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ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 37: Development of an up-to-date consolidated statement of continuing ICAO policies and practices related to a global ATM system and communications, navigation and surveillance/air traffic management (CNS/ATM) systems

TRANSITION TO REDUCED VERTICAL SEPARATION MINIMA IN RUSSIAN FEDERATION AIRSPACE AND A NUMBER OF NEIGHBORING COUNTRIES

(Presented by the Russian Federation)

EXECUTIVE SUMMARY

This document sets out the material for the transition of the Russian Federation and a number of neighboring countries to reduced vertical separation minima.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective A.
<i>Financial implications:</i>	Some additional resources may be required.
<i>References:</i>	Doc 9574, <i>Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive</i>

* Russian version provided by the Russian Federation.

1. INTRODUCTION

1.1 In September 2001 the Russian Federation Government decided to switch to reduced vertical separation minima for aircraft in the Kaliningrad (over the Baltic Sea) and parts of the Rostov (over the Black Sea) regions through a single air traffic management system. The use of reduced vertical separation minima in these regions has significantly increased the effectiveness of using the airspace while providing a specific level of flight safety.

1.2 Reduced vertical separation minimum (RVSM) will be implemented throughout the Russian Federation by 2011 which will result in:

- a) doubled capacity without having to establish additional air routes;
- b) a reduction in aircraft take-off delays by 40 – 45 per cent;
- c) a saving on aviation fuel of up to 5 per cent;
- d) a reduction in the emission of harmful substances into the atmosphere by 5 per cent; and
- e) the creation of a “seamless” airspace with neighboring countries.

2. IMPLEMENTING RVSM IN THE RUSSIAN FEDERATION

2.1 At the initiative of the Russian Federation, the European/North Atlantic office of ICAO has set up a task group to implement RVSM in the eastern part of the European Region (Eurasia RVSM). The countries taking part in the project to implement RVSM in the Eurasia Region are as follows: Russian Federation, Kazakhstan, Mongolia, Tajikistan, Turkmenistan, Kyrgyzstan, and Uzbekistan. There are also plans for Afghanistan to join the project.

2.2 In December 2009 the task group approved the Eurasia RVSM Masterplan which envisages a single date when all of the participating countries will implement RVSM, 17 November 2011.

2.3 As part of the activity of the task group, the Russian Federation has taken on additional responsibilities connected with creating a Regional Monitoring Agency (RMA EURASIA) for the Eurasia Region which is also shown in the EURASIA RVSM Masterplan.

2.4 In February 2010 the Russian Federation sent the European/North Atlantic office of ICAO a preliminary proposal for an amendment to the *Regional Supplementary Procedures* (Doc 7030) "Additional ICAO regional regulations" approved by the countries taking part in the project.

2.5 According to the EURASIA RVSM Masterplan, a program to implement RVSM for aircraft in the Russian Federation airspace was drawn up in the Russian Federation which was approved at a meeting of the Government Transport and Communications Committee on 29 March 2010. This program includes a plan of measures for its implementation (Annex 1) and the vertical separation system for aircraft with reduced vertical separation minima (Annex 2).

2.6 The vertical separation system for aircraft within Russian Federation airspace set out in the program corresponds to the ICAO table of cruising levels published in Annex 2 — *Rules of the Air* to the Chicago Convention, and is to be implemented from 17 November 2011.

2.7 A Russian Federation aeronautical information circular has been published, AIC 03/10, "On the transition to the ICAO vertical separation system and reduced vertical separation minima (RVSM) from FL 290 to FL 410 inclusive in Russian Federation airspace from November 17, 2011", which came into effect on AIRAC date 29 July 2010.

3. SOME SPECIFIC FEATURES OF IMPLEMENTING RVSM IN RUSSIAN AIRSPACE

3.1 Since the Russian Federation uses the international system of units (SI), the absolute altitudes, elevation, and relative altitudes accepted by the general conference on weights and measurements and recommended by the International organization of legislative metrology, are measured in meters when using the new vertical separation system. In order to provide flights of aircraft equipped with vertical separation technology, which measure in non-systemic units, the Russian Federation allows for the measurement of absolute and relative altitudes in feet. The flight level will be determined by air traffic management in the flight level numbers.

3.2 While Annex 2 — *Rules of the Air*, Appendix 3 "Cruising level table", establishes that the track line is determined using magnetic north, in the Russian Federation true north is used to determine the direction of the track line of aircraft. This is connected with the level of magnetic variation in the Russian Federation, on account of its size, of up to 40 degrees.

