



COVID-19 Scenario Emerging Role of Drones in India





COVID-19 Scenario – Emerging Role of Drones in India

Recommendations by FICCI Committee on Drones

1. Drones have proven to be among the most promising technologies emerging from the Fourth Industrial Revolution. Recently, the Hon'ble Prime Minister of India Sh. Narendra Modi launched the e-gram Swaraj and Swamitva Scheme portals. Interestingly, the Swamitva Scheme is likely to use drones to map inhabited lands in rural areas and land surveys¹. This is a testimony to the emerging role of drones in India.
2. FICCI was the first industry body to anticipate this significant role of drones and has a dedicated Committee on Drones representing this nascent but highly promising sector at the confluence of “Make in India” and “Digital India” initiatives of Government of India. This committee has been advocating for the holistic and responsible use of Drone technology across government agencies, agriculture and enterprises.
3. As the COVID-19 pandemic continues to impact India, the response by the Government of India and all state authorities has been swift and effective. You may be aware about FICCI's deep engagement in supporting various Government initiatives.
4. FICCI Committee on Drones in a meeting held on 22-Apr-2020 with over 40 stakeholders in attendees, reviewed the significant media coverage in India and globally on Government agencies leveraging the use of drones responding to the COVID-19 pandemic.
5. We understand that drones are playing a significant role in fight against the coronavirus in support to the following activities undertaken by Police, healthcare and municipal authorities:
 - a. Surveillance & Lockdown Enforcement
 - b. Public Broadcast
 - c. Monitoring Body Temperatures
 - d. Medical & emergency food Supplies Delivery
 - e. Surveying & Mapping
 - f. Spraying Disinfectants

Details of above cited use-cases as per media reports, is listed in **Annexure-I**.

¹ 'To become self-reliant and self-sufficient is the biggest lesson learnt from Corona pandemic: PM', Press Information Bureau, 24 April 2020.

6. The advantages offered by use of drones are numerous. To begin with, drones help minimize human interactions and prevent exposure to viral transmission for our frontline warriors. They act as force multipliers in augmenting the available man-power for security and public safety. Drones can speed up transport by as much as 50%² in comparison to regular vehicle road transport. They can also be deployed to reach remote areas easily and quickly than standard modes of transportation.
7. Throughout the world, innovators and scientific researchers are coming together to find innovative ways to use drones to fight COVID-19. In such critical times, policy makers world over are leveraging the advantages offered by drones and facilitating their wider deployment by removing barriers and streamlining their use for combating COVID-19. Globally, International Civil Aviation authorities have started providing COVID-19 related approvals and waivers to drone companies for the use of unmanned aircrafts to combat the current pandemic. A few such examples are enclosed in **Annexure – II**.
8. **FICCI would like to make the following recommendations to the Government of India in expediting the effective and safe adoption of Drones for the following:**
 - a. Inclusion of Drone services to Government agencies and enterprises involved in fighting against COVID-19, under Essential Goods and Services
 - b. Blanket exemptions for usage of drones for law enforcement and public safety agencies and critical industries / sectors for supporting COVID-19 crisis response
 - c. Sector-wise exemptions for use of drones for supportive activities (agriculture and enterprises) to revive the Indian economy
 - d. Re-enable voluntary disclosure of non-compliant drones flying in India

A. Inclusion of Drone services to Government agencies and enterprises involved in fighting against COVID-19, under Essential Goods and Services

- i. The battle against COVID-19 is long and strenuous, compounded by the fact that the first set of vaccines are expected to receive clinical approval only in late 2020 or early 2021. As remotely piloted devices, drones are naturally effective at minimizing human interactions, which is crucial when the government, law enforcement and critical service personnel, meant to safeguard the communities can potentially become vectors for the virus.
- ii. **FICCI recommends that under clause 14 of the Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated April 15, 2020; following drone services to Government agencies and enterprises involved in fighting against COVID-19, should be immediately notified as essential goods and services:**
 - a. Surveillance & Lockdown Enforcement
 - b. Public Broadcast
 - c. Monitoring Body Temperatures

