



International Civil Aviation Organization

INFORMATION MANAGEMENT PANEL (IMP)

FIRST MEETING

Montréal, 26 to 30 January 2015

REPORT FOLDER

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**FIRST MEETING OF THE
INFORMATION MANAGEMENT PANEL (IMP) (2015)**

LETTER OF TRANSMITTAL

To: President, Air Navigation Commission

From: Chairman, Information Management Panel (IMP) (2015)

I have the honour to submit the report of the first meeting of the Information Management Panel (IMP) which was held in Montréal, from 26 to 30 January 2015.



Pierre Truter
Chairman

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Information Management Panel (Imp)

FIRST MEETING

Montréal, 26 to 30 January 2015

HISTORY OF THE MEETING

1. DURATION

1.1 The first meeting of the Information Management Panel (IMP) was opened by Mr. Farid Zizi, President of the Air Navigation Commission (ANC), in Montréal at 1000 hours on 26 January 2015. The meeting ended on 30 January 2015 at 1100 hours.

2. ATTENDANCE

2.1 The meeting was attended by members nominated by 14 Contracting States and 5 international organizations, as well as by advisers as shown in the list below:

Members	Advisors	Nominated by
Mr. Pierre Truter		Australia
Lt Luiz Souza	Mr Johny Ferreira	Brazil
Ms. Kelly Ann Kicks		Canada
Ms. Meng Aimin	Mr. Su Hang Ms. He Xu	China
Mr. Stephane Dubet		France
Dr Suzanne Biermann-Höller	Mr. Stefan Kellar	Germany
Mr. Hiroyasu Shirasaki	Mr. Minoru Murakami	Japan
Ms. Yelena Nikolayevna Stepanova		Russian Federation
	Mr. Khaled Al-Khodhari	Saudi Arabia
Mr. Kuah Kong Beng	Mr David Leow Shin Hwah Mr Chan Feng Yi	Singapore
Ms. Eva Noreus		Sweden
Mr. Saffet Öztürk		Turkey
Mr. Abdalla Al Rashidi	Mr. Razvan Guleac	United Arab Emirates
Mr. Anthony Stevens		United Kingdom

Members	Advisors	Nominated by
Ms. Abigail Smith	Ms. Deborah Cowell Ms. Diana Liang Mr. Gregory Pray Ms. Susan O'Hara	United States
Mr. Athanase Ahouangan		Agency for Aerial Navigation Safety in Africa and Madagascar (ASECNA)
Mr. Richard Williams	Mr. William (Bill) Crawley Mr. Peter Rudolph	Civil Air Navigation Services Organisation (CANSO)
Mr. Paul Bosman	Mr. Sam van der Stricht	European Organisation for the Safety of Air Navigation (EUROCONTROL)
Mr. Jean-Francois Grout	Ms Carole Couchman Mr. John Moore Mr. Joel Morin Mr John Synnot	International Air Transport Association (IATA)
Mr. David Almeida	Mr. Allan Hart	International Coordinating Council of Aerospace Industries Associations (ICCAIA)

3. OFFICERS AND SECRETARIAT

3.1 Mr. Pierre Truter (Australia) was elected Chairman of the meeting and Mr. Hiroyasu Shirasaki (Japan) was elected Vice-Chairman.

3.2 The Secretary of the meeting was Mr. Michael W. Hohm, Technical Officer, Airspace Optimisation and Management.

4. AGENDA OF THE MEETING

4.1 The agenda for the meeting as approved by the Air Navigation Commission is shown hereunder.

- Agenda Item 1: Opening of the meeting
- Agenda Item 2: Election of Chairman
- Agenda Item 3: Adoption of the agenda and working arrangements
- Agenda Item 4: Review the panel terms of reference (ToRs), Panel directives, working methods, tasks, and panel deliverables

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- Agenda Item 5: Review and elaborate on concepts, utilising a globally interoperable framework for the system-wide availability and management of information required to support flight and ANS system operations.
- Agenda Item 6: Review the limitations and issues associated with providing updates to published information and critical operational information via the current NOTAM messaging system; develop an approach to improve the delivery of information, including options to replace the NOTAM system.
- Agenda Item 7: Review the development of data models used for the global exchange of information and develop a plan to ensure the globally harmonised delivery of information across all information domains; consider the future development of exchange and reference models.
- Agenda Item 8: Review the need to establish requirements concerning the development by other groups, of provisions relating to security of information, network capacity, and information access and quality.
- Agenda Item 9: Establish a framework to identify critical institutional issues that may impede the availability of information needed by operational users; identify the issues where system governance will need to be defined and elaborated.
- Agenda Item 10: Establish a panel work program; review and define objectives, timelines, and a management plan that will achieve the timely availability of deliverables; establish working groups.
- Agenda Item 11: Any other business

5. WORKING ARRANGEMENTS

5.1 The panel met as a single body with ad-hoc working groups as required. Discussions were conducted in English only. Working papers and the report are issued in English only.

5.2 Documentation for the meeting was issued via the panel website. A complete list is available at: <http://www.icao.int/airnavigation/IMP/Pages/Meetings.aspx>

5.3 The panel met in plenary on Monday, 26 January, Tuesday, 27 January, the morning of Wednesday, 28 January, the morning of Thursday 29 January, and the morning of Friday, 30 January 2015. The rest of the time was allocated for ad-hoc working groups to develop the work programme and job cards. The later part of the morning of Friday, 30 January was reserved to de-brief the ANC on the proceedings of the week. The following meeting times were established: Monday: 1000 to 1700 hours, Tuesday to Thursday: 0900 to 1700 hours, and Friday: 0900 to 1200 hours.

