

**Summary of Discussions of the
Twentieth Meeting of the
Cross Polar Trans East Air Traffic Management Providers Working Group
(CPWG/21)
17-19 May 2016 – Montreal, Canada**

1. Background

1.1 The Twenty First Meeting of the Cross Polar Trans East Air Traffic Management (ATM) Providers Working Group (CPWG/21) was hosted by the International Air Transport Association (IATA) at their Head Office in Montreal, Quebec, Canada 17-19 May 2016. The schedule included meetings of the Air Navigation Service Providers (ANSPs) and the CPWG/21 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, ICAO Global Lead for the FAA facilitated the meeting. Attendees included representatives of the ANSPs from China, Japan, Canada, Iceland, Russia, Denmark and the United States (US); International Air Transport Association (IATA); international airlines and operators, and industry. The list of participants is at **Attachment A**.

2. Opening of the Meeting

2.1 Ms. Leah Moebius welcomed participants to Montreal and thanked IATA for hosting the 21st CPWG. She noted that China ATMB was in attendance and the meeting was especially appreciative of participation. Regrets were sent from Norway as they were unable to attend due to a conflicting meeting. Following Leah's opening remarks, meeting participants provided introductions.

3. Agenda Item 1: Review and approve Agenda

3.1 The following agenda was approved by the meeting:

Agenda Item 1: Review and approve Agenda
WP/01: CPWG/21

Agenda Item 2: Administrative Matters (CPWG/20 Report)
WP/02: CPWG/20 Report

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

Agenda Item 4: Report from the Pacific Project Team Meeting
WP/09: Proposal to Incorporate Pacific Project into CPWG

Agenda Item 5: Provide Status on CPWG/20 Actions
WP/03: CPWG/20 Action Item List
CP01-08C: ATFM Collaboration Between FAA and State ATM – FAA
CP04-31: Update on Radar – State ATM
CP06-02: ATOP Update – ZAN
CP07-02: To Be Discussed Under Agenda No. 6
CP10-08: Update on JCAB and State ATM LOA for ATFM – State ATM
CP10-13: Update on CPDLC/ADS-C – State ATM

CP12-04: TAUG Update – ZAN
CP12-06: Coordination Between ATMB and State ATM – State ATM
CP14-02: AIDC Implementation Update – State ATM
CP14-11: Update on Eliminating Restrictions – FAA
CP14-12: IP/03: Implementation of ADS-C CDP – FAA
IP/02: Implementation of ADS-B ITP - FAA
CP15-06 & CP19-05: Outcomes of VOLKAM16 Exercise & VOLKAM17 Planning
- State ATM
CP15-08: Update on ICAO EURNAT Volcanic Ash Task Force & MET G Meetings –State
ATM
CP15-09: Planned Rocket Launches from Norway -Avinor
CP16-01P: Zero Track load times
CP17-10: Update on Departure Messages (ANSP Discussion) - FAA
CP18-02: WP/05 Contingency Reroute Procedures - FAA
CP18-03P: Collect Traffic Count Data for Arctic, RTE and NOPAC – FAA
CP18-04P: FAA UPR Expansion to Russian FIR boundary – FAA
CP18-05P: Russia UPR Expansion from Anchorage FIR boundary – State ATM
IP/10: FAA and State ATM response to IATA UPR Requests _State ATM
CP18-06P: FAA Trial to merge PACOTS Tracks C and E - FAA
CP18-07P: PACOTS Track F UPRs - FAA
CP19-02: Form R Update - IATA
CP19-04: Update re: Contingency Routes & LOA Status – State ATM
CP19-05P: Remove restrictions along 141W – FAA
CP19-06P: Bidirectional Routes over KUNAD, LUMES and KOKES – State ATM
CP19-07P: Operator desired areas for UPR expansion - IATA
CP20-01: ANSP updates on launch activities – All ANSPs
CP20-02: Medium and Heavy Unmanned Balloon Procedures - FAA
CP20-03: New additional RTE Waypoints and Routes –State ATM
CP20-04P: High Altitude UPRs –JCAB FAA
IP/11 JCAB High Altitude UPR Trial

Agenda Item 6: ATS Route Catalogue Update

CP07-02: Entry/Exit Fixes on FIR Boundaries
WP/07: State ATMATS Route Catalog – State ATM

Agenda Item 7: 2016-2017 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: Communications, Navigation, Surveillance (CNS) and Air Traffic Management (ATM) issues

- ANSP Updates/Presentations
 - o NAV CANADA Update
 - o FAA Anchorage Update
 - o State ATM Corporation Update
 - o ISAVIA Update
 - o China ATMB Update
 - o JCAB Update
- Airline Updates/Presentations
 - o IATA/Aircraft Operators

- Industry Updates
 - o ARINC
 - o Iridium

Agenda Item 9: Other Business

Agenda Item 10: Next Meeting

4. Agenda Item 2: Administrative Matters

4.1. The following Working Papers (WPs), Information Papers (IPs), and presentations were provided to the meeting:

| Paper Number | Agenda Item | Action Number | Title of Paper | Presented by |
|--------------|-------------|---------------|---|--------------|
| WP/01 | 1 | | Proposed Agenda and Timetable | FAA |
| WP/01REV | | | Detailed Agenda | FAA |
| WP/02 | 2 | | Summary of Discussions from CPWG/20 | FAA |
| WP/03 | 2 | | CPWG/20 Action Item List | FAA |
| WP/04 | 7 | | Proposed CPWG Work Program | FAA |
| WP/05 & ppt | 5 | CP18-02 | Reroutes and Coordination Issues Associated with Volcanic Events | FAA |
| WP/06 | 6 | | ISAVIA Proposal to open Entry/Exit Point between Murmansk and Reykjavik | State ATM |

| Paper Number | Agenda Item | Action Number | Title of Paper | Presented by |
|---------------------------|-------------|--------------------|---|-----------------------|
| WP/07 | 6 | | State ATM ATS Route Catalogue | State ATM |
| WP/08 | 6 | | Improving Airspace Structure between Khabarovsk, Irkutsk & Shenyang FIRs | State ATM |
| WP/09 | 4 | | Proposal To Incorporate The Pacific Project Into The CPWG Meetings | IATA/FAA |
| | | | | |
| Information Papers | | | | |
| IP/01 | 5 | | List of Documentation | |
| IP/2 &ppt | 5 | CP14-12 | Implementation Automatic Dependent Surveillance-Contract (ADS-C) Climb/Descent Procedure (CDP) | FAA |
| IP/03 &ppt | 5 | CP14-12 | Implementation of Automatic Dependent Surveillance-Broadcast (ADS-B) In-Trail Procedure (ITP) | FAA |
| IP/04 | 6 | | Changes to ATS Routes in Khabarovsk and Pyongyang FIRs | State ATM Corporation |
| IP/05 | 8 | | Space Weather, a New Service for Annex 3, Meteorological Service for International Air Navigation | NOAA |
| IP/06 | 5 | CP06-02 CP14-11 | Update on Implementation of Anchorage ARTCC's Sector 64 | FAA |
| IP/07 | 8 | | UAL FANS Issues_Embedded ACKs | United Airlines |
| IP/08 | 8 | | Future Air Navigation System (FANS) Anomaly related to a Boeing 787-900 Aircraft | FAA |
| IP/09 | 8 | | Naviair Request to Join CPWG | Naviair |

| Paper Number | Agenda Item | Action Number | Title of Paper | Presented by |
|------------------|-------------|-------------------------------|--|-----------------|
| IP/10 | 4 | PP10-01 | ATM Response to IATA UPR Requests | FAA |
| IP/11 | 4 | PP08-06 | High Altitude User Preferred Route (UPR) between North America and Asia for West-Bound | JCAB |
| Briefings | | | | |
| PPT | 8 | CP04-31 CP14-02 CP07-02 | Magadan Update | State ATM |
| PPT | 8 | | NavCanada Update | NavCanada |
| PPT | 8 | | Etihad Airways Overview | Etihad Airlines |
| PPT | 8 | | Iridium Update | Iridium |
| PPT | 8 | | JCAB Update | JCAB |
| PPT | 8 | | Isavia Update | Isavia |
| PPT | 8 | | FAA Anchorage Update | FAA Anchorage |
| PPT | 8 | | ATMB Update | ATMB |

4.2. Copies of all WPs and IPs, as well as additional information presented during the meeting were made available on the CPWG web site at:
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/ato_intl/cross_pol ar/

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

5.1. The FAA provided an update on the Inter-regional ADS-C Reporting Interval Task Force (ADS-C RITF). This inter-regional Task Force includes ANSP participants from both the North Atlantic (NAT) and Asia-Pacific (APAC) regions, and industry participation from Airbus, ARINC, Boeing, Inmarsat, Iridium, and SITA OnAir. The Task Force is evaluating the minimum technically feasible ADS-C reporting interval for reduced separation, as well as 64 second periodic reporting intervals for aircraft in an urgency or distress state. Evaluation includes considerations such as airframe, satellite, communications, and ATC ground system performance as these more frequent reporting intervals are established. The Task Force has conducted several telcons and has planned to meet in-person at the ICAO Office in Paris, France from the 21-23 June 2016.

