**Fourteenth Meeting of the Cross Polar Trans East Air Traffic Management Providers’ Work Group (CPWG/14)**

(Chicago, USA – 10-14 December 2012)

**Agenda Item 7: 2012-2013 Cross Polar Work Program**

**Proposed CPWG Work Program**

**(Action Item #** **CP13-04)**

(Presented by the Federal Aviation Administration)

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| --- |
| SUMMARY  During CPWG/13, the air navigation service providers (ANSPs) agreed to develop a Work Program and list of on-going tasks and accomplishments to replace the CPWG Planning Chart. The FAA offered to present a draft Work Program for review and discussion at CPWG/14. This working paper presents the draft program agreed by the ANSPs. |

1. Introduction
2. The Fifth Meeting of the CPWG (CPWG/5) agreed that it was time to start planning and developing a work program to ensure that the overall goals and objectives of increased efficiencies in the Polar and trans-east region continued. Potential topics for the group’s consideration included:
   1. Increase flexible routings (Russian North Coast and others)
   2. Respective ANSPs efforts for improving communications in the area
   3. Development of a single separation standard in region
   4. Improve/Increase efficiencies and predictability on Polar routes
3. During the discussions at CPWG/6, it was agreed the work program should focus on strategic objectives for each category instead of specific initiatives and target dates. Based on the input received and discussions during the previous two meetings, five objectives were identified by CPWG/7 to provide the overall structure for the Work Program. They were:
   1. Reduce Separation Standards
   2. Improve Efficiencies for Traffic on Cross Polar and Russian Far East Routes (Routes, Procedures, and System Performance)
   3. Improve Communications
   4. Improve Weather Reporting
   5. Develop Contingency Plan/Safety
4. CPWG/7 agreed that the Terms of Reference (TOR) provided the high level purpose and scope of the CPWG work, and that what was needed was a Planning Chart to document near- and mid-term activities, as well as a summary of accomplishments.
5. At the ANSPs’ Meeting held prior to CPWG/13, the group considered the value of the Planning Chart in its current format. The meeting felt that the chart had expanded beyond the original intent, which was to serve as a list of near- and mid-term activities, as well as a summary of accomplishments. The FAA agreed to work with the ANSPs to develop a draft Work Program to present to CPWG/14. New Action Item CP13-04 was established to replace Action Item CP12-09.
6. Discussion
7. It was agreed that the CPWG needed a written Work Program, which would describe and categorize the activities listed on the current Planning Chart, and define them as near-term or mid-term planning goals. As goals are completed, they would be moved into a list of accomplishments that would be a part of the Work Program. The Planning Chart could then be used strictly for the status of the near-term items (1-3 years), and could become an appendix to the Work Program.
8. The Work Program would be reviewed at the ANSPs’ Meetings. As work commenced on a particular goal, it would be moved from the written work program to the Planning Chart. Similarly, as initiatives are completed, they would be moved to the list of accomplishments.
9. Based on the outcome of the discussions of the ANSPs during their meeting prior to CPWG/14, a draft work program has been developed for consideration by the meeting. See **Attachment A.**
10. The updated CPWG Planning Chart is at **Attachment B**. A list of completed actions is at **Attachment C**.
11. Action by the Meeting
12. The meeting is invited to:
    1. review and discuss the information contained in this working paper; and
    2. make recommendations to the information provided in Attachments A and B.

**Cross Polar Trans East**

**Air Traffic Management Providers’ Work Group (CPWG)**

**Work Program**

The Cross Polar Trans-East Air Traffic Management (ATM) Working Group (CPWG) is recognized by the International Civil Aviation Organization (ICAO) Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS) as a forum to improve the provision of air traffic services (ATS) to aircraft which operate between North America and Asia via Cross Polar and Russian Trans East routes. The CPWG is composed of representatives from the air navigation service providers (ANSPs) responsible for providing ATS in the Arctic and adjacent airspace, representatives from international organizations representing airspace operator groups, and international airlines that operate in the airspace.

**Background**

During the discussions at the sixth meeting of the CPWG (CPWG/6) held in Hong Kong China in November 2008, it was agreed a work program was needed that would focus on strategic objectives.

