International Civil Aviation Organization
Fifth Meeting of the ATFM Task Force (ATFM/TF/5)
(Armenia, Colombia, 8 to 12 June 2009)

Agenda Item 3: ATS Capacity Methodologies
3.1 Methodology to calculate runway occupancy time.
3.2 Estimating capacity requirements for airport master plans
Agenda Item 4: Review of ATFM documentation for the CAR/SAM Regions
4.2 CAR/SAM Air Traffic Flow Management Procedures Manual

REPORT OF ACTIVITIES FOR THE IMPLEMENTATION OF AIR TRAFFIC FLOW MANAGEMENT (ATFM)

(Presented by United States)

SUMMARY

This working paper presents the follow up activities for the implementation of ATFM which is in accordance with the Strategy for the CAR/SAM Regions approved by GREPECAS.

1. Introduction

1.1 GREPECAS, through its Conclusion 14/51, approved a Demand Capacity Balancing Strategy for CAR/SAM Regions The goals were to: attain interoperability and continuity for all users during all the flight phases throughout the regions; to meet the agreed upon safety levels; to develop economically optimal and environmentally sustainable operations; and to satisfy national safety requirements.

2. Background Information

2.1 The Meeting considered that ATFM implementation in the CAR/SAM Regions would require the development of detailed guidelines for States and International Organizations, including the following aspects:

a) Review experience in other regions;

b) Obtain and complete the information, taking note of the status in the participating States and organizations; and

c) Obtain and complete the information, taking note of the status in the participating States and organizations regarding the electronic databases required for the evolutionary phases of the ATFM system.

2.2 The work related to these tasks requires the development of an ATFM Questionnaire to be completed by the States and Organizations (**Appendix A**). Another document directly related to the ATFM implementation Strategy is a draft of ATFM Manual (**Appendix B**).

2.3 It is important to stress that the documents included in Appendix B are in draft form and will require additional discussion and exchange of ideas to develop the final products before submitting them to GREPECAS for approval.

3. Recommendations

3.1 The Meeting is invited to:

a) take note of the information contained in this working paper;

b) consider developing and utilizing a questionnaire similar to the questionnaire located in Appendix A of this working paper for use in the CAR/SAM Regions;

c) consider adopting the ATFM Manual presented in Appendix B of this working paper for application in the CAR/SAM Regions; and

d) consider developing a timetable for accomplishing the activities associated with the ATFM Strategy adopted by GREPECAS.

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APPENDIX A

ATFM QUESTIONNAIRE

The objective of this survey is to obtain information in order to learn about the current status in the participating States and Organizations with respect to:

a) The methods for estimating airport and ATC capacity; and

b) ATFM procedures for the following phases:
1) Airport strategic
2) Airport tactical
3) Airspace strategic
4) Airspace tactical

This information will allow the ATFM Implementation to fulfil GREPECAS planning and harmonizing objectives.

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 icao_nacc@mexico.icao.int / mail@lima.icao.int.

1. Does your administration currently have a method, whether basic or complex, for calculating airport capacity? If yes, please send an electronic copy of the methodology to icao_nacc@mexico.icao.int/ mail@lima.icao.int as applicable

☐ YES ☐ NO

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).

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

Table 1

Comments

_____

_____

_____

2. Does your administration 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_nacc@mexico.icao.int / mail@lima.icao.int as applicable

☐ YES ☐ NO

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

3. Does your administration currently have procedures 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

_____

_____

_____

ATFM QUESTIONNAIRE

a) Flow management data processing and display:

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

☐ YES ☐ NO

2. Does your administration 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

3. Does your administration have an electronic ATFM system that displays airborne traffic?

☐ YES ☐ NO

4. Does your administration 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. Does your administration have a system to monitor the status of the air navigation infrastructure?

☐ YES ☐ NO

6. Does your administration have a system to monitor and display the airport acceptance rates (AAR) at the main airports?

