RECOMMENDATIONS ON THE (DRAFT) DRONE RULES, 2021

Submitted by:

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AND

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The Ministry of Civil Aviation ("**MoCA**") has undertaken the initiative of bringing critical amendments to the currently existing Unmanned Aircraft System Rules, 2021 ("**UAS Rules**")[1] *vide* the Draft Drones Rules, 2021 ("**Draft Rules**")[2] released on July 14, 2021 for public consultation.

The Draft Rules have heavily reduced the procedural and compliance aspects of owning, operating, manufacturing and importing civilian drones or Unmanned Aircraft Systems ("**UAS**"/"**Drone(s)**").

The Draft Rules seek to provide a legal and regulatory framework to the UAS or Drone industry in India. India is set to be one of the largest and fastest growing Drone markets in the world by FY2026 growing at a CAGR of 14.61%, owing to the rapid technological advancements and the increasing need for advanced systems for delivery, security among others. The Indian Drone market has shown exponential growth since 2018, pursuant to the release of the draft norms for usage of Remotely Piloted Aircraft Systems ("**RPAS**")[3] in 2018[4].

In light of the fast paced evolution of the Drone industry, and the need for expansive legislations for this sector, we appreciate the initiative undertaken by the MoCA to revise and enact newer and more advances legislations to better govern this sector. We submit our views and observations on the Draft Rules through the present recommendations ("**Our Recommendations**").

[1] https://egazette.nic.in/WriteReadData/2021/225860.pdf;
[2] https://www.civilaviation.gov.in/sites/default/files/Draft_Drones_Rules_14_Jul_2021.pdf;
[3] Office of Director General of Civil Aviation, Government of India. "Requirements for Operation of Civil Remotely Piloted Aircraft System (RPAS).", F. No. 05-13/2014-AED Vol. IV. (August 27, 2018)
[4] India Drone Market Report 2019-2024, ResearchAndMarkets.com

Our Recommendations on the Draft Rules are divided in three parts.

In PART A, we examine the existing legal and regulatory framework governing Drones in India.

In PART B we examine in detail the established UAS regimes in certain international jurisdictions.

In PART C, we encapsulate our recommendations on the provisions of the Draft Rules.

The recommendations have been co-drafted by Mr. Kevin Westwood, a pioneer in high hazard industries such as Oil & Gas, Petrochemical, & Agrochemical, having more than 40 years of experience. He has domain expertise in wide range of engineering disciplines, and has held positions with certification responsibility for mechanical, electrical, civil, transportation (road and rail) operations.

Being a subject matter expert, Mr. Kevin Westwood has served on the panel developing British Petroleum's internal drone operating standards and has also advised on use of drones within the company. British Petroleum was the first company to obtain a commercial license to fly drones in USA after the regulations were introduced.

Further, Mr. Kevin Westwood has successfully managed many significant emergencies of high value assets and is a world recognised expert in emergency response, risk and crisis management. Mr. Westwood owns and operates drone companies in the UK, and Trinidad & Tobago and represents various drone manufacturers from the UK, Ukraine, Netherlands, USA, Switzerland, & Israel.

Part A: Current Framework regulating UAVs in India

A1. LEGISLATIVE HISTORY OF DRONES IN INDIA

1. The first notification concerning the UAS was issued by the Office of the Director General of Civil Aviation ("**DGCA"**), which is the apex regulator for civil aviation in India, and can be traced back to 7 October 2014.[5] Under this notification, the DGCA recognized that UAS have potential for large number of civil applications. However, its use besides being a safety issue, also poses a security threat. As the airspace over cities in India has high density of manned aircraft traffic, lack of regulation, operating procedures/standards and uncertainty of the technology, UAS poses threat for collisions and accidents. On the basis of this, the DGCA restricted civil operation of UAS and made it mandatory to obtain approval from the Air Navigation Service provider, defence, Ministry of Home Affairs, and other concerned security agencies, besides the DGCA before undertaking any Drone usage. Furthermore, it also stated that the DGCA is in the process of formulating the regulations (and globally harmonize the same) for certification & operation for use of UAS in the Indian civil airspace and cautioned against use of UAS by any non-government agency, organization, or an individual in Indian civil airspace for any purpose whatsoever.[6]

2. Further, the DGCA released a set of draft guidelines on April 21, 2016 on the use of UAVs for civilian or recreational purposes. The DGCA invited comments on these guidelines from various stakeholders. Thereafter, in October 2017, the DGCA announced a set of draft regulations for the use of UAVs in the

[5] Government of India, Office of the Director General of Civil Aviation, "Public Notice – Use of Unmanned Aerial Vehicle (UAV)/ Unmanned Aircraft Systems (UAS) for Civil Applications," October 7, 2014, http://164.100.60.133/public_notice/PN_UAS.pdf.
[6] *Id.*

civilian airspace.[7] The Indian Railways Budget Speech (2016-17) also recorded that in line with international best practices, technological solutions such as the latest drone and geo-spatial based satellite would be utilised for remotely viewing physical progress of major projects.[8]

3. Subsequently, the Indian Government, over the years has referred to the use of Drones in various sectors including agriculture, railways, mining and defence among others.

4. In the year 2018, the DGCA released Civil Aviation Requirements, 2018 to regulate the operation of Civil RPAS ("**CAR, 2018**"). Further in 2019, the DGCA released the requirements for undertaking aerial work by RPAS ("**CAR, 2019**"). The CAR, 2018 and CAR, 2019 have been collectively referred to as "**CARs**".

5. Pursuant to the issue of the CARs, the DGCA has been issuing various circulars, notifications and guidance manuals to regulate and suggest standards of operating and certifying RPAS. The DGCA has also issued a Flying Training Circular 1 of 2019, stipulating the training and procedure manual for remote pilot training. In 2020, the DGCA issued Flying Training Circular 3 of 2020, laying down a detailed procedure for getting approval as a remote pilot training organisation. Flying Training Circular 1 of 2019 and Flying Training Circular 3 of 2020 are collectively referred to as "**Flying Training Circulars**".

6. Thereafter in June 2020, the MoCA released draft Unmanned Aircraft Systems (UAS) Rules 2020 and invited comments from the public on the same. Public

[7]Government of India, Office of the Director General of Civil Aviation, "Requirements for Operations of Remotely Piloted Aircraft Systems (RPAS), http://164.100.60.133/misc/draft%20cars/CAR%20-%20UAS%20(Draft_Nov2017).pdf.
[8] https://eparlib.nic.in/bitstream/123456789/156/1/rbs_2016-17.pdf

consultations were held with the stakeholders post which the UAS Rules were notified on March 15, 2021. The UAS Rules purported to provide a uniform and consolidated framework for the regulation of Drones in India.

7. With the present Draft Rules, the UAS Rules stand to be superseded. However, it must be noted that the since the Flying Training Circulars and the CARs have been issued under the Aircraft Rules, 1937, the application of which has been specifically made inapplicable under the Draft Rules, the validity of these are under question.

8. The Draft Rules substantially reduce the compliances to be met by the licensees, compared to the UAS Rules. However, the Draft Rules also lack a proper framework of regulating the licensing and authorisation process in terms of operation of drones/UAS, remote pilot training organisation and traffic management.

9. It is in light of the above ambiguity that we proceed with making the following recommendations/comments.

Part B: Established UAV Regimes in International Jurisdictions

B1. United Kingdom

10. The drone operations in the UK are primarily governed by Air Traffic Management and Unmanned Aircraft Act 2021[9] ("**ATM Act**") and CAP 722[10] also known as Unmanned Aircraft System Operations in UK Airspace – Guidance ("**CAP 722**"). They are the primary guidance document for the operation of unmanned aircraft systems within the UK. It is intended to assist those who are involved in all aspects of the development and operation of UAS. The CAP 722 which was previously referred to as DAP Unmanned Aerial Vehicle Operations in UK Airspace – Guidance, June 2001, find's its recognition from two main primary legislations namely- Air Navigation Order 2016[11] (**"ANO"**) and The Basic Regulation[12] (**"BR"**). The rules under above mentioned guidance and regulations are enforced by Civil Aviation Authority of UK (**"CAA"**).

11. The ATM Act confers police certain powers in relation to unmanned aircrafts and provides for fixed penalties for certain offences relating to unmanned aircraft under Part 3 of the Act. Schedule 8 of the ATM Act makes provision about powers of police officers and prison authorities relating to unmanned aircraft whereas Schedule 9 makes provision about powers of police officers relating to requirements in the ANO 2016.

12. The BR sets out the common rules for civil aviation within the UK. It makes provision for Implementing Regulations[13] or Delegated Regulations

[9] https://www.legislation.gov.uk/ukpga/2021/12/part/3/enacted;
[10] https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=415;
[11] https://www.legislation.gov.uk/uksi/2017/1112/contents/made;
[12] Regulation (EU) 2018/1139 (https://www.legislation.gov.uk/eur/2018/1139/contents);
[13] https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=9654;

(sometimes referred to as Implementing Acts or Delegated Acts) dealing with subjects such as airworthiness certification, continuing airworthiness, operations, pilot licensing, air traffic management and aerodromes.[14] For eg- Implementing Regulations for airworthiness certification and continuing airworthiness were the first 'common EU regulations' to be introduced and Implementing Regulations for pilot licensing, operations, aerodromes, air traffic management and common rules of the air have more recently become applicable under the BR.

13. The CAP 722D[15] defines Unmanned Aircraft System (**"UAS"**) as an unmanned aircraft and the equipment to control it, comprising of remotely individual 'system elements' and any other system elements necessary to enable flight, such as a Command Unit (CU), communication link and launch and recovery element. An unmanned aircraft is defined as any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board.

14. Some of the areas pertaining to governance of drones/UAS in accordance with the established regulations have been mentioned below:

A. Registration and Accreditation[16]

15. The registration requirements for civil UAS are contained within the BR.[17] Further, the UA whose design is subject to certification are required to be registered in accordance with Annex IX of the BR and articles 24 to 32 of ANO 2016. Once the Civil Aviation Authority ("**CAA UK**") has processed the application, the aircraft will be issued with a registration ID consisting of five

[14] 1.2.3.3 CAP 722 8th Ed.;
[15] https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=9802;
[16] A3 CAP 722 8th Ed.;
[17] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1139&from=EN;

characters starting 'G-' (e.g. G-ABCD) and the details will be entered into the aircraft register. The registration must be displayed permanently on the aircraft in accordance with article 32 of ANO 2016.[18]

16. Further, every UAS operator must be registered and such registration is subject to a charge as defined in CAA scheme of charges.[19] For a UAS having less than 250g flying weight (Class C0), UAS operator must be registered if the UA is able to capture personal data (i.e. a camera) and is not a toy[20]. Registration not required if the UA is either a toy, or it is not able to capture personal data. Similarly, UAS operators flying UAS with 900g flying weight (Class C1) must also be registered. Same goes for UAS coming under Class C2 and C3 i.e., UAS with the maximum take-off weight of 25kgs.

17. In UK, even though the concept of UTM[21], or U-space as it is referred to within the EU, is still in its relative infancy and regulations are still under development the Connected Places Catapult[22] are leading the UAS traffic management work through 2019-20 to build on previous work to develop a UK framework based on open access principles, with support from the Department for Transport, CAA, a consortium of industry specialists and broader consultation.[23] This work recommends an architecture for UAS traffic management that includes several key roles:

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[18] C1.1 CAP 722 8th Ed.;
[19]http://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=list&type=sercat&id=10
[20] To be classed as a toy, a product must be able to comply with the 'Toys (Safety) regulations 2011.
[21] 3.8 CAP 722 8th Ed.
[22] The Connected Places Catapult are one of 9 'catapult' organisations which are funded by Innovate UK (Department for Business, Energy and Industrial Strategy) to accelerate technology uptake and integration across different sectors in the UK.
[23] https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=9307

- Central Services offering vital services to the UAS traffic management ecosystem including a flight information and management system, the authorisation and directory of UAS traffic management Service Providers, a flight notice board, and UAS and operator registration.
- UAS traffic management Service Providers, offering specific UTM services to the public, businesses, local authorities, and others.
- Supplementary Data Service Providers who provide the data that supports the functioning of the UAS traffic management ecosystem, including weather, terrain and obstacle data along with insurance and surveillance data.
- Air Traffic Service Providers who will need to interact in some way with the unmanned traffic system.
- Public Authorities, who may in future be required to engage in the ecosystem as an authority holder for certain operations.

