

# India Opens Skies for Drones

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Strategic, Legal and Tax Analysis

August 2019



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# 1. Introduction

**“Everything that can be invented has been invented.”<sup>1</sup>**

This statement may have appealed to the United States’ Patent Office in 1899; however, technological advancements presented by the 20th and 21<sup>st</sup> centuries have proven them wrong. The materializing of self-driven cars, cloud computing, and artificial intelligence has proven that innovation is not bound by any limits and has no goals to rest. Driven by the human imagination, innovation has touched our lives in an unprecedented manner.

On one hand the internet has largely broken the barriers of physical borders and brought people closer, on the other, several ground-breaking inventions have provided a plethora of benefits to the human kind. One such revolution in the making is the increasing use of drones.

Ever since their introduction, drones have opened up several commercial applications in different fields ranging from delivery of products to end-consumers, capturing aerial footage for news purposes by journalists, entertainment, transport etc. Governments and militaries across the world have also been employing drones for guarding their international borders and other law

enforcement purposes.<sup>2</sup> The drone industry has massive potential in terms of giving an economic boost by attracting significant global investments in India. The Unmanned Aircraft System (“UAS”) market in India is projected to touch US\$ 885.7 million by 2021, while the global market is likely to achieve over US\$ 21.47 billion.<sup>3</sup>

To tap into these opportunities, India must regularly upgrade and evolve its policy framework affecting these new technologies. The economic benefits also play into the need to innovate the entire ecosystem along with invention of even more advance drones. With the rise of drones, several challenges in terms of personal privacy, public safety, international airspace, civil rights etc. have and will continue to arise.

This paper provides a brief introduction to the concept of drones, the technology they can integrate with and their current commercial capabilities and uses within the current legal framework in India. It further analyses legal and tax issues on drone usage and provides a comparative regulatory framework for different jurisdictions. The concluding section provides for a way forward to ensure successful regulations which strive for a balance between drone usage and policy making.

1. <http://patentlyo.com/patent/2011/01/tracing-the-quote-everything-that-can-be-invented-has-been-invented.html>

2. <http://www.ndtv.com/india-news/india-seeks-to-purchase-patrol-drones-from-us-1421891?pfom=home-topstories>

3. <http://ficc.in/spdocument/23003/Make-in-India-for-UAS.pdf>

## 2. What Are Drones?

UAS represents a significant development in the field of robotics and automotive technology.<sup>4</sup> The use of UAS, popularly known as drones, is not a new concept. In common terminology, drones refer to aerial vehicles, which can fly without a human operator. The origins of this concept can be traced back to 1896, when the first pilotless steam-powered aircraft registered a powered flight lasting over one minute.<sup>5</sup>

Drones come in many shapes and sizes and can be operated for both defense and civil (recreational or commercial) purposes. Unlike traditional helicopters and hot air balloons, drones have the capability of flying at lower altitudes. This is in addition to their enhanced capabilities to undertake activities like data capturing, cargo delivery and discharge of substances etc.

For regulatory purposes, different countries and international organizations have provided varied definitions of drones. In general aviation and airspace-related parlance, a 'Drone' refers to *any vehicle that can operate on multiple surfaces and/or in the air without a human being on board*

*to control it.* They vary in size, shape, form, speed, and a host of other attributes. However, most jurisdictions categorize and regulate them by weight. A drone could vary from a model aircraft / toy in a store to a large sized aircraft sent to a war zone.<sup>6</sup>

The International Civil Aviation Organization ("ICAO") is the international body charged with the responsibility of codification and regulation of airways. The organization identifies drones as UAS and has coined the term RPAS for drones that are operated with the aid of a remote pilot. The ICAO Circular on Unmanned Aircraft Systems, 2011 defines an RPAS as '*[a] set of configurable elements consisting of a remotely-piloted aircraft, its associated remote pilot station(s), the required command and control links and any other system elements as may be required, at any point during flight operation*'.<sup>7</sup> RPAS belong to the wider family of UAS. UAS essentially includes (i) the unmanned aircraft; (ii) the control system(s) on the ground; (iii) the control data link(s); and (iv) other support equipment.

4. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2571490](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2571490)

5. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2385448](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2385448)

6. [https://www.priv.gc.ca/information/research-recherche/2013/drones\\_201303\\_e.asp#ftnref5](https://www.priv.gc.ca/information/research-recherche/2013/drones_201303_e.asp#ftnref5)

7. ICAO Circular 328-AN/190.

### 3. Concerns With The Use of Drones

Drones have many cutting-edge applications which are becoming increasingly mainstream. Drones are being used for the instant delivery of blood vessels, harvested organs, and other critical medical supplies.<sup>8</sup> Creating the ability to deliver critical supplies without the risk of traffic delays to potentially save numerous lives.<sup>9</sup> They are also used for enhancing agricultural efficiency by identifying factors such as moisture content and nutrient soil availability. Many drones also have autonomous functionality, to the extent that they avoid collisions and some to the extent that there are only provided general instructions or waypoints to follow, with the rest being left up to the drone.<sup>10</sup>

Further, remote sensing through drones can be of significant use in disaster-prone areas like pinpointing and fighting fires<sup>11</sup> or detection of theft and pilferage of goods meant for public utilization, or in detection of LPG gas leaks which can save several lives and resources.<sup>12</sup>

A rapidly intensifying ecosystem of drone sports is drone racing which has garnered much attention worldwide.<sup>13</sup> The Drone Racing League organizes several drone racing events across the globe and live-stream videos of the event online using a mix of camera drones, stationary cameras and first-person-view (FPV) video, viewed by millions of viewers.<sup>14</sup>

Drones are also being adopted by law and enforcement for helping prevent human and drug trafficking. Recently, drone cameras were utilized by Indian police personnel to bust a drug cultivation case in Karimnagar, India.<sup>15</sup> They have even proved useful for spotting and reacting to border infractions and assisting in monitoring otherwise inaccessible terrain.<sup>16</sup>

Concerns pertaining to privacy, accuracy and safeguards to accessibility of information are prominent ethical issues in relation to the enhanced capabilities and operations of drones. Further, the absence of adequate safeguards and regulations with respect to the use of drones raise several concerns. These relate to both legal and ethical issues such as rogue drones, major airspace collision accidents, government overreach, private-party data aggregation and invasion of privacy in public. It is imperative that these concerns are acknowledged and addressed efficiently by adequate regulations.

#### I. Surveillance

Use of drones for mass or private surveillance should be understood in the context of digital technologies that aim to revolutionize our daily lives, by having more detailed records about private individuals.<sup>17</sup> With the advancement in camera resolution and higher altitude capabilities, it has created a scenario where people may be unaware that they are under constant surveillance. By the virtue of their design and size, drones have the capability of operating undetected, allowing the user to monitor people without their knowledge. For instance, there are drones with super high-resolution gigapixel cameras that can be used to track people and vehicles from altitudes as high

8. <https://www.reuters.com/article/us-medical-drones-idUSKBN0GF1720140815>

9. <http://www.deccanherald.com/content/501388/drones-may-soon-used-organ.html>

10. <http://www.directionsmag.com/entry/future-trends-newest-drone-tech-revealed-at-ces-2016/462157>

11. <http://www.businessinsider.in/The-fire-in-Alberta-doubled-in-size-on-Saturday-and-firefighters-are-using-drones-to-fight-it/articleshow/52170421.cms>

12. <http://www.businessinsider.in/Now-a-drone-that-detects-LPG-gas-leak-and-delivers-emergency-medical-kits/articleshow/48467531.cms>

13. <https://futurism.com/the-byte/aerovironment-softbank-5g-drone-uav>

14. <https://singularityhub.com/2017/05/05/why-the-fast-paced-world-of-drone-sports-is-getting-so-popular/#sm.ooofqku9k1sg8etyjkmkeysbdp2>

15. <https://timesofindia.indiatimes.com/city/hyderabad/hidden-ganja-crop-unravalled-by-drone/articleshow/67781197.cms>

16. <https://www.brookings.edu/testimonies/border-security-and-comprehensive-immigration-reform/>

17. <http://harvardlawreview.org/2013/05/the-dangers-of-surveillance/>

as 20,000 feet.<sup>18</sup> Hence, use of drones from a surveillance perspective should always be balanced from a national security and privacy perspective.

## II. Hacking

The drones are used by the government for maintaining law and order; and for patrolling the borders, generally contain sensitive information. However, like every computer resource, drones may also get compromised and may get vulnerable to spoofing, hacking and jamming.<sup>19</sup> Accuracy has been an issue of concern as drones can capture footage from its camera apparatus and relay the footage captured to the pilot. However, if the channel used for transfer of information is not secured between the drone and the receiver, then such information can be captured by an unrelated third-party from the drone before reaching the receiver, they could then alter the information, create an inaccurate representation of the footage captured. In one instance, drug traffickers across the Mexican border successfully hacked the US Department of Homeland Security and the US Customs and Border Protection UAVs by sending wrong GPS coordinates, making it possible for them to avoid surveillance and cross the border.<sup>20</sup> Apart from being compromised, drones can be used to also hack other devices.

Hence, there is a need to ensure that adequate measures are taken to maintain high encryption standards for the data stored on drones and necessary regulations are enacted which prescribes penalties for unauthorized hacking.

## III. Potential Security Hazards

The opening up of respective national skies for the private and domestic use of UAVs, can potentially have globally abhorrent effects at both commercial and federal levels. There can be instances wherein a civilian drone pilot flying his drone in civilian airspace, however, if he accidentally enters military airspace, and gets access to information which the public is not allowed to see or have access to. It also increases the risk of possible accidents caused by collisions, battery failures, loss of navigational control or other equipment's etc. Some incidents have also been reported because of negligent use of drones. For example, in July 2014, a drone narrowly avoided a coalition with an Airbus A320 at the London's Heathrow Airport.<sup>21</sup> Drones pose a similar risk of injury on grounds caused due to crash impacts.

