




International Civil Aviation Organization

SEMINAR/WORKSHOP (SAM ANIP-PB)

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Global Air Navigation Plan Doc. 9750

Third Edition 2007

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Introduction

Premise
The air transport industry plays a major role in **world economic activity** and remains one of the **fastest growing** sectors of the world economy.

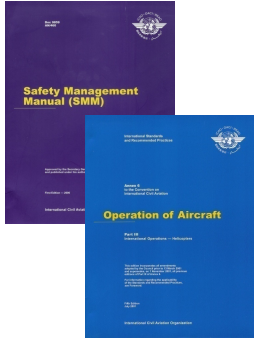


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Introduction

What to do to maintain the vitality?

To ensure that a safe, secure, efficient and environmentally sustainable air navigation system is available at the global, regional and national levels.




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Introduction


How?

Through the implementation of an air traffic management system that allows optimum use to be made of enhanced capabilities provided by technical advances.



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Introduction




Where does ICAO address efforts?

At coordinating the worldwide planning processes in support of a global air traffic management (ATM) system, as it evolves from the technology-based CNS/ATM systems concept.

Result: Global Air Navigation Plan

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Trajectory towards CONOPS ATM



2006 Global Air Navigation Plan approved

2003 AN 11^a approved ATM

1998 GANP for CNS/ATM Systems approved

1993 CNS/ATM Transition Plan approved

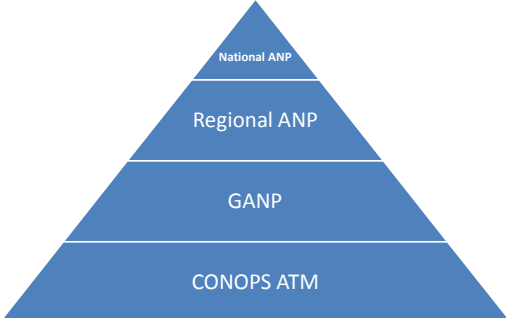

1992 Assembly endorsed CNS/ATM concept

1991 AN 10^a approved FANS concept

1988 FANS concept approved

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Documentation Structure



National ANP

Regional ANP

GANP

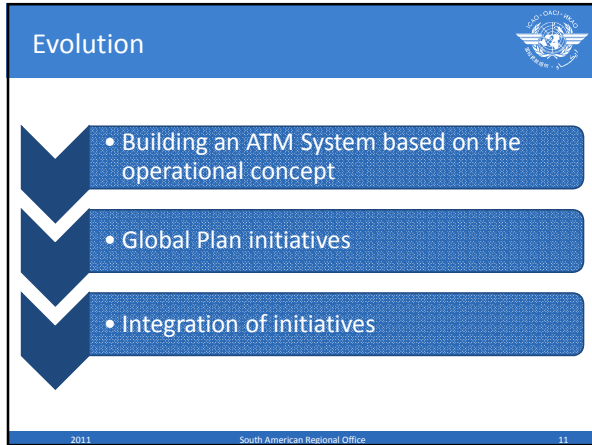
CONOPS ATM

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Documentation structure

DOCUMENT	DESCRIPTION	OBJECTIVE	FUNCTION	GUIDANCE
CONOPS ATM (Doc 9854)	ICAO Vision	Global inter-functional ANS	Vision	Requirements of the ATM System
GANP (Doc 9750) Part I	Describes methodology global harmonization	Activities mid and short term	Strategy	Contains transition strategies
GANP Part II GPIs	Group of implementation initiatives	Progress of measurable implementation	Tactic	Guides how to assess ATM efficiency
Performance-based regional plan	Work programmes	ICAO Strategic Objectives	Action	Oriented to results
Performance-based national plans	National action Plan	Respond to users' needs	Implementation	Aligned to the regional plan

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(GPI-1) Flexible use of airspace

Scope: The optimization and equitable balance in the use of airspace between civil and military users, facilitated through both strategic coordination and dynamic interaction.

Related Operational Concept Components: AOM, AUO

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(GPI-2) REDUCED VERTICAL SEPARATION MINIMUM




Scope: The optimization of the utilization of airspace and enhanced aircraft altimetry systems.

Related Operational Concept Components:
AOM, CM

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(GPI-3) HARMONIZATION OF LEVEL SYSTEMS




Scope: The adoption by all States of the ICAO Flight Level Scheme based on feet as contained in Appendix 3 to Annex 2 — Rules of the Air.

Related Operational Concept Components:
AOM, CM, AUO

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(GPI-4) ALIGNMENT OF UPPER AIRSPACE CLASSIFICATIONS



Scope: The harmonization of upper airspace and associated traffic handling through application of a common ICAO ATS Airspace Class above an agreed division level.

Related Operational Concept Components:
AOM, CM, AUO


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(GPI-5) RNAV AND RNP (PERFORMANCE-BASED NAVIGATION) 

Scope: The incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure.

