Basic Building Block (BBB) Framework

APRIL 2019 VERSION
Agenda

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• BBB Verification
• BBB Framework
  – Meteorological services
  – Aeronautical information services
  – Search and rescue services
  – ATM services
  – Aerodrome operation services
Introduction

The Basic Building Block (BBB) framework outlines the foundation of any robust air navigation system. It is nothing new but the identification of the essential services to be provided for international civil aviation in accordance with ICAO Standards. These essential services are defined in the areas of aerodromes, air traffic management, search and rescue, meteorology and information management. In addition to essential services, the BBB framework identifies the end users of these services as well as the assets (communications, navigation, and surveillance (CNS) infrastructure) that are necessary to provide them.

The BBB is considered an independent framework and not a block of the ASBU framework as they represent a baseline rather than an evolutionary step. This baseline is defined by essential services recognized by ICAO Member States as necessary for international civil aviation to develop in a safe and orderly manner. Once these essential services are provided, they constitute the baseline for any operational improvement.

The BBB framework will be updated every two years taking into account amendments to ICAO provisions. Although an initial draft of the BBB framework is presented online in the GANP Portal (https://www4.icao.int/ganpportal/BBB), the BBBs will be included in a web-based application in a format similar to the ASBU framework.
BBB Verification

In 2014, the ICAO Council approved a new template for the Regional Air Navigation Plans (ANPs) to better align global and regional planning. This template consists of three volumes. Volumes I and II list the regional facilities as well as the general and specific regional service requirements, required for international civil aviation operations in accordance with regional air navigation agreements, in the areas of aerodrome operations, communications, navigation and surveillance, air traffic management, meteorology, search and rescue and aeronautical information management.

To set a baseline for the system envisioned in the GANP and to ensure a robust foundation for the global air navigation system, an effective process should be established to verify, pursuant to Article 37 of the Chicago Convention, that the essential air navigation services identified in the BBB framework are provided. It is important to highlight that this process should focus on verifying the implementation of the essential air navigation services outlined in the BBB framework as the capability of the States to oversight these services is covered by the ICAO USOAP. To avoid duplications and to align global and regional planning, the process for verifying the implementation of these essential services should be embedded within the methodology for the identification of deficiencies against the regional air navigation plans. If these essential services are not being delivered, ICAO, upon request of a State, provides the necessary technical assistance to address the needs as identified within the process.

To ensure the provision of seamless air navigation services based on the deployment of interoperable systems and harmonized procedures, States need to leverage the implementation of the BBBs through their national air navigation plans as a strategic part of their national aviation planning framework. This will also pave the way for the future implementation of air navigation improvements to increase the quality of the services and meet the performance expectations of the aviation community.
BBB Framework:

- METEOROLOGICAL INFORMATION
- AERONAUTICAL INFORMATION
- SEARCH AND RESCUE
- AIR TRAFFIC MANAGEMENT
- AERODROME OPERATIONS
METEOROLOGICAL SERVICES
MET BASIC MODULES AND ELEMENTS

- AERODROME METEOROLOGICAL OFFICE
  - Flight Briefing Service
  - Met. Observation and Reports Service
  - Aero. Met. Forecast Service
  - Aero. Met. Warnings Service
  - Aero. Climatological Information Service

- METEOROLOGICAL WATCH OFFICE
  - SIGMET Service
  - AIRMET Service
  - GAMET Service
  - AIREP

- GLOBAL/REGIONAL CENTRES
  - WAFS Service
  - IAVW Service
  - TCAC Service
  - RMM Service
MET References

- Annex 3: Meteorological Service for International Air Navigation
- Doc 8896: Manual of Aeronautical Meteorological Practice
- Doc 9817: Manual on Low-level Wind Shear
- Doc 9691: Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds
- Doc 9328: Manual of Runway Visual Range Observing and Reporting Practices
- Doc 9377: Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services
- Doc 9766: Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List
AERONAUTICAL INFORMATION SERVICES
AIS BASIC MODULES AND ELEMENTS

