



International Civil Aviation Organization

SIP/2012/ASBU/Dakar-WP/24 B

Aviation System Block Upgrades Module N° B0-35/PIA3

Improved Flow Performance through Planning based on a Network-Wide view

Workshop on preparations for ANConf/12 – ASBU methodology
(Dakar, 16-20 July 2012)

Module N° B0-35

Improved Flow Performance through Planning based on a Network-Wide view



Summary	Air Traffic Flow Management (ATFM) is used to manage the flow of traffic in a way that minimizes delay and maximizes the use of the entire national airspace.	
Main Performance Impact	-KPA-01 Access & Equity	- KPA-02 Capacity - KPA-04 Efficiency - KPA-05 Environment - KPA -09 Predictability
Operating Environment/Phases of Flight	Pre-flight phases, some action during actual flight.	
Applicability Considerations	Region or sub-region	
Global Concept Component(s)	DCB – Demand-Capacity Balancing TS – Traffic Synchronisation AOM – Airspace Organisation and Management	
Global Plan Initiatives	GPI-1 Flexible use of airspace GPI-6 Air traffic flow management GPI-8 Collaborative airspace design and management	
Global Readiness Checklist		Status
	Standards Readiness	2013
	Avionics Availability	N/A
	Ground Systems Availability	Ready
	Procedures Available	2013
	Operations Approvals	2013



- It is difficult to describe an exact baseline. The need for ATFM emerges as traffic densities increased
- Even where overall capacity is not an issue, the efficient management of flows through a given volume of airspace deserves a specific consideration

Module N° B0-35 – Change Brought by the Module



- In order to regulate flows, ATFM may take measures of the following nature:
 - Departure slots; Rate of entry; Requested time; Miles-in-trail figures;
 - Re-routing; Sequencing of flights;
 - Delaying of specific flights on the ground by a few minutes
- These measures are not mutually exclusive

Module N° B0-35 – Intended Performance Operational Improvement



Access and Equity	Improved access by avoiding disruption of air traffic in periods of demand higher than capacity; ATFM processes take care of equitable distribution of delays.
Capacity	Better utilisation of available capacity, network-wide; ability to anticipate difficult situations and mitigate them in advance.
Efficiency	Reduced fuel burn due to better anticipation of flow issues; Reduced block times and times with engines on.
Environment	Reduced emissions as delays are absorbed on the ground, with shut engines; rerouting however generally put flight on a longer distance, but this is generally compensated by other airline operational benefits.
Participation by the ATM community	Common understanding of operational constraints, capabilities and needs.
Predictability	Increased predictability of schedules as the ATFM algorithms tends to limit the number of large delays.
Safety	Reduced occurrences of undesired sector overloads.
CBA	The business case has proven to be positive due to the benefits that flights can obtain in terms of delay reduction.

Module N° B0-35 – Necessary Procedures (Air & Ground)



- An ICAO manual on ATFM is available in draft version and need to be completed and approved. US/Europe experience is enough to help initiate application in other regions.
- New procedures are required to link much closer the ATFM with ATS in the case of using miles-in-trail or Arrival management or Departure management



- **Avionics**
 - No avionics requirements
- **Ground Systems**
 - When serving several FIRs, ATFM systems are generally deployed as a specific unit, system and software connected to the ATC units and airspace users to which it provides its services. Regional ATFM units have been the subject of specific developments.

Module N° B0-35 – Training and Qualification Requirements

- Flow managers in the flow management unit and controllers in ACCs need specific training and airline dispatchers using the remote flow management information or applications need training.
- Training in the operational standards and procedures are required for this module.
- Likewise, the qualifications requirements are identified in the regulatory requirements



- **Regulatory/Standardization:**
 - New standards and requirements is required for standard ATFM messages
- **Approval Plans:**
 - To Be Determined.

Module N° B0-35 – Reference Documents

- ***Standards:*** TBD
- ***Procedures:*** TBD
- ***Guidance Material***
 - ICAO Global Collaborative Decision Making (CDM) Guidelines (under development).
- ***Approval Documents***
 - ICAO Global Collaborative Decision Making (CDM) Guidelines (under development).

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Benefits - Main Key Performance Areas (KPA)

KPAs	Access	Capacity	Efficiency	Environment	Safety
Applicable	Y	Y	Y	Y	Y

Element:

-Collaborative ATFM

To be reflected in ANRF

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