² Tracy Cozzens, 'China fights coronavirus with delivery drones', GPS World, 06 March 2020. Link - <https://www.gpsworld.com/china-fights-coronavirus-with-delivery-drones/>

- d. Medical & Emergency Food Supplies Delivery
 - e. Surveying & Mapping
 - f. Spraying disinfectants
 - g. Spraying fertilizers/pesticides
 - h. Monitoring oil and gas pipelines and infrastructure for detecting leakages, safety, security and ensuring operational continuity
 - i. Monitoring industrial / office premises for safety, security, asset monitoring and executing business critical activities within sites
- iii. Drone Manufacturers (which are also part of Aerospace & Defence sector) have been exempted in states like Karnataka, from the nationwide lockdown and have been permitted to resume manufacturing activities. **It is further recommended that Drone Manufacturing should also be classified under the essential goods manufacturing category.**

B. Blanket exemption for usage of drones for law enforcement and public safety agencies and critical industries / sectors for supporting COVID-19 crisis response

- i. Currently, drones are only allowed to legally fly using permission from Digital Sky in six small green zones in remote rural areas of the country. This is insufficient to address the numerous challenges faced by our country in the time of this crisis.
- ii. **The FICCI Drone Committee recommends that Ministry of Civil Aviation (MoCA) should provide blanket exemptions to law enforcement agencies, public safety and emergency response agencies (municipal corporations, fire departments, NDRF, forest departments, etc.) and critical security agencies and enterprises during COVID-19 lockdown to use drones to augment available manpower and prevent risk of human life till 31st December 2020, for the following use cases:**
 - a. Surveillance & Lockdown Enforcement for government authorities as well as security of infrastructure critical to national requirements
 - b. Public Broadcast
 - c. Monitoring Body Temperatures
 - d. Medical & Emergency Food Supplies Delivery
 - e. Surveying & Mapping
 - f. Spraying disinfectants
 - g. Spraying fertilizers/pesticides
 - h. Monitoring oil and gas pipelines and infrastructure for detecting leakages, safety, and security and ensuring operational continuity
 - i. Monitoring industrial / office premises for safety, security, asset monitoring and executing business critical activities within sites
- iii. It is further recommended that:
 - a. The approval should be for agencies / enterprises that provide a letter stating their intent that the drones would be used only to fulfil critical requirements related to COVID-19 crisis

- b. The approval should be granted up to end of 31st December 2020, and can be extended as required depending on the severity of the pandemic at that stage

iv. The FICCI Drone Committee believes that the above permissions/exemptions are justified during the time of the unprecedented COVID-19 pandemic as:

- a. Drones have proven to be very effective in providing an aerial view to maintain surveillance & security for monitoring the COVID-19 lockdown^{3,4,5}
- b. There has been a general reduction in available manpower for maintaining law and order situation during COVID-19 crisis, which has led to an increase in illegal activities. Drones have proven effective as a force multiplier in augmenting the reduced manpower to maintain security requirements.
- c. The safety risk associated with the usage of drones for the above use cases during the COVID-19 lockdown is miniscule as: (i) There are very few civil manned aircraft in operation (ii) There are very few people in public areas whose safety could be affected by drone flights.
- d. As the drones will be bearing Unique Identification Number (UIN) / Drone Acknowledgement Number (DAN), they will be registered with the government and Ministry of Civil Aviation will have full traceability of the drone operator. Further, such operations would be permitted only with the intent of usage by security and other government agencies and will be of a time bound nature.
- e. This is an opportunity to be forward looking as a country and become one of the front-runners in encouraging the use of emerging technologies for responding to an unprecedented global situation, without comprising any safety requirements.
- f. A further fillip to the economic recovery shall be provided

