

**Summary of Discussions of the  
Twenty-Fifth Meeting of the  
Cross Polar Trans East Air Traffic Management Providers Working Group  
(CPWG/25)  
22-24 May 2018 – Paris, France**

**1. Background**

- 1.1 The Twenty-Fifth Meeting of the Cross Polar Trans East Air Traffic Management (ATM) Providers Working Group (CPWG/25) was hosted by the International Civil Aviation Organization's (ICAO) Europe and North Atlantic Office in Paris, France, 12-14 May 2018. The schedule included meetings of the Air Navigation Service Providers (ANSPs) and the CPWG/25 plenary meeting.
- 1.2 The CPWG was established to provide a forum for ANSPs and airspace users to meet and explore solutions for improving air traffic services (ATS) to aircraft which operate between North America and Asia via Cross Polar (CP) and Russian Trans East (RTE) routes.
- 1.3 Ms. Leah Moebius, FAA Air Traffic Organization and Mr. Blair Cowles, Regional Director, International Air Transport Association (IATA) co-facilitated the meeting. Attendees included representatives of the ANSPs from Canada, China, Denmark, Finland, Iceland, Japan, Norway, the Russian Federation and the United States; ICAO; IATA, international airlines and operators; and industry. The complete list of participants is provided in **Attachment A**.

**2. Opening of the Meeting**

- 2.1 The meeting was opened at 1300 local time. Ms. Moebius welcomed everyone to the 25<sup>th</sup> CPWG meeting and explained the agenda and the plan for the day and the meeting participants introduced themselves.

**3. Agenda Item 1: Review and approve Agenda**

- 3.1 The following agenda was approved:

Agenda Item 1: Review and approve Agenda

WP/01: CPWG/24

Agenda Item 2: Administrative Matters

- WP/02: CPWG/24 Report
- IP/01 CPWG/25 List of Papers

Agenda Item 3: Summary of Pertinent Issues from the ANSPs Meeting and other relevant meetings

- CPWG/25: A historical Overview – Jeppesen
- RDGE/28 Update – ICAO
- FIFA 2018 World Cup Update – State ATM
- PBCS Implementation
  - PPT: JCAB PBCS Implementation PPT – JCAB
  - PPT: Isavia PBCS Implementation
  - IP/03: Status of PBCS Qualifications in ZAN Oceanic Airspace - FAA

Agenda Item 4: ANSP Updates/Presentations

- ANSP Updates/Presentations
  - NAV CANADA Update
  - FAA Anchorage Update
  - State ATM Corporation Update
  - ISAVIA Update
  - Avinor Update
  - JCAB Update
  - ATMB Update
  - ANS Finland Update
- Airline Updates/Presentations
  - Singapore Airlines

Agenda Item 5: ATS Route Catalogue Update

- WP/5 & PPT State ATM Route Catalogue – State ATM
- IP/06 State ATM Russian Airspace Structure – State ATM

Agenda Item 6: Status on CPWG/24 Actions

Agenda Item 7: 2018-2019 Cross Polar Work Program

- Respective ANSPs' efforts for improving communications in the area
- Development of a single separation standard in region
- Improve/Increase efficiencies and predictability on Polar Routes

Agenda Item 8: Other Business

Agenda Item 9: Next Meeting

#### **4.0 Agenda Item 2: Administrative Matters**

4.1 Ms. Moebius brought attention to the Draft Summary of Discussions (SoD) from CPWG/24 and asked if there were any corrections that need to be made. Receiving no comments, concerns or corrections, the CPWG/24 report was accepted as the final version and approved unanimously by the CPWG.

4.2 The following Working Papers (WPs), Information Papers (IPs) and presentations were provided to the CPWG/25 meeting:

Paper Number	Agenda Item	Action Number	Title	Presented by
<b>WORKING PAPERS</b>				
WP/01	1		Proposed Agenda and Timetable	FAA
WP/01REV			Detailed Agenda	FAA
WP/02	2		Summary of Discussions from CPWG/24	FAA
WP/03	2		CPWG/24 Action Item List	FAA
WP/05	5		State ATM ATS Route Catalogue	State ATM
WP06	6	CP17-10	JCAB Departure Messages	JCAB
WP/07	6	CP17-10	State ATM Update on Departure Messages	State ATM
<b>INFORMATION PAPERS</b>				
IP/01	2		List of Documentation	
IP/02	6	CP14-11	ATM Efficiency Trials in the ZAN Arctic FIR	FAA-ZAN
IP/03	8		Status of PBCS Qualification in Anchorage Oceanic Airspace	FAA-ZAN
IP/04	6	CP14-02	AIDC Between Anchorage ARTCC and Magadan ACC	FAA-ZAN
IP/05	6	CP 15-06 CP 18-02 CP 23-01	Outcomes of VOLKAM/18 Exercise	State ATM
IP/06	5		Russian Airspace Structure	State ATM
IP/07	3		Outcomes of the 28th Route Development Group – Eastern Part of the ICAO EUR Region (RDGE/28)	ICAO EURNAT Office
<b>PRESENTATIONS</b>				

Paper Number	Agenda Item	Action Number	Title	Presented by
PPT	4		Jeppesen Presentation	Jeppesen
PPT	4		ANS Finland Update	ANS Finland
PPT	4		ATMB Update	ATMB
PPT	8		JCAB PBCS Update	JCAB
PPT	6	CP14-02	State ATM Update on AIDC	State ATM
PPT	6	CP04-31	Provideniya Update	State ATM
PPT	6	CP18-05	VOLKAM/18 Update	State ATM
PPT	4		FIFA 2018 World Cup Briefing	State ATM
PPT	5		State ATM ATS Route Catalogue Presentation	State ATM
PPT	4		Isavia Update	Isavia
PPT	6	CP22-02	Space-Based ADS-B	NavCanada
PPT	4		Avinor Update	Avinor
PPT	4		Oakland Update	FAA
PPT	4		Anchorage Update	FAA
PPT	4		Singapore Airlines & Polar Routes	Singapore Airlines

4.3 Copies of all WPs and IPs, as well as additional information presented during the meeting was made available on the CPWG web site at:

[https://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/systemops/ato\\_intl/cross\\_polar/](https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/ato_intl/cross_polar/)

### 5.0 Agenda Item 3: Summary of Pertinent Issues from the ANSPs Meeting and other relevant meetings

5.1 Jeppesen PPT: Jeppesen provided a historical overview of the implementation of the first polar routes to acknowledge the progress from the original RACGAT through the 25<sup>th</sup> meeting of the Cross Polar Working Group. Beginning in 1992 with an invite to fly from Detroit to Tokyo on a Northwest B747 (unfortunately, the trial flight was cancelled) through 1996 with the involvement of IFATCA and United Airlines. In 1999, Jeppesen really got involved with RACGAT, culminating with the 30 Sept 1998 Polar-1 Plotting Chart. The 31 March 2000 Russia polar route map showed 5 polar routes. Tailored information and waypoints continued to be presented by the airlines and Charts today include Polar routes 1-4 and include the tailored arctic polar high altitude orientation chart. Early CPWG discussions were about missing communication and routing. Now there's more sophisticated discussions on efficiencies.

5.2 IP/07: Outcomes of the 28th RDGE Meeting – presented by Patricia Cuff. Ms. Cuff presented information on the main outcomes of the April 10-13<sup>th</sup> meeting and thanked the group for sharing CPWG meeting outcomes with ICAO. Main outcomes and conclusions of the meeting can be found in IP/7 in section 2. A total number of 21 (+2) States reports were discussed, which showed again a very volatile picture in traffic figures (between an increase of 0.2% and a maximum increase of 35.2%, but with a strong average traffic growth of 10.1% for the total traffic figures) when compared with the traffic figures for the same time period in the previous year. Patricia noted (as of special interest to the CPWG) Bullet 2.6 c. could only discuss 23 of the 56 existing proposals due to absence of delegations from P.R., China, Kyrgyzstan, Pakistan and Tajikistan. Although a significant amount of ATS route improvements and updates to the RDGE ATS route catalogues in the Baltic Sea, Black Sea, Middle Asia and Far East Subgroups were made since the previous meeting, all Sub-group members expressed their disappointment in the stagnation of the ATS route development process due to the lack of information/responses from a number of States in the interface area which had not given feedback for many years (Note : this refers to China, Japan, Pakistan and South Korea. The proposals involving responses from these States have been pending for nearly 4 years). The ICAO Secretariat was requested to assist in coordinating all new proposals affecting the States before the next RDGE meeting.

5.3 State ATM FIFA 2018 World Cup Update: State ATM provided information on the upcoming FIFA 2018 World Cup to be hosted by Russia. There are 11 host cities for the world cup events involving 13 airports and additional airports which will host soccer teams for their preparation. The most congested airports are in Moscow. Moscow handles ~2500 flights/day. 89.4% of flights are take-off/landings and 10.6% of flights are transit. Strategy: safety, increase sector capacity, airspace usage efficiency, and others. Most airports already experience international arrivals – but there are new ones that will be challenging; as well as flights within Russia. State ATM worked with Eurocontrol for FLS message for flights departing from IFPZ at 13 Russian airports. It's the same procedure that was used for the 2014 Olympics. Restricted areas over cities and stadiums were published May 21 in the Russian AIP as a separate AIC, including the approval process for access to that airspace during that time.

#### 5.4 PBCS Implementation

5.4.1 JCAB Update: Traffic volume in Fukuoka FIR is 1.8m flights/year. Volume is increasing but the increase of international and overflights have particularly increased. East-west flows are mainly used. Approximately 5000 per date with approximately 800 overflights.

Oceanic area includes the NOPAC and PACOTS; as well as other flights thru Guam and Indonesia, totaling 700 flights per day. PBCS filing is around 35% as of May 2nd. It is slowly increasing and controllers are working to minimize the impact on the operation. Chinese airlines have not been approved the B777 and DAL's approval is currently very low. Taiwan Hong Kong and Singapore do not have PBCS – nor low cost carriers and cargo. JCAB has been working to assist airlines in gaining State PBCS approvals. TOPS implementation has been postponed However, this new system will support more efficient operations such as CDP and ITP. IATA noted that in the Pacific where an operator is not PBCS approved, it is due to the State of Registry or manufacturer not a commercial decision not to equip.

IATA expressed their expectation that PBCS implementation would result in a deterioration of the level of service due to low compliance and an expectation of more altitude denials, but noted that the controllers are working hard to ensure that it works. IATA stated that it still remains hard for airlines that cannot get approvals by states or manufacturers and thanked controllers in Fukuoka, ZAN and ZOA for their efforts.

## 5.4.2 Isavia PBCS Implementation

Traffic has increased over 5-10 years and Isavia anticipates 10% growth in 2018. PBCS was implemented on the evening of 23 March and was associated with reduced lateral separation of 23 nm and longitudinal separation of 5 minutes with Reykjavik CTA (BIRD FIR and BGGL above FL195). The ADS-C periodic reporting rate changed to 14 minutes. 39% of total flights are now approved for PBCS operations and that is gradually increasing; some days are well over 40%. Operations north of 70N is higher on average ~45% and some days over 50%. New separation standards are useful in North sector. The Uplink Latency Timer (ULT) will be in effect from May 24 in the BIRD CTA. The first CPDLC message upon entry will change from THIS IS AN AUTOMATED MESSAGE TO CONFIRM CPDLC CONTACT WITH REYKJAVIK CENTRE TO SET MAS UPLINK DELAY VALUE TO 300 SECONDS Iceland AIC 004/2018 - new sectorization within Reykjavik CTA published 28 March resulted in more flexibility, better distribution of controller workload, and an increase in sector capacity.

Implementation overall went very well – before the implementation we did not know what percentage of PBCS aircraft would be in the area, we started with 35 % we would like to see this number much higher. Isavia uses reduced separation (23nm) between suitably equipped pairs.

