

WORKSHOP ON AIR NAVIGATION PLANNING FRAMEWORKS

Hybrid, 28 September to 1 October 2026

ATELIER SUR LES CADRES DE PLANIFICATION DE LA NAVIGATION AÉRIENNE

Hybride, du 28 septembre au 1er octobre 2026



ASBU ELEMENTS APPLICABLES TO AFI REGION

**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



ALIGNMENT OF GLOBAL PLANNING AND AFI REGIONAL PRIORITIES



ICAO WACAF

Outline

01 Introduction

02 AOP

03 AIM

04 ATM/SAR

05 CNS

06 MET

01 INTRODUCTION



01. Introduction

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From the GANP global framework to a relevant, prioritized, and measurable ASBU portfolio for the AFI region

1. Global context

The GANP establishes a shared vision, a technical framework, the BBBs, and ASBU enhancements to ensure the interoperability of the global system.



2. Regional Adaptation

The eANP AFI adapts this framework to reflect the region's specific needs, benefits, dependencies, constraints, and the value of harmonization.



3. Implementation

States and ANSPs prioritize projects based on demand, maturity, resources, and regional deadlines.

Principle: Global alignment ≠ uniform implementation. The goal is a consistent course of action with priorities based on regional needs.

01. Introduction

Volume III of the eANP AFI serves as the link between global ASBUs and regional implementation

- ❑ Volume I establishes the responsibilities of the States as well as the stable regional requirements. Amendments follow the appropriate approval process at the Council level.
 - ❑ Volume II establishes the detailed regional requirements and information regarding the facilities and services to be maintained through regional coordination.
 - ❑ Volume III focuses on dynamic and flexible modernization planning, integrating the ASBU framework and the GANP technology roadmaps, with AFI priorities, targets, and monitoring.
- ❑ **Prior to GANP 6:** Regional planning based on the prioritization of ASBU modules.
 - ❑ **Starting with GANP 6:** Identification of ASBU elements applicable to the AFI region, based on the region's performance objectives. (APIRG/24 Decision 24/30 & APIRG/26 Decision 26/19))

01. Introduction

Identification of Applicable Elements

1. Element ID and Title

APTA-B0/1 PBN Approaches
(with basic capabilities)



2. Applicability

Applicable.



3. Rational

To facilitate access to airfields where conventional procedures cannot be implemented, or to supplement existing procedures.

Number of elements:

AOP 2

ATM 67

SAR 2

CNS 27

AIM 7

MET 8

01. Introduction

Data Collection on the planning and implementation of applicable elements

1. Element ID and Title

FRT0-B0/2 Airspace
Planning and Flexible Use of
Airspace (FUA)



2. Deliverables

- ✓ Operational Approval
- ✓ Procedures for Dynamic Airspace Management
- ✓ Tools and Systems to Support FUA
- ✓ Training
- ✓ ATFM System for FUA



3. Implementation

- ✓ Implementation Status
- ✓ Scheduled Date
- ✓ Completion Date
- ✓ Evidence

Implementation data provided by the states in coordination with their service providers

02 AOP

Applicable ASBU
elements



2. ASBU elements applicable to the AFI region – AOP domain

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"Collaborative decision-making in airports – ACDM" thread

		Maturité
ACDM-B0/1	Airport CDM Information Sharing (ACIS)	Ready for implementation
ACDM-B0/2	Integration with ATM Network function	Ready for implementation

2. ASBU elements applicable to the AFI region – AOP domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

ACDM-B0/1

Airport CDM Information Sharing (ACIS)

- ACIS Platform
- A-HOM Procedures
- Apron Management

ACDM-B0/2

Integration with ATM Network function

- ATM-Airport Coordination
- Airport Capacity Information
- FUM - Flight Status Update Messages

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AIM

Applicable ASBU
Elements



3. ASBU Elements Applicable to AFI Region – AIM Domain

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Elements of the "Aeronautical Information Management – DAIM" thread

		Maturity
DAIM-B1/1	Provision of aeronautical data and information with quality assurance	Ready for implementation
DAIM-B1/2	Provision of AIP digital datasets	Ready for implementation
DAIM-B1/3	Provision of digital terrain datasets	Ready for implementation
DAIM-B1/4	Provision of digital obstacle data sets	Ready for implementation

3. ASBU Elements Applicable to AFI Region – AIM Domain

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Elements of the "Aeronautical Information Management – DAIM" thread

		Maturity
DAIM-B1/5	Provision of digital aerodrome mapping datasets	Ready for implementation
DAIM-B1/6	Provision of digital instrument flight procedures datasets	Ready for implementation
DAIM-B1/7	NOTAM Enhancements	Ready for implementation

