

INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE



REPORT OF THE THIRTEENTH MEETING OF THE AIR TRAFFIC FLOW
MANAGEMENT TASK FORCE
(ATFM/TF/13)

BANGKOK, THAILAND, 22 – 25 SEPTEMBER 2009

The views expressed in this Report should be taken as those of the
Meeting and not the Organization

Approved by the Meeting
and published by the ICAO Asia and Pacific Office, Bangkok

ATFM/TF/13
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1.1 Introduction

1.1.1 The Thirteenth Meeting of the Air Traffic Flow Management Task Force (ATFM/TF/13) was held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand from 22 to 25 September 2009.

1.2 Officers, Secretariat and Participants

1.2.1 Mr. Andrew Tiede, Regional Officer ATM, acted as the Secretary of the meeting. He was assisted by Mr. John Richardson, ICAO ATM Expert.

1.2.2 Thirty-two (32) participants from Afghanistan, India, Indonesia, Malaysia, Mongolia, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, United States, and IATA attended the meeting. A list of participants is in **Appendix A**.

1.3 Opening of the Meeting

1.3.1 Mr. Andrew Tiede, on behalf of Mr. Mokhtar A. Awan, Regional Director, ICAO Asia and Pacific Regional Office, opened the meeting and welcomed participants to Bangkok. He commented that the last meeting of the ATFM/TF (TF/12) was held in conjunction with the Interregional Afghanistan Interface meeting (IRAI) in Cairo, Egypt during July 2008, about 14 months ago. These meetings were instrumental in implementing ATS route segment UL333 across the southern portion of Kabul FIR and removing restrictions from B466 in Kabul FIR. Since the Cairo meeting a number of initiatives including route segment implementations and bypass route procedures have been introduced to enhance the ATFM procedures.

1.3.2 Mr. Tiede summarised the ATFM developments from the recent APANPIRG/20 meeting, including the call for the establishment of an ATFM Steering Group to provide overall ATFM guidance to the Region. A regional survey of ATFM capability has been endorsed for conduct during early 2010. APANPIRG also agreed to the Regional Office advocating on behalf of the ATFM/TF by providing data to the airlines and States that are identified as contributing to the early and late departures problems continuously experienced in the application of the ATFM procedures.

1.4 Documentation and Working Language

1.4.1 The meeting was conducted in English. All meeting documentation was in English.

1.4.2 Eight (8) working papers, three (3) information papers and one flimsy were presented to the meeting. A list of the papers is at **Appendix B**.

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Agenda Item 1: Adoption of Agenda

1.1 The meeting adopted the following agenda:

- Agenda Item 1: Adoption of Agenda
- Agenda item 2: Outcomes of Related Meetings
- Agenda item 3: Data Analysis
- Agenda item 4: Operational Issues
- Agenda item 5: Safety and Airspace Monitoring Issues
- Agenda Item 6: Future Direction and Arrangements
- Agenda Item 7: Any Other Business
- Agenda Item 8: Date and Venue for the Next Meeting

Agenda Item 2: Outcomes of Related Meetings

2.1 The meeting was informed that the Twentieth meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20) was held from 7-11 September, 2009 in Bangkok, Thailand.

2.2 As part of the APANPIRG/20 meeting activities a number of ATFM matters were discussed. It was noted by the meeting that there were four important Conclusions adopted by APANPIRG/20 relating to ATFM, as follows:

ATFMBOBCAT System and procedures - Early and Late Departures

Conclusion 20/10 – ATFM Compliance-Advice to Airlines and Airports

That, on behalf of the ATFM/TF, the Regional Office seek assistance in properly complying with ATFM procedures from the specific airlines and airports identified by the ATFM/TF as contributing to poor ATFM performance because of early or late departures.

Results from ATFM Seminar/Workshop (October 2008, Fukuoka, Japan)

Conclusion 20/11 – ATFM Steering Group and Concept of Operations

That a regional ATFM Steering Group be constituted and tasked with preparing an Asia/Pacific Regional ATFM Concept of Operations based on analysis of regional data and traffic flows. The ATFM Steering Group should consider the outcomes and recommendations from the October 2008 ATFM Seminar/Workshop (Fukuoka, Japan) and information about the CAR/SAM ATFM Project contained in IP/3 to APANPIRG/20 as guidance in deriving its Objectives and Terms of Reference.

Conclusion 20/12 – Adopt ATFM Communications Manual

That the *Air Traffic Flow Management (ATFM) Communications Handbook for the Asia/Pacific Region*, as shown in Appendix B to the APANPIRG/20 Report on Agenda Item 3.2, be adopted and circulated as regional guidance material.

Conclusion 20/13 – Conduct Regional ATFM Survey

That a survey of Asia/Pacific States be conducted based on the questionnaire at Appendix C to the APANPIRG/20 Report on Agenda Item 3.2, with the objective of benchmarking the current status of Air Traffic Flow Management (ATFM) activities in the Asia/Pacific Region.

2.3 The ATFM Communications Handbook adopted by APANPIRG/20 has been included as **Appendix C**, whilst the ATFM Survey is shown as **Appendix D**.

Agenda Item 3: Data Analysis

3.1 The meeting was given a detailed analysis and overview of operational data by Thailand on westbound flights operating into the Kabul FIR from the commencement of full ATFM operations in July 2007 to August 2009.

3.2 It was noted by the meeting that the average traffic per night has considerably increased from 38 flights when operational trials commenced in July 2006, to 56 flights in September 2009. The meeting was informed that on 1 April 2009, a new record of 73 aircraft requested slot allocation using the ATFM/BOBCAT system. Analysis has shown that, over the period of 3 years since operational trials commenced, the westbound traffic demand through the Kabul FIR has been growing at an average rate of 21% per annum for this period as shown in **Figure 1** below.

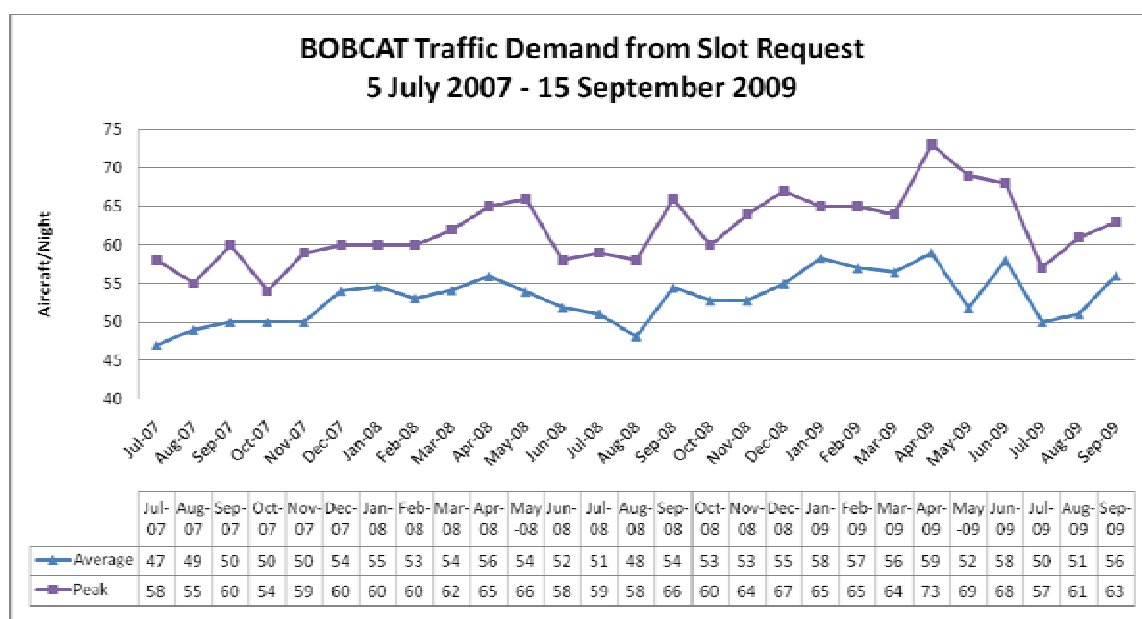


Figure1: BOBCAT Slot Request Statistics (5 July 2007 – 15 September 2009)

3.3 The meeting learned that, while slot requests continued to increase, the number of airlines involved has also increased to a figure of 47 different airline operators in September 2009. The updated airline participation since operational trials commenced in July 2006 is shown in Figure 2.

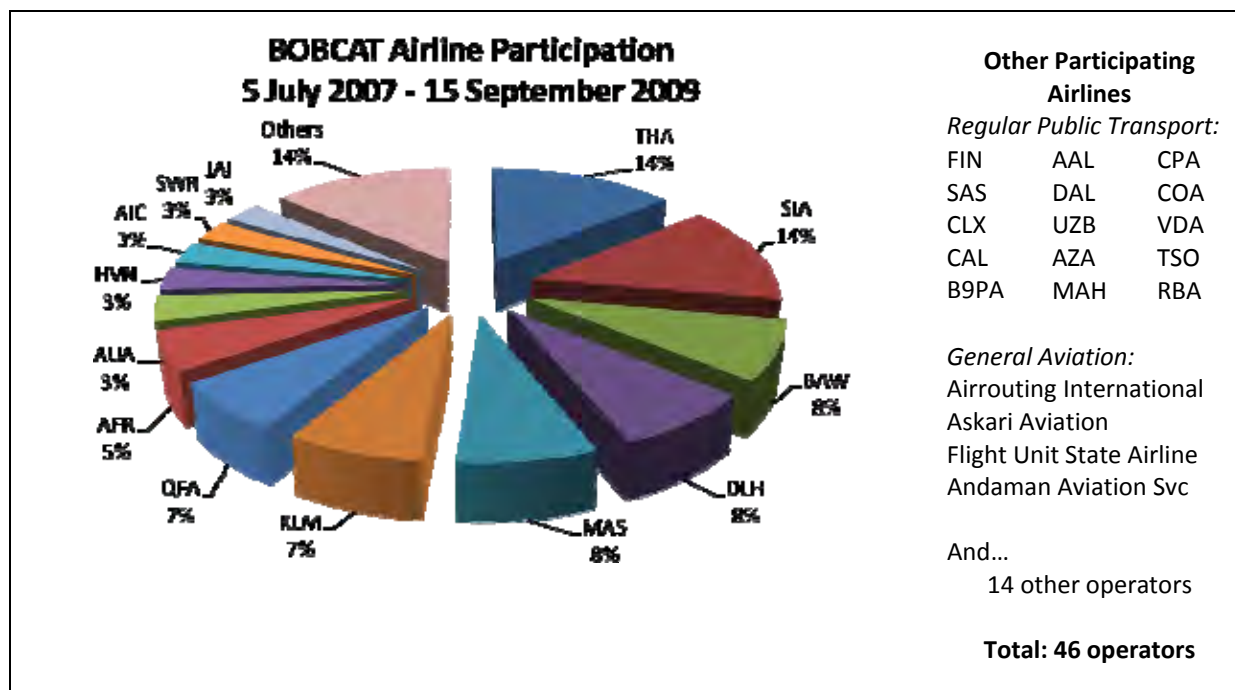


**Figure 2: BOBCAT Airline Participation since ATFM Implementation
(5 July 2007 – 15 September 2009)**

Overall Data Analysis – Traffic Distribution by Airport

3.4 Weekly departing air traffic numbers from the top 9 airports, given as a percentage of the overall total ATFM metered departures derived from data for flights that entered the Kabul FIR during the period 5 July 2007 to 15 September 2009, are shown in Figure 3 below:

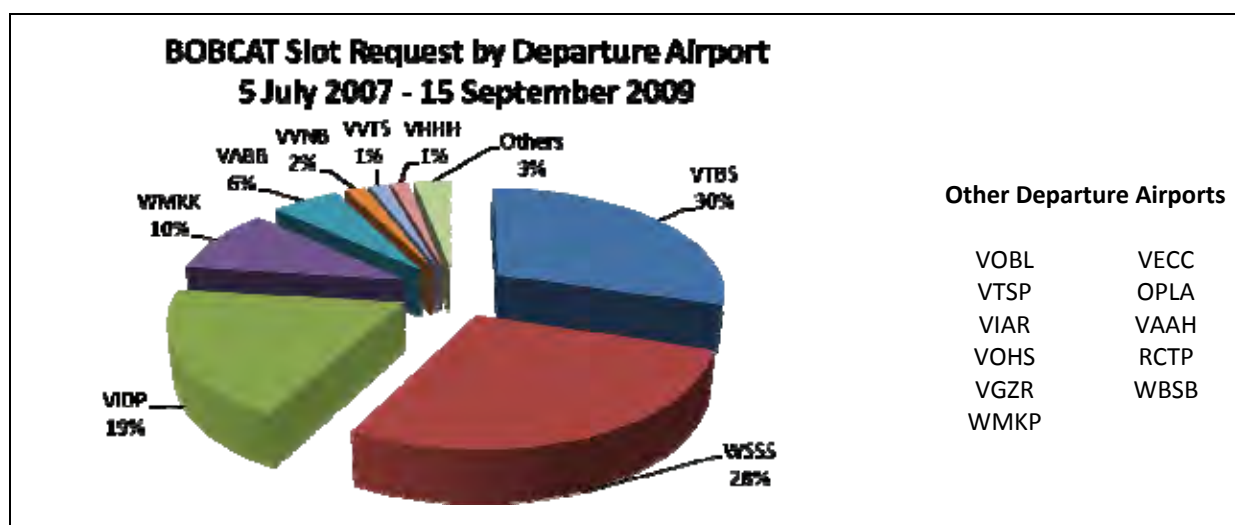


**Figure 3: BOBCAT Traffic Demand from Slot Request Information organized by Departure Airport
(5 July 2007 – 15 September 2009)**

Overall Data Analysis – Traffic Distribution by Route

3.5 The meeting noted that, between October 2008 and August 2009, route usage among the 4 ATS routes through the Kabul FIR using the ATFM procedure (A466, N644, L750 and G792) was approximately evenly distributed. Nevertheless, within this overall outcome seasonal (summer/winter) changes to preferred use of ATS route were evident.

3.6 The meeting was informed that during this period, changes to the route structure were implemented which allowed flights to use an additional route to PAROD (Kandahar) from SERKA (B466) as well as G792. In addition, an extension to UL333 (SERKA – SOKAM) across the southern portion of the Kabul FIR was implemented.

3.7 The meeting turned its attention to the most easterly routes, being A466 and N644. It was advised that the combined A466 and N644 air traffic entering the Kabul FIR accounted for 38% of the entire BOBCAT traffic in January 2009 and 60% of the traffic in August 2009. This suggests that the ATS route realignments in the Lahore FIR which will remove A466 and N644 traffic convergence at waypoint DI would provide additional capability for traffic distribution following their implementation.

Overall Data Analysis – Traffic Distribution by Flight Level

3.8 The meeting recognised that FL350 continues to be the most favoured flight level for entry into Kabul FIR, closely followed by FL310.

Overall Data Analysis – Flight Level Allocation

3.9 With respect to flight level allocation entering the Kabul FIR, the meeting was advised that the number of flights achieving the same or higher preferred flight level varied between 80.90% in August 2009 and 93.02% in May 2009. **Figure 4** below shows further information on the percentage of traffic achieving same or higher preferable flight level between October 2008 and August 2009. However there was an unfortunate downward trend in the average number of flights achieving same or higher preferred flight level from May 2009 to August 2009. This downturn is discussed in more detail later in this report.

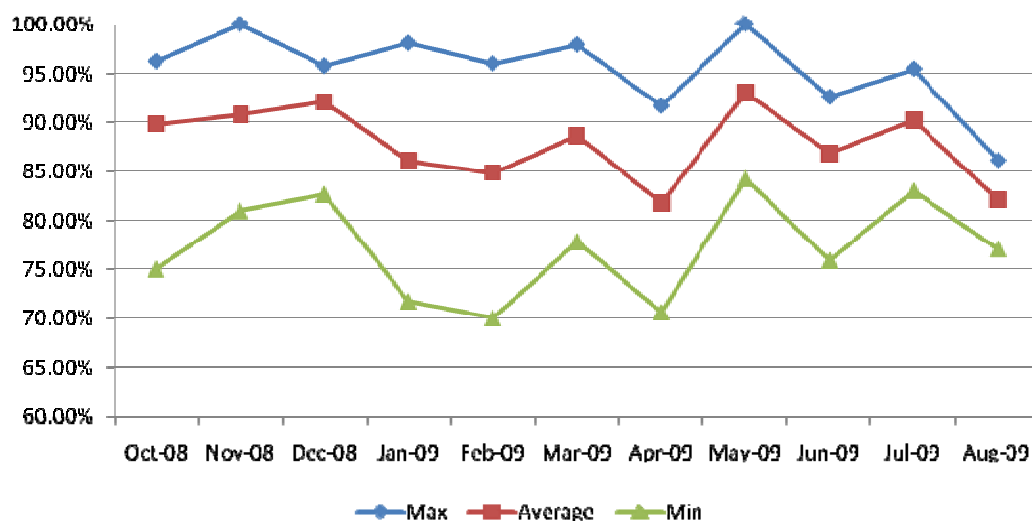


Figure 4: Percentage of Aircraft Achieving Same or Higher Preferable Flight Level

Flights Transiting the Kabul FIR at a Flight Level Lower than Slot Allocation

3.10 The number of flights transiting the Kabul FIR at a flight level lower than slot allocation flight level between October 2008 and May 2008 is shown in **Figure 5**. While the percentage of aircraft entering the Kabul FIR at a flight level lower than slot allocation reached its lowest (i.e. best) point in May 2009 at 4.69%, it is concerning to note the increasing negative trend during August 2009 to 15.25%. This also has been discussed later in the report.

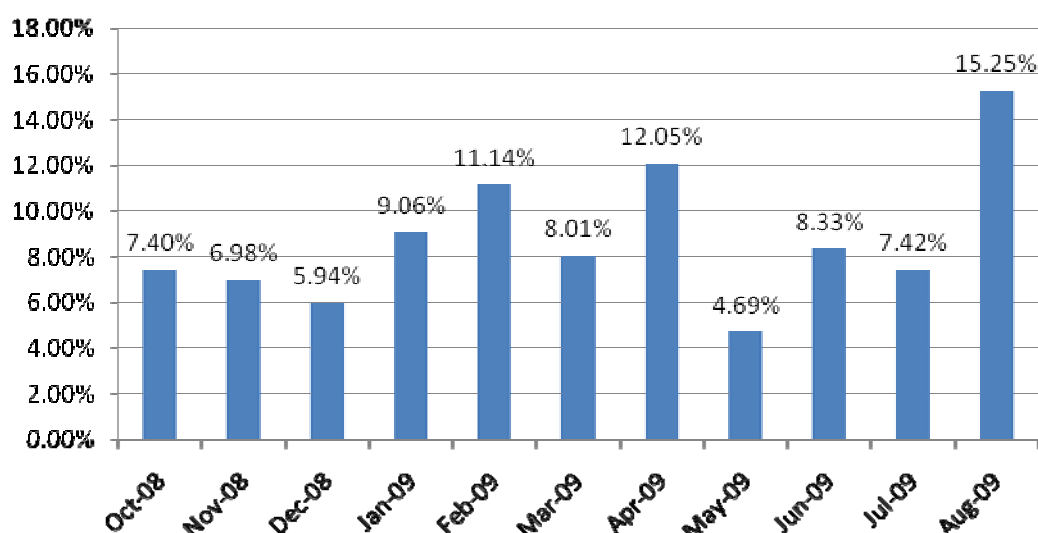


Figure 5: Number of Flights Transiting the Kabul FIR at a Flight Level Lower than Slot Allocation

3.11 From the data analysis, there are 6 likely reasons why aircraft are unable to achieve their slot allocation flight level:

- a) Early or late departures of the particular aircraft or another in close proximity;
- b) EET inaccuracy;
- c) VIDF tactical ATC issue;
- d) Eastern Bay of Bengal tactical ATC issue;
- e) Departures without slot allocation; and,
- f) Unknown reason due to insufficient data

3.12 The percentage breakdown of aircraft unable to achieve slot allocation flight level is shown in **Figure 6** below.

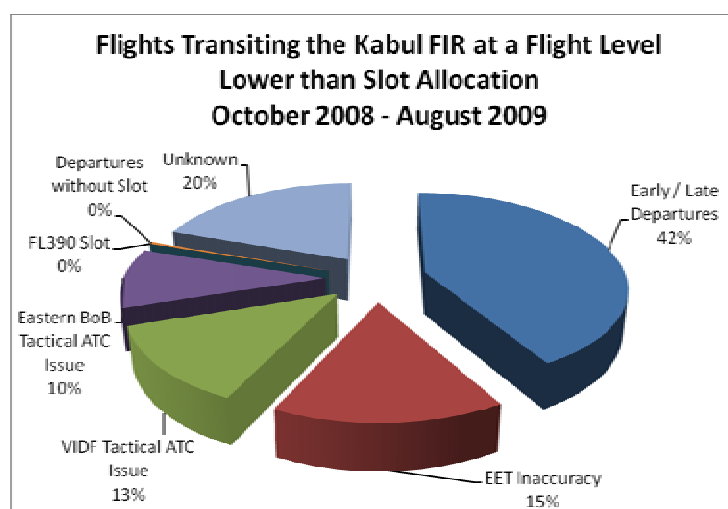


Figure 6: Breakdown of Aircraft Unable to Achieve Slot Allocation Flight Level (October 2008 – August 2009)

Early and Late Departures

3.13 The meeting was advised that the period October 2008 – April 2009 data collection, saw the highest percentage of aircraft (approximately 42 %) that transited the Kabul FIR at a flight level lower than slot allocation due to early or late departure of the aircraft itself or being caused by other late/early aircraft. Most of these occurrences had aircraft transiting the Kabul FIR excessively early or late.

