



**WORKING PAPER**

**SECOND HIGH-LEVEL SAFETY CONFERENCE 2015 (HLSC 2015)  
PLANNING FOR GLOBAL AVIATION SAFETY IMPROVEMENT**

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**Theme 2: Future approach to manage aviation safety**

**Topic 2.3: Safety information sharing**

**EVOLVING SAFETY ANALYSIS TO SUPPORT GLOBAL  
AVIATION SAFETY STRATEGIES**

(Presented by the ICAO Secretariat)

**SUMMARY**

This working paper presents information on the continued evolution of ICAO's safety analysis capabilities, including the potential benefits to be derived from future development of a global information sharing framework. The purpose of the proposed framework is to support the Global Aviation Safety Plan (GASP) and the resolution of any issues that may otherwise adversely impact aviation safety. The paper also reports on progress leading to the development of the proposed framework, including experience of existing regional information sharing initiatives.

**Action:** The conference is invited to:

- a) acknowledge the benefits and lessons learned from existing information sharing initiatives to measure safety performance; and
- b) recommend that ICAO develop the global information sharing framework that can be used for different types of information, including but not limited to, exchange of operational information.

**1. INTRODUCTION**

1.1 Article 54(i) of the *Convention on International Civil Aviation* (Doc 7300, Chicago Convention) requires the Council to "[r]equest, collect, examine and publish information relating to the advancement of air navigation and the operation of international services...".

1.2 Article 55 of the Chicago Convention further permits the Council to:

- “c) Conduct research into all aspects of air transport and air navigation which are of international importance, communicate the results of its research to the contracting States, and facilitate the exchange of information between contracting States on air transport and air navigation matters;

...

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; and, after such investigation, issue such reports as may appear to it desirable.”*

1.3 The exchange of information is a fundamental tenet of a safe air transportation system and is acknowledged as an enabler to achieve the GASP objectives. Due to the interrelated nature of the global air transportation system, detection of safety issues and decisions taken to improve safety are contingent upon access to sources of accurate and relevant information from multiple domains.

1.4 The 38th Session of the Assembly (Montréal, 24 September – 4 October 2013) agreed that a framework should be developed that facilitates the sharing and analysis of safety information through and across regional systems, and provides the means to adequately protect the resulting safety information (*Assembly 38th Session. Montréal, 24 September – 4 October 2013. Technical Commission. Report* (Doc 10028) refers).

1.5 The relevance of an international information exchange framework has been considered in a number of contexts. In particular, the Task Force on Risks to civil aviation arising from Conflict Zones (TF RCZ) recognized the need for a framework to consolidate and share information among all relevant stakeholders, including States and industry.

1.6 The safety benefits to be derived from information sharing initiatives have been demonstrated through a number of projects at the State and regional levels. Nonetheless, a framework does not yet exist to enable the holistic analysis of international safety issues among States and aviation service providers at the global level. Establishment of a global framework requires appropriate governance policies, safeguards and a technical integration process to proactively analyse known and emerging risks in an international context.

## 2. **PROGRESS**

2.1 The Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety 2006 (DGCA/06) (Montréal, 20 to 22 March 2006) made recommendations to provide public access to appropriate information on safety oversight audits (Conclusion 2/1 refers).

2.2 The High-level Safety Conference (HLSC) 2010 (Montréal, 29 March – 1 April 2010) made recommendations for ICAO to enter into new agreements and amend existing agreements for the sharing of confidential safety information with international entities and organizations in order to reduce the burden on States caused by repetitive audits or inspections and to decrease the duplication of monitoring activities (Recommendation 1/2 refers). Pursuant to this recommendation, a Memorandum of Understanding (MOU) on a Global Safety Information Exchange (GSIE) was signed between ICAO, IATA, the Department of Transportation of the United States of America (DOT) and the Commission of the European Union (EC).

2.3 One of the objectives of the GSIE was to identify an optimal framework for the exchange of safety information multilaterally between the participants. GSIE provides an example for the sharing of information related to the participants' respective safety audits.

2.4 Following the HLSC 2010 recommendation, the technical enhancements to the ICAO Integrated Safety Trend Analysis and Reporting System (iSTARS) expanded online access to a range of information used to conduct holistic analyses of systemic safety risks. iSTARS has facilitated the

integration of information from various sources as well as the dissemination of related analysis output to improve aviation safety.