3. ASBU Elements Applicable to AFI Region – AIM Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

DAIM-B1/1

Provision of aeronautical data and information with quality assurance

- QMS
- SLA
- AIRAC
- WGS-84

DAIM-B1/2

Provision of AIP digital datasets

- AIXM Database
 - Electronic AIP
 - AIP dataset

3. ASBU Elements Applicable to the AFI Region – AIM Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

DAIM-B1/3

Provision of digital terrain datasets

- Terrain Data Area 1
- Terrain Data Area 2
- Terrain Data Area 3
- Terrain Data Area 4

DAIM-B1/4

Provision of digital obstacle datasets

- Obstacle data Area 1
- Obstacle data Area 2
- Obstacle data Area 3
- Obstacle data Area 4



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ATM/SAR

Applicable ASBU
Elements



4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.1 Procédures PBN

		Maturity	Ops phase	Application	Required technology
APTA-B0/1	Approches PBN (basic capability)	Ready for implementation	Approach	RNP APCH-LNAV/VNAV	DME/GNSS+IRU+Alt
APTA-B0/2	SID/STAR PBN (basic capability)	Ready for implementation	Departure/ Arrival	SID/STAR RNAV2/1	DME/GNSS+IRU
APTA-B0/3	CAT I SBAS/GBAS approaches	Ready for implementation	Approach	RNP APCH-LP/LPV	GNSS-SBAS
APTA-B0/4	CDO Basic	Ready for implementation	Arrival	RNAV CDO (sur STAR)	DME/GNSS+IRU+Alt
APTA-B0/5	CCO Basic	Ready for implementation	Departure	RNAV CCO (on SID)	DME/GNSS+IRU+Alt

4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.1 PBN Procedures

		Maturity	Ops phase	Application	Required technology
APTA-B0/6	PinS Helicopters	Ready for implementation	Approach	RNP 0.3 (hélicoptère)	GNSS
APTA-B0/7	Performance-based aerodrome operating minima	Ready for implementation	Approach	NPA + EVS	VOR/DME/GNSS+IRU+Alt +a/d LDG lightings
APTA-B0/8	Minima performance base	Ready for implementation	Approach	NPA for Non-Inst RWY	GNSS+a/d LDG lightings
APTA-B2/5	Advanced PBN Approaches	Ready for implementation	Approach	A-RNP & RNP AR	GNSS
APTA-B2/6	Advanced SID/STAR	Ready for implementation	Departure/Arrival	SID/STAR RNP1	GNSS
APTA-B2/7	Advanced CDO	Ready for implementation	Arrival	RNP CDO (sur STAR)	GNSS
APTA-B2/8	Advanced CCO	Ready for implementation	Departure	RNP CCO (sur SID)	GNSS

4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.1 En route Trajectories

		Maturity	Ops phase	Application	Required technology
FRT0-B0/1	Direct route(DCT)	Ready for implementation	Enroute	UPR	GNSS/VOR/DME/IRU
FRT0-B0/2	Airspace Planning and Flexible Use (FUA)	Ready for implementation	Enroute Approach	Planned dynamic management of SUAs	Non-specific
FRT0-B0/3	Pre-validated ATS routes and coordinates	Ready for implementation	Enroute	Airspace use plan	Non-specific
FRT0-B0/4	Basic conflict detection and compliance monitoring	Ready for implementation	En-route ARR/DEP	3D FPL monitoring (FPCP, MTCA, SAP)	ATC System
FRT0-B1/1	Free routes (FRA)	Ready for implementation	Enroute	Local and cross-border FRA	GNSS/DME
FRT0-B1/2	PBN Routes	Ready for implementation	Enroute	ATS Routes type LMNP/QTYZ	GNSS/VOR/DME/IRU

4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.1 Enroute Trajectories

		Maturity	Ops phase	Application	Required technology
FRT0-B1/3	Advanced FUA	Ready for implementation	En-route ARR/DEP	Dynamic and tactical management of the AUS	Non-specific
FRT0-B1/4	Dynamic Sectorization	Ready for implementation	En-route ARR/DEP	Demand/Capacity Balance	Non-specific
FRT0-B1/5	Enhanced Conflict Detection and Compliance Monitoring Tools	Ready for implementation	En-route ARR/DEP	4D FPL MONITORING (FPCP, MTCA, SAP)	ATC System
FRT0-B2/5	Multi-sector planning	Ready for implementation	En-route ARR/DEP	Multi-sector ATC planer	AMHS, ATS/DS, ATC System

4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.2 Flow management and security

