Australian GNSS CORS networks – Status, Issues, Challenges, Future

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The Australian precision agriculture sector currently relies on stand-alone RTK (Real Time Kinematic) GPS (Global Positioning System) base station technology. These base stations are established for local use or formed into small and often ad hoc proprietary 'arrays' to increase user coverage to support applications such as controlled traffic farming and inter-row farming etc.

Recently, Continuously Operating Reference Station (CORS) technology, delivering genuine networked satellite correction services (Network RTK—NRTK) has become available and has superseded single RTK base station solutions. CORS networks create significant utility which is leading to its application across many Global Navigation Satellite System (GNSS) user sectors—including agriculture. The primary advantages of CORS includes efficient station spacing (approximately 70 km) which can enable regional and even national access to uniform, sub 2 centimetre horizontal spatial accuracy for guidance, positioning and navigation applications.

Australian jurisdictions are at various stages in the coordination, establishment and expansion of multi-purpose CORS networks. These include Victoria's GPSnet™, New South Wales' CORSnet-NSW, Queensland's SunPoz and an embryonic network in the Northern Territory. The Australian Government, in partnership with jurisdictions, is also implementing the AuScope GNSS CORS network to support scientific and commercial applications.

This presentation will provide an update on Australian CORS networks and the benefits for low emissions cropping systems. It will detail the issues and challenges facing government and commercial organisations in the implementation of an appropriate CORS infrastructure for the nation.