C. Sector-wise exemptions for use of drones for supportive activities (agriculture and enterprises) to revive the Indian economy

i. Exemption for the use of Drones for Agricultural sector

- a. Agriculture sector is expected to face unprecedented headwinds due to the ongoing shortage in labour availability precipitated by COVID-19 crisis. Hence, the automation of critical agriculture related activities should be taken on priority. Labour shortage and related concerns are expected to prevail in Kharif season (July onwards) also. Allowing Drone based Agricultural Spraying will ease the labour shortage issue and will also be a good opportunity to showcase what this technology can do.
- b. It would be important to note here in that Hon'ble Prime Minister of India Sh. Narendra Modi has launched the e-Gram Swaraj and Swamitva Yojana portal. These two portals are launched with the aim of accelerating the pace of development projects in the rural areas⁶. It is reported that the Swamitva Yojana would be using drones to map properties

³ 'COVID-19: Authorities rely on drone eye to maintain vigil ', The Economic Times, 12 April 2020.

⁴ 'Covid-19: Drones drive surveillance in Delhi's containment zones ', Hindustan Times, 11 April 2020.

⁵ 'Drones to track poachers, forest fires around Bengaluru ', Deccan Herald, 10 April 2020.

⁶ 'PM Narendra Modi launches EGram Swaraj, Swamitva Yojana for faster development of villages', The Economic Times, 24 April 2020.

in the villages of India. This in turn would substantially help in resolving property disputes⁷. This particular use case of drones could play an important role in rural areas.

- ii. Exemptions for the use of drones in Oil & Gas Sector:
 - a. Without proper monitoring, industrial disaster/ security threats in sectors such as oil & gas, has increased considerably. For instance, Oil and Gas companies heavily rely on a network of cross-country pipelines transporting high-pressure inflammable hydrocarbons to maintain operations. Any damages to these pipelines may result in leakage of inflammable liquid/gases, which can not only result in large-scale damage to property and the environment but also disrupt the countries hydrocarbon and energy supply chain. We believe that strict surveillance of these pipelines is essential for safeguarding public safety and the nation's economy. We seek exemption from present regulation in flying of drones for pipeline right of way surveillance.
 - b. As on date, Oil & Gas sector in India, has not been permitted for drone / UAV based surveillance, and their previous attempts to seek waiver from these regulations have proven to be unsuccessful.
 - c. Such critical cases should be immediately considered by the DGCA. They may be exempted from existing regulations restricting flying of UAV. They need to survey the pipeline right of way and 200m on either side of the right of way (which are generally 30m wide). The flying height shall be in the range of 60-100m.
- iii. Exemption for the Use of Drones within Industry / office campus during COVID-19 scenario
 - a. Given the current resource constraints and need for social distancing to be maintained for the foreseeable future due to the COVID-19 pandemic, FICCI requests exemption for the use of DGCA registered Drones within Industries / office campus premises while taking care of prescribed safety precautions and following SOPs as laid by the concerned ministries / agencies. This would enable drones to support use cases for security, safety, asset monitoring, ensuring business continuity and for COVID-19 pandemic response support within the site.

D. Re-enable voluntary disclosure of non-compliant drones flying in India

- i. This is with reference to the Ministry of Civil Aviation, Public Notice dated January 13, 2020, File No. AV-22011/4/2015-DG, regarding voluntary disclosure of non-compliant drones flying in India by January 31, 2020.
- ii. On successful submission of voluntary disclosure of possessing drone, a Drone Acknowledgement Number (DAN) and an Ownership Acknowledgement Number (OAN) will be issued online which will help in validation of operations of drones in India. However, the DAN or OAN does not confer any right to operate drone(s) in India, if it does not fulfil the provisions given in the CAR. Further, ownership of drone(s) in India without a valid DAN or OAN shall invite PENAL ACTION as per applicable laws.