3.14 Statistics of aircraft analyzed to have potentially caused other aircraft to transit the Kabul FIR at a flight level lower than slot allocation are shown in **Figure 7** (by airline operator) and **Figure 8** (by departure airport) below.

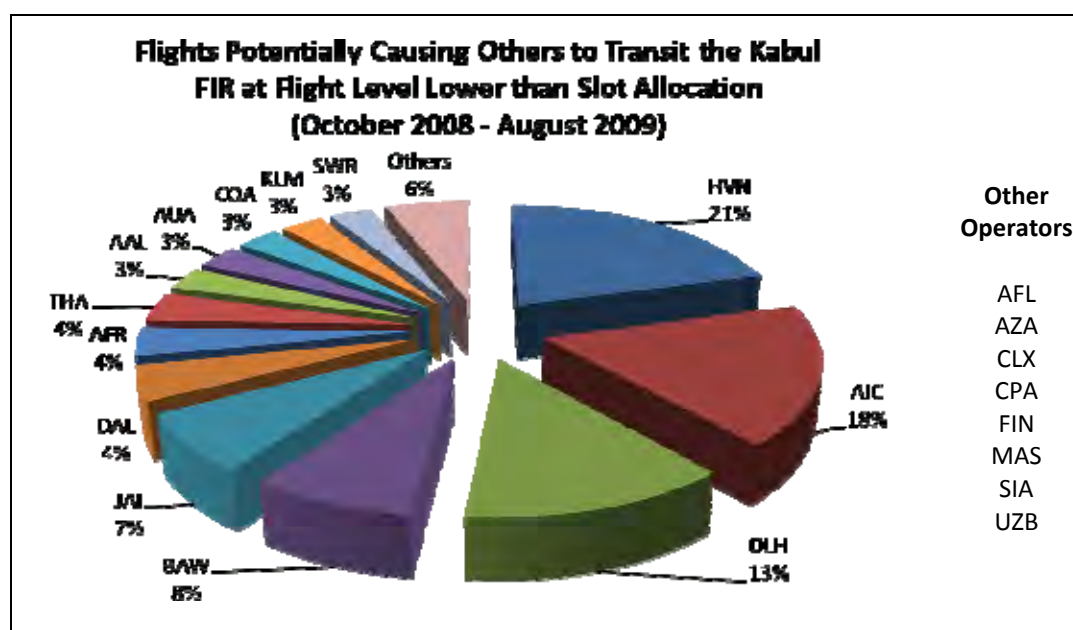


Figure 7: Flights Potentially Causing Others to Transit the Kabul FIR at a Flight Level Lower than Slot Allocation (October 2008 – August 2009, shown by Operator)

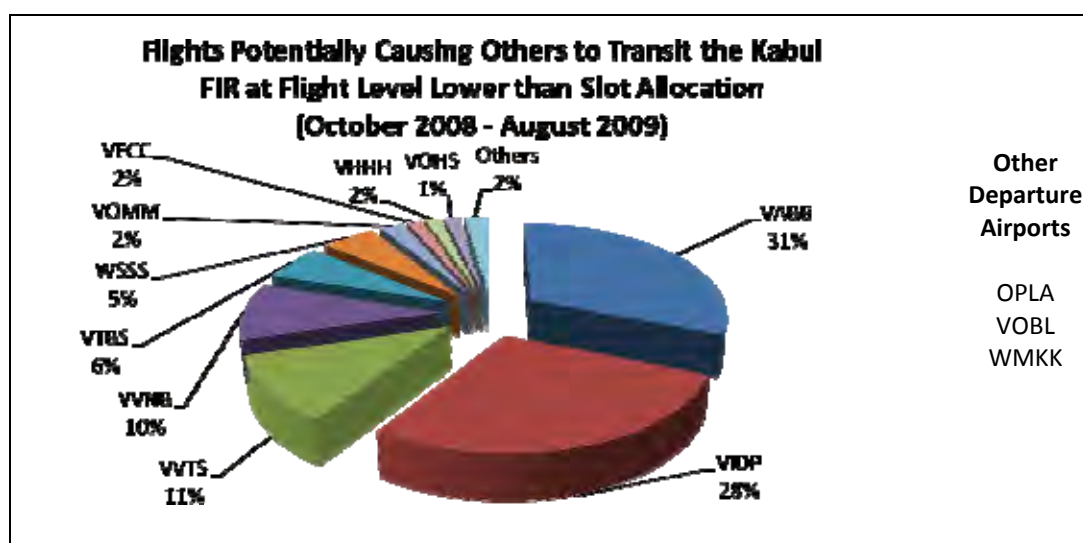


Figure 8: Flights Potentially Causing Others to Transit the Kabul FIR at a Flight Level Lower than Slot Allocation (October 2008 – August 2009, shown by Departure Airport)

3.15 While tactical air traffic management by en-route ACCs has assisted in limiting the effect of early/late departures on other aircraft to a certain extent, the early/late departures cause an overall increase in ATC workload for the en-route ACCs involved.

3.16 In considering the continuing issue of early/late departures, the meeting was given a comprehensive summary of the ATFM AIP Supplement which had been issued by States based on the model developed by the ATFM/TF. The meeting considered that the early/late departures and a number of other matters would be readily addressed if operators and ANSPs properly complied with the provisions of the ATFM AIP Supplement.

Departures Punctuality

3.17 The meeting then discussed and analysed data punctuality for departures from the 7 major ATFM affected airports between October 2008 and August 2009, based on submitted information and ATS messages received by the Bangkok ATFMU. Using the philosophy provided by IATA airlines that present day aircraft are readily able to lose or gain time by one minute per hour of flight “punctuality time” was calculated dependant on the distance in time of the departure airport from entry into the Kabul FIR. Outcomes for the respective airports are discussed below.

Departures Punctuality: VABB (Mumbai)

3.18 The meeting noted that, as Mumbai departures were only 2 hours from entry into Kabul FIR, the departures punctuality for the Mumbai Airport between October 2008 and August 2009 shown **Figure 9** below is based on a time of 2 minutes before AWUT till 7 minutes after AWUT. Only around 24% of flights are meeting the punctuality requirements for this airport.

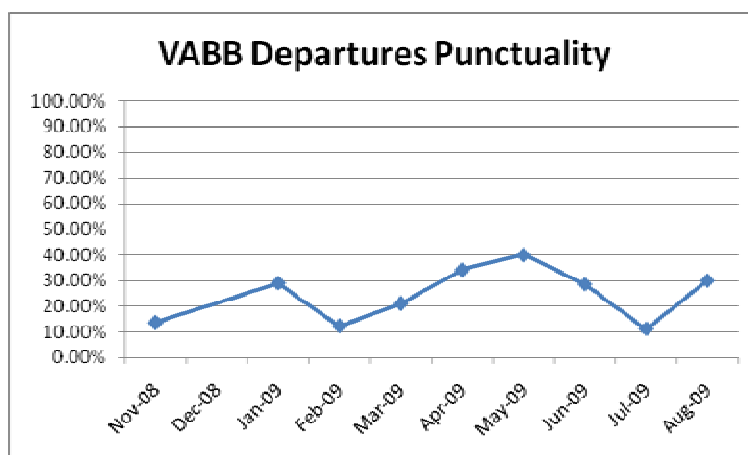


Figure 9: Departures Punctuality for Mumbai Airport
(October 2008 – August 2009)

Departures Punctuality: VIDP (Delhi)

3.19 The meeting noted that, since Delhi is about one hour from entry into the Kabul FIR, “punctual” departures from Delhi are considered as departures that are between AWUT and 5 minutes after AWUT. With respect to departures from Delhi airport during the same period, the graph in **Figure 10** indicates that around 21% of aircraft departed meeting the punctuality requirements.

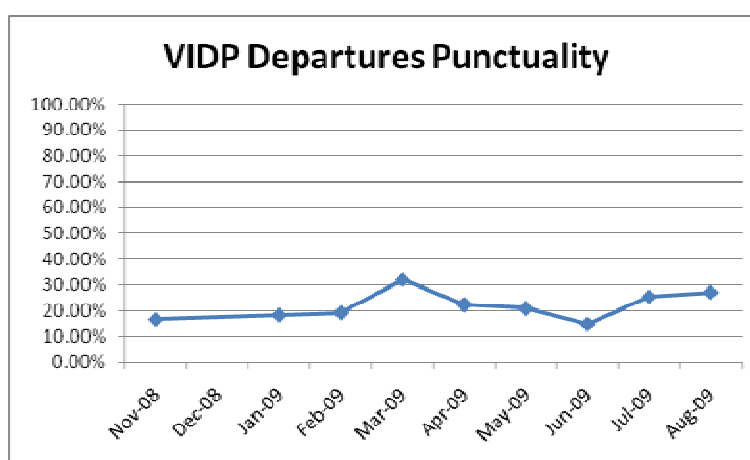


Figure 10: Departures Punctuality for Delhi Airport
(October 2008 – August 2009)

3.20 Considerable discussion probed the question as to why the punctuality achieved was so low from these airports. One consideration may be the “standard taxi time” adopted at both airports which is used in the calculation of the AWUT. It was recommended that, if necessary to do so, this figure should be increased from 15 minutes (the current standard taxi time used) to 20 minutes (as used by major airports in Bangkok, Kuala Lumpur and Singapore) as this may alleviate some of the issues. This, coupled with strict compliance with the ATFM AIP Supplement, is expected to significantly assist the problem.

Departures Punctuality: VTBS (Bangkok, Suvarnabhumi)

3.21 Since Bangkok is approximately four hours from entry into the Kabul FIR, departure punctuality from Bangkok is considered as departures that are between 4 minutes ahead of AWUT and 9 minutes after AWUT. The meeting was pleased to note that the departures punctuality for the Bangkok Suvarnabhumi Airport between October 2008 and August 2009, as shown in **Figure 11**, was approximately 91%.

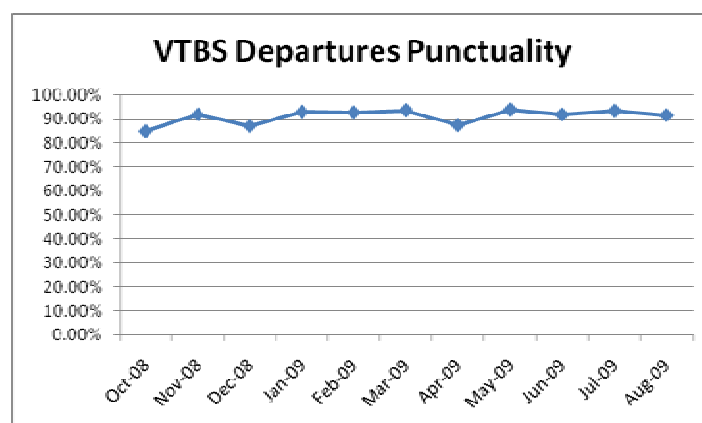


Figure 11: Departures Punctuality for Bangkok Suvarnabhumi Airport (October 2008 – August 2009)

Departures Punctuality: VVNB (Ha Noi)

3.22 It was recognised that as Ha Noi is approximately five hours from entry into the Kabul FIR, “punctual” departures from Ha Noi are considered as departures that are between 5 minutes ahead of AWUT and 10 minutes after AWUT.

3.23 As shown in **Figure 12** below, the meeting noted that departures from Ha Noi averaged a disappointing 22% of what is considered on-time departures in accordance with ATFM procedures and ATFM slot allocation. The wide variation in month to month performance reflects the relatively small number of flights departing from Ha Noi.

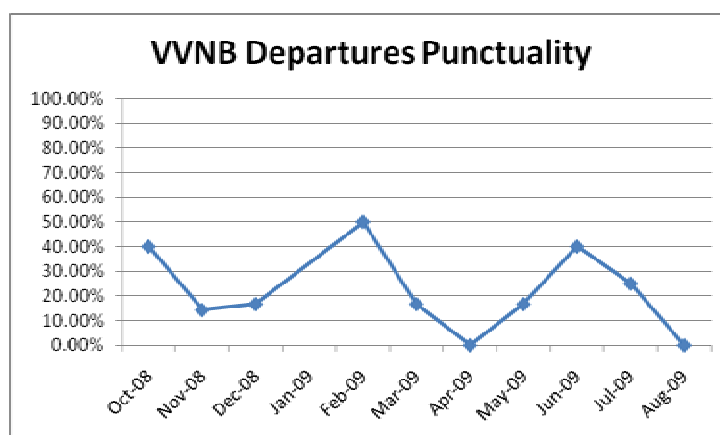


Figure 12: Departures Punctuality for Ha Noi (Noi Bai) Airport (October 2008 – August 2009)

Departures Punctuality: VVTS (Ho Chi Minh)

3.24 Ho Chi Minh is approximately five hours from entry into the Kabul FIR, therefore “punctual” departures from Ho Chi Minh are considered as departures that are between 5 minutes ahead of AWUT and 10 minutes after AWUT.

3.25 The meeting noted that departures from Ho Chi Minh airport averaged a very disappointing 14% of what is considered on-time departures in accordance with ATFM procedures and ATFM slot allocation, as shown by **Figure 13**.

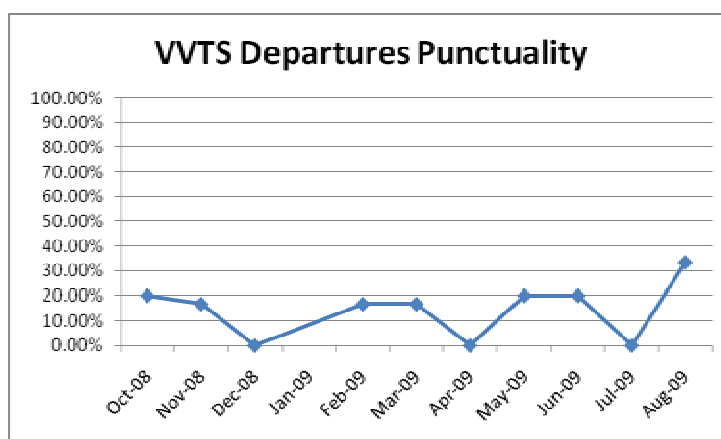


Figure 13: Departures Punctuality for Ho Chi Minh Airport
(October 2008 – August 2009)

3.26 The meeting strongly urged Vietnam to give serious consideration in analysing their ATFM procedures for flights departing from their two airports so that conformity is achieved in accordance with their ATFM AIP Supplement. There were many instances evident to the meeting where aircraft operating out of Vietnam proceeding through the Kabul FIR during the ATFM time period have caused other aircraft under ATFM to lose their slot allocation, necessitating these flights to operate at an undesirable flight level despite being in full compliance with their allocated slot times.

Departures Punctuality: WMKK (Kuala Lumpur)

3.27 Kuala Lumpur is approximately six hours from entry into the Kabul FIR, therefore “punctual” departures from Kuala Lumpur are considered as departures that are between 6 minutes ahead of AWUT and 11 minutes after AWUT. The meeting recognised that on time performance was clearly achievable as this was well demonstrated by the departures punctuality for the Kuala Lumpur Airport, which averaged 97% of on-time departures as shown in **Figure 14** below.

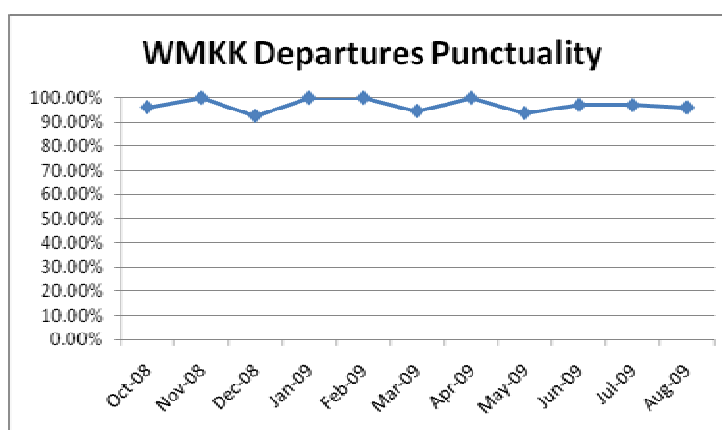


Figure 14: Departures Punctuality for Kuala Lumpur Airport (October 2008 – August 2009)

Departures Punctuality: WSSS (Singapore)

3.28 As Singapore is approximately six hours from entry into the Kabul FIR, “punctual” departures from Singapore are considered as departures that are between 6 minutes ahead of AWUT and 11 minutes after AWUT. The meeting commended the departures punctuality for the Singapore Airport which was at a high level of 92% as shown in **Figure 15** below.

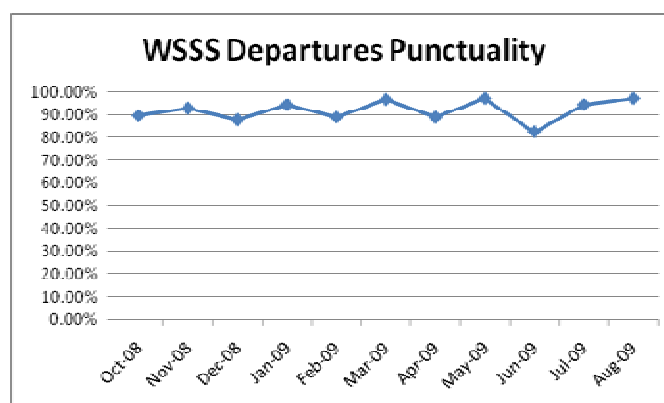


Figure 15: Departures Punctuality for Singapore Airport (October 2008 – August 2009)

3.29 The meeting considered that this high level of departure punctuality, and that also achieved by Malaysia and Thailand, demonstrates a willingness and ability to correctly follow the ATFM procedures notified in their ATFM AIP Supplement, as well as those specified in the ATFM Procedural Handbook.

Timeliness of Entry into the Kabul FIR

3.30 From **Figure 16** below, it was observed that most departures were unable to enter the Kabul FIR inside the AWUT window. Notwithstanding the high punctual departure percentages calculated from Bangkok, Kuala Lumpur and Singapore airports mentioned above, which totalled in excess of 68% of slot requests where data was analysed, only approximately 30 percent of aircraft were able to enter the Kabul FIR within their allocated ETO window.

