



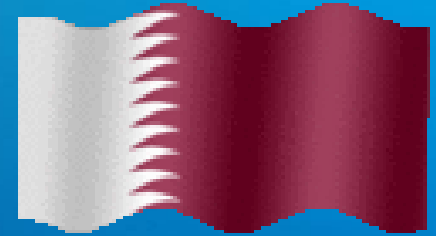
الهيئة العامة للطيران المدني  
CIVIL AVIATION AUTHORITY  
قطر QATAR



ICAO

# MIDANPIRG/22 & RASG-MID/12

Doha, Qatar | May 4-8, 2025



الهيئة العامة للطيران المدني  
GENERAL CIVIL AVIATION AUTHORITY



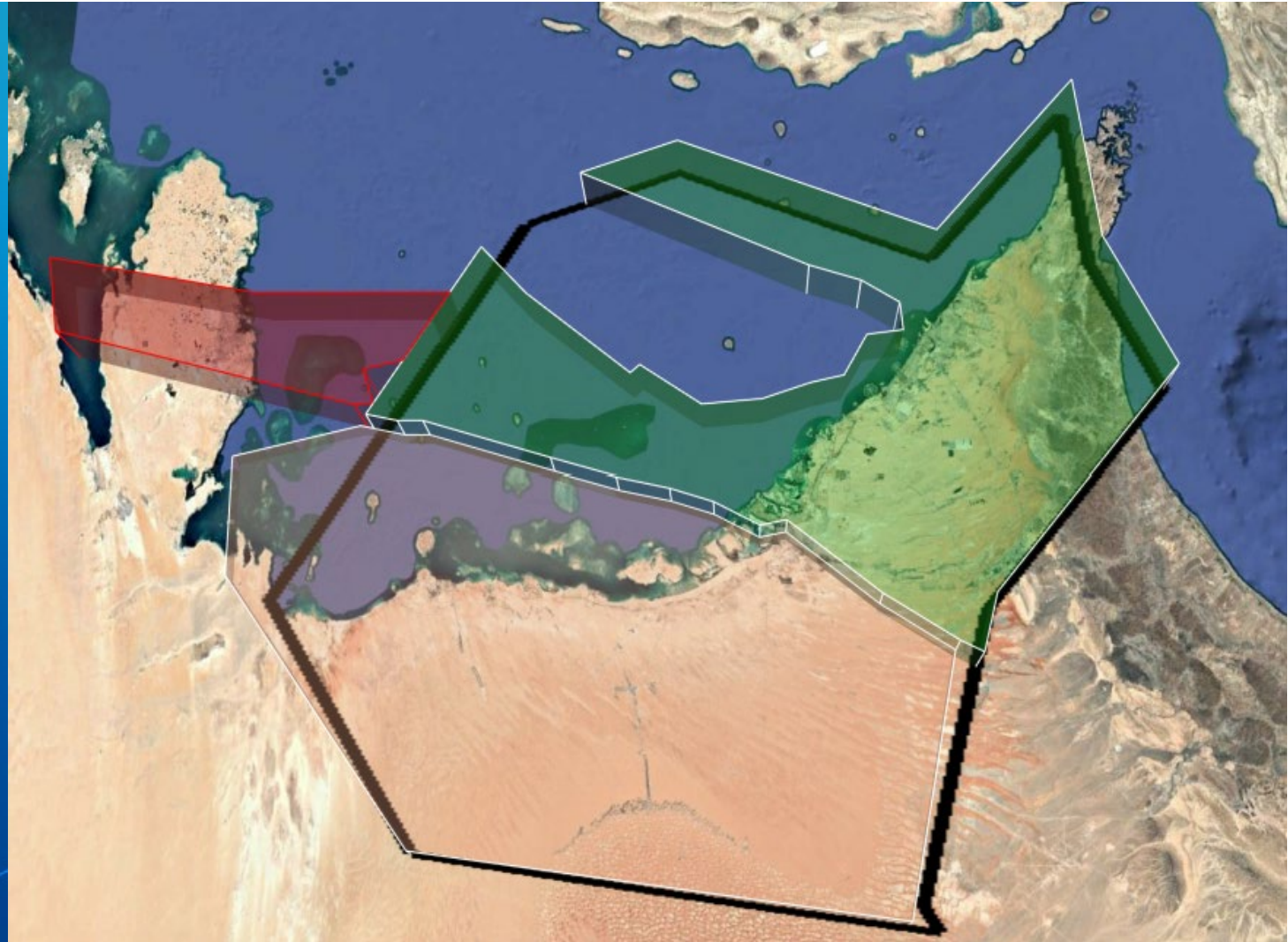
# Emirates FIR Cross-border FRA

Presentation by the United Arab Emirates  
General Civil Aviation Authority (GCAA)



