



INTERNATIONAL CIVIL AVIATION ORGANIZATION

A United Nations Specialized Agency

ICAO ATFM Supporting Documents


**Workshop on Air Traffic Flow Management
(ATFM) Implementation for the CAR and SAM
Regions**

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International Civil Aviation Organization

North American, Central American and Caribbean Office

 3.7.5.2 Recommendation. — ATFM should be implemented on the basis of regional air navigation agreements or, if appropriate, through multilateral agreements. Such agreements should make provision for common procedures and common methods of capacity determination.



✈️ 3.1.1.1 The capacity of an ATS system depends on many factors, including the ATS route structure, the navigation accuracy of the aircraft using the airspace, weather-related factors, and controller workload. Every effort should be made to provide sufficient capacity to cater to both normal and peak traffic levels; however, in implementing any measures to increase capacity, the responsible ATS authority shall ensure, in accordance with the procedures specified in Chapter 2, that safety levels are not jeopardized.

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ATS System Capacity and Air Traffic Flow Management



✈️ 3.1.1.2 The number of aircraft provided with an ATC service shall not exceed that which can be safely handled by the ATC unit concerned under the prevailing circumstances. In order to define the maximum number of flights which can be safely accommodated, the appropriate ATS authority should assess and declare the ATC capacity for control areas, for control sectors within a control area and for aerodromes.

ATS System Capacity and Air Traffic Flow Management





3.1.2 Capacity assessment

 In assessing capacity values, factors to be taken into account should include:

 a) the level and type of ATS provided;

 b) the structural complexity of the control area, the control sector or the aerodrome concerned;

 c) controller workload, including control and coordination tasks to be performed;

 d) the types of communications, navigation and surveillance systems in use, their degree of technical reliability and




 availability as well as the availability of backup systems and/or procedures;

 e) availability of ATC systems providing controller support and alert functions; and

 f) any other factor or element deemed relevant to controller workload.



3.1.3 Regulation of ATC capacity and traffic volumes

-  3.1.3.1 Where traffic demand varies significantly on a daily or periodic basis, facilities and procedures should be implemented to vary the number of operational sectors or working positions to meet the prevailing and anticipated demand. Applicable procedures should be contained in local instructions.
-  3.1.3.2 In case of particular events which have a negative impact on the declared capacity of an airspace or aerodrome, the capacity of the airspace or aerodrome concerned shall be reduced accordingly for the required time period. Whenever possible, the capacity pertaining to such events should be predetermined.
-  3.1.3.3 To ensure that safety is not compromised whenever the traffic demand in an airspace or at an aerodrome is forecast to exceed the available ATC capacity, measures shall be implemented to regulate traffic volumes accordingly.

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3.1.4 Enhancement of ATC capacity

3.1.4.1 The appropriate ATS authority should:

-  a) periodically review ATS capacities in relation to traffic demand; and
-  b) provide for flexible use of airspace in order to improve the efficiency of operations and increase capacity.

3.1.4.2 In the event that traffic demand regularly exceeds ATC capacity, resulting in continuing and frequent traffic delays, or it becomes apparent that forecast traffic demand will exceed capacity values, the appropriate ATS authority should, as far as practicable:

-  a) implement steps aimed at maximizing the use of the existing system capacity; and
-  b) develop plans to increase capacity to meet the actual or forecast demand.

AIR TRAFFIC FLOW MANAGEMENT



DOC 4444

AIR TRAFFIC FLOW MANAGEMENT



- ✦ 3.2.1.1 An air traffic flow management (ATFM) service shall be implemented for airspace where traffic demand at times exceeds the defined ATC capacity.

- ✦ 3.2.1.2 ATFM should be implemented on the basis of a regional air navigation agreement or, when appropriate, as a multilateral agreement.

- ✦ 3.2.1.3 The ATFM service within a region or other defined area, should be developed and implemented as a centralized ATFM organization, supported by flow management positions established at each area control centre (ACC) within the region or area of applicability.