		Maturity	Ops Phase	Application	Required Technology
ACAS-B1/1	ACAS Enhancements	Standard	En-route ARR/DEP	Safety on board (TA, RA)	TCAS II Version 7.1
NOPS-B0/1-5	Coordinated networked operations	Ready for implementation	En-route ARR/DEP	ASM ATFM	Network Manager (NOM), Flow Management Unit (FMU)
NOPS-B1/1-10	Networked Operations Integrated	Ready for implementation	En-route ARR/DEP	ASM ATFM ACDM	NOM, FMU
OPFL-B0/1	Self-separation procedure	Ready for implementation	En-Route	Self-separation in ACP	ADS-B in/out
OPFL-B1/1	Climb and Descend Procedure (CDP)	Ready for implementation	En-Route	Self-separating with DL	CPDLC/ADS-C
SNET-B0/1 & B1/2	Safety nets	Ready for implementation	En-route ARR/DEP	STCA, MSAW, APM, RAM	ATC System

4. ASBU Elements Applicable to the AFI Region – ATM Domain

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4.2 Flow management and security

	Maturity	Ops Phase	Application	Required technology
CSEP-B1/1-4 Cooperative separation	Ready for implementation	En-route	Collaborative separation	TCAS, ADS-B, CDTI
GADS-B1/1-2 & B2/1 Global Distress System and aviation safety	Standards	En-route ARR/DEP	Enhanced alert service	XPDR Mode S, Terminal LADR
RSEQ-B0/1-3 & B1/1 Séquencement de pistes	Ready for implementation	ARR/DEP	Time-based ARR/DEP sequencing	SSR, ADS-B, MLAT, Système ATC
SURF-B0/1-3 & B1/1-4 Surface Operations	Ready for implementation	Aerodrome traffic	Taxiing and vehicle Mvt	Visual aids, A-SMGCS (ground radar and ADS-B)

*CDTI: Cockpit Display Traffic Information

*LADR: Location of and Aircraft in Distress

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CNS Domain

*Applicable ASBU
Elements
(Technology)*



5. ASBU Elements Applicable to the AFI Region – CNS Domain

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5.1 ASUR - Surveillance Systems

		Maturity	
ASUR-B0/1	ADS-B* Surveillance to improve ATS coverage and accuracy	Ready	
ASUR-B0/2	Cooperative Multilateration Surveillance (MLAT) using "existing" aircraft transponders	Ready	
ASUR-B0/2	Transmission of advanced aircraft parameters via Mode S radar to improve ATS services (SSR DAPS**)	Ready	
ASUR-B1/1	Space based ADS-B: Reception of ADS-B signals via satellite to provide surveillance in areas without terrestrial infrastructure (Space ADS-B)	Ready	
ASUR-B2/1	New ADS-B and Mode S capabilities incorporating ATS/MET data, Detect & Avoid, and advanced ATM applications.	Ready	

5. ASBU Elements Applicable to the AFI Region – CNS Domain

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5.2 COMI – Communication Infrastructure – Air-Ground Communication and Long-Range Communications

		Maturity
COMI-B0/1	ACARS : digital air-ground messaging via VHF or satellite, enabling the automated exchange of operational data between aircraft and ground stations	Ready
COMI-B0/3	VDL Mode 0/A : VHF data link for digital air-ground communications.	Ready
COMI-B0/4	VDL Mode 2 Basic : digital VHF link with enhanced capacity.	Ready
COMI-B1/2	VDL Mode 2 Multi-Frequency : multi-frequency VHF link with enhanced capacity and better use of the VHF spectrum.	Ready
COMI-B0/5	SATCOM Class C Data : satellite communications outside VHF coverage.	Ready
COMI-B0/6	HF DL : HF data link for remote areas.	Ready

5. ASBU Elements Applicable to the AFI Region – CNS Domain

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5.2 COMI – Communication infrastructure – Ground-to-ground communications



Ground-Ground Communications

Maturity

COMI-B0/7

AMHS: ATS messaging system that supports flight plans, AIDC exchanges, and meteorological data

Ready

COMI-B1/1

ATN/IPS: Next-generation IP infrastructure that provides more robust, efficient, and interoperable connectivity for ATS services.

Ready



Airport Communications

COMI-B1/4

AeroMACS : a secure high-speed network designed for critical airport communications between airport equipment and vehicles.

