

**Eighteenth Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group  
(CPWG/18)**

(Paris, France, 16-19 December 2014)

**Agenda Item 8:** Communications, Navigation, Surveillance (CNS) and Air Traffic Management (ATM) issues

**AIRSPACE STRUCTURE OF THE RUSSIAN FEDERATION**

(Presented by State ATM Corporation)

**SUMMARY**

This working paper presents information on airspace structure modernization in the Russian Federation in 2014.

**1. Introduction**

1.1. During the ten months of 2014, the amount of traffic handled in the Russian airspace reached **1 242 697** flights, with an increase of **4,51%** compared to 2013. The number of international traffic was down by **1,95%** (**722 222** flights) while domestic flights increased by **15,02%** (**520 476** flights).

Below is a comparison analysis of traffic density from 2005 to 2014.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 (10 months)
<b>Total</b>	821667	892985	1017090	1094754	987969	1109663	1248106	1318486	1418749	1242697
<b>International flights</b>	465333	516201	595648	655398	605387	676879	767971	822134	871662	722222
<b>Domestic flights</b>	356334	376784	421442	439356	382582	432784	480135	496352	547087	520476

1.2. The breakdown of traffic intensity during 2014 is shown below:

Month	Total	International	Domestic
January	109343	68936	40407
February	101634	60028	41606
March	112980	67457	45523
April	113912	66299	47613
May	125729	75290	50439
June	137737	80536	57201
July	144456	82409	62048
August	144442	80475	63967
September	131844	73330	58514
October	120620	67462	53158

The dynamics of the traffic both for international and domestic flights depends on the season. During the ten months of 2014, the transit traffic reached the number of 227 426 operations which is down by 6,75 % compared to 2013.

1.3. The flights along the major ATS route:

Increase in en-route flights (%)	
Trans-Siberian	19,43
Trans-Asian	7,81
Trans-Polar	3,91
Trans-East	3,17
Cross-Polar	2,03
Other	46,38
Decrease in en-route flights (%)	
Asian	34,48
Kaliningrad FIR	5,18

## 2. Air Traffic Services Units

2.1. The Russian ATM System interacts with 19 neighbouring States and is an integral part of the global and European regional air navigation systems. The Russian ATM System covers the area of some 26 million sq. km. of sovereign and delegated airspace.

2.2. As of December 11, 2014, the Russian Federation operates 42 ATC Units, providing air traffic services.

2.3. After the recent changes, the present-day air traffic control system incorporates 1 Main ATM Center, 7 Zonal ATM Centers, 27 Area Control Centers (including 15 with planning responsibilities) and 7 auxiliary Area Control Centers.

### Changes to Number of ATS Units

Type of Center	Main ATM Center	Zonal ATM Center	Aux Zonal ATM Center	ACC with traffic management authority	Civil/Military ACC	Civil ACC	Aux ACC	Aux ACC w/o ATC	Total:
2000	1	8	6	-	38	31	45	4	133
2001	1	7	4	-	42	26	44	2	126
2002	1	8	4	-	41	25	44	1	124
2003	1	8	4	-	40	25	44	1	123
2004	1	8	4	-	40	24	40	1	118
2005	1	8	4	-	32	30	36	1	112
2006	1	8	4	-	29	33	38	-	113
2007	1	8	4	18	-	60	32	-	105
2008	1	7	-	18	-	40	20	-	86
2009	1	7	-	18	-	36	18	-	80
2010	1	7	-	18	-	33	16	-	75
2011	1	7	-	17	-	24	14	-	63
2012	1	7	-	17	-	19	8		52
2013	1	7	-	16	-	16	7		44
2014	1	7	-	15	-	12	7		42

2.4. The work on the establishment of consolidated Area Control Centers and equipment of these with advanced ATC systems and facilities is in progress. A great amount of work was done on consolidation of Yakutsk, St. Petersburg, Tyumen ACCs.