6. Agenda Item 4: Proposal to incorporate the Pacific Project into CPWG regular work program.

6.1 The FAA and IATA have co-lead the Pacific Project Team (PPT) since its inception following CPWG/10. The FAA and IATA co-authored Working Paper 9 (WP09) proposing to merge the PPT from a stand-alone meeting into the CPWG work program. It was noted that the goal of the PPT is to improve operational efficiency utilizing existing on-board technology with navigation on user preferred routes (UPR) for flights between North America and Asia. As discussed in WP09, there have been a number of significant advances toward expanding UPR availability throughout the region and that ANSPs expect greater availability of UPRs in the region within the next three to five years. As a number of the efficiency gains sought within the CPWG meeting are also linked to expansion of UPRs, a number of topics in PPT and CPWG meetings are similar in nature. Given the ongoing efforts of ANSPs to adopt technologies to support UPRs, expand or develop new UPR opportunities, and the similar efforts being taken within CPWG and PPT both IATA and the FAA agreed to propose that the PPT work program/actions be incorporated into the CPWG regular work program. Included in WP09 was a proposed Action Item list that incorporated PPT actions into the CPWG action list, with special notation of actions arising from the work of the PPT. IATA and the FAA asked that the meeting endorse the proposal to move the PPT into the CPWG regular work program. The meeting agreed to the proposal and the recommendations of WP09 were adopted.

7. Agenda Item 5: Provide Status on CPWG/20Actions

CP14-12: Consider expanding trial for ADS-C Climb/Descend Procedures (CDP) to ZAN Airspace

7.1 The FAA presented IP/02 ADS-B ITP and IP/03 ADS-C CDP. The FAA has developed software for their ATOP Oceanic ATC system that automates the application of the ITP and CDP procedures. The software is undergoing final testing at the FAA ATOP facilities. The ADS-B ITP procedure has been published in the PANS-ATM and the ADS-C CDP procedure will be published in November 2016. The FAA noted that it expects publication of an ICAO State Letter approving ADS-C CDP prior to November 2016 and will begin implementation once in receipt of that letter. This was expected to occur in mid CY2016 with gradual implementation at all three ATOP facilities by the end of CY2016..

The FAA will apply the ADS-B ITP as prescribed in the PANS-ATM with one exception. The PANS-ATM does not allow for any aircraft turns while the ITP procedure is being applied. The FAA will allow ITP aircraft turns if the turns will not cause a reduction in separation. Oakland is currently conducting a manual trial of the ADS-B ITP and they will seamlessly transition to the automated application of the procedure which is planned for June 2016. United Airlines inquired if the ITP procedure required RNP4 equipage. The FAA advised that the automated application of the procedure checks the aircraft Figure of Merit (FOM) to make sure it meets minimum requirements. United also asked NAV CANADA if they were considering implementation of the ADS-C CDP. They replied that they were following the procedure and considering a possible implementation in their airspace.

CP15-06: Consider utilizing the ATM VACP Template in the development of Volcanic Ash Contingency Plan for NOPAC and RTE.

7.2 An update to the most recent volcanic ash planning exercise, VOLKAM/16, was provided by State ATM Corporation. Exercise participants included Civil Aviation Bureau of Japan (JCAB), State ATM Corporation, the FAA (both Oakland and Anchorage Center) and several international air carriers. This exercise utilized two different ash plumes traveling in different directions from a simulated eruption of a volcano on the Kamchatka Peninsula. During

the exercise, a number of teleconferences were conducted that effectively demonstrated dissemination of information among the participants. The exercise highlighted some areas for improvement and coordination including: 1) standardized format for Airlines to request reroutes; 2) Ensure that ANSPs/VAACs publish volcanic SIGMETS in WGS-84 format as required in ICAO Annex 3, Appendix 6; and 3) Identify and socialize information with the teleconference focal point and processing the information for an actual volcanic ash avoidance teleconference. The VOLKAM/16 exercise resulted in the simulated rerouting of nearly 100 aircraft and illustrated the point that in a real-world event, having a well-prepared VA focal point is essential to safely rerouting aircraft and maintaining system integrity. The next exercise is planned for 20-21 April 2017. Anchorage Center thanked State ATM and the Russian Federation for all their efforts to make the VOLKAM exercises the success that they have been and encouraged wider participation in these exercises. Anchorage added that the volume of traffic for VOLKAM16 was large, with over 100 aircraft requiring reroutes; the result being a tremendous amount of work.

Planning for VOLKAM17 exercise is in August 2016. United Airlines reiterated an issue with Volcanic Ash SIGMETS where the SIGMETS describe the location of the volcano to the hundredth of the degree (e.g. 56.06N 160.64E) instead of as outlined in WGS-84 formatting. Publishing locations as noted in the example creates difficulty for flight crews when programming their FMS and they are unable to display the hazard area properly. United has asked the ANSPs to address the formatting issue so that flight crews can display the information.

CP19-04: Update re: Contingency Routes & LOA Status

7.3 State ATM advised that there are no updates on a Letter of Agreement (LOA) between Fukuoka ATMC and them. Magadan Control Center has assumed responsibility for providing ATC services in the area. Magadan has been directed to contact and establish an LOA with Fukuoka. An update is to be provided at the CPWG22 meeting.

CP15-09: Planned Rocket Launches from Norway

7.4 Action Item CP15-09 was closed and a new Action Item was opened CP20-01 for ANSPs to report on future Rocket Launches to the meeting.

CP01-08C: ATFM collaboration between FAA/ATO and State ATM

7.5 The FAA noted it has made several attempts to obtain the status of a proposed LOA between State ATM's Main Air Traffic Flow Management Center (MATFMC) and the FAA's Air Traffic Control System Command Center (ATCSCC). To date, no reply to those queries has been received. Both FAA and State ATM agreed to follow up after the meeting. An update will be provided at the CPWG/22 meeting.

CP04-31: Implement use of radar procedures between Magadan Area Control Centre (ACC) and Anchorage Air Route Traffic Control Centre (ARTCC)

7.6 State ATM reported that the target date for the implementation of radar procedures is 2018. An update will be provided at the CPWG/22 meeting.

CP06-02: Anchorage ARTCC ATOP System update

7.7 Anchorage ARTCC advised that it was making progress towards a planned implementation of ATOP in its Arctic Sector on 1 June 2016 at 1800Z. The current Sector 4 will be split at 73N, with portions

of airspace north of 73N being included in the ATOP platform and those south of 73N remaining within its domestic system. A NOTAM will be issued which will include flight plan addressing information. A status update will be provided at the CPWG/22 meeting

CP07-02: Add additional entry/exit fixes on the FIR boundaries

7.8 State ATM briefed that three new additional waypoints and four airway segments will be added. The expected publication and implementation date is late 2016-early 2017.

602427N/1685824W--RUPIS-OSKON;
682642N 1685824W-LORKI;
682642N 1685824W-BETAM-OGEMA-RAMKA;
672752N 1685824W-NB.

An update will be provided at the CPWG/22 meeting.

CP10-08: Improved contingency collaboration between State ATM and JCAB

7.9 State ATM briefed that there is continuing dialogue between them and JCAB to update Letters of Agreement. An update will be provided at the CPWG/22 meeting.

CP10-13: Expand CPDLC/ADS-C capability for Magadan FIR and install CPDLC/ADS-C at Murmansk

7.10 State ATM briefed that by 2018, Murmansk will be phased out and the airspace will be absorbed by St. Petersburg. There are no current plans to implement ADS-C or CPDLC at St Petersburg, but they will evaluate and advise on the status at the next CPWG meeting. As previously briefed, Magadan now has ADS-C and CPDLC capability.

CP12-04: Updates to Track Users Advisory Guide (TAUG) for dispatchers

7.11 The FAA briefed that two new waypoints were added to the TAUG. The updated TAUG is available on the Oakland or Anchorage ARTCC websites. United Airlines raised an issue they had encountered with DOTS Plus Online. The Westbound PACOTS Track Advisory compilation time was incorrect in DOTS Plus Online. The FAA advised that they would investigate the issue and make corrections. An update will be provided at the CPWG/22 meeting.

CP12-06: Coordination between State ATM and ATMB

7.12 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 structures 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. Also, ATMB noted that the air traffic volume and requirement around the region of HLD is low with insufficient ATC capabilities. State ATM and ATMB agreed that they would like to have further technical discussion on a bilateral basis. An update will be provided at the CPWG/22 meeting.

CP14-02: Establish flight data exchange between facilities

7.13 State ATM briefed that they will be working to implement an AIDC connection to Sapporo ACC. The implementation date is still to be determined. After completing the Sapporo AIDC connection, they would like to work towards implementing an AIDC connection between Magadan and Anchorage Control Centers.

CP14-11: Eliminate Restrictions where possible

7.14 Anchorage ARTCC provided an update on a request to eliminate restrictions to flight plan over named waypoints or Lat/longs along 141W. Anchorage will review the requirement after ATOP is implemented in Sector 64, the Arctic airspace. An update will be provided at the CPWG/22 meeting.