Hence, it is imperative that in order to avoid such hazards, UAVs should be equipped with the ability to detect and avoid other aircrafts while moving through the air. Additionally, the regulatory authorities must prescribe minimum quality and technology standards, which must be used for manufacturing of drones so as to mitigate the said risks.

18. <https://www.eff.org/deeplinks/2012/01/drones-are-watching-you>

19. <https://arxiv.org/pdf/1702.01251.pdf>

20. <https://www.hackread.com/us-border-patrol-drones-hacked-by-drug-cartels/>

21. <http://www.techrepublic.com/article/12-drone-disasters-that-show-why-the-faa-hates-drones/>

## 4. Global Drones Regulation

Numerous countries have thoroughly deliberated on various concerns involved with operations of UAVs and have laid down comprehensive legislations to regulate their use. This section briefly discusses the drone regulations worldwide.

### I. Global Standards

On November 28, the International Organization for Standardization (“ISO”) released the first ever draft global standard for drone operations, titled *Draft International Standard for Unmanned Aircraft Systems Operations*. Although ISO will publish the standard for global adoption in 2019, compliance is not mandatory.<sup>22</sup>

These standards propose “no-fly zones” to ensure adequate distance from critical and high-risk locations. It suggests that operators should respect privacy and data protection of the individuals. Crucially, it also seeks to formulate a set of uniform industry regulations for drone technology, to ensure safety and security. These proposed standards are one of the four sets that regulate aerial drones. The other three standards may focus on other relevant issues such as technical specifications, manufacturing quality, and traffic management.<sup>23</sup>

### II. United States of America

#### A. Federal regulations

The United States of America currently dominates the drone industry, in terms of manufacturing and usage. As per Federal Aviation Administration (“FAA”) report, the number of drones is estimated to cross 7 million by 2020, with recreational drones accounting for 4.3 million units.<sup>24</sup> Thus, to keep up with

the rapid pace of UAVs usage, the FAA and the respective states have provided for a plethora of legislations for their regulation.

In 2012, the USA Congress with an aim to address the safety concerns and to provide for uniformity throughout the national airspace, passed the FAA Modernization and Reform Act, 2012. The act requires the FAA to “develop a comprehensive plan to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system.”<sup>25</sup> It further mandates that a ‘model aircraft’ which could be a drone: i) must not weigh more than 55 pounds; ii) must be within the visual line of sight of the operator; iii) must be used only for recreational or hobby purposes. Model aircrafts are covered by Federal Aviation Regulation (“FAR”) 101 which came into force in August 29, 2016.<sup>26</sup>

At present, any federal, state or local agency wanting to operate a drone in national airspace needs a certificate of authorization from the FAA, whereas the commercial use of drones is allowed in compliance with FAA regulations and guidelines for private commercial use and the state-specific guidelines. FAA also plans to create test ranges and designating specific airspace throughout the country to be used to operate drone flights to develop better certification and air traffic standards.<sup>27</sup>

FAA and the USA Department of Transport also issued an Interim Final Rule of 14 CFR “Aeronautics and Space” Part 48, *Registration and Marking Requirements for Small Unmanned Aircraft*. The rules require providing for registration of anyone above 13 years of age to register with FAA, for operating drones outdoors for a hobby or recreational purposes, before taking the outdoor flight. Additionally, Rule 91.13 of the Federal Aviation Regulations prohibiting careless and reckless operations of

22. <https://www.iso.org/standard/70835.html?browse=tc>

23. <https://dronelife.com/2018/11/22/iso-proposes-global-drone-standards/>

24. <http://www.govtech.com/public-safety/Drone-Sales-Could-Reach-7-Million-by-2020-FAA-Says.html>

25. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2357657](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2357657)

26. <http://www.lexology.com/library/detail.aspx?g=246a14e9-c2c1-40e8-949c-c90e28cf287>

27. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2357657](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2357657)

aircrafts is also applicable to drones, as per the case of *FAA v. Pirker*<sup>28</sup> where it was observed that drones fall within the definition of ‘aircraft’ for the purposes of this FAR.

In furtherance to this, FAA has asserted a much wider control by using its Interpretation<sup>29</sup> of the FAA Modernization and Reform Act of 2012 (‘FMRA’), stating that all existing FARs apply to drones as the FAA includes ‘model aircraft’ in its definition of ‘Aircrafts’, to which the FARs are applicable in law. While the USA Supreme Court has held that the interpretations of a federal agency are not legislative rules, and do not have the force and effect of law, they continue to stand unless found to be arbitrary.<sup>30</sup>

## B. Exemptions for commercial purposes

The commercial use of drones is prohibited, however, FAA provides for certain exemptions to fly drones commercially, provided that other compliances, such as requirement for operator to obtain a private pilot’s license, are met.<sup>31</sup> The FAA has laid down a procedure under which people can obtain exemptions under S.333 of the FMRA in order to fly their drone commercially.<sup>32</sup> This exemption is granted to certain FARs if i) they demonstrably burden the applicant, ii) the applicant adheres to the minimum standard of safety envisaged by the regulations, and iii) it is in the interests of the public.

## C. Small Unmanned Aircraft Rule (Part 107)

The FAA had come out with the final version of small Unmanned Aircraft System (“UAS”), which came into effect on August 29, 2016.<sup>33</sup> Part 107 regulation provided for detailed operational limits along with the certification process and responsibilities for remote pilots in command.<sup>34</sup> It allows for operation of drones without applying for a Section 333 exemption. This regulation was significantly different as it does not require operators to pass a medical exam or file any Notice to Airmen (“NOTAM”) prior to commencing a drone operation. It required operators to only obtain a remote pilot certificate by passing an online test regarding the new regulation<sup>35</sup> and a basic aeronautical knowledge test rather than acquiring any form of pilot’s license,<sup>36</sup> which had been a roadblock.<sup>37</sup> Furthermore, the regulation required person flying the drone to be at least 16 years old or be directly supervised by someone holding a remote pilot certificate. It further obligates a drone operator to ensure that the drone is safe prior to flying by performing a pre-flight visual and operational check of small UAS and checking the communication links between the control station and the UAS.<sup>38</sup>

Part 107 was hailed as a step forward, however it was also criticized since it still did not allow flight beyond visual range of the operator and restricts the flight to daytime.<sup>39</sup> The continuing restriction on beyond visual range operations rules out implementation of drone deliveries (as they would have to travel kilometers), to the frustration of companies like Amazon and Google, and delivery is specifically left out of

28. *FAA v. Pirker*, NTSB Docket CP-217, July 18, 2013.

29. Federal Aviation Administration, Interpretation of the Special Rule for Model Aircraft, 14 CFR Part 91, available at: [http://www.faa.gov/uas/media/model\\_aircraft\\_spec\\_rule.pdf](http://www.faa.gov/uas/media/model_aircraft_spec_rule.pdf)

30. *Perez v Banker* 135 S. Ct. 1199

31. Peter Sachs, Current U.S. Drone Law, DRONE LAW JOURNAL <http://dronelawjournal.com>.

32. Peter Sachs, Current U.S. Drone Law, DRONE LAW JOURNAL <http://dronelawjournal.com>.

33. <http://www.lexology.com/library/detail.aspx?g=446a14e9-c2c1-40c8-949c-c90e28ef287>

34. [http://www.faa.gov/uas/media/Part\\_107\\_Summary.pdf](http://www.faa.gov/uas/media/Part_107_Summary.pdf)

35. <http://motherboard.vice.com/read/the-faas-new-commercial-drone-regulations-are-a-mess-for-hobby-pilots>

36. <http://waypoint.sensefly.com/u-s-drone-rules-part-107-explained/>

37. <http://dronelife.com/2016/05/17/what-is-part-107/>

38. [https://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=20515](https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20515)

39. <http://dronelife.com/2016/06/21/industry-reaction-part-107/>



the ambit of possible waiver under Part 107.<sup>40</sup> Further in all cases the combined weight cannot exceed 55lbs.

The FAA<sup>41</sup> grants a Certificate of Waiver or Authorization ('COA'), which can be exercised under the S. 333 exemption as well as new Part 107. The terms of CoA for the purpose of Part 107 will permit activities otherwise proscribed such as, operation from a moving vehicle, beyond visual line of sight operation (however, this explicitly excludes delivery), operations in restricted airspace, operating multiple small aircrafts, operations over uninvolved people, etc.<sup>42</sup>

Recently in April of 2019, Wing Aviation LLC, which is a subsidiary of Alphabet Inc., became the first drone operator to receive government approval to function as an airline. This approval is a forward-looking step in terms of acceptance by any government towards drone operations aimed at delivering products to customers. Although, permissions to operate drones over urban areas as well as crowded areas were not granted for such operations but the approval allows Wing to make any delivery on behalf of its customers on a chargeable basis. This further opens up possibilities for many more such operations by different companies to seek the same approval and expand their footprints in the growing drones market.<sup>43</sup>

## D. State Legislations

As the American Federal Government has exclusive sovereignty over the American airspace, federal enactments pre-empt any state enactment on this issue. Therefore, state governments are blocked out of legislating on this issued due to the passage of the FMRA, which confirms the federal government's intent to continue to "occupy the field" of flight.

However, states are at the liberty to provide for ancillary regulations such as providing for security safeguards, segregating no fly zone whereby forty-five states have introduced legislation to protect privacy and limit the use of drones.<sup>44</sup> Furthermore, certain states like the District of Columbia are a complete no-fly zone for UAVs. The rules set forth after the 9/11 attacks consign the airspace over the area to the category of '*National Defence Airspace*', and limit aircraft operations to those with an FAA and Transportation Security Administration authorization.