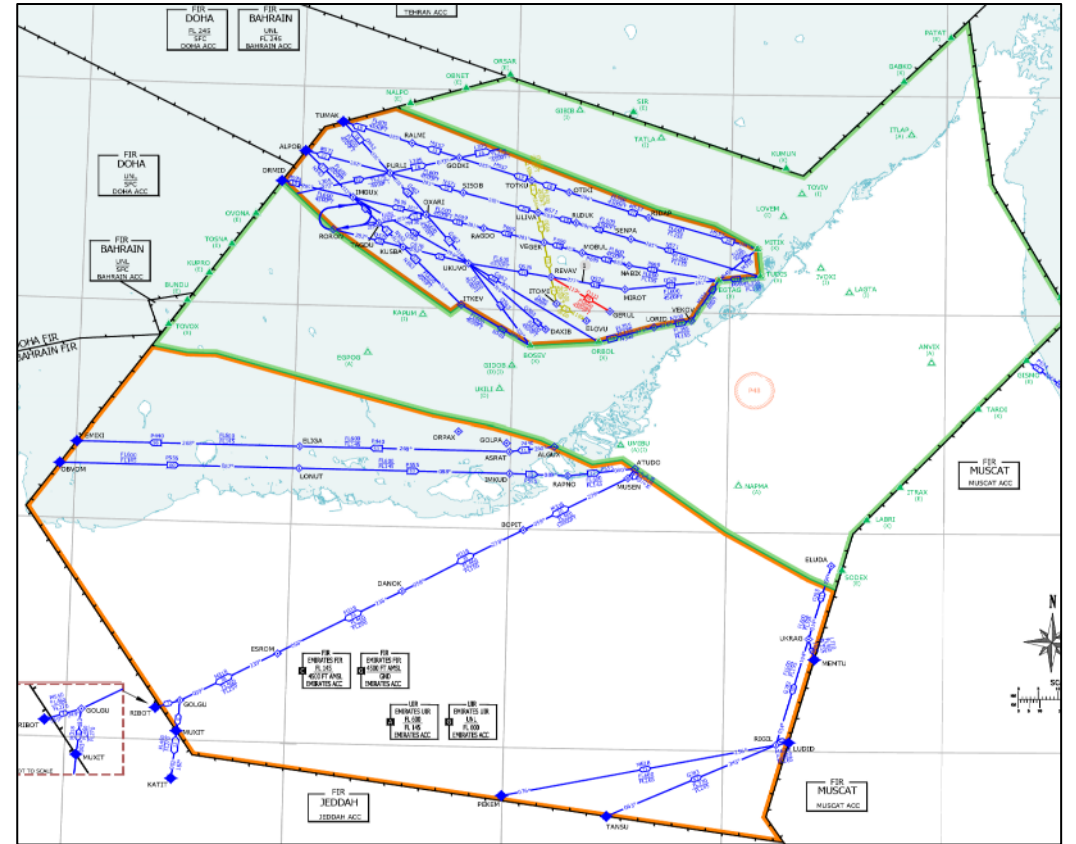
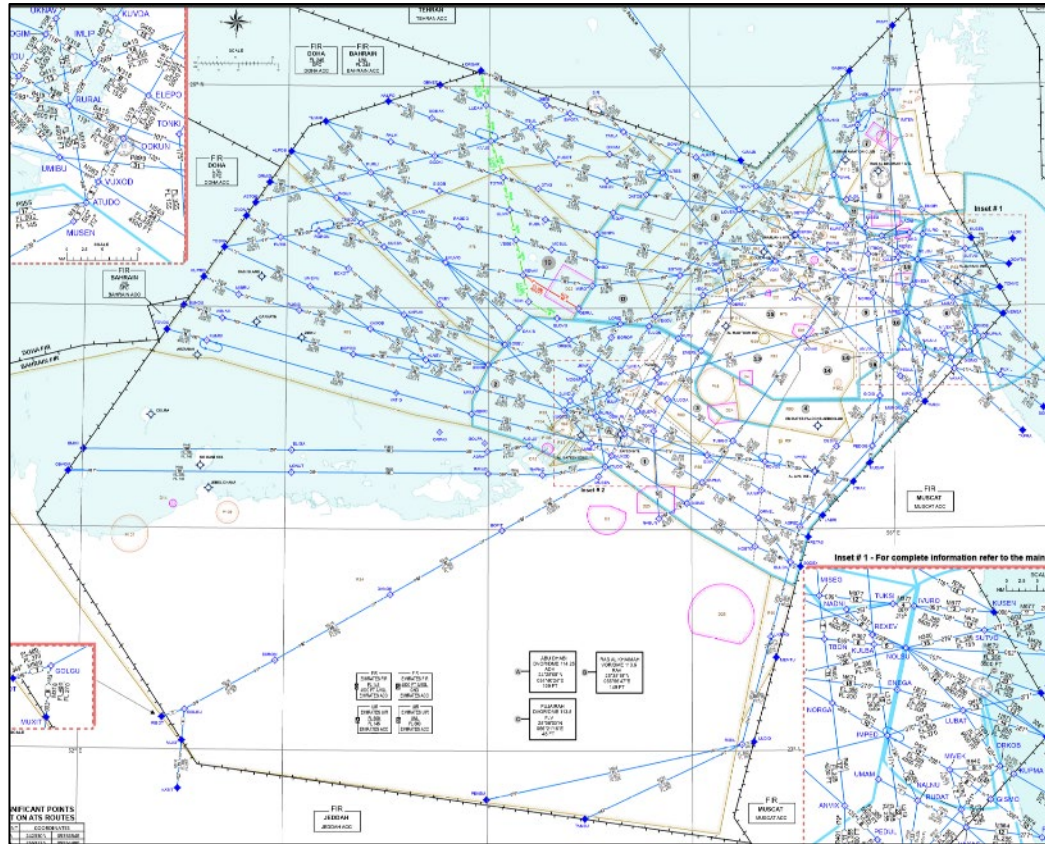
01