6. OPENING REMARKS BY THE PRESIDENT OF THE AIR NAVIGATION COMMISSION

6.1 Mr. Farid Zizi, President of the Air Navigation Commission (ANC), officially opened the panel meeting on behalf of the ANC. He greeted the new panel and warmly welcomed all participants to Montréal.

6.2 The President commenced his address noting that the panel process and operating methods had evolved significantly over the years. In particular, he explained that Panel meetings were once conducted infrequently and with full interpretation and translation services available. As the need for further meetings evolved, panels often met in the interim as “working groups of the whole”. In this regard, he observed that the ATMCP and its successor, ATMRPP, had only had one actual, and full “meeting” in its 16 year history spanning over 28 meetings.

6.3 He informed the meeting that the ANC now considers that every meeting will now be considered a panel meeting and that working group of the whole meetings will no longer exist. He also advised that the new Directives for Panels of the Air Navigation Commission (Doc 7984) is now published, noting that it had not been amended for over thirty years.

6.4 With respect to the election of a Panel Chairperson and Vice-Chairperson, the President noted that it was once customary to elect these offices for every meeting. However as Panels have evolved in their working methods, and the need for continuity between meetings, he informed the meeting that Chairpersons do not have to be elected every meeting, but a re-election should be held at least every three years as a minimum. The President also noted that it was preferable to rotate the offices of Chairperson and Vice-Chairperson when it was necessary to hold an election.

6.5 The President emphasized that panel members must participate in the work of the panel in their personal capacity as experts and should not express the points of view of any particular State, group of States or the organizations that nominated them. Reference in this respect was made to the *Directives for Panels of the Air Navigation Commission* (Doc 7984).

6.6 The President encouraged discussions and debates within the panel to progress its work and with the aim of obtaining consensus on the deliverables resulting in work to be considered by the ANC. The President ended by addressing the role of the Chairperson in facilitating the expression of all members’ views and building consensus to obtain a harmonized product.

6.7 The ANC president indicated that the IM Panel will provide the roadmap of IM which is the “skeleton of the future ATM system”. All future developments and concepts are dependent on the way that IM will be defined. He further indicated that the IM Panel activity is not only about IM but that it also touches key domains and concepts of AIM / MET / FF-ICE information. The ANC president also used the example of the AFTN to establish the scope of SWIM explaining that it was designed to work at a global level. Therefore the challenge is also to make the new solutions “work everywhere”.

6.8 Regarding panel web-sites, he indicated that there was a desire to have a common format to simplify the navigation of information. He also stated that the ANC website would be revised to indicate panel terms of reference, work programmes and impact assessments. He highlighted the importance of the impact assessment for amendment proposals and the difficulty in addressing a global audience. However, the ANC determined that a better assessment was required thereby developing the new template.

6.9 Finally, he wished everyone, a productive and successful IMP/1. He looked forward to the debriefing and thanked everyone for their valuable participation.

7. **OPENING REMARKS BY THE DIRECTOR OF THE AIR NAVIGATION COMMISSION**

7.1 Ms. Nancy Graham, the Director of the ICAO Air Navigation Bureau also extended her warm welcome to the new panel

7.2 Ms Graham informed the group as to the changes that had taken place at ICAO and the new focus on a complete solution leading to implementation. In this regard, work programs were being developed around complete packages of deliverables leading to implementation kits that are designed to foster the adoption of changes envisioned in the ASBU framework.

7.3 The ANB director also stressed the role of the panel secretary as the focal point for interacting with ICAO and the liaison with the ANC.

8. **INTRODUCTIONS**

8.1 The President of the ANC introduced the Commission members who had also taken the opportunity to attend the opening of the new panel. The panel participants were introduced to the ANC Vice President, Mr. Aleksander Aleksandrovich Korkasov (Russian Federation), Mr. Jeffrey Bollard (Australia), Ms. Kirsten L. Riensema (United Kingdom), and Mr. Declan Fitzpatrick (ABIS countries - Austria, Belgium, Ireland, Switzerland).

Agenda Item 1: Opening of the meeting**1.1 INTRODUCTIONS**

1.1.1 The Secretary welcomed all participants to ICAO for the first meeting of the Information Management Panel (IMP/1). The Secretary thanked Mr. Zizi on behalf of all the participants. The Secretary then had all the participants briefly introduce themselves.

1.2 ADMINISTRATION

1.2.1 The Secretary briefed the participants on the administrative aspects of the meeting as well as specific procedures to be followed.

Agenda Item 2: Election of Chairman**2.1 ELECTION OF CHAIRPERSON AND VICE-CHAIRPERSON**

2.1.1 The Secretary of the panel, reiterated the points made by the President of the ANC with respect to the positions of Chairperson and Vice-Chairperson and presented the voting process for the election of the Chairperson and Vice Chairperson. The secretary also informed that meeting that the positions of chairman and vice-chairman would be elected for a duration to be decided by the panel but not to exceed three years without another election.. The meeting agreed that the positions of chairman and vice-chairman should be for a duration of three years unless an earlier election was necessary because of vacancy.

