International Civil Aviation Organization
North American, Central American and Caribbean Office

INFORMATION PAPER

GTE/16 — IP/06
19/08/16

Sixteenth Scrutiny Working Group Meeting (GTE/16)
Mexico City, Mexico, 5- 9 September 2016

Agenda Item 6: Other Business

DISCUSSIONS ON SAFETY MONITORING ACTIVITIES FOR NEW YORK OCEANIC WEST FLIGHT INFORMATION REGION (FIR)

(Presented by North American Approvals and Registry Monitoring Organization (NAARMO) / United States)

EXECUTIVE SUMMARY

The NAARMO, an ICAO endorsed Regional Monitoring Agency (RMA) administered by the United States Federal Aviation Administration (FAA) at the William J. Hughes Technical Center (WJHTC), serves as a RMA for United States, Canadian and Mexican airspace. The FAA Technical has extensive experience in conducting safety assessments to support the implementation of new separation minima and in on-going monitoring activities. These activities include analyses conducted for the New York Oceanic FIR.

A recent change was made to partition the New York Oceanic FIR into two FIRs; New York Oceanic East and New York Oceanic West. Now the New York Oceanic East FIR is part of the ICAO NAT Region, and the New York Oceanic West FIR is part of the ICAO CAR/SAM Region.

The NAARMO believes the results of the on-going safety monitoring activities conducted for New York Oceanic West FIR would be of interest to GREPECAS. If the group is interested in receiving these results, the NAARMO requests guidance for proceeding with the future exchange to coordinate with existing safety assessment activities in the CAR/SAM region.

Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
Reference:	• ICAO State Letter Ref: NACC13/01 - ATM — EMX0694, Proposal for Amendment of the Caribbean and South American Regions (CAR/SAM-ANP - Doc 8733) and North Atlantic Region (NAT ANP - Doc 9634) Basic Air Navigation Plans, 15 August 2013

1. Introduction

1.1 The North American Approvals Registry and Monitoring Organization (NAARMO), an ICAO endorsed Regional Monitoring Agency (RMA) administered by the FAA at the WJHTC, serves as a RMA for United States sovereign and delegated airspace. As a result of formal bilateral agreements between the FAA and both Canada and Mexico, the NAARMO is also the RMA for all North American airspace, including sovereign Canadian airspace and all sovereign and delegated Mexican airspace. The RVSM was implemented in North America in January 2005.

1.2 In addition to the NAARMO duties and responsibilities, the WJHTC serves as an RMA for portions of Asia Pacific airspace as the Pacific Approvals Registry and Monitoring Organization (PARMO). The RVSM was introduced into Pacific airspace in February 2000.

1.3 The WJHTC contributed actively in the implementation of the RVSM in North Atlantic (NAT) airspace, and continues to support the related on-going monitoring activities in the NAT Region through participation in various ICAO NAT Regional Groups.

1.4 The New York Oceanic FIR is shown in Figure 1. The fixed route system residing in the western portion of the FIR is referred to as the Western Atlantic Route System (WATRS) airspace. The WATRS airspace primarily contains operations travelling between North America and the Caribbean. The eastern portion of the New York Oceanic FIR contains operations travelling between North America and Europe. The United States FAA is the Air Traffic Service (ATS) provider for the New York Oceanic FIR. The Northern Oceanic boundary of New York oceanic airspace borders the Gander FIR which is controlled by Transport Canada/NavCanada. The eastern boundary of the New York FIR borders the Santa Maria FIR which is controlled by Navagacao Aerea de Portugal.

1.5 The RVSM was introduced in November 2001 into WATRS airspace. The NAARMO completed the RVSM safety assessment for this implementation and conducts the on-going airspace safety monitoring activities to ensure the continued safe-use of the RVSM.