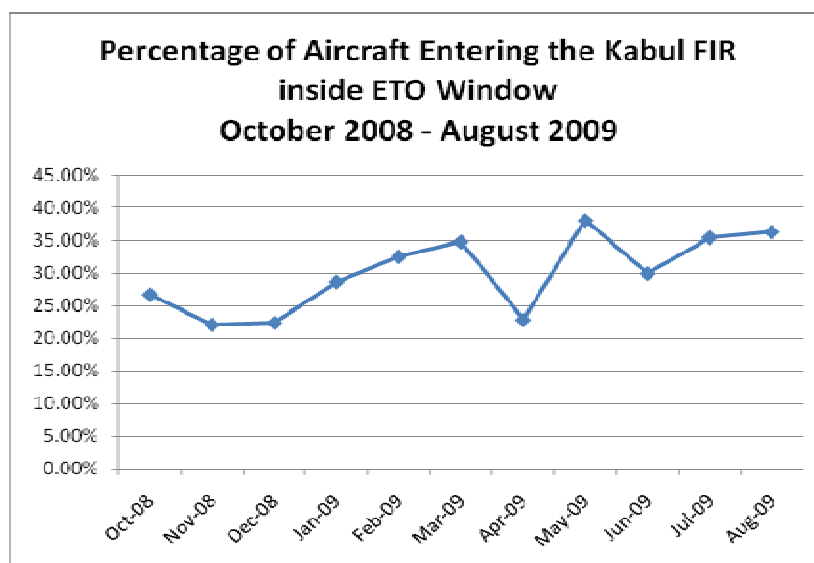


Figure 16: Percentage of Aircraft Entering the Kabul FIR Inside ETO Window

3.31 Considerable discussion took place on this anomaly, including consideration of possible errors in aircraft estimated elapsed times submitted in the slot requests and changes to forecast winds but no clear solution was identified. Thailand agreed that further analysis will be undertaken by the ATFMU in order to better understand this matter.

Participation in Data Collection

3.32 The meeting reviewed the level of participation in ATFM data submission between May 2009 and August 2009, shown in **Table 1** below.

	May 2009	June 2009	July 2009	August 2009
WSFC	7 days	7 days	7 days	7 days
WMKK	7 days	7 days	7 days	7 days
VTBB	7 days	7 days	7 days	7 days
VYYY	7 days	7 days	7 days	7 days
VOMF	7 days	7 days	7 days	7 days
VECF	7 days	7 days	7 days	7 days
VABF	7 days	7 days	7 days	7 days
VIDF	7 days	7 days	7 days	7 days
OPKR	7 days	7 days	7 days	7 days
OPLR	7 days	7 days	7 days	7 days
OAKX	N/A	N/A	N/A	N/A

Table 1: Participation in Data Collection by FIR

3.33 The meeting expressed sincere appreciation to States for the excellent data submission rate. Thailand noted that, on some occasions, there were some issues with integrity of data submitted from certain FIRs which may have reduced the reliability of data analysis on some days of the data collection. The ATFMU would be very happy to answer questions on an ongoing basis to assist States in this regard.

Requirement for Operational Messages Sent to the Bangkok ATFMU

3.34 The meeting was reminded that, according to the ATFM Users Handbook, “[*aircraft operators shall also address flight plan and related ATS messages (e.g. DEP, DLA, CNL, CHG) to the Bangkok ATFMU.*]” Nevertheless, some flight plans and ATS messages are still not transmitted to the Bangkok ATFMU, especially for departures from airports west of the Bay of Bengal.

3.35 The meeting understood that departure punctuality remains a crucial cause for aircraft transiting the Kabul FIR at a flight level lower than slot allocation. The meeting recognised that these ATS messages can be used in future ATFM data analysis, namely in determining potential cause of aircraft transiting the Kabul FIR at flight level lower than slot allocation as well as alerting potential issues arising from aircraft departing early or late outside the AWUT window.

3.36 Accordingly, the meeting encouraged full compliance with the provisions of the ATFM AIP Supplement in respect to the submission of relevant ATS messages via AFTN to the ATFMU.

Contributors to poor on-time performance

3.37 Based on the data analysis, the meeting recognised that the following airlines and airports were contributing disproportionately to the long standing poor on-time performance (early/late departures) experienced by the ATFM procedures.

- Airlines
 - o Viet Nam Airlines (HVN)
 - o Air India (AIC)
 - o Lufthansa (DLH)
 - o British Airways (BAW)
 - o Jet Airways (JAI)
- Airports
 - o Mumbai (VABB)
 - o Delhi (VIDP)
 - o Ho Chi Minh (VVTG)
 - o Hanoi (VVNB)

3.38 The meeting requested that, in accordance with the provisions of APANPIRG Conclusion 20/10, the Regional Office write to the States of the Operators and Airports who were shown by the preceding data to be contributing to the problem of early/late departures to draw attention to the poor on-time performance identified by the ATFM/TF. A request should be included that States investigate and, if necessary, take regulatory action to ensure compliance with the provisions of the ATFM AIP Supplement published by the States affected by ATFM procedures. An item was added to the Task list in this respect.

3.39 The meeting invited IATA to take a similar action and draw the attention of operators to the persistence of the early/late departures problem, highlighting that a non compliance by one flight had a direct and immediate negative effect on an adjacent flight. This action was also added to the Task List.

Agenda Item 4: Operational Issues

4.1 The meeting recalled previous discussions on ATS route enhancements which include:

- a) Extension of UL333 across the Kabul FIR as SERKA-SOKAM;
- b) Removal of restrictions on B466 between SERKA-PAROD;
- c) Implementation of M875 into the Lahore FIR as GUGAL-JHANG; and,
- d) Activation of SAMAR-LAJAK route segment removing convergence of A466 and N644 traffic at waypoint DI.

4.2 In this context, the meeting noted implementation of the extension of UL333 (SERKA-SOKAM) and removal of restriction on B466 (SERKA-PAROD) commenced from 20 August 2008. These changes were accompanied by configuration changes to the BOBCAT system to take advantage of the new routing through the Kabul FIR.

4.3 The meeting also noted the implementation of M875 (GUGAL-JHANG) in the Lahore FIR on 30 July 2009. While the ATS route extension has not eliminated convergence of A466 and N644 traffic at waypoint DI, it has been estimated that, when combined with M875 (BUTOP-GUGAL) in the Delhi FIR, BUTOP-JHANG would potentially save close to 60 NM track distance.

4.4 Thailand informed the meeting that, according to ATFM data for August 2009, during the three weeks after activation of the GUGAL-JHANG route segment approximately 51% of the aircraft planning to transit the Kabul FIR via A466 or N644 utilized ATS route M875 (BUTOP-GUGAL-JHANG) to enter the Lahore FIR en route to the Kabul FIR.

4.5 The meeting learned that since the implementation of UL333 and B466 (SERKA-PAROD) on 28 July 2008, there was one ATFM flight which had filed flight plan on N571/N877 and entered Kabul FIR at SERKA/PAROD.

4.6 The meeting also learned that there are a couple of airlines which still filed flight plans on P628, when these non-ATFM flights are not able to operate FL360 or above which is contrary to the requirement of Malaysian AIP ENR3.3-8.

4.7 It was noted that there were some ATFM flights departing from Singapore are flight planning on M751/M770 and entering Kabul FIR at PAVLO. There were 15 flights in June, 5 in July and 10 in August 2009. These flights operating on these routes had actually resulted in more efficient way to manage traffic during nightly peak hour periods.

4.8 The meeting was advised to explore the possibility of encouraging the airline operators who intend to use L759 to flight plan their flights via B469/M751/VKB/A334/PUT when departing from Singapore during the hours of ATFM operations.

4.9 On 27 June 2009 due to extreme weather conditions in the Bay of Bengal area all flights on L759 had deviated extensively to the left of track. As a result Chennai ACC informed Lumpur ACC to reroute all the eleven westbound flights on P628 to L510.

4.10 The meeting noted that the implementation of operational trial bypass route procedures L759 using M770 on 18 December 2008 has resulted in a more orderly and smooth coordination between Bangkok ACC and Kuala Lumpur ACC.

4.11 The meeting reviewed the data shown in **Figure 17** below, which illustrates the number of ATFM flights using P628, L759, M770 and L507. It was evident that P628 continues to be the most favoured route used by airline operators departing from Kuala Lumpur and Singapore during the hours of ATFM operations. The maximum number of flights recorded utilizing this route was 15 flights per night.

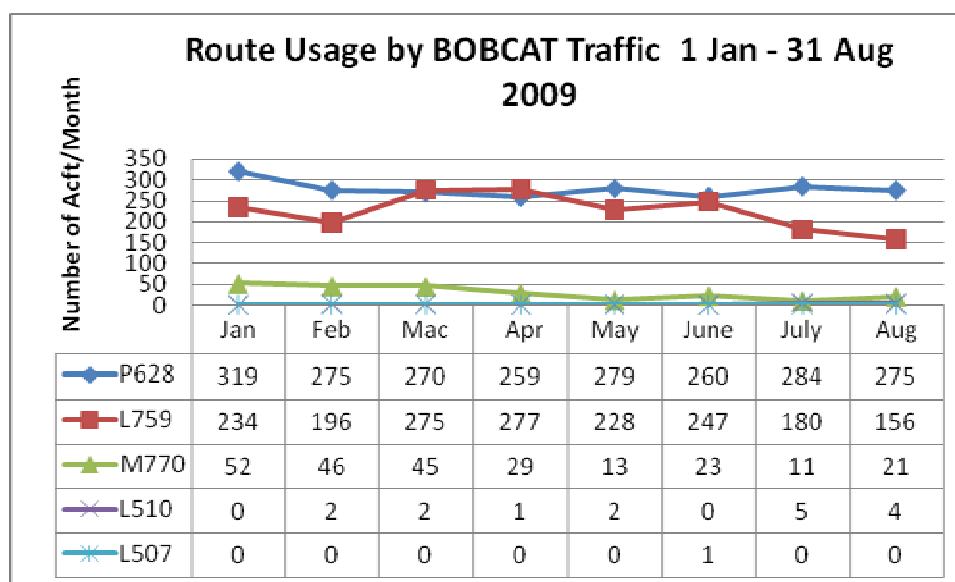


Figure 17: Flights from Kuala Lumpur and Singapore on P628, L759, M770 and L507 (period 1 Jan to 31 Aug 2009)

4.12 The meeting was informed that data showed that ATS routes N571 and N571/N877 were the most favoured ATS routes for flights proceeding to destinations in South Asia, Middle-East and Europe. Currently flights proceeding to destinations in Europe will also normally route on N571 or N571/N877 when airline operators decide not to participate in the ATFM procedures.

Pakistan Update

4.13 Pakistan provided a working paper for presentation by the Secretariat that detailed the actions taken by Pakistan in response to the tasks previously allocated by the ATFM/TF. The meeting noted the following information in this respect:

Action Item 8/7 – Pakistan requested to lower the Minimum En-route Altitude (MEA) on P628 to FL300 as soon as possible to align with India MEA.

4.14 Pakistan advised that MEA of ATS Route P628 between ASOPO and VIKIT in Indian airspace is also published as FL320. Lowering of MEA of P628 to FL300 was proposed to India. India has been informed that the proposal will add on complexities in managing the flow of traffic in Indian FIR and hence not feasible to agree with. In this scenario, availability of FL280 in Afghanistan will not have any benefit. It has also been highlighted that implementation of M875 also does not necessitate this requirement.

Action Item 8/11 – Study feasibility of route segments proposed during ATFM/TF/8 to assist N644 and A466 in vicinity of DI Khan.

4.15 The meeting noted that M875 between GUGAL and PAVLO has been implemented from 30 July 2009. The proposed new route between SAMAR – LAJAK was not yet implemented but is in coordination within Pakistan.

4.16 The meeting thanked Pakistan for the implementation of GUGAL-PAVLO, recognising the complexity of the coordination that had been required within Pakistan. IATA expressed their gratitude and noted that the conditional operating hours from 1630 – 2230 UTC provided valuable relief to flights during this time. However, some flights were being caught after 2230 and IATA advised that an extension of the conditional hours until 2359 would be extremely beneficial. The meeting agreed to relay this request to Pakistan and seek their concurrence in extending the hours from 1630 until 2359 for the GUGAL – JHANG segment, and also for the same time period on SAMAR - LAJAK when it was implemented.

4.17 The meeting also requested that as an interim measure, Pakistan give consideration to a by-pass route linking Lahore and HUNGU to the north of the PRD area then onwards to LAJAK which will allow suitable spacing for aircraft entering Kabul FIR at LAJAK and PAVLO. Afghanistan advised that Kabul ACC would be able to accept traffic via LAJAK - G796 - MURAD - A466 to assist traffic flows.

4.18 The meeting recognised that to take full advantage of the opening of route segment SAMAR-LAJAK, the following actions may need to be considered at least during the ATFM hours of operation:

- a) Deactivation of ATS route segment SAMAR-PATNI-JHANG of A466 in the Lahore FIR;
- b) Deactivation of ATS route segment DI-SITAX in the Lahore FIR;

4.19 Thailand advised the meeting that coincident with the activation of the route segment SAMAR-LAJAK, the following tasks are to be accomplished in the BOBCAT system:

- a) Waypoint DI removed from the BOBCAT system;
- b) Waypoint SITAX, originally used for A466 traffic removed from the BOBCAT system;
- c) Waypoint LAJAK created for A466 traffic in lieu of SITAX; and,
- d) Slot Request Templates involving waypoint SITAX need to be redone.

4.20 It was anticipated that the configuration workload of Bangkok ATFMU for these changes would be minor, in order of minutes, while airline dispatchers should be allocated time to review slot request templates.

4.21 The meeting expected that once all changes were implemented, the following benefits will be realized:

- a) Traffic flow planning to transit the Kabul FIR using ATS routes A466 and N644 isolated into two parallel routes, substantially reducing ATC workload in the Lahore FIR;
- b) Capacity of the overall BOBCAT system increased due to removal of waypoint DI from slot calculation; and,
- c) Slight decrease in time utilized by the system to process initial 1200UTC cutoff-time slot allocation as well as changes to slot allocation affecting A466 and N644 traffic.

Action Item 10/5 – Implement additional ATS route via TOXEX to bypass PAVLO during military operations.

4.22 Afghanistan advised that this bypass route was no longer required. Tactical control would now be able to solve issues when required.

Malaysia Update

4.23 Malaysia presented the meeting with an update on aspects of the ATFM operations, based on data from 1 January to 31 August 2009. The meeting recalled that, at the ATFM/TF/12 meeting, it was advised that there could be potential for bunching of aircraft operating on N571/N877 which would aggravate the present issues on P628 within the Kuala Lumpur FIR.

4.24 In this respect Malaysia provided the data shown in the following Tables, recording the numbers of flights affected by bunching on P628 and L759, respectively, during the first 8 months of 2009. The data highlighted that about 6% of P628 traffic and about 12% of L759 traffic had been affected by a bunching scenario.

4.25 **Table 2** below shows the number of flights using P628 affected by traffic bunching, including the number of flights that required diversion to bypass route L510 or restriction to FL260 to remain on P628.

YEAR/MONTH	How many times?	How many flights were diverted to L510?	How many flights were held at FL260 on P628?
2009 (Jan-Aug)	92	16	0
Table 2:-Bunching of Traffic on P628			

4.26 **Table 3** below shows the number of flights using L759 affected by traffic bunching, including the number of flights that required diversion to bypass route M770 or restriction to FL260 to remain on L759.

YEAR/MONTH	How many times?	How many flights were TFR to Bangkok ACC at FL260 or rerouted (incl M770)?	How many flights were Orbited?
2009 (Jan-Aug)	58	20	0
Table 3:-Bunching of Traffic on L759			

4.27 The meeting noted that Malaysia had issued a NOTAM notifying operators not to flight plan to enter Kabul FIR at SERKA then B466 to PAROD via N571/N877 during the nightly hours of ATFM procedures. However, there are no ATFM requirements or flight planning restrictions for flights via N571/N877 entering Kabul FIR at SERKA then UL333 to SOKAM. This NOTAM will remain active until a connector route is established to enable L510 to rejoin N877 over India.

4.28 The meeting recognised that the matter of the contingency route in Chennai FIR referred to above had been under investigation by India since the SCM ATFM SEA Routes nearly 12 months ago and was urgently required. ATFM/TF/12 had noted that the existing route structure in India already had some possibilities that should be considered, notably L301 DOGEM - VVZ and G472/N895 EKADI - NAGPUR.

4.29 India agreed to urgently follow up on this issue and advise the Regional Office by the end of October 2009. The Task List was updated in this respect.

4.30 When a connector route from L510 to rejoin N877 over India becomes available, flights departing from Kuala Lumpur and Singapore will be able to flight plan to enter Kabul FIR via SERKA-PAROD or SERKA-SOKAM with ATFM requirements. The meeting noted that with the opening of the SERKA-PAROD route to airports east of India there will be a possibility of flights on P628 using this route making their way to SERKA. This would potentially add traffic to P628 in the KL FIR and add to the existing bunching problem.

4.31 Accordingly, the meeting agreed that P628 should not be used to feed SERKA and therefore notification of flight planning restrictions on P628 will be necessary and should also be posted on the "BOBCAT Announcements" page when traffic via N571/N877 is used to feed the BOBCAT metering at SERKA.

4.32 The meeting was further advised that when the above NOTAM (paragraph 4.27 refers) has been cancelled and N571/N877 becomes part of BOBCAT flow route during the hours of BOBCAT operations, Malaysia will issue a NOTAM requiring all westbound flights on N571 and N571/N877 which are not subject to ATFM measures when transiting Kuala Lumpur FIR to destinations in South Asia, Middle East and Europe to file their flight plan as follow:

- FL360 or above for flights estimating VAMPI between 1530 and 1930 UTC. Flights which are unable to comply during this period are advised to use other alternate routes.

4.33 Given the popularity of ATS route N571 and N571/N877 to non-participating AFTM flights, Singapore requested that Malaysia to reconsider the requirement for non-participating ATFM flights to cross waypoint VAMPI at or above FL360. IATA also expressed strong concern that operators would find F360 difficult to operationally achieve, thereby imposing a significant penalty.

4.34 As only a small percentage of such flights would be able to meet the FL360 requirement, Singapore requested that Malaysia to reconsider lowering the requirement to cross waypoint VAMPI at or above FL340. Malaysia advised that they would consider the requests from Singapore and IATA but that they presently thought it necessary to have a FL360 or above requirement at VAMPI between 1530 and 1930UTC when N571/N877 becomes a BOBCAT flow route. Malaysia would conduct a review not later than six months after the commencement of ATFM operations on N571/N877.

4.35 The meeting recognised that the availability of connector route in Chennai would enable activation of ATS routes for traffic subject to ATFM metering. There were a number of aspects to this implementation that were identified in this and previous reports which would need to be

considered and coordinated between India Malaysia Pakistan and Thailand to enable a smooth implementation. The meeting anticipated that the arrangements could be made via correspondence, rather than waiting for the next suitable ICAO regional meeting, and States and the Regional Office would commence actions as soon as India confirmed the use of a connector route in the Chennai FIR (refer paragraphs 4.28 & 4.29 above).

Agenda Item 5: Safety and Airspace Monitoring issues

5.1 No items were identified for discussion under this agenda item.

Agenda Item 6: Future Direction and Arrangements

Permanent Implementation of By-Pass route M770

6.1 The meeting was advised that Thailand would shortly publish an AIP Supplement regarding Bypass Procedures to alleviate bunching of aircraft during the ATFM period on ATS route L759 by directing affected aircraft to proceed via L515 onto M770, which is parallel to their flight planned route. This arrangement has been under operational trial since December 2008 (refer paragraph 4.5 above) and has proven successful in managing situations of traffic bunching in Bangkok FIR.

6.2 Myanmar and India have been invited to join with Thailand in the management of this diversion when required and to issue their appropriate AIP Supplement for implementation on AIRAC date 19 November 2009. Thailand and Myanmar would use a common text and issue date for their respective AIP Supplements and the meeting strongly encouraged India to also use the same text (see **Appendix E**) and issue date for their AIP Supplement. An item was added to the Task List in this respect.