2.1.2 Ms. Abigail Smith (United States) nominated Mr. Pierre Truter (Australia) as Chairperson of the meeting, seconded by Mr. Richard Williams (CANSO). Mr Truter indicated that he willingly accepted the nomination.

2.1.3 Mr. Paul Bosman (Eurocontrol) nominated Mr. Hiroyasu Shirasaki (Japan) as the Vice-Chairperson of the meeting, seconded by Mr. Kuah Kong Beng (Singapore). Mr. Shirasaki also indicated his willingness to accept the nomination.

2.1.4 The meeting was pleased to accept Mr Truter and Mr. Shirasaki as Chairperson and Vice Chairperson respectively.

Agenda Item 3: Adoption of the agenda and working arrangements**3.1. AGENDA**

3.1.1 The Secretary provided the background to the proposed agenda and outline. It was noted that the agenda was developed anticipating a work program focussed around five principle work areas:

- i) SWIM concept
- ii) NOTAM
- iii) Information Exchange
- iv) Service requirements
- v) Governance and Institutional Issues

3.1.2 The Secretary stressed that these work areas were a preliminary assessment only and that as the panel became more acquainted with the tasks and mandate of the panel that these areas could be modified.

3.1.3 The meeting adopted the agenda as proposed.

3.2 WORKING ARRANGEMENTS

3.2.1 It was agreed that the meeting would be held from 0900 to 1700 daily with a morning and afternoon break for coffee and approximately one and one-half hour for lunch.

Agenda Item 4: Review the panel terms of reference (ToRs), Panel directives, working methods, tasks, and panel deliverables

4.1 TERMS OF REFERENCE

4.1.1. The Secretary informed the meeting that the panel's terms of reference (TORs) had been developed by the Secretariat in coordination with an ANC working group. The ANC had approved the TORs when it agreed on the establishment of the IMP.

4.1.2. The TORs reflected a wide mandate for the IMP and considerable scope. It is envisioned that the panel will be responsible to produce SARPs relating to IM and the implementation of SWIM in at least Annexes 3, 10, 11, 12, 14, and 15 as well as related PANS.

4.2 PANEL DIRECTIVES AND WORKING METHODS

4.2.1 As a new panel, the Secretary provided an overview of the organization of ICAO and the role of technical panels of the Air Navigation Commission. Also highlighted was the background to the formation of the IMP and salient aspects of the panel directives for the information of participants.

4.2.2 The Secretary informed the group of the panel website and that the relevant forms and templates for documentation would be found there. This would be updated as required. The website could also be expected to be changed in view of the ANC president's remarks concerning website standardization. The meeting was also informed that it was the intent to ensure that all necessary reference documentation would be available to the group through the website. The participants were invited to inform the secretary of any documentation that might be required to be available to the group.

4.3 WORK PROGRAM AND PANEL DELIVERABLES

4.3.1 The meeting reviewed WP/02 which outlined the background of the panel formation, the Aviation System Block Upgrades (ASBUs) and Work Program Items (WPI) driving the panel work program, tasks, and expected deliverables.

4.3.2 With respect to the ASBUs, it was outlined that the work to develop necessary ICAO provisions and implementation guidance was assigned to the various expert groups. Recognising the interconnected nature and cross discipline requirements of most ASBU implementations, the individual modules have been assigned to "lead" groups and supporting groups were identified for coordination. The ASBU modules assigned to the panel along with the identified supporting groups was provided in the table shown below:

<i>ASBU Block</i>	<i>Module</i>	<i>Description</i>	<i>Coordination/ Support</i>
B0	DATM	Service Improvement through Digital Aeronautical Information Management	CP,
B1	DATM	Service Improvement through Integration of all Digital ATM Information	ATMRPP, CP, METP

B1	SWIM	Performance Improvement through the application of System-Wide Information Management (SWIM)	ATMOPS, ATMRPP, CP, METP
B2	SWIM	Enabling Airborne Participation in collaborative ATM through SWIM	ATMOPS, ATMRPP, CP, METP
EN	IM	Information Management Enablers and Roadmap	ATMRPP, CP, METP, RPASP
<p>ATMOPS - ATM Operations Panel ATMRPP - ATM Requirements and Performance Panel CP - Communications Panel METP - Meteorology Panel RPASP - Remotely Piloted Aviation System Panel</p>			

4.3.3 It was explained to the group that the latest version of the ASBU framework document may be found on the IMP website under “documents”. A review of the document will reveal that each module is expressed in a template which outlines what the module is designed to achieve and the necessary changes that are required for implementation. The module templates express a number of requirements for standards, training, regulatory changes, etc., which are related to the Reference Documents section at the end of the section. Required changes to these reference documents for the ASBU modules assigned to the IMP thus become a primary focus for the deliverables assigned to the IMP.

4.3.4 As outlined in the opening address by the ANC president and Director of the ANB, the ASBU framework itself, is designed from the perspective of implementation. Given the cross domain nature of many of the ASBU modules, a work planning framework has been developed for the purposes of organising the required deliverables along specific expertise sets provided by the various ICAO panels. This has resulted in a considerable number of work program items (WPIs). It was provided to the group that these items are organised as Required Operational Improvements (ROI), Enablers (ENB); and Recurrent activities (REC).

4.3.5 With regard to the work program items it was noted that information management was considered the key enabler for most of the improved capabilities envisioned in the ASBU framework. In this regard, the majority of WPIs assigned to the IMP fall under the “enabler” category.