B. Licence requirements[24]

18. The requirements for the licensing and training of United Kingdom civil remote pilots have not yet been fully developed. United Kingdom requirements will ultimately be determined by ICAO Standards and Recommended Practices (SARPs). ICAO has developed initial standards for a Remote Pilot's Licence (RPL), but these are part of a larger SARPS package that will not become applicable until 2024 at the earliest. Until formal licensing requirements are in place the CAA UK will determine the relevant requirements on a case-by-case basis, considering additional factors such as the type of operation being conducted, and the system being operated.

[24] C3.2.1 CAP 722 8th Ed.

19. For now, Remote pilots must be in possession of an appropriate manned aviation pilot's licence associated with the type of operation being conducted (with appropriate mitigation related to the operation of the particular unmanned aircraft).

C. Remote Pilot Training Course[25]

20. The "remote pilot" is defined as 'a natural person responsible for safely conducting the flight of an unmanned aircraft by operating its flight controls, either manually or, when the unmanned aircraft flies automatically, by monitoring its course and remaining able to intervene and change the course at any time.'

21. The Competency requirements for a "Remote Pilot" is provided under 4.2.3 of CAP 722. The competency of the personnel involved in the operation of an unmanned aircraft is a major factor in ensuring that unmanned aircraft operations remain tolerably safe. Within any UAS operation, the primary focus is obviously placed on the competency of the remote pilot. Following on with the principle of taking a risk-based approach, the regulations use the competency of the remote pilot as a way of complementing the other risk mitigations and so the precise level of competency that is required is dependent on the category of operation. Remote pilot competency requirements will be set out in each individual operational authorisation document. UAS operators will be expected to propose the levels of remote pilot competency through the risk assessment associated with the particular operation.

[25] 4.2 CAP 722 8th Ed.

D. Standard operating procedure for UAS[26] (Few Examples)

22. The UAS pilot must operate within Visual Line of Sight. Operating within Visual Line of Sight (VLOS) means that the remote pilot must be able to clearly see the unmanned aircraft and the surrounding airspace at all times while it is airborne. The key requirement of any flight is to avoid collisions and a VLOS operation ensures that the remote pilot is able to monitor the aircraft's flight path and so manoeuvre it clear of anything that it might collide with. While corrective lenses may be used, the use of binoculars, telescopes, or any other forms of image enhancing devices is not permitted.

23. The 'operating height' is limited to a maximum distance of 400 feet (120 metres) from the closest point of the earth's surface.[27] However, there is scope for the CAA to authorize flight at greater heights, via an operational authorisation, if the CAA is satisfied that this can be achieved safely.[28] It must be noted that the 400 ft (120 m) limitation applies to 'heights above/distances from' the surface of the earth. It does not automatically apply to heights/distances from tall buildings or other structures. There are no specific prohibitions to VLOS operations during night time. The basic VLOS principles still apply (i.e., you must be able to see the aircraft and the surrounding airspace).

24. Remote pilots flying under VLOS should always approach their task with the mindset that they will be the ones that will need to 'make the first move' when avoiding other airspace users; invariably, they will be the first to recognize (i.e., 'see' or more likely 'hear') the potential conflict. While the primary focus

[26] 2.1 CAP 722 8th Ed.
[27] 2.1.1.1 CAP 722 8th Ed.
[28] Annex B CAP 722 8th Ed.

of the UAS Regulations is on the protection of persons, UAS operators and remote pilots must also bear in mind their responsibilities towards vehicles, vessels and structures while flying, even if they are unoccupied.[29]

25. A UAS will not be flown within 150 meters (492 feet) of any congested area or organized open-air assembly of more than 1,000 persons; or within 50 meters (164 feet) of any person, property, vessel, vehicle, or structure which is not under the control of the person in charge of the aircraft; following additional codes not to overfly 122 meters (400 feet) above the surface.

26. Flight Restriction Zones (FRZ) are implemented at the majority of UK aerodromes. Their purpose is to enhance safety for other airspace users within the vicinity of an aerodrome. Permission to fly above 400 feet (120 metres) within the FRZ may be granted by the ATC unit, without requiring further permission from the CAA, providing the flight remains entirely within the FRZ. If no ATC unit is present, then flight above 400 feet (120 metres) within the FRZ is not permitted unless permission has been granted by the CAA.

E. <u>UAS operations in restricted areas</u>[30]

27. Prohibited Areas and Restricted Areas, as notified in the (Aeronautical Information Publication) AIP apply to unmanned aircraft (irrespective of their size) as well as manned aircraft. Where approval is required to enter these areas, permission must be sought in accordance with the entry requirements as set out in the statutory instrument that established the specific area.

[29] Article 241 of ANO 2016.
[30] 2.4.5 CAP 722 8th Ed.

28. For eg., The Air Navigation (Restriction of Flying) (Hyde Park) Regulations 2017, Air Navigation (Restriction of Flying) (City of London) Regulations 2004 and Air Navigation (Restriction of Flying) (Isle of Dogs) Regulations 2004, lay down restrictions on aircraft operations, including UAS, within three defined airspace areas:
    - EG R157 (vicinity of Hyde Park);
    - EG R158 (vicinity of the City of London); and
    - EG R159 (vicinity of the Isle of Dogs).

29. Further, persons in charge of an unmanned aircraft with a mass of more than 7 kilos cannot fly the aircraft without specific permission, or at a height of more than 400 feet except in some very limited instances. The operator must be reasonably satisfied that the fight can be made and cannot drop an article or an animal from the aircraft so as to endanger people or property.[31]

30. The UK regime also provides an authorisation framework for drones flying out of UK. There are specific restrictions in place in terms of the purpose for which the drones are being used, such as, drones fitted with a camera, there are also a number of additional limitations surrounding where it can be operated and in how close proximity can it fly to other uninvolved people or objects. The CAA UK gives out a special permission in this regard.

B2. Australia

31. Australia was one of the first countries to establish and implement a regulatory framework for Drones, with the first set of regulations coming out as early as

[31] UK Civil Aviation Authority, "Air Navigation Order 2016 and Regulations," August 2016, https://www.caa.co.uk/News/Air-Navigation-Order-2016/.

in 2002.[32] The basic rules governing Drones and Drone operations in Australia are laid out in Part 101 of the *Civil Aviation Safety Regulations 1998* (CASR)[33], and are enforced by the Civil Aviation Safety Authority ("**CASA**")[34]. These Regulations provide a strict code on flying for all Drones, with exceptions for certain pre-approved circumstances. Australia has an extensive Civil Aviation framework, which finds its sources in the following Acts and Regulations:

(i) Civil Aviation Act, 1988;
(ii) Civil Aviation Safety Regulations, 1998;
(iii) Civil Aviation Regulations, 1988;
(iv) Civil Aviation Orders that address specific air service operations, among other things and chiefly,
(v) (Unmanned Aircraft and Rockets) Manual of Standards, 2019 ('Manual of standards')

32. The CASR, define a remotely piloted aircraft (RPA) to include those which carry (i) a balloon, (ii) a kite and (iii) a model aircraft.[35] As has further been discussed in Para 21, there are five types of RPAs under the Australian Law. On September 30, 2020, the Civil Aviation Safety Authority of Australia released the Manual of Standards 2019, which have been given effect to under the CASR. At present both the CASR and the Manual of Standards 2019 are applicable to the Drone framework in Australia.

[32] https://www.casa.gov.au/standard-page/casr-part-101-unmanned-aircraft-and-rocket-operations
[33] Part 101 of the Civil Aviation Safety Regulations 1998, https://www.casa.gov.au/standard-page/casr-part-101-unmanned-aircraft-and-rocket-operations
[34] CASA, https://www.legislation.gov.au/Details/F2021C00238.
[35] 101.021 Meaning of RPA

33. Some of the key areas of Drone governance under the Manual of Standards, 2019 and the CASR are discussed as below:

A. Registration and Accreditation:[36]

34. All drones for private use weighing more than 250 g and all drones for commercial use are required to be registered. The CASA provides for registration through an online platform called *myCASA* portal. The registration typically remains valid for a period of 12 months with differing fee for commercial and recreational Drones.

35. Individuals above the age of 16 can apply for accreditation to operate a drone weighing more than 250 g, validity of which lasts for three years.[37] Commercial drone registration was first introduced in September 2020, and was made mandatory starting January 2021. Subsequently, the Australian Government also introduced an annual drone registration levy for commercially operated drones, which covers only those drones that are flown for business or on behalf of an employer.

36. Most recently, in May 2021, Australia's Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) issued a Policy Statement. The policy statement read that the DITRDC, working with state, territory and local governments, using a whole-of-government approach, will develop:

- A Drone Rule Management System (DRMS) to coordinate and manage operating rules for drones from different agencies across Commonwealth,

[36] Registration of drone, https://www.casa.gov.au/drones/register
[37] myCASA portal.

state, territory and local governments.

- Coordinated enforcement schemes to enable state and territory law enforcement authorities to manage minor breaches of rules and regulations related to drone operations.
- A National Drone Detection Network (NDDN) consisting of scalable and modular infrastructure to facilitate the detection of drones to protect assets, activities and events in the air and on the ground. The system will consist of a modular and scalable network of drone detection sensors, linked to a central database, which can filter and provide appropriate data to a wide range of users.
- A NEAT infrastructure planning framework consisting of clear principles and processes to ensure effective and efficient coordination of planning decisions related to construction and operation of electric vertical take-off and landing vehicles (eVTOL) and drone take-off, delivery and landing sites.
- The NEAT Policy Statement also addresses unmanned traffic management and integration of drones and eVTOL aircraft into Flight Information Management systems, as well as regulatory modernization and industry partnerships. Timelines for various NEAT initiatives span from 2021 through 2024.

B. <u>License requirement:</u>

37. Some types of RPA can be operated without the need for a remote pilot licence and an operator's certificate; they are referred to as '*excluded RPA*'[38]operations. All other RPA require either a remote pilot licence or an

[38] reg 101.237, Civil Aviation Safety Regulations 1998 (Cth).

operators certificate or both.[39] The types of RPAS under Australian laws have been categorized under the following heads:

(i) *Micro RPA*

38. This is an *excluded RPA*. Neither a remote pilot licence nor an operators certificate are needed to fly this aircraft.[40] A micro RPA is subject to all the general regulations regarding RPA operation including the Standard Operating Conditions.[41]

(ii) *Very Small RPA*

39. If this RPA is used for sport/ recreational purposes or in accordance with the Standard Operating Conditions.[42] then neither a remote pilot licence nor an operators' certificate are needed to fly this aircraft.[43]

40. This RPA may be flown for commercial gain provided it is flown within the Standard Operating Conditions without the need for either a remote pilot's licence or an operators' certificate. Flying a very small RPA outside of the Standard Operating Conditions for commercial gain will require the operator to hold an operators' certificate and the pilot to hold a remote pilots licence.