CP15-08: Update on ICAO EURNAT Volcanic Ash Task Force & MET G Meetings

7.15 Ms. Thordis Sigurdardottir, ISAVIA advised that a Final Draft of the EURNAT Volcanic Ash Contingency Plan has been completed. It is expected the new plan will be approved by the COG and NAT SPG Meetings in June 2016. She proposed that this item be closed and that a new Volcanic Ash Reporting Action Item be opened. The meeting agreed and adopted the proposal. Action Item CP21-02 was created for providing updates on Volcanic Ash exercises using NAT Doc. 006 VACP.

CP16-01P: Zero Track load times

7.16 State ATM has requested that Anchorage change their Track Advisory Gateway reservation track loading parameter to 0 minutes. The RTE entry points have been set to 0 minutes. The Arctic entry waypoints have been set to 10 minutes. Anchorage will reevaluate the Arctic gateway track loading settings after ATOP has been implemented in the Anchorage Arctic airspace (Sector 64). A status update will be provided at CPWG22.

CP17-10: Update on Departure Messages (ANSP Discussion)

7.17 State ATM had requested that the FAA investigate an issue where Departure Messages (DEP) were not being transmitted from US airports. The FAA has investigated this issue and worked with their ARTCCs to resolve this issue. There has been improvement in the number of transmitted DEP messages, but there are still some missing messages. State ATM provided a list of missing airport DEP messages to the FAA. The FAA thanked State ATM for the information and requested more in depth information, specifically call signs and dates, if available. The FAA noted that the scripts used by its Flight Data units may include incorrect addressing information and that having call signs makes it easier to track the issue. JCAB had noted issues in the past and advised that they are still compiling data to assist the FAA with addressing ongoing problems. United Airlines commented that they had seen issues with DEP messages not getting to the correct facilities in China. The FAA will investigate the UAL issue. Japan will also provide some data in the future on missing DEP messages. An update will be provided at CPWG22.

CP18-02: WP/05 Contingency Reroute Procedures

7.18 The FAA presented WP/05 on proposed Contingency Reroute Procedures for an airborne aircraft. This Action Item was opened in response to difficulties an AAL aircraft encountered in obtaining an volcanic ash avoidance reroute after departure. The paper made some suggestions for obtaining a revised routing in a VHF voice environment. The best solution for obtaining an avoidance reroute is Dynamic Airborne Reroute Procedure (DARP). The issue is that DARP is not supported by all FIRs. Additionally some FIRs require advance coordination and approval to transit the airspace. DARP requires CPDLC and Automated Flight plan forwarding like AIDC to the destination airport. A map was presented which displayed the capabilities of each FIR boundary. Operators may use the map to evaluate if a revised flight

plan reroute would be forwarded to downstream FIRs. Another table was presented which displayed the requirements of the FIRs needs for revised Flight Plan or Revision messages. It was made clear that an operator could not file a revised flight plan after the aircraft was airborne and begin following the revised route without an ATC clearance. Delta Airlines raised the concern that the process still had several steps that had to occur and that they would like to see a simpler process. State ATM suggested that the current ICAO procedures are outdated and do not effectively cover airborne contingency reroutes. They suggested that ICAO should address this issue. A global solution is needed and this is just not a CPWG issue. The FAA took an Action Item to investigate how the issue should be addressed to ICAO.

CP18-03P: Collect Traffic Count Data for Arctic, RTE and NOPAC

7.19 This Action Item was created from the Pacific Project and rolled into the CPWG normal work program. IATA had requested traffic count information for the Arctic, RTE and NOPAC Routes. It was noted that traffic count data would be provided via the Anchorage ANSP Update.

Note: Anchorage presented the data in their ANSP update and the data was accepted as meeting IATA's needs. Anchorage will continue to collect the Traffic Count data and present the data to the CPWG meeting.

CP18-04P: FAA UPR Expansion to Russian FIR boundary

7.20 This Action Item was moved from the Pacific Project to the CPWG normal work program. The AI requests Anchorage to explore areas where UPRs could be expanded to reach the RTE entry points. Anchorage ARTCC advised that they have established a collaborative work group within their facility to explore areas where UPRs may be expanded to join the RTE entry points. An update will be provided at CPWG22.

*CP18-05P: Russia UPR Expansion from Anchorage FIR boundary
IP/10: FAA and State ATM response to IATA UPR Requests State ATM*

7.21 This Action Item was moved from the Pacific Project to the CPWG normal work program. State ATM advised that legislative changes must be made at FATA to make this issue possible. The AI will be kept open and an update will be provided at the next CPWG meeting.

CP18-06P: FAA Trial to merge PACOTS Tracks C and E

7.22 This Action Item was moved from the Pacific Project to the CPWG normal work program. The Issue was discussed at the IPACG meeting and it was proposed to pursue Track C UPRs as an alternative due to the many issues encountered with merging PACOTS Tracks C and E. Some progress has been made with expanding Track C UPRs to join NOPAC. An update will be provided at CPWG22.

CP18-07P: PACOTS Track F UPRs

7.23 This Action Item was moved from the Pacific Project to the CPWG normal work program. PACOTS Track UPRs have been ongoing as a Trial without any issues. It is expected that the trial will move into normal operations in the near future. An update will be provided at CPWG22.

CP19-02: Form R Update

7.24 State ATM briefed that FATA requires traffic rights information. They have established a working group to investigate Form R options and either continue with the current Form R or change to RPL. There was discussion between State ATM and the operators regarding the preferred method for submitting the information; RPL or Form R. The operators agreed that they prefer an electronic version of the R-Form. An

update will be provided at CPWG22.

CP19-05P: Remove restrictions along 141W

7.25 This issue was imported from the Pacific Project Action Items into the CPWG normal work program. Anchorage had previously updated the meeting on the status of this issue under CP14-11. It was agreed to close this Action Item because it is a duplicate of CP14-11.

CP19-06P: Bidirectional Routes over KUNAD, LUMES and KOKES

7.26 This issue was imported from the Pacific Project Action Items into the CPWG normal work program. Information Paper IP/10 was previously presented to the meeting on this subject. The issue has been addressed and it was agreed to close this Action Item.

CP19-07P: Operator desired areas for UPR expansion

7.27 This issue was imported from the Pacific Project Action Items into the CPWG normal work program. Blair Cowles, IATA posed the question to the Meeting; do we leave the Action Item open as overarching or do we close it? United stated that the whole PAC Project on how you deal with UPRs in the NOPAC is problematic. Is it possible to eliminate the NOPAC routes and/or should they be eliminated? Anchorage ARTCC said that since the beginning of NOPAC UPRs and over time they have found that UPRs are not being used as extensively as they thought they would be. Anchorage feels that the NOPAC is needed, but maybe RNP4 separated routes could be used to maximize the use of the NOPAC airspace. United stated that this needs to be reviewed by all interested parties, a more specific unified request is needed from the operators and IATA in order to move this Action Item forward. IATA agreed to provide recommendations and proposals for the NOPAC Route System at the next CPWG meeting.

CP20-01: ANSP updates on launch activities

7.28 ISAVIA briefed that they had encountered two scientific rockets to be launched between October and mid-DEC 2015. Early notification of the planned launches gave them the opportunity to coordinate and establish an agreement with the space center. Because the space center and ISAVIA had more experience, the launch proceeded smoothly. ISAVIA was able to provide updates if scheduled launches were cancelled due to weather. State ATM agreed that everything went smooth. For future launches, the orientation will be east, but so far there are no scheduled launches.

State ATM briefed that a new spaceport site has been opened in Russia. There was much discussion about active NOTAMed airspace avoidance. The meeting discussed requiring an EET in the flight plan for the time a flight would enter active airspace. The operators had problems with using EETs, because they are based on departure times. There was no conclusion on the best way forward. ANSPs are to provide updates on rocket launch activities at the next CPWG meeting.

CP20-02: Medium and Heavy Unmanned Balloon Procedures

7.29 The FAA and other ANSPs discussed handling medium and heavy unmanned balloon operations in remote or un surveilled airspace. FAA briefed on their informal discussions with ICAO regarding type of separation was to be provided between aircraft and Medium/Heavy weight balloons.

ICAO advised that per PANS-ATM 8.7.3, ANSPs should separate utilizing standard surveillance separation (e.g. 5 NM). Separation in non-surveilled airspace is not possible and ATC provides

advisories and flight crews must “see and avoid”. There is ongoing work at SASP to develop new separation standards.

CP20-03: New additional RTE Waypoints and Routes

7.30 This Action Item is to be covered in Agenda Item 6 and the Action Item was closed.

*CP20-04P: High Altitude UPRs
IP/11 JCAB High Altitude UPR Trial*

7.31 JCAB presented Information Paper IP/11 on the details of JCAB and the FAA’s High Altitude UPR Trial. The trial is on-going. This Action Item is closed.

8. Agenda Item 6: ATS Route Catalogue Update

8.1 State ATM provided WP/07. In accordance with CPWG/20 decision, the following changes were introduced to the catalogue:

- the main section was added with the route proposals under review and implemented since the last CPWG meeting;
- the route catalogue was complemented with an archive section that covered all route proposals that had been implemented or those that were not feasible;
- the route proposals that were not part of Crosspolar/Transeast ATS routes had been added to the ICAO Route Development Group – East (RDGE) catalogue. These route proposals would be highlighted in separate presentations at the CPWG meeting.

State ATM said there have been several discussions with airlines. They need to see if the airlines are in agreement with the proposed implementations. And they will also need justification for new route proposals.

