



Agenda Item 2: Review of Air Navigation Matters
2.1 Global Air Navigation and CAR/SAM developments
2.1.2 ICAO Air Navigation Performance Framework

AIR NAVIGATION PERFORMANCE FRAMEWORK

(Presented by the Secretariat)

SUMMARY	
The following working paper presents a summary of the concept and scope of the Performance Framework concept and ICAO proposal for its application and implementation.	
References:	
• Global Air Traffic Management Operational Concept (Doc 9854) • Global Air Navigation Plan (Doc 9750) • Manual on Global Performance of the Air Navigation System (Doc 9883), • The Air Traffic Management System Requirements (Doc 9882), • Air Navigation Plan — CAR/SAM Regions, Volume I — Basic ANP and Volume II — FASID (Doc 8733) • National Plan for CNS/ATM System – Guidance Material (Circular 278) • Economics of Satellite-based Air Navigation Services (Circular 257) • Manual on Air Navigation Services(ANS) Economics (Doc 9161) • Development of business case for the implementation of CNS/ATM Systems – Guidance Material (available on the ICAO CAFEA website) • eANP Transition Framework • Performance-based navigation (PBN) Manual (Doc 9613)	
Strategic Objectives	<i>This working paper is related to Strategic Objectives A, C and D.</i>

1. Introduction

1.1 With the endorsement of the Global Air Traffic Management Operational Concept (Doc 9854) by the Eleventh Air Navigation Conference in 2003, the Global ATM operational concept serves as the vision for a global ATM system intended to achieve an interoperable global air navigation 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; and to guide the high-level implementation of CNS/ATM technology by providing a description of how the emerging and future air navigation system should operate.

1.2 Based on the Global ATM operational concept and the Strategic Objectives of ICAO, an updated and revised version of the Global Air Navigation Plan for CNS/ATM Systems, re-titled as the Global Air Navigation Plan (ICAO Doc 9750), was developed. Most significantly, the revised Global Plan was developed on the basis of an industry roadmap which was developed in follow-up to the Eleventh Air Navigation Conference in an effort to facilitate implementation of the Recommendations of the Conference and ensure that focused efforts would lead to near- and medium-term benefits.

1.3 The Global Air Navigation Plan (GANP) describes a strategy aimed at achieving near and medium term air traffic management (ATM) benefits on the basis of available and foreseen aircraft capabilities and ATM infrastructure. It contains guidance on ATM improvements necessary to support a uniform transition to the ATM system envisioned in the *Global ATM Operational Concept* (Doc 9854). On the basis of the GANP, planning should be focused on specific performance objectives, supported by a set of “Global Plan Initiatives” (GPIs). States and regions should choose initiatives that meet performance objectives, identified through an analytical process, specific to the particular needs of a State, region, homogeneous ATM area or major traffic flow.

1.4 The GANP describes a method for identifying gaps in performance of the system and for describing performance objectives. GPIs are evaluated against these gaps and the performance objectives to identify those that would most appropriately provide the operational improvements necessary to meet performance objective(s).

2. Performance-based Approach (PBA)

2.1 Under this approach, the planning process described in the current GANP has been developed on the basis of the planning model contained in the previous version of the Global Plan which served as a step in the evolution toward a global ATM system.

2.2 Development of work programmes must be based on the experience and lessons learned in the previous cycle of the CNS/ATM implementation process. The GANP therefore, focuses efforts toward maintaining consistent global harmonization and improving implementation efficiencies by drawing on the existing capabilities of the infrastructure and successful regional implementations over the near and medium terms. The Global Plan Initiatives will ensure the full use of available short and medium term opportunities and the planning tools will provide guidance for planned activities and will serve as basis for the establishment of performance objectives, to enable the States to clearly define performance outcomes which is the main element of performance based planning. The Regional Plan and State Plans are considered to be the action plans.

2.3 The ICAO planning objective is to achieve a performance based global air traffic management (ATM) system through the implementation of air navigation systems and procedures in a progressive, cost-effective and cooperative manner.

2.4 Performance objectives may change depending on the ATM system’s evolution; therefore, throughout the implementation process, these should be coordinated with and be available to all interested parties.

2.5 The notion of Performance Based Approach (PBA) emanated from good industry practices and evolution of aviation industry into a less regulated and more corporatized environment, with greater accountability. ICAO supports and encourages the global adoption of performance management techniques as a step towards a performance based global air navigation system as envisaged in the *Global Air Traffic Management Operational Concept* (Doc 9854) and documentation related to ATM system requirements supporting the global air traffic management operational concept (Doc 9882 and Doc 9883).

2.6 The PBA is based on three principles: a) Strong focus on desired/required results: Instead of prescribing *solutions*, desired/required *performance* is specified. It implies finding what the current situation is, what the most appropriate result should be, as well as clarifying who is accountable for achieving those results; b) Informed decision making, driven by desired/required results: working backwards from the “what (result)” – the primary focus – to decisions about “how” and c) Reliance on facts and data for decision making: Desired/required results, drivers, constraints, shortcomings, options expressed in quantitative terms (not in qualitative terms). Rationale “*if you can’t measure it, you can’t manage it.*”

2.7 The PBA is expected to provide following advantages:

- it is results oriented, allows customer focus and promotes accountability;
- policy making becomes much more transparent when the goals to be reached are publicly stated in terms of performance outcome (rather than solutions);
- shift from prescribing solutions to specifying desired/required performance gives more freedom and flexibility in selecting suitable solutions;
- “Technology Driven Approach” and “Solutions searching for a problem to solve” can be avoided;
- stress on rigorous scientific approach in place of anecdotal evidence;
- focus on desired/required results helps decision makers to set right priorities, make most appropriate trade offs, choose optimum solution and resource allocation;
- provides more predictability of benefits; and
- typically results in cost savings, which often is much more than the investment made in applying the approach.

2.8 Once an organization (or State, region etc.) has decided to adopt the PBA approach, it must acknowledge that following ingredients are essential for success:

- Commitment (at the top).
- Agreement on goals (desired results).
- Organization (who is responsible/accountable for various functions).
- Human resources and know-how (Culture & Skills).
- Data collection, processing, storage and reporting.
- Collaboration and coordination (with other subject areas and stakeholders).
- Cost implication (dedicated data management & IT infrastructure).

2.9 In the long run, implementation of PBA is expected to result in:

- Efficient system through identified cost savings.
- Reduction in waste of resources.
- More equitable charging practices.
- More efficient provision of services.
- It requires a globally coordinated effort, and a common approach towards developing and implementing a performance-based air navigation system.

2.10 In this regard, ICAO is performing several Workshops for the States to promote the understanding and application of the Performance Based Approach and its tools, as the one held in the ICAO NACC Regional Office in Mexico City from 6 to 10 July 2009, in which the performance-based objectives formulated for the NAM/CAR Regional Performance Based Air Navigation Implementation Plan were reviewed (WP/07 of this Meeting refers). The material presented in this workshop is available from the ICAO NACC Regional Office website at:

http://www.icao.int/nacc/meetings/2009/Workshop_DEV_NPF_AN_SYS/

3. Suggested actions:

3.1 The Meeting is invited to:

- a) take note of the information on the ICAO Performance Framework concept;
- b) review the current performance based objectives indicated in the NAM/CAR Regional Performance Based Air Navigation Implementation Plan; and
- c) apply this concept in the development of State National Plans.