NACC/DCA/3 – WP/12
International Civil Aviation Organization 12/08/08
North American, Central American and Caribbean Office
Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3)
Punta Cana, Dominican Republic, 8-12 September 2008

Agenda Item 2: Air Navigation Services
2.1 Air Navigation Matters

UPDATING OF THE GLOBAL AIR NAVIGATION PLAN

(Presented by the Secretariat)

SUMMARY

This working paper contains a summary of the planning proposed by ICAO for electronic format implementation of the Air Navigation Plan (eANP) as well as the actions carried out to update information related to the Global Air Navigation Plan.

References:

- Global Air Navigation Plan (Doc 9750 AN/968)
- CAR/SAM Air Navigation Plan (Doc 8733)
- Global ATM operational concept (Doc 9854)
- Manual on Global Performance (Doc 9883)
- Manual on ATM System Requirements (Doc 9882)

Strategic Objectives	*This working paper is related to Strategic Objectives A, B, C and D.*

1. Introduction

1.1 In 1996, the Council agreed that there was an established need for an updated Global Coordinated Plan for Transition to ICAO CNS/ATM Systems (Global Coordinated Plan) and that the updated plan should constitute a "living" document comprising technical, economic, legal and institutional elements. The first update to the Global Coordinated Plan was presented to the Council on 13 March 1998. The revised plan, re-titled as the *Global Air Navigation Plan for CNS/ATM Systems* (Global Plan) was accepted by the Council at that time.

1.2 Subsequently, a comprehensive proposal for amendment to several parts of the Global Plan document was developed by the Secretariat and accepted by the Council in 2001, and published as first amendment to the Global Plan.

1.3 In follow-up to the Eleventh Air Navigation Conference (AN-Conf/11), Montreal, 22 September to 3 October 2003, the Sixth Meeting of the Air Navigation Commission Consultation with Industry was held in Montreal from 18-19 May 2004. Among the topics discussed was "Global ATM — From Concept to Reality," which resulted in a conclusion encouraging industry partners to work together towards the development of a common roadmap/global action plan for inclusion in the Global Plan. Subsequently, two roadmaps were developed by dedicated project teams established by industry for this purpose.

1.4 Based on the incorporation of the relevant material from the industry roadmaps and the review by States and the ALLPIRG/5 on 30 November 2006, the Council accepted the second amendment of the Global Plan and agreed that future updates should be carried out by the Secretariat based on ongoing work of ICAO at both global and regional levels.

2. Global Air Navigation Plan (Doc 9750)

2.1 As the evolution of CNS/ATM systems continues with endorsement of a global ATM operational concept and a revised Global Plan that provides a phased implementation plan to arrive at a global ATM system, it is clear that planning for implementation of such a system goes beyond CNS and ATM systems and horizontally integrates all elements of the air navigation system. Therefore, the Air Navigation Commission (ANC) felt that the title of the document should be changed to the Global Air Navigation Plan, which also allows for a more logical alignment with the regional air navigation plans.

2.2 As a result of this amendment, the current Global Air Navigation Plan is formed by a) the Foreword and the three chapters of the revised Global Plan that describe the roadmap and guidance for the continued evolution towards a global ATM system; b) a set of twenty-three Global Plan Initiatives (GPIs), which stem from the industry roadmap, consolidated by the Secretariat and the ANC; and c) the Appendices containing generic guidance material in areas outside of the air navigation field that are useful and valid for planning purposes. The initiatives are a logical progression of the evolutionary work already accomplished by the Planning and Implementation Regional Groups (PIRGs) and will integrate into the present planning framework.

2.3 The Global Plan will be supported by planning tools, e.g., software applications, planning documentation, web-based reporting forms, and project management tools. As States and PIRGs consider improvements to regional air navigation infrastructures, they will use the GPIs and associated common programme templates as the basis for establishing performance objectives and implementation timelines, as well as to develop a comprehensive schedule and programme of planning activities to accomplish the work.

Electronic Version of the Air Navigation Plan (eANP)

2.4 To facilitate the coordination and implementation of regional air navigation plans and support the Global Air Navigation Plan, ICAO has foreseen an electronic version of the Air Navigation Plan (eANP). This will contribute to air navigation planning development through the supply of a framework for the efficient domestic, regional, interregional and global implementation of new systems and air navigation services. This framework will support the work of the PIRGs who monitor, plan and analyze the status of implementation of facilities and services that are planned to be included into the regional air navigation plans, while recommending ways to speed-up the plans in accordance with ICAO priorities. Online availability of this information will enormously facilitate updating and accessing the latest information for States, ICAO Regional Offices and several users.