8.2 ISAVIA presented WP/06 on a proposal to open an entry/exit point between Murmansk and Reykjavik. State ATM has reviewed the proposal and considered the suggested new segments. The current status of the route proposal is in internal coordination for late 2016 to early 2017 implementation.

United Airlines asked for the city pairs that the new routes would service. State ATM advised that idea was to streamline routes from east coast to Hong Kong and China.

8.3 State ATM presented IP/04 regarding changes to ATS routes in Khabarovsk and Pyongyang FIRs:

9. Agenda Item 7: 2016-2017 Cross Polar Work Program

9.1. Ms. Leah Mobius, FAA reviewed all of the CPWG21 updates to the CPWG/21 Action Item and Planning Chart.

10. Agenda Item 8: CNS and ATM Issues

10.1 Mr. Bob Rutledge, NOAA presented IP/05 on Space Weather. Space Weather is not like regular weather. There is less future predictability. NOAA has worked to increase the accuracy of their predicting of Space Weather events that impact aviation operations. They are working to gain global

predictions that avoid disagreements between regional forecasts. They are not where they want to be but they are working to continually improve their product. NOAA is focusing on impact based reporting. Significant HF Communication Absorption events, events affecting GNSS signal accuracy, Impacts on radar capability and the Radiation Environment including Daily radiation and Radiation Events.

He outlined the work that is being completed through ICAO. The ANC has established a MET Panel that will be working on SARPs that will be included in the next amendment cycle of Annex 3. The challenge for the MET Panel is to define the functional and performance requirements to meet operational requirements. They have developed a draft table that represents the high-level functional requirements. The table areas represent the most significant impacts from space weather and they focus on delivering information that best supports the aviation decision making. This represents a paradigm shift in many space weather services to date, focusing less on the driving space weather phenomena itself and translating that phenomena-centric information into information more applicable to aviation decision making. Peter Raw, Emirates commented that they do not want to have the new advisory system be too restrictive affecting when an airline can operate in the polar region. They would like to be involved in future meetings to make sure the products are reasonable and meet their needs. Mr. Rutledge replied that IATA is involved in the meetings. They are trying to use terms which are useful to the airlines so that the operators can make determinations of whether to fly in affected airspace.

10.2 B787 FANS Issue with Imbedded ACKs

10.2.1 United Airlines presented IP/07 on a FANS issue they had experienced with one of their B787 aircraft. They found that an embedded ACARS (technical) acknowledgement to the FN_CON in the FN_AK, when this is part of address forwarding from one ATC Center to another can cause all ATS downlink traffic to be delayed about 10.5 minutes, after which the FN_CON is repeated, followed by any CPDLC or ADS-C downlink messages which were queued during that time. This issue has been observed on numerous occasions. The Blockpoint version 4 (BPv4) software release for the Communication Management Function (CMF) on 787 airplanes is expected to fix the problems stated in this paper. BPv4 is scheduled for certification later this year.

10.2.2 Anchorage Center presented IP/08 on the same B787 FANS issue. The paper outlined an event that had occurred on ATS Route R220 where the delayed ADS-C and CPDLC messages coupled with the aircraft's unannounced speed change of Mach .04 caused a loss of ATC required separation between two aircraft. He also outlined that Boeing had advised that a software correction for this problem would be available by the first quarter of 2017.

11. ANSP and Industry UPDATES

11.1.1 Isavia presented an update on activity within the Reykjavik FIR including a video of traffic moving through their airspace and operational information. Isavia has a new logo and slogan "It's in our nature". Traffic levels grew within their airspace by 12% in 2015 and the growth is forecast to be even greater in 2016. Isavia detailed their areas of surveillance and VHF coverage with their FIR. They have been working on FANS Processing, their automated CPDLC auto greeting has been updated, their VCS communications has been updated to VOIP and their controllers have been trained on SatVoice.

11.1.2 Isavia has discovered that the INMARSAT I4 satellite coverage is smaller than the I3 coverage. As the I3 satellites are phased out they may have to reduce their satellite coverage to 74N. She also discussed EUR/NAT Volcanic Ash Contingency Plan (VACP).

11.1.3 Blair Cowles had received an inquiry from a University Student who was looking for traffic information on the number of Cross Polar flights per day. He asked if it would be alright for him to

provide Isavia's contact information to the student. Isavia and NAV CANADA advised that the University could send them a letter requesting the data and the purpose for the request and they would consider the request.

11.2 NAV CANADA Update

11.2.1 Edmonton ACC provided detailed figures on traffic growth within their FIR. They have been experiencing double digit growth. Edmonton recently began ADS-C conformance checking in May 2016. There are plans to begin RNP-4 Lateral separation in 2017. They have been working to establish SatVoice for DCPC communications, Sat Voice calls will now go directly to the controller. An update on the Northern Tracks was provided noting that the Mike Tracks and NCA Tracks are being revoked effective on July 21, 2016

11.2.2 Edmonton has been working on the PBN implementation, assisting Anchorage with their Sector 64 ATOP implementation and working with ISAVIA on the ADS-B corridor. They have also been working on preparing for Space Based ADS-B surveillance coverage.

11.2.3 Vancouver ACC provided an update on their operations. Vancouver's goal is to support increased use of UPRs and reduced separation standards. They are now receiving ADS-C reports from aircraft. A flight plan interface within Oakland ARTCC using the NAT/NAM Link interface protocol has been implemented. Utilizing the interface they have been working on supporting DARP between Oakland and Vancouver. Vancouver has implemented a Conflict Prediction tool (COPR). Consistent with their goal of increasing UPRs, they have begun a trial for UPRs at F370 and above.

11.3 FAA Update: Anchorage

11.3.1 Anchorage ARTCC provided updates for the FAA. Anchorage briefed on the available information on the Anchorage website. Information was provided on their Facility ATC staffing levels and how Anchorage ARTCC was comprised of 3 different FIRs. Details were provided on the plans to implement ATOP in the Arctic airspace north of 73N. Anchorage has 52 volcanos underlying their airspace and has over 100 volcanos that can affect their airspace. Anchorage highlighted the importance of VOLKAM Exercise participation. It is not a question of "if" Volcanic Ash will affect operations, it is a question of "when" will VA affect operations and being prepared for the event.

11.3.2 Anchorage also presented data on Data Link performance and traffic flows. He detailed the percentages of FANS/RNP4 and RNP10 aircraft equipage. In the Anchorage Oceanic FIR, they receive an average of 160 altitude requests a day. Of the aircraft that make altitude change requests, around 80% of the requests are cleared.

11.3.3 No Kodiak Rocket launches are planned at this time, but they are expecting to receive a request in the near future. They are experiencing a high number of low level UAS activity. There are 3 large scale Red Flag missions planned for 2016 and details were provided on the required Traffic Management Initiatives (TMI) routings to avoid the Red Flag operating areas.

11.3.4 As requested in the Pacific Project, Anchorage provided detailed traffic count data for the NOPAC, RTE and Arctic gateways/routes. Anchorage's overall count is slightly down, but the enroute international traffic counts are all up:

- Oceanic Traffic (NOPAC + Cross Polar) up 9% in 2016
- NOPAC +11%
- Polar traffic up 24%

Hourly traffic count data was given for different waypoints. VALDA is most used RTE waypoint. LISKI and ORBIT most used POLAR waypoints

11.4 JCAB Update

11.4.1 As part of their update, JCAB detailed operations in the various JCAB FIRs and how major traffic flows and international overflights transit through their airspace. Traffic Count details were provided. Tokyo, Haneda is the busiest airport in Japan. The Haneda airport comprises 90% of the TMI in Japan.

11.4.2 JCAB also discussed plans to redesign Japan's domestic airspace. The goal is to reduce ATC workload and improve the efficiency of ATC operations. The new design will create En-Route Upper controlled airspace sectors. The goal is to complete the airspace redesign by 2025. JCAB also detailed the use of operational efficiency CDR routes when military airspaces are inactive.

11.5 China ATMB Update

11.5.1 China ATMB detailed office structure of the ATM system below the Ministry of Transportation as part of the update. Brief introduction of airspace structure including FIRs, Upper, Medium and Lower control areas, approach control areas and terminal control area. Till now, 80% of their airports currently have implemented PBN procedures. The goal is to have 95% of their airports with PBN procedures in 2016.

11.5.2 ATMB provided traffic count information and noted they are working on CNS, new airports, CDM application, ATFM construction, national route networkplanning, TMA restructure and new technologies including PBN, HUD, GLS, ADS-B and CCO/CDO.

11.6 Naviair Update

11.6.1 Naviair, Denmark has requested to become a member of the CPWG. Denmark provides ATS at FL195 and below in the Sønderstrøm FIR. They have delegated the delivery of ATS above FL195 in the Sønderstrøm FIR to NAV CANADA and Iceland. Denmark retains the responsibility for the delivery of CNS and Meteorological services with the entire Sønderstrøm FIR.

11.6.2 Naviair is an active participant to the governing forums related to governance and development of the ATM infrastructure in the North Atlantic which is established by ICAO under the North Atlantic (NAT) structure. Naviair will therefore be in a position to add to the qualifying debates and decisions regarding a coherent ATM development in the Arctic region. The meeting agreed to make Naviair a member of the CPWG.

