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International Civil Aviation Organization
South American Regional Office

SECOND WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/2)
REGIONAL PROJECT RLA/06/901

Lima, Peru, 3 to 7 November 2008

Agenda Item 4: Implementation of air traffic flow management (ATFM) in the SAM Region

REPORT OF THE AIR TRAFFIC FLOW MANAGEMENT (ATFM) REGIONAL PROJECT EXPERT, REGARDING THE WORK OF SEPTEMBER 01 – 12, 2008 (RLA/06/901)

(Presented by the ATFM Expert, Regional Project RLA/06/901)

Summary

This paper presents the report of the activities of the ATFM Project personnel regarding the work accomplished in Lima, Peru from 01-12 September 2008 under Regional Project RLA/06/091. It includes information on the work accomplished during the first two weeks of September at the ICAO Regional Office in Lima, Peru. There are three Appendices to this Working Paper: **Appendix A** is a draft CAR/SAM ATFM Roadmap, **Appendix B** is a draft ATFM Procedures Manual, and **Appendix C** is a draft ATFM Communications Manual.

References:

- Report of the Air Traffic Flow Management (ATFM) Project Personnel regarding the work of September 01 – 12, 2008 (RLA/06/091).

1 Background

1.1 The First Workshop/Meeting of the SAM Implementation Group (SAM/IG/1) was held at the ICAO South American Regional Office in Lima, Peru, as part of the Regional Project RLA/06/901. The stated goal of Project RLA/06/901, which sponsored the First Implementation Workshop/Meeting, was 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.

1.2 The Meeting was attended by 30 participants from 8 States of the SAM Region and by 3 International Organizations, ALTA, ARINC and IATA.

2 Tasks 1.2.1 and 1.2.2

2.1 The Meeting considered that ATFM implementation in the SAM Region 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 Meeting felt that the development of the material required for ATFM implementation would require the hiring of experts to work to fulfill some of the tasks of the action plan. Consequently, the Meeting decided that Tasks 1.2.1 and 1.2.2 described in the SAM/IG/1 Report should be assigned to an expert hired by project RLA/06/901.

2.3 The work related to these tasks was accomplished by a hired expert 01-12 September 2008 at the ICAO Regional Office in Lima, Peru. One result of this effort was the development of an ATFM Questionnaire to be completed by the States and Organizations (**Appendix A**). Another result of the work was the development of a draft ATFM Roadmap for the CAR/SAM Regions (**Appendix B**). A document directly related to the ATFM Roadmap was also developed, a draft CAR/SAM ATFM Manual (**Appendix C**).

2.4 It is important to stress that the documents included in Appendix B and Appendix C are in ***draft*** form and will require additional discussion and exchange of ideas to develop the final products.

3 Recommendation

3.1 The Meeting is invited to:

a) Take into consideration the information presented in this paper;

b) Take the necessary steps to develop :
- the CAR/SAM ATFM Roadmap; and
- the CAR/SAM ATFM Manual.

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APPENDIX A

ATFM QUESTIONNAIRE

SAM/IG/1 TASK 1.2.1 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 SAM Implementation Group (SAM/IG) to fulfil its 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 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 mail@lima.icao.int

☐ 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 mail@lima.icao.int

☐ 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

SAM/IG/1 TASK 1.2.2 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

APPENDIX B

CAR/SAM ATFM ROADMAP

ATFM

INTERNATIONAL CIVIL AVIATION ORGANIZATION

CAR/SAM ROADMAP FOR AIR TRAFFIC FLOW MANAGEMENT

(Lima, September 2008)

Version 1.0

Table of Contents

1. EXECUTIVE SUMMARY

1.1 GREPECAS determined that air traffic flow management (ATFM) implementation will help ensure optimum air traffic flow to/through specific airspace areas during periods in which the demand exceeds, or is foreseen to exceed, available capacity of the air traffic control (ATC) system. An ATFM system will help reduce ground and airborne delays and help avoid overloading the air traffic system.

1.2 In this connection, GREPECAS approved the CAR/SAM ATFM Concept of Operations (CAR/SAM ATFM CONOPS), which reflects the expected order of development events and should assist and guide the planners in the design and gradual implementation of an ATFM system.

1.3 The main stakeholders involved in ATFM include the organizations, bodies or entities which might participate, collaborate and cooperate in the planning, development, use, regulation, operation and maintenance of the ATFM System.

