



International Civil Aviation Organization

WORKING PAPER

A42-WP/44

EX/20

4/7/25

ASSEMBLY — 42ND SESSION

EXECUTIVE COMMITTEE

Agenda Item 22: Other high-level policy issues to be considered by the Executive Committee

INFRACTION OF THE CONVENTION ON INTERNATIONAL CIVIL AVIATION BY THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

(Presented by the Council of ICAO)

EXECUTIVE SUMMARY

This working paper reports on Global Navigation Satellite System (GNSS) Radio Frequency Interference (RFI) originating from the Democratic People's Republic of Korea (DPRK) and its harmful impact on the safety and security of international civil aviation, which is against the principles enshrined in the *Convention on International Civil Aviation* (Chicago, 1944 – the “Chicago Convention”), which has been determined by the Council as an infraction of the Chicago Convention to be reported to the 42nd Session of the Assembly pursuant to Article 54 k) of the Convention.

Action: The Assembly is invited to:

- a) consider this working paper; and
- b) adopt the draft Resolution presented in the Appendix B.

<i>Strategic Goals:</i>	This working paper relates to Strategic Goals: <i>Every Flight is Safe and Secure, Aviation Delivers Seamless, Accessible, and Reliable Mobility for All, The International Civil Aviation Convention and other Treaties, Laws and Regulations address all Challenges, and The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All</i>
<i>Financial implications:</i>	This working paper has no direct financial implications
<i>References:</i>	C-DEC 235/7 Oral Report, Secretary General (Revision No. 1, 6 June 2025) C-DEC 234/11 C-WP/15690, <i>Recurring GNSS Radio Frequency Interference and their Implications on the Safety and Security of International Civil Aviation</i> Doc 7559, <i>Rules of Procedure for the Council</i> Doc 7300, <i>Convention on International Civil Aviation</i>

1. BACKGROUND

1.1 As set out in *Annex 10 – Aeronautical Telecommunications, Volume I – Radio Navigation Aids*), Global Navigation Satellite Systems (GNSS) serve as standard radio navigation aids. Since most aircraft are equipped with GNSS receivers, GNSS Radio Frequency Interference (RFI) is considered to pose a risk to the safety, regularity, and efficiency of international civil aviation and should therefore be strictly prohibited. The Assembly, in Resolution A41-8, Appendix C,¹ recognized that GNSS should be free from harmful interference and in this connection urged States to refrain from any form of jamming, or spoofing affecting civil aviation.

1.2 As enshrined in the Preamble and Article 44 of the *Convention on International Civil Aviation* (Chicago, 1944 – the “Chicago Convention”), the safety of international civil aviation remains the primary aim and objective of the Chicago Convention and the International Civil Aviation Organization (ICAO) and all its Member States. Accordingly, GNSS RFI which jeopardizes the safety of civil aviation, poses an unacceptable hazard to the safety and security of civil aviation in a manner that contravenes the principles and objectives of the Chicago Convention as well as those of ICAO.

1.3 At the Fifth Meeting of its 232nd Session (14 June 2024) and at the Seventh Meeting of its 233rd Session (5 November 2024), the Council considered the matter “GNSS interference on the Korean Peninsula” and noted with grave concern the reported recurring incidents of GNSS RFI originating from the Democratic People’s Republic of Korea (DPRK). In this regard, the Council decided to strongly urge the DPRK to fully implement the Council’s Decisions of 31 May 2016 (C-DEC 196/4) and 18 June 2012 (C-DEC 208/9), and to strictly comply with its obligations under the Convention. In spite of the above-mentioned Council Decisions in 2024 (C-DEC 232/5 and C-DEC 233/7), the largest and the longest-lasting GNSS RFI originating from the DPRK was observed in the Incheon Flight Information Region (FIR), starting from 2 October 2024.

2. ACTIONS BY THE ORGANIZATION

2.1 At the Eleventh Meeting of its 234th Session (26 March 2025), the Council, following its consideration of a report presented by the Republic of Korea on recurring GNSS RFI on the Korean Peninsula originating from the DPRK and the resulting risks to air navigation safety and security of international civil aviation, recalled and reaffirmed its serious concern regarding the harmful impact of GNSS RFI on the safety and security of international civil aviation, which goes against the principles enshrined in the Chicago Convention.

