



International Civil Aviation Organization

**WORKING PAPER**

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10/9/25

**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  
RUSSIAN FEDERATION - GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)  
RADIO FREQUENCY INTERFERENCE (RFI)**

(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 territory of the Russian Federation 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”), and 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 235/17 Oral Report, Secretary General (18 August 2025) C-DEC 235/7 C-WP/15745, <i>Recurring GNSS Radio Frequency Interference and their Implications on the Safety and Security of International Civil Aviation</i> Doc 7559/11, <i>Rules of Procedure for the Council</i> Doc 7300/9, <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,<sup>1</sup> 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 Seventh Meeting of its 235th Session (13 June 2025), the Council considered a working paper presented by Estonia, Finland, Latvia, Lithuania, Poland and Sweden, which reported on recurring GNSS RFI in the Baltic, Eastern and Northern European regions and its implications on the safety and security of international civil aviation. The Council was apprised that the Radio Regulations Board of the International Telecommunication Union (ITU), at its 98th Meeting (17 – 21 March 2025) concluded that measurements had geolocated the source of the GNSS RFI in the Baltic, Eastern and Northern European regions to be within the territory of the Russian Federation.

## 2. ACTIONS BY THE ORGANIZATION

2.1 The Council, at the Seventh Meeting of its 235th Session, following its consideration of a report of recurring GNSS RFI in the Baltic, Eastern and Northern European regions originating from the territory of the Russian Federation and the resulting risks to air navigation safety and security of international civil aviation, recalled and reaffirmed its grave 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 serious concern, the recurring incidents of GNSS RFI originating from the Russian Federation, affecting international air navigation in the Warszawa (EPWW), Vilnius (EYVL), Riga (EVRR), Tallinn (EETT), Helsinki (EFIN), and Sweden (ESAA) Flight Information Regions (FIRs).

2.3 The Council strongly urged the Russian Federation to strictly comply with its obligations under the Chicago Convention and its Annexes and called on the Russian Federation to ensure that similar occurrences do 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 Russian Federation, the Council agreed to give further consideration to the reporting of this matter in accordance with Article 54 k) of the Chicago Convention to the 42nd Session of the Assembly at a subsequent meeting during the 235th Session.

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<sup>1</sup> 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.*

2.4 As requested by the Council during its 235th Session (C-DEC 235/7, paragraph 3 f) refers) and consistent with Article 54 k) of the Chicago Convention, on 7 July 2025, the President of the Council sent a letter to the Representative of the Russian Federation to ICAO, communicating the Council's decision and requesting the government of the Russian Federation to report to the Council within thirty days of its receipt on the appropriate action it has taken in regard to the Council's decision and comply with its obligations under the Chicago Convention and its Annexes.

2.5 The thirty-day period expired on 6 August 2025 and the Organization has not received any correspondence from the authorities of the Russian Federation in response to the letter from the President of the Council sent on 7 July 2025 or generally in regard to actions taken by them with regard to this matter.

2.6 At the Seventeenth Meeting of its 235th Session (2 September 2025), the Council reiterated its serious concern relating to the recurring incidents of GNSS RFI originating from the territory of the Russian Federation, which jeopardized the safety of international air navigation in the Warszawa (EPWW), Vilnius (EYVL), Riga (EVRR), Tallinn (EETT), Helsinki (EFIN), and Sweden (ESAA) Flight Information Regions (FIRs).

2.7 The Council also noted, with regret, that the Russian Federation had yet to respond to the letter of the President of the Council, despite the thirty-day timeframe having expired on 6 August 2025, or more generally to any other aspect of this matter.

2.8 Current information on safety reports provided by the civil aviation authorities of the affected States confirmed that GNSS radio frequency interference remains ongoing without interruption. The Russian Federation therefore failed to take appropriate action as of the date of this paper.

2.9 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 territory of the Russian Federation, and acknowledging that the Russian Federation had not responded to the Council's decision or complied with its obligations under the Chicago Convention and its Annexes, 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 RUSSIAN FEDERATION**

3.1 Evidence of the infraction of the Chicago Convention by the Russian Federation was presented to the Council by Estonia, Finland, Latvia, Lithuania, Poland and Sweden in C-WP/15745 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 Russian Federation 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 territory of the Russian Federation and its calls on the Russian Federation to implement the determination of the Council and comply with the Russian Federation's obligations under the Convention, the Council decided at the seventeenth meeting of its 235th Session on 2 September 2025, that the actions of the Russian Federation, 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 Russian Federation 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.

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## APPENDIX A

### EXCERPT OF C-WP/15745 PRESENTED BY ESTONIA, FINLAND, LATVIA, LITHUANIA, POLAND AND SWEDEN

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#### 2. CONTINUOUS GNSS RFI IN THE BALTIC, EAST AND NORTH EUROPEAN REGION

2.1 The Baltic, East and North Europe region is severely affected by GNSS RFI. The attribution of those GNSS RFI to the Russian Federation was notably recognised by the International Telecommunication Union (ITU) at the 98<sup>th</sup> meeting of its Radio Regulatory Board held on 17-25 March 2025. The ITU concluded that measurements had geolocated the source of the GNSS RFI in the Baltic, East and North Europe to be within the territory of the Russian Federation and noted “*with grave concern the increasing number of cases of harmful interference affecting (...) civil aviation (...)*”. It follows from Article 45.1 of the ITU Constitution, that the right of administrations to deny access to GNSS for defense or security purposes, refers to denial of access within States’ sovereign territories, and therefore should neither affect neighbouring States nor high seas airspace.

