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Global Air Navigation Plan and the Aviation System Block Upgrades (ASBUs)

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Lima, Peru, August 2017





Objective

To level knowledge on the relationship between the GANP, the ASBUs and their operational impact.



- Vision
- Planning mechanism based in scenarios
- GANP
- ASBUs
- Enhancement plan.



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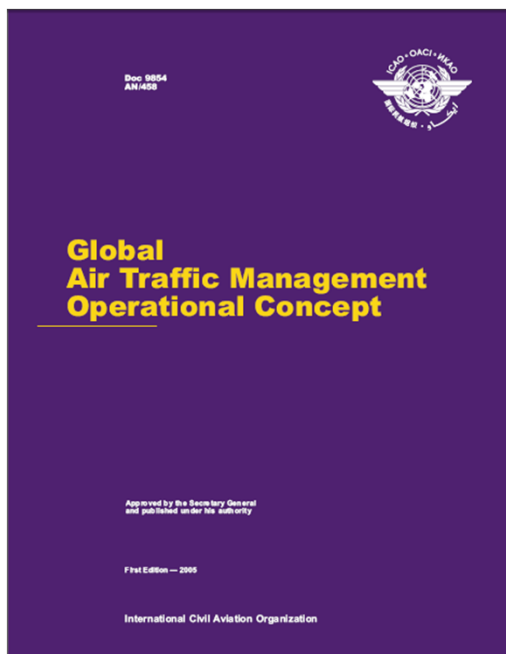
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“Do we know where to go?”





YES



*“To achieve an **interoperable** global air traffic management system, for **all users** during **all phases of flight**, that **meets agreed levels of safety**, provides for **optimum economic operations**, is **environmentally sustainable** and **meets national security requirements**”*