Related Operational Concept Components: AOM, AO, TS, CM, AUO


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(GPI-6) AIR TRAFFIC FLOW MANAGEMENT 

Scope: The implementation of strategic, tactical and pre-tactical measures aimed at organizing and handling traffic flows in such a way that the totality of the traffic handled at any given time or in any given airspace or aerodrome is compatible with the capacity of the ATM system.

Related Operational Concept Components: AOM, AO, DCB, TS, CM, AUO

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(GPI-7) DYNAMIC AND FLEXIBLE ATS ROUTE MANAGEMENT 

Scope: The establishment of more flexible and dynamic route systems, on the basis of navigation performance capability, aimed at accommodating preferred flight trajectories.

Related Operational Concept Components: AOM, AUO

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(GPI-8) COLLABORATIVE AIRSPACE DESIGN AND MANAGEMENT




Scope: The application of uniform airspace organization and management principles on a global basis, leading to a more flexible airspace design to accommodate traffic flows dynamically.

Related Operational Concept Components: AOM, AUO

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(GPI-9) SITUATIONAL AWARENESS




Scope: Operational implementation of data link-based surveillance. The implementation of equipment to allow traffic information to be displayed in aircraft supporting implementation of conflict prediction and collaboration between flight crew and the ATM system. Improve situational awareness in the cockpit by making available electronic terrain and obstacle data of required quality.

Related Operational Concept Components: AO, TS, CM, AUO

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(GPI-10) TERMINAL AREA DESIGN AND MANAGEMENT



Scope: The optimization of the terminal control area (TMA) through improved design and management techniques.

Related Operational Concept Components: AOM, AO, TS, CM, AUO


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(GPI-11) RNP AND RNAV STANDARD INSTRUMENT DEPARTURES (SIDS) 

Scope: The optimization of the terminal control area (TMA) through implementation of improved ATS route structures based on RNP and RNAV, connecting the en-route phase of flight with the final approach, based on improved coordination processes.

Related Operational Concept Components: AOM, AO, TS, CM, AUO


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(GPI-12) FUNCTIONAL INTEGRATION OF GROUND SYSTEMS WITH AIRBORNE SYSTEMS 

Scope: The optimization of the terminal control area (TMA) to provide for more fuel-efficient aircraft operations through FMS-based arrival procedures and functional integration of ground and airborne systems.

Related Operational Concept Components: AOM, AO, TS, CM, AUO

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(GPI-13) AERODROME DESIGN AND MANAGEMENT 

Scope: The implementation of management and design strategies to improve movement area utilization.

Related Operational Concept Components: AO, CM, AUO

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(GPI-14) RUNWAY OPERATIONS

Scope: Maximize runway capacity.

Related Operational Concept Components: AO, TS, CM, AUO

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(GPI-15) MATCH IMC AND VMC OPERATING CAPACITY

Scope: Improve the ability of aircraft to manoeuvre on the aerodrome surface in adverse weather conditions.

Related Operational Concept Components: AO, CM, AUO


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(GPI-16) DECISION SUPPORT AND ALERTING SYSTEMS

Scope: Implement decision support tools to assist air traffic controllers and pilots in detecting and resolving air traffic conflicts and in improving traffic flow.

Related Operational Concept Components: DCB, TS, CM, AUO


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(GPI-17) DATA LINK APPLICATIONS 

Scope: Increase the use of data link applications.

Related Operational Concept Components: DCB, AO, TS, CM, AUO, ATMSDM


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(GPI-18) AERONAUTICAL INFORMATION 

Scope: To make available in real-time quality assured electronic information (aeronautical, terrain and obstacle).

Related Operational Concept Components: AOM, DCB, AO, TS, CM, AUO, ATMSDM


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(GPI-19) METEOROLOGICAL SYSTEMS 

Objective: To improve the availability of meteorological information in support of a seamless global ATM system.

Related Operational Concept Components: AOM, DCB, AO, AUO


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(GPI-20) WGS-84 

Objective: The implementation of WGS-84 by all States.

Related Operational Concept Components: AO, CM, AUO


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(GPI-21) NAVIGATION SYSTEMS 

Scope: Enable the introduction and evolution of performance-based navigation supported by a robust navigation infrastructure providing an accurate, reliable and seamless global positioning capability.

Related Operational Concept Components: AO, TS, CM, AUO

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(GPI-22) COMMUNICATION INFRASTRUCTURE 

Scope: To evolve the aeronautical mobile and fixed communication infrastructure, supporting both voice and data communications, accommodating new functions as well as providing the adequate capacity and quality of service to support ATM requirements.

Related Operational Concept Components: AO, TS, CM, AUO


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(GPI-23) AERONAUTICAL RADIO SPECTRUM 

Scope: Timely and continuing availability of adequate radio spectrum, on a global basis, to provide viable air navigation services (communication, navigation and surveillance).


Related Operational Concept Components: AO, TS, CM, AUO, ATMSDM

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Summary 

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Questions?

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