



ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 46: Other issues to be considered by the Technical Commission

SAFETY PLAN FOR UAS IN THE REPUBLIC OF KOREA

(Presented by the Republic of Korea)

EXECUTIVE SUMMARY

As highly advanced and various types of unmanned aircraft system (UAS) for both civil and military purpose are in use in the Republic of Korea (ROK), safety issues have been brought to the attention of the government of the ROK so that a safety plan for UAS operations is being developed to ensure safe UAS operation.

Action: The Assembly is invited to urge ICAO to consider adding the development of a regulatory framework for UAS into the technical work programme of the Organization in the air navigation field in order to support the ROK and all other States facing this new safety issue.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives A – <i>Safety</i>
<i>References:</i>	“2009/2010 UAS Year Book” published by UVS international in 2009 “World Unmanned Aerial Vehicle Systems : Market Profile and Forecast” published by Teal Group Corporation in 2008

1. INTRODUCTION

1.1 Unmanned aircraft system (UAS), a new concept-based flying vehicles equipped with advanced information technology and communication capability, have been increasingly in use as the number of States developing UAS has increased from forty in 2004 to fifty-one in 2009. Statistically, the industry concerned has grown rapidly by 12 per cent per year since the late 1990s, with a projected growth to fifty-five billion US dollars over the next the years as well.

1.2 Following the international developments, high-performed and various types of UAS for civil and military aviation in the Republic of Korea (ROK) have been developed and operated for the use of communication, agriculture, photographs and etc.

1.3 Since there are no international standards and agreed practices for UAS flight operations, the regulatory framework for safe operations is being developed by individual States at their discretion. Further, there are emerging issues to be addressed regarding the reliability of the vehicle, ATM integration, frequency utilization, increasing flight safety within the airspace, etc., for securing the safety of UAS operations and measures that have been implemented for manned aircraft.

1.4 In this regard, and in response to the foresaid safety issues, the ROK is developing a basic regulatory framework for UAS to ensure the safety of UAS operations.

2. CURRENT SAFETY REGULATIONS APPLYING TO UAS

2.1 The ROK classifies UAS by empty weight of 150kg:

- a) small UAS: 12 kg to 150 kg (its flight must be notified to the government); and
- b) large UAS: 150 kg and above (its flight must be registered with the government).

2.2 Airworthiness certification is not applied to UAS in the ROK. Also, a large UAS needs a special certification for operation, and a small UAS shall meet technical criteria for ultra light flying device prescribed in the aviation act in the ROK. Pilot licence and training requirements for UAS do not exist yet regardless of the size of the UAS, and every operation needs flight approval prior to its flight.

2.3 Recently, the number of incidents related to small UAS has noticeably increased in the ROK as the number of small UASs has grown. As 92 per cent of incidents result from human factors and errors, there is growing concern regarding pilot qualification for small UAS.

3. ACTIVITIES FOR UAS SAFETY

3.1 Recognizing that UAS have more accident and incident possibilities and less reliability than manned aircraft operations, there is a need for airworthiness certification standards and pilot requirements as well as a sufficient number of reserved communication frequencies for the safe UAS operation.

3.2 In this regard, for short-tem safety assurance, the ROK has planned for the development of requirements for small UAS pilot license and training. Also, the ROK will reinforce the criteria for UAS operation permission.

3.3 As a mid- and long-term plan for safety management for UAS reflecting the growth of UAS industry, the ROK will develop comprehensive safety standards and regulations for UAS covering various aspects of small and large UAS in the following:

- a) classification based on UAS performance;
- b) certification of airworthiness;
- c) requirements for pilot license and training;
- d) flight safety regulations; and
- e) safety assessment.

3.4 The ROK has established a consultative body to assist with research and provide advice on UAS safety management, which is called “UAS Steering Committee” consisting of the government, military, research institutes and interested civil organizations.

3.5 Major activities of the Committee are consulting on the development of UAS safety standards and regulation, sharing the newest technology and information concerned and discussing views and ideas for safe operation of UAS.

3.6 The ROK will continuously seek to improve the UAS safety plan through various studies and research together with various activities by the UAS Steering Committee.

4. **CONCLUSION**

4.1 The increased number of UAS flights could lead to significant impact on the safety of manned civil aviation operations within the existing airspace. Thus, there is no doubt that safety standards and regulations on those UAS flights will be necessary for the harmonized and safe operations of UAS.

4.2 Also, standardized safety rules and regulations for UAS, particularly classification, reliability of airworthiness and personnel licensing, are needed for the assurance of safety for UAS operations.

4.3 At present, safety issues and regulatory matters of UAS operations are addressed by several States rather than international organizations. However, given that the technology of UAS is developing very fast with great demands from the industry, global discussions on UAS safety issues would be necessary in near future. In this regard, mutual efforts and close cooperation for safety research and information sharing among ICAO, Member States, international and regional bodies concerned will be indispensable for facilitating safe operation of UAS on a national, regional and global basis.

4.4 Furthermore, the ROK proposes to urge ICAO to consider adding the development of a regulatory framework for UAS into the work programme of the Air Navigation Bureau in order to support the ROK and all other States facing this new safety issue.