Global Air Navigation Plan (GANP) and the Minimum Implementation Path (MIP)

David Batchelor, Chair GANP-SG

Amornrat Jirattigalachote, Chair ASBU-PPT

Carol Teo, Chair GANP-PEG

Presentation Overview

01 Global Air Navigation Plan (GANP)

02 Outcomes of the Assembly/42

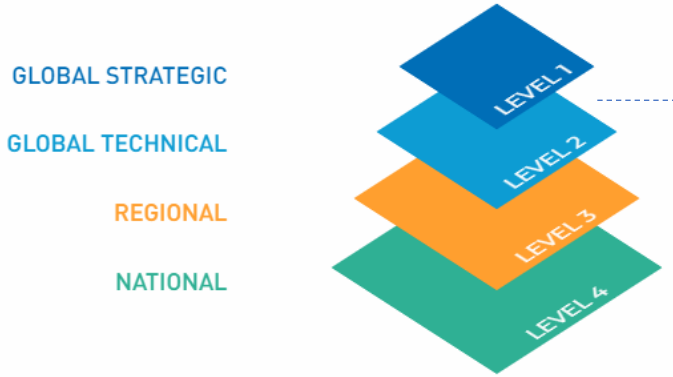
03 Minimum Implementation Path

04 Towards ANS Modernisation

05 Developing the MIP

Global Air Navigation Plan and its Study Group

Multi-layered structure of the Global Air Navigation Plan



Global Air Navigation Plan - Study Group
Co-chairs: David Batchelor, SESAR-JU, Steve Bradford, FAA

Layer 1: GLOBAL STRATEGIC
Layer 2: GLOBAL TECHNICAL

Aviation System Block Upgrade-Project and Panel Team (ASBU-PPT)

Co-Chairs: Amornrat Jirattigalachote, AEROTHAI
Eduardo Garcia, CANSO
Members: Operational technical experts

Global Air Navigation Plan – Performance Expert Group (GANP-PEG)

Chair: Carol Teo, CAAS
Members: Performance experts

ASBU

- provides a structured and performance-based approach to air navigation modernization
- offers States and regions a flexible pathway to implement new technologies and operational approaches, allowing for phased transformations that deliver tangible benefits

Performance Framework

- enables States to adopt a data-driven, performance-based approach to determine air navigation modernisation requirements
- encompasses the measurement, continuous monitoring, and improvement of actual performance

Outcomes of the ICAO Assembly/42 relating to the GANP

At the A42, (ref. A42-WP655-23.8)

1. The Commission recommended that the Assembly endorse the Eighth Edition of the GANP
2. The Commission supported the proposed outlook for the Ninth Edition of the GANP and agreed that **ICAO develop and disseminate guidance on a minimum implementation path, providing clear, actionable steps and timelines for States**
3. The Commission also agreed that ICAO facilitate the use of the guidance provided within the GANP framework for reporting performance in a transparent, holistic and harmonized manner.
4. The Commission also agreed that ICAO develop guidance for the integration of initiatives across regions, including an approach to define a minimum set of GANP initiatives to be implemented globally with associated timelines, and an approach whereby neighbouring regions would define a set of joint GANP initiatives and implementation timelines between themselves.
5. The Commission agreed with the proposal to extend the duration of the GANP update cycle to six years and focus on supporting States in implementing the GANP and developing national plans.

Benefits of Minimum Implementation Path (MIP)

ASBU framework is comprehensive but complex and overwhelming for implementers	**Pragmatic approach**: MIP provides States with more actionable steps and timelines to modernize air navigation system without being overwhelmed
Different rate of progress globally and regionally	**No country left behind**: MIP identifies core capabilities necessary for a functional and interoperable global air navigation system whilst focusing on foundational elements
States face challenges justifying investments and performing individual cost-benefit analysis	**Strategic resource allocation**: MIP focuses States' investments on the most critical and impactful upgrades that contribute directly to global air navigation evolution.
States have to navigate the complexity of implementing a myriad of upgrades on their own	**Enhanced implementation manageability**: With wide participation in GANP/ASBU implementation, States have to support each other in the implementation

Minimum Implementation Path Explained

Purpose

- Enable global aviation to make a significant leap forward into the future
  - ➢Advanced States can progress to improve the flight operations beyond their boundary
  - ➢Less advanced States can focus their investment on critical fundamental elements
- If left to the States to each decide, interpret and develop their own systems, there is a high chance of fracturing and systems failing to interoperate

Considerations
outlined in A42-WP192

- Prioritisation for States' implementation
- Focus on core capabilities
- Enhanced implementation manageability
- Strategic resource allocation

Components of MIP

- The MIP represents a globally agreed baseline of essential capabilities that every State should **implement for modernization and to ensure interoperability across the air navigation system**

Concepts of Operations

ASBU Elements

Regulatory Frameworks (*SARPS, PANS, Guidance*)

Global Air Navigation Plan (GANP) Evolutionary Steps

Minimum Implementation Path v1.0

Today

Step 1: Flight Operations in a Digital Rich Environment

To unlock the inherent capacity of the system by allowing more scheduled flights

Step 2: Time-based Operations enabled by an Information Revolution

To improve efficiency, predictability and cost-effectiveness by moving from isolated data pockets and automation to a single, shared view/coordinated system