☐ YES ☐ NO

7. Does your administration have a system to monitor and display enroute sector capacity?

☐ YES ☐ NO

8. Does your administration have a system to monitor and display the mix of aircraft using the airspace or airports?

☐ YES ☐ NO

b) Surveillance systems:

1. On the following table, list the type of surveillance systems in use in your administration's airspace structure.

ACC Surveillance System	TMA Surveillance System	Other Surveillance System

Table 3

c) AIS/MAP:

1. On the following lines, list the AIS and map databases that your administration has available to support ATFM.

_____

_____

_____

_____

2. Are they available in an electronic format?

☐ YES ☐ NO

3. What is the AIS database update cycle?

☐ 28-DAY UPDATE ☐ 56-DAY UPDATE

d) Meteorological information:

1. On the following lines, list the specific meteorological products and/or websites that your administration has available to support ATFM.

_____

_____

_____

_____

e) Data for historical and statistical analysis:

1. On the following lines, list the type of databases your administration maintains to support the analysis of air traffic operations and meteorological activities.

_____

_____

_____

_____

f) Communication systems and processes in support of CDM and inter-facility coordination:

1. List the types of communication systems your operational units have with:

(a) other centralized ATFM organizations

_____

_____

(b) other FMUs, FMPs, and/or ATS units

_____

_____

(c) operators and airspace users

(d) airport authorities

(e) meteorological authorities

(f) aeronautical information services

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

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APPENDIX B

AIR TRAFFIC FLOW MANAGEMENT MANUAL FOR THE CAR/SAM REGIONS

1.0 Introduction

1.1 Definition of ATFM

ATFM is a function established with the objective of producing a safe, orderly, and expeditious flow of traffic while minimizing delays. This is accomplished through continuous analysis, coordination, and dynamic use of traffic management initiatives.

1.2 Purpose

The purpose of ATFM is to balance air traffic demand with system capacity to ensure the maximum, efficient use of the system airspace. This is accomplished by ensuring that capacity is utilized to the maximum extent possible and that air traffic volume is compatible with the capacities declared by the appropriate air traffic service providers.

1.3 Implementation

a. Implementing of ATFM shall be established in accordance with a view to optimizing available capacity in the use of airspace and airports and enhancing air traffic flow management processes. It shall be based on transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner, consistent with the recommendations of the ICAO Regional Air Navigation Plan.

b. Implementing shall support operational decisions by air navigation service providers, airport operators and airspace users and shall cover the following areas:

1. flight planning;
2. use of available airspace and airport capacity during all phases of flight; and
3. developing a single publication for route and traffic orientation.

c. Implementing shall seek to balance the financial impact on stakeholders with expected safety improvements and the operational and technical benefits, taking into account the requirement for global interoperability;

d. Implementing shall take into consideration the requirements of the military, law enforcement, and search and rescue communities.

e. ATFM implementing will aim at optimizing available capacity in the use of airspace and airports and enhancing flow management processes. It shall also be based on transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner.

f. It recognizes that airspace and airports are a common resource for all categories of users that needs to be used flexibly by all of them, ensuring fairness and transparency

while taking into account security and defense needs of Member States and their commitments with international organizations.

g. Air traffic flow management should be based on principles of partnership operated in accordance with the principles laid down in the ICAO Air Navigation Plan – FASID (Doc 7754), and contain the following functions:

1. Central unit for air traffic flow management;
2. Flow Management Positions;
3. Operators – general aviation, air carrier, military; and
4. Airport Operators

h. Military aircraft operating as general air traffic should be subject to air traffic flow management measures when operating or intending to operate within airspace to which air traffic flow management measures apply.

i. Member States, air navigation service providers and air carriers will provide data to SYNCROMAX, PROSAT or TFMS (previously ETMS) through the appropriate networks on a voluntary basis.

j. ATFM shall apply within the Member States' airspace and airports to:

1. all flights intended to operate or operating as general air traffic and in accordance with the instrument flight rules (IFR); and
2. all phases of those flights.

k. ATFM shall apply to each of the following parties, or anyone acting on their behalf, involved in air traffic flow management activities:

1. operators,
2. air traffic service providers
3. entities involved in airspace management
4. airport operators
5. the entity charged by Member States with the provision of a single central unit for flow management.

