INTERNATIONAL CIVIL AVIATION ORGANIZATION

Fourth Meeting of the APIRG Communications, Navigation and Surveillance Sub-group (Dakar, Senegal, 25-29 July 2011)

Agenda Item 7: Aeronautical Surveillance

Planning and implementation guidelines

(Presented by the Secretariat)

SUMMARY

This information paper provides the CNS/SG/4 Meeting with the strategy for the implementation of the ICAO Global Plan Initiative for situational awareness systems, for consideration when establishing regional planning and implementation guidelines.

Action by the meeting is at **paragraph 3.**

REFERENCE:

-ICAO Global Air Navigation Plan, Doc 9750

Related Strategic Objectives: **A** and **C.**

1. INTRODUCTION

1.1. The *Global Air Navigation Plan* was developed on the basis of an industry roadmap in an effort to facilitate implementation of the Recommendations of the 11TH Air Navigation Conference and ensure that focused efforts would lead to near- and medium-term benefits. The Global Plan, therefore, contains near- and medium-term guidance on air navigation system improvements necessary to support a uniform transition to the ATM system envisioned in the operational concept.

2. DISCUSSION

2.1. In accordance with the Global Plan, planning will be focused on specific performance objectives, supported by a set of "Global Plan Initiatives" ("initiatives"). These initiatives are options for air navigation system improvements that when implemented result in direct performance enhancements. States and regions will 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. A set of interactive planning tools will assist with the analytical process.

Description of strategies for the implementation of the ICAO Global Plan initiative on situational awareness (GPI-9)

2.2. The further implementation of enhanced surveillance techniques (ADS-C or ADS-B) will allow reductions in separation minima and an enhancement of safety, increase in capacity, and improved flight efficiency, all on a cost-effective basis. These benefits may be achieved by bringing surveillance to areas where there is no primary or secondary radar, when cost-benefit models warrant

it. In airspaces where radar is used, enhanced surveillance can bring further reductions in aircraft separation minima and improve, in high traffic density areas, the quality of surveillance information both on the ground and in the air, thereby increasing safety levels. The implementation of sets of quality-assured electronic terrain and obstacle data necessary to support the ground proximity warning systems with forward-looking terrain avoidance function as well as a minimum safe altitude warning (MSAW) system will benefit safety substantially.

2.3. Implementation of surveillance systems for surface movement at aerodromes where weather conditions and capacity warrant will also enhance safety and efficiency while implementation of cockpit display of traffic information and associated procedures will enable pilot participation in the ATM system and improve safety through greater situational awareness.

2.4. In remote and oceanic airspace where ADS-C is used, FANS capabilities exist on many air transport aircraft and could be added to business aircraft. ADS-B can be used to enhance traffic surveillance in domestic airspace. In this respect, it should be noted that the 1090 extended squitter is available and should be accepted as the global choice for the ADS-B data link.

2.5. At terminal areas and at aerodromes surrounded by significant terrain and obstacles, the availability of quality-assured terrain and obstacle databases containing digital sets of data representing terrain surface in the form of continuous elevation values and digital sets of obstacle data of features, having vertical significance in relation to adjacent and surrounding features considered hazardous to air navigation, will improve situational awareness and contribute to the overall reduction of the number of controlled flight into terrain related accidents.

3. CONCLUSION

3.1. The meeting is invited to endorse the strategy for the implementation of the Global Plan Initiative for systems as described in this working paper, as part of regional planning and implementation guidelines for aeronautical surveillance.

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