## III. Canada

The Transport Canada is responsible for regulation of all drones used for recreational purpose or for other state uses such as police drones, except for military drones. Additionally, Drone operators are allowed to undertake commercial operations. However, a separate commercial drone pilot certification must be obtained, namely a Special Flight Operations Certificate ("SFOC") from the TCAA unless they meet the strict safety conditions of the TCAA's exemptions.<sup>45</sup>

SFOC is a two-step process for drone registration. The first step involved authorization followed by a gradual certification process. The SFOC is issued initially for a specific mission with specific conditions, which restricts the certificate holder to a particular flight plan, to be executed with a specific model of drone. If the operator develops a good track record of successful flights, the authorization is broadened to include larger geographic area, longer validity periods to cover multiple flights.<sup>46</sup> As per SFOC process, drones with maximum take-off weight lesser than 2 kg weighing between 2 kg-25 kg, do not require SFOC.<sup>47</sup>

40. Peter Sachs, Commercial drone law, DRONE LAW JOURNAL <http://dronelawjournal.com/commercial/>

41. Peter Sachs, Current U.S. Drone Law, DRONE LAW JOURNAL <http://dronelawjournal.com>.

42. Peter Sachs, Commercial drone law, DRONE LAW JOURNAL <http://dronelawjournal.com/commercial/>

43. <https://www.hindustantimes.com/tech/google-s-wing-aviation-gets-faa-approval-for-drone-deliveries-in-us/story-a2aM63GPTZ8bfedDWTxRPK.html>

44. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2357657](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2357657)

45. <https://uaavcoach.com/drone-laws-in-canada>

46. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2571490](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2571490)

47. <https://www.tc.gc.ca/eng/civilaviation/opssvs/ac-600-004-2136.html>

## IV. The European Union

Similar to the United States, the EU also provides for detailed set of regulations for regulating drone operation. The European Aviation Safety Agency (“EASA”) in December 2015 released the following notes titled:

“*Introduction of Regulatory Framework for the Operation of Unmanned Aircraft*” and “*Proposed Concept of Operations for Drones*”, with regard to the regulation pertaining to the use and operation of drones.<sup>48</sup> These notes provide feedback for EASA members and other stakeholders such as manufacturers and operators of regulatory framework for operation of drones. Based on the nature and purpose, the notes divide drones in the following categories:

- *Open* – These drones do not require an authorisation by an aviation authority for the flight but need to carry out their flight within defined limitations;
- *Specific* – These drones require an operations authorisation by an aviation authority with specific limitations adapted to the operation;
- *Certified* – These are drones with a higher risk associated with them due to the kind of operation they are used for. Such drones require certification from the relevant aviation authorities.

Notably, while the FAA regulations categories drones by size and shape, the EASA regulations go for more risk-based categories. The EU regulations are focused on licenses and certifications, as noted above. Accordingly, permissions have to be sought from the aviation authority and an airworthiness certificate has to be obtained before a pilot is allowed to fly a drone.

With respect to the privacy and data protection ramifications, the EU has released a report<sup>49</sup> evaluating the implications of drones. As per the report, Europe’s existing regulatory framework

is adequate to address the concerns posed by the emergent technology. There are certain pre-conditions, which need to be addressed, to ensure that drones do not pose serious risks to citizens’ fundamental rights to privacy and data protection, to security and to safety. In order to address these privacy concerns, the EASA has suggested to install chips/SIM cards in drones and direct operators to self-register in a web based application maintained by the local authorities.

On 11 June 2019, EASA released the Europe-wide rules on drones, namely European Commission Delegated Regulation (EU) 2019/945, which set out rules for the safe and secure use of drones and the European Commission Implementing Regulation (EU) 2019/947, which sets out rules for the design and manufacture of drones. These rules will play an instrumental role in securing the safety and the privacy of EU citizens while enabling the operation of drones and a level playing field within the European Union.

## V. Germany

In Germany, the German Aviation Act, 2007 (*Luftverkehrsgesetz*’ or *LuftVG*) was amended classifying RPAS as an aircraft for non-commercial purposes on the fulfilment of certain physical conditions.<sup>50</sup> Such flights faced certain restrictions under S. 6(4) regarding use in certain zones, and a use-based permissions criterion.

The German Federal Ministry of Transport and Digital Infrastructure<sup>51</sup> have proposed new rules<sup>52</sup> for both commercial unmanned systems as well as recreational UAS operations, with relevant prospective legislations to effectuate such changes.

As per the rules, i) all drones weighing over 0.5 kilograms, regardless of their use, must obtain individual license plates for identification purposes. ii) For commercial purposes, the ministry has the discretion to permit on a case-

48. <https://www.easa.europa.eu/easa-and-you/key-topics/civil-drones-rpas>

49. [http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/519221/IPOL\\_IDA\(2015\)519221\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/519221/IPOL_IDA(2015)519221_EN.pdf)

50. Per § 1(2) German Aviation Act, <http://www.gesetze-im-internet.de/luftvg/BjNRoo6810922.html>

51. [http://www.bmvi.de/EN/Home/home\\_node.html](http://www.bmvi.de/EN/Home/home_node.html)

52. <http://www.bmvi.de/SharedDocs/DE/Artikel/K/151108-drohnen.html>

to-case beyond line of sight flights, pending the determination of safe operations. However, what constitutes 'safe operation' is considerably opened. The rules also provide for separate set of regulations for UAVs flights for recreational purposes. According to these rules, recreational flights above 100 meters and out beyond visual line-of-sight are to be forbidden. More no-fly zones have been proposed, namely the airspace over railroads, power plants, industrial facilities and other critical infrastructure such as power transmission networks.

## VI. United Kingdom

The Civil Aviation Authority of the United Kingdom ("CAA") is responsible for regulation of all drones used in UK for recreational or commercial purpose. The Regulations are contained within the Air Navigation Order ("ANO") of 2016.<sup>53</sup> Permissions and/or exemptions obtained under the ANO are valid for up to 12 months and are subject to an annual renewal.

These permissions or exemptions are subject to the conditions and limitations that are specified within the individual authorization document.

The CAA restricts drones to undertake operations BVLOS in the UK. If a drone operator seeks to undertake commercial operations, a special permit is required to be obtained from the CAA.<sup>54</sup> In January 2018, the CAA published an assessment of the drone safety risk.<sup>55</sup> On July 2018, it published a guidance for small unmanned aircraft users with an outline of the revised regulations to provide guidance on the effects of the changes and how they will be interpreted by the CAA. These guidelines were subsequently updated and replaced on February 28, 2019.<sup>56</sup>

It is also pertinent to note that the CAA is building a drone registration service which can be availed by drone pilots and operators. Registration and remote pilot competency requirements will come into force in November 2019. Additionally, as per media reports, the police personnel in the UK will soon be equipped with new powers to tackle and combat the illegal use of drones.<sup>57</sup>

## VII. Italy

The Italian Civil Aviation Authority or Ente Nazionale l'Aviazione Civile ("ENAC") is the nodal agency for governing all drones used in Italy. In Italy, remoted piloted aircraft or drones are becoming contagiously popular for many activities. ENAC, has specifically focused on operations in critical areas and BVLOS operations in non-segregated airspace. Procedures for drone's activities have been issued in ATM-05 circular.<sup>58</sup>

For undertaking commercial operations, there is a requirement to obtain a commercial drone pilot certification. The process includes conducting low-risk operations and submitting a statement of compliance with specific requirements to ENAC along with a 94 Euro processing fee. For higher risk operations, commercial drone pilots must obtain a training and operating certificate as well as a health certificate.<sup>59</sup> Drones can be used at night too, subject to the approval from ENAC.<sup>60</sup> Additionally, BVLOS operations are allowed subject to risk assessment performed by the RPAS operator. On 24 March 2017, ENAC introduced a new safety legal framework, which clarifies ENAC's competency in case of accidents.

53. <https://www.caa.co.uk/Commercial-industry/Aircraft/Unmanned-aircraft/Small-drones/Regulations-relating-to-the-commercial-use-of-small-drones/>

54. <https://www.caa.co.uk/Commercial-industry/Aircraft/Unmanned-aircraft/Small-drones/Regulations-relating-to-the-commercial-use-of-small-drones/>

55. [http://publicapps.caa.co.uk/docs/33/CAP1627\\_Jan2018.pdf](http://publicapps.caa.co.uk/docs/33/CAP1627_Jan2018.pdf)

56. <http://publicapps.caa.co.uk/docs/33/CAP1763%20New%20UAS%20guidance%20Feb%202019.pdf>

57. <https://www.euronews.com/2019/01/08/uk-introduces-new-drone-measures-to-protect-aircraft>

58. <https://www.enac.gov.it/la-normativa/normativa-enac/circolari/serie-atm/atm-05a>

59. [https://www.enac.gov.it/repository/ContentManagement/information/N1068541283/Regulation\\_RPAS\\_Issue\\_2\\_Rev\\_3\\_eng.pdf](https://www.enac.gov.it/repository/ContentManagement/information/N1068541283/Regulation_RPAS_Issue_2_Rev_3_eng.pdf)

60. *Ibid*

Interestingly, Italian luxury fashion giant Dolce and Gabbana recently used a procession of drones to introduce their new line of premium purses and handbags, with a different showpiece item hanging from the bottom of each drone.<sup>61</sup>

## VIII. France

La Direction Générale de l'Aviation Civile (“DGCA”) which is the French Civil Aviation Authority is the governing body for all the UAVs in France. Drones are regulated in France by virtue of Order of December 17, 2015, Regarding the Use of Airspace by Unmanned Aircraft] (“**Airspace Order**”)<sup>62</sup> and Order of December 17, 2015, regarding the Creation of Unmanned Civil Aircraft, the Conditions of their Use, and the Required Aptitudes of the Persons that Use them] (“**Creation and Use Order**”).<sup>63</sup>

Under the Creation and Use Order, drones should stay within their pilot’s line of sight. However, extended visual line of sight is permitted if a second person keeps the drone in their view while it is outside of the pilot’s view. EVLOS operations are permitted for drones weighing less than 2 kilograms, flying below 200 meters from its pilot.

