FINAL VERSION

INTERNATIONAL CIVIL AVIATION ORGANIZATION
NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

The Second Meeting of the North Atlantic/Caribbean ATS Routes Working Group

(NAT/CAR WG/2)

(Miami, Florida, USA, 8 to 10 May 2007)

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HISTORICAL

ii.1 Establishment of the Group

The North Atlantic/Caribbean ATS Routes Working Group (NAT/CAR WG) was established for the purpose of examining issues relating to separation reduction and airspace redesign in and adjacent to the West Atlantic Route System (WATRS).

ii.2 Place and Duration of the Meeting

The second meeting of the North Atlantic/Caribbean ATS Routes Working Group was held in Miami, Florida, USA, 8-10 May 2007 at the Marriott Miami Dadeland Hotel under the auspices of the United States Federal Aviation Administration (FAA) and the International Civil Aviation Organization.

ii.3 Opening Ceremony

On behalf of the United States, Mr. Justo Casablanca, Manager Special Projects FAA Air Traffic Organization, welcomed the group, provided background information and an overview of the "West Atlantic Route System Plus" (WATRS Plus) separation reduction and airspace redesign project.

Ms. Leslie Cary, Regional Officer, Air Traffic Management/Search and Rescue, on behalf of the ICAO North American, Central American and Caribbean (NACC) Regional Office also welcomed the group and reminded them of the international nature of the project, the goals of the meeting and urged the participants to give their best efforts to complete the listed activities.

ii.4 Officers of the Meeting

The Meeting was chaired by Mr. Justo Casablanca of the United States. Ms. Leslie Cary acted as Secretary of the Meeting.

ii.5 **Working Arrangements**

The Meeting was presented an overview, including a synopsis of the matters to be dealt with, working method, schedule and organization. It was agreed that the working hours would be from 09:00 to 15:00 daily with adequate breaks.

ii.6 **Agenda**

Welcome, Introductions and Agenda Review.

Agenda Item 1: WATRS Plus Project Implementation Issues

a. Project Overview

b. Concept of Operations

c. Draft Airspace Redesign

d. Traffic Simulation

e. Draft Action Plan (Task List Summary)

f. Safety Assessment

g. Draft Doc 7030 Amendments

h. RNP 10 and RNP 4 Authorization

Agenda Item 2: WATRS Plus Airspace Redesign Issues

a. Ad hoc groups to discuss interface issues between individual ATS providers

b. Review issues and recommendations identified in ad hoc groups

Agenda Item 3: Task List and Future Activities

a. Review Implementation Task List and Timelines

b. Review key agreements, conclusions and follow-up actions

Agenda Item 4: Other Business

a. Any other business

b. Closing remarks

ii.7 **Attendance**

The meeting was attended by 3 States of the CAR Region, 2 States of the NAT Region, 5 International Organizations, U.S. DoD, 2 airline operators and ICAO, totaling 46 participants as indicated on pages iii-1 to iii-4.

ii.8 **LIST OF WORKING PAPERS AND INFORMATION PAPERS**

No.	Agenda Item	Title	Prepared by
WP/01	1	Approval of the Meeting Agenda and Schedule	Chairperson
WP/02	1	WATRS Plus Route Structure Redesign and Lateral Separation Reduction Planning and Policies	United States
WP/03	2	Status of Route Structure Redesign and Publication	United States
WP/04	3	WATRS Plus Implementation Task List	United States
WP/05	1	Safety Assessment and Oversight	United States
WP/06	1	Proposals for the Amendment of CAR and NAT Regional Supplementary Procedures (SUPPS) (Doc 7030)	United States
Information Papers			
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IP/02	--	List of Working and Information Papers	United States
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IP/04	1	Key WATRS Plus International Meetings and Events 2007	United States
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2/2	USE OF THE RNP 10 JOB AID	1-6
2/3	ACTION PLAN FOR THE WATRS PLUS PROJECT	3-1

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Agenda Item 1: WATRS Plus Project Implementation Issues

Project Overview

1.1 The United States provided an overview of the objectives of the WATRS Plus project and the work that has been completed to date with regards to the airspace redesign, procedures development, international and industry coordination and WATRS Plus plans and policy material. Detailed information is provided in **Appendix A** to this part of the Report.

1.2 The objectives of the WATRS Plus project are to:

a) Reduce lateral separation on oceanic routes or areas from 90 NM to 50 NM between aircraft authorized Required Navigation Performance 10 (RNP 10) or RNP 4. (RNP 10 is the minimum navigation specification for the application of 50 NM lateral separation);

b) Have a significant percentage of WATRS Plus operators obtain RNP 10 or RNP 4 authority from the appropriate State authority;

c) Accommodate operation of the small percentage of flights not projected to meet RNP 10 or RNP 4;

Note: the U.S. plans to develop and coordinate a proposal that would require RNP 10 or RNP 4 authorization for flight on WATRS Plus CTA oceanic routes or areas between flight level 290-410, inclusive. The proposed effective date will be some time after June 2008;

d) Redesign the WATRS Plus route structure to make approximately 40% more routes available to enhance operator access to time/fuel efficient routes and altitudes and to enhance en-route capacity; and

e) Harmonize the WATRS Plus route structure with that in the Caribbean and North Atlantic regions.

1.3 To coordinate project plans and policies, the United States (U.S.) has worked with the ICAO European and North Atlantic (EUR/NAT) Office and the North American, Central American, and Caribbean (NACC) Regional Office to provide detailed inputs to the appropriate NAT and CAR working groups and to revise the appropriate ICAO documents. Following the 1st NAT/CAR ATS Routes Working Group, the FAA submitted project information and draft documents to the 29th North Atlantic Air Traffic Management Group, 19-23 March, 2007; the 5th NAT Safety Analysis and Reduced Separation Implementation Group, 11-13 April 2007; and the 30th NAT Implementation Management Group, 24-27 April, 2007. Information was coordinated with the NAT Operations and Airworthiness Group via email.

1.4 Additional to the above Meetings, the WATRS Plus project information and documentation will be presented to the 43rd North Atlantic System Planning Group, 12-15 June 2007; the 1st Caribbean Working Group, 21-23 June 2007; the 9th Central Caribbean Directors of Civil Aviation, 9-13 July 2007; and the 13th Air Traffic Management Authorities and Planners Meeting, 9-13 July 2007.

Concept of Operations

1.5 50 NM lateral separation is planned to be applied between aircraft authorized RNP 10 or RNP 4 operating on oceanic routes or areas within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area and/or within the control area of the New York Oceanic FIR, regardless of altitude. Aircraft not authorized RNP 10 or RNP 4 will be provided with 90 NM separation within the WATRS Plus CTAs. Separation standards between aircraft crossing adjacent NAT and CAR FIR boundaries will remain in accordance with Regional documents.

1.6 The United States has determined that the existing ICAO flight plan equipment suffix of "R" to indicate RNP approval may create conflicts with other Regional or continental use of the suffix. To prevent flight planning difficulties or inappropriate application of 50 NM separation, a procedure currently in use in the Pacific to distinguish between RNP type specifications is being proposed. This procedure is as follows:

> To inform ATC and to key Ocean21 automation that they have RNP 10 or RNP 4 authorization and are eligible for 50 NM separation, operators must:
>
> (1) annotate ICAO Flight Plan Item 10 (Communication, Navigation and Approach Equipment) with the letters "R" and "Z"; and
>
> (2) annotate Item 18 (Other Information) with "NAV/RNP10" or "NAV/RNP4", as appropriate.
>
> *Note: on the ICAO Flight Plan, letter "R" currently indicates that the aircraft will maintain the appropriate RNP navigation specification for the entire flight through airspace where RNP is prescribed. Letter "Z" indicates that information explaining aircraft navigation and/or communication capability is found in Item 18.*

1.7 The United States intends to accommodate non-RNP 10 aircraft within the WATRS Plus airspace following implementation until the U.S. regulatory changes can be made to identify the airspace as "exclusionary", a process that may take two to three years to complete. In order for the project to be successful during the interim period, operators flying on oceanic routes or areas in the WATRS Plus CTAs should obtain RNP 10 or RNP 4 authority to the maximum extent possible, particularly if they operate between FLs 290 and 410, inclusive. The objective of the United States is to have at least 85% of the flights operating in the airspace approved for RNP 10 or RNP 4 by 5 May 2008, one month before implementation.

1.8 The complete Concept of Operations is contained in **Appendix B** to this part of the Report.

Draft Airspace Redesign

1.9 The United States presented the draft WATRS design that replaces the existing 18 routes with 31, providing more and better routing options for airspace users. East/west routes have designators beginning with "M", while north/south routes are designated with "L". Additional analysis and discussions with operators will be needed to determine if all crossing points will have to be named using ICAO compliant 5 letter name codes.

1.10 The Meeting noted that there will be no changes to entry/exit routes for the New York area and that Military Special Use Airspace along the East Coast of the United States is unaffected by the WATRS Plus redesign.

1.11 The U.S. Federal Aviation Administration (FAA) has been coordinating with the United States Navy (USN) regarding routes which transition Special Use Airspace in the San Juan FIR. The USN has given approval for aircraft to transition the airspace when it is not active; however they have previously opposed the charting of fixed routes through the airspace. ICAO raised the issue that the resulting disconnect in route segments is a safety concern, with potential errors in flight planning, ATC/pilot coordination, data entry into FMS or ATC computers and re-routing. ICAO strongly urged the FAA to continue pursuing an agreement with the USN to resolve this situation.

1.12 During the discussions, the FAA advised the USN that it intended to honor its original agreement in order to meet the target implementation date of June 5, 2008. However, based on the newly identified issues and ICAO's concerns, the FAA intends to reestablish negotiations with the USN. The intent will be to reach a new agreement that accounts for and mitigates these concerns.

1.13 The USN advised that the FAA should include as part of any new proposal, a request for the USN to consider decommissioning and/or reduction of the Special Use Airspaces surrounding Puerto Rico. Coordination will be required with the Puerto Rico Air National Guard (ANG) to determine their airspace requirements.

1.14 The FAA will schedule an initial meeting with the appropriate USN/ANG representatives within the next 45-60 days. The FAA will keep the Group advised of its progress.

Recommendation 2/1 Routes transitioning San Juan Special Use Airspace

That the United States Federal Aviation Administration take the necessary action to approve and publish routes M597, M598, L459, L460, L461 and L462 in their entirety.

Traffic Simulation

1.15 The United States conducted a fast time simulation of the WATRS Plus traffic movement to prepare quantitative estimates of en-route fuel-burn, route length, aircraft proximity, transit time and occupancy. The simulation compared the existing route structure to the proposed routes and accounts for projected capacity increase (due to growth in the aviation population, not the restructure). Fuel, time, distance and aircraft proximity estimates were determined with the use of the following modules: NASPAC (development of future traffic), AWSIM/AVID (occupancy estimation), Adapted NICE Model (fuel calculations).

1.16 Three days were modeled using traffic samples derived from Enhanced Traffic Management System (ETMS) data; the days selected were carefully analyzed ensuring that they are representative of WATRS Plus characteristics. Traffic flow profiles were created including route assignments for each origin/destination pair, aircraft type and flight level utilization. ATC experts projected route assignments by origin/destination pair to reconstitute traffic as it might fly on the proposed new routes. The simulation model distributes the traffic by actual time and maintains separation as the aircraft are flown from origin to destination. Fuel burn, time and distance were calculated from entry-exit points of the WATRS Plus airspace.

1.17 Preliminary results indicate that the proposed WATRS Plus route structure and separation reduction will result in a significant reduction in fuel burn, flying time and route lengths. The simulation process is in the preliminary stage and will continue during the WATRS Plus redesign effort. The United States will inform the Group of future simulation results.

Draft Action Plan (Task List Summary)

1.18 The United States reviewed a summary of major tasks which have been identified to date that must be accomplished prior to implementing RNP 10 and the associated separation reduction. These tasks cover the following general subjects:

a. General Project Development & Management
b. International Coordination: ICAO Groups & Documents
c. Route Structure Redesign & Publication
d. Safety Analysis & Monitoring
e. Air Traffic Control Tasks – General
f. Operations, Airworthiness & RNP Authorization
g. State Responsibilities for RNP Authorization
h. Operator Responsibilities & Tasks
i. Final Implementation Decision & Notification
j. Post-Implementation Tasks

Safety Assessment

1.19 ICAO Annex 11 identifies the need to analyze the safety of airspace prior to introducing a reduced separation standard as well as monitoring the safety situation post-implementation. The United States addressed safety assessment and monitoring plans that will be combined with the Safety Risk Management Document (SRMD) for international consideration. These three components are the essential elements of a Safety Case which is part of the supporting documentation to be submitted with the Doc 7030 amendment proposal.