(iii) *Small RPA*

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[39] [39] reg 101.252, Civil Aviation Safety Regulations 1998 (Cth)
[40] reg 101.237(2), Civil Aviation Safety Regulations 1998 (Cth)
[41] reg 101.238, Civil Aviation Safety Regulations 1998 (Cth)
[42] *Id.*
[43] reg 101.237(3), Civil Aviation Safety Regulations 1998 (Cth)

41. If this RPA is used for sport/ recreational purposes then neither a remote pilot licence nor an operators certificate are needed to fly this aircraft.[44] Small RPA flown for sport / recreation purposes must comply with the provisions for model aircraft such as being able to see the RPA continuously,[45]not flying at night without complying with the procedures of an approved aviation administration organization,[46] staying away from people and populous areas;[47] and flying below 120 metres.[48] Neither a remote pilot licence nor an operators certificate are needed to fly a small RPA on your own land providing the some conditions are met.[49] The Civil Aviation Safety Authority must be notified of the intention to conduct an RPA operation and the location. Limited training and experience exceptions also apply to allowing use without licence or certificate.[50]

(iv) *Medium RPA*

42. If this RPA is used for sport/ recreational purposes then neither a remote pilot licence nor an operators certificate are needed to fly this aircraft.[51] Medium RPA flown for sport / recreation purposes must comply with the provisions for model aircraft. A remote pilot licence *is* needed but not an operators certificate to fly a medium RPA providing the following conditions for landholders, but certain conditions apply.[52]

[44] reg 101.237(5), Civil Aviation Safety Regulations 1998 (Cth)
[45] reg 101.285, Civil Aviation Safety Regulations 1998 (Cth)
[46] reg 101.290, Civil Aviation Safety Regulations 1998 (Cth)
[47] reg 101.295, Civil Aviation Safety Regulations 1998 (Cth)
[48] reg 101.400, Civil Aviation Safety Regulations 1998 (Cth)
[49] reg 101.237(4), Civil Aviation Safety Regulations 1998 (Cth)
[50] reg 101.237(6), Civil Aviation Safety Regulations 1998 (Cth)
[51] reg 101.237(5), Civil Aviation Safety Regulations 1998 (Cth)
[52] reg 101.237(7), Civil Aviation Safety Regulations 1998 (Cth)

43. Limited training and experience exceptions also apply to allowing use without licence or certificate.[53]

(v) *Large RPA*

44. A large RPA is **not** an *excluded RPA*. To operate it legally you needed a remote pilot licence:[54] an operators certificate[55] and a special certificate of airworthiness (restricted category), or an experimental certificate.[56] The large RPA has to be maintained as a *class B* aircraft,[57] and is only able to be operated with approval of the Civil Aviation Safety Authority.[58]

C. <u>The Remote Pilot Training Course</u>

45. Chapter 2 of the Manual of Standards 2019 provides for Remote Pilot License (RePL) Training Course. The Chapter 2 provides guidance of the specific areas of the RePL, which are required to be mandatorily covered under the training standards. These include: knowledge standards, practical competency standards, examination standards, passing grades, certification upon course completion, etc.

46. Further, it must also be noted that the Manual of Standards also includes manner of conducting examination, release of results etc. The Manual of Standards is further detailed in the domain of student classes, student-

[53] reg 101.237(6), Civil Aviation Safety Regulations 1998 (Cth);
[54] reg 101.252, Civil Aviation Safety Regulations 1998 (Cth);
[55] reg 101.270, Civil Aviation Safety Regulations 1998 (Cth);
[56] reg 101.252, Civil Aviation Safety Regulations 1998 (Cth);
[57] reg 101.260,101.265 Civil Aviation Safety Regulations 1998 (Cth);
[58] reg 101.275, Civil Aviation Safety Regulations 1998 (Cth);

instructor ratio, requirements for training instructors, simulator courses and flight experience, among other things.

D. Standard operating conditions for Remotely Piloted Aircraft (RPA):

47. The Civil Aviation Safety Regulations include are standard operating conditions for RPAs, which have been laid down in detail and cover a wide range of activities which can be undertaken by the Drone operators. The Civil Aviation Safety Regulations also prescribe penalties for their breach. Some of the conditions are laid down hereinbelow:

- Only fly one RPA at a time.[59]
- Avoid fly into cloud/fog without approval from air traffic control and training;
- Only fly during the day.[60]
- Keep an RPA within visual line-of sight.[61]
- Do not fly an RPA higher than 120 metres (400ft) above ground level (exceptions apply).[62]
- Keep an RPA at least 30 metres away from other people (exceptions apply).[63]
- Keep an RPA at least 5.5km away from an aerodrome or helicopter landing site without approval.[64] There are apps and software that can assist with this, see for example the Drone Complier Software website.

[59] reg 101.238(f), Civil Aviation Safety Regulations 1998 (Cth);
[60] reg 101.095, Civil Aviation Safety Regulations 1998 (Cth);
[61] reg 101.073, 101.095, Civil Aviation Safety Regulations 1998 (Cth);
[62] reg 101.085; 101.070; 101.030; 101.250, Civil Aviation Safety Regulations 1998 (Cth);
[63] reg 101.245, Civil Aviation Safety Regulations 1998 (Cth);
[64] reg 101.075, 101.080, Civil Aviation Safety Regulations 1998 (Cth)

- Do not fly a RPA over or near an area affecting public safety or where emergency operations are underway (without prior approval). This could include situations such as a car crash, police operations, fire and associated fire-fighting efforts and search and rescue.[65]
- Do not operate an RPA in a prohibited area or in a restricted area without the permission of, and without operating in accordance with, any conditions imposed by the authority controlling the area.[66]
- Do not fly an RPA autonomously;[67] The CASA is still developing regulations for autonomous flight however currently approval has to be sought and is only granted on a case by case basis. Conditions to that approval may apply.
- Do not fly an RPA over any populous areas;[68] A populous area can include: beaches, parks and sporting ovals.[69] There is an exception if the RPA is certified as airworthy.[70] A populous area is: when the area has a sufficient density of population for some aspect of the operation, or some event that might happen during the operation (in particular, a fault in, or failure of, the aircraft or rocket) to pose an unreasonable risk to the life, safety or property of somebody who is in the area but is not connected with the operation.[71]
- It is an offence to fly an RPA in controlled airspace without complying with the prescribed requirements.[72]
- Penalties apply if anything is dropped or discharged from an RPA that

[65] reg 101.055, Civil Aviation Safety Regulations 1998 (Cth);
[66] reg 101.065, Civil Aviation Safety Regulations 1998 (Cth);
[67] reg 101.097 Civil Aviation Safety Regulations 1998 (Cth);
[68] reg 101.025, Civil Aviation Safety Regulations 1998 (Cth);
[69] *See,* reg 101.025, 101.280, 101.235, Civil Aviation Safety Regulations 1998 (Cth);
[70] reg 101.280, Civil Aviation Safety Regulations 1998 (Cth);
[71] reg 101.072, Civil Aviation Safety Regulations 1998 (Cth);
[72] reg 101.072, 101.285, Civil Aviation Safety Regulations 1998 (Cth);

creates a hazard to another aircraft, a person or property.[73]

E. Areas where flying drones may attract a penalty:

48. It is an offence to fly a drone or other remotely piloted aircraft in a South Australian National Park or Reserve without a permit and can attract a penalty upto $1000. [74] Defence available if charged with flying a drone in National park, is:[75]

- the defendant proves that he or she acted in response to an emergency; and
- the court finds that the action was reasonable in the circumstances.

49. Similarly, it is prohibited to operate a remotely piloted aircraft (for example, a drone) within 100 metres of a correctional institution, except with the permission of the Chief Executive. It can attract a penalty of $10 000 or two years imprisonment.[76] Section 87B of the same Act outlines special powers that apply regarding seized remotely piloted aircraft (RPA).

F. Operating Remotely Piloted Aircraft (RPA) for Hire or Reward

50. A person operating a Very small RPA for hire or reward must comply with the following conditions:

- Must give the Civil Aviation Safety Authority notice in writing at least five business days before commencement of the operation;[77]
- Must give notice in writing to CASA of any changes in the event or the

[73] reg 101.090, Civil Aviation Safety Regulations 1998 (Cth);
[74] *See* reg 12(3), National Parks and Wildlife (National Parks) Regulations 2016;
[75] *Id,* reg 42(2);
[76] *See*, Correctional Services Act 1982, Section 87A and 87B;
[77] reg 101.371, 101.372, Civil Aviation Safety Regulations 1998 (Cth);

matter within 21 days business days of the change, event or matter occurring;[78] and

- Must operate within standard operating conditions,[79] if do not have a remote pilots licence or an operators certificate.[80]
- Small, medium and large RPA being flown for reward are not excluded operations and therefore need an appropriate remote pilots licence and/or operators certificate.[81]

[78] reg 101.373, Civil Aviation Safety Regulations 1998 (Cth);
[79] reg 101.238, Civil Aviation Safety Regulations 1998 (Cth);
[80] reg 101.237(3)(b), Civil Aviation Safety Regulations 1998 (Cth);
[81] reg 101.237, Civil Aviation Safety Regulations 1998 (Cth);

Part C: Our Comments

This section encapsulates our observations, comments and recommendations on specific rules of the Draft Drone Rules 2021.

C1. General Comments

51. At the outset, before we make our comments on a rule wise basis, we recommend that the following general comments/suggestions be taken into consideration:

Graded remote pilot licensing structure

52. While we understand that it is the intent of the MoCA to mirror the traditional licensing structure, we would like to recommend that the MoCA explore a more graded and purpose-based licensing regime in order to cater to not only recreational but also private, commercial and industrial uses of drones. Presently the grant of a remote pilot license is merely based on the applicant meeting certain eligibility criteria and not on the purpose for which the would-be license holder will use the drone for. For example, an industrial entity may only seek to use a drone for in-campus surveys and may not allow the use of drones outside of such area on the other hand another person may only require a drone for use in a private estate while commercial entities such as carrier and delivery companies will require a much broader license in order to operate across heavily populated areas such as cities, towns etc.

Vocational and purpose specific remote pilot license training

53. In order to ensure the graded licensing regime is given effect to, the MoCA may also consider revisions which allow for the various levels of training for

remote pilot licensing. In Our Comments, we recommend the inclusion of vocational and purpose specific training so as to ensure that license holders are given training specific to the use case. This will help in restricting drone operation to specific areas even within the defined zones so that chances of unskilled drone pilots do not operate in populous areas.

Use of sustainable energy

54. We note that the Draft Rules do not provide any guidance regarding fuel for drones. It is recommended that as India moves towards the use of sustainable fuels, the Draft Rules should provide guidance for usage of green fuels by drone devices in the spirit of sustainable development and safer environments and further to comply with global best practices.

Clarify on the Foreign Direct Investment

55. In the present regime, the framework of Foreign Direct Investment ("FDI") in the drone sector is unclear and requires clarification by the MoCA.

56. The Department of Industry Policy and Promotion ("**DIPP**") issued a press note[82] in 2014 classifying UAV or drones as defence aircrafts. Later in 2019, the DIPP exempted a select category of UAV from the meaning of defence aircraft on basis of maximum endurance against the gust of air.[83] Consequently, there is ambiguity with respect to the UAV or drones falling under the exempted list as there is no clear demarcation with respect to the drones being used for the defence purpose and commercial purpose. It is

[82] Press Note No. 3 (2014 Series), DIPP, Ministry of Commerce and Industry, dated 26.06.2014;
[83] Press Note No. 1 (2019 Series), DIPP, Ministry of Commerce and Industry, dated 01.01.2019;

suggested that the MoCA clearly define the "civil drones" that may be used for commercial or non-commercial purposes.

