



# ICAO Performance Based Approach for Air Navigation Services

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# Central America -Caribbean

## ✈ Aviation essential for further development

- ✈ Many small economies in the Caribbean, particularly the tourism-dependent economies, have been growing faster in the last three years. GDP growth rates in 2017 averaged 1.7 percent in service-oriented economies. The Dominican Republic did even better, growing by an estimated 4.6 percent. Others did not fare so well. Belize, Suriname, and Trinidad and Tobago continue to face the aftershocks of the 2014 drop in world prices for oil and other commodities

## ✈ Agriculture, travel and tourism

## ✈ Climate change and natural disasters

## ✈ Reduce operation costs



# What are ATM Expectations?

Meeting the expectations of the aviation community:

- ✈ meeting safety objectives
- ✈ operate along preferred 4D trajectories (business trajectories)
- ✈ scheduling
- ✈ gate availability
- ✈ environmental objectives
- ✈ other business requirements



# The Role of States and PIRGs

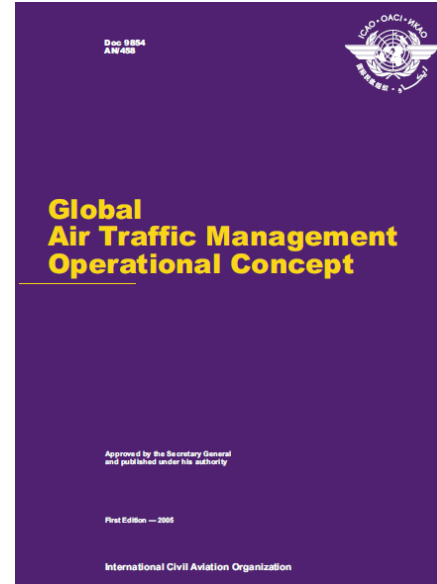
11<sup>th</sup> Air Navigation Conference in 2003

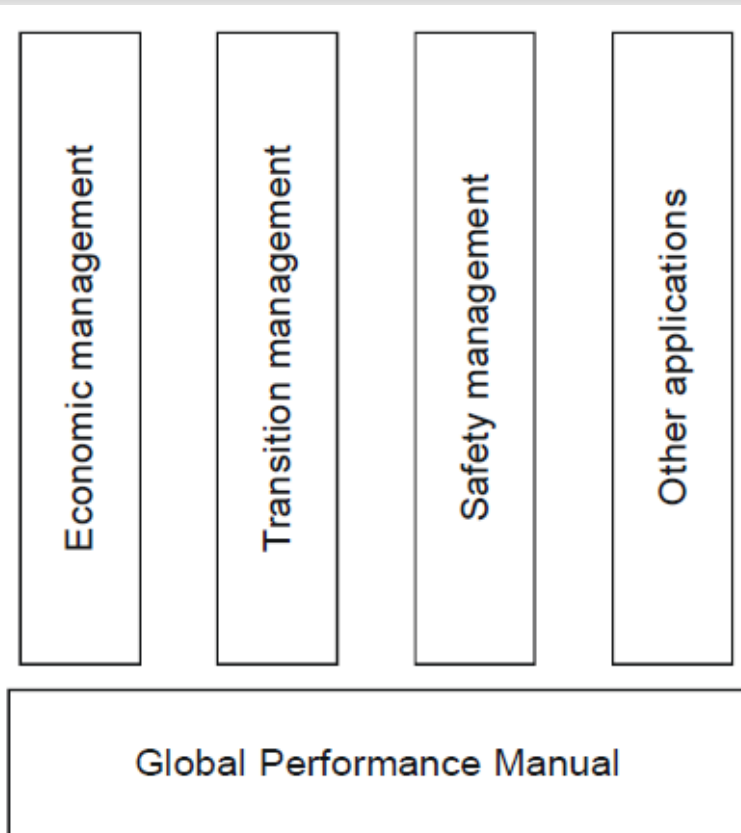
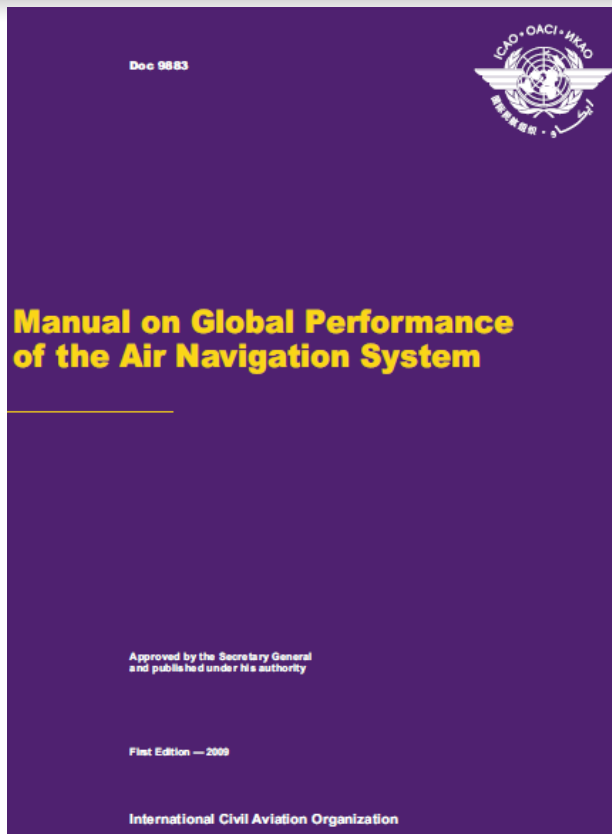
- ✈ States and PIRGs consider the Global Air Navigation Plan for CNS/ATM Systems as a catalyst for change, providing a global safety and interoperability framework while allowing regional or local adaptation to efficiently meet regional and local needs
- ✈ That States and PIRGs agree on a set of metrics related to key performance areas, incorporate these metrics into the performance monitoring process and review their results on a regular basis



