INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE ICAO ASIA/PACIFIC AIR TRAFFIC FLOW MANAGEMENT SEMINAR/WORKSHOP

FUKUOKA, JAPAN, 7 – 9 OCTOBER 2008

The views expressed in this summary should be taken as those of the Seminar/Workshop and not of the Organization.

Adopted by the ATFM Seminar/Workshop
and published by the ICAO Asia and Pacific Office

TABLE OF CONTENTS

PART I – BACKGROUND OF THE ATFM SEMINAR/WORKSHOP

1. Introduction

1.1 The ICAO Asia/Pacific Air Traffic Flow Management (ATFM) Seminar/Workshop, graciously hosted by the Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism was held at the ACROS FUKUOKA Convention Centre, Fukuoka, Japan from 7 to 9 October 2008.

2. Attendance

2.1 The ATFM Seminar/Workshop was attended by 48 participants from 14 States – Australia, Bangladesh, Brunei Darussalam, Hong Kong China, India, Indonesia, Japan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, United States, Viet Nam - and 3 international organizations – IATA, IFALPA and IFATCA. Late apologies were received from seminar presenter Mr. Ricardo Torres, Servicios a la Navegación en el Espacio Aéreo Mexicano (SENEAM), Mexico and the delegations from China and Mongolia.

2.2 A list of participants is at **Appendix A** to this report.

3. Inauguration and Opening of the Seminar/Workshop

Japan Civil Aviation Bureau

3.1 Mr. Yukio Yoshida, Director of the Fukuoka Area Control Centre and Air Traffic Management Centre (ATMC), JCAB welcomed delegates to the ICAO ATFM Seminar/Workshop. He thanked ICAO for arranging this event in Japan, as it was an honour for JCAB to host this important ICAO seminar and workshop in Fukuoka. Mr. Yoshida provided an overview of the history of air traffic in Japan, noting that the increases in traffic over time had led to periodic delays on occasion when the capacity of en-route airspace and airports was exceeded.

3.2 In order to tackle these issues, JCAB had taken initiatives to develop systematic ATFM procedures and had established an ATFM Centre in 1994. Ten years later, the ATFM Centre was expanded to include the functions of airspace management, international ATFM (as well as domestic ATFM), oceanic ATC and aeronautical information management. The present ATMC in Fukuoka was opened in October 2005 in response to the continuously increasing air traffic and needs of airspace users.

3.3 Japan is located in a strategically significant position connecting Asia and North/Central Pacific routes and plays a vital role in facilitating smooth traffic flows in the Asia/Pacific region. Mr. Yoshida stressed the importance of States working together, noting that JCAB considered that all ANSPs and aviation authorities in the region should get together and work collaboratively under the leadership of ICAO as no single country working alone was likely to be able to adequately address the requirements of international civil aviation.

ICAO Regional Office

3.4 Mr. Andrew Tiede, Regional Officer, Air Traffic Management with the ICAO Asia/Pacific Office, extended warm greetings and best wishes to all delegates on behalf of Mr. Mokhtar A. Awan, Regional Director Asia and Pacific Office, and thanked the JCAB for their very gracious consideration to ICAO in hosting this ATFM Seminar/Workshop. He also thanked the United States FAA for the very important leadership role that they had played in ensuring that the Seminar was well supported and able to receive information from a wide variety of sources.

3.5 To Mr. Tiede's knowledge, this was the first ATFM related Seminar that had been organized by ICAO for the Asia/Pacific region. He was encouraged by the interest that had been shown and drew attention to the effort put in by speakers at the seminar – in researching, preparing and delivering suitable material for presentation. Mr. Tiede thanked all presenters, and the administrations that made their participation possible, for their support to ICAO and the States of the Asia/Pacific region in advancing civil aviation matters in the region.

4. Officers and Secretariat

4.1 Mr. Andrew Tiede acted as the Moderator of the Seminar and Secretary to the Workshop. He was ably assisted in both these roles by Mr. Hiroshi Inoguchi, Director for International Policy Coordination with the JCAB and Ms. Leslie McCormick, International Operations Specialist, Air Traffic Control System Command Centre of the United States Federal Aviation Administration (FAA).

5. Working Arrangements, Language and Documentation

5.1 The working language of the Seminar/Workshop was English, inclusive of all documentation. Three information papers and six discussion papers were considered by the Workshop. A List of Seminar/Workshop papers has been included as **Appendix B.**

5.2 The ATFM Seminar/Workshop prepared a resource tool on CD-ROM, for retention and use by participants in developing their own knowledge, and that of their colleagues, about ATFM matters. The CD-ROM contains a copy of all the Seminar presentations and Workshop information and discussion papers, as well as relevant reference material.

PART II – REPORT ON THE ATFM SEMINAR/WORKSHOP

Objectives of the Seminar/Workshop

2.1 The Seminar/Workshop was informed that, in response to the increasing ATFM activities regionally and the provisions of GPI- 6 *Air Traffic Flow Management*, the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/18, September 2007) had adopted Conclusion 18/7 for the conduct of a regional ATFM Seminar during 2008.

2.2 Recognizing that the ATFM Seminar called for by APANPIRG/18 provided a good opportunity to influence regional ATFM planning, the ICAO Regional Office elected to include a 'Workshop' component to allow opportunity for recommendations to come forward. APANPIRG/19 (September 2008) noted that such a Workshop would be tasked with identifying and recommending appropriate regional objectives, for example:

a) Development of a high level ATFM Concept of Operations for the Region;
b) Enhancement of the draft ATFM Communications Manual;
c) Develop mechanisms for data gathering, collation and sharing;
d) Review activities of the Bay of Bengal ATFM Task Force.

2.3 Hence, the focus was now on an ATFM Seminar/Workshop that would address the following objectives:

a) To raise awareness of ICAO provisions regarding ATFM;

b) To enhance coordination and cooperation between ATFM providers and users in the Asia and Pacific Regions; and

c) To identify regional initiatives to optimize ATFM activities in order to gain the maximum benefits for all users.

Seminar/Workshop programme

2.4 The Seminar/Workshop adopted the programme shown in **Appendix C** to this report.

Seminar Activities

2.5 The programme incorporated information style seminar presentations during the first half of the event, under the broad headings:

- ATFM in the Asia/Pacific today, and
- ATFM in other Regions

2.6 Seminar presentations were made by ICAO, JCAB, Aeronautical Radio of Thailand Limited (AEROTHAI), Civil Aviation Authority of Singapore (CAAS), Airservices Australia, the United States, IFATCA, IATA and a number of IATA member airlines. The United States also presented information on behalf of SENEAM, Mexico. Importantly, the Seminar programme included a familiarization visit to the Fukuoka ATMC. This enabled Seminar/Workshop participants to observe JCAB's operations with focus on ATFM matters.

Workshop Activities

2.7 The Workshop component was accommodated in the second half of the 3-day programme, under the broad headings:

- Workshop Session 1 – Planning for ATFM, and
- Workshop Session 2 – Where do we go from here?

2.8 The Workshop examined the methodologies utilized and lessons learned from the implementation of long range ATFM procedures in the Bay of Bengal, as well as pre-tactical experiences with the Centralised Traffic Management System (CTMS) in Australia.

2.9 The Workshop was also informed about Japan's proposals for further development of ATFM in their areas of responsibility and an initial proposal for establishment of a regional ATFM initiative in East-Asia, possibly encompassing the Fukuoka, Beijing, Shanghai, Incheon, Taipei, Hong Kong and Manila FIRs. The Workshop received detailed information from the United States on methodologies useful for planning near term ATFM implementation.

PART III – OUTCOMES FROM THE ATFM SEMINAR/WORKSHOP

GPI-6 – Air Traffic Flow Management

3.1 The Workshop recalled that the ICAO Global Air Navigation Plan (GANP, Doc 9750) promulgates a performance based planning process that uses 23 Global Plan Initiatives (GPIs) to support the planning and implementation of performance objectives in the region. A specific GPI has been allocated for ATFM, termed *GPI/6 – Air Traffic Flow Management* (**Appendix D** refers). In particular, GPI-6 notes that, where warranted, States and regions should evolve to a collaborative-based approach to capacity management.