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GAP

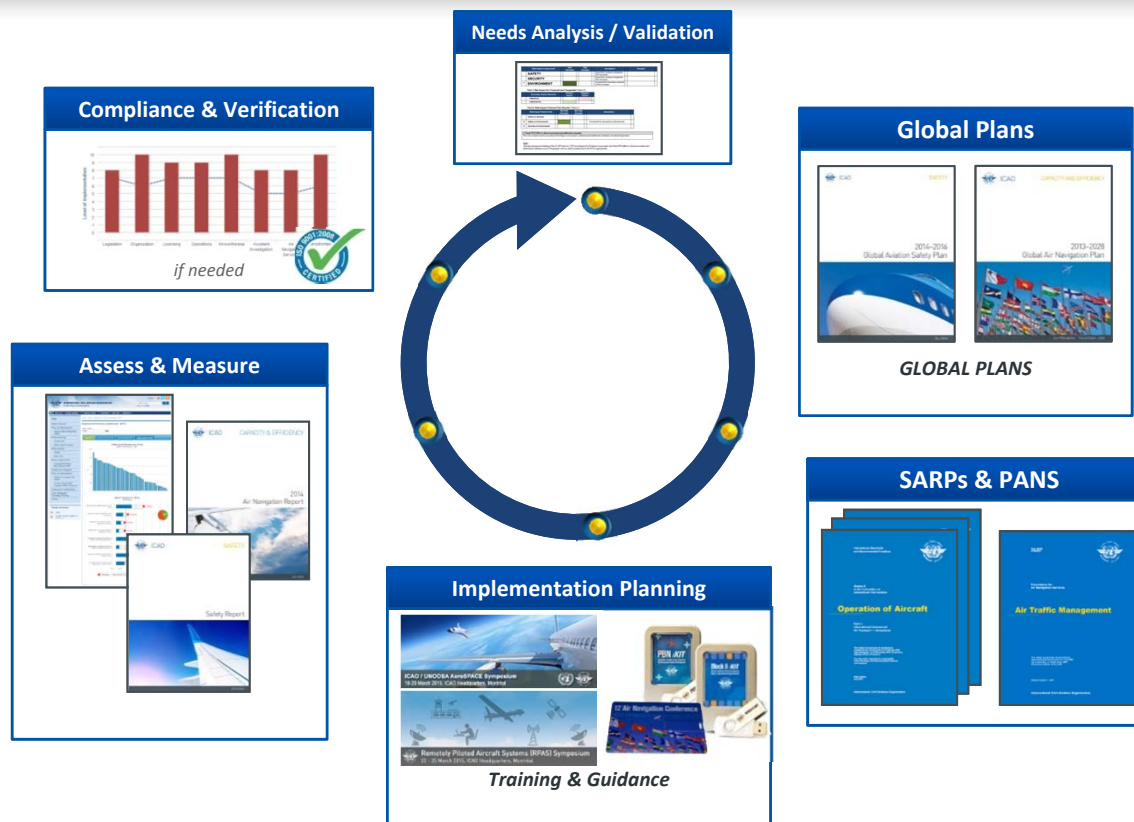




**DRIVERS
FOR
CHANGE**

Aviation is
undergoing a
FUNDAMENTAL
change





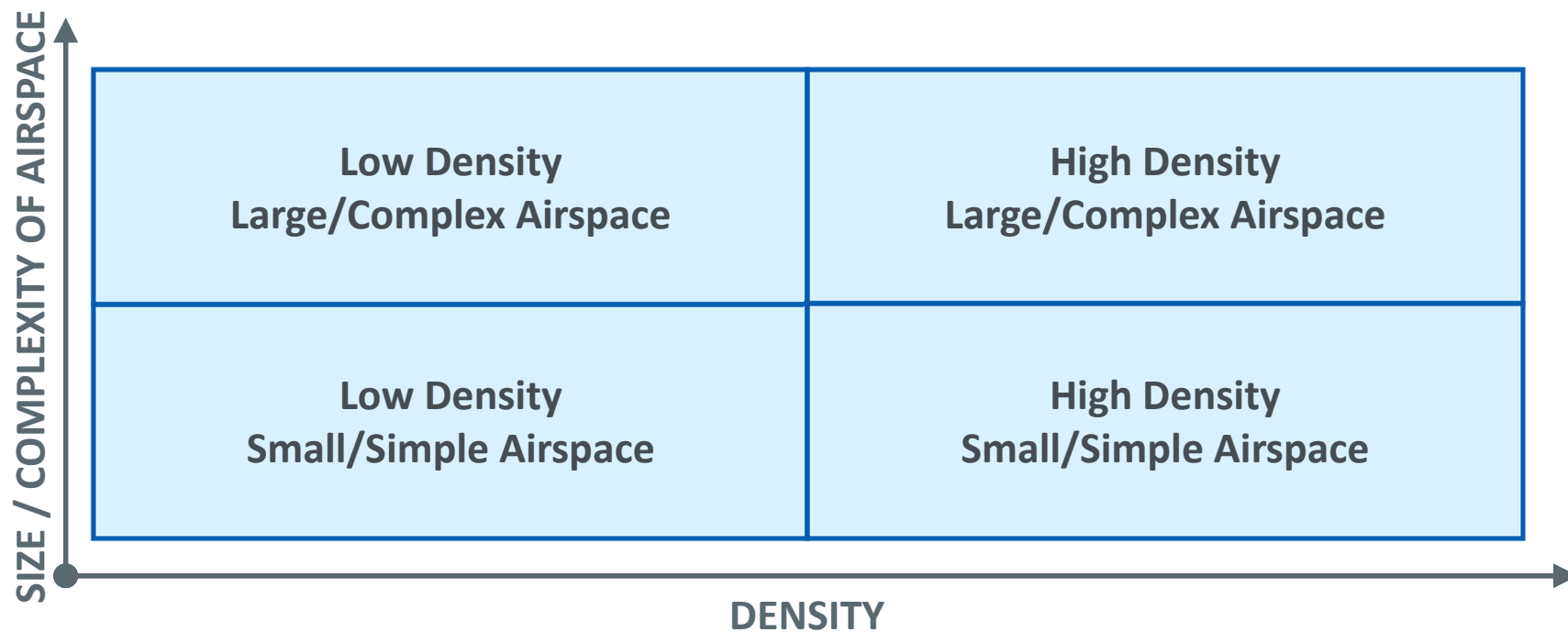


ICAO's Role in ATM Modernization



“Increase the capacity and improve the efficiency of the global civil aviation system”

- Through the **GANP**, offer a long-term vision to assist all aviation stakeholders, and ensure continuity and harmonization among modernization programmes
- Through the **Aviation System Block Upgrades (ASBU)**, provide a consensus-driven modernization framework for integrated planning based on performance