1. The Safety Assessment contains five key components:

a) An assessment of the requirements for implementation such as airspace system considerations, authorization of operators and aircraft, flight crew operating procedures, ATC policy and procedures, system verification and safety analysis, and system monitoring must be identified. A “Know Your Airspace” analysis was completed identifying operational characteristics of the airspace including operators and aircraft types to support the safety assessment process.

b) A preliminary assessment of system safety and the ability to meet the target level of safety (TLS), 5.0 fatal accidents per 10^9 flying hours, will be performed by assembling safety-related data. It was noted in the meeting that the United States will adapt this process to the established ICAO collision risk methodology which consists of TLS

(safety goal), collision risk model (risk estimation tool) and agreed means to determine if the safety goal is met, given the risk estimate.

c) Once the preliminary assessment is complete, the next step is planning and preparation. This requires establishing parameters for navigation and performance and establishing methods and systems necessary to monitor aircraft lateral performance.

d) The fourth step is verification and initial implementation. The pre-implementation safety assessment will be complete approximately three months prior to implementation (early March 2008).

e) The final step is to continue to monitor the safety of the system and ensure that planned ATC changes are effective.

1.20 The FAA has implemented a Safety Management System and a Safety Risk Management Document (SRMD) will be required for WATRS Plus implementation. The purpose of the document is to analyze the principal operational components of the ATC system to determine the small chance that unusual events may occur. The product of this document is the identification of potential individual limits and proposed mitigation strategies that will contain the events.

1.21 The United States committed to establishing a post-implementation monitoring plan; it was also noted that this duty is the responsibility of the Regional Monitoring Agency (RMA) assigned to the Region. A critical component of the monitoring plan is the identification of performance measures necessary to assure that system estimates will remain below the agreed target value. A means of collecting and compiling data will be established for the purpose of analyzing aircraft and system performance. Additionally, a Scrutiny Group will be established, comprised of ATC, flight standards and safety analysis specialists, pilots and controllers, as a focal point for assembling and analyzing safety oversight information such as risk-bearing events (e.g., large lateral deviations).

Draft Doc 7030 Amendments

1.22 The Meeting was presented with draft amendments to the ICAO Doc 7030 Regional Supplementary Procedures (SUPPS) for the Caribbean and North Atlantic containing sections pertinent to 50 NM lateral separation and RNP 10. The North Atlantic SUPP has previously been reviewed, modified and endorsed by the NAT ATMG/29, NAT SARSIG/5 and NAT IMG/30 and will be presented to the NAT SPG/43 in June for endorsement. The Caribbean SUPP is based on the wording approved by the NAT groups. The Meeting approved one modification to the Caribbean SUPP which is shown in **Appendix C** to this part of the Report. The North Atlantic SUPP is contained in **Appendix D** to this part of the Report. The two SUPPS will be circulated by State Letter for approval in the September/October 2007 timeframe.

RNP 10 and RNP 4 Authorizations

1.23 Parts 1 and 2 of ICAO Annex 6, paragraph 7.2 (Navigation Equipment), call for an aircraft to be authorized by the State for operations in airspace or on routes where an RNP navigation specification (previously RNP type) is prescribed. The newly published ICAO Performance Based Navigation (PBN) Manual *(new Doc 9613)* provides guidance on the authorization process for RNP 10 and RNP 4 in Volume II.

1.24 The United States has developed a comprehensive "Job Aid" attached in **Appendix E** to this part of the Report to provide an example that State regulators and operators can consider when developing documents to identify and track operator fulfillment of requirements to obtain RNP 10 authorization. This version is oriented to WATRS Plus. The Job Aid provides FAA 8400.12A references for specific operator and aircraft RNP 10 requirements, the location of documents on the FAA WATRS Plus Webpage and FAA points of contact. A new version of the RNP 10 Job Aid will be developed that provides references to the new PBN Manual, Doc 9613.

1.25 Meeting participants were strongly urged to review the Job Aid and provide it to their appropriate State authority and operators. The most current edition of the Job Aid is posted in Section 2d of the FAA WATRS Plus Webpage. The WATRS Plus Webpage can be accessed through the Oceanic Operations Standards Homepage: **http://www.faa.gov/ats/ato/130.htm**

Recommendation 2/2 Use of the RNP 10 Job Aid

That States/Territories/International Organizations of the NAT and CAR Regions provide the RNP 10 Job Aid to their appropriate State authority and operators to assist in the State approval process of operators and aircraft.

APPENDIX A

PROJECT OVERVIEWWATRS PLUS ROUTE STRUCTURE REDESIGN & SEPARATION REDUCTION

Note: this document is an updated version of the FAA advance notice that was published in November 2006 and disseminated to State and industry organizations.

Introduction. On 5 June 2008, the FAA is planning on introducing a redesigned route structure and a reduced lateral separation standard on oceanic routes or areas in the WATRS Plus Control Areas (CTA). The WATRS Plus CTAs are shown on the attached chart. They are: the Atlantic portion of the Miami Oceanic CTA, the CTA of the San Juan FIR and the West Atlantic Route System (WATRS).

Background. In 1998, lateral separation was reduced to 50 NM in conjunction with the introduction of Required Navigation Performance 10 (RNP 10) for aircraft operating on the North Pacific Route System. Since that time, application of 50 NM lateral separation and RNP 10 has been expanded throughout the Pacific Flight Information Regions (FIR). The WATRS Plus initiative will apply the experience gained in Pacific operations.

Aircraft Population Status. FAA studies show that approximately 90% of flights operating in the WATRS Plus CTAs are conducted by aircraft that already meet RNP 10 or RNP 4 requirements. To obtain RNP 10 or RNP 4 authority, operators must apply to the responsible State (country) authority. Applicable documents are discussed below.

Project Objectives. The objectives of the WATRS Plus project are to:

a) Reduce lateral separation on oceanic routes or areas from the existing 90 NM standard to 50 NM between operators/aircraft authorized Required Navigation Performance 10 (RNP 10) or RNP 4. (50 NM lateral will be applied at any altitude when aircraft are authorized RNP 10 or RNP 4);

b) Have a significant percentage of WATRS Plus operators obtain RNP 10 or RNP 4 authority from the appropriate State authority. **(RNP 10 is the minimum navigation specification for the application of 50 NM lateral separation);**

c) Accommodate operation of the small percentage of flights not projected to meet RNP 10 or RNP 4. See the discussion below;

Note: the U.S. plans to develop and coordinate a proposal that would require RNP 10 or RNP 4 authorization for flight on WATRS Plus CTA oceanic routes or areas between flight level 290-410 (inclusive). The proposed effective date will be some time after June 2008.

d) Redesign the WATRS Plus route structure to make approximately 40% more routes available to enhance operator access to time/fuel efficient routes and altitudes and to enhance en-route capacity; and

e) Harmonize the WATRS Plus route structure with that in the Caribbean and North Atlantic regions.

Note: operation on certain routes that are located within the WATRS Plus CTAs will not be affected by the introduction of RNP 10/50 NM lateral separation. Examples are: routes defined by VOR, VOR/DME or NDB; Special Area Navigation (RNAV) routes (now designated as T-routes) between Florida and Puerto Rico and routes located within radar and VHF coverage (e.g., A761 between HANRI and ETOCA and R511 between AZEZU and ELTEE at/above Flight Level 310).

Operator Action By 5 May 2008. To the maximum extent possible, operators flying on oceanic routes or areas in WATRS Plus CTAs between flight level (FL) 290-410 should obtain RNP 10 or RNP 4 authority **by 5 May 2008**. Competition for routes and altitudes is greatest at those FLs. To enhance operational flexibility, the FAA also recommends that operators flying on oceanic routes or areas above or below those FLs obtain RNP 10 or RNP 4 authority.

Having operators RNP 10 or RNP 4-ready one month in advance of the implementation date will help the transition to the new route structure and separation standard on 5 June 2008. The FAA will track the authorization status of operator/aircraft combinations that operate in WATRS Plus CTAs to confirm that the fleet will be ready on time.

Accommodation of Aircraft Not Authorized RNP 10 or RNP 4 (Non-RNP 10 Aircraft). Aircraft that are authorized RNP 10 or RNP 4 will have a better opportunity of obtaining their preferred altitude and route because the 50 NM lateral separation standard will be applied to those aircraft. 50 NM lateral separation will not be applied to Non-RNP 10 aircraft.

The following basic accommodation policies will apply:

a) Non-RNP 10 operators/aircraft will be able to file any route at any altitude in WATRS Plus airspace. They will be cleared to operate on their preferred routes and altitudes as traffic permits.

b) Non-RNP 10 aircraft will retain the option of climbing to operate at altitudes above those where traffic is most dense (i.e., at/above FL 410). To minimize the chance of conflict with aircraft on adjacent routes, non-RNP 10 aircraft should plan on completing their climb to or descent from higher FLs within radar coverage.

c) All aircraft can enhance their opportunity to be cleared on their preferred route and altitude if they operate at non-peak hours, approximately 0100 to 1100 UTC.

Criteria for RNP 10 and RNP 4 Authorization For Operators and Aircraft

The **minimum** navigation specification for the application of 50 NM lateral separation in the WATRS Plus CTAs is RNP 10.

Criteria for aircraft and operator RNP 10 authorization is contained in FAA Order 8400.12A (*RNP 10 Operational Approval (*under revision to eliminate dated information on manual General Aviation Letters of Authorization). Criteria for RNP 4 authorization is contained in FAA Order 8400.33. The new ICAO *Performance Based Navigation (PBN) Manual (new Doc 9613*) contains guidance on RNP 10 and RNP 4 authorization. The FAA Orders are posted on the WATRS Plus Webpage (see below) and the ICAO PBN Manual will be posted as soon as possible.

RNP 10 criteria includes:

a) a requirement for two operational Long-Range Navigation Systems (LRNS) meeting RNP 10 standards. (A detailed discussion of acceptable aircraft LRNS configurations on/after project implementation is posted on the WATRS Plus Webpage, Section 2d (Operator/Aircraft RNP 10 Authorization Policy/Procedures); and

b) ***unless approved otherwise**, an RNP 10 time limit of 6.2 hours between position updates for aircraft on which Inertial Navigation Systems (INS) or Inertial Reference Units (IRU) provide the only source of long range navigation.

***Extended RNP 10 time limits of 10 hours and greater are already approved for many IRU systems.** Time limit may be an issue for INS-only equipped aircraft on westbound flights entering WATRS Plus airspace from Europe, Africa and the Mid-East.

WATRS Plus Webpage: Policy/Procedures Information For Operators and Regulators

Information on policies and procedures related to the introduction of 50 NM lateral separation and RNP 10 or RNP 4 is posted on the "WATRS Plus Webpage". The WATRS Plus Webpage is linked to the existing Oceanic/International Operations Standards Group Homepage at: www.faa.gov/ats/ato/130.htm.

It is recommended that regulators and operators review the briefing entitled "Operational Approval for RNP 10" posted in Section 2d of the WATRS Plus Webpage. This briefing provides details on RNP 10 aircraft and operator requirements.

A Job Aid showing the format and content for operator submissions for RNP 10 authorization is also posted in Section 2d of the WATRS Plus Webpage. In addition, the FAA is working with ICAO regional offices to disseminate the Job Aid and related information to appropriate State authorities and industry.

As the project progresses, the FAA will coordinate with ICAO, other authorities and industry to take additional measures to disseminate information, as necessary.

ICAO Coordination. The FAA is coordinating this project with the ICAO working groups in the North Atlantic and Caribbean regions. The FAA is working with the ICAO North American, Central American and Caribbean (NACC) Office in Mexico City and the European and North Atlantic (EUR/NAT) Office in Paris to progress the work, revise the necessary documents and inform operators and regulatory authorities of program requirements.

Industry Coordination. As the project progresses, the FAA will coordinate with and inform U.S. and international industry groups on a regular basis. The project leads listed below will ensure that industry groups are informed of program requirements and progress.