Outcomes and Recommendations from the Seminar/Workshop

3.2 The ATFM Seminar/Workshop, in its review of the information provided to the Seminar and arising from the discussions held during the Workshop, reached outcomes and made recommendations as outlined below.

ATFM Regional Concept of Operations

3.3 The ATFM Workshop recognized that the preparation of an ATFM regional Concept of Operations document for the Asia/Pacific Region represented a significant body of work, which would need to be undertaken in a collaborative manner between States over a period of time. In particular, analysis was necessary to indentify major traffic flows which would benefit from ATFM solutions. As a result of the size and complexity of the Asia/Pacific region it was likely that an approach whereby specify areas or sub regions were identified would be necessary, under overriding arrangements which ensured interoperability between the respective sub regions. For example, such ATFM sub regions could include:

- North Pacific
- East Asia (Fukuoka, Beijing, Shanghai, Incheon, Taipei, Hong Kong, Manila FIRs)
- South China Sea
- Bay of Bengal/Arabian Sea
- Cross polar route network Asia – North America

ATFM Seminar/Workshop Outcome 1:
That the preparation of an Asia/Pacific Regional ATFM Concept of Operations was a significant body of work that would need to be undertaken collaboratively between States over a period of time.

Lack of Asia/Pacific regional ATFM mechanism

3.4 The Seminar/Workshop considered that it was timely to look into the various developments of ATFM in each State or sub region and to examine ways to accelerate planning and implementation of ATFM in a collaborative manner. However, there was no current overall regional mechanism under the ICAO umbrella with which to specifically and collaboratively address ATFM matters. Although the Bay of Bengal ATFM Task Force was active, the Workshop recognized the very narrow focus of this Task Force, which was established to address an identified problem, namely the peak night time traffic flows from Asia to Europe via Afghanistan.

3.5 The ATFM Seminar/Workshop saw significant value in having available a regional oversight capability of some kind, in the form of a high level Steering/Focus Group to begin to analyze regional data and traffic flows and make recommendations with the objective of ensuring the harmonization/coordination of regional ATFM implementation plans. Such a capability could take

overall responsibility for regional matters including the development of an ATFM Concept of Operations and could also support implementation activities such as the Bay of Bengal ATFM Task Force in a number of discrete geographical areas, thereby increasing standardization whilst minimizing duplications of effort.

ATFM Seminar/Workshop Outcome 2:
The ATFM Seminar/Workshop recognized that there would be significant benefit in having a regional oversight capability of some kind, in the form of a high level ATFM Steering/Focus Group, to begin to analyze regional data and traffic flows and make recommendations with the objective of ensuring the harmonization/coordination of regional ATFM implementation plans.

Critical importance of data

3.6 The ATFM Workshop recognized the fundamental and critical need for accurate and timely data to be continuously available to support implementation and ongoing ATFM operations. This was essential in two aspects:

a) Static data identifying historical traffic loadings, for use as strategic planning and trend analysis, and

b) Dynamic real time data that was used for the tactical management of traffic in terms of commencement of ATFM measures

Static Data

3.7 The Workshop recognized that as a result of the Annex 11 provisions requiring that RVSM monitoring be conducted on a regional basis, APANPIRG/16 (August 2005) had endorsed the use of a standardized approach to the sampling of vertical and horizontal traffic data under the terms of Conclusion 16/4, adopting the month of December every year for the collection of a one month traffic sample data by all Asia/Pacific States. Although this data was currently used exclusively for airspace safety monitoring purposes, the Workshop considered it likely that this annual traffic count would provide a very useful source of data for airspace planning purposes in general and specifically to identify peak traffic loadings for ATFM purposes.

3.8 Consequently, the Workshop recommended that RASMAG review the situation, with the objective of expanding the use of the annual December RVSM data collection for airspace implementation planning in general (ATFM, PBN, ATS routes etc) and, under supervision of the Regional Office, this data be made available to implementation groups as required to support all regional ATM implementations. The Workshop recognized that perhaps one or two additional parameters would have to be included in the existing RVSM data templates, in order to make the data more widely usable.

Dynamic real time data

3.9 In a number of the examples described during the Seminar presentations, the importance of having advance notice of real time traffic demand was recognized as essential for accurate capacity balancing. A case study from Australia has been included as **Appendix E**.

3.10 Real time data on the numbers and location of flights, available well in advance, may enable ATFM solutions to be applied in a more timely and effective manner. This means that adjustments could be made by flight crews and operators in a managed and economic manner, for example before top of descent in terms of an arrival slot or before start and pushback in the case of a departure slot. Such strategies enable delays to be absorbed over longer periods of time, and in less complex and more fuel efficient phases of flight, particularly en-route cruise.

3.11 Efficient application of appropriate ATFM initiatives generally involves use of automated tools which are heavily data dependant. Sources of relevant data include ATC operational systems (radars, flight data processors), airline scheduling (e.g. OAG) and operational systems (including gate management), airport data systems (including reliable and dynamic [e.g. hourly] capacity forecasts, aeronautical meteorology (en-route and terminal area forecasts and actuals) and so forth. Importantly, the sharing of such data between adjacent ANSPs on a continuous and real time basis was recognized by the Workshop as a key activity in gaining ATFM benefits.

3.12 The Workshop recognized the necessity for formalized data sharing arrangements to be instituted between as many of these parties as possible with one primary party (logically the ANSP) charged with taking all data and turning it into a meaningful presentation for all parties. Accordingly, the Workshop recommended that the importance of real time data sharing for traffic management purposes be highlighted by way of appropriate State meeting papers and examples to the next ATM/AIS/SAR Sub-Group meeting, with the objective of developing regional strategies that recognized the long term need to share dynamic data within and between States.

ATFM Seminar/Workshop Outcome 3:
That accurate and timely static and dynamic data be continuously available to support ATFM implementation planning and ongoing ATFM operations.

ATFM Seminar/Workshop Recommendation 1:
That the present arrangements for annual month of December traffic sampling by all States for airspace safety analysis enabled by APANPIRG Conclusion 16/4 be expanded to enable this data to also be used, under authority of the ICAO Asia/Pacific Regional Office, for airspace planning and implementation purposes.

ATFM Seminar/Workshop Recommendation 2:
Recognizing that the sharing of dynamic data between adjacent ANSPs on a continuous and real time basis was a key requirement in realizing ATFM benefits, regional strategies be developed with the objective of implementing formalized data sharing arrangements with relevant parties within, and between, States.

Airspace capacity assessment

3.13 As a follow on to the data discussions above, the Workshop recognized the importance of establishing dynamic airspace capacity assessment mechanisms including airspace sector workload forecasting to enable timely activation of appropriate ATFM initiatives. Such activities would also depend upon adequate data being made available.

3.14 The Workshop was informed that the ICAO ATS Planning Manual (Doc 9426) contains guidance on methodologies for Sector capacity assessments. Some States have used these techniques to develop capacity calculations and relevant automation. As a result of information made available during the Seminar presentations, Japan and the United States were invited to share their expertise in these matters.

ATFM Seminar/Workshop Recommendation 3:
That guidance material in the ICAO ATS Planning Manual (Doc 9426) be reviewed and utilized as the basis for development of Sector capacity assessments.

'Virtual' Regional ATFMU

3.15 The Workshop saw merit in establishing a regional website for ATFM matters, noting that no such capability existed at the present time. A website devoted to ATFM information would provide an archive of information for regional airports to be made available, such as the capacity information for Chep Lap Kok International airport provided by Hong Kong China in a discussion paper to the ATFM Workshop.

3.16 The meeting was informed that one model of such a "Virtual ATFMU" may be the US ATSCC website <www.fly.faa.gov> which provides and continuously updates relevant information.

ATFM Seminar/Workshop Outcome 4:

That the concept of a web based 'virtual ATFMU' along the lines of the US ATSCC example at <www.fly.faa.gov> showed merit for providing a 'one-stop-shop' of regional ATFM matters.

ATFM Communications Handbook

3.17 In its review of the draft *ATFM Communications Handbook for the Asia/Pacific Region*, the Workshop stressed that the Handbook should be written to ensure that the message examples contained therein were applicable to both voice and written ATFM communications.

