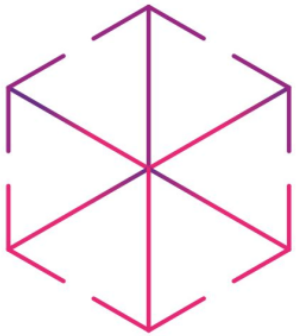
COMMENTS TO THE GUIDELINES FOR OBTAINING UNIQUE IDENTIFICATION NUMBER (UIN) AND OPERATION OF CIVIL UNMANNED AIRCRAFT SYSTEMS (UAS) ISSUED BY THE OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION



About the Commentator:

TRA is a law firm specialising in representing new-technology companies in the aerospace and aviation sectors and represents a significant number of UAS design, manufacturing and operations companies.

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EXECUTIVE SUMMARY

The draft guidelines dated 22nd April, 2014 provide for the terms and conditions for the ownership and operation of UAs. A summary of our major comments is provided below:

1. Creation of additional weight category, “nano” for UAs weighing less than 250 gms, which should be exempt from registration.

2. Web-based system for registering all UAs up to 20kg in weight.

3. Registration for UAs under 5kg should be automatic upon verification of documents and not discretionary.

4. Appointment of an organisation to conduct and facilitate preliminary grant of UIN and UAOP for final confirmation by DGCA.

5. Designate test sites for test flights to facilitate R&D. Test flights conducted from designated sites should not require insurance and should be granted approvals on a fast-track.

6. The UAOP awarded to a pilot should be linked to a UA type and not to a specific UA.

7. The DGCA should permit fast-tracking of UAOP applications upon payment of significantly higher fees. For UAs weighing less than 20kg, the suggested (regular-track) timeline should be 15 to 30 days.

8. Limited revival of the now deleted CAR Section 2, Series F, Part XVIII, Issue I dated 23rd October 1992 relating to Construction, Certification and Operation of Experimental and Amateur Build Aircraft.

9. DGCA should give a blanket permission for import of certain standard components of UAS and popular and reliable models of UAs.

10. Age limit for recreational flying may be relaxed to 13 years.

11. Any kind of photography or videography using UAs including but not limited to surveillance activities should be subject to express permission of the DGCA and that of the local administration.

12. Any UA operations involving operation of UAs as a fleet whether for a single task or a series of tasks and whether operated by a single entity or multiple entities acting in concert may only be undertaken with the express permission of the DGCA.

DETAILED COMMENTS

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
		REGARDING WEIGHT BASED CATEGORISATION AND REGISTRATION OF UAS		
1.	**Weight-based categorisation of UAs**	*Clause 3* The draft guidelines classify civil UAs in accordance with weight as indicated below: i) Micro: Less than 2 kg. ii) Mini: Greater than 2 kg and less than 20 kg. iii) Small: Greater than 20 kg and less than 150 kg. iv) Large: Greater than 150 kg.	We suggest the creation of an additional category, "*Nano*" for *UAs weighing less than 250 gm* which should be exempt from registration. Accordingly, Micro UAs will be revised to mean UAs between 250 gm and 2 kg. This provision should also be amended to clarify that the weight of the payload and mandatory fire proof plate shall be included into the weight of the UA for the purpose of determining the weight category	The FAA, USA recognises UAs weighing less than 250 grams (0.55 pounds) as a separate category and exempts them from registration.
2.	**Registration Requirement**	*Clause 4* The draft guidelines provide for the same registration process for all UAs	Nano UAs should be exempt from registration. A web-based system should be provided for registering all UAs up to 20kg in weight.	The FAA, USA exempts UAs weighing less than 250 grams (0.55 pounds) from registration. Singapore has a blanket

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
		irrespective of weight-category.	Registration for UAs under 5kg should be automatic upon verification of documents and not discretionary.	exemption for UAs weighing below 7 kg used for non-commercial purposes from registration.
3.	**Single Window Registration**	*Clause 4.2* As per the draft guidelines, prior to applying for registration, the registrant is required to obtain a character certificate from local police and permission for use of frequencies from the WPC, DoT.	The Registration process should be a *single window clearance* from the WPC and local police. The DGCA may reconsider the need for a character verification.	
4.	**Eligibility for Registration**	*Clause 4.1* The draft guidelines only provide for grant of UIN to an Indian citizen.	We recommend that a temporary UIN may be granted to aliens for R&D purposes, pilot training and recreational purposes. This will enable the Indian UAS industry to benefit from expertise available outside India. Recreational use should not be restricted in any way. The guidelines should also permit residents living in India for a reasonable period of time (say, 2 years) to obtain a UIN.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
5.	**Outsourcing Preliminary Processes for Registration**		The DGCA may *appoint an organisation* with individuals having appropriate credentials and experience in design, manufacture, operations and testing of UAs *to conduct time-bound preliminary grant of UIN and UAOP*, and to co-ordinate with various government agencies for the same. The organisation shall also be qualified and permitted to counsel the applicant for a fee on completing the application and meeting the standards prescribed or expected by the DGCA for final approvals. Such a two-tier process will be beneficial for both the regulator and the industry. The DGCA will benefit from lower workload since the preliminary evaluation will be done by an external agency and the applications forwarded to the DGCA will be in line with the expectations of the DGCA. The industry will benefit from faster turn-around and handholding which otherwise the regulator will neither be able to nor permitted to offer.	Worldwide, aviation regulators are being subjected to an increased workload and resource crunch because of the number of industry applications for approvals. The CAA, UK, has appointed an external agency (EuroUSC) to evaluate and recommend organisations to the CAA, UK for grant of exemption for certain operation approvals. EuroUSC is permitted to counsel such organisations for a fee and help them meet design standards that may be acceptable to the CAA, UK.
REGARDING TEST FLIGHTS AND R&D				