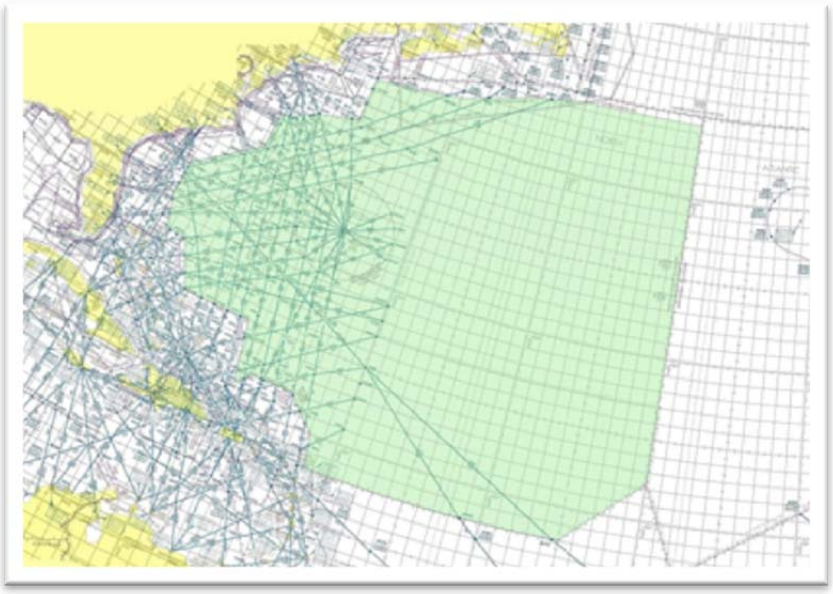

Figure 1. New York Oceanic FIR

1.6 A recent change was made to partition the New York Oceanic FIR into two FIRs; New York Oceanic East and New York Oceanic West. Prior to this change the entire New York Oceanic FIR was part of the ICAO NAT Region. After the change, the New York Oceanic East FIR is part of the ICAO NAT Region, and the New York Oceanic West FIR is part of the ICAO CAR/SAM Region (reference 1 and **Attachment**).

1.7 The purpose of this paper is to discuss the RVSM airspace safety monitoring activities conducted by the NAARMO for the New York Oceanic West FIR.

2 Discussion

2.1 The flight operations within the New York Oceanic FIR are comprised of two distinct traffic flows. The two main traffic flows are East-West (NAT routes) and North-South (NAM-CAR routes). Figure 2 shows reported positions within the New York Oceanic FIR during May 2015. The WJHTC frequently conducts airspace analyses studies for new implementations and on-going safety monitoring purposes for the New York Oceanic East and West FIRs.

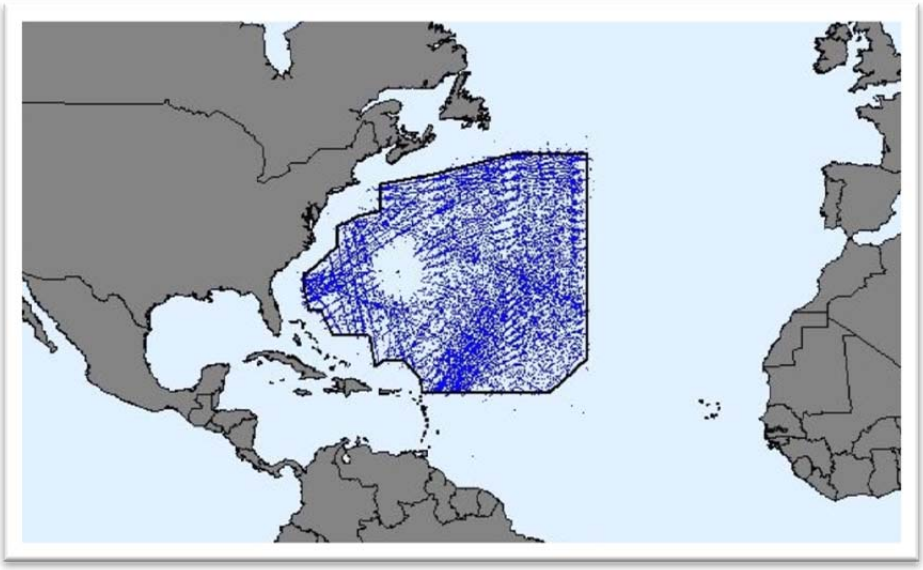

Figure 2. Reported Positions within New York Oceanic FIR – May 2015

2.2 Reduced Separation Standards introduced in WATRS Airspace

2.2.1 In June 2008, a significant restructure of the airways within WATRS airspace was implemented in an effort to increase capacity and efficiency. With the reorganization of the WATRS route system, the 50 NM lateral separation standard was introduced. The WJHTC conducted the safety assessment for the implementation of the 50 NM lateral separation standard in WATRS airspace.

