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国际民用
航空组织

Bureau Afrique Occidentale et Centrale / Western and Central African Office

T7/7 - 0229

20 March 2012

Subject: Workshop on Preparations for AN-Conf/12 – ASBU methodology, Dakar, Senegal, 16 -20 July 2012.

Action required: advise by 16 May 2012 the names of participants.

Sir/Madam,

I have the honour to inform you that ICAO will be holding a workshop on Preparations for 12 Air Navigation Conference (AN-Conf/12) – Aviation System Block Upgrades (ASBU) methodology. The workshop will be held from **16 to 20 July 2012 in Dakar, Senegal**. I hereby extend an invitation to your Administration to participate in this workshop.

The 37th Session of the ICAO General Assembly held in 2010 directed the Organization to double its efforts to meet the global requirements for airspace interoperability while maintaining its focus on safety. Furthermore, the need was recognized to integrate the air, ground and regulatory parts in air navigation infrastructure planning by addressing flight trajectories as a whole, distributing the decision-making process, taking into account safety risks and recognizing the role of the human element in the change-process. In response to these developments, ICAO initiated the ASBU methodology as a global framework that comprises a suite of modules, which are organized into flexible and scalable building blocks and can be implemented in a State or a region depending on the need and level of readiness.

The ASBU initiative will be integrated in the revised Global Air Navigation Plan (GANP, Doc 9750) with intent to seek the endorsement of ANConf/12 scheduled to take place from 19 to 30 November 2012 under the single sky concept. The revised GANP will also include related technology roadmaps such as CNS, AIM, and Avionics. Consequential amendments will also take place in the Regional and National Performance Framework for Air Navigation Systems and reflected appropriately in the air navigation plans.

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The successful rollout of the ASBU concept and modules/technologies will depend on well synchronized strategies for education and training that would also facilitate discussions during the ANConf/12. As a result, significant efforts are underway to familiarize States, Regulators, Service Providers, Airline Operators, Military and International Organizations on the concept of ASBUs as well as the agenda of ANConf/12. Following this, the Secretary General established a Special Implementation Project (SIP) consisting of a workshop on "Preparations for AN-Conf/12 – ASBU methodology ", for the States of the Western and Central African Region, in order to provide requisite training in the development of performance framework for air navigation systems using ASBU methodology.

The objective of the workshop is to share with the participants understanding of the air navigation performance planning process through the revised Global plan and ASBU methodology, reviewing related technology roadmaps such as CNS, AIM and Avionics, whilst assessing regulatory needs, defining operational improvements, developing business cases, determining performance metrics and evaluating fuel savings and corresponding environmental benefits through the ICAO Fuel Savings Estimation Tool (IFSET). The workshop, through specially designed hands-on exercises, would provide the participants with practical experience for the development of national performance framework on the basis of the ASBU concept and with understanding of its impact on Regional Air Navigation Plans. Also, the outcome of this workshop would enable the States to prepare for their participation in the upcoming ANConf/12.

In order to conduct the hands-on exercises efficiently, meaningfully and within the time frame of the workshop, you are requested to advise your participants to review the background information on ASBUs (**Attachment A**) as well as the agenda of the workshop (**Attachment B**) and bring along with them a copy of the national air navigation plan of your State, and relevant air traffic forecast data to the workshop. In this regard, please note that as the workshop covers all disciplines of air navigation systems, I would encourage participation of experts from your State representing the fields of OPS/ATM/CNS/ MET/ AIM/ AGA as you consider appropriate.

The working language of the workshop will be English with simultaneous interpretation in French. The daily subsistence travel allowance in addition to other costs for participants are the responsibility of the nominating States. The registration form is at **Attachment C** and the Information Bulletin at **Attachment D**.

In order to proceed with the planning for the workshop, you are kindly requested to provide, by 16 May 2012, the names and designation of your nominated participants.

Please accept, Sir/Madam, the assurances of my highest consideration.


