GLOBAL AIR NAVIGATION PLAN ASBU FRAMEWORK

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Mayda Alicia Ávila
Regional Officer, Communications, Navigation and Surveillance
International Civil Aviation Organization North American,
Central American and Caribbean Regional Office

What is the GANP?

✈ The GANP is an important planning tool for setting global priorities to drive the evolution of the global air navigation system and ensure that the vision of an integrated, harmonized, globally interoperable and seamless system becomes a reality.

https://www4.icao.int/ganpportal/

https://www4.icao.int/ganpportal/Tutorial

Global Technical Level

✈ The global technical level includes two technical frameworks, the basic building blocks (BBBs) and Aviation System Block Upgrades (ASBUs), with its associated performance framework, which includes performance objectives and key performance indicators (KPIs). The BBB framework outlines the foundation of a robust air navigation system. It can also be viewed as the commitment of the State, under the Convention on International Civil Aviation (Doc 7300), to provide essential air navigation services for the safe and orderly conduct of international civil aviation.

GLOBAL TECHNICAL LEVEL

- Information maintained in information warehouse

  - Reports (paper) can be derived

- GLOBAL FRAMEWORK

  - BBBs ⎤ Consistent with Conceptual Roadmap and
  - ASBUs ⎦ System Architecture

- PERFORMANCE-BASED APPROACH for ANS improvement

  - Performance-based Decision Making Method

  - Key Performance Indicators

- Clear definitions

Basic Building Block (BBB)

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.

BBB Framework:
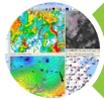
Meteorological Information

Aeronautical Information

Search and Rescue

Air Traffic Management

Aerodrome Operations

BBB Verification

✈ 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.

THE ASBU FRAMEWORK

ASBU Framework

ASBU Block	ASBU Thread
Specific concept of operations. Deadline for an element to be available for implementation.	Key feature area of the air navigation system.
	ASBU Element A specific operational improvement
ASBU Enabler Component (standards, procedures, training, technology,…)	**ASBU Module** A group of elements from a thread.

ASBU Thread

✈ Another key concept in the updated framework.

✈ The ASBU threads already existed in previous versions of the GANP and they were key feature areas of the air navigation system where improvements are needed in order to achieve the vision outlined in the Global ATM Operational Concept.

✈ The ASBU threads are been categorized in 3 groups:
  – Operational threads: ACDM, APTA, NOPS…
  – Information threads: SWIM, AMET, DAIM, FICE,…
 – Technology threads: COMS, COMI, NAVS, ASUR (previous roadmaps)

ASBU Thread (cont)

✈ This updated version of the GANP presents the following major changes regarding the threads:

- The CCO and the CDO threads have been merged into the APTA thread, which has expanded its scope to cover terminal and approach operations.
- Some elements in the OPFL thread have been moved to FRTO, so FRTO will from now on cover horizontal and vertical en-route flight efficiency. However, in order to respect stability, elements in Block 0 and one element in Block 1 have been left in OPFL.
- The RPAS thread is TBD, however, the lower airspace operations improvements have been reflected as elements in other threads.

ASBU Thread (cont)

– Higher airspace operations improvements have also been reflected as elements in other threads.

– There is a new thread for global tracking: GADS.

– The roadmaps have become technology threads in order to show the dependencies on them of the other ASBU elements.

– The TBO thread has been updated based on the TBO concept and as an integrating concept, its elements are the elements from the operational threads. The communication elements in the previous versions of the TBO thread are now in the COMS (communication services) thread.

ASBU Elements

- ✈ The main concept of the updated ASBU framework.

- ✈ The ASBU elements were defined in previous versions of the GANP in an inconsistent manner. With the digitalization of the framework, they have become the core concept and they have been defined in a harmonized manner.

- ✈ An ASBU element is a specific change in operations designed to improve the performance of the air navigation system under specified operational conditions.