The Airspace Order permits drones to fly at night subject to authorization from the authorities. Similarly, for commercial activities a special permit is required to be taken from the civil aviation authorities.<sup>64</sup> Further, drones flown for hobby and competition purposes may fly at night within specific preauthorized areas.<sup>65</sup> Additionally, drones may fly autonomously and weigh less than 1 kilogram and fly for less than eight minutes.

61. <https://www.wetalkuav.com/drones-model-fashion/>

62. <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000031679868&dateTexte=20160330>

63. *Ibid*

64. <https://www.loc.gov/law/help/regulation-of-drones/france.php>

65. <https://uavcoach.com/drone-laws-in-france/>

## IX. Ghana

The Ghana Civil Aviation Authority (“GCAA”) is the regulatory body for all UAV operations in the country. Drones are allowed to operate only within VLOS, though spotters are allowed.<sup>66</sup> Commercial discharge is allowed, though all commercial drone controllers require an RPAS Operating Certificate from the Civil Aviation Authority.<sup>67</sup> Drones are only approved in Ghana if they have an insurance. Additionally, night flights are allowed with prior approval from the CAA.<sup>68</sup> Remotely piloted aircraft system operators are also required to comply with the Detect and Avoid (DAA) procedures.<sup>69</sup>

The government of Ghana has showcased interest in drones to deliver medical supplies and blood vessels to hospitals nationwide, especially in remote areas. The Ministry of Health has signed a Letter of Intent with USA-based Zipline International Inc. to offer a drone-enabled supply chain solution in Ghana that will ensure deliveries of medical products and supplies to hospitals and other health facilities. The service seeks to leverage the drone technology to improve the supply chain of critical medical supplies and save lives.<sup>70</sup>

## X. Singapore

The Civil Aviation Authority of Singapore (“CAAS”) is the nodal agency governing operations of all UAVs in the country. All operations are governed by Chapter 6, Section-3 of the Air Navigation Act.<sup>71</sup> In Singapore, drones are allowed to fly only within VLOS.

66. [http://www.gcaa.com.gh/web/wp-content/uploads/2018/directives/GCA\\_FLIGHT\\_STANDARDS\\_DIRECTIVE/PART\\_28\\_REMOTELY\\_PILOTED\\_AIRCRAFT\\_SYSTEMS\\_DIRECTIVES.pdf](http://www.gcaa.com.gh/web/wp-content/uploads/2018/directives/GCA_FLIGHT_STANDARDS_DIRECTIVE/PART_28_REMOTELY_PILOTED_AIRCRAFT_SYSTEMS_DIRECTIVES.pdf)

67. *Ibid*

68. *Ibid*

69. [http://www.gcaa.com.gh/web/wp-content/uploads/2018/directives/GCA\\_FLIGHT\\_STANDARDS\\_DIRECTIVE/PART\\_28\\_REMOTELY\\_PILOTED\\_AIRCRAFT\\_SYSTEMS\\_DIRECTIVES.pdf](http://www.gcaa.com.gh/web/wp-content/uploads/2018/directives/GCA_FLIGHT_STANDARDS_DIRECTIVE/PART_28_REMOTELY_PILOTED_AIRCRAFT_SYSTEMS_DIRECTIVES.pdf)

70. <http://www.ghanahhealthservice.org/ghs-item-details.php?scid=22&iid=138>

71. <https://www.caas.gov.sg/public-passengers/unmanned-aircraft-systems>

Further, any commercial Operations that are to be undertaken are only allowed subject to approval.<sup>72</sup> Further, Operator Permit and Class I activity permit is also required to operate drones commercially.<sup>73</sup>

From the perspective of regulating the operation of drones in Singapore, the Republic of Singapore Air Force has several weapons at its disposal, including a jammer gun, which emits signals that can jam the control signals of drones, as well as a drone catcher system, which uses a net to catch them. According to media reports, CAAS plans on developing a system to monitor and check if individual drones are operating under a valid permit, and issue alerts to pilots who fall foul of regulations.<sup>74</sup>

## XI. Rwanda

The Civil Aviation Authority (“CAA”) of Rwanda is the regulatory body for all UAVs in Rwanda. All drones are required to be registered and have to be marked by a number assigned by the CAA.<sup>75</sup> Additionally, drone operations in Rwanda are restricted to maximum distance between pilot and drone of 300 meters, as long as direct visual contact is maintained. All drones are required to have an insurance and a separate RPA activity permit and RPA Operator permit are required for commercial use.<sup>76</sup> Also, commercial discharge is allowed. Interestingly, Rwanda is the first country to have implemented the Performance Based Regulations.<sup>77</sup>

## XII. China

The Civil Aviation Administration of China (“CAAC”) is the governing body for all UAV operations in the country. Only VLOS is allowed in China.<sup>78</sup> Drone flights are allowed over controlled airspace subject to prior approval from CAAC.<sup>79</sup> Any drone weighing over 116Kg requires a pilot’s license and UAV certification for operation.<sup>80</sup>

As per the 2019 regulations, 120m (400ft) is the maximum altitude permitted for undertaking operations. For drones operating higher than the limit would qualify as commercial operations which are allowed subject to approval from CAAC. Additionally, drone operators are obligated to cover their liability for third parties on the ground through insurance.<sup>81</sup>

In April, 2019 China successfully conducted their testing for a new breed of drones. This new technology that China tested was for the world’s first amphibian drone boat. The officials claimed that this boat was fully capable of land assault operations, forming a combat triad with aerial drones and other drone ships. The Chinese military, which is known to be the world’s largest military, has invested a considerable amount in developing new technologies which can give them an edge in warfare.<sup>82</sup>

72. <https://www.caas.gov.sg/docs/default-source/pdf/air-navigation-order.pdf>

73. <https://www.caas.gov.sg/public-passengers/unmanned-aircraft-systems/permit-application>

74. <https://www.straitstimes.com/singapore/transport/in-singapore-tightened-laws-on-drone-use-still-under-review>

75. [https://www.caa.gov.rw/fileadmin/templates/Regulatory\\_Services/Frequently\\_asked\\_questions\\_on\\_flying\\_drones\\_in\\_Rwanda.pdf](https://www.caa.gov.rw/fileadmin/templates/Regulatory_Services/Frequently_asked_questions_on_flying_drones_in_Rwanda.pdf)

76. [https://www.caa.gov.rw/fileadmin/templates/Regulatory\\_Services/Frequently\\_asked\\_questions\\_on\\_flying\\_drones\\_in\\_Rwanda.pdf](https://www.caa.gov.rw/fileadmin/templates/Regulatory_Services/Frequently_asked_questions_on_flying_drones_in_Rwanda.pdf)

77. <https://www.weforum.org/communities/drones-and-tomorrow-s-airspace>

78. <https://uavcoach.com/drone-laws-in-china/>

79. <https://www.uavsystemsinternational.com/drone-laws-by-country/china-drone-laws/>

80. <https://uavcoach.com/drone-laws-in-china/>

81. <https://www.travelchinacheaper.com/flying-drone-china-regulations>

82. <https://economicstimes.indiatimes.com/news/defence/china-develops-worlds-first-armed-amphibious-drone-boat-report/articleshow/68886661.cms?from=mdr>

## 5. Drones Regulation in India

### I. The Present scenario

Drones have been used in India for an extended period of time, however their use caught public imagination when a pizzeria in Mumbai delivered a pizza to much fanfare in May, 2014.<sup>83</sup> The police, realizing that there were no regulations on drones, banned their use.<sup>84</sup> In 2014, the Directorate General of Civil Aviation (“DGCA”) had issued a public notice announcing its intention to release guidelines to regulate the civil use of unmanned aircrafts. The notice clarified that until the formulation of regulations, there would be a blanket ban on civil use of drones by any individual, organization or non-governmental agency.<sup>85</sup> Further, the Directorate General of Foreign Trade (“DGFT”) added another legal hindrance by way of a notification issued to restrict the import of drones.<sup>86</sup> Thus, the civilian use and import of drones was banned in India.<sup>87</sup> Post this notification, in April, 2016 the DGCA released draft guidelines on possible future drone regulations in India.<sup>88</sup>

Subsequently, pursuant a circular issued by the Director General of Civil Aviation (“DGCA”) dated August 27, 2018,<sup>89</sup> the Government introduced the Civil Aviation Requirements for remotely piloted aircrafts systems (“CAR 1.0”), ending a long period of ambiguity and paving the way for civil use of drones in India. CAR 1.0 defines what will be classified as RPAS, how they can be flown and the restrictions they will have to operate under.

83. [http://www.telegraphindia.com/1140522/jsp/nation/story\\_18368920.jsp#.V3JATfI97IU](http://www.telegraphindia.com/1140522/jsp/nation/story_18368920.jsp#.V3JATfI97IU)

84. <http://www.mumbaiirror.com/mumbai/others/Police-ban-Drones-from-city-skies/articleshow/41661016.cms>

85. [http://dgca.nic.in/public\\_notice/PN\\_UAS.pdf](http://dgca.nic.in/public_notice/PN_UAS.pdf)

86. [http://dgft.gov.in/Exim/2000/NOT/NOT16/Notification\\_No.16\\_\(English\).pdf](http://dgft.gov.in/Exim/2000/NOT/NOT16/Notification_No.16_(English).pdf)

87. [http://dgft.gov.in/Exim/2000/NOT/NOT16/Notification\\_No.16\\_\(English\).pdf](http://dgft.gov.in/Exim/2000/NOT/NOT16/Notification_No.16_(English).pdf)

88. [http://www.dgca.nic.in/misc/draft%20circular/AT\\_Circular%20-%20Civil\\_UAS\(Draft%20April%202016\).pdf](http://www.dgca.nic.in/misc/draft%20circular/AT_Circular%20-%20Civil_UAS(Draft%20April%202016).pdf)

89. <http://dgca.nic.in/cars/D3X-X1.pdf>

### II. Key features of the CAR

#### A. Introduction of DigitalSky Platform

CAR 1.0 introduces an all-digital-process for registering, operating and monitoring drones in India, namely the ‘DigitalSky Platform’ enabling a one-time digital registration process for drones, pilots and owners as well as monitoring drone traffic.