4.3.6 In consideration of the TORs, the ASBU modules, and the WPIs, the Secretary explained that a preliminary effort had been taken to organise the work of the panel into five work areas that had also been used to develop the agenda of the meeting:

- i) SWIM concept
- ii) NOTAM
- iii) Information Exchange
- iv) Service requirements
- v) Governance and Institutional Issues

4.3.7 It was left to the meeting as it became familiar with the mandate and tasks assigned to the group to determine whether this provided an appropriate means to proceed and develop a work program.

4.3.8 The Secretary explained to the meeting that the ANC uses “job cards” as a primary means to assign tasks and specific deliverables to panels. In this regard, as a new panel there was only one job cards that had been approved thus far and provided to the group (Appendix B); the update of the relevant ASBUs for the 5th edition of the Global Air Navigation Plan (GANP). It was further explained that it was expected that the panel would develop further job cards encompassing the work as it was understood by the panel.

4.4 ASBU AND GANP UPDATE TASK

4.4.1 In order to better appreciate the job card issued with respect to the ASBU and GANP update task, the panel received a briefing from the Secretariat Technical Officer responsible for the GANP. It was recognised that the timelines in the job card were very short, especially considering that the panel is just being formed. Nevertheless it was emphasised that it was necessary to have an assessment within the timelines in order to meet the needs of updating the GANP within its required timeframe.

4.4.2 The meeting reviewed the relevant section in the GANP and the ASBU document. With respect to the road map and the ASBU modules in the GANP, it was considered that few modifications would be warranted at this time.

4.4.3 In order to coordinate any changes to be recommended and forwarded to the Secretariat, it was agreed that an ad-hoc working group consisting of the Chairman, and the working group rapporteurs and additional participants would further review the material, solicit the views of the panel, and report any recommendations to the Secretary.

4.5 REVIEW OF WORK PROGRAM ELEMENTS (WPIs) ASSIGNED TO THE PANEL

4.5.1 The meeting performed a review of the work program elements assigned to the panel as outlined in WP/02. It was recognised that these elements were developed prior to the formation of the panel and without the benefit of the panel having the opportunity to comment. Nevertheless, the Secretary informed the group that they had the opportunity to review the items and provide feedback as to their inclusiveness, and appropriateness. The results of the meeting review are summarised in the table in Appendix A.

4.5.2 During the review of the work program, it was noted by the meeting that the current ICAO integrated work program does not envision specific activities relating to e-charting, digital briefing, periodicity and notification of information updates (currently managed by AIRAC), and the merging of the SWIM and IM roadmaps. The opinion of the meeting was that notwithstanding the lack of specific activities in the work program, that these items would warrant dedicated work and should be recognised as key enablers with respect to the delivery of information to end users.

4.6 PROPOSED JOB CARDS

4.6.1 The meeting discussed the proposed work areas that were presented in WP/02. It was appreciated that the scope and mandate of the IMP gave considerable latitude as to how to organise the

work and furthermore there would be multiple ways to deal with the overlapping areas of interest and expertise. Nevertheless, after considerable discussion it was decided to coalesce the work program into 4 principle areas:

- i) Information Architecture and Management;
- ii) Provisions and Guidance on the use of ATM messaging including the review of NOTAM;
- iii) SWIM Awareness and Communication; and
- iv) SWIM Governance

4.6.2 It was further agreed that these work areas would provide a focus for at least an initial set of job cards. This was in recognition of the fact the job cards are a primary tool to define tasks and deliverables that will be considered by the ANC. It is recognised that the job cards do not necessarily define a Working Group program but nevertheless could at least serve as a starting point. The job cards produced are provided under agenda item 10.

Elements Assigned to the Group		
Element	Deliverable	Work program identifier
630	Annex 15 / Exchange Models Already covered by ongoing AIS-AIMSG activities	ENB-IM-2016-1
440	Doc ##### - PANS-AIM (Doc #####) / Procedures for flight and flow information Already covered by ongoing AIS-AIMSG & ATMRPP activities	ENB-IM-2016-1
430	Annex 4 / Amendments related to air navigation security Activity to be clarified	IMP ENB-CNS-2018-2
449	Annex 11 / Amendment on the requirements on the use of the improved NOTAM system for ATM Covered by Job Card – ii) Provisions and Guidance on the use of ATM messaging including the review of NOTAM	ENB-IM-2018-4
636	Annex 15 / Amendment on the requirements on the use of the improved NOTAM system for AIM Covered by Job Card – Provisions and Guidance on the use of ATM messaging including the review of NOTAM	ENB-IM-2018-4
635	Annex 15 / Provisions on the use and support of SWIM The relevant Job cards cover this by a statement that consequential amendments to ICAO Annexes	ENB-IM-2018-2
435	Annex 15 / Amendments related to air navigation security Activity to be clarified	ENB-CNS-2018-2
450	PANS-ATM (Doc 4444) / Procedures and guidance on the use of improved NOTAM system for ATM Covered by Job Card – Provisions and Guidance on the use of ATM messaging including the review of NOTAM	ENB-IM-2018-4
451	Doc ##### - PANS-AIM (Doc #####) / Procedures and guidance on the general use of improved NOTAM system Covered by Job Card – Provisions and Guidance on the use of ATM messaging including the review of NOTAM	ENB-IM-2018-4