The consolidation program has been continued in 2014:

- Irkutsk ACC took over Chita ACC (26.06.14)
- Krasnoyarsk ACC took over Norilsk ACC (11.12.14)
- Yakutsk ACC took over Tiksi ACC (11.12.14)

Further consolidation activities scheduled for 2015:

- Chelyabinsk ACC took over Magnitogorsk ACC
- Arkhangelsk ACC took over Naryan-Mar ACC

As of now, 8 consolidated Area Control Centers (Moscow, Rostov, Samara, Novosibirsk, Khabarovsk, Irkutsk, Krasnoyarsk, and Magadan) are in operation.

### 3. Improvements to ATS Routes

3.1. The current airspace structure supports international and domestic flights of 1 272 national and foreign airlines.

3.2. In 2014, State ATM Corporation of Russia has accomplished a number of important initiatives aimed at meeting user requirements, establishing and expanding transit ATS routes and keeping balance between the available ATC capacity and growing traffic, modernization of Moscow, Rostov, St.-Petersburg, Samara and Ekaterinburg airspace structure.

3.3. As a result of ongoing cooperation with neighbouring air navigation service providers and airlines, several new entry/exit points were opened with adjacent FIRs: 2 new entry/exit points with the USA (on Cross-Polar routes – BARIP, SALET), a number of air routes both on and within Russia's FIR boundary; the range of flight levels was extended and some route usage restrictions were removed.

3.4. State ATM Corporation's efforts to establish a near Great Circle route system were applauded and commended by IATA and airline representatives at several international meetings.

3.5. The overall number of ATS routes in the Russian airspace has reached 885, of which 573 are international. The total mileage of ATS routes has reached 690 302 km, including 521 725 km of international airways.

#### 4. Number of ATS Routes Implemented

Year	Total	International	Domestic	Weekend Routes
2004	124	75	42	7
2005	36	19	15	2
2006	50	43	6	1
2007	61	57	2	2
2008	136	115	20	1
2009	67	56	10	1
2010	41	32	5	-
2011	70	67	3	-
2012	57	51	6	-
2013	44	42	2	-
2014	24	20	3	1

#### 5. Route and Mileage Expansion

Year	Total number of airways		including							
			international		RNAV		Domestic		Conditional	
	number	mileage (km)	number	mileage (km)	number	mileage (km)	number	mileage (km)	number	mileage (km)
2001	549	392359	302	241028	-	-	147	107358	100	43973
2002	555	394612	305	242807	-	-	148	107540	102	44265
2003	571	404098	368	266051	-	-	301	94352	129	43695
2004	785	510256	356	286945	-	-	298	177747	131	45564
2005	810	522336	373	301026	-	-	307	176534	130	44766
2006	812	499270	388	305888	-	-	302	144986	124	48396
2007	791	537725	374	331259	-	-	293	163428	124	43038
2008	821	574494	444	380101	-	-	271	148582	106	35811
2009	829	598537	474	421768	-	-	259	143289	96	33480
2010	810	610016	489	441600	4	8602	321	168416	-	-
2011	840	639085	521	468227	4	8602	315	162256	-	-
2012	863	668160	544	497868	4	8602	313	161690	-	-
2013	869	678507	556	508869	4	8602	309	161036	-	-
2014	885	690302	573	521725	35		277	149390	-	-

