



Agenda Item 4: Monitoring and reporting of the implementation of air navigation in the CAR/SAM Regions

U.S. IMPLEMENTATION OF THE AVIATION SYSTEM BLOCK UPGRADES (ASBU) BLOCK 0 MODULES

(Presented by United States)

EXECUTIVE SUMMARY	
<p>This paper presents information on the United States' implementation of the ICAO Aviation System Block Upgrades (ASBUs), in support of the Global Air Navigation Plan (GANP). It describes areas of ASBU implementation in the United States, and its broader effects on international aviation.</p>	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• <i>Global Air Navigation Plan</i>, ICAO Doc 9750, Fourth Edition• Working Document for the Aviation System Block Upgrades, The Frame work for Global Harmonization, issued on 28 March 2013• NAM ASBU Handbook

1. Introduction

1.1 The Global Air Navigation Plan (GANP) and the Aviation System Block Upgrades (ASBUs) concept and documents were developed to provide the framework and strategic direction for a global and harmonized aviation system. With endorsement and approval from the 12th Air Navigation Conference and the 38th Assembly, the GANP and ASBUs provide the strategic direction and define measurable operational improvements for the next 15 years. It also includes key civil aviation policy principles to assist ICAO regions, sub-regions and States with the preparation and implementation of their air navigation plans. The benefit of the GANP and ASBU program is that modernization can be implemented based on a State's needs, capabilities, and resources.

1.2 During the ANI/WG/2, the U.S. presented the status of U.S. implementation of the ASBUs in support of the GANP. Since then the North American Project Team (NAM) team has created the NAM ASBU Handbook by clarifying and articulating the Block 0 Elements. In addition, a new Element has been identified during the preparation of NAT process and added to the NAM ASBU Handbook.

1.3 The U.S. has reviewed and re-evaluated the ASBU B0 implementation status based on the NAM ASBU Handbook and the result is presented in this paper.

2. Analysis and Implementation Workflow and Status Definitions

2.1 The analysis and implementation workflow of ASBU Elements is depicted in the Figure below.

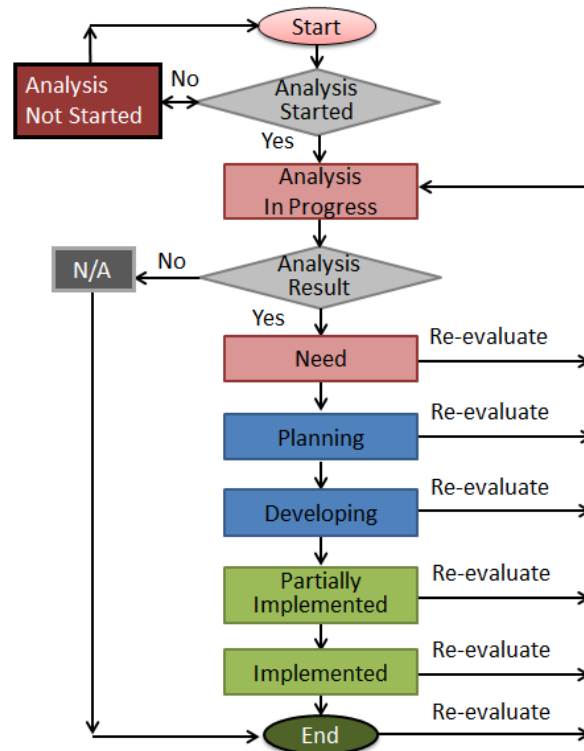


Figure 2.1: Analysis and Implementation Workflow

2.2 The significance of each step in the workflow is as follows: Note that the status definitions are written from the Regional view (i.e., NACC) consisting multiple States. From the State view (i.e., United State of America), the exact same definitions are applicable, however only the State determines its own status.

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

Block 0 Modules	Elements	Need Analysis of Module Elements			Implementation Status (if Element is needed)				
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
FICE	1. (Derived from 1.1.4) AIDC to provide initial flight data to adjacent ATSUs								X
	2. (Derived from 1.1.5) AIDC to update previously coordinated flight data								X
	3. (Derived from 1.1.5) AIDC for control transfer								X
	4. (Derived from 1.1.6) AIDC to transfer CPDLC logon information to the Next Data Authority					X			
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. (Derived from 1.3.2) ACAS II (TCAS version 7.1)				X				
	2. (Derived from 1.3.7 a) Auto Pilot/Flight Director (AP.FD) TCAS				X				
	3. (Derived from 1.3.7 b) TCAS Alert Prevention (TCAP)				X				
ASEP	1. (Defined: Element 1) ATSA-AIRB								X
	2. (Defined: Element 2) ATSA-VSA								X
ASUR	1. (Defined: Element 1) ADS-B								X
	2. (Defined: Element 2) Multilateration (MLAT)								X
FRTO	1: (Derived from Element 1) CDM incorporated into airspace planning								X
	2: (Defined: Element 2) Flexible Use of Airspace (FUA)								X
	3. (Defined: Element 3) Flexible route system								X
	4: (Derived from Element 3) CPDLC used to request and receive re-route clearances								X
NOPS	1. (Derived from 1.1.1) ATFM								X
OPFL	1. (Derived from 1.3.1) ITP using ADS-B								X
SNET	1. (Defined: Element 1) Short Term Conflict Alert implementation (STCA)								X
	2. (Defined: Element 2) Area Proximity Warning (APW)								X
	3. (Defined: Element 3) Minimum Safe Altitude Warning (MSAW)								X
	4. (Identified by NAT) Medium Term Conflict Alert (MTCA)								X
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. (Defined: Element 1) Procedure changes to facilitate CCO								X
	2. (Defined: Element 1) Route changes to facilitate CCO								X
	3. (Defined: Element 2) PBN SIDs								X
CDO	1. (Derived from Element 1) Procedure changes to facilitate CDO								X
	2. (Derived from Element 1) Route changes to facilitate CDO								X
	3. (Derived from Element 2) PBN STARs								X
TBO	1. (Defined: Element 1) ADS-C over oceanic and remote areas								X
	2. (Defined: Element 2) Continental CPDLC								X
All Elements: 63		0							

4 Conclusion

4.1 In order to coordinate the modernization of the global air navigation system, it is imperative to have a harmonized plan for aviation regulators, operators and industry to follow. The planning, development, training and implementation of a globally harmonized system are contingent on a framework that includes scalable plans and provides operational, economic, and safety benefits.

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