Further discussions during the seventh meeting of the CPWG (CPWG/7) held in Paris, France in June 2009 identified five objectives to provide the overall structure for the Work Program. They were:

* 1. Reduce Separation Standards
  2. Improve Efficiencies for Traffic on Cross Polar and Russian Far East Routes (Routes, Procedures, and System Performance)
  3. Improve Communications
  4. Improve Weather Reporting
  5. Develop Contingency Plan/Safety

Based on these objectives, a Planning Chart was developed to document near- and mid-term activities, as well as to maintain a summary of accomplishments.

During a meeting of the air navigation service providers (ANSPs) held in Reykjavik, Iceland in June 2012 prior to the thirteenth meeting of the CPWG (CPWG/13), the group considered the value of the Planning Chart in the format that had been used. The meeting felt that the chart had expanded beyond the original intent, which was to serve as a list of near- and mid-term activities, as well as a summary of accomplishments.

It was agreed that the CPWG needed a written Work Program, which would describe and categorize the activities listed on the Planning Chart, and define near-term or mid-term planning goals. As goals are completed, they would be moved into a list of accomplishments that would be a part of the Work Program. The Planning Chart could become an appendix to the Work Program to track the status of the near-term items.

**CPWG Objectives**

This section describes the five current objectives of the CPWG.

1. ***Reduce and Harmonize Separation Standards in International Airspace***

It was agreed that the international operators would benefit from a reduction, as well as harmonization of the vertical, lateral and longitudinal separation standards across the Arctic airspace. This would allow for more efficient altitude changes.

Separation reductions would need to take into account the equipage of aircraft operating in the Arctic and adjacent airspace, and provide for a mixed environment, recognizing the existing and planned aircraft capabilities while providing benefits to operators implementing Required Navigation Performance (RNP).

1. ***Improve/Increase Efficiencies for Cross Polar and Russian Far East Air Traffic***

Efficiencies could be provided through the development and enhancement of ATS routes, ATM and operator procedures, and improved system performance.

Route efficiencies to be considered include, but are not limited to, the following:

* New routes taking into account the reduced lateral separation standards
* Bi-directional routes
* Procedures for tactical re-routes
* Airline route proposals
* Additional boundary entry/exit points into China
* Implementation of radar hand-offs and procedures between Magadan and Anchorage Flight Information Regions (FIRs)
* ANSPs to work together to develop RVSM transition procedures between each FIR
* Flex Track System
* Simplifying Russian Form R Process
* Improved Air Traffic Flow Management (ATFM) tools and exchange of information between ANSPs and operators through use of the Dynamic Ocean Tracking System Plus (DOTS+) Gateway Reservation List (GRL) and DOTS+ Online (DPO)
* Polar Minimum Time Tracks

1. ***Improve Communications in Arctic/Polar Region***

It is expected that improved communications in the Arctic airspace (*i.e*., north of 80 degrees North) would provide enhanced operations.

Communication improvements to be considered include, but are not limited to, the following:

* Benefits from satellite technology (Iridium)
* High Frequency (HF) Air-Ground Data Link
* Current ANSP communication capabilities
* Implementation of Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance – Contract (ADS/C) capability for all polar routes
* Automated flight data exchange between facilities
* Monitor communications and data link performance

1. ***Improve Awareness of Space Weather Issues in Arctic/Polar Region***

Although the CPWG does not have responsibility for weather reporting, some related issues to be considered include, but are not limited to, the following:

* Improve exchange of long range weather and Notices to Airmen (NOTAM) information
* Maintain an awareness of research on space weather and its impact on aviation
* Recognition of the impacts of space weather, including sun spots and HF black outs

1. ***Improve Safety***

Activities enhancing safety to be considered include, but are not limited to, the following:

* Making contingency response information available, including volcanic activities
* Procedures for the exchange of Russian missile launch information

**Time Frames**

It was agreed that Near-Term activities were defined as those planned to be completed within 1-3 years, and Mid-Term activities would be completed in 4-10 years.

**Maintenance of the Work Program**

The Work Program will be reviewed by the ANSPs prior to each CPWG meeting. As work commences on a particular goal, it will be moved from the Mid-Terms Goals to the Near-Term Planning Chart. Similarly, as initiatives are completed, they would be moved to the list of accomplishments.

As new work programs are introduced, they will be added to the appropriate goal section.