# UAE Qatar Cross- border FRA Initiative



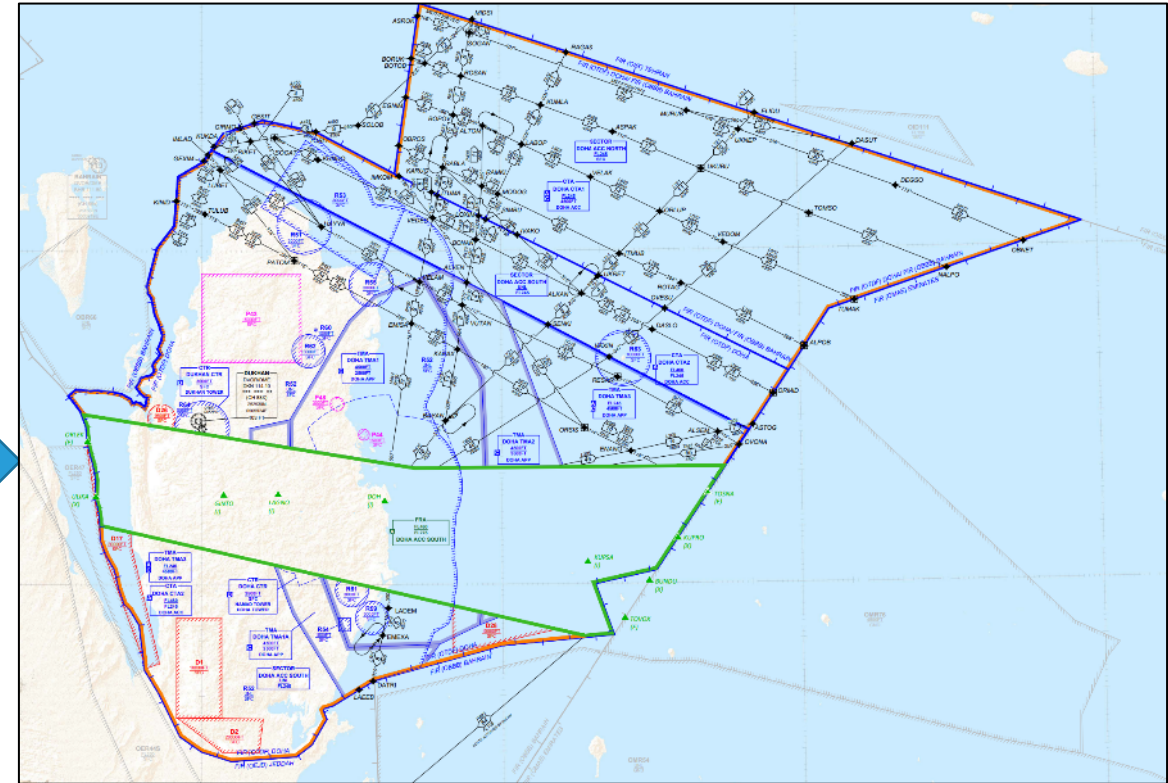
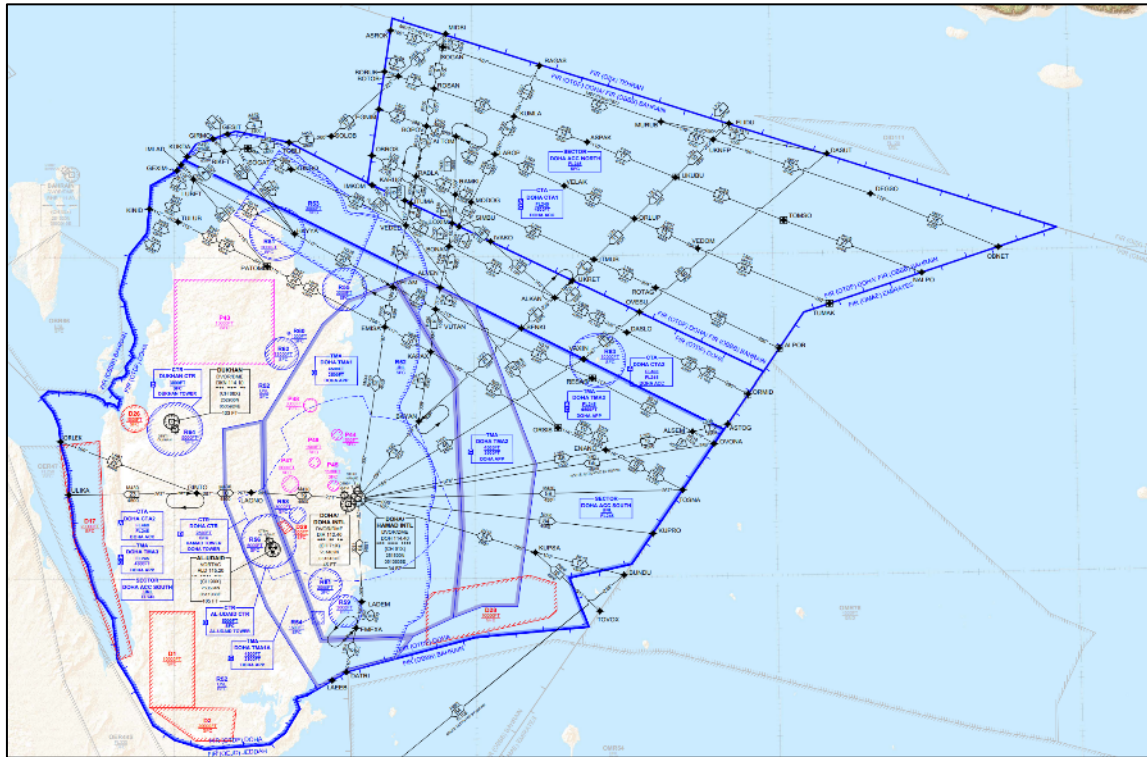