1.4 With regard to air traffic management, a number of airspace areas with common interests have been identified. The common interests are based on similar characteristics of traffic density, complexity and air navigation system infrastructure requirements. The identification of these airspace areas will help foster the implementation of the Global ATM Operational Concept. A description of such homogeneous and routing areas is attached to the CAR/SAM ATFM CONOPS.

1.7 As established in ICAO documents, ATFM cannot be restricted to the area of one State because of its far-reaching effects on the flow of air traffic elsewhere. ATFM should be implemented within a Region, or within a defined area, as a Regional ATFM centre. The main objectives of the Regional ATFM centre include: assist ATC in making the maximum use of its airspace and capacity; issue flow management initiatives, as required, in order to maintain a safe, orderly and expeditious flow of air traffic; ensure that air traffic volume is compatible with declared capacities; develop a description of the principles and functions of flow management units (FMU); and establish the requirements for equipping flow management units and Regional ATFM centres. The Regional ATFM centre will be supported by FMUs established in each ACC within the Region or defined area of application.

1.8 GREPECAS established a simple phased ATFM implementation strategy in order to ensure maximum utilization of available capacity and permit all parties concerned to obtain sufficient experience. The implementation will be initiated with the application of basic ATFM procedures at airports and then progress in an evolutionary manner to reach more complex phases, without the immediate need for a Regional ATFM centre. GREPECAS noted that the implementation of a Regional ATFM centre would require further studies to define the operational concepts, systems requirements and institutional aspects for its implementation.

1.9 In view of the need for harmonized ATFM planning, it is considered advisable to prepare an ATFM Roadmap to provide guidance to air navigation service providers, airspace operators and users, international organisations, and others regarding the applications that should be implemented in the short term (2008 – 2010) and medium term (2010 – 2014) in the CAR/SAM Regions.

1.10 The CAR/SAM ATFM Roadmap will provide material for Regional projects regarding the implementation of ATFM as well as guidance for national implementation plans.

2. INTRODUCTION

2.1 The CAR/SAM ATFM Roadmap is being developed by the CAR/SAM States and Territories together with concerned international organizations such as COCESNA, IATA, IFALPA, and IFATCA. It is intended to assist the main stakeholders of the aviation community with planning a harmonized and coordinated transition to ATFM applications. The main stakeholders of the aviation community that benefit from this roadmap are:

- Airspace operators and users.
- Air navigation service providers.
- International organizations.

2.2 ATFM is a service designed to assist ATC with making the maximum efficient use of its airspace. This is done by balancing system demand with capacity in order to maintain a safe, orderly and expeditious flow of traffic.

2.3 In its beginning applications, ATFM need not involve complicated procedures or tools. The goal is to collaborate with system stakeholders and communicate operational information to airspace operators and ATC providers in a timely manner. In the initial application of ATFM, this can be accomplished via point-to-point telephone calls designed to exchange pertinent weather information, system constraints, and other information of operational significance. Examples include relaying information on known runway closures, volcanic activity, and reroute information. Significant benefits can be realized by applying the initial levels of ATFM service.

2.4 In more advanced applications, ATFM requires a continuous analysis and monitoring of traffic flows, regular coordination between traffic management units, and dynamic use of traffic management initiatives and programs. This involves the development, maintenance, and use of flight plan data bases, electronic flight data displays, and telephone conference systems.

2.5 Because ATFM is a collaborative process, it is ever improving, growing, and changing with a focus on meeting the operational needs of the stakeholder community. The establishment of a Collaborative Decision Making community is therefore an important key to the long-term success of ATFM.

3.0 OBJECTIVES OF THE ATFM ROADMAP

The following strategic objectives apply to the CAR/SAM ATFM Roadmap:

a) That CAR/SAM States, Territories, and Organizations will work together to develop a seamless and harmonized ATFM system in the CAR/SAM Regions.
b) To communicate with and involve all of the appropriate stakeholders during the development and implementation process.
c) To develop the applicable Regional and national documents necessary for the support of the ATFM system.
d) To provide training to all of the appropriate stakeholders with regard to the principles and processes of ATFM in the CAR/SAM Regions.