3.18 The ATFM Workshop agreed in principle to the concept of a regional ATFM Handbook and recommended that the ICAO Secretariat present the draft ATFM Communications Handbook, as reviewed and updated by the Workshop (see **Appendix F**), to the ATM/AIS/SAR/SG for further refinement and eventual adoption by APANPIRG as regional guidance material.

ATFM Seminar/Workshop Recommendation 4:

That the draft ATFM Communications Handbook for the Asia/Pacific Region be advanced through the normal ICAO processes with the objective of gaining APANPIRG approval as a regional guidance material.

Relay outcomes of Asia/Pacific ATFM Seminar/Workshop to ICAO HQ

3.19 Recognizing that ATFM matters were on the programme of ICAO Headquarters for action during 2009/2010, the ATFM Workshop recommended that all material from the ATFM Seminar/Workshop be provided to ICAO HQ for their information and review. The Regional Office Secretariat would take this action once the Summary Report of the Seminar/Workshop was finalized.

ATFM Seminar/Workshop Recommendation 5:

That the ICAO regional Secretariat provides all material associated with the ATFM Seminar/Workshop to the ICAO Headquarters Secretariat for consideration in the ICAO HQ ATFM work programme scheduled during 2009/2010.

IATA position on ATFM

3.20 IATA expressed very clearly during the ATFM Workshop that their preference was for accelerated implementation of recognized structural airspace capacity increasing measures (RVSM, PBN, flexible use of airspace, use of more effective ATC procedures) in preference to use of ATFM. Notwithstanding, IATA recognizes that structural improvements will take time and accepts that use of traffic management and ATFM procedures in some circumstances is warranted.

ATFM Seminar/Workshop Outcome 5:
That IATA clearly expressed their preference for accelerated implementation of recognized structural airspace capacity increasing measures (RVSM, PBN, flexible use of airspace, use of more effective ATC procedures) in preference to use of ATFM. However, IATA recognizes that structural improvements will take time and accepts that use of traffic management and ATFM procedures in some circumstances is warranted.

Leverage Regional Know How

3.21 The Workshop recognized the significant ATFM expertise available in Australia, Japan, Thailand and United States. Methods to leverage this knowledge and experience for regional benefit would save time and effort, leading to earlier implementation of ATFM infinitives that would assist in meeting demand/capacity balancing objectives.

ATFM Seminar/Workshop Outcome 6:
That significant regional ATFM knowledge and experience lies with Australia, Japan, Thailand and United States and that access to and use of this expertise will be beneficial to other States of the Asia/Pacific region.

Closing of the Seminar/Workshop

3.22 In closing the Seminar/Workshop, Mr. Tiede thanked JCAB for their generosity in hosting the event. The support and hospitality from JCAB was excellent, with all in-country arrangements being well considered, efficient and productive. The Seminar presentations from Japan and the opportunity to inspect he operational arrangements at the JCAB ATMC had been very informative for all participants.

3.23 Mr Tiede also thanked the FAA for their long terms support and commitment. The material that had been presented by the FAA included documentation from other areas of the world that would form the basis for the preparation of ATFM related material for the region. He acknowledged the efforts of FAA and JCAB in preparing the basic document that had now been further developed into the draft *ATFM Communications Handbook for the Asia/Pacific Region.*

3.24 Mr. Tiede considered that all the presentations had been informative and relevant, again thanking presenters for their hard work. Additionally, the engagement of participants in the Workshop discussions had resulted in a number of worthwhile outcomes and recommendations that would be carried forward into related ICAO forums for further development.

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LIST OF ATFM SEMINAR/WORKSHOP PAPERS

INFORMATION PAPERS

NUMBER	TITLE	PRESENTED BY
IP/1	List of Seminar/Workshop Papers	Secretariat
IP/2	Programme for ATFM Seminar/Workshop	Secretariat
IP/3	ICAO Reference Material on ATFM	Secretariat

DISCUSSION PAPERS

NUMBER	TITLE	PRESENTED BY
DP/1	ATFM related outcomes of APANPIRG/19	Secretariat
DP/2	Draft ATFM Communications Handbook for the Asia/Pacific Region	Secretariat
DP/3	ATFM Implementation for the European Region	Secretariat
DP/4	Caribbean/South American (CAR/SAM) ATFM Concept of Operations (CONOPS) and Roadmap	United States
DP/5	ATFM Implementation Action Plan	United States
DP/6	ATFM in Asia Pacific Region Today – Flow Management Programme for Traffic Transiting Fukuoka/ Taipei/Hong Kong FIRs – Daily Capacity Notification Scheme	Hong Kong, China

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PROGRAMME

ICAO Asia/Pacific ATFM Seminar/Workshop

(Fukuoka, Japan, 7-9 October, 2008)

TUESDAY, 7TH OCTOBER 2008		
Venue: ACROS Fukuoka Convention Centre, 1-1-1 Tenjin, Chuo-ku, Fukuoka		
TIME	**TITLE AND SUMMARY**	**SPEAKER & ORGANIZATION**
0930-1000	Registration of Delegates	Lobby – ACROS Fukuoka
1000-1015	Opening Remarks ***Mr. Yukio Yoshida*** *Director* *Fukuoka Area Control Centre*	
1000-1030	Administration, Introduction of Delegates.	*Moderators:* Mr. Andrew Tiede, ICAO Mr. Hiroshi Inoguchi, JCAB
1030-1100	**Coffee/Tea**	
1100-1145	ICAO ATFM Provisions & APANPIRG Key Priorities	Mr. Andrew Tiede, ICAO
ATFM in the Asia Pacific Region Today		
1145-1215	Air Traffic Flow Management in Japan	Mr. Junichi Morishita JCAB – Fukuoka ATMC
1215-1245	AEROTHAI's ATFM Involvement and Lessons Learned	Mr. Piyawut (Toon) Tantimekabut, AEROTHAI
1245-1345	**Lunch**	
1345-1415	Singapore Changi Flow Management – Lessons Learnt	Mr. Victor Tan, Singapore Air Traffic Control Centre, CAAS
1415-1445	Flow Management Programme for Traffic Transiting Hong Kong/Taipei/Naha FIRs	Mr. Raymond Li, Hong Kong Civil Aviation Department
1445-1515	Tactical Air Traffic Flow Management in Australia	Mr. Matthew Shepherd, Airservices Australia
1515-1545	**Coffee/Tea**	
1545-1615	Hurry Up and Wait – The IFATCA Perspective	Mr. John Wagstaff, EVP, Asia Pacific Region, IFATCA
1615-1700	Questions and Answers Panel session	All Speakers from the day

WEDNESDAY, 8TH OCTOBER 2008		
Venue: ACROS Fukuoka Convention Centre, 1-1-1 Tenjin, Chuo-ku, Fukuoka		
TIME	**TITLE AND SUMMARY**	**SPEAKER & ORGANIZATION**
0945-1000	Opening Remarks Day 2	Mr. Andrew Tiede, ICAO
1000-1030	The IATA Perspective on ATFM	Mr Geoff Hounsell, IATA Asia/Pacific
1030-1100	**Coffee/Tea**	
1100-1130	User Needs in the Future	Mr. Bill Leber, Northwest Airlines
1130-1200	Operators' Perspective on BOBCAT ATFM in the Bay of Bengal	Capt Aric Oh, Singapore Airlines
1200-1230	Challenges for New Operational Procedures in Pacific	Mr. Yasunobu Funai, Japan Air Lines
1230-1330	**Lunch**	
ATFM in Other Regions		
1330-1400	Overview of Regional ATFM Initiatives in North America, Caribbean and South America and Lessons Learned	Mr. Tim McHale, US FAA
Workshop – Session 1 – Planning for ATFM		
1400-1430	The Bay of Bengal long range ATFM implementation – A Regional Office perspective	Mr. Andrew Tiede ICAO
1430-1500	Pre-Tactical Experience with CTMS in Australia	Mr. Matthew Shepherd, Airservices Australia
1500-1530	**Coffee/Tea**	
1530-1600	Development plan of ATFM in Japan and Proposal for Establishment of Regional ATFM	Mr. Ryo Yamauchi & Mr. Kimihiko Ito, JCAB
1600-1630	Planning for Near-Term Implementation of ATFM	Ms. Leslie McCormick, US FAA
1630-1700	Questions and Answers Panel session	All Speakers from the day