# Emirates FIR Transition to FRA



FL355+

# Doha FIR Transition to FRA



FL460  
FL275







# Traffic Analysis (Westbound Trajectories)

ITRAX															
	FRA Entry point (E)	FRA EXIT (X)	Existig route	FRA Route	Intermediate (I)	Reason	DEP Airport	ARR Airport (Dest)	Present	FRA	Difference	Present time	FRA Time	Difference	
1	ITRAX	ULIKA	MCT T506 TULBU G652 TOKRA Y511 BOSOB M321 KIA	>MCT Q978 ITRAX > ULIKA V975 HSA V975 KOBOX V975 DEGLA V975 KIA >			OOMS	OERK	748.6	653.7	94.9	2:38:00	2:24:00	0:14:00	
5	ITRAX	ULIKA	OPKC MELOM A454 PARET A454 TAPDO A454 VUSET N571 MENSA N571 ALPOB L768 OBROS L768 ULADA T136 OTISU N112 GETOT Q212 ETBAS KIA	OPKC KC J215 PUNEL J167 OREMU J169 PI J120 BIVIN R462 MIXAM P899 ITRAX ULIKA M430 KOBOX KIA			OPKC	OERK	1201.9	1167.6	34.3	4:19:00	4:09:00	0:10:00	
6			OPKC MELOM A454 TAPDO G652 VEKAN G652 TULBU M628 PEKEM MEDPO SITUK M321 KIA						1232.5	1167.6	64.9	4:15:00	4:09:00	0:06:00	
7	SODEX	ULIKA	VAAH AAE L639 RASKI KIPOL L444 TOLDA M628 PEKEM MEDPO SITUK M321 RESAL KIA	VAAH AAE L639 RASKI KIPOL L444 TOLDA M628 TULBU N563 SODEX N563 UMIBU ULIKA M430 KIREN M430 KIA	UMIBU	OMR54	VAAH	OERK	1519	1466.8	52.2	5:07:00	5:01:00	0:06:00	
8	SODEX	ULIKA	VAAH AAE L639 RASKI L301 RAGMA N571 ALPOB L768 ULADA T136 EMUSA Q212 ETBAS KIA		UMIBU	OMR54			1502.4	1466.8	35.6	5:14:00	5:01:00	0:13:00	
9	ITRAX	ULIKA	VABB SAKUN V2 SUGID N571 PARAR N571 MENSA N571 ALPOB L768 OBROS L768 ULADA T136 EMUSA Q212 ETBAS KIA	VABB SAKUN SUGID N571 PARAR N767 ELIGO L631 MCT T508 MIXAM P899 ITRAX ULIKA M430 KIREN V975 GOLNO M430 KOBOX KIA			VABB	OERK	1583.9	1520.4	63.5	5:22:00	5:05:00	0:17:00	
10	ITRAX	ULIKA	VABB ADPOP P574 TOTOX L555 TOLDA M628 PEKEM KATIT MEVDO BOSOB M321 RESAL KIA						1604.2	1520.4	83.8	5:16:00	5:05:00	0:11:00	
11	ORLIK	TBD	OERK ALTAV H976 MUSRI P891 GESOR L308 DAROR P559 BORUK P559 VUTEB OMDB	KINIB Z511 GISRA KUPRO N300 GIDOB N300 ORBOL N300 LORID			OERK	OMDB	566.8	493.1	73.7	1:42:00	1:31:00	0:11:00	
12			OERK RESAL T533 RAPMA KUVSO RIBOT M550 GOLGU M318 RURAL Q317 LORID OMDB						584.8	493.1	91.7	1:48:00	1:31:00	0:17:00	
13	ORLIK	TONVO	KIA ALTAV H976 MUSRI P891 GESOR L308 DAROR P559 BORUK P559 NALPO TONVO A777 NADSO B524 ALPOR G216 LOTAT	KINIB Z511 GISRA L681 ORLEK GIDOB TONVO A777 NADSO B524 ALPOR G216 LOTAT	GIDOB		OERK	OPKC	1226.6	1149.2	77.4	3:38:00	3:25:00	0:13:00	

Accumulative average of **11 minutes** to be saved

Accumulative average of **67.2 NM** to be saved

# Cross-border FRA Traffic Analysis Sample

Candidate Flight: **BBC339**

Type: **B773**

Leg: **VGHS – OERK**

Not taking into consideration:

