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ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30 : Other issues to be considered by the Technical Commission

**HARMONISED STANDARDS AND RECOMMENDED PRACTICES FOR UAS OPERATIONS
AND NEED FOR REVIEW OF AIRPORT EMERGENCY PLANNING IN
AIRPORT SERVICE MANUAL (DOC 9137-PART 7)**

(Presented by Iran (Islamic Republic of))

EXECUTIVE SUMMARY

The use of unmanned aircraft systems (UAS) continues to grow rapidly, and with it, the risk of unsafe encounters between domestic UAS and manned aviation operations. UAS can pose a threat to aircraft landing and taking off at aerodromes, and it can cause cessation of aerodromes regular operations. In recent years, UAS have caused aerodrome several stop operations or runway closing. Preparing an airport to cope with such emergencies is not possible without setting forth the procedures for co-ordinating the response of different airport agencies (or services) and those agencies in the surrounding community that could be of assistance in responding to UAS operations.

<i>Strategic Objectives:</i>	This working paper relates to the Safety Strategic Objective.
<i>Financial implications:</i>	
<i>References:</i>	Annex 14 — <i>Aerodromes</i> Doc 9137, <i>Airport Services Manual</i> , Part 7 — <i>Airport Emergency Planning</i>

1. INTRODUCTION

1.1 The use of unmanned aircraft systems (UAS) continues to grow rapidly, and likewise the risk of unsafe encounters between domestic UAS and manned aviation operations. Not only can UAS pose a threat to aircraft landing and taking off at aerodromes, they can also pose a danger in other environments, such as to low flying helicopters in urban areas. In the absence of guidance in this area, in the aviation community, States themselves have embarked on a diverse range of approaches to tackle the issue according to their own rules and regulations.

1.2 UAS have often been reported as causing hazards to aircraft, or to people or property on the ground. Safety concerns have been raised due to the potential for an ingested drone to rapidly disable

an aircraft engine, and several near-misses and verified collisions have involved hobbyist drone operators flying in violation of aviation safety regulations.

1.3 Airport emergency planning is the process of preparing an airport to cope with an emergency occurring at the airport or in its vicinity. The objective of airport emergency planning is to minimize the effects of an emergency, particularly in respect of saving lives and maintaining aircraft operations.

1.4 “After the emergency”, considerations may not carry the urgency of preceding events, but transitions of authority and responsibility at the scene need to be thoroughly discussed and planned in advance. It is also necessary to preplan for supportive roles services, and to consider problems related to restoring or maintaining protective services to permit continuation of normal airport/aircraft operations which may have been disrupted by the emergencies due to unsafe UAS operations.

2. DISCUSSION

2.1 ICAO Annex 14 — *Aerodromes* and its guidance material Doc 9137, *Airport Services Manual*, Part 7 — *Airport Emergency Planning*, ICAO Annex 17 — *Security — Safeguarding International Civil Aviation against Acts of Unlawful Interference* and its guidance material Doc 8973, *Aviation Security Manual* are totally silent about the emergencies due to unsafe UAS operations.

2.2 Although a number of States are moving to establish regulatory controls and launch safety awareness campaigns, the industry is concerned that unless these controls are put into place in an expeditious, harmonized, effective, and enforceable manner, a UAS-related accident will certainly occur affecting civil aviation.

2.3 In recent years, there has been an exponential increase in reports of UAS operating in close vicinity of aircraft and airports. The ASN¹ Drone Database contains over 5 200 reports of unmanned aircraft (UAS) sightings from pilots and airprox occurrences involving UAS and aircraft. The database contains the 15 cases of suspected and confirmed drone collisions with aircraft between 2015 and 2019.

2.4 Collisions and near-collisions between UAS and commercial aircraft have occurred with no correlation with altitude or distance from airports.

2.5 Failed adherence to established procedures or regulations was a recurring theme.

2.6 The unauthorized operation of UAS in the vicinity of aerodromes is not a question of integration, but rather how the unauthorized use of UAS can be effectively excluded from the airspace where they pose the greatest safety threat to civil aviation.

2.7 Some States are introducing airspace assessments to identify zoning areas. This would provide “no drone zones” around aerodromes, heliports, hospitals, nuclear power stations, etc.

2.8 UAS represent a hazard to civil aviation, as they might operate near aerodromes and are used by people unfamiliar with the safety risks, or have little awareness of civil aviation and its regulation.

¹ Aviation Safety Network (www.aviation-safety.net)

2.9 While it is recognized that the ICAO role is limited to international aviation, Article 44 of the Chicago convention mentions the need to “insure the safe and orderly growth of international civil aviation throughout the world”. As available safety reports contain evidence of collisions and near collisions between manned aircraft and UAS and the temporary cessation of airport operations, we feel that it is necessary for ICAO to establish or modify reference standards to support States in responding to unsafe UAS operations.

2.10 Experience to date shows that the nature of UAS operations is so diverse and is changing so rapidly that it is not possible to develop a solution that suits all types of operations. The expertise gathered in the ICAO Small Unmanned Aircraft System Advisory Group (SUAS-AG) provides the basis to develop guidance that will be adaptable to the environment and needs.

2.11 Studies show that none of the solutions against unsafe UAS operations can control the risk of UAS operations near the airports alone. The best result may come from utilizing several solutions together.

2.12 Choosing the best solution (jamming, gun firing, using hound bird etc.) and effective use of them can only be achieved through emergency planning and exercises in major problem areas: command; communication; and coordination.

3. CONCLUSION

3.1 The rapid proliferation of UAS for commercial and recreational use requires more than guidance material to States on how to establish regulations as each passing day it increases the safety risk to international civil aviation. It is necessary for ICAO to develop Standards and Recommended Practices allowing for harmonized regulations by States.

3.2 It seems that the best place to manage and control the emergency due to unsafe UAS operations to permit continuation of normal airport/aircraft operations is airport emergency plan.

3.3 The Assembly is invited to request that ICAO extend the scope and mandate of the SUAS-AG to:

- a) study the effect of and the risk posed by UAS operations on the safety, security, and efficiency of civil aviation operations, particularly the risk of UAS collision at aerodromes and its vicinity;
- b) develop a baseline of standards and definitions to ensure global harmonization of regulations for the safe use of UAS; and
- c) support preparation of aerodromes with updating Annex 14 and Doc 9137, Part 7 to cope with an emergency occurring at the airport or in its vicinity due to unsafe UAS operations.