

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 1: Introduction and assessment of a global air traffic management (ATM) operational concept

1.1 The global ATM operational concept

:

ON PLANNING THE REALIZATION OF THE MAIN PROVISIONS OF THE PROJECT OF GLOBAL OPERATIONAL AIR TRAFFIC MANAGEMENT CONCEPT IN THE REGION OF THE COMMONWEALTH OF INDEPENDENT STATES

(Presented by the Republic of Azerbaijan, Republic of Armenia, Republic of Belarus, Georgia, Republic of Kazakhstan, Kyrgyzstan Republic, Republic of Moldova, Russian Federation, Republic of Tadjikistan, Republic of Uzbekistan and the Interstate Aviation Committee)

SUMMARY

The working paper sets forth the directions of regional activity of the member States of the Commonwealth of Independent States in relation to planning and ensuring the realization of the main provisions of the ICAO operational air traffic management concept.

A positive estimation is given to the operational air traffic management concept as a document, outlining global perspectives of developing and improving national air traffic management systems, their harmonization and integration into the world air navigation system.

Action by the conference is in paragraph 12.

¹ English and Russian versions provided by the Republic of Azerbaijan, Republic of Armenia, Republic of Belarus, Georgia, Republic of Kazakhstan, Kyrgyzstan Republic, Republic of Moldova, Russian Federation, Republic of Tadjikistan, Republic of Uzbekistan and the Interstate Aviation Committee Interstate Aviation Committee.

1. INTRODUCTION

1.1 In the field of air traffic management (ATM) the activity of the CIS member States is aimed at providing the necessary conditions for the development and improvement of the national ATM systems, their regional harmonization in accordance with the ICAO strategy and preparation for the integration into the world air navigation system.

1.2 A significant event in air navigation in the CIS States became approving by the Heads of the Governments of the Republic of Armenia, Republic of Belarus, Republic of Kazakhstan, Kyrgyzstan Republic, Republic of Moldova*, Russian Federation, Republic of Tadjikistan, Republic of Uzbekistan* of the Concept of the Harmonization of the National Air Traffic Management Systems of the Member States of the Commonwealth of Independent States, the project of which had been worked out by the Interstate Aviation Committee jointly with the aviation administrations and national ATC bodies of the CIS States on the basis of the ICAO global strategy for communications, navigation and surveillance/air traffic management (CNS/ATM) implementation.

1.3 The urgency of the issue of the harmonization of air space use planning and air traffic control systems became especially evident after the transition period of the national ATM systems formation in the CIS States was over, when the national and interstate arrangements, aimed at the search for the effective ways of the ATM systems unification and integration, had been carried out.

1.4 Under present conditions it became obvious that a new complex approach to realizing the task of unification and harmonization of the CIS States' ATM systems is necessary. This new approach should simultaneously take into consideration the tasks of economic efficiency of air space use, tasks of the flight safety improvement, tasks of the States' security, financial resources of the States, international experience and the results of activity of the countries and regions, most developed in this way, as well as the development directions of these systems, adopted by the world aviation community.

1.5 The concept of harmonization is a regional fragment of concrete approaches to the medium-term planning and ensuring the realization of the ICAO global operational ATM concept, which is highly topical for all the States of the Eastern part of the ICAO European Region, as it is aimed at achieving interaction of the global ATM system for all the users in the course of all flight stages, which is in compliance with the coordinated safety levels, provides economically optimum operation, is economically viable and meets security requirements.

2. SYSTEM APPROACH TO REALIZING REGIONAL TASKS IN THE FIELD OF AIR NAVIGATION

2.1 Within the framework of the Interstate Aviation Committee on the national and interstate level the CIS States are actively working in the field of the CIS member States' ATM systems, as they are important components of the national transport systems and are among significant components, determining their national security.

* with certain reservations

2.2 From a position of maximum satisfaction of air space users' interests, national ATM systems need improving. All aviation administrations of the CIS States recognized it expedient to: jointly work out, coordinate normative legal acts on the state regulation and organization of air space use; coordinate directions of improving technical base and developing technical facilities, used in the national ATM systems; increase the level of coordination and interaction with air space users and management structures of the national ATM systems of the CIS States; be guided by ICAO Standards and Recommended Practices for the purpose of ensuring safety and regularity of international air navigation.

3. AIR SPACE USE ORGANIZATION

3.1 The issues of flexibility and dynamism in the organization of air space use should meet the requirements of our time and envisage close cooperation of all air space users within every State, as well as within the framework of the Commonwealth of Independent States and with the contiguous States of one or another ICAO region.