BOBCAT Operating Costs and sustainability for Regional Cooperative Projects

6.3 Thailand advised the meeting on the background to the introduction of the BOBCAT ATFM Computerized System to assist aircraft and States involved in the management of the traffic flow from Southeast Asia and South Asia through the Kabul FIR during the busy night time period.

6.4 The meeting was also advised of the provisions for the technical equipment necessary to drive the system as well as the staffing arrangements within the Air Traffic Flow management Unit (ATFMU).

6.5 In order to continue the work required to manage the system as well as the operation of the ATFMU, the meeting was advised that the desire of Thailand was to introduce a mechanism to enhance sustainability of regional programmes such as ATFM using BOBCAT into the future.

6.6 Thailand further advised the meeting that they do not intend to seek reimbursements for the development and operating costs already incurred on the BOBCAT system to this present time.

6.7 IATA advised the meeting that the sustained effort which Thailand has put into this project was gratefully acknowledged. While recognising the ongoing requirements IATA expressed the opinion that such projects should not be individually charged. To this end, IATA agreed to work directly with AEROTHAI to reach a mutually agreeable arrangement, with the objective of ensuring that the past efficiency of this much needed service to the aviation community was maintained.

ATFM Task List

6.8 The ATFM Task List was updated during the meeting and is reproduced as **Appendix F**.

Agenda Item 7: Any other business

Develop ICAO global Air Traffic Flow Management (ATFM) Manual

7.1 The United States presented details of the progress on the development of an ICAO ATFM project to establish a global ATFM Manual. The framework for the Global Manual on Air Traffic Flow Management is shown at **Appendix G**.

7.2 The United States gave a presentation titled “*Traffic Flow Management Model for Efficiency and Best Business Decisions*” which dealt with the many beneficial impacts of civil aviation operations on the commerce activities of a State. Keeping traffic flowing efficiently was a necessity in maintaining and developing many State functions and ATFM was an ever more important aspect of this. The presentation has been included as **Appendix H**.

7.3 The meeting expressed its appreciation to the USA for this presentation which highlighted the critical importance of fully and efficiently matching air traffic demand with all available system capacity.

Agenda Item 8: Date and venue for the next meeting

8.1 Extensive discussion took place in relation to the next meeting of the Task Force and the way forward on ATFM matters in general, with questions being raised as to whether there was a need for further meetings. It had been 14 months since the last ATFM/TF and that the ATFM procedures, with the exceptions noted in this report, had performed adequately during this time. The meeting had identified some actions and initiatives that, when implemented, would further increase the robustness of operations.

8.2 Additionally, the recent APANPIRG/20 meeting had adopted Conclusions establishing an ATFM Steering Group to progress ATFM matters on a regional basis, and for the conduct of an ATFM survey in early 2010.

8.3 Noting that the BBACG was responsible for the future direction of the ATFM/TF, the meeting agreed that these matters should be informed to the annual BBACG meeting in the first quarter of 2010 for their consideration. Any decision scheduling, deferring or dissolving the ATFM/TF should be made by the BBACG at that time. Accordingly, no future meeting date was established by the meeting.

Closing of the Meeting

8.4 Mr. Tiede thanked the meeting participants for their significant work during the meeting, noting that the meeting had agreed to a number of actions to further improve the performance of the ATFM procedures. The importance of compliance with the AIP Supplement for ATFM procedures could not be understated and was the key to improvements in overall system performance. The data provision remained as an essential activity as it enabled the AEROTHAI ATFMU to undertake the detailed analysis that was necessary to guide enhancements to the ATFM operations.

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LIST OF WORKING PAPERS (WPs) AND INFORMATION PAPERS (IPs)

WORKING PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
WP/1	1	ATFM/TF/13 – Provisional Agenda	Secretariat
WP/2	6	ATFM/TF Task List	Secretariat
WP/3	2	ATFM Related Outcomes of APANPIRG/20	Secretariat
WP/4	4	Bay of Bengal Air Traffic Flow Management Update in Kuala Lumpur FIR	Malaysia
WP/5	4	ATFM Action Plan	Pakistan
WP/6	6	New Routing through the Lahore FIR and the BOBCAT System	Thailand
WP/7	6	Bobcat Operating Cost and Sustainability Enhancements For Regional Cooperative Projects	Thailand
WP/8	3	BOBCAT Data Collection and Analysis	Thailand

INFORMATION PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
IP/1	-	List of Working Papers (WPs) and Information Papers (IPs)	Secretariat
IP/2	7	Participation in ICAO ATFM action to establish a global Air Traffic Flow Management (ATFM) Manual	United States
IP/3	6	Permanent Implementation Of Bypass Route M770	Thailand

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**INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE**



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

Version 1.0 – September 2009

Issued by the ICAO Asia/Pacific Regional Office, Bangkok

FOREWORD

Centralized air traffic flow management (ATFM) providers 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 units.

Common terminology is an essential element in exchanging definitive, clear, and concise communication between international ATFM units. 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/20, under the terms of Conclusion 20/12, 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.

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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.

<u>Name</u>	<u>Description</u>
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: - In severely reduced capacity situations (below most user arrival minimums, airport/runway closed for snow removal, or aircraft accidents/incidents); - To preclude extended periods of airborne holding; - To preclude sector/center reaching near saturation levels or airport grid lock; - In the event a facility is unable or partially unable to provide ATC services due to unforeseen circumstances; and - When routings are unavailable due to severe weather or catastrophic events.

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	

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	
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	
IFPP	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	
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	

Asia/Pacific Region
Air Traffic Flow Management (ATFM) SURVEY

1. General

1.1 The objective of this survey is to obtain information in order to learn about the current status of ATFM in Asia/Pacific States and Organizations with respect to:

- a) The methods for estimating airport and ATC capacity;
- b) ATFM procedures for the following phases:
 - Airport strategic
 - Airport tactical
 - Airspace strategic
 - Airspace tactical
- c) Existing and planned equipment/infrastructure capable of supporting ATFM collaborative decision making (CDM), display and analysis; and
- d) related matters included meteorology, AIS and map aspects related to ATFM provision.

1.2 This information will be beneficial in enabling APANPIRG to fulfil its overall planning and harmonizing objectives. Accordingly, APANPIRG/20 (September 2009) adopted Conclusion 20/12 calling for the conduct of a regional ATFM survey during 2010

1.3 Mark with an “X” the corresponding answer. Please include your comments, if you deem pertinent. If necessary, use additional sheets. As applicable, send copies of requested electronic documents to the ICAO Asia/Pacific Regional Office icao_apac@bangkok.icao.int

1.4 Effective coordination with the relevant stakeholders should be made by the entity responsible for collating inputs for that State (i.e. ensure that a copy of this questionnaire has been sent to the State’s MET Authority as components of this survey depend on MET input and coordination with your MET Authority in obtaining input for the relevant sections of the survey maybe necessary).

2. Airport Capacity

2.1 Does your administration (and/or State) currently have a method, whether basic or complex, for calculating airport capacity? If yes, please send an electronic copy of the methodology to icao_apac@bangkok.icao.int

☐ YES

☐ NO

2.2 If yes, please provide any available airport capacity data for your main airports in the following table. Please note that for this table:

Total Capacity = Airport Acceptance Rate (AAR) + Airport Departure Rate (ADR).

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Airport Name	Runway configuration	Airport Acceptance Rate (AAR)			Airport Departure Rate (ADR)	Total Capacity
		VFR	MVFR	IFR		

Table 1

Comments

3. En-route Sector Capacity

3.1 Does your administration (and/or State) currently have a method, whether basic or complex, for calculating enroute sector capacity? If yes, please send an electronic copy of the methodology to icao_apac@bangkok.icao.int

☐

YES

☐

NO

3.2 If yes, please provide any available airport capacity data for your main airports in the following table. Under the “Time Increments” column, please indicate if the sector capacity is computed by 15-minute increments, 60-minute increments, or some other increment.

ACC	Sector Name	Sector Altitudes	Sector Capacity	Time Increments

Table 2

Comments

4. Procedures for Phases of ATFM

4.1 Does your administration (and/or State) currently have procedures/arrangements in place to support the following phases of ATFM?

a) Airport Strategic

☐ YES

☐ NO

b) Airport Tactical

☐ YES

☐ NO

c) Airspace Strategic

☐ YES

☐ NO

d) Airspace Tactical

☐ YES

☐ NO

Comments

5. Flow Management Data Processing and Display

5.1 Does your administration (and/or State) have a system to receive, process, and display flight plan data (FPL, RPL, etc.)?

☐ YES

☐ NO

5.2 Does your administration (and/or State) have a database that includes airspace information (for example, ACC boundary coordinates, sector boundary coordinates, NAVAIDS, airways, special use airspace) and airport information (for example, runway and taxiway layout, ramp layout, parking gate information)?

☐ YES

☐ NO

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5.3 Does your administration (and/or State) have an electronic ATFM system that displays airborne traffic?

☐ YES

☐ NO

5.4 Does your administration (and/or State) have a communication system that allows automated or manual exchange of messages to support ATFM decision making (for example, SLOT assignment messages, SLOT adjustment messages, delay reporting messages, alternate route messages)?

☐ YES

☐ NO

5.5 Does your administration (and/or State) have a system to monitor and display the airport acceptance rates (AAR) at the main airports?

☐ YES

☐ NO

5.6 Does your administration (and/or State) have a system to monitor and display enroute sector capacity?

☐ YES

☐ NO

5.7 Does your administration (and/or State) have a system to monitor and display the mix of aircraft using the airspace or airports?

☐ YES

☐ NO

6. Surveillance Systems for ATFM Support

6.1 In the following table, list the type of surveillance systems in use in your administration's (and/or State's) airspace structure.

ACC Surveillance System	TMA Surveillance System	Other Surveillance System

Table 3

7. AIS/Map for ATFM Support

7.1 On the following lines, list the AIS and map databases that your administration (and/or State) has available to support ATFM.

7.2 Are they available in an electronic format?

☐

YES

☐

NO

7.3 What is the routine AIS database update cycle?

☐

28-DAY UPDATE

☐

56-DAY UPDATE

☐

OTHER

8. Meteorological Information

8.1 Provide the specific meteorological products and/or websites that your administration (and/or State) has available to support ATFM by checking the appropriate box.

☐TAF; ☐Trend; ☐METAR; ☐Local Report;

☐Real-time Sensor Data (e.g. RVR); ☐Weather Radar; ☐Satellite Imagery;

☐Surface Analysis Charts; ☐Surface Prognosis Charts; ☐SIGWX Chart;

☐Wind/temperature forecast Charts; ☐GRIB data (wind & temperature forecasts);

☐SIGMET; ☐Aerodrome warnings, wind shear warnings and alerts;

☐VA/TC Advisories; ☐Weather Briefing; ☐Others (please elaborate):

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8.2 List the MET products your facility considers operationally valuable (in order of most importance) to AFTM.

8.3 List the MET products your facility considers operationally insignificant (in order of least importance) to AFTM.

8.4 Does your facility use automated processes of gridded data?

8.5 If no to 8.4, does your facility plan to implement automated processes of gridded data (if yes, please indicated approximate date)?

9. Data for Historical and Statistical Analysis

9.1 On the following lines, list the type of databases (i.e. aircraft position data from ADS-B/radar, OPMET data, weather radar data...) your administration (and/or State) maintains to support the analysis of air traffic operations and meteorological activities.

10. Communications capabilities for Collaborative Decision Making in ATFM

10.1 List the types of communication systems (i.e. AFTN, Internet, dedicated data link, video/tele-conferencing...) your operational units already have or could straightforwardly have with:

(a) other centralized ATFM organizations

(b) other ATS units and/or Flight Management Units

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(c) operators and airspace users

(d) airport authorities

(e) meteorological authorities and/or aeronautical MET services

☐ tick box if AFTM has a specialized meteorological support service

(f) aeronautical information services

(g) the transmission of radar and ADS data to the ATFM center

- END -

DRAFT AIP SUPPLEMENT

Bypass procedure to alleviate bunching of flights on L759 over the Bay of Bengal during the ATFM period

Introduction

- 1.1 The ICAO ATFM/TF recognized that the contributory elements of flights bunching comprise:
 - 1.1.1 BOBCAT system allocates AWUTs based on the spacing at Kabul entry points ;
 - 1.1.2 The differences in EET; and
 - 1.1.3 The limited westbound level availability (FL280, 300 and 340) in addition to an inadequate performance of most aircraft to climb to higher level at an early stage of flight.
- 1.2 The bunching was caused by flights with near AWUT proximity having to operate on the same routes in the initial stages of their flights over the Bay of Bengal outside of radar coverage thus exceeding the capacity of a particular route resulting in en-route holding or unacceptable available flight level.
- 1.3 In order to alleviate traffic bunching on L759 during the ATFM period for flights under ATFM procedure over the Bay of Bengal, a trial of ATS re-route procedure was cooperatively conducted by Bangkok, Kolkatta and Yangon ACCs in accordance with the agreed procedure as recorded under the auspices of ICAO Asia and Pacific Office, in The Combined Meeting of FITBOB/8, ATFM/TF/9 & BBACG/18 (Bangkok, Thailand, 22 to 26 January 2007) as well as the Coordination Meeting of the ATFM core team during APANPIRG/19 (Bangkok, Thailand, 3 September 2008). The operational trial of this Bypass Procedure has been conducted from December 2008 onward based on NOTAM publication and has proven successful in managing traffic bunching.

Bypass arrangement for flight under ATFM procedure operating on L759

- 1.4 Flights under ATFM procedure that are unable to maintain 80NM longitudinal separation in relation to preceding traffic from PUT until BBS or accept other available levels on L759 shall be re-routed by Bangkok ACC to proceed on M770 via:
“PUT L515 OBMOG M770 BUBKO N895 BBS then re-join L759”

2. Conditions in which M770 be utilized as a Bypass route

- 2.1 If the 80 NM longitudinal separation cannot be achieved or maintained in relation to preceding traffic on the flight planned route L759 from PUT until BBS over the Bay of Bengal ;
- 2.2 When, by using the flight planned route L759 an aircraft would suffer an unacceptable lower flight level;
- 2.3 In concurrence with the flight crew, the Bangkok ACC shall assign the alternative parallel route M770 or lower acceptable flight level on L759 to affected flights enabling a better chance of obtaining the ATFM allocated flight level and time into the Kabul FIR

3. Effective Date

- 3.1 The effective date of the above procedure shall be started from 19 November 2009 at 1200 UTC onward.

4. Operators Involvement

- 4.1 Flight crews and dispatchers are encouraged to become fully conversant with the L759 bypass procedure and are advised to take appropriate proceedings to enable affected flights to proceed on M770 when necessary.

Bay of Bengal Air Traffic Flow Management Task Force

Task List

(last updated ATFM/TF/13, 25 September 2009)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
8/7	Pakistan lower the Minimum Enroute Altitude (MEA) on P628 to FL300 as soon as possible to align with MEA for P628 in India	Next ATFM/TF meeting	India, Pakistan, Afghanistan Regional Office	Ongoing	Pakistan advised ATFM/TF/13 that MEA between ASOPO and VIKIT in Indian airspace is also published as FL320. Lowering of MEA of P628 to FL300 was proposed to India. It has been informed that the proposal will add on complexities in managing the flow of traffic in Indian FIR and hence not feasible to agree with. It has also been highlighted that implementation of M875 also does not necessitate this requirement.
8/11	Study feasibility of route segments proposed during ATFM/TF/8 to assist N644 and A466 in vicinity of DI Khan	Next ATFM/TF meeting	Afghanistan, India, Pakistan,	Ongoing	Pakistan advised ATFM/TF/13 that as a first step, the route M875 between GUGAL and PAVLO has been implemented wef 30 th July 2009. Implementation of route segment between SAMAR and LAJAK has been delayed due to some national concerns. However,

ATFM/TF/13
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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					the best efforts are being made to resolve the issues. With implementation of this segment, parallel flow within Lahore FIR between GUGAL/ PAVLO and SAMAR/ LAJAK could be maintained enhancing airspace capacity.
8/12	Study and rectify inconsistency between bases of airways in the Yangon and Chennai FIRs with a view to harmonization	Next ATFM/TF meeting	India, Myanmar, Thailand to assist	Ongoing	Base of airways in Yangon FIR is charted (Jeppesen) as FL280, base in Chennai FIR charted as FL260
8/15	Review trial related data with a view to incrementally reducing flow buffer time from 5 minutes	Next ATFM/TF meeting	ATFM/TF	Ongoing	ATFM/TF/13 reviewed this issue at length, high complexity, take action as per APANPIRG Conclusion 20/10, continue monitoring and review at ATFM/TF/14
8/19	Data provision. Provide 7 consecutive days data collection each month, commencing from the third Sunday of each month, first date 20 May 2007, promptly to the ATFMU	One week data per month continuously	Afghanistan, India, Pakistan, Malaysia, Singapore and Thailand	Ongoing	Report to ATFM/TF/14
9/13	Thailand and India agreed to use M770 as an alternate route when a bunching situation occurred on L759. Flights affected by the bunching will be re-routed to M770 and rejoin L759 over the Indian continent via position PALKO and BBS. A coordination procedure will be arranged between India, Myanmar and Thailand as soon as possible	AIRAC November 2009	Thailand, India, Myanmar, keep IATA informed	Ongoing	ATFM/TF/13 informed of success of operational trial of procedure which commenced December 2008. ATFM/TF/13 supported permanent implementation of the procedure on AIRAC November 2009.