### 5.4.3 IP/03: Status of PBCS Qualifications in ZAN Oceanic Airspace - FAA

Anchorage provided an update on PBCS implementation on 29 March in the FAA. Impact to PBCS qualified operators in cross polar airspace is minimal, however, the NOPAC has been impacted more. Data sample only uses CPLs and eastbound aircraft from Fukuoka on certain, random days. Lowest % was 14.5 and highest was 35%. RNP-4 compliance in the NOPAC is ~88%. So, comparatively – the difference is extremely high. The ability to utilize reduced separation has therefore been decreased greatly. Mitigation – we have increased the use of the ADS-C CDP and is available for Non-PBCS aircraft that are ADS-C capable and have current contracts. Prior to PBCS implementation, 25 clearances were issued on average and the issuances increased to 90 CDP clearances in April. Controller Workload has increased dramatically and the faster we can get more PBCS compliance the greater benefit to everyone.

## 6.0 Agenda Item 4: ANSP Updates/Presentations

### 6.1 NAV CANADA Update

6.1.1 NavCanada briefed on the Space-Based ADS-B in Canada, specifically implementation plans in Edmonton. Maintaining radars in southern Canada and will be supplemented by space based ADS-B and expand coverage of surveillance of 110,000 flights per year. Main benefit of SB ADS-B is in the polar region. Controllers will be able to detect vertical deviations immediately and undetected aircraft deviations or Gross Navigation Errors (GNEs). Secondary benefit – efficiency in oceanic airspace. Planned and tactical step climbs, or use of variable MACH. Acceptance testing to be completed in 2018.

### 6.2 FAA Anchorage Update

6.2.1 Steve Kessler provided the update for Anchorage ARTCC (ZAN) including background, oceanic performance, commercial space activity, etc. Please visit the ZAN website (get from presentation) for lots of good info. ZAN has 158 employees, plus 4 national weather service unit personnel. See presentation for breakdown of airspace density. North area stops at 73N. South area includes panhandle and Anchorage. High area includes arctic and oceanic airspace. ATOP and FDP were up 3% in 2017 and up 7% to date. Trending is up for the past 5 years. ZAN to provide an update on red flag exercises for CPWG/26.

### **6.3 FAA Oakland Update**

6.3.1 Oakland provided update on their oceanic ATC operations. 19 of 22 PACOTS have been replaced with User Preferred Routes. High-altitude UPR trials in place – one with ZAN, one with Tokyo. Busiest traffic flow is in the Central East Pacific (CEP). 2nd heaviest is the CENPAC with approximately 850 flights per day. ZOA receives approximately 800 altitude change requests per day. Controller workload has changed with the implementation of PBCS. Approximately 45% of ZOA traffic is PBCS certified. Pre-PBCS, controllers were used to having the capability of using D30 to feed oceanic sectors and now domestic controllers need to remember “rule of 11” and 10 minutes. Anchorage noted that they were having same occurrence due to a confluence of aircraft meeting in the NOPAC. The volume of traffic hasn’t changed but the amount of airspace to accommodate them as changed dramatically.

### **6.4 State ATM Corporation ANSP Update**

6.4.1 State ATM area of responsibility covers 26 million square kms and included 265 towers and 35 ACCs. 20% of their traffic is from overflights while the other 80% is made up of arrivals and departures. International traffic makes up 49% of the traffic count, while domestic traffic is at 51%. Overall, State ATM averages ~1000 aircraft under their simultaneous control and 1.4 million flights annually.

6.4.2 From 2017, State ATM has seen an 8.33% increase of overall traffic, and specifically an increase of 13.41% for international traffic. Domestic traffic increased by 3.41% over the same time period. For specific traffic breakdowns, please see IP/06.

6.4.3 State ATM is in the process of consolidating their ACCs. ATS services are currently provided by 34 centers of the Joint ATM System, including 7 zonal centers and 26 area control centers. ATS centers are undergoing technical and technological upgrade as part of ACC consolidation efforts. Moscow, Rostov, Khabarovsk, Samara, Novosibirsk, Krasnoyarsk, and Irkutsk consolidated ACCs are currently operational. Consolidated ACC in St. Petersburg will be commissioned in 2018

6.4.4 Following the resolutions of the Federal Air Transport Agency, work is under way to implement technical and organizational action plans to enable the transition to QNH and use of feet for altitude measurements for operations in the following TMAs: Krasnoyarsk, Arkhangelsk (Talagi), Anapa (Vityazevo), Murmansk, Syktyvkar, Saratov (Tsentralny), Yuzhno-Sakhalinsk, Khanty-Mansiysk, and Ufa.

6.4.5 IATA asked State ATM about longitudinal separation in oceanic airspace. Conventional rules were transferred to airspace over the high seas. Allowing the application of 50nm separation when using ADS-C – therefore, proposal for the group – start working on the reduction in separation in Magadan oceanic with who is equipped with ADS-C now – immediate implementation with Russian Federation to realize benefits of PBN implementation. State ATM to report out at CPWG/26.

### **6.5 State ATM Corporation Traffic Count Update**

State ATM presented information that showed a steady increase of traffic density with neighboring States. Cross-polar traffic also continues to increase. Details provided in State ATM Traffic Statistics briefing.

## **6.6 Avinor Update**

6.6.1 Mr. Morten Tjonndal provided the update for the Norway ACC and Bodo Oceanic FIR. Total overflights in Norway ACC are the same as last year with oceanic airspace showing slight decrease from the same time as last year. Morten provided an update on datalink mandate including Phase 2C mandatory FL290 and above scheduled for 2020. Requirement for all aircraft Except for flights north of 80North, flights in airspace with surveillance coverage in Svalbard Corridor, and flights with STS/FFR, HOSP, HUM, MEDEVAC, SAR or STATE. Svalbard surveillance corridor between Svalbard and Norway will allow aircraft without FANS 1/A at FL350-FL390 but they must be equipped with ADS-B or mode S transponder. Introduction of surveillance in lower airspace at Svalbard improves coverage.

## **6.7 China ATMB Update**

6.7.1 China ATMB provided an update on its new Airspace Management Center that opened at the Beijing Capital International Airport in December 2017. In addition, ATMB provided an overview of the four major work areas including:

- policy and recommendations for the use of national airspace, planning, air routes/airways and technical standards;
- delineating of FIR of air routes/airways planning;
- organizing civil aviation flight routes and conditional route management;
- monitor and evaluate airspace operations environment

After bi-lateral conversations with Mongolia and Russia, ATMB implemented new entry/exit points between China and Mongolia and China and Russia. IATA asked when the entry/exit points will be implemented and China did not have any details on implementation timeline but will follow up at the next CPWG meeting. State ATM asked if China ATMB could provide information on traffic counts at the next meeting as well.

## **6.8 ANS Finland**

6.8.1 Mr. Osmo Liimatainen presented the update for ANS Finland. Main objective that airlines can operate without delays. At the end of 2017 they employed 456 persons. Strong growth in traffic volumes is expected to continue. Overflights by more than 3% and expected to increase substantially over the next few years. There are two major flows: Middle East to North America and Far East to Europe. Tampere ACC will close on June 1, 2018 and will move to work at ATC Finland at Helsinki-Vantaa Airport which will result in ACC in Helsinki. CPDLC will be operational in November 2018. Network providers are SITA and ARINC. Osmo to provide a pamphlet to operators. CPDLC expected to increase capacity.

## **6.9 Singapore Airline Update**

6.9.1 Adrian Khee provided briefing on Singapore Airlines Polar Route Operations including background on SIA and their past experience with trans-polar routes and moving forward. SIA dates back to 1947 with the introduction of Malaysian Airways with flights between Singapore and Malaysia. Became Malaysia-Singapore Airlines in 1966. 1972 Singapore Airlines started with 10 airplanes operating to 22 cities in 18 countries. Today – SIA is a member of Star Alliance and operators a modern fleet of over 100 aircraft to 61 destinations in 31 countries form their hub in Singapore Changi Airport. Over 130 destinations.



6.9.2 Why do we need to operate on polar routes? A340-500 began in 2004 and SIA launched non-stop services between Singapore and New York. Distance was close to 90000 nm. Flight time is more than 18 hours. Singapore to New York was usually across the NOPAC. In some cases, the polar route gave more flexibility especially due to typhoons or volcanic activity. New York to Singapore – Polar route frequently used during summer months with shorter flight times compared to trans-Atlantic routes. Polar route often much faster. Flight time much shorter and cost comparison between trans-Atlantic and polar – polar much more competitive.

6.9.3 SIA will relaunch direct flights between Singapore and New York before the end of 2018 with the delivery of new A350-900ULR aircraft. Expect to use north polar routes again. Savings from polar route – 35 minutes and 3300 kg of fuel. Especially in summer months operating from New York to Singapore. Challenges include: EDTO beyond 180 minutes approval for trans-polar operations. Availability of suitable enroute alternates and the polar operations recovery plan in case of actual diversions.

## **7.0 Agenda Item 5: ATS Route Catalogue Update**

7.1 State ATM provided update to WP/05: State ATM ATS Route Catalogue and summarizes key changes which have occurred since last meeting and the proposals from UAL. Russia had a very challenging task – more than 100 RNAV-5/10 routes in Russian airspace on March 29, 2018. AIC published two AIRAC cycles before. There are no issues at this time but there are some challenges with equipage by some of the Russian airlines.

7.2 State ATM discussed long standing proposals to China for additional entry/exit points in the vicinity of SIMLI and noted that they have reached agreements with ATMB but have received no feedback on last message. State ATM asked China ATMB to follow up on entry/exit points and provide an update at the next CPWG meeting. State ATM also noted some proposals by UAL to improve existing cross-polar routes that would provide more direct options to TELOK and result in better utilization of entry/exit points. These will be published on 10/11/18.

## **8.0 Agenda Item 6: Status on CPWG/24 Actions**

### *CP01-08C: ATFM Collaboration Between FAA and State ATM*

8.1 State ATM reported that the ATFM LOA is still being discussed with FAA and requested that the item remain open.

### *CP04-31: PPT Update on Provideniya Radar - State ATM*

8.2 State ATM provided a briefing on the radar facility in Provideniya that highlighted major milestones to accomplish this very difficult task. Since 2006 Magadan ACC has increased dramatically in terms of traffic and size and felt that the radom should be more robust. The Krona-M MSSR installation is expected later this year. Estimated area of radar coverage will cover most trans-east entry/exit fixes. Coordination with ZAN will be much easier. Magadan will be ready to discuss the use of radar separation for those entry/exit fixes once the radar is operational. This item will stay open with an update at next meeting.

### *CP10-08: Update on JCAB/FATA LOA – State ATM*

8.3 Discussions between JCAB and State ATM regarding LOA. JCAB it is planned for discussion at the next bi-lateral meeting between Japan and Russia. State ATM agreed to discuss at next bi-lat. JCAB asked the bi-lateral be held next spring. Both State ATM and JCAB agreed to keep this action item open and update at the next meeting.

*CP12-04: FAA Update on Track Advisory Users Guide – ZAN*

8.4 No additions or modifications to the RTE or polar routes and because of that there's been no modifications to the TA users guide.

*CP12-06: Russia-China Bilateral Discussions Update – State ATM*

8.5 Discussion held during China ATMB ANSP Update. State ATM requested China ATMB to provide an update on discussions on entry/exit fixes and to provide an update at the next meeting.

*CP14-02: AIDC Status*

8.6 FAA presented an IP to provide status on AIDC implementation between ZAN and Magadan. They share a 2700 nm FIR boundary which extends from near the north pole to the middle of the North Pacific. And currently, controllers at both facilities complete manual coordination via voice call for more than 40,000 individual cross boundary flights. ZAN and Magadan completed an MOU to conduct online AIDC testing which began January 17, 2018 and resulted in two significant issues – CRC errors and missing SSR (code) data errors. Coordination is now underway between ZAN and Magadan to establish an acceptable date for the resumption of online AIDC testing. An update on these efforts will be provided at CPWG/26.