443	<p>Doc ##### - Manual on the SWIM Concept (Doc #####) / Second Edition</p> <p>Not assigned yet -> Put in work programme to be later activated</p>	ENB-IM-2018-2
627	<p>Doc 9855 - Guidelines on the Use of the Public Internet for Aeronautical. Applications. (Doc 9855)</p> <p>Not assigned yet -> Put in work programme to be later activated</p>	ENB-CNS-2018-4
447	<p>Doc ##### - Manual on the ATM RM (Doc #####) / New manual on the ATM Reference Model</p> <p>Covered by Job Card – Information Architecture and Mangement</p>	ENB-IM-2018-3

Title	Update of the ASBUs for the 5th Edition of the GANP			Reference: IMP.001.01		
Source	A38, ANC12					
Problem Statement	The Global Air Navigation Plan is an overarching planning document relying on the Aviation System Block Upgrades. The next edition of the GANP has to be endorsed by the 39th Assembly in 2016. The different modules, threads and roadmaps have to be updated for that matter.					
Specific Details (including impact statements)	<p>The Aviation System Block Upgrades have been developed by a technical team and included in the 4th edition of the Global Air Navigation Plan, approved by the Council and endorsed by the 38th Assembly as a strategic direction for technical work programme. According to the level of maturity of each module and technical enabler, the Standards and recommended Practices need to be developed and the description of the modules refined.</p> <p>The panels are the proper framework to handle these tasks hereafter. The ANB and ANC have agreed on the Lead panel for each block/module.</p> <p>For the next edition of the GANP, the lead panel will particularly focus on Block 0 and Block 1 modules, update/amend as necessary and validate the list of SARPs that have to be produced. These SARPs will become part of their work programme.</p> <p>The Lead panel will also update the operational threads or the technology roadmaps when applicable.</p> <p>All the modifications will be further reviewed by the ATMRPP panel to ensure consistency among all modules.</p>					
Expected Benefit	Updated version of the ASBUs, planning of documents delivery for better implementation of the modules, validated information for endorsement of next edition of the GANP by A39.					
References	Global Air Navigation Plan (Doc 9750, 4th edition), ASBU document (version mars 2013 revised), table defining the lead and supporting panel for each module.				Attachments?	
WPI No.	Work Programme Item (WPI) Description		Expert Group		Deliverable Document	Delivery Timeline
			Lead	Supporting		
1369	Review and indicate potential concerns on ASBU module DATM and SWIM or related Technical enabler objectives and timelines as well as the Information Management Roadmap		IMP	ATMRPP, CP and METP	Updated ASBU block 0 and 1 sections	February 2015
1401	Review and update/amend the module DATM and SWIM description for Block 0 and 1, including the SARPs to be delivered.				Updated ASBU block 0 and 1 sections	April 2015
1130	Review and update the operational thread(s) or technology roadmap(s) when applicable, Information Management Roadmap in particular.				Updated technology roadmap(s)	April 2015
Issue Date: Xx December 2014	Date Assessed by WG/SRP: XX December 2014	Date Approved by ANC: XX December 2014	Session/Meeting	Assigned to CG:	CG Review Date:	Completion Date:

Agenda Item 5: Review and elaborate on concepts, utilizing a globally interoperable framework for the system-wide availability and management of information required to support flight and ANS system operations

5.1 CURRENT STATUS OF SWIM INITIATIVES

5.1.1 The meeting was presented with an overview of SWIM current state of development by the FAA and the European SESAR initiative in WP/07 and WP/06 respectively. The meeting appreciated that both programs were largely reflective of the concept outlined in the draft SWIM concept produced by the ATMRPP. The papers recommended that the IMP consider the content and incorporate the material into group outputs. The IMP was further invited to participate in the demonstration work being hosted by the SESAR and NextGen.

5.1.2 The meeting was presented with a maturity model for SWIM readiness in WP/03. It was appreciated by the group that many of the concepts outlined in the model could be of potential use by PIRGs when assessing and planning regional implementation activities

5.1.3 WP/04 was considered under this agenda but was understood to have a considerable overlap into agenda item 9. The paper prompted a considerable discussion on the issue of governance which was further elaborated after a presentation on IGIF-Governance. It was generally accepted by the meeting that governance is a significant concern in the context of SWIM. More particularly the upper layers of the interoperability stack relating to business alignments are areas which need to be considered in addition to the governance of the more technical interoperability aspects. The meeting agreed that it would be a focus for work.

5.1.4 As an example how to liaise with the different Exchange model Configuration and control boards (CCB) to ensure coherency would require much work and further deliberation by the panel. This topic will be addressed as part of the information architecture and management work area.

Agenda Item 6: Review the limitations and issues associated with providing updates to published information and critical operational information via the current NOTAM messaging system; develop an approach to improve the delivery of information, including options to replace the NOTAM system.

6.1 NOTAM REVIEW

6.1.1 The meeting reviewed information paper IP/02 which indicated that NOTAM proliferation continues to be a considerable problem. The meeting was further informed that the subject had been raised at the 12th Air Navigation Conference and resulted in the following recommendation from the conference:

Recommendation 3/9 – Review of NOTAM system and development of options for replacement

That ICAO initiate a review of the current NOTAM system, building further on the digital NOTAM activities, including the development of options for a replacement system that would enable web-based applications and compliant with the system-wide information management principles that are being developed for the air traffic management system.