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
6.	**Temporary UIN for Test Flights**	*Clause 4* The draft guidelines require every UA to carry a UIN.	There should be a provision for grant of *temporary UIN for test flights* for manufacturing/R&D. If India has to maintain a lead in the UAS industry, an enabling regulatory framework for R&D, and in particular for test flights is essential. A provision for temporary UINs that can be awarded quickly for evolving prototypes will facilitate R&D.	The FAA, USA and CAA, UK currently provide a special certificate in the experimental category / permit to fly to enable operations at a constrained level. These certificates are provided on a case to case basis. The FAA, USA has already issued hundreds of airworthiness certificates.
7.	**Test Sites/ Free Fly Zones**		The DGCA in consultation with concerned agencies should designate test sites in various parts of the country where approved UAOP holders may test prototypes of all weight-categories pursuant to a *fast-track approval* and without other requirements such as insurance.	The FAA, USA has designated six test sites in the US. Some sites have been opened in affiliation with leading universities.
8.	**Manufacturing standards**	It is unclear what standards manufacturers must follow while developing UAVs. By necessary implication, CAR21 applies, the standards of which	In the absence of any guidelines for the same, Indian entrepreneurs will concede an unfair advantage to foreign manufacturers operating in jurisdictions with enabling regulations for design and manufacturing.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
		practically cannot be applied for development of UAs, in particular for prototypes and new concepts.	This will be a good opportunity to make a *limited revival of the now deleted CAR Section 2, Series F, Part XVIII, Issue I dated 23rd October 1992 relating to Construction, Certification and Operation of Experimental and Amateur- Build Aircraft*. This part of CAR provided guidance on the building and certification of amateur built aircraft and laid down eligibility criteria for amateur-built certification in the Experimental Category. Many new ideas and concepts originate with small aircraft built by the non- professional designer. This activity will be destroyed by excess regulation. Appropriate amendments to include UAs, will provide a much needed impetus to R&D in aviation in India.	
REGARDING OPERATORS AND UA OPERATOR PERMITS (UAOPS)				
9.	**Definition of "Operator"**	*Clause 2* The draft guidelines do not define the term "Operator".	The term "Operator" may be defined to mean: "*A person, organisation or enterprise engaged in or offering to engage in an aircraft operation*". This definition clarifies that organisations can also be deemed to be operators, and accordingly, both the individual operating the UA as well as the organisation employing such individual will be responsible for the operation of the UA.	The suggestion definition has been borrowed from the ICAO Circular No. 328-AN/190