Contacts. If there are questions, please contact one of the following:

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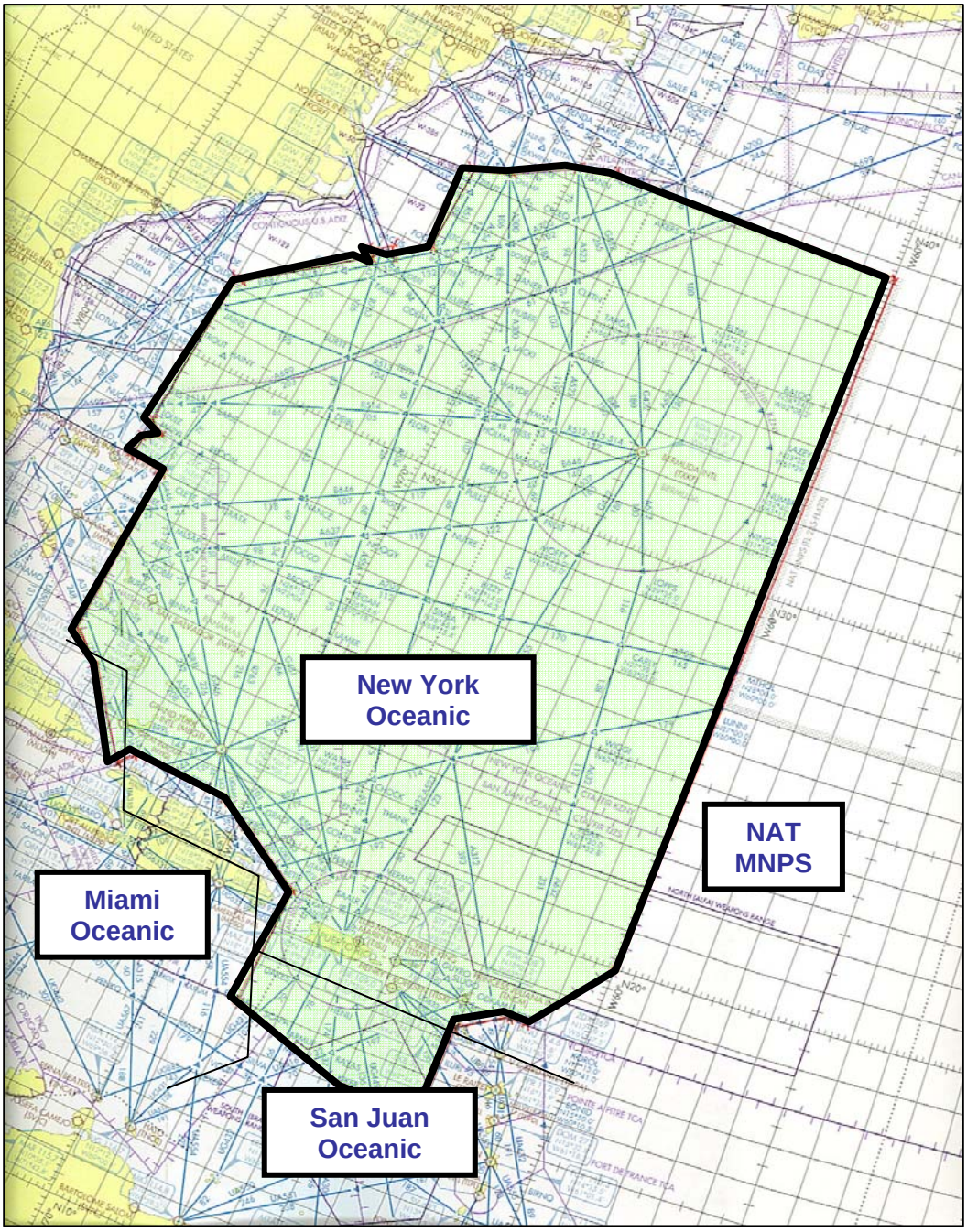
•WATRS PLUS CTAs



APPENDIX B

DRAFT CONCEPT OF OPERATIONS WATRS PLUS CONTROL AREAS (CTA)

1. Vertical and horizontal boundaries of airspace

a. Horizontal Boundary. 50 NM lateral separation is planned to be applied between aircraft authorized RNP 10 or RNP 4 operating on oceanic routes or areas:

- Within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area or the West Atlantic Route System (WATRS);

Note: the control areas listed above are referred to hereafter as the "WATRS Plus CTAs".

- Outside WATRS within the control area of the New York Oceanic FIR

Note: a chart depicting the boundaries of the WATRS Plus CTAs is published on the WATRS Plus Webpage. The coordinates defining the horizontal boundary of WATRS are published in ICAO Regional Supplementary Procedures (Doc 7030) for the Caribbean (CAR) and North Atlantic (NAT) regions.

b. Vertical Boundary. 50 NM lateral separation is planned to be applied between aircraft authorized RNP 10 or RNP 4 operating above the floor of controlled airspace within the WATRS Plus CTAs.

2. Lateral separation standard(s) to be applied

a. 50 NM Lateral Separation.

(1) WATRS Plus CTAs. 50 NM lateral separation will be applied between aircraft authorized RNP 10 or RNP 4 operating at any altitude within WATRS Plus CTAs above the floor of controlled airspace.

(2) New York Oceanic CTA/FIR Outside of WATRS. 50 NM lateral separation may be applied between aircraft authorized RNP 10 or RNP 4 operating at any altitude above the floor of controlled airspace.

b. 90 NM Lateral Separation. Within the WATRS Plus CTAs, the lateral separation standard applicable to non-RNP 10 aircraft will be 90 NM.

Note: policies for application of the following lateral separation standards are not affected by the WATRS Plus project:

- 60 NM within WATRS and outside WATRS within the New York Oceanic CTA/FIR
- 90 NM outside the WATRS Plus CTAs
- 100 NM west of 55 West
- 120 NM east of 55 West

3. Concept for transfer of control to adjoining FIRs

a. Transfer of Flights into non-U.S. Controlled NAT MNPS Airspace. New York Oceanic Center will provide 60 NM lateral separation between aircraft authorized MNPS when transferring aircraft control to ATS providers in NAT MNPS airspace.

b. Transfer to Other CTAs. Aircraft transiting FAA controlled airspace to other FIRs will be transferred per regional documentation with the appropriate separation standard applied.

4. Transition airspace

a. Transition airspace is airspace in the CAR and NAT regions adjoining the WATRS Plus CTAs. Coordination is necessary to establish policies related to transfer of control and the separation to be applied.

b. The airspace outside the WATRS Plus CTAs within the control area of the New York Oceanic FIR is considered transition airspace.

5. Concept for use of fixed routes

Fixed routes will be planned based on a 50 NM lateral separation minima.

6. Flight Plan Equipment Suffix Requirements

a. ICAO Flight Plans. To inform ATC and to key Ocean21 automation that they have RNP 10 or RNP 4 authorization and are eligible for 50 NM separation, operators must:

(1) annotate ICAO Flight Plan Item 10 (Communication, Navigation and Approach Equipment) with the letter "R" and letter "Z"; and

(2) annotate Item 18 (Other Information) with "NAV/RNP10" or "NAV/RNP4", as appropriate.

Note 1: on the ICAO Flight Plan, letter "R" currently indicates that the aircraft will maintain the appropriate RNP navigation specification for the entire flight through airspace where RNP is prescribed. Letter "Z" indicates that information explaining aircraft navigation and/or communication capability is found in Item 18.

Note 2: the ICAO Flight Plan Study Group is developing revised flight equipment suffixes that are proposed to be effective in late 2010. The WATRS Plus Task Force will maintain contact with the appropriate FAA and ICAO organizations to track pertinent ICAO flight plan change developments.

7. Concept for use of Ocean21 in New York Oceanic Airspace

Ocean21 will provide the New York Oceanic air traffic controller with a set of automated tools to assist in assuring that the correct separation is applied between aircraft with a mix of navigation capabilities (i.e., RNP 10 or 4, non-RNP 10). Automated tools will include: automated conflict prediction and reporting (CPAR), graphic dynamic situation display to the controller and interactive electronic flight strips, aircraft labels and aircraft position symbols.

8. Provisions for accommodating aircraft not meeting RNP 10 or RNP 4

a. For the project to be fully successful, operators flying on oceanic routes or areas in the WATRS Plus CTAs between FL 290-410 (inclusive) should obtain RNP 10 or RNP 4 authority (to the maximum extent possible). For initial project implementation, however, the airspace of the WATRS Plus CTAs will not be "exclusionary". Aircraft not authorized RNP 10 or RNP 4 will be allowed to fly on oceanic routes or areas within WATRS Plus CTAs, however, 50 NM lateral separation will not be applied to them. They will be cleared on their preferred routes and altitudes as traffic permits. Aircraft that are authorized RNP 10 or RNP 4 will have a better opportunity of obtaining their preferred route and altitude because the 50 NM lateral separation standard will be applied to those aircraft.

b. The following basic accommodation policies will apply:

(1) Non-RNP 10 operators/aircraft will be able to file any route at any altitude in the WATRS Plus CTAs. They will be cleared to operate on their preferred routes and altitudes as traffic permits.

(2) Non-RNP 10 aircraft will retain the option of climbing to operate at altitudes above those where traffic is most dense (i.e., at/above FL 410). To minimize the chance of conflict with aircraft on adjacent routes, non-RNP 10 aircraft should plan on completing their climb to or descent from higher FLs within radar coverage.

(3) All aircraft can enhance their opportunity to be cleared on their preferred route and altitude if they operate at non-peak hours, approximately 0100 to 1100 UTC.

c. Proposed Plan to Stop Accommodation of Non-RNP 10 Aircraft. The FAA is planning to propose a regulatory change that would be effective some time (to be determined) **after** the June 2008 project implementation date. The goal of the proposal would likely be to maximize operational efficiency by requiring RNP 10 or RNP 4 authority for cruise operations in the WATRS Plus CTA oceanic airspace between FL 290-410 (inclusive). The content of and effective date for the change would be established after the necessary coordination required by the rulemaking process.

9. Operator/Aircraft requirements for operation on routes on the periphery of the WATRS Plus CTAs.

Operation on certain routes that fall within the boundaries of WATRS Plus airspace will not be affected by the introduction of RNP 10/50 NM lateral separation, scheduled for 5 June 2008. Operation on the following routes will not be affected:

- Routes that are flown by reference to ICAO standard ground-based navigation aids (VOR, VOR/DME, NDB) (such as the routes in the airspace between Florida and Puerto Rico).

- Special Area Navigation (RNAV) routes currently designated as T-routes that are located in the airspace between Florida and Puerto Rico. (A new RNAV route structure is planned to replace the current T-route structure in the June 2007 timeframe. The new routes will be designated as "Y-routes".)

- Routes that are located within radar and VHF coverage (e.g., A761 between HANRI and ETOCA and R511 between AZEZU and ELTEE at/above Flight Level 310).

10. Flight of aircraft previously authorized RNP 10 or RNP 4 with one of two required long range navigation systems inoperative.

a. To the maximum extent possible, operators that are authorized RNP 10 or RNP 4 should operate on WATRS Plus oceanic routes in compliance with those standards. Operators may, however, if the situation warrants, fly an aircraft on WATRS Plus oceanic routes with one of two long range navigation systems (LRNS) inoperative. The intent of this policy is to allow an aircraft to be flown to a maintenance facility for repair. For U.S. operators conducting operations under Part 121, 125 or 135 of the Code of Federal Regulations, Operations Specifications paragraph B054 (Class II (Oceanic) Navigation Using Single Long-Range Navigation System) applies.

b. **In this situation, operators will not annotate their filed flight plan with an aircraft equipment suffix indicating RNP 10 or RNP 4 compliance.** The aircraft will be treated as non-RNP 10 aircraft and appropriate lateral separation will be applied.

11. Aircraft Population RNP 10 Authorization Objective

a. Implementation Objective: Percentage of Flights Authorized RNP 10 or RNP 4. The WATRS Plus Task Force will progress its work with the objective of having at least **85% of flights** operating in WATRS Plus control area oceanic airspace authorized for RNP 10 or RNP 4 by 5 May 2008 (i.e., one month prior to the 5 June 2008 planned project implementation date).

b. RNP 10 or RNP 4 Compliance To the Maximum Extent Possible. The WATRS Plus Task Force will advocate that all operators/aircraft that fly in the WATRS Plus CTAs obtain RNP 10 or RNP 4 authorization as soon as possible.

12. Aircraft/operator authorization requirements (equipage, RNP 10 authorization documents)

a. For 50 NM lateral separation to be applied, operators will be required to obtain RNP 10 or RNP 4 authorization from the appropriate State authority.

b. Guidance To Be Used, The FAA will use FAA Order 8400.12 (as amended) or, if applicable, FAA Order 8400.33 (as amended). It is recommended that other States use either the FAA Orders or the ICAO *Performance Based Navigation (PBN) Manual* (Doc 9613). This manual was posted on the ICAO NET in April 2007. It replaced the ICAO *Manual on RNP* which was previously Doc 9613.