4.0 PRINCIPLES OF ATFM IMPLEMENTATION

The implementation of ATFM in the CAR/SAM Regions will be based on the following principles:

a) Development of a Collaborative Decision Making process based on the concepts of teamwork, trust, and communication;
b) Use of the existing system capacity on a first-come, first-served basis without compromising safety;
c) Completion of the necessary coordination to make every possible attempt to increase available capacity before resorting to the application of ATFM measures;
d) Equitable distribution of delays among operators when taking pertinent measures to balance air traffic demand with system capacity; and
e) Application of Safety Management System processes to the ATFM services provided.

5.0 ATFM DEVELOPMENT STRATEGY

5.1 The initial development of ATFM in the CAR/SAM Regions can be characterized by the following steps.

a) Develop and apply a common methodology to determine:
   1) airport capacity; and
   2) enroute sector capacity

b) Identify and apply weather products that can be commonly used to assess weather impact to the system.
   1) METAR and TAF information
   2) Prognostic websites and charts
   3) Satellite websites and charts
   4) Other

c) Identify the personnel and operational phone numbers that will serve as the point of contact for ATFM issues at each:
   1) ACC
   2) TMA
   3) Control Tower
   4) Airline Operations Center
   5) Weather Office
   6) Military Flight Operations Center
   7) General Aviation Operations Center
   8) Airport Operations Center
   9) Other

d) Develop a local database to analyze the arrival and departure demand at key airports for the following time increments:

   1) annually

2) monthly

3) daily

4) hourly

e) Discuss, develop, and apply basic traffic management initiatives and procedures to balance air traffic demand with system capacity.

1) Example 1: Request expanded miles-in-trail between arrivals to the same airport from adjacent sectors or ACCs.

2) Example 2: Have adjacent sectors or ACCs call-for-release of departures to a constrained airport in order to fit them into the arrival flow.

3) Example 3: Coordinate reroutes with adjacent ACCs for flights to a constrained airport to avoid

f) Develop and utilize point-to-point (for example, ACC-to-ACC, control tower-to- airline operator) phone calls for the initial application of traffic management initiatives.

g) Develop the applicable procedures manuals and training materials to support this initial ATFM phase.

h) Establish an implementation date for this phase of ATFM.

i) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.

j) Implement the processes and procedures.

k) Evaluate the results and coordinate changes as necessary.

l) Other.

Initial ATFM Development Steps (2008 – 2010)	
a) Develop and apply a common methodology to determine: 1) airport capacity; and 2) enroute sector capacity	March 2009
b) Identify and apply weather products that can be commonly used to assess weather impact to the system. 1) METAR and TAF information 2) Prognostic websites and charts 3) Satellite websites and charts 4) Other	March 2009
c) Identify the personnel and operational phone numbers that will serve as the point of contact for ATFM issues at each: 1) ACC 2) TMA 3) Control Tower 4) Airline Operations Center 5) Weather Office 6) Military Flight Operations Center 7) General Aviation Operations Center 8) Airport Operations Center 9) Other	March 2009
d) Develop a local database to analyze the arrival and departure demand at key airports for the following time increments: 1) annually 2) monthly 3) daily 4) hourly	June 2009
e) Discuss, develop, and apply basic traffic management initiatives and procedures to balance air traffic demand with system capacity.	August 2009
f) Develop and utilize point-to-point (for example, ACC-to-ACC, control tower-to- airline operator) phone calls for the initial application of traffic management initiatives.	November 2009
g) Develop the applicable procedures manuals and training materials to support this initial ATFM phase.	December 2009
h) Establish an implementation date for this phase of ATFM.	December 2009
i) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.	March 2010
j) Implement the processes and procedures.	June 2010
k) Evaluate the results and coordinate changes as necessary.	September 2010

5.2 The intermediate development of ATFM in the CAR/SAM Regions can be characterized by the following steps.

a) Develop a CAR/SAM flight plan database with the flexibility to allow operators to input, modify, or cancel their arrival / departure flight plan information.

b) Discuss, develop, and apply more advanced traffic management initiatives and procedures to balance air traffic demand with system capacity.

1) Example: Establish an electronic route database to facilitate the coordination and implementation of reroutes around volcanic activity, hurricanes, severe turbulence, etc.

c) Develop and utilize ATFM telcons among facilities in the CAR/SAM Regions.

d) Update the procedures manuals and training materials to support this intermediate ATFM phase.

e) Establish an implementation date for this phase of ATFM.

f) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.

g) Implement the processes and procedures.

h) Evaluate the results and coordinate changes as necessary.

i) Other.