Ready

5. ASBU Elements Applicable to the AFI Region – CNS Domain

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5.3 COMS - ATS Communication Services

CPDLC

Maturity

COMS-B0/1	CPDLC (FANS 1/A & ATN B1) : digital controller-pilot communications.	Ready
COMS-B1/1	RCP 240 Approved CPDLC (FANS 1A & 1/A+) : CPDLC communications that comply with RCP240 performance requirements.	Ready
COMS-B2/1	Advanced CPDLC (Baseline 2) : Improves CPDLC performance and supports advanced data link services.	Ready

ADS-C

COMS-B0/2	ADS-C (FANS 1/A) : Contract monitoring automatically transmitting the position and flight profile.	Ready
COMS-B1/2	RSP180 Approved ADS-C (FANS 1A & 1/A+) : ADS-C meets RSP180 performance requirements	Ready
COMS-B2/2	Advanced ADS-C (Baseline 2) : New ADS-C features supporting advanced data services and exchange of planned flight profiles.	Ready

5. ASBU Elements Applicable to the AFI Region – CNS Domain

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5.4 NAV – Navigation system

		Maturity
NAVS-B0/1	GBAS : ground augmentation system providing precision approaches and landings with improved accuracy and GNSS integrity.	Ready
NAVS-B0/2	SBAS : satellite augmentation system improving the accuracy, integrity and availability of PBN navigation and vertical guidance.	Ready
NAVS-B0/3	ABAS : aircraft on-board augmentation system supporting PBN navigation as well as LNAV and LNAV/VNAV approaches.	Ready
NAVS-B0/4	Navigation MON : minimum network of conventional aids to ensure back-up navigation capability and system resilience.	Ready
NAVS-B1/1	Extended GBAS : evolution of the GBAS supporting advanced approach and landing operations up to the higher categories.	Ready
NAVS-B2/2	DFMC SBAS : Dual-frequency, multi-constellation SBAS system improving the coverage, availability and robustness of GNSS services.	Validation
NAVS-B2/3	DFMC ABAS : dual-frequency and multi-constellation ABAS system reinforcing the robustness and continuity of on-board navigation.	Ready

5. ASBU Elements Applicable to the AFI Region — ~~CNS Domain~~

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Additional elements

Automated Basic Inter Facility Data Exchange (AIDC)

FICE-B0/1

AIDC: Automation of data exchange between ATS units to improve coordination, transfer of control, and sharing of flight information between adjacent ATSUs.

Ready

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MET Domain

*Applicable ASBU
Elements*



6. ASBU Elements Applicable to the AFI Region – MET Domain

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MET - AMET

Maturity

AMET-B0/1	Meteorological observations products	Ready
AMET-B0/2	Meteorological forecast and warning products	Ready
AMET-B0/3	Climatological and historical meteorological products	Ready
AMET-B0/4	Dissemination of meteorological products	Ready
AMET-B1/1	Meteorological observations information	Standardization
AMET-B1/2	Meteorological forecast and warning information	Standardization
AMET-B1/3	Climatological and historical meteorological information	Standardization
AMET-B1/4	Dissemination of meteorological information	Standardization

6. ASBU Elements Applicable to the AFI Region – MET Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

AMET-B0/1

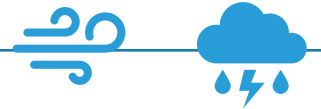
Meteorological observations products



- MET observation procedures
- AWOS Services
- MET REPORT/SPCIAL
- METAR/SPECI
- Ground-based Weather Radar Messages
- AIREP/ARS
- Vertical Wind and Temperature Profiles
- VONA Messages
- Wind Shear Alerts

AMET-B0/2

Meteorological forecast and warning products



- MET Forecasting Procedures
- Products at WAFS Grid Points
- SIGWX ; GAMET
- TAF /TREND
- Take-off forecast
- VAA ; TCA
- AIRMET
- SIGMET
- AD WRNG
- WS WRNG

6. ASBU Elements Applicable to the AFI Region – MET Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

AMET-B0/3

Climatological and historical meteorological products

- Procedures for the supply of climatological products
- Aerodrome climatological tables
- Aerodrome climatological summaries

AMET-B0/4

Dissemination of meteorological products

Means of dissemination required:

- AFTN and/or AMHS services
- SADIS/WIFS services
- IWXXM (XML/GML)

6. ASBU Elements Applicable to the AFI Region – MET Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

AMET-B1/1

Meteorological observations information

- Procedures for providing MET observation information
- Quality assurance of MET observation information
- Weather observations in TAC format;
- Weather observations in digital format (transition phase)

AMET-B1/2

Meteorological forecast and warning information

- Procedures for providing weather forecast and warning information
- Quality assurance of weather forecast and warning information
- Weather forecasts in TAC format;
- Weather forecasts in digital format (transition phase)

6. ASBU Elements Applicable to the AFI Region – MET Domain

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Implementation Deliverables – Procedures, Systems, Services, Equipment

AMET-B1/3

Climatological and historical meteorological information

- Procedures for the provision of climatological information
- Winds on the way
- Aerodrome parameters (air and surface temperature, wind, precipitation, etc.)
- Metadata of meteorological parameters and phenomena

AMET-B1/4

Dissemination of meteorological information

- Procedures for the dissemination of weather information
- AMHS FTBP
- SADIS/WIFS SWIM compliant services (SADIS API/WIFS API)
- Model IWXXM



Thank You