57. Currently, it seems that the FDI in the drone industry is accepted on the basis of type of drones. For drones which may be used for defence purpose, FDI shall be accepted as per the limits and the route provided for in the extant Foreign Direct Investment Policy, 2020 ("**FDI Policy**") (i.e., 100% - 74% automatic and rest the government route) and for FDI in the civil aviation sector (for non-scheduled air transport service, for commercial use), a 100% FDI is permitted under the automatic route (apart from scheduled air transport services).

58. While such a position begs clarifications by the authorities, a possible argument can be that the drones (used for commercial purpose) would come under the non-scheduled air transport service (for civil use), as mentioned under the FDI Policy and consequently 100% FDI would be permitted under the automatic route as the same is a commercial activity and not a defence sector related activity.

C2. DEFINITIONS

59. Text of certain definitions in proposed Rule 2:

> *"(b) "Automatic drone operation" means a drone operation with pre-programmed instructions wherein the drone pilot is able to intervene at any time;*
>
> *(c) "Autonomous drone operation' means a drone operation that does not allow intervention of a drone pilot in the management of the flight. This shall not include phases of drone operation during which the drone*

pilot has no ability to intervene in the management of the flight, either following the implementation of emergency procedures, or due to a loss of the command and control connection;

(h) "Drone" means an aircraft that can operate autonomously or can be operated remotely without a pilot on board;

(l) "Green zone" means the airspace from the ground up to a vertical distance of 400 feet (120 metre) above ground level (AGL) that has not been designated as a red zone or yellow zone in the airspace map for drone operations; and the airspace from the ground up to a vertical distance of 200 feet (60 metre) AGL in the area located between a lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport. In the airspace above 400 feet (120 metre) AGL in a designated green zone and the airspace above 200 feet (60 metre) AGL in the area located between the lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport, the provisions of yellow zone shall apply;

(p) "Remote pilot licence" means the permission issued by an authorised remote pilot training organisation to any natural person for operating a particular class or classes of drones"

Recommendations:

60. Under the Draft Rules, 'Drones' have been defined to include "*aircraft that can operate autonomously",* however the definition does not include any reference to 'automatic operations', which have been defined under proposed Rule 2(b).

61. We understand that while 'automatic operations' (refer proposed Rule 2(b) allow for intervention by the Drone pilot at any time of the flight, in an autonomous operation (refer Rule 2(c)), the pilot is only able to interfere with the operation of the Drone in two circumstances, i.e., in implementation of emergency procedures or in case of loss of the command and control connection.

62. In terms of the globally accepted definition of the term 'Drone', references to automatic operations have not been commonly specified in law. Under Part 101 (Unmanned Aircraft and Rockets) Manual of Standards 2019, Automated operation, for an RPA, has been defined to include RPA function after take-off and until it lands, to:

(a) either:

(i) flies a predetermined flight path programmed into the RPAS before take-off; or

(ii) changes its flight path or configuration in flight solely because of dynamic updating of pre-programmed turning, way point data, or configuration settings; and

(b) is not subject to any manual operation.

63. In terms of the globally accepted definition of the term 'Drone', references to automatic operations have not been commonly specified in law. However, it is seen that the legislations do recognize autonomous drone operations. For example, CAP 722 in the UK defines autonomous as "freedom from external control or influence". This means that the UAS' response to any set of inputs must be the result of a pre-designed data evaluation output activation process. It may further be noted that from a technical standpoint, Drone systems fall in to two categories:

i. *Highly automated* – systems that require inputs from a human operator (e.g. confirmation of a proposed action) but which can implement the action without further human interaction once the initial input has been provided.

ii. *High authority automated systems* – Systems that can evaluate data, select a course of action and implement that action without the need for human input.

64. From a technical standpoint, it is recommended that the definition of autonomous drone operations be retained and be made more detailed by recognizing the two categories of autonomous drones as specified hereinabove. Further, the definition of *'autonomous drone operation'* with slight modifications in the text. the proposed text reads as below:

"*Autonomous drone operation' means a drone operation that does not allow intervention of a drone pilot in the management of the flight. Provided that this shall exclude phases of drone operation during which the drone pilot has the ability to intervene in the management of the flight, for the implementation of emergency procedures, or in the event of a loss of the command and/or control connection; "*

65. Further, the MoCA has defined the green zone under the Draft Rules from ground level upto 400 ft. It must be noted that this definition is wide enough to include any and all private premises falling from the ground level upto 400 ft. Allowing the use of drones in such areas as a "green zone" which would include residential premises as well, would amount to trespass and a violation of privacy.

66. While the jurisprudence of assigned airspace rights on the basis of the private land situated immediately below the airspace is still at a nascent stage in India, countries like the USA where the usage of drones for commercial purposes is a well-established industry, rely on the restricted interpretation of "*Cujus est Solum, ejus est usque ad coelum*" or the "*ad coelum*" doctrine meaning "to whomsoever the soil belongs, he also owns the sky".

67. This issue of flying aircrafts/drones over private premises was discussed in *Causby v. United States 328 U.S. 256, 264 (1946)*, wherein it was established that landowners did hold exclusion rights in at least some of the low-altitude non-navigable airspace directly above their parcels.

68. With the potential of drones to act as a viable alternative to the logistic services provided by e-commerce and freight services industry, it becomes pertinent to clear the ambiguity on requiring permission to operate drones directly above the private property in a green-zone so as to avoid the claims of aerial trespass in the urban areas. It is therefore recommended that the usage of airspace between 50ft – 100ft above ground level, depending upon the geographical domain inside the green-zone, be allowed only after the exclusive consent of the owner of such land/immovable property in question so as to avoid the claims of aerial trespass.

Suggestions:

- **Revise the definition of 'Drone' to refer to autonomous drone operations as they encompass the Drone operations in entirety.**
- **Delete the definition of 'Automatic Drone operations' as the same is rendered redundant.**

φ The airspace between 50ft – 100ft above ground level, depending upon the geographical domain inside the green-zone, must not be allowed for commercial purposes, except with exclusive consent of the owner of such land/immovable property in question to avoid the claims of aerial trespass.

C3. CLASSIFICATION OF DRONES

69. *Text of proposed Rule 3:*

"3. Classification of drones.

Drones shall be classified based upon the maximum all-up weight including payload as under –

(a) Nano drone: Less than or equal to 250 gram;

(b) Micro drone: Greater than 250 gram and less than or equal to 2 kilogram;

(c) Small drone: Greater than 2 kilogram and less than or equal to 25 kilogram;

(d) Medium drone: Greater than 25 kilogram and less than or equal to 150 kilogram; and

(e) Large drone: Greater than 150 kilogram."

φ AnantLaw's Recommendations:

70. The proposed Rule 3 provides a classification of Drones based on their weight categories. Under the UAS Rules, Drones were classified into aeroplane, rotorcraft and hybrid UAS. These categories were further sub-categorized as:

a. RPAS (i.e. UAS piloted from a remote pilot station)

b. Model RPAS (i.e. UAS operating without payload and used for educational purposes only within visual line of sight) and
c. Autonomous Unmanned Aircraft System (i.e. UAS that does not require pilot intervention in the management of the flight.

71. It is recommended that the Drones be broadly classified into categories of defence and civilian Drones. This classification will prevent military grade Drones, which are capable of operating in specific environments, from being classified as civilian Drones. The Press Note 1 of 2019, issued by the Ministry of Commerce and Industry[84] states that certain Drones being used for purposes of defence shall require licensing while all other categories are exempt from the same.

72. It is further recommended that the classification of Drones, instead of being based on simply the weight of the Drone, be based on the technical complexity of the device. For example, the UAS Rules, refer to aeroplane, rotorcraft and hybrid unmanned aircraft systems in addition to the weight based classification. We propose the following categories of Drones to be included in the Draft Rules:

- Single-Rotor Drones.
- Multi-Rotor Drones.
- Fixed-Wing Drones.
- Fixed-Wing Hybrid Drones.

73. It is also pertinent to note that the categorization of drones should include a reference to the purpose or environment in which the drones are to be used.

[84] Press Note No. 1 (2019 series)

For example, in the CAP 722 three operational categories based on risk involved in the flight to be taken have been defined. These include:

a. **Open**: Presents low risk to third parties. An authorisation from the CAA is not required.
b. **Specific:** More complex operations or aspects of the operation fall outside the boundaries of the Open Category. Authorisation is required from the CAA and;
c. **Certified:** Very complex operations, presenting an equivalent risk to that of manned aviation. UK regulations relating to the Certified Category are still being developed and are not yet published. Until unique UAS regulations are available, the principles set out in the relevant manned aviation regulations for airworthiness, operations and licensing will be used as the basis for regulating the Certified Category.

74. It is also imperative to note that the Part I of the Draft Rules, under proposed Rule 1 (5) specifies that in the event the maximum all up weight of the drone exceeds 500 kg, then the provisions of Aircraft Rules, 1937 shall apply.

75. It is noted that the aforementioned proposed Rule 1 leads to the creation of yet another category of Drones, which may be used for civilian and/or purely commercial purposes but will mandatorily be required to comply with much more onerous compliance requirements under the Aircraft Rules, 1937. The MoCA is requested to issue clarification pertaining to the applicability of the CARs and other notifications, public notices etc. issued under the Aircraft Rules, 1937 to Drones carrying payload exceeding 500 kg.

76. It is further brought to the notice of the MoCA that in the event, Drones exceeding 500 kg are engaged in the carrying of human beings, rules specific

to the safety and security of persons will need to be followed. Since the regime of Drones has been distinctly different from that governing traditional aircrafts, it is imperative to recommend that specific rules for Drones carrying goods, providing services that do not involve transport of human beings and those Drones which involves the movement of humans be separately addressed by way of these rules.

Suggestions:

- **φ Classify Drones on the basis of their machine complexity such as Fixed-wing, Single-Rotor, Multi-rotor and Hybrid Drones.**
- **φ Create broader classification of 'civil' and 'defence' Drones so that the chances of a potential overlap may be avoided.**
- **φ For Drones carrying maximum all-up weight of more than 500kg, specify the applicable CARs under the Aircraft Rules, 1937**
- **φ As Drones carrying maximum all-up weight of more than 500kg may also carry human beings, address the same by way of including specific rules to regulate human-carrying Drones.**

C4. CERTIFICATION OF DRONES

77. *Text of proposed Rule 5 and Rule 6:*

Rule 5:

"Certification entities

The Quality Council of India or a certification entity authorised by the Quality Council of India or the Central Government may issue a certificate of airworthiness for any particular type of drone, on an application filed by a manufacturer or importer of that type of drone on the digital sky platform, if such type of drone meets the specified certification standards."

Rule 6:

"Certification standards

On the recommendation of the Quality Council of India, the Central Government may specify the standards for obtaining a certificate of airworthiness for drones. These standards may promote the use of made-in-India technologies, designs, components and drones; and India's regional navigation satellite system named Navigation with Indian Constellation (NavIC)."

Recommendations:

78. While the Draft Rules specifically provide for the certification to be provided by the Quality Council of India ("**QCI**"), the same was not referred to in the UAS Rules. It is to be noted that the DGCA has vide a public notice dated 22.09.2020, clarified that it has signed a memorandum of understanding ("**MoU**") with QCI under the Civil Aviation Requirements ("**CAR**") issued by the Director General of Civil Aviation ("**DGCA**")[85] and appointed it as the certification body for Drones. It is imperative to note that the appointment of QCI as the certification body of the DGCA is coming from the MoU issued by the DGCA under Rule 15A and Rule 133A of the Aircraft Rules, 1937.

79. As the Draft Rules, explicitly exclude the application of Aircraft Rules, 1937 unless the maximum all-up weight of a Drone is more than 500 kg[86], it must

[85] https://qcin.org/public/uploads/ck-docs/1609747316.DGCA%20Notification%20dated%2022%20September%202020%20on%20%E2%80%98Certification%20Scheme%20for%20Remotely%20Piloted%20Aircraft%20System%20(RPAS)%E2%80%99.pdf;

[86] Part I: Preliminary Section 1, Draft Rules;

be noted that the CARs issued under the Aircraft Rules, 1937 also do not apply to the Drone regime envisaged under the Draft Rules.