THURSDAY, 9TH OCTOBER 2008		
Venue: Fukuoka ATMC – Japan Civil Aviation Bureau (JCAB)		
TIME	**TITLE AND SUMMARY**	**SPEAKER & ORGANIZATION**
0900-1000	*Travel to Fukuoka ATMC*	*Transport arrangements from ACROS Fukuoka to Fukuoka ATMC by JCAB*
Workshop – Session 2 - Where Do We Go From Here?		
1000-1030	Asia/Pacific ATFM Concept of Operations and Roadmap –Strategy and Recommendations	*Moderators:* Mr. Andrew Tiede, ICAO Ms. Leslie McCormick, US FAA
1030-1100	Asia/Pacific ATFM Communications Handbook – Strategy and Recommendations	*Moderators:* Mr. Andrew Tiede, ICAO Mr. Hiroshi Inoguchi, JCAB
1100-1130	**Coffee/Tea**	
1130-1200	Regional Supplementary Procedures (Doc 7030) and Guidance Materials – Recommendation and Update	*Moderators:* Mr. Andrew Tiede, ICAO Ms. Leslie McCormick, US FAA
1200-1230	Proposals for consideration by APANPIRG	*Moderators:* Mr. Andrew Tiede, ICAO Mr. Hiroshi Inoguchi, JCAB Ms. Leslie McCormick, US FAA
1230-1300	Summary and Closing of ICAO Asia/Pacific ATFM Seminar/Workshop	Mr. Andrew Tiede, ICAO
1300-1400	**Lunch**	
1400-1630	Visit to ATMC and ATC facilities at the Fukuoka Air Traffic Management Center	Hosted by Fukuoka ATMC, JCAB
1630 onwards	Return to ACROS Fukuoka	*Transport arrangements from Fukuoka ATMC to ACROS Fukuoka by JCAB*

(GPI-6) AIR TRAFFIC FLOW MANAGEMENT

Scope: The implementation of strategic, tactical and pre-tactical measures aimed at organizing and handling traffic flows in such a way that the totality of the traffic handled at any given time or in any given airspace or aerodrome is compatible with the capacity of the ATM system.

Related Operational Concept Components: AOM, AO, DCB, TS, CM, AUO

Description of strategy

1.37 The implementation of demand/capacity measures, commonly known as air traffic flow management (ATFM), implemented on a regional basis where needed, will enhance airspace capacity and improve operating efficiency.

1.38 In the event that traffic demand regularly exceeds capacity, resulting in continuing and frequent traffic delays, or when it becomes apparent that forecast traffic demand will exceed the available capacity, the appropriate ATM units, in consultation with aircraft operators, should consider implementing steps aimed at improving the use of the existing system capacity and developing plans to increase capacity to meet the actual or forecast demand. Any such planning to increase capacity should be undertaken in a structured and collaborative manner.

1.39 Where warranted, States and regions should evolve to a collaborative-based approach to capacity management. The ATM Operational Concept envisages a more strategic approach to ATM overall, and through collaborative decision-making, a reduction in the reliance on tactical flow management. It is inevitable that tactical flow intervention will continue to be required; however closer coordination between airspace users and ATM service providers can reduce the need for routine tactical intervention which is often disruptive to aircraft operations.

Australia's real time data sharing mechanisms.

As discussed extensively during the ATFM Seminar for the Asia Pacific Region, with its large number of independent Air Navigation Service Providers (ANSP), Australia recognises that sharing of data, including real time traffic data, represents a core activity for an ANSP in accurately determining demand on its ATC system.

In the case of smaller FIRs (e.g. Hong Kong FIR, Singapore FIR) with the vast majority of their arriving traffic originating outside of the FIR, ANSPs will have difficulties in correctly determining demand without the ability to accurately see and assess the traffic in advance. Whilst affected ANSPs will receive FPL and DEP/EST information via AFTN, real-time information is generally not made readily available until the aircraft has passed the position report prior to the FIR boundary. This can sometimes be only 40-60 minutes before ETA. A longer lead time is very useful to allow more strategic planning.

The Australian approach

In order to meet its own internal requirements, Airservices Australia has adopted a simplified approach to address the need for data sharing between its own two FIRs. One of the initial focuses of this approach was to display and evaluate aircraft real tiome position information.

The solution Airservices has chosen to address this need is the creation of a datastore containing aircraft movement information drawn from AFTN supplied flight plan and movement messages on all flights which may be of interest to the Australian ATFM system. Other data sources are added in as they became available.

The solution is a dual server system with data connections to AFTN, OAG Eurocat flight information (flight plan position, radar data records, and ADS-C position). Airservices will also shortly commence connection to ADS-B systems.

Filtered portions of this data are used to feed the air situation display provided by a commercial software, Flight Explorer, and to provide assessments of airport and volume traffic demand internally to Airservices. This system will provide the primary source of data to the emerging ATFM system.

Inputs

The datastore is fed by AFTN data such as DEP, FPL, CHG, CNL, EST and CHG. The datastore contains information such as the following:

```
(FPL-QFA123-IS
-B763/H-SDHIZWR/C  -
-M078F360 DCT MADEP N774 SY DCT
-YSSY0305
-EET/MADEP0033 NZZO0033 YBBB0129 SHARK0252 YMMM0256
REG/VHOGQ  SEL/EGDL PER/D NAV/TCAS RIF/OLREL  RUNOD  PORAR  UBTAM
LUNBI L521  AA  NZAA)
```

ACID	ADEP	ATYP	ETD	ATD	ADES	EET	ATA
QFA123	NZAA	B767	0125		YSSY	0305	

As changes arrive, such as; `(CHG-QFA123-NZAA-YSSY-7/QFA123/B747)`, the information is updated

ACID	ADEP	ATYP	ETD	ATD	ADES	EET	ATA
QFA123	NZAA	**B747**	0125	0138	YSSY	0305	0443

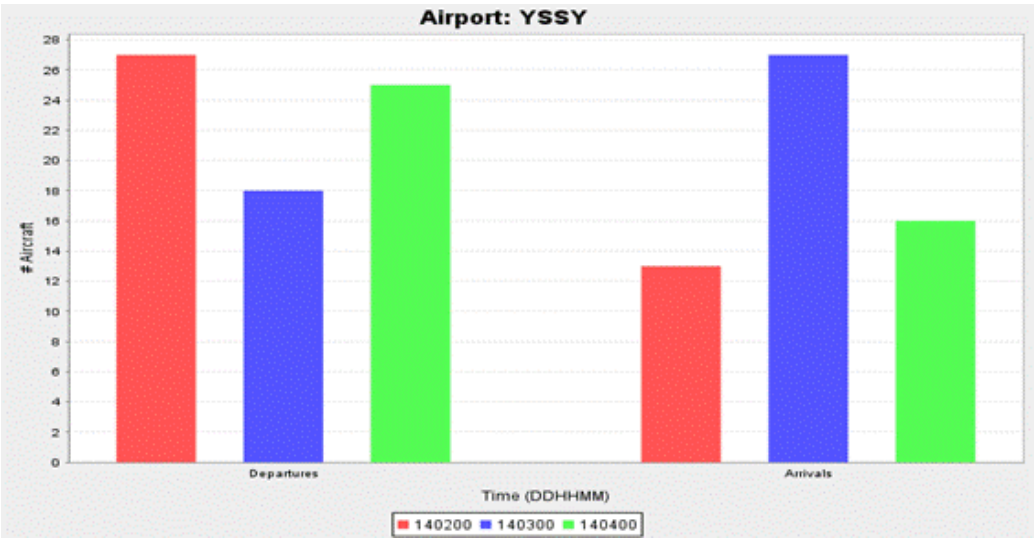
As additional data arrives such as; `(DEP-QFA123/A0275-NZAA0138-YSSY)`, the information is added and data updated:

ACID	ADEP	ATYP	ETD	ATD	ADES	EET	ATA
QFA123	NZAA	B767	0125	**0138**	YSSY	0305	**0443**

Radar Data Records can be added to increase the level of data. Data on landed flights is removed from the active datastore.