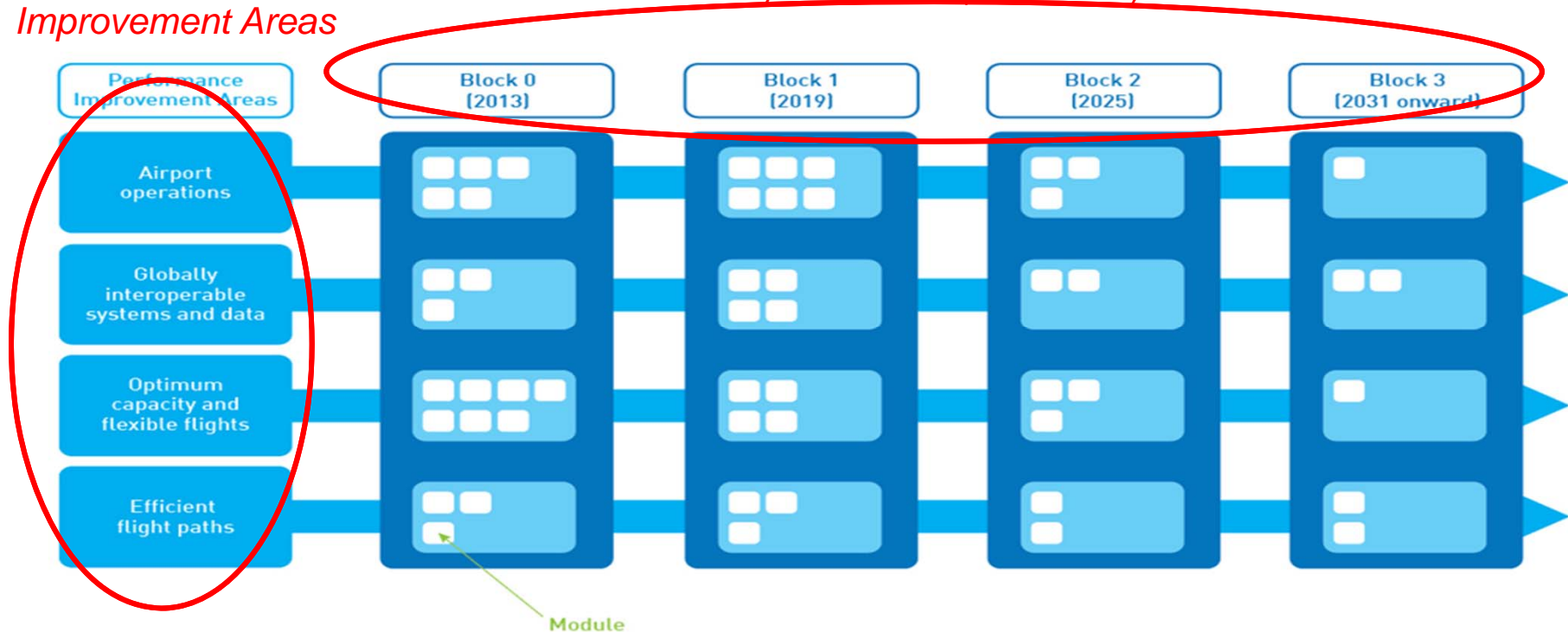




ASBU framework

4 Performance Improvement Areas

6-year blocks (new 2016)