- ground delays
- Flight levels
- runways orientation
- weather conditions



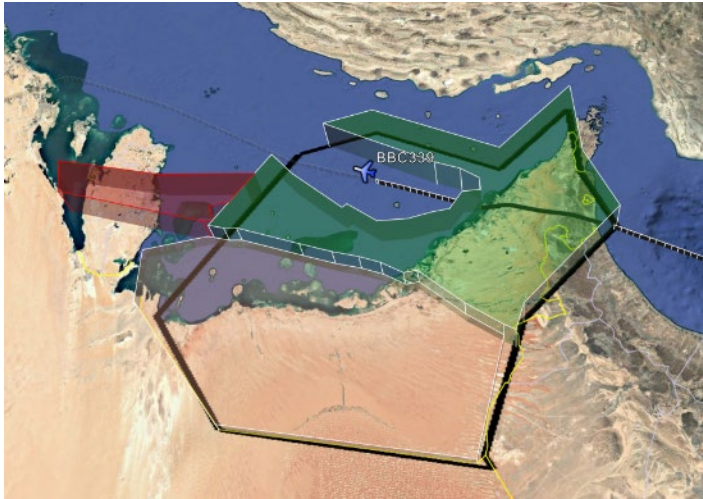


# Cross-border FRA Traffic Analysis Sample