2.2 The Council further noted with grave concern that, despite its previous decisions of 18 June 2012 (C-DEC 196/4), 31 May 2016 (C-DEC 208/9), and 14 June 2024 (C-DEC 232/5), these incidents of GNSS RFI originating from the DPRK had continued to recur in the intervening period and had been ongoing since 2 October 2024, jeopardizing the safety of international air navigation in the Incheon Flight Information Region (FIR).

2.3 The Council strongly urged the DPRK to fully implement the afore-mentioned Council decisions and to strictly comply with its obligations under the Chicago Convention while reiterating its previous call to the DPRK to ensure that similar occurrences did not recur in the future. Considering the serious and continuous risk posed to international civil aviation as a result of these recurring incidents of GNSS RFI originating from the DPRK, the Council agreed to give further consideration to the reporting of

¹ Assembly Resolution A41-8, *Consolidated statement of continuing ICAO policies and practices related to a global air traffic management (ATM) system and communications, navigation, and surveillance/air traffic management (CNS/ATM) systems – Appendix C, Ensuring the resilience of ICAO CNS/ATM systems and services.*

this matter in accordance with Article 54 k) of the Chicago Convention to the 42nd Session of the Assembly during the 235th Session.

2.4 As requested by the Council during its 234th Session (C-DEC 234/11, paragraph 2 e) refers) and consistent with Article 54 k) of the Chicago Convention, on 6 May 2025, the President of the Council sent a letter to the minister responsible for civil aviation in the DPRK communicating the said Council's decision and requesting the government of the DPRK to report to the Council within thirty days the appropriate action it has taken in that regard to implement the Council's determinations and comply with the DPRK's obligations under the Chicago Convention.

2.5 Despite the expiration of the thirty-day period on 5 June 2025, the Organization has not received any correspondence from the authorities of the DPRK in response to the letter from the President of the Council dated 6 May 2025 or generally in regard to actions taken by them to address or resolve the above infraction of the Chicago Convention.

2.6 At the Seventh Meeting of its 235th Session (13 June 2025), the Council reiterated its grave concern that notwithstanding its previous decisions of 18 June 2012 (C-DEC 196/4), 31 May 2016 (C-DEC 208/9), 14 June 2024 (C-DEC 232/5) and 26 March 2025 (C-DEC 234/11) relating to the incidents of GNSS RFI on the Korean Peninsula originating from the DPRK, these incidents had continued to recur in the intervening period and had been ongoing since 2 October 2024, jeopardizing the safety of international civil aviation in the Incheon FIR;

2.7 The Council also noted, with regret, that the DPRK had yet to respond to the afore-mentioned letter of the President of the Council, despite the thirty-day timeframe having expired on 5 June 2025, or more generally to any other aspect of this matter.

2.8 In this connection, considering the serious and continuing risk posed to international civil aviation as a result of these recurring incidents of GNSS RFI originating from the DPRK, and acknowledging that the DPRK had not responded to the Council's repeated requests and decisions or comply with its obligations under the Chicago Convention, the Council decided to report the matter as an infraction of the Chicago Convention to the 42nd Session of the ICAO Assembly, in accordance with Article 54 k) of the Chicago Convention.

3. EVIDENCE OF THE INFRACTION OF THE CHICAGO CONVENTION BY THE DPRK

3.1 The evidence of the infraction of the Chicago Convention by the DPRK was presented to the Council by the Republic of Korea in C-WP/15690 and is reproduced in **Appendix A** of this working paper.

4. ARTICLE 54 K) OF THE CONVENTION

4.1 By virtue of Article 54 k) of the Convention, the Council shall "[r]eport to the Assembly any infraction of this Convention where a Contracting State has failed to take appropriate action within a reasonable time after notice of the infraction".