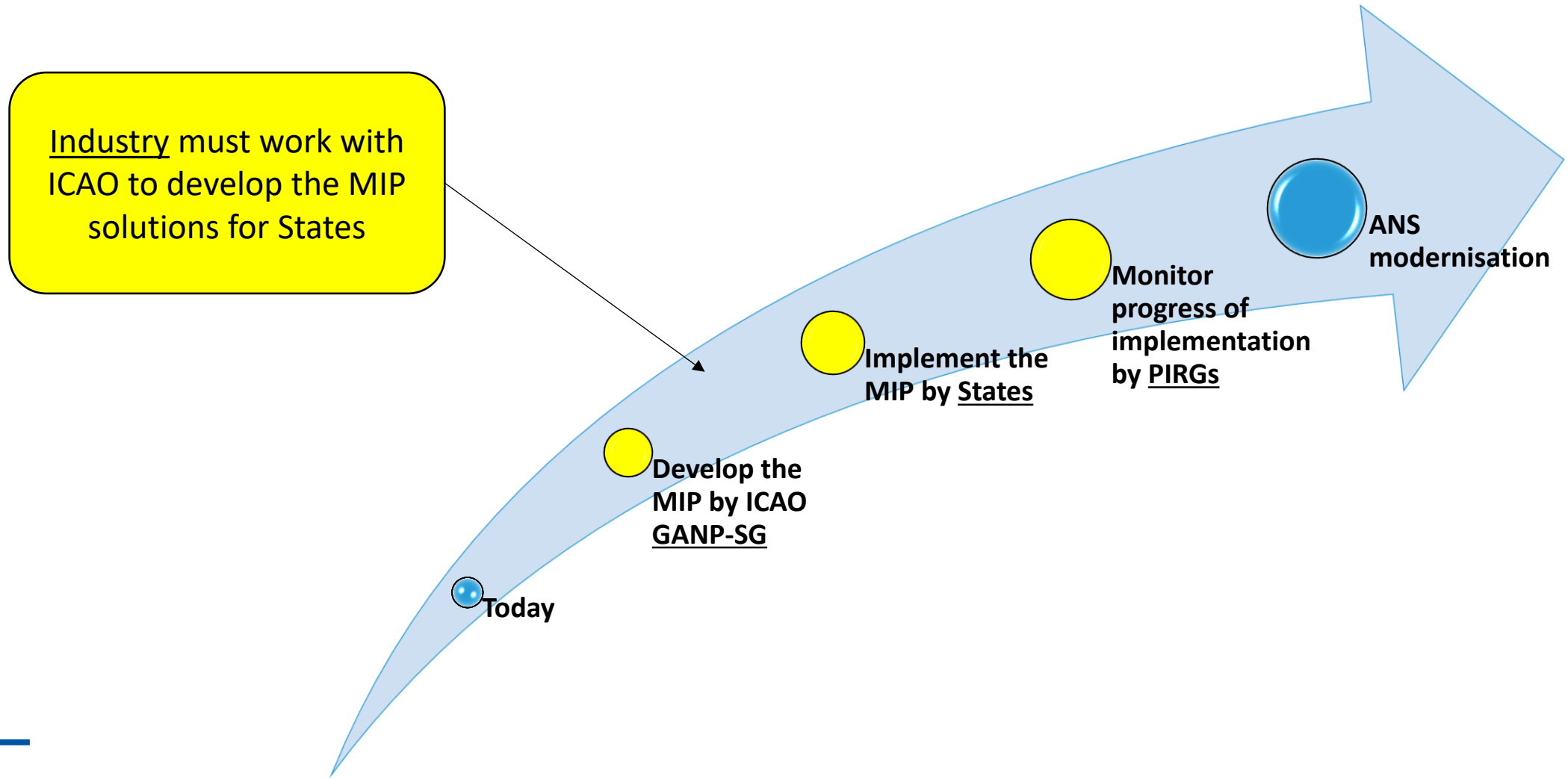
Step 3: Trajectory-based Operations enabled by Full Connectivity through the Internet of Aviation

To increase flexibility, improve strategic planning, and decrease uncertainty by optimising flow of traffic and dynamically managing flight trajectory based on knowledge of constraints

Step 4: Total Performance Management System Focus on Business/ Mission Needs

To fully optimise decision-making and satisfy the needs of airspace users

Taking the leap towards ANS modernisation



Phases of developing Minimum Implementation Path by the GANP-SG

Phase 01

Definition Phase

Intended outcomes of MIP
Criteria for inclusion in MIP
Timeline for MIP

GANP-SG/7: Feb 2026

Phase 02

Identification Phase

ASBU threads & elements
Identify regulatory needs e.g. SARPS, PANS, guidance

APAC GANP Workshop: 5-6 Mar 2026
CANSO ASW: May 2026
CANSO AP Conf: Jun 2026

Phase 3 03

Validation Phase

Technical validation and consultation with expert groups/ panels/ regional offices

Step 04

Finalisation Phase

MIP
Implementation guidance
Monitoring framework

HLSC: Dec 2027

Phase 1 – Definition Phase to be discussed at GANP-SG in Feb ‘26

*Deliverable: Definition Paper “*Purpose and Principles of the MIP” - concept and success criteria

- What is the *intended outcome* of the MIP? (e.g. “Enable every State to achieve a minimum globally interoperable capability baseline by 2035.”)
- What are the requirements for the MIP? (e.g. simple, displayed graphical, only one for all States, include clear timelines, be able to be monitored)
- What are the criteria for inclusion? (e.g. safety-critical, interoperability-enabling, globally mature, cost-effective, regulatory ready)
- How does the MIP relate to the rest of the GANP (BBBs, ASBUs, PF) and its 6-year cycle?
- What are the *guardrails*? (what the MIP is not (e.g. not a wish list or full ASBU catalogue)
- Should the MIP be time-bounded (e.g. deliverable by 2035) or capability-based (achieved when enablers are verified)?
- Should there be a “progressive minimum” concept (e.g. 2028, 2032, 2038 milestones)?
- What is required to support ICAO applicability dates e.g. FPL 2012 cessation?

Thank you