11.7 Etihad Airways Update.

11.7.1 A briefing on their operations was provided by Etihad Airways. Etihad is a young airline that was established in 2003. They have 27,000 employees in 143 different countries. Their main hub is in Abu Dhabi, the capital of the UAE. They have a mixed fleet of Boeing and Airbus aircraft. They operate around 330 flights a day with 3 possible polar operation city pairs a day.

11.7.2 Etihad is planning to enhance their Polar Operations and increase their operations to more US city pairs. Etihad would like to implement DARP, especially on their Polar flights. They have conducted some DARP Trials with NAV CANADA.

11.8 Iridium Briefing

11.8.1 A presentation on Iridium Satellite Operations was provided to the meeting. The Iridium network consists of 66 Low Earth Orbit (LEO) Satellites in overlapping planes. Iridium is the only fully global voice and data commercial satellite network. The LEO shelters the satellites and makes them more resilient to space weather. Iridium offers Push to Talk (PTT) services to terrestrial targets/groups. They are planning to deliver PTT aviation services in the future.

11.8.2 Iridium is planning on launching a replacement satellite network called Iridium Next. The Iridium Next satellites will include the Aireon payload to provide global Space Based ADS-B coverage. The Iridium Next Launch schedule is expected to be completed by the end of 2017. The new network is called Iridium Next but the new broadband service is called "Iridium Certus Broadband". He provided details on the expected reliability of the network and equipment workings.

11.9 State ATM Update

11.9.1 State ATM provided an update that contained information regarding their North-East Branch Air Navigation Division. Details of a planned Magadan ACC Consolidation were also provided, including maps detailing airspace configurations. It was also noted that new HF facilities have been created to provide service in the Consolidated Magadan ACC.

11.9.2 In 2016, State ATM Corporation made a decision to contract an upgrade of the existing Alpha Flight Data System for providing interaction between Magadan Consolidated ACC and Anchorage ARTCC via AIDC v3.0. The work is planned to be finished by the first half of 2017.

11.9.3 State ATM is developing a new radar position in Providenia Bay including a chart depicting areas of radar coverage. The new radar site is expected to be commissioned in the first half of 2017.

11.9.4 United Airlines requested new routes between FRENK and LISKI. In response to the request State ATM is adding 3 new waypoints and 4 new routes that are to be completed in the end of 2016 or early 2017.

12. Agenda Item 9: Other Business

12.1 IATA proposed that the CPWG meeting adopt a 9 month meeting cycle or a format like the IPACG or ISPACG meetings where there is an annual full meeting and inbetween the annual meeting there is an ANSP/IATA meeting to work on issues and airspace enhancements. State ATM commented that they prefer the current meeting format. The FAA suggested that the meeting be reduced to 3 days due to the reduced workload and meeting activity. NAV CANADA commented that they prefer the current meeting format. No decision was made to change the meeting format. Participants were asked to consider ways that the meeting might be reformatted for efficiency.

13. Agenda Item 10: Next Meeting

13.1 The next meeting was planned to be in China, but due to issues with obtaining visas for the meeting, two different possible meeting locations were provided. Delta Airlines offered a possible meeting location at the Radisson Hotel in Japan. The other possibility was the ICAO office in Paris France. No final decision was made on the meeting location or date. Ms. Moebius will coordinate the next meeting date and location after more details regarding the possibilities can be obtained

Closing of the Meeting

All the agenda Items were completed, so Ms. Moebius thanked all participants for their support and participation in the meeting and the meeting was closed 1 day early on Thursday.

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Attachment B

CPWG/21 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 | Work is in progress and update at CPWG/22 | Fall 2016 | 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 2018. | State ATM | Update to be provided at CPWG/22 | Fall 2016 | Open |
| CP06-02 | Improve Efficiencies | Implement ATOP in the Arctic FIR | Current ZAN Sector 4 will split at 73N, with ATOP Sector 64 handling airspace north of 73N effective 1 June 2016 at 1800Z. NOTAM with FP addressing information to be issued. | FAA | Update on status at CPWG/22 | Fall 2016 | Open |
| CP07-02 | Improve Efficiencies | Add additional entry/exit fixes on the FIR boundaries | State ATM opened two additional entry/exit points on LETUN and BEKAR. Additional entry exit LISKI and FRENK. Three additional fixes and four airway segments added 602427N/1685824W--RUPIS-OSKON; 682642N 1685824W-LORKI; 682642N 1685824W-BETAM-OGEMA-RAMKA; 672752N 1685824W-NB. Expected publication and implementation late 2016-early 2017. | State ATM/FAA | Update to be provided to CPWG/22 | Fall 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|---------------|---------------------------|--|---|----------------------------|---|------------|--------|
| 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 | Update to be provided to CPWG/21 Proposed LOA under review by FATA and will update at the next meeting. Update at CPWG/22 | Fall 2016 | Open. |
| CP10-13 | Improve Communications | Expand CPDLC/ADS-C capability for Magadan FIR and install CPDLC/ADS-C at Murmansk. | By 2018, Murmansk will be phased out and airspace will be absorbed by St. Petersburg. No current plans to implement ADS-C or CPDLC at St. Petersburg but State ATM will evaluate and advise on status at next CPWG. | State ATM | Update at CPWG/22. | Fall 2016 | Open |
| CP12-04 | Improve Efficiencies | Monitor changes to Track Advisory Users Guide | Two new fixes added and Information is available on either ZAN or ZOA websites. | FAA | Updates at CPWG/22. | Fall 2016 | Open |
| 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 agreed that they would like to have further technical discussion on a bilateral basis. | State ATM/ATMB IATA | Updates to be provided at CPWG/22. | Fall 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|---------------|---------------------------|---|--|--------------------------|-----------------------------------|------------|--------|
| CP14-02 | Improve communications | Establish flight data exchange between facilities | State ATM will work with Sapporo to implement AIDCTBD. Magadan / Anchorage AIDC will be implemented after Sapporo | State ATM/ FAA/JCAB | Updates to be provided to CPWG/22 | Fall 2016 | Open |
| CP14-11 | Improve Efficiencies | Eliminate restrictions where possible | Eliminate requirement to flight plan over named or lat/long fixes at 141W Further evaluation and consideration following implementation of ZAN Sector 64. | FAA | Update at CPWG/22 | Fall 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|---------------|--|---|--|--|---|------------|--------|
| 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. Software is currently undergoing evaluation/field testing. 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>A State Letter is forthcoming from ICAO pending translation into the various ICAO languages. Once the FAA receives the State Letter, it will implement ADS-C CDP in all three oceanic FIRs following controller training and facility step-up to T24. For Oakland, this is expected in mid-Summer 2016. Both Anchorage and New York anticipate implementation in Fall 2016.</p> <p>As with ADS-C CDP, ADS-B ITP software is also included in the T24 build. ADS-B ITP is already an approved global standard but facilities are planning to implement ADS-B ITP in conjunction with ADS-C CDP, with timelines as noted above.</p> | FAA | Update at CPWG/22 | Fall 2016 | Open |
| CP15-06 | Develop CPWG Volcanic Ash Contingency Plan | Consider utilizing the ATM VACP Template in the development of Volcanic Ash Contingency Plan for NOPAC and RTE. | JCAB and State ATM expect progress on agreement between Fukuoka and Magadan FIR in in 2016. | State ATM JCAB FAA/ZAN NAV CANADA | Based on results from VOLKAM16 Fukuoka and Magadan will work on VOLKAM exercise LOA with possibility of a permanent LOA and permanent routes in 2016. State ATM | May 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|---------------------------|---------------------------|--|--|--------------------------|---|------------|--------|
| CP16-01P (was PP06-03) | Zero track load times | | <p>State ATM would like ZAN to continue to work toward zeroing track load times for all routes</p> <p>ZAN has zero fix load times for all RTE fixes. ZAN will continue evaluation of zero fix load times within the Arctic FIR.</p> | FAA | <p>ZAN to continue assessing opportunities.</p> <p>Update CPWG/22</p> | Fall 2016 | Open |
| CP17-10 | | | <p>State ATM requests FAA to look at lack of departure messages being provided to Russian and JCAB</p> <p>State ATM provided information to FAA showing current status of DEP messages. Vast improvement from initial request but still some areas of improvement.</p> | FAA | <p>State ATM and JCAB to continue to provide data for further tracking and resolution. FAA has requested that data base detailed as possible, including departure point, call signs, and dates.</p> | Fall 2016 | Open |
| CP18-02 | | Harmonized process for coordination of route changes to In-Flight Aircraft and issues with use of CHG messages | <p>FAA provided suggested guidance/best practices in order to streamline 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.</p> | All ANSPs IATA | <p>FAA to reach out to ICAO Montreal for further assistance on PANS-ATM and guidance across different FIRs. Update at CPWG/22.</p> | Fall 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|------------------------|---|-----------------------------|---|--------------------------|---|------------|--------|
| CP18-03P (was PP08-02) | Collect traffic count data for Arctic, Anchorage/RTE, and NOPAC | | <p>IATA has requested more detailed traffic count information for the NOPAC, Anchorage/RTE, Arctic fixes. Specifically, a breakdown of traffic by hour and days of the week is requested.</p> <p>Determined that traffic count information was only needed from ZAN.</p> | IATA/ANSPs | IATA and ZAN to continue evaluation of data. Update at CPWG/22. | Fall 2016 | Open |
| CP18-04P (was PP08-03) | UPR Expansion | | <p>IATA request that the FAA consider allowing UPRs westbound to Russian FIR boundary fixes or both the Magadan and Petropavlovsk boundaries. The relevant fixes are ERNIK, RUSOR, BESAT, BAMOK, KOKES, LUMES, and KUNAD. If possible the UPRs would not require using any ATS routes within ZAN airspace.</p> | IATA/FAA | Anchorage will re-evaluate restrictions and UPR status on a regular basis through a collaborative work group with operational personnel at the facility approximately every six months. | Fall 2016 | Open |
| CP18-05P (was PP08-04) | UPR Expansion | | <p>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.</p> <p>Consider implementation of flexible tracks between approved entry and exit points within the RTE region on a daily basis.</p> | IATA/State ATM | Ongoing discussions with FATA related to legislative changes. Additional considerations with Magadan ACC and CPDLC/ADS-C service. Update at CPWG/22. | Fall 2016 | Open |