8.6.1 State ATM provided a briefing on AIDC update to the meeting that began during CPWG/13 a proposal was made to start working on AIDC between Magadan and ZAN. The equipment project was developed, the hardware was delivered installed adjusted and started up. The automated Alpha software was installed and testing began. Preliminary testing was conducted between Magadan sending AIDC messages for 24 hours to the WJHTC but there was no response. Also drafted an amendment to the existing LOA that provided operational procedures for AIDC usage between Magadan and Anchorage.

8.6.2. On-line testing took place in January 2018 where Magadan ACC and ZAN were exchanged using AIDC for all flights crossing the transfer of control points in both directions. Magadan made prompt adjustments to the software which hopes to considerably minimize the number of errors in further implementation. Magadan and Anchorage have agreed to continue on-line testing. Keep action open for updates from Anchorage and State ATM at CPWG/26.

*CP14-11: Eliminate Restrictions*

8.7 Standing item to eliminate restrictions. Anchorage presented a paper on trials in the Arctic FIR. Mr. Kessler talked about improving efficiencies at CPWG/24 – zero-minute track loading and reducing the dots+ system to zero minutes. In addition, Anchorage also described the implementation of a trial for routing options for westbound flights between AMATI, BEKAR and BARIP. Asking for operator input for further trial expansion. On 1/10/18 – modified dots+ to implement a zero-minute track load for AMATI, BEKAR and BARIP. Approximately 475 have crossed those fixes and have not received any negative reports from either operators or other ANSPs as far as the zero-minute track load goes. In 2.2 the additional routing that was modified to utilize about a 180-mile window between AGMIF and BIITE through which aircraft could flight plan – approximately 474 aircraft have used that and have not seen any flight planning issues. Trials will continue and operators were encouraged to forward suggestions to ZAN on the priorities going forward so that they can coordinate with Edmonton and State ATM to modify routing restrictions or zero-minute track loads – understanding that changes need to be implemented incrementally to ensure no issues are encountered.

*CP14-12: ADS-C Update – All*

8.8 All ANSPs provided status of CDP Implementation. JCAB to provide an update at the next meeting.

- ZOA/ZAN/ZNY have implemented CDP – item open to get other ANSP input. Any updates?
- Isavia has no plans to implement CDP at the moment. Using ground-based ADS-B and 10 miles up to 70n and have implemented PBCS to use 23 nm/5 min. GNSS down to 20nm the traffic N of 70N is not that dense so there's not a big opportunity for CDP.
- JCAB planning to implement CDP/ITP by end of 2019.
- NavCanada - waiting for Space-Based ADS-B implementation which would overtake any benefits CDP would offer.
- Avinor - no plans for CDP due to surveillance coverage.

IATA thanked the FAA and noted that CDP has made a significant impact with PBCS and seems to be a bigger benefit than the ITP and asks other ANSPs to consider.

*CP15-06, CP18-02, CP23-01: VOLKAM Exercise*

8.9 State ATM provided an update on the VOLKAM/18 exercise held 19-20 April 2018 from 2200 UTC on 19 April to 0200 UTC on 20 April 2018 featuring a simulated eruption of the Zheltovsky volcano with ash column 13700 meters moving southeast at 400 km/h affecting trans-east routes. The Khangar Volcano ash plume reached 7600 meters and drifting to the northwest at 250 km/h impacting trans-east routes. Three VAACs (Tokyo, Anchorage & Washington) were simultaneously involved in the handover procedure for issuing volcanic ash messages for the first time. The exercise also simulated an emergency landing into PK airport utilizing Boeing 777/200.

*CP17-10: Departure Messages*

8.10 WP/06 was presented by JCAB and the meeting was invited to review the information on the table found in Attachment A. Of the 22 U.S. airports depicted on the table, only 2 had a 100% success rate. Three airports were at 0%. The only change was KBOS was zero last survey but has increased to 23/3%.

8.11 WP/07 was presented by State ATM on Departure Messages statistics and provides regular data to the FAA. They thanked Steve Kessler and ZAN for resolving issues with Anchorage Center as the Alaska airports are doing very well. Number of departure airports is much larger. Zero rate for New York area. Work is underway and ZOA made some modifications last week to see if things have improved for west coast.

*CP18-05P: State ATM Update on IATA Request UPRs westbound from ZAN to waypoints along ATS Routes within Russia oceanic airspace – State ATM/IATA*

8.12 UPRs are not planned at this time in Russian airspace. Most of the efforts have been used to implement RNAV routes. State ATM suggested that this action be closed.

*CP20-01: ANSP Updates on Launch Activities – All ANSPs*

8.13 State ATM noted that the number of launches that affect cross polar routes is increasing. Once the launch companies advise State ATM, we immediately publish NOTAMs. There was a recent request for launches from Russian far east which impacted areas in both the Atlantic and Pacific oceans. We prepared request for establishing danger areas and the NOTAM for the Pacific was published but the area in the Atlantic was not. State ATM is asking the FAA and other ANSPs if there is a way to streamline the process and would like to discuss this in the CPWG/26 ANSP meeting.

*CP22-02: Space-Based ADS-B CONOPS*

8.14 Completed in Agenda Item #4. Keep open.

*CP23-01: ANSP Updates on Volcanic Ash Activities – All*

8.15 The group noted that VOLCEX18 would take place on **28 November 2018** and simulate an eruption of a volcano named Öraefajökull in Iceland. The ash plume will impact a large part of the ICAO EUR Region, including the Russian Federation. Some of the simulated ash will move west and impact Canada and the United States. In order to prepare for this exercise, a preparatory workshop for VOLCEX18 will be held at the ICAO EUR/NAT Regional Office in Paris from **6 to 7 September 2018** (beginning 1400 on 6 September 2018). States are encouraged to attend with a focus on Air Navigation Service Providers (ANSPs), Meteorological Watch Offices (MWOs), NOTAM Offices (NOFs), and Regulators in order to clarify what is expected from each participant in accordance to the EUR/NAT Volcanic Ash Contingency Plan (e.g. use of Danger Areas, NOTAM referencing existing volcanic ash products). Operators are also welcome to attend this workshop. Furthermore, a review of the VOLCEX18 Exercise Directive will be conducted at this workshop. An update to be provided at CPWG/26.

*CP24-02: ANSP Updates on NOTAMS re Rocket Launches – All*

8.16 State ATM brought up a number of issued NOTAMs for launches for Mexico, Tahiti, Trinidad & Tobago, Oakland airspace, Norway, Canada, Iceland, Greenland, Chile and New Zealand. NOTAMs not sent 7 days prior in some cases and they needed to cancel. this was discussed in CP20-01 and will be added to the ANSP agenda for CPWG/26 for discussion.

**Agenda Item 7: 2018-2019 Cross Polar Work Program**

- Respective ANSPs' efforts for improving communications in the area
- Development of a single separation standard in region
- Improve/Increase efficiencies and predictability on Polar Routes

**Agenda Item 8: Other Business**

No other business was raised by the meeting.

**Agenda Item 9: Next Meeting**

- CPWG/26: October 29-November 1, 2018 hosted by NavCanada, Vancouver, Canada
- CPWG/27: Week of May 20, 2019 hosted by ICAO Paris.
- CPWG/28: TBD

The meeting was closed by Leah at 1330. She thanked everyone for their participation and support.

DRAFT

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**CPWG/25 Action List and PPT Actions**

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP01-08C	Administration	ATFM collaboration between FAA/ATO and State ATM		FAA/State ATM	Part of bilateral discussions. Any updates to be provided at CPWG/26	Fall 2018	Open
CP04-31	Improve Efficiencies	Implement use of radar procedures between Magadan ACC and Anchorage ARTCC	Radar expected to be commissioned in mid-2017. State ATM reported that the target date for implementation of radar procedures is late 2018.	State ATM	Update to be provided at CPWG/26	Fall 2018	Open
CP10-08	Contingency Response	Improved contingency collaboration between State ATM and JCAB	JCAB and State ATM agreed on LOA for ATFM. Will continue to work on a bilateral basis. Proposed LOA sent to FATA. Currently under review  Continuing dialogue with JCAB and State ATM to update LOAs.	JCAB /State ATM/FATA	Proposed LOA under review by FATA with anticipated signature by 2019. Bilateral meeting to be scheduled in Spring 2019 and any updates provided at CPWG/27.	Spring 2019	Open
CP12-04	Improve Efficiencies	Monitor changes to Track Advisory Users Guide	New information on fixes added is available on either ZAN or ZOA websites.	FAA	Any updates to the TAUG will be presented at CPWG/26.	Fall 2018	Open

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP12-06	Improve Efficiencies	Coordination between State ATM and ATMB	State ATM presented WP/08 with three suggested routes- HRB-493236N/1281936E-AMERA-VZ; SIMLI-HRB; RITEK-425025N/1182854E-HLD ATMB noted that parallel route structure would enhance safety at SIMLI. However, the proposal is in conflict with the ongoing work of Chinese airspace restructure, which will require further evaluation from both sides. State ATM and ATMB held bilateral discussions July 2017 and discussed entry/exit point near SIMLI and will continue discussions on readiness the end of 1 <sup>st</sup> quarter 2018.	State ATM/ATMB	Bilateral discussions held and both State ATM Corporation and China ATMB to follow up on discussions and provide update at the CPWG/26.	Fall 2018	Open
CP14-02	Improve communications	Establish flight data exchange between facilities	State ATM implemented AIDC in Magadan in 2017 and is conducting tests with Anchorage. AIDC with Sapporo in 2020.	State ATM/ FAA/JCAB	State ATM/FAA to resume testing in May/June 2018 time-frame. Testing will be conducted over several months identify and address any issues before going operational. An update to be provided at CPWG/26.  For VOLKAM/19, Edmonton and Anchorage, Magadan to accomplish DARP test through AIDC.  State ATM/JCAB implementation between Sapporo and Khabarovsk tentatively scheduled 2020 time-frame. An update to be provided at CPWG/26.	Fall 2018	Open

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP14-11	Improve Efficiencies	Eliminate restrictions where possible	<p>Eliminate requirement to flight plan over named or lat/long fixes at 141W</p> <p>Further evaluation and consideration following implementation of ZAN Sector 64.</p> <p>FAA and NavCanada conducted zero track trial in December 2016 for CP entry fixes DEVID and NALIM. Data from April 30 shows 85 aircraft on DEVID; 8 aircraft on NALIM. Agreed to continue zero track trial indefinitely. Discussions with Edmonton for other fixes for expanded trial to CP fixes AMATI, BEKAR, and BARIP.</p>	FAA/NavCanada	<p>Update provided on 2 zero track trials. FAA has asked for IATA and Operators to provide feedback to FAA on current trials and potential new ones. This will be coordinated with Edmonton and State ATM to determine next steps. It was noted next steps should be done incrementally.</p> <p>An update to be provided at CPWG/26.</p>	Fall 2018	Open
CP14-12	Improve Efficiencies	<p>Consider expanding trial for ADS-C CDP to ZAN airspace.</p> <p>FAA has released its T24 ATOP software update to all three oceanic facilities. The ADS-C CDP was approved by the ICAO Air Navigation Council as a global standard and will be published in the Doc. 4444 November 2016</p>	<p>ICAO has issued the State Letter announcing the ADS-C CDP procedure will be included in the November 10, 2016 Change 7 amendment to the PANS-ATM, Doc 4444. The FAA has begun an ADS-C CDP trial. The FAA ADS-C CDP trial use of the procedure will continue until November 10, 2016 when change 7 to the PANS ATM becomes effective.</p> <p>Oakland, Anchorage and New York implemented CDP.</p>	JCAB	<p>ANSPs to provide information on intent to implement CDP. At this time, JCAB has decided to implement CDP in Fukuoka FIR by FY2019.</p> <p>An update from JCAB will be provided at CPWG/26</p>	Fall 2018	Open

