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**Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/3)**  
Mexico City, Mexico, 4 to 6 April 2016

- Agenda Item 4: Follow-up, Performance Evaluation and Monitoring of the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) Targets**
- 4.1 Progress Reports of the Task Forces and the ANI/WG**

**MIAMI AIR ROUTE TRAFFIC CONTROL CENTER, MIAMI HIGH SECTOR 40: IMPROVING OPERATIONS**

(Presented by United States)

<b>EXECUTIVE SUMMARY</b>	
This Information paper provides an update on the mitigations that Miami Air Route Traffic Control Center (ARTCC) has implemented to improve operations in the Miami High Sector 40. This sector is located in the United States offshore airspace, East-Southeast of the state of Florida, within the boundaries of Miami ARTCC. It spans over portions of Bahamas and shares a common boundary with the Cuban Flight Information Region (FIR) and its vertical limits are flight level 240 and above.	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li><li>• Environmental Protection</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Miami Air Route Traffic Control Center Mitigation Strategy Plan</li><li>• Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2) – WP/26</li></ul>

**1. Introduction**

1.1 The original update regarding the Miami ARTCC mitigations to improve operations in the Miami High Sector 40 was presented to the Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2) held in Puntarenas, Costa Rica, 1 to 4 June, 2015 as ANI/WG/2 WP/26. This Paper provides an update to the ANI/WG/3 on those mitigations since last year meeting.

1.2 The traffic flow in the Miami High Sector 40 is not specific in terms of concise, directional, and streamlined patterns. Overflight aircraft traverse this sector in intersecting trajectories from North-Eastern and North-Western United States aerodromes, as well as East/West trajectories for flights originating in/destined to European aerodromes.

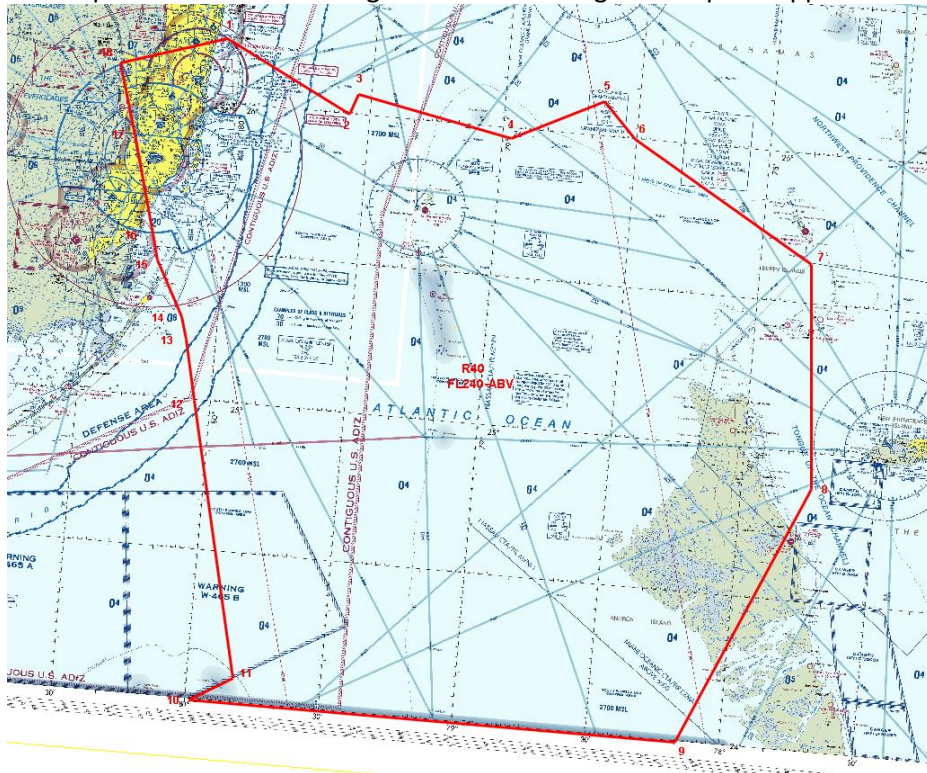
1.3 This sector provides service to aircraft climbing and descending to/from Bahamian aerodromes. Additionally, the Miami High Sector 40 is responsible for sequencing arrival traffic destined to South Florida aerodromes (e.g. Miami Intl and Ft. Lauderdale Intl) from the Southeast. Inbound traffic from internal adjacent sectors directly east and southeast, must blend with northbound traffic from Cuba to the South. This sector also controls South and Southeast bound departure traffic from South Florida airports.