| Action Number | Capacity Enhancement Goal | Supporting Goal Initiatives | Information/Status | Responsible Organization | Action Pending | Action Due | Status |
|------------------------|---------------------------|-----------------------------|---|--------------------------|--|------------|--------|
| CP18-07P (was PP08-06) | Improve Efficiencies | | Provide information on the Oakland FIR UPR trial with PACOTS Track F | FAA | UPR trial in conjunction with Track F has been successful and without issue. Update on PACOTS Track F Trial at CPWG/22. | Fall 2016 | Open |
| CP19-02 | Improve Efficiencies | | <p>Following simplification of Form R process, IATA followed up with additional requests:</p> <ol style="list-style-type: none"> 1. Consider electronic filing of R Forms via SITA or email. State ATM request IATA Moscow Office submit letter to FATA for trial via SITA. UAL and Emirates to participate. 2. United also requested 40 day timeframe for approval be reduced to 20- days 3. airlines needed to participate in trial IATA Moscow representative to follow up with FATA. | IATA | <p>State ATM established WG to look at Form R options and either continue with current Form R or move to RPL. Based on discussions, Airlines desire to use electronic Form R instead of paper R forms. .</p> <p>An update to be provided at next CPWG meeting.</p> | Fall 2016 | OPEN |
| CP19-07P (was PP09-03) | UPR Expansion | | Consider operator desired areas for UPR expansion/implementation | IATA | Ongoing- IATA to hold further discussions with operators and to develop short, mid, and long-term goals for Pacific Project. | Fall 2016 | 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 | ANSPs to provide updates on recent launch activities as necessary. | Fall 2016 | Ongoing |
| CP21-01 | | | | FAA | Coordinate with ICAO EURNAT Office on movement of PPT as a stand-alone into CPWG work program | Fall 2016 | Open |
| CP21-02 | Develop CPWG Volcanic Ash Contingency Plan | | NAT Doc. 006.final draft developed with expected approval | ISAVIA | Provide updates on volcanic ash exercises using EURNAT VACP (NAT Doc. 006). | Fall 2016 | Open |

CPWG Planning Chart

Near Term Goals (2016-2018)

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|----------|---|-------------|-------------|------------------|
| 1 | REDUCE AND HARMONIZE SEPARATION STANDARDS IN INTERNATIONAL AIRSPACE | | | |
| | <ul style="list-style-type: none"> Implement RVSM FL290-410 | | | Completed |
| | Harmonize RVSM Transition Procedures | | | |
| | <ul style="list-style-type: none"> Anchorage Arctic FIR | | | Completed |
| | <ul style="list-style-type: none"> Anchorage Oceanic FIR | | | Completed |
| | <ul style="list-style-type: none"> Russian FIRs | | | Completed |
| | <ul style="list-style-type: none"> Fukuoka FIR | | | Completed |
| | Implement 10 Minute Longitudinal Separation for ATS Route B932 | | | Completed |
| | Implement reduced longitudinal separation (aircraft equipage requirements) | | | |
| | <ul style="list-style-type: none"> Edmonton FIR (5 min or 50NM) | NAV CANADA | TBD | |
| | <ul style="list-style-type: none"> Reykjavik FIR (10 min) | Isavia | 2016 (Nov) | |
| | <ul style="list-style-type: none"> Reykjavik FIR (5 min) | Isavia | 2016 (Nov) | |
| | <ul style="list-style-type: none"> Anchorage Arctic FIR | FAA | TBD | |
| | <ul style="list-style-type: none"> Murmansk | State ATM | TBD | |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|--|--|-------------|-------------|---|
| | • Magadan | State ATM | TBD | New Horizontal separation minima for RNP-4, RNP-10 aircraft based on periodic ADS-C Reports |
| | • Edmonton | NavCanada | TBD | |
| | • Anchorage Oceanic FIR (30 NM) | | | Completed |
| | • Fukuoka (30 NM) | | | Completed |
| | Implement Further Reduced longitudinal separation (aircraft equipage requirements) | | | |
| | • Anchorage Arctic FIR (30 NM) | FAA | TBD | |
| | • Murmansk | State ATM | TBD | |
| | • Magadan | State ATM | TBD | |
| | • Edmonton | NavCanada | TBD | |
| | • | | | |
| | Implement further reductions to lateral separation (aircraft equipage requirements) | | | |
| | • Edmonton FIR RNP-4 | NavCanada | Spring 2017 | |
| | • ADS-C Conformance Reporting | NavCanada | | Completed |
| | • Lat/Long of RNP-4 | NavCanada | TBD | |
| | • Reykjavik FIR (25 NM) | Isavia | 2016 (Nov) | |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|---|---|-----------------|--|------------------|
| 2 | IMPROVE/INCREASE EFFICIENCIES FOR CROSS POLAR AND RUSSIAN FAR EAST AIR TRAFFIC | | | |
| | Harmonize Procedures for ATS Route B932 | | | Completed |
| | Create seamless and homogeneous airspace for the traffic from North America to Asia with the expansion of User Preferred Routes (Pacific Project) | ANSPs/Operators | TBD | |
| | Improve Efficiency on Cross Polar Routes | | | |
| | <ul style="list-style-type: none"> Add entry/exit fixes on the Anchorage/Russian FIR boundary in order to provide additional parallel routes | FAA/State ATM | Nov 12 LETUN BEKAR Total No. of Entry/Exit Fixes: 18 (incl. routes with boundary of Iceland and Norway) | Completed |
| | <ul style="list-style-type: none"> Eliminate restrictions to file entry fixes on the Anchorage/Edmonton FIR boundary | FAA/NAV CANADA | TBD | |
| | <ul style="list-style-type: none"> Add Additional Entry/Exit between Murmansk and Reykjavik | State ATM | Late 2016/Early 2017 | |
| | <ul style="list-style-type: none"> Add Entry/Exit Fixes on Reykjavik/Russian FIR Boundary | | | Completed |
| | <ul style="list-style-type: none"> Open new Kamchatka Routes from PILUN and LISKI | | | Completed |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|--|--|--------------------|--------------------|-------------------------|
| | <ul style="list-style-type: none"> Open New Routes South of ABERI | | | Completed |
| | Improve Efficiency on Russian Trans-East Routes | | | |
| | <ul style="list-style-type: none"> Eliminate 10 min track loading for RTE over Anchorage/Russian Boundary | | | Completed |
| | Improve Air Traffic Flow Management | | | |
| | <ul style="list-style-type: none"> Establish CTA in Anchorage Arctic FIR | FAA | July 2015 | Completed |
| | <ul style="list-style-type: none"> Reduce track loading to 10 minutes for Cross Polar Fixes | | | Completed |
| | <ul style="list-style-type: none"> Remove requirement for flight to file NOR OTS Routes over Canada | | | Completed |
| | Improve ATFM Collaboration | | | |
| | <ul style="list-style-type: none"> FAA/NavCanada | | | Completed |
| | <ul style="list-style-type: none"> FAA/State ATM | | | Completed |
| | <ul style="list-style-type: none"> NavCanada/State ATM | | | Completed |
| | Make Tactical Re-Routes Available for Daily Operations | | | Completed |
| | Implement use of Radar Procedures between Magadan ACC and Anchorage ARTCC without Radar Data Sharing | | | |
| | <ul style="list-style-type: none"> Anchorage Arctic FIR | FAA | 2018 | |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|-----------|---|---|-------------|------------------|
| | <ul style="list-style-type: none"> Magadan FIR | FATA | 2018 | |
| 3. | IMPROVE COMMUNICATIONS IN ARCTIC/POLAR REGION | | | |
| | Improve communications procedures | | | |
| | <ul style="list-style-type: none"> Change procedures to retain connection with Iridium and HFDL north of 82N | Isavia | | Completed |
| | <ul style="list-style-type: none"> Implement ADS-C periodic contract and lateral and vertical conformance monitoring | Isavia NavCanada FAA (Lateral – completed) FAA (Vertical – January 2017) | | Completed |
| | Implement AIDC/OLDI for Data Exchange | | | |
| | <ul style="list-style-type: none"> Magadan and Anchorage FIRs | FAA State ATM | 2018 | |
| | <ul style="list-style-type: none"> St. Petersburg and Anchorage FIRs | FAA/State ATM | TBD | |
| | <ul style="list-style-type: none"> Khabarovsk ACC and Sapporo ACC | State ATM/JCAB | TBD | |
| | <ul style="list-style-type: none"> St. Petersburg and Reykjavik FIRs (AIDC) | State ATM/Isavia | TBD | |
| | <ul style="list-style-type: none"> Bodo and St. Petersburg FIRs | Avinor/State ATM | TBD | |
| | <ul style="list-style-type: none"> Anchorage Arctic, Oceanic and Continental FIRs (AIDC) | | | Completed |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|--|---|-------------|-------------|------------------------|
| | • Edmonton FIR (AIDC) | | | Completed |
| | • Reykjavik and Edmonton FIRs | | | Completed |
| | Implement CPDLC for All Polar Routes | | | |
| | • | | 2018 | |
| | • Anchorage Arctic FIR | | | Completed |
| | • Bodo | | | Completed |
| | • Reykjavik FIR | | | Completed |
| | • Magadan FIR (North Sector) (Kamchatka Sector 2) | | 2017 | |
| | Implement ADS-C | | | |
| | • Anchorage Arctic FIR | FAA | Mid 2016 | |
| | • Edmonton FIR | NAV CANADA | | Completed 5/17/2016 |
| | • Bodo | | | Completed |
| | • Magadan FIR (Kamchatka Sector 2) | | 2017 | |
| | Implement ADS-C for All Polar Routes | | | |
| | • Edmonton FIR (waypoints only) | | | Completed |
| | • Reykjavik CTA | | | Completed |
| | • Magadan FIR | | | Completed |
| | Monitor Communications and Data Link Performance | | | |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|-----------|---|-------------------------|--------------------|-------------------------|
| | <ul style="list-style-type: none"> Provide information on any issues relating to communications/data link performance at CPWG meetings | All ANSPs and Operators | Ongoing | |
| | Improve Awareness of Space Weather Issues in Arctic/Polar Region | | | |
| | <ul style="list-style-type: none"> Develop Space Weather User Needs | All | | Completed |
| 5. | IMPROVE SAFETY | | | |
| | DEVELOP ARCTIC ATM OPERATIONAL CONTINGENCY PLAN | All | | Completed |
| | Develop CPWG Volcanic Ash Contingency Guidance | | | |
| | <ul style="list-style-type: none"> ICAO EURNAT TF developed joint Volcanic Ash Contingency Plan in January 2016 and is expected to be approved in 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. | All | TBD | |
| | <ul style="list-style-type: none"> | | | |
| | <ul style="list-style-type: none"> | | | |