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
10/5	Implement conditional ATS route with RNP10 lateral separation with N644 for bypass via TOXEX entering Afghanistan	July/August 2008	Pakistan, Afghanistan SWG/2	Ongoing Closed	Afghanistan advised ATFM/TF/13 that this no longer required, Kabul ACC now has capacity to manage tactically.
11/4	Kabul ATS Authority to explore avenues by which H24 AIS capability could be made available. Solutions could include the preparation of a number of NOTAM templates for typical events and making arrangements to fax or email them to a H24 AIS Office for issue on behalf of Afghanistan.	Next ATFM/TF meeting	Kabul ATS Authority	Ongoing	Report to ATFM/TF/13 – No update provided by Afghanistan to ATFM/TF/13
11/8	Identify causes and implement solutions for the poor on time performance for AWUT and Kabul entry, both too early and too late, that was still evident in the data reviewed by ATFM/TF/12. Review standard taxi times for affected airports.	Next ATFM/TF meeting	All	Ongoing	ATFM/TF/13 identified poor performing airlines and airports and requested Regional Office take action in accordance with APANPIRG Conclusion 20/10 –see Action item 13/1.
11/9	Conduct overall review of the priority allocated at FL280 for departures from India and Pakistan	Next ATFM/TF meeting	BOBCAT Development Team, ICAO, IATA	Ongoing	ATFM/TF/12 agreed to simulation trials to be conducted July/August 2008 – No update to ATFM/TF/13
11/11	Noting DGCA Action Item 44/14 in relation to environmental benefits, ATFM/TF/11 requested that IATA work with its member airlines to attempt to broadly quantify the environmental savings being made from the ATFM procedures.	Next ATFM/TF meeting	IATA	Ongoing	Report to ATFM/TF/13 – No update from IATA to ATFM/TF/13

ATFM/TF/13
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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
12/1	Bangkok ATFMU to include announcement on BOBCAT website highlighting that the primary reason that flights transited the Kabul FIR at level lower than slot allocation was because their own departure time was outside AWOT window and the Kabul entry fix time window was consequently not met.	August 2008	Bangkok ATFMU	Open Closed	Announcement in place on BOBCAT website
12/2	Regional Office to relay concerns of ATFM/TF/12 to India about poor departure timeliness from Delhi and non submission of data from India	August 2008	Regional Office	Open Closed	Regional Office transmitted Letter to India, Ref.: E 1/12, T 3/10.0 — AP-ATM0349, dated 11 December 2008
12/3	Enhance data collection: A) amend electronic template to remove less significant data points; B) adopt point of contact methodology using ATFM/TF delegates as State POC, C) create email address list accordingly D) transmit email reminder to POCs one week before monthly data collection period	August 2008	Bangkok ATFMU	Open Completed	

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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
12/4	<u>Resolve L759 bunching issue:</u> a) Thailand undertake urgent coordination with India (Kolkata FIR) to implement bypass procedures, b) The Regional Office bring the matter to the attention of India and seek the urgent implementation of the procedures shown in Appendix XX to the report of ATFM/TF/12, in accordance with the agreements previously given by India as recorded in the Report of ATFM/TF/9 (January 2007), c) In the event that the bypass procedures between Bangkok FIR and Kolkata FIR could not be implemented by AIRAC 23 October 2008: o Thailand publish NOTAM advising of ATFM bunching issue in Bangkok FIR and requiring flights during the BOBCAT period to include in Field 18 of Flight Plan RMK/ details of alternate route & level acceptable to be flown if flight was affected by a bunching situation.	Next ATFM/TF meeting	Thailand, India Regional Office, India Thailand	Open Open Open	See action Item 9/3 ATFM/TF/13 informed of success of operational trial of procedure which commenced December 2008. ATFM/TF/13 supported permanent implementation of the procedure on AIRAC November 2009. This Action Item considered “Completed” after implementation in November 2009. See Action item 13/4
12/5	Take BOBCAT configuration actions including appropriate BOBCAT Announcements to configure SERKA – SOKAM, SERKA PAROD, change to PAROD vice ASLUM, additional route segments vicinity DI Khan etc	Next ATFM/TF meeting	Bangkok ATFMU	Open	

ATFM/TF/13
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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
12/6	<u>Manage SERKA related bunching in Kuala Lumpur FIR:</u> a) NOTAM SERKA as temporarily unavailable for traffic departing Singapore and Malaysia, b) Manage traffic on P628 through interface with BOBCAT, c) Implement connector routes for L510 to manage overflow traffic from N571/N877, and d) NOTAM segment LAGOG – BIKEN as unavailable during BOBCAT hours	Next ATFM/TF meeting	Singapore, Malaysia Bangkok ATFMU Malaysia, India, Regional Office India, Regional Office	Open Open Open Open	Further discussion during ATFM/TF/13, review during ATFM/TF/14
~~12/7~~	~~Pakistan to create an additional waypoint in the vicinity of Adina to enable the transition between airways G325 and M881.~~	August 2008	~~Pakistan~~	~~Open~~ Completed	~~In place~~
12/8	<u>Lower the MEA on P628/G792</u> a) Delhi ACC to use F300/FL320 as one level for transfer of control at VIKIT, b) Afghanistan to study possibility of making FL280 available via ASLUM	August 2008 August 2008	Pakistan, India, Regional Office Afghanistan	Open, Open	See Action Item 8/7 above. ATFM/TF/13 advised that lowering the MEA on P628 to FL300 has not been agreed by India. In this scenario, availability of FL280 in Afghanistan will not have any benefit.
13/1	In accordance with the provisions of APANPIRG Conclusion 20/10, the Regional Office write to the States of the Operators and Airports who were shown by the ATFM/TF/13 data analysis to be contributing to the problem of early/late departures to draw attention to the poor on-time performance identified by the ATFM/TF. A request should be included that States investigate and, if necessary, take regulatory action to ensure compliance with the provisions of the ATFM AIP Supplement published by the States affected by ATFM procedures. .	Next ATFM/TF meeting	Regional Office	Open	

ATFM/TF/13
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ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
13/2	IATA to take a similar action to 13/1 above and draw the attention of operators to the persistence of the early/late departures problem, highlighting that a non compliance by one flight had a direct and immediate negative effect on an adjacent flight.	Next ATFM/TF meeting	IATA	Open	
13/3	India urgently review request to authorise use of a connector route in Chennai FIR to enable L510 bypass traffic to rejoin N877 in Chennai FIR.	End October 2009	India	Open	
13/4	Thailand, Myanmar and India to issue their appropriate AIP Supplement for implementation on AIRAC date 19 November 2009 of permanent bypass arrangements on L759/M770. Use common text and issue date for the respective AIP Supplements based on Appendix E of the ATFM/TF/13 report.	November AIRAC	India, Myanmar, Thailand	Open	Action Items 9/13 and 12/4 refer.
13/5	Secretariat provide WP to BBACG/21 meeting (first quarter 2009) re future direction of ATFM/TF as discussed in Agenda Item 8 of ATFM/TF/13 report	BBACG/21 in first quarter 2010	Regional Office	Open	

DRAFT

Global Manual on Air Traffic Flow Management

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Appendix B. Calculating Aerodrome Capacity Best Practices

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Appendix E. Sample ATFM Structure

Appendix F. Common ATFM Terminology

Appendix G. Resources

TFM

Model For Efficiency and Best Business Decision



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ATFM / TF-13

Traffic Flow Management

Overview

Traffic Flow Management

Addressing Today's needs for
Tomorrow's Future.



Primary Mission Essential Functions (PMEFs).

- **PMEFs are defined as those functions that must be continued with minimal disruption or cannot be disrupted for more than 12 hours without compromising the organization's ability to perform its critical missions**
- **Mission Essential Functions (MEFs) are a broader set of essential functions that includes not only an agency's PMEFs, but also all other agency functions that must be continued throughout or resumed rapidly after a disruption of normal activities. MEFs are those functions that enable an organization to provide vital services, exercise civil authority, maintain the safety of the public, and sustain the national industrial/economic base during disruption of normal operations.**



System Thinking for a Global ATFM System

- **a system is an organized collection of parts (or subsystems) that are highly integrated to accomplish an overall goal**
- **Systems range from simple to complex.**
- **Complex systems are comprised of numerous subsystems and these subsystems are integrated to accomplish the overall goal of the overall system.**



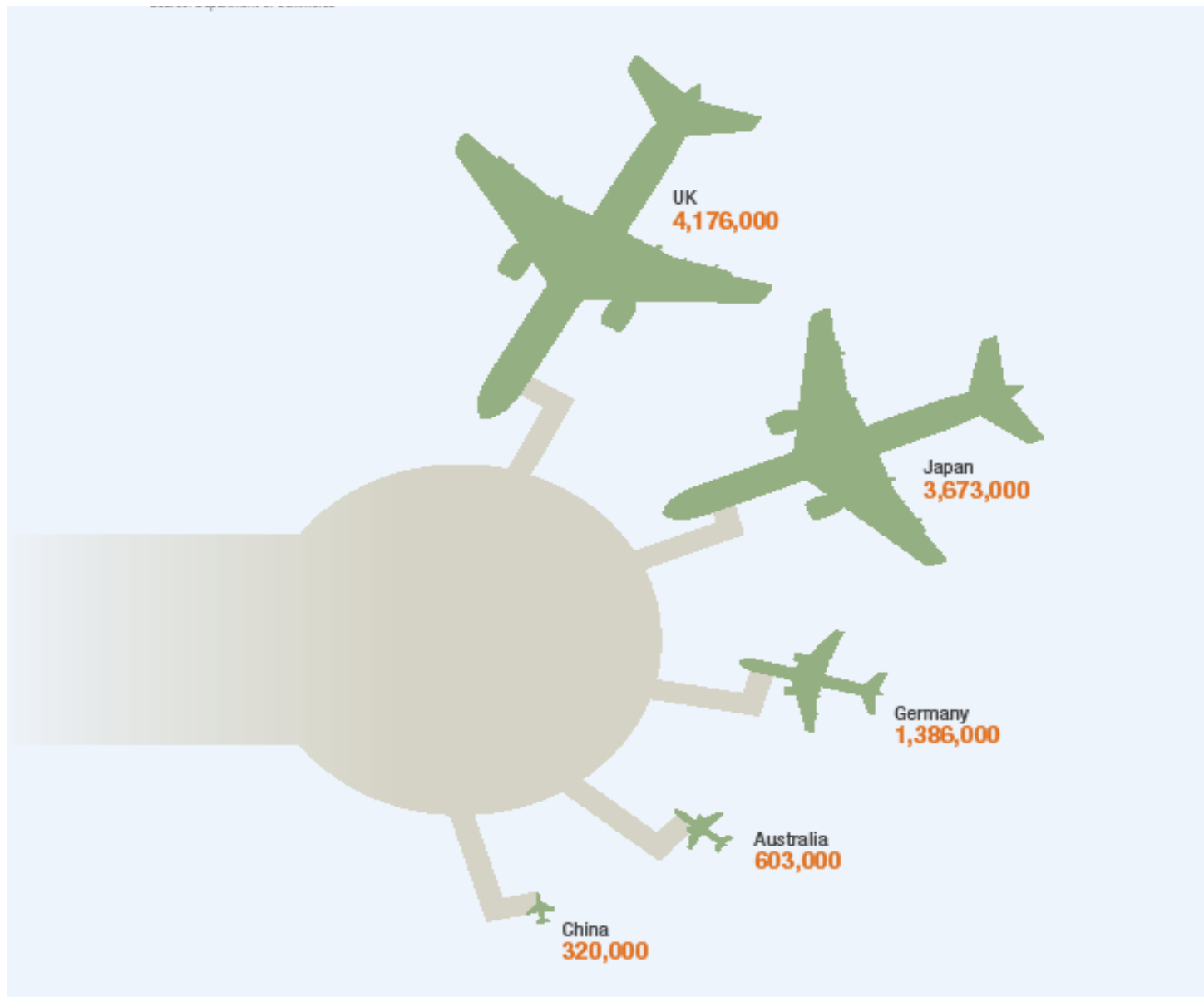
System Thinking for a Global ATFM System cont

- **Each subsystem has its own boundaries of sorts, and includes various inputs, processes, outputs and outcomes geared to accomplish an overall goal for the subsystem.**
- **A high-functioning system continually exchanges feedback among its various parts to ensure that they remain closely aligned and focused on achieving the goal of the system. If any of the parts or activities in the system seems weakened or misaligned, the system makes necessary adjustments to more effectively achieve its goals.**



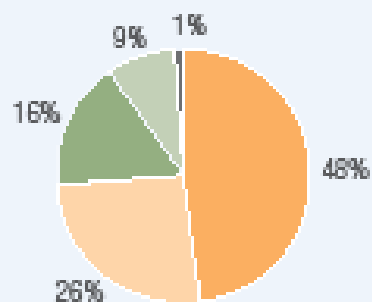


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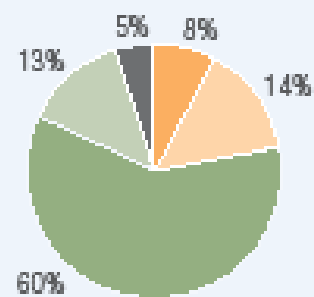


Source: Department of Commerce

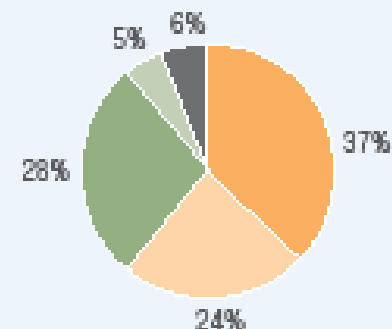
Business Conference Tourism Family/Friends Other



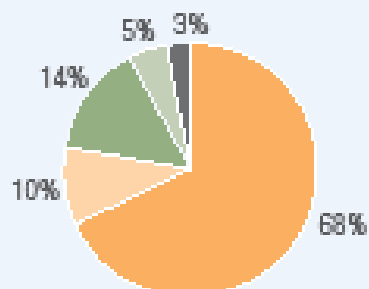
Australia



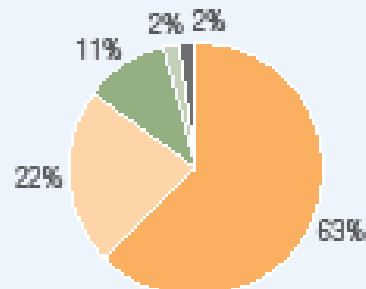
China



Germany



Japan



UK



Types of Economic Impacts

PRIMARY IMPACTS

The primary impacts of aviation are a summation of direct and indirect impacts of civil aviation on the U.S. economy. For example:

- Airlines and supporting services
- Aircraft, engines and parts manufacturing
- Air-visitor travel and other trip-related expenditures

Direct:

Direct impacts of civil aviation are created through manufacturing and air transportation activities as measured by the employment, payroll and sales/output associated with the following industries/entities:

- Scheduled and non-scheduled commercial airlines (passenger and cargo) and air couriers.
- Airport and aircraft service providers (including FAA and other government services)
- Air cargo service providers
- GA (non-commercial) aircraft operators (including flight schools)
- Aircraft and components manufacturing

Indirect:

Indirect impacts are derived from the expenditures of air passengers, in addition to airfares and associated charges. Visitor expenditures translate into sales, payroll and employment for the following industries:

- Traveler accommodations (hotels, motels, etc.)
- Food and beverage providers (restaurants, bars, fast-food outlets and stores)
- Arts, entertainment and recreation (museums, theatres and amusement parks)
- Visitor travel services (sightseeing and other tourist services and travel agencies)
- Ground transportation (to/from airport)
- Other on-and-off airport purchases of goods and services (souvenirs)

INDUCED IMPACTS

Induced impacts result from expenditures made by the direct and indirect impact industries to supporting businesses and entities, as well as the spending of direct and indirect employees. Induced impacts capture the secondary impacts to the economy as direct/indirect sales, and payroll impacts are circulated to supporting industries through multiplier effects.



Airlines Don't Just Carry Passengers.

They also transport:

- Mail
- Car parts
- Checks
- Computers
- Human organs and medical supplies
- Office supplies
- Perishables
- Any thing that is time sensitive!



Atlanta AAR 100

- **Operating at 99% of capacity for 4 hours precludes 1 aircraft per hour from landing**
- **4 aircraft carrying 150 passengers**
- **300/300 are not where they should be.**
- **Aircrews and airframes not where they should be**



Impacts of this Inefficiency

- 300





Economics

New York

The Aviation industry contributes \$67.2 billion to the gross domestic product (GDP).

663,800 people are employed by the Aviation industry.

Georgia

The Aviation industry contributes \$29.6 billion to the gross domestic product (GDP).

301,900 people are employed by the Aviation industry.

Texas

The Aviation industry contributes \$64.9 billion to the gross domestic product (GDP).

800,200 people are employed by the Aviation industry.



operations
& safety



AIR TRANSPORT ASSOCIATION

Delay Cost's

If a disruption in air service caused a **25% reduction** in operations, the state would **lose**:

New York

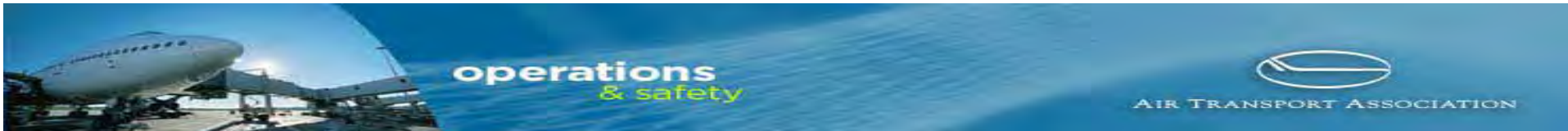
\$45.9 million per day in gross domestic product (GDP)
\$13.5 million per day in personal earnings
1.3 million man-hours per day in employment productivity

Georgia

\$20.3 million per day in gross domestic product (GDP)
\$5.4 million per day in personal earnings
604,000 man-hours per day in employment productivity

Texas

\$44.4 million per day in gross domestic product (GDP)
\$11.9 million per day in personal earnings
1.6 million man-hours per day in employment productivity



Fuel Facts



Fuel is the largest operating cost of an air carrier running between 40 to 50 percent, depending on the carrier.



At a consumption rate of 19 to 20 billion gallons per year, every penny paid for a gallon of jet fuel costs the U.S. passenger and cargo airline industry \$190 to \$200 million annually. (Note: One barrel contains 42 gallons.)



Air Traffic facilities can assist air carriers on a daily basis to reduce fuel consumption through good coordination and communication.

Our Efficiencies

- The automation of flight data transfer leads to reductions in controller and support staff workload and improves cost efficiency
- Predictability in flows allows staffing to traffic
- Greater success by working smarter not harder



ATFM BOBCAT July 2007

Airline benefits (WP7)

- **environmental benefits of reduction in noxious gas emissions**
 - 12 million kilograms of fuel savings annually, associated with
 - 50 million kilograms of reduction in carbon dioxide emissions per year
- **\$12, 000,000 Airline cost savings**
- **Substantial reduction in ground delays**



ATFM BOBCAT July 2007

ANSPs benefits

- **immediate ATC workload reduction together with safety and capacity enhancements**
 - Kabul FIR- were better regulated more evenly spread, enabling safer air traffic control
 - Enroute ANSP- immediate ATC workload reduction together with safety and capacity enhancements
- **substantial reduction in ground delays**



Why is Collaboration Essential?

ATC

Goals

Managing
the ATC
System



OPERATORS

Goals

Managing
the
Schedule

Each stakeholder may have dissimilar goals, different views, varying capabilities

Each makes autonomous strategic and tactical decisions to achieve their individual goals

Sometimes these decisions run counter to ATC decisions

...Affecting the entire system in ways not known to ATC

Collaboration can provide Shared Situational Awareness and Collaborative Resolutions for Win-Win Solutions for both ATC and Stakeholders



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ATC Goals

- Safe Separation
- Maximum Throughput
- Efficient use of Capacity
- Controller Workload Managed
- Equitable service
- Reduce greenhouse Gases

Stakeholders Goals

- Safe Flight
- On-time arrivals, Mission objective accomplished
- minimal delay
- Passenger Connections
- Crew Connections
- Aircraft Connections
- Minimize turn times
- Fuel Savings



Between Stakeholders and ATC

- Surveillance and Flight Data
- Delay Information
- Collaboration for Capacity Reduction or Delays involving:
 - Real Time Updates on ATC Status
 - Rerouting or Amended Flight Planning and Cancellations
- Airline Preferences- Identifying Airline Economic Factors with ATC Capacity Constraint options (different actions will impact airlines in significantly different ways)

Result:

Collaboration leads to enhanced options resulting in improved decision making, stakeholder acceptance and support, and increased service performance



Bobcat is a strategic tool



ATC State Leadership

Cooperation to:

- **Ensure standard of safety and service in all systems**
- **Ensure common standards and procedures**
- **Enable air transportation growth and competition in all state markets**
- **Minimize ASP costs by sharing information, results & efforts**



Similarities between States

SAME PRESSURES

- – Maintain Safety
- – Accommodate Growth
- – Eliminate Restrictions
- – Contain Costs

SAME CUSTOMERS

- – Same Airlines
- – Same Aircraft
- – Same Avionics
- – Same Pilots

SAME OBLIGATIONS

- – Chicago Convention
- – ICAO SARPS

SAME CONSTRAINTS

- – Political Visibility
- – Environmental Pressures
- – Financial Constraints
- – Security demands

SAME OPPORTUNITIES

- – High Competence (Technical & Operational) – Advanced Technology



We are aviation
service partners

provide the best
service possible
for our countries &
for our customers
to sustain our
economies and
promote business
successes through
seamless operations
around the globe