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
10.	**Linkage between UAOP and UIN**	*Clause 6.4(f)* The draft guidelines suggest that each UAOP shall be linked to a UA/UIN.	The UAOP awarded to a pilot should be linked to a UA type and not to a specific UA. The pilot should be able to use her UAOP with any UA of the same type, especially in case of Nano, Micro and Mini categories.	
11.	**Timeline for grant of UAOP**	*Clause 6.2.* The draft guidelines require the submission of UAOP application at least 90 days prior to actual conduct of UA operations.	The 90 day timeline should be a retained as a suggestion for the applicants and not be prescribed as mandatory. The DGCA should also permit fast-tracking of UAOP applications upon payment of significantly higher fees. For UAs weighing less than 20kg, the suggested timeline should not be more than 15 days.	
12.	**Renewal of UAOP**	*Clause 6.5.* The draft guidelines prescribe that there should be renewal of NOC which would require security clearance from Ministry of Home Affairs (MHA) and Bureau of Civil Aviation security (BCAS).	The draft guidelines do not require prior permission or NOC from the MHA for first-time registration. Accordingly, no such NOC should be required for renewal. Like in first time registration, a copy of the renewal may be forwarded to the MHA. However, if the NOC requirement is not dispensed with then it is suggested that all such approvals are obtained by the DGCA as part of a single window system of clearances.	
13.	**Security Clearance from BCAS**	*Clause 6.1.(e)*	UAs weighing less than 7kg (or at least 2kg) should be exempt from obtaining BCAS approval.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
		The draft guidelines mandate that firms and operators need to take security clearance from BCAS before they start their civil operations.	In furtherance of establishing a Single Window System for clearances, DGCA should get this clearance for the firm/ operator on the basis of the documents that are submitted to DGCA by the firm/ operator.	
14.	**Information of Commencement of Operations**	*Clause 10.1. / 10.10* The draft guidelines provide that irrespective of weight category, the UAS operator shall intimate Local Administration, ATS unit (for operations at or above 200ft AGL in uncontrolled airspace), BCAS, Aerodrome operator (if applicable) before commencement and after termination of operation. In event of cancellation of operations, the operator shall notify the same to all appropriate authorities as soon as possible.	We suggest that information to Local Administration should be exempt for recreational flying of Micro UAs below 200ft. Further, a web-based system may be developed for operators to share flight information with concerned authorities.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
15.	**Applicability of Rules of Air to UAs**	*Clause 10.5.* The draft guidelines prescribe UA shall be operated in accordance with the rules governing the flights of manned aircraft as specified in the CAR Section 9, Series C, Part I (Rules of Air)	Rules of Air as they stand currently need to be adapted for use with UAs as many of its provisions will either be irrelevant, onerous or incompatible with some categories of UAs, especially, Micro and Small UAs.	Internationally, regulators are also developing Air Traffic Rules and Rules of Air which are suited for civilian UAs as the Rules of Air for manned aircrafts are designed to address a different threshold of risk.
REGARDING RESTRICTIONS FOR PILOTS				
16.	**Age Restriction on Remote Pilot**	*Clause 8.1.* Training Requirements for Remote Pilots: The draft guidelines provide that the prescribed training requirements are not applicable to micro UAs and recreational flying, however it is unclear whether the age limit of 18 years for remote pilots applies to micro UAs and recreational flying.	The guidelines should be amended to clarify that age limit of 18 years shall not apply to Nano UAs and for Micro UAs flown for recreational purposes below 200ft AGL. The limit may be relaxed to 13 years.	The FAA, USA prescribes a 13 year age limit for both registration and flying.

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
17.	**Ground Training requirement for Remote Pilots**	*Clause 8.1.* The draft mandates a remote pilot to have taken training equivalent to that undertaken by aircrew of manned aircraft or a PPL holder (aeroplane/helicopter) with FRTOL.	The training requirements for UAs weighing less than 20kg will need to be adapted to make them relevant to such remote pilots to include modules relating specifically remote piloting and a concomitant reduction of parts relevant to manned aircrafts.	
REGARDING AEROMODELLING AND MODEL AIRCRAFTS				
18.	**Aero modelling**	*Clause 5.3(b)* Aero modelling activities carried out within premises of educational institutions alone are considered recreational.	The DGCA may register aero modelling clubs based on certain eligibility criteria. Flights by members within the premises of such clubs may be considered as recreational and may further be exempt from the altitude limitation (200 ft AGL) applicable to recreational flights. Provided that such flights shall be subject to community based set of safety guidelines adopted by such clubs.	
19.	**Payload for Model Aircraft**	*Clause 2* Model Aircrafts are defined to mean UAs without payload used for recreational purposes only.	There should not be an omnibus restriction on payloads for recreational flights. The DGCA may issue a general list of approved payloads such as light cameras. A model aircraft fitted with a camera for personal photography should be classified as recreational.	Section 336 of the United States Modernization and Reform Act, 2012 does not exclude payload from model aircrafts