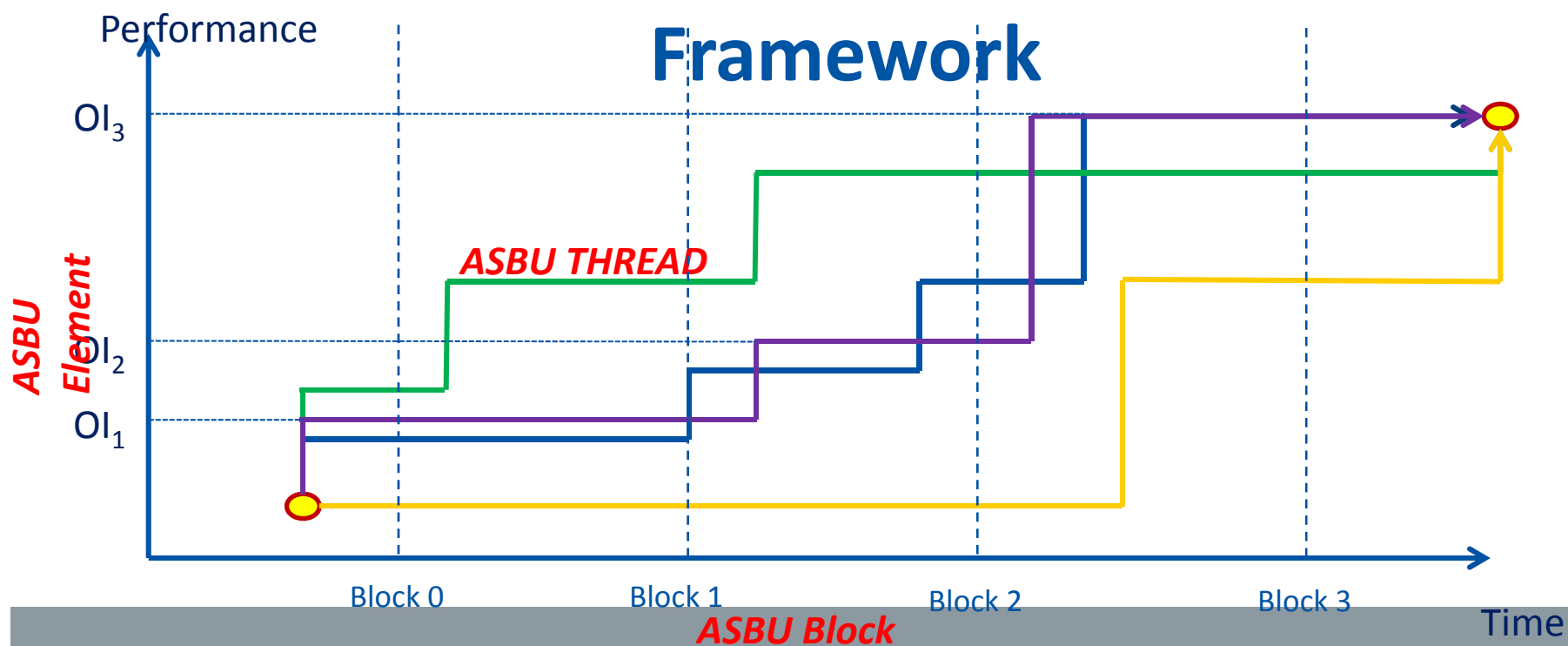


Key concepts

- **ASBU Thread:** key feature area of the air navigation system that needs improvement in order to achieve the vision outlined in the Global ATM Operational Concept.
- **ASBU Element:** a specific change in operations designed to improve the performance of the air navigation system under specified operational conditions.
- **ASBU Enabler:** component (standards, procedures, training, technology, etc) required to implement an element.
- **ASBU Block:** a six year timeframe whose starting date defines a deadline for an element to be available for implementation.
- **ASBU Module:** a group of elements from a thread that, according to the enablers' roadmap, will be available for implementation within the defined deadline established by the ASBU Block.