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP15-06 & CP18-02	LOA Agreement between Fukuoka and Magadan	<p>Consider utilizing the ATM VACP Template in the development of Volcanic Ash Contingency Plan for NOPAC and RTE.</p> <p>Harmonized process for coordination of route changes to In-Flight Aircraft and issues with use of CHG messages.</p>	JCAB and State ATM expect progress on agreement between Fukuoka and Magadan FIR in in 2018.	State ATM JCAB FAA/ZAN NAV CANADA	<ol style="list-style-type: none"> <li>1. State ATM and JCAB continue to work on LOA between Magadan and Fukuoka with possibility of a permanent LOA. An update to be provided at CPWG/26</li> <li>2. State ATM has asked for feedback from IATA/Airlines on DARP and tactical re-routes in the exercises prior to next CPWG/26 meeting.</li> <li>3. State ATM has requested that the FAA coordinate with the ATCSCC on future participation in VOLKAM exercises. An update to be provided at CPWG/26.</li> <li>4. Small Discussion Group under VOLKAM to discuss FAA proposed guidance/best practices in order to streamline CHG process. Airlines noted that recommended procedures may still be problematic and further work should be undertaken, including requesting guidance from ICAO on which messages should be used by operators. There is currently no clear guidance within ICAO Docs., Supps., etc</li> <li>5. State ATM to provide updates on VOLKAM planning and results from VOLKAM/19. An update to be provided at CPWG/26.</li> </ol>	Fall 2018	Open

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP17-10			State ATM requests FAA to look at lack of departure messages being provided to Russian and JCAB	FAA	JCAB and State ATM provided list of departure messages not received for discussion during CPWG25. FAA has action to develop plan and resolution for upcoming meeting.  FAA-ZOA and ZNY are working on departure message issues including looking at automation or meetings with specific centers. An update to be provided at CPWG/26.  In the interim, State ATM and JCAB will provide new data at CPWG/26 as applicable for further tracking and resolution.	Fall 2018	Open
CP18-05P (was PP08-04)	UPR Expansion		IATA request that Russia consider an extension of the UPR expansion proposal in PP08-03 by allowing UPRs westbound from the Anchorage FIR boundary (LAT/LONS) to named waypoints along ATS routes within Russia Oceanic airspace.  Consider implementation of flexible tracks between approved entry and exit points within the RTE region on a daily basis.	IATA/State ATM	Ongoing discussions with FATA related to legislative changes. Update at CPWG/25  State ATM Corporation and IATA to discuss off-line and provide an update at CPWG/26.	Fall 2018	Open

Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP20-01			Isavia noted Antoya Space Center planned launch activity over a three week period over a large portion of airspace. Through collaborative efforts, Isavia and the space center were able to develop a LOA that assisted in mitigating the impact on ATC and operators.	All ANSPs	<ol style="list-style-type: none"> <li>1. ANSPs to provide updates on recent launch activities since last CPWG meeting.</li> <li>2. Discussion on FAA NOTAM process. FAA to provide information on their process at CPWG/26.</li> <li>3. ZOA/ZAN/FAA HQ/IATA to discuss rocket launches and develop strategy and provide update at CPWG/26.</li> </ol>	Fall 2018	OPEN
CP22-02				NavCanada Isavia	An update to be provided at CPWG/26 on Space based ADS-B	Fall 2018	OPEN
CP23-01	Volcanic Ash Activities		ANSPs to provide updates on recent volcanic ash exercises	All ANSPs		Fall 2018	OPEN
CP24-01	Communication		Invite Inmarsat to brief at CPWG25 on issue of coverage with new IV tier satellite above 70N	FAA	FAA to invite Inmarsat and Iridium to CPWG/26 for discussions on communication in Polar Region.	Fall 2018	OPEN
CP24-02				All ANSPs	ANSPs to provide updates on number of NOTAMs for rocket launches	Fall 2018	OPEN
CP25-02	Improve Capacity		Implement 100 km (50NM) longitudinal separation within Magadan Oceanic	State ATM/FAA	<p>Implementation of PBN RNAV 10 specification together with national PBCS separation standards in Russian Federation enables implementation of 100 km (50 NM) with 22 min periodic interval of ADS-C within Magadan Oceanic in coordination with ZAN.</p> <p>The coordination is needed for harmonization of PBCS requirements and amendment of LoA</p>	Fall 2018	OPEN



Action Number	Capacity Enhancement Goal	Supporting Goal Initiatives	Information/Status	Responsible Organization	Action Pending	Action Due	Status
CP25-03			Request information on general traffic data and ATMB's plans related to ICAO RVSM transition	China ATMB	1. The ATMB to provide general traffic data in its area of responsibility. 2. The ATMB to provide information on on plans related to ICAO RVSM transition.	Fall 2018	OPEN

## CPWG Planning Chart

### Near Term Goals (2018-2020)

	PLANNING GOAL	ACTION WITH	TARGET DATE	STATUS OF ACTION
<b>1</b>	<b>REDUCE AND HARMONIZE SEPARATION STANDARDS IN INTERNATIONAL AIRSPACE</b>			
<b>1a</b>	<b>Harmonize RVSM Transition Procedures</b>			
	• Ulaanbaatar	Mongolia	TBD	
<b>1b</b>	<b>Implement reduced longitudinal separation</b>			
	• Edmonton FIR (5 min or 50NM)	NAV CANADA	On Hold	
	• Bodo FIR (10 min)	Avinor	TBD	
	• Bodo FIR (50nm/30nm long and 30nm lateral)	Avinor	TBD	*
	• Anchorage Arctic FIR	FAA	TBD	Use 10 min currently. FIRs surrounding ZAN will determine differences, limited comm, ADS-C limitation
	• Murmansk	State ATM	TBD	
	• Magadan	State ATM	TBD	
	• Edmonton	NavCanada	On Hold	
<b>1b</b>	<b>Implement Further Reduced longitudinal separation</b>			
	• Anchorage Arctic FIR (30 NM)	FAA	TBD	

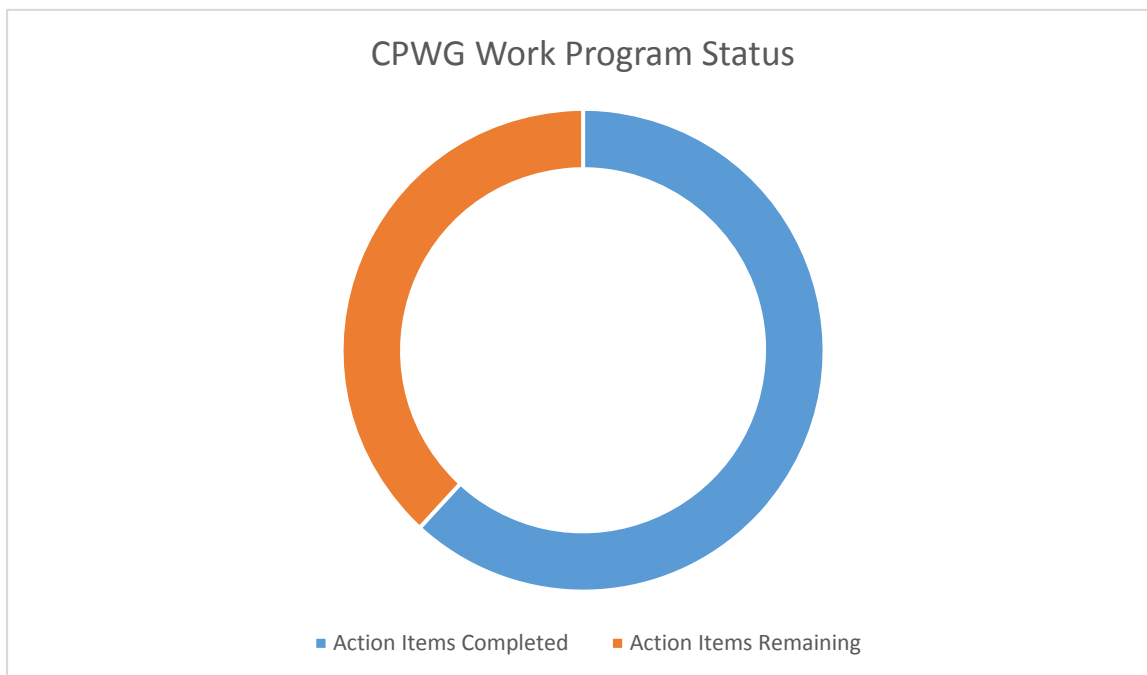
	PLANNING GOAL	ACTION WITH	TARGET DATE	STATUS OF ACTION
	• Murmansk	State ATM	TBD	
	• Magadan	State ATM	TBD	
	• Edmonton	NavCanada	On Hold	
	• Reykjavik FIR (10 min)	Isavia	Completed	March 29 2018
	• Reykjavik FIR (5 min)	Isavia	Completed	March 29 2018
	•			
<b>1c</b>	<b>Implement further reductions to lateral separation</b>			
	• Edmonton FIR RNP-4	NavCanada	On Hold	
	• Lat/Long of RNP-4	NavCanada	On Hold	
	• Reykjavik FIR (23 NM)	Isavia	Completed	March 29 2018
	• Bodo	Avinor	TBD	
	• Fukuoka FIR (23 NM)	JCAB	2020	
	• Anchorage Oceanic FIR (23NM)	FAA	2020	
<b>2</b>	<b>IMPROVE/INCREASE EFFICIENCIES FOR CROSS POLAR AND RUSSIAN FAR EAST AIR TRAFFIC</b>			
<b>2a</b>	<b>Create seamless and homogeneous airspace for the traffic from North America to Asia with the expansion of User Preferred Routes (Pacific Project)</b>			

	PLANNING GOAL	ACTION WITH	TARGET DATE	STATUS OF ACTION
	<ul style="list-style-type: none"> <li>Seamless/homogeneous airspace for traffic from North America to Asia with the expansion of User Preferred Routes (Pacific Project)</li> </ul>	ANSPs/Operators	TBD	ANSPs continue to work toward UPRs as appropriate.
<b>2b</b>	<b>Improve Efficiency on Cross Polar Routes</b>			
	<ul style="list-style-type: none"> <li>Eliminate restrictions to file entry fixes on the Anchorage/Edmonton FIR boundary</li> </ul>	FAA/NAV CANADA	Spring 2018	Eliminated some restrictions during trials. Discussions with Operators on next steps
<b>2c</b>	<b>Improve Air Traffic Flow Management</b>			
	<ul style="list-style-type: none"> <li>Reduce track loading to 0 minutes for Cross Polar Fixes</li> </ul>	FAA	TBD	Trial for 2 fixes
<b>2d</b>	<b>Implement use of Radar Procedures between Magadan ACC and Anchorage ARTCC without Radar Data Sharing</b>			
	<ul style="list-style-type: none"> <li>Anchorage Arctic FIR</li> </ul>	FAA	Early 2019	
	<ul style="list-style-type: none"> <li>Magadan FIR</li> </ul>	FATA	Early 2019	
<b>2e</b>	<b>Make Tactical Re-Routes /DARPs Available for Daily Operations</b>			
	<ul style="list-style-type: none"> <li>State ATM</li> </ul>	State ATM	TBD	DARP testing during VOLKAM Exercises. Need to continue discussions with Operators