The press release dated August 27, 2018 issued by the Ministry of Civil Aviation states that the DigitalSky Platform is intended to include a unique unmanned traffic management (“UTM”) platform that implements “no-permission, no takeoff” (“NPNT”).

The purpose of the UTM is to ensure that each time an operator decides to fly a drone (with drones under the Nano category intending to operate up to 50 feet being the exception), they would require requisite permission to fly. Such permission is to be obtained through a mobile application with the permission or denial of the request to be granted vis-à-vis an automated process. Any drone that does not have a digital permit will not be able to take-off. It would only take off on obtaining requisite permission. Such a digitized process intends to prevent unauthorized flights altogether and avoid regulatory red-tape, while at the same time enabling efficient registration, regulation, monitoring and ensuring public safety.

Although, the initiative of the Digital Sky Platform was welcomed by the Industry because it offered a sophisticated system for operations of drones that could expedite development of their use but the implementation and functioning of the portal has not yet lived up to its expectations. However, the government is in the process of ironing out issues of the DigitalSky Platform and hopefully the site should run seamlessly in the next few months.

## B. Classification of Drones

The categorization of drones has been made in accordance with the maximum All-Up-Weight (including payload) as indicated below:

- i. *Nano*: Less than or equal to 250 grams.
- ii. *Micro*: Greater than 250 grams and less than or equal to 2 kg.
- iii. *Small*: Greater than 2 kg and less than or equal to 25 kg.
- iv. *Medium*: Greater than 25 kg and less than or equal to 150 kg.
- v. *Large*: Greater than 150 kg.

The All-Up-Weight is a key determinant of the regulatory requirements and relaxations granted to a particular drone and compliances that must be adhered to while applying for ownership and operating drones. This is important because drones in the Nano and Micro category are exempt from certain regulatory requirements.

The All-Up-Weight includes not just the weight of the drone itself but also of the weight of the extra materials that it may be carrying, including the weight of the fuel that it may hold. Persons interested in the ownership or operation of drones must be aware of the functions and purpose of the drone, including the maximum weight of the payload and the fuel, if any, before assessing the application requirements.

## C. Import of Drones

CAR 1.0 now allows for the import of drones, albeit with certain regulatory requirements, in place. Entities that intend on importing drones into India shall first have to obtain an Equipment Type Approval (“ETA”) from the Wireless Planning and Coordination (“WPC”) wing of India’s Department of Telecommunication (“DoT”) for operating drones in de-licensed frequency bands. De-licensed frequency bands are low frequency bands, which for instance, facilitate communication between connected vehicles in the automotive industry. Drones will now also

run on such de-licensed frequency bands.

On obtaining the ETAs, the importers are then required to obtain import clearance from the DGCA. Details of the Drone, including the maximum All-Up-Weight, maximum height attainable, foreign manufacturer details, purpose of operations and security clearance (along with other details) are to be provided. Such details shall be vetted by the DGCA and on case-to-case basis, the DGCA shall accordingly provide the import clearance. Based on the import clearance received from the DGCA, the Director General of Foreign Trade (“DGFT”) shall subsequently issue the license for the import of the Drones.

*Only on obtaining the clearance from DGCA and the license from DGFT can the importers then proceed to obtain a unique identification number (“UIN”) and unmanned aircraft operator permits (“UAOP”) which are necessary to fly / operate the drone. Process for obtaining UIN and UAOP is detailed below.*

However, there is no specific approval process or time-line provided within which the WPC, DGCA and DGFT shall provide the necessary import clearances. Also, it is not clear whether the import clearances would be linked to the online Digital Sky Platform. Thus, there remains ambiguity with respect to the time / effort which may be required for obtaining such clearances.

## D. Domestically manufactured Drones

Although drones manufactured in India do not require DGFT/DGCA import clearances, they still need to obtain ETA approvals from the WPC for operating in de-licensed frequency bands. In addition, UIN and UAOP would also be needed before operating / flying a drone.

Do note that apart from the above process, local drone manufacturers may also need to procure an industrial license from the Department of Industry and Internal Trade (“DPIIT”) (formerly known as the Department of Industrial Policy and Promotion (“DIPP”)) for manufacturing of drones in India. Primary reason being that drones fall under the category of dual

use (defense and civil use), hence triggering the industrial license requirements. This might prove to be a disadvantage to domestic manufacturers in comparison with drone importers who would not be required to procure such industrial licenses.

## E. Eligibility for Ownership

To be eligible to apply for UIN, the Drone must be wholly owned:

- a. By a Citizen of India; or
- b. By the Central Government or State Government or any company or corporation owned or controlled by either of the said Governments; or
- c. By a company or a body corporate provided that:
  - i. It is registered and has its principle place of business within India;
  - ii. Its chairman and at least two-thirds of its directors are citizens of India;
  - iii. Its substantial ownership and effective control is vested in Indian Nationals;

Or;

- d. By a company or company registered elsewhere than in India provided that it has leased the drone to any organization mentioned in b and c above.

CAR 1.0 prevents foreign nationals and subsidiaries of foreign companies from applying for a UIN to own a drone. This provision will most likely discourage foreign drone players entering into the Indian market as their Indian subsidiaries will not be able to own / operate drones in India. This may also disincentivize foreign players from investing in the Indian drone market.

## F. Ownership: Unique Identification Number (UIN)

Having ensured that the ETA (and other relevant approvals for import of drones) have been duly obtained, to be eligible to own/

operate drones, one will need a UIN. However, drone in the Nano category intended to fly up to 50 feet above ground level in uncontrolled airspace, enclosed premises for commercial, recreational or research and development purposes, and those owned by the National Technical Research Organisation (“**NTRO**”), Aviation Research Centre (“**ARC**”) and Central Intelligence Agency (“**CIA**”) (collectively referred to as “**Government Agencies**”) are exempt from this requirement.

CAR 1.0 has provided detailed specifications on what is to be included in the UIN application including the prescribed form for the said application. Details of the owner, purpose and base of operations, specifications of the drone, maximum All-Up-Weight, equipment specifications etc. need to be provided for obtaining a UIN. In addition, security clearance is also required from the Ministry of Home Affairs (“**MHA**”), which is a pre-requisite for obtaining the UIN.

Do note that Indian citizens may exempt themselves from the requirement of security clearance from the MHA by providing self-attested copies of at least two out of three valid identity proofs such as passport, driving license or Aadhar Card. In case of foreign remote pilots employed by Indian entities, the DGCA shall forward documents for security clearance to security agencies in accordance with the procedure to be followed by Foreign Aircrew Temporary Authorization (“**FATA**”) pilots. There is no specific time-line provided for this additional procedure.

As per CAR 1.0, DGCA shall issue the UIN within 02 working days, provided all relevant documents are duly submitted, Further, we understand that the submission of the documents / approval process would be via the online Digital Sky Platform. However, do note that there is no timeline provided within which the MHA needs to provide necessary security clearances.



## G. Operation of Drones: Unmanned Aircraft Operator Permit

Civil Drone operators for drones i.e. persons, organizations or enterprises engaged in or offering to engage in the operation of Drones (“Operators”) must acquire UAOP from DGCA by submitting an application through the Digital Sky Platform with the prescribed fee and in the prescribed form. Operators of Drones in the Nano Category and of Drones in the Micro Category flying up to 50 feet and 200 feet respectively, in uncontrolled airspace / enclosed premises, are exempt from the requirement of obtaining a UAOP. Similarly, Operators of Drones owned by Government Agencies are also exempt from this requirement. However, in the case of Micro Drones, the operator will have to inform the concerned local police office twenty-four hours before operating the drone.

The application for a UAOP, to be submitted through the Digital Sky Platform, is to include details of the Standard Operating Procedure (“SOP”) and requisite permissions from the property owners of areas where the take-off and landing of the Drone would take place. The Operator, in its application, must also provide details of the remote pilot, with either the security clearance from MHA or self-attested copies of at least two out of three valid government issued identification proofs viz. Passport, Driving License or Aadhaar Card in addition to the copies of the training records, insurance details and the security programme.

Once submitted with all requisite details, the DGCA is required to issue the UAOP within 07 working days. Copies of the same must be provided to the MHA, Bureau of Civil Aviation Security, Indian Air Force, ATS providers, which includes the Airport Authority of India (“AAI”) and Ministry of Defence, and the concerned district administration. In case of a company or corporation registered outside India leasing a Drone to an Indian entity, only that Indian entity will be issued the UAOP.

The validity of UAOP shall be for a period of 05 years from the date of issue and shall not be transferrable.

## H. Remote Pilot: Training Requirements

To be eligible to fly a Drone, a remote pilot is required to be 18 years of age, should have passed a tenth standard exam in the English language and must have undergone thorough ground and practical training. However, these requirements will not apply for operation of drones in the Nano and Micro category.

The responsibility of providing ground training is upon DGCA approved Flying Training Organisations (“FTOs”). The training programme shall include teaching theoretical subjects which are intended to equip the pilots with knowledge equivalent to that undertaken by the aircrew of a manned aircraft or a private pilot license holder to enable him / her to control the operation of a drone under any and all circumstances. Similarly, for obtaining practical training, a five-day intensive syllabus and curriculum has been prescribed for training remote pilots. These requirements, to a certain extent, conform to international best standards such as in the United States, where a person must be at least 16 years of age and must pass an Aeronautical Knowledge Test (“AKT”) at an FAA-approved knowledge testing centre along with undergoing a Transportation Safety Administration (“TSA”) security screening. Similarly, in Australia, for a person to pilot a Drone in a commercial operation, he / she must hold a Drone Controller’s Certificate as well as a remote pilot licence (“RePL”).

