



Submission to ACMA 850/900MHz band auction consultation



MAY 2021

About Connected Farms

Connected Farms Pty Ltd is an Australian owned and operated company and a licenced telecommunications carrier. Connected Farms was formed specifically to provide connectivity solutions to the agriculture sector in regional and remote Australia with the vision of enabling digital agriculture with three key areas of offering:

1. Improved business grade broadband to the farm office/ house
2. Over the farm coverage preferably to mobile quality coverage to allow improved voice and data communications (and this coverage can also collect IoT data). Effectively this requires the use of privateLTE technology.
3. Regional / local edge micro datacentres – to reduce latency in autonomous applications and allow better near farm data processing of all the various data sources such as IoT sensors

Our technical solutions are tailored to a farm's particular requirements. The most significant obstacle in the provision of acceptable handset coverage across regional and remote farmland is the availability of spectrum to enable the use of privateLTE solutions.

Lower band spectrum such as the 700MHz, 850MHz and 900MHz are more suited to over the farm coverage than spectrum currently available under apparatus licences. Lower bands offer much better area coverage performance than the currently available higher frequencies. While in theory the existing spectrum holders can commercially make spectrum available, their default position is to refuse any request to share spectrum in these lower bands. The inability to access the lower band spectrum is challenging the use and adoption of privateLTE in regional and remote Australia across diverse industries spanning agriculture, mining, gas extraction and transport/logistics.

Connected Farms' response

Connected Farms welcomes ACMA consultation on draft allocation and technical instruments for 850/900 band auction. Connected Farms supports the ACMA proposal to offer the 850MHz expansion band in a single regional national geographic area, thereby allowing bidders with regionally focused demand to participate in the auction. This provides an important policy shift for the allocation of spectrum bands and recognises the significant unmet demand for lower spectrum bands in regional/remote areas.

While a good starting point, Connected Farms considers that an allocation of 2 x 5 MHz (10MHz) is small and may in practice only provide enough spectrum for a single carrier. This may not address key communications policy objectives for the allocation of the 850/900MHz band – to encourage investment in infrastructure including regional Australia and promote competitive market outcomes – for the following reasons:

- If an outcome of the auction process is that a large MNO incumbent outbids a smaller regional provider and wins the dedicated regional lot allocation, this:

- will consolidate the current model of incumbents being the sole custodians to lower band spectrum on a national basis and is unlikely to facilitate competitive market outcomes
 - is unlikely to result in any changes to the current infrastructure investment profile and provision of services to under-serviced remote regions, farms, enterprises and communities
 - is unlikely to change the current state for regional/remote areas where there is already unused lower band spectrum held by incumbents, lack of direct investment in regional services (apart from government funding) and reluctance to rent/lease unused spectrum to smaller regional providers.
- If a non-incumbent MNO is unsuccessful in securing the regional 850 lots, current challenges to service provision in regional/remote markets will continue such as:
 - The inability to access the lower band spectrum is affecting the use of, and investment in, privateLTE in regional and remote Australia across diverse industries such as agriculture, mining, gas extraction and transport/logistics. Lack of lower band spectrum to facilitate end-to-end coverage solutions in regional/remote areas is a major barrier to deployment because of higher build costs and poor coverage outcomes. The lack of available lower band spectrum is now a material factor in constraining the development of advances in agriculture and other remote industries. There is currently limited opportunity for small carriers to use privateLTE technologies other than in very small space restricted environments.
 - The lack of available spectrum for private and industrial LTE networks is severely impairing the development and use of this technology, which is an essential foundation technology enabler as Industry 4.0 develops in regional and remote based industries. Examples are the effective use of autonomous plant in mining and also the adoption of AgTech in agriculture. This is unique to remote and regional Australia where coverage requirements are likely to be geographically larger than other industry 4.0 privateLTE systems as would be deployed in a factory or similar urban workplace.

Potential options

As noted above, lower band spectrum such as the 700MHz, 850MHz and 900MHz are more suited to regional and over the farm coverage than spectrum currently available under apparatus licences. Regional/remote areas require coverage driven solutions and lower bands offer much better area coverage performance than the currently available higher frequencies.

Connected Farms suggests that a range of alternate pathways is required to appropriately address the challenges associated with regional/remote spectrum band access and better provisioning for under-serviced areas. These pathways could include:

- Dedicate 10MHz of 850MHz spectrum in regional/remote areas auction for non-incumbent bidders.
- Make changes to licensing and allocation settings that allow for service provision that is coverage driven and that may include technology mixes across apparatus, spectrum and class licenced bands. This could include making better use of lower band spectrum licence alternatives such as apparatus and/or area wide licences in

order to ensure more than one provider can access this valuable spectrum according to where demand exists (i.e., single farm or farming community, mines, remote/indigenous communities, councils, gas/renewals). For example, dedicating 10MHz of lower band spectrum for apparatus licence use would enable multiple regional carriers to deliver enterprise private LTE and 5G to a range of commercial and farming entities thereby significantly addressing unmet demand in regional/remote areas.

- Introduce licence requirements on spectrum incumbents requiring that where there are no short-term build plans, other players be authorised to use/lease/rent the spectrum. This would be based on a 'use it or share it' arrangement and subject to commercial rates negotiated between parties.