6.1.2 The meeting noted the information provided in WP/05 and concurred that the current provision of NOTAM was not meeting the operational need of “providing the right information to the right user at the right time”.

6.1.3 The meeting also noted that the introduction of digital NOTAM was a considerable improvement in capabilities allowing for improved search and filter capabilities. In particular, the capability to graphically display information was considered a notable improvement. Nevertheless, it was noted that even with these improvements, the NOTAM system as currently conceived, is outdated and the framework that it is built on requires a conceptual review so that would have the opportunity to evolve with other aviation operational sectors.

6.1.4 The meeting was informed that the need to review NOTAM in accordance with ANC/12 recommendation 3/9 would be a significant work item for the panel. In this regard the panel appreciated that the mandate allowed a re-visioning of the provision of the function provided by NOTAM. Nevertheless, any proposal for the replacement of NOTAM should consider an transition path and take into account the work and investment being made with digital NOTAM. Notwithstanding, the group felt that the introduction of SWIM would provide an opportunity to considerably evolve how the information streams currently provided by NOTAM could be provided in the future. In this connexion, the term “ATM messaging” was considered to be more descriptive.

6.1.5 The meeting concluded that NOTAM related consideration should be made in the wider context of current AFTN messaging and future SWIM Services.

Agenda Item 7: Review the development of data models used for the global exchange of information and develop a plan to ensure the globally harmonized delivery of information across all information domains; consider the future development of exchange and reference models

IP/03

7.1 INFORMATION EXCHANGE AND REFERENCE MODELS

7.1.1 No working papers were presented for consideration by the meeting under this Agenda Item.

7.1.2 The meeting noted the information presented in IMP/1-IP/03. The paper was presented as a follow-on to the discussion relating to the work accomplished by the ATMRPP to begin development of ICAO guidance manual relating to specific issues facing the air transportation information exchange environment.

7.1.3 The meeting was informed that AIXM, WXXM and FIXM are handled differently with respect to ICAO provisions and have different mechanisms for governance.

7.1.4 For AIXM, a performance orientated approach has been taken with the need for a global exchange model being captured in a few high level provisions and further referring to ICAO guidance and the aixm.aero website. An AIXM Configuration Control Board was established a number of years ago with FAA & EUROCONTROL providing a secretariat and open to all AIXM stakeholders. Decisions are made using a consensus approach with the option to call for a meeting of an Advisory Board with representatives of all key stakeholders.

7.1.5 For WXXM, a subset model; ICAO WXXM (iWXXM), has been created which is covered in detail in relevant ICAO and WMO documentation and provisions. Governance is intended to happen through the relevant ICAO and WMO working arrangements.

7.1.6 For FIXM, which is still in development, an approach similar to AIXM is being targeted.

7.1.7 The meeting noted that there are overlaps between the different models as well as possibilities for a future ICAO ATM Information Reference Model (AIRM) to play a coordinating role.

7.1.8 The group working on Information Architecture and Management will further work on these aspects.

Agenda Item 8: Review the need to establish requirements concerning the development by other groups, of provisions relating to security of information, network capacity, and information access and quality

8.1 INFORMATION SECURITY AND ACCESS

8.1.1 No papers were presented under this agenda item.

Agenda Item 9: **Establish a framework to identify critical institutional issues that may impede the availability of information needed by operational users; identify the issues where system governance will need to be defined and elaborated**

9.1 INSTITUTIONAL ISSUES

9.1.1 No papers were presented under this agenda item and related discussions are reported under Agenda Item 4.

Agenda Item 10: Establish a panel work program; review and define objectives, timelines, and a management plan that will achieve the timely availability of deliverables; establish working groups

10.1 ESTABLISHMENT OF WORKING GROUPS AND ASSIGNMENTS

10.1.1 The meeting reviewed the draft SWIM Concept Document developed by the ATMRPP as presented in IP/03 as well as the set of deferred comments outlined in Flimsy/03 in the form of an spreadsheet, received in response to consultations as an aid to organising the panel work program.

10.1.2 Flimsy/01 and/02 were also considered by the meeting with respect to SWIM governance and communication.

10.1.2 As a result of the above review, it was decided that the four areas outlined in 4.6 would provide the best opportunity to establish a work plan.

10.1.2 The following four Working Groups were established:

Working group A: Provisions and Guidance on the use of ATM messaging including the review of NOTAM

Rapporteur Abigail Smith

Members Athanase Ahouangan

Meng Aimin

David Almeida

Paul Bosman

Carole Couchman

Johny Ferreira

Razvan Guleac

Jean Francois Grout

Su Hang

Diana Liang

John Moore

Eva Noreus

Saffet Öztürk

Gregory Pray

Abdalla Al Rashidi

Hiroyasu Shirasaki

Luiz Souza

Yelena Nikolayevna Stepanova

Anthony Stevens

John Synnott

Sam van der Stricht

Richard Williams

He Xu

Working Group B: Information Architecture and Management

Rapporteur	Paul Bosman
Members	David Almeida
	Carole Couchman
	Deborah Cowell
	Razvan Guleac
	Jean Francois Grout
	Stefan Keller
	David <u>Leow</u> Shin Hwah
	Minoru Murakami
	Hiroyasu Shirasaki
	Anthony Stevens
	Sam van der Stricht
	Richard Williams

Working Group C: SWIM Awareness and Communication

Rapporteur	Richard Williams
Members	Paul Bosman
	Susanne Biermann-Höller
	Bill Crawley
	Peter Rudolph
	Anthony Stevens

Working Group D: SWIM Governance

Rapporteur	Stephane Dubet
Members	David Almeida
	Kuah Kong Beng
	Susanne Biermann-Höller
	Paul Bosman
	Allan Hart
	Kelly Ann Hicks
	Susan O'Hara
	John Moore
	Hiroyasu Shirasaki
	Anthony Stevens
	Richard Williams

10.1.3 The working groups have developed job card proposals provided in Appendix A. The job cards provide the tasks associated with each working group.