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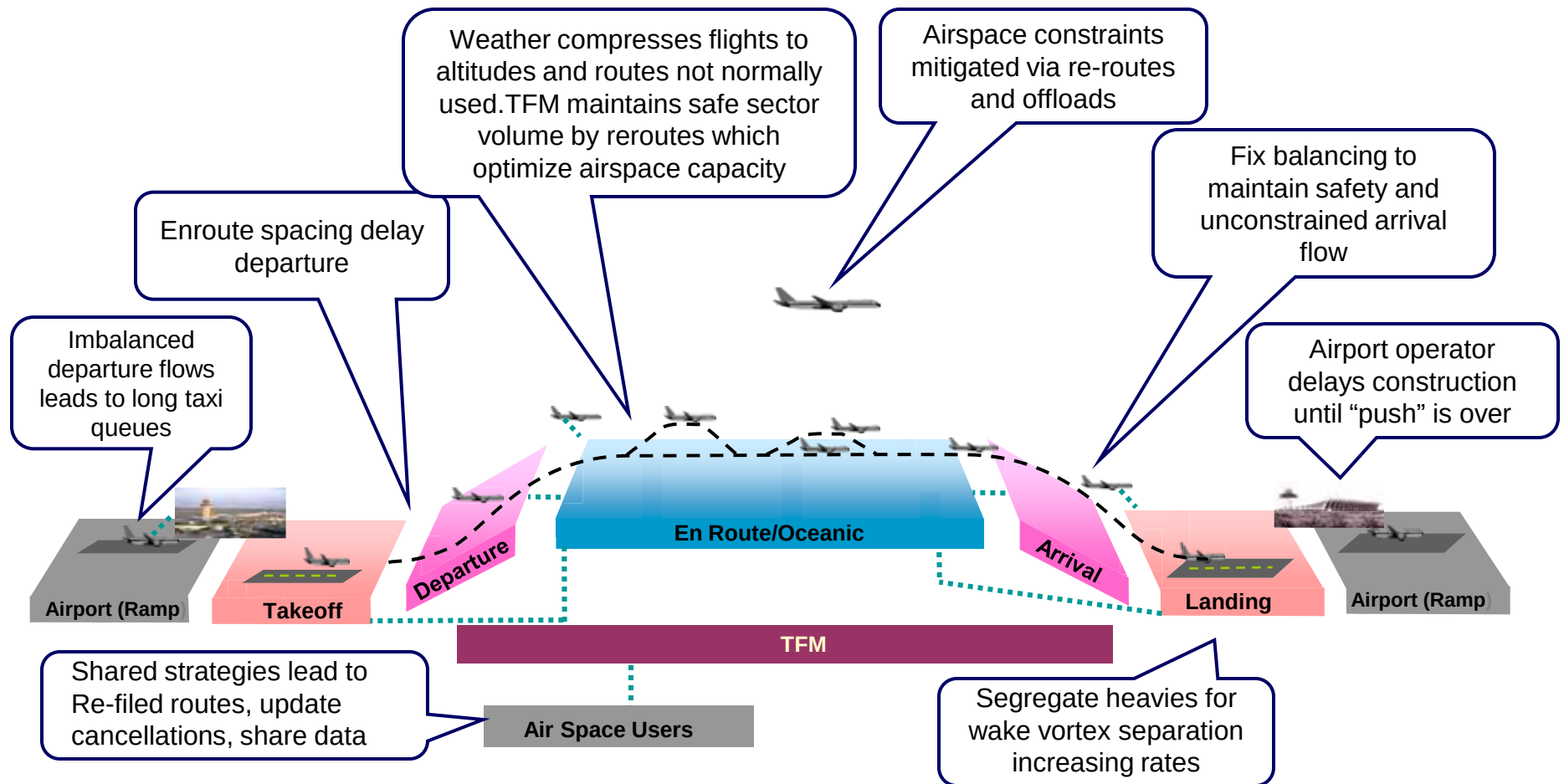
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How does TFM optimize CAPACITY and control DEMAND



TFM monitors system limitations and optimizes airspace utilization to maintain a balance by elevating capacity and controlling demand



List of things to do for a Manual on Air Traffic Flow Management to improve airspace safety and efficiency, in conjunction with service continuity and interoperability

- **Chapter 1. Introduction**
 - Definition, Philosophy, Benefits of Air Traffic Flow Management
- **Chapter 2. Objectives, Principles of Air Traffic Flow Management**
 - Collaborative Decision Making
- **Chapter 3. ATFM Development Strategy**
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- **GLOSSARY**
- **ACRONYMS**
- **APPENDICES**



Forecast Enplanements

Region	2009	2010	2010-2025
Domestic	(8.8)	1.9	2.4
International	(2.4)	2.4	4.4
Atlantic	(2.0)	4.5	3.8
Latin America	(1.2)	1.8	4.7
Asia/Pacific	(6.3)	(0.3)	4.9
System	(8.0)	1.9	2.7



CDM COMMUNICATION

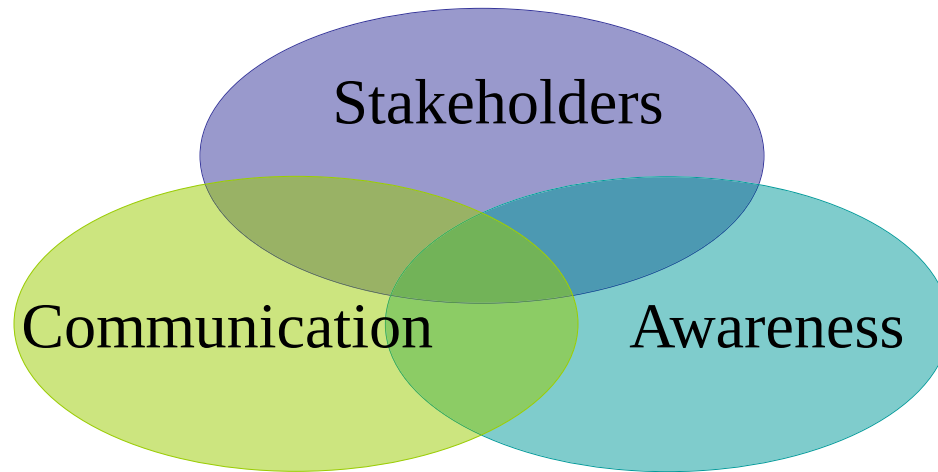


What is Collaborative Decision Making (CDM)

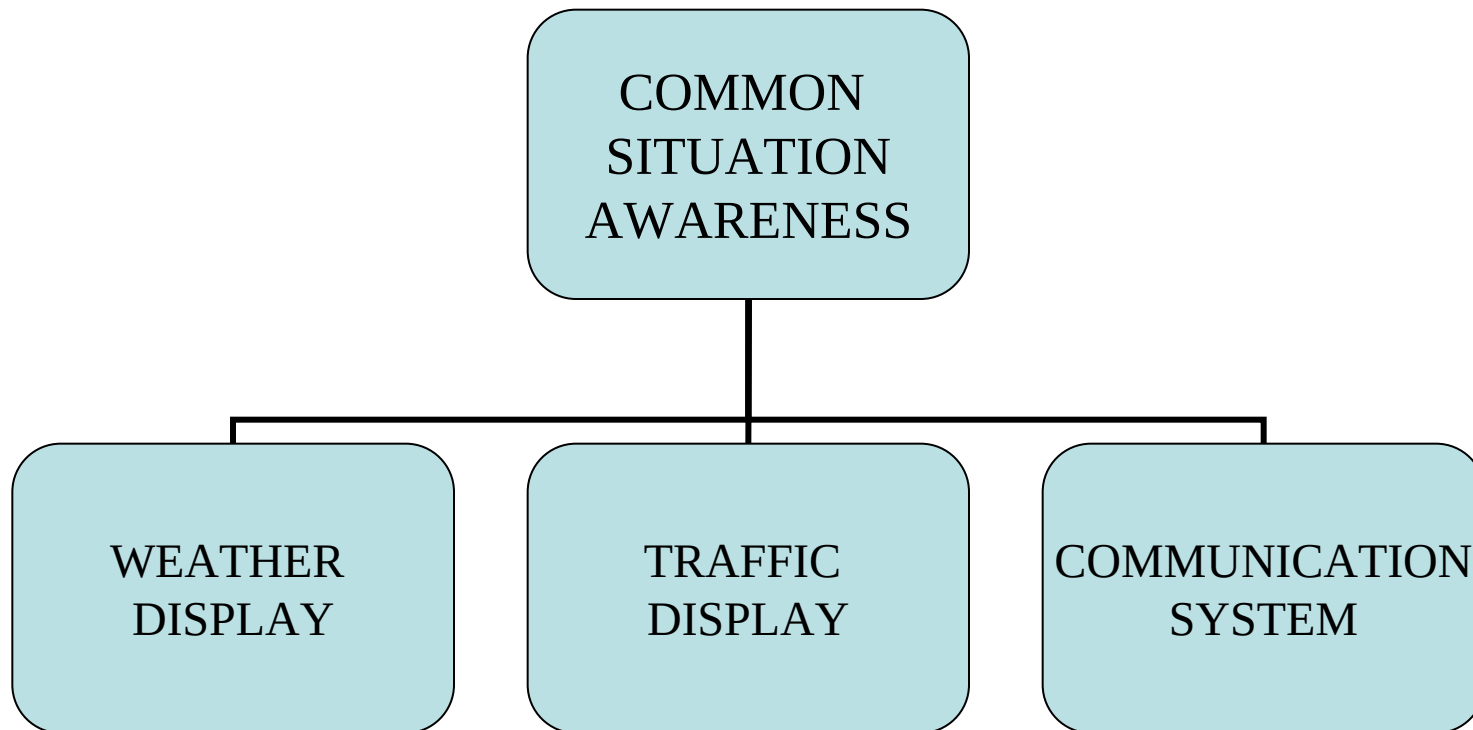
- - Traffic Flow Management operational philosophy
- - Associated shared technologies and procedures
- - Enable Air Navigation Service Providers and Stakeholders to identify and work towards common goals
- - Enables Stakeholders to meet business or mission needs within the commonly understood operational constraints
- - Maximizes trust, operational efficiency, and safety



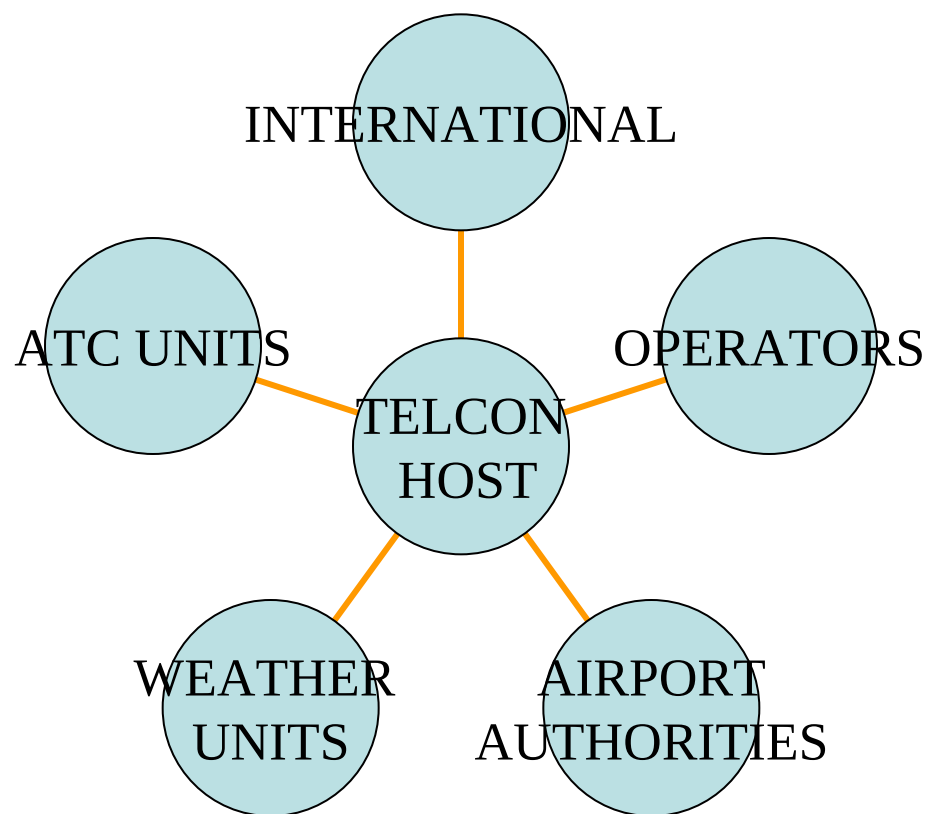
An operating philosophy



Awareness



Communication



Airline Transport Association

FedEx®

ASTAR
WITH CHARGES

Continental Airlines

jetBlue
AIRWAYS®

BX AIR

Aloha



AIR CANADA

Alaska Airlines



airJamaica

Delta

nwa
NORTHWEST AIRLINES

MEXICANA

AA
American Airlines

EVERGREEN

SOUTHWEST
AIRLINES

MIDWEST
AIRLINES



U.S. AIRWAYS

ATLAS AIR



HAWAIIAN
AIRLINES

UNITED



Federal Aviation
Administration

National Business Aviation Association



- **Local representative for member business aircraft operators**
- **Role and Responsibilities**
 - Coordinates the concerns of specific customer groups to the ATCSCC about the impact of specific traffic management issues
 - Provides information to the customers on planned or current traffic initiatives
 - Provides information to ATCSCC on significant unscheduled or unanticipated GA movement



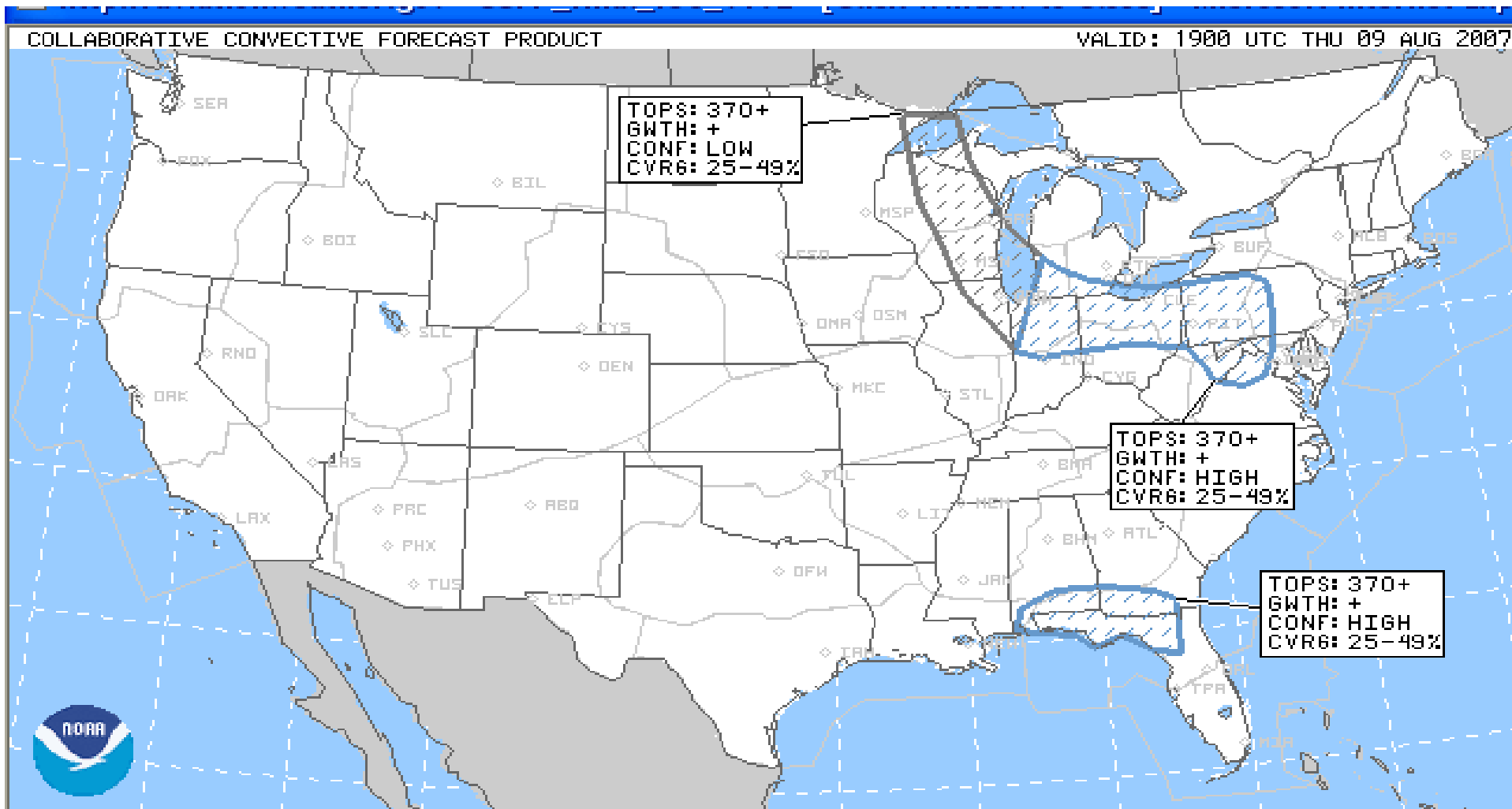
Air Traffic Services Cell



The ATSC is a Civil/ Military organization created to resolve DoD/ FAA issues while ensuring DoD needs are met in the National Airspace System



Weather Products: CCFP



AVIATION WEATHER CENTER (NOAA/NWS/NCEP)

ISSUED: 1300 UTC THU 09 AUG 2007

TOPS:
HEIGHT OF MAX ECHO
100's OF FEET MSL

GROWTH RATES:
 ++ = FAST POSITIVE
 + = POSITIVE
 NC = NO CHANGE
 -- = NEGATIVE

**CONVECTIVE
COVERAGE:** SPARSE
25 - 49%
MEDIUM
50 - 74%
SOLID
75 - 100%
LINE

CONFIDENCE:

HIGH
50 - 100%

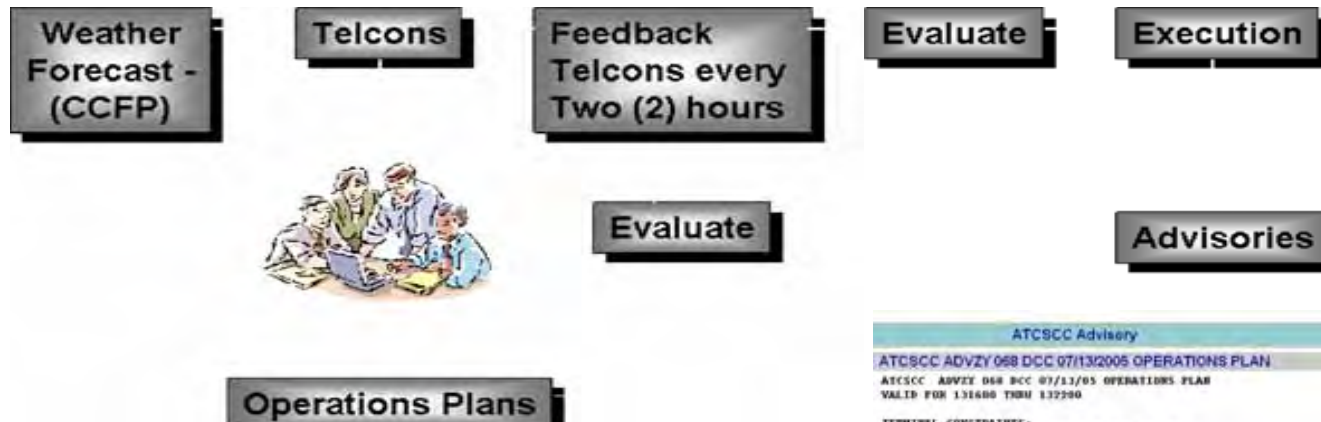
LOW
25 - 49%

MOVEMENT:

DIR.