⁷ ibid

- iii. As per a Lok Sabha reply⁸ by the Hon'ble Minister of State in the Ministry of Civil Aviation, Shri Hardeep Singh Puri - the information received on Digital Sky Portal, during 14.01.2020 to 31.01.2020, the total number of civil drones, enlisted by individuals were 19,553.
- iv. While there is no official data, it is estimated that the number of commercial and recreational drones in India is around 2 lakhs.
- v. Also, many companies and individuals, were not able to register their drones on Digital Sky portal due to some technical issues on the website.
- vi. **Re-enabling the voluntary disclosure till 30-Jun-2020 will allow many drone users to legally register the drones in their possession strengthening the visibility into the ownership of such drones.**

⁸ Available at - <http://164.100.47.194/Loksabha/Questions/QResult15.aspx?qref=14286&Isno=17>

Annexure - I

Part A - Drone use cases to combat COVID 19 in States of India

Since the last one-month, Government authorities in India have extensively sought the help of drone service operators for wide ranging operations in their fight against COVID 19. Drone companies have played a constructive role by providing their technology solutions to state authorities in order to expand the scope and coverage of their operations within their respective jurisdictions. While the usage of drones has occurred in a few states, however their successful demonstration of capabilities is motivating additional number of states to deploy drones for wide ranging activities to fight COVID 19. This section provides an overview of drone use cases currently employed by authorities in several states of India to combat COVID 19 and for other ancillary activities associated with COVID 19.

1. Drone use cases to fight COVID 19

a. Spraying disinfectants

- i. The states of Telangana, Tamil Nadu, Chhattisgarh, Karnataka, Uttar Pradesh etc. have solicited the services of drone companies to spray disinfectants in earmarked areas¹. Drones are uniquely positioned to perform the task of spraying disinfectants several times faster and also able to cover wider geographical areas. While the effectiveness of drones deployed to spray disinfectants remains a contested factor, it is a use case of drones which has been widely deployed by state authorities in India to fight COVID 19 pandemic².
- ii. Public areas, government buildings, hospitals in some of these states have been sprayed with disinfectants. Several more states have also evinced interest to solicit the services of drone operators to conduct similar operations in their areas³.
- iii. The COVID 19 pandemic has also prompted several educational institutes based drone startups to innovate and remodel drones to cater to the demands of sanitization⁴.

b. Monitoring body Temperature:

- i. Drones mounted with thermal cameras have been deployed in cities such as New Delhi and Bengaluru to monitor body temperature of people, especially in crowded places⁵. According to news reports, the North Delhi Municipal Corporation has deployed drones with thermal scanners to monitor temperature of people standing on roofs⁶. If any abnormality in the person's body temperature is noticed, then such a person is requested to come down, according to the report⁷.
- ii. A drone company specializing in crowd control and monitoring body temperature has deployed its services in several part of Bengaluru⁸.

c. Medical supplies delivery:

- i. A drone startup based out of Telangana has successfully demonstrated medical supplies delivery via drones to remote areas⁹. Another startup based in Pune has

expressed its intention to work with city authorities in the domain of medical services delivery¹⁰.

- ii. At IIT Madras, research on drone is underway which would be designed for the purpose of delivering drugs and medicines¹¹. The project is expected to take another nine months to complete.

2. Drone use cases during COVID 19 (Supportive activities):

a. Surveillance and ensure lockdown:

- i. State and police authorities have sought support from drone operators in maintaining law and order and ensure that people are adhering to lockdown rules and social distancing norms. This particular use case of drones seems to have been extensively used in comparison to other use cases.
- ii. With media reports suggesting some police officers in different states of India getting infected by COVID 19 while performing their duties, deployment of drones for the purpose of surveillance, ensuring lockdown and public broadcast could enable limiting the spread of COVID 19 infection among police officers and healthcare officials. States such as Maharashtra, Gujarat, National Capital Region, Karnataka, Telangana, Assam, Kerala and Tamil Nadu have reportedly deployed drones for the purpose of surveillance and ensuring lockdown¹².
- iii. Considering the resource constraints and operational limits of ground forces in patrolling extensive areas, drones have played a significant role in plugging such specific gaps. For instance, in the city of Mumbai, drones have been deployed by local police to monitor and conduct aerial surveillance of narrow lanes¹³. In case of Gujarat, in addition to conducting surveillance, drones have also been used to monitor and capture the number plates of any car found to be plying on the streets during lockdown in the state of Gujarat¹⁴.
- iv. In addition to deploying drones for surveillance, drones have also been deployed by state authorities in places such as Hyderabad and Bengaluru to plan and organize ground forces deployment to monitor areas^{15 16}.
- v. In places such as New Delhi and Mumbai, drones have been used to ensure that people are following social distancing norms in public places such as vegetable markets and whole sale markets^{17 18}. In places such as Sangli, drones are enabling police forces to ensure social distancing in places near pharmacies and grocery stores¹⁹.
- vi. In the state of Kerala, drones have been used to disperse crowd and also check illicit brewing shops and group drinking²⁰.