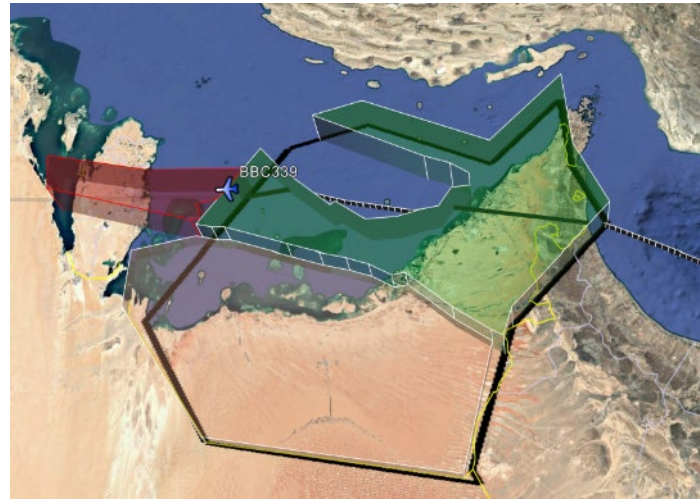
Non-FRA  
25 Apr 2025

FRA  
27 Apr 2025

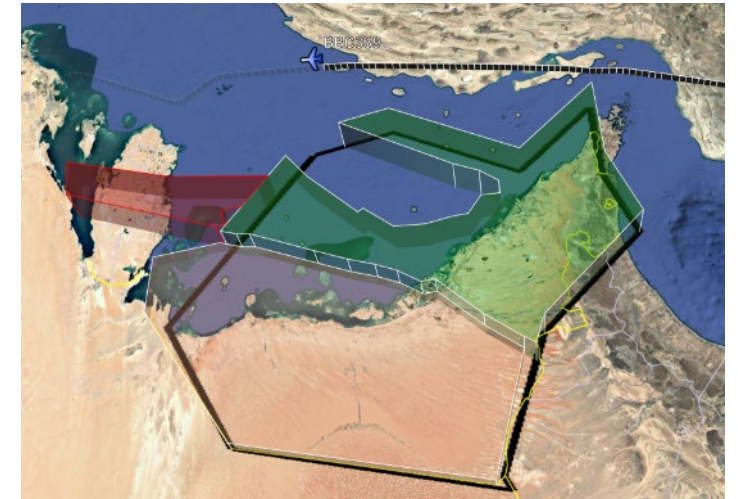
Non-FRA  
28 Apr 2025



2517 NM



2481 NM