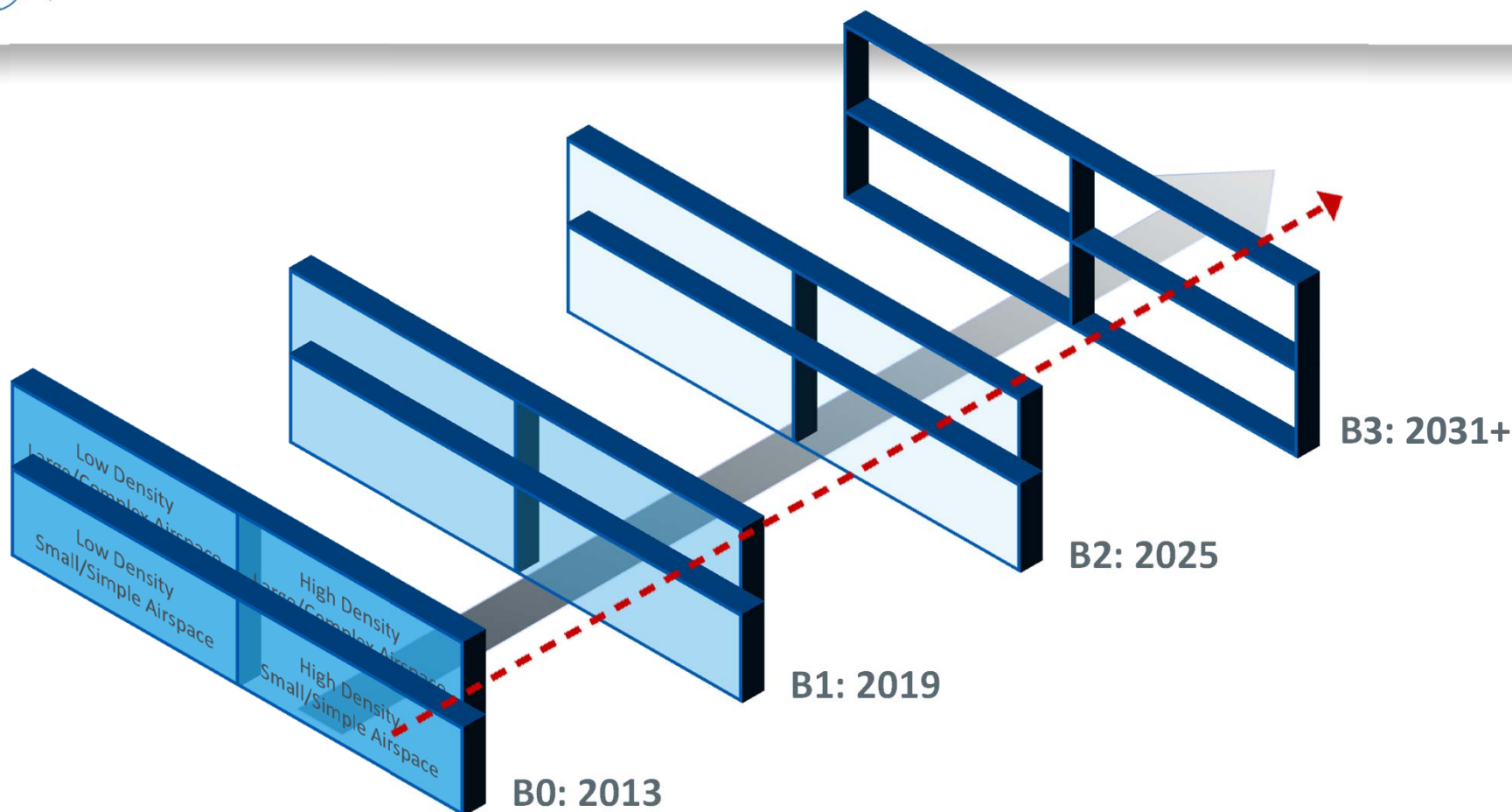


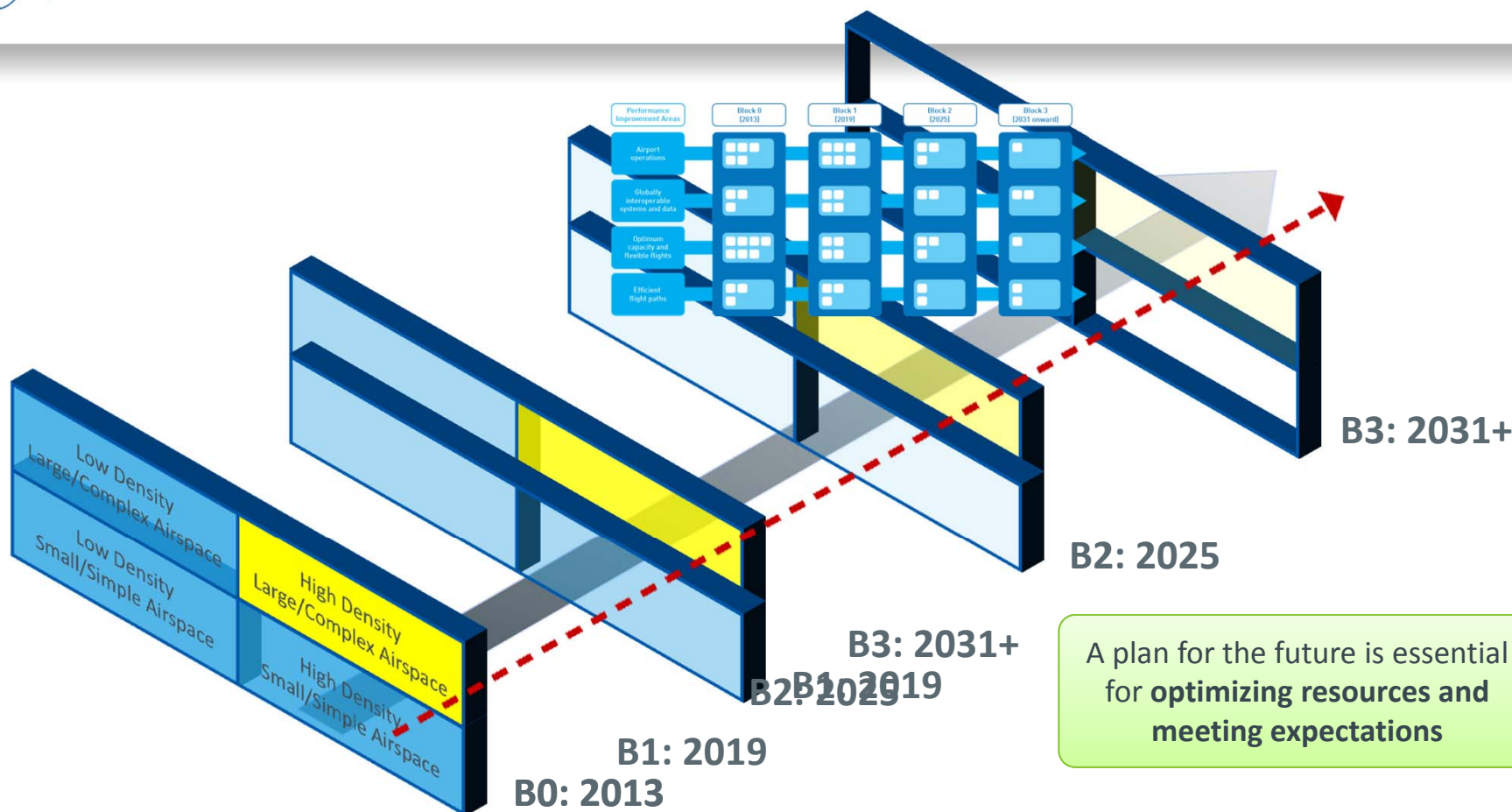
Aviation System Block Upgrades (ASBU) Framework





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GANP Update

- **Objectives**
 - **International and overarching framework** of a global investment plan: make it more usable towards implementation
 - Keep it **stable** while making the necessary updates/additions
 - Adjust the **periodicity** to the Assembly and ICAO editing cycles
- **A Planning Document for Implementation**
 - GANP should be comprehensive planning tool to **support the development and implementation** of a harmonized global air navigation system