13. Target Dates:

a. Implementation Decision Date: 5 March 2008 (calendar date, 3 months prior to target implementation date).

b. Operator/aircraft RNP 10 or RNP 4 Authorization Date: 5 May 2008 (calendar date, 1 month prior to target implementation date).

c. Target Implementation Date: 5 June 2008 (AIRAC date, effective date for application of 50 NM lateral separation and redesigned route structure).

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APPENDIX C

WATRS PLUS PROJECT PROPOSAL FOR AMENDMENT OF CAR REGIONAL SUPPLEMENTARY PROCEDURES (SUPPS) (Doc 7030)

DRAFT 9 May 07

a) **Proposed by:** **The United States of America**

b) **Proposed amendment:**

"Amend **the SUPPs** in the **CAR Region** as shown below:

5.0 SEPARATION OF AIRCRAFT

5.1 Lateral separation

(A2 – 5.1.1; A11 – 2.7 and ATT B; A6, Part I – 7.2.2 and Chapter 3, Note 1; A6, Part II – 7.2.2 and
Chapter 3, Note 1; P-ATM – 2.4)

5.1.1 *Minimum lateral separation shall be:*

1) 93 km (50 NM) between aircraft authorized RNP 10 or RNP 4 by the State of the Operator or the State of Registry, as appropriate, operating on oceanic routes or areas:

   a) Within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area or the West Atlantic Route System (WATRS);

   b) Outside WATRS within the control area of the New York Oceanic FIR except, minimum lateral separation between aircraft transitioning from airspace in the New York Oceanic FIR/CTA to MNPS airspace shall be 110 km (60 NM);

Note: RNP 10 is the minimum navigation specification for the application of 93 km (50 NM) lateral separation. See other provisions for application of 93 km (50 NM) lateral separation in paragraph 5.1.2.

2) 60 NM between aircraft which meet the North Atlantic minimum navigation performance specifications (MNPS) which, while operating in the control area of San Juan FIR control area, are in transit to or from the NAT MNPS airspace;

   Note.— The NAT MNPS are set forth in NAT SUPPS, Section 3.0. NAT MNPS airspace is identified in NAT SUPPS, 3.2.

3) 90 NM between aircraft not authorized RNP 10 or RNP 4 operating between the United States, Canada or Bermuda and points in the CAR Region in the control areas of San Juan and New York Oceanic FIRs and the Atlantic portion of the Miami Oceanic control area;

4) 100 NM west of 60W (only in Oceanic areas) between aircraft not covered in 1) and 2) above, and between aircraft in the control area of Piarco FIR west of 55W;

5) 120 NM between aircraft operating east of 60W in the New York Oceanic FIR, and between aircraft in the control area of Piarco FIR east of 55W;

except that lower minima as detailed in 5.4.1.1.2 of the PANS ATM may be applied, or further reduced in accordance with 5.11, where the conditions specified in the relevant PANS ATM provisions are met (see 6.4).

5.1.2 For 93 km (50 NM) lateral separation to be applied between aircraft authorized RNP 10 or RNP 4 in the oceanic control areas listed in paragraph 5.1.1 operators and civil aviation authorities must follow the provisions listed below.

5.1.2.1 The aircraft and Operator must be authorized RNP 10 or RNP 4 by the State of the Operator or the State of Registry, as appropriate. RNP 10 is the minimum navigation specification for the application of 93 km (50 NM) lateral separation.

5.1.2.2 States shall ensure, when granting authorization for RNP 10 or RNP 4, that Operators establish programmes to mitigate the occurrence of large lateral track errors due to equipment malfunction or operational error.

Note.— The ICAO Performance Based Navigation (PBN) Manual Volume I – Concept and Implementation Guidance (Doc 9613) provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized navigation specification. Doc 9613 will be supplemented and updated as required and as new material becomes available.

5.1.2.3 All operators authorized RNP 10 or RNP 4 shall include the letter "R" and the letter "Z" in Item 10 of the Filed Flight Plan and NAV/RNP10 or NAV/RNP4, as appropriate, in Item18.

5.1.2.4 A target level of safety (TLS) of 5 x 10^{-9} fatal accidents per flight hour per dimension shall be established for route systems operating a 93 km (50 NM) lateral separation minimum. The safety level of such airspace shall be determined by an appropriate safety assessment.

Note — Detailed guidance material on conducting safety assessments is contained in the *Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689*) and the Safety Management Manual (Doc 9859).

5.1.2.5 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the population in relation to the lateral separation minimum. These data shall include statements of the core of the lateral navigational performance, the proportion greater than one-half the lateral separation minimum and the proportion in the vicinity of the adjacent route centreline as these measures have been shown to have a direct link to the risk of collision. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met. Data shall include operational errors due to all causes.

Note.— Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO. Detailed guidance is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (Doc 9859).

c) **Intended date of implementation:** 5 June 2008

d) **Proposal circulated to the following States and international organizations:**

e) **Originator's reasons for amendment:**

On 5 June 2008, the United States, in coordination with States providing Air Traffic Services in the Caribbean and North Atlantic and with international organizations, is planning to implement a redesigned route structure in conjunction with a reduction of lateral separation within the control area of the San Juan FIR, the Atlantic portion of the Miami Oceanic control area and the West Atlantic Route System (WATRS). 93 km (50 NM) lateral separation is planned to be applied between aircraft authorized Required Navigation Performance 10 (RNP 10) or RNP 4 by the State of Registry or State of Operator, as appropriate, operating on oceanic routes or areas. (Guidance and direction for RNP authorization is provided in ICAO Annex 6, Parts I and II, paragraph 7.2 (Navigation equipment). Guidance on the application of 93km (50NM) lateral separation between aircraft authorized RNP 10 or RNP 4, is provided in ICAO Annex 11, Attachment B).

Reduction of lateral separation from 167 km (90 NM) to 93 km (50 NM) will enable an increase of approximately 40% in the number of routes and associated altitudes. Increased availability of routes and altitudes will enable more aircraft to operate on time and fuel efficient routes and altitudes thereby reducing fuel burn and engine emissions. In addition, en route capacity and Air Traffic Management (ATM) flexibility will be enhanced.

Analysis of aircraft types operating in the oceanic areas affected by this initiative indicates that approximately 90% of the flights conducted in the airspace are now flown by aircraft meeting RNP 10 or RNP 4 standards without modification.

Aircraft that are not authorized RNP 10 or RNP 4 (Non-RNP 10 aircraft) will be allowed to continue to file any route at any altitude in areas listed above. They will be cleared to operate on their preferred routes and altitude as traffic permits and will be separated from other aircraft by the existing 167 km (90 NM) standard. The FAA enhanced air traffic control automation system, Ocean21, will aid the controller in applying the applicable separation standard between aircraft authorized RNP 10 or RNP 4, and Non-RNP 10 aircraft.

93 km (50 NM) lateral separation has been applied between operators/aircraft authorized RNP 10 or RNP 4 since 1998 in Pacific oceanic areas. It is also currently applied in the European-South American Corridor; on routes between Santiago, Chile and Lima, Peru; on routes connecting Australia, Asia, the Middle East and Europe south of the Himalayas

and, it is planned for trans-Africa routes. Project planners will apply the experience gained in these operations.

f) **Secretariat comments:**

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APPENDIX D

WATRS PLUS PROJECT PROPOSAL FOR AMENDMENT OF NAT REGIONAL SUPPLEMENTARY PROCEDURES (SUPPS) (Doc 7030)

EXTRACTED FROM 13 APRIL 2007 NAT SARSIG REPORT

(Serial no.:)

a) **Proposed by: The United States of America**

b) **Proposed amendment**:

"Amend the SUPPs in the **NAT Region** as shown below:

4.0 REQUIRED NAVIGATION PERFORMANCE (RNP)

4.1 Means of Compliance
(A2 – 5.1.1; A11 – 2.7 and ATT B; A6, Part I – 7.2.2 and Chapter 3, Note 1; A6, Part II – 7.2.2 and Chapter 3, Note 1; P-ATM – 2.4)

4.1.1 In order for 93 km (50 NM) lateral separation to be applied between aircraft in the New York Oceanic FIR/CTA, the requirements listed below shall be met.

4.1.1.1 The aircraft and Operator must be authorized RNP 10 or RNP 4 by the State of the Operator or the State of Registry, as appropriate. RNP 10 is the minimum navigation specification for the application of 93 km (50 NM) lateral separation.

4.1.1.2 States shall ensure, when granting authorization for RNP 10 or RNP 4, that Operators establish programmes to mitigate the occurrence of large lateral track errors due to equipment malfunction or operational error.

Note.— The ICAO Performance Based Navigation (PBN) Manual Volume I – Concept and Implementation Guidance (Doc 9613) provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized navigation specification. Doc 9613 will be supplemented and updated as required and as new material becomes available.

4.1.1.3 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the population in relation to the lateral separation minimum. These data shall include statements of the core of the lateral navigational performance, the proportion greater than one-half the lateral separation minimum and the proportion in the vicinity of the adjacent route centreline as these measures have been shown to have a direct link to the risk of collision. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met. Data shall include operational errors due to all causes.

Note.— Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO. Detailed guidance is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (Doc 9859).

4.2 Area of Applicability

4.2.1 93 km (50 NM) lateral separation may be applied between aircraft authorized RNP 10 or
RNP 4 in all controlled airspace within the New York Oceanic FIR/CTA.

5.0 FLIGHT PLANS

5.1.5 *Approval status and aircraft registration*

5.1.5.1 All RVSM-approved aircraft intending to operate in the NAT Region shall include the letter "W" in Field 10 of the flight plan. Furthermore, all RVSM-approved aircraft intending to operate in the NAT Region shall include the aircraft registration in Item 18 of the flight plan.

5.1.5.2 All MNPS-approved aircraft intending to operate in the NAT Region shall include the letter "X" in Field 10 of the Flight Plan.

5.1.5.3 All operators authorized RNP 10 or RNP 4 shall include the letter "R" and the letter "Z" in Item 10 of the Filed Flight Plan and NAV/RNP10 or NAV/RNP4, as appropriate, in Item18.

9.0 SEPARATION OF AIRCRAFT

9.1 Lateral separation
(P-ATM, 5.4.1 and 5.11)

9.1.1 Minimum lateral separation shall be:

a) 93 km (50 NM) between aircraft authorized RNP 10 or RNP 4 operating within the New York Oceanic FIR/CTA except, minimum lateral separation between aircraft transitioning from MNPS airspace in the New York Oceanic FIR/CTA to other MNPS airspace shall be 110 km (60 NM);

b) 110 km (60 NM) between aircraft which meet the minimum navigation performance specifications (MNPS) provided that a portion of the route of the aircraft is within, above, or below MNPS airspace;

c) 167 km (90 NM) between aircraft operating outside the MNPS airspace and at least one aircraft does not meet the MNPS;

1) between the Iberian Peninsula and the Azores Islands; and

2) between Iceland and points in Scandinavia and in the United Kingdom;

d) 167 km (90 NM) between aircraft not authorized RNP 10 or RNP 4 operating outside MNPS airspace where no portion of the route of the aircraft is within, above, or below the MNPS airspace:

1) between the United States or Canada and Bermuda; and

2) West of 55°W between the United States, Canada or Bermuda and points in the CAR Region; or

e) 223 km (120 NM) between other aircraft;

except that lower minima in 5.4.1.2 of the PANS-ATM (Doc 4444) may be applied, or further reduced in accordance with 5.11, where the conditions specified in the relevant PANS-ATM provisions are met (see 9.4)."

"Re-number all subsequent paragraphs."