3.2 Aviation administrations of the CIS States actively cooperate in the issues of air space use organization, which finds its realization in the preparation to the introduction of reduced vertical separation minimums, aligned routes, cross-Polar, trans-Polar, trans-Siberian and trans-Asian routes, application of CNS/ATM technologies in the air space of the CIS member States.

3.3 The issues of organizing the use of air space by civil and state aviation, executing flights of military aircraft and special-purpose aircraft, ensuring flight safety of civil aircraft in the zones of local military conflicts, providing aeronautical information to military aviation, ensuring military/civil coordination of air space use and air traffic control within the framework of the CIS States are being settled in close cooperation of civil and military operational air traffic management (control) bodies on the basis of ICAO SARPs, multilateral (bilateral) Agreements and Decrees of the CIS member States on aviation activity issues.

4. AERODROME OPERATIONS

4.1 The analysis of issues, settled by the Aviation Administrations of the CIS States and the Interstate Aviation Committee in relation to air traffic management for the aerodromes of the CIS States, as one of the components of the national ATM systems and their comparison with the component of the operational ATM concept "Aerodrome Operations" showed their full adequacy in all the parameters and at the same time determined the key conceptual changes in the conditions of future ground aerodrome (airport) infrastructure. Furthermore, operational ATM concept shows, that the future ATM system will give the possibility of the effective use of the airport capacity under the conditions of the available infrastructure.

4.2 The CIS States and the Interstate Aviation Committee support the ideology of the present issue in the operational ATM concept and support this direction of the ICAO future activity.

5. AIR TRAFFIC SYNCHRONIZATION

5.1 Keeping balance between demand and capacity is a process of jointly adopting decisions in multilevel planning (strategic, before-tactical and tactical) with the account of collecting, comparing and analysing data, received from different sources within and beyond the involved air space capacity. Collection, comparison and analysis of data for the reproduction of the exact picture of demand and limitations will allow to reveal any factors, which can influence ATM system's safety, capacity and efficiency.

5.2 With the aim of the most complete realization of ATM tasks in the Eastern part of the ICAO European Region, Heads of the National Air Space Use and air traffic management bodies of the Republic of Kazakhstan, Kyrgyzstan Republic, Russian Federation, Republic of Tadjikistan, Republic of Uzbekistan with the active participation of the Interstate Aviation Committee have established the "Euroasia" Coordination Council (CC).

5.3 In the interests of pursuing coordinated policy in the field of organizational, normative and legal, functional and technological and informative and technical support of the national ATM systems functioning, the members of the "Euroasia" CC set up International Air Navigation Service "Vostok", which is a component part of the All-European Air Navigation System.

6. AIR SPACE USERS' OPERATIONS JOINT DECISION-MAKING

6.1 The national air space of the CIS States is restricted, and the air space capacity resource depends on the procedures and facilities used. Therefore, there is a problem of management in these conditions, as it is necessary to ensure acceptable safety, which is one of the main tasks, solved by the CIS States with the coordinating role of the Interstate Aviation Committee. The present aspect covers the issues of improving ATM systems, normative and legal base, planning aircraft flight paths, interaction in the technical equipment of ATC bodies and others issues, which are being settled by the Aviation Administrations of the CIS States with the participation of the Interstate Aviation Committee.

7. SETTLEMENT OF CONFLICT SITUATIONS

7.1 The ideal aim of the multilevel planning is receiving a coordinated four-dimensional flight path, when no tactical interference is needed during flight. However, it is recognized that some errors in the information used and unforeseen and uncontrolled changes will still require tactical modifications to the flights' configuration. Besides a priori settlement of conflict situations on the stages of flight planning and tactical settlement of conflict situations, related to providing separation at all flight stages, important role is given in the operational ATM concept to the use and development of airborne and ground collision avoidance systems.

8. ORGANIZATION OF AIR TRAFFIC SERVICE

8.1 Air traffic management is a versatile process, including airspace and air traffic flow management, all forms of air traffic service (advisory, flight information, alerting service, control service, which, in its turn, includes area control service, approach control service and aerodrome control service). Organization of air traffic management service envisages coordination of providing services in full measure by service providers with ensuring the required safety level and efficiency of air space use. Air traffic management service may be provided by separate ATM service providers or by a combination of ATM services, corresponding to the optimum capacity level and efficiency for the whole community of airspace users. Such approach to the issues of the organization of air traffic management service may serve as a starting-point (focal point) of interaction between real and potential airspace users and ATM services, providing their services in this sphere.