AIS HEADQUARTERS

ATS

INTERNATIONAL NOTAM OFFICE

NOTAM SERVICE

CARTOGRAPHY OFFICE

CARTOGRAPHIC SERVICE

AERODROME/HELIPORT AIS UNITS

AERONAUTICAL INFORMATION PUBLICATION SERVICE

PUBLICATION OFFICE

POST-FLIGHT BRIEFING SERVICE

PRE-FLIGHT BRIEFING SERVICE
AIS BASIC ELEMENTS/REFERENCES ICAO Procedures

- **AIS HEADQUARTERS**
  - **ATS**
  - **INTERNATIONAL NOTAM OFFICE**
  - **CARTOGRAPHY OFFICE**
  - **PUBLICATION OFFICE**
  - **AERONAUTICAL INFORMATION PUBLICATION SERVICE**
  - **POST-FLIGHT BRIEFING SERVICE**
    - None
  - **NOTAM SERVICE**
    - PANS-AIM: Ch.:6, App. 3,4,5,7
  - **CARTOGRAPHIC SERVICE**
    - PANS-AIM: Ch.5, App.2
    - PANS-OPS: Part I, Ch.9 and all “Promulgation” chapters
  - **AERODROME/HELIPORT AIS UNITS**
    - PANS-AIM: Ch.5
  - **PRE-FLIGHT BRIEFING SERVICE**
    - PANS-AIM: Ch.5
    - PANS-AIM: Ch.5 , App.2
    - PANS-OPS: Part III, Sec.5
AIS BASIC ELEMENTS/REFERENCES ICAO Guidance

- **ATS**
  - **POST-FLIGHT BRIEFING SERVICE** → Doc 8126: Ch. 8
  - **INTERNATIONAL NOTAM OFFICE** → Doc 8126: Ch. 6 and its App. A,B,C, Ch. 9 and its App. A
  - **CARTOGRAPHY OFFICE** → Doc 8126: Specimen AIP and Doc 8697: all
  - **PUBLICATION OFFICE**
  - **CARTOGRAPHIC SERVICE**
  - **AERONAUTICAL INFORMATION PUBLICATION SERVICE** → Doc 8126: Ch. 5 and its App., Specimen AIP
  - **AERODROME/HELIPORT AIS UNITS** → Doc 8126: Ch. 8
  - **PRE-FLIGHT BRIEFING SERVICE**
AIS References

- Annex 15: Aeronautical Information Services
- Annex 4: Aeronautical Charts
- PANS-AIM (Doc 10066): Aeronautical Information Management
- PANS-OPS (Doc 8168): Aircraft Operations
- Doc 8126: Aeronautical Information Services Manual
SEARCH AND RESCUE SERVICES
SAR BASIC MODULES AND ELEMENTS

1. RCC/RSC
   - RECEIVE EMERGENCY NOTIFICATION
     - INCER
     - ALERT
     - DETRES
     - SIGNAL
     - ALERT SERVICE

2. PROCESS EMERGENCY NOTIFICATION
   - INCERFA
   - EVALUATION
   - EMERGENCY REPORT
   - COORDINATION
   - ALERT TO BE PREPARED

3. ALERFA
   - DESIGN SAR PLAN
   - DEVELOP SAR PLAN FOR INCIDENT
   - IMPLEMENT SAR PLAN FOR INCIDENT

4. DETRESFA
   - TASK
   - REQUEST ASSISTANCE
   - NOTIFY

ALERT TO BE PREPARED
DEVELOP SAR PLAN FOR INCIDENT
IMPLEMENT SAR PLAN FOR INCIDENT
SAR BASIC ELEMENTS/REFERENCES ICAO SARPs