APPENDIX

PLAN OF MEASURES TO CARRY OUT THE PROGRAM TO IMPLEMENT THE RVSM FOR AIRCRAFT IN RUSSIAN FEDERATION AIRSPACE

This Plan covers the following main areas:

Organizing and supporting the Program. The measures involved in this area include the creation of an inter-agency working group at the Russian Federation Ministry of Transport, including specialists from the competent organizations and representatives from air transport operators. This area also envisages the organization of information support for implementing the reduced vertical separation minima;

Preparing aircraft and air transport operators. This area will include work to confirm and preserve the airworthiness of the aircraft in accordance with the technical requirements for the minimum characteristics of the on-board systems. It also envisages training of aviation staff, and changes and additions to the guidance and instructional documentation of the operators;

Preparing the air traffic management system. These measures are aimed at modifying the air traffic management system to bring it in line with the conditions for implementing the reduced vertical separation minima, making changes to the airspace structure and to the Agreements on cooperation procedures between Russian and neighboring air traffic management centers. It envisages training the air traffic control staff, as well as making changes and additions to the instructional documentation, and the working technology of the air traffic management controllers;

Normative and legal regulation. As part of the implementation of this point of the Program, draft changes and additions to the relevant normative and legal acts will be prepared;

Ensuring the safety of flights under reduced vertical separation minima conditions and controlling the working characteristics (monitoring) of the system. The list of the measures within this area envisages a preliminary safety assessment of the system in order to determine the possibility of implementing the reduced vertical separation minima in accordance with flight safety indicators. In order to control the characteristics of the system to ensure flight safety when operating under reduced vertical separation minima, there are plans to create a monitoring infrastructure and to set up a Regional Monitoring Agency;

Carrying out a flight safety assessment after implementing the reduced vertical separation minima and to ensure the technical development of the monitoring system. This area includes the planned flight safety assessment after implementing the reduced vertical separation minima in order to control the operation of the system and to ensure the monitoring of the flight safety indicators.

**VERTICAL SEPARATION SYSTEM FOR AIRCRAFT
IN RUSSIAN FEDERATION AIRSPACE**
(from 17 November 2011)

True course angle from 000° to 179°						True course angle from 180° to 359°					
IFR flights			VFR flights			IFR flights			VFR flights		
flight level	absolute altitude		flight level	absolute altitude		flight level	absolute altitude		flight level	absolute altitude	
	meters	feet		meters	feet		meters	feet		meters	feet
010	300	1000	-	-	-	020	600	2000	-	-	-
030	900	3000	035	1050	3500	040	1200	4000	045	1350	4500
050	1500	5000	055	1700	5500	060	1850	6000	065	2000	6500
070	2150	7000	075	2300	7500	080	2450	8000	085	2600	8500
090	2750	9000	095	2900	9500	100	3050	10,000	105	3200	10,500
110	3350	11,000	115	3500	11,500	120	3650	12,000	125	3800	12,500
130	3950	13,000	135	4100	13,500	140	4250	14,000	145	4400	14,500
150	4550	15,000	155	4700	15,500	160	4900	16,000	165	5050	16,500
170	5200	17,000	175	5350	17,500	180	5500	18,000	185	5650	18,500
190	5800	19,000	195	5950	19,500	200	6100	20,000	205	6250	20,500
210	6400	21,000	215	6550	21,500	220	6700	22,000	225	6850	22,500
230	7000	23,000	235	7150	23,500	240	7300	24,000	245	7450	24,500
250	7600	25,000	255	7750	25,500	260	7900	26,000	265	8100	26,500
270	8250	27,000	275	8400	27,500	280	8550	28,000	285	8700	28,500
290	8850	29,000	-	-	-	300	9150	30,000	-	-	-
310	9450	31,000	-	-	-	320	9750	32,000	-	-	-
330	10050	33,000	-	-	-	340	10,350	34,000	-	-	-
350	10,650	35,000	-	-	-	360	10,950	36,000	-	-	-
370	11,300	37,000	-	-	-	380	11,600	38,000	-	-	-
390	11,900	39,000	-	-	-	400	12,200	40,000	-	-	-
410	12,500	41,000	-	-	-	430	13,100	43,000	-	-	-
450	13,700	45,000	-	-	-	470	14,350	47,000	-	-	-
490	14,950	49,000	-	-	-	510	15,550	51,000	-	-	-
etc.	etc.	etc.	-	-	-	etc.	etc.	etc.	-	-	-