



Second NAM/CAR Air Navigation Implementation Working
Group (ANI/WG) Performance-Based
Navigation (PBN) Implementation Task Force Meeting
(ANI/WG/PBN/TF/2)

IP/02

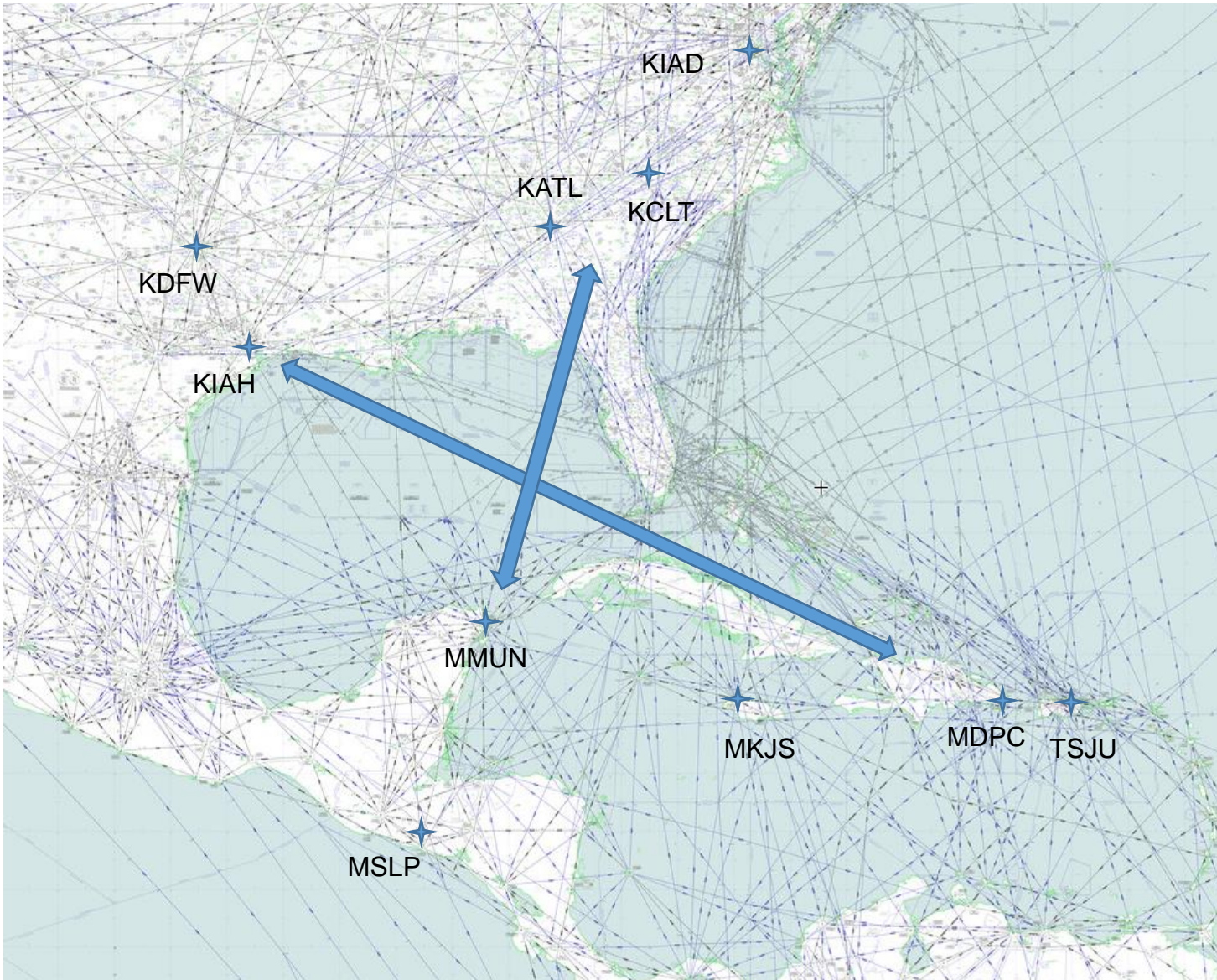
EXPERIENCE OF THE HABANA FIR WITH THE PFA NACCC
21/03 IMPLEMENTATION

(Presented by Cuba)