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
			The DGCA may also encourage aero modelling clubs to adopt community based safety standards and permit members of such registered aero modelling clubs on a case to case to attach payloads to model aircrafts so long as they are in line with the DGCA approved community based safety guidelines.	and recognises community based safety guidelines for such use.
REGARDING OTHER MISCELLANEOUS ISSUES				
20.	**Definition of Civil Operations**		There is ambiguity as to the definition of Civil Operations, especially in light of the previous DGCA notice restricting UAS operations in Indian airspace dated 07.10.2014. The guidelines should clarify if they apply to government operations as well, especially in case of sue by law enforcement agencies, PSUs etc.	
21.	**Fleet Operations**		Where it is intended that a task to be achieved by a UAS will be completed using a fleet of UAs, whether towards the achievement of single task or a series of tasks and whether operated by a single entity or by multiple entities acting in concert should be undertaken with the express permission of the DGCA.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
22.	**Definition of Unmanned Aircraft (UA)**	*Clause 2* The draft guidelines define Unmanned Aircraft as "an aircraft which is intended to operate with no pilot on board."	The definition of UA should expressly *exclude* traditional balloons, tethered aircrafts, hot air balloons, unpowered gliders, rockets and other self-propelled vehicles. The said aircrafts are to be regulated separately, and such exclusion would avoid confusion regarding the applicability of these guidelines.	The FAA, USA specifically excludes these aircrafts from the definition of UAs.
23.	**Import Permission from DGCA**	*Clause 6.7.* The draft guidelines necessitate obtaining an import permission from DGCA based on which DGFT shall provide a license for import of UAS.	We suggest that DGCA should give a blanket permission for import of certain standard components of UAS or popular and reliable models of UAs, so that excessive permissions do not burden regulators, developers and users of UAs. For other parts and UAS' a timeline of 30 days may be prescribed for approval from DGCA. A single window clearance from both DGCA and DGFT may be considered. The Indian UAS industry will benefit from such access to foreign technology.	
24.	**Prohibition on Sale/Disposal of UAS without permission**	*Clause 7.1.* The draft guidelines provide that the UAS shall not be sold or disposed of in any way to any person or firm without permission of DGCA.	A part of the process of transfer of UAS, like in case of automobiles, will require transfer of UIN associated with such UAS. The guidelines should lay down the procedure for such transfer. Ideally, the process for transfer for Nano and Micro UAs should be intimation based.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
			A timeline of 30 days may be prescribed for grant of permission by DGCA for sale of any UAs weighing more than 2kg but less than 20kg. The guidelines should clarify that nothing in this clause will restrict lease / rental of a UA to a valid UAOP holder concerning the same UA type. This will reducing the capex associated with the purchase of a UA and will facilitate low-cost UA applications/operations.	
25.	**Flying over the territory of Delhi**	*Clause 10.13.* The draft guidelines prohibit the UA to be flown over the entire air space over the territory of Delhi (30 km radius from Rashtrapati Bhavan)	A blanket restriction over Delhi will be unnecessary. The restriction may be relaxed as follows: 1. Nano UAs: May be operated outside a radius of 3 km from Rashtrapati Bhawan; 2. Micro and Mini UAs: May be operated outside a radius of 15km from Rashtrapati Bhawan.	
26.	**Privacy**	*Clause 10.4* The draft guidelines provide that privacy and protection of personnel/property/data shall be given due importance	The draft guidelines do not provide a detailed framework for privacy and protection of data. Any photography or videography activities especially activities like surveillance in residential areas should be with express permission from the DGCA and the local administration. Policies relating to retention of data from any photography or videography activities should be mandated.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
27.	**Rain/ Thunderstorm Warning**	*Clause 10.16.* The draft guidelines lay down that the UAS operator shall not launch the UA when rain/ thunderstorm warning is in force	The guidelines should direct operators to an authoritative source for checking the weather online. This source shall be relied upon by the DGCA as well as operators to avoid any confusion.	
28.	**Detect and Avoid / Return Home Capability**	*Clause 10.23* The draft guidelines require all UAs to have detect and avoid and home return capability.	Current technology and associated costs may not allow for (or may render unviable) building such features in to Nano and Micro category UAs. Since, such UAs are largely flown within VLOS, have limited range and impose limited risk, such a requirement may be dispensed with.	
29.	**Maintenance of Records**	*Clause 9.4.* The draft guidelines require that the UAOP holder shall maintain records of each UA flight and makes such records available to the DGCA on demand.	We suggest that such records should be maintained only for a maximum period of 1 year for all UAs except Large UAs for which the records should be maintained for 7 years. We also suggest that it should not be mandatory to maintain such records for UAs flown for recreational purposes.	
30.	**Insurance**	*Clause 12.* The draft guidelines mandate all UAOP holders to have insurance with the liability that they might incur for any	We suggest that this provision should not apply to i) UAs weighing less than 2kg flown for recreational purposes, and ii) prototypes flown in designated test sites.	

S.NO.	ISSUE	RELEVANT PROVISION	TRA RECOMMENDATION	INTERNATIONAL PRACTICE
		damage to third parties resulting from the accident/ incident.		
31.	**Penalty**	*Clause 13* In the event of any non-compliance, the draft guidelines only provide for cancellation or suspension of the UAOP.	Bearing in mind the dangers of non-compliant use of UAs, this penalty may be insufficient. It may be mentioned that aside from action that may be taken under the Aircraft Act, 1934 and Aircraft Rules, 1937 (e.g. for dangerous flying, carriage of arms, operations without permit etc.), action may also be preferred against defaulters under the applicable provisions of The Suppression of Unlawful Acts against Safety of Civil Aviation Act, 1982, Anti-Hijacking Act, 1982 etc.	

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