Outputs

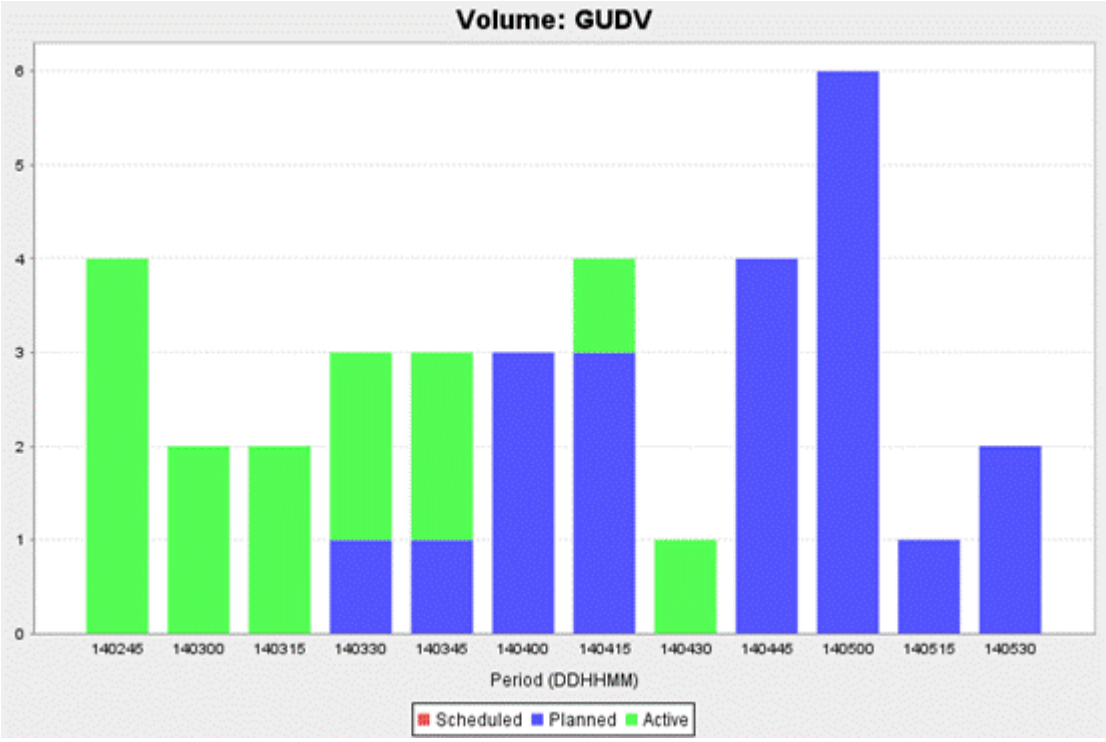
When the full datastore is queried for flights with ADES = YSSY, a picture can be built up showing real-time forecast activity. In the case below, showing hourly arrival and departure demand at Sydney.



A plain flight list can also be provided by amending the query. The state of the flight at the right of the table shows whether the aircraft is airborne, pre-active, or landed

ACID	SSR	FRUL	FTYP	ATYP	WTC	ADEP	DEP Time	ADES	ARR Time	REG	State
JST955	1017	I	S	A320	M	YBCS	14/10/08 00:13:00	YSSY	14/10/08 02:38:00	VHABC	FIN
JST409	1140	I	S	A320	M	YBCG	14/10/08 01:36:00	YSSY	14/10/08 02:40:00	VHDEF	FIN
VOZ232	1143	I	S	B737	M	YBBN	14/10/08 01:31:00	YSSY	14/10/08 02:43:00	VHGHI	FIN
JST411	1137	I	S	A320	M	YBCG	14/10/08 01:41:00	YSSY	14/10/08 02:45:00	VHJKL	FIN
VOZ841	3643	I	S	B738	M	YMML	14/10/08 01:38:00	YSSY	14/10/08 02:47:00	VHABC	CONT
RXA329	1231	I	S	SF34	M	YLIS	14/10/08 01:28:00	YSSY	14/10/08 02:51:00	VHABC	CONT
ACI140	1215	I	S	B763	H	NWWW	14/10/08 00:11:00	YSSY	14/10/08 03:03:00	VHDEF	CONT
SMZ	4333	I	S	TBM8	L	YSCB	14/10/08 02:31:00	YSSY	14/10/08 03:08:00	VHGHI	CONT
QFA434	3645	I	S	B738	M	YMML	14/10/08 02:07:00	YSSY	14/10/08 03:09:00	VHJKL	CONT

By overlaying historical volume entry time, a list of potential sector impacts can be developed, as shown in the example below:



This tool is also the basis for Airservices RVSM monitor tool and Flight Number Callsign Confusion event monitor.

The datastore exports all the information required for Australian flight information to the Flight Explorer product for integration and display.

INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

DRAFT

AIR TRAFFIC FLOW MANAGEMENT (ATFM) COMMUNICATIONS HANDBOOK FOR THE ASIA PACIFIC REGION

Version 0.2 – November 2008

Issued by the ICAO Asia/Pacific Regional Office, Bangkok

FOREWORD

Centralized air traffic flow management (ATFM) facilities are best able to communicate the capacity of their national airspace systems to accept traffic from adjacent international air traffic service (ATS) providers. As coordination and collaboration efforts to balance traffic demand and airspace/airport capacity intensify between affected States, common ATFM procedures and communication are essential. Once procedures are defined, a key element in removing language barriers is establishing common terms and phrases. Terminology and phraseology differences in the operational application of ATFM procedures could be a potential source of confusion during communications, both written and verbal, between international ATFM facilities.

Common terminology is an essential element in exchanging definitive, clear, and concise communication between international ATFM facilities. Likewise, the phraseology should follow a technical pattern for the exchange of standardized and harmonized messages. This Asia/Pacific guidance material is intended to support States in meeting these objectives and has been adopted by APANPIRG/xx, under the terms of Conclusion xx/Xx, for this purpose. As this is the first document of its kind for the region, APANPIRG noted that further development and amendment was likely. However, it is expected that the guidance herein will be equally applicable to both verbal ATFM coordination exchanges and as the basis for written ATFM messages. Although the terminologies and phraseologies presented herein are not intended to be a requirement for ATFM communications, they are recommended to States as guidelines for the exchange of ATFM messages.

TABLE OF CONTENTS

1. Introduction

1.1 ATFM is a function of air traffic management (ATM) established with the objective of contributing to a safe, orderly, and expeditious flow of traffic while minimizing delays. This is accomplished through the dynamic use of operational traffic management initiatives supported by continuous coordination and analysis.

1.2 The purpose of ATFM is to balance air traffic demand with airspace and/or airport capacity to ensure the most efficient use of the airspace system. This is achieved by ensuring that capacity is utilized to the maximum extent possible and that air traffic volumes are compatible with the capacities declared by the appropriate air navigation service providers.

1.3 ATFM implementation should provide for the organization and handling of the flow of air traffic in such a way that, while ensuring the safe, orderly and expeditious flight of individual aircraft, the totality of the traffic handled at any given point or in any given area is compatible with the capacity of the air traffic control system.

1.4 The operation of ATFM service includes the application of ATFM measures that are designed to achieve the optimum flow of traffic. These measures include, but are not limited to:

a) Allocating and updating departure slots;
b) Allocating and updating arrival slots;
c) Allocating and updating en-route slots;
d) Re-routing of traffic;
e) Alternate flight profiles;
f) Minutes-in-trail assignments;
g) Mile-in-trail assignments;
h) Airborne holding; and
i) Ground holding.

1.5 Inherent in the provision of an ATFM service is the necessity to coordinate arrangements clearly and accurately between ATC units. In most instances this is achieved via voice coordination between operatives in the respective units, however many occasions also require written messaging to support implementation of ATFM operational initiatives. Accordingly, efficient and effective written and verbal communication using standardized and documented terminologies and phraseologies is essential.