1.4 The Miami High Sector 40 shares its southern boundary with Havana Area Control Center (ACC). Miami ARTCC and Havana ACC manage a bilateral, high-volume radar operation that, on occasion, is highly complex due to the arrival/departure traffic to/from South Florida aerodromes, arrival/departure traffic to/from Cuban aerodromes, and North/South overflight traffic that traverses the common FIR boundary originating from aerodromes in North, Central, and South America.

1.5 The steady increase in traffic volume in an antiquated airway structure that handles intersecting overflight traffic, as well as transition traffic descending and climbing to/from Florida, Bahamian, and Cuban aerodromes, has contributed to an increase in traffic conflicts in the Miami High Sector 40. These conflicts have led to an increase in operational errors and proximity events.

1.6 This paper provides a summary of the improvements that have already been implemented, and describes the short-term, intermediate, and long-term mitigation strategies programmed to reduce controller workload, enhance efficiency, optimize safety, and improve overall sector operations.

1.7 A depiction of the Miami High Sector 40 and legal description appears below:



## 1.8 Miami High Sector 40: from FL240 and above

### Beginning at

- 1: 26-13-00N/080-03-15W direct to
- 2: 26-00-00N/079-34-30W direct to
- 3: 26-04-00N/079-33-00W direct to
- 4: 25-58-00N/078-58-00W direct to
- 5: 26-07-01N/078-38-06W direct to
- 6: 26-00-00N/078-30-30W direct to
- 7: 25-38-00N/077-48-50W direct to
- 8: 24-53-00N/077-44-30W direct to
- 9: 24-00-00N/078-10-00W direct to
- 10: 24-00-00N/079-59-00W direct to
- 11: 24-05-00N/079-49-30W direct to
- 12: 25-00-00N/080-03-30W direct to
- 13: 25-12-00N/080-06-30W direct to
- 14: 25-16-30N/080-08-00W direct to
- 15: 25-27-30N/080-14-30W direct to
- 16: 25-32-30N/080-16-00W direct to
- 17: 25-57-00N/080-22-00W direct to
- 18: 26-06-15N/080-26-30W direct to point of beginning.

## 2. Discussion

2.1 In order to achieve optimized safety and increase efficiency in Miami High Sector 40 operations, Miami ARTCC has implemented several mitigations and has developed short, intermediate, and long-term initiatives.

2.2 Mitigations already implemented

2.2.1 Automated Data Exchange (ADE) between Miami ARTCC and Havana ACC, which allows automated transfer flight plan data, was implemented in December 2011.

2.2.2 Additional Traffic Management Initiatives (TMI) comprised of Miles in Trail (MIT), altitude restrictions for traffic inbound from adjacent internal Miami ARTCC sectors, and coordination with Havana ACC to initiate specific bilateral TMIs were initiated in late 2014.

2.2.3 In the third quarter of 2014, the operational area in Miami ARTCC that controls the offshore airspace where Miami High Sector 40 is located was divided into two separate operational areas; Caribbean and Ocean Areas.

2.2.4 These mitigations have been successfully implemented and monitored throughout the year. The mitigations are having the desired effects and there is nothing new to report.

### 2.3 Short and intermediate-term mitigations:

2.3.1 Since mid-2014, Miami ARTCC controllers have been receiving robust supplemental training which has emphasized the utilization of the automated conflict probe function of the en-route Decision Support Tool (EDST). This system detects potential traffic conflicts and displays the involved aircraft and their trajectories. This training has resulted in an enhanced working knowledge of the system and its capabilities, which has been instrumental in reducing separation errors and providing better service to operators. Enhanced tracker training is also being provided to controllers. Trackers, which work in conjunction with the radar controller during peak traffic periods, will be better equipped to provide assistance as needed to the radar and assistant radar controllers, as well as coordinate with adjacent sectors, facilities, TMU, and operational supervisors.

2.3.2 Those mitigations have been enacted and are proceeding as planned. The mitigations are having the desired effects and there is nothing new to report.

### 2.4. Long term mitigations:

2.4.1 Longer term initiatives and future changes to airspace and route structure will continue to improve the efficiency and effectiveness of the operation in the Miami High Sector 40 and adjacent Miami ARTCC sectors. One such initiative currently being implemented is Metroplex. The Metroplex project entails the restructuring of arrival and departure procedures, the development of optimized profile descent, and establishing Performance-Based Navigation (PBN) routes. PBN routes will replace or supplement existing routes and harmonize the en-route airway structure with terminal airways and associated arrival/departure procedures.

2.4.2 The Metroplex Project continues to make progress towards implementation. The work is proceeding as scheduled.

## 3. Suggested Actions

3.1 The meeting is invited to:

- a) note the information provided in this paper; and
- b) engage in being proactive in establishing regional Air traffic flow management (ATFM) initiatives