# Global ATM Operational Concept

- ✈ Endorsed by 35th Session of the Assembly
- ✈ Vision:
  - Globally interoperable
  - All users & flight phases
  - Safe, economic, environmental & secure
- ✈ ATM user expectations are drivers for change, requiring:
  - Safety case
  - Business case
- ✈ Foundation for ATM System Requirements








# ICAO MEXICO CITY UNITING AVIATION

Doc 9161




## Manual on Air Navigation Services Economics

Approved by the Secretary General and published under his authority

Fifth Edition — 2013

International Civil Aviation Organization




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## Doc 9859

### Safety Management Manual

Fourth Edition, 2018



Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION



# Performance-based Approach (PBA)

PBA is based on the following principles:

- ✈ strong focus on desired/required results through adoption of performance objectives and targets
- ✈ informed decision-making, driven by the desired/required results
- ✈ reliance on facts and data for decision-making.





# Strong focus on desired/required results

- ✈ Instead of prescribing **solutions**, desired/required **performance** is specified.
- ✈ The attention of management is shifted from a resource and solution-centric view (How will we do it?) towards a primary focus on desired/required performance results (*What is the outcome we are expected to achieve?*).
- ✈ This implies determining
  - ✈ the current performance situation,
  - ✈ what the most appropriate results should be, and
  - ✈ clarifying who is accountable for achieving those results.



# Informed decision-making (driven by the desired/required results)

- ✈ *“Informed decision-making”* requires that decision-makers develop a good understanding of the mechanisms which explain how drivers, constraints, shortcomings, options and opportunities influence (i.e. contribute to, or prevent) the achievement of the desired/required results.
  - ✈ This means working “backwards” from the “what”—the primary focus—to decisions about the “how”.
- ✈ Only then can decisions — in terms of priorities, trade-offs, selection of solutions and resource allocation — be optimized to maximize the achievement of the desired/required (*performance*) results.



# Reliance on facts and data for decision-making

- ✈ In the performance-based approach the desired/required results, as well as the drivers, constraints, shortcomings and options, are expressed in quantitative terms and in a qualitative way.
- ✈ The rationale for this is that “if you can’t measure it, you can’t manage it”, i.e. unless you measure something, you don’t know if it is getting better or worse.
- ✈ When facts and data are used, they should be relevant and reflect reality.
  - ✈ This requires the adoption of a performance measurement culture.
  - ✈ It also necessitates associated investments in data collection and management.



# PBA Advantages

The advantages of the performance-based approach are:

- ✓ it is result-oriented, allows customer focus and promotes accountability;
- ✓ policy-making becomes transparent when the goals are publicly stated in terms of performance outcome rather than solutions;
- ✓ the shift from prescribing solutions to specifying desired/required performance also gives more freedom and flexibility in selecting suitable solutions, which in turn is a catalyst for more cost-effectiveness.
- ✓ exclusive bottom-up approaches (“technology-driven approach” and “solutions searching for a problem to solve”) are easier to avoid;
- ✓ reliance on anecdotal evidence can be replaced by a rigorous scientific approach employing quantitative and qualitative methods;
- ✓ the focus on desired/required results helps decision-makers set priorities, make the most appropriate trade-offs, choose the right solutions and perform optimum resource allocation;
- ✓ organizations are successful in reaching goals, i.e. the general effect of the approach is that it ensures improved predictability of benefits.



