



الشركة العامة لخدمات الملاحة الجوية

Air Traffic Flow Management in Iraq

ICAO APAC/MID ATFM & FF-ICE
DUBAI 2025



Overview of Baghdad FIR

01

Baghdad FIR has two main ACC sectors:
North sector and South sector.

02

Baghdad FIR has three approach sectors:
Kirkuk, Baghdad, and Ali sectors.

03

Baghdad has 6 main international airports and some military bases.

ENROUTE CHART - ICAO

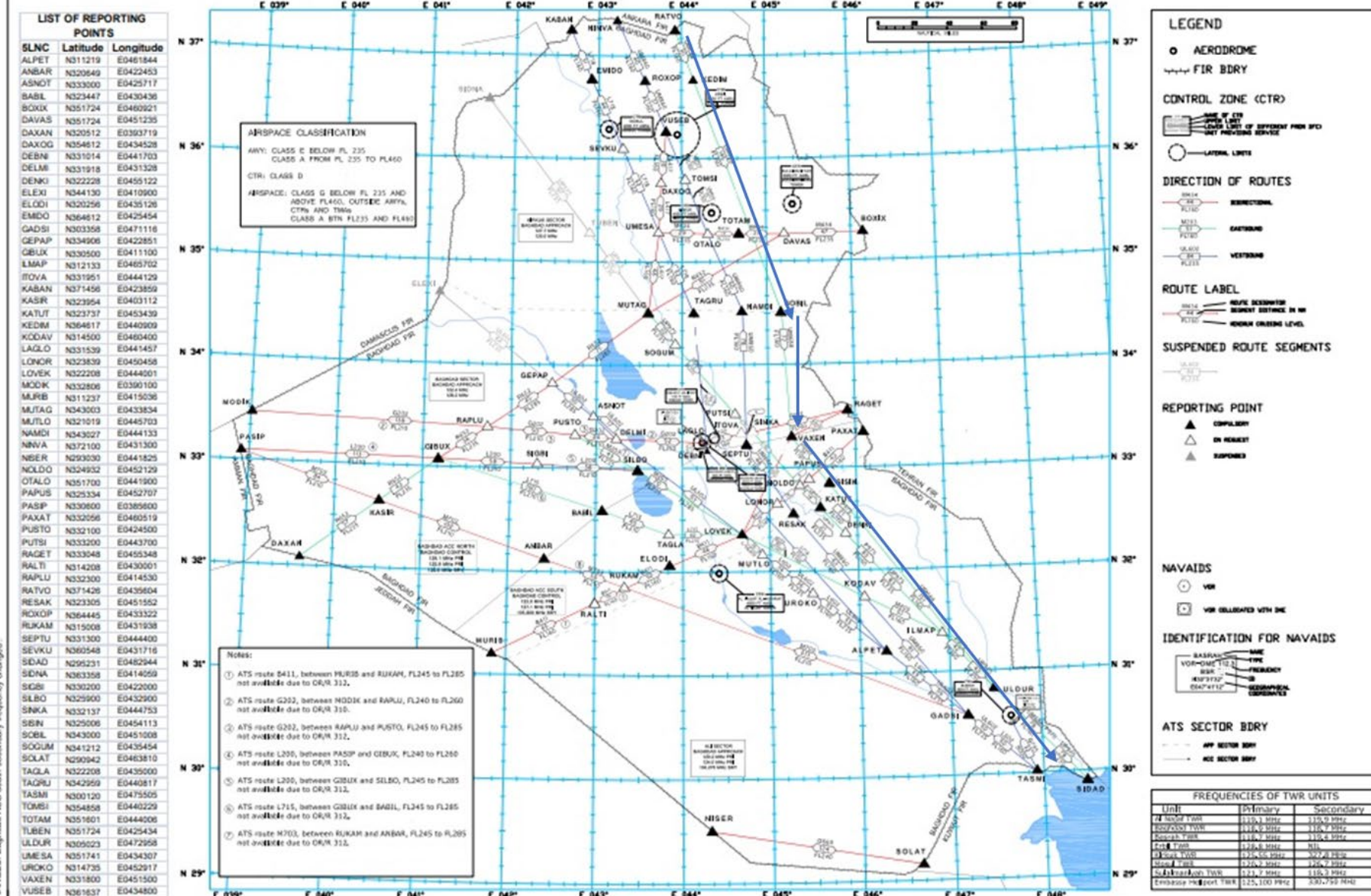


CHANGES: Baghdad ACC south secondary frequency changed.

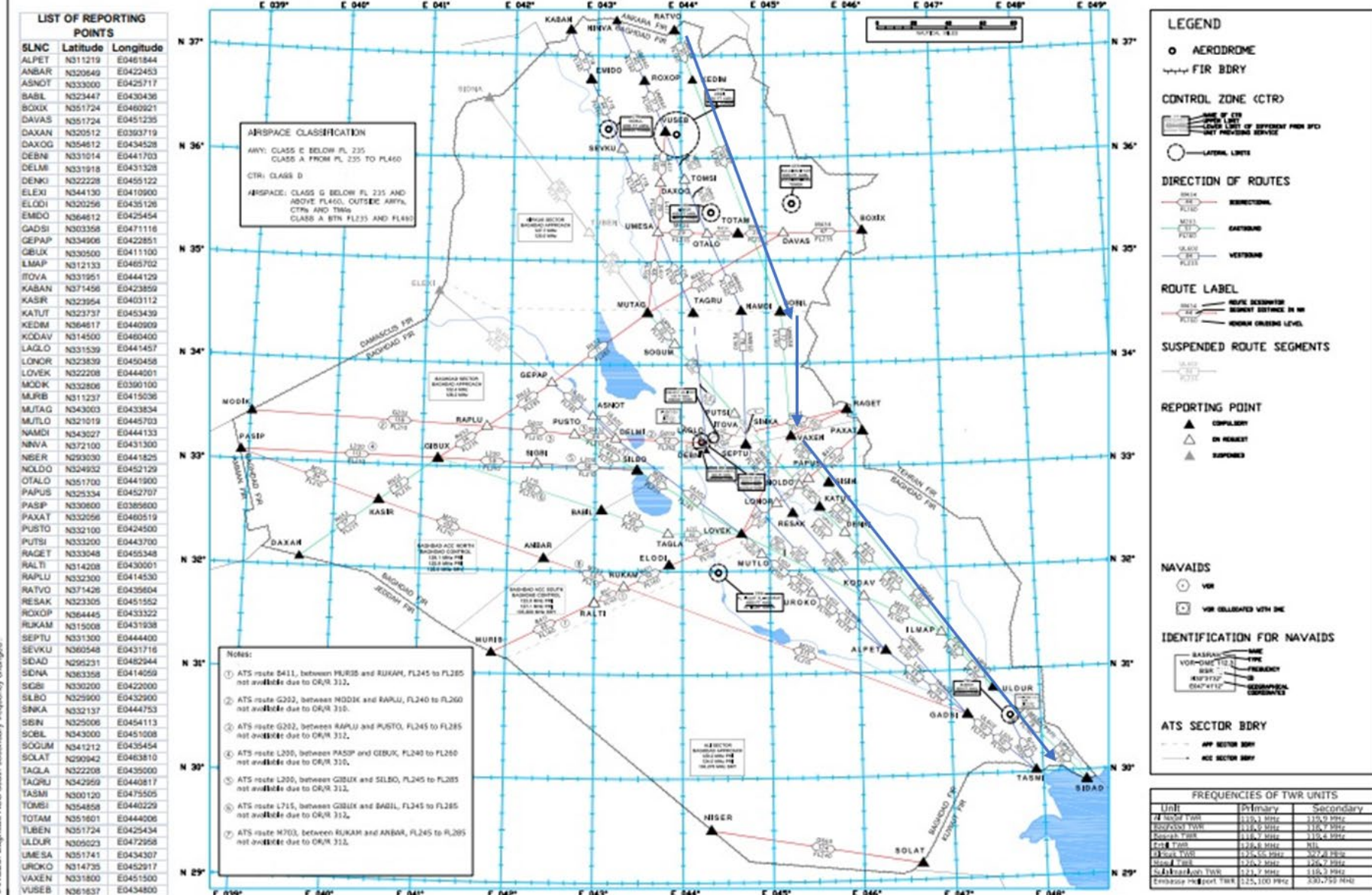
Iraq Civil Aviation Authority

AIRAC AIP AMDT 01/22

ENROUTE CHART - ICAO



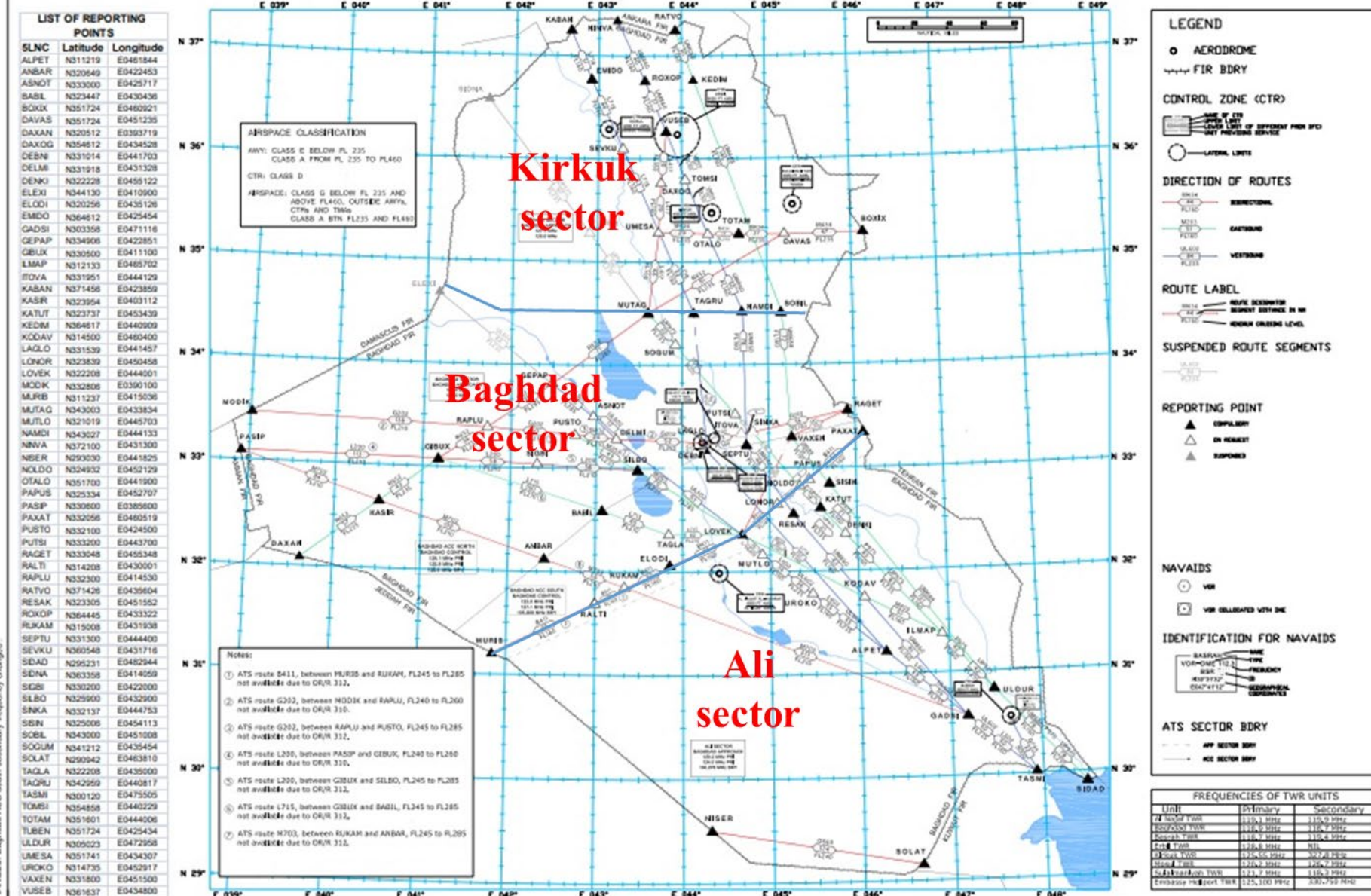
ENROUTE CHART - ICAO



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ENROUTE CHART - ICAO



CