



## INTERNATIONAL CIVIL AVIATION ORGANIZATION

### Twenty First Meeting of the Africa-Indian Ocean Planning and Implementation Regional Group (APIRG/21) (Nairobi, Kenya, 9-11 October 2017)

#### Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

#### 3.4 STATUS OF ASBU IMPLEMENTATION IN THE AFI REGION

*(Presented by the Secretariat)*

| SUMMARY                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <p>This working paper presents the qualitative status of implementation of ASBU Block 0 Modules in the AFI Region, and calls upon States to develop their national ASBU plans based on regional/national operational needs and priorities. It also requests States to cooperate and actively participate in surveys conducted by the Secretariat or relevant stakeholders to assist the AFI Region in the monitoring of, and reporting on ASBU implementation.</p> |
| <p>Action by APIRG is contained in <b>Paragraph 3</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>Reference(s):</b></p> <ul style="list-style-type: none"> <li>• ICAO Global Air Navigation Plan (GANP, Doc 9750)</li> <li>• AFI Air Navigation Plan (ANP, Doc 7474), Volume III</li> </ul>                                                                                                                                                                                                                                                                    |
| <p><b>Related ICAO Strategic Objective(s):</b> A, B, C and E</p>                                                                                                                                                                                                                                                                                                                                                                                                   |

## 1. INTRODUCTION

1.1 The GANP and the ASBU concept and documents provide the framework and strategic direction for a global and harmonized aviation system. They provide strategic direction and define measurable operational improvements and include key civil aviation policy principles to assist ICAO Regions and States with the preparation and implementation of their air navigation plans.

1.2 The planning and implementation of selected ASBU Modules in the AFI Region is undertaken within the framework of the APIRG with the participation and support of all stakeholders, including regulatory personnel so as to ensure global interoperability and harmonization of the aviation system.

## 2. DISCUSSION

2.1 The ASBU implementation monitoring report will be presented to the APIRG/APCC on an annual basis and will be, after endorsement, issued as a companion document to Volume III of the Regional Air Navigation Plan, and incorporated in the APIRG Annual Air Navigation Report.

2.2 The **Appendix** to this working paper provides qualitative information on the status of implementation of ASBU Block 0 Modules in the AFI Region. It contains a workflow to guide the need analysis, planning, development and implementation of ASBU Modules, and to assess their implementation

status. It also provides the categorization, priority and high level indicator(s) associated with each of the ASBU Modules.

2.3 In this regard, it is important to recall that a module categorization has been developed below with the objective of ranking each module in terms of implementation priority. On the basis of operational requirements and taking into benefits associated, AFI Region has chosen all 18 Block 0 Modules for implementation. The categories of 18 Block 0 Modules are as follows:

- a) Essential (E): These are the ASBU modules that provide substantial contribution towards global interoperability, safety or regularity. The eight (8) Modules for all States of AFI Region are FICE, DATM, ACAS, FRTO, AMET, APTA, CDO and CCO.
- b) Desirable (D): These are the ASBU modules that, because of their strong business and/or safety case, are recommended for implementation almost everywhere. The five (5) Modules for all States of AFI Region are: ACDM, NOPS, ASUR, SNET and TBO.
- c) Specific (S): These are the ASBU modules that are recommended for implementation to address a particular operational environment in specific countries of AFI Region. The (3) Modules are OPFL, ASEP and WAKE.
- d) Optional (O): These are the ASBU modules that address particular operational requirements in specific countries of AFI Region and provide additional benefits that may not be common everywhere. The two (2) Modules are SURF and RSEQ.

2.4 With regard to the allocation of priority, Priority 1 requires immediate implementation, and Priority 2 corresponds to a recommended implementation. Out of the 18 Block 0 Modules, only nine (9) Modules have Priority 1 and apply to most of the AFI States, and the remaining Modules are Priority 2 and apply to only specific States.

2.5 The APIRG has yet to determine the mechanisms and tools for the monitoring and collection of necessary data at regional level.