| | PLANNING GOAL | ACTION WITH | TARGET DATE | STATUS OF ACTION |
|--|--|--------------|-------------|------------------|
| | Implement single AFTN address for each ANSP ¹ | | | |
| | • State ATM | State ATM | 2020 | |
| | • CAAC ATMB | CAAC ATMB | Unknown | |
| | • CAA Mongolia | CAA Mongolia | Unknown | |
| | • Kazakstan | | TBD | |
| | • NavCanada | | TBD | |
| | • Iceland | | | Completed |
| | • Norway | | | Completed |

¹ FAA and JCAB do not plan to implement a single AFTN address

**Twenty-First Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group
(CPWG/21)**

(Montreal, Canada, May 17-20 2016)

Agenda Item 6: ATS Route Catalogue

AIR TRAFFIC SERVICES ROUTE CATALOGUE

(Presented by STATE ATM CORPORATION)

SUMMARY

This working paper presents status and information on route proposals since the Twenty First Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group (CPWG/21) for the CPWG information and discussion.

1. Introduction

1.1 Since the Ninth meeting of the CPWG, the State ATM Corporation has provided an Air Traffic Services (ATS) Route Catalogue for the Polar Region for discussion and use during the meetings.

1.2 State ATM Corporation presents the updated route catalogue for crosspolar and transeast ATS routes.

1.3 In accordance with CPWG/20 decision, the following changes were introduced to the catalogue:

- the main section was added with the route proposals under review and implemented since the last CPWG meeting;
- the route catalogue was complemented with an archive section that covered all route proposals that had been implemented or those that were not feasible;
- the route proposals that were not part of Crosspolar/Transeast ATS routes had been added to the ICAO Route Development Group – East (RDGE) catalogue. These route proposals would be highlighted in separate presentations at the CPWG meeting.

2. Discussion

2.1 Attachment A is the proposed ATS Route Catalogue for the CPWG's discussion and consideration.

3. Recommendation

3.1 The meeting is invited to:

- a. review the information contained in this Working Paper; and
 - b. recommend changes or additions to the ATS Route Catalogue at **Attachment A**.
-

Monreal, Canada
May 17-20 2016

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/30 | 7300.0N16858.4W – LURET (7037.5N 14753.8E) – R351 (B933 . G7. G494 . G495. G806) (bidirectional use) | State ATM Corporation. 09.02.2010 | a) Open a new cross polar route; b) Under review c) unacceptable at the moment | | RUS USA | unacceptable at the moment |
| 2 | CPRS/31 | ORVIT – 7500.0N 17000.0E -6500.0N 15300.0E – BANOT - .. B223 - LUMIN | Continental Airlines April 2010 | a) New York – Tokio traffic; b) distance saving- 35.8 m.m. c) accepted for review d) unacceptable at the moment | | RUS | unacceptable at the moment |
| 3 | CPRS/32 | 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 – Tokio traffic; b) distance saving - 40.2 m.m. c) accepted for review | | RUS | unacceptable at the moment |
| 4 | CPRS/33 | DEVID (B480) - GIKSI .. G491 or G493 or B489 | United Airlines April 2010 | a) Transition routes for flying between Mid West US/US East Cost and Asia b) Accepted for review | | RUS | unacceptable at the moment |
| 5 | CPRS/34 | 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 Cost and Asia b) Accepted for review | | RUS | unacceptable at the moment |
| 6 | CPRS/35 | 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 Cost and Asia b) Accepted for review | | RUS | unacceptable at the moment |
| 7 | CPRS/36 | a) ORVIT (G494) - TAKUN (G226); b) DILSA - RUTIN (G226) | United Airlines April 2010 | a) Transition routes for flying between Mid West US/US East Cost and Asia b) Accepted for review | | RUS | unacceptable at the moment |
| 8 | CPRS/38 | a) NELTI-A299-DONUS-TINRI далее G359 or | Emirates | a) Accepted for review. | | RUS | under review |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|---|-------------------------|---|----------------|------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | b) NELTI- TINRI .. G359 | Airlines 19.05. 2010 | | | | |
| 9 | CPRS/48 | 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.) |
| 10 | CPRS/49 | 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.) |

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 | TVRS/42 | FA – WZ - SIMLI (Proposed alternative is FA – PARUS – SIMLI) | Pacific United Airlines | route realignment | | RUS | unacceptable at the moment |
| 1. | TVRS/43 | 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. | TVRS/46 | 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 | Реализовано G101 с 12.11.15 |
| 3. | TVRS/47 | NETRI – 430312N 1463915E - NODAN | RUS 09.08.13 | To be used by coordination with ATC to avoid volcanic ash | | RUS | Approved in Russia, no approval from Japan. |
| 4. | TVRS/49 | 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 |
| 5. | TVRS/52 | Open up a new entry/exit point between FRENK and LISKI and establish supporting routes as follows: a) XXXX – OSKON; b) XXXX – ASBAT; c) XXXX – RAMKA d) XXXX – TK | United Airlines May 2015 | Establish new ATS routes | Improve airspace and fuel efficiency, | RUS USA | This proposal was duly reviewed. Three new entry/exit points were proposed between FRENK and LISKI as follows: a) 692427N 1685824W - RUPIS; b) 682642N 1685824W - LORKI; c) 682642N 1685824W - BETAM; d) 672752N 1685824W – NB (Uyelkal) |

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 an ordinal number of a route proposal.