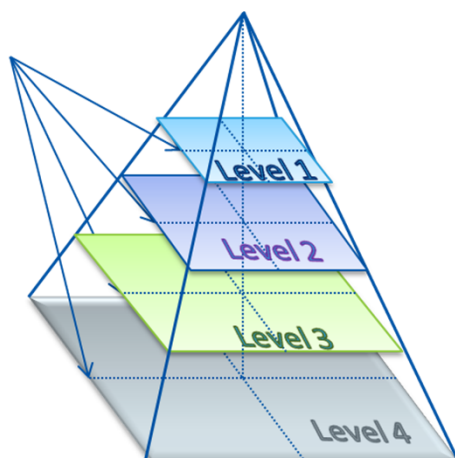




2019 Update of the GANP

Multilayer Structure

LAYERS





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ELEMENT OVERVIEW THREAD OVERVIEW ENABLERS ▾

ELEMENT OVERVIEW

☒ Functional Description ☐ Enablers ☐ Deployment Applicability ☐ Performance Impact Assessment

+ Add Element

WAKE-BO/1 Wake turbulence separation minima based on six aircraft categories



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



APTA-BO/2 PBN SID and STAR procedures (with basic capabilities)



APTA-BO/3 Cat I Precision Approach Procedures



APTA-BO/4 PBN transitions to/from xLS (with basic capabilities)





What is Global Plan?