2.6 In the meantime, the Secretariat has launched a survey to establish the implementation Status of ASBU Block 0 in the AFI Region. A survey questionnaire for collection of data was developed and circulated to all AFI States. However, a majority of the States did not respond to the questionnaire. Of those States who responded, a few were not able to provide accurate data and the deadline for the responses from States and Organizations was extended to September 2017.

2.7 A more comprehensive survey is required preferably before the end of this year 2017, to establish the actual implementation status of all ASBU Module elements against regional and national operational needs.

### 3. CONCLUSION

3.1 The meeting is invited to:

- a) Review the information provided in **Appendix** to this working paper;
- b) Request States to pursue the development of their national ASBU plans (as a component to their national Air Navigation Plan) based on APIRG's categorization and prioritization of ASBU Modules;
- c) Request the Secretariat to carry out a more comprehensive survey to establish the exact extent of ASBU Block 0 Modules implementation in the AFI Region; and
- d) Request States / Organizations to cooperate and actively participate in surveys conducted by the Secretariat or relevant stakeholders to assist the AFI Region in the monitoring of, and reporting on ASBU implementation.

**APPENDIX**

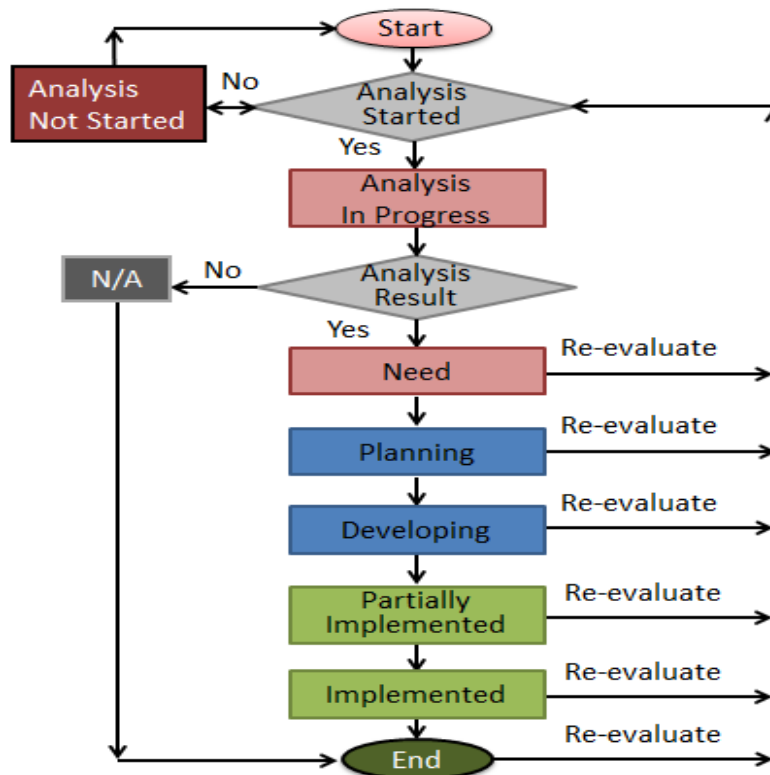
**Implementation Status of ASBU Block 0 Modules in the AFI Region**

**Figure below** depicts the workflow for analysing and implementing ASBU Modules.

The significance of each step in the workflow as it pertains to regional planning is as follows:

- **Analysis Not Started** – The requirement to implement this ASBU Module element has not yet been assessed by any State in the Region
- **Analysis In Progress** – A Need Analysis as to whether or not this ASBU Module is required is in progress by at least one State in the Region
- **N/A** – The Region has decided not to implement this ASBU Module
- **Need** - One or more States in the Region have determined the ASBU Module is required, but none have begun planning for the implementation
- **Planning** – Implementation of this ASBU Module is planned, but not started
- **Developing** – Implementation of this ASBU Module is in the development phase, but not yet operational
- **Partially Implemented** – Implementation of this ASBU Module is partially completed and/or operational in at least one area of the Region
- **Implemented** - Implementation of this ASBU Module has been completed and/or is fully operational in all areas of the Region where the need was identified

