

**61ST CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

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AGENDA ITEM 7: AVIATION AND ENVIRONMENT

**AUTOMATING AND DIGITALISING CORSIA COMPLIANCE SYSTEMS:
STRENGTHENING INTEGRATION WITH ICAO'S CENTRAL REGISTRY**

(Presented by Malaysia)

INFORMATION PAPER

SUMMARY

This paper highlights the growing administrative demand that CORSIA reporting will place on States and ICAO as the scheme enters its mandatory phase from 2027, when the number of participating States nearly doubles. It proposes that ICAO assess common data standards to enable automated, secure data exchange between national CORSIA systems and the ICAO CORSIA Central Registry (CCR) and encourages States/Administrations to share experience on digital-ledger tracking of CORSIA Eligible Emissions Units (CEEU) to support accurate, efficient and extensible CORSIA implementation.

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1. INTRODUCTION

1.1 At the 41st Session of the ICAO Assembly, Member States adopted the Long-Term Global Aspirational Goal (LTAG) of net-zero carbon emissions from international aviation by 2050, with CORSIA recognised as a key measure in the basket of measures supporting this goal.

1.2 From 2027, CORSIA becomes mandatory for all ICAO Member States, expanding participation from approximately 130 States today to nearly 200. This will significantly increase the volume of Emissions Reports (ERs), Verification Reports (VRs) and CEEU transactions that States must process and submit to ICAO through the CORSIA Central Registry (CCR).

1.3 It is important that the systems and processes supporting CORSIA reporting are able to scale efficiently to meet this increased demand, without compromising data quality or timeliness.

1.4 Administrations responsible for reviewing Emissions Reports (ERs) and Verification Reports (VRs) from aeroplane operators and for processing submissions to ICAO through the CCR gain direct and practical insight into the steps involved in compiling, checking, and transmitting CORSIA data.

1.5 This paper focuses on one specific, practical enabler of CORSIA's continued smooth implementation and the integration of data systems between States and ICAO. It does not seek to revisit the policy or eligibility criteria of CORSIA, but rather the administrative and technical means by which compliant data reaches the CCR.

2. DISCUSSION

2.1 As CORSIA enters its mandatory implementation phase from 2027, the number of participating States and the volume of emissions reporting, verification activities and CEEU transaction records are expected to increase substantially. This will place greater demands on national administrations and the ICAO CORSIA Central Registry (CCR).

2.2 Under current arrangements, many States maintain emissions monitoring, reporting and verification (MRV) information through spreadsheets, national databases or standalone reporting tools before manually entering or uploading information to the CCR. While effective at current reporting levels, manual processing may become increasingly resource-intensive as participation expands. (*Source: ICAO CORSIA Central Registry guidance.*)

2.3 Automated exchange of standardised CORSIA data between national systems and the CCR could improve efficiency, reduce transcription errors, and strengthen data consistency. Similar approaches are widely used in customs, air traffic management, and aviation safety reporting systems. (*Sources: ICAO Digital Transformation Strategy; IATA Digital Transformation Initiatives.*)

2.4 The development of common data standards and Application Programming Interfaces (APIs) could allow authorised national systems to securely transmit emissions reports, verification information and compliance data directly to the CCR. Automated validation checks could also identify incomplete or inconsistent submissions before formal review, reducing administrative workload for both States and ICAO.

2.5 Digitalisation may also support transparency in the tracking of CORSIA Eligible Emissions Units (EEUs). Digital registries or distributed ledger technologies could help strengthen auditability, reduce reconciliation efforts and minimise the risk of duplicate recording across multiple systems. Such approaches would require further technical assessment and should complement existing registry arrangements rather than replace them.

2.6 Similar digital infrastructure may also support emerging sustainability initiatives,

including Sustainable Aviation Fuel (SAF) registries and book-and-claim systems, which increasingly rely on trusted digital records and interoperable data exchange mechanisms.

2.7 Implementation costs and technical capacity requirements should be carefully considered. Some States, particularly developing States and smaller administrations, may face resource constraints in adopting new digital tools and standards.

2.8 Regional coordination and ICAO guidance could help promote interoperability, reduce duplication of effort, and encourage the adoption of cost-effective solutions based on common standards rather than fragmented national approaches.

2.9 A phased pilot programme involving interested volunteer States could provide a practical means of testing interoperability, security arrangements and implementation requirements before broader deployment.

2.10 ICAO is well positioned to facilitate the development of common standards, technical guidance and capacity-building activities that support efficient and scalable CORSIA implementation while maintaining data integrity, security and transparency.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) note the growing administrative and data management demands that CORSIA reporting will place on States and ICAO as the scheme enters its mandatory phase from 2027;
- b) encourage ICAO to assess the development of common data standards and/or APIs to enable automated, secure data exchange between national CORSIA systems and the CORSIA Central Registry (CCR);
- c) encourage States/Administrations to share experience on digital-ledger tracking of CEEUs to support transparency and reduce the risk of double-counting;
- d) encourage ICAO to consider a phased, pilot-based approach to system interoperability, beginning with volunteer States, ahead of broader rollout before the 2027–2029 compliance period; and
- e) request the ICAO Asia and Pacific Regional Office to facilitate regional coordination and capacity building on CORSIA system digitalisation ahead of the 2027–2029 compliance period.

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