- Strategic Document for global, regional and national planning for air navigation improvements
- Refers to five major disciplines
 - ATM, CNS, MET, IM and AGA





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Global Air Navigation Planning: an evolution

2002



Doc 9750
AN/963



**Global Air Navigation Plan
for CNS/ATM Systems**

Approved by the Secretary General
and published under his authority

Second Edition — 2002

International Civil Aviation Organization

2007



Doc 9750
AN/963



**Global
Air Navigation
Plan**

Approved by the Secretary General
and published under his authority

Third Edition — 2007

International Civil Aviation Organization

2013



CAPACITY AND EFFICIENCY

2013–2028
Global Air Navigation Plan



Doc 9750-AN/963 Fourth Edition — 2013

2016



CAPACITY & EFFICIENCY

2016–2030
Global Air Navigation Plan



Doc 9750-AN/963 Fifth Edition — 2016



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GANP Policy Principles



1. **Commitment to the Implementation of ICAO's Strategic Objectives and KPAs**
2. Aviation Safety is the highest priority
3. Global Air Traffic Management Operational Concept (GATMOC)
4. **Regional and National Air Navigation Priorities**
5. Aviation System Block Upgrades (ASBUs), Elements and Roadmaps
6. **Cost Benefit and Financial issues.**



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Benefits



- Represents a rolling, 18-year strategic methodology
- Leverages existing technologies and anticipates future developments
- Offers a long-term vision
- Assist ICAO, States and industry to ensure continuity and harmonization among their modernization programmes.



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Content



- Identifies issues to be addressed in the near future alongside financial aspects of aviation system modernization
- Recognizes importance of collaboration and partnership and addresses its multidisciplinary challenges.



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Content



- Information on online support documentation, description of ASBU Threads, and Technology Roadmaps, as well as financial guidance
- Explores the need for more integrated aviation planning at both regional and national level
- Identifies issues to be addressed in the near future alongside financial aspects.



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Content



- Link improvements in air navigation with reduction in aviation emissions – as aviation pursues its commitment to comprehensively reduce its environmental impacts.



Aviation System Block Upgrades – Definition

- What is an 'Aviation System Block Upgrade' (ASBU)?

A global operational framework that allows all Member States to advance their air navigation capabilities based on their specific operational requirements.



What is the Basis for Block Upgrades?

- Foundation of blocks originates from existing near term implementation plans
- Aligned with ICAO ATM Operational Concept
- Block upgrades will allow **structured approach to meet regional and local needs, while considering associated business cases**
- They reflect recognition that all **elements are not required in all airspaces or airports.**



Challenges



- Air traffic growth expands **two-fold every 15 years**
- Growth can be a **double-edged sword**. Challenge is how to achieve both safety and efficiency
- The 37th session of ICAO General Assembly advised to redouble our efforts with focus on **ensuring interoperability** of systems while at the same time maintaining or enhancing aviation safety.



National/Regional Plans - interoperability challenges Examples..



Many Regional and National ATM modernization programmes are being developed worldwide

- They are following the Global ATM Operational Concept view, but nevertheless **they are different in their own way**
- Resulting in **interoperability and procedures harmonization challenges**



What is the difference between current implementation approach and ASBU framework?

- **Current method**
 - Scope covers only **ground equipment for ANSPs**
 - Planning based on short and medium term
- **ASBU framework**
 - Scope extends to **airspace users** and regulators
 - Planning based on short, medium and **long terms**
 - Provisions development process is through Blocks and corresponding module elements
 - **Envisages enhancement in performance and not in implementation of technologies**



What are the advantages of ASBU framework?