80. Deriving from the above, it is recommended that clarifications as regards the following to be officially declared by the MoCA:

a. Whether the CARs will apply to the Drone regime under the Draft Rules? If yes, the same would need to be re-notified by the MoCA.

b. Whether the MoU signed between the QCI and DGCA under the aegis of the CAR Section 3 – Air Transport Series X Part I, Issue I, dated 27 August, 2018 will remain valid under the proposed Drone regime?

81. Further, proposed rule 6 of the Draft Rules specify that the standards of certification issued by the Central government in consultation with the QCI shall be applicable to Drones. However, it is not clarified if the certification standards which have been notified under the CARs previously, such as under the RPAS Guidance Manual, among others, will remain applicable. It is recommended that clarification on the same be released.

82. Further, as the certification standards are to be formulated and released by the QCI, at present there remain no airworthiness standards which are applicable and which can be used as a benchmark for manufacturers for the production of Drones which are likely to be granted the certification.

83. At the highest level, aircraft have a certificate of airworthiness which is underpinned by the type of classification of the drone, its continued and continuing airworthiness processes, and design and production and organisation approvals. Certificate of airworthiness must also have an element of the safety features that are available on the device. Safety assessment

should, therefore, be made part of the certification of airworthiness. A safety assessment may be conducted by following these steps:

- Determination of the set of aircraft level threats/hazards related to functional failures are identified.
- The severity of the consequence for each of these failure conditions is determined/classified.
- This classification could be different for differing scenarios, e.g., during different phases of flight.
- The target level of safety (TLOS) is assigned for each failure condition.
- The systems and component failures that could contribute to each of these failure conditions are assessed or analysed to establish if the individual TLOS is met.
- Compliance with each individual failure condition and the overall aircraft level target is shown.

Recommendations:

- **Clarify the applicability of CARs issued under the Aircraft Rules, 1937 as the same have been made inapplicable to the present Drone regime under the Draft Rules.**
- **Clarify whether the existing QCI framework on certification will be applicable to the Drones regulated under the Draft Rules, as they have been issued under the Aircraft Rules, 1937.**
- **Include more specific technical standards for granting airworthiness to the Drones such as security assessment, type of classification, design production and organisation approvals.**

C5. IMPORTS

84. *Text of proposed rule 8:*

"<u>Restriction on imports</u>

Import of drones and drone components shall be regulated by the Directorate General of Foreign Trade."

Recommendations:

85. While proposed rule 8 prescribes that the import of Drones or Drone parts shall be regulated by the Directorate General of Foreign Trade ("**DGFT**"), no details or procedure for the same has been prescribed.

86. As is the longstanding thumb rule of the law, certainty of the law brings stability to the sector it governs. Presently, as there is no certainty as regards the law which will govern the import and export of Drones to and from India, the entry of foreign market players in this sector in addition to the entry of local manufacturers is severely restricted.

87. It is recommended that certain basic criteria pertaining to the import of Drones and Drone components be incorporated into the Draft Rules so as to avoid sole reliance on import policies of the Central Government. Further, clarification for the applicability of DGFT Circulars issued before the official date of enactment of the Draft Rules should also be incorporated within the Draft Rules. This will not only lend certainty to the sector but will also allow the foreign and local entities, wishing to enter the sector, make informed commercial decisions. We note that under the UAS Rules, for the purpose of import of drones and drone related parts a two-pronged approval was required to be obtained. Firstly, a clearance from the DGCA and post that an import license was required to be obtained from the DGFT. Under the Draft Rules, the import of drones and drone parts is entirely to be regulated by the DGFT. It is recommended that the

operation and applicability of the DGCA approvals obtained for import under the proposed Draft Rules be clarified.

88. It must be noted that India is one of the largest markets for Drones and is highly likely to engage in massive volume of imports. These imports may not be limited to just Drones and Drones components but are likely to include prototype and models of Drones. It is recommended that such prototypes may be exempted from the import restrictions/specific import licensing, flowing from the exemption granted for the purpose of research and development.

Recommendations:

- **Provide clarity on the procedures, policy and the framework to be implemented by the DGFT for import licensing/ import of Drones and Drone components in India.**
- **Clarify whether the DGFT circulars governing import of Drones prior to the enactment of the Draft Rules will apply or not.**

C6. MANDATORY SAFETY FEATURES

89. *Text of the proposed Rule 11:*

"Mandatory safety features

(1) The Central Government shall notify safety features to be installed on a drone by the person owning the drone.

(2) All persons owning a drone shall adopt the said safety features within such period as may be specified by the Central Government, which shall not be less than six months from the date of such notification. Such safety features, that may be notified in future, may include as under –

(a) 'No Permission – No Takeoff' (NPNT) hardware and firmware;

(b) Real-time tracking beacon that communicates the drone's location, altitude, speed and unique identification number; and

(c) Geo-fencing capability."

Recommendations:

90. Rule 11 of the proposed Drone Rules envisages certain 'safety features' of drones to be notified '*in future'*. It is evident that the safety features are not just 'mandatory' in nature but also have not been laid down by the Draft Rules. The Central Government has deferred laying down of safety features which are to be installed on a drone to a future date which may prove to be antithetical to the objectives for which the rules have been proposed to be introduced.

91. One of the predominant objectives for introduction of the Draft Rules is to facilitate establishment of a regime where adoption and use of drones is facilitated by providing for relaxation in Draft Rules, which is evident from the fact that a lot of requisite approvals were abolished and permission(s) have been envisaged to be granted on self-certification basis. In fact, the 'achievements of the Indian Drone Sector and the measures taken to further the ease of doing business' are proposed to be documented in the six-monthly report.[87]

92. It is only natural that the manufacturers ought to be made aware of the drone safety features lest its manufactured drones may later prove to be unmarketable in the Indian markets if they do not meet the safety features which may be notified at a 'future time' as is envisaged by the Draft Rules. Any

[87] Rule 29(3) of the Draft Rules;

robust legal regime which is premised on the objective of facilitating advent and use of technology must provide clear and categorical standards against which products shall be weighed as a condition of their marketability to ensure that players are willing to enter into such markets and invest in such technology.

93. No potential investor or manufacturer would seek to enter into the 'market' of drones which is plagued with uncertainty lest such an investor/ manufacturer may invite the possibility of losing its investment in case the future rules which may be introduced render its products unmarketable. The Draft Rules have brought about uncertainty surrounding the safety technology which is required to be possessed and built into the drone. Therefore, it is recommended that rules relating to material information such as the safety features which the drones are required to possess must not be framed at a 'future date' but ought to be made known at the first possible instance lest the very purpose for which the rules have been introduced may not be achieved for want of commercial investments in this area.

94. Certainty of law is an important characteristic of any sound and robust legal system. This is especially important in cases of 'law' which seeks to regulate new and dynamic technologies such as those surrounding unmanned aircraft systems. The objective of establishing a regime which facilitates adoption and utilisation of drone technology can only be achieved if commercial players operating in the market enjoy a sense of security in so far as rules regulating the industry are concerned. Therefore, a drone manufacturer must be made aware of all yardsticks against which its manufactured drones would be weighed before the manufacturer is permitted to offer them for sale.

95. However, the Draft Rules fall short on such a benchmark. The Draft Rules state that 'safety features' shall be notified 'in future'.[88] These safety features which may be notified at a later date include features such as the ability of drones to restrict the movement within a defined airspace, real-time tracking beacon which communicate the drones' location, altitude, speed etc. as well as other safety features which would determine the hardware and firmware with which the drone is required to be embedded.[89]

96. The Draft Rules also envisage use of drones for the purpose of 'delivery of 'goods'. The framework for developing 'drone corridors' for purpose of delivery of goods by drones is proposed to be specified within 60 days from date of notification of the Draft Rules. It is safe to infer that the Central Government may desire to restrict the transportation or delivery of certain goods, however, provisions relating to such restrictions are conspicuously absent in the Draft Rules. This is more glaring in light of the fact that Rule 40 of the prevailing UAS Rules expressly prohibit carriage of arms, ammunition, explosives, military stores etc. by way of drones. Further, by virtue of Rule 42 under the extant UAS Rules, no person was permitted to carry 'dangerous goods'. The aforementioned relevant provisions are being reproduced hereunder for the sake of ready reference:

> ***"40. Prohibition on Carriage of Arms, Ammunition, Explosives, Military Stores, etc.—*** *(1) No person shall carry or cause or permit to be carried in any unmanned aircraft to, from, within or over India, any arms, ammunitions, munitions of war, implements of war, explosives and military stores, except with the written permission of the Central*

[88] Rule 11(2) of the Draft Rules;
[89] Rule 11(2)(a) of the Draft Rules;

Government or any other person authorised by the Central Government and subject to the terms and conditions of such permission."

***42. Carriage of Dangerous Goods**.— No person shall carry dangerous goods on unmanned aircraft unless such operation is in compliance with the Aircraft (Carriage of Dangerous Goods) Rules, 2003.*

97. However, such provisions regulating 'goods' which may or may not be delivered/ transported by drones are conspicuously absent in the Drone Rules 2021.

98. It is recommended that the Draft Rules should not do away with provisions which clarify and expound the legal regime sought to be established. Certainty of law is a desirable characteristic in any legal regime. It may not be incorrect to state that one of the most important commercial uses of Drones is the delivery of goods. Some technology giants in the western economies have already received regulatory approvals and begun commercial operations whereby delivery of goods were done by drones.[90] Therefore, the commercial viability of drones for the purpose of transport and delivery of goods cannot, in any manner, be undermined.

99. Clearly defining the nature and scope of goods which may not be the subject-matter of delivery by drones would bring about certainty in the mind of 'commercial establishments' who wish to deploy multiple drones for the purpose of commercial operations. From the consumer standpoint, laying down a comprehensive provision which clearly lists down the nature of 'goods' which may be delivered by goods would enable consumers to draw strategies and

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90 https://www.cnbc.com/2020/08/31/amazon-prime-now-drone-delivery-fleet-gets-faa-approval.html;

procure drones for their own commercial operations. For instance, e-commerce entities may not be willing to place orders for Drones for the purpose of delivery of goods until there is clarity as to the goods which can be delivered or transported using them. Likewise, from the manufacturers' standpoint, certain modifications may have to be made to drones keeping in mind the requirements of the consumers and the goods which are envisaged to be delivered using the drone. However, the manufacturer may not be in a position to design drones keeping in mind the goods which are envisaged to be transported/ delivered using drones manufactured by them unless the Draft Rules comprehensively deal with such issues.

100. Another reason for recommending inclusion of provisions relating to 'goods' which may be transported/ delivered by drones is that exclusion of such provisions may lead to an undesirable interpretation that the Central Government has sought to permit the use of drones for the purpose of delivering even 'hazardous' or 'dangerous goods'. This is so because the prevailing UAS Rules contains provisions which restricts persons from carrying dangerous goods on unmanned aircrafts. Removal of such provisions from the Draft Rules makes the legal regime susceptible to arguments that the Central Government has sought to remove such a condition which restricted use of drone for delivery of arms, ammunitions etc. and such an interpretation will lead to undesirable outcomes.

