ICAO Information Management Panel

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Chairman, Information Management Panel

25 August 2015

Air Transportation Information Exchange Conference

History of the panel

1. Final state letters send in October 2014, set first meeting in Montreal January 2015.
2. IM Panel membership: 14 states and 6 international organisations with around 20 Advisors.

States: Australia, Brazil, France, Germany, India, Japan, Russian Federation, Singapore, South Africa, Sweden, Turkey, United Arab Emirates, United States, United Kingdom,

International Organisations:
*   the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA),
*   Civil Air Navigation Services Organisation (CANSO),
*   European Organisation for the Safety of Air Navigation (EUROCONTROL),
*   International Air Transport Association (IATA) and
*   the International Coordinating Council of Aerospace Industries Associations (ICCAIA).

Panel Objectives

Define a <u>global interoperability framework</u> describing the functions, architectures and system design requirements.

Define and elaborate on the <u>ATM information management concepts</u>:
- functions and processes required,
- including a business model to provide accredited, quality-assured and timely information required by actors within the air navigation system and used to support operations (including full FF-ICE, digital MET information exchange and NOTAM system review) on a system-wide basis, including avionics.

Identify the quality of <u>service requirements</u> necessary to maintain <u>ATM information security</u>, <u>integrity</u>, <u>confidentiality and availability</u>, and to mitigate the risks of intentional disruption and/or changes to safety-critical ATM information

Panel Objectives

Develop an <u>ATM information service architecture</u>.

Identify the requirements for SARPs and changes to existing <u>SARPs to support the information requirements</u> in accordance with the Global Air Navigation Plan and:
a) develop those SARPs necessary to enable SWIM'
b) update and maintain the information management roadmap.

Develop <u>transition strategies</u> and guidance necessary for the <u>implementation of global SWIM</u> and new information exchange formats, including future avionic requirements.

Identify and plan for <u>anticipated data and information flows</u> in relation <u>to future ATM requirements and capabilities</u> and assess the capacity of appropriate Facilities to support them.

Setting the scene

1. **Working papers (5)**
   - **SWIM programs in NextGen and SESAR.**
   - **SWIM readiness assessment.**
   - **Information Model Management.**
   - **NOTAM proliferation and the impact on the end-user.**
2. **Information papers**
   - **NOTAM history and growth**
   - **Current and possible future data domains**
3. **Discussion on possible working groups:**
   - **SWIM concept.**
   - **NOTAM.**
   - **Information Exchange.**
   - **Service Requirements.**
   - **Governance and Institutional Issues.**

Working Groups

1. Drafting teams were created for four working groups.
2. Four working groups were created:
   - Information Services and improved NOTAM .
     (Rapporteur – Ms. Abigail Smith)
   - SWIM Governance.
     (Rapporteur – Mr. Stephan Dubet)
   - Information Architecture and Management.
     (Rapporteur – Mr. Paul Bosman)
   - SWIM Awareness and Communication.
     (Rapporteur – Mr. Richard Williams)
3. Job cards were created for every working group by drafting teams.
4. Job cards were refined through two iterations of drafting teams and plenary editing.
5. ANC Job card (IMP 001.01) – Update of the ASBUs for the 5th Edition of the GANP.
   - Review of the ASBU module DATM and SWIM.
   - Review and update the roadmaps on Information Management.

Information Services and improved NOTAM .

(Rapporteur – Ms. Abigail Smith)

Initiate a review of the NOTAM, ATM Messages and investigate its future integration into a SWIM enabled operational messaging system.

Activities will include:
- **Document findings & shortfalls of NOTAM;**
- **Develop a Concept for future messaging services;**
- **Develop transition plan;**
- **Develop guidance document;**
- **Take into account current work on the standardised reporting and delivery of operationally critical information being performed by the Runway Friction Task Force (subgroup of the Aerodrome Operations Panel) and OPLINK Panel.**

SWIM Governance.

(Rapporteur – Mr. Stephan Dubet)

With SWIM developments ongoing and accelerating in different parts of the world, there is not yet a defined view on which SWIM elements need to be standardised at the Global level.

Activities will include:
- Identify what is to be governed at global level and to what extent.
- Identify the main stakeholders involved in SWIM.
- Further detail the ICAO Global Interoperability Framework.
- Identify any institutional issue (legal, political, financial, etc.).
- Define what compliance with SWIM means and how it may be assessed.
- Determine the relevance of a global registry.
- Determine how best to enable data quality requirements across all SWIM data domains
- Determine what governance processes may need to be applied to assure that the application of SWIM can achieve operational goals and realize benefits

Information Architecture and Management.

(Rapporteur – Mr. Paul Bosman)

The envisaged solution include the development of :
- **An architectural information framework including data, information and standards in the form of an ATM Information Reference Model (AIRM).**
- **Common information management provisions addressing inter alia descriptive (meta) data, model extensibility and technical conventions.**
- **Usage guidance including best practices.**

Usage / Impact
- **The reference model will enable system architects and developers to build system solutions in a more cost-effective fashion.**
- **Seamless information interoperability, quality and reliability between the ATM stakeholders.**
- **Further evolve the exchange models in a more consistent and non-ambiguous way.**

SWIM Awareness and Communication.

(Rapporteur – Mr. Richard Williams)

Increase stakeholder understanding and provide a communication channel between the IMP and stakeholders. This will be done through the creation of an awareness programme. It is expected that the awareness programme will consist of many of the following elements:

- **Connection to the other IMP working groups to provide a common view and a single point of contact.**
- **Development a concept summary and other.**
- **Establish two way communication with stakeholders**
- **Development of a baseline and desired state of stakeholder understanding.**
- **Gap analysis between current and desired stakeholder understanding.**
- **Provide easy to consume reference materials and personal communication.**
- **Plan to "close the gaps".**
- **Measure the effectiveness of the awareness programme based on stakeholder feedback.**
- **A calendar of events for SWIM activities, panel meetings and workgroup initiatives.**

Cooperation between Information Management and Meteorological Panel

**SWIM Governance
(Stephane Dubet, SIA-France)**

**Information Services and
NOTAM
(Abigail Smith, FAA)**

**Information Architecture &
Management
(Paul Bosman, Eurocontrol**

**SWIM Awareness &
Communication
(Richard Williams, CANSO)**

Testing of the ATS message
handling system (AMHS) in relation
to the exchange of digital
Aeronautical Meteorological
information.
METP CP.008.01

Inclusion of aeronautical
meteorological information In the
SWIM-enabled environment and
further development of SWIM
concept relating to meteorology.
METP CP.004.01

INTERIM ADVANCE EDITION
Doc 10039
AN/511

MANUAL ON SYSTEM WIDE INFORMATION MANAGEMENT (SWIM) CONCEPT

Disclaimer

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Advanced edition (unedited)

International Civil Aviation Organization

ICAO Doc 10039
Scope of the SWIM Manual

Limited to articulating the concept for SWIM necessary to:
- **achieve global interoperability.**
- **describe a common framework to facilitate discussion and promote interoperability.**

Purpose and Objective of the SWIM Manual

Purpose of the manual is:
- **to provide a vision for interoperable global information management.**
- **address the transition to a mixed operational environment.**

The objectives are as follows:
- **to assist in the creation of a common lexicon when states/groups desire to work together.**
- **to provide a background framework for states to implement SWIM.**

Closing

- **Next Panel Meeting – 16 to 20 November 2015 Montreal**

- **Draft agenda available early next week.**

- **Expectation of more working groups.**
  - **Cyber security.**

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and Caribbean
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