2.2.2 In December 2013, the 50 NM longitudinal, 30 NM lateral, and 30 NM longitudinal separation minima were introduced in the New York Oceanic FIR, including the WATRS airspace. The reduced horizontal separation minima are available for suitably equipped aircraft pairs. The application of the reduced horizontal separation standards is accomplished ad hoc between pairs of eligible aircraft; this means that the application of the separation minima is not planned prior to oceanic entry. The WJHTC conducted the pre-implementation safety assessment and the post-implementation monitoring activities for these reduced horizontal separation standards in New York Oceanic FIR.

2.3 Table 1 provides an example of some of the routine airspace analyses for the New York Oceanic East and West FIRs. The data shown in Table 1 are produced as part of the on-going safety monitoring activities for the reduced horizontal separation standards (30 NM and 50 NM longitudinal and 30 NM lateral separation minima). These data provide insight to the proportion of operations eligible for these reduced separation minima.

Table 1. Recent Airspace Analyses for the New York Oceanic West FIR

Equipage in New York Oceanic West FIR							
Period: Jan 01, 2015 to Jun 30, 2016 (18 months)							
Month	**ALL FLIGHTS**						
	Total Flights	**% Using ADS-C**	**% Filing ADS-C**	**% Using CPDLC**	**% Filing CPDLC**	**% Filing RNP4**	**% Filing ADS-B**
Jan-15	17,978	43%	41%	43%	43%	30%	22%
Feb-15	16,021	43%	41%	43%	43%	31%	23%
Mar-15	18,441	45%	41%	45%	45%	32%	25%
Apr-15	17,161	44%	40%	45%	44%	31%	24%
May-15	15,943	48%	45%	48%	48%	34%	29%
Jun-15	15,446	49%	46%	50%	49%	34%	29%
Jul-15	16,634	47%	43%	48%	47%	32%	26%
Aug-15	16,172	46%	42%	47%	46%	30%	25%
Sep-15	12,677	54%	50%	54%	54%	35%	31%
Oct-15	13,167	52%	49%	53%	52%	35%	32%
Nov-15	15,220	52%	49%	52%	51%	45%	33%
Dec-15	18,517	46%	44%	46%	45%	45%	29%
Jan-16	18,540	45%	44%	46%	45%	45%	28%
Feb-16	17,816	46%	45%	47%	46%	47%	29%
Mar-16	19,093	47%	46%	47%	47%	49%	29%
Apr-16	17,470	47%	45%	48%	47%	50%	29%
May-16	16,157	54%	50%	54%	53%	54%	35%
Jun-16	16,376	53%	49%	54%	53%	55%	36%

2.4 In addition to these statistics, the NAARMO receives reports of large height deviations (LHDs), large lateral deviations (LLDs), and large longitudinal errors (LLEs) for New York Oceanic West FIRs. A recent summary of the event data received by the NAARMO is provided in Table 2.