## I. Equipment Standardization

All drones, with the exception of Nano Drones flying up to 50 feet, must incorporate standardised equipment with serviceable components. There are varying requirements depending on the flight height of the drone along with the airspace in which it is intended to fly (controlled / uncontrolled).

Such requirements include navigation satellite system, return home option, flashing anti-collision strobe lights, RFID and GSM SIM Card, being Digital Sky platform compliant for enabling real time tracking, fire resistant

identification plate with inscribed markings, and finally, a flight controller with the capability to log all the flight data etc.

Irrespective of the flight height of such Drones, all Drones must be equipped with the capability of establishing two-way communication between the remote pilot and the concerned air traffic service. Additionally, the tracking system on the Drones is required to be both self-powered and tamper proof so that even in cases of an accident, data can be transmitted. The movement of such Drones is to be monitored by the Indian Air Force (“IAF”) in coordination with the AAI.

## J. Flying Restrictions

CAR 1.0 requires that the drones ought to be operated within the visual line-of-sight and in the daytime-only. The visual line-of-sight requirement is in conformity with the present international norms and although it may limit some of the commercial applications of drones, as drone technology advances and commercial drones become the norm, such a requirement should undergo periodic relaxations.

CAR 1.0 also divides the air space into different zones, indicated as follows;

- No Drone Zones - Flying not permitted
- Controlled airspace — permission required before flying
- Uncontrolled airspace — automatic permission

## K. Drone Traffic Control

The Operator will have to obtain permission to fly the drone through the ‘Digital Sky Platform’ along with informing the local policy, prior to flying the drone. However, Nano drones are exempt from this obligation.

In addition, all remote pilots are required to file their respective flight plans at least 24 hours prior to taking flight along with necessary air traffic clearances. The exception to this rule is for Nano and Micro category drones intending to fly within the limits as prescribed under CAR 1.0.

To operate a drone in the controlled airspace, the remote pilot must establish and maintain communication with the Air Traffic Controller (“ATC”) before entering it. Such operators will also undertake safety risk assessment of such operations, both at the launch and the recovery site. Such take-off and landing sites should be segregated from public access and should be under the complete control of the drone operator. Designated safe areas ought to be established for emergency drone holding and termination of its flight.

Operators shall also be responsible for ensuring the privacy norms of all concerned entities.

Drones, at all times, will have to give way to manned aircrafts and shall not be allowed to discharge or drop any material or substance without special permission and specified in the UAOP.

## L. Consequences for violation of Provisions

In the event of violation of any provisions in CAR 1.0, the UIN/UAOP issued by the DGCA shall be suspended/cancelled by the DGCA. Since the UIN and UAOP are mandatory for operating drones, suspension/cancellation should deter users from violating norms.

It is also provided that breach of compliance of any of the requirements stated in this regulation and falsification of records/documents shall attract penalties under various sections of the Indian Penal Code (“IPC”) including section 287 (negligent conduct with respect to machinery), section 336 (act endangering life or personal safety of others), section 337 (causing hurt by endangering life or personal safety of others), section 338 (causing grievous hurt by act endangering life or personal safety of others) and any other relevant section of the IPC. The Local Police Office shall have jurisdiction for enforcement of violations of provisions of the IPC. It is also provided that necessary actions may be taken as per the relevant sections of the Aircraft Act, 1934 / the Aircraft Rules 1937 or any statutory provisions.

### III. Related Regulatory Framework

#### A. Foreign Direct Investment (“FDI”)

The erstwhile Department of Industry Policy and Promotion (now Department of Industrial Policy and Promotion (“DPIIT”)) issued a Press Note No. 3 (2014 series), that classified Drones / Unmanned Aerial Vehicles (“UAV”) as a ‘defence aircraft’, hence mandating an industrial license for the manufacture of drones. This applied even if the drones were being manufactured for civil purposes. Hence, Drones were deemed to be dual list items. Although, the DPIIT through Press Note 1 (2019 series) exempted a select category of UAVs, (“**Exempted Drones**”) from the meaning of ‘defence aircraft’, a large number of UAVs continue to fall outside the list of Exempted Drones. From an FDI perspective, drones which do not fall within the category of Exempted Drones would be classified as defence items, irrespective of their use. Hence, investments in such companies could be linked to the defence sector restrictions where FDI is permitted up to 49% under the automatic route (i.e. no prior approval of the Government is required), and beyond 49% (up to 100%) through government approval route.

Further, the current FDI policy is also not clear on the status of companies proposing to provide non-scheduled air transport service (delivery services via drones). The industry view being that such activities would fall under non-scheduled air transport service (for civil use) where 100% FDI is permitted under the automatic route.

#### B. Intellectual Property Rights

As more and more advanced drones are invented with unique utilities, it opens up avenues for protection by the grant of patents. For example, Amazon, one of the leading e-commerce websites, has applied for a patent for its delivery system drone that delivers products to the customer’s doorstep within 30 minutes of the

order.<sup>90</sup> To keep up with the competition in this space, even Walmart has applied for record 56 patents. Walmart is planning to use Drone to speed up its delivery system for its premium customers.<sup>91</sup> Boeing also obtained a patent for its “flying submarine” drone which is adaptable for both flight and water travel.<sup>92</sup> Under the Indian Patents Act, 1970 (“Act”), although there is no express restriction on filing patent applications in relation to drone inventions, specific procedures need to be adhered to if the invention has an impact on defense<sup>93</sup> or national security, and the grant of such patents may be subject to prior government approvals (*including the Indian Ministry of Defence*).

#### C. Security and Privacy Concerns

The current data protection laws fall under the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011. The Data Protection Rules mainly regulate the collection, use, storage, transfer and disclosure of personal data / sensitive personal data in India. The Information Technology Act, 2000 (the “IT Act”) provides for exhaustive rules for authorized monitoring of information stored on any electronic device or computer. The provisions for interception, i.e. Section 69 and Section 69B draw their language from the phone tapping provisions under the Telegraph Act.<sup>94</sup> The IT Act further provides for IT (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009 and IT (Procedure and Safeguards for Monitoring and Collection of Traffic Data or Information), for invoking the provisions for monitoring of data.

The right to privacy was recognized by the Supreme Court of India as a fundamental right in *Justice K. S. Puttaswamy (Retd.) and*

90. <https://www.google.co.in/patents/US8825226>

91. <https://dronebelow.com/2019/06/20/walmart-trumps-amazon-with-drone-patent-applications/>

92. <http://www.businessinsider.in/Boeing-has-patented-a-flying-drone-that-turns-into-a-submarine/articleshow/48504572.cms>

93. Per Chapter VII of the Patents Act, 1970

94. <http://silc.in/wp-content/uploads/2014/09/SFLC-FINAL-SURVEILLANCE-REPORT.pdf>

*Anr. vs Union of India And Ors*<sup>95</sup> (“**Puttaswamy Judgment**”). Pursuant to this judgment, the Ministry of Electronics & Information Technology set up a Committee of Experts which released the Draft Personal Data Protection Bill, 2018 (“**Draft Bill**”).

The Draft Bill introduces new obligations pertaining to data collection and specific use, data localization, data access & portability, cross border transfers of such personal data and sensitive personal data of the individual (“**Data Principal**”). Further, data fiduciary can be State, a company, any juristic entity or any individual who alone or in conjunction with others determine the purpose and means of processing of personal data; is to be held liable in cases of breach of the Draft Bill.

As previously mentioned, drones amongst other things will also be used for investigation purposes, giving rise to concerns relating to unwarranted targets or mass surveillance. Use of photography or filming technology by drones, may lead to unauthorized breach of privacy rights. However, the use of drones for surveillance cannot be rejected entirely, as it significantly helps law enforcement agencies in restricting unlawful activities and promoting national security. Drone surveillance has reportedly helped in discovering illegal activities at various instances, such as growth of marijuana in a hidden field in Karimnagar, Hyderabad.<sup>96</sup> Therefore, an effective balance needs to be achieved between the security and privacy concerns while ensuring sufficient flexibility to avail variety of beneficial drone uses. Further, it is pertinent to note that the Telegraph Act and the IT Act lay down adequate safeguards against the unwarranted collection and abuse of data by the government as well as by private players in the industry.

95. (2017) 10 SCALE 1.

96. <https://timesofindia.indiatimes.com/city/hyderabad/hidden-ganja-crop-unravalled-by-drone/articleshow/67781197.cms>

## D. Tax Related Aspects of Drones

Developments in technologies have given rise to various tax issues especially in relation to characterization of income and withholding taxes. Another emerging area where such issues is likely to come up, is the usage of drones.

### i. Direct Tax Regime in India

Taxation of income in India is governed by the provisions of the Income Tax Act, 1961 (“**ITA**”). Under the ITA, residents are subject to tax in India on their worldwide income, whereas non-residents are taxed only on income sourced in India. Companies are treated as residents in India, if: (a) they are incorporated in India, or (b) their place of effective management (“**POEM**”) is in India. A company incorporated outside India may be taxable in India if considered as an Indian resident, due to its POEM being situated in India.

Currently, the corporate tax rate for companies having turnover up to INR 250 crores (approx. USD 36.3 million) is 25%<sup>97</sup>. All other companies are subject to a corporate tax rate of 30%. However, in line with India’s continuing strive to reduce corporate tax rates as part of the ‘Make in India’ initiative, the Budget 2019 has proposed to extend the beneficial corporate tax rate of 25% to companies having turnover up to INR 400 crores (approx. USD 58.12 million). The proposal to lower the corporate tax rates is in line with global trends and should apply to 99.3% of the Indian companies.