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APPENDIX E

JOB AID: OPERATOR APPLICATION TO CONDUCT RNP 10 OPERATIONS IN WATRS PLUS CONTROL AREAS (CTA)

Introduction. This initial version of the RNP 10 Job Aid in this format was developed by the FAA Flight Technologies & Procedures Division at FAA Hq to provide guidance to operators and inspectors on the process for operators to obtain RNP 10 or better authorization for operation on oceanic routes/airspace in WATRS Plus CTAs. RNP 10/50 NM lateral separation is planned to be introduced in WATRS Plus CTAs on 5 June 2008. (See Webpage references on page 3). The WATRS Plus CTAs are: the West Atlantic Route System (WATRS), the Atlantic portion of Miami Oceanic Airspace and the San Juan FIR. (RNP 10 is currently applied in the Pacific, the South Atlantic and other global areas). **Note: a General Aviation operator holding a current Letter of Authorization (LOA) showing RNP 10 authority does not have to re-apply for RNP 10 authority for WATRS Plus CTAs. See "Notes on Issuing LOAs and Operations Specifications (OpSpecs)" on page 4.**

Purposes of this Job Aid. The Job Aid:
1. Provides core RNP 10 reference documents for operators and inspectors.
2. Provides a series of tables that show: the content of an application, related reference paragraphs, location in operator documents/exhibits where an RNP 10 element is addressed and columns for the inspector to comment on and track the status of various RNP 10 program elements.

Job Aid Organization **Page**

Recommended Inspector and Operator Actions. The following are suggestions on how the job aid can be used:

	Lead	Action
1	Inspector	Reviews the **"Basic Events in the RNP 10 Approval Process"** on page 2 with the operator in the pre-application meeting to provide an overview of approval process events.
2	Inspector	Reviews this Job Aid with the operator to establish the form and content of the operator application for RNP 10 authority.
3	Operator	Uses the Job Aid as a guide to assemble documents/exhibits for its RNP 10 application. See suggested list in Part 3.
4	Operator	Annotates Job Aid to show location of RNP 10 program elements in the operator exhibits/documents.
5	Operator	Submits Job Aid and RNP 10 exhibits/documents to inspector.
6	Inspector	Annotates Job Aid to show task or document "complete/satisfactory" or "open/further operator action required".
7	Inspector	Informs the operator as soon as possible, when further operator action is required.
8	Operator	Provides inspector, when requested, with revised material.
9	Inspector	Issues LOA or OpSpecs, as applicable, to operator when required tasks and documents are completed.

PART 1 – GENERAL INFORMATION

Basic Events in RNP 10 or Better Authorization Process

	Operator Actions	Inspector Actions
1	Establishes need to obtain RNP 10 or better authority.	
2	Reviews Airplane Flight Manual (AFM), AFM Supplement or Type Certificate Data Sheet or other appropriate documents (e.g., Service Bulletins, Service Letters) to determine aircraft eligibility for RNP 10 or better. Operator contacts airplane or avionics manufacturer, if necessary, to confirm airplane RNP 10 or better eligibility.	
3	Contacts a Flight Standards District Office (FSDO) or Certificate Management Office (CMO), as applicable, to arrange a **pre-application meeting** to discuss requirements for operational approval.	
4		Establishes, during pre-application meeting: • Form and content of operator exhibits/documents supporting RNP 10 authorization. • Whether or not a review of operator program documents will suffice for RNP 10 authorization or if an FAA observed validation flight will also be required. **Note: an FAA observed validation flight may not be necessary. Inspectors should contact one of the navigation specialists listed in Job Aid Part 9 for guidance and recommendation.**
5	Submits exhibits/documents to FAA Flight Standards office, at least 60 days in advance of the planned start of RNP 10 operations, for operational approval.	
6		Reviews operator submissions.
7		**Only if required,** FAA observed validation flight is completed. See note above.
8		Issues operational approval in the form of OpSpecs (Parts 121, 125 or 135) or OPSS generated LOA (part 91), as appropriate, when airworthiness and operational requirements are fulfilled.

WATRS PLUS WEBPAGE: Core Documents, Contacts, etc. The FAA **"WATRS Plus Webpage"** can be accessed from the FAA Oceanic Operations Standards Homepage: **www.faa.gov/ats/ato/130.htm**

Core FAA Reference Documents	Subject or Title	WATRS Plus Webpage Location
1. FAA WATRS Plus Airspace Redesign & Separation Reduction Notice **(Version 2.0, 28 Feb 07)**	Project description, planned operational policies/procedures.	Section 2a (Project Description), **FAA Notice**
2. FAA Order 8400.12 (as amended)	RNP 10 Operational Approval	Section 2d (Operator/Aircraft RNP 10 Authorization Policy/Procedures), **FAA Order 8400.12**
3. Acceptable Navigation System Configurations For Operations In WATRS Plus Control Areas (CTAs)	Explanation of RNP 10 dual equipage and operation on VOR and RNAV routes within WATRS Plus CTAs	Section 2d, **Acceptable Navigation System Configurations for Operations in WATRS Plus Control Areas**
4. Pilot Procedures: In-flight Contingencies, Weather Deviation and SLOP (Strategic Lateral Offset Procedures)	Extract from FAA Notice posted on WATRS Plus Webpage. See Job Aid Part 7.	Section 2c (Operating Policy), **Contingency, Weather Deviation & Strategic Lateral Offset Procedures**
5. FAA Notice: WATRS Plus Control Areas (CTAs) (planned for July 2007)	Detailed RNP 10/50-lateral Operating Policies & Procedures For WATRS Plus CTAs	**Planned for July 2007 timeframe**
6. FAA Inspector Guidance: Notice 8000.340, Figure 1.5.5	Inspector guidance on RNP 10 Operational Approval	Section 2 e (FAA Flight Standards Inspector Guidance), **Operational Approval to Operators to Conduct Operations in Oceanic Airspace Where RNP 10 is Required**

Note: FAA Order 8400.33 (Procedures for Obtaining Authorization for RNP 4 Oceanic and Remote Area Operations) can also be used. At this time, however, RNP 4 is principally related to 30 NM separation in the Pacific. 30 NM oceanic separation also requires satellite datalink communications and Automatic Dependant Surveillance-Contract. 8400.33 is also posted on the WATRS Plus and Pacific CNS Webpages.

Applicable Part 91 (GA) Letters of Authorization (LOA): Operations Safety System (OPSS) Generated

1. OPSS LOA B036 (Operation in Required Navigation Performance Airspace)
2. OPSS LOA D098 (Flight in Special Areas of Operations for Short-term Operations)

Applicable Operations Specifications (OpSpecs) Paragraphs

1. B036 (Class II Navigation Using Multiple Long-Range Navigation Systems (LRNS)
2. B054 (Class II Navigation Using Single Long-Range Navigation system): currently applicable for WATRS and other specific oceanic areas. See 11/22/06 FAA Notice on WATRS Plus Webpage for policy for operation of Non-RNP 10 aircraft (including single LRNS aircraft) in WATRS Plus airspace after the June 2008 project implementation.

Notes on Issuing LOAs and OpSpecs (Reference FAA Notice 8000.340, Figure 1.5.5)

1. **Separate Part 91 (GA) LOAs are not required to be issued for individual areas of operations.** LOA B036 contains a statement of operator responsibility for policies/procedures applicable to individual areas of operation.

2. **A Part 91 (GA) operator holding a current LOA showing RNP 10 authority does not have to re-apply for RNP 10 authority in WATRS Plus Control Areas.**

3. **Inspector action for Part 91 (GA) operators is to "accept" RNP 10 related operations and airworthiness programs.** Formal "approval" is not required. (See FAA Order 8700.1, Chapter 3, paragraph 11 for discussion of these terms).

4. **An operator planning to obtain initial RNP 10 authority for WATRS Plus CTAs may apply for and be issued authority based on operational policies published and referenced in this Job Aid.** When WATRS Plus specific policy/procedures are published, inspectors and operators will be notified and this Job Aid will be modified accordingly.

5. **OpSpecs.** Part 121, 125 and 135 operators showing RNP authority in OpSpec paragraph B036 should list the authority applicable to individual areas of operations in OpSpec paragraph B050 (Authorized Areas of En Route Operations, Limitations, and Provisions).

Related ICAO Reference Documents (The FAA RNP 10 authorization process is in accordance with ICAO RNP documents. The ICAO documents shown below are for reference only).

1. ICAO Annex 2 (Rules of the Air). See paragraphs 2.3 (Responsibility for compliance with the rules of the air) and 5.1.1 (Aircraft equipment).

2. ICAO Annex 6 (Operation of Aircraft), Part 1 (International Commercial Air Transport) and Part 2 (International General Aviation). See paragraph 7.2 (Navigation Equipment).

3. ICAO Doc 9613 (Manual on Required Navigation Performance (RNP)), Appendix E. **The ICAO *Performance-Based Navigation (PBN) Manual* is planned to replace ICAO Doc 9613 in the second quarter of 2007.**

4. ICAO Doc 4444 (Procedures For Air Navigation Services – Air Traffic Management), paragraph 15.2 (Special Procedures for In-flight Contingencies in Oceanic Airspace)

PART 2: OPERATOR/AIRCRAFT IDENTIFICATION INFORMATION

OPERATOR NAME: _____

AIRCRAFT MAKE, MODEL, SERIES	# REGISTRATION NUMBER(s)	# SERIAL NUMBERS(s)	LONG-RANGE NAVIGATION SYSTEMS (LRNS): NUMBER, MANUFACTURER & MODEL	RNP TYPE REQUESTED (E.G., RNP 10, RNP 4)

#Note: may be provided separately in a form and manner acceptable to the inspector.

DATE OF PRE-APPLICATION MEETING _____

DATE APPLICATION RECEIVED: _____ DATE OPERATOR PLANS TO START RNP 10 OPERATIONS _____

NOTIFCATION TIME TO FLIGHT STANDARDS FIELD OFFICE ADEQUATE? ___YES ___NO

Note: Separate Part 91 (GA) LOAs are not required to be issued for individual areas of operations.

PART 3: OPERATOR EXHIBITS/DOCUMENTS SUBMITTED

Exhibit	Exhibit/Document Title	Operator Indication of Inclusion	INSPECTOR COMMENTS
A	(Recommended) **Operator Letter Requesting RNP 10 or better Authority**		
B	**Aircraft Eligibility Group.** Operator statement of RNP 10 Eligibility Group or Groups into which its aircraft/Long Range Navigation System (LRNS) combinations fall. See Job Aid Part 5.		
C	**Aircraft airworthiness documents…..showing RNP 10 or better eligibility**… in accordance with FAA Order 8400.12, paragraphs 11, 12, 15b: e.g., AFM, AFM Revision, AFM Supplement or Type Certificate Data Sheet (TCDS) showing that aircraft LRNS are RNP 10 eligible. (See Job Aid Parts 4 and 5).		
D	**Aircraft Modified To Meet RNP 10 Standards……documentation of aircraft inspection and/or modification. <u>If applicable,</u>** maintenance records documenting installation or modification of aircraft/LRNS (e.g., Major Repair and Alteration (FAA Form 337))		
E	**<u>For INS or IRU Only Equipped Aircraft:</u> RNP 10 Time Limit and Area of Operations.** Documentation establishing the RNP 10 time limit and area of operations or routes for which the specific aircraft/navigation system is eligible. (Not applicable to GPS equipped aircraft.)		
F	**Maintenance Program:** for aircraft with established LRNS maintenance practices, provide list of document or program references. For newly installed LRNS, provide LRNS maintenance practices for review.		
G	**Minimum Equipment List (MEL) (<u>only</u> for operators operating under an MEL):** MEL or MMEL showing provisions for LRNS		
H	**1. Part 91 (GA) Operator Method of Pilot Training/Knowledge:** operator in-house training, part 142 training center or other course of instruction. **2. Part 121, 125 or 135 Pilot &, if applicable, Dispatcher Training documents**		
I	**1. Part 91 Operator Operations Manuals <u>or</u> Documents:** Operations Manual **<u>or</u>** section of operator's application documenting RNP 10 operational policy/procedures. **2. Part 121, 125 or 135 Operations Manuals material**		

PART 3: OPERATOR EXHIBITS/DOCUMENTS SUBMITTED (cont.)

Exhibit	Exhibit/Document Title	Operator Indication of Inclusion	INSPECTOR COMMENTS
J	**Operating History.** (If any, past problems, incidents, track keeping errors, corrective actions.)		
K	**Removal of RNP 10 Operating Authority.** Awareness of necessity for timely, effective follow-up to navigation errors and potential for removal of RNP 10 authority.		
L	**Only if required, plan for FAA Observed Validation Flight.** See Job Aid Part 4, item 11.		

***SUBMISSION INCLUDES: ____ AIRCRAFT/LRNS COMPLIANCE DOCUMENTION**
____ OPERATIONAL POLICY/PROCEDURES
____ MAINTENANCE MANUAL SECTIONS RELATED TO LRNS (if not previously reviewed)

Note: Exhibits/documents may be included in a binder or submitted as a stand-alone document(s).