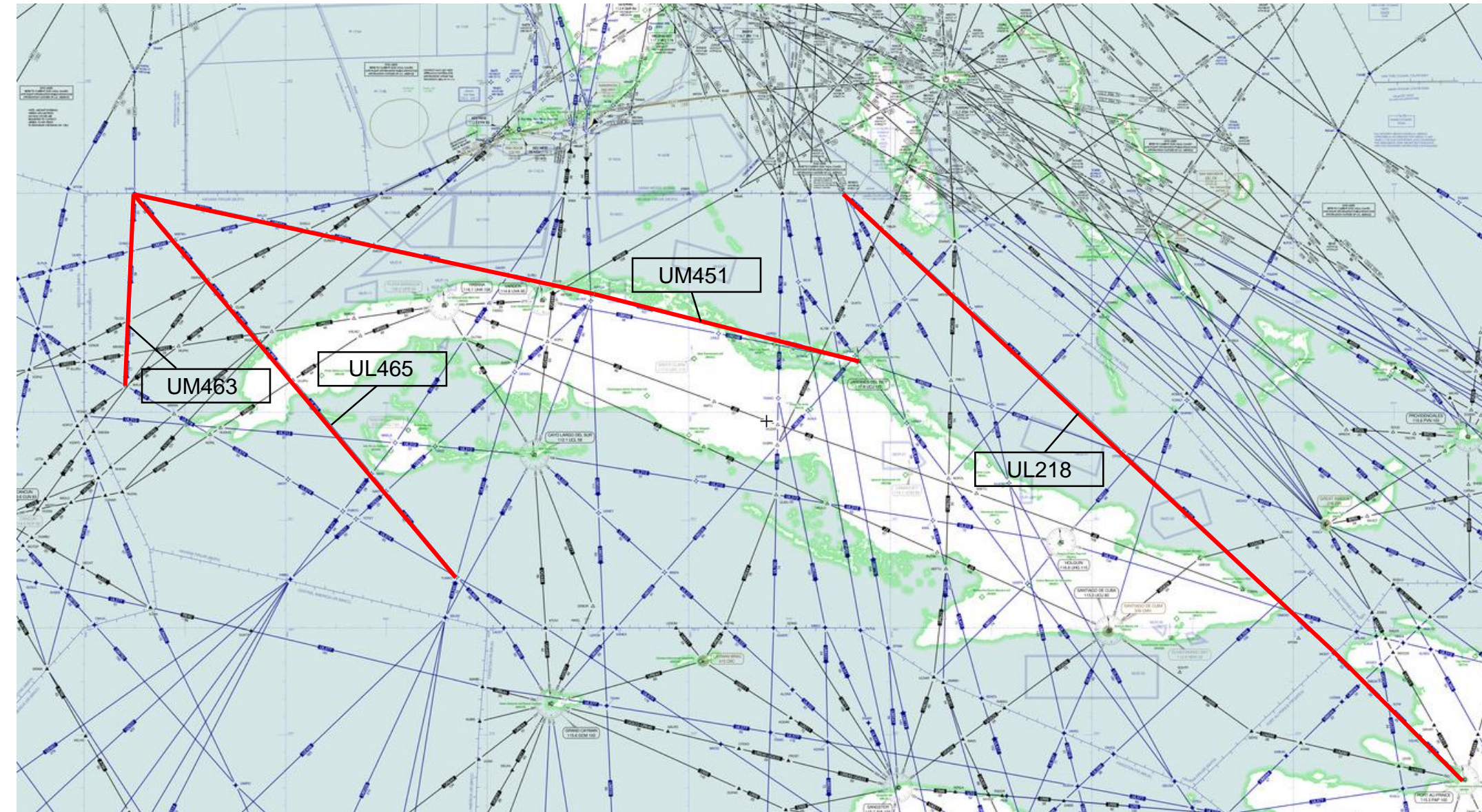
The optimization of the airspace of the ATS route network in the CAR region is a recurring task, which requires significant interaction between the air navigation service providers (ANSP) of the CAR region and adequate integration with the regions NAM and SAM; as well as an adequate coordination and feedback process with aircraft operators.

The ANSP in the Habana FIR, the Empresa Cubana de Navegación Aérea (ECNA), in conjunction with the Cuban Civil Aeronautics Institute, created a working group, including ATM, PANS/OPS and AIM managers and specialists, which discussed a number of proposals for modifications of the route network in the Habana FIR, with the purpose of increasing the safety and efficiency of air operations.





During the analysis of the Habana FIR, the traffic flows and the city pairs in the NAM/CAR/SAM regions that register the highest number of air operations, various traffic flows were detected that could be optimized by creating new routes that would reduce flight distances; as well as offering new options for flight planning in the event of meteorological, operational or other factors that affect operations.