Ordinarily, in the absence of a permanent establishment (“**PE**”) or business connection (“**BC**”) in India, non-resident companies are not taxable in India on their India-source business profits. However, if there is a PE / BC, the net profits of the non-resident company attributable to the PE / BC in India are taxable at the rate of 40 percent, unless such income qualifies to be

97. All tax rates mentioned in this paper are exclusive of surcharge and cess; in case of residents, surcharge of 12% / 7% is applicable on the income-tax if their total taxable income is in excess of INR 10 crores / in excess of INR 1 crore but less than INR 10 crores respectively; in case of non-residents, the surcharge is 5% / 2% respectively for such taxable income; for both resident and non-residents, a cess of 4% is applicable on the total of the income-tax and surcharge.

reated as royalties or fees for technical services (“FTS”) which are taxable at the rate of 10% on the gross amount received.<sup>98</sup> However, if a taxpayer is resident in a country with which India has a Double Taxation Avoidance Agreement (“DTAA” or “tax treaty”), the taxpayer has the option of being taxed under the provisions of the tax treaty or the ITA to the extent it is more beneficial to the taxpayer.<sup>99</sup> Withholding taxes may apply in a cross border scenario where payments made to a non-resident are taxable in India.

### Permanent Establishments:

Traditionally, a PE may be constituted if a foreign entity generates income from another country either through a fixed place of business or through employees or dependent agents located in the other country.

However, these rules were formulated in the era of brick and mortar, and did not envisage the new and disruptive business models enabled by the onset of the digital economy, propelled by technological advancements, including UAVs. These unique business models have given rise to concerns that multinational enterprises may be able to rely on the existing tax rules to artificially reduce taxable income or shift profits to low-tax jurisdictions in which little or no economic activity is performed. These concerns have prompted countries around the world to come together to revise the international tax framework through the Base Erosion and Profit Shifting Action Plans (“BEPS Action Plan”) and the Multilateral Instrument (“MLI”).<sup>100</sup> Among other

things, the MLI proposes an expansion of the PE definition, which is hopefully aimed at business models precipitated by the digital economy.<sup>101</sup>

Industries and sectors where such drones are likely to be used, specifically for commercial purposes are global in nature. It is possible that the usage of drones by these enterprises in multiple jurisdictions could potentially give rise to PE status in such jurisdictions. In such cases, the manner in which such drones are to be deployed would have a significant bearing on the level of PE risk involved.

Just one example is Amazon, which is reported to be looking at the option of using drones for delivery of goods instead of delivery executives. Owing to the nature of their global operations, their headquarters may be in one jurisdiction, but it may have a presence in other jurisdictions in the form of warehouses, branch offices, liaison offices, godowns etc. to effectively carry out business activities in each jurisdiction. The likelihood of the existence of a PE increases in such scenarios. Whether the use of drones increases the risk of a PE being constituted in any of such jurisdictions would depend greatly on the manner in which the drones are integrated into Amazon’s business model.

### Patent Box Regime

India has also introduced a new patent box regime <sup>102</sup>. Under the patent box regime, worldwide income derived by an Indian resident from a patent developed and registered in India is taxed on a gross basis at a concessional rate of 10%. The patent box is an attractive proposition for India-based drone developers.

## ii. Indirect Tax Framework

The GST regime is comprised of three major pillars: The Central Goods and Services Tax Act, 2017 (“CGST Act”) which provides for the taxing powers of the Central Government,

98. After the amendment to the IT Act through the Finance Act, 2016 the tax rates for royalties and FTS has been reduced to 10% from the 25%. This is significant since most treaties provide for a 15% cap on the tax that can be imposed by India. In light of this change the availability of tax treaty benefits is not as important as it was before.

99. Section 90(2) of ITA; India has entered into more than DTAAAs. In order to avail benefits under the DTAA, a non-resident is required to furnish a tax residency certificate (“TRC”) from the government of which it is a resident in addition to satisfying the conditions prescribed under the DTAA for applicability of the DTAA. Further, the non-resident should also file tax returns in India and furnish certain prescribed particulars in Form 10F to the extent they are not contained in the TRC.

100. The latter is a multilateral treaty designed to simultaneously amend a majority of existing bilateral tax treaties to bring them in line with the proposals set out in the BEPS Action Plans.

101. This is not to say that foreign companies using business models involving the use of technology (including drones) do not run the risk of having a PE in another country. Rather, once in effect, the BEPS proposals substantially increase that risk.

102. Section 115BFF of the ITA, inserted vide the Finance Act, 2016.

individual State / Union Territory Goods and Services Tax Acts (“**SGST Act**” and “**UTGST Act**” respectively) which provide for the taxing powers of each State / Union Territory, and the Integrated Goods and Services Tax Act, 2017 (“**IGST Act**”), which grants exclusive rights to the Centre to tax inter-state commerce.

Under the GST regime the “supply” of goods, or services, or both, is treated as the taxable event, with different taxes applying to inter-state supply and intra-state supply. Every inter-state supply of goods or services is liable to IGST under the IGST Act, while every intra-state supply of goods or services is liable to both CGST under the CGST Act, and SGST / UTGST under the applicable SGST Act / UTGST Act. Supply is treated as either inter-state, or intra-state, depending on the location of the supplier, and the “place of supply” determined in accordance with the provisions of the IGST Act.

GST is levied at rates that vary between nil – 28% depending on the rate schedule applicable to the supply in question. To prevent cascading of taxes, a uniform input tax credit system is available in respect of input supplies of goods or services used or intended to be used in the provision of output supplies of goods or services or both. GST is a consumption tax and is typically passed on to the consumer of the good / service as part of the price.

As a general rule, the import of goods or services or both into India qualifies as a taxable inter-state supply chargeable to IGST, while the export of goods or services or both from India is treated as a zero-rated supply not chargeable to tax under the GST regime.

### **Value Added Tax**

VAT is a state specific levy and almost all states in the country has enacted specific legislations for the levy and collection of VAT, which is a multi-stage tax with the provision to allow ‘input tax credit’ on tax at an earlier stage, which can be appropriated against the VAT liability on subsequent sale. VAT was introduced in India to prevent leakages in tax and to avoid the cascading effect of taxes prevalent under the erstwhile sales tax regime. At present, VAT is applicable at rates varying between 0 per cent and 36 per cent.

However, with the introduction of the GST in India, the States power to levy VAT has been significantly curtailed. From July 1, 2017, VAT may be levied only on the sale within a State of petroleum crude, high speed diesel, motor spirit (commonly known as petrol), natural gas, aviation turbine fuel and alcoholic liquor for human consumption.

### **Excise Duty**

Prior to the introduction of GST, CENVAT was a duty of excise which was levied on all goods that were produced or manufactured in India, marketable, movable and covered by the excise legislation. The peak duty rate applicable was 12.5 per cent, although rates varied based on the goods involved.

In order to avoid the cascading of excise duty and double taxation, the CENVAT scheme had been framed under the Central Excise Act, 1944 and the CENVAT Credit Rules. Under the CENVAT Credit Rules, a manufacturer of excisable goods can avail of credit of duty paid on certain inputs and capital goods barring certain inputs used in the specified manufacture of certain products. The credit can be utilized towards the duty payable on removal of the final product. It must also be noted that the CENVAT scheme also took into account credits in respect of any service tax paid by the manufacturer on input services received.

With the introduction of the GST in India, the scope of CENVAT has been significantly limited. From July 1, 2017, CENVAT may be levied only on the production or manufacture of petroleum crude, high speed diesel, motor spirit (commonly known as petrol), natural gas, aviation turbine fuel and alcoholic liquor for human consumption.

### **Custom Duty**

Customs duty is levied under the Customs Act, 1962. The duty is payable on goods imported into India as also on certain specified goods exported out of India. Prior to the introduction of GST in India, customs duty was made of three components: a basic customs duty (“**BCD**”); a countervailing duty in lieu of excise duty

("CVD"); and a countervailing duty in lieu of state and local taxes ("ACD"). Additionally, education cess and higher education cess was also imposed. The CVD was levied on the aggregate of the CIF value of the imports and the basic import duty. It was equal to the excise duty that was leviable in respect of the same product if it were to be manufactured in India and was primarily levied to protect indigenous manufacturing units. The ACD was levied on the aggregate of the BCD and CVD and was levied at 4 percent and was primarily levied to countervail the CST or VAT that would have been applicable in respect of the product in India if sold by an indigenous dealer.

The rates of import duty are specified in the Customs Tariff Act, which classifies goods into numerous chapters. Currently, the peak rate of customs duty in India stands at approximately 29 per cent which includes a peak rate of BCD at 10 percent, CVD at 12.5 percent, ACD at 4 percent and additionally, the education and higher education cess.

With the introduction of the GST, the customs framework has been significantly revamped. Import of goods is now subject to IGST at the rate prescribed for inter-state supply of the goods concerned, in addition to basic customs duty, while most other duties have been abolished, or significantly curtailed.

## E. Other Legal Issues

Beyond CAR i.o, the law is wide open for exploration. No case law as such exists on drones in India, but the principles of torts such

as trespass, nuisance, privacy, harassment, hurt and negligence will play an instrumental role in the development of jurisprudence of drones' regulations. For e.g. flying a drone over another individual's land may account for trespass and nuisance. Although, airplanes, helicopters are allowed to fly over a person's private property as transit, there is no jurisprudence developed regarding the low-altitude flight on an aircraft. The nuisance requires establishing harm. Types of harm recognized under the claim of nuisance may include damage to the land, interference with the easement, discomfort or inconvenience. Although, minor inconvenience will not be considered as nuisance, spying or unauthorized surveillance may account for nuisance, particularly when done with a deliberate attempt of causing harassment.

Similarly, injuries caused due to crash of drone or technical defaults to an individual may trigger a claim of hurt and may also involve principles of vicarious liability of the owner or the operator of the drone causing the injury under the tort law. It will be interesting to observe how the courts will apply these principles on the functioning of drones and other new technologies, in due course of time.

Application of drones offers several advantages in various facets and it is imperative that these benefits can be availed by maximum number of people while mitigating the risks to the civil liberties. The prospective regulations must be drafted after considering the economic opportunities presented by drones as well as the risks they present to other aircrafts and people at land.