	PLANNING GOAL	ACTION WITH	TARGET DATE	STATUS OF ACTION
	<ul style="list-style-type: none"> <li>Implementation of DARP when we implement CPDLC</li> </ul>	NavCanada	2018	
	<ul style="list-style-type: none"> <li>ZAN can provide DARP based on ability of adjoining FIR</li> </ul>	FAA	TBC	
	<ul style="list-style-type: none"> <li></li> </ul>			
<b>3</b>	<b>IMPROVE COMMUNICATIONS IN ARCTIC/POLAR REGION</b>			
<b>3a</b>	<b>ADS-C Conformance Reporting</b>			
	<ul style="list-style-type: none"> <li>NavCanada</li> </ul>			Completed
	<ul style="list-style-type: none"> <li>Reykjavik</li> </ul>			Completed
	<ul style="list-style-type: none"> <li>Avinor</li> </ul>			Completed
<b>3b</b>	<b>Implement AIDC/OLDI for Data Exchange</b>			
	<ul style="list-style-type: none"> <li>Magadan and Anchorage FIRs</li> </ul>	FAA State ATM	2018	Testing resumes May 30, 2018
	<ul style="list-style-type: none"> <li>St. Petersburg and Anchorage FIRs</li> </ul>	FAA/State ATM	TBD	
	<ul style="list-style-type: none"> <li>Khabarovsk ACC and Sapporo ACC</li> </ul>	State ATM/JCAB	2020	
	<ul style="list-style-type: none"> <li>St. Petersburg and Reykjavik FIRs (AIDC)</li> </ul>	State ATM/Isavia	TBD	
	<ul style="list-style-type: none"> <li>Bodo and St. Petersburg FIRs</li> </ul>	Avinor/State ATM	TBD	
	<ul style="list-style-type: none"> <li>Ulaanbaatar/Krasnoyarsk</li> </ul>	Mongolia/State ATM	Late 2018	

	PLANNING GOAL	ACTION WITH	TARGET DATE	STATUS OF ACTION
	<ul style="list-style-type: none"> <li>Anchorage Arctic, Oceanic and Continental FIRs</li> </ul>	FAA	TBD	
<b>3c</b>	<b>Implement CPDLC for All Polar Routes</b>			
	<ul style="list-style-type: none"> <li>ANS Finland FIR</li> </ul>		Nov 2018	
<b>3d</b>	<b>ADS-B/WAM/Mode-S/Space Based ADS-B</b>			
	<ul style="list-style-type: none"> <li>ADS-B</li> </ul>	Avinor	Completed for Oceanic Airspace  Ongoing for domestic implementation	
		ANS Finland	2019	
	<ul style="list-style-type: none"> <li>ADS-B</li> </ul>	Mongolia	2018	
	<ul style="list-style-type: none"> <li>WAM Domestic Airspace</li> </ul>	Avinor	2020	Ongoing work with phased WAM implementation
	<b>Space Based ADS-B</b>			
	<ul style="list-style-type: none"> <li>Gander FIR</li> </ul>	NavCanada	2018	
	<ul style="list-style-type: none"> <li>Edmonton FIR</li> </ul>	NavCanada	2018	
	<ul style="list-style-type: none"> <li>Reykjavik CTA</li> </ul>	Isavia	TBD	
	<ul style="list-style-type: none"> <li>Ulaanbaatar FIR</li> </ul>	Mongolia	2019	
<b>3e</b>	<b>Monitor Communications and Data Link Performance</b>			

	<b>PLANNING GOAL</b>	<b>ACTION WITH</b>	<b>TARGET DATE</b>	<b>STATUS OF ACTION</b>
	<ul style="list-style-type: none"><li>• Provide information on any issues relating to communications/data link performance at CPWG meetings</li></ul>	All ANSPs and Operators	Ongoing	Action: Identify items from papers and presentations and include in Section 3e for next meeting.





## Completed Work Program Items (2010-2018)

Completed Goals	
<b>1</b>	<b>REDUCE AND HARMONIZE SEPARATION STANDARDS IN INTERNATIONAL AIRSPACE</b>
<b>1a</b>	<b>Implement RVSM FL290-410</b>
<b>1b</b>	<b>Harmonize RVSM Transition Procedures</b>
	<ul style="list-style-type: none"> <li>• Anchorage Arctic FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Anchorage Oceanic FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Russian FIRs</li> </ul>
	<ul style="list-style-type: none"> <li>• Fukuoka FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• NavCanada National RVSM Implementation prior to CPWG @2004</li> </ul>
<b>1c</b>	<b>Implement 10 Minute Longitudinal Separation for ATS Route B932</b>
<b>1d</b>	<b>Improve Efficiency on Russian Trans-East Routes</b>
	<ul style="list-style-type: none"> <li>• Eliminate 10 minute track loading for Russian Trans-East Routes over Anchorage/Russian boundary</li> </ul>
<b>1e</b>	<b>Implement reduced longitudinal separation (aircraft equipage requirements)</b>
	<ul style="list-style-type: none"> <li>• Anchorage Oceanic FIR (30 NM)</li> </ul>
	<ul style="list-style-type: none"> <li>• Fukuoka (30 NM)</li> </ul>
	<ul style="list-style-type: none"> <li>• Vancouver (30 NM) in Feb 2017</li> </ul>
<b>1f</b>	<b>Implement further reductions to lateral separation (aircraft equipage requirements)</b>
	<ul style="list-style-type: none"> <li>• Anchorage Oceanic FIR (30 NM)</li> </ul>
	<ul style="list-style-type: none"> <li>• Reykjavik FIR (50NM) in 2012</li> </ul>
	<ul style="list-style-type: none"> <li>• Ulaanbaatar FIR (30km) in 2015</li> </ul>

<b>Completed Goals</b>	
<b>2</b>	<b>IMPROVE/INCREASE EFFICIENCIES FOR CROSS POLAR AND RUSSIAN FAR EAST AIR TRAFFIC</b>
<b>2a</b>	<b>Harmonize Procedures for ATS Route B932 (reopened 15 to 10 minutes)</b>
<b>2b</b>	<b>Improve Efficiency on Cross Polar Routes</b>
	<ul style="list-style-type: none"> <li>• Add entry/exit fixes on the Anchorage/Russian FIR boundary in order to provide additional parallel routes</li> </ul>
	<ul style="list-style-type: none"> <li>• Add entry/exit fixes on Reykjavik/Russian FIR boundary</li> </ul>
	<ul style="list-style-type: none"> <li>• Open new Kamchatka routes from PILUN and LISKI</li> </ul>
	<ul style="list-style-type: none"> <li>• Open new routes south of ABERI</li> </ul>
	<ul style="list-style-type: none"> <li>• Add entry/exit fixes on Bodo /Russian FIR Boundary</li> </ul>
<b>2c</b>	<b>Improve Efficiency on Russian Trans-East Routes</b>
<b>2d</b>	<b>Improve Air Traffic Flow Management</b>
	<ul style="list-style-type: none"> <li>• Implement DOTS Plus Online Track Advisory</li> </ul>
	<ul style="list-style-type: none"> <li>• Establish CTA in Anchorage Arctic FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduce track loading to 10 min for Cross Polar Fixes</li> </ul>
	<ul style="list-style-type: none"> <li>• Remove requirement for flight to file NOR OTS Routes over Canada, Dec 2012</li> </ul>
<b>2e</b>	<b>Improve ATFM Collaboration (ongoing activity)</b>
	<ul style="list-style-type: none"> <li>• FAA/NavCanada – signing LOA re: ATFM (MATMC/NOC)</li> </ul>
	<ul style="list-style-type: none"> <li>• FAA/State ATM signing LOA re: ATFM (MATMC/ATSCC)</li> </ul>
	<ul style="list-style-type: none"> <li>• NavCanada/State ATM signing LOA re: ATFM **</li> </ul>
<b>3</b>	<b>IMPROVE COMMUNICATIONS IN ARCTIC/POLAR REGION</b>
<b>3a</b>	<b>Improve Communications Procedures</b>

	<b>Completed Goals</b>
<b>3</b>	<b>IMPROVE COMMUNICATIONS IN ARCTIC/POLAR REGION</b>
<b>3a</b>	<b>Improve Communication Procedures</b>
	<ul style="list-style-type: none"> <li>• Change procedures to retain connection with Iridium and HF DL north of 82N in Reykjavik CTA</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement ADS-C periodic contract and lateral and vertical conformance monitoring</li> </ul>
<b>3b</b>	<b>Implement AIDC/OLDI for Data Exchange</b>
	<ul style="list-style-type: none"> <li>• Edmonton FIR (AIDC)</li> </ul>
	<ul style="list-style-type: none"> <li>• Reykjavik and Edmonton FIRs</li> </ul>
	<ul style="list-style-type: none"> <li>• Ulaanbaatar FIR /Irkutsk June 2017</li> </ul>
<b>3c</b>	<b>Implement CPDLC for All Polar Routes</b>
	<ul style="list-style-type: none"> <li>• Anchorage Arctic FIR (limited to ability of provider)</li> </ul>
	<ul style="list-style-type: none"> <li>• Bodo FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Reykjavik FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Magadan FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Vancouver Oceanic in 2016</li> </ul>
<b>3d</b>	<b>Implement ADS-C</b>
	<ul style="list-style-type: none"> <li>• Anchorage Arctic FIR (limited by provider)</li> </ul>
	<ul style="list-style-type: none"> <li>• Edmonton FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Bodo FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Magadan FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Reykjavik CTA</li> </ul>

	<b>Completed Goals</b>
<b>3e</b>	<b>Implement ADS-C for All Polar Routes</b>
	<ul style="list-style-type: none"> <li>• Edmonton FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Reykjavik CTA</li> </ul>
	<ul style="list-style-type: none"> <li>• Magadan FIR</li> </ul>
	<ul style="list-style-type: none"> <li>• Anchorage FIR March 2017</li> </ul>
<b>4</b>	<b>IMPROVE AWARENESS OF SPACE WEATHER ISSUES IN ARCTIC/POLAR REGION</b>
<b>4a</b>	<b>Develop Space Weather User Needs</b>
<b>5</b>	<b>IMPROVE SAFETY</b>
<b>5a</b>	<b>Develop Arctic ATM Operational Contingency Plan</b>
	<ul style="list-style-type: none"> <li>• Publish Document v1 on website</li> </ul>
<b>5b</b>	<b>Develop CPWG Volcanic Ash Contingency Guidance</b>
	<ul style="list-style-type: none"> <li>• ICAO EURNAT TF developed joint Volcanic Ash Contingency Plan in January 2016. Volcanic Ash Guidance document that provides guidance to 3 regions (Far-Eastern part of the ICAO European/North Atlantic region) is included as a subset of this document.</li> </ul>
<b>5c</b>	<b>Implement Single AFTN Address</b>
	<ul style="list-style-type: none"> <li>• Iceland</li> </ul>
	<ul style="list-style-type: none"> <li>• Norway</li> </ul>
<b>5d</b>	<b>Implement ICAO Flight Plan 2012</b>
	<b>All ANSPs completed implementation of flight plan 2012</b>

Paris, France  
23 - 25 May 2018

**ATS ROUTE CATALOGUE**

**Section 1. Proposed Cross-Polar Route Segments (CPRS)**

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
1	CPRS/55	Harbin - XXXXXX (505618N 127060E) - XXXXXX (514224N 1271043E) - UDRIL (522607N 1270803E) — NALEB (534132N 1270522E)	State ATM Corporation ATMB			RUS CHN	
2	CPRS/56	SIMLI (504724N 1272206E) – PARIS (512001N1300004E)- Ekimchan NDB (FA)	State ATM Corporation			RUS CHN	
3	CPRS/57	XXXXXX (514224N 1271043E) – RUNET (505413N 1273328E) – VOR/DME Blagoveshchensk – SIMLI (504724N 1272206E)	State ATM Corporation			RUS CHN	
4	CPRS/58	SALAK to GABAL	United Air Lines 18.12.17	ASM optimization	Mileage reduction 7 min (44 nm)	RUS	1) SALAK- SUPAN (691421N 1142251E)-KEDUK (645433N 1151845E)-GIMAR (602138N 1155844E)-RAPTI (591720N 1160744E); TELOK- 2) NERPA-ODANA – A965 tentative implementation date 11.10.18 P142