ASBU THREADS

Information

Operational

CNS technology and services

Meteorological information

System Wide Information Management

Digital Aeronautical Information Mangement

Flight and Flow Information for a Collaborative Environment (FF-ICE) Information
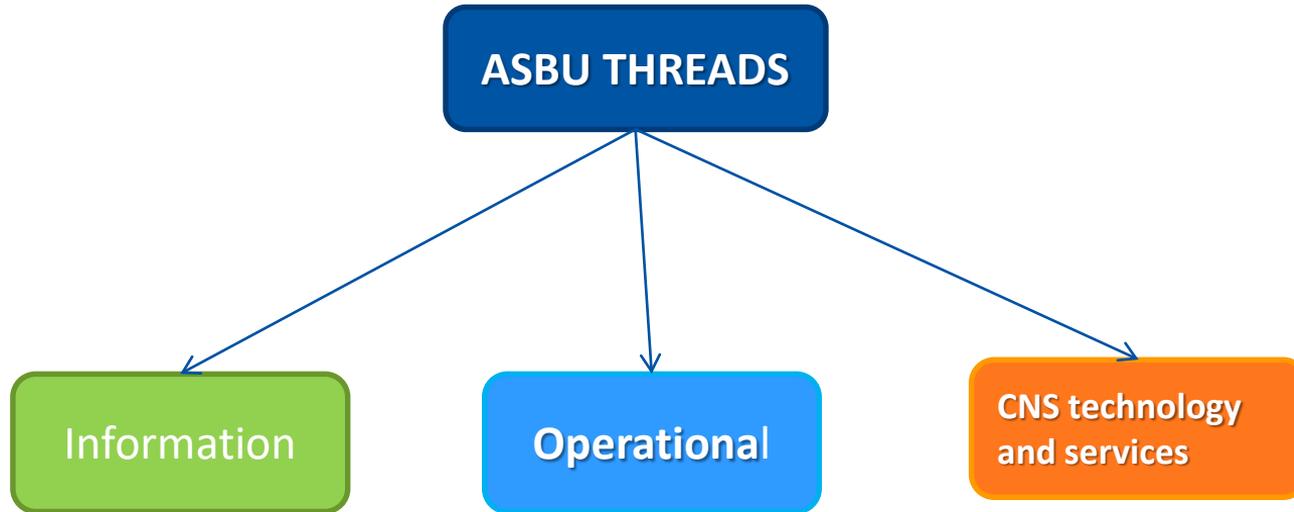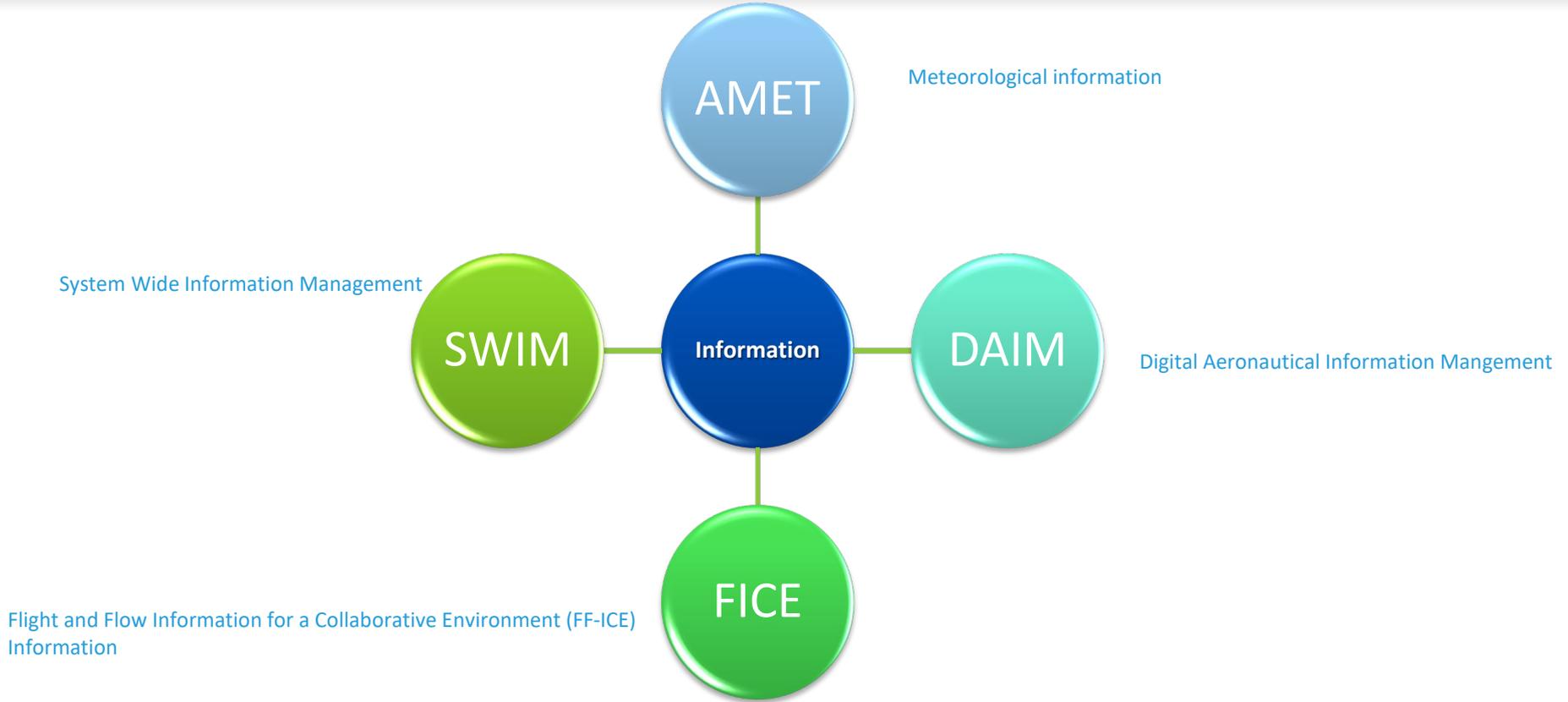
Airborne Collision Avoidance System (ACAS)