2.0 Chapter 1: Demand and Capacity

2.1 In order to balance demand and capacity, it is first necessary to determine the aiport acceptance rate (AAR), airport departure rate (ADR), total airport capacity (a combination of AAR and ADR), and the sector capacity. Once these capacities are established, steps can be taken to monitor and evaluate the air traffic demand and implement measures to balance demand with declared capacity. While there are a variety of methods to compute these values, the SAM Region has agreed to develop a common methodology in a White Paper for use by the States. The White Paper will take into account the following:

a. Determining the AAR, ADR, and Total Airport Capacity.

1. Definitions:

(a) **Airport Acceptance Rate (AAR):** A dynamic parameter specifying the number of arriving aircraft that an airport, in conjunction with terminal airspace, ramp space, parking space, and terminal facilities can accept under specific conditions during any consecutive 60 minute period.
(b) **Airport Departure Rate (ADR)**: A dynamic parameter specifying the number of departing aircraft that an airport, in conjunction with terminal airspace, ramp space, parking space, and terminal facilities can depart under specific conditions during any consecutive 60 minute period.
(c) **Total Airport Capacity**: A dynamic parameter specifying the *total* number of arriving and departing aircraft that an airport, in conjunction with terminal airspace, ramp s pace, parking space, and terminal facilities can manage under specific conditions during any consecutive 60 minute period.
(d) **Hypothetical Runway Capacity**: The runway capacity calculated during sixty minutes, taking into account the average time of runway occupancy and the legislation concerning aircraft separation, including the specific rules and procedures adopted to the local operations.

b. Administrative considerations:

1. Identify the organization responsible for the establishment and implementation of the airport capacity and sector capacity.
2. Establish the airport capacity for the airports identified by the States, Territories, and Organizations.
3. Review and validate the associated airport capacity and sector capacity values at least once each year.

2.2 Determining AAR:

To be determined by the results of the White Paper.

2.3 Determining ADR:

To be determined by the results of the White Paper.

2.4 Determining Total Airport Capacity:

To be determined by the results of the White Paper.

2.5 Determining Sector Capacity:

To be determined by the results of the White Paper.

2.6 Monitoring demand

1. Airport
2. Sector

2.7 Evaluating demand

1. Evaluating the need for Traffic Management Initiatives

3.0 **Chapter 2: Traffic Management Tools**

3.1 SYNCROMAX

3.2 TFMS

4.0 **Chapter 3: Traffic Management Initiatives (TMI)**

4.1 Definition

4.2 Purpose

4.3 Types

1. Altitude initiatives
   a. Capping
   b. Tunneling

2. In-trail initiatives
   a. Miles-in-trail
   b. Minutes-in-trail
   c. Call for release (enroute spacing)

3. Fix balancing

4. Airborne holding

5. Reroutes

6. Sequencing programs
   a. Ground delay programs
   b. Ground stops

4.4 TMI approval authority

4.5 TMI processing

NOTE: This list of traffic management initiatives is not all inclusive and will be developed more fully by a project expert.

5.0 **Chapter 4: Communications and Coordination**

5.1 Communicating traffic management information

1. Planning telephone conferences
2. Operational telephone conferences
3. Web pages

5.2 Operations plan

5.3 Implementing Traffic Management Initiatives

5.4 Adjusting Traffic Management Initiatives

5.5 Cancelling Traffic Management Initiatives

NOTE: This list of communication and coordination initiatives is not all inclusive and will be developed more fully by a project expert.

6.0 **Chapter 5: Organization and structure**

6.1 Line of authority

6.2 Regional Traffic Management Center

1. Mission: Monitors and manages the flow of air traffic throughout the designated airspace system in order to produce a safe, orderly, and expeditious flow of air traffic while minimizing delays.