### Section 2. Proposed Trans-East Route Segments (TVRS)

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
7	<b>TVRS/42</b>	FA – WZ - SIMLI (Proposed alternative is FA – PARUS – SIMLI)	Pacific United Airlines	route realignment		RUS	unacceptable at the moment
1.	<b>TVRS/43</b>	SIBIR – LURED – EKVIK (decommission B451 LURED – IGROD)	IATA	To improve north-south traffic flows between Khabarovsk FIR and Fukuoka FIR	Reduce mileage	RUS JPN	under review
2.	<b>TVRS/47</b>	NETRI – 430312N 1463915E - NODAN	RUS 09.08.13	To be used in coordination with ATC to avoid volcanic ash		RUS	Approved in Russia, no approval from Japan.
3.	<b>TVRS/49</b>	KOKES – DIPNA – NK (Nikolskoe) – UK (Ust-Kamchatsk) – 5150N 15301E – 453933E 1505937E	JCAB Feb 2015	Detour route in case of volcanic ash	Improve airspace efficiency	RUS JCAB	Accepted for implementation. A new entry/exit point at the FIR boundary between PK and Fukuoka shall be coordinated. Assign an international status to domestic routes. Target date - 2016

**Abberviations:**

- Proposed cross polar Route Segments (CPRS);
- Proposed Trans-East Route Segments (TVRS);
- Trans-Asian Route Segments (TARS);
- Asian Route Segments (ARS);
- Trans-polar Route Segments ( TPRS);
- Trans-Siberian Route Segments (TSRS);
- Other Route Segments ( DRS)

**Brief catalogue description:**

**Item 1.** Shows the ordinal number of a route proposal.

**Item 2.** Shows the reference number of a route proposal.

**Item 3.** Route description consists only of IDENTs for NAVAIDS and 5LNC without coordinates (where several NAVAIDS have same IDENT include name of NAVAID).

b) when available. Route designators to be included.

c) unidirectional use of the route to be indicated in text (i.e. Westbound. Eastbound. etc.).

d) several routes being studied within a single airspace planning package will be entered as one proposal.

**Item 4.** Shows Flight Information Regions (FIR) concerned.

**Item 5.** Shows objectives/comments.

**Item 6.** Proposed by.

**Item 7.** Target dates.

Route proposals that cannot be implemented should be marked grey

Implemented proposals should be marked green

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<i><b>FIR</b></i>	<i><b>CODE</b></i>
Afghanistan	AFG
Albania	ALB
Algeria	DZA
Armenia	ARM
Austria	AUT
Belarus	BLR
Belgium	BEL
Bosnia and Herzegovina	BIH
Bulgaria	BGR
China	CHN
Croatia	HRV
Cyprus	CYP
Czech Republic	CZE
Democratic People's Republic of Korea	PRK
Denmark	DNK
Egypt	EGY
Estonia	EST
Finland	FIN
France	FRA
Georgia	GEO
Germany	DEU
Greece	GRC
Hungary	HUN
Iceland	ISL
India	IND
Iran. Islamic Republic of	IRN
Iraq	IRQ
Ireland	IRL
Israel	ISR
Italy	ITA
Japan	JPN
Jordan	JOR
Kazakhstan	KAZ
Kuwait	KWT
Kyrgyzstan	KGZ
Latvia	LVA
Lebanon	LBN
Libyan Arab Jamahiriya	LBY
Lithuania	LTU
Luxembourg	LUX
Malta	MLT
Mongolia	MNG
Montenegro	MNE
Morocco	MAR
Netherlands	NLD
Norway	NOR
Pakistan	PAK
Poland	POL
Portugal	PRT
Republic of Azerbaijan	AZE
Republic of Moldova	MDA
Republic of Serbia	SRB
Romania	ROU
Russian Federation	RUS
Saudi Arabia	SAU
Slovak Republic	SVK
Slovenia	SVN



Spain	ESP
Sweden	SWE
Switzerland	CHE
Syrian Arab Republic	SYR
Tajikistan	TJK
The former Yugoslav Republic of Macedonia	MKD
Tunisia	TUN
Turkey	TUR
Turkmenistan	TKM
Ukraine	UKR
United Arab Emirates	ARE
United Kingdom	GBR
United States of America	USA
Uzbekistan	UZB

Route catalog legend

	Cannot be implemented at the moment	
AMATI (780000N 1685824W) - GILOD (755416N 1720106E)	Implemented proposals	
AMATI (780000N 1685824W) - GILOD (755416N 1720106E)	Proposals for implementation in the near future	
AMATI (780000N 1685824W) - GILOD (755416N 1720106E)	Under consideration	
Implementation is deemed unreasonable	Реализация считается необоснованным	
Published as ...	Опубликовано как ...	
Implemented on ...	Реализован с ...	
segment is unavailable before ...	Сегмент недоступен до ...	
under review ...	на рассмотрении	
expected date of commissioning	Планируемый срок ввода ...	
unacceptable at the moment	Неприемлем в данный момент	
Consider after commissioning Ust-Khairuzovo SSR	Рассмотреть после ввода в строй в ВРЦ Усть-Хайрюзово ВРЛ	

**ARCHIVE**

**Section 1. Proposed Cross Polar Route Segments (CPRS)**

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
1	<b>CPRS/2</b>	RAMEL (8430.0N 16858.4W) - 8456.2N 16653.4E - 8331.IN 12736.3E - BESON (7921.0N 10431E) (bidirectional use)	State ATM Corporation. 2008	a) Implementation will be possible only after elaboration of procedures between oceanic sectors of Magadan. Murmansk ACCs and Anchorage ARTCC; b) Implementation is unreasonable. No stable communications. Safety concerns.		RUS USA	Implementation is deemed unreasonable.
2	<b>CPRS/3</b>	NALIM (8620.4N 16858.4W) - KUBON (8000.0N 12452.9E) - IRMAK (7601.4N 11830.0E) - ROMUL (7355.5N 11557.3E) – SALAK (7158.0N 11407.0E) – LALEN (6930.0N 11252.9E) – OLEMU (UERO 6831.0N 11228.0E) – RULAT (UERP 6624.0N 11202.0E) – IRBIS (6455.4N 11056.7E) - GIBRI (6318.6N 10953.4E) - DORIP (6054.2N 10831.5E) – PEKUN (6002.0N 10805.0E) - CI (Ust-Kut NDB) - URAMO (5542.9N 10526.0E) - MX (ZHIGALOVO) – then along the existing airways (bidirectional use)	State ATM Corporation. 2008	a) Open a new cross-polar route; b) 8620.4N 16858.4W - 7600.4N 11839.6E segment is approved and ready for implementation; c) SALAK – LALEN – OLEMI – RULAT segment is under review and international coordination; d) IATA Top Priority		RUS USA	Published as G112 on Nov 1, 2010 ( NALIM (8620.4N 16858.4W) – KUBON (8000.0N 12452.9E) segment is unavailable before Dec 16, .2010
3	<b>CPRS/12</b>	MAGUN (8500N 03200E) - BESED (8133.0N 05535.1E) - ANODI (7730.0N 06600.0E) – PINOG (7340.1N 06911.4E) - REFRI (6728.6N 07128.0E) - GIMIR (6528.9N 07242.0E) - R348 (H=8600 -16100) – GISUR (6120.6N 07324.2E) -5855.4N 07345.9E – ML (Chapayev NDB 5615.0N 07357.0E) - A302 - G487 – DAKIN (5409.5N 07224.3E) (bidirectional use)	State ATM Corporation. 2009	a) Establish a new route for flying from India. Pakistan and UAE to North America East Coast; b) Approved. ready for implementation after resolution of comm. Issues between Murmansk and Mys Kamennyi; c) Will be assigned R706 designator		RUS ISL	Published as G706 (NOTAM A3432/10) on Jul 1, 2010
4	<b>CPRS/13</b>	RIMAG (6828.0N 07335.8E) - OLDEM (6721.0N 07310.2E) – (6638.0N 07255.0E) - GONOK (6620.1N 07250.4E) - GIMIR (6528.9N 07242.0E) – LEBUL (6450.7N 07148.6E) - RILIS (6321.6N 06954.7E) -	Emirates Airlines	a) Open a new route; Approved and ready for implementation		RUS	Published as A947 on Nov 1, 2010

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
		URMAN (6146.2N 06806.9E) – ATREM (6058.6N 06714.0E) – BAGEN (6638.0N 07255.0E) – LUGIK (5943.0N 06556.0E) (bidirectional use)					
5	CPRS/14	SORLI (6228.0N 06602.0E) - BELEG (6341.3N 06642.0E) - MASUL (6455.1N 06639.8E) - SH (Salekhard VORDME 6635.3N 06636.4E) - GOPUS (6726.1N 06639.2E) - ADERA (6851.9N 06644.3E) - TUMOK (7113.0N 06654.5E) – LUGOT (7202.3N 06649.5E) - ANODI (7730.0N 06600.0E) (unidirectional use to ANODI)	Emirates Airlines	a) Transition from a new Crosspolar route; b) Approved and ready for implementation; c) Will be assigned G359 designator		RUS	Published as G359 (NOTAM A3429/10) on Jul 1, 2010
6	CPRS/15	PIREL (8000.0N 03500.0E) – ANODI (7730.0N 06600.0E) – then on B483 (bidirectional use)	State ATM Corporation. 14.05.2009	a) Open a new routing from China to North America; b) approved and ready for implementation. c) Will be assigned R705 designator		RUS NOR	Published as R705 (NOTAM A3427/10) on Jul 1, 2010
7	CPRS/16	ANODI (7730.0N 06600.0E) - MELAM (07610.7E 7657.0N) - TINEM (7459.4N 07610.7E) – DOSON (7331.0N 08022.9E) (bidirectional use)	State ATM Corporation. 14.05.2009	a) A new transition from Cross-polar route; b) ANODI - MELAN approved and ready for implementation			Published as R705 on Nov 1, 2010
8	CPRS/17	MX (ZHIGALOVO NDB 5448.0N 10509.0E) – GUSIN (5106.0N 10614.0E) (bidirectional use)	State ATM Corporation. 14.05.2009	a) Shorten the route by 15 km b) Approved for implementation as a route by coordination with ATC; c) Will assigned B934 designator		RUS	Implemented on March 11, 2010 (NOTAM A0404/10)
9	CPRS/18	NIBUL (5913.1N 06239.8E) –5738.2N 06147.9E – EKB (Yekaterinburg/Koltsovo VORDME 5644.6N 06047.9E) (between 2100-7500 m unidirectional to NIBUL. between 8100-15100 m bidirectional)	State ATM Corporation. 14.05.2009	a) Shorten the route by 13 km; b) Under review		RUS	Published as G552 on May 05 2011
10	CPRS/19	RIVAS (7140.8N 08425.3E) - SIVDI (6951.1N 08736.9) – TESLA (6720.5N 09155.5E) – SAKAT (6526.6N 09432.4E) – OKASA (6225.8N 09728.3E) – KOSUM (5756.3N 10044.6E) - BRT (Bratsk VORDME) (bidirectional use)	Continental Airlines April 2008	a) Open up a route for flying from South-East Asia to North America; b) Under review		RUS	Published as R705 on Nov 1, 2010
11	CPRS/20	DAKIN (5409.5N 07224.3E) - ML (Chapayev NDB 5615.0N 07357.0E) - NJC (Nizhnevar-	Emirates Airlines	a) Open up a route for flying from Middle East to North America;		RUS	Published as G715 on