PART 4: CONTENT OF OPERATOR APPLICATION FOR RNP 10 OR BETTER

#	CONTENT OF OPERATOR APPLICATION FOR RNP 10 REFERENCE 8400.12, PARAGRAPH 9	**8400.12 and Other** **Reference Paragraphs:**	**Where Found in Operator Exhibits/Documents** **Note:** operator should update this column to reflect the content of its application.	**FAA Inspector Recommendation and/or Comments**	**Inspector Tracking: Item Status and Date**
1.	**Operator Request Letter:** statement of intent to obtain RNP 10 or better authority. (Recommended)		Exhibit A		
2.	**Aircraft/Navigation System RNP 10 Eligibility Group.** Airworthiness documents that establish the proposed aircraft/navigation system group, its RNP 10 approval status and, in a form acceptable to the inspector, a list of airframes in that group.	Paragraphs 11 and 12 See Job Aid, Part 5.	Exhibit B, C, D, as applicable		
2a.	**Dual Equipage Requirement:** at least two Long Range Navigation Systems (LRNS) with adequate display and functionality for oceanic operations	15b See Job Aid Part 5	Exhibit B, C, D, as applicable		
3.	**Time Limit For INS or IRU Only Equipped Aircraft.** Approved or requested RNP 10 time limit for aircraft for which Inertial Navigation Systems (INS) or Inertial Reference Units (IRU) are the only source of Long Range Navigation (LRN). (Not applicable to GPS equipped aircraft)	Paragraphs 12b(2), (3); 12d;	Exhibit E		
4.	**RNP 10 Area of Operations For INS or IRU Only Equipped Aircraft.** Documentation establishing the RNP 10 area of operations or routes for which the specific aircraft/navigation system is eligible. (Not applicable to GPS equipped aircraft)	12e; position updating (12f and 12g, as applicable); 15e	Exhibit E		
5.	**a. Part 91 (General Aviation) Pilot Training or Knowledge.** (e.g., operator in-house training, part 142 training center or other course of instruction). **b. Part 121, 125 or 135 Pilot and, if applicable, Dispatcher Training documents.**	Paragraphs 9a(4); position updating (12f and 12g, as applicable); paragraph 15; Appendix 4; Appendix 7 (if applicable); Contingency, Weather, Offset Procedures (See Job Aid Parts 6 & 7).	Exhibit H		

#	CONTENT OF OPERATOR APPLICATION FOR RNP 10 REFERENCE 8400.12, PARAGRAPH 9	**8400.12 and Other** **Reference Paragraphs:**	**Where Found in Operator Exhibits/Documents** **Note:** operator should update this column to reflect the content of its application.	**FAA Inspector Recommendations and/or Comments**	**Inspector Tracking: Item Status and Date**
6.	**a. Part 91 (GA) Operations Manuals or Documents.** Operations Manual or section of operator's application documenting RNP 10 operational policies and procedures. **b. Part 121, 125 or 135 Operations Manuals and Checklists.**	Paragraphs 9a(5), 12f and 12g (as applicable), paragraph 15; Appendix 4; Appendix 7 (if applicable); Contingency, Weather, Offset Procedures (See Job Aid Parts 6 & 7).	Exhibit I		
7.	**Maintenance Practices.** For aircraft with established LRNS maintenance practices, provide document references. For newly installed LRNS, provide maintenance practices for review.	Paragraph 14	Exhibit F		
8.	**Minimum Equipment List (MEL) updates, if applicable.** (Only applicable if operator conducts operations under an MEL).	Paragraph 13	Exhibit G		
9.	**Operating History.** Operating history that identifies past problems, incidents, track keeping errors, if any, and actions taken to correct the situation.	Paragraph 9a(6)	Exhibit J		
10.	**Removal of RNP 10 Operating Authority.** Awareness of the necessity to follow up action after navigation error reports, and the potential for removal of RNP 10 operating authority.	Paragraph 9b(3)	Exhibit K		
11.	**Only if required, plan for FAA Observed Validation Flight.** An FAA observed validation flight may not be necessary. Inspectors should contact one of the navigation specialists listed in Job Aid Part 9 for guidance and recommendation.	FAA Inspector Guidance Notice 8000.340, Fig 1.5.5 paragraph 3K	Exhibit L		

PART 5 GUIDE FOR DETERMINING AIRCRAFT ELIGIBILITY

#	Subject	8400.12 & Other Reference Paragraphs:	Location in Operator Exhibits	FAA Recommendations/Comments	Inspector Tracking Item Status & Date
1	**Defining Group Aircraft**	11a	B, C, as applicable		
2	**Eligibility Group 1 – Aircraft Eligibility Through RNP Certification** (RNP compliance documented in Airplane Flight Manual (AFM)	12a	B, C, as applicable		
3	**Eligibility Group 2 – Aircraft Eligibility Through Prior Navigation System Certification**	12b 12b(1) - no longer applicable.	B, C, D, as applicable		
	INSs or IRUs Approved In Accordance With 14 CFR Part 121, Appendix G (Time limit 6.2 hours)	12b(2)	B, C, D, as applicable		
	INSs or IRUs Approved For North Atlantic MNPS or Australian RNAV Operations (Time limit 6.2 hours)	12b(3)	B, C, D, as applicable		
	Obtaining Approval For Extended INS or IRU Time Limit	12d Appendix 2	B, C, D, as applicable		
	GPS Approved to Primary Means of Navigation Standards (reference AC 20-138, as amended)	12b(4)	B, C, D, as applicable		
	Multisensor Systems Integrating GPS (reference AC 20-130, as amended)	12b(5)	B, C, D, as applicable		
	Equipage With One GPS and One Other Approved LRNS (e.g., INS or IRU). Note: this category is being added to 8400.12 to harmonize with ICAO guidance.	Ref. Inspector Guidance: Notice 8000.340, Figure 1.5.5, paragraph 3C(5).	B, C, D, as applicable		
4	**Eligibility Group 3 – Eligibility Through Data Collection**	12c	B, C, as applicable		
	Sequential Method	12c(1), Appendix 1	B, C, as applicable		
	Periodic Method	12c(2), Appendix 6	B, C, as applicable		

PART 6: BASIC PILOT PROCEDURES FOR RNP 10 OPERATIONS

#	Subject	Reference Paragraphs 8400.12, Appendix 4 & Others	Location In Operator Exhibits	FAA Recommendations/Comments	Inspector Tracking Item Status & Date
1	**Flight Planning.**	Paragraph 2	Exhibits H and I		
	Verify aircraft authorized RNP 10 and two long-range navigation systems (LRNS) operational.	2a	Exhibits H and I		
	When equipped with INS or IRU only, verify that RNP 10 time limit (area of operations) is accounted for.	2b	Exhibits H and I		
	Verify letter "R" annotated in block 10 (Equipment) of ICAO Flight Plan. -If two approved LRNS not operational, delete "R" annotation and operate in accordance with policy applicable to the airspace.	2c	Exhibits H and I		
	As applicable, verify that GPS requirements such as Fault Detection & Exclusion (FDE) are accounted for.	2d	Exhibits H and I		
	Account for navigation system operating restriction, if any.	2e	Exhibits H and I		
2	**Pre-flight Procedures at the Aircraft.**	3	Exhibits H and I		
	Review maintenance logs and forms for LRNS status; confirm navigation database current.	3a	Exhibits H and I		
	During external inspection of aircraft, check condition of navigation-related items such as navigation antennas.	3b	Exhibits H and I		

#	Subject	**Reference Paragraphs** **8400.12, Appendix 4**	Location In Operator Exhibits	FAA Recommendations/Comments	Inspector **Tracking** Item Status & Date
3	**En route Procedures**	4	Exhibits H and I		
	Before oceanic entry point, verify two LRNS operating. If not, notify ATC and operate in accordance with policy applicable to the airspace.	4a	Exhibits H and I		
	Before entering oceanic airspace, perform navigation accuracy check and position update (if necessary) using accepted method. See item 4 below.	4b	Exhibits H and I		
	Follow in-flight operating drills to to prevent inadvertent deviation from cleared routes.	4c	Exhibits H and I		
	Advise ATC of loss of long-range navigation capability and operate in accordance with policy applicable to the airspace.	4d	Exhibits H and I		
4	**LRNS Position Updating**		Exhibits H and I		
	Automatic Position Updating (as applicable)	12f	Exhibits H and I		
	Manual Position Updating (as applicable)	12g, Appendix 7	Exhibits H and I		

PART 7: IN-FLIGHT CONTINGENCY, WEATHER DEVIATION & SLOP (STRATEGIC LATERAL OFFSET PROCEDURES)

NOTE: The guidance cited below is not applicable to a specific lateral separation standard (i.e, it is not specific to RNP 10/50 NM lateral). It is applicable to general oceanic operations above, below and within RVSM airspace. An operator may have previously adopted the guidance for oceanic operations. If so, the operator only needs to confirm that that is the case.

WEBPAGE REFERENCE DOCUMENT: see WATRS Plus Webpage, Section 2, paragraph c (Operating Policy): "Contingency, Weather Deviation and Strategic Lateral Offset Procedures".

Note: FAA guidance reflects ICAO Document 4444, section 15.2 (*Special Procedures for In-flight Contingencies in Oceanic Airspace).*

#	Subject	# Webpage Reference Document Paragraphs	Location In Operator Exhibits	FAA Recommendations/Comments	Inspector Tracking Item Status & Date
1	**Procedures for In-flight Contingencies in Oceanic Airspace**		Exhibits H and I		
	Introduction (purpose of in-flight contingency procedures)	Introduction: paragraphs 1, 2	Exhibits H and I		
	General Procedures	General Procedures: Paragraphs 1-4	Exhibits H and I		
	Special Procedures For ETOPS Aircraft	ETOPS paragraph	Exhibits H and I		
2	**Weather Deviation Procedures For Oceanic Operations**		Exhibits H and I		
	General Procedures	Paragraphs 1-3	Exhibits H and I		
	Obtaining Priority From ATC When Weather Deviation Required	Paragraph 4	Exhibits H and I		
	Actions To Be Taken When Controller-Pilot Communications Are Established	Paragraph 5	Exhibits H and I		
	Actions To Be Taken If A Revised ATC Clearance Cannot Be Obtained	Paragraph 6	Exhibits H and I		

#	Subject	# Webpage Reference Document Paragraphs	Location In Operator Exhibits	FAA Recommendations/Comments	Inspector Tracking Item Status & Date
3	**Strategic Lateral Offsets Procedures (SLOP) In Oceanic Airspace**				
	Introduction (objective of SLOP)	Paragraph 1	Exhibits H and I		
	Guidelines For Offset Positions	Paragraph 2	Exhibits H and I		
	Guidance For Using SLOP	Paragraph 3	Exhibits H and I		
	SLOP Application In The San Juan FIR And Bermuda Airspace	Paragraphs 3(f) and 3(g)	Exhibits H and I		

PART 8 – OPERATING POLICY/PROCEDURES: WATRS PLUS (to be posted in July 2007 timeframe)

PART 9 – CONTACTS

Name	Position/Organization	Phone/FAX	Email
David Maloy	Navigation Specialist, Flight Technologies & Procedures Division (AFS-400). Office in Windsor Locks, Conn.	Ph. 860-654-1006; Fax 860-654-1009	David.Maloy@faa.gov
Anderson Davie	Navigation Specialist, San Francisco Intl. Field Office (IFO)	Ph. 650-876-2771; Fax 650-697-7231	Anderson.Davie@faa.gov
James D. Brown	Navigation Specialist, San Francisco IFO	Ph. 650-876-2771; Fax 650-697-7231	James.D.Brown@faa.gov
Madison Walton	Flight Standards Lead for WATRS Plus Initiative; AFS-400, Washington, D.C.	Ph. 202-385-4596; Fax 202-385-4653	Madison.Walton@faa.gov
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Agenda Item 2 – WATRS Plus Airspace Redesign Issues

Cross-border Issues

2.1 The Meeting noted that with any airspace redesign or change of procedures, issues can develop with adjacent facilities. In order to identify such potential issues and mitigate them the Meeting agreed to create ad hoc groups to focus on this subject.