101. In this backdrop, it is important that the Draft Rules clearly list down the 'goods' which may or may not be delivered by drones. In this regard, reference may be made to European Union Regulations (EU Regulation 2019/947) which had comprehensively laid down what constitutes 'dangerous goods' by clearly and categorically defining the term and laying down its scope thereof in the following terms:

"(11) dangerous goods' means articles or substances, which are capable of posing a hazard to health, safety, property or the environment in the case of an incident or accident, that the unmanned aircraft is carrying as its payload, including in particular:

a) explosives (mass explosion hazard, blast projection hazard, minor blast hazard, major fire hazard, blasting agents, extremely insensitive explosives);

b) gases (flammable gas, non-flammable gas, poisonous gas, oxygen, inhalation hazard);

c) flammable liquids (flammable liquids; combustible, fuel oil, gasoline);

d) flammable solids (flammable solids, spontaneously combustible solids, dangerous when wet);

e) oxidising agents and organic peroxides;

f) toxic and infectious substances (poison, biohazard);

g) radioactive substances;

h) corrosive substances;"

102. The drone framework in the European Union does not confer a blanket ban on transfer of dangerous goods, but only places 'additional obligations' on such delivery of 'dangerous goods' by placing them under the 'certified' category of UAS operation. In this background, it is recommended that the Draft Rules clearly state the 'goods' which may be transported to ensure that consumers and manufacturers may accordingly make commercial decisions in light thereof.

103. Below is an indicative list of best practices, which may be followed for security features of drones:

a. Redundant flight control system;
b. Return to home loss of signal features;
c. Geofencing capabilities[91];
d. Automated functionality such as autonomous flight;
e. Transponder - ADS-B or equivalent conspicuity;
f. Detect and avoid capability;
g. Parachute availability; and
h. Algorithmic flight controlled descent (eg. loss of propeller).

Key suggestions:

- **Include safety features required to be included in Drones before the enactment of the Draft Rules so that the manufacturers may comply with the highest safety standards at the time of manufacture.**
- **Clarify and define the type of 'goods' which can be carried on or transported through Drones.**

C7. UNIQUE IDENTIFICATION NUMBER

104. *Text of proposed Rule 13:*

"Unique identification number

(1) No person shall operate a drone which does not have a unique identification number, unless such drone is exempted under these rules.

[91] All UAS accidents have to be reported to the AAIB (Air Accident Investigation Branch). The rules and regulations to be followed while conducting this investigation have been covered under "The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2018 and Regulation (EU) 996/2010; Refer: Para 2.9.9 of CAP 722.

(2) A person may generate the unique identification number of a drone by providing requisite details in Form D-2 on the digital sky platform.

(3) The unique identification number of a drone shall be linked to the unique serial number provided by the manufacturer and the unique serial numbers of its flight control module and ground control station.

(4) No person shall replace the flight control module or ground control station of a drone, whose serial number is linked to such drone's unique identification number, without updating on the digital sky platform, the unique serial number of the new flight control module or ground control station, within a period of seven days from the date of such replacement."

Recommendations:

105. The proposed Rule 13 requires the operation of a drone to be linked to a unique identification number (UID). The provision on linking the UID to the device of the owner has been included in the Draft Rules in order to ensure that the driver of a Drone is identifiable in all circumstances.

106. While the eligibility criteria for holding a valid remote pilot license and/or the UID, specifies that the same may not be obtained by minors, it is recommended that safety features to bring effect to the same also be included within the Drone Rules 2021. As envisaged under the Draft Rules, each Drone is required to mandatorily have a UID at the time of manufacture. Proposed Rule 13(c) states that such UID shall be linked to the flight control module and ground control station and any replacement of the same shall be required to be notified on the Digital Sky platform.

107. In furtherance of this, it is also recommended that the Draft Rules also include provisions to link the UID of the Drone to the remote polit license of the person who is flying a Drone. If the remote pilot license holder is required to enter

his/her license details before taking flight, then the traffic controller will not only be aware of the the Drone device being operated but also by whom it is being flown.

108. Such a system will require the linking of each remote pilot license issued and the Drone device which is to take flight. It is recommended that a biometric system creating such linkage be explored. This will further ensure that only a licensed Drone pilot is able to fly a Drone and that only one drone can be operated by them at a time.

Key suggestions:

- **Create a link between the remote pilot license and the UID of the Drone being operated through biometric systems so as to ensure the accountability of the pilot flying each Drone. This will also ensure that no pilot flies more than one Drone at a time.**

C8. REMOTE PILOT LICENCE

109. Rule 24 pertains to the grant of a remote pilot licence to a natural person. As per this Rule, any natural person having a valid remote pilot licence is authorised to operate a drone.

110. Sub-rule 4 of Rule 24 stipulates that a remote pilot certificate must be issued by an authorised remote pilot organisation, through the digital sky platform, within seven (7) days, from the successful completion of the proficiency test conducted by the authorised remote pilot organisation. It is only after obtaining a remote pilot certificate that a remote pilot license shall be issued by the DG under sub-rule 4 (c) of Rule 24, within fifteen days of obtaining such remote pilot certificate.

111. Further, under sub-rule 5 (b) of Rule 24, a remote pilot licence shall be valid for a period ten (10) years, subject to remote pilot licensee undergoing refresher courses from time to time.

112. Sub-rule 6 of Rule 24 exempts the requirement of a valid remote pilot licence for operating nano drones and micro drones which may be used for non-commercial purposes.

113. *Text of proposed Rule 24:*

"24. Remote Pilot Licence

…

(4) Procedure for obtaining remote pilot licence.

(a) After completing the prescribed training and passing the prescribed proficiency test conducted by an authorised remote pilot training organisation, the natural person shall be issued a remote pilot certificate by such authorised remote pilot training organisation through the digital sky platform, within seven days of the successful completion of such proficiency test.

…

(5) Validity

(b) A remote pilot licence shall, unless suspended or cancelled, remain valid for a period of ten years, and may be renewed by any authorised remote pilot training organisation for the period specified therein, subject to a maximum period of ten years:

Provided that the holder of the remote pilot licence undergoes such refresher courses as may be specified by the Director General on the digital sky platform from time to time.

(6) Exemption

No remote pilot licence shall be required for a person –

(a) operating a nano drone; and

(b) operating a micro drone for non-commercial purposes."

Recommendations:

114. The proposed Rule 24 grants an option to natural persons to obtain remote pilot licences for more than one type/category of drones. On an application being made to a remote pilot training organisation in this regard, different categories/ types of drones must be available to the prospective licensee, for operation and training purposes.

115. While the proposed Rule 24 substantially reduces the compliances and approvals required under UAS Rules for obtaining a remote pilot license, there are some crucial aspects that need clarity to avoid any confusion/ ambiguity in future.

116. The proposed sub-rule 4(a) of Draft Rule 24 prescribes a mandatory proficiency test, however the syllabus or the particulars of such proficiency test is not provided for under the Rules. This sub-rule read with Rule 25 (5) (a) makes it clear that the requirements of the proficiency test along with other training requirements, to be complied with by the remote pilot training organisation, shall be prescribed by the DG on the digital sky platform.

117. However, to ensure that proper standards are set forth in the Draft Rules itself, it is recommended that the Draft Rules provide for a basic framework or the core subjects on which such proficiency test shall be based on. This would provide the entities that seek authorisation for setting up a remote pilot training organisation as well as the applicants seeking a remote pilot licence, a much need clarity.

118. Further, sub-rule 5 of Rule 24 provides that a remote pilot licence granted under the Draft Rules shall be valid up to a period of ten (10) years. In line with the dynamic nature of the technology involved in drones, the Draft Rules cater to the need of licensees updating their skills from time to time. However, a period of 10 years is very long for the validity of a remote pilot licence. It is suggested that the validity of the licence period may be reduced to five (5) years subject to the mandatory annual refresher courses being undertaken by licensees.

119. This would ensure that the licensees are always up to date with the evolving technology and there is never a substantial gap between their skills, proficiency in terms of flying technologically advanced drones. The software and hardware involved in drones change rapidly, especially the safety features, endurance capacity, field type and the central technology linking, and therefore five (5) years is sufficient time for remote pilot licence validity.

120. Further, sub-rule 6 of Rule 24 exempts the operators of micro drone for non-commercial purposes from obtaining a remote pilot license. It must be noted that the term "*non-commercial purpose*" has not been defined in the Draft Rules or the Aircraft Act. The Draft Rules lack clarity in terms of the activities that would fall under commercial purpose or non-commercial purpose. In light of the ambiguity, it is suggested that the terms "*commercial purpose*" and "*non-commercial purposes*" be defined under the Draft Rules to delineate the purposes for which drones may be used and the applicable exemptions.

121. Furthermore, the definition of remote pilot license is only limited to the criteria provided in proposed Rule 24 at present. In order for a more graded approach to be taken for licensing, we recommend the implementation of levels of license which can be granted for specific purposes. For example, as golf-carts are only licensed to be operated in golf-courses, similarly, certain drones would

only be licensed for operation in geo-fenced specific areas for defined purposes. Some of the purposes for which graded licensing may be considered may include:

a. Recreational purposes;
b. Private use;
c. Industrial use;
d. Commercial operations among others.

122. It is also recommended that the commercial and industrial licenses are made non-transferable so that the instances of misuse are minimized to completely eliminated.

Key Suggestions

- **The MoCA must list out the particulars/core subjects for the mandatory proficiency test to ensure that proper standards are maintained by remote pilot training organisations.**
- **The validity of a remote pilot licence must be reduced to a maximum of 5 years, subject to annual mandatory refresher courses.**
- **The term "*non-commercial purposes*" should be defined under the Draft Rules and as a corollary, the term "*commercial purposes*" as well.**
- **The MoCA must adopt a more grader approach in terms of the licensing regime.**
- **The license obtained by a remote pilot must be non-transferable in relation to the premise it is being used for.**

C9. REMOTE PILOT TRAINING ORGANISATION

123. The proposed Rule 25 of the Draft Rules, regulates the manner in which a remote pilot training organisation may impart training to natural persons seeking a remote pilot licence.

124. Sub-rule 25 (2) lays down the eligibility criteria for an applicant remote pilot training organisation to become an authorised remote pilot training organisation. Under the Draft Rules, the applicant seeking authorisation for running a remote pilot training organisation shall make an application to the DG as per the prescribed form on the digital sky platform.

125. The authorisation to run a remote pilot training organisation so granted to an eligible applicant under the Draft Rules shall be valid for a period of ten (10) years, subject to renewal.

126. Further, an authorised remote pilot training organisation is mandated to ensure strict compliance with the requirements as prescribed by the DG on the digital sky platform.

127. Text of the proposed of Rule 25:

"25. Remote pilot training organisation

…

(2) Eligibility - No remote pilot training organisation shall be authorised unless the following eligibility criteria have been met:

(a) The remote pilot training organisation is operating from a plot of land that has minimum dimensions of 50 metre by 50 metre;

(b) The remote pilot training organisation has an adequate number of classrooms to ensure that there are not more than 30 students in a classroom at any point in time;

(c) The remote pilot training organisation has a requisite number of drones and related equipment in good working condition so as to ensure that each student has adequate opportunity for hands-on practical training; and

(d) The remote pilot training organisation has a requisite number of instructors with valid remote pilot licences who shall be responsible for training the students."

…

(5) Training requirements. –

(a) The authorised remote pilot training organisation shall ensure strict compliance with the requirements prescribed by the Director General on the digital sky platform in respect of training, proficiency testing and issue of remote pilot certificates.

(b) The prescribed training requirements shall be specific to a class or classes of drone.

(c) There shall be prescribed training requirements for automatic and autonomous drone operations."

Recommendations:

128. At the outset, it must be pointed out that the Flying Training Circulars issued by the DG which lay down the guidelines for remote pilot training organisations and the training and procedural manuals for remote pilot training, conform to the requirements stipulated under the CAR, 2018. As discussed above in para 5, the CAR, 2018 has been issued under the Aircraft Rules, 1937, which have been made specifically inapplicable to the Draft Rules under Rule 1 (4) and

therefore the Flying Training Circulars issued under the CAR, 2018 also stand to be superseded by the Draft Rules.

