
International Civil Aviation Organization


ASBU/SIP/Lima/2012-WP/21 A

Aviation System Block Upgrades

Module N° B0-25/PIA-2

Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

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

Module N° B0-25


Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

Summary	To improve coordination between ATS Units by using AIDC. The transfer of communication in a data link environment improves the efficiency of this process particularly for Oceanic ATSUs	
Main Performance Impact	- KPA-02 Capacity - KPA-07 Global Interoperability	- KPA-04 Efficiency - KPA-10 Safety
Operating Environment/Phases of Flight	All flight phases and all type of ATS units	
Applicability	Applicable to min. 2 ACCs dealing with en-route and/or TMA airspace.	
Considerations	Greater number of consecutive participating ACCs → increase the benefits.	
Global Concept Component(s)	CM - Conflict management IM - Information Management	
Global Plan Initiatives (GPI)	GPI-16 Decision Support Systems	
Pre-Requisites	Link with B0-40	
Global Readiness Checklist		Status
	Standards Readiness	Ready
	Avionics Availability	No requirement
	Ground systems Availability	Ready
	Procedures Available	Ready
	Operations Approvals	Ready

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Module N° B0-25 - Baseline



- Classical coordination by phone and procedural and/or radar distance separations
- **New Flight Plan 2012 and AMHS/IPS (not included in this module) but mapped to this module**

Module N° B0-25 – Change Brought by the Module



- Implementation of the set of AIDC messages in the Flight Data Processing System (FDPS) of the different ATS units
- Establishment of Letter of Agreement (LoA) to determine the appropriate parameters.

Module N° B0-25 – Intended performance Operational Improvement



Capacity	<ul style="list-style-type: none"> -Reduced controller workload -Increased data integrity supporting - Reduced separations translating directly to cross sector or boundary capacity flow increases.
Efficiency	- Reduced separation can be offered more frequently to aircraft flight levels closer to the flight optimum; in certain cases, this also translates in reduced en-route holding.
Global Interoperability	Seamlessness: the use of standardised interfaces reduces the cost of development, allows controller to apply the same procedures at the boundaries of all participating centres and border crossing becomes more transparent to flights.
Safety	Better knowledge of more accurate flight plan information
CBA	Increase of throughput at ATC unit boundary, reduced ATCo Workload will exceed FDPS software changes cost.

Module N° B0-25 – Necessary Procedures (Air & Ground)



- Required procedures exist
- Experience from other regions can be a useful reference

Module N° B0-25 – Necessary System Capability



- **Avionics**
 - No specific airborne requirements
- **Ground Systems**
 - Technology is available.
 - Implemented set of AIDC messages in Flight Data Processing and could use the ground network standard AFTN-AMHS or ATN.
 - Europe is presently implementing IP Wide Area Networks
 - It also includes for oceanic ATSUs a function supporting transfer of communication via data link.

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Module N° B0-25 – Training and Qualification Requirements



- Training for the automation support will be required.
- Training in the operational standards and procedures are also required.
- Likewise, the qualifications requirements are identified in the regulatory requirements in Section 6 which form an integral part to the implementation of this module.

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Module N° B0-25 – Regulatory/Standardization needs and Approval Plan (Air & Ground)



- Regulatory/Standardization: Use current published criteria that include:
 - ICAO Doc 4444, *Procedures for Air Navigation Services — Air Traffic Management*;
 - EU Regulation, EC No 552/2004.
- Approval Plans: To Be Determined, based upon regional consideration of AIDC.

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Module N° B0-25 – Reference Documents



Standards

- ICAO Doc 4444, *Procedures for Air Navigation Services - Air Traffic Management*, Appendix 6 - ATS Interfacility Data Communications (AIDC) Messages
- ICAO Doc 9880, *Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols, Part II — Ground-Ground Applications — Air Traffic Services Message Handling Services (ATSMHS)*.

Procedures: To be determined.

Guidance Material

- ICAO Doc 9694, *Manual of Air Traffic Services Data Link Applications*; part 6
- GOLD Global Operational Data Link Document (APANPIRG, NAT SPG), June 2010;
- Pan Regional Interface Control Document for Oceanic ATS Interfacility Data Communications (PAN ICD) Coordination Draft Version 0.3. 31 August 2010;
- Asia/Pacific Regional Interface Control Document (ICD) For ATS Interfacility Data Communications (AIDC). ICAO Asia/Pacific Regional Office. http://www.bangkok.icao.int/edocs/icd_aidc_ver3.pdf
- EUROCONTROL Standard for On-Line Data Interchange (OLDI); and EUROCONTROL Standard for ATS Data Exchange Presentation (ADEXP)

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Module N° B0-25 Implementation - Benefits and Elements



Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

- **Benefits: Capacity, Efficiency, Global Interoperability and safety**
 - **Elements:**
 - New Flight Plan (Not included in the Module)
 - AMHS/IPS (Not included in the Module)
 - AIDC
- To be reflected in ANRF**

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