2.5 The eANP has two primary objectives:

a) at the global level: reconcile the Regional Air Navigation Plan with the ATM operational concept, the new Global ANP provisions and the new ICAO business planning processes; and

b) at the regional level: expedite regional planning and coordination through simplifying and freeing core planning from a long and cumbersome formal approval process, whilst maintaining the planning and coordination process requirements within the ICAO regional machinery.

2.6 To support the above objectives, the following deliverables will be produced:

a) easy-to-use planning templates that contain relevant elements, specifically, homogeneous ATM areas and major international traffic flows, and the agreed Global Air Navigation Plan systems infrastructure necessary to support the implementation of homogeneous ATM areas and major international traffic flows; and

b) an integrated air navigation planning environment containing details currently listed in Table ATS 1 and all other FASID Tables (AOP, CNS, ATM, MET, SAR, AIS). This will be designed to easily support the coordination, agreement and recording process between States and international organizations through a user-friendly interface.

2.7 The proposed methodology that will be employed to achieve the above deliverables consist of:

a) replacing the current provisions in the ANP, Volume I, concerning establishment of ATS Routes and Table ATS 1 with the relevant elements of the Global Plan and the evolving ATM operational concept, specifically, homogeneous ATM areas and major international traffic flows;

b) replacing the current provisions in the ANP, Volume II, comprised of FASID tables from AOP, CNS, ATM, MET, SAR, AIS with the agreed air navigation system elements necessary to support the implementation of a performance-based infrastructure to support homogeneous ATM areas and major international traffic flows;

c) moving all details currently listed in Table ATS 1 and all other FASID Tables to an integrated air navigation planning environment, which will be designed to support the coordination, agreement and recording process between States and international organizations; and

d) proposing the necessary amendments to current ICAO SARPs, e.g., Annex 11 — Air Traffic Services, Appendix 1, to remove the distinction between regional and non-regional ATS routes networks.

2.8 For the achievement of these goals and deliverables, the eANP proposes certain framework elements, which are detailed in the eANP overview included in the **Appendix** to this working paper. Under these framework elements and among the tools proposed are the communication planning and the 5LNC management tools:

a) On communication planning, ICAO has been considering and evaluating several existing tools used by different regions, for example, the Spectrum and Frequency Information Resource (SAFIRE), which is operational in the European Region and under evaluation in the Asia Pacific Region. SAFIRE together with another tool used for the frequency planning purposes (MANIF Application) were also assessed by the ICAO NACC Office, and further evaluation will be conducted by ICAO for defining the best tool for this planning; and

b) the five-letter name code (5LNC) management tool is a planning tool to ensure unique designator allocation compliant with Annex 11 standards, promoting efficient global assignment of designators for the different ATS routes and permitting unambiguous designation of significant points not linked to the site of a radio navigation aid. Currently, this tool is operational in the European and Middle East Regions and in preparation for implementation in the Asia Pacific, NAM/CAR and SAM Regions. In this regard, the ICAO NACC Office is preparing an initial version of 5LNC assignment information for NAM/CAR States/Territories/International Organizations that will be available by the end of 2008 on the ICAO NACC Office website for review and update.

2.9 The eANP activities initiated in 2008, can be viewed on the ICAO GIS website (https://192.206.28.84/eganp), in which a revised ANP structure and format, as well as online training for use of the air navigation planning database/GIS is available. The new structure, including harmonized ANP tables, will be available to States in 2009.

Updating of information for the Air Navigation Plan

2.10 As part of the update and review process by ICAO and States/Territories/International Organizations, ICAO has sent several communications announcing the amendment of a number of CAR/SAM ANP, Volume II, FASID Tables to update frequency assignments and the NDB Deactivation Plan. In this regard, these tables have been uploaded onto the NACC Office website for consultation by States/Territories/International Organizations. This information was last updated on 26 August 2008.

ANIP Planning Process

2.11 The ANC is in the process of reviewing the Air Navigation Integrated Programme (ANIP), which will support the ICAO Business Plan. The ANIP will serve as the mechanism for the ANC to review ICAO work programmes and provide a planning and monitoring tool to ensure that ICAO work programmes lead to a more global and seamless air navigation system. The ANC expects that the ANIP will support the Global Plan and work programmes of ICAO while allowing a more effective reporting process for the ANC and Council.