129. The Flying Training Circulars provide a very comprehensive framework of the training and the standards to be met by remote pilot training organisations, however, it is suggested that the MoCA clarify the applicability of these Flying Training Circulars or issue fresh circulars/notifications in this regard.

130. Further, contrary to the UAS Rules and the eligibility criteria mentioned therein for entities engaged in the manufacture, import, trade and operation of drones/unmanned aircraft systems, the new Draft Rules do not specify the type/class of entities that may apply for an authorisation for operating a remote pilot training organisation or even otherwise for manufacture and import etc. Sub-rule 2 of Rule 25 only mentions the plot, staff and classroom requirements as the eligibility criteria for the entities seeking to authorisation.

131. As the Aircraft Rules, 1937 shall be superseded by the Draft Rules, unless expressly provided for, the eligibility for criteria provided under the UAS Rules (Rule 5) shall also become inapplicable. Rule 5 of the UAS Rules, stipulates that the eligibility criteria to be met by the applicant entities shall conform to the requisites provided under Schedule XI of the Aircraft Rules, 1937.

132. Schedule XI of the Aircraft Rules, 1937 prescribes that permission to operate a schedule air transport services shall be granted to entities which are registered and have their principal place of business within India. Such applicant entities must also have their Chairman and at least two-thirds Directors as citizens of India and the substantial ownership and effective control must also vest in Indian nationals.

133. These requirements stipulated under the Aircraft Rules, 1937 is significant as the UAS Rules mandate that the entities seeking authorisation for

manufacture, import, trade and operation must conform to these requirements. However, with the Draft Rules, the MoCA has done away with the different categories of licences which were earlier available under the UAS Rules. Rather, the entities seeking authorisation under the Draft Rules are now required to only obtain airworthiness certificate, as per the procedure *(discussed above),* to operate drones*:* the intent behind the Draft Rules becoming more apparent.

134. The proposed Rule 25 (3) (a) on the other hand reads that "*Any person who has met the eligibility criteria set out in sub-rule (2) and is seeking authorisation to establish a remote pilot training organisation shall submit an application to the Director General in Form D-6 on the digital sky platform, along with the specified fee".* Therefore, "any person" who meets the eligibility criteria specified under sub-rule 2 of Rule 25 may become an authorised remote pilot training organisation.

135. The term "person" has the following definition under the Draft Rules:

> *(m) "Person" includes an individual or a company or a firm or an association of persons or body of individuals or a local authority or any legal entity, whether incorporated or not, Central Government or State Government or an entity thereof;*

The definition of person under the Draft Rules is wide enough to include companies that may be foreign incorporated, owned and controlled and which do not conform to the requirements specified under the Aircraft Rules, 1937.

136. In light of the above, it becomes imperative that the specifications to be met by eligible entities must be spelled out, clearly, to avoid confusion and loss of revenue in future. An ambiguity of such nature, has a deterrent effect on the

prospective investors, who may not want to invest in a regime that is unstable or is unclear.

137. Further, the eligible entities are required to fill an application under the proposed Rule 25 as per the format provided for in Form D-6. This Form D-6 would clearly list the specific documents required for obtaining such authorisation. However, the requisite forms are not available on the digital sky platform and are neither part of the Draft Rules.

138. The purpose of seeking these comments from stakeholders is to get a different perspective on the procedures and the requirements of the law, and in absence of the forms being available, the same is not being achieved. Hence, it is suggested that the MoCA place the forms before the public for comments as well, to provide better clarity on the framework and seek comments on the relevant document requirements.

139. Furthermore, the eligibility requirement of operating from a plot of 50 metre * 50 metre for running a training school is very small, especially for training novice pilots. The standard requirement in terms of plot size for drone training in most jurisdictions, including UK is at least 150 metre * 150 metre and therefore it is suggested that the same may be adopted under Rule 25 (2) (a) as well.

140. Additionally, the requirements under Rule 25 must also reflect certain standard in terms of the age and the number of drones to be maintained by the remote pilot training organisation. Similar to the Para 8.3 of the CAR, 2019, the age of the aircraft/drone must be stipulated under these Draft Rules.

141. It is also suggested that a minimum number of drones or the ratio of drones: students to be maintained by an authorised remote pilot training organisations must be clearly specified. This provides an interested prospective entity,

seeking authorisation, a much needed clarity in terms of the capital/ investment requirements to be made for successfully running a remote pilot training organisation.

142. Same as the number of drones, the Draft Rules must also specify the minimum or the instructor to student ratios to be maintained by authorised remote pilot training organisation. No company interested in engaging in this business can be expected to seek an approval without being aware of the commercial/financial liabilities it may incur post authorisation.

143. It is also imperative that the MoCA set out the qualification requirements of the instructors to be engaged by an authorised remote pilot training organisation. It is suggested that the instructors appointed by the remote pilot training organisations are licenced remote pilots, having at least 20 hours of operational flight experience.

144. Further, a remote pilot training organisation is mandated to adhere to the requirements as may be specified by the DG on the digital sky platform. It is suggested that these requirements prescribed by the DG must also include a set of standard skilled pilot manoeuvres expected of any pilot in general and as per the purpose/use of the drones. These standard pilot manoeuvres may be similar to those prescribed by the National Institute of Standards and Technology, U.S. Department of Commerce, in the Quick Start Guide for Standard Test Methods for Small Unmanned Aircraft Systems available at: *https://www.nist.gov/system/files/documents/2019/08/21/nist-astm-nfpa_standard_test_methods_for_suas_-_maneuvering_and_payload_functionality_overiew_v2019-08-20v2.pdf*

145. Furthermore, flowing from the different categories of licenses which have been proposed in the Rule 24, it is recommended that the training imparted for each

such license be specifically tailored to the specifications of the purpose. We propose the inclusion of vocational training in drone operation and flight as each drone pilot may not need to learn the same basics for a niche usage. Further, it is also recommended that training be made specifically tailored to each type of license from the point of view of its duration, i.e., a license granted for recreational use of drones does not require rigorous training modules over long durations. Similarly, drone pilots operating in populous areas require a much more complex training.

Key Suggestions

- **The MoCA should lay down the eligibility criteria for authorised remote pilot training organisations in terms of, *inter alia*, the type of entity, the country of incorporation, the control, shareholding and directorship requirements to be adhered to.**
- **The forms being referred to under the Draft Rules must be placed before the public for comments to understand the scheme of the legislation and the document requirements.**
- **The plot size of 50 metre * 50 metre for running a training school must be increased to at least a minimum of 150 metre * 150 metre.**
- **The MoCA must specify the age and the number of drones to be used by remote pilot training organisation.**
- **The minimum number of drones or the ratio of drones to students must be specified under the Draft Rules.**
- **The minimum number of instructors must be specified. The instructors appointed by the remote pilot training organisations under these Draft**

Rules must be licenced remote pilots, having at least 20 hours of operational flight experience.

- **φ The DG, while specifying the syllabus and training requirements, must include a set of standard skilled pilot manoeuvres expected of any pilot in general and as per the purpose/use of the drones in its manuals.**

- **φ The MoCA must consider that the remote pilot training organisation ought to impart training in light of the license being sought by a licensee.**

C10. RESEARCH AND DEVELOPMENT

146. Proposed Rule 26, provides a blanket exemption to all persons operating drones for research and development ("**R&D**") purposes from obtaining the requisite license under the Draft Rules.

147. Text of the proposed Rule 26:

"*26. Drone operations for research and development.*

The following persons shall not require a certificate of airworthiness, unique identification number, prior permission and remote pilot licence for operating drones for research and development purposes –

(a) Research and development entities under the administrative control of, or recognised by the Central Government, State Governments or Union Territory Administrations;

(b) Educational institutions under the administrative control of, or recognised by the Central Government, State Governments or Union Territory Administrations;

(c) Start-ups recognised by Department for Promotion of Industry and Internal Trade; and

(d) Any drone manufacturer having a Goods and Service Tax Identification Number:

Provided that such drone operations take place within a green zone and within the premises of the person where such research and development is being carried out; or within an open area in a green zone under such person's control."

Recommendations:

148. The compliances to be met by entities operating drones for R&D purposes have been significantly done away with, and to such extent that under the Draft Rules, the entities undertaking R&D are exempt from obtaining any type of licence.

149. Part IX of the UAS Rules stipulates the entire procedure for obtaining authorisation for undertaking R&D. However, the proposed Rule 26 permits all eligible entities to carry out R&D subject to the conditions provided for in the proviso, without any requirement of prior authorisation.

150. The proposed Rule 26 (d) makes "*Any drone manufacturer having a Goods and Service Tax Identification Number ("GSTIN")*" an eligible organisation for carrying out R&D, making the provision very wide in contrast to UAS Rules[92].

151. While the same is attractive to industry players, it opens the market to any person, even persons not possessing the requisite understanding of the R&D.

[92] Rule 57, UAS Rules;

Any person merely having a GSTIN shall escape the requirements of obtaining the requisite authorisation.

Key Suggestions:

- **The MoCA must define the terms "commercial purposes" and "non-commercial purposes" to ensure that the current provision is not misused.**

C11. DRONE TRAFFIC MANAGEMENT

152. Proposed Rule 27 empowers the Central Government to frame and publish a policy on drone traffic management within sixty (60) days of the Draft Rules coming into effect.

153. Text of the proposed Rule 27:

"27. Drone Traffic Management

(1) The Central Government may, within sixty days of the date of notification of these rules, publish the policy framework in respect of the Unmanned Aircraft System Traffic Management (UTM) System on the digital sky platform.

(2) Such policy framework shall be in alignment with these rules and shall facilitate automated permissions as required under these rules.

(3) The framework for developing drone corridors for safe transfer of goods by drones shall be specified in the said policy framework.

(4) The roles, powers and responsibilities of State Governments and Union Territory Administrations shall be specified in the said policy framework.

Recommendations:

154. The provision for drone traffic management was provided for under the UAS Rules as well, along with the process for obtaining authorisation in this regard. In addition to traffic management service, the UAS Rules provided for licence for traffic management personnel and authorisation for operating a drone traffic management training organisation as well.

155. Under the UAS Rules, the drone traffic management training organisation was open to private entities as well. However, the Draft Rules do not lay down the process or procedure in this regard. The procedure and the framework provided under the UAS Rules does not find mention in the Draft Rules.

156. Therefore, it is suggested that the MoCA permit the private entities to become an authorised drone traffic management training organisation. The MoCA may retain the framework of traffic management relating to management personnel and training organisations from the UAS Rules.

157. Further, it is imperative to point out that the proposed Rule 26 must be read with proposed Rule 11, which lays down the safety requirements (*as detailed above*), to holistically understand the nuances of drone traffic management. It must be noted that the exact standards under proposed Rule 11 have also not been notified and the Central Government shall provide the same within six (6) months from the date of notification of these Draft Rules.

158. In light of the above, it become clear that a holistic understanding of drone traffic management would not be possible unless the standards under Rule 11 are also notified. Unless the same is notified, no interested entity would invest or seek authorisation in this regard. It is reiterated that uncertainty in any legislation is detrimental to business opportunities, especially foreign investments. Therefore, keeping in mind the commercial aspects of this Rule,

it is suggested that the MoCA notify the safety standards as well as the framework of drone traffic management at the earliest.