- a)UM463: for aircraft from the NAM region bound for Cancun airport and also for those bound for Central America (San Salvador, San Pedro Sula and other destinations).
- b)UL465: for aircraft from the NAM region bound for the Caribbean (Grand Cayman, Montego Bay, etc.) and vice versa.
- c)UL218: from Port-au-Prince VOR to the boundary with the Miami FIR for aircraft from the NAM region bound for South America (Brazil, Bolivia, etc.) and vice versa.
- d)UM451: for aircraft operating between the Eastern Caribbean and the Central / Southern US (Dallas-Houston).

Between June 17, when the new PBN routes became implemented, until July 15 (28 days), a total of **89** operations have been registered, divided into:

UM463: 60 operations. (Operations to MMUN are not permitted by FAA UFA).

UL218: 15 operations.

UL465: 12 operations.

UM451: 2 operations

The operators that have used these new routes the most are:



TACA (Avianca El Salvador): 40 operations.



Delta Airlines: 17 operations.



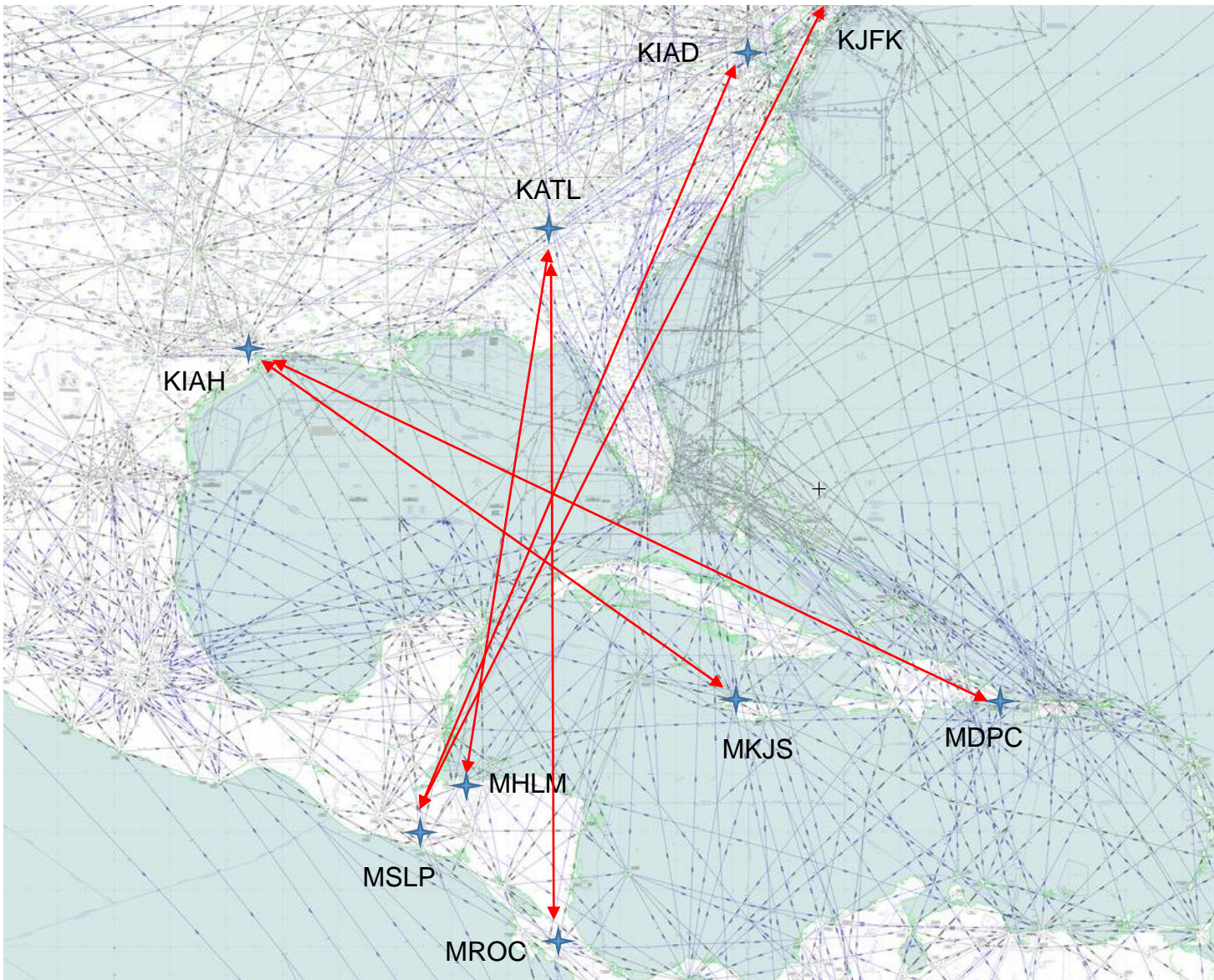
United Airlines: 9 operations.



