



International Civil Aviation Organization
CAR/SAM Regional Planning Implementation Group (GREPECAS)
**Second Meeting of the Communications, Navigation and Surveillance / Air
Traffic Management Subgroup (CNS/ATM/SG/2)**
(Mexico City, Mexico, 16 to 19 November 2010)

Agenda Item 2: Follow-up to the implementation status of the performance based navigation systems plans for the CAR and SAM Regions and to the latest amendments to the ATM- and CNS-related SARPS

KEEPING STANDARDS RELEVANT

(Presented by the Secretariat)

SUMMARY

An extensive analysis of the NextGen and SESAR programmes was conducted to determine their impact on ICAO Standards, manuals and circulars. Although both programmes are based on the *Global Air Navigation Plan* (GANP, Doc 9750), it was found that the programmes have significant differences; and the programmes will result in a significant number of changes to the Standards.

In addition to NextGen and SESAR programmes, GANP would be more effective if it included a framework for the definition of other States' air navigation modernization plans. This framework would be structured with the Global Plan Initiatives at the top, supported by operational improvements and their enablers. Air navigation modernization plans defined this way could then be analysed and subjected to international consultation to ensure harmonization with the global air navigation system.

The assembly resolution A-37/12(B) is in appendix hereto.

Document 9750 Global Air Navigation Plan

Strategic Objective(s)	<i>This working paper is related to Strategic Objectives A – Safety D – Efficiency</i>
-------------------------------	--

1. INTRODUCTION

1.1 Following the Forum on Integration and Harmonization of NextGen and SESAR into the Global ATM Framework held in September 2008, an extensive analysis by ICAO on the NextGen and SESAR Programmes revealed that these programmes will generate over 300 updates to ICAO documentation.

1.2 This analysis was conducted with a view to ensuring:

- a) that NextGen and SESAR programmes are aligned with the *Global Air Navigation Plan* (GANP, Doc 9750) and that they will be compatible with each other and be adaptable to the global aviation community;
- b) that NextGen and SESAR developments are fed into the ICAO international consultation process in order to achieve global agreement and hence harmonization; and

- c) that the innovations of NextGen and SESAR are made available globally.

2. HOW WAS THE ANALYSIS DONE?

2.1 The NextGen and SESAR programmes are based on the Global Plan Initiatives (GPIs) contained in GANP. Each programme contains deliverables termed “operational improvements”. These are supported by various “enablers”. The enablers are technical, operational, procedural or even policy or legal prerequisites, required to achieve the operational improvements.

2.2 The operational improvements are generally defined at the same level of technical detail that Air Navigation Commission panels deal with. This simplified the task of analysis as it was easier to identify the appropriate bodies to perform the analysis for each particular operational improvement.

2.3 Both operational improvements and enablers were evaluated to determine if additions to international Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and other documentation were required.

3. RESULTS

3.1 The work identified is divided into two categories:

- a) clearly defined document changes; and
- b) new concepts that require further development.

3.2 In total, over 300 changes to ICAO documentation were identified. Of these approximately 170 are in the first category, while over 130 are in the second category. The second category could be grouped into sixteen unique concept areas. Further work on these is needed in order to determine their impact on the standards development activities.

4. NEXT STEPS AND THE CHALLENGE AHEAD

4.1 The operational improvements resulting in clearly defined changes have specific timelines, so ICAO can program this work with adequate lead time to ensure timely completion.

4.2 The concept development work is slightly more complicated. The dates that the described operational capabilities are needed are known; however, it will be necessary to determine a timeline for ICAO to produce the material. This task is complex as much of the work will also require SARPS development with validation by industry standards-making bodies.

4.3 For each category, ICAO has initiated the “standards roundtable” process in which ICAO will meet regularly with the management personnel of NextGen and SESAR and the various industry standards-making bodies. The intention is to make as much use as possible of the resources and products of the recognized external bodies as called for by Assembly Resolution A36-13.

4.4 In the standards roundtable process, work schedules will be driven by implementation dates. Standards development will be treated like a project. The relationship between the high-level international SARPS and the detailed industry standards will be clear. The work of ICAO and the standards making bodies will be tightly coupled to save on resources. ICAO will adopt a multi-disciplinary approach to SARPS development.