Intermediate ATFM Development Steps (2011 – 2012)	
a) Develop CAR/SAM flight plan database with the flexibility to allow operators to input, modify, or cancel their arrival / departure flight plan information.	March 2011
b) Discuss, develop, and apply more advanced traffic management initiatives and procedures to balance air traffic demand with system capacity.	June 2011
c) Develop and utilize ATFM telcons among facilities in the CAR/SAM Regions.	September 2011
d) Update the procedures manuals and training materials to support this intermediate ATFM phase.	December 2011
e) Establish an implementation date for this phase of ATFM.	December 2011
f) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.	March 2012
g) Implement the processes and procedures.	June 2012
h) Evaluate the results and coordinate changes as necessary.	September 2012

5.3 The advanced development of ATFM in the CAR/SAM Regions can be characterized by the following steps.

a) Develop a process for electronic exchange of both textual and visual flight data.

1) Example: SYNCHROMAX (Brazil), PROSAT (Mexico), TFMS (USA) - (previously, ETMS), an interface between these two systems, or another system yet to be defined.

b) Develop and implement Regional ATFM command centers to coordinate inter-facility traffic management initiatives, flows, etc.

c) Update the procedures manuals and training materials to support this advanced ATFM phase.

d) Establish an implementation date for this phase of ATFM.

e) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.

f) Implement the processes and procedures.

g) Evaluate the results and coordinate changes as necessary.

h) Other.

Advanced ATFM Development Steps (2014 – 2015)	
a) Develop a process for electronic exchange of both textual and visual flight data.	January 2014
b) Develop and implement Regional ATFM command centers to coordinate inter-facility traffic management initiatives, flows, etc.	June 2014
c) Update the procedures manuals and training materials to support this intermediate ATFM phase.	December 2014
d) Establish an implementation date for this phase of ATFM.	December 2014
e) Train the appropriate personnel regarding the process and procedures of this phase of ATFM implementation.	March 2015
f) Implement the processes and procedures.	June 2015
g) Evaluate the results and coordinate changes as necessary.	September 2015

EXPLANATION OF TERMS

The development of this document is based on the understanding of important terms and expressions that are described below:

Stakeholders involved in ATFM -

The ATFM stakeholder community includes the organizations, bodies or entities which could participate, collaborate and cooperate in the planning, development, utilization, regulation, operation, and maintenance of ATFM system. Among them are:

Aerodrome Community - The air traffic control authorities, aerodrome authorities, commercial, military, and general aviation operators, and other parties involved in the provision and operation of the physical infrastructure needed to support the take-off, landing, and ground handling of aircraft.

Airspace Providers - Refers, in general terms, to Contracting States/Territories in their capacity as airspace owners with the legal authority to permit or deny access to their sovereign airspace. The term may also be applied to organizations of the State assigned responsibility for establishing the standards and guidelines for use of the airspace.

Airspace users - Refers to the commercial, military, and general aviation operators that utilize the sovereign airspace of States/Territories/Organizations.

ATM service providers - All of the organizations and personnel (e.g., controllers, engineers, technicians) involved in the provision of ATFM services to airspace users.

Military aviation - Refers to the personnel, aircraft, and equipment of military organizations that serve a vital role in the security of States/Territories.

International Civil Aviation Organization (ICAO) - Considered the only international organization in position to efficiently coordinate the implementation activities of global ATM.

Air Traffic Flow Management (ATFM) - A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATC authority.

Air Traffic Management (ATM) - A service which comprises airspace management, air traffic flow management, and air traffic services.

ATM Community - All the organizations, bodies or entities which might participate, collaborate and cooperate in the planning, development, use, regulation, operation and maintenance of the ATM System.

Air Traffic Management System - A system which provides ATM through the integration and cooperation of personnel, information, technology, facilities and services. It also involves the support of on-board and space-based communications, navigation and surveillance.

Air Traffic Volume - The number of aircraft within a defined airspace or aerodrome movement area in a given period of time.

Capacity (for ATFM purposes) - The maximum number of aircraft that can be accommodated in a defined airspace or aerodrome (throughput) in given period of time.