**Figure – Analysis and Implementation Workflow**



**Table –Implementation Status of ASBU Block 0 Modules in the AFI Region**

| Block 0 Modules                                           | Module Title                                                             | Need Analysis of Modules |             |      |     | Implementation Status |            |                       |             | High level Implementation Indicator(s)                                                                                               | Category                                                                                                      | Priority |
|-----------------------------------------------------------|--------------------------------------------------------------------------|--------------------------|-------------|------|-----|-----------------------|------------|-----------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------|
|                                                           |                                                                          | Not Started              | In Progress | Need | N/A | Planning              | Developing | Partially Implemented | Implemented |                                                                                                                                      |                                                                                                               |          |
| <b>PERFORMANCE IMPROVEMENT AREA 1: AIRPORT OPERATIONS</b> |                                                                          |                          |             |      |     |                       |            |                       |             |                                                                                                                                      |                                                                                                               |          |
| APTA                                                      | Optimization of Approach Procedures including vertical guidance          |                          |             | X    |     |                       |            | X                     |             | % of international aerodromes having at least one runway end provided with PBN procedures (APV Baro-VNAV or LPV)                     | <b>Essential</b><br>(provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| WAKE                                                      | Increased Runway Throughput through optimized Wake Turbulence Separation |                          |             | X    |     | X                     |            |                       |             | % of applicable international aerodromes having implemented increased runway throughput through optimized wake turbulence separation | <b>Specific</b><br>(recommended to address a particular operational environment in specific countries)        | 2        |
| SURF                                                      | Safety and Efficiency of Surface Operations                              |                          |             | X    |     | X                     |            |                       |             | % of applicable international aerodromes having implemented A-SMGCS Level 2                                                          | <b>Optional</b><br>(recommended to address particular operational requirements in specific countries)         | 2        |
| ACDM                                                      | Improved Airport Operations through Airport-CDM                          |                          |             | X    |     |                       |            | X                     |             | % of applicable international aerodromes having implemented improved airport operations through airport-CDM                          | <b>Essential</b><br>(provide substantial contribution towards global interoperability, safety or regularity)  | 1        |

| Block 0 Modules                                                                                          | Module Title                                                                          | Need Analysis of Modules |             |      |     | Implementation Status |            |                       |             | High level Implementation Indicator(s)                                                                                     | Category                                                                                            | Priority |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|-------------|------|-----|-----------------------|------------|-----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------|
|                                                                                                          |                                                                                       | Not Started              | In Progress | Need | N/A | Planning              | Developing | Partially Implemented | Implemented |                                                                                                                            |                                                                                                     |          |
| RSEQ                                                                                                     | Improve Traffic flow through Runway Sequencing (AMAN/DMAN)                            |                          |             | X    |     | X                     |            |                       |             | % of applicable international aerodromes having implemented AMAN/DMAN                                                      | Optional (recommended to address particular operational requirements in specific countries)         | 2        |
| PERFORMANCE IMPROVEMENT AREA 2: GLOBALLY INTEROPERABLE SYSTEMS AND DATA                                  |                                                                                       |                          |             |      |     |                       |            |                       |             |                                                                                                                            |                                                                                                     |          |
| FICE                                                                                                     | Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration |                          |             | X    |     |                       |            |                       | X           | % of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC/OLDI with neighbouring ACCs | Essential (provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| DATM                                                                                                     | Service Improvement through Digital Aeronautical Information Management               |                          |             | X    |     |                       |            |                       | X           | % of States having implemented an AIXM based AIS database<br><br>% of States having implemented QMS                        | Essential (provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| AMET                                                                                                     | Meteorological information supporting enhanced operational efficiency and safety      |                          |             | X    |     |                       |            |                       | X           | % of States having implemented SADIS<br><br>% of States having implemented QMS                                             | Essential (provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| PERFORMANCE IMPROVEMENT AREA 3: OPTIMUM CAPACITY AND FLEXIBLE FLIGHTS – THROUGH GLOBAL COLLABORATIVE ATM |                                                                                       |                          |             |      |     |                       |            |                       |             |                                                                                                                            |                                                                                                     |          |
| FRT0                                                                                                     | Improved Operations through Enhanced En-Route Trajectories                            |                          |             | X    |     |                       |            |                       |             | % of FIRs in which FUA is implemented                                                                                      | Essential (provides substantial contribution towards global interoperability, safety or regularity) | 1        |