2. General

2.1 The primary goal of this guidance material is to promulgate appropriate terminologies and phraseologies for the exchange of written and verbal ATFM messages between units providing ATFM services, both within States and between States. The terminologies and phraseologies contained herein are intended to reflect the current use of plain language and provide a basis for regional standardization and harmonization.

2.2 Although there are various plain language words and phrases in use today by ATFM service providers, these words and phrases are all capable of being organized into a modular and structured method of delivery to ensure the harmonization of communications and reduce the incidence of misunderstanding between units providing ATFM services.

2.3 It is not the intent of these guidelines to provide detailed information on ATFM concepts, procedures, and initiatives; however, since not all readers may be familiar with ATFM terms used in the examples, a brief description of ATFM operational initiatives is provided at **Appendix 1**. The list is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved ATFM services.

3. Modular and Structured ATFM messages

3.1 The use of a modular and structured ATFM message provides for consistent ATFM message design and delivery. Each component of the ATFM message can contain plain language elements that, when combined, provide a complete ATFM message. Harmonization is achieved by the delivery of an ATFM message that has all of the required components in a structured format while making allowances for different plain language elements. This is of particular benefit for ATFM service providers that use different ATFM terminology or for non-native English speaking ATFM service providers.

3.2 This guidance material promulgates the concept of modular and structured ATFM messages as the basis for written and verbal ATFM coordination and defines an ATFM message in terms of five modules – the "Who", "What", "Where", "When" and "Why" of the ATFM communication. These five modules are described as follows:

a) **Who:** The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact;

b) **What:** The ATFM objective to be achieved;

c) **Where:** The location of the ATFM objective to be achieved;

d) **When:** The time and/or duration of the ATFM objective to be achieved; and

e) **Why:** The reason for the ATFM objective.

3.3 There is no module regarding "How" the ATFM restrictions should be achieved by the counterpart ATFM service provider. This is because it is clearly the counterpart's responsibility "how" they fulfill the ATFM restrictions within their airspace. However, the ATC unit being asked

to implement ATFM restrictions may collaborate with the originating ATC unit on the type and method of ATFM measure to be applied.

3.4 Generally speaking, ATFM service providers should resolve demand-capacity related constraints by initiating local and/or national ATFM initiatives first. Hence, ATFM operational initiatives will be requested by an adjacent international ATFM facility only when national measures are exhausted and therefore compliance should be considered highly necessary. Accordingly, once information is exchanged regarding an ATFM initiative and an action is agreed, application of the ATFM operational initiative is considered MANDATORY. Importantly, it should be noted that a critical situation at the receiving ATC unit could require imposition of an ATFM restriction without any option of non compliance by the transferring ATC unit.

3.5 Below are the examples of possible ATFM messages:

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC … REQUIRE 100 MILES IN TRAIL REGARDLESS OF FLIGHT LEVEL ON R220, R580 AND ALL PACOTS TRACKS FOR TRAFFIC LANDING NARITA ESTIMATING FIR BOUNDARY FROM 0100 UTC UNTIL 0500 UTC DUE TO SEVERE WEATHER".

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER… CAPACITY RESTRICTION: LOS ANGELES HAS STARTED FLOW RESTRICTIONS FOR ALL AIRCRAFT LANDING LOS ANGELES DUE TO EARTHQUAKE. LOS ANGELES APPROACH IS UNABLE TO ACCEPT INBOUND TRAFFIC UNTIL FURTHER NOTICE".

4. ATFM Message Components

4.1 As the modular and structured ATFM message may contain several different elements of plain language, this section will examine each of the five components and detail some of the possible plain language words and phrases that are in use today.

The WHO Component

4.2 The 'WHO' component identifies the ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact. ATFM units will be addressed by name until ICAO Annex 10 – *Aeronautical Telecommunications* is amended to incorporate appropriate ATFM unit identifiers. Examples of the 'WHO' component include:

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER…"
- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC…"

The WHAT Component

4.3 The 'WHAT' component identifies the ATFM objective to be achieved. The 'WHAT' component may also be used to provide ATFM information. Objectives include, but are not limited to:

- "REQUIRE (number) MILES (or MINUTES) IN TRAIL AT THE SAME FLIGHT LEVEL";

- "REQUEST (number) MILES (or MINUTES) IN TRAIL REGARDLESS OF FLIGHT LEVEL";
- "REQUEST A RATE OF LESS THAN (number) AIRCRAFT PER HOUR";
- "FLIGHT LEVELS (number) AND (number) NOT AVAILABLE";
- "ONLY FLIGHT LEVELS (number), (number) AND (number) ARE AVAILABLE";
- "(route/airport/airspace) NOT AVAILABLE DUE (reason) ALTERNATIVE[S] IS/ARE (routes/airports)".

The WHERE Component

4.4 The 'WHERE' component represents the location of the ATFM objective to be achieved. It is often preceded by a modifying clause, indicating which aircraft or group of aircraft the restriction will apply to. The modifying clause and the location combination are used to construct the 'WHERE' component. Examples of which aircraft or group of aircraft are to be restricted include:

- "FOR ALL AIRCRAFT…"
- "FOR TRAFFIC FASTER THAN 300 KNOTS…"
- "FOR HEAVY AIRCRAFT…"
- "FOR TRAFFIC LANDING…"
- "FOR AIRCRAFT DEPARTING…"
- "FOR TRAFFIC OVERFLYING…"
- "FOR AIRCRAFT PASSING…"

4.5 Examples of location include:

- "AT NIPPI…"
- "ON A337…"
- "WESTBOUND ON PACOTS TRACK CHARLIE…"
- "INBOUND ON G344…"
- "ON PACOTS TRACK 2 LANDING SAN FRANCISCO AIRPORT…"
- "ABOVE FLIGHT LEVEL 300…"

4.6 In practice the modifying clause and the location are combined into one ATFM message, for example*:*

- "FOR ALL AIRCRAFT WESTBOUND ON PACOTS TRACK CHARLIE…"

The WHEN Component

4.7 The 'WHEN' component represents the time and/or duration of the ATFM objective to be achieved:

- "[FROM (time)] UNTIL (time)".

4.8 Examples of time/duration include:

- "FROM 0300 UTC UNTIL 0600 UTC…"
- "FROM NOW UNTIL 0600 UTC…"

- "FROM 2300 UTC UNTIL FURTHER NOTICE…"
- "UNTIL FURTHER NOTICE…"

The WHY Component

4.9 The 'WHY' component represents the reason for the ATFM objective:

- "DUE TO (reason)";
- "FOR (reason)".

4.10 Examples of reasons include:

- "DUE TO RUNWAY CLOSURE"
- "FOR (SEVERE) WEATHER"
- "DUE TO COMMUNICATION FAILURE"
- "DUE TO (significant event/natural disturbance such as FIRE or VOLCANIC ASH)"
- "FOR STATE AIRCRAFT ACTIVITY"
- "DUE TO EQUIPMENT OUTAGE"
- "FOR EMERGENCY"
- "DUE TO ATFM INITIATIVES IN (location)"

5. ATFM Message Types

5.1 ATFM messages can be readily categorized by identifying the primary objective to be achieved by each type of message. This section describes a number of ATFM message types and their application in achieving particular objectives.

Messages containing information to be shared prior to commencing ATFM restrictions

5.2 ATFM related information-sharing should be facilitated not only during the actual flow control but also (and more importantly) well prior to invoking the ATFM restrictions when the possibility of flow control arises. The following phrases will make clear the distinction between the ATFM messages and the information provided for situational awareness:

- "POSSIBLE TRAFFIC FLOW RESTRICTIONS";
- "CAPACITY RELATED INFORMATION".

5.3 Examples of messages sent prior to invoking ATFM restrictions follow:

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… **POSSIBLE TRAFFIC FLOW RESTRICTIONS**… NARITA AIRPORT HAS CLOSED ONE RUNWAY AND STARTED SNOW REMOVAL".

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… **CAPACITY RELATED INFORMATION**…NARITA AIRPORT HAS ENTERED THE STORM ZONE OF THE TYPHOON".