4.2 The Convention does not define the word "infraction" as used in Article 54, although it has been previously interpreted that any action which may be considered as an infraction, breach, violation or infringement of the Convention is potentially open for Council action under Article 54 k). The Council has previously determined that an infraction, breach, violation or infringement of the principles or rules of the

Convention has taken place. In this regard, the Council agreed in 1999 that, in continuity of past practice, it may wish to consider taking the action specified in Article 54 k) only where important considerations are at issue (158th session).

4.3 In making a determination under Article 54 k), the Council must follow due process and elementary principles of justice. This means that, at a minimum, the States concerned must be given adequate opportunity to be heard by the Council consistent with Article 53 of the Convention and Rule 31 of the *Rules of Procedure for the Council* (Doc 7559/11). The States concerned must also be notified of the infraction and provided reasonable time to take appropriate action.

4.4 In accordance with the above and considering that the DPRK failed to take appropriate action within a reasonable time after notice of the infraction, despite the Council's strong condemnation of the recurring GNSS RFI originating from the DPRK and repeated calls on the DPRK to implement the determinations of the Council and comply with the DPRK's obligations under the Convention, the Council decided, on 13 June 2025, that the actions of the DPRK, set out in paragraph 1.3 above, qualify as an infraction of the Chicago Convention to be reported to the Assembly under Article 54 k) of the Convention.

5. CONCLUSIONS AND ACTION BY THE ASSEMBLY

5.1 The Council invites the Assembly to condemn the infraction of the Convention by the DPRK as presented in this paper.

5.2 The Assembly is therefore invited to consider the adoption of the draft Resolution presented in **Appendix B** to this paper

— — — — —

APPENDIX A

EXCERPT OF C-WP/15690 PRESENTED BY THE REPUBLIC OF KOREA

[...]

2. CONTINUOUS GNSS RFI ALONG THE BORDER

2.1 From 4 March to 13 March 2011, GNSS RFI signals transmitted from a location in the DPRK affected the GNSS receivers of 106 aircraft of 18 airlines of six States. One of those aircraft made a missed approach due to the [E]GPWS warning.

2.2 From 28 April to 13 May 2012, GNSS RFI from the DPRK recurred and affected the GNSS receivers of 1,016 aircraft from 16 States. In particular, four aircraft made a missed approach due to the [E]GPWS warning.

2.3 From 31 March to 5 April 2016, the incident of GNSS RFIs from the DPRK recurred. In total, 1,007 aircraft of 40 airlines from 14 States reported an unreliable GNSS signal to the air traffic control unit in the Incheon FIR.

2.4 From 6 March to 2 June 2024 (6 March - 16 March, 2 April, 7 April, and 29 May - 2 June), the incident of GNSS RFI from the DPRK recurred. In total, 530 aircraft of 49 airlines from more than 20 States reported an unreliable GNSS signal to the air traffic control unit in the Incheon FIR.

2.5 After four months, the longest and largest incident of GNSS RFI from the DPRK recurred (from 2 October 2024 to 14 February 2025, and is expected to continue for some time). In total, 4,402 aircraft of 100 airlines from more than 20 States reported an unreliable GNSS signal to the air traffic control unit in the Incheon FIR.

2.6 The GNSS RFIs in 2011, 2012, 2016, 2024, and 2025 have a transboundary element in the sense that the GNSS RFI signals originated from a location in the DPRK with the effect of affecting the safety of civilian aircraft flying over the northern and northwest areas of the Republic of Korea (ROK).

3. RESULTS OF MEASUREMENT OF THE LOCATION OF GNSS RFI IN 2024 AND 2025 (FROM 2 OCTOBER 2024 TO 14 FEBRUARY 2025)

3.1 Measurement sites: All border areas from the east to the west, including nine locations (Yeonpyeong, Ganghwa, Incheon, Paju, Yeoncheon, Cheolwon, Yanggu, Hwacheon, and Gosung).

3.2 Frequencies: GPS L1 (1575.42 MHz), GPS L2 (1227.60 MHz) [same as the transmitting frequencies of GPS satellites].

3.3 Measurement systems: Fixed GNSS Interference Monitoring System.

3.4 Employed measuring method: triangulation, which is generally used to identify the location of the interfering source.