Review issues and recommendations identified in ad hoc groups

2.2 Moderators from the ad hoc groups presented the issues and recommendations identified to the plenary, including the request that all route intersections be named. The complete report of the ad hoc groups is contained in **Appendix A** to this part of the Report. The suggested modifications to the proposed route/fix structure were:

- M201 to terminate at a point just north of CARAC (yet to be determined) with the establishment of a new fix along the Moncton/New York Oceanic FIR boundary;
- M202 to transition through JEBBY and terminate at LOMPI;
- M203 to terminate at BOBTU;
- The current fix structure along A761 to remain the same along M201;
- M596 to be extended from POKEG to the OBN VOR. M596 will join a route currently under development that will proceed from OBN VOR direct to TBG VOR (Panama);
- M597 to extend from BETIR southwest to PALAS to join UA319;
- L453 to be extended from ASIVO to TEKOL utilizing the existing UL793 route (currently terminated at ASIVO);
- L455 between SCAPA and KABON within the Curacao airspace has been deleted; and
- M598 commencing at ANTEX to be modified to commence at MELLA to join the existing UM525 route to TBG VOR. The M598 route designator will be changed to M525. This will be a high and low altitude route.

2.3 The revised draft WATRS Plus chart is contained in **Appendix B** to this part of the Report.

2.3 IFALPA raised the issue of FMS database capacity with regards to the approximately 150 additional fix names which will be created. It was agreed that this may be a concern for some operators and should be evaluated by airspace users. The Group will track this issue.

2.4 A request was made that the Group ensure new waypoint names will not result in similar sounding name conflicts with existing or other new 5 letter name codes (5LNCs). The FAA agreed to circulate all proposed 5LNCs to the Group for their review before submitting them for publication.

2.5 IATA requested that a complete review be made to ensure routings (e.g. SIDs and STARs) are available to connect airports to the new routes for flight planning purposes. The Meeting noted this request.

2.6 Miami Center advised that they will require the use of Georgetown radar to support implementation of the WATRS Plus airspace redesign. The radar is scheduled to be operational in December 2007. The FAA will track its progress.

APPENDIX A

EAST-WEST AD-HOC GROUPS

West

NAV CANADA provided a tie-in Proposal, outlining the tie-in structure to routes M201, M202 and M203:

- M201 to terminate at a point just North of CARAC (yet to be determined) with the establishment of a new fix along the Moncton / New York Oceanic FIR boundary. The classification of the fix, compulsory or non-compulsory, is yet to be determined.
- M202, would transition through JEBBY and terminate at LOMPI; and
- M203 would terminate at BOBTU

NAV CANADA is requesting that the ENGLE and FOCUS waypoints be deleted. Additionally, the creation of a new waypoint be established along the common boundary formed by a line from KEVLU to a point yet to be determined along M201 to accommodate Halifax departures. The creation of another waypoint from KEVLU to M202 would also be required. NAV CANADA is requesting that air traffic coordination for M201 and M202 be accomplished not at the common boundary but at the new respective termination points; this would allow for Moncton to utilize a reduced separation standard. New York Center will evaluate the request. Westbound coordination on M201 and M202 would still be accomplished at the common New York Oceanic / Moncton FIR boundary.

Jacksonville

Jacksonville Center is requesting:

- the current fix structure along A761 remain the same along M201.
- all airway intersections be named.
- a review of all of the fix names associated with this project to avoid problems created by similar sounding names.

New York Center will select ICAO compliant five-letter name codes and provide them to all affected service providers and IATA for their comments.

Jacksonville requested no additional route modifications and expects no sector changes as a result of this project.

Miami

Miami Center is requesting:

- all intersections be named
- no sector changes as a result of this project
- a formal status update of the Georgetown radar installation.

Miami Center requires the operational use of Georgetown radar to support this project. The current status as described by Miami is that the radar site is currently under

construction and is expected to be turning by August 2007 and operational by December 2007.

The proposed boundary change between Miami and San Juan was reviewed with no additional changes requested.

New York Center will review the possible adjustment of L453 between M325 and M326 to join multiple crossing points at a single point and will update the WATRS Plus structure to show a segment of M594 from Grand Turk (GTK) to CERDA that was previously omitted.

Delta

Bill Manion expressed some concern regarding their Atlanta to Dakar, Africa flights being routed from OLDEY to JAINS M326. New York Center committed to Delta that routing via OTTNG and EMQUE to the intersection of L452 and M326 then on course would be approved.

Caribbean

M596 will be extended to the OBN VOR where it will join a route currently under development that will proceed direct to TBG VOR (Panama); the publication of the OBN to TBG route will be accomplished prior to the implementation of WATRS Plus.

M597 will extend from BETIR to PALAS to join UA319.

Santo Domingo would like to join L453 from ASIVO to TEKOL utilizing the existing UL793 route (currently terminated at ASIVO).

IATA is requesting that a review of the SIDS and STARS to ensure tie-ins to the new route structure be added to the task list.

East

The route segment of L455 between SCAPA and GABON within the Curacao airspace has been deleted from the project.

M598 commencing at ANTEX will be modified to commence at the MELLA fix, the purpose of which is to join the current UM525 route to TBG VOR. The M598 route designator will be changed to M525 to retain consistency with the entire route.

The legal description of M598 (M525 within San Juan airspace), and M597 will be documented as being available for both low and high altitude usage.

Navy

The FAA will petition the Department of the Navy for the dis-establishment of the Puerto Rico Operating Areas; it is expected that the Department of the Navy will likely provide a favorable response, with the exception of those areas that the Puerto Rico Air National Guard identifies as mission critical.


WATRS PLUS
May 15, 2007

Agenda Item 3 – Task List and Future Activities

WATRS Plus Implementation Task List and timelines

3.1 The Meeting reviewed the complete WATRS Plus Task List and updated it as necessary. It was noted that the FAA will continue to post the tasks and actions with their current status on the FAA website. This will permit all interested parties to view the progress of the WATRS Plus Project. The WATRS Plus Webpage can be accessed through the Oceanic Operations Standards Homepage: http://www.faa.gov/ats/ato/130.htm The current list of identified Tasks and Actions is contained in **Appendix A** to this Report. To this end the meeting agreed on the following:

Recommendation 2/3 Action Plan for the WATRS Plus Project

That States, Territories and International Organizations of the NAT and CAR Regions review the Action Plan and progress work on their applicable tasks.

Review key agreements, conclusions and follow-up actions

3.2 A review of the key agreements and conclusions was made by the Meeting. They are as follows:

1. Re WP/02 (WATRS Plus Plans and Policies):

   Endorsed project plans, dates and objectives
   Endorsed Concept of Operations

2. Re WP/03 (Route Structure Redesign)

   Agreed to certain route changes as discussed in the ad hoc groups
   Determination to be made on whether routes are high and low
   U.S. FAA to develop request package on San Juan SUAs to submit to the U.S Department of Defense;

   Include pro and con discussion of options for charting
   Include request to decommission SUAs in San Juan FIR except those used by Puerto Rico Air National Guard

3. Re WP/04 (WATRS Plus Implementation Task List)

   Endorsed WATRS Plus Implementation Task List as a tool for continued planning and coordination

4. Re WP/05 (Safety Assessment and Oversight)

   Endorsed plans for pre- and post implementation safety assessment and oversight

5. Re WP/06 (Proposed amendment of CAR and NAT 7030)

Endorsed draft CAR amendment with minor change
Endorsed plan to progress NAT and CAR amendments to publication

3.3 The Third Meeting of the North Atlantic Caribbean ATS Routes Working Group is scheduled for 13-15 November, 2007. The meeting location is to be determined.

ID	DESCRIPTION (9 May, 2007)	COMPLETE BY	STATUS	LEAD; COORDINATING ORG.
	I. GENERAL PROJECT DEVELOPMENT & MANAGEMENT			
1	Conduct analysis of traffic flows, flight level utilization, city pairs, operator and aircraft type populations	30-Abr-06	Complete	US WATRS Plus Task Force (WPTF)
2	Identify Target Airspace	30-Jun-06	Complete	US WPTF
3	Identify target Control Areas (CTA) and incorporate into doc revisions	30-Jun-06	Complete	US WPTF
4	Identify transition airspace and incorporate into doc revisions	31-May-07	Complete	US WPTF; NAT WG, CAR WG
5	Identify issues for adjoining airspace (e.g., route extension into airspace of adjoining ATS providers)	31-May-07		US WPTF; NAT WG, CAR WG
6	Identify Project Goals	30-Jun-06	Complete	FAA; NAT WG, CAR WG
7	Have significant percentage of operators obtain RNP 10 or RNP 4 authority from appropriate State authority	05-Jun-08		States; Operators, US WPTF
8	Accommodate operation of approx. 15% of flights conducted by Non-RNP 10 aircraft	05-Jun-08		US WPTF
10	Implement airspace route structure redesign to increase the number of routes and associated altitudes	05-Jun-08		US WPTF; ATS Providers
11	Reduce lateral separation between aircraft authorized RNP 10, RNP 4 or equivalent	05-Jun-08		US WPTF; NAT & CAR WG
12	Develop Concept of Operations Document	31-May-07	In progress	US WPTF; NAT & CAR WG
13	Assess Costs and Benefits	31-Ago-07		US WPTF
14	Complete initial assessment	30-Jun-06	Complete	US WPTF
15	Complete Cost/Benefit Analysis	31-Ago-07		US WPTF; NAT & CAR WG
16	Assess Feasibility	30-Sep-06		USWPTF; NAT& CAR WG
17	Confirm that 85% of flights are conducted by aircraft types capable of meeting RNP 10 standards without major modification	31-Ene-07	Complete	US WPTF
18	Develop schedule for Route Structure redesign and publication	30-Sep-06	Complete	US WPTF; NAT/CAR ATS Rts WG
19	Develop schedule for ATC automation system update or modification	30-Sep-06	Complete	US WPTF
20	Identifiy Key Target Dates	30-Sep-06	Complete	US WPTF; NAT/CAR WG
21	Establish Information Dissemination Program	05-Jun-07		US WPTF
22	Establish WATRS+ Webpage	31-Dic-06	Complete	US WPTF
23	Schedule WATRS+ seminars, if necessary	30-Jun-06		US WPTF; NAT/CAR WG, ICAO Offices
24	Establish distribution lists for State regulators and Industry organizations	30-Sep-06	Complete	US WPTF
25	Publish State letters through ICAO NACC and EUR/NAT Offices, as necessary	05-Mar-08		US WPTF; NAT/CAR WG, ICAO offices
26	Notify States and Operators of key implementation dates and requirements	05-Jun-07		US WPTF; NAT/CAR WG
27	Publish 18-month Advance Notice	30-Nov-06	Complete	US WPTF
28	Publish Notice containing WATRS Plus specific operational policy/procedures	15-Jul-07		US WPTF; NAT/CAR WG, ICAO Offices
29	Publish 3-month Notice confirming implementation date	10-Mar-08		US WPTF; NAT/CAR WG
30	Confirm ATS providers ready for implementation	05-Mar-08		US WPTF, State ATS Providers
31	Confirm Operators ready for implementation	05-Mar-08		US WPTF; State regulators; Operators
32	***II. INTERNATIONAL COORDINATION: ICAO GROUPS & DOCUMENTS***			
33	Schedule NAT/CAR ATS Routes WG (see section III)	10-May-07		US WPTF; ICAO Offices
34	Provide input into appropriate CAR/SAM and NATSPG WGs	On-going		US WPTF; NAT/CAR WG, ICAO Offices
35	CAR/SAM meetings (to be updated as meetings scheduled)			US WPTF, NACC Office
36	*GREPECAS/14 (15-20 April 07, Costa Rica)*	20-Abr-07	Complete	US WPTF, NACC Office
37	*NAT/CAR ATS Routes WG/2 (8-10 May 07, Miami, Fla.)*	10-May-07		US WPTF, NACC Office
38	*Air Traffic Flow Mgt. Task Force/3 (ATFM/3) (18-22 June 07, Colombia)*	15-Jun-07		US WPTF, NACC Office
39	*CAR WG/1 (21-23 Jun 07, Trinidad/Tobago)*	30-Jun-07		US WPTF, NACC Office
40	*AP/ATM/13 (9-13 July 07, Lima)*	13-Jul-07		US WPTF, NACC Office
41	*C/CAR DCA/9 (9-13 July 07, Aruba)*	13-Jul-07		US WPTF, NACC Office
42	*GREPECAS ATM Committee/6 (15-19 Oct 07, Dominican Republic)*	19-Oct-07		US WPTF, NACC Office
43	*E/CAR DCA/21 (3-7 Nov 07, British Virgin Islands)*	07-Nov-07		US WPTF, NACC Office
44	*NAT/CAR ATS Routes WG/3 (13-15 Nov 07, tbd)*	15-Nov-07		US WPTF, NACC Office
45	NATSPG meetings (to be updated as meetings scheduled)			US WPTF, EUR/NAT Office

