

**57th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

*Incheon, Republic of Korea
4 – 8 July 2022*

AGENDA ITEM 3: AVIATION SAFETY

**RESPONSE SYSTEM FOR THE APPEARANCE OF UNLAWFUL
DRONES AT INCHEON INTERNATIONAL AIRPORT**

(Presented by the Republic of Korea)

INFORMATION PAPER

SUMMARY

In relation to the recent cases of unlawful drones hindering flight safety during take-off and landing around airports, this paper introduces the drone detection system and overall response system Incheon International Airport of the Republic of Korea has to respond to unlawful drones flying around the airport.

RESPONSE SYSTEM FOR THE APPEARANCE OF UNLAWFUL DRONES AT INCHEON INTERNATIONAL AIRPORT

1. INTRODUCTION

1.1 Incheon International airport (ICN) of the Republic of Korea has provided protection to aircraft from unlawful drones during take-off and landing by introducing a drone detection system in September 2020. This paper introduces ICN's response procedures with regard to the appearance of unauthorized drones around the airport.

2. DISCUSSION

2.1 In order to prevent damage caused by unlawful drones, Incheon International Airport operates a dedicated team and equipment to identify and monitor unauthorized objects flying around the airport, and take necessary safety measures. Additionally, a drone detection system has been operated by a counterterrorism department of the Incheon International Airport Corporation.

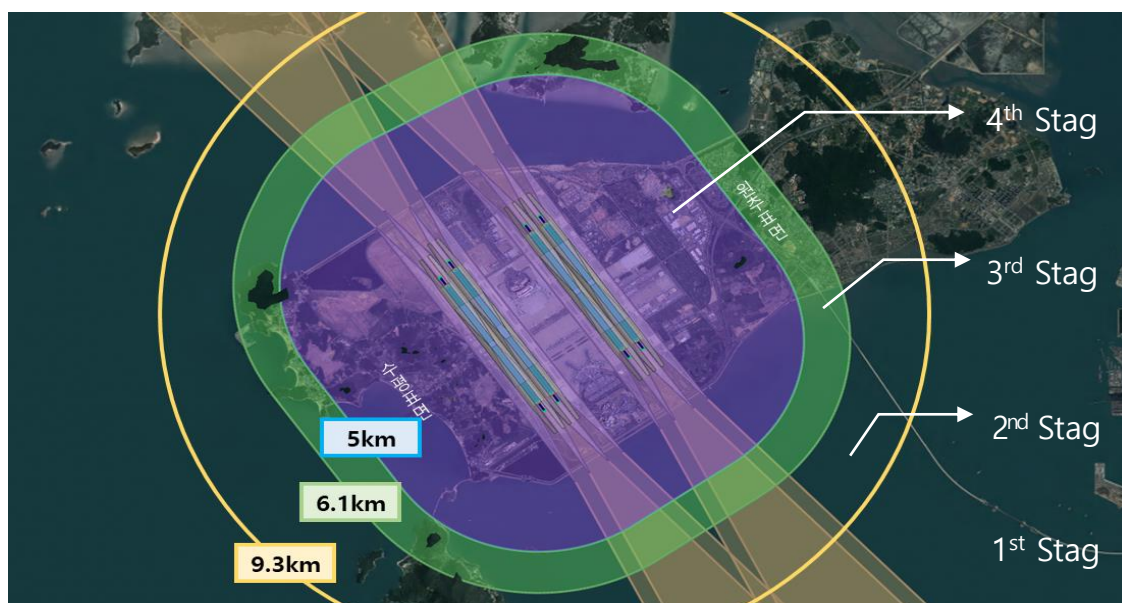
2.2 The response procedures consist of four different stages that are activated depending upon the position of the relevant unlawful drone identified by ICN's drone detection system.

2.3 The first stage applies to a case where an unlawful drone is detected more than 9.3km away from the center of the airport and calls for the lowest level of response: confirm its moving path, speed, altitude and other related information and monitor the situation.

2.4 The second stage is activated when an unlawful drone is detected within 5~9.3km away from the airport center. It triggers notifications to related organizations (National Intelligence Service, Military Security Support Command, police, military, and the relevant team from Incheon International Airport Corporation) except for the air traffic control agency and dispatch of military and/or police forces to search for the pilot of the drone in question.

2.5 The third stage applies when the detection occurs within 3~5km away from the airport center. It triggers notifications to the air traffic control agency to enable the undertaking of necessary measures such as aircraft take-off and landing controls.

2.6 The fourth stage concerns a case where a drone approaches within a distance of 3km from the airport center. In this stage, military, police, and airport response personnel are mobilized to go all- out for searching for the pilot of the drone in question.



2.7 The Incheon International Airport control tower has two sets of response procedures and takes one of them depending on whether a drone detection system is in operation or not when an unlawful drone appears in the control area.

2.8 First, when the drone detection system is in operation and an unlawful drone is detected within the horizontal surface (5km), all take-offs and landings shall be halted until a report comes in confirming that the drone in question has been eliminated and the case is closed.

2.9 Second, when the drone detection system is not in operation, all take-offs and landings shall be halted if any unlawful drone activities are observed or reported within the conical surface (6.1km).

2.10 Despite these measures in place, visual errors may occur when unlawful drone activity is reported based on visual observations. Therefore, in addition to the drone detection system, radar control equipment should be used to check whether an aircraft has been mistaken for an unlawful drone before a decision to halt take-off and landing is made.

2.11 Since the introduction of the drone detection system, ICN had a total of 259 cases of unlawful drone appearance and detection around the Incheon Airport between September 2020 and May 2022. During the same period, the number of cases where aircraft take-off and landing was halted due to unlawful drone activities was five in 2020 (an average duration of 31.6 minutes), nine in 2021 (an average duration of 10.7 minutes), and two in 2022 (an average duration of 6.5 minutes). In all of those cases, unlawful drone activities were detected immediately and proper safety measures were taken.

2.12 In order to prevent any unauthorized drone activities in aircraft operations around Incheon International Airport, related agencies are pursuing close cooperation, communication and information sharing.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

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