3.5 Results of measurement: five locations (Yongyeon, Haeju, Gaepung, Jangpung, and Pyeongyang in the DPRK) were determined and confirmed as the places of origin of the GNSS RFI signals.

3.6 The power level of the RFI signal ranges from approximately -133dBm to -78dBm (4dB - 59dB compared with noise signal strength on the measurement sites), depending on the areas of measurement (GNSS signal strength is from -160dBm to -130dBm).

3.7 Measurer: the Ministry of Science and ICT(MSIT), a governmental authority with the mandate to control and manage the radio frequencies in the ROK.

3.8 Interfered areas: the island area of West Incheon, Gyeonggi Province (including Seoul and the Incheon area), the northern part of Chungcheong Province, and the middle of Gangwon Province. Four thousand four hundred two aircraft, 800 vessels, and five mobile communications base stations were interfered.

[...]

— — — — —

APPENDIX B

DRAFT ASSEMBLY RESOLUTION

Resolution A42/xx : Infraction of the Convention on International Civil Aviation by the Democratic People's Republic of Korea

Having considered the item concerning recurring Global Navigation Satellite System (GNSS) Radio Frequency Interference (RFI) on the Korean Peninsula originating from the Democratic People's Republic of Korea;

Bearing in mind that the safety of international civil aviation remains the primary aim and objective of the *Convention on International Civil Aviation* as well as the International Civil Aviation Organization;

Recalling Assembly Resolution A41-8, Appendix C on ensuring the resilience of ICAO CNS/ATM systems and services, which recognized that GNSS should be free from harmful interference and urged States to refrain from any form of jamming, or spoofing affecting civil aviation;

Considering the paramount importance of preserving the safety and security of international civil aviation as enshrined in the principles and rules of the *Convention on International Civil Aviation* and its Annexes;

Noting that the ICAO Council, on 26 March 2025, recalled and reaffirmed its serious concerns regarding the harmful impact of GNSS RFI on the safety and security of international civil aviation, which is against the principles enshrined in the *Convention on International Civil Aviation*;

Noting that the ICAO Council, on 13 June 2025, reiterated its grave concern that notwithstanding its previous decisions of 18 June 2012, 31 May 2016, 14 June 2024 and 26 March 2025 relating to the incidents of GNSS RFI on the Korean Peninsula originating from the Democratic People's Republic of Korea, these incidents had continued to recur in the intervening period and had been ongoing since 2 October 2024, jeopardizing the safety of international civil aviation in the Incheon Flight Information Region (FIR);

Noting that the Democratic People's Republic of Korea was notified that the recurring incidents of GNSS RFI went against the principles enshrined in the *Convention on International Civil Aviation* and yet failed to respond to the Council's repeated decisions and requests to implement its decisions and comply with the Democratic People's Republic of Korea's obligations under the *Convention on International Civil Aviation*;

Considering that the ICAO Council decided to submit this matter to the 42nd Session of the ICAO Assembly, in accordance with Article 54 k) of the *Convention on International Civil Aviation*;

The Assembly:

1. *Endorses* the determination of the ICAO Council that, GNSS RFI on the Korean Peninsula originating from the Democratic People's Republic of Korea and its harmful impact on the safety and security of international civil aviation goes against the principles enshrined in the *Convention on International Civil Aviation*, and constitutes an infraction of that Convention;

2. *Deplores* that, in disregard of the concerns repeatedly expressed by the ICAO Council, the Democratic People's Republic of Korea has continued to engage in actions resulting in recurring GNSS RFI on the Korean Peninsula;

3. *Condemns* the Democratic People's Republic of Korea for the recurring GNSS RFI originating therefrom that is jeopardizing the safety and security of international civil aviation;
4. *Urgently calls* upon the Democratic People's Republic of Korea to comply strictly with its obligations under the *Convention on International Civil Aviation*, in order to cease the recurrence of such GNSS RFI activities;
5. *Requests* the Council to remain seized of this matter and report back to the Assembly as appropriate; and
6. *Instructs* the Secretary General to immediately draw the attention of all Contracting States to this resolution.

— END —