b. Public Broadcast:

- i. Drones mounted with speakers or police sirens have been deployed by states such as Telangana, Maharashtra, Kerala, Jammu and Kashmir, Assam to disperse gathered crowd, encourage people to stay indoors, create social awareness on COVID 19, etc²¹.
- ii. In the state of Kerala particularly, drones mounted with police sirens have demonstrated effective use of the platform for encouraging people to remain indoors²².

c. Miscellaneous drone use cases during COVID 19:

- i. Given the strain on resources availability, there are indications of increase in illegal activities such as illegal poaching in forests, pilferage of oil from pipelines, instances of theft and burglary in industrial areas. Drones if deployed could enable state and central authorities in India to prevent occurrence of such illegal activities. Some use cases of drones during the COVID 19 lockdown are as follows: -
- ii. **Prevent illegal poaching in forests:** State forest department authorities in Karnataka have solicited the services of drone service providers to surveil forest areas in Bengaluru in order to preclude poaching in forest areas²³.
- iii. **Asset protection:** In light of the COVID 19 lockdown, the Railway Protection Force in Srikakulam district of Andhra Pradesh has deployed drone to conduct surveillance in and around railway tracks and other railway assets²⁴. The underlying rationale behind drone deployment is to prevent entrance of migrants from other states via railway tracks on foot and also prevention of theft from railway premises²⁵.

Part B - Global use cases of drones to fight COVID 19 pandemic

Drones are uniquely positioned to fill glaring gaps in resources, provide faster mobility and expand the scope and coverage of anti-COVID activities (direct and indirect). Keeping this factor in mind, importance of drones and their ability to support state efforts in combating COVID 19 pandemic has begun dawning upon several countries world over. This annexure documents different use cases of drones deployed by countries in their fight against COVID 19 pandemic. The use cases of drones are classified into two categories i.e. **1) Drone use cases in combating COVID 19 pandemic; 2) Drone use cases during COVID 19 pandemic (Supportive activities)**. The use cases and their details are provided in the following sections:

1. Drone use cases in combating COVID 19:

a. Spraying disinfectants

- i. Drones designed to spray pesticides on agricultural lands have been remodeled with disinfectants to sanitize large spaces²⁶. While the verdict is still out on the effectiveness of using drones to spray disinfectants²⁷, nevertheless, it is an important use case of drones which is widely being deployed by countries in the fight against COVID 19 pandemic.
- ii. Drone companies in countries such as China have teamed with Agricultural research institutes to make effective use of drones for spraying disinfectants. China, South Korea, UAE, Israel and India have deployed drones to spray these disinfectants in their respective urban and rural spaces²⁸. The primary recipients of drone based disinfectant operations have largely been Government offices, hospitals, public places.

b. Monitoring body temperature:

- i. Drones mounted with thermal cameras have been deployed by state authorities across the world to detect body temperatures of people in public places. Some drones are

fitted with AI enabled cameras which enables to identify any abnormalities in body temperature²⁹.