Title	Provisions and guidance on the use of ATM messaging including review of NOTAM	Reference: IMP.xxxx
Source	ANC12	
Problem Statement	<p>Proliferation of information (e.g. NOTAM) has become an issue of increasing concern. Operational personnel are finding it increasingly difficult to parse pertinent information and it is becoming evident that safety critical messages are not always accessed.</p> <p>Current efforts to mitigate the issues have included the development of digital NOTAM, providing improved ways of sorting and displaying information. However, there remains the need for increasing information integration. This recognises that SWIM will provide increased opportunities to access and integrate other message streams to give a complete situational “picture”. This also recognises that the “situational picture” must be shared across a wider operational picture than the premise that NOTAM is built on. Finally, there is an assortment of regional and local messages that require standardization.</p>	
Specific Details (including impact statements)	<p>Initiate a review of the NOTAM, ATM Messages and investigate its future integration into SWIM. Activities will include:</p> <ul style="list-style-type: none"> • Document findings & shortfalls of the “as-is” ATM messages including NOTAM; • Requirements for information services (eg...quality of service, security) • Develop a Concept for information services including a core set of minimum services to be provided at the global level. It will include guidelines and criteria for identifying such core 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 Design and Operations Panel) and OPLINK Panel. 	
Expected Benefit	<ul style="list-style-type: none"> • Improve safety by providing the ATM community with the capability to receive useful/relevant information efficiently. • Deliver information to the ATM community leveraging evolving technologies. • Transition from system oriented to service oriented environment. • Compliance with the SWIM principles being developed for the ATM community. 	
References	ANC/12 Recommendation 3/9	Attachments ?

WPI No.	Work Programme Item (WPI) Description	Expert Group		Deliverable Document	Delivery Timeline
		Lead	Supporting		
	Develop a Concept for information services including a core set of minimum services to be provided at the global level. It will include guidelines and criteria for identifying such core services.	IMP	AIS-AIMSG ATMOPSP FLTOPSP CP ATMRPP	Manual	2016
	Provisions on information services addressing NOTAM and related message needs			Proposal for Amendments (eg...Annex 3, 11, 15,	2018

						PANS-ATM, PANS-AIM)	
Issue Date:	Date Assessed by WG/SRP:	Date Approved by ANC:	Session/Meeting	Assigned to CG:	CG Review Date:	Completion Date:	

Title	Information Architecture and Management	Reference: IMP.xxxx
Source	ANC/12	
Problem Statement	<p>In today’s world ATM implementations and associated digital data and information exchanges require the translation of textual descriptions of common core concepts and operational procedures into system and data models. The information exchanges resulting from these concepts are currently captured differently across regions, industries, community of interests leading to interoperability and associated cost issues. Above all unstructured and ambiguous data can lead to safety concerns/risks.</p> <p>Initiatives have been developed over the last years with exchange models like AIXM, WXXM, FIXM, AMDB et cetera however not cross-harmonised. These differences and equivalences are not known today.</p> <p>Hereby the following issues are observed :</p> <ul style="list-style-type: none"> • In some cases key ATM data have different meanings across areas of ATM. • Uncertainty of the data quality (accuracy, timeliness, resolution, integrity). • Inconsistent units of measurements, ranges of values, formatting (time & date, latitude/longitude, ...), unique identifiers et cetera 	
Specific Details (including impact statements)	<p>The envisaged solution include the development of :</p> <ul style="list-style-type: none"> • An architectural information framework including data, information and standards in the form of an ATM Information Reference Model (AIRM). It will provide a structured, traceable, unified, harmonised, common, digital reference representation based on standard modelling notation. The AIRM scope will, as a minimum, contain the ATM data elements which require information interoperability. • Common information management provisions addressing inter alia descriptive (meta) data, model extensibility and technical conventions. • Usage guidance including best practices. <p>Usage / Impact</p> <ul style="list-style-type: none"> • The reference model will enable system architects and developers to build system solutions in a more cost-effective fashion. • The reference model will be used to align ATM data communities and their associated Configuration Control Boards. • Seamless information interoperability, quality and reliability between the ATM stakeholders. • Further evolve the exchange models in a more consistent and non-ambiguous way. 	
Expected Benefit	Optimised / Fit for purpose collaborative design building interoperable, improved consistency and reliability of data leading to a positive effect on safety and cost effectiveness.	
References	GANP/B1-DATM → ATM Information Reference Model (AIRM)	Attachments?