**Mid Term Goals (2016-2022)**

|  |  |
| --- | --- |
| **Reduce and Harmonize Separation Standards in International Airspace** | |
|  |  |
|  | **Implement further reductions to lateral separation (aircraft equipage requirements)** |
|  | Reykjavik FIR (25NM) |
|  |  |
|  | **Implement reduced longitudinal separation (aircraft equipage requirements)** |
|  | Anchorage Arctic FIR(50NM) |
|  |  |
|  | **Implement further reductions to longitudinal separation (aircraft equipage requirements)** |
|  | Anchorage Arctic FIR (30NM) |
|  |  |
| **Improve communications in arctic/polar region** | |
|  |  |
|  | **Implement AIDC/OLDI for Data Exchange** |
|  | Reykjavik and Murmansk FIRs (OLDI) |
|  | Bodo and Murmansk FIRs |
|  |  |
|  | **Implement Periodic ADS-C Reporting for All Polar Routes** |
|  | Edmonton FIR |
|  |  |
|  | **Implement CPDLC** |
|  | Murmansk FIR |

**CPWG Planning Chart**

**Near Term Goals (2012-2015)**

|  | **Planning Goal** | **Action with** | **Status of Action and Target Date** |
| --- | --- | --- | --- |
| **1** | **Reduce and Harmonize Separation Standards in International Airspace** |  |  |
|  |  |  |  |
|  | **Harmonize RVSM Transition Procedures** |  |  |
|  | Russian and Mongolian FIRs | State ATM/CAA Mongolia | 2013 |
|  |  |  |  |
|  | **Implement reduced longitudinal separation (aircraft equipage requirements)** |  |  |
|  | Edmonton FIR (5 min or 50NM) | NavCanada | Fall 2013 |
|  | Reykjavik FIR (5 min) | Isavia | TBD |
|  |  |  |  |
| **2** | **Improve/Increase Efficiencies for Cross Polar and Russian Far East Air Traffic** |  |  |
|  |  |  |  |
|  | **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** |  |  |
|  | Make tactical re-routes available for daily operations[[1]](#footnote-1) | FAA/State ATM | TBD |
|  | Add entry/exit fixes on the Anchorage/Russian FIR boundary in order to provide additional parallel routes | FAA/State ATM | Ongoing (Polar 7, 8, & 9 have been added) |
|  | Eliminate restrictions to file entry fixes on the Anchorage/Edmonton FIR boundary | FAA/NavCanada | TBD |
|  |  |  |  |
|  | **Improve Efficiency on Russian Trans East Routes** |  |  |
|  | Eliminate 10 min track loading for RTE over Anchorage/Russian Boundary | FAA/State ATM | TBD (Trials completed for 3 fixes; trial underway for 3 fixes) |
|  |  |  |  |
|  | **Implement use of Radar Procedures between Magadan ACC and Anchorage ARTCC without Radar Data Sharing** |  |  |
|  | Anchorage Arctic FIR | FAA | TBD |
|  | Magadan FIR | FATA | TBD |
|  |  |  |  |
|  | **Improve Air Traffic Flow Management (ATFM)** |  |  |
|  | Provide DOTS Plus Online Track Advisory to State ATM for monitoring inbound flights (State ATM to request access) | FAA/State ATM | TBD |
|  | Establish CTA in Anchorage Arctic FIR | FAA | TBD |
|  | Remove requirement for flight to file NOR OTS routes over Canada | NavCanada | Spring 2013 |
|  |  |  |  |
| **3.** | **Improve communications in arctic/polar region** |  |  |
|  |  |  |  |
|  | **Improve communications procedures** |  |  |
|  | Change procedures to retain connection with Iridium and HFDL north of 80N | Isavia | Spring 2013 |
|  | Implement ADS-C periodic contract and lateral and vertical conformance monitoring | Isavia | Spring 2013 |
|  |  |  |  |
|  | **Implement AIDC/OLDI for Data Exchange** |  |  |
|  | Russian and Anchorage FIRs | State ATM/FAA | TBD |
|  | Khabarovsk ACC and Sapporo ACC | State ATM/JCAB | 2015 |
|  | Reykjavik and Edmonton FIRs | Isavia/NavCanada | Spring 2013 |
|  | Reykjavik and Bodo FIRs (AIDC) | Isavia/Avinor | Spring 2014 |
|  |  |  |  |
|  | **Implement CPDLC for All Polar Routes** |  |  |
|  | Murmansk FIR | State ATM | 2015 |
|  | Bodo | Avinor | 2014 |
|  | Magadan FIR (North Sector) | State ATM | 2013 |
|  |  |  |  |
|  | **Implement ADS-C** |  |  |
|  | Anchorage Arctic FIR | FAA | TBD |
|  | Bodo | Avinor | 2014 |
|  | Magadan FIR (North Sector) | State ATM | 2013 |
|  |  |  |  |
|  | **Monitor Communications and Data Link Performance** |  |  |
|  | Provide information on any issues relating to communications/data link performance at CPWG meetings | All ANSPs and Operators | Ongoing |
|  |  |  |  |
| **5.** | **Improve Safety** |  |  |
|  |  |  |  |
|  | **Develop Arctic ATM Operational Contingency Plan** |  |  |
|  | Provide information on volcanic ash response to be included in Document v2 | Isavia | 2013 |
|  | Draft update to Document v2 | FAA | 2013 |
|  | Endorse/Publish Document v2 | All | 2013 |
|  |  |  |  |
|  | **Implement single AFTN address for each ANSP[[2]](#footnote-2)** |  |  |
|  | NavCanada | NavCanada | TBD |
|  | State ATM | State ATM | TBD |
|  | CAAC ATMB | CAAC ATMB | Unknown |
|  |  |  |  |