2.2 In addition, data regarding GNSS RFI in the EPWW, EYVL, EVRR, EETT, EFIN and ESAA FIRs that has been collected by the affected States as described in this paper confirm that the GNSS RFI originate from locations in the Russian Federation. The Automatic Dependent Surveillance-Broadcast (ADS-B) provides indicators of the navigation integrity degradation, which can be linked to RFI events. The percentage of flights affected by RFIs in those FIRs has grown from around 7.5% in May 2024 to around 27.4% in April 2025, reaching in some of those FIRs over 42% of all flights.

2.3 In January 2025, GNSS RFI transmitted from locations in the Russian Federation affected 23,438 flights operated by 234 operators.

2.4 In February 2025, GNSS RFI transmitted from locations in the Russian Federation affected 28,010 flights operated by 258 operators.

2.5 In March 2025, GNSS RFI transmitted from locations in the Russian Federation affected 29,877 flights operated by 256 operators.

2.6 In April 2025, GNSS RFI transmitted from locations in the Russian Federation affected 41,282 flights operated by 271 operators.

2.7 From January to April 2025, aircraft from 365 operators registered in over 45 States have been affected by RFI when flying in the EPWW, EYVL, EVRR, EETT, EFIN and ESAA FIRs.

2.8 Aggregated ADS-B measurements show false GNSS reported positions caused by the spoofer located in Rostov from November 2024 to February 2025. In total, 293 flights were spoofed in this period, with more than 21,000 ADS-B measurements reporting false positions in a circular trajectory around Rostov. There is data of affected flights by other spoofers in the area, specifically in Kaliningrad, Saint Petersburg and Soltsy, all in the Russian Federation.

2.9 It is important to note that the effects of GNSS RFI can impact safety long after aircraft have exited the airspace with interferences until destination. Indeed, GNSS RFI have a transboundary element in the sense that interference originated from locations in the Russian Federation affect the safety of civilian aircraft flying over European, Asia and Middle East regions. One example is an Air India flight from New Delhi to Amsterdam on November 27<sup>th</sup>, 2024, which was spoofed twice (near Smolensk and Rostov) before entering European airspace.

### **3. MEASUREMENT TO LOCATE SOURCES OF INTERFERENCES IN 2024-2025**

3.1 Measurement sites: The data has been collected by affected States in dedicated ground/airborne measurement campaigns.

3.2 Frequencies: The interference signals are mainly centered on Galileo E1, GPS L1, BeiDou B1, and GLONASS G1 bands (1560 – 1605 MHz), but wide-band spectrum analysis have also revealed interferences in other bands (Galileo E5/E6, GPS L2).

3.3 Measurement systems: Radio Frequency measurement systems installed in fixed and mobile GNSS Interference monitoring stations.

3.4 Employed measuring method: radio-frequency spectrum sensing, raw radio frequency data capture and triangulation, which is generally used to identify the location of the interfering source.

3.5 Results of measurement: Multiple jammers/spoofers detected in the Kaliningrad enclave, Pskov, St. Petersburg and Smolensk. Sites were determined and confirmed as the places of origin of the interfering signals.

3.6 The power level of the RFI signal ranges from approximately - 120dBm to -80dBm (10dB - 50dB 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 Interfered FIRs are: EPWW, EYVL, EVRR, EETT, EFIN and ESAA

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## APPENDIX B

### DRAFT ASSEMBLY RESOLUTION

#### **Resolution A42/xx : Infraction of the Convention on International Civil Aviation by the Russian Federation**

*Having considered* the item concerning recurring Global Navigation Satellite System (GNSS) Radio Frequency Interference (RFI) in the Baltic, Eastern and Northern European regions originating from the territory of the Russian Federation;

*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, expressed its grave concern regarding the recurring incidents of GNSS RFI originating from the Russian Federation, affecting international air navigation in the Warszawa (EPWW), Vilnius (EYVL), Riga (EVRR), Tallinn (EETT), Helsinki (EFIN), and Sweden (ESAA) Flight Information Regions (FIRs);

*Noting* that the Russian Federation 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 request to implement its decision and comply with the Russian Federation'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 in the Baltic, Eastern and Northern European regions originating from the territory of the Russian Federation 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. *Condemns* the Russian Federation for the recurring GNSS RFI originating therefrom that is jeopardizing the safety and security of international civil aviation;
3. *Urgently calls* upon the Russian Federation to comply strictly with its obligations under the *Convention on International Civil Aviation*, in order to cease the recurrence of such GNSS RFI activities;

**Appendix B**

4. *Requests* the Council to remain seized of this matter and report back to the Assembly as appropriate; and
5. *Instructs* the Secretary General to immediately draw the attention of all Contracting States to this resolution.

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