Given its technical capabilities, the importance of reliable use of 5.9GHz DSRC, over and above other mediums, to enable this main driver cannot be underestimated.

TCA thanks the ACMA for the opportunity to contribute to consultation process for the development of regulatory arrangements for C-ITS, and looks forward to further opportunities to contribute.