ATFM Operational Initiative Messages

5.4 ATFM operational initiatives communicate air traffic flow restrictions/objectives from one air navigation service provider to another. They follow the five module structure described earlier:

a) Who: The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact.

b) What: The ATFM objective to be achieved.

c) Where: The location of the ATFM objective to be achieved.

d) When: The time and/or duration of the ATFM objective to be achieved.

e) Why: The reason for the ATFM objective.

5.5 Examples of ATFM operational initiatives include:

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER … REQUIRE 30 MINUTES IN TRAIL AT THE SAME FLIGHT LEVEL FOR ALL AIRCRAFT LANDING CHICAGO FROM 0800 UTC UNTIL FURTHER NOTICE DUE TO STATE AIRCRAFT ACTIVITIES".

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… FL350 AND BELOW NOT AVAILABLE FOR AIRCRAFT OVERFLYING JAPANESE DOMESTIC AIRSPACE UNTIL 0900 UTC DUE TO EMERGENCY".

Reply to ATFM Operational Initiative Messages

5.6 The following phrases will be used for replying to ATFM initiative messages:

- "ACCEPT (operational initiative)";
- "AGREED TO (operational initiative)";
- "(operational initiative) IS ACCEPTABLE [DEPENDS ON THE DEMAND] (other pertinent information, if any)";
- "UNABLE (operational initiative) [DUE (reason)] (alternative proposed)".

5.7 Examples of replying to ATFM operational initiatives follow:

- "**AGREE TO** 30 MINUTES IN TRAIL AT THE SAME FLIGHT LEVEL ON PACOTS TRACKS 2 AND 3 FROM 1000 UTC UNTIL 1500 UTC".

- "**UNABLE TO** ACCEPT THE RESTRICTION FROM 1430 UTC DUE TO TRAFFIC VOLUME ON A590 UNTIL 1530 UTC, **PROPOSE** COMMENCE RESTRICTION FROM 1530".

Messages for the coordination of aircraft exempted from ATFM operational initiatives:

5.8 The following types of aircraft may be exempted from ATFM restrictions:

a) Aircraft in a state of emergency
b) Aircraft engaged in search and rescue missions
c) Aircraft operating for humanitarian reasons
d) Aircraft carrying the head of State or distinguished visitors of State
e) Aircraft carrying a patient who needs urgent medical treatment

5.9 The following phrases will be used for the coordination of aircraft which are exempt from ATFM restrictions:

- "REQUEST EXEMPTION FROM ATFM FOR (aircraft identification) [DUE (reason)]";
- "COORDINATION OF ATFM EXEMPTION FOR (aircraft identification) [DUE (reason)]".

5.10 Examples of messages requesting ATFM exemption follow:

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER… **REQUEST EXEMPTION FROM ATFM**…UAL123 DUE PATIENT WHO NEEDS URGENT MEDICAL TREATMENT".

- "UAL123…EXEMPTION APPROVED".

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… **COORDINATION OF ATFM EXEMPTION**… JA501A DUE OPERATING SEARCH AND RESCUE MISSIONS".

Messages providing information for the next coordination

5.11 If it is possible and appropriate, the expected time of next coordination should be forwarded with the ATFM messages:

- "I WILL CALL YOU AT (time) FOR FURTHER COORDINATION".

5.12 An example of a message with information for the next coordination follows:

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER… REQUIRE 30 MINUTES IN TRAIL REGARDLESS OF FLIGHT LEVEL FOR ALL AIRCRAFT ON PACOTS TRACK 8 FROM 1000 UTC UNTIL FURTHER NOTICE DUE TO MILITARY ACTIVITY. **I WILL CALL YOU AGAIN AT 1100 UTC FOR FURTHER COORDINATION".**

Amendment Messages

5.13 The amendment of an ATFM message should be structured in a similar way to the initial message and include similar elements but with additional modifiers. These modifiers may include:

a) CHANGE
b) AMEND
c) REDUCE
d) INCREASE
e) DECREASE

5.14 Amendment messages should also identify which message is being amended, as several restrictions could be in place at one time. Examples of ATFM amendment messages include:

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… WE HAVE **CHANGED** THE RESTRICTION ON TRAFFIC FLYING PACOTS TRACKS CHARLIE, ECHO AND FOXTROT FOR NARITA AIRPORT. WE NOW NEED 20 MINUTES IN TRAIL AT THE SAME FLIGHT LEVEL ON PACOTS TRACKS CHARLIE, ECHO AND FOXTROT FOR TRAFFIC LANDING NARITA FROM NOW UNTIL 0900 UTC".

- "FUKUOKA ATMC, THIS IS FAA COMMAND CENTER…WE HAVE **INCREASED** THE INBOUND RATE FROM 5 AIRCRAFT PER HOUR TO 10 AIRCRAFT PER HOUR FOR TRAFFIC BEYOND OAKLAND FIR UNTIL FURTHER NOTICE".

Cancellation Messages

5.15 The cancellation of an ATFM message should be structured in a similar way to the initial message and include similar elements but also contain a canceling word or phrase. It is normally not necessary to state the reason for the cancellation. A canceling word or phrase may include:

a) CANCEL
b) RESUME
c) RESUME NORMAL
d) RELEASE

5.16 Cancellation messages should also identify which message is being cancelled, as several restrictions could be in place at one time. An example of an ATFM cancellation message follows:

- "FAA COMMAND CENTER, THIS IS FUKUOKA ATMC… **CANCEL** THE RESTRICTION ON TRAFFIC BEYOND THE FUKUOKA FIR AT THIS TIME. **RESUME NORMAL** TRAFFIC FLOW".

6. Active Listening

6.1 Although written ATFM messaging is able to be read and re-read to ensure understanding, because of the variety of ATFM information that may be exchanged verbally and the inability to prescribe phraseologies for every situation that will be encountered, **active listening** is encouraged. Active listening is a structured form of listening and responding that focuses the attention on the speaker. The listener must take care to attend to the speaker fully, and then repeats, in the listener's own words, what he or she thinks the speaker has said. The listener does not have to agree with the speaker; he or she must simply state what they think the speaker said. This enables the speaker to find out whether the listener really understood. If the listener did not understand, the speaker can explain further. Once the speaker and listener are clear as to the message, the listener should respond with agreement, acceptance or disagreement.

6.2 Active listening has several benefits. First, it forces people to listen attentively to others. Second, it avoids misunderstandings, as people have to confirm that they do really understand what another person has said.

7. Abbreviations

7.1 **Appendix 2** provides a sample list of abbreviations used that are not defined in the ICAO Doc. 8400 (PANS-ABC). Neighboring ATFM facilities may wish to develop a similar list of abbreviations which are frequently used in ATFM communications, and include them in a letter of agreement.

Appendix 1

EXAMPLES OF AIR TRAFFIC FLOW MANAGEMENT OPERATIONAL INITIATIVES

The following list contains the ATFM operational initiatives presently utilized by the United States Federal Aviation Administration. The list is provided for example purposes, it is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved ATFM service delivery.

Name	Description
Airborne holding	Planned holding of aircraft may be utilized. This is normally done when the operating environment supports holding and the weather conditions are expected to improve shortly; this ensures aircraft are available to fill the capacity at the airport.
Altitude	Utilized to segregate different flows of traffic, or to distribute the number of aircraft requesting access to a specified geographic region. ***a) Capping:*** Term used to indicate aircraft will be cleared to an altitude lower than their requested altitude until they are clear of a particular airspace. Capping may apply to the initial segment of the flight or for the entire flight. ***b) Tunneling:*** Term used to indicate traffic will be descended prior to the normal descent point at the arrival airport to remain clear of an airspace situation; e.g., holding.
Fix balancing	Assigning an aircraft a fix other than that in the filed flight plan in the arrival or departure phase of flight to equitably distribute demand.
Ground delay programs (GDP)	Aircraft are held on the ground in order prior to departure to manage capacity and demand at a specific downstream location. The purpose of the program is to limit airborne holding.
Ground stops (GS)	GS is a process that requires aircraft that meet specific criteria to remain on the ground. Since this is one of the most restrictive methods of traffic management, alternative initiatives should be explored and implemented if appropriate. GSs should be used: a) In severely reduced capacity situations (below most user arrival minimums, airport/runway closed for snow removal, or aircraft accidents/incidents); b) To preclude extended periods of airborne holding; c) To preclude sector/center reaching near saturation levels or airport grid lock; d) In the event a facility is unable or partially unable to provide ATC services due to unforeseen circumstances; and e) When routings are unavailable due to severe weather or catastrophic events.