**Completed Activities**

|  |  |
| --- | --- |
| **1** | **Reduce and Harmonize Separation Standards in International Airspace** |
|  |  |
|  | **Implement RVSM FL290-410** |
|  |  |
|  | **Harmonize RVSM Transition Procedures** |
|  | Anchorage Arctic FIR |
|  | Anchorage Oceanic FIR |
|  | Russian FIRs |
|  | Fukuoka FIR |
|  |  |
|  | **Implement 10 Minute Longitudinal Separation for ATS Route B932** |
|  |  |
|  | **Implement reductions to lateral separation based on aircraft equipage requirements** |
|  | Anchorage Oceanic FIR (30NM) |
|  |  |
|  | **Implement reductions to longitudinal separation based on aircraft equipage requirements** |
|  | Anchorage Oceanic FIR (30NM) |
|  |  |
| **2** | **Improve/Increase Efficiencies for Cross Polar and Russian Far East Air Traffic** |
|  |  |
|  | **Harmonize Procedures for ATS Route B932** |
|  |  |
|  | **Improve Efficiency on Cross Polar Routes** |
|  | Add entry/exit fixes on the Reykjavik/ Russian FIR boundary |
|  | Open new Kamchatka routes from PILUN and LISKI |
|  | Open new routes south of ABERI |
|  |  |
|  |  |
|  | **Improve Air Traffic Flow Management (ATFM)** |
|  | Implement DOTS Plus Online Track Advisory |
|  | Reduce track loading to 10 minutes for Cross Polar fixes |
|  |  |
|  | **Improve ATFM Collaboration** |
|  | FAA/NAV CANADA |
|  | FAA/State ATM |
|  | NAV CANADA/State ATM |
|  |  |
| **3.** | **Improve communications in arctic/polar region** |
|  |  |
|  | **Implement AIDC/OLDI for Data Exchange** |
|  | Anchorage Arctic, Oceanic and Continental FIRs (AIDC) |
|  | Edmonton FIR (AIDC) |
|  |  |
|  | **Implement CPDLC for All Polar Routes** |
|  | Anchorage Arctic FIR |
|  | Reykjavik FIR |
|  | Magadan FIR |
|  |  |
|  | **Implement ADS-C for All Polar Routes** |
|  | Edmonton FIR (waypoints only) |
|  | Reykjavik FIR |
|  | Magadan FIR |
|  |  |
| **4.** | **Improve Awareness of Space Weather Issues in Arctic/Polar Region** |
|  | Develop Space Weather User Needs |
|  |  |
| **5.** | **Improve Safety** |
|  |  |
|  | **Develop Arctic ATM Operational Contingency Plan** |
|  | Publish Document v1 on Web Site |
|  |  |
|  | **Implement single AFTN address** |
|  | Iceland |
|  | Norway |
|  |  |
|  | **Implement ICAO Flight Plan 2012** |

1. For discussion with operators during CPWG/14 [↑](#footnote-ref-1)
2. FAA does not plan to implement a single AFTN address. JCAB recognizes that Japan already has the minimum AFTN addresses and has no plan to reduce further.

   cf. AFTN address in Japan

   1. for passing flights over Fukuoka FIR: two address (RJJJ for ATC use and RJAA for HF communication)

   2. for arrival flights within Fukuoka FIR: three addresses (RJJJ and RJAA for the purpose of 1. above, and an address of destination airport for aeronautical information handling, including SAR) [↑](#footnote-ref-2)