2.12 Considering the *ICAO Strategic Objective D – Efficiency*, as well as the results of the AN-Conf/11, the approach for the future of global air navigation is contained in:

a) the Global ATM operational concept serves as the vision document (Doc 9854);

b) the Global Plan supports, at the strategic level, the ATM operational concept;

c) a performance-based transition document (Doc 9883 Part II), offers transition strategies and guidance aimed at harmonizing transition planning on the basis of a common set of operational improvements;

d) an ATM system requirements document (Doc 9882), is aimed at industry, standards-making bodies and panels to ensure that all ATM-related standards-making and industry work are in support of the operational concept; and

e) the purpose of a performance manual (Doc 9883, Part I) will be to offer guidance with establishing regional performance targets associated with the eleven Key Performance Areas (KPAs) or expectations contained in the operational concept.

3. Suggested Action

3.1 The Meeting is invited to:

a) take note of the information contained in this paper;

b) consult and comment on the progress made regarding the eANP referred in paragraphs 2.4 to 2.9 and the Appendix to this paper;

c) review the updates to the Air Navigation Plan referred to in paragraph 2.10 and inform ICAO of results;

d) disseminate the information contained in paragraphs 2.11 to 2.12 regarding planning and implementation of national plans in harmony with regional plans to their respective administrations; and

e) recommend and/or suggest any action deemed appropriate.

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APPENDIX

ELECTRONIC VERSION OF THE AIR NAVIGATION PLAN (eANP)

Framework elements

The framework elements for the deliverables of this transition will be:

a) Planning documents

- homogeneous ATM areas and major international traffic flows, and
- agreed CNS/ATM systems infrastructure necessary to support this implementation

- Proposed new Layout and Content
- Introduction/BORPC/General Planning Aspects (Common to all Regions)
- Coloured pages of specific requirements per Region per discipline

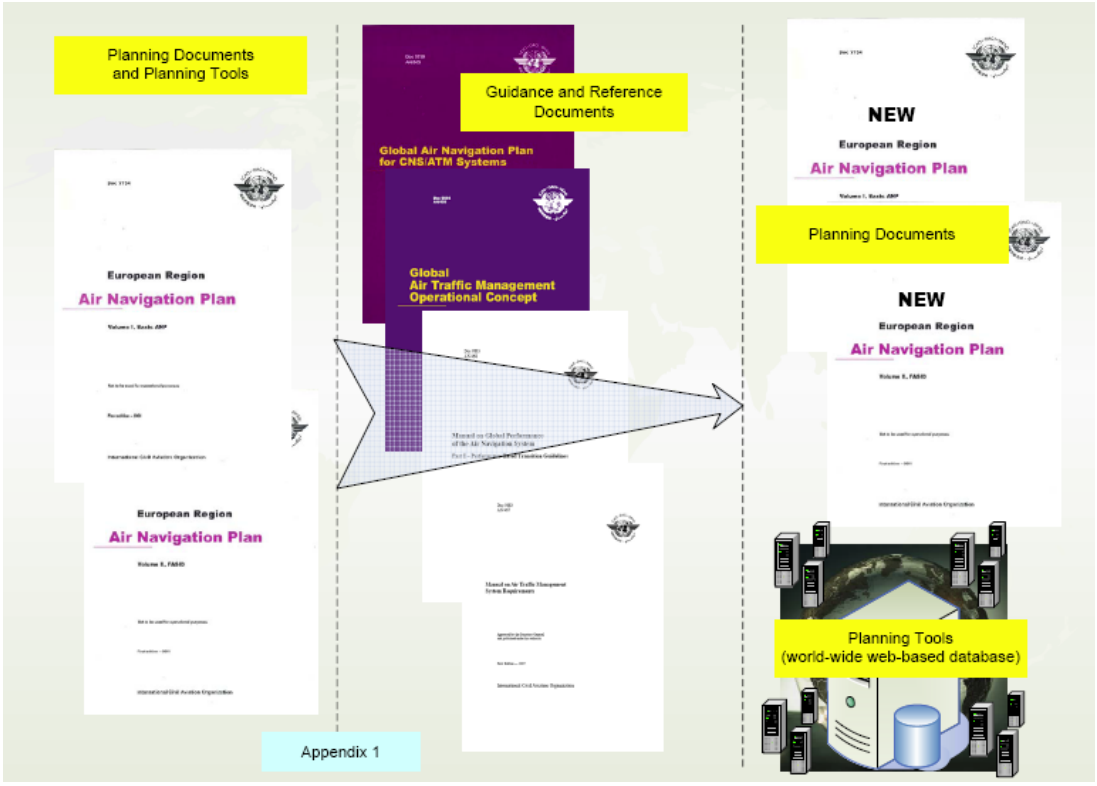
b) Integrated air navigation planning environment

