

**Sixteenth Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group
(CPWG/16)**

(Ottawa, Canada – 3-6 December 2013)

Agenda Item 7: 2013-2014 Cross Polar Work Program

Proposed CPWG Work Program

(Presented by the Federal Aviation Administration)

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. This working paper presents the latest version of the program for discussion and updates by the ANSPs.

1. Introduction

1.1. 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:

- a. Increase flexible routings (Russian North Coast and others)
- b. Respective ANSPs efforts for improving communications in the area
- c. Development of a single separation standard in region
- d. Improve/Increase efficiencies and predictability on Polar routes

1.2. 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:

- a. Reduce Separation Standards
- b. Improve Efficiencies for Traffic on Cross Polar and Russian Far East Routes (Routes, Procedures, and System Performance)
- c. Improve Communications
- d. Improve Weather Reporting
- e. Develop Contingency Plan/Safety

1.3. 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.

1.4. 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.

2. Discussion

2.1. 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.

2.2. 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.

2.3. Based on the outcome of the discussions of the ANSPs at CPWG/13, a draft work program has been developed for consideration by the meeting. See **Attachment A**.

2.4. The updated CPWG Planning Chart is at **Attachment B**. A list of completed actions is at **Attachment C**.

3. Action by the Meeting

3.1. The ANSPs meeting is invited to:

- a. review and discuss the information contained in this working paper;
- b. make recommendations to the information provided in Attachments A and B; and
- c. agree to present to CPWG/16.

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:

- a. Reduce Separation Standards
- b. Improve Efficiencies for Traffic on Cross Polar and Russian Far East Routes (Routes, Procedures, and System Performance)
- c. Improve Communications
- d. Improve Weather Reporting
- e. 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).

2 *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

3 *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

4 *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

5 *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 (**Attachment A**) to the Near-Term Planning Chart (**Attachment B**). Similarly, as initiatives are completed, they would be moved to the list of accomplishments (**Attachment C**).

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

Mid Term Goals (2017-2022)

REDUCE AND HARMONIZE SEPARATION STANDARDS IN INTERNATIONAL AIRSPACE

Implement further reductions to lateral separation (aircraft equipage requirements)

Reykjavik FIR (25NM)
Edmonton FIR

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

Bodo and Murmansk FIRs

Implement CPDLC

Murmansk FIR

CPWG Planning Chart

Near Term Goals (2013-2016)

	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	Early 2015
	Implement reduced longitudinal separation (aircraft equipage requirements)		
	Edmonton FIR (5 min or 50NM)	NAV CANADA	Fall 2014
	Reykjavik FIR (10 min)	Isavia	2015
	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		
	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/NAV CANADA	TBD
	Improve Efficiency on Russian Trans East Routes		
	Eliminate 10 min track loading for RTE over Anchorage/Russian Boundary	FAA/State ATM	Completed
	Implement use of Radar Procedures between Magadan ACC and Anchorage ARTCC without Radar Data Sharing		
	Anchorage Arctic FIR	FAA	2016
	Magadan FIR	FATA	2016
	Improve Air Traffic Flow Management (ATFM)		

	Planning Goal	Action with	Status of Action and Target Date
	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	NAV CANADA	Completed
3.	IMPROVE COMMUNICATIONS IN ARCTIC/POLAR REGION		
	Improve communications procedures		
	Change procedures to retain connection with Iridium and HFDL north of 82N	Isavia	2014
	Implement ADS-C periodic contract and lateral and vertical conformance monitoring	Isavia	Completed
	Implement AIDC/OLDI for Data Exchange		
	Russian and Anchorage FIRs	FAA State ATM	2015-2016
	Khabarovsk ACC and Sapporo ACC	State ATM/JCAB	2015
	Reykjavik and Edmonton FIRs	Isavia/NAV CANADA	Completed
	Reykjavik and Bodo FIRs (AIDC)	Isavia/Avinor	May 2014
	Murmansk and Reykjavik FIRs	State ATM/Isavia	2015-2016
	Implement CPDLC for All Polar Routes		
	Murmansk FIR	State ATM	2015
	Bodo	Avinor	May 2014
	Magadan FIR (North Sector)	State ATM	Early 2014
	Implement ADS-C		
	Anchorage Arctic FIR	FAA	2015
	Bodo	Avinor	May 2014
	Magadan FIR (North Sector)	State ATM	Early 2014
	Edmonton FIR	NAV CANADA	2014
	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	Completed

	Planning Goal	Action with	Status of Action and Target Date
	Draft update to Document v2	FAA	Completed
	Endorse/Publish Document v2	All	Completed
	Develop CPWG Volcanic Ash Contingency Plan		
	Consider amending LOAs between adjacent ACCs to introduce provisions on contingency reroutes	All	2014
	Formalize teleconference format and process taking into consideration collaborative decision making (CDM)	FAA, State ATM, JCAB	2014
	Streamline the process for issuing NOTAMs on volcanic ash	NAV CANADA, FAA, State ATM	2014
	Implement single AFTN address for each ANSP¹		
	NAV CANADA	NAV CANADA	TBD
	State ATM	State ATM	2018
	CAAC ATMB	CAAC ATMB	Unknown
	CAA Mongolia	CAA Mongolia	2015

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

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

Make Tactical Re-Routes Available for Daily Operations

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