LATAM: 6 operations.



General Aviation: 6 operations.

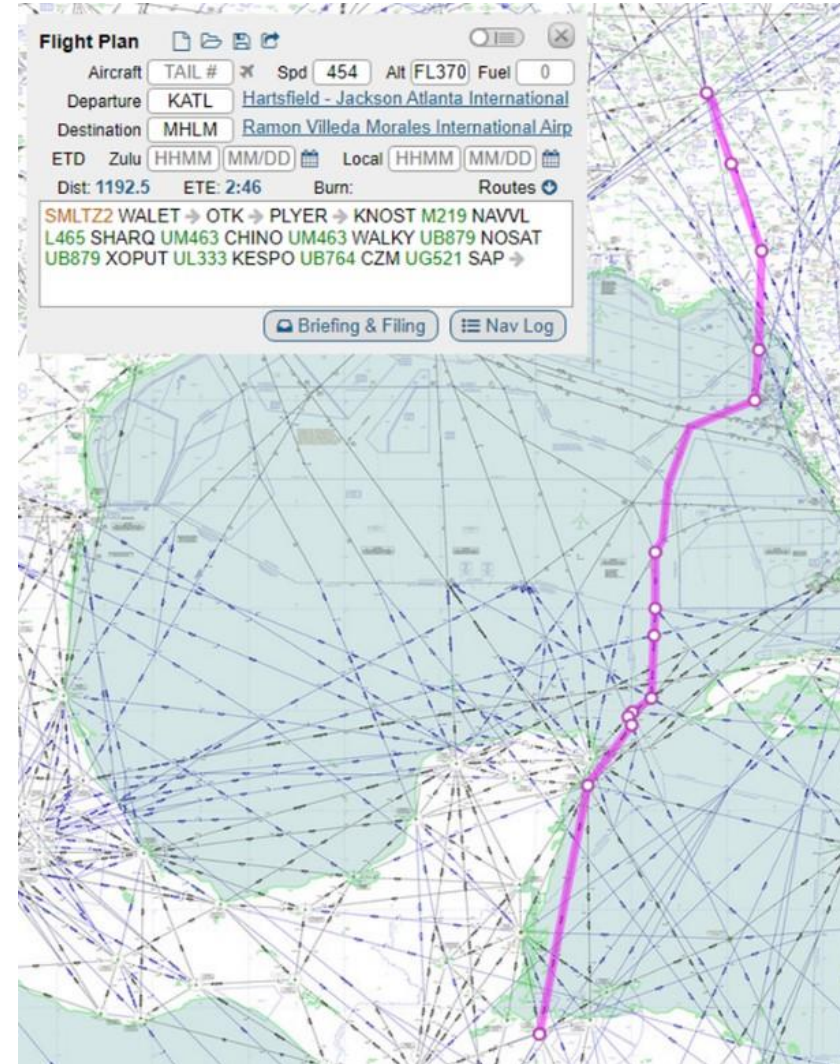
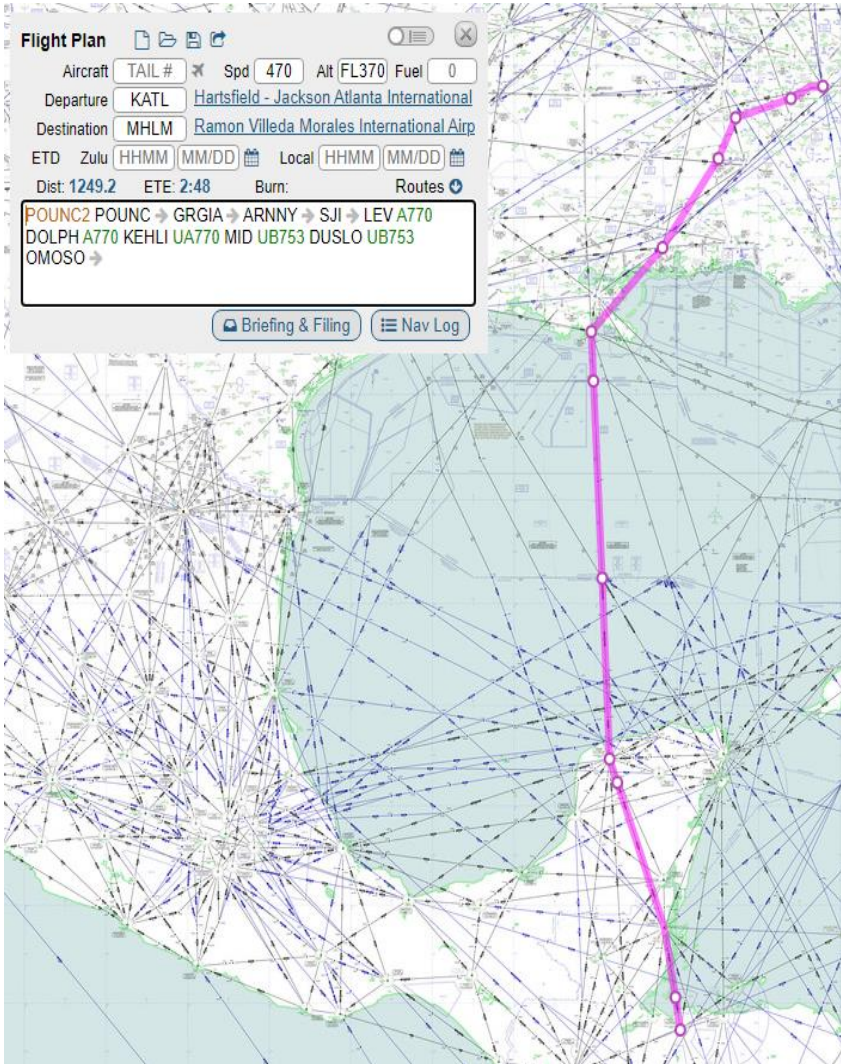


The city pairs with the most registered operations have been:

- Washington (KIAD Dulles Intl) - El Salvador (MSLP Mon Oscar Romero Intl): 29.
- New York (KJFK John F. Kennedy) - El Salvador (MSLP Mon Oscar Romero Intl): 14.
- Atlanta (KATL Hartsfield-Jackson) - San Pedro Sula (MHLM Ramón Morales Intl): 5.
- Atlanta (KATL Hartsfield-Jackson) - Costa Rica (MROC Juan Santamaría): 2.
- Houston (KIAH George Bush) - Montego Bay (MKJS Sangster Intl): 2.
- Punta Cana (MDPC Punta Cana Intl) - Houston (KIAH George Bush): 2.

DAL1920 KATL / MHLM June 15. Distance by FPL 1249,2 NM.

DAL1920 KATL / MHLM June 18. Distance by FPL 1192,5 NM.



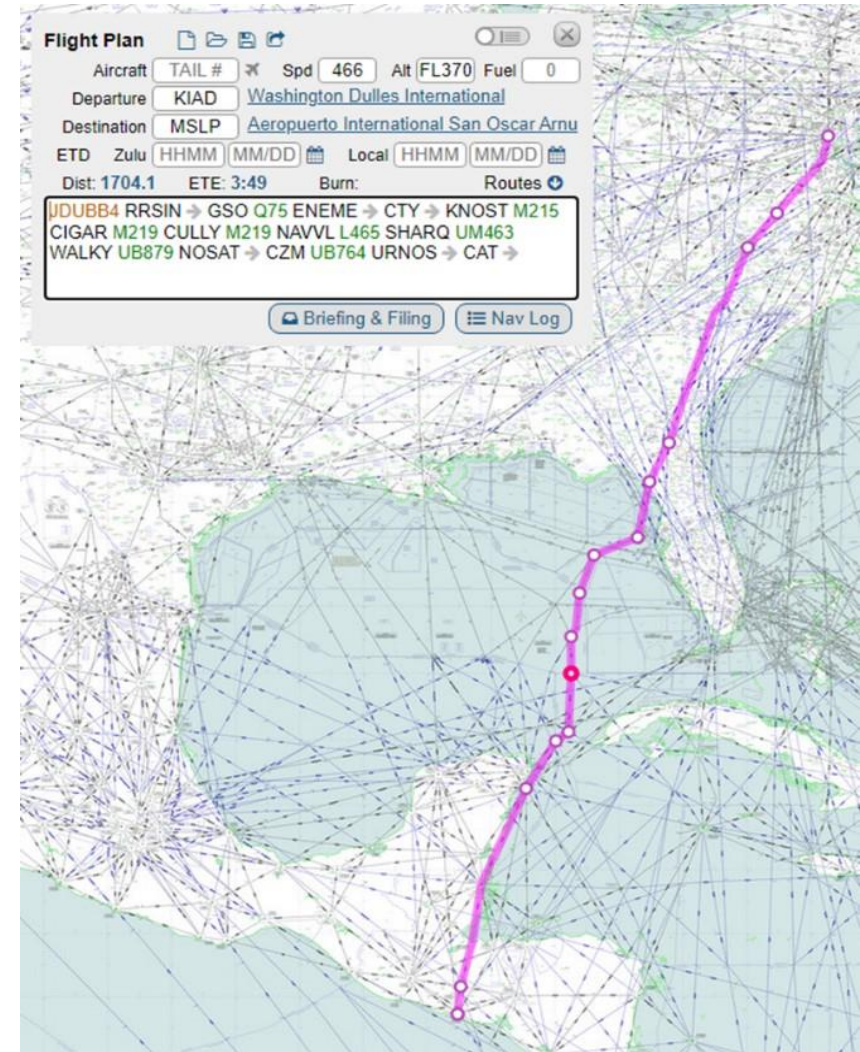
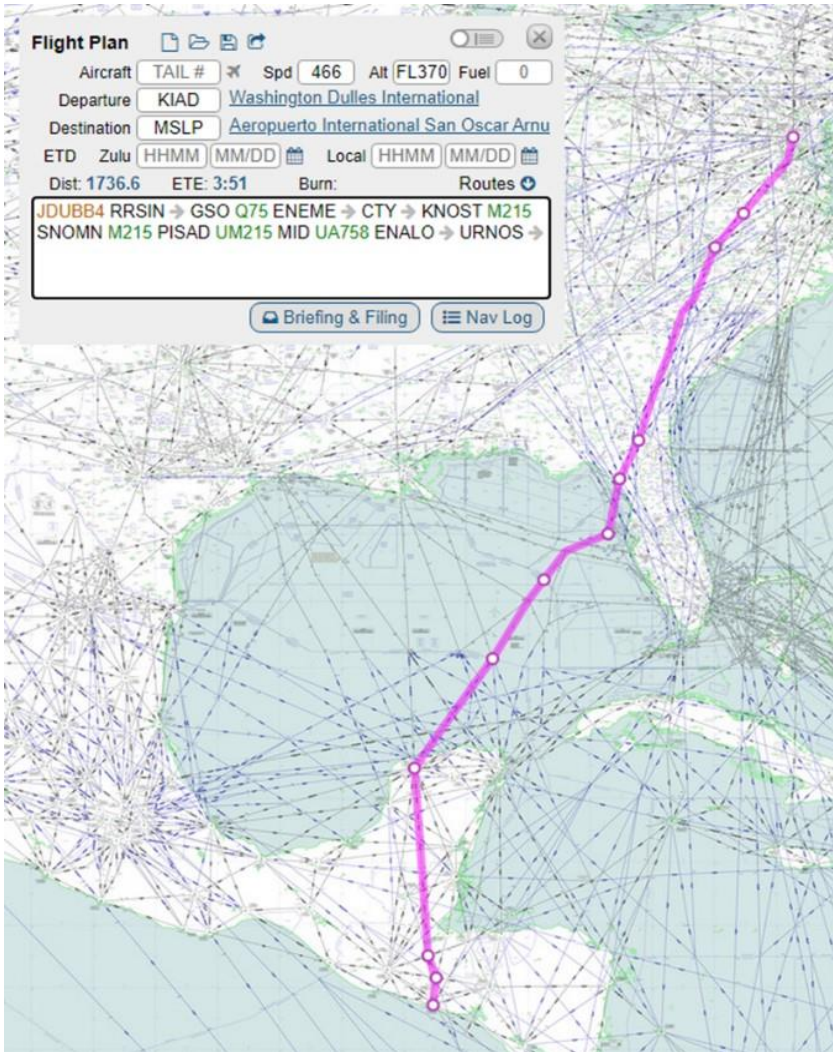
Total saving for each flight:
56,7 NM.

Potencial of 7 flights a week
(Source: Flightradar24)

396,9 NM

TAI591 KIAD / MSLP June 15. Distance by FPL 1736,6 NM.

TAI591 KIAD / MSLP June 19. Distance by FPL 1704,1 NM.

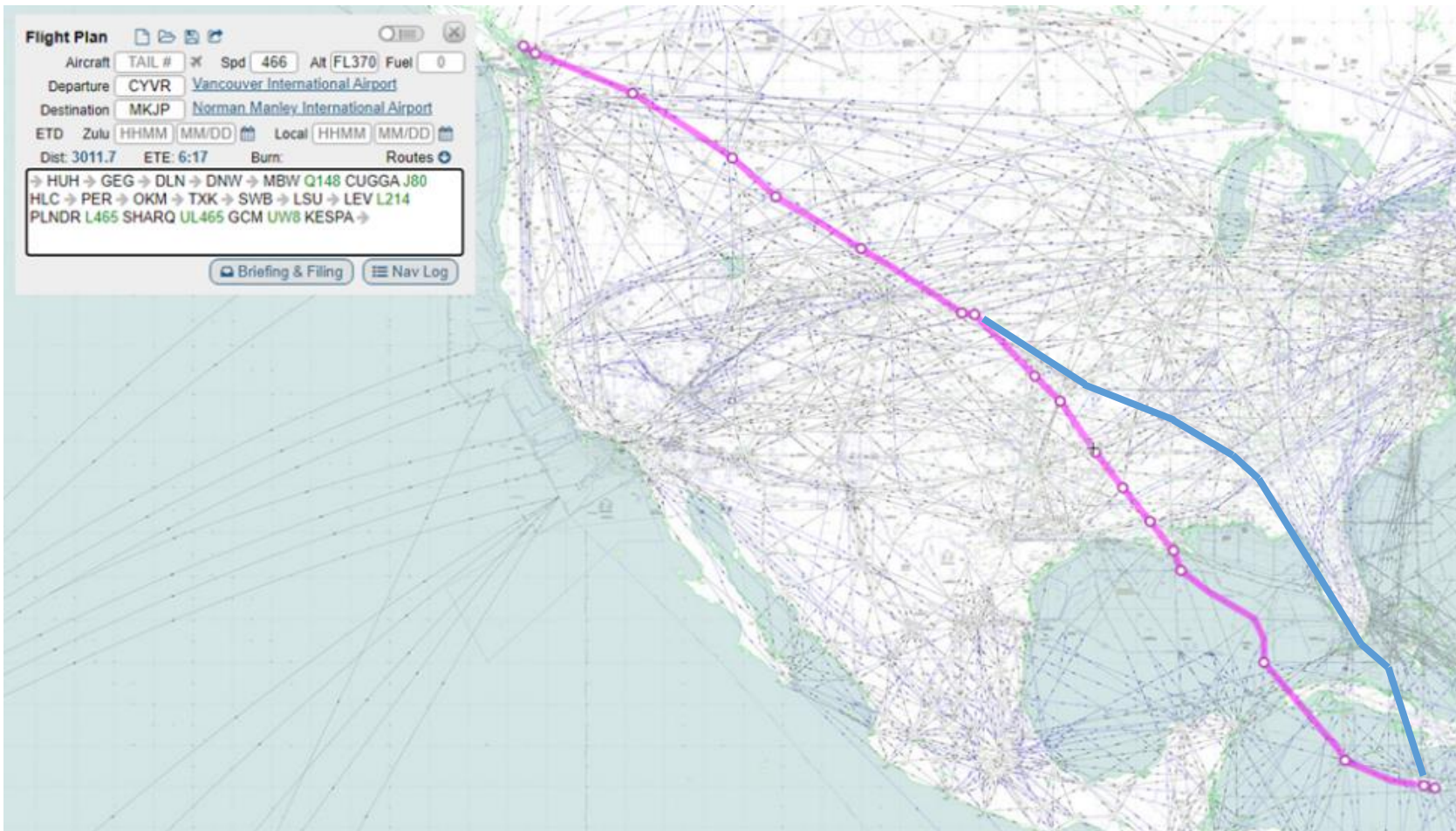


Total saving for each flight:
32,5 NM.

Potencial of 41 flights a week
(Source: Flightradar24)

1332,5 NM

It also shows how, thanks to the option of the new UL465 route, despite flying an additional 12 miles from its most optimal usual route, flight SWG9855 on June 23 was able to avoid bad weather conditions in Florida, by planning on a different route than usual:



- Usual routing.
- June 23 routing.

In the first 28 days after the new routes became implemented, the calculated savings in flight distance, only for the operations registered between the Atlanta - San Pedro Sula and Washington - San Salvador city pairs, has been of **1204** nautical miles, with the consequent reduction in flight time, fuel consumption and emission of polluting gases into the atmosphere.

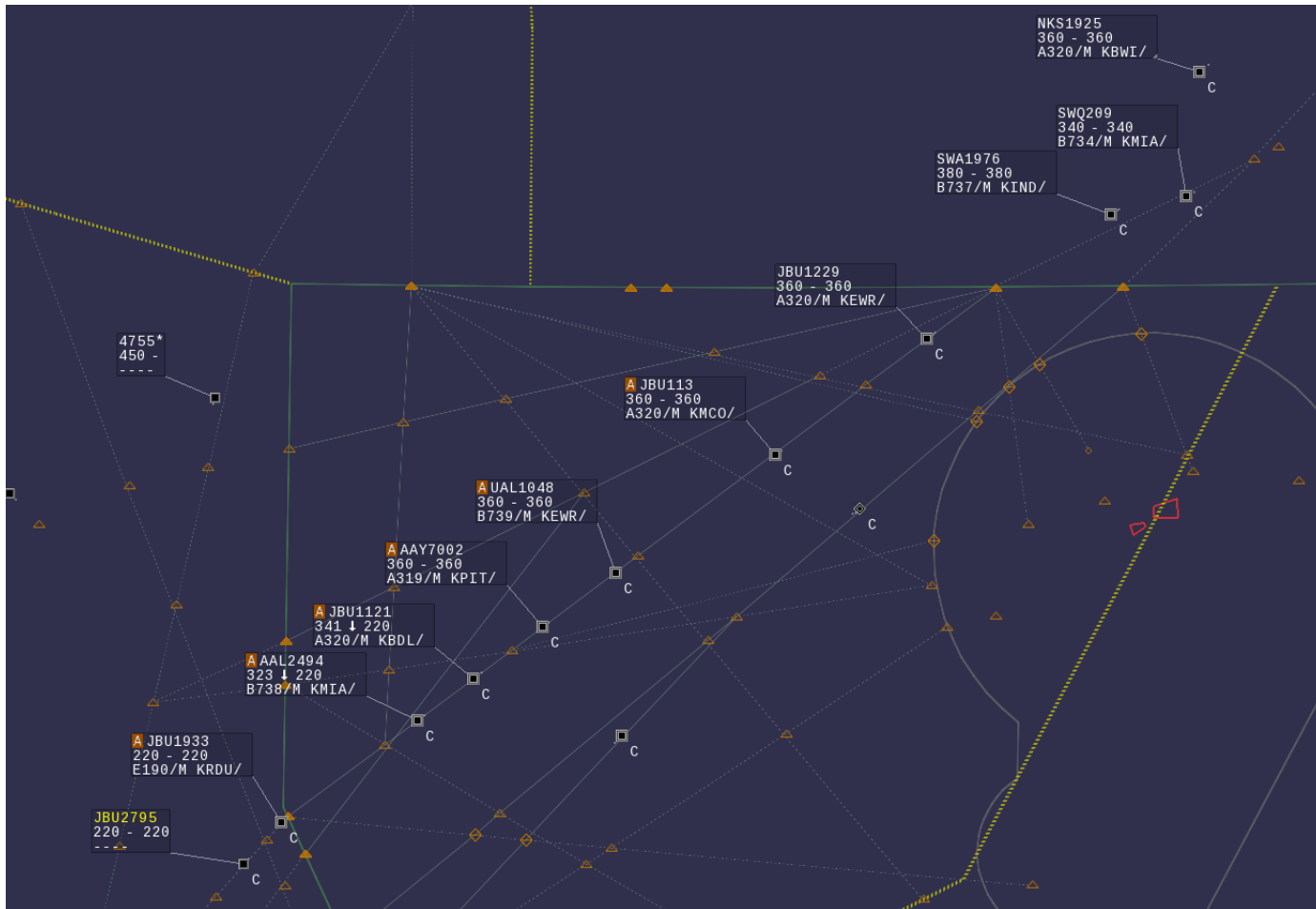


Image of actual traffic trough CANOA arriving to Cancun (data block shows the departure airport). Below the calculated saving in flight distance for some of them, by using the new route UM463:

(Source: Flight Aware FPL route for each flight)

- KBWI: CANOA 1340.6 / SHARQ 1276 (- 64.6 NM)
- KPIT: CANOA 1344.4 / SHARQ 1277.1 (- 67.3 NM)
- KBDL: CANOA 1569.3 / SHARQ 1526.9 (-42.4 NM)
- KRDU: CANOA 1091.2 / SHARQ 1072.9 (-18.3 NM)
- KEWR: CANOA 1426.9 / SHARQ 1418.0 (- 8.9 NM)

Data shows the potential for fuel and flight time savings for the operators, as soon as they can use the new route UM463 for the arrivals to Cancun.



United Airlines flight 1163 from KIAH to MKJS, first operation registered on June 17, at 17:22 UTC, approaching SHARQ to open the new route and also the coordination between Habana ACC and Houston ARTCC for the first time.

Well done United!!