- ii. A team of researchers from University of South Western Australia have reportedly made a breakthrough wherein the drones fitted with specialized cameras can detect coughing, sneezing, detect heart and respiratory rates of people and monitor their body temperatures³⁰. Countries such as China, Saudi Arabia, Jordan, Israel and Bulgaria have deployed drones to monitor people's body temperature³¹.

c. Medical and food supplies delivery :

- i. Social distancing is considered to be an important measure to prevent the spread of the COVID 19. While the presence of mass congregation of people in public places has largely been brought down due to government efforts world over, however there are some essential human activities which necessitates people to venture out. For instance, for their daily needs, people move out of their homes to purchase food and medical supplies (for COVID and non-COVID patients). In such testing times, drones are uniquely positioned to cater to some of the needs such as transporting food and medical supplies.
- ii. Advantage of deploying drones for food and medical supplies transport during COVID 19 becomes particularly important given the fact that there is a significant drop in air traffic congestion. Transportation of medical supplies, medical equipment and even blood samples could be pursued through drones.
- iii. A company named Antwork has flown medical samples and quarantine supplies from People's Hospital, Xinchang county to Disease control center in Xinchang county³². The company is also considering expanding its operations in Hangzhou and Wuhan provinces of China³³. Chinese e-commerce company JD has used drones to supply medical equipment to hospitals located in remote areas of Wuhan³⁴.
- iv. In case of China, reports suggests that robotics have been extensively used inside hospitals to cater to these needs of COVID infected patients. Robotics have been deployed to deliver food to patients in COVID infected wards.
- v. Zipline, a drone company has already proven and validated drone based medical supplies deliveries in Rwanda, Africa³⁵. The company is currently engaging in talks with US Government to seek permission to begin operations in United States³⁶. Similarly, a Canadian company Drone Delivery Canada has also begun negotiating with the Government of Canada for transportation of pharmaceutical products in suburban and rural areas of Canada³⁷.

2. Drones use cases during COVID 19 (Supportive activities):

a. Surveillance and ensuring lockdown:

- i. Countries across the globe have announced nation-wide lockdown. The lockdown measures have been announced with the express intention to halt the spread of COVID through preventing human contact. However, several cases have emerged wherein people not realizing the severity of the COVID 19 pandemic have been flaunting lockdown rules and venturing out.
- ii. To ensure that people stay within the confines of their homes, especially in containment zones across the world, police forces have deployed drones to expand

the coverage of their surveillance with faster speed. Drones are uniquely positioned to not only pick up signs of lockdown violations on the streets but also to ensure that people are adhering to social distancing rules on rooftops.

- iii. One of the unique advantages of deploying drones to ensure surveillance and lockdown is that it precludes police officers performing such duties from getting infected by COVID 19, particularly those operating in declared containment zones.
- iv. Countries such as Israel, China, USA, Malaysia, Kazakhstan, Italy, France, Jordan, Belgium, Greece, etc. have deployed drones to ensure lockdown in public places³⁸. In case of Israel, drones are regularly sent in places wherein people have been quarantined. Such quarantined people are required to come near their windows to provide visual confirmation that they are inside their houses³⁹. Drones have also been used to disperse crowd and ensure that people are practicing the social distancing norms. One participant during the FICCI Drone Committee meeting of 22 April 2020 mentioned that a sudden drop in crime statistics in Israel could be attributed to extensive deployment of drones by the state of Israel⁹. China too has deployed its drones extensively to monitor congested areas and disperse crowd in its cities and other areas⁴⁰.

b. Public Broadcast :

- i. While drones continue to be effectively deployed to surveil and ensure lockdown, its effectiveness substantially increases when it is fitted with speakers. Drones with mounted speakers have frequently been used in countries such as China, Israel, France, Spain, India etc. to disperse crowd in public places⁴¹.
- ii. Drones deployed for public broadcast can be effectively used for not only dispersing crowd but to also relay area specific messages pertaining to COVID 19 to educate and raise awareness among inhabitants. In scenarios wherein some people are found to be not wearing masks, drones with mounted speakers are able to relay messages encouraging people to wear masks⁴². In case of countries such as Malaysia, Qatar, Kuwait, drones with fitted speakers have been used to relay messages in multiple languages⁴³.

c. Survey mapping :