Key Suggestions

- **The drone traffic management regime must be open to private players, similar to the regime under the UAS Rules. The Central Government while notifying the standards for drone traffic management may retain the existing provisions under the UAS Rules.**
- **The safety standards under Rule 11 of the Draft Rules must be notified together with Rule 27, at the earliest, in the commercial interest of applicant entities.**

C12. FEES

159. Text of the proposed Rule 30:

"*30. Fee*

The fee for services rendered by the Central Government under these rules shall be payable as specified under –

S. No.	*Service*	*Fees*
1.	*Issuance of certificate of airworthiness*	*100*

Note: Entities such as Quality Council of India, certification entities and authorised remote pilot training organisations etc. may charge market-linked fee for their services."

Recommendations:

160. Since the fee stipulated under these Draft Rules is much less compared to the UAS Rules, clarity is sought in terms of the payment of fees.

161. The MoCA must clarify if the fee is payable on the certification being obtained on the import of each drone that is manufactured/imported or if the fee shall be payable on the basis of an approved sample lot/class of drones.

162. This clarification and exact understanding in terms of the fees required to be paid would critically impact the business of the entities seeking authorisation under the Draft Rules. Under the UAS Rules, the fees payable was specified as per the type/size of drones, the nature of business being undertaken by the entity seeking authorisation and the purpose of the authorisation.

Key Suggestions

φ The MoCA must clarify the fee structure under the Draft Rules.

C13. PROSECUTION OF OFFENCE

163. Proposed Rule 33 provides for the prosecution of persons not complying with the provisions of the Draft Rules.

164. Text of proposed Rule 33:

"*33. Prosecution for offences.*

(1) A person who has contravened or failed to comply with these rules shall be punishable by the Court in accordance with the provisions of sub-section (2)

of Section 10 of the Aircraft Act, 1934 and such contraventions or non-compliance shall be compoundable in accordance with the provisions of Section 12A of the Aircraft Act, 1934.

(2) The provisions of these rules shall be in addition to, and not in derogation of the provisions of any other law, for the time being in force."

Recommendations:

165. The UAS Rules under Rule 72 stipulated the offences under the relevant provisions along with the applicable penalty basis the nature of offence and the size of the entity committing such offence. However, the Draft Rules do not specify the same.

166. In light of the above, it is suggested that the MoCA list out the offences under these Draft Rules as it lends a lot of uncertainty to the law. Further, the offences under the Draft Rules must not be made punishable by the Courts as the Courts would not have the technical or scientific understanding to decide on such matters. The term "Court" as also not been defined under the Draft Rules. It is therefore recommended that a special tribunal be formed to decided such issues that may arise.

Key Suggestions

- **The Draft Rules must clearly specify the list of offences along with applicable penalties to avoid uncertainty.**
- **A special tribunal must be formed to adjudicate upon the cases arising out of the Draft Rules.**

C14. PENALTIES

167. Proposed Rule 34 stipulates that the DG or any officer authorised by the relevant government may impose a penalty, not exceeding rupees one lakh, on the person contravening the provision of these Draft Rules. Before the imposition of penalty, the person must also be provided with an opportunity of being heard.

168. Text of proposed Rule 34:

"34. Penalties.

Where the Director General or an officer authorised by the Central Government, State Government or Union Territory Administration; after giving an opportunity of being heard, is satisfied that a person has contravened or failed to comply with the provisions of these rules, he may, for reasons to be recorded in writing, levy a penalty not exceeding rupees one lakh in accordance with the provisions of Section 10A of the Aircraft Act, 1934."

Recommendations:

169. The quantum of penalty stipulated under the Draft Rules is extremely less compared to the earlier UAS Rules. Under Rule 77 of the UAS Rules, the penalty for the contravention was listed on the basis of nature of contravention and the size of entity committing the contravention.

170. It is submitted that a penalty of one lakh rupees is not high enough to create a deterrent effect among the market players/ authorised entities. It is suggested that a sliding scale of penalties is prescribed, similar to the provision under the UAS Rules.

171. Further, the provision of Appeal stipulated under Rule 78 of the UAS Rules has been removed from the Draft Rules. It is suggested that there must be a

provision for appeal against the order of the DG/authorised officer of the relevant government, passed under proposed Rule 34. The appeal provision so implemented by the MoCA must however conform to the principles of natural justice.

172. In light of the above, in the absence of specific offences/contraventions and relevant penalties, it is unclear as to what hearing would be provided to a person by the DG/authorised officer before imposing the penalty.

Key Suggestions

- **A sliding scale of penalties is prescribed, similar to the provision under the UAS Rules, taking into account the nature of the offence and the size of the entity committing such offence.**
- **The MoCA must provide a provision for appeal from the decisions passed by the DG/authorised officer under the proposed Rule 34.**

C15. CANCELLATION OR SUSPENSION

173. The proposed Rule 35 provides for the cancellation or suspension of licence granted under the Draft Rules by the order of the DG or an officer authorised by the central government.

174. Text of proposed Rule 35:

"35. Cancellation or Suspension

"Where the Director General or an officer authorised by the Central Government, State Government or Union Territory Administration; after giving

an opportunity of being heard, is satisfied that a person has contravened or failed to comply with the provisions of these rules, he may, for reasons to be recorded in writing, cancel or suspend any licence, certificate, authorisation or approval granted under these rules. "

Recommendations:

175. This provision is against the Principle of Natural Justice as there is no clarity on the events that may lead to suspension/ cancellation of a licence. There is no set standard for avoiding arbitrary rejection of application.

176. To cancel or suspend a license, the criteria /standards leading to such cancellation or suspension must be stipulated.

Key Suggestions

- **The MoCA must lay down criteria/standards to be observed by the entities/authorised persons under the Draft Rules, failing which there shall be a cancellation/suspension of licence.**

C16. FOREIGN DIRECT INVESTMENT

177. In addition to the recommendations made on the Draft Rules, the MoCA needs to clarify the framework of Foreign Direct Investment ("**FDI**") as well.

178. The Department of Industry Policy and Promotion ("**DIPP**") issued a press note[93] in 2014 classifying UAV or drones as defence aircrafts. Later in 2019, the DIPP exempted a select category of UAV from the meaning of defence

[93] Press Note No. 3 (2014 Series), DIPP, Ministry of Commerce and Industry, dated 26.06.2014;

aircraft on basis of maximum endurance against the gust of air.[94] Consequently, there is ambiguity with respect to the UAV or drones falling under the exempted list as there is no clear demarcation with respect to the drones being used for the defence purpose and commercial purpose. It is suggested that the MoCA clearly define the "civil drones" that may be used for commercial or non-commercial purposes.

179. Currently, it seems that the FDI in the drone industry is accepted on the basis of type of drones. For drones which may be used for defence purpose, FDI shall be accepted as per the limits and the route provided for in the extant Foreign Direct Investment Policy, 2020 ("**FDI Policy**") (i.e., 100% - 74% automatic and rest the government route) and for FDI in the civil aviation sector (for non-scheduled air transport service, for commercial use), a 100% FDI is permitted under the automatic route (apart from scheduled air transport services).

180. While such a position begs clarifications by the authorities, a possible argument can be that the drones (used for commercial purpose) would come under the non-scheduled air transport service (for civil use), as mentioned under the FDI Policy and consequently 100% FDI would be permitted under the automatic route as the same is a commercial activity and not a defence sector related activity.

181. In light of the above, it is recommended that the DIPP and the DGCA clarify the FDI limits for civil drones falling under the category of air transport service.

[94] Press Note No. 1 (2019 Series), DIPP, Ministry of Commerce and Industry, dated 01.01.2019;

CONCLUSION

While we understand that the legislation on drones is an evolving branch of the law throughout the world, we commend the efforts of the MoCA to make the sector more lucrative for industry players. However, we believe that the Draft Rules may be revised after examining our recommendations and suggestions.

We have examined and analyzed the Draft Rules, compared them with the existing legislations/ laws/ rules in foreign jurisdictions and provided detailed recommendations. We have consolidated our key recommendations hereinbelow:

- φ Revise the definition of 'Drone' to refer to autonomous drone operations as they encompass the Drone operations in entirety.
- φ Delete the definition of 'Automatic Drone operations' as the same is rendered redundant due to the technicalities attached with drone operations.
- φ Classify Drones on the basis of their machine complexity such as Fixed-wing, Single-Rotor, Multi-rotor and Hybrid Drones.
- φ Create broader classification of 'civil' and 'defence' Drones so that the chances of a potential overlap may be avoided.
- φ For Drones carrying maximum all-up weight of more than 500kg, specify the applicable CARs under the Aircraft Rules, 1937
- φ As Drones carrying maximum all-up weight of more than 500kg may also carry human beings, address the same by way of including specific rules to regulate human-carrying Drones.
- φ Provide clarity on the procedures, policy and the framework to be implemented by the DGFT for import licensing/ import of Drones and Drone components in India.
- φ Clarify whether the DGFT circulars governing import of Drones prior to the enactment of the Draft Rules will apply or not.

- φ Provide clarity on the safety features required to be included in drones before the enactment of the Draft Rules so that the manufacturers may comply with the highest safety standards at the time of manufacture.
- φ Clarify and define the type of 'goods' which can be carried on or transported through Drones.
- φ Create a link between the remote pilot license and the UID of the Drone being operated through biometric systems so as to ensure the accountability of the pilot flying each Drone. This will also ensure that no pilot flies more than one Drone at a time.
- φ The MoCA must list out the particulars/core subjects for the mandatory proficiency test to ensure that proper standards are maintained by remote pilot training organisations.
- φ The validity of a remote pilot licence must be reduced to a maximum of 5 years, subject to annual mandatory refresher courses.
- φ The term "*non-commercial purposes*" should be defined under the Draft Rules and as a corollary, the term "*commercial purposes*" as well.
- φ The MoCA should lay down the eligibility criteria for authorised remote pilot training organisations in terms of, *inter alia*, the type of entity, the country of incorporation, the control, shareholding and directorship requirements to be adhered to.
- φ The forms being referred to under the Draft Rules must be placed before the public for comments to understand the scheme of the legislation and the document requirements.
- φ The plot size of 50 metre * 50 metre for running a training school must be increased to at least a minimum of 150 metre * 150 metre.
- φ The MoCA must specify the age and the number of drones to be used by remote pilot training organisation.

- φ The minimum number of drones or the ratio of drones to students must be specified under the Draft Rules.
- φ The minimum number of instructors must be specified. The instructors appointed by the remote pilot training organisations under these Draft Rules must be licenced remote pilots, having at least 20 hours of operational flight experience.
- φ The DG, while specifying the syllabus and training requirements, must include a set of standard skilled pilot manoeuvres expected of any pilot in general and as per the purpose/use of the drones in its manuals.
- φ The MoCA must define the terms "commercial purposes" and "non-commercial purposes" to ensure that the current provision is not misused.
- φ The drone traffic management regime must be open to private players, similar to the regime under the UAS Rules. The Central Government while notifying the standards for drone traffic management may retain the existing provisions under the UAS Rules.
- φ The safety standards under Rule 11 of the Draft Rules must be notified together with Rule 27, at the earliest, in the commercial interest of applicant entities.
- φ The MoCA must clarify the fee structure under the Draft Rules.
- φ The Draft Rules must clearly specify the list of offences along with applicable penalties to avoid uncertainty.
- φ A special tribunal must be formed to adjudicate upon the cases arising out of the Draft Rules.
- φ A sliding scale of penalties is prescribed, similar to the provision under the UAS Rules, taking into account the nature of the offence and the size of the entity committing such offence.
- φ The MoCA must provide a provision for appeal from the decisions passed by the DG/authorised officer under the proposed Rule 34.

- φ The MoCA must lay down criteria/standards to be observed by the entities/authorised persons under the Draft Rules, failing which there shall be a cancellation/suspension of licence.
- φ The MoCA must specify the FDI requirements under the Draft Rules.

We shall be pleased to provide any additional information or clarifications on the above recommendations/ suggestions and can be reached at the e-mail addresses provided at cover page of the present recommendations.

Best regards,

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