2. Duties

    a. Analysis
    b. Coordination
    c. Intra-facility
    d. Inter-facility
    e. Telephone conferences
    f. CDM approach
    g. Documentation
        (1) Operational log

NOTE: GREPECAS recognizes that this step will require further analysis.

6.3 Flow Management Unit / Flow Management Position

1. Mission: Monitor and balance flows of air traffic within their area of responsibility.

2. Duties
    a. Analysis
    b. Coordination
    c. Intra-facility
    d. Inter-facility
    e. Telephone conferences
    f. CDM approach
    g. Documentation
        (1) Operational log

NOTE: The development of FMU/FMP will be part of the near-term focus.

7.0 **Chapter 6: System Performance Metrics**

7.1 Actual arrival and departure counts for main airports

7.2 Actual traffic counts for en route airspace

7.3 Delay information

NOTE: This list of system performance metrics is not all inclusive and will be developed more fully by a project expert. It is envisioned that the metrics structure will be developed at the local, regional, and then global levels.

8.0 Chapter 7: Collaborative Decision Making

8.1 Organization

1. Roles and responsibilities

NOTE: This will be developed more fully by a project expert.

NOTE: This section will be developed more fully by a group of project experts. It could be reviewed by at least CGNA, Colombia, Mexico, Canada, AENA, CFMU, ATCSCC. The terms and definitions must be checked and reconciled with existing ICAO documents.

9.0 Chapter 8: Common ATFM Terminology

NOTE: This section will be developed as a separate appendix so that it can be reviewed and revised on a periodic basis.

9.1 **General**

1. The primary goal of these guidelines is to develop terminology and phraseology for the exchange of ATFM messages between units providing ATFM services. The terminology and phraseology contained herein are intended to both reflect the current use of plain language and provide a basis for standardization and harmonization.

2. Although there are various plain language words and phrases in use today by ATFM service providers, these words and phrases can be organized into a modular and structured method of delivery to ensure communication harmonization and reduce the incidence of misunderstanding between units providing ATFM service.

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 initiatives is provided at Attachment 1. The list is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved service.

4. These guidelines include the concept of modular and structured ATFM messages and define an ATFM message's components as who, what, where, when and why. These five components 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.
e. Why: The reason for the ATFM objective.

5. There is no module regarding "how" the ATFM restrictions should be achieved by the counterpart ATFM service provider. It is the counterpart's responsibility how they fulfill the requested ATFM restrictions within their airspace. However, the center being asked for the ATFM restrictions may collaborate with the originating center on the type and method of ATFM measure application. It should be noted that once information is exchanged regarding an ATFM restriction, it is considered MANDATORY unless otherwise agreed.

NOTE: It is recommended that this sentence be deleted.

6. Below are the examples of possible ATFM messages:

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER … 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.
- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER… CAPACITY RESTRICTION: LOS ANGELES HAS STARTED FLOW RESTRICTIONS FOR ALL AIRCRAFT LANDING LOS ANGELES DUE TO EARTHQUAKE. APPROACH HAS REQUESTED GROUND STOPS FOR ARRIVALS UNTIL FURTHER NOTICE.

9.2 ATFM Message Components

1. The use of a modular and structured ATFM message provides for consistent ATFM message design and delivery. Each of the ATFM message's five components can contain plain language elements that when combined provide a complete ATFM message. The harmonization achieved lies in 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.

2. 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.

3. **WHO**: The **who** component identifies the ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact. Examples of the who component:

- ABCD COMMAND CENTER THIS IS FAA COMMAND CENTER…
- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…

4. **WHAT**: The **what** component identifies the ATFM objective to be achieved. Objectives include but are not limited to:

   REQUIRE
   - (number) MILES [or MINUTES] IN TRAIL AT THE SAME FLIGHT LEVEL…
   - (number) MILES [or MINUTES] IN TRAIL REGARDLESS OF FLIGHT LEVEL…
   - A RATE OF (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)

5. **WHERE**: The **where** component represents the location of the ATFM objective to be achieved. It is often preceded by a modifying clause, indicating what aircraft or traffic the restriction will apply to. The modifying clause and the location combination are used to construct there where component.