## 6. ATS Routes Implemented in 2014

#	ATS routes	Airway Designator
1	SUGIR (544401N 0363833E) – AGNIN (534757N 0354117E) – ARLAB (533634N 0354628E) – RIMAK (532541N 0355123E) - KOREB (525859N 0360553E). Sector A131 SUGIR (544401N 0363833E) – UNORI (532829N 0361453E) – KOREB (525859N 0360553E) received status of R374.	A131 continuation
2	KELEK (683012N 0282730E) – PILAN (672718N 0324701E) A new sector replaces GEPLA (673852N 0303958E) – PILAN 672718N 0324701E	A222 continuation
3	KUDAR (521802N 1062901E) – BALOG (520959N 1055624E) – USONA (520202N 1052501E)	A807 continuation
4	GUSIN (510602N 1061401E) – LETBI (501154N 1033036E)	A809 continuation
5	VOR/DME KRD (Krasnodar (450115N 0390950E) –NDB XT (Ryazanskaya) (445744N 0393435E) - NDB RF (Ladozhskaya) (451712N 0395503E) - NDB ND (Bolshevik) (454550N 0401439E) – SUDIR (462059N 0402754E)	B820
6	ULTUK (514302N 1034100E) – LETBI (501154N 1033036E)	G909
7	IDENI (513436N 1050942E) – LETBI (501154N 1033036E)	G910
8	NDB UK (Yukhnov) (544415N 0351316E) – AGNIN (534757N 0354117E) – FORMA (502118N 0354154E)	G915
9	SUGIR (544401N 0363833E) – OGRUS (533207N 0342326E)	G916
10	IDENI (513436N 1050942E) – AMUTA (502230N 1045230E)	G917
11	KULED (452659N 0403354E) – KULOM (454859N 0412554E) – NOSAK (452729N 0424324E)	G918*
12	NDB UH (Tikhoretsk) (455107N 0400524E) - KULOM (454859N 0412554E)	G919*
13	PARAT (453159N 0414254E) – TUSOK (450159N 0425355E)	G920*
14	ABELA (441129N 0423601E) – RESLO (435700N 0423730E)	G921*
15	LARIN (443559N 0430107E) – RESLO (435700N 0423730E) – OKOBA (434000N 0422955E) – LODNA(425942N 0431449E)	G922*
16	VOR/DME MNW (Mineralnye Vody) (441423N 0430313E) - RESLO (435700N 0423730E) – DINAP (433130N 0414955E)	G924*
17	POGUL (440459N 0441555E) – RATKI (434000N 0441800E) – DIKUL (431219N 0443624E)	G925*
18	GUBOR (435253N 0404237E) – DINAP (433130N 0414955E) – UGADA (432759N 0430155E) – NAMEN (433048N 0433830E) – RATKI (434000N 0441800E)	G926*
19	KUDAR (521802N 1062901E) – SILON (524835N 1095516E) – KARAL (533013N 1164621E) – URUSA (534550N 1220812E) – NIKTO (534727N 1232810 E)	P873 RNAV 5
20	SUGIR (544401N 0363833E) – UNORI (532829N 0361453E) – KOREB (525859N 0360553E)	R374 continuation
21	GIREN (574614N 1080337E) – LADEN (553838N 1101525E) – RITEK (520138N 1131820E)	R809 continuation
22	ASGET (711403N 0720811E) – BALKI (700206N 0724849E) – OGDAR (692545N 0730741E) – RIMAG (682802N 0733542E)	A947 continuation

#	ATS routes	Airway Designator
23	AMUPI (502431N 1365604E) – LALET (500525N 1371410E) – DASKO (490619N 1380834E) – LEPRO (475419N 1390846E) – OLDAN (474601N 1391722E) – VASIN (473743N 1392434E) – ODONI (470725N 1394934E) – TEMRA (465431N 1400004E) – NENUR (464419N 1400804E) – AKSUN (454500N 1405430E)	B153 continuation
24	BARIP (745700N 1685824W) – GINEG (734221N 1781550E) – RUSOB (723413N 1712810E) – LUTEM (715325N 1680014E) – TIDRO (695456N 1602444E) – OLMIN (672801N 1534310E) – TURAN (654349N 1504621E) – TUTET (635048N 1480439E) – LITLU (613753N 1452236E) – ASKIB (592407N 1430312E)	B722 continuation
25	ODEKO(463513N 1432847E) – ALEPA (462858N 1435153E) – ITURUP (451451N 1475847E) – ROTNI (450519N 1474818E) – BURAP (445512N 1473717E)	G239
26	SARET (452218N 1473553E) – BANOP (451053N 1470040E) – ALODI (451053N 1470040E)	G810
27	KUNAD (514139N 1623837E) – DIROS (505408N 1583338E) – OTLER (494811N 1535843E)	G815
28	LUMES (532442N 1671258E) – RIMLI (514218N 1580655E)	G816
29	SALET (795700N 1685824W) – RUGEK (773225N 1650932E) – ULKAS (725630N 1475741E) – AMLAT (723409N 1470441E) – TIRBU – BAMTI (690726N 1403725E) – RODOK (663344N 1371013E)	G819

\* G918-G922, G924-G926 are detour routes to be implemented in case of natural emergency situations between April 25 and September 30. Both routes shall be used by instruction from ATC unit.