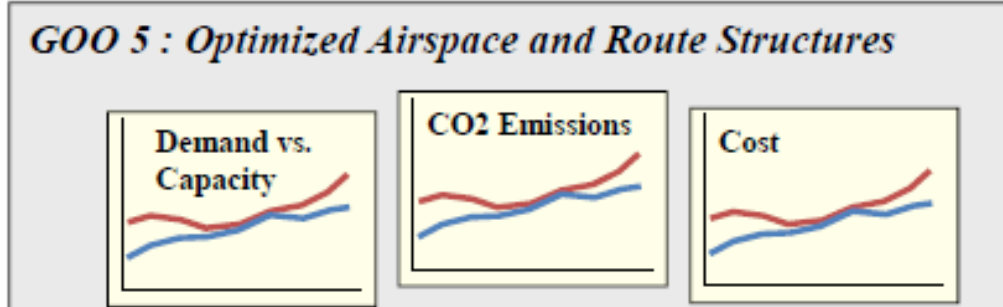
# THE WAY TO SUCCESS

✈ Once an organization (or State, region, etc.) decides to adopt the performance-based approach in a particular subject area, it must acknowledge that a number of elements are essential to the successful application of the approach. These elements are:

- ✓ commitment
- ✓ agreement on goals
- ✓ organization
- ✓ human resources and knowledge/expertise
- ✓ data collection, processing, storage and reporting
- ✓ collaboration and coordination
- ✓ cost implications

# How to Understand Performance

- ✈ The past and now:
  - Performance Review
    - (performance) Data capturing
    - Data analysis (trends)
    - Reporting
- ✈ How to improve:
  - Performance Planning
    - Understanding performance impact
    - Validation





# Performance Terminology

- ✈ Performance objectives: These define — in a qualitative and focused way — a desired trend from today's performance (e.g. improvement).
  - ✈ Generic objectives specifically focus on what has to be achieved, but do not make statements about the when, where, who or how much.
  - ✈ Instantiated objectives add the when, where, who and how much to the generic objectives. Instantiated objectives can have indicator values and associated targets.
  
- ✈ Performance indicators: to measure achievement of performance objective.
  - ✈ Current/past performance, expected future performance (estimated as part of forecasting and performance modelling), as well as actual progress in achieving performance objectives is quantitatively expressed by means of indicators (sometimes called key performance indicators, or KPIs).
  - ✈ To be relevant, indicators need to correctly express the intention of the associated performance objective. Since indicators support objectives, they should be defined having a specific performance objective in mind.
  - ✈ Indicators are not often directly measured. They are calculated from supporting metrics according to clearly defined formulas. Performance measurement is therefore done through the collection of data for the supporting metrics.

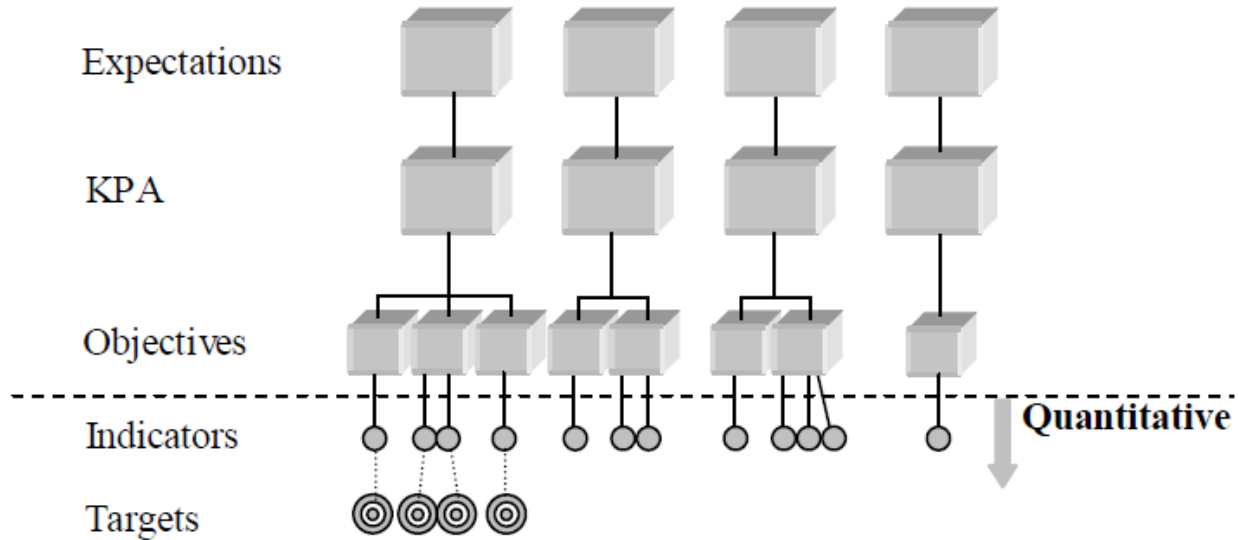


# Performance Terminology

- ✈ Performance targets: closely associated with performance indicators, they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.
- ✈ Performance gaps: The difference between the baseline performance and the target performance is referred to as the “performance gap”.
- ✈ Performance case. The term performance case is used to denote the documentation that contains all the reasoning and arguments used to demonstrate that the performance objectives (and performance targets) will be met. Combination of the various cases that together address and balance all areas in which the ATM community has expectations, e.g. the safety case, together with the business case, together with the environment case



# Performance Measurement



Objective is met when indicators meet or exceed targets



# Key Message

- ✈ Understanding Performance is key for successful transition from past and current to the future
- ✈ Working under one common umbrella
  - ✈ Performance based transition
  - ✈ Continued operational improvements
  - ✈ Toward a common vision





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