Mam Sait Jallow
Regional Director

Attachments

- A – Agenda of the workshop
- B – Background information on ASBUs
- C – Registration Form
- D – Information Bulletin



ATTACHMENT A to STATE LETTER T7/7-0229

**BACKGROUND INFORMATION ON AVIATION
SYSTEM BLOCK UPGRADES (ASBUs)**

**WORKING DOCUMENT
ON THE
AVIATION SYSTEM BLOCK UPGRADES**

**THE FRAMEWORK
FOR GLOBAL HARMONIZATION**

ISSUED: 16 NOVEMBER 2011

**SECOND VERSION TO THE WORKING DOCUMENT FOR THE
GLOBAL AIR NAVIGATION INDUSTRY SYMPOSIUM (GANIS)**

Preface to this Edition

The International Civil Aviation Organization established a framework for global harmonization and interoperability of air space named the aviation system block upgrades (ASBUs). These are sets of capabilities that provide measurable, operational performance improvements organized into flexible and scalable building blocks that can be introduced and implemented as needed.

Draft ASBUs were presented at the Global Air Navigation Industry Symposium (GANIS), which was held at ICAO in September 2011, and were integrated in the GANIS working document. Since then, constructive feedback forms were received from both States and the Industry and all comments were reviewed by the Future Aviation Technical Team.

Based on the review of the Technical Team, the ASBUs have been revised and are available for review and comment using the forms provided for this purpose at <http://www2.icao.int/en/GANIS/Pages/Aviation-System-Block-Upgrades.aspx>. Feedback is of particular importance because the ASBUs will form part of the Global Air Navigation Plan (GANP) which will be the subject of a working paper at the Twelfth Air Navigation Conference (AN-Conf/12).

ICAO Aviation System Block Upgrades

Introduction

The 37th Session of the International Civil Aviation Organization (ICAO) Assembly (2010) directed the Organization to increase its efforts to meet the global needs for airspace interoperability while maintaining its focus on safety. ICAO therefore introduced the "Aviation System Block Upgrades" initiative as a programmatic framework that:

- a) develops a set of air traffic management (ATM) solutions or upgrades;
- b) takes advantage of current equipage;
- c) establishes a transition plan; and
- d) enables global interoperability.

ICAO estimates that US\$120 billion will be spent on the transformation of air transportation systems in the next ten years. While NextGen and SESAR in the United States and Europe account for a large share of this spending, parallel initiatives are underway in many areas including the Asia/Pacific, North and Latin America, Russia, Japan and China. Modernization is an enormously complex task but the Industry needs the benefits that these initiatives will bring as traffic levels continue to rise. It is clear that to safely and efficiently accommodate the increase in air traffic demand, as well as to respond to the diverse needs of operators, the environment and other issues, a renovation of ATM systems is needed to provide the greatest operational and performance benefits.

Aviation system block upgrades comprise suites of modules, each having the following essential elements:

- a) a clearly defined and measurable operational improvement and success metric;
- b) necessary equipment and/or systems in aircraft and on the ground, along with an operational approval or certification plan;
- c) standards and procedures for both airborne and ground systems; and
- d) a positive business case over a clearly defined period of time.

Modules are organized into flexible and scalable building blocks that can be introduced and implemented in a State or a region depending on need and level of readiness, while recognizing that all the modules are not required in all airspaces.

The concept of the block upgrades originates from existing near-term implementation plans and initiatives providing benefits in many regions of the world. The block upgrades are largely based on operational concepts extracted from the United States' Next Generation Air Transportation System (NextGen), Europe's Single European Sky ATM Research (SESAR) and Japan's Collaborative Actions for Renovation of Air Traffic Systems (CARATS) programmes. Also included was the feedback from States with evolving modernization programmes received at the recent Global Air Navigation Industry Symposium. The block upgrades are also aligned with the ICAO *Global Air Traffic Management Operational Concept* (Doc 9854). The intent is to apply key capabilities and performance improvements

drawn from these programmes across other regional and local environments with the same level of performance and associated benefits on a global scale.