4.5 All of the SARPS work required by NextGen and SESAR has been identified and will be subject to full consultation with the States and international organizations. This will allow all States to participate in the work.

4.6 Failure to engage the NextGen and SESAR programmes early carries the risk that new techniques and technology could be implemented by some States before the necessary SARPS are developed and subjected to the international consultation process by ICAO.

5. BEYOND NEXTGEN AND SESAR

5.1 Many other States have developed next generation plans for air navigation modernization. As the number of modernization plans increases, so too does the challenge of ensuring harmonization. ICAO is about to begin the task of ensuring harmonization between NextGen and SESAR and sees benefit in extending this to all new air navigation modernization plans.

5.2 The benefits of this approach include:

- a) the availability of best practices to all; and
- b) a reduction in transition problems.

5.3 All major air navigation modernization initiatives that have any impact on the global air navigation system should be subject to analysis and assessment for global compatibility as early as possible.

5.4 ICAO will amend the GANP to include a framework for the definition of other States' air navigation modernization plans requiring them to do the following:

- a) define the objectives of each air navigation modernization programme in terms of desired operational improvements; and
- b) define the necessary enablers to support these improvements.

5.5 States should then submit this information to ICAO for review so that the impact on ICAO's work programme and standards development activities can be determined.

5.6 The information would then be forwarded by ICAO to the air navigation service providers concerned with appropriate recommendations which may be as follows:

- a) for clearly defined needs, engagement in appropriate standards development work; and, if necessary; and
- b) a standards roundtable process like that applied to NextGen and SESAR.

6. CONCLUSION

6.1 ICAO has taken action to ensure that the NextGen and SESAR programmes are integrated and harmonized into the global air navigation system. Early engagement is essential to allow the necessary standards to be subject to international consultation and development while still meeting the programme schedules. Depending on the programme needs, this work may require simple involvement in Air Navigation Commission Panel activities or a coordinated activity like the standards roundtable process described in this paper.

6.2 There is a need for ICAO to amend GANP to include a framework which will allow ICAO to easily analyze the impact of other States' air navigation modernization plans on the global ATM system and then take appropriate action needed to ensure global harmonization.

7. ACTION BY THE MEETING

7.1 The meeting is invited to:

- a) request States, industry and financing institutions to provide the necessary support for coordinated implementation of the GANP, avoiding duplication of effort; and
- b) urge States that are developing their own air navigation infrastructure modernization plans, and has an impact on ICAO SARPs, to share those plans in a timely manner with ICAO for review and assessment to ensure global compatibility and harmonization.

APPENDIX

**Resolution ICAO global planning for safety and sustainability
37/12(B):**

Whereas the enhancement of the efficiency of aviation operations is a key element of the ICAO Strategic Objectives;

Having adopted Resolution A35-15, a consolidated statement of continuing ICAO policies and practices related to a global air traffic management (ATM) system and communications, navigation and surveillance/air traffic management (CNS/ATM) systems; and

Noting the acceptance of 30 November 2006 by the Council of the new version of the Global Air Navigation Plan (GANP); and

Recognizing that many States are developing new generation plans for their own air navigation modernization.

The Assembly:

1. *Instructs* the Council to amend the GANP to include a framework that will allow ICAO to easily analyze the impact of States' air navigation modernization plans on the global system and then take appropriate action as needed to ensure global harmonization.
2. *Calls upon* States, planning and implementation regional groups (PIRGs) and the aviation industry to utilize the guidance provided in the GANP for planning and implementation activities.
3. *Urges* Contracting States, industry and financing institutions to provide the necessary support for coordinated implementation of the GANP, avoiding duplication of effort.
4. *Urges* States that are developing new generation plans for their own air navigation modernization to share their plans in a timely manner with ICAO to ensure global compatibility and harmonization.
5. *Instructs* the Council to ensure that the GANP is continuously maintained up to date in light of further operational and technical developments, in close collaboration with States and other stakeholders.
6. *Instructs* the Council to organize a Twelfth Air Navigation Conference in 2012, to develop longer-term planning for ICAO based on an update of the GANP.

— END —