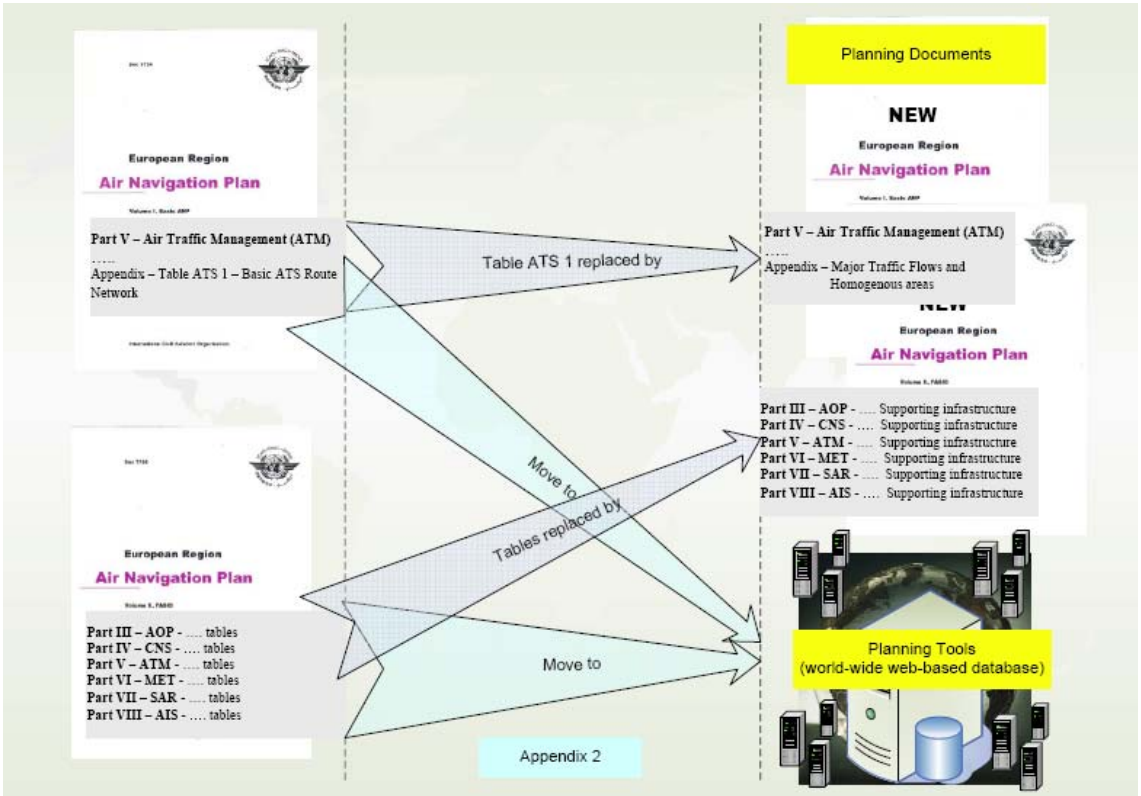
- Tools that are proposed under the electronic Air Navigation Plan (eANP) environment effort:

i. 5LNC Management Tool
ii. Navaid Management Tool
iii. Communications planning
iv. HF SELCAL allocations
v. AMHS assignments
vi. SBAS Channel Allocation Utility
vii. Route Designator Management Tool
viii. Automated ANP update processing utility
ix. eBORPC
x. eFASID
xi. FIRs Amendment and Information Tool

- Process model for ATS route planning tool (suggested model for all other FASID table-related tools)

This transition process is an ongoing process with the participation of several stakeholders including ICAO offices, EUROCONTROL and States through their corresponding Planning/Implementation Group (for example for the CAR/SAM Regions: GREPECAS). In general terms the transition to the eANP will de accomplished as illustrated on figure 1.


Planning Documents and Planning Tools
Guidance and Reference Documents
Global Air Navigation Plan for CNS/ATM Systems
Global Air Traffic Management Operational Concept
European Region
Air Navigation Plan
NEW
European Region
Air Navigation Plan
Planning Documents
NEW
European Region
Air Navigation Plan
Planning Tools (world-wide web-based database)
Appendix 1


European Region
Air Navigation Plan
Part V – Air Traffic Management (ATM)
.....
Appendix – Table ATS 1 – Basic ATS Route Network
Table ATS 1 replaced by
Planning Documents
NEW
European Region
Air Navigation Plan
Part V – Air Traffic Management (ATM)
.....
Appendix – Major Traffic Flows and Homogenous areas
European Region
Air Navigation Plan
Part III – AOP - ..... Supporting infrastructure
Part IV – CNS - .... Supporting infrastructure
Part V – ATM - .... Supporting infrastructure
Part VI – MET - ..... Supporting infrastructure
Part VII – SAR - ..... Supporting infrastructure
Part VIII – AIS - .... Supporting infrastructure
Move to
Tables replaced by
European Region
Air Navigation Plan
Part III – AOP - ..... tables
Part IV – CNS - .... tables
Part V – ATM - .... tables
Part VI – MET - ..... tables
Part VII – SAR - ..... tables
Part VIII – AIS - .... tables
Move to
Planning Tools (world-wide web-based database)
Appendix 2

