GNSS/RNAV Non-Radar Longitudinal Separation in the Caribbean

- For: ICAO/IATA/CANSO PBN Harmonization, Modernization, and Implementation Meeting
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### **Overview**

- Review of current separation standards
- Potential longitudinal separation reductions
- Summary



## **Houston ARTCC**

- Current longitudinal separation minima
  - Monterey ACC-
    - 10 NM radar
    - 10 minutes Mach Number Technique (MNT)
    - 5 minutes faster in front by M 0.06 or greater
  - Merida ACC-
    - 10 minutes MNT
    - 5 minutes faster in front by M 0.06 or greater

#### Potential longitudinal separation reductions

- Procedural issues clarified to allow for reduced GNSS/RNAV non-radar longitudinal separation
- Will require LOA discussions with Houston, Monterey & Merida
- Estimated time for implementation of reduced separation
  - 4-6 months



### Miami ARTCC

- Current longitudinal separation minima
  - Havana ACC
    - 10-20 NM radar
    - 10 minutes non-radar or 40 NM MUHA to KZMA with coordination
      - Larger separation minima typically associated with traffic management initiatives
  - Port-au-Prince ACC
    - 10 minutes with MNT
  - Santo Domingo ACC
    - 10 NM radar
    - 10 minutes non-radar
  - New York ARTCC
    - 10 minutes with MNT
    - 15 minutes all others
  - San Juan CERAP
    - 5 NM radar



## Miami Center (cont.)

- Potential longitudinal separation reductions
  - Havana ACC
    - Current radar procedures in effect
      - Very robust- non-radar separation very rare
        - » No current discussions on non-radar longitudinal separation
  - Port-au-Prince ACC
    - Draft LOA revision sent to MTEG for review
    - Miami still coordinating with MTEG
      - Timeline- TBD
  - New York ARTCC
    - Procedural issue with rules in FAA Air Traffic Procedures manual
      - Currently being resolved through procedure change
        - » Expected publication- Fall 2017
      - Timeline- First Quarter CY 2017 with Notice prior to Fall publication
  - Santo Domingo ACC
    - Non-radar operations generally limited to "mid-shift" during low traffic
      - No current discussions on non-radar longitudinal separation planned



## San Juan CERAP

- Current longitudinal separation minima
  - New York ARTCC, Piarco ACC, Maquetia ACC, Curacao ACC, Santo Domingo ACC, St. Maarten Approach
    - 10 minutes with MNT
    - 15 minutes all others
      - Aircraft below FL200 require 20 minutes
  - Miami ARTCC
    - 5 NM radar separation
      - In areas of non-radar below FL200, 10 minutes



#### San Juan CERAP (cont.)

- Potential longitudinal separation reductions
  - New York ARTCC, Piarco ACC, Maquetia ACC, Curacao ACC
    - Procedures issue with airspace definition
      - Nearing resolution
    - Requirements issue
      - Utilization of ICAO PANS-ATM Chapter 5 requires direct pilot controller voice communication
        - » Areas along common boundaries with these facilities have limited frequency coverage
        - » Work to analyze cause and address is underway
          - » Timeline- TBD
  - St. Maarten Approach
    - Procedures issue with airspace definition nearing resolution
    - International agreement required by FAA
      - Work underway to finalize agreement for FAA air-to-ground communication equipment at St. Maarten; radar data sharing may also be possible
      - Site survey for communication equipment completed
      - Installation/certification of equipment with expected implementation in 2 years



# San Juan CERAP (cont.)

#### Potential longitudinal separation reductions (cont.)

- Santo Domingo ACC
  - Manual radar handoff procedure LOA drafted
    - Under review by San Juan CERAP Collaborative Working Group
    - Expected implementation of manual radar handoffs- April 2017
  - Automated radar handoffs
    - Requires Automated Data Exchange Stage III
      - » TBD

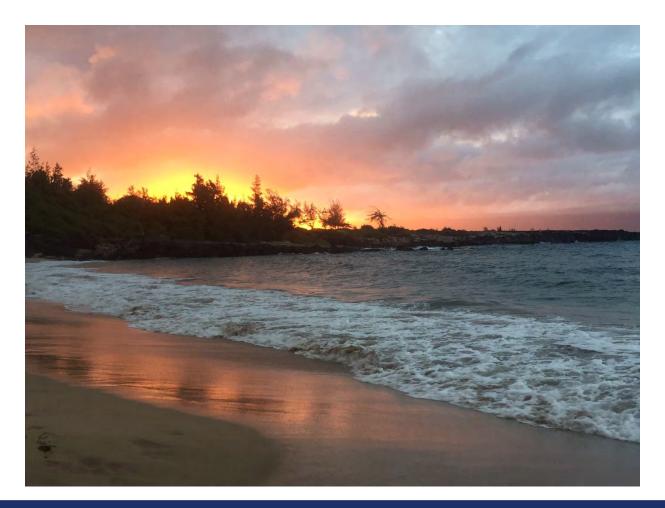


## Summary

- A number of areas for potential non-radar GNSS/RNAV separation being evaluated
  - Procedures being reviewed and modified to support
  - Technical requirements and international agreements under development or review
  - LOA discussions and required safety work being conducted



### **Questions/Comments?**





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