Table 2. Summary of Recent Event Reports Received for New York Oceanic West FIR

Reporting Facility	Event Date	Event Type	Magnitude (NM)	Duration (sec)	Levels Crossed	Codes
ZNY	1/17/2012	Vertical		180	0	J
ZNY	1/21/2012	Vertical		30	1	D
CEDAR	02/09/2012	Vertical		60		J
CEDAR	02/18/2012	Vertical			-2	L,E
ZNY	2/22/2012	Vertical		5700	0	J,O
CEDAR	3/17/2012	Lateral	26			C4
ZNY	4/2/2012	Vertical/ Lateral	30	669	0	O/C3
ZNY	4/5/2012	Vertical		158	0	F
ZNY	4/19/2012	Vertical		9	0	J
ZSU	5/14/2012	Vertical		10	0	J
ZNY	5/26/2012	Vertical		0	1	D
ZSU	6/4/2012	Vertical/ Lateral	82	12	0	J,G/C3
ZSU	6/23/2012	Vertical		12	0	D
ZSU	6/24/2012	Vertical		12	0	D
CEDAR	06/28/2012	Vertical		3840	0	J,L
CEDAR	07/23/2012	Vertical		60	0	O
ZSU	09/24/2012	Vertical			-2	E
CEDAR	10/06/2012	Vertical		60	0	J
ZNY	10/08/2012	Lateral	15			C4,W
ZNY	10/27/2012	Lateral	20			C4,W
ZNY	11/6/2012	Lateral	70			W
CEDAR	11/06/2012	Vertical		60	0	J
ZNY	11/15/2012	Lateral		10		W
ZNY	11/18/2012	Lateral		20		C4,W
ZNY	11/25/2012	Lateral		6		B1
ZNY	11/25/2012	Vertical		840	0	J
CEDAR	11/28/2012	Vertical		300	0	J
ZNY	12/6/2012	Vertical		90	1	D
ZNY	12/20/2012	Vertical		90	1	D

2.5 The data presented in Table 2 provide the operational error details used in the vertical and lateral collision risk estimates. The collision risk model parameters are determined from the available traffic sample data. The use of the strategic lateral offset procedure (SLOP) is taken into account in the estimate of vertical risk.

2.6 Now that the New York Oceanic West FIR is part of the ICAO CAR/SAM Region, the NAARMO believes the results of the on-going safety monitoring activities conducted for this airspace are of interest to the respective Planning and Implementation Regional Group (PIRG) in the CAR/SAM Region, GREPECAS. These results may assist decision makers in future changes for the Region. If the group is interested in receiving these results, the NAARMO requests guidance for proceeding with the future exchange to coordinate with existing safety assessment activities in the CAR/SAM region.

3 Summary

3.1 The NAARMO, an ICAO endorsed RMA administered by the FAA at the WJHTC, serves as a RMA for United States, Canadian and Mexican airspace. The WJHTC has extensive experience in conducting safety assessments to support the implementation of new separation minima and in on-going monitoring activities. These activities include analyses conducted for the New York Oceanic FIR.

3.2 A recent change was made to partition the New York Oceanic FIR into two FIRs; New York Oceanic East and New York Oceanic West. Now the New York Oceanic East FIR is part of the ICAO NAT Region, and the New York Oceanic West FIR is part of the ICAO CAR/SAM Region.

3.3 The NAARMO believes the results of the on-going safety monitoring activities conducted for New York Oceanic West FIR would be of interest to GREPECAS. These safety monitoring reports and results may assist decision makers in future changes for the Region. If the group is interested in receiving these results, the NAARMO requests guidance for proceeding with the future exchange to coordinate with existing safety assessment activities in the CAR/SAM region.

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International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

When replying please quote:
Ref.: NACC13/01 - ATM — **EMX694** 15 August 2013

To: States and Territories

Subject: **Proposal for Amendment of the Caribbean and South American Regions (CAR/SAM-ANP - Doc 8733) and North Atlantic Region (NAT ANP - Doc 9634) Basic Air Navigation Plans**
(Serial No. NACC 13/01 -ATM)

Sir/Madam:

I wish to inform you that the President, on behalf of the Council, approved on 9 August 2013, the attached Proposal for Amendment to the ICAO (CAR/SAM-ANP - Doc 8733) and North Atlantic Region (NAT ANP - Doc 9634) Basic Air Navigation Plans.

The material concerned will be implemented as soon as practicable.

The approved amendment will be incorporated into the next consolidated amendment to be issued to the ICAO ICAO (CAR/SAM-ANP - Doc 8733) and North Atlantic Region (NAT ANP – Doc 9634) Basic Air Navigation Plans.

Accept, Sir/Madam, the assurances of my highest consideration.

