AUSTRALASIAN RAILWAY ASSOCIATION SUBMISSION

To

The Australian Communications and Media Authority

On

Proposed area-wide apparatus licence

The ARA

The Australasian Railway Association (ARA) is a not-for-profit member-based association that represents rail throughout Australia and New Zealand. Our members include rail operators, track owners and managers, manufacturers, construction companies and other firms contributing to the rail sector. We contribute to the development of industry and government policies in an effort to ensure Australia's passenger and freight transport systems are well represented and will continue to provide improved services for Australia's growing population.

The ARA thanks the Australian Communications and Media Authority (**ACMA**) for the opportunity to provide this submission to the *Proposed area-wide apparatus licence (**AWL**)*.

This submission has been developed in consultation with the ARA's Telecommunications Committee which is comprised of representatives from the following organisations: Arc infrastructure, Aurizon, Department of Planning, Transport and Infrastructure South Australia, Genesee & Wyoming Australia, Metro Trains Melbourne, Pacific National, Public Transport Authority of Western Australia, Public Transport Victoria, Queensland Rail, RailCorp, Sydney Trains, Transport for NSW, V/Line and VicTrack.

For further information regarding this submission, please contact Maria Morozova, Senior Program Manager at ARA via mmorozova@ara.net.au or +61 499 919 496.

Background Information

The rail Industry presently has a number of systems in use which would benefit from the availability of Area-Wide Apparatus Licences. These systems presently operate on Ambulatory licences and the uncertainty of continued operation for these licences is a constant concern for the industry. The rail industry is very interested in a licencing system which would provide improved certainty of operation.

Ambulatory licences are used for three main purposes in the rail industry, all of which revolve around moving trains. One purpose is for local voice communication either within the train or between the train and trackside staff. The other two purposes are for data communications within the train consist and are integral parts of systems providing for the safe and efficient running of certain types of trains.

The three main purposes and how they operate are described below:

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PO Box 4608, Kingston
ACT 2604 Australia

T   +61 2 6270 4501
F   +61 2 6273 5581

E   ara@ara.net.au
W   www.ara.net.au

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1. Local Voice Communications

The types of communications include:

1.1 Train to Train

- When trains cross each other in non-signalled areas it is common for train drivers of one train to tell the train drivers of the other train that they are "Intact". Drivers observe the flashing light End of Train device which shows that a part of the train hasn't been left behind on the previous section of track. This is a simple safety mechanism to prevent train to rollingstock collisions.
- Train to Train is also used on long distance passenger services for communications between the train manager who looks after the passengers and the train drivers. This purpose has both safety and efficiency aspects.

1.2 Train to Trackside

Used for communicating between Train crew and staff on the ground for various purposes including:

- Shunting in remote yards when detaching or reattaching wagons to a train consist,
- Operation of Track maintenance vehicles.

2. Radio based End of Train (EOT) devices

EOT devices are fitted to the back of the last carriage of some train consists. They are mainly used by freight operators in locations all around the country. As a minimum, EOT Devices consist of a flashing light, however for some operators, a radio system is used to communicate between the EOT device and the leading locomotive. These radio-based systems provide improved safety by:

- Constant monitoring of the train integrity. This ensures that the driver knows if there has been a break in the train and some of the carriages have been left behind.
- Providing the ability for the driver to release brake air pressure at the back of the train to enable faster stopping in an emergency situation.

Presently a significant number of the trains hauling freight throughout Australia use radio based EoT devices. Using Ambulatory licencing for these systems requires the train operators to accept a risk that they may need to stop using these systems in areas where they cause interference to an apparatus licenced user. This may lead to cancellation of services.

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3. Locomotive Distributed Power and Braking systems (DP systems)

For long and heavy freight trains it can be more efficient if the locomotives which are required to handle the loads are distributed throughout the train consist. By distributing the locomotive power, the in-train forces are reduced which allows for longer consists. Distributing the locomotives also allows for the braking system to be partially distributed which improves braking capability.

The remote locomotives are controlled by the driver in the leading locomotive via a DP control system. Modern train sets are fitted with electronically controlled brake systems and have a wired communications system along the length of the train consist for this purpose. Where this system exists, it is also used for the DP system.

On older train sets, wired communications systems along the train don't exist, so the DP control system runs on a radio-based communications bearer. To date these systems which mostly operate in regional and remote areas of the country have also used Ambulatory licences to operate.

Presently a significant number of the trains running on the Central Queensland Coal Network use radio-based DP systems. Using Ambulatory licencing for these systems requires the train operators to accept a risk that they may need to stop using these systems in areas where they cause interference to an apparatus licenced user. If this were to occur there would likely be a disruption to these services.

Issues for comment

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?**
    The ARA believes that the characteristics of the AWL type would support the rail industry's existing local voice communications on moving trains systems, End of Train systems and Distributed Power systems. The AWL type would provide certainty of operation of the trains using these systems when compared with using Ambulatory licences.

2. **Which bands and/or geographic areas do you believe would be conducive to the use of an AWL?**
    The 400 MHz band is presently used by the existing three systems listed above and the industry believes that this band should be made available for use for Area Wide Apparatus licences. This

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W   www.ara.net.au

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band is heavily used by the rail industry and it would be expensive and, in some cases, impractical for other bands to be used.

The ARA notes that using RI spectrum for AWL is a practical solution for some of the present uses, however some systems would need 400 MHz spectrum outside of the RI spectrum. An example of a system requiring spectrum outside of the RI spectrum is the End of Train systems. This is due to the equipment being manufactured in the USA to meet USA standards. As the worldwide market for these systems is small, there are no other manufacturers from which these systems can be economically purchased.

Whilst the rail industry presently uses Australia-wide or State-wide Ambulatory licences, we would be very open to having Area Wide Licences which cover the rail corridors and easements that provide interference protection from out-of-area mobile and stationary transmitters. The industry does not require coverage of non-corridor areas except to ensure interference protection.

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

The trains that would benefit from this form of licencing provide a significant value to the Australian economy. These trains carry a significant amount of freight across much of the country and are presently required to run at an increasing risk by using Ambulatory licences for onboard systems. There would be improved efficiency and utilisation of spectrum if a small number of AWL's could be made available in the 400 MHz band for use by the rail industry.

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

The rail industry would prefer to not be required to transmit call signs as is the case with Ambulatory licenced systems.

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W   www.ara.net.au

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