✈️ ATFM should be carried out in three phases:

- ✈️ a) **strategic planning**, if the action is carried out more than one day before the day on which it will take effect. Strategic planning is normally carried out well in advance, typically two to six months ahead;
- ✈️ b) **pre-tactical planning**, if the action is to be taken on the day before the day on which it will take effect;
- ✈️ c) **tactical operations**, if the action is taken on the day on which it will take effect.



3.2.3 Strategic planning

- 3.2.3.1 Strategic planning should be carried out in conjunction with ATC and the aircraft operators. It should consist of examining the demand for the forthcoming season, assessing where and when demand is likely to exceed the available ATC capacity and taking steps to resolve the imbalance by:
 - a) arranging with the ATC authority to provide adequate capacity at the required place and time;
 - b) re-routing certain traffic flows (traffic orientation);
 - c) scheduling or rescheduling flights as appropriate; and
 - d) identifying the need for tactical ATFM measures.
- 3.2.3.2 Where a traffic orientation scheme (TOS) is to be introduced, the routes should, as far as practicable, minimize the time and distance penalties for the flights concerned, and allow some degree of flexibility in the choice of routes, particularly for long-range flights.
- 3.2.3.3 When a TOS has been agreed, details should be published by all States concerned in a common format.









3.2.4 Pre-tactical planning

 Pre-tactical planning should entail fine-tuning of the strategic plan in the light of updated demand data.

During this phase:

-  a) certain traffic flows may be re-routed;
-  b) off-load routes may be coordinated;
-  c) tactical measures will be decided upon; and
-  d) details for the ATFM plan for the following day should be published and made available to all concerned.

Cancun International - MMUN



Preplanning



- ✈️ CCFMEX will normally issue the AAR for the weekends by Thursday afternoon. This information will be placed on the clipboard at the IO position.
- ✈️ Review this information prior to calling CCFMEX at 0100z
- ✈️ Call CCFMEX every night at 0100z to discuss the plan for the next day. This discussion needs to include but not be limited to the AAR, required routings and expected airport configuration. Tactical changes from the pre-negotiated AAR can be made by CCFMEX during this call.
- ✈️ Either check with NOM or call ZJX to see if W470 will be hot or cold for the following day. This will be addressed in route portion of the training.

Operational Timeline



1230z: [Thurs. – Sun. or when necessary] Re-issue routes from previous evening.

1200z: Determine need for AFP and issue if necessary.

1300z: }
0000z: } Monitor demand, AFP, routes (refer to following pages)

0100z: Determine status of W470 in ZJX for next day

0100z: [Thurs. – Sun. or when necessary] Issue required routes for next day

0100z: Call CCFMEX and coordinate AAR and plan for next day.

Routes



✈️ Routes fall into two categories

✈️ RQD

✈️ Typically on Fri. – Sun. or when requested by CCFMEX

✈️ Are designated through ZJX/ZMA/ZHU and are all the way to the airport

✈️ FYI

✈️ Are used when RQD routes are not needed

✈️ Allows aircraft to file through a cold W470 in ZJX

✈️ Issue by 0100z the night before to allow dispatchers to flight plan overnight.