## 7. CPWG/17 Action Plan Implementation Status

Item	Action	Body	Status
CP01-08	ATFM collaboration between FAA/ATO and State ATM	FAA/State ATM	Agreement is under consideration in State ATM - under legal evaluation.
CP04-31	Implement use of radar procedures between Magadan ACC and Anchorage ARTCC □	State ATM	Providence Bay: 2015– construction + electricity installation; 2016– fitting, commissioning and start-up; 2017 (3 <sup>rd</sup> quarter) – operational commissioning.
CP07-02	Add additional entry/exit fixes on the FIR boundaries □	FAA/State ATM	On 26 June 2014, two new entry/exit points BARIP and SALET and ATS routes G819 and B722 respectively were established in Cross-Polar direction on Magadan and Anchorage FIR boundary.
CP10-02	Provide flow constraint information □	State ATM	Updated information
CP10-08	Improved contingency collaboration	JCAB/State	Agreement is under consideration – legal

Item	Action	Body	Status
	between State ATM and JCAB □	ATM/FATA	evaluation.
CP10-13	Expand CPDLC/ADS-C capability for Magadan FIR and install CPDLC/ ADS-C at Murmansk. □	State ATM	Working position commissioned in Magadan in 2014. CPDLC /ADS-C in Murmansk is planned for 2018.
CP10-14	Provide information on minimum level of service maintained outside operational hours for emergency diversions □	State ATM	Updated information
CP12-06	Coordination between State ATM and ATMB □	State ATM/ ATMB	Russia's proposal to open a new entry/exit point east of SIMLI has not been considered yet by ATMB. Continue cooperation with ATMB on opening the new entry/exit point. Challenge: State ATM Corporation's proposals on the modernization of communications between Russian and Chinese ATC Units have not been addressed, no response from the Chinese party to requests.
CP14-02	Establish flight data exchange between facilities □	State ATM/ FAA State ATM/JCAB	Technical availability of the equipment of Magadan ACC - 2015, testing, commissioning – 2016 (3 <sup>rd</sup> quarter) AIDC – technical availability of Khabarovsk ACC in 2015(4 <sup>th</sup> quarter). Exchange is to be arranged in the 4 <sup>th</sup> quarter of 2016 (upon Sapporo's availability).
CP15-04	Develop LOA between PK and Fukuoka at the bilateral meeting and also consider opportunities for reroute transitions. Develop routings from RFE to NOPAC. □	JCAB, State ATM, FAA, IATA	Kamchatka Air Navigation Branch – exit routings from NOPAC have been agreed.
CP15-06	Consider utilizing the ATM VACP Template in the development of Volcanic Ash Contingency Plan for NOPAC and RTE. □	State ATM	Draft Plan is being developed by EUR (EAST) VOLCEX/SG. The Draft will be presented at the next CPWG.
CP15-07	Formalize teleconference format and process taking into consideration collaborative decision making (CDM). □	JCAB State ATM FAA	Proposals on the formalization of teleconference format and processing with regards to collaborative decision making (CDM) were considered during the 5 <sup>th</sup> meeting of EUR (EAST) VOLCEX/SG. The results to be reported at the next CPWG.
CP15-09	Streamline the process for establishing danger areas through NOTAM process	NAV CANADA, State ATM FAA, FAA	Due to recurrent requests from various space agencies to establish danger areas for rocket launching in the offshore zone of the Arctic Ocean (launches from

Item	Action	Body	Status
			Kourou Space Centre in French Guiana, Andoya Space Centre in Norway). The issue of streamlining the process for establishing such areas in order to reduce a negative impact on air traffic flows is under discussion. It is planned to discuss the aspects of establishing dangerous area for recent launches and develop proposals for optimization.

**8. Action by the Meeting**

- a.** The meeting is invited to note the information contained in this paper.