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
		tovsK VORDME 6056.6N 07628.1E) (bidirectional use)	2009	b) Under review			Nov 17, 2011
12	<b>CPRS/21</b>	BEBIR (6355.2N 06501.8E) - GUDIR (6734.5N 07001.6E) - NIDRA (7127.5N 07708.7E) (bidirectional use)	Emirates Airlines 2009	a) Shorten the existing route b) Under review		RUS	Published as G497 on Nov 17, 2011
13	<b>CPRS/22</b>	8530.0N 16858.6W	FAA December 4. 2009	a) Open up a new entry fix for Crosspolar routes b) Under review		RUS USA	4 <sup>th</sup> quarter 2010 NPRS/27
14	<b>CPRS/23</b>	8330.0N 16858.6W	FAA December 4. 2009	c) Open up a new entry fix for Crosspolar routes a) Under review		RUS USA	4 <sup>th</sup> quarter 2010 <b>NPRS/28</b>
15	<b>CPRS/24</b>	7800.0N 16858.6W	FAA December 4. 2009	d) Open up a new entry fix for Crosspolar routes a) Under review		RUS USA	4 <sup>th</sup> quarter 2010 <b>NPRS/29</b>
16	<b>CPRS/25</b>	7300.0N 16858.6W	FAA December 4. 2009	e) Open up a new entry fix for Crosspolar routes a) Under review		RUS USA	4 <sup>th</sup> quarter 2010 <b>NPRS/30</b>
17	<b>CPRS/26</b>	NIKIN (8100.0N 16858.6W)	FAA December 4. 2009	a) Relocate NIKIN b) Under review c) Relocation of NIKIN is unreasonable		RUS USA	4 <sup>th</sup> quarter 2010 Realignment is unjustified
18	<b>CPRS/27</b>	LISKI (7000.0N 16858.6W)	FAA December 4. 2009	d) Relocate LISKI e) Under review a) Relocation of LISKI is unreasonable		RUS USA	4 <sup>th</sup> quarter 2010 relocation of the entry fix is unnecessary
19	<b>CPRS/28</b>	833000N1685823W - 740039N 1360232E - ... a) NA (Nizhneyansk NDB 7125.0N 13608.0E) – G226; b) GIKSI (7141.7N 12854.0E) – G491 (B489. G493) (bidirectional use)	State ATM Corporation. 09.02.2010	a) Open a new cross-polar route; a) Under review		RUS USA	Published as G493 and G812 on Nov17, 2011
20	<b>CPRS/29</b>	AMATI (780000N 1685824W) - GILOD (755416N 1720106E) - LUNOG (720705N 1565953E) - NOGDA (711205N 1544019E) – OTNIR (690000N 1500037E) - SIPVI (652256N 1441620E) - NERPA (643256N 1430619E) (bidirectional)	State ATM Corporation. 09.02.2010	b) Open a new cross-polar route; a) Under review		RUS USA	Published as B806 on Oct 18, 2012
21	<b>CPRS/30</b>	7300.0N16858.4W – LURET (7037.5N	State ATM	a) Open a new cross-polar route;		RUS	unacceptable at the moment

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
		14753.8E) – R351 (B933 . G7. G494 . G495. G806) (bidirectional use)	Corporation. 09.02.2010	b) Under review c) unacceptable at the moment		USA	
22	<b>CPRS/31</b>	ORVIT – 7500.0N 17000.0E -6500.0N 15300.0E – BANOT - .. B223 - LUMIN	Continental Airlines April 2010	a) New York – Tokyo traffic; b) distance saving- 35.8 NM c) accepted for review d) unacceptable at the moment		RUS	unacceptable at the moment
23	<b>CPRS/32</b>	ORVIT - 7700.0N 18000.0E - 7000.0N 16100.0E - 6500.0N 15500.0E - 6000.0N 15100.0E – ROMEM .. B337 - ANIMO	Continental Airlines April 2010	a) New York – Tokyo traffic; b) distance saving - 40.2 NM c) accepted for review		RUS	unacceptable at the moment
24	<b>CPRS/33</b>	DEVID (B480) - GIKSI .. G491 or G493 or B489	United Airlines April 2010	a) Transition routes for flying between Mid-West US/US East Coast and Asia b) Accepted for review		RUS	unacceptable at the moment
25	<b>CPRS/34</b>	a) RAMEL (G491) - TAKUN (G226); b) PETUL - RUTIN (G226); c) UNELI (G491) - BALOM (G226)	United Airlines April 2010	a) Transition routes for flying between Mid-West US/US East Coast and Asia b) Accepted for review		RUS	unacceptable at the moment
26	<b>CPRS/35</b>	a) NIKIN (G226) - UNELI; b) TAKUN (G226) - TIGLA (G491); c) BALOM (G226) - TEMGA (G491)	United Airlines April 2010	a) Transition routes for flying between Mid-West US/US East Coast and Asia b) Accepted for review		RUS	unacceptable at the moment
27	<b>CPRS/36</b>	a) ORVIT (G494) - TAKUN (G226); b) DILSA - RUTIN (G226)	United Airlines April 2010	c) Transition routes for flying between Mid-West US/US East Coast and Asia d) Accepted for review		RUS	unacceptable at the moment
28	<b>CPRS/38</b>	a) NELTI-A299-DONUS-TINRI далее G359 or b) NELTI- TINRI . G359	Emirates Airlines 19.05. 2010	a) Accepted for review.		RUS	under review
29	<b>CPRS/37</b>	ANODI-ABERI	Emirates Airlines 19.05. 2010	a) Accepted for review b) Reviewed. Implementation is possible.		RUS	Published as G359 on Sep 22, 2011
30	<b>CPRS/39</b>	a) W104 TARSA-NOR b) W98 DOSON-KUTET	Continental Airlines April 2010	a) assign an international status b) streamline DAKIN – DEVID route for Delhi/Mumbai – Newark daily flights c) transition from DEVID		RUS	Published as a) R200 as b) G498 on Nov17, 2011
31	<b>CPRS/40</b>	B358 LANEP – IKADA	British	Remove flight level restrictions		RUS	Route excluded

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
			Airways 17.01.11	between FL350-530			
32	<b>CPRS/41</b>	LURUN (852500N 1685824W) - TUSAT (833607N 1543003E) - UNTEK (791121N 1340410E) - NIGES (750546N 1265137E) - RANEN (735405c 1252913E) - NESPA (715403N 1233405E) - MOPUL (693331N 1232755E) - GANPA (664703N 1232204E) - ARLAG (651308N 1254435E) - SUBOS (635738N 1272559E) - TAGIL (631602N 1282035E) - Yakutsk VOR/DME (UTS) (620533N 1294705E) (bidirectional)	State ATM Corporation. 09.02.2010	a) Open a new cross-polar route; b) Under review		RUS USA	Implemented as R494 on Oct 18, 2012
33	<b>CPRS/42</b>	GIMON – NIRUT (76N035E)	2012	Purpose: for flights from India to existing routes to GIMON continue in the North America		RUS NOR	Published as A840 on March 07, 2013
34	<b>CPRS/43</b>	GIMON – AGATA (78N035E)	2012	Purpose: for flights from India to existing routes to GIMON continue in the North America		RUS NOR	Published as A841 on March 07, 2013
35	<b>CPRS/44</b>	ANODI – KOMEL (7730N035E)	2012	Use as a new Cross-polar route for flying from North America to Southeast Asia		RUS NOR	Published as A839 on March 07, 2013
36	<b>CPRS/45</b>	SIMLI-G494-B331-W205-WZ	2013	Reduce mileage		RUS	Will be published as G494, A803 on September 19, 2013
37	<b>CPRS/46</b>	NERPA (643256N 1430619E) –FA (Yekimchan) (530807N 1324953E) – MAGIT (474131N 1310900E) Unidirectional traffic from FA to MAGIT	2013	Extend the existing Cross-polar route		RUS	Will be published as B806 on September 19, 2013
38	<b>CPRS/47</b>	WZ (503808N 1280207E) – PARIS (512001N 1300004E) - FA (530807N 1324953E). Unidirectional traffic from WZ to FA	2013	Establish parallel routes		RUS	Will be published as A803 on September 19, 2013
39	<b>CPRS/50</b>	SALET (7957N 16858W) – RODOK then align G495	State ATM Corporation October 2013	Establish an additional entry/exit point		RUS FAA	To be published as G819 in 13.11.14

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
40	<b>CPRS/51</b>	BARIP (7457N 16858W) – LUTEM – OLMIN – ZR (Zyryanka) - ASKIB	State ATM Corporation October 2013	Establish an additional entry/exit point		RUS FAA	To be published as B722 in 13.11.14
41	<b>CPRS/52</b>	Establish additional CRPs on G819, G493, G226, R351	United Airlines August 2014	Establish additional NCRPs to simplify transitions between the existing airways	Increase Route Efficiency	RUS	The following NCRPs were established: BAKUK, BUNIT, OKLOS NOTAM: A3748/14, A3750/14, A3745/14, A3743/14
42	<b>CPRS/53</b>	Establish ATS route SOTIS PILAN-LURAM-	United Airlines August 2014	Establish a new ATS route.	Increase airspace efficiency, provide fuel savings and CO <sub>2</sub> reduction	RUS	The route proposal accepted. The new A303 airway implemented in April 2015 as follows LURAM (664606N 0375031E) - TOKRO (660730N 0391350E) – SOTIS (654100N 0400750E) Flight level band;, <u>FL100**</u> <u>FL140</u> <u>FL160*</u> <u>FL200</u> <u>FL080</u> <u>FL110</u> <u>FL150</u> <u>FL170</u> <u>FL250*</u> <u>FL390</u> <u>FL510*</u> <u>FL210</u> <u>FL260</u> <u>FL400</u>
43	<b>CPRS/54</b>	820939N 1685824W – 802806N 1642448E– 755700N 1431800E – IDIMA	State ATM Corporation December 2014	Establish a new ATS route segment.	Increase airspace efficiency, provide fuel savings	RUS	The new route B802 will be opened effective from November 12, 2015 as follows: LETUN (820939N 1685824W) OLMAT( 802806N 1642448E) LOMRI (760029N 1432814E) IDIMA (740045N 1360243E) <u>FL530</u> <u>FL270</u>
44	<b>CPRS/55</b>	755700N 1431800W –RUTIN	State ATM Corporation December 2014	Establish a new ATS route segment.	Increase airspace efficiency, provide fuel savings	RUS	The new route G813 will be opened effective from November 12, 2015 as follows: : LOMRI (760029N 1432814E) RUTIN (733414N 1403546E) BEKOP (721044N 1360641E) BANIK (714205N 1344553E) AKEBA (713047N 1341525E)

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5	6	7	8
							RILAK (691609N 1290106E) DISES (650957N 1231911E) Vilyuysk NDB (CZ) (634438N 1214704E) <u>FL530</u> <u>FL270</u>
45	<b>CPRS/56</b>	762814N 1685824W - 754700N 1791349E – LUNOG	State ATM Corporation December 2014	Establish a new ATS route segment.	Increase airspace efficiency, provide fuel savings	RUS	The new route R827 will be opened effective from November 12, 2015 as follows: BEKAR (762814N 1685824W) OMELI (754700N 1791349E) LUNOG (720705N 1565953E) <u>FL530</u> <u>FL270</u>
46	<b>CPRS/57</b>	762814N 1685824W – 722712N 1662946E – OLMIN	State ATM Corporation December 2014	Establish a new ATS route segment.	Increase airspace efficiency, provide fuel savings	RUS	The new route R830 will be opened effective from November 12, 2015 as follows: BEKAR (762814N 1685824W) TUSET (743842N 1761440E) GOPAN (722659N 1662322E) IPTER (713000N 1631457E) RUDBA (703041N 1602609E) LULIR (692254N 1573900E) KEMED (690349N 1565606E) OLMIN (672801N 1534310E) <u>FL530</u> <u>FL270</u>
5	<b>CPRS/48</b>	493236N 1281936E-AMERA- WZ (unidirectional traffic to WZ)	IATA	Establish parallel ATS routes (G494 is unidirectional to SIMLI)		RUS CHN	Under review and coordination. Negotiate with China, in different formats (IATA, ICAO, etc.)
6	<b>CPRS/49</b>	RITEK – 495025N 1182854E - HAILAR	IATA	Establish an additional entry/exit point	Reduce mileage	RUS CHN	Under review and coordination. Negotiate with China, in different formats (IATA, ICAO, etc.)
7	<b>CPRS/50</b>	1. B830 RITAK (8300N3200E) – KUKET – SALAK; 2. G64 KUKET – GIKSI; 3. B828 RITAK - ANODI	State ATM Corporation 2015	Open a new air corridor		RUS ISL	c 02.02.2017