RCC/RSC

PROCESS EMERGENCY NOTIFICATION

RECEIVE EMERGENCY NOTIFICATION

INCER
ALERT
DETRES

ALERT SERVICE

SIGNAL

ALERT TO BE PREPARED

COORDINATION

EMERGENCY REPORT

DEVELOP SAR PLAN

IMPLEMENT SAR PLAN FOR INCIDENT

DESIGN SAR PLAN

REQUEST ASSISTANCE

NOTIFY

EVALUATION

A11: Ch.:2,5

A12: Ch.:3,5 and A11: Ch.:5

A12: Ch.:3,5 and A11: Ch.:5

A12: Ch.:5

A12: Ch.:5

A12: Ch.:5

A12: Ch.:3,5 and A11: Ch.:5

A12: Ch.:3,5 and A11: Ch.:5

A12: Ch.:3,5 and A11: Ch.:5

A12: Ch.:3,5 and A11: Ch.:5
RCC/RSC

Receive Emergency Notification

INCER
Alert
Detres

Signal

Alert Service

PANS-ATM: Ch. 9.2 and Ch. 10.2

Process Emergency Notification

Incremental Evaluation

INCERFA

Evaluation

Emergency Report

Alert to be Prepared

Design SAR Plan

Develop SAR Plan for Incident

Implement SAR Plan for Incident

Request Assistance

Task

Notify

RCC/RSC
SAR BASIC ELEMENTS/REFERENCES ICAO GUIDANCE

- RECEIVE EMERGENCY NOTIFICATION
- ALERT SERVICE
- EMERGENCY NOTIFICATION
- INCER
- DETRES
- SIGNAL
- RCC/RSC
- PROCESS EMERGENCY NOTIFICATION
- INCERFA
- EVALUATION
- EMERGENCY REPORT
- COORDINATION
- ALERT TO BE PREPARED
- DESIGN SAR PLAN
- DEVELOP SAR PLAN FOR INCIDENT
- IMPLEMENT SAR PLAN FOR INCIDENT
- ALERFA
- DETRESFA
- TASK
- REQUEST ASSISTANCE
- NOTIFY

→ IAMSAR Vol 1
→ IAMSAR Vol 1 and IAMSAR Vol 2 Ch.:2,3
→ IAMSAR Vol 1 and IAMSAR Vol 2 Ch.:5,6,7,8,9
→ IAMSAR Vol 1 and IAMSAR Vol 2 Ch.:6,7,9
SAR References

- Annex 11: Air Traffic Services
- Annex 12: Search and Rescue
- PANS-ATM (Doc 4444): Air Traffic Management
AIR TRAFFIC MANAGEMENT SERVICES
ATM BASIC MODULES AND ELEMENTS

ATM

AIR TRAFFIC SERVICES (ATS)
- AFIS
- TWR
- APP
- FIC
- ACC

AIRSPACE MANAGEMENT
- TRAFFIC INF
- MET INF
- OPR INF
- COORD

GND CTRL
- DEP CLR
- LDG CLR
- SEP
- COORD

ARR CLR
- APCH CLR
- SEP
- COORD

ENR CLR
- SEP
- COORD

PROC DESGN
- ROUTE STRUC
- SEG AIRSPACE

ADU
ATM References

- Annex 11: Air Traffic Services
- Annex 4: Aeronautical Charts
- PANS-ATM (Doc 4444): Air Traffic Management
- PANS-OPS (Doc 8168): Aircraft Operations
AERODROMES/
AERODROMES OPERATIONS
SERVICES
AO References

- Annex 14: Aerodromes Volume I — Aerodrome Design and Operations
- Doc 9157: Aerodromes Design Manual
- Doc 9184: Airport Planning Manual
- Doc 9137: Airport Services Manual
- Doc 9870: Manual on the Prevention of Runway Incursions
- Doc 9774: Manual on Certification of Aerodromes
- PANS-Aerodromes(Doc 9981): Aerodromes
THANK YOU!