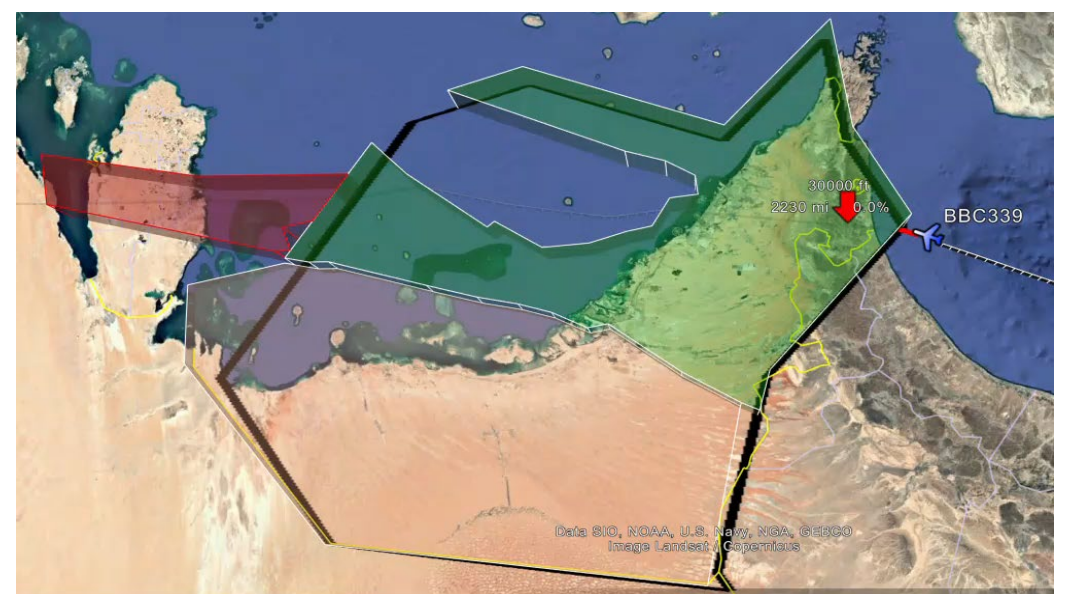
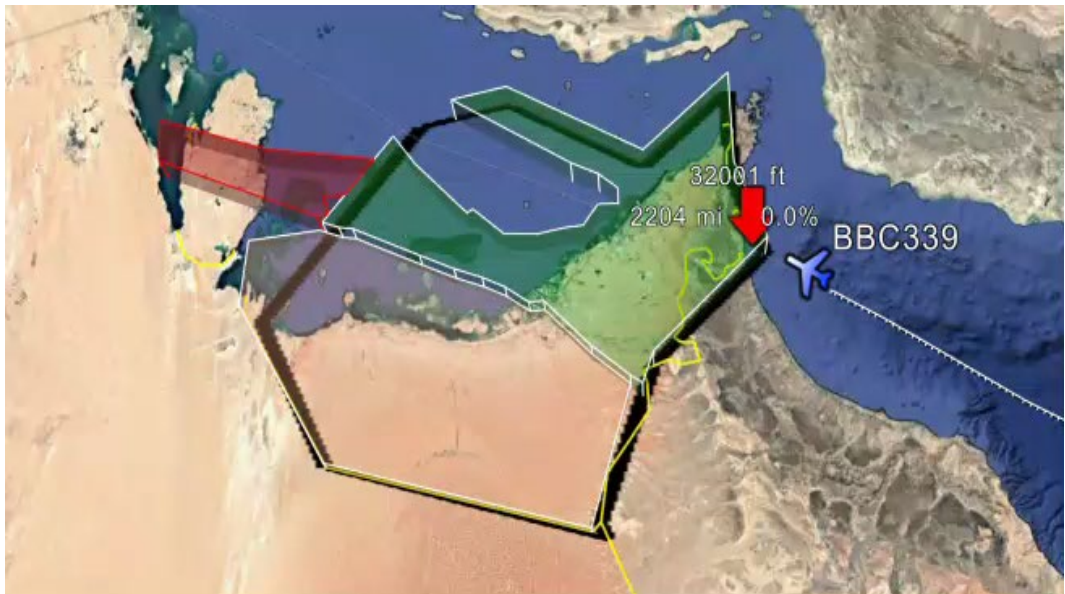
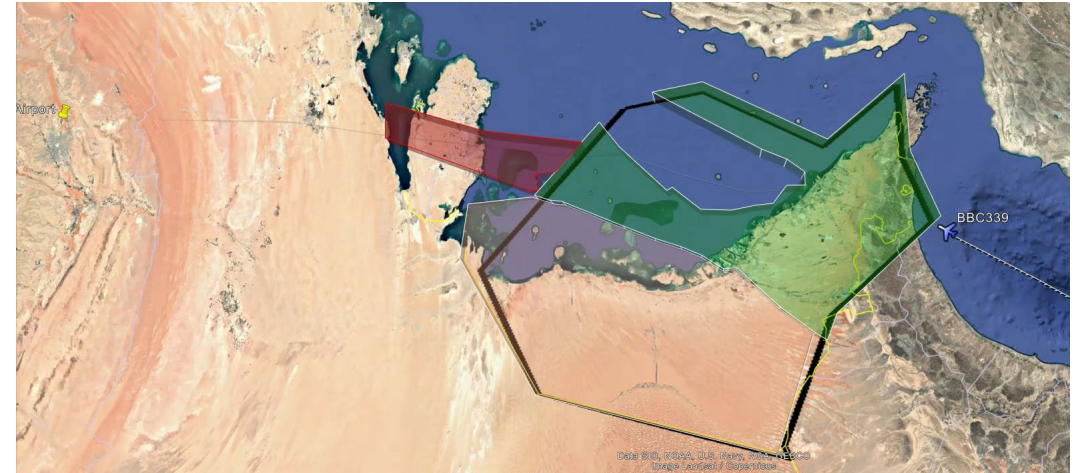
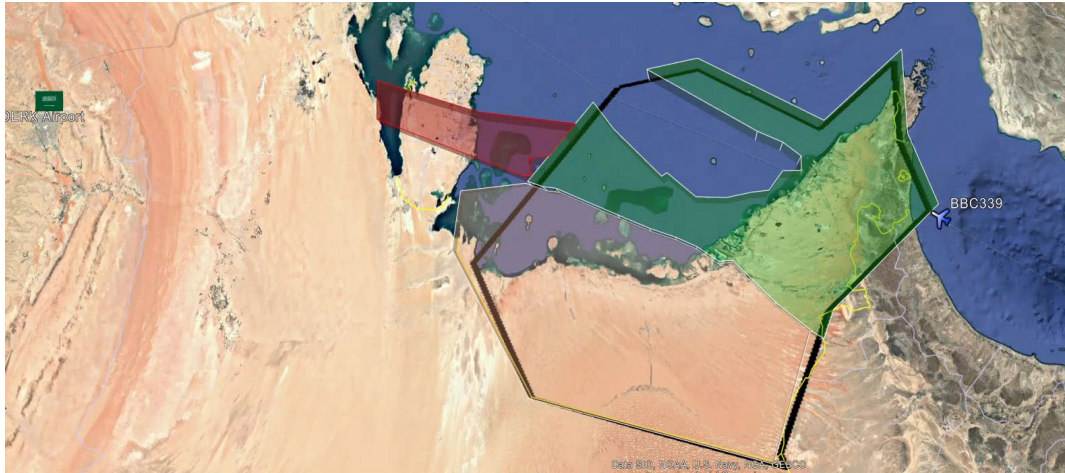
2495 NM