Wake Turbulence Separation

Airport Collaborative Decision Making

ACAS

WAKE

ACDM

Improve arrival and departure operations

Trajectory-based operations

TBO

APTA

Surface operations

SURF

CSEP

OPERATIONAL

Cooperative Separation

Ground-based Safety Nets

SNET

FRTO

Improved operations through enhanced en-route trajectories

RSEQ

GADS

Improved traffic flow through runway sequencing

RATS

OPFL

NOPS

Global Aeronautical Distress and Safety System (GADSS)

Remote Aerodrome Air Traffic Services

Network Operations

Improved access to optimum flight levels in oceanic and remote airspace

ASBU Enabler

- Another key concept in the updated framework.
- The ASBU enablers are a new concept in the updated ASBU framework.
- They are the components (standards, procedures, training, technology, etc)
- required to implement an element.
- Their goal is to identify the stakeholders involved in the implementation of an ASBU element as well as all the necessary requirements, in order to ensure an effective implementation. Some of the enablers can be elements in other threads, for instance: avionics or ground systems in the technology threads.
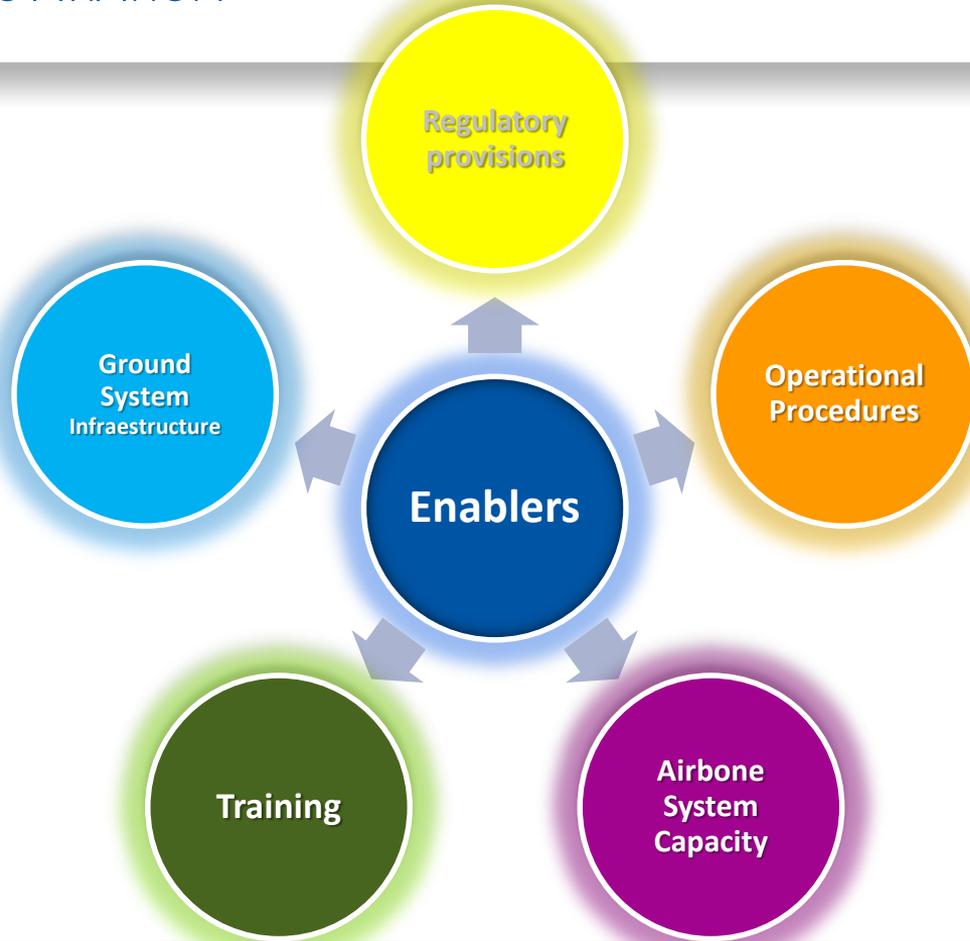
ASBU Block

- Another key concept in the updated framework.