CAR/SAM ATFM Roadmap - A document offering appropriate guidance for air navigation service providers, airspace operators and users, international organizations and other appropriate ATM community members that describes the ATFM applications that will be implemented in the short, medium and long term in the CAR/SAM Regions.

Regional ATFM Center - A flow management unit responsible for the provision of air traffic flow management across multiple area control centers.

Collaborative Decision Making - an operating philosophy and the associated technologies that enable traffic managers and aviation industry representatives to respond in a timely manner to constraints in the airspace system.

Demand - The number of aircraft requesting to use the ATC system in a given time period.

Efficiency - The ratio of the cost of ideal flight to the cost of procedurally constrained flight.

Flow Management Position / Flow Management Unit (FMP/FMU) - A position or working unit established in an appropriate air traffic control unit to ensure the necessary interface between the local ATFM and a centralized ATFM unit.

Homogeneous ATM area - An airspace with a common ATM interest, based on similar characteristics of traffic density, complexity, air navigation system infrastructure requirements and other specified considerations, wherein a common detailed plan will foster the implementation of ATFM.

Main Traffic Flow - The concentration of a significant volume of air traffic on the same, or similar, flight trajectories.

Routing area - An area that encompasses one or more major traffic flows, defined for the purpose of developing a detailed plan for the implementation of ATM systems and procedures.

Traffic Management Initiatives - Techniques used by traffic managers to balance air traffic demand with available capacity.

ACRONYMS

Lista de Acrónimos/ List of Acronyms

ACC	Centro de control de área	Area control center
AFTN	Red de telecomunicaciones fijas aeronáuticas	Aeronautical fixed telecommunication network
AIP	Publicación de Información aeronáutica	Aeronautical Information Publication
AIS	Servicio de información aeronáutica	Aeronautical information service
ANP	Plan navegación aérea	Air navigation plan
ANS	Servicios de navegación aérea	Air navigation services
ANSP	Proveedor de servicios de navegación aérea	Air navigation service provider
AO	Operador de aeronave	Aircraft operator
APP	Oficina de control de aproximación	Approach control facility
AAR	Régimen de aceptación del aeropuerto	Airport Acceptance Rate
ADR	Régimen de salida del aeropuerto	Airport Departure Rate
ATC	Control de tránsito aéreo	Air traffic control
ATFM	Gestión de la afluencia del tránsito aéreo	Air traffic flow management
ATM	Gestión del tránsito aéreo	Air traffic management
ATS	Servicios de tránsito aéreo	Air traffic services
CAA	Administración de aviación civil	Civil aviation authority
CAR/SAM	Regiones Caribe y Sudamérica	Caribbean and South American Regions
CATFM	Dependencia de Gestión de la afluencia del tránsito centralizada	Centralized air traffic flow management unit
C/BA	Análisis de costo/beneficios	Cost/benefit analysis
CDM	Toma de decisiones en colaboración	Collaborative Decision Making

CNS/ATM	Comunicaciones, navegación y vigilancia/gestión del tránsito aéreo	Communications, navigation, and surveillance/air traffic management
CTA	Area de control	Control Area
FDPS	Sistema de procesamiento de datos de vuelo	Flight data processing system
FIR	Región de información de vuelo	Flight information Region
FMP	Puestos de gestión de afluencia	Flow management position
FMU	Dependencia de organización de la afluencia	Flow management unit
FPL	Plan de vuelo	Flight plan
GREPECAS	Grupo Regional de planificación y ejecución CAR/SAM	CAR/SAM Regional planning and implementation group
IATA	Asociación del Transporte Aéreo Internacional	International Air Transport Association
IFALPA	Federación Internacional de Asociaciones de Pilotos de Líneas Aéreas	International Federation of Air Line Pilots' Associations
IFATCA	Federación Internacional de Asociaciones de Controladores de Tránsito Aéreo	International Federation of Air Traffic Controllers' Associations
LOA	Carta de acuerdo	Letter of Agreement
MET	Servicios meteorológicos para la navegación aérea	Meteorological services for air navigation
NOTAM	Aviso al Personal Encargado de las Operaciones de Vuelo	Notice to Airmen
OACI/ICAO	Organización de aviación civil internacional	International civil aviation organization
PANS ATM	Procedimientos para los servicios de navegación aérea –Gestión de tránsito aéreo	Procedures for Air Navigation Services –Air traffic management
PIRG	Grupo Regional de planificación y ejecución	Planning and implementation Regional group
PROSAT	Pronóstico de Saturación	PROSAT
RNAV	Navegación de área/Area Navigation - RNAV Route: Ruta de navegación de área	Area navigation route
RNP	Performance de navegación requerida	Required Navigation Performance