36 NM savings with cross-border FRA

14 NM savings with cross-border FRA



# Cross-border FRA Traffic Analysis Sample



## Comparison of Benefits

Item	Conventional Routing	Cross-Border FRA	Savings (Benefit)
Distance (Nautical Miles)	2,517 NM ↑	2,481 NM ↓	36 NM ☑
Flight Time (at 488 kt)	5.16 hr (309.6 min)	5.08 hr (304.8 min)	4.8 minutes
Cost to Airspace Users (AED)	AED 147,244.5	AED 145,138.5	AED 2,106
Cost to Airspace Users (USD)	\$40,117	\$39,532	\$585 saved
CO <sub>2</sub> Emissions (kg)	122,200 kg	120,300 kg	1,900 kg saved
For 1,000 Flights (USD)	\$40.12 million	\$39.53 million	\$585,000 saved
For 1,000 Flights (CO <sub>2</sub> )	122,200,000 kg	120,300,000 kg	1,900,000 kg (1,900 tons)

### References & Assumptions

Item	Value / Source
Aircraft Type	Boeing 777-300 (B773)
Cruise Speed	488 knots (typical long-haul cruise)
Fuel Burn Rate	7.5 tons/hour (cruise average)
CO <sub>2</sub> Emission Factor	3.16 kg CO <sub>2</sub> /kg fuel (ICAO standard)
CO <sub>2</sub> per Flight Hour	7,500 kg × 3.16 = 23,700 kg
Cost to Airspace Users	58.5 AED per NM (regional ANSP charge estimate)
Currency Exchange Rate	1 USD = 3.67 AED





## Action By the Meeting

- a) note the content of this WP and the initiative by Qatar & UAE
- b) encourage States to initiate or accelerate the implementation of Free Route Airspace (FRA) within their areas of responsibility in accordance with **MID ANP** and **GANP** guidance.
- c) urge States to actively pursue cross-border FRA arrangements through **collaborative planning, harmonized procedures, and timely coordination** to enhance airspace efficiency and reduce environmental impact.
- d) invite airspace users to participate in FRA planning activities by **providing operational data, sharing performance feedback**, and supporting the identification and quantification of operational and environmental benefits.



**End of  
Presentation**



**ANY QUESTION?**



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# Thank You

