



Countdown to mission possible

By Rose Trapnell

In a world-first breakthrough Queensland Unmanned Aircraft System researchers have developed an on-board, vision-based system that allows small unmanned aircraft (UA) to detect other aircraft in flight—a critical point for allowing UAs to fly in commercial airspace.

Currently, the usage of UA is restricted to small areas where human observation can ensure there is no collision risk to other aircraft in the area. Enabling all aircraft to equally share the airspace requires new technology and new regulations.

Chief technical hurdles include the inability of UA to detect and avoid oncoming aircraft and to land safely in emergencies.

Under the banner of Project ResQu, QUT's Australian Research Centre for Aerospace Automation (ARCAA), in conjunction with Boeing Research & Technology—Australia (BR&T-A) and

UA systems industry leader Insitu Pacific, has successfully proven a UA can detect another aircraft while in flight.

ARCAA director, QUT Professor Duncan Campbell, said once all technical and regulatory hurdles were overcome, UAs had the potential to perform a myriad of functions from providing real-time information to urban-fringe firefighters, to delivering life-saving medical supplies, to enabling farmers to inspect livestock and crops from their homesteads.

'They will be able to provide public services such as assistance in disaster management and recovery, as well as in environmental, biosecurity and resource management,' Professor Campbell said.

'The challenge worldwide has been to develop an on-board system of appropriate size, weight and power usage for a small UA.

'We can see benefit in the use of this technology in general aviation, too, as a detect-and-avoid aid to the human pilot.

'In coming months, we expect to deliver recommendations to the Civil Aviation Safety Authority in relation to necessary regulatory changes. It is hoped that these, in conjunction with our technology research achievements, will accelerate the integration of UA into everyday life.'

Project ResQu is a \$7 million project supported by the Queensland Government and involves some of the nation's top aerospace experts drawn from QUT, CSIRO, BR&T-A, and the Boeing subsidiary Insitu Pacific.