SPD (KT₅)

Planning Process



ATCSCC Advisory

ATCSCC ADVZY 068 DCC 07/13/05 OPERATIONS PLAN

ATCSCC ADVZY 068 DCC 07/13/05 OPERATIONS PLAN
VALID FOR 131600 THRU 132200

TERMINAL CONSTRAINTS:
NY METROS/PHL/DC METROS/ATL/PHL/CVG-LOCIGS
IAD-TAXIWAY CONSTRUCTION
DC METROS/PIT/CLT/BTV/ATL/PHL/IAD/BTV-TSTMS
LAS-1R/19L INF CONSTRUCTION
LAX-LOCIGS/VSBY

ENROUTE CONSTRAINTS:
ZFW/INT/IDC/SLX/DNA/ZTL/DNK/SPW/IDH/ZLC/IAB-TSTMS
ATL-TSTMS
RTG3-CLSD TILL 1900 DUE TO TSTMS
SLX/DNA-SPACE SHUTTLE LAUNCH

1. ROUTES
1800-0000 -CHUNKPOINT ROUTES TO EWO/JFK (FCA)
AFTER 1800 -SOUNDING 6 PLAYBOOK ROUTES PSBL
AFTER 1600 -RFP SUSPENDED VIA J29 SPW/IDH/ZDC TO NORTHEAST
AFTER 1700 -POSSIBLE PLATFORM ROUTES, INCLUDING HNM AND/OR
CANADIAN ROUTES TO THE NORTHEAST POSSIBLE

2. INF
UNTIL 0300 -IGA/ENR/PHL GROUND DELAY PROGRAMS
UNTIL 0200 -NY METROS/PHL CDS/SMAP, GROUND STOPS PSBL
AFTER 1700 -JFK GROUND DELAY PROGRAM PSBL
UNTIL 0000 -YER GAAP GROUND DELAY PROGRAM EXPECTED

3. ZOR
AFTER 1900 -DTW/CLT/PIT CDS/SMAP, TACTICAL REDUTES, CAPPING/
TUNNELING, GROUND STOPS PSBL

4. ZTL
UNTIL 0400 -ATL GROUND DELAY PROGRAM
UNTIL 0000 -ATL CDS/SMAP, GROUND STOPS PROBABLE
AFTER 1800 -CLT CDS/SMAP, TACTICAL REDUTES

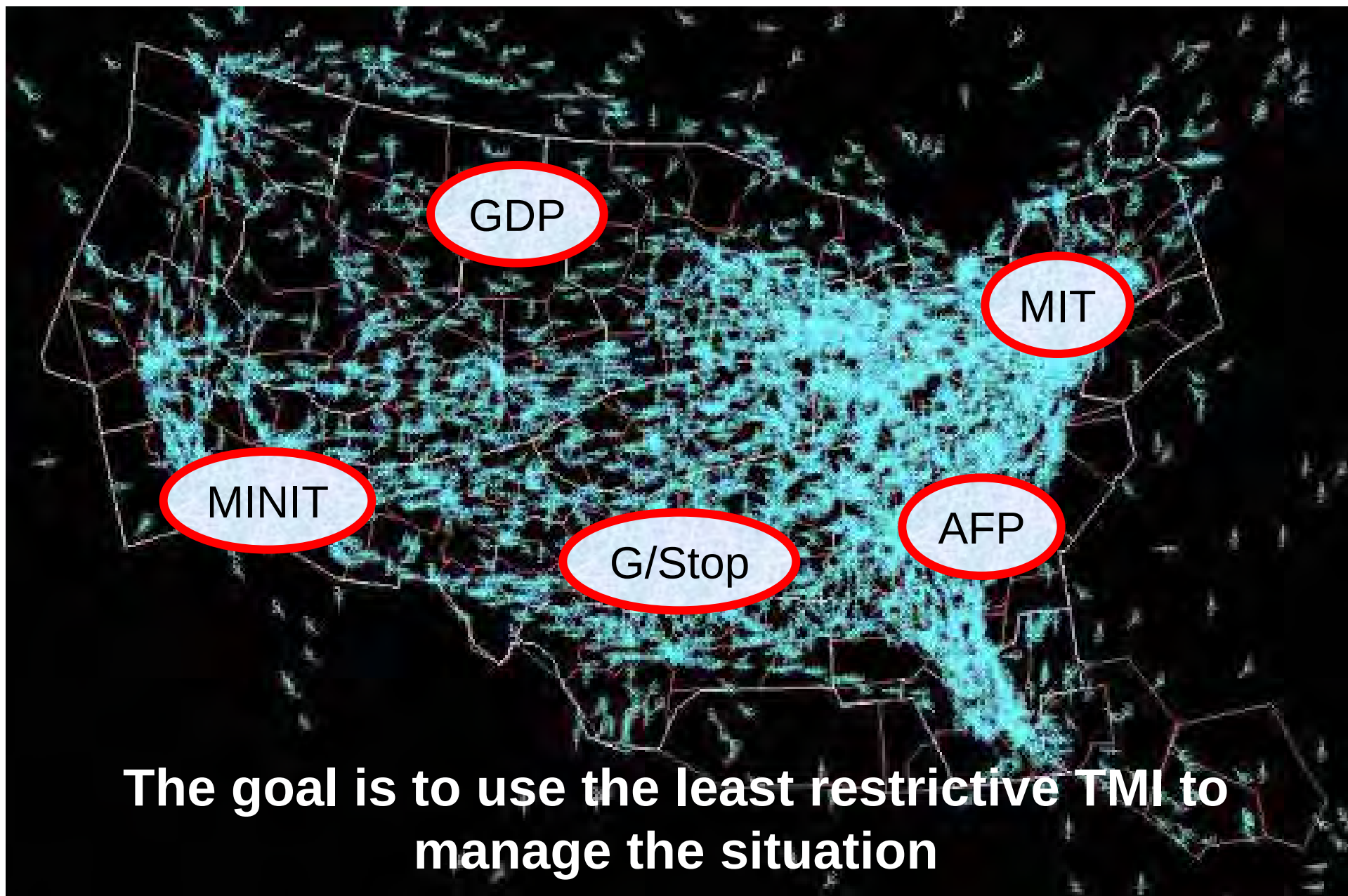
5. SLX/DNA
UNTIL 2300 -TACTICAL REDUTES, CAPPING/TUNNELING

*** SUBMIT NEW OPERATIONS PLAN AGENDA ITEMS VIA OIS PAGE ***

NEXT PLANNING TELCON: 131715Z
PARTICIPATION REQUIRED BY: ALL CENTERS/W90
131545-131759
05/07/13 15:45 PSA-//lnatn08a



Federal Aviation
Administration



ATFM Planning

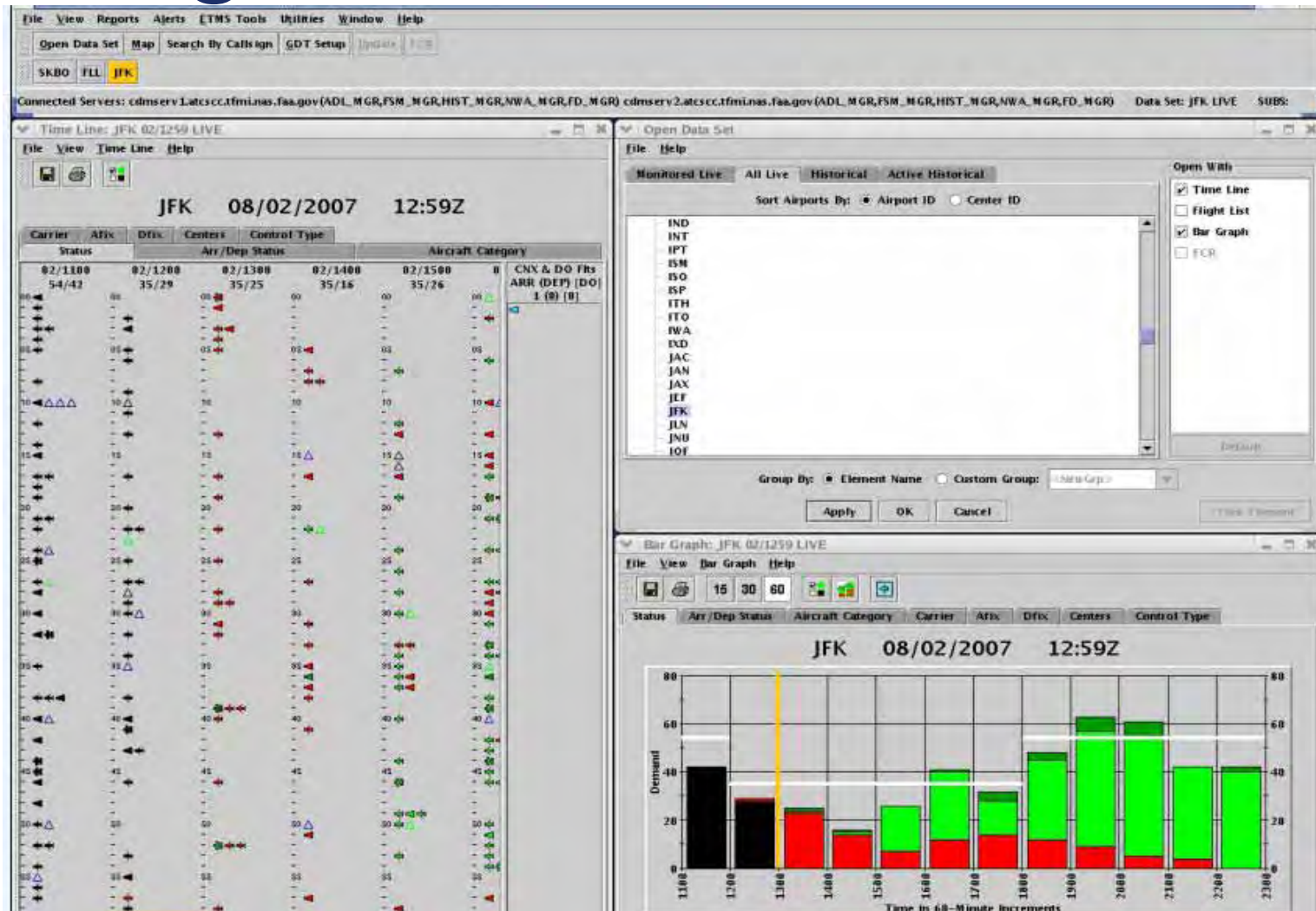


Traffic Management Modeling for Safety: Determining Aerodrome Acceptance Rate (AAR)

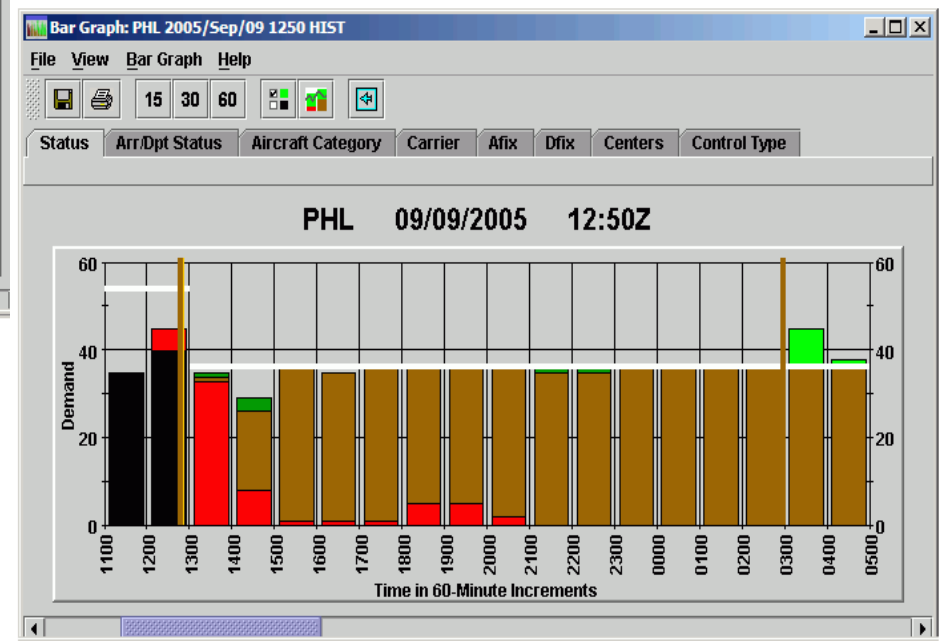
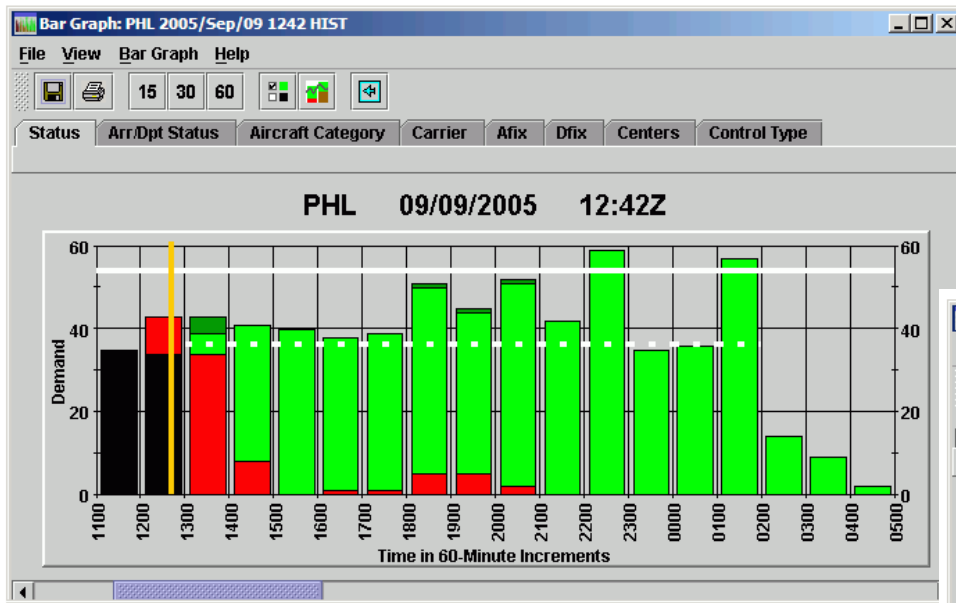
The number of arrival aircraft that an aerodrome -- in conjunction with weather conditions, terminal airspace, ramp space, parking space, and facilities -- can accept per hour



Flight Schedule Monitor



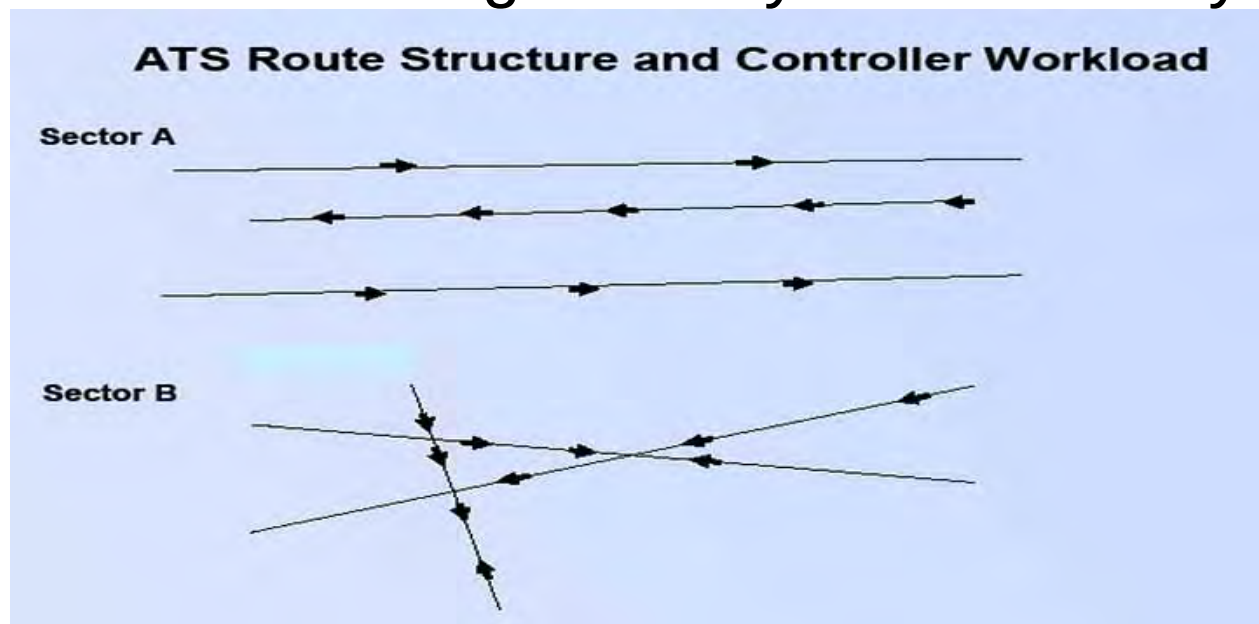
The Before and After



Traffic Management Modeling for Safety:

Determining Sector Capacity

- **Sector capacity:**
 - The optimum number of flights, in a given sector, for a specified period of time, that can be managed safely and efficiently



Reference: 7210.3 Chap 17-7-2



Federal Aviation
Administration



U.S. Department
of Transportation
**Federal Aviation
Administration**

Order JO 7210.3V

Facility Operation and Administration

February 14, 2008

An electronic version of this publication is on the internet at
<http://www.faa.gov/atpubs>

Distribution: ZAT-721, ZAT-464

Initiated By: AJR-0
Vice President, System Operations Services



**Federal Aviation
Administration**

Section 7. Monitor Alert Parameter

- **17-7-1. PURPOSE**
 - The Monitor Alert Parameter (MAP) establishes a
 - numerical trigger value to provide notification to
 - facility personnel, through the MA function of the
 - ETMS, that sector/airport efficiency may be
 - degraded during specific periods of time.
-
- **17-7-2. IMPLEMENTATION PROCEDURES**
 - MAP values are established within the MA
 - function of ETMS as follows:
 - Average Sector Flight Time

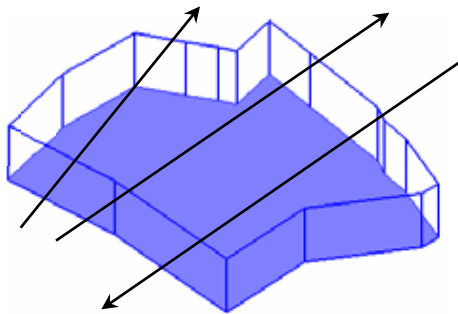
MAP	VALUE
• 3 min.	5
• 4 min.	7
• 5 min.	8
• 6 min.	10
• 7 min.	12
• 8 min.	13
• 9 min.	15
• 10 min.	17
• 11 min.	18
• 12 min. or greater	18



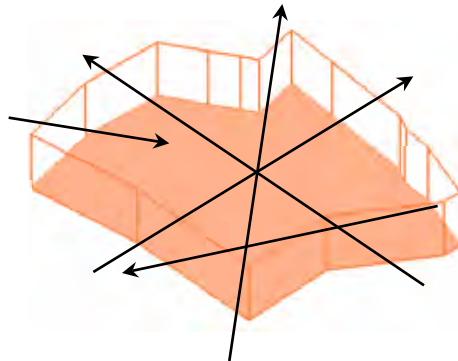
Traffic Complexity, Controller Workload, and Sector Capacity

Traffic flow characteristics create different levels of complexity for a sector:

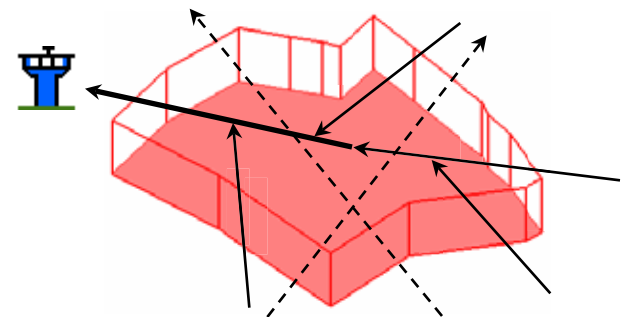
Cruise Traffic



Altitude Transitioning and Crossing Traffic



Arrival and Crossing Traffic



Different levels of complexity

Different levels of workload

Different levels of capacity



Traffic Management Model for Determining Sector Capacity

Definition

- **Factors that affect sector capacity:**
 - Airway structure in the sector
 - Airspace volume of the sector
 - Vertically and horizontally
 - Complexity of operations in the sector
 - Number of adjoining sectors
 - Amount of climbing/descending traffic
 - Terrain
 - Military operations and special use airspace



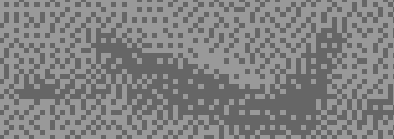
Traffic Management Model for Determining Sector Capacity