Item 2. Shows 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 can not be implemented should be marked with grey

Implemented proposals should be marked by green

| <i>FIR</i> | <i>CODE</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 |

Legend

| | | |
|---|--|--|
|  | Route proposals that can not be currently implemented | |
| AMATI (780000N 1685824W) - GILOD (755416N 1720106E) | Implemented route proposals | |
| AMATI (780000N 1685824W) - GILOD (755416N 1720106E) | Route proposals planned for implementation in the nearest future | |
| AMATI (780000N 1685824W) - GILOD (755416N 1720106E) | Route proposals under review | |
| 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 | CPRS/2 | 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 | CPRS/3 | 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 | CPRS/12 | 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 | CPRS/13 | RIMAG (6828.0N 07335.8E) - OLDEM (6721.0N 07310.2E) – (6638.0N 07255.0E) - GONOK (6620.1N 07250.4E) - GIMIR | Emirates Airlines | a) Open a new route; Approved and ready for implementation | | RUS | Published as A947on Nov 1, 2010 |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|--|-----------------------------------|--|----------|---------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | (6528.9N 07242.0E) – LEBUL (6450.7N 07148.6E) - RILIS (6321.6N 06954.7E) - 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 Crosspolar 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) – | Continental Airlines April 2008 | a) Open up a route for flying from South-East Asia to North America; | | RUS | Published as R705 on Nov 1, 2010 |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|---|-----------------------------------|---|----------|------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | OKASA (6225.8N 09728.3E) – KOSUM (5756.3N 10044.6E) - BRT (Bratsk VORDME) (bidirectional use) | | b) Under review | | | |
| 11 | CPRS/20 | DAKIN (5409.5N 07224.3E) - ML (Chapayev NDB 5615.0N 07357.0E) - NJC (Nizhnevartovsk VORDME 6056.6N 07628.1E) (bidirectional use) | Emirates Airlines 2009 | a) Open up a route for flying from Middle East to North America; b) Under review | | RUS | Published as G715 on Nov 17, 2011 |
| 12 | CPRS/21 | 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 | CPRS/22 | 8530.0N 16858.6W | FAA December 4. 2009 | a) Open up a new entry fix for Crosspolar routes b) Under review | | RUS USA | 4 th quarter 2010 NPRS/27 |
| 14 | CPRS/23 | 8330.0N 16858.6W | FAA December 4. 2009 | c) Open up a new entry fix for Crosspolar routes a) Under review | | RUS USA | 4 th quarter 2010 NPRS/28 |
| 15 | CPRS/24 | 7800.0N 16858.6W | FAA December 4. 2009 | d) Open up a new entry fix for Crosspolar routes a) Under review | | RUS USA | 4 th quarter 2010 NPRS/29 |
| 16 | CPRS/25 | 7300.0N 16858.6W | FAA December 4. 2009 | e) Open up a new entry fix for Crosspolar routes a) Under review | | RUS USA | 4 th quarter 2010 NPRS/30 |
| 17 | CPRS/26 | NIKIN (8100.0N 16858.6W) | FAA December 4. 2009 | a) Relocate NIKIN b) Under review c) Relocation of NIKIN is unreasonable | | RUS USA | 4 th quarter 2010 Realignment is unjustified |
| 18 | CPRS/27 | LISKI (7000.0N 16858.6W) | FAA December 4. 2009 | d) Relocate LISKI e) Under review a) Relocation of LISKI is unreasonable | | RUS USA | 4 th quarter 2010 relocation of the entry fix is unnecessary |
| 19 | CPRS/28 | 833000N1685823W - 740039N 1360232E - ... a) NA (Nizhneyansk NDB 7125.0N 13608.0E) – G226; b) GIKSI (7141.7N 12854.0E) – G491 (B489. G493) | State ATM Corporation. 09.02.2010 | c) Open a new cross polar route; a) Under review | | RUS USA | Published as G493 and G812 on Nov17, 2011 |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|---|--------------------------------------|--|----------|------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | (bidirectional use) | | | | | |
| 20 | CPRS/29 | AMATI (780000N 1685824W) - GILOD (755416N 1720106E) - LUNOG (720705N 1565953E) - NOGDA (711205N 1544019E) – OTNIR (690000N 1500037E) - SIPVI (652256N 1441620E) - NERPA (643256N 1430619E) (двухсторонняя) | State ATM Corporation. 09.02.2010 | d) Open a new cross polar route; a) Under review | | RUS USA | Published as B806 on Okt 18, 2012 |
| 21 | CPRS/37 | ANODI-ABERI | Emirates Airlines 19.05. 2010 | a) Accepted for review b) Reviewed. Implementation is possible. | | RUS | Published as G359 on Sep 22, 2011 |
| 22 | CPRS/39 | 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 |
| 23 | CPRS/40 | B358 LANEP – IKADA | British Airways 17.01.11 | Remove flight level restrictions between FL350-530 | | RUS | The route is excluded. |
| 24 | CPRS/41 | 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) (двухсторонняя) | 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 |
| 25 | CPRS/42 | 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 |
| 26 | CPRS/43 | 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 |
| 27 | CPRS/44 | ANODI – KOMEL (7730N035E) | 2012 | Use as a new Crosspolar route for flying from North America to | | RUS NOR | Published as A839 |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|---|---|---|---|------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | Southeast Asia | | | on March 07, 2013 |
| 28 | CPRS/45 | SIMLI-G494-B331-W205-WZ | 2013 | Reduce mileage | | RUS | Will be published as G494, A803 on September 19, 2013 |
| 29 | CPRS/46 | NERPA (643256N 1430619E) –FA (Yekimchan) (530807N 1324953E) – MAGIT (474131N 1310900E) Unidirectional traffic from FA to MAGIT | 2013 | Extend the existing Crosspolar route | | RUS | Will be published as B806 on September 19, 2013 |
| 30 | CPRS/47 | 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 |
| 31 | CPRS/50 | SALET (7957N 16858W) – RODOK then alogn G495 | State ATM Corporation October 2013 | Establish an additional entry/exit point | | RUS FAA | To be published as G819 on 13.11.14 |
| 32 | CPRS/51 | 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 on 13.11.14 |
| 33 | CPRS/52 | Establish additional NCRPs at 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 |
| 34 | CPRS/53 | Establish a new ATS route SOTIS PILAN- LURAM- | United Airlines August 2014 | Establish a new ATS route. | Increase airspace efficiency, provide fuel savings and CO ₂ 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> |
| 35 | CPRS/54 | 820939N 1685824W – 802806N 1642448E– 755700N 1431800E – IDIMA | State ATM Corporation December | Establish a new ATS route segment. | Increase airspace efficiency, | RUS | The new route B802 will be opened effective from November 12, 2015 as follows: |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|----------------|---|--|------------------------------------|--|-----|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | 2014 | | provide fuel savings | | LETUN (820939N 1685824W) OLMAT(802806N 1642448E) LOMRI (760029N 1432814E) IDIMA (740045N 1360243E) <u>FL530</u> FL270 |
| 36 | CPRS/55 | 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) RILAK (691609N 1290106E) DISES (650957N 1231911E) Vilyuysk NDB (CZ) (634438N 1214704E) <u>FL530</u> FL270 |
| 37 | CPRS/56 | 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> FL270 |
| 38 | CPRS/57 | 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) |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|-----------|-------------------|-------------|---------------------|----------|-----|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | KEMED (690349N 1565606E) OLMIN (672801N 1534310E) <u>FL530</u> FL270 |

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 | TVRS/8 | 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 Transeast 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 | TVRS/13 | 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 | CHUKO TKA-1 | 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 | TVRS/14 | 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 | TVRS/21 | ABAGO (5617.5N 14414.2E) - 5517.2N 14005.3E (ABAGO (561731c 1441418B) - GITAK (551707c 1400520B) | State ATM Corporation. апрель July 10. 2007 | a) Open up 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 | TVRS/22 | 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 up 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 | TVRS/23 | 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 | TVRS/24 | 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 | TVRS/25 | 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 | TVRS/26 | 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 | TVRS/27 | 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 | TVRS/28 | 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 | TVRS/29 | 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 | TVRS/30 | OSKON-UHMI (UHMI – PEMID) | Air Canada 14.02.2011 | a) remove flight level restrictions 13100-16100 | | RUS | Published as A218 FL 270-530 |
| 15 | TVRS/31 | 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 |
| | | б) KURAK – KUNIK | декабрь 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 | TVRS/40 | BALUB (564751N 1671435E)- MURTA (562209N 1634311E)- Ust-Kamchatsk NDB (UK) (561324N 1624114E)- OSMOR (551335N 1565706E)- TOSNO (550813N 1563047E)- BANIT (544949N 1550431E)- KORES (535524N 1500000E)- GIRAN (532549N 1474300E) | Cathay Pacific 26.07.2011, RDGE/15 30.09.2011 | route realignment | | RUS | Published as B804 on May 31, 2012 |
| 25 | TVRS/41 | IRKAN-KOKUN-BANIT | Cathay Pacific 26.07.2011, RDGE/15 30.09.2011 | route realignment | | RUS | Published as B327 |
| 26 | TVRS/44 | KUNAD - OTLER | RUS 09.08.13 | NOPAC transition to Trans-East | Reduce mileage | RUS | To be published as G815 in 13.11.14 |
| 27 | TVRS/45 | LUMES - RIMLI | RUS 09.08.13 | NOPAC transition to Trans-East | Reduce mileage | RUS | To be published as G816 in 13.11.14 |
| 28 | TVRS/48 | Troitskoye NDB (FI) - REPIK - ADITO – LANRI эшелоны FL120-FL300 используются по согласованию с органом ОВД, эшелоны FL310-FL530 используются без ограничений | 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 |
| 29 | TVRS/50 | 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 LUPIR 550053N 1570825E NELEB 545837N 1564046E BANIT 544949N1550431E |
| 30 | TVRS/51 | PETIN- RIMLI | RUS 2015 | Operate flights in upper and lower airspaces. | Increase airspace efficiency | RUS | The new route segment of B244 will be opened on November 12, 2015 as follows: |

| Item | Reference | Route description | Proposed by | Objectives/Comments | Benefits | FIR | Target Dates |
|------|-----------|-------------------|-------------|---------------------|----------|-----|---|
| 1 | 2 | 3 | 4 | 5 | | 6 | 7 |
| | | | | | | | RIMLI (514218N 1580655E) RINOT (522205N 1585954E) PETIN (531012N 1582713E) <u>FL530</u> FL130 |