- The ASBU blocks already existed in previous versions of the GANP and they introduced the "time" dimension to the framework.

- An ASBU Block is the end date of a six years timeframe that defines a deadline for an element to be available for implementation. This implies, that the element and all the enablers associated to it, need to be available for implementation by the ASBU block year.

- ASBU Blocks years: 2013, 2019, 2025, 2031….

ASBU key concepts
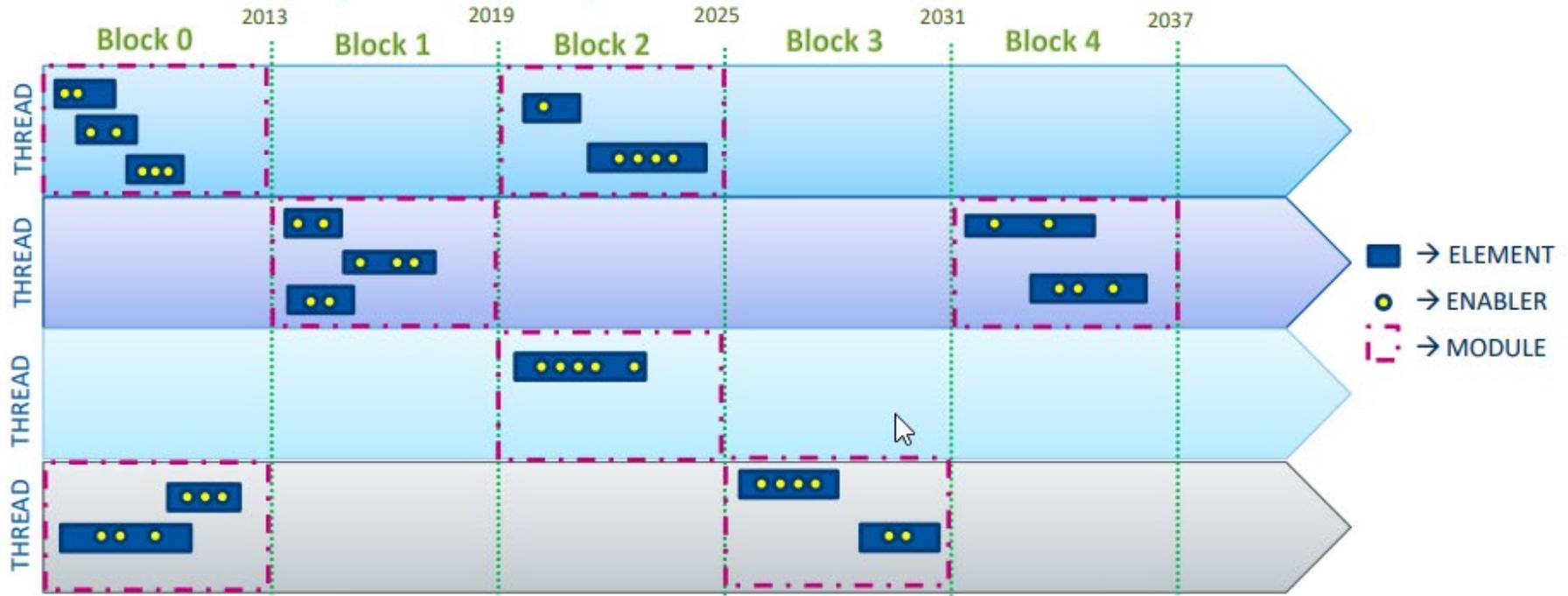
ASBU Module

– The last key concept in the updated framework.

– The ASBU modules already existed in previous versions of the GANP and they are the crossing point between the threads and the blocks. Therefore, an ASBU module is the 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.

– As such, if in the digital ASBU framework we select in the filter one ASBU thread and one Block, we will obtain the elements that constitute the module.