Determining sector capacity UNDERSTANDING

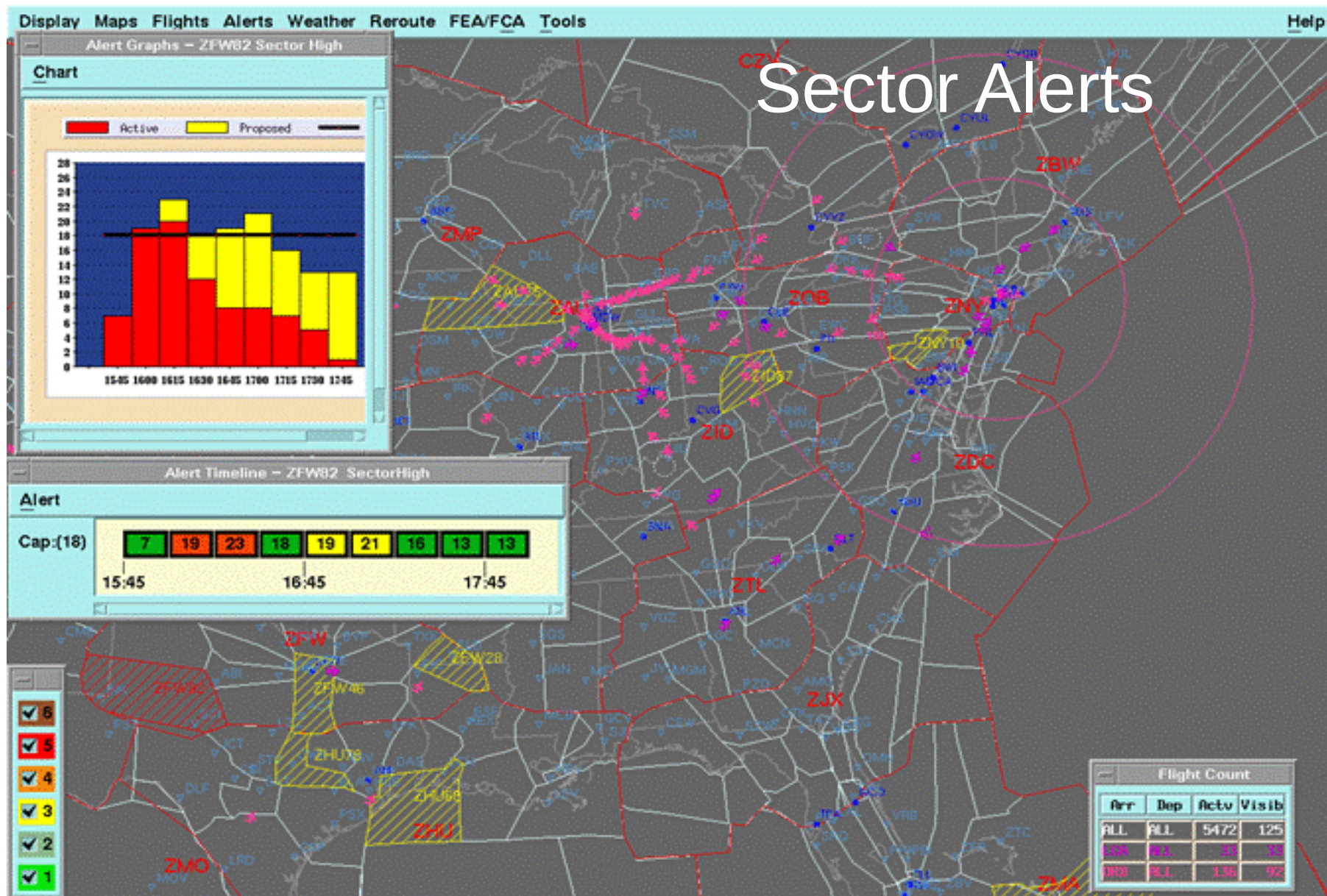
- **You must, after taking into consideration the factors that affect the sector:**
 - Apply local, professional judgment and adjust the optimum sector capacity value up or down, as necessary



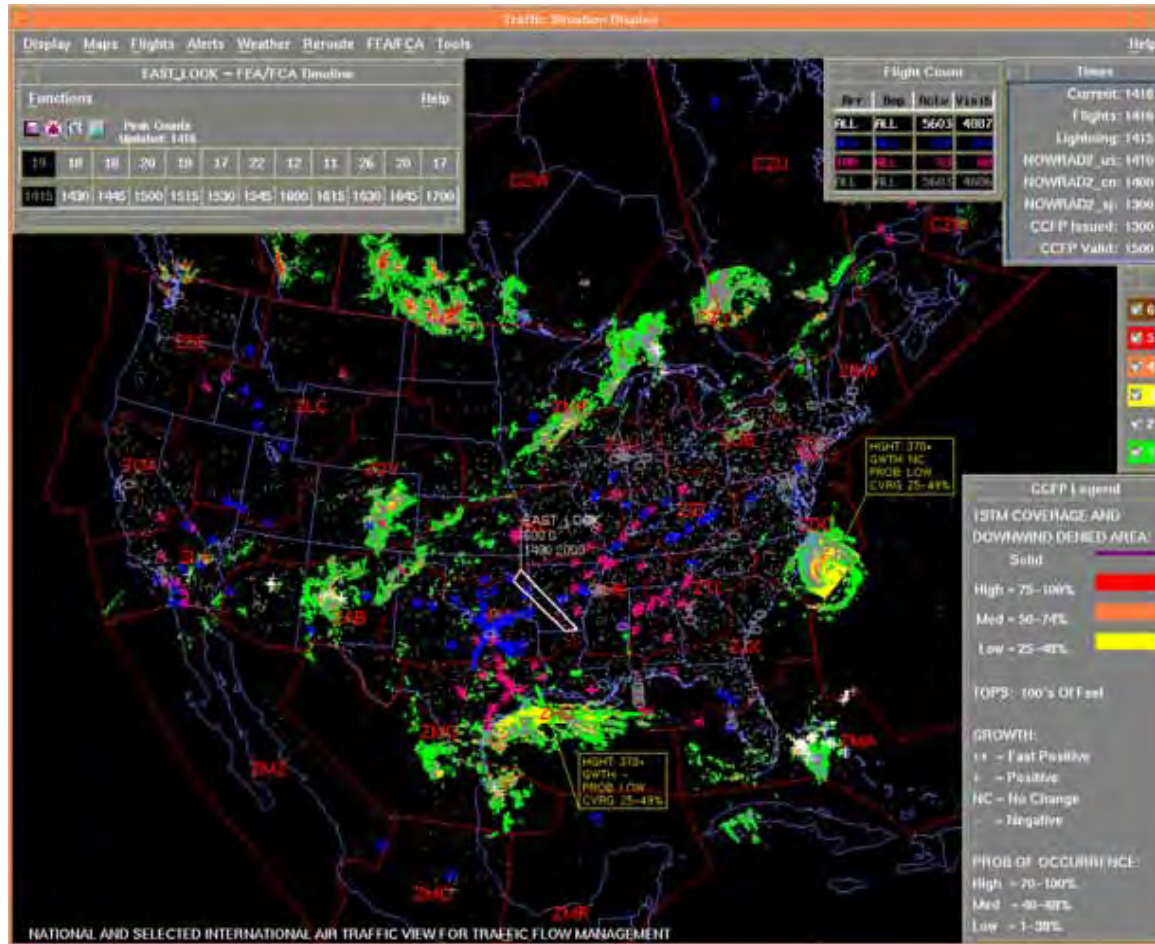
再生



Sector Alerts



Traffic Situation Display



Common Situational awareness

- Provides National Airspace System (NAS) and foreign-source information
- Distinguishes civil & military aircraft
- Displays all flights or flights sorted by origin, destination, airline, type of aircraft, and/or NAS element: sophisticated data filters
- Once per minute updates
- Weather information
- Customizable display and queries
- User selectable views via zoom, move, and projection features

- Interoperable with airlines to form common situation awareness



CDM Collaborative Tools

-Integrates Data to Enhance Decisions-

Common Situational Awareness between Stakeholders and ATC allows for integration of data from all sources to make a more informed, **“Better”** decision

- Integration of ATC and Airline Data to provide a “Big Picture”
- Improved Situational Awareness, Enroute & Airport Flow Tools, Real time information & Uniform Reaction to system impacts, Analysis –lessons learned



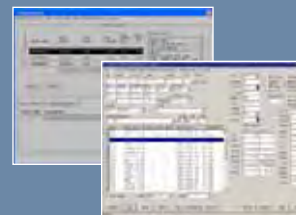
Flight Following,
Weather, &
Decision Support
Tools

Proactive Flight &
Weather data
Common
understanding



Enroute & Airport
Flow Tools for flow
management

Monitor flows,
predict delays,
optimize response
to impacts



Flight Planning
changes,
OIS & NTML Mgmt.
Tools

Optimized plans
Shared info &
responses to
System impacts



Event Analysis Tools
for Real-time &
historical
performance

Data & Analysis



National Traffic Management Log (NTML)

- **Standardizes log tool across all facilities**
- **Provides a “Single Point of Entry” for NAS data (e.g., restrictions, delays, ground stops, runway changes, airport counts, etc.)**
- **Automates data collection**
- **Archived log data from the NTML system for used for post-analysis of NAS data and reporting**



Exceed

OIS - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

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Home Bookmarks Linux TOD OIS ATCSCC ADVIS RMT ITWS Current Reroutes Web RSTRNS WSI PLAYBOOK

OIS Pos Relief East-Rstrm West-Rstrm CoverSheet Routes Adv Fac Info #'s WX-NOTA... RVR ITWS Route Mgm...

Schedules

- Day
- Mid
- Eve
- East Directory
- West Directory
- NSST
- Crisis Management
- National Playbook
- Metro
- Tier Info
- Checklists
- Airport Metrics
 - Request Date
 - View All Airport Metrics
 - ABQ
 - ANC
 - ATL
 - AUS
 - BDL
 - BHM
 - BNA
 - BOS
 - BUF
 - BUR
 - BWI
 - CLE
 - CLT
 - CVG
 - DAL
 - DAY
 - DCA
 - DEN
 - DFW
 - DTW
 - EWR

AAR/ADR Tracking System - 3/23/2008

ARPT	Date/Time-Zulu	Arrival Runway(s)	AAR	Departure Runway(s)	ADR
ABQ	03/23/2008 1243Z	08/03	64	08/03	30
ANC	03/23/2008 1430Z	07R/07L	30	07L/32	0
ATL	03/23/2008 1430Z	26R/27L/28	126	26L/27R	100
AUS	03/23/2008 1452Z	35R	17	35R	17
BDL	03/23/2008 1110Z	24/33	37	24/33	0
BED	03/23/2008 1100Z	29	26	29	26
BFI	03/23/2008 1235Z	13R	24	13R	24
BHM	03/23/2008 1439Z	06/36	42	06/36	0
BNA	03/23/2008 1053Z	02L/02C/02R	72	02L/02C/02R	60
BOS	03/23/2008 1950Z	27/22L	59	22R	50
BUF	03/23/2008 1701Z	5	37	5	37
BUR	03/23/2008 1300Z	08/15	42	08/15	36
BWI	03/23/2008 1010Z	33L	40	28	40
CLE	03/23/2008 1842Z	06R/06L	56	06R	45
CLT	03/23/2008 2125Z	18R/23	70	18L/18R	64
CVG	03/23/2008 1030Z	18R/18C/18L	108	18C/18L/27	112
DAL	03/23/2008 1058Z	31R/31L	40	31R/31L	36
DAY	03/23/2008 1130Z	06L/06R	45	06L/06R	0
DCA	03/23/2008 1010Z	01	36	01	36
DEN	03/23/2008 1533Z	16L/16R/17R	114	17L/17R/08/25	152
DFW	03/23/2008 1058Z	36L 35C 35R 31R	120	31L/36R/35L	100
DTW	03/23/2008 1254Z	22R/22L/21R	92	22L/21R	92
EWR	03/23/2008 2017Z	22L/11	52	22R	38
ELI	03/23/2008 2030Z	01 / 02	42	01 / 02	40

TSD Traffic Situation Display OIS - SeaMonkey ETMS AUTOSEND

Sun Mar 23 21:53



Exceed

OIS - SeaMonkey

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(Note: This page will refresh every minute. Last updated Sun, 23 Mar 2008 21:51:31 UTC.)

NATIONAL PROGRAMS [Edit]

CONTROL ELEMENT	START	END	SCOPE	REASON	AVG	AAR	PR	ADVZY	DA
HPN	1700	0159	ALL+CYZ_AP (GAAP)	VOLUME / VOLUME	2	28	24	026	DA
JFK	2100	0259	(Distance) - 1000 miles. + CYHZ+CYOW+CYUL+CYYZ	VOLUME / VOLUME	92	36	36	037	DA
TEB	1900	0159	ALL+CYZ_AP (GAAP)	VOLUME / VOLUME	6	26	24	029	DA

GROUND STOPS [Edit]

ARPT	UPDATE	POE	SCOPE	REASON	ADVZY

DELAY INFO [Edit]

ARPT	AD	DD	TIME	REASON
FLL		+90	1910	VOL:Multi-taxi
IAH		+15	2116	WX:WIND
MIA		+60	1909	WX:TSTMS
PBI		+30	2104	TM

Initiatives:MIT/MINIT:WX:TSTMS

VACAPES REQUESTS

AREA	REQ/APVL	ALTITUDE	TIME	REMA
A,B,C,D	APVD	AOA FL240	1700-0400	SEASO VO
E	DISAPVD	AOA FL240	1700-0400	SEASO VO

CANCELLED INITIATIVES [Edit]

ARPT	TYPE	TIME CANCELLED
FLL	GS	23/2125

AIRPORT CLOSURES [Edit]

ARPT	TIME	REASON	REOPEN

OIS Main Menu

- Summary
- Contingency Database
- Planned Outages
- Intl Summary
- Schedules
 - Day
 - Mid
 - Eve
- East Directory
- West Directory
- NSST
- Crisis Management
- National Playbook
- Metro
- Tier Info
- Checklists
- Airport Matrix

Traffic Situation Display OIS - SeaMonkey ETMS

Sun Mar 23 21:52

- Web application available to communicate delays with FAA, Airlines, Military, and General public

- Delay information automatically displayed and allows manual input



WWW.Fly.FAA.Gov

 Federal Aviation Administration [FAA.gov Home](#) | [ATCSCC Home](#)

Flight Delay Information - Air Traffic Control System Command Center

[ATCSCC Home](#) | [Products](#) | [What's New](#) | [Site Map](#) | [ATCSCC FAQ](#) | [Text-Only Version](#)

View by Region:

Search by Airport:
(Enter city, airport code, airport name)

View by Major Airport:

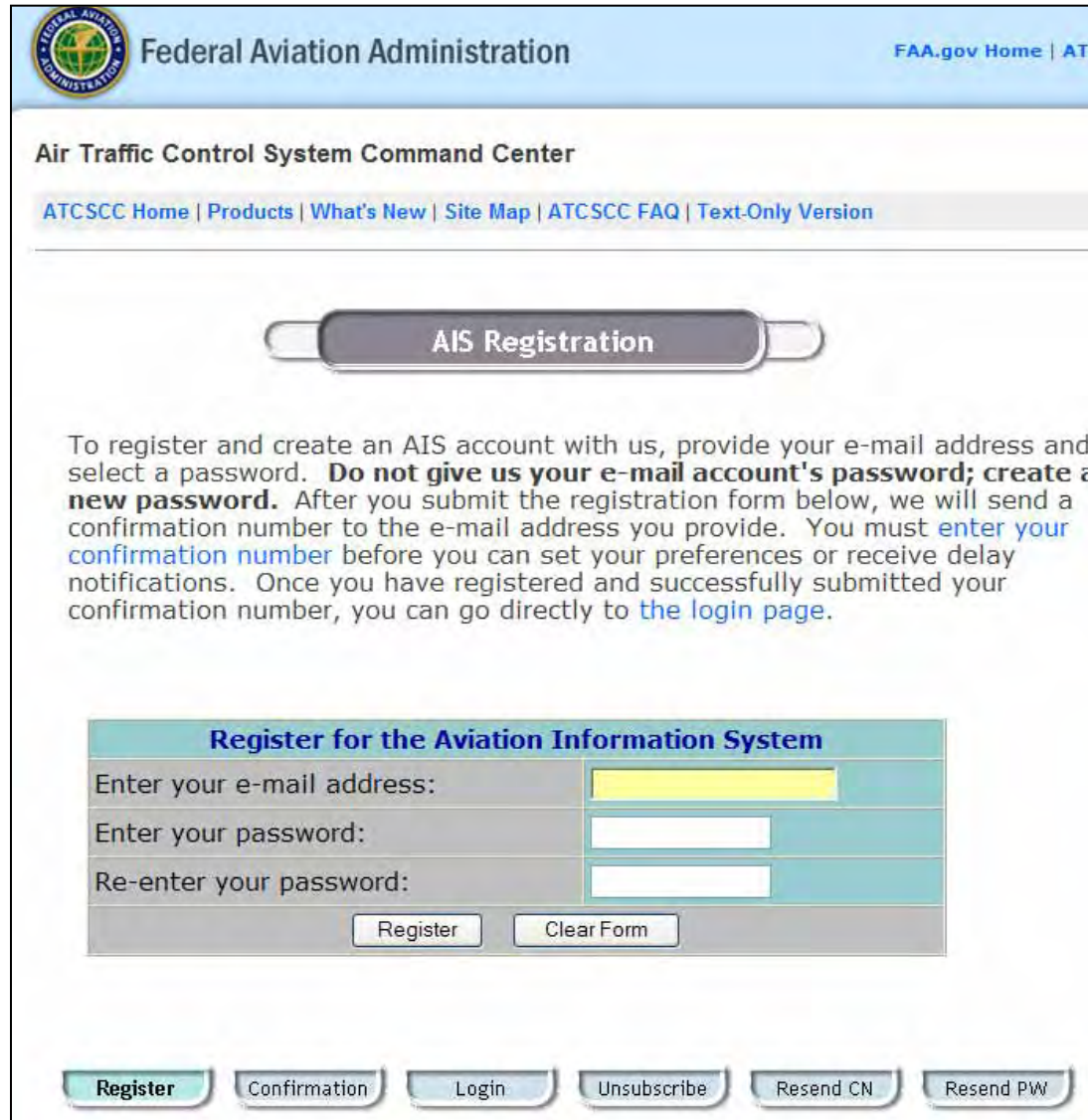


The status information provided on this site indicates general airport conditions; it is not flight-specific. [Check with your airline](#) to determine if your flight is affected. Information on [wait times at security checkpoints](#).

- Web application available to communicate with delays with FAA, Airlines, Military, and General public.
- Delay information automatically displayed and allows manual input
- XML version of data for news providers (Weather Channel, CNN, etc.)



Aviation Information System



Federal Aviation Administration

FAA.gov Home | ATC

Air Traffic Control System Command Center

[ATCSCC Home](#) | [Products](#) | [What's New](#) | [Site Map](#) | [ATCSCC FAQ](#) | [Text-Only Version](#)

AIS Registration

To register and create an AIS account with us, provide your e-mail address and select a password. **Do not give us your e-mail account's password; create a new password.** After you submit the registration form below, we will send a confirmation number to the e-mail address you provide. You must [enter your confirmation number](#) before you can set your preferences or receive delay notifications. Once you have registered and successfully submitted your confirmation number, you can go directly to [the login page](#).

Register for the Aviation Information System

Enter your e-mail address:

Enter your password:

Re-enter your password:

- Public can sign up to receive information for airport delays via email





Mexico

- **Invited to a bi-lateral SENEAM-FAA ATFM meeting in Mexico City**
 - **August 2006**
- **We discussed a wide range of topics, including:**
 - **CDM**
 - **ETMS and traffic analysis**
 - **ATFM between FAA and NAVCANADA**
 - **Playbook**
 - **Training**







CCFMEX



ATFM

**Matching
Air Traffic
Demand with
System
Capacity
Efficiently**



Federal Aviation
Administration

No Order Breeds Chaos



Federal Aviation
Administration