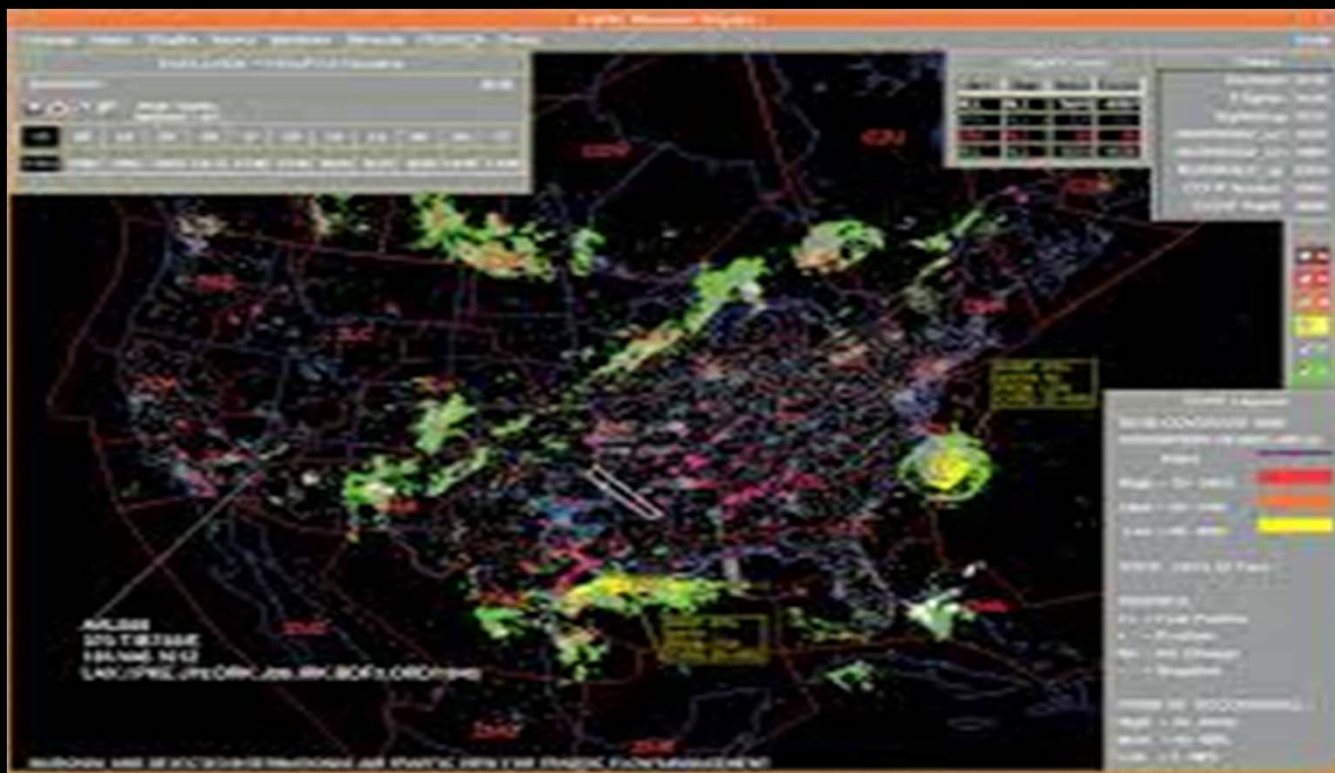
✈️ Re-issue by 1230z the next morning for FAA facilities.

Coordination/Communication





- ✈️ Engage CCFMEX several times during the day to obtain feedback from ZMR and MMUN. Document comments in the NTML.
- ✈️ Inform TAM and SW specialist that the IOM needs to be informed of any TMIs that impact MMUN flow.
- ✈️ Discuss potential GA demand with NBAA
- ✈️ Monitor MMUN FSM and attempt to gain more arrival slots if there is underdelivery.


Tactical ATFM operations





3.2.5.1 Tactical ATFM operations should consist of:

-  a) executing the agreed tactical measures in order to provide a reduced and even flow of traffic where demand would otherwise have exceeded capacity;
-  b) monitoring the evolution of the air traffic situation to ensure that the ATFM measures applied are having the desired effect and to take or initiate remedial action when long delays are reported, including re-routing of traffic and flight level allocation, in order to utilize the available ATC capacity to the maximum extent.

 3.2.5.2 When the traffic demand exceeds, or is foreseen to exceed, the capacity of a particular sector or aerodrome, the responsible ATC unit shall advise the responsible ATFM unit, where such a unit is established, and other ATC units concerned. Flight crews of aircraft planned to fly in the affected area and operators should be advised, as soon as practicable, of the delays expected or the restrictions which will be applied.



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Thank You

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