   Examples of location:

   - …AT NIPPI…
   - …NARITA AIRPORT…

   - …ANCHORAGE APPROACH…
   - …ON A337…
   - …WESTBOUND ON PACOTS TRACK CHARLIE…
   - …EASTBOUND ON A590…
   - …INBOUND ON G344…
   - …ON PACOTS TRACK 2 LANDING SAN FRANCISCO AIRPORT…
   - …ON PACOTS TRACK ECHO BELOW FLIGHT LEVEL 350…
   - …ABOVE FLIGHT LEVEL 300…
   - …INBOUND TO TOKYO ACC…
   - …INBOUND TO OAKLAND OCEANIC SECTOR 5
   - ... WEST OF MARCC

   Examples of what aircraft or traffic are included:

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

6. **WHEN**: The **when** component represents the time and/or duration of the ATFM objective to be achieved:

   Examples of time/duration:

   - …FROM 0300 UTC UNTIL 0600 UTC…
   - …FROM NOW UNTIL 0600 UTC…
   - …FROM 2300 UTC UNTIL FURTHER NOTICE…
   - …UNTIL FURTHER NOTICE…

7. **WHY**: The **why** component represents the reason for the ATFM objective:

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

9.3 **ATFM Message Types**

1. **Information to be shared prior to invoking the ATFM restrictions**: The 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 situation awareness:

   - POSSIBLE TRAFFIC FLOW RESTRICTIONS
   - CAPACITY RELATED INFORMATION

   Examples of messages sent prior to invoking ATFM restrictions follow:

   - FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**POSSIBLE TRAFFIC FLOW RESTRICTIONS**… XYZ AIRPORT HAS CLOSED ONE RUNWAY AND STARTED SNOW REMOVAL.
   - FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**CAPACITY RELATED INFORMATION**…XYZ AIRPORT HAS ENTERED THE STORM ZONE OF THE HURRICANE.

2. **ATFM Initiative Message**: ATFM initiatives communicate air traffic flow restrictions/objectives from one air traffic service provider to another. They follow the five component 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.

Examples of ATFM initiatives follow:

- ABCD COMMAND CENTER, 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 ABCD COMMAND CENTER… FL350 AND BELOW NOT AVAILABLE FOR AIRCRAFT OVERFLYING XYZ DOMESTIC AIRSPACE UNTIL 0900 UTC DUE TO EMERGENCY.

3. **Coordination of aircraft exempted from ATFM initiatives**: The following phrases will be used for the coordination of aircraft which are exempt from ATFM restrictions:

- REQUEST EXEMPTION FROM ATFM
- COORDINATION OF ATFM EXEMPTION

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

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

Examples of messages requesting ATFM exemption follow:

- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER…**REQUEST EXEMPTION FROM ATFM**…UAL123 IS CARRYING A PATIENT WHO NEEDS URGENT MEDICAL TREATMENT.

UAL123…EXEMPTION APPROVED.

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**COORDINATION OF ATFM EXEMPTION**… UAL501A IS OPERATING SEARCH AND RESCUE MISSIONS.

5. **Information for the next coordination**: If it is possible and appropriate, the expected time of next coordination will be forwarded with the ATFM messages:

- I WILL CALL YOU AT 0400 UTC FOR FURTHER COORDINATION
- WE WILL CALL YOU AGAIN IN 30 MINUTES

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

- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER… REQUIRE 30 MINUTES IN TRAIL REGARDLESS OF ALTITUDE FOR ALL AIRCRAFT ON PACOTS TRACK 8 FROM 1000 UTC UNTIL FURTHER NOTICE DUE TO MILITARY ACTIVITY. I WILL CALL YOU AGAIN IN 60 MINUTES.