## 6. Road Ahead

With effect from December 1, 2018 and with the introduction of the Digital Sky Platform, flying of drones for civil use was legalized in India. However, the current regime only permitted flying of drones within visual light of sight and commercial usage was restrictive. Liberalize the regime and tap the potential uses of drones especially for commercial purposes. The Ministry of Civil Aviation constituted a drone task force under the chairmanship of Hon'ble Minister of State for Civil Aviation. Accordingly, on the basis of the recommendations of the task force, the Drone Ecosystem Policy Roadmap ("**Drone Policy 2.0**") was released by the Ministry of Civil Aviation on January 15, 2019.

The Drone Policy 2.0 seeks to function as a policy roadmap for the next stage of drone regulations, which if made law, would relax some of the restrictions under CAR 1.0. The key distinction between CAR 1.0 and Draft Policy 2.0 is the intention behind formulating the two. While CAR 1.0 was put in place from the perspective of allowing hobbyists and recreational flyers to operate drones in Indian airspace, Drone Policy 2.0 aims to foster innovation in the UAS market by enabling commercial use of UAS including autonomous UAS and expanding its operability beyond visual line of sight.

Further, it also seeks to provide a level playing field to the foreign players interested to make investments in India which will give a boost to the development of the UAV industry.

The Drone Policy 2.0 is a policy roadmap for establishing a fully functional drone ecosystem that would allow commercial usage of drones in India. It expands the scope of the operational airspace for drones by allowing them to operate beyond the visual line of sight and fly above the current limit of 400 ft.

The DGCA has also invited for expression of interest from consortia's willing and able to conduct experimental BVLOS operations of RPA in Indian airspace.

By allowing companies to provide proof of concept for the use of drone technology, the authorities have taken an evidence-based regulatory approach which can potentially transform the drone industry by paving the way for regulations allowing more enhanced operations by drones. Big players such as Zomato, Tata, Zipline, DeTect Technologies and various other companies have reportedly submitted their expression of interest for testing this technology for various uses.<sup>103</sup> From delivery of consumer products to delivery of medical supplies to surveillance of traffic, construction sites etc., companies from all spheres have applied to conduct such experimental operations under the supervision of the DGCA for development of new regulations for this growing industry.

This willingness shown by the DGCA and other concerned authorities to incorporate use of drones in the aviation ecosystem of the country has been welcomed by all.

103. <https://www.livemint.com/technology/gadgets/flying-high-how-commercial-drones-are-taking-flight-in-india-through-enterprise-1551640246185.html>



## Our Expertise

At Nishith Desai Associates (NDA), it is our ongoing endeavors in conducting and facilitating original research in emerging areas of law, especially when it comes to disruptive technologies like Drones. It has helped our team in developing unparalleled proficiency to anticipate legal obstacles, mitigate potential risks and identify new opportunities for our clients on a global scale. Simply put, for conglomerates looking to conduct business in the subcontinent, NDA takes the uncertainty out of new frontiers. Supported by a team of legal experts with unparalleled domain knowledge, the team brings with it not just legal proficiency but an acute understanding of the economics of the business led by key industry insights substantiated by vast experience in the field. However, the most important benchmark to us for our services will always be client satisfaction. Here is a glimpse into what our client oriented services entail:

### Regulatory & Advisory

- Regulatory advisory in relation to setting up of Drone-based businesses in India.
- Advising foreign companies (which are engaged in the Drone sector) on entry strategy, obtaining foreign investment approvals and other relevant approvals from concerned Government bodies.
- Dialogue and consultations with diverse regulatory authorities on related matters.
- Advising and assisting the Government of India in the policy making process for civilian drones in India.
- Advising on do's and don'ts basis the Indian drone ecosystem.
- Identifying critical issues for financial or strategic investors with the help of our industry insights.
- Provide comprehensive legal and regulatory due-diligence of target's drone business.
- Assisting in documentation and negotiation for consortium agreements and technology licensing deals.
- Identifying complex and/or litigious intellectual property issues concerning the technology specifically developed or used by a drone company.

### International Tax

- Structuring of client operations in India and globally taking into account international tax, corporate law, regulatory and intellectual property laws.
- Advisory in financing transactions.
- Advisory on issues related to international tax treaties.
- Advisory on transfer pricing issues.

## Corporate & Securities

- Documentation and negotiation for M&A, Joint Ventures and Private Equity and VC investments including undertaking complete due diligence (including IP audit)
- Advising on and setting up funds focusing on drone services and drone technologies.
- Advising on competition law and consumer protection matters.
- Advising on exchange control regulations and compounding issues for non-compliances
- Advising on strategy and documentation for offshore and domestic offerings



The following research papers and much more are available on our Knowledge Site: [www.nishithdesai.com](http://www.nishithdesai.com)

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## NDA Insights

TITLE	TYPE	DATE
Bombay High Court Quashes 197 Order Rejecting Mauritius Tax Treaty Benefits	Tax	May 2019
Payments For Online Subscription Services Not To Be Taxed As Royalty	Tax	May 2019
Taxation Of Unexplained Cash Credits: Recent Developments	Tax	May 2019
Taxing Cross-Border Production Activities – Contract Language Re-Emphasized	Tax	May 2019
Delhi High Court Sets Aside The Arbitral Award Passed In The Airport Metro Express Dispute	Dispute Resolution	May 2019
Arbitration Clause In An Unstamped Agreement? Supreme Court Lays Down The Law	Dispute Resolution	May 2019
English Court's Dictum On The "Without Prejudice" Rule	Dispute Resolution	May 2019
Bombay High Court Settles Dust Over Validity Of 'Options' Under Securities Law	Dispute Resolution	May 2019
Stamp Duty Stumps Brokers And Demat Transfers	Regulatory	May 2019
External Commercial Borrowings: Regulatory Framework Substantially Relaxed	Regulatory	May 2019
NDA Presents Regulatory Approaches On Crypto-Assets To The Government Of India	Regulatory	May 2019
To Strike While The Iron Is Hot: Sebi Relaxes Norms For Listing Of Start-Ups	Regulatory	May 2019

## Research @ NDA

**Research is the DNA of NDA.** In early 1980s, our firm emerged from an extensive, and then pioneering, research by Nishith M. Desai on the taxation of cross-border transactions. The research book written by him provided the foundation for our international tax practice. Since then, we have relied upon research to be the cornerstone of our practice development. Today, research is fully ingrained in the firm's culture.

Our dedication to research has been instrumental in creating thought leadership in various areas of law and public policy. Through research, we develop intellectual capital and leverage it actively for both our clients and the development of our associates. We use research to discover new thinking, approaches, skills and reflections on jurisprudence, and ultimately deliver superior value to our clients. Over time, we have embedded a culture and built processes of learning through research that give us a robust edge in providing best quality advices and services to our clients, to our fraternity and to the community at large.

Every member of the firm is required to participate in research activities. The seeds of research are typically sown in hour-long continuing education sessions conducted every day as the first thing in the morning. Free interactions in these sessions help associates identify new legal, regulatory, technological and business trends that require intellectual investigation from the legal and tax perspectives. Then, one or few associates take up an emerging trend or issue under the guidance of seniors and put it through our "Anticipate-Prepare-Deliver" research model.

As the first step, they would conduct a capsule research, which involves a quick analysis of readily available secondary data. Often such basic research provides valuable insights and creates broader understanding of the issue for the involved associates, who in turn would disseminate it to other associates through tacit and explicit knowledge exchange processes. For us, knowledge sharing is as important an attribute as knowledge acquisition.

When the issue requires further investigation, we develop an extensive research paper. Often we collect our own primary data when we feel the issue demands going deep to the root or when we find gaps in secondary data. In some cases, we have even taken up multi-year research projects to investigate every aspect of the topic and build unparallel mastery. Our TMT practice, IP practice, Pharma & Healthcare/Med-Tech and Medical Device, practice and energy sector practice have emerged from such projects. Research in essence graduates to Knowledge, and finally to *Intellectual Property*.

Over the years, we have produced some outstanding research papers, articles, webinars and talks. Almost on daily basis, we analyze and offer our perspective on latest legal developments through our regular "Hotlines", which go out to our clients and fraternity. These Hotlines provide immediate awareness and quick reference, and have been eagerly received. We also provide expanded commentary on issues through detailed articles for publication in newspapers and periodicals for dissemination to wider audience. Our Lab Reports dissect and analyze a published, distinctive legal transaction using multiple lenses and offer various perspectives, including some even overlooked by the executors of the transaction. We regularly write extensive research articles and disseminate them through our website. Our research has also contributed to public policy discourse, helped state and central governments in drafting statutes, and provided regulators with much needed comparative research for rule making. Our discourses on Taxation of eCommerce, Arbitration, and Direct Tax Code have been widely acknowledged. Although we invest heavily in terms of time and expenses in our research activities, we are happy to provide unlimited access to our research to our clients and the community for greater good.

As we continue to grow through our research-based approach, we now have established an exclusive four-acre, state-of-the-art research center, just a 45-minute ferry ride from Mumbai but in the middle of verdant hills of exclusive Alibaug-Raigadh district. **Imaginarium AliGunjan** is a platform for creative thinking; an apolitical ecosystem that connects multi-disciplinary threads of ideas, innovation and imagination. Designed to inspire 'blue sky' thinking, research, exploration and synthesis, reflections and communication, it aims to bring in wholeness – that leads to answers to the biggest challenges of our time and beyond. It seeks to be a bridge that connects the futuristic advancements of diverse disciplines. It offers a space, both virtually and literally, for integration and synthesis of knowhow and innovation from various streams and serves as a dais to internationally renowned professionals to share their expertise and experience with our associates and select clients.

We would love to hear your suggestions on our research reports. Please feel free to contact us at [research@nishithdesai.com](mailto:research@nishithdesai.com)

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