The block upgrades describe ways to apply the concepts defined in the ICAO *Global Air Navigation Plan* (Doc 9750) with the goal of achieving regional performance improvements. They will include the development of technology roadmaps to ensure that standards are mature and to facilitate synchronized implementation between air and ground systems and between regions. The ultimate goal is to achieve global interoperability. Safety demands this level of interoperability and harmonization which must be achieved at a reasonable cost with commensurate benefits.

Leveraging upon existing technologies, block upgrades are organized in five-year time increments starting in 2013 continuing through 2028 and beyond. Such a structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

The block upgrades will be formalized at the Twelfth Air Navigation Conference in November 2012 and will form the basis of the new or revised Global Air Navigation Plan (GANP).

The development of block upgrades will be realized by a shift in focus from top-down planning to more bottom-up and pragmatic implementation in the regions. The ASBU initiative will influence ICAO's work programme in the coming years, specifically in the area of standards development and associated performance improvements.

Stakeholder Roles and Responsibilities

Stakeholders, including service providers, regulators, airspace users and manufacturers, will face increased levels of interaction as new, modernized ATM operations are implemented. The highly integrated nature of capabilities covered by the block upgrades requires a significant level of coordination and cooperation among all stakeholders. Working together is essential for achieving global harmonization and interoperability.

For ICAO and its governing bodies, the block upgrades will enable the development and delivery of necessary Standards and Recommended Practices (SARPs) to States and Industry in a prompt and timely manner to facilitate regulatory and technological improvement and to ensure operational benefits worldwide. This process will be facilitated by the standards roundtable process, which involves ICAO, States and Industry, and by various technological roadmaps.

States, operators and Industry will benefit from the availability of SARPs with realistic lead times. This will allow regional regulations to be identified, the development of adequate action plans and, if needed, investment in new facilities and/or infrastructure.

Stakeholders worldwide must prepare the ATM system for the future. The block upgrades initiative should constitute the basis for future ATM modernization plans. Where plans are already in place, they should be aligned with objectives defined in the block upgrades.

For the Industry, the ASBU initiative forms the basis for planning future development and delivering products to the market at the proper target time.

For service providers or operators, block upgrades should serve as a planning tool for resource management, capital investment, training, as well as for potential reorganization.

What is an Aviation System Block Upgrade?

An aviation system block upgrade (ASBU) designates a set of improvements that can be implemented globally to enhance the performance of the ATM system. There are four components of a block upgrade.

Module — a deployable package based on performance or capability. It offers a clear operational benefit, supported by procedures, technology, regulation/standards as necessary, and a business case. A module will be also characterized by the operating environment within which it may be applied.

It is important that each module be both flexible and scalable to the point where its application could be managed through any set of regional plans and still realize the intended benefits. The preferential basis for the development of the modules relied on the applications being adjustable to fit many regional needs as an alternative to being made mandated as a one-size-fits-all application. Even so, it is clear that many of the modules developed in the block upgrades will not be necessary to manage the complexity of air traffic management in many parts of the world.

Thread — a series of dependent modules reaching across successive block upgrades which represents a coherent evolution over time from basic to more advanced capability and associated performance while reflecting key aspects of the global ATM concept. The date considered for allocating a module to a block is that of the initial operating capability (IOC)

Block — is made up of modules that, when combined, enable significant improvements and benefits.

The notion of blocks is based on five year intervals. Detailed block descriptions can include more accurate implementation dates, often not at the exact reference date of a block. The purpose, however, is not to indicate when a module implementation must be completed, unless dependencies among modules logically suggest such a completion date.

Performance Improvement Area (PIA) — sets of modules in each block are grouped to provide operational and performance objectives in the environment to which they apply, thus forming executive high-level view of the intended evolution. The PIAs facilitate comparison of ongoing programmes.

The four performance improvement areas are as follows:

1. *Greener Airports*
2. *Globally Interoperable Systems and Data* – through globally interoperable system-wide information management
3. *Optimum Capacity and Flexible Flights* – through global collaborative ATM
4. *Efficient Flight Path* – through trajectory-based operations

Figure 1 illustrates the relationships between the modules, threads, blocks, and performance improvement areas.