

SINGAPORE

# 16 dancing drones to add buzz to The Future of Us exhibition

By Loke Kok Fai Updated 08 Jan 2016 15:20

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SINGAPORE: Come Friday night (Jan 8), 16 buzzing drones will dance together in sync to put on a colourful aerial light show for visitors to The Future of Us exhibition at the Gardens by the Bay.

Equipped with guidance, navigation and control algorithms, the drones are capable of autonomously keeping to preset flight paths while avoiding collisions with each other - necessary to perform the six-minute routines of six to seven formations flawlessly.



Multi-coloured drones rising in formation (Photo: Ngau Kai Yan)

Together they showcase ongoing research on multi-drones, forming shapes of significance to Singapore such as the numbers "50" and "100" representing the Republic's present and future. Some formations also draw inspiration from group behaviours found in nature, such as when schools of fish swim together or a flock of birds fly in V-formation.



*Drones "dancing" (Photo: Ngau Kai Yan)*

Eleven students and staff from the Temasek Laboratories at the National University of Singapore, the Nanyang Technological University and the Singapore University of Technology and Design are involved in the performance. "This system is the first of its kind in Singapore," said Kevin Ang, one of the participants.

"If you imagine having 16 different hobbyist pilots piloting the system together, you can tell that it's humanly impossible to be able to coordinate 16 different humans to manage the drones to fly in a specific 3D space."



*Pilots of the camera drone used to capture footage of the aerial show (Photo: Ngau Kai Yan)*



"It has applications both commercial and military," said MINDEF's Future Systems and Technology Directorate's programme manager Johnson Tang. "Because there's so many (drones), we can actually do surveillance over big areas and there's no single point of weakness. If one is down, the rest can still operate by themselves."



*Before lift-off (Photo: Ngau Kai Yan)*

It is hoped that the exhibition will help people better understand the technology behind such aerial drone flights in a fun and educational manner.

The public can catch repeat performances on Jan 9, 15 and 16. There will be two performances each day, at 7.20pm and 8.20pm.

- CNA/xk