GANP → GLOBAL TECHNICAL

BBB

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

ASBU

threads

Operational Information Technology

Elements

Modules

B0 | B1 | B2 | B3 | B4

Block 0 | Block 1 | Block 2 | Block 3 | Block 4

Enablers
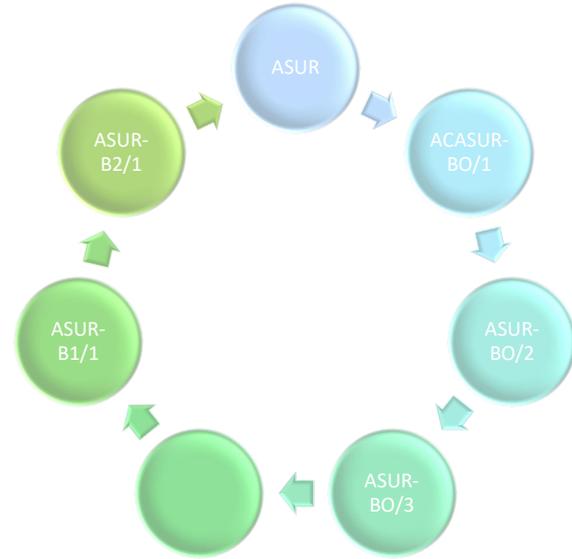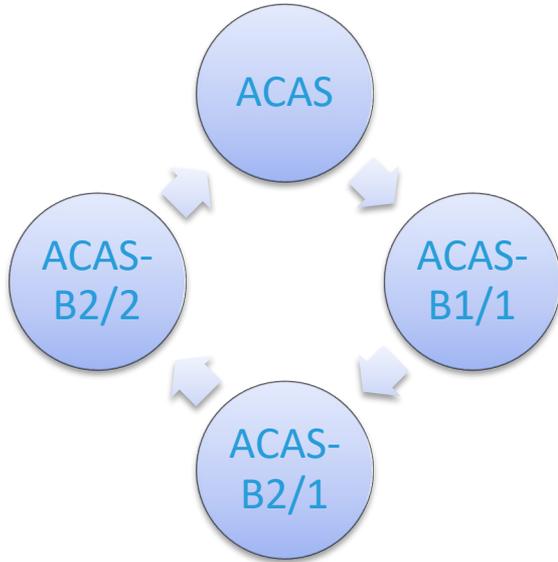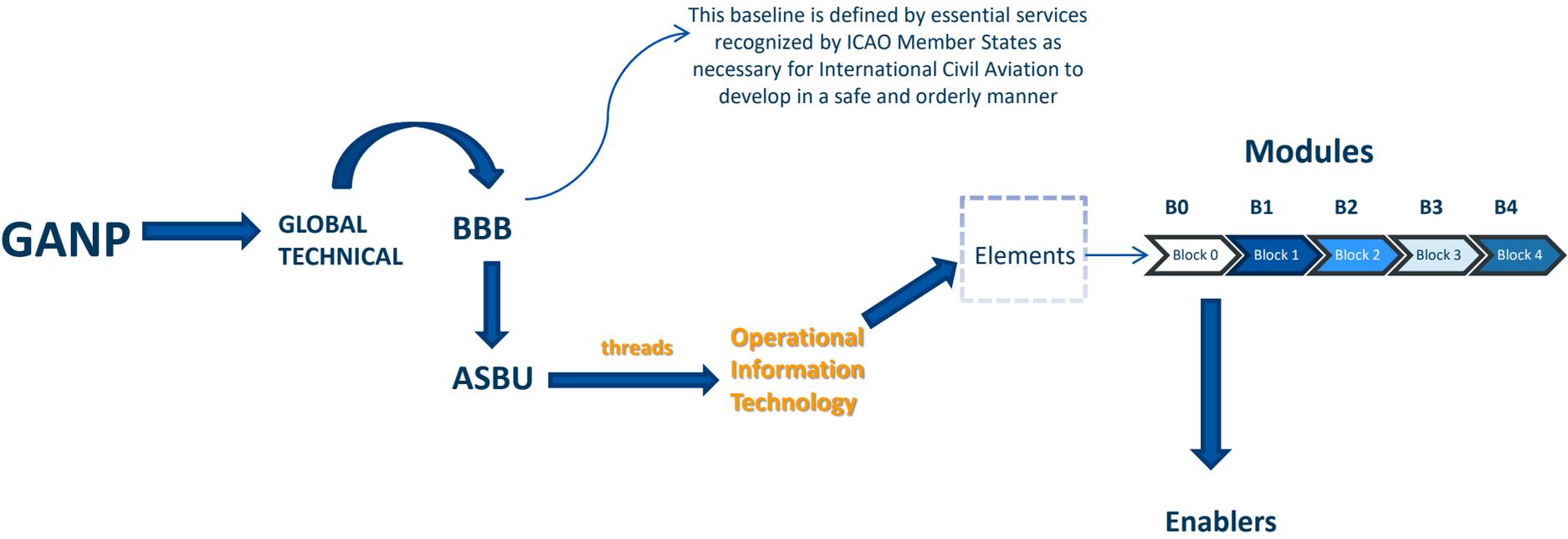
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