Loretta Martin
Regional Director
North American, Central American and Caribbean (NACC) Regional Office

Enclosure:
As indicated

N:\NACC Proposals for Amendment\NACC 13-01 ATM\Correspondence\EMX0694ATM-States-ApprovalNACC1301.doc

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PROPOSAL FOR AMENDMENT OF THE BASIC AIR NAVIGATION PLANS

NORTH ATLANTIC REGION (NAT ANP – DOC 9634)
and
CARIBBEAN AND SOUTH AMERICAN REGIONS (CAR/SAM ANP- DOC 8733)
(Serial No. NACC 13/01- ATM)

a) **Plans:**

Doc 9634 – North Atlantic Region, Basic ANP, as approved on 15 December 2008
(Approved Proposal for Amendment of the NAT ANP (Serial No: EUR/NAT 06/9 – GEN/AOP/CNS/ATM/MET/SAR/AIS) circulated under cover of State Letter ref: PFA/ANP/NAT/2006/06-09 & F06-10 - 08-0526.SLG of 23 December 2008)

Doc 8733 – Caribbean and South American Regions, Basic ANP, Vol. I, Basic, Part V- Air Traffic Management (ATM)

b) **Proposed Amendment:**

PART V - ATM

Amend the requirements concerning the New York Oceanic FIR (KZNY) in Chart ATS 1 - *Flight Information Regions*, as indicated below and as illustrated in the **Appendix.**

1. **Amend** the requirements concerning the New York Oceanic East FIR (KZNY) in Chart ATS 1 - *Flight Information Regions*, in the NAT Basic ANP (Doc 9634) as follows:

   Lateral limits of the New York Oceanic East FIR (KZNY):

   39°00'N 67°00'W - ~~38°35'N 68°53'W - 38°20'N 69°57'W - 37°31'N 71°41'W - 37°14'N 72°40'W - 35°06'N 72°40'W - 32°12'N 76°49'W - 32°15'N 77°00'W - 28°08'N 77°00'W - 27°50'N 76°32'W - 27°50'N 74°50'W - 25°00'N 73°12'W - 25°00'N 68°30'W - 22°57'N 68°02'W - 23°30'N 67°15'W -~~ 39°00'N 60°00'W - 23°30'N 60°00'W - 20°00'N 60°00'W - 18°00'N 61°30'W - 18°00'N 45°00'W - 22°18'N 40°00'W - 45°00'N 40°00'W - 45°00'N 51°00'W - 45°00'N 53°00'W - 43°36'N 60°00'W - 41°52'N 67°00'W - 39°00'N 67°00'W

   (cf. Chart ATS 1 Doc 9634, NAT Basic ANP)

2. **Add** the requirements concerning the New York Oceanic West FIR (KZNW) in Chart ATS 1 - *Flight Information Regions*, in the CAR/SAM Basic ANP (Doc 8733) as follows:

   Lateral limits of the New York Oceanic West FIR (KZNW):

   39°00'N 67°00'W - 39°00'N 60°00'W - 23°30'N 60°00'W - 23°30'N 67°15'W - 22°57'N 68°02'W - 25°00'N 68°30'W - 25°00'N 73°12'W - 27°50'N 74°50'W - 27°50'N 76°32'W - 28°08'N 77°00'W - 32°15'N 77°00'W - 32°12'N 76°49'W - 35°06'N 72°40'W - 37°14'N 72°40'W - 37°31'N 71°41'W - 38°20'N 69°57'W - 38°35'N 68°53'W - 39°00'N 67°00'W

   (cf. Chart ATS 1 Doc 8733, CAR/SAM Basic ANP)

c) Originated by:

United States

d) Reasons for the proposal

1) Based on the amendments made between1991 and 2008, airspace was transferred from the San Juan FIR to the New York Oceanic FIR resulting in a misalignment between the CAR and NAT Regional Supplementary Procedures (SUPPs) and the related ANPs. All of the New York Oceanic FIR is assigned to the NAT ANP while SUPPs for the airspace south of 27°N within the New York Oceanic FIR remain in the CAR SUPPs.

2) Compounding this misalignment is the fact that there are two distinct traffic flows comprising two distinct homogeneous airspaces. The two main traffic flows are East-West (NAT routes) and North-South (NAM-CAR routes), neither of which relates to the 27°N division contained in the SUPPs. As of 2010 each main flow carries approximately 20% of the international traffic to and from the United States.