WPI No.	Work Programme Item (WPI) Description			Expert Group		Deliverable Document	Delivery Timeline
				Lead	Supporting		
xxx	Creation of guidance material which describes information management concepts, functions and processes as well as introduces the AIRM model and its usage.			IMP	METP, ATMRPP, CP, ADOP, ATMOPS, IFPP, AIS-AIMSG	Doc XXX – Information Management Manual	2018
447	Development of the ATM Information Reference Model (AIRM) Package containing the model and supporting documentation.					AIRM Package	2018
yyy	Considerations for provisions as required.					Provisions including consequential amendments to e.g. Annex 3, 10, 11, 12, 14 and 15 will be considered once material has matured	2020
Issue Date:		Date Assessed by WG/SRP:	Date Approved by ANC:	Session/Meeting	Assigned to CG:	CG Review Date:	Completion Date:

Title	SWIM Governance		Reference: IMP.xxxx		
Source	A38, ANC12				
Problem Statement	The IMP 01 meeting showed that there were several views on governance (including roles and responsibilities, oversight, SWIM compliance, registry of services, data quality, Global Interoperability Framework, etc.) which led to confusion amongst the panel. There is a need to explain what governance means and to initiate actions to develop governance provisions (e.g. inputs to existing ICAO material, development of best practices). The roles, responsibilities and relationships of SWIM stakeholders should be clearly defined. In addition to governance of technical aspects of SWIM, institutional aspects such as legal, political and financial issues should also be assessed.				
Specific Details (including impact statements)	<ul style="list-style-type: none"> • Agree on definition and scope of SWIM governance • Identify any institutional issue (legal, political, financial, etc.) that could impede the availability of information to operational users • Define what compliance with SWIM means and how it may be assessed • Assess the advantages and drawbacks of a global registry vs local registries • Determine how best to enable data quality requirements across all SWIM data domains • Determine where governance can be beneficial for SWIM (adding valuable processes and oversight) • Describe the roles, responsibilities and relationships amongst the various SWIM Stakeholders 				
Expected Benefit	Foundation for global SWIM implementation. Enhanced interoperability. Clarity on roles, responsibilities and relationships. Contribution to the definition of the Global Interoperability Framework. Transparency. Mitigation of risks. Improved CDM				
References	ICAO SWIM Concept, Global Air Navigation Plan, ASBU Document			Attachments ?	
WPI No.	Work Programme Item (WPI) Description	Expert Group		Deliverable Document	Delivery Timeline
		Lead	Supporting		
1	Initial ICAO provisions to support SWIM governance	IMP	All other IMP groups AIS-AIM SG ATMRPP MET-P	Update to the governance part of Doc 10039 (Manual on SWIM Concept), amendments to ICAO material	2018
2	Consolidated ICAO provisions to support SWIM governance		EUROCAE WG44 / RTCA SC217	Amendments to ICAO material including Annex 15 and PANS-AIM.	2020

Issue Date: 28 January 2015	Date Assessed by WG/SRP:	Date Approved by ANC:	Session/Meeting IMP01	Assigned to CG:	CG Review Date:	Completion Date:
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Title	Awareness and Communication		Reference: IMP.xxxx			
Source	IMP/1-WP/02; <i>Global Air Navigation Plan (GANP)</i> (Doc 9750)					
Problem Statement	There is a lack of clarity about SWIM and the activities undertaken by the IMP to contribute to the delivery of SWIM. The delivery/implementation of SWIM will require collaboration across stakeholders making a common understanding imperative. A working group, the Awareness and Communication Working Group (ACWG), has been established to address this problem.					
Specific Details (including impact statements)	<p>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:</p> <ul style="list-style-type: none"> • Connection to the other IMP working groups to provide a common view and a single point of contact. • Development a concept summary document (2-3 pages). • 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. 					
Expected Benefit	Improved understanding of SWIM and the activities of the IMP across stakeholders. This will be measured through stakeholder engagement. This improved stakeholder understanding will aid stakeholders implementing SWIM.					
References	IMP/1-WP/02; <i>Global Air Navigation Plan (GANP)</i> (Doc 9750)					
WPI No.	Work Programme Item (WPI) Description		Expert Group		Deliverable Document	Delivery Timeline
			Lead	Supporting		
	Awareness Programme Plan		ACWG	Canso IMP IMP WG's	Programme plan	IMP 2
Issue Date:	Date Assessed by WG/SRP:	Date Approved by ANC:	Session/Meeting	Assigned to CG:	CG Review Date:	Completion Date: Ongoing

Agenda Item 11: Any other business**11.1 FUTURE MEETINGS**

11.1.1 The meeting considered what frequency of meetings would be necessary in the near term considering the proposed job cards and work program of the panel. The Chairman suggested that the meeting frequency should at least initially, aim for two meetings each year. This would be intended to allow for the working groups to get established in their work and afford the opportunity for the larger group to be given the opportunity to remain aware of their work and for cross coordination to occur.

11.1.2 In order for the Working groups to make progress in their initial tasks it was initially agreed that the next panel meeting should occur in the week of 16th November 2015. It was further considered that the meeting would consist of a portion in plenary and a portion devoted to working group activities. The Secretary agreed to look into the suitability the proposed dates from the perspective of room availability and to seek ANC concurrence as soon as reasonably practical.

11.1.3 It was also pointed out that the 2015 edition of the annual information exchange conference held in Washington, DC each August would feature a SWIM focus. It was further suggested that this would also provide an opportunity for working group coordination and it was offered that meeting space could be arranged for the Monday preceding and Friday following, the conference. The meeting expressed its appreciation for this offer and noted that it would provide a very good opportunity.

— END —