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Ref: On Farm Connectivity Program

The Australian Radio Communications Industry Association (ARCIA) represents the Land Mobile Radio (LMR) industry in Australia, often referred to as the two-way radio industry or in more modern parlance the 'wireless communications industry'. The clients of our members are a critical part of the Australian economy and are represented in virtually every industry sector in Australia, as well as multiple public interest areas. Our association is recognised by the Australian Communications & Media Authority (ACMA) as being the peak industry body that represents this segment of spectrum users, and we are also representing our members and clients in the discussions about spectrum access for private wireless broadband networks.

The initial market interest for private wireless broadband (WBB) has come from the resources sector, primarily mining companies who are keen to have autonomous operations in their facilities, this includes both underground as well as above-ground operations. Although the public carriers (Telstra, Optus and TPG/Vodafone) have continuously advised the ACMA and other Government agencies that they can provide the services required, in the real world this has not proven to be the case, with coverage and reliability both falling well short of users requirements. It is also recognised that similar concerns relate to the farming sector with several reports and enquiries into the benefits that WBB can bring to the agriculture sector, with comments on the problems with coverage in many areas.

We know that there are organisations that are developing and promoting Wi-Fi products to fill in the 'last mile' of communications, however, as an unlicensed system with easy access the Wi-Fi option will suffer degradation over time as more users try to access the open spectrum. This has been the experience of the resources industry and they are now moving away from Wi-Fi towards having their own licenced systems on private LTE networks. Our industry members have been supplying and maintaining private communications networks for close to seventy years and we continue to provide both mission critical and business critical wireless communications systems in many market sectors.

Until recently the major stumbling block for anyone considering installing a private LTE network has been the availability of suitable spectrum, most WBB spectrum has been allocated to the public carriers networks and was not available for private enterprise networks. Our association has lobbied the ACMA over several years for changes to this approach and as a result we have been advised that from late 2023 there will be spectrum available to be allocated for Local Area Wireless Broadband (LA-WBB) services, privately owned and operated WBB systems. This will potentially change the landscape for agriculture as farmers will be able to have their own WBB network and manage the systems to suit their own operations. This means that the major obstacle to private systems is now being removed.



The second issue with private WBB systems is the perception of the cost, usually assumed to be in the “millions of dollars” associated with the public carriers outlines. In fact, a private system to cover a typical farming operation in areas such as the Southern Mallee or Wimmera would probably be less than the cost of a new tractor, and a system to cover multiple properties in a cooperative format would still not extend beyond six-figure numbers.

There are real benefits from WBB to be gained by agriculture, the book *'Farm Fresh Broadband'* by Dr Christopher Ali highlights that mobile data offers progressive benefits, covered by the 3M's –

- Mapping – initially the benefits from WBB relate to being able to track and locate assets and resources, a basic function but in the early days this was seen as a big step towards efficiency.
- Monitoring – as the WBB access became more reliable there were benefits to be gained from monitoring and measuring actions around the farm; rainfall and irrigation, application of fertilisers and chemicals, and with modern machinery even yield and quality of harvest have become available.
- Managing – will become the primary benefit in the immediate future, already there are applications to manage the data gained from the above, however, this will add much more to the



longer term productivity efficiency gains, the better the data available the more accurate the analysis of the data becomes to really approach the 'precision agriculture' level. Several years ago, there was much hype about the possible benefits of 'big data', we are now seeing that this can be true in a more niche application for specific industry sectors.

One area that should be of concern to the agriculture sector is the ownership and access to the data generated on the farm, there are already concerns expressed in the USA regarding the proprietary data generated by agriculture machinery and the fact that the data might be generated by the farmer, but they have no ownership or access to the raw data. With the present systems in Australia that are using the public carriers WBB systems (or even if they are using a Wi-Fi option to extend coverage), the data is within the public carriers network and the farmers who generate the data and wish to gain the benefits have very limited access. Having a private WBB system will mean the data will remain the property of the farmer for their own benefit.

With this background we would respectfully suggest that as part of the equipment supply considerations for the project that Private LTE systems should be considered as an option. As outlined above at present



the main users of these networks have been in the resources sector, however, availability of spectrum will now mean that other industries can also gain the benefits of having total farm coverage of wireless broadband and get the real benefits of being able to manage and analyse their own on-farm data in future years.

Although ARCIA will not be a supplier of equipment as such, our members potentially will be, so we will be happy to respond to any queries that may be raised out of this submission.

Yours sincerely,
Australian radio Communications Industry association (ARCIA) Inc.

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