**Section 2. Proposed Trans-East Route Segments (TVRS)**

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
1	<b>TVRS/8</b>	G907 - BANOT (5940.6N 14908.7E) - NILOT (5611.0N 14142.7E) -.6N 13726.1E –4809.5N 13131.6E –MAGIT (474131N 1310900E) – JMU (JIAMUSI) (unidirectional from 5340.6N 13726.1E to 474131N 1310900E)	State ATM Corporation. 10.07.2007	a) Open up a new Trans-East route to join JMU (JIAMUSI); b) Approved and ready for implementation; c) There is no connection in China airspace from 4741.3N 13108.4E – JMU (JIAMUSI); d) ASBAT – BA (Balagannoye); e) After opening of the above route. G212 ARGUK - HAB (Khabarovsk VORDME 4832.7N 13512.6E) will be used only for eastbound flying.		RUS CHN	Published as R213 on Oct 20, 2011
2	<b>TVRS/13</b>	ASKIB (5924.1N 14303.1E) - 5340.6N 13726.1E (ASKIB (592407c 1430312B) - GIRUD (534038c 1372609B)	State ATM Corporation. 10.07.2007	a) Open up a new route; b) Approved and ready for implementation		RUS	Published as B722 on Oct 20, 2011
3	<b>CHUKO TKA-1</b>	LISKI (7024.3N 16858.3W) - PEVEK (UHMK) (6947.0N 17035.7E) - CHERSKY (UESS) (6844.6N 16120.2E) -Zyryanka (6543.8N 15046.2E) - INDIK (6316.0N 14312.0E) - Chagda (5845.0N 13039.0E) Flight Level Band 9600-11600 m (bidirectional use)	RACGAT/13	a) UESU – INDIK – Chagda segment is located to close to the existing FIR boundaries and is outside VHF and radar coverage. b) Developed and approved an alternative route G912		RUS USA	Implementation is deemed unreasonable
4	<b>TVRS/14</b>	BELEK (6817.1N 14247.1E) - RODOK (6633.7N 13710.1E) (bidirectional use)	Proposed by airlines August 1. 2009	a) Transition from G969 to G495; b) Approved and ready for implementation		RUS	Published as B969 (by NOTAM ) on Jul 1, 2010
5	<b>TVRS/21</b>	ABAGO (5617.5N 14414.2E) - 5517.2N 14005.3E (ABAGO (561731c 1441418B) - GITAK (551707c 1400520B)	State ATM Corporation. April July 10. 2007	a) Open a new route; Approved and ready for implementation		RUS	Published as G902 on Oct 20, 2011

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
6	<b>TVRS/22</b>	ARNAP (6440.0N 17025.0E) - ASMOK (6448.8N 16843.2E) – ILMUK (6456.1N 16714.7E) – LUVAK (6502.8N 16526.4E) – OSKON (6514.3N 16032.5E) – ABAPI (6502.5N 15718.3E) – RUBIS (6433.3N 15159.3E) – ELBIN (6340.5N 14532.7E) – INDIK (6316.0N 14312.0E) – KURAK (6247.0N 13651.0E) – LUKON (6230.9N 13338.4E) – UEEE (6205.5N 12947.0E)	State ATM Corporation. 30.03.2010	a) Open a new route; b) North America and Alaska traffic to Afganistan, Kyrgystan (Manas), Beijing, Hong Kong, Mongolia and China; c) Approved and ready for implementation Assigned B155 designator		RUS	Published as B155 (by NOTAM A2204/10) on Jun 3, 2010
7	<b>TVRS/23</b>	NUZAN – 5141.2N 16239.1E – RIMLI (5142.3N 15806.8E) – B932	State ATM Corporation. April 2010	a) Transition between R220 and B932; b) Initial review completed		RUS USA	Published as G801 on Nov 17, 2011
8	<b>TVRS/24</b>	5005.0N 15900.0E – 4947.2N 15400.0E – B932	State ATM Corporation. April 2010	a) Transition between R220 and B932; b) Initial review completed		RUS USA	Published as G804 on Nov 17, 2011
9	<b>TVRS/25</b>	NYMPH - 5310.5N 166310.E – RIMLI (5142.3N 15806.8E) – B932	State ATM Corporation. April 2010	a) Transition between R220 and B932; b) Initial review completed		RUS USA	Published as G816 LUMES - RIMLI
10	<b>TVRS/26</b>	NYMPH - 5325.0N 167126.E– B932 (5321.6N 16218.4E) -UHPP	United Airlines April 2010	a) Transition between G469 and B932 then to B915; b) Accepted for review		RUS USA	Published as G73 on Nov17, 2011
11	<b>TVRS/27</b>	OLCOT – NUZAN – 5141.0N 16237.6E – RIMLI – SENOR – G73 (B115)	United Airlines April 2010	a) Transition between R580 (A342) and B932 then to G73 (B115); b) Accepted for review		RUS USA	unacceptable at the moment
12	<b>TVRS/28</b>	OGDEN – 4855.5N 15636.2E – NETRI – LATAK – G103	United Airlines April. 2010	a) Transition between R580 (R451) and B932 then to G103; b) Accepted for review		RUS USA	unacceptable at the moment
13	<b>TVRS/29</b>	NETRI – 4304.2N 14640.4E - NODAN	United Airlines April 2010	a) Transition between B932 and B915; b) Requires opening of a new entry/exit fix with Japan c) Accepted for review		RUS JPN	unacceptable at the moment
14	<b>TVRS/30</b>	OSKON-UHMI (UHMI – PEMID)	Air Canada 14.02.2011	a) remove flight level restrictions 13100-16100		RUS	Published as A218 FL 270-530
15	<b>TVRS/31</b>	a) KURAK (6247.0N 13651.0E) – ODANA	IATA	a) reduce mileage		RUS	unacceptable at the moment

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
		6) KURAK – KUNIK	December 2010	b) provide transition from R819 to G494			Published KURAK – KUNIK as R819
16	TVRS/32	Okhotsk - N5340.6 E13726.1	State ATM Corporation. 10.07.2007	open up a new route		RUS	Published as B722 on Oct 20, 2011
17	TVRS/33	ABAGO – GITAK (N.5517.2 E14005.3)	State ATM Corporation. 10.07.2007	open up a new route		RUS	Published as G902 on Oct 20, 2011
18	TVRS/34	BIRBO – ODEKA (N4809.5 E13131.6)	State ATM Corporation. 10.07.2007	open up a new route		RUS	Published as B723 on Oct 20, 2011
19	TVRS/35	ARNAP (N 644000 E 1702510) –ASBAT (N635331 E1644434)	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	extension R213		RUS	Published as R213 on May 31, 2012
20	TVRS/36	AMETO (N582137 E1532037)-NARIT (581534N 1525610E)- BAMUN (580808N 1522641E)-BENGA (575715N 1514437E)- BEBAT (573246N 1501419E)-GRUMA (N560501 E1453036)	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	extension B237		RUS	Published as B237 on May 31, 2012
21	TVRS/37	BUMAT (615007N 1603257E)-BUSUL (612501N 1555402E )-DERUD (604907N 1522350E)	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	extension A827		RUS	Published as A827 on May 31, 2012
22	TVRS/38	BUMAT (615007N 1603257E)-LUNEK (605645N 1552506E)- ODERI (603231N 1532656E)	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	route realignment		RUS	Published as A828 on May 31, 2012
23	TVRS/39	URABI (601201N 1544108E)-BANEB (601415N 1552423E)-SOPUR (601839N 1570605E)-RUNAB (602101N 1581731E)- BEBOR (602257N 1593711E)-DIREG (602413N 1610436E)-RAMKA (602426N	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	a) extension G370 b) Leaving the NOPAC		RUS	Published as G370 on May 31, 2012

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
		1613257E)-Tilichiki NDB (TK) (602154N 1660045E)-NELTA (605736N 1725315E)-RUSOR (611400N 1775600W)					
24	<b>TVRS/40</b>	BALUB (564751N 1671435E)- MURTA (562209N 1634311E)- Ust-Kamchatsk NDB (UK) (561324N 1624114E)- OSMOR (551335N 1565706E)- TOSNO (550813N 1563047E)- BANIT (544949N 1550431E)- KORES (535524N 150000E)- GIRAN (532549N 1474300E)	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	route realignment		RUS	Published as B804 on May 31, 2012
25	<b>TVRS/41</b>	IRKAN-KOKUN-BANIT	Cathay Pacific 26.07.2011, RDGE/15 30.09.2011	route realignment		RUS	Published as B327
26	<b>TVRS/44</b>	KUNAD - OTLER	RUS 09.08.13	NOPAC transition to Trans-East	Reduce mileage	RUS	To be published as G815 in 13.11.14
27	<b>TVRS/45</b>	LUMES - RIMLI	RUS 09.08.13	NOPAC transition to Trans-East	Reduce mileage	RUS	To be published as G816 in 13.11.14
28	<b>TVRS/46</b>	Ust-Kamchatsk NDB (UK) - MIVAN (552730N 1615931E) - KEGOR (544042N 1611855E) - SIPVA (530624N 1600201E) - Khalaktyrka (HY) (530001N 1584736E) - PETIN (531012N 1582713E) – to be used by coordination with ATC	RUS 09.08.13	To support general aviation flights from USA to China		RUS	Implemented G101 since 12.11.15
29	<b>TVRS/48</b>	Troitskoye NDB (FI) - REPIK - ADITO – LANRI FL120-FL300 are applied in coordination with ATS unit, FL310-FL530 are applied without restrictions	JCAB Feb 2015	Avoid volcanic ash	Increase airspace efficiency	RUS JCAB	Accepted for implementation. A new entry/exit point at FIR boundary between PK and Fukuoka shall be agreed. Domestic routes in PK shall be assigned an international status. Target date - 2016
30	<b>TVRS/50</b>	IRKAN 552000N 1625631E - BANIT 544949N 1550431E	RUS 2015	Avoid volcanic ash	Increase airspace efficiency	RUS	The new route segment of B327 will be opened on November 12, 2015 as follows: IRKAN 552000N 1625631E KOKUN 551630N 1611642E GITRU 551259N 1600635E

Item	Reference	Route description	Proposed by	Objectives/Comments	Benefits	FIR	Target Dates
1	2	3	4	5		6	7
							LUPIR 550053N 1570825E NELEB 545837N 1564046E BANIT 544949N1550431E
31	<b>TVRS/51</b>	PETIN- RIMLI	RUS 2015	Flights in lower and upper airspace	Increase airspace efficiency	RUS	The new route segment of B244 will be opened on November 12, 2015 as follows: RIMLI (514218N 1580655E) RINOT (522205N 1585954E) PETIN (531012N 1582713E) <u>FL530</u> <u>FL130</u>
4.	<b>TVRS/52</b>	Open up a new entry/exit point between FRENK and LISKI and establish supporting routes as follows: a) 692427N 1685824W – OSKON; b) 682642N 1685824W – RAMKA; c) 682642N 1685824W – LORKI; d) 672752N 1685824W – OSKON;	United Airlines May 2015	Establish new ATS routes	Improve airspace and fuel efficiency,	RUS USA	c 02.02.2017: a) A800 BAKOL (692427N 1685824W) – OSKON; b) A953 TESMA (682642N 1685824W) – RAMKA; c) A951 TESMA (682642N 1685824W) – LORKI; d) G903 AGURA (672752N 1685824W) – OSKON