ID	DESCRIPTION (9 May, 2007)	COMPLETE BY	STATUS	LEAD; COORDINATING ORG.
46	NAT ATMG/29 (19-23 Mar 07, FAA ATCSCC)	23-Mar-07	Complete	US WPTF, EUR/NAT Office
47	NAT SARSIG/5 (11-13 April 07, Paris)	13-Abr-07	Complete	US WPTF, EUR/NAT Office
48	NAT Safety Management Coordination Group (16-20 April, Paris)	20-Abr-07	Complete	US WPTF, EUR/NAT Office
49	NAT IMG/30 (24-27 Apr 07, Reykavik, Iceland)	27-Abr-07		US WPTF, EUR/NAT Office
50	NAT/CAR ATS Routes WG/2 (8-10 May 07, Miami, Fla.)	10-May-07		US WPTF, EUR/NAT Office
51	NAT Ops/Air WG (coordinate via email, etc.)	31-Mar-07	Complete	US WPTF, EUR/NAT Office
52	NATSPG/43 (12-15 June 06, Paris)	15-Jun-07		US WPTF, EUR/NAT Office
53	NAT/CAR ATS Routes WG/3 (13-15 Nov 07)	15-Nov-07		US WPTF, EUR/NAT Office
54	Revise ICAO CAR and NAT Regional Supplementary Procedures	01-Abr-08		US WPTF, NAT/CAR WG, ICAO Offices
55	Develop initial draft Doc 7030	15-Feb-07	Complete	US WPTF
56	Have CAR and NAT working groups review draft	15-Abr-07		US WPTF; NAT/CAR WG, ICAO Offices
57	Incorporate safety analysis document into Doc 7030 revision package	15-Jun-07		US WPTF; ICAO Offices
58	Forward draft to ICAO NACC (Mexico City Office)	18-Jun-07		US WPTF
59	ICAO NACC distribute Doc 7030 revisions for State and International organization comment	15-Sep-07		ICAO NACC Office; EUR/NAT Office
60	ICAO approve and publish CAR and NAT 7030 revisions	01-Abr-08		ICAO Hq; NACC Office; EUR/NAT Office
61	Revise CAR/SAM Air Navigation Plan (ANP)	01-Abr-08		US WPTF, NACC Office; CAR WG
62	Finalize route structure redesign chart	01-Ago-07		US WPTF; NAT/CAR ATS Rts WG
63	Develop draft CAR/SAM ANP revision	01-Ago-07		US WPTF; NACC Office
64	Forward ANP draft to NACC Office	31-Ago-07		US WPTF
65	Coordinate ANP draft at Oct GREPECAS meeting	19-Oct-07		US WPTF; NACC Office
66	***III. ROUTE STRUCTURE REDESIGN & PUBLICATION***			
67	Convene NAT/CAR ATS Routes WG, as necessary to coordinate project with ATS providers adjoining airspace			US WPTF; EUR/NAT & NACC Offices
68	NAT/CAR ATS Routes WG/1 (Sept 2006)	19-Sep-06	Complete	US WPTF; NACC Office
69	NAT/CAR ATS Routes WG/2 (8-10 May 2007)	10-May-07		US WPTF; NAT/CAR WG; ICAO Offices
70	NAT/CAR ATS Routes WG/3 (13-15 Nov 07)	13-Nov-07		US WPTF; NAT/CAR WG, ICAO Offices
71	Confirm lateral separation standard to be applied	21-Sep-06	Complete	US WPTF; NAT/CAR WG
72	Develop and distribute initial route structrue redesign chart	19-Sep-06	Complete	US WPTF
73	Validate route & fix coordinates w/ U.S. National Aeronautical Charting Organization and National Data Flight Center	01-Jun-07		US WPTF
74	Name fixes and routes in accordance w/ ICAO policy	01-Jun-07		US WPTF
75	Develop new SIDs and STARs, as necessary	01-Jun-07		US WPTF; States, Industry
76	Complete ATC simulations, as necessary	3/Q 07		US WPTF
77	Submit draft CAR/SAM ANP revision to ICAO NACC	31-Ago-07		US WPTF; NAT/CAR ATS Rts WG
78	Publish and distribute final route redesign charts and nav database information	10-Abr-08		US WPTF; NAT/CAR ATS Rts WG
79	Finalize State government charts and nav database information	10-Abr-08		US WPTF; States, Industry
80	Distribute to industry aeronautical chart and nav database providers	10-Abr-08		US WPTF; NAT/CAR WG
81	ATS providers with adjoining airspace coordinate Letter of Agreement, as necessary	10-Abr-08		US WPTF; ATS providers
82	Implement redesigned WATRS Plus route structure	05-Jun-08		US WPTF; ATS providers
83	***IV. SAFETY ANALYSIS & MONITORING***			
84	Conduct studies to assess traffic flows and operator and aircraft operations in WATRS Plus CTAs	31-May-06	Complete	US WPTF; NAT/CAR ATS WG
85	Confirm acceptability of RNP 10 navigation standard with ICAO Separation and Airspace Safety Panel (SASP)	31-May-06	Complete	US WPTF; ICAO SASP
86	Establish WATRS Plus Scrutiny Group and convene, as necessary	01-Jun-07		US WPTF; NAT/CAR WG
87	Develop Safety Analysis document to attach to Doc 7030 submission	15-Jun-07		US WPTF
88	Develop plan for post-implementation monitoring	30-Sep-07		US WPTF; NAT/CAR WG
88	Conduct pre-implementation safety assessment	05-Mar-08		US WPTF; NAT/CAR WG
90	Start post-implementation monitoring	05-Jun-08		US WPTF; NAT/CAR WG
91	***V. AIR TRAFFIC CONTROL TASKS - GENERAL***			

ID	DESCRIPTION (9 May, 2007)	COMPLETE BY	STATUS	LEAD; COORDINATING ORG.
92	Modify ATC automation systems, as necessary	05-Mar-08		US WPTF; ATS providers
93	Confirm ICAO Flight Plan Equipment Suffix provisions are adequate	15-Jun-07		US WPTF; NAT/CAR WG, Operators
93a	Conduct Fast-time simulations to assess effect of added routes and associated flight levels and effect of Non-RNP 10 aircraft	31-Mar-07		US WPTF; NAT/CAR ATS Rts WG
94	Coordinate with Flight Service Stations and other appropriate ATS organizations	30-Jun-07		US WPTF; ATS providers
96	Conduct ATC automation system simulations (e.g., Ocean 21)	3 Q 07		US WPTF; New York Center
97	Revise Air Traffic policy orders, manuals, etc.	05-Mar-08		US WPTF; ATS providers
98	Establish plan for controller training to be conducted between 1 Apr - 1 Jun 08	15-Sep-07		US WPTF, ATS providers
99	***VI. OPERATIONS, AIRWORTHINESS & RNP 10 (MINIMUM PERFORMANCE) AUTHORIZATION***			
100	Provide WPs & IP's to appropriate CAR and NAT WG containing Ops/Air requirements	**On-going**		US WPTF
101	Establish WATRS Plus Webpage where current Operations and Airworthiness (Ops/Air) guidance can be posted	31-Dic-06	Complete	US WPTF; NAT/CAR WG
102	Review ICAO RNP Manual (Doc 9613), Appendix E (RNP 10 Operational Approval Process) to identify Ops/Air criteria for RNP 10 authorization	30-Abr-06	Complete	US WPTF; State regulators
103	Incorporate ICAO Performance Based Navigation (PBN) Manual references into documents and presentations	01-Jun-07		US WPTF, NAT/CAR WG, ICAO Offices
104	Publish and distribute Advance Notice containing basic Ops/Air requirements	22-Nov	Complete	US WPTF
105	Develop US version of RNP 10 Authorization Job Aid and post on WATRS Plus Webpage for State consideration	05-Mar	Complete	US WPTF; ICAO Offices
106	Develop ICAO State letter for RNP 10 Authorization Job Aid	30-May-07		US WPTF; ICAO Offices
107	Update and re-distribute RNP 10 Job Aid/Checklist after publication of ICAO PBN Manual, if necessary	01-Jul-07		US WPTF; ICAO Offices
108	Provide general support to regulatory authorities in preparing inspectors for RNP 10 authorization tasks	15-Sep-07		US WPTF; State regulators
109	Coordinate w/ NATSPG Ops/Air Group and key CAR/SAM Ops/Air contacts	01-Abr-07		US WPTF; NAT/CAR WG
110	Track timely publication and distribution of aeronautical charts and nav database information	10-Abr-08		US WPTF
111	Track operator/aircraft fleet RNP 10 readiness	05-Mar-08		US WPTF; State regulators
112	***VII. STATE RESPONSIBILITIES FOR RNP 10 (MINIMUM PERFORMANCE) AUTHORIZATION***			
113	Review ICAO docs and/or State documents recommended by ICAO related to RNP 10 authorization	01-Jun-07		States
114	Consider using FAA Order 8400.12A (RNP 10 Operational Approval)	01-Jun-07		State regulators
115	Develop or revise State guidance and/or regulations, as necessary, for RNP 10 or RNP 4 authorization	01-Jun-07		State regulators
116	Establish State RNP 10 airworthiness requirements	01-Jun-07		State regulators
117	Establish operational policy/procedures requirements for RNP 10 authorization	01-Jun-07		State regulators; US WPTF
118	Prepare State inspectors to perform RNP 10 authorization tasks	01-Jun-07		State regulators
119	Review WATRS Plus Webpage periodically to remain current on WATRS Plus information	On-going		State regulators
120	Plan to authorize national operators for RNP 10 or better by 5 May 08, to extent possible	01-Jun-07		State regulators
121	***VIII. OPERATOR RESPONSIBILITIES & TASKS***			
122	Plan to obtain RNP 10 (minimum) or RNP 4 authorization by 5 May 08, to maximum extent possible	01-Jun-07		Operators
123	Coordinate w/ State regulatory authorities to determine requirements for RNP 10 (minimum) or RNP 4 authorization	01-Sep-07		Operators
124	Determine aircraft/Long Range Navigation System (LRNS) eligibility for RNP 10 (minimum) or RNP 4	01-Jun-07		Operators
125	Review WATRS Plus Webpage periodically to remain current on WATRS Plus plans and schedules and Ops/Air requirements	On-going		Operators
126	In accordance w/ regulatory authority guidance, submit docs supporting State authorization for RNP 10 or RNP 4	As required		Operators
127	Train pilots and, if applicable, dispatchers on WATRS Plus RNP 10/50 NM lateral separation policy/procedures	05-May-08		Operators
128	Develop and distribute operations manuals, pilot bulletins or other appropriate docs containing WATRS Plus policy/procedures	05-May-08		Operators
129	Maintain LRNS in accordance accepted maintenance practices	On-going		Operators
130	Take timely action w/ State authorities to address any track keeping errors or other events that could affect operational safety	On-going		Operators
131	***IX. FINAL IMPLEMENTATION DECISION & NOTIFICATION***			
132	Target date for readiness review and decision to implement	05-Mar-08		US WPTF

ID	DESCRIPTION (9 May, 2007)	COMPLETE BY	STATUS	LEAD; COORDINATING ORG.
133	Target date for publication of notice of implementation decision	10-Mar-08		US WPTF; NAT/CAR WG
134	Target date for operators to obtain RNP 10 (minimum) or RNP 4 authorization	05-May-08		Operators, State regulators
135	Target for implementaion of redesigned route structure and 50 NM lateral separation	05-Jun-08		US WPTF; NAT/CAR WG
136	***X. POST IMPLEMENTATION TASKS***			
137	Air Traffic, Flight Standards, and Safety Analysis organizations identify and rectify problems and inform WATRS Plus Task Force leads and appropriate organizations	On-going		US WPTF
138	Convene WATRS Plus Scrutiny Group to identify and rectify air traffic, operations or airworthiness problems	05-Jul-08		US WPTF; NAT/CAR WG
139	One-month post-implementation review	10-Jul-08		US WPTF; NAT/CAR WG
140	6-month review	05-Dic-08		US WPTF; NAT/CAR WG
140	12-month review and Safety Assesment	30-Jun-09		US WPTF; NAT/CAR WG
141	Periodic review and safety assessment	On-going		US WPTF; NAT/CAR WG

Agenda Item 4 – Other Business

4.1 No other business was raised.

Closing Remarks

4.2 The United States and ICAO thanked the participants for their support for the WATRS Plus Project and hard work during the meeting.