

The day the farm changed: exciting new ag-tech careers

A host of exciting new career paths in agriculture and overcoming labour shortages that cost Australian farmers more than \$150 million a year in lost productivity, are just two of the likely outcomes from an autonomous tractor like the concept vehicle recently unveiled by Case IH.

Case IH and the Innovation Group of parent Company CNH Industrial developed the Case IH Autonomous Concept Vehicle (ACV) which was first demonstrated at the Farm Progress Show in the USA in late August.

At the recent GrowAg Summit held in Albury, Pete McCann, Case IH's Marketing Manager for Australia and New Zealand, said "There are a lot of different opportunities and the ACV really does open a very big door into 'what's next, what can we do?'. Well, we can do anything. We just need to build on the technology."

The concept vehicle is a cabless Case IH row crop tractor that can operate autonomously with a wide range of paddock implements. It can move around the farm on private roads and follows a pre-set route. An alert lets the operator know if inputs such as fuel, or fertiliser or seed are low, so they can plot a path to a re-fuelling point, where inputs are topped up manually. The refuelled ACV then returns to the last area worked, and resumes. Through the use of radar, lidar (light imaging, detection, and ranging) and onboard video cameras, the vehicle can sense stationary or moving obstacles in its path and will stop on its own until the operator, notified by audio and visual alerts, assigns a new path. The ACV can be controlled either via a desktop computer or a portable handheld tablet.

Pete says, "The whole idea of bringing that tractor out of the 'development shed' was to show people what we're working on. Case IH is not sitting there, waiting, we are progressing rapidly. As with Australia's first tracked tractors, which we brought out in 1996, we're leading development of this technology."

The main benefits of autonomous technology are being able to use labour in value-added, rather than low-skill, tasks; for the possibility to work 24 hours with no variation in productivity; and options to overcome skilled labour shortages during critical times such as planting.

According to a 2012 Senate inquiry into higher education and skills training to support future demand of agriculture and agribusiness in Australia, acute labour shortages cost Australian farmers more than \$150 million a year in lost productivity, as they struggle to find specialist workers and technicians¹.

¹ *Higher education and skills training to support agriculture and agribusiness in Australia, June 2012.*

“This sort of technology can help to overcome these shortages, and allow workers to focus less on manual labour and more on the science of farming, helping to attract people into the industry,” says Pete.

Brett Whelan, Associate Professor in Precision Agriculture at The University of Sydney, concurs. “Automated vehicles running broad-scale farming operations open up new linkages between agricultural science and engineering. Combining an understanding of agricultural systems and high-tech engineering provides exciting new career pathways for the next generations to help feed and clothe the world.”

Pete says software developments featured in the ACV could enhance current Case IH models.

“Information and information control, rather than the actual hardware, are the biggest advances that I see in regards to where we’re up to with agricultural technology, and I think we’ll continue seeing this technology be incorporated into machines. Look at how far we’ve come already — with steering for 16 years, ISO 4 on balers to control matter feed in, and so on. Building on this, the ACV shows how farmers can remotely monitor and control machines directly, giving greater operational efficiencies for tilling, planting, spraying, harvesting to just mention a few.

“Some of the components of the ACV such as information control, could eventually be applied to standard tractors. These are very exciting times for farmers, as they — and Case IH — look at every avenue possible to optimise returns from every square centimetre of their farm.”

Pete says while Case IH will bring a concept vehicle to Australia to show farmers at some point, there are no current plans for local farm trials.

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Drawing on more than 170 years of heritage and experience in the agriculture industry, Case IH provides a powerful range of tractors, combines and balers supported by a global network of highly professional dealers dedicated to providing our customers with the superior support required to be productive in the 21st century. More information on Case IH products and services can be found online at www.caseih.com.

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