| Block 0 Modules | Module Title                                                                          | Need Analysis of Modules |             |      |     | Implementation Status |            |                       |             | High level Implementation Indicator(s)                                                                                | Category                                                                                               | Priority |
|-----------------|---------------------------------------------------------------------------------------|--------------------------|-------------|------|-----|-----------------------|------------|-----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------|
|                 |                                                                                       | Not Started              | In Progress | Need | N/A | Planning              | Developing | Partially Implemented | Implemented |                                                                                                                       |                                                                                                        |          |
| NOPS            | Improved Flow Performance through Planning based on a Network-Wide view               |                          |             | X    |     |                       |            |                       |             | % of FIRs within which all ACCs utilize ATFM systems                                                                  | Desirable<br>(recommended for implementation because of strong business and/or safety case)            | 2        |
| ASUR            | Initial capability for ground surveillance                                            |                          |             | X    |     |                       |            |                       |             | % of FIRs where ADS-B OUT and/or MLAT are implemented for the provision of surveillance services in identified areas. | Desirable<br>(recommended for implementation because of strong business and/or safety case)            | 2        |
| ASEP            | Air Traffic Situational Awareness(ATSA)                                               |                          |             | X    |     |                       |            | X                     |             | % of States having implemented air traffic situational awareness                                                      | Specific<br>(recommended to address a particular operational environment in specific countries)        | 2        |
| OPFL            | Improved access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B |                          |             | X    |     | X                     |            |                       |             | % of FIRs having implemented in-trail procedures                                                                      | Specific<br>(recommended to address a particular operational environment in specific countries)        | 2        |
| ACAS            | ACAS Improvements                                                                     |                          |             | X    |     |                       |            | X                     |             | % of States requiring carriage of ACAS (with TCAS 7.1 evolution)                                                      | Essential<br>(provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| SNET            | Increased Effectiveness of Ground-Based Safety Nets                                   |                          |             | X    |     |                       |            | X                     |             | % of States having implemented ground-based safety-nets (STCA, APW, MSAW, etc.)                                       | Desirable<br>(recommended for implementation because of strong business and/or safety case)            | 2        |

PERFORMANCE IMPROVEMENT AREA 4: EFFICIENT FLIGHT PATHS

| Block 0 Modules | Module Title                                                                               | Need Analysis of Modules |             |      |     | Implementation Status |            |                       |             | High level Implementation Indicator(s)                                                                                           | Category                                                                                                      | Priority |
|-----------------|--------------------------------------------------------------------------------------------|--------------------------|-------------|------|-----|-----------------------|------------|-----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------|
|                 |                                                                                            | Not Started              | In Progress | Need | N/A | Planning              | Developing | Partially Implemented | Implemented |                                                                                                                                  |                                                                                                               |          |
| CDO             | Improved Flexibility and Efficiency in Descent Profiles (CDO)                              |                          |             | X    |     |                       |            | X                     |             | % of international aerodromes / TMAs with PBN STAR implemented<br><br>% of international aerodromes/TMA where CDO is implemented | <b>Essential</b><br>(provides substantial contribution towards global interoperability, safety or regularity) | 1        |
| TBO             | Improved Safety and Efficiency through the initial application of Data Link En-Route       |                          |             | X    |     |                       |            | X                     |             | % of FIRs utilizing data link en-route in applicable airspace                                                                    | <b>Desirable</b><br>(recommended for implementation because of strong business and/or safety case)            | 2        |
| CCO             | Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCO) |                          |             | X    |     |                       |            | X                     |             | % of international aerodromes / TMAs with PBN SID implemented<br><br>% of international aerodromes/TMA where CCO is implemented  | <b>Essential</b><br>(provides substantial contribution towards global interoperability, safety or regularity) | 1        |