Name	Description
Miles-in-trail (MIT)	The number of miles required between aircraft that meet a specific criteria. The criteria may be separation, airport, fix, altitude, sector, or route specific. MIT are used to apportion traffic into manageable flows, as well as to provide space for additional traffic (merging or departing) to enter the flow of traffic.
Minutes-in-trail (MINIT)	The number of minutes required between successive aircraft. It is normally used in a non-radar environment, or when transitioning to a non-radar environment, or when additional spacing is required due to aircraft deviating around weather.
Reroutes	Reroutes are ATC routings other than the filed flight plan. They are issued to: a) Ensure aircraft operate with the "flow" of traffic. b) Remain clear of special use airspace. c) Avoid congested airspace. d) Avoid areas of known weather where aircraft are deviating or refusing to fly.
Sequencing programs	These programs are designed to achieve a specified interval between aircraft; they may be software generated or determined by ATFM personnel. Different types of programs accommodate different phases of flight. ***a) Departure Sequencing Program (DSP):*** Assigns a departure time to achieve a constant flow of traffic over a common point. Normally, this involves departures from multiple airports. ***b) En route Sequencing Program (ESP):*** Assigns a departure time that will facilitate integration in the en route stream. ***c) Arrival Sequencing Program (ASP):*** Assigns fix crossing times to aircraft destined to the same airport.

Appendix 2

SAMPLE TABLE OF ABBREVIATIONS

The abbreviations listed here are those used by the FAA Command Centre (ATCSCC) and Fukuoka ATMC respectively that are not defined in the ICAO Doc. 8400 (PANS-ABC), and are provided only as examples. The shaded abbreviations are considered to be the common terms between the two centers.

ABBREVIATION	ATCSCC MEANING	ATMC MEANING
AAR	Airport Acceptance Rate	
ACID	Aircraft Identification	
ADL	Aggregate Demand List	
ADR	Airport Departure Rate	
ADZY	Advisory	
AIM	Aeronautical Information Manual	
ALTRV	Altitude Reservation	Altitude Reservation
ANP	Air Navigation Plan	
AOA	Office of the Administrator	
AOC	Airline Operations Center	
AP	Air Patrol	
APREQ	Approval Request	Approval Request
APVL	Approval	Approval
ARO	Airport Reservation Office	
ARTCC	Air Route Traffic Control Center	Air Route Traffic Control Center
ASM		Airspace Management
AT	Air Traffic	
ATCSCC	Air Traffic Control System Command Center	Air Traffic Control System Command Center
ATMC	Air Traffic Management Center	Air Traffic Management Center
ATMetC		Air Traffic Meteorological Center
ATO	Air Traffic Operations Program	
AUTODIN	Automatic Digital Network	
CARF	Central Altitude Reservation Function	
CCFP	Collaborative Convective Forecast Product	
CCWSU	Command Center Weather Service Unit	
CDM	Collaborative Decision Making	Collaborative Decision Making
CDR	Coded Departure Route(s)	Conditional Route
CDR	Continuous Data Recording	
CDT	Controlled Departure Time	

ABBREVIATION	ATCSCC MEANING	ATMC MEANING
CFR	Code of Federal Regulations (formerly FAR)	
CIWS	Corridor Integrated Weather System	
COMSEC	Communications Security System	
CR	Collaborative Routing	
CT	Select Flights Ground Delay Program	
CTA	Controlled Time of Arrival	
CTAS-TMA	Center TRACON Automation System Traffic Management Advisor	
CVRS	Computerized Voice Reservation System	
CWA	Central Weather Advisory	
CWSU	Center Weather Service Unit	
DARC	Direct Access Radar Channel	
DCCWU	ATCSCC Weather Unit	
DOTS	Dynamic Ocean Track System	Dynamic Ocean Track System
DP	Departure Procedure	
DSP	Departure Sequencing Program	
EDCT	Expected Departure Clearance Time	Expected Departure Clearance Time
EFAS	Enroute Flight Advisory Service	
EFTO	Encrypt For Transmission Only	
EOF	Emergency Operations Facility	
EOR	Emergency Operations Room	
EPS	Engineered Performance Standards	
ESCAT	Emergency Security Control of Air Traffic	
ETE	Estimated Time Enroute	Estimated Time Enroute
ETMS	Enhanced Traffic Management System	
EUCARF	European Central Altitude Reservation Facility	
FA	General Ground Delay Program	
FAA	Federal Aviation Administration	Federal Aviation Administration
FADT	Fuel Advisory Delay Time	
FCA	Flow Constrained Area	
FDMS		Flight Data Management System
FDPS		Flight Data Processing Section
FEA	Flow Evaluation Area	
FP	Flight Plan	
FPL	Full Performance Level	

ABBREVIATION	ATCSCC MEANING	ATMC MEANING
GA	General Aviation	
GAAP	General Aviation Airport Program	
GDP	Ground Delay Program	
GS	Ground Stop	
HARS	High Altitude Route System	
HDTA	High Density Traffic Airport	
IFCN	Interfacility Communication Network	
IFPFP	Individual Flight Plan From this Point	Individual Flight Plan From this Point
IFSS	International Flight Service Station	
INATS	Interruption of Air Traffic Service	
JCAB	Japan Civil Aviation Bureau	Japan Civil Aviation Bureau
LAA	Local Airport Advisory	
LADP	Local Airport Deicing Plan	
LOA	Letter of Agreement	Letter of Agreement
MAP	Monitor Alert Parameter	
MARSA	Military Assumes Responsibility for Separation of Aircraft	Military Assumes Responsibility for Separation of Aircraft
MEL	Minimum Equipment List	
MINIT	Minutes in Trail	
MIT	Miles in Trail	
MOS	Military Operations Specialist	
MTSAT	Multi-functional Transport Satellite	Multi-functional Transport Satellite
MVFR	Marginal Visual Flight Rules	
NADIN	National Airspace Data Interchange Network	
NAS	National Airspace System	
NAVAID	Navigational Aid	Navigation Aid
NFDC	National Flight Data Center	
NMCC	National Maintenance Coordination Center	
NOAA	National Oceanic and Atmospheric Administration	
NOM	National Operations Manager	
NOPAC	North Pacific	North Pacific
NOS	National Oceanographic Service	
NRP	National Route Program	
NTMO	National Traffic Management Officer	
NWS	National Weather Service	

ABBREVIATION	ATCSCC MEANING	ATMC MEANING
OAG	Official Airline Guide	
ODP		Oceanic Air Traffic Control Data Processing System
OPSNET	Operations Network	
OTG		Oceanic Track Generator
OTR		Oceanic Transition Route
PACMARF	Pacific Military Altitude Reservation Facility	Pacific Military Altitude Reservation Function
PACOTS	Pacific Organized Track System	Pacific Organized Track System
PMTC	Pacific Missile Test Center	
PO	Plan of Operation	
Pref Route	Preferential Route	
PT	Planning Team	
RA	Route Advisory	
RAA	Remote Airport Advisory	
ROT	Runway Occupancy Time	
SAA	Special Activity Airspace	
SOP	Standard Operating Procedure	
STMP	Special Traffic Management Program	
SUA	Special Use Airspace	
SVRW	Severe Weather	
SWAP	Severe Weather Avoidance Program	
TEC	Tower-Enroute Control	
TELCON	Telephone Conference	
TFM	Traffic Flow Management	
TIS	Traffic Information System	
TMC	Traffic Management Coordinator	Traffic Management Coordinator
TMCIC	Traffic Management Coordinator in Charge	
TMI	Traffic Management Initiative	
TMU	Traffic Management Unit	Traffic Management Unit
TSTM	Thunderstorm	
WSO	Weather Service Office	