



WORKING PAPER

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

**Agenda Item 1: Update on the ICAO 2023-2025 Business Plan and long-term strategic planning
1.1: Reprioritization of the ICAO 2023-2025 Business Plan**

**NEED FOR A GLOBAL FRAMEWORK FOR AVIATION SAFETY DATA AND
INTELLIGENCE MANAGEMENT**

(Presented by Hungary on behalf of the European Union and its Member States¹,
other Member States of the European Civil Aviation Conference²,
European Organisation for the Safety of Air Navigation (EUROCONTROL),
and by Singapore and the United States)

EXECUTIVE SUMMARY

This working paper presents the need for establishing a global framework for aviation safety data and intelligence management. Such a global framework would facilitate the coordination of the voluntary regional initiatives aimed at pooling large amount of data and expertise to improve the accuracy of safety information and proactively identify safety issues. It could bring significant benefits to the entire international community, including the capacity to produce global aviation safety intelligence based on the aggregation of the safety information from the regional data and information sharing initiatives.

Action: The Conference is invited to note the conclusion and endorse Recommendation 1.1/x – Global framework for aviation safety data and intelligence management in paragraph 3.

1. INTRODUCTION

1.1 The global landscape is witnessing a surge in regional initiatives dedicated to sharing, analysing and aggregating large amounts of data as well as expertise to enhance the precision of safety intelligence. Some notable examples of these initiatives include the Data4Safety³ (D4S) programme in Europe, the Aviation Safety Information Analysis and Sharing (ASIAS) initiative in the United States, and the Regional Data Collection, Analysis and Information Sharing for Aviation Safety (AP-SHARE) demonstration project in the Asia-Pacific Region. Airlines may also join the International Air Transport Association (IATA) Flight Data Exchange (FDX).

1.2 Assembly Resolution A41-6: *ICAO Global planning for safety and air navigation* recognizes the importance of global frameworks and regional and national plans to support the Strategic Objectives of ICAO. The *Global Aviation Safety Plan* (GASP, Doc 10004) identifies the sharing and

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² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, Norway, San Marino, Serbia, Switzerland, Türkiye, Ukraine, and the United Kingdom

³ <https://www.easa.europa.eu/en/domains/safety-management/data4safety>

exchange of safety information as a safety performance enabler to achieve the GASP objectives. Underlining the importance of the use of safety data and its positive impact on the State's safety programme, ICAO Annex 19 – *Safety Management* requires the collection, analysis and exchange of safety data to support the State's safety management activities.

1.3 Moreover, ICAO Annex 19, ICAO Doc 9859, *Safety Management Manual* and the upcoming ICAO Doc 10159, *Safety Intelligence Manual* provide definition and guidance on the following topics:

- a) developing a safety intelligence strategy;
- b) safety data collection and processing system (SDCPS) including data collection methods and sources of data;
- c) mandatory reporting systems;
- d) taxonomies;
- e) safety data and safety information management;
- f) different types of safety analysis;
- g) competencies required for conducting safety analysis and interpreting results; and
- h) sharing and exchange of safety data and safety information.

1.4 The sharing of safety data and information at the regional level through cooperation entails a higher informative value and enables a more effective monitoring of existing safety risks and a swifter identification of new and emerging threats. Furthermore, it facilitates an effective and timely mitigation of risks within the region.

2. DISCUSSION

2.1 Regional data and information sharing initiatives are powered by cutting-edge technologies, most notably big data and data Science technologies, which facilitate the extensive collection and analysis of vast datasets from multiple aviation domains and proactive identification of systemic safety issues. They are also underpinned by robust governance structures that not only safeguard data protection but also establish ethical guidelines for the utilization of results.

2.2 Several of the existing regional data and information sharing initiatives have already taken strides to establish communication channels, improving compatibility among participating systems and their algorithms. This interoperability opens the door to collaborative studies and comparisons of the intelligence produced at regional levels, fostering a collective approach to global safety. This is facilitated by the development of new international taxonomies, such as the flight data monitoring taxonomy that is prepared by the Flight Data Metric Definition Working Group of the CAST/ICAO Common Taxonomy Team (CICCTT).

2.3 In this context, there is a compelling case for a high-level discussion in ICAO, to explore and enhance the current framework to safeguard data, standardize governance procedures, facilitate the aggregation of safety information generated by regional initiatives and to establish sustainable and actionable global safety intelligence.

2.4 Ensuring the compatibility of the regional data and information sharing initiatives, will enable the exchange of safety intelligence across regions. This will also create the potential for aggregating consistent safety intelligence at global level to validate existing global safety risks, identify new and emerging global threats and risks and facilitate effective and timely action at global level.

2.5 Such a global framework holds the potential to bring significant benefits to the entire international community, including the capacity to leverage on a new form of aviation safety intelligence to support the evolution of the global aviation safety strategies in accordance with the GASP.

2.6 Many organizations, including government and industry bodies, are developing regional data and information sharing initiatives. The creation of a global framework would bring more benefits to the entire international aviation community by enabling an access to global safety information and intelligence.

2.7 Considering that a global framework would provide greater clarity and baseline rules on issues such as data protection, data confidentiality and the roles and responsibilities of the different actors, the ICAO Council may, in accordance with Article 55 of the Chicago Convention, Permissive Functions of the Council:

c) Conduct research into all aspects of air transport and air navigation which are of international importance ... and facilitate the exchange of information between contracting States on air transport and air navigation matters;

d) Study any matters affecting the organization and operation of international air transport...

e) Investigate, at the request of any contracting State, any situation which may appear to present avoidable obstacles to the development of international air navigation.

3. CONCLUSION

3.1 A global framework for aviation safety data and intelligence management has the potential to bring significant benefits to the entire international aviation community, including the ability to produce global aviation safety intelligence based on the aggregation of the safety information from regional data and information sharing initiatives. There is a need for a high-level discussion in ICAO to explore and enhance the current framework to protect safety data, standardise governance procedures and facilitate the aggregation of safety information generated by regional data and information sharing initiatives and establish sustainable and actionable global safety intelligence to support the evolution of the global aviation safety strategies.

3.2 In light of the above, the Conference is invited to agree to the following recommendation:

Recommendation 1.1/x – Global framework for aviation safety data and intelligence management

That ICAO:

- a) actively promotes a collective approach by Member States and stakeholders to global safety data and acts as an advocate to facilitate the exchange of aviation safety data at regional level and of safety information and intelligence at global level;

- b) launches work to elaborate guidance to enable the exchange of safety intelligence between regional data and information sharing initiatives, and to foster the capacity to aggregate their aviation safety intelligence at global level;
- c) assesses whether the SARPs on the protection of safety data are fit for the purpose of establishing a global framework and strive towards its creation;
- d) sets up a forum of the regional data and information sharing initiatives to facilitate the development of common and standard algorithms, criteria and indicators to be used in analysis processes; and

that ICAO Member States:

- e) encourage their regional data and information sharing initiatives to support the establishment of a global framework for aviation safety data and intelligence management.

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