2.5 Historically, ICAO's focus has been on the exchange of information collected by ICAO and Member States on effective implementation of Standards and Recommended Practices; in other words, the results of monitoring and oversight activities, including but not limited to audits. To date, iSTARS has made significant progress in correlating safety-related risks with the effective implementation of Universal Safety Oversight Audit Programme (USOAP) protocols and traffic growth. While effective implementation of Standards and Recommended Practices is important, residual risks may exist in compliant air transportation systems. The transition to a risk-based approach will increasingly require the exchange of operational information among ICAO, its Member States and industry to determine the effectiveness of existing safety strategies, define future global safety priorities, and further enhance the proactive mitigation of safety risks.

### 3. NEXT STEPS

3.1 The successful implementation of State Safety Programmes (SSP) and safety management systems (SMS) is dependent upon a steady flow of operational information to identify hazards, assess related safety risks, develop mitigation strategies and assess the resulting safety improvements.

3.2 As part of their safety management activities, States and aviation service providers increasingly collect and analyse information to proactively detect and respond to hazards or threats to aviation safety. Nonetheless, individual States or service providers may not have access to sufficient information to ascertain the overall context or impact of operational events captured by their safety management processes. In addition, States or service providers having low levels of aviation activity face difficulties in de-identifying aggregated information to ensure appropriate levels of protection.

3.3 Thus, an information exchange mechanism is required to support risk assessments conducted by States and aviation service providers, to evaluate mitigation measures and to detect emerging safety issues. The harmonization of leading safety indicators facilitates common understanding of safety trends at the global level. The alignment of safety metrics and definitions required for the establishment of common leading safety indicators is reflected in the work of the Safety Information Exchange Study Group (SIXSG) and presented in the information paper HLSC/15-IP/1.

3.4 Regional Aviation Safety Group – Pan American (RASG–PA) created a system for the open exchange of safety information from airlines operating in the Pan-American Region. The system allowed for queries of multiple databases comprising an extensive warehouse of safety data, displaying pertinent elements in an array of useful formats. However, the exchange of safety information in RASG-PA is limited to one region and does not support the holistic analysis of safety issues globally. In addition, although the RASG-PA regional initiative works well in the Pan-American Region, this model may not be applicable to all regions. Therefore, a global approach providing an interface for all regions is proposed. All RASGs will interface with the global mechanism and be able to request analyses for risks identified in the region, a sub-region, or in a particular State.

3.5 The future implementation of a global information exchange framework will be inclusive, allowing for participation by Member States and any interested aviation service providers from across all relevant domains. The framework will increase the amount of information available to analyze different issues in collaboration with States and international organizations, determine areas of elevated risk and evaluate measures taken to mitigate issues.

3.6 While the vision is for a framework that involves global participation, a pilot project is beneficial to test an information exchange model on a limited scale to identify lessons learned that would lead to the future implementation of a framework used at the regional or global levels to mitigate known issues as well as to detect emerging issues.

3.7 The TF RCZ agreed to establish a pilot project to determine the feasibility and assess the potential benefits of sharing information regarding risks arising from conflict zones. The pilot project involves the sharing of such information through the existing NOTAM system by a number of Member States and international organizations. Depending upon the lessons learned from the pilot project, the development of a framework for a centralized global system may be considered beneficial to complement the NOTAM system or to facilitate the collection and sharing of other types of operational safety information. To encourage and support the global information exchange, it is essential to establish necessary safeguards that will ensure the appropriate protection and use of any information provided. ICAO is uniquely positioned to provide a protected environment for the storage of information used to analyse issues affecting international air transport.

3.8 The protected environment will allow for the study of systemic safety trends through the aggregation and analysis of operational information to identify hazards and assess the associated risks. The framework will also support future updates to the GASP objectives, metrics and targets. All these activities will assist Member States in addressing regional and global issues affecting international aviation.

#### 4. CONCLUSIONS

4.1 Recognizing that global aviation comprises multiple interrelated systems, there are significant benefits in the sharing of information across aviation domains to identify systemic aviation deficiencies, develop effective corrective actions and appropriately allocate limited resources.

4.2 The exchange of information has become a requisite component to the implementation of strategies that will continually improve safety within the global air transportation system. The protected environment provided by ICAO will assure the availability and exchange of such information which will in turn assist States in performing State safety risk management and State safety assurance activities; both are important components of a State's SSP.