6. **Amendment:** The amendment of an ATFM message should be structured as the initial message and include similar elements but with additional modifiers. These modifiers may include:

   - CHANGE
   - AMEND
   - REDUCE
   - INCREASE
   - DECREASE

7. 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 follow:

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

8. **Cancellation**: The cancellation of an ATFM message should be structured the same as 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:

   - CANCEL
   - RESUME
   - RESUME NORMAL
   - RELEASE

9. 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 ABCD COMMAND CENTER…**CANCEL** the restriction on traffic beyond the XYZ FIR at this time. **Resume normal** traffic flow.

9.4 **Description of Air Traffic Flow Management Initiatives**

The following list is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved service.

NAME	DESCRIPTION
Airborne holding	**Planned holding of aircraft may be utilized. This is normally done when the operating environment supports holding and the weather conditions are expected to improve shortly; this ensures aircraft are available to fill the capacity at the airport.**
Recommended wording:	
(Inflight holding)	
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 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 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 location, by assigning arrival slots. 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:**
NOTE: for ICAO, GS is Glide slope	**a. In severely reduced capacity situations (below most user arrival minimums, airport/runway closed for snow removal, or aircraft accidents/incidents);** **b. To preclude extended periods of airborne holding;** **c. To preclude sector/center reaching near saturation levels or airport grid lock;** **d. In the event a facility is unable or partially unable to provide ATC services due to unforeseen circumstances; and** **e. When routings are unavailable due to severe weather or catastrophic events.**
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.**

NAME	DESCRIPTION
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.** **1. 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.** **2. En route Sequencing Program (ESP) - Assigns a departure time that will facilitate integration in the en route stream.** **3. Arrival Sequencing Program (ASP) - Assigns fix crossing times to aircraft destined to the same airport.**

9.5 **Table of Abbreviations**

The abbreviations listed here are those used by ATCSCC and other Command Centers that are not defined in the ICAO Doc. 8400 (PANS-ABC). The shaded abbreviations are considered to be the common terms between the two centers. The asterisk shows verbatim difference in the original collocation but the abbreviation still indicates the common object.

	ATCSCC	Other Command Centers
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
ARINC	Aeronautical Radio Incorporated	
ARO	Airport Reservation Office	
ARTCC	Air Route Traffic Control Center	Air Route Traffic Control Center

	ATCSCC	Other Command Centers
ARU	Airspace Reservation Unit (Canada)	
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	
CCFMEX	Mexico Command Center	Centro de Control de Flujo de Mexico
CFMU	Central Flow Management Unit (Brussels)	Central Flow Management Unit
CCFP	Collaborative Collective 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)	
CGNA	Brazil Command Center	Centro De Gerenciamento Da Navegação Aérea
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	

	ATCSCC	Other Command Centers
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	
IFPFP	Individual Flight Plan From this Point	Individual Flight Plan From this Point
IFSS	International Flight Service Station	
INATS	Interruption of Air Traffic Service	
JCAB	Japan Civil Aviation Bureau	Japan Civil Aviation Bureau
LAA	Local Airport Advisory	
LADP	Local Airport Deicing Plan	
LOA	Letter of Agreement	Letter of Agreement
MAP	Monitor Alert Parameter	
MARSA	Military Assumes Responsibility for Separation of Aircraft	Military Assumes Responsibility for Separation of Aircraft

	ATCSCC	Other Command Centers
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	
NOC	NAV CANADA National Operations Centre (Ottawa)	NAV CANADA National Operations Centre
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	

	ATCSCC	Other Command Centers
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	

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive versions of the present document.

Version Number	Date	Reason for Change	Pages Affected
1.0	**12-05-08**	**Creation**	**All**
2.0	**12-09-08**	**General Amendment**	**All**
3.0	**07-11-08**	**General Amendment**	**All**

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