



ICAO

International Civil Aviation Organization

**Fifth Meeting of the Surveillance Implementation
Coordination Group (SURICG/5)**

Web-conference, 22 – 24 September 2020

Agenda Item 5: Update on surveillance activities and explore potential cooperation opportunities

**THE IMPLEMENTATION OF NEW SURVEILLANCE SYSTEM WITHIN
PYONGYANG FIR**

(Presented by Democratic People's Republic of Korea)

SUMMARY

This paper presents the information on the transition of surveillance system from SSR to ADS-B within Pyongyang FIR.

1. The challenges to CNS, ATMD, GACA, DPR Korea

In 2021, our current PSRs and SSRs will reach the end of their operational life.

Replacing the full radar system would be too expensive and it is also aging technology that does not make the most of the significant improvements offered by global navigation satellite system (GNSS). Therefore, the CNS of ATMD has decided to introduce ADS-B 1090MHz ES rather than the update of surveillance system by SSRs and speeded up the implementation for ADS-B surveillance system.

2. Discussion

2.1 The implementation status for ADS-B 1090MHz ES

In 2013, the CNS of ATMD has organized a special group for the implementation of ADS-B, made State Implementation Plan based on *ADS-B Implementation and Operations Guidance Document* for ICAO Asia/Pacific and speeded up the ADS-B implementation.

The CNS of ATMD has set the State Policy, main principles, general targets, steps and technical innovations for ADS-B implementation. Then, the CNS of ATMD has installed the ADS-B ground stations so as to cover all airspaces in Pyongyang FIR, compared it with SSRs and confirmed that ADS-B was better than SSR. And the CNS of ATMD has made the system safety assessment for ADS-B surveillance system. ADS-B surveillance system in Pyongyang FIR complies with following standards:

- ICAO Annex 10, Volume IV;
- RTCA DO-260/DO-260A/DO-260B: Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services – Broadcast (TIS-B);
- ED-129A: Technical Specification for a 1090 MHz Extended Squitter ADS-B Ground

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Station; and

- SUR. ET1. ST05. 2000-STD-12-01: All Purpose Structured Eurocontrol Surveillance Information Exchange Part 12: “Category 021-ADS-B Messages” V0.26 and V2.1.

The CNS of ATMD issued the information on the implementation of new surveillance system by NOTAM early in February of this year and published the relevant AIRAC AIP AMDT effective from October 08, 2020 through the AIS.

2.2 The proposed issues associated with ADS-B implementation

2.2.1 RAIM Prediction NOTAM

Even though there was no standard or procedure specifically for GPS RAIM outage NOTAMs in ICAO Annex 15 and PANS-AIM, examples for the unavailability of GNSS, GBAS and SBAS are contained in the current version of ICAO Doc 8126 and examples for GPS signal non-availability events included in the *Guidance Manual for AIS in the Asia/Pacific Region*. So, we have to issue the prediction NOTAMs for RAIM outage. But whenever the controller received a RAIM warning report from an aircrew, we have decided to implement contingency procedures to be followed in the event of data degradation after reconfirmation through other aircrew because of small air traffic flows within Pyongyang FIR.

In the future, we are planning to issue RAIM prediction NOTAMs in support of increasing air traffic flows.

2.2.2 The sharing of ADS-B data

We are planning to discuss the sharing of ADS-B data with adjacent Contracting States in accordance with the requirement for providing the aircraft surveillance from departure to landing.

3. Action by the meeting

3.1 The meeting is invited to note the information in this paper.