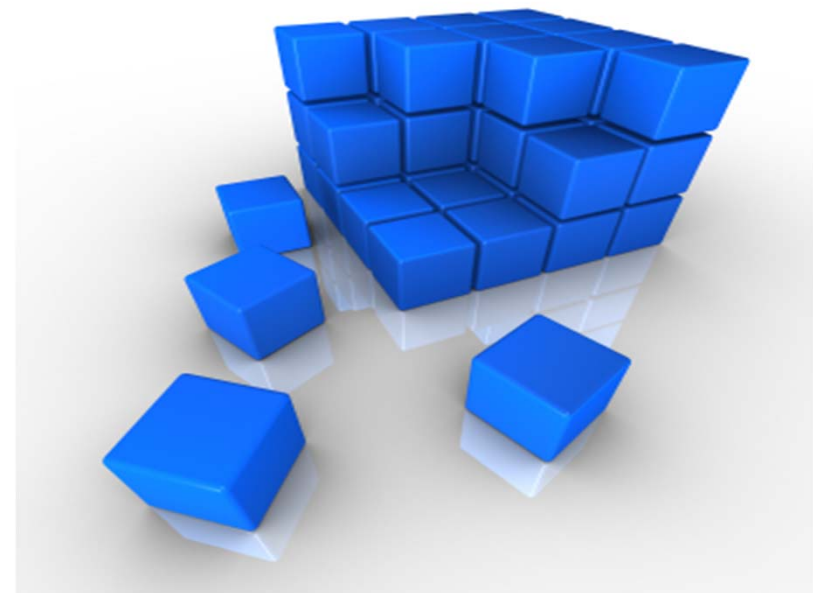
- Takes into account all related issues such as air/ground systems, air/ground procedures, air/ground regulatory requirements and business case formulation
- One stop planning at the same time **flexible and scalable**
- Module elements provide a series of **measurable, operational performance improvements**, which can be introduced as needed.



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ASBUs Summary

- **Addresses ANSP, aircraft and regulatory requirements**
- **Identify 4 improvement areas**
- **Availability of provisions through Block Upgrades (0,1,2, and 3) each comprising a number of threads**
- **Each thread and its elements is explained in a standardized 4-5 pages template**





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ASBUs Summary

- **Provide a series of measurable, operational performance improvements**
- **Organized into flexible & scalable building blocks**
- **Can be introduced as needed**
- **All elements are not required in all airspaces.**





Enhancement Plan

Consists of two distinct phases:

- **Phase one:** harmonization of the provision of air navigation services in according to the ICAO SARPs and PANS
- **Phase two:** to improve the performance of the air navigation system as a whole

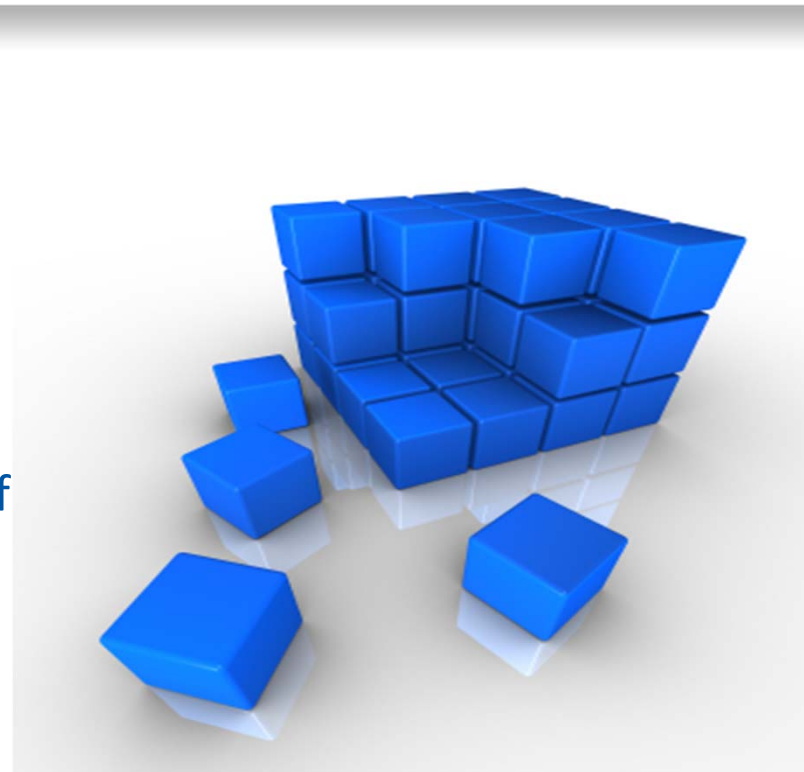




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Enhancement Plan

- A **performance-based approach** will set the basis for collaboration among all aviation stakeholders
- Will ensure the achievement of agreed performance targets and the **optimization of resource allocation** for the implementation of air navigation operational improvements.







- Vision
- Planning mechanism based in scenarios
- GANP
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Objective

To level knowledge on the relationship between the GANP, the ASBUs and their operational impact.



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THANK YOU