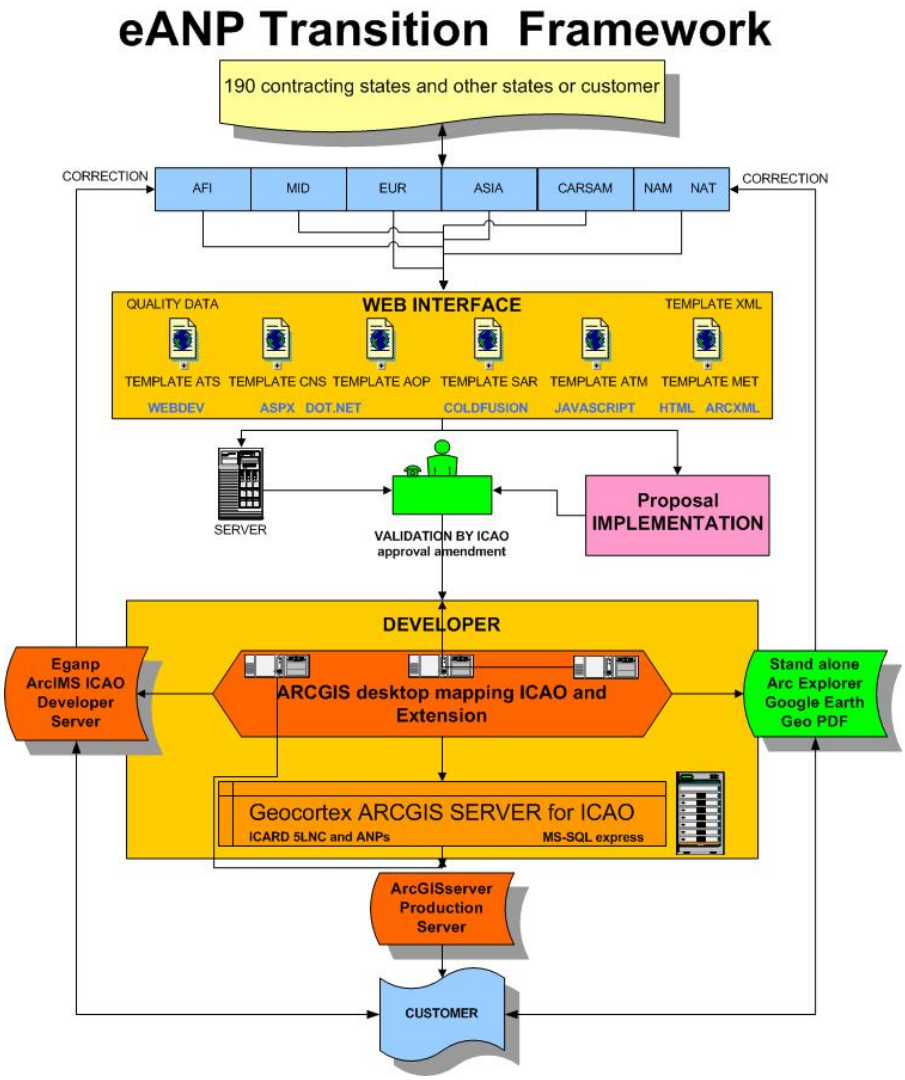

eANP Transition Framework
190 contracting states and other states or customer
CORRECTION
AFI
MID
EUR
ASIA
CARSAM
NAM NAT
CORRECTION
QUALITY DATA
WEB INTERFACE
TEMPLATE XML
TEMPLATE ATS
TEMPLATE CNS
TEMPLATE AOP
TEMPLATE SAR
TEMPLATE ATM
TEMPLATE MET
WEBDEV
ASPX DOT.NET
COLDFUSION
JAVASCRIPT
HTML ARCXML
SERVER
VALIDATION BY ICAO
approval amendment
Proposal
IMPLEMENTATION
DEVELOPER
Eganp
ArcIMS ICAO
Developer
Server
ARCGIS desktop mapping ICAO and
Extension
Stand alone
Arc Explorer
Google Earth
Geo PDF
Geocortex ARCGIS SERVER for ICAO
ICARD 5LNC and ANPs
MS-SQL express
ArcGISserver
Production
Server
CUSTOMER

Figure 1

– END –