- i. Drones have also been found to play a critical role in activities like survey mapping. For instance, while planning construction of hospitals and critical care facilities drones could be used to play an important role in surveying areas. In case of China, the country has made use of satellite technology to survey areas⁴⁴.
- ii. According to reports, several empty fields in countries such as China, US and Germany have been converted into makeshift hospitals⁴⁵. Drones have played a critical role in survey mapping of such areas to construct hospital efficiently and with minimal human involvement⁴⁶.
- iii. Further drones fitted with lightings have been used to illuminate areas which have been designated for construction activities. Drones were used for one such hospital construction in Wuhan, wherein 6 drones hovering 50 meters above ground could

⁹ Participant in an online FICCI Drone Committee meeting, 22 April 2020.

illuminate an area of 6000 sq meters and remain illuminated for 10 hours with a single charge⁴⁷.

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Annexure – II

Exemptions provided by Global Civil Aviation Authorities, to drone companies for the use of unmanned aircrafts to combat the current pandemic

| Sr. No. | Civil Aviation Authority | Exemption |
|---------|---|--|
| 1. | United States' Federal Aviation Administration (FAA) | The US Federal Aviation Administration has offered its first coronavirus-related waiver for drone flight, allowing an oil and gas company in - Houston, Texas, to use unmanned aircraft instead of humans to inspect its facilities while staff remain confined in lockdown ¹ . Waivers for the commercial drone industry are common in the US, but this is the first specifically related to the pandemic, which has dramatically increased demand for unmanned services such as contactless delivery and aerial surveillance. In addition, the approval was granted within 24 hours ² . |
| 2. | | The FAA proposes to amend its rules and enact <u>new standards</u> for unmanned drones, which could be the first step toward the eventual mainstream acceptance of deliveries via drones ³ . |
| 3. | UK Civil Aviation Authority (CAA) | Temporary prioritization of Operating Drones for COVID-19 by National Health Service, Police, Fire, Ambulance or by Government Department (<i>This prioritization will remain in place until the end of May 2020, at which point it will be reviewed and renewed if appropriate</i>) ⁴ |
| 4. | | Police forces have always had the ability to fly drones outside the limits of the CAA's rules, but the move by the regulator means they have been given a blanket exemption to help tackle coronavirus ⁵ . |
| 5. | Australia's Civil Aviation Safety Authority (CASA) | The government has agreed to defer mandatory drone registration and accreditation until 30 September 2020 ⁶ . |
| 6. | New Zealand's Civil Aviation Authority (CAA) | Drone operators can support organizations providing essential services during lockdown ⁷ . |
| 7. | Italian Civil Aviation Authority (ENAC) | Recreational drone pilots are allowed to operate their drones within their property, as long as CAA rules are followed and privacy of others is respected ⁸ . |
| 8. | Italian Civil Aviation Authority (ENAC) | ENAC note dated March 23, 2020, authorizes local police forces carrying out critical operations in urban areas, without the need of any ENAC's authorization or compliance with ENAC's published standard scenarios ⁹ . |

| | | |
|-----|---|---|
| 9. | South African Civil Aviation Authority (SACCA) | Extension of licenses of Remote Pilots and other licenses issued by them till 26 June 2020 ¹⁰ . |
| 10 | | Step Above (a Private Drone Company) is notified as 'Essential Service' ¹¹ . |
| 11. | Civil Aviation Authority of Malaysia (CAAM) | <p>The Civil Aviation Authority of Malaysia (CAAM) has given the go-ahead to the Royal Malaysian Police (RMP) to deploy drones for enforcement and surveillance purposes to help reduce the spread of coronavirus. The operation will see the deployment of 92 drones throughout Malaysia.</p> <p>This drone operation is led by RMP in collaboration with Malaysian Armed Forces and three private drone companies (Deftech Unmanned Systems, System Consultancy Services and Aerodyne Group). CAAM authorised operation will abide to the instructions and SOPs laid out by RMP¹².</p> |

