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Mexico City, Mexico, 29 July to 1 August 2013

Agenda Item 4 **Air Navigation Matters**

4.2 Follow-up on the Implementation of the NAM/CAR Regional Performance Based Air Navigation Plan (NAM/CAR RPBANIP):

- **Progress reports of the former Sub-regional Working Groups on AIM, ATM and CNS fields.**

GLOBAL INFORMATION SPACE FOR SEAMLESS DELIVERY OF AIR TRAFFIC MANAGEMENT (ATM) INFORMATION

(Presented by the United States)

SUMMARY

Air Traffic Management (ATM) is increasingly becoming data and information dependent and demands the delivery of higher quality operational information. To meet this challenge, the Federal Aviation Administration (FAA) is working with international regulatory, oversight and operational partners on a performance-based approach to information management. Such an approach will allow for the achievement of a high quality operational information space and for the seamless delivery of harmonized air traffic management information to the user.

References:

- ICAO Twelfth Air Navigation Conference, Montreal, September 2012.
- International Civil Aviation Organization, Global Air Traffic Management Operational Concept (p. 2-16), First Edition – 2005.

Strategic Objective	*This information paper is related to Strategic Objective:* *A. Safety – Enhance global civil aviation safety*

1. Introduction

1.1 Air Traffic Management (ATM) is becoming increasingly data and information dependent, demanding the delivery of higher quality operational information and informed collaborative decision making. With rapid changes in technology, digital distribution of information is no longer limited to traditional structured data sources. It must expand to include unstructured and semi-structured information types that are rapidly entering the ATM environment.

1.2 In the current approach, user's applications pull data from services and users must reconcile the complexity between multiple sources. This leads to variation in data interpretation. We must employ new and innovative solutions if we are to realize the flexible, seamless air transportation systems we envision for the future.

1.3 Adopting common global performance standards, business rules, and exchange models could provide consistency across the globe for people, processes, and platform to enable a seamless operating environment. The resulting performance-based framework could serve as the foundation for common information management (IM) principles and practices to solve the unique global information challenges. The FAA has begun exploring performance-based information management with international regulatory, oversight and operational partners.

2. Emerging Trends

2.1 Today's world of information technology is transforming at an exponential rate, and the way in which information is managed must evolve to support operational and management needs, as well as the capabilities of the integrated and complex systems of the future, as envisioned by the ICAO ASBU initiatives. Other external drivers pushing towards global common solutions include (a) information as a global commodity; (b) constrained resources; (c) interoperability requirements; and (d) minimizing/removing human intervention from information processing and delivery.

2.2 Emergence of continuously increasing volumes of semi-structured, and unstructured information in the system, available from a variety of sources including text, sensor data, video, audio, and documents, to name a few.

2.3 In addition to the services provided by System Wide Information Management (SWIM), new technologies give users the ability to discover, acquire, process, package, and deliver all types of information which do not use traditional service-oriented architectures. These platforms have the ability to scale dynamically to support the users of information, compared to techniques used by conventional architectures. This leads to improvements in the processing speed at which information gets validated, assembled, integrated, or fused and made available for use. These new technologies also increase the ability of end users (including third parties) to model, visualize and analyze the information. The technology improvements will enable faster and easier acquisition of source data and provide additional value by making information more usable and relevant.

3. Global Information Challenge

3.1 Globalization is changing the scope and scale of how we manage information, compelling us to work in partnerships to develop a performance-based approach to delivery this essential global commodity. Global collaboration in IM solutions will reduce the variation in the quality of information products and services delivered while building an environment of trust.

4. Performance-Based Approach

4.1 Performance-based information management is a mechanism to manage the performance of the aeronautical information. It requires a collaborative approach between global operational, regulatory and oversight partners.

4.2. A performance-based approach should include policies, standards, as well as prescriptive and performance-based oversight.

4.3 The goals include the following:

a) Raise the overall quality of information products and services.

b) Deliver effective information services to support global harmonization and situational awareness as the world transitions from analog, paper-based products to a seamless digital information environment.

c) Emphasize that quality management starts at data origination and continues throughout the data lifecycle.

d) Support a globally interoperable information management system that can be measured and harmonized.

5. Conclusion

5.1 The Working Group is invited to recognize the emerging information and technology trends that demand new and innovative solutions enabled by a global information management effort.

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