8.2 In this relation the CIS States and the Interstate Aviation Committee are considering the proposed operational concept, Section “Organization of Air Traffic Management Service” to be a basis for the further detailed study and working out recommendations on its realization within the framework of the CIS member States.

9. PROVIDING INFORMATION SERVICE

9.1 The key element of the approach, adopted in the ATM operational concept, is the idea of global information service, use of information and organization of information exchange, which allows to take effective decisions on any level.

9.2 Successful control of quality, integrity and readiness of this complex, increasing, quickly changing, open ATM information on the real time-scale, called virtual ATM unification, can be considered as the main operational decision for the ATM operational concept. Not only ATM services, but other users (customs and immigration authorities, meteorological services, baggage services, etc.) can avail themselves of such information.

10. INTERACTION WITH REGIONAL ORGANIZATIONS IN THE FIELD OF AIR NAVIGATION

10.1 Coordination of air navigation planning and ATM issues in the Eastern part of the ICAO European Region, air traffic flow service and management, perspective CNS/ATM systems' implementation are realized on the basis of constructive interaction with the ICAO European and North Atlantic Office (through its Working Groups and Meetings of EANPG, GATE, TARTAR, FLOE, RVSM IE), ECAC Eurocontrol.

10.2 For the purpose of working out proposals on the realization of coordinated policy and integration in the field of airspace use and air traffic control of the Agreement Contracting States, Coordination Commission on Air Navigation has been functioning at the Interstate Aviation Committee since 1994. This Commission actively promoted establishing in 1999 in the Central Asian region of the “Euroasia” Coordination Council (“Euroasia” CC), consisting of the Aviation Administrations of the Republic of

Kazakhstan, Republic of Tadjikistan, Republic of Uzbekistan, Russian Federation and Kyrgyzstan Republic. The main task of this Coordination Council is to determine measures on policy coordination in the field of the normative and legal support of the ATM system, development of the international air routes' structure, methods of airspace service, personnel training and logistic support of ATM systems, including CNS/ATM Concept implementation. In October 2002 there was an Agreement signed on the establishment of the "Vostok" International Air Navigation Service in the Eastern part of the ICAO European Office. This Agreement was signed by the Republic of Kazakhstan, Republic of Tadjikistan, Republic of Uzbekistan, Russian Federation, Kyrgyzstan Republic. The aim of the "Vostok" International Air Navigation Service activity is the realization of coordinated policy in the field of organizational, normative and legal support, national ATM systems' functioning, in the interests of the States, Aviation Administrations of which have concluded the Agreement on the "Vostok" International Air Navigation Service, including the ICAO CNS/ATM concept implementation and other international agreements.

10.3 The idea, put forward and supported at the ICAO/ECAC/Eurocontrol Meeting in June 2002 in Baku, on establishing the regional association of air navigation providers of Azerbaijan, Armenia, Georgia, Kazakhstan, Moldova and the Ukraine (RADA) with its Headquarters in Kiev, found its realization. Its aim is to promote safe and effective air navigation service in the Black Sea-Transcaucasus Region.

10.4 Taking into account the above-mentioned, as well as the fact, that the CIS States have adopted the concept of the harmonization of the national ATM systems of the CIS States on the state level, the immediate perspective tasks, which are also stipulated by the main provisions of the ICAO ATM operational concept, are considered coordination of the above-mentioned subregional air navigation organizations and integration of the national ATM systems of the ICAO Eastern-European Region into the world air navigation system.

11. CONCLUSIONS

11.1 The ATM operational concept for the period up to 2025 and later on systematically sets forth what is necessary to be done to provide more flexibility to airspace users and maximize the indices of ATM systems' operation efficiency. The concept shows the ways of increasing the capacity of the global ATM system and flight safety under the future conditions. Taking this into account, the CIS States and the Interstate Aviation Committee support the draft operational concept and recommend the ICAO Air Navigation Commission to approve it.

12. ACTION BY THE CONFERENCE

12.1 The conference is invited to:

- a) take into consideration the present working paper on the planning of the realization of the main provisions of the draft ATM operational concept in the CIS region;
- b) approve the draft ATM operational concept, complete it in accordance with the proposals stated by the participants of the conference and submit it to the ICAO Council for approval.

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