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Annexure – III

FICCI Drone Committee Meeting April 22, 2020

List of attendees from whom inputs were invited and included

1. Mr. Rajan Luthra, Chairman's Office, Head – Special Projects, Reliance Industries (**Chair, FICCI Committee on Drones**)
2. Lt. Gen. Sanjeev Madhok, Head of Defence Business, Dynamatic Technologies (**Co-Chair, FICCI Committee on Drones**)
3. Mr. Ankit Mehta, CEO, ideaForge (**Co-Chair, FICCI Committee on Drones**)
4. Mr. Neel Mehta, Director and Co-founder, Asteria Aerospace
5. Mr. Nihar Vartak, Director and Co-founder, Asteria Aerospace
6. Sq. Ldr V S Srinivasan, Deputy General Manager - Airborne Platforms & Systems, Tata Advanced Systems Ltd
7. Mr. Vipul Singh, Co Founder & CEO at Aarav Unmanned Systems
8. Mr. Mridula Dhanuka, Director, Dhanuka Agritech
9. Mr. Varun Jain, Partner, Usnatek
10. Mr. Brijesh Pandey, Founder, GarudaUAV
11. Mr. Parag Sehgal, Director - RMS (India), Lockheed Martin
12. Mr. S. S. Gupta, Chief General Manager (Maintenance & Inspection), Indian Oil
13. Mr. Dilip Kumar Damodaran, Joint General Manager - Airspace Planning and Design, Airports Authority of India
14. Ms. Arpana Anand, Indian Oil
15. Ms Mamta Chiniya, Assistant Manager (Telecom & Instrumentation), Indian Oil
16. Mr. Gavriel Surujon, Technical Advisor – Security Platform, Reliance Industries Ltd.
17. Mr. Rajvir Rathi, Head - Agricultural Policy & Stakeholder Affairs, Bayer Crop Science [Senior Member, Croplife India]
18. Ms. Sangeeta Dawar, Croplife India
19. Mr. Joydeep Chakraborty, Head-Communications, Croplife India
20. Mr. Sunny Sharma, CEO, IIO Technologies
21. Mr. Tarun Mishra, Founder, DeTect Technologies
22. Mr. Karthik R, CTO, DeTect Technologies
23. Mr. Kunal Chaudhary, Freebird Aerospace India
24. Mr. Chirag Sharma, CEO, Hubblefly Technologies
25. Mr. Apurva Godbole, Co-Founder and CEO, Drona Aviation
26. Mr. Piyush Rana, Aarav Unmanned
27. Mr. Anshu Abhishek, Manager-Tech, Zomato
28. Mr. Pradeep Palelli, Founder, Thanos Technologies
29. Mr. Prem Kumar Vishlawath, Founder & Chief Innovator, Marut Drones
30. Mr. Mrinal Pai, Co-Founder at Skylark Drones
31. Mr. Abhishek Burman, Director & CEO, General Aeronautics



32. Mr. Nagendran Kandasamy, Founder & Director, Throttle Aerospace systems
33. Mr. Mitul Arora, Policy Lead- India/Sri Lanka, DJI
34. Mr. Abhinav Kumar, VP –Operations, Asteria Aerospace
35. Dr. Sanket Kulkarni, Business Analyst, Reliance Industries
36. Mr. Amrit Mahapatra, AGM, Dynamatic Technologies
37. Mr. Vishal Saxena, ideaForge
38. Mr. Sumeet Gupta, Assistant Secretary General, FICCI
39. Mr. Ankit Gupta, Deputy Director – Drones & Homeland Security, FICCI
40. Ms. Sonali Hansda, Assistant Director – Drones & Homeland Security, FICCI

Primary Contributors

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2. Lt. Gen. Sanjeev Madhok, Head of Defence Business, Dynamatic Technologies (**Co-Chair, FICCI Committee on Drones**)
3. Mr. Ankit Mehta, CEO, ideaForge (**Co-Chair, FICCI Committee on Drones**)
4. Mr. Sumeet Gupta, Assistant Secretary General, FICCI
5. Mr. Ankit Gupta, Deputy Director – Drones & Homeland Security, FICCI
6. Ms. Sonali Hansda, Assistant Director – Drones & Homeland Security, FICCI



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