



## **Automated vehicles at Queensland Materials Handling: a step away from robotic forklifts**

Robotic forklifts are "inevitable" in Australian warehouses, according to an artificial intelligence expert ahead of the Queensland Materials Handling trade show.

Freelance Robotics will exhibit automated vehicles at the show when it runs from June 21 to 23 at the Brisbane Convention & Exhibition Centre and ultimately, says principal William Pagnon, central computers will orchestrate the movements of entire fleets of forklifts.

"A central computer will coordinate the positions of all the forklifts in a warehouse and decide which path each should take to avoid collisions or busy aisles," Mr Pagnon explains. "Decision algorithms can make traffic fully automatic – right down to time out for battery recharging – but should be able to be over-ridden by personnel."

Outdoors, forklifts would be guided with the help of GPS technology, while indoors, wireless networks would pinpoint their positions. Mr Pagnon says the need for automated vehicles to be aware of their environments and safety brought a great deal of complexity.

"Obviously, vehicles need to stop for pedestrians, for instance, and interact with other systems in a warehouse. It takes a lot of resources to integrate object recognition, GPS, artificial intelligence algorithms and communication systems. This is one of the main barriers to adoption of fully automated fleets of vehicles."

On the other hand, Mr Pagnon says Australian companies are embracing trials of automated vehicles at a faster rate than their European counterparts.

"Australia has a great history of research and development, industry is less sensitive to risk and the economy is strong. All these factors mean Australian companies are often better placed to trial new technologies. Automated vehicles are already a reality here – in fact, Freelance Robotics will have some on show at Queensland Materials Handling."

Mr Pagnon says many companies are already beginning to build automation into otherwise manual tasks.

"A good way forward is to look at what can be done better with some simple automation," he says. "For example, you might make your objective to decrease damage to crates and add sensors that allow the forklift to automate some manipulation. Sensors linked to artificial intelligence can perform like a second reflex, improving safety and reducing the risk of property damage."

"Partial automation of forklift use should soon be commonplace in Australian warehouses, where drivers are directed to the correct bay, there are no-go zones and artificial intelligence is used for improved WHS."

In any case, Mr Pagnon, whose Freelance Robotics consultancy offers everything from the development of algorithms right through to working prototypes of specialised robots and automated vehicles, recommends beginning with a proof of concept.

"Unless it's a well-tested robot out of the box, you need to be sure it will work," he says "A prototype allows you to test and validate the concept and then prove the worth of the investment."

Freelance Robotics will have automated vehicles and specialised robotics at the Queensland Materials Handling Show, co-located with the Queensland Safety Show and Queensland Manufacturing, it will run from June 21 to 23, 2011 at the Brisbane Convention & Exhibition Centre. For more information, visit [qldsafetyshow.com.au](http://qldsafetyshow.com.au), email [safetyvisitor@aec.net.au](mailto:safetyvisitor@aec.net.au) or phone Australian Exhibitions & Conferences Pty Ltd on 03 9654 7773.

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