



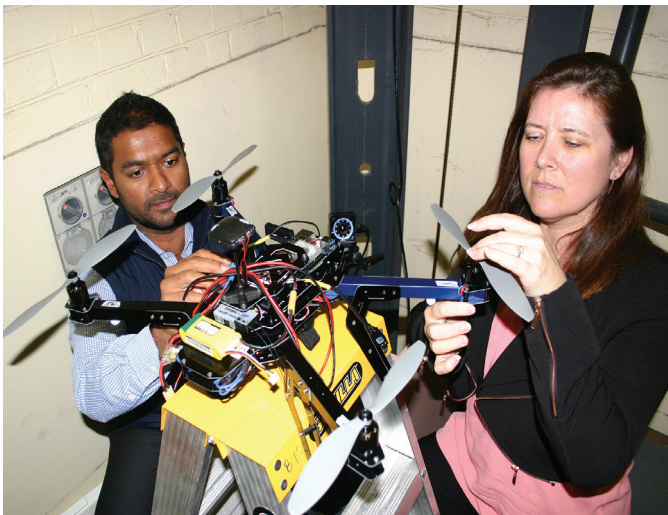
# Small autonomous aircraft

The Defence Science and Technology (DST) Group is creating teams of small autonomous aircraft, or drones, for missions in contested urban environments. They can operate at street level and inside buildings to provide intelligence, surveillance and reconnaissance data unavailable through any other means.

Urban environments are extremely challenging. Drones sold to hobbyists (and current commercial unmanned aircraft systems) cannot operate in cities because they cannot cope with darkness or highly variable lighting created by artificial lighting, visual obscuration (smoke or dust), the highly turbulent conditions common in cities, and radio-frequency interference.

## Major benefits

- ▶ The project leverages flight control and navigation techniques from the wider robotics community and combines them with unique sensors meeting the size, weight, and power requirements of very small drones.
- ▶ The aircraft will be no larger than the average drone sold to hobbyists – the difference will be in the on-board intelligence and sensors that will allow our aircraft to operate autonomously in difficult and contested conditions.



- ▶ The technology we are developing is dual-use, meaning it is equally useful (and of interest) to the military and to civilian authorities.
- ▶ It can increase the effectiveness of and decrease the risk to humans undertaking missions in urban environments.

## Partners and partnering opportunities

The program includes a large number of researchers outside of DST, reaching into universities that include University of Western Sydney, Queensland University of Technology, RMIT University, Monash University, University of Melbourne. DST is also collaborating with international partners in the US, UK, Canada, and New Zealand, via The Technical Cooperation Program, and with Singapore.

With the start of the Next Generation Technologies Fund program, DST is seeking to collaborate with industry partners.

## For further information:

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