3) The current boundaries of the New York Oceanic FIR allow for the efficient planning and implementation of East-West routes, which pertain to the NAT Region. However, those same boundaries inherently complicate the process of planning and implementation for the North-South routes which enter the CAR Region. This is especially noted when involving any transitions to or from the Miami Oceanic and San Juan FIRs. Currently, changes or amendments to North-South routes transitioning to these FIRs must be coordinated through the ICAO European and North Atlantic (EUR/NAT) and North American, Central American and Caribbean (NACC) Regional Offices. This creates an inefficient procedural process.

4) United States proposes to partition the New York Oceanic FIR into two FIRs, New York Oceanic East and New York Oceanic West. This partition will reflect the major traffic flows and align them with the respective Planning and Implementation Regional Group (PIRG). The East FIR will remain contained within the NAT Region; the West FIR would be contained within the CAR Region. The reference to the 27°N division will be deleted.

5) The New York Oceanic East location indicator will remain KZNY. The New York Oceanic West location indicator will be KZNW.

6) A geographical representation of the proposed division is found in the **Appendix**. The yellow shaded area is the proposed area for the New York Oceanic East FIR; the red shaded area represents the area of the proposed New York Oceanic West FIR. The current dividing line at 27° N as contained in the *Regional Supplementary Procedures* (Doc 7030) is shown for informational purposes.

7) The New York Oceanic East FIR will be addressed in the NAT ANP and NAT SUPPs. United States will continue as a member of the North Atlantic Systems Planning Group (NAT SPG).

8) The New York Oceanic West FIR will be addressed in the CAR/SAM ANP and the CAR SUPPs. United States will continue as a member of the CAR/SAM Regional Planning and Implementation Group, GREPECAS.

9) United States believes this proposal will improve planning and implementation for the respective areas and will not have any adverse impact to the current relationships or operational flows within the affected and adjacent regions.

e) Date of implementation:

As soon as practicable after approval.

f) Proposal circulated to the following States and organizations:

Anguilla	French Guyana	Spain
Antigua and Barbuda	Grenada	Suriname
Argentina	Guatemala	Trinidad and Tobago
Aruba	Guyana	Turks and Caicos Islands
Bahamas	Haiti	United Kingdom
Barbados	Honduras	United States
Belize	Iceland	Uruguay
Bermuda	Ireland	Venezuela
Bolivia	Jamaica	Virgin Islands (USA)
Brazil	Mexico	
British Virgin Islands	Montserrat	
Canada	Norway	COCESNA*
Cayman Islands	Netherlands	ECCAA*
Chile	Nicaragua	IATA*
Colombia	Panama	IBAC*
Costa Rica	Paraguay	IFALPA*
Cuba	Peru	IFATCA*
Curacao	Portugal	
Denmark	Puerto Rico (USA)	* *For information purposes only*
Dominican Republic	Saint Kitts and Nevis	
Ecuador	Saint Lucia	
El Salvador	Saint Vincent and the Grenadines	
France		
French Antilles	Saint Maarten	

g) Secretariat's comments:

1) The current West Atlantic Route System (WATRS) airspace was established within the New York Oceanic (KZNY) FIR to facilitate traffic transitioning between the eastern NAM and CAR Regions and between MNPS airspace in the NAT Region and adjacent FIRs (Jacksonville, Miami, Habana, Miami Oceanic, Port-au-Prince, Santo Domingo and San Juan) in the NAM and CAR Regions. These traffic flows would be contained in the New York Oceanic West FIR.

2) The ATS routes and the corresponding operational requirements and planning criteria for the proposed New York Oceanic West FIR are not reflected either in the CAR/SAM nor the NAT regional ANP. However, both the *Regional Supplementary Procedures* (Doc 7030) Parts CAR and NAT, contain provisions for these airspaces.

3) The new alignment of the FIRs would be consistent with the goal of the proposal recently endorsed by the 12th Air Navigation Conference to simplify the procedures for regional performance framework management for PIRGs and will also support more efficient planning and implementation of the Aviation System Block Upgrades (ASBUs).