SID	Salida Normalizada por Instrumentos	Standard Instrument Departure
STAR	Llegada Normalizada por Instrumentos	Standard Instrument Arrival
SYNCHROMAX	SYNCHROMAX	SYNCHROMAX
TBD	A ser determinado	To be determined
TELCON	Tele-conferencia	Telephone conference
TFMS	Sistema de gestión de la afluencia del tránsito (previamente, ETMS	Traffic Flow Management System (previously, ETMS)
TMA	Area de control terminal	Terminal management area
TMC	Coordinador de la gestión del tránsito	Traffic Management Coordinator
TMI	Iniciativa de gestión del tránsito	Traffic management initiative
TWR	Torre de control	Control Tower
WSO	Oficina del servicio meteorológico	Weather Service Office
WWW	Red mundial	World Wide Web

APPENDIX C

CAR/SAM ATFM MANUAL

1. Introduction

1.1 Definition of ATFM

a. 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.

a. 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 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 capacity during all phases of flight; and

3. the creation of 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 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 is 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

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 provide data to SYNCHROMAX or TFMS (previously ETMS) through the appropriate networks on a voluntary basis.

j. ATFM shall apply within the Member States' airspace 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. Chapter 1: Demand and Capacity

2.1 In order to balance demand and capacity, it is first necessary to determine the airport acceptance rate (AAR), airport departure rate (ADR), total airport capacity, 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 CAR/SAM Regions have agreed to use the following methodology:

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 space, parking space, and terminal facilities can manage under specific conditions during any consecutive 60 minute period.

b. Administrative considerations:

1. Identify the organization responsible for the establishment and implementation of the AAR, ADR, Total Airport Capacity, and sector capacity.

2. Establish the AAR, ADR, and Airport Capacity for the airports identified by the States, Territories, and Organizations.

3. Review and validate the associated AAR, ADR, Total Airport Capacity, and sector capacity values at least once each year.

2.1 Determining AAR:

TO BE DETERMINED

2.2 Determining ADR:

TO BE DETERMINED

2.3 Determining Total Airport Capacity:

TO BE DETERMINED

2.4 Determining Sector Capacity:

TO BE DETERMINED

2.5 Monitoring demand

1. Airport
2. Sector

2.6 Evaluating demand
1. Evaluating the need for Traffic Management Initiatives

3.0 Chapter 2: Traffic Management Tools

3.1 SYNCHROMAX

3.2 PROSAT

3.3 TFMS

4.0 FSM

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

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

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

6.3 Local Traffic Management Unit

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

7.0 Chapter 6: System Performance Metrics

7.1 Actual arrival and departure counts for main airports

7.2 Delay information

8.0 Chapter 7: Collaborative Decision Making

8.1 Organization

1. Roles and responsibilities

9.0 Chapter 8: Common ATFM Terminology

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.

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

Name	Description
Miles-in-trail (MIT)	The number of miles required between aircraft that meet a specific criteria. The criteria may be separation, airport, fix, altitude, sector, or route specific. MIT are used to apportion traffic into manageable flows, as well as to provide space for additional traffic (merging or departing) to enter the flow of traffic.
Minutes-in-trail (MINIT)	The number of minutes required between successive aircraft. It is normally used in a non-radar environment, or when transitioning to a non-radar environment, or when additional spacing is required due to aircraft deviating around weather.
Reroutes	Reroutes are ATC routings other than the filed flight plan. They are issued to: **a.** Ensure aircraft operate with the "flow" of traffic. **b.** Remain clear of special use airspace. **c.** Avoid congested airspace. **d.** Avoid areas of known weather where aircraft are deviating or refusing to fly.
Sequencing programs	These programs are designed to achieve a specified interval between aircraft; they may be software generated or determined by ATFM personnel. Different types of programs accommodate different phases of flight. **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
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)	

	ATCSCC	Other Command Centers
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	
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
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	
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

1.1	xx-xx-0x General Amendment xx

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- END -