

Telco connectivity for broadacre agriculture on the move

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Key words

connectivity, 4G, telecommunications, Wi-Fi, 3G switch off

Take home message

Existing telco coverage over broadacre cropping regions is inadequate and unreliable and does not meet the data demands of modern agricultural systems. Connected Farms is a company that offers a range of solutions for enhancing the telco connectivity for agriculture on the move. These solutions can help farmers to overcome the connectivity challenges and to leverage the benefits of real time connection for their operations.

Introduction

Many broadacre farmers face challenges in accessing reliable and affordable telecommunications services, especially in remote and rural areas. This paper explores the current situation of telco coverage in the broadacre cropping sector, the benefits of real time connection for agricultural operations, and the possible solutions offered by Connected Farms, a company that specializes in rural telecommunications deployment and innovation.

The existing telco coverage situation in broadacre cropping

Most cropping areas have little or sporadic coverage mainly by Telstra 4G with their 3G service planned to be switched off just before harvest in late 2024. Optus 4G also provides some coverage, but again their 3G option is being switched off in September 2024.

Increased connectivity is needed to support the high data demands of modern agricultural technologies, such as variable rate maps, section control, real time weather, yield mapping, moisture and protein sensors, performance monitoring, and robotics. These technologies require continuous data flow and low latency, which are not always achievable with the existing coverage.

Connected Farms has a combining technology, CommsXtend, that operates by maximising and combining signals from any available 4G (and 5G if available) network and combining that into usable in-machine connectivity.

The benefits of real time connection for agricultural operations

Real time connection can enhance the efficiency, productivity, and profitability of cropping agricultural operations, as well as improve the safety, quality, and sustainability of farming practices. Some of the benefits of real time connection include:

- Make phone calls anywhere, using Wi-Fi calling, WhatsApp, or other applications, to communicate and coordinate with staff, contractors, suppliers, customers, and advisors.
- Access variable rate maps directly from the cloud, and remotely check or adjust the seeding and fertilizing rates. Real time alterations to mapping from farm office received directly to machines in the paddock.
- Use section control to avoid overlap and wastage of inputs, and to monitor the planting progress and completion.

- Access real time weather data and forecasts, and record the conditions and outcomes during spray application, to avoid spray drift and comply with regulations.
- Make harvesting decisions in real time at the farm office (or anywhere), based on the data from yield mapping, on-header moisture and protein sensors, and optimize the grain quality and value.
- Remotely monitor the performance of machines and vehicles, and access the settings, manuals, and spares ordering online, to reduce downtime and maintenance costs.
- Operate and supervise autonomous and robotic systems, such as drones, sprayers, and harvesters, and ensure their safety and functionality.

The possible solutions offered by Connected Farms

Connected Farms is a company that provides a range of solutions for improving the telco connectivity for agriculture on the move, especially in broadacre. Some of the solutions offered by Connected Farms are:

- **Dynamic Sim:** A unique and exclusive sim card that works on any available network from Telstra, Optus, or Vodafone, and allows data pooling options for multiple machines and devices.
- **CommsXtend:** A device that uses the Dynamic Sim to maximize the connection over all mobile network operators and provides a strong Wi-Fi output in and around the machine or vehicle, enabling voice calls and data transfer.
- **Satellite On The Move:** A service that uses the Starlink Mobility satellite network to provide connectivity anywhere, with high performance antenna and massive data capabilities.
- **Private 4G/5G network towers:** A solution that deploys fully functioning 4G or 5G data networks to cover several farms and can be upgraded to meet the future digital ag requirements.

Conclusion

Telco connectivity is essential for agriculture on the move, as it enables the use of advanced technologies that can improve the efficiency, productivity, profitability, safety, quality, and sustainability of farming operations. However, the existing telco coverage over broadacre cropping regions is inadequate and unreliable and does not meet the data demands of modern agricultural systems. Connected Farms is a company that offers a range of solutions for enhancing the telco connectivity for agriculture on the move, such as dynamic sim, CommsXtend, satellite on the move, and private 4G/5G network towers. These solutions can help farmers to overcome the connectivity challenges and to leverage the benefits of real time connection for their operations.

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