

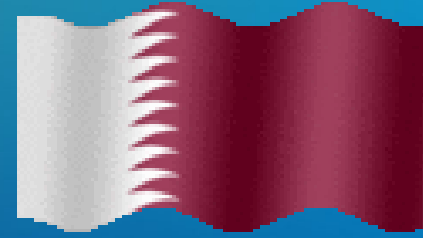


الهيئة العامة للطيران المدني
CIVIL AVIATION AUTHORITY
قطر QATAR



ICAO

MIDANPIRG/22 & RASG-MID/12



Doha, Qatar | May 4-8, 2025



GONCA DEMIROZ

Head of Approach Operations

Qatar Civil Aviation Authority



QATAR CROSSBORDER FREE ROUTE AIRSPACE

01

ABOUT CROSS BORDER
FREE ROUTE AIRSPACE

02

QATAR'S STRATEGIC
AIRSPACE PLAN AND
POSITION

03

ICAO's OBJECTIVES and
ASBU ELEMENTS

04

QATAR'S OBJECTIVES
THROUGH CROSS BORDER
FRA IMPLEMENTATION

05

IN PRACTICE OPERATIONS

06

TACTICAL & OPERATIONAL
CHALLENGES

07

PERFORMANCE
MONITORING KPIs

08

LOOKING AHEAD: 2025
AND BEYOND



01

ABOUT CROSS BORDER FREE ROUTE AIRSPACE





02

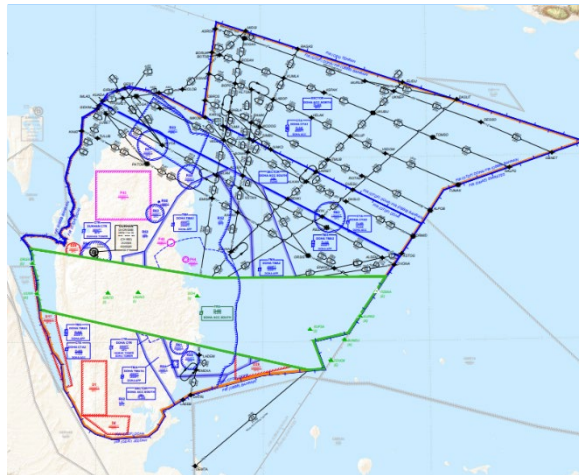
QATAR'S STRATEGIC AIRSPACE PLAN AND POSITION



Qatar's Strategic Airspace Plan and Position

Qatar's strategic plan for cross-border Free Route Airspace centers on enhancing regional interoperability, optimizing flight efficiency, and aligning with global aviation standards. Through strong collaboration with neighboring FIRs, the initiative aims to deliver seamless direct routing, reduce environmental impact, and support the modernization of air traffic management across the region.

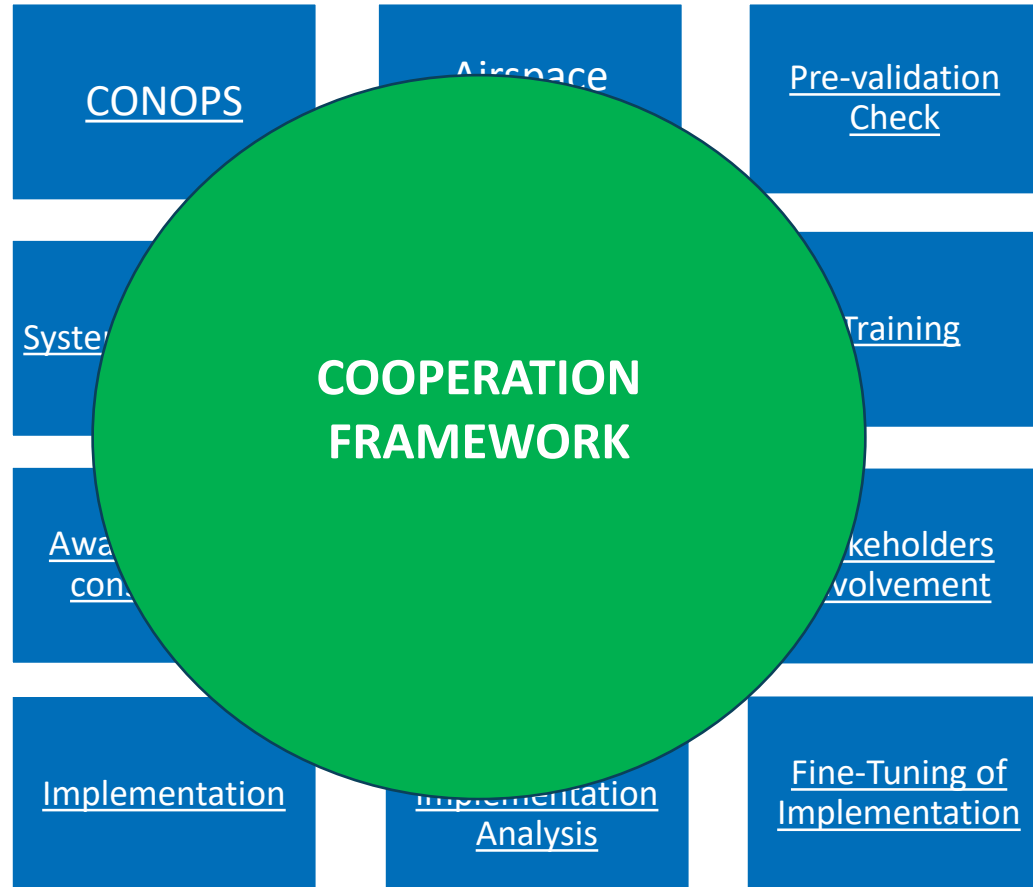
- Location at the crossroads of Asia, Europe, Africa traffic flows.
- High-density east–west overflight routes.
- Role as an FIR between UAE, Iran, Saudi Arabia, and Bahrain.



Cross Border Free
Route Implementation
In 2025



ROADMAP

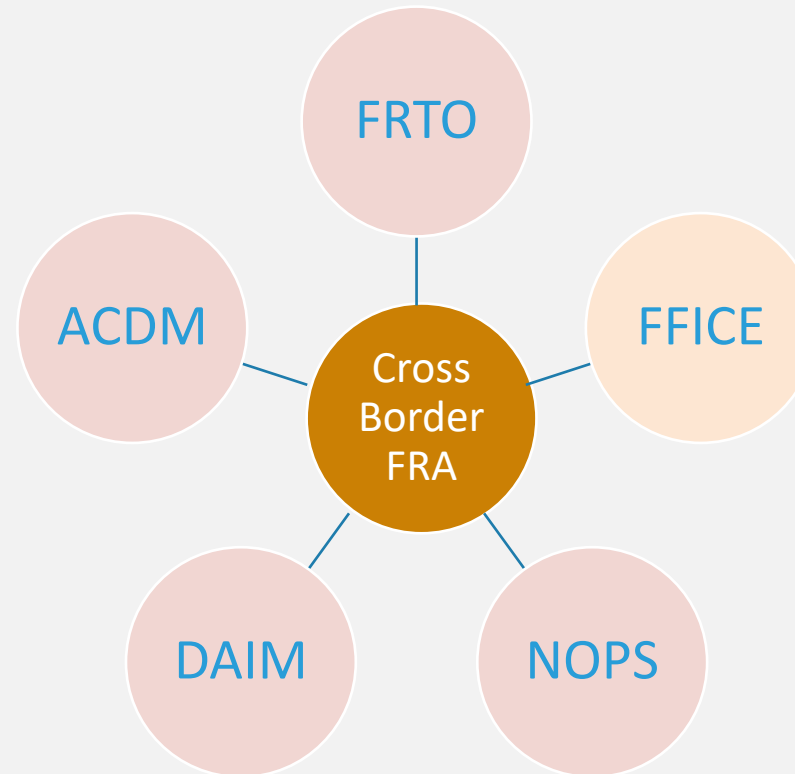


The cooperative framework stands as the keystone for regional airspace modernization. In order to achieve our national and regional objectives jointly pursuing projects integration is essential for a seamless global air navigation system in the Middle East.



03

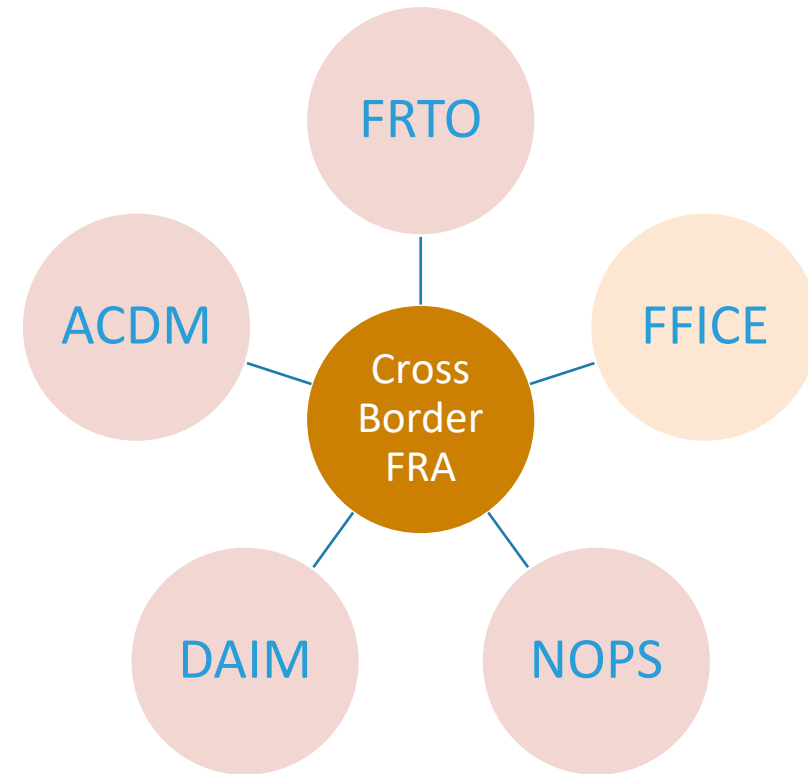
ICAO's OBJECTIVES and ASBU ELEMENTS



Qatar's Strategic Airspace Plan and Position

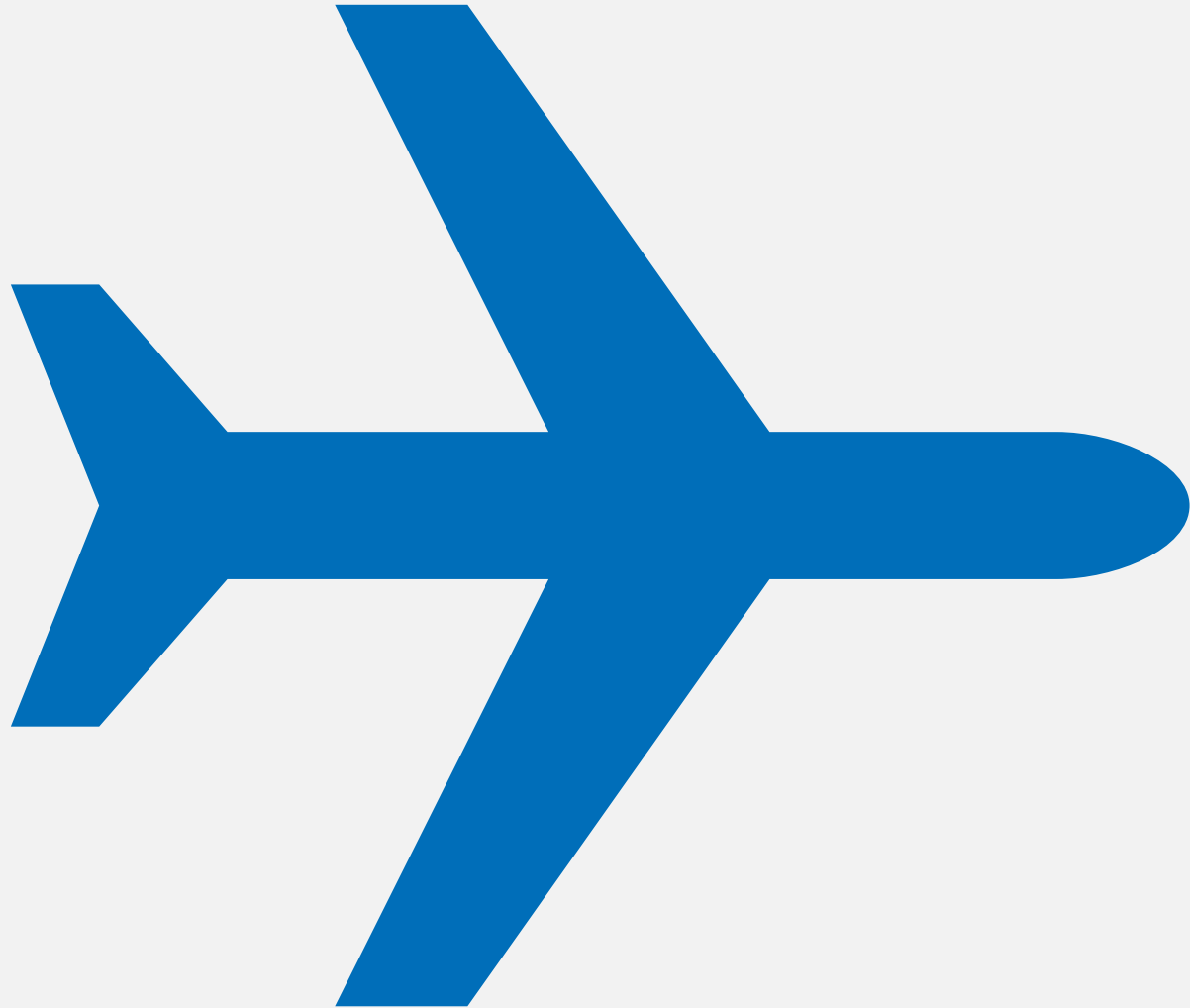
The cross-border FRA concept is deeply rooted in ICAO's Global Air Navigation Plan (GANP) and related ASBU (Aviation System Block Upgrades) Elements particularly:

Qatar's commitment to advancing these ASBU elements reflects its dedication to enhancing air navigation services and aligning with global aviation standards.



04

**QATAR's
OBJECTIVES
Through Cross
Border FRA
Implementation**



QATAR's OBJECTIVES Through Cross Border FRA Implementation

1. Collaboration

Establish operational agreements with neighboring States to allow cross-border FRA operations.

Phase 1 : UAE-QATAR FRA Ongoing Discussion

Developing cross-FIR route catalogs and flexible/dynamic COPs (Coordination Points).

Supporting regional performance-based approach operations.

2. Update Technical Capabilities

Ensure FDP systems support free route processing, trajectory prediction, and DCTs (directs).

Automate OLDI and radar coordination to manage flexible entry/exit points.

3. Civil-Military Coordination

Implement dynamic airspace management to mitigate airspace restrictions (e.g., conditional routes, flexible use airspace concepts).



QATAR's OBJECTIVES Through Cross Border FRA Implementation

4. Procedural and Structural Readiness

Letters of Agreement (LOAs), ATC procedures, and Controller Training Programs to including contingency planning.

5. Participate in Regional FRA Roadmaps

Contribution to working groups to align timelines and best practices.

Harmonization with ICAO MID Region FRA roadmap.

6. Reduction in fuel burn and CO₂ emissions through optimized trajectories

The project reinforces Qatar's sustainability goals in line with ICAO's Carbon Offsetting and Reduction Scheme



QATAR's OBJECTIVES Through Cross Border FRA Implementation

7. Enhanced Flexibility

Airlines can plan more dynamic trajectories based on performance and weather. ATCOs benefit from fewer fixed route constraints, allowing proactive conflict management.

8. Airspace Capacity Improvement

Smoother handovers with neighbours to enhance sector throughput in Doha ACC.

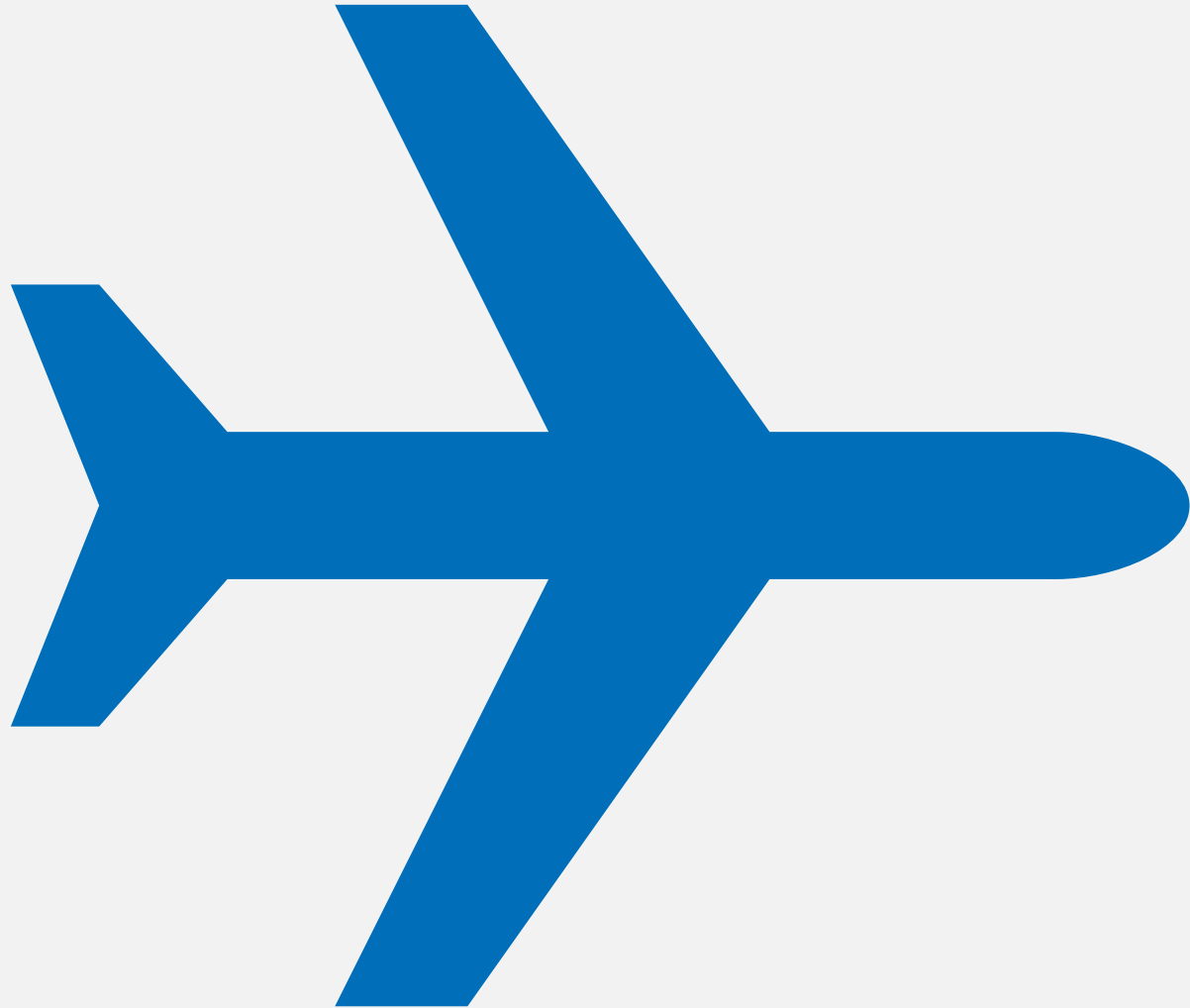
Reduction complexity of congested traditional ATS routes.

9. Targeting mid-term regional Phase 2 FRA harmonization.

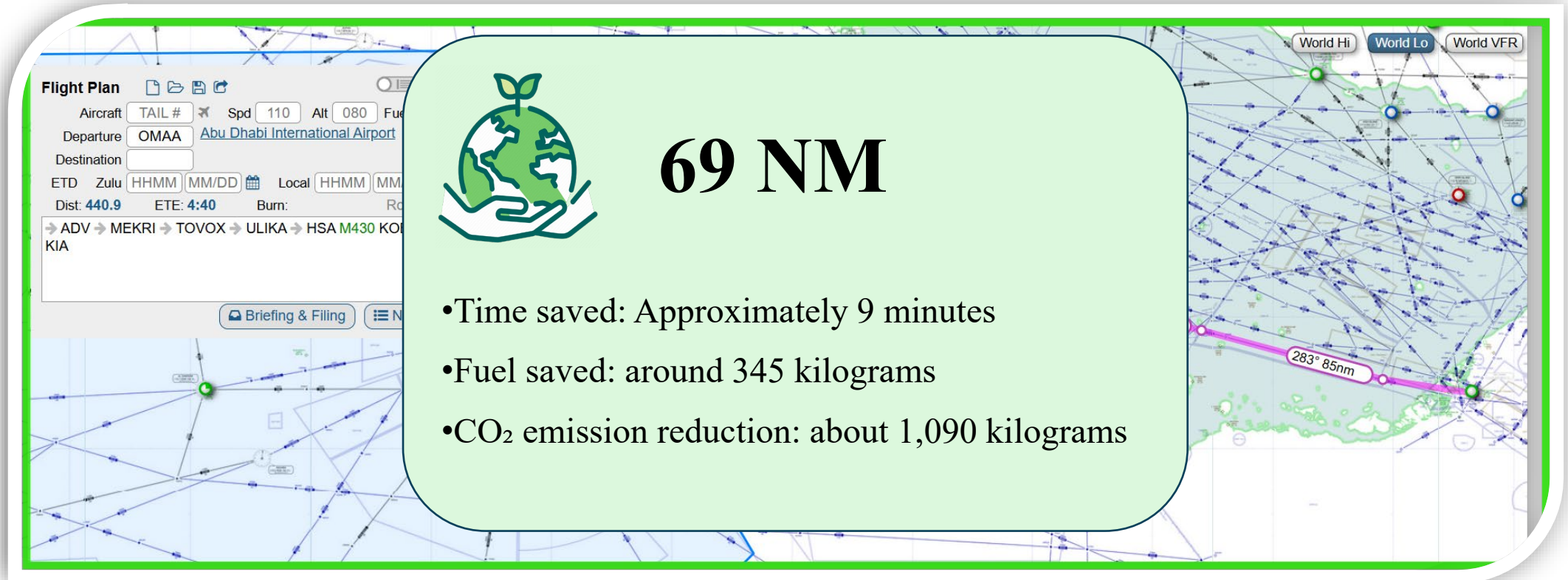


05

IN PRACTICE OPERATIONS



IN PRACTICE OPERATIONS

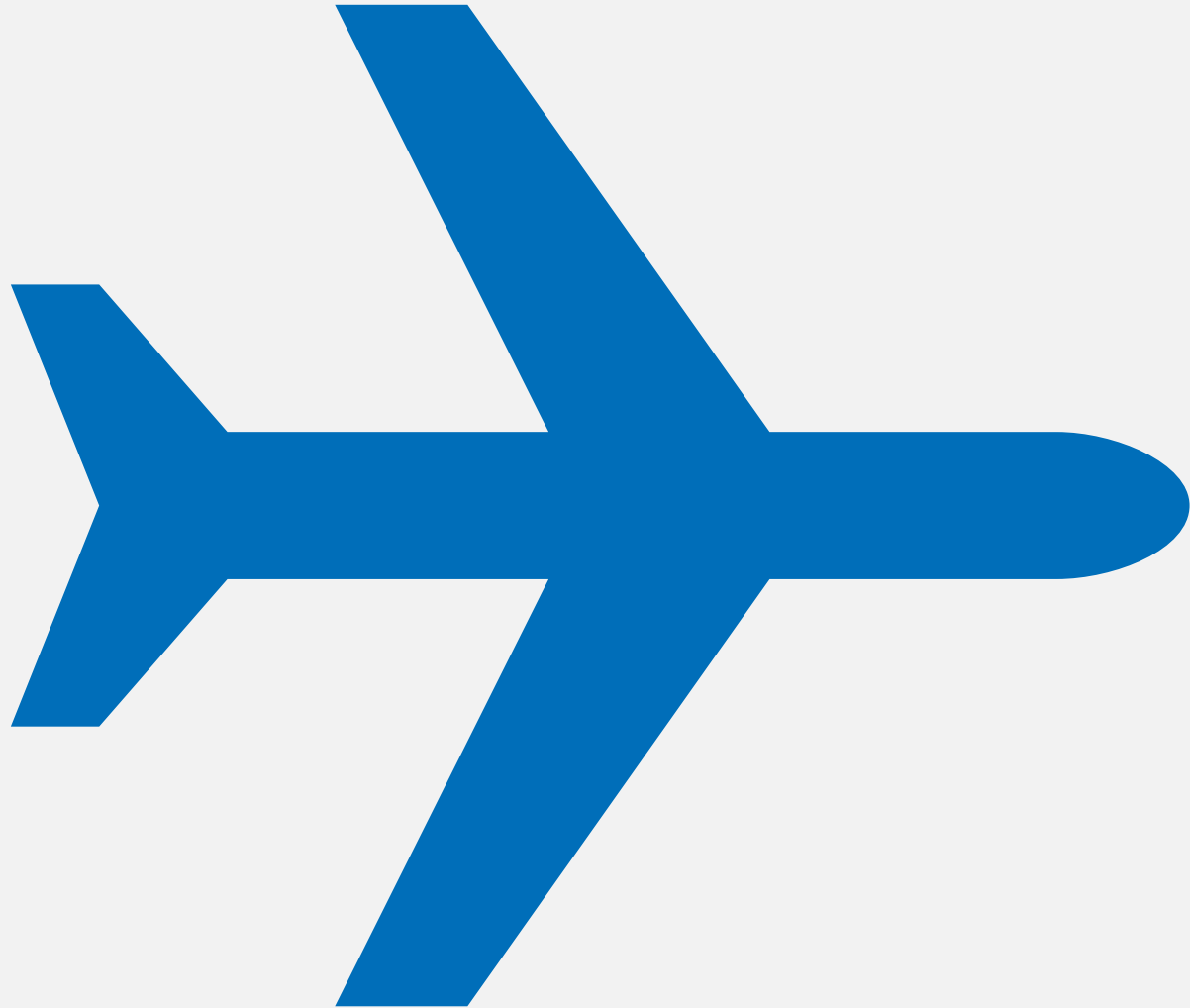


ATS
ROUTES
507 NM

CROSS
BORDER FRA
438 NM

06

TACTICAL & OPERATIONAL CHALLENGES



TACTICAL & OPERATIONAL CHALLENGES

1. Airspace Design Conflicts

- Existing route structure may conflict with direct FRA flows
- Military restricted areas in both FIRs limit the availability of optimal cross-border trajectories. Discussions Ongoing.

2. Coordination Complexity

- Real-time coordination required for traffic outside standard COPs. Ready.
- OLDI messages and system adaptations may need fine-tuning (e.g., flexible COP activation, tactical point handovers) Ready.



TACTICAL & OPERATIONAL CHALLENGES

3. Sector Workload Imbalance

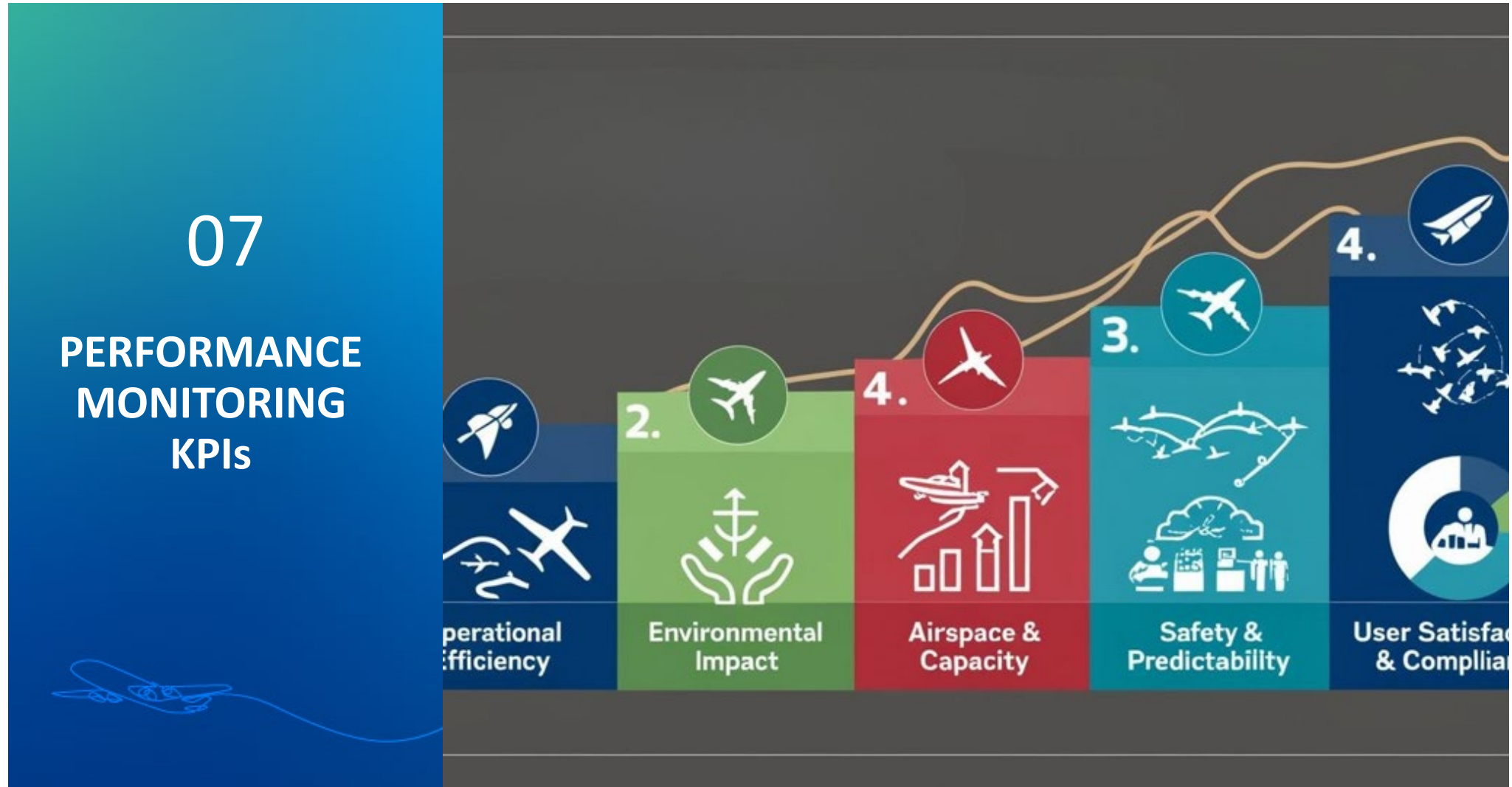
- Qatar FIR's ACC sectors may need for dynamic sector configurations or ATFM regulation on entry volumes.

4. Procedural Adjustments

Existing LOAs and ATC procedures (e.g., fixed FLs, time-based handovers) may need revision. To be Addressed.

- Controllers need retraining for dynamic reroutes and FRA conflict resolution techniques. To be Addressed.





PERFORMANCE MONITORING KPIs



PERFORMANCE MONITORING KPIs

Operational Efficiency

- Average Track Miles Saved per Flight
- Average Flight Time Reduction
- Direct Routing Utilization Rate
- Percentage of flights taking advantage of FRA
- Percentage of flights granted requested cruising levels.
- Rate of tactical point activations beyond published COPs.

Environmental Impact

- Fuel Burn Reduction per Flight
- CO₂ Emission Reductions

Airspace Capacity & Complexity

- Sector Workload Distribution
- Cross-Border Traffic Volumes Coordination Events per Hour

Safety & Predictability.

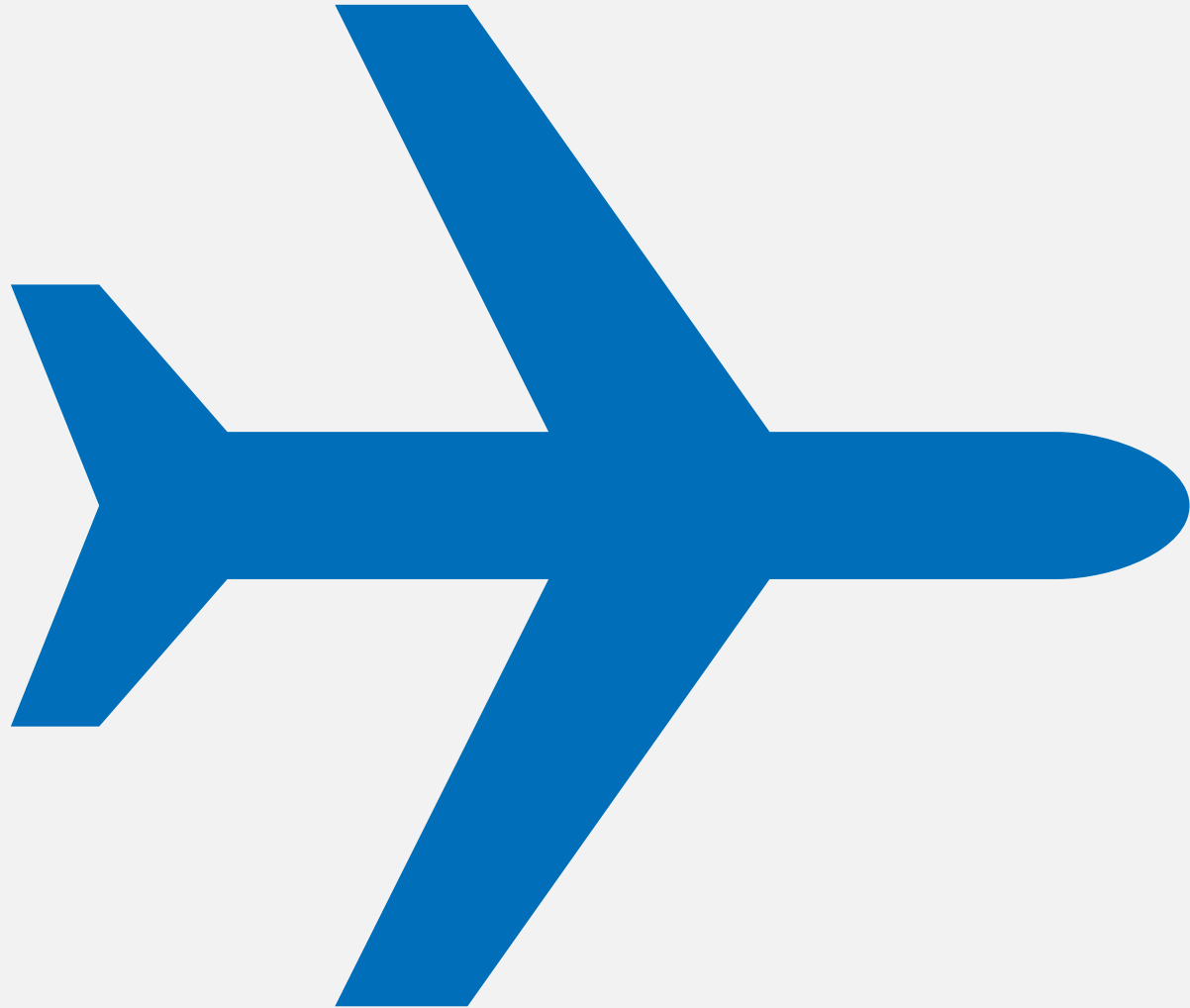
- Separation Minima Infringements
- Conflict Rate per 100 Flights
- ATCO Interventions per FRA Flight

User Satisfaction & Compliance

- Airline FRA Usage Rate
- ATCO Feedback and Confidence Level
LOA and Procedural Compliance



08 LOOKING AHEAD: 2025 AND BEYOND



LOOKING AHEAD: 2025 AND BEYOND

In 2025, Qatar is targeting the implementation of cross-border free route airspace in collaboration with the United Arab Emirates.



LOOKING AHEAD: 2025 AND BEYOND

Qatar's cross-border Free Route Airspace initiative is not only a testament to our regional commitment but also a critical step toward a more efficient, collaborative, and sustainable future for global aviation.



—

Thank You

