



Airspace Optimization



Airspace Optimization CAR Region

✈ North American, Central American and Caribbean Working Group (NACC/WG)
Air Space Optimization Task Force

- Working Collaboratively
- Two Pronged Attack
- Moving to Free Route Airspace
- Results



SAFETY

EFFICIENCY

ENVIRONMENTALLY - FRIENDLY



Airspace Optimization CAR Region

North American, Central American and Caribbean Working Group (NACC/WG)
Air space Optimization Task Force

- ✈ States
- ✈ CANSO
- ✈ IATA
- ✈ ICAO

Working Collaboratively - CIIFRA

CADENA IATA ICAO Free Route Airspace

Airspace Optimization CAR Region

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Two Pronged Attack

- ✈ End to End route Optimization
- ✈ User Preferred Route/Free Route Airspace



Airspace Optimization CAR Region

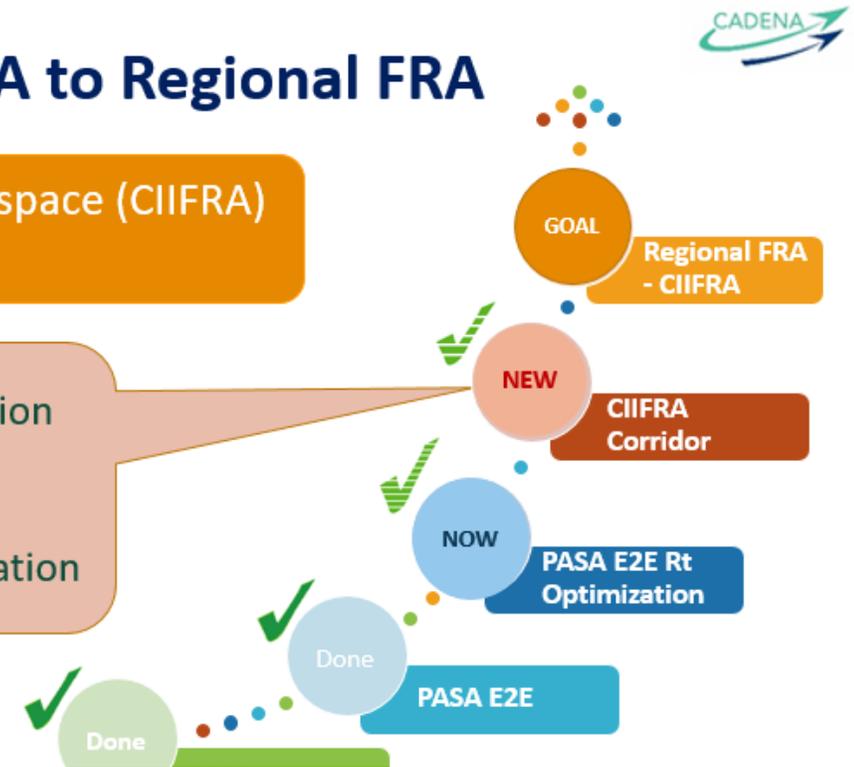
North American, Central American and Caribbean Working Group (NACC/WG)
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Move to Free Route Airspace

Step-by-Step: From PASA to Regional FRA

CANSO IATA ICAO Free Route Airspace (CIIFRA)
for Latin America Regional FRA

- Approaches of FRA Implementation
- Formation of Focus Team
- Selection of the 1st CIIFRA Trial
- CIIFRA Trial Plan and Implementation





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Results Track 1

Estimated 1-year savings of the 6 completed PASA Optimized Routes

- KATL ↔ SPJC
- KATL ↔ SBGR
- TTPP ↔ KMIA
- KIAH ↔ MMPR
- SAEZ ↔ KATL
- KATL ↔ SAEZ

Savings	
Flight min:	13,126
Fuel (lb):	2,583,088
CO2 (kg):	3,702,477
Cost (\$):	2,107,410



ICAO

CAPACITY & EFFICIENCY

Airline	City Pair	Southbound Route	Northbound Route	Status	Start Date	End Date	Comments
Aerolinas Argentinas (ARG)	SAEZ - KJFK - SAEZ	Not requested	SAEZ PTA6A KUKEN UL324 MIGOT UM402 BVI UM423 KIKER DCT DONQU L454 OKONU DCT YAALE Y495 CAMRN DCT KJFK	Approved	7/15/2022	10/13/2022	
Aerolinas Argentinas (ARG)	SAEZ - KMIA - SAEZ	KMIA GWAVA1 URSUS UP406 BILSI UL795 LORBA DCT EMABU UP525 SJE UB689 LET UP525 RCO UL417 LOKOX UM784 BOLET UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 PABON EJA KILER UM779 ZEUSS VIIICE1 KMIA	Approved		3/5/2023	Aerolinas Argentinas has requested a route modification
American (AAL)	KMIA - SPJC - KMIA	KMIA MAYNR1 FUNDI DCT LEPON DCT ARNAL DCT TINPA DCT VAMOS DCT GYV DCT VAKUD DCT ATATU ATATU2 SPJC	SPJC ISRE2F ISREN DCT VAKUD UL780 GYV DCT VAMOS DCT TINPA DCT LEVOR UP536 GCM UG448 ATUVI DCT IKBIX SNDBR2 KMIA	Approved	6/15/2022	10/7/2022	
American (AAL)	KDFW - SPJC - KDFW	KDFW ARTZ8 TNV MUSYL L207 IPSEV UL207 CPE IOS URPOS LIXAS UL203 ATEN O UM542 TAL UV1 ATATU ATATU2 SPJC	Not requested	To be coordinated			
American (AAL)	KMIA - SCEL - KMIA	KMIA MAYNR1 FUNDI LEPON ARNAL TINPA VAMOS GYV VAKUD ATUTU ILMAR UL302 SIMOK SIMO5D SCL	SCEL DONT4B DONTI UL780 ISREN VAKUD UL780 GYV VAMOS TINPA LEVOR UP536 GCM UG448 ATUVI IKBIX SNDBR2 KMIA	In coordination			
Caribbean (BWA)	TTPP - KMIA - TPPP	KMIA SKIPS2 SKIPS Y290 HAGIT Y421 HARBG L452 ANADA UG449 PERGA ITRAK NAPKO LEXOR TALUS TTPP	TTPP DCT ANADA DCT MUNOZ DCT HARBG Y330 FODED DCT MADIZ DCT FOXID DCT FLIPR FLIPR7 KMIA	Approved		11/4/2022	
Caribbean (BWA)	TTPP - KJFK - TTPP	KJFK JFK SHIPP SPDEY DOGRS BLUUU DUMPR ISLES SQUAD DARUX ENAPI SHEIL ODUCA GEECE PERGA ITRAK NAPKO LEXOR TALUS TTPP	TTPP POS GEECE ODUCA L459 SHEIL ENAPI DARUX L459 SAVIK YAALE YETTI MOUGH OWENZ PREPI LEECY CAMRN KJFK	Unable by ZNY. Further coordination required.			
Copa (CMP)	MPTO - SBGL - MPTO	MPTO DCT OREPI DCT DAKMO UW36 VASIL DCT OBKIL DCT GAVIT DCT ILKOD DCT 0835S05957W DCT PALEP DCT 1404S05339W DCT NAXIV DCT SAMGA DCT OGMUK UTBOM2A SBGL	SBGL EVRAD1A ENSOD DCT VULER DCT GELIB DCT NAXIV DCT SAMAR DCT ESDAG DCT 0901S05939W DCT MIMUM DCT 0428S06440W DCT GAVIT DCT OBKIL UM549 DAKMO DCT ISOKO ISOKO1 MPTO	Approved	5/9/2022	No end date	
Copa (CMP)	MPTO - KLAX - MPTO	KLAX PNDH2 TCATE DCT PPE DCT ALGUN DCT OTOSO DCT IPSAG DCT OTITI DCT EMOBI DCT EMADA DCT IOS DCT ANSON DCT VUMAN VUMAN1A MPTO	MPTO SIMAN2A SIMAN DCT AMUBI DCT VOKAS DCT ATUTO DCT AXOMU DCT RAULS DCT CVM DCT AVAPA DCT ASUTA DCT AMMOR OLAAA2 KLAX	In coordination			
Delta (DAL)	KATL - SPJC - KATL	KATL SMLT22 WALET DCT YUESS Q79 MCLAW Y442 FUNDI DCT LEPON DCT ARNAL DCT TINPA DCT VAMOS DCT GYV DCT VAKUD DCT ATATU ATATU2 SPJC	SPJC ISREN2F ISREN DCT VAKUD UL780 GYV DCT VAMOS DCT TINPA DCT LEVOR UP536 GCM UG448 ATUVI DCT IKBIX Y183 PEAKY Q87 MATLK Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/7/2022	
Delta (DAL)	KATL - SBGR - KATL	KATL VRSTY2 MCN DCT YANTI Q89 MANLE Y185 RENAH Y355 FIPEK Y294 GESSO L467 ANADA DCT KORTO DCT SUMVA ... SBGR	SBGR ... SUMVA DCT KORTO DCT ANADA L452 HARBG Y421 HAGIT Y306 VENDS Y185 MANLE Q89 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/25/2022	
Delta (DAL)	KATL - SAEZ - KATL (Option 1)	KATL SMLT22 WALET DCT YUESS Q79 FEMID DCT DHP A509 URSUS UP406 BILSI EMABU UP525 RCO UL417 TOPOG UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 BORDO Y259 OCTAL Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/7/2022	
Delta (DAL)	KATL - SAEZ - KATL (Option 2)	KATL VRSTY2 MCN DCT YANTI Q89 SHRKS DCT CRG DCT DEBRL DCT OMN DCT URSUS UP406 BILSI UL795 LORBA DCT EMABU DCT BOBKA DCT VULNO DCT LONAX DCT PUPAS DCT LET DCT ARNUB DCT ISARA DCT PUBUM UL417 TOPOG UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 PUBUM DCT CITRA DCT PUBU DCT ARUXA DCT LONAX DCT IROTI DCT NEVPA UL417 LENAX DCT ALTIB UM779 ZEUSS DCT OCTAL Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved	6/24/2022	10/7/2022	
Delta (DAL)	KATL - SCEL - KATL	KATL VRSTY2 MCN DCT YANTI Q89 SHRKS DCT DEBRL Q97 EBAYY DCT DHP A509 URSUS UL780 SULNA DCT TOY UV208 SIMOK SIMO6B SCEL	Not requested	To be coordinated			



RULE of 20

- ✈ CIIFRA has agreed that 20 optimized point to point routes will be the maximum carried forward.
- ✈ Once routes are published, that makes space for additional routes to be added.
- ✈ Letter sent out to NACC states.
- ✈ state papers



CANSO IATA ICAO Free Route Airspace (CIIFRA) Track 2

- ✈ CIIFRA initiative created for Regional FRA
- ✈ Airlines select a city pair route for UPR trials and ANSPs do their best to accommodate

KATL-SPJC-KATL
DAL151/DAL150

✈ Small steps

- ✓ Step 0: one northbound and one southbound legs
- ✓ Step 1: one round trip
- ✓ Step 2: three consecutive round trips
- ✓ Step 3: seven consecutive round trips
- ☐ Step 4: 30 consecutive round trips (initiated on July 15, 2022)
- ☐ Step 5: 90 consecutive round trips
- ☐ Goal: continued use of CIIFRA UPR

	Baseline vs UPR	
Savings	12 Day	1 Year
Flight min:	116	3,528
Fuel (lb):	12,479	379,570
CO2 (kg):	17,887	544,057
Cost (\$):	15,325	466,138

Estimation of 1-year savings based on 12 days of data obtained from Steps 0, 1, 2, and 3



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Results Track 2

	July 22 – 28
7 days	35 minutes saved
	7,700 lbs fuel



Traffic between US and top 10 airports in Latin America up 2.3%
Jan 1-July 23 2019 vs 2022