4) This proposal for amendment meets the ICAO Strategic Objectives by updating, strengthening and simplifying the policy framework for ICAO's activities in the air navigation fields.

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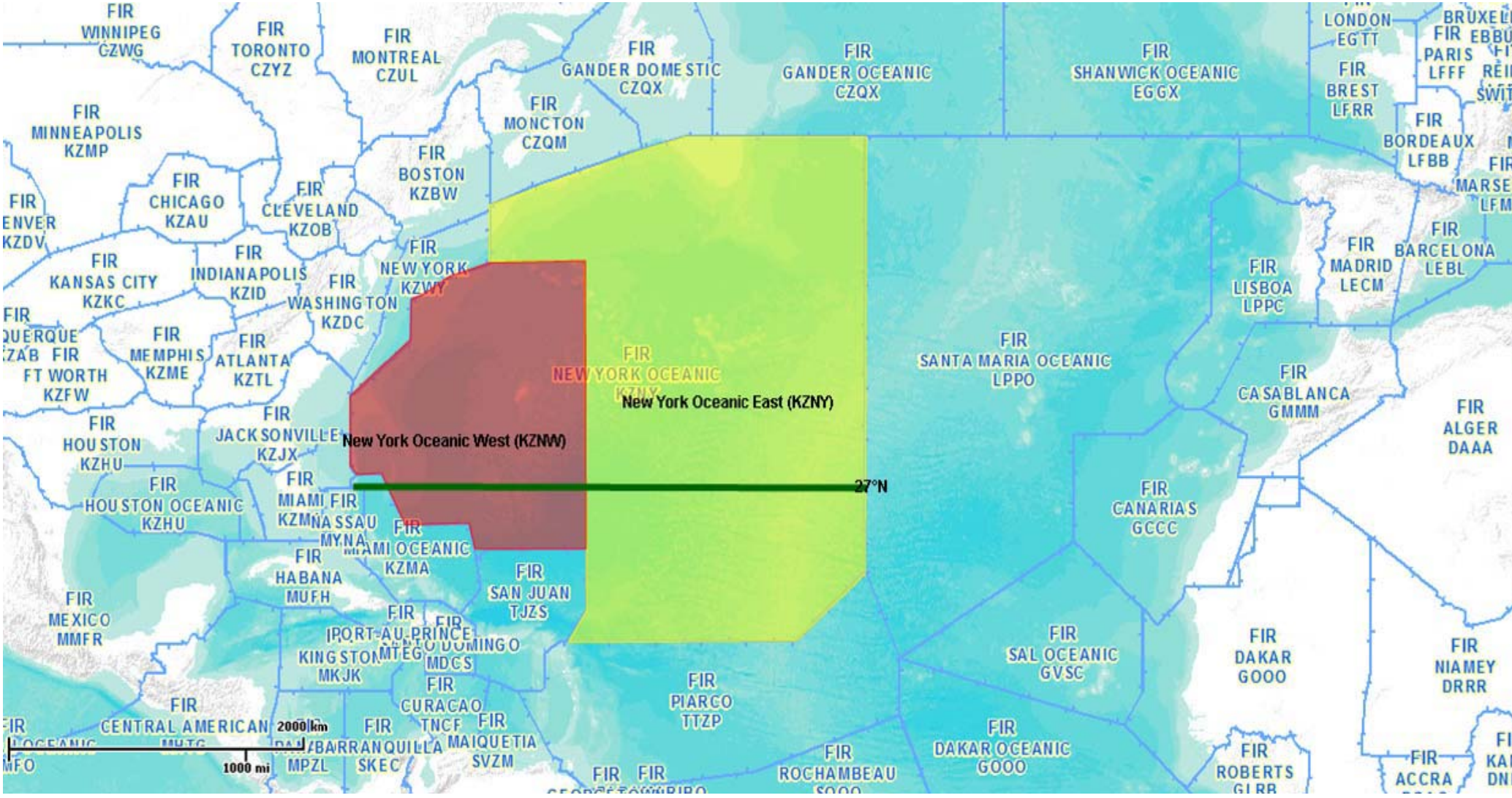
Appendix - Proposed New York Oceanic Alignment



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