

AEROSPACE

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SINGAPORE

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THROUGH THE EYE OF THE STORM

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DRONES

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- THE UNSUNG PANDEMIC HEROES?



Disinfecting Public Spaces with Drones. Photo: DJI

The COVID-19 pandemic has accelerated the adoption of technology across workplaces, industries and in homes. For Unmanned Aircraft Systems (UAS) companies worldwide, whose businesses have been hampered by regulatory hurdles, the pandemic has provided an unexpected boost. Demand for UAS has soared as public agencies and commercial businesses seek out drone-enabled solutions to help them manage the pandemic in a myriad of ways.

OPPORTUNITY IN CRISIS

The utility of UAS in the commercial arena has hitherto been led by industrial applications such as inspection of buildings, agriculture applications such as crop spraying, as well as aerial photography. Drones have the advantage of being nimble and flexible – they can go to places that are

hard to reach for humans and can carry a variety of payloads. They can also be programmed and integrated with navigation systems, sensors, cameras and AI, giving limitless potential for output.

In the context of a global pandemic, drones have the important advantage in that they can minimise face-to-face contact and the need for human interaction while carrying out tasks. This enables businesses and public agencies to perform critical services while protecting their employees from risk of exposure to the virus during.

UAS IN THE FIGHT AGAINST COVID-19

To ensure that social distancing policies are properly enforced, many countries are looking to drones to monitor public areas. Singapore's National Parks Board (NParks), for

example, has deployed some 30 drones to monitor human traffic in popular parks and nature areas. Hovering at approximately 50m above ground, the drones cover a wide area, offering a bird's eye view and complementing ground operations. Real-time data is collected every half hour and updated on an online portal, where the public can access information on how crowded a park is at a given time. If the number of visitors exceeds the maximum allowed for safe distancing measures, the park will be temporarily closed.

Just across the border, Malaysian Movement Control Order enforcers are using loudspeakers attached to drones to broadcast information while monitoring the streets of Penang and Johor. A single drone can cover the same area that approximately 40 policemen can. A similar application can be seen in the parks of Madrid, with Spanish police using drones to reprimand people who flout social distancing and quarantine rules.

Elsewhere in Europe, thermal sensing drones are helping officials identify people with high body temperature safely. This allows patients to be quickly isolated, enabling early treatment and limiting further spread of the virus. In Italy, drones can be seen flying above various virus hotspots measuring the temperature of people below. If found with a fever, police on the ground will then approach the person and take a temperature reading manually. It is an offence to be out with a raised temperature in Italy and citizens will be issued a fine if caught.

Drones with thermal sensors and loudspeakers are also being used in China. In a viral video published by its

media, drones can be seen hovering outside the windows of apartment buildings, instructing residents to open their windows for temperature taking procedures to be carried out. Chinese drone manufacturers DJI have adapted its agricultural spraying drones to spray disinfectant in public areas. According to DJI, this can be 50 times faster than traditional methods, while reducing risk to workers who would otherwise be more exposed to both the virus and the disinfectant.

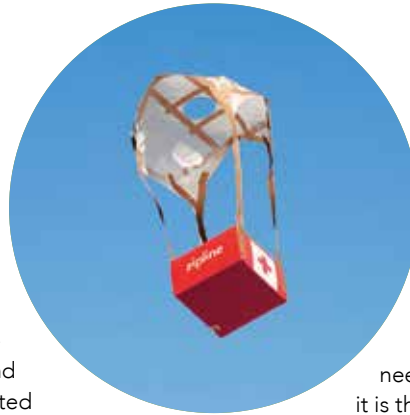
With the rapid spread and severity of the virus, doctors and hospitals need medical supplies and laboratory testing more than ever, and drones have emerged as the safest and fastest way to deliver supplies and transport samples from hospitals to laboratories. In the US, delivery startup, Zipline, has deployed drones to distribute personal protective gear and medical equipment to frontline healthcare workers in North Carolina. The activity gained approvals by the U.S. Federal Aviation Administration (FAA), under a special waiver and condition limiting operations until “all COVID-related restrictions on travel, business and mass gatherings for North Carolina are

lifted”.

Across the pond in the UK, drones are helping to fly urgent medical supplies from the country’s mainland to a hospital located on the Isle of Wight, some 8km off the south coast of England. Utilising a fixed-wing, twin-engined UAV with a payload capacity of 100kg, a drone delivery takes only 10 minutes, much faster than the traditional ferry crossing, which takes about 30 minutes, and is far cheaper than a normal flight. The operation has the clearance from the UK Civil Aviation Authority (CAA) to fly beyond visual line of sight with benign cargo and will have capacity to carry out ten return flights between the airfields per day.

CONCLUSION

The COVID-19 outbreak has led to many countries accelerating plans for UAS, highlighting the need for more efficient ways of supply delivery and surveillance. With lives at stake, increased pressure to deliver and the

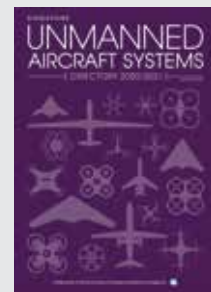


Zipline will fly supplies including personal protective equipment (PPE) about 32 miles to a hospital in North Carolina. Photo: Zipline

need for social distancing, it is the perfect opportunity to get creative and work around current constraints. It has also presented the unexpected opportunity to re-align public perception about how UAS can be used to improve lives without compromising privacy or safety. The flexibility, innovation and potential demonstrated by drone applications in these challenging times have given more visibility and weight to the UAS industry. The future is looking up for these nifty flying machines.



NParks’ useful real-time map that shows the visitorship status at different green spaces in Singapore. Photo: Screengrab from safedistparks.nparks.gov.sg



Singapore Unmanned Aircraft Systems Directory 2020/21

The second edition of the

Singapore Unmanned Aircraft Systems (UAS) Directory has been released. The publication was first launched in 2019, in conjunction with the formation of the Singapore UAS Community. Featuring Singapore-based UAS service providers, manufacturers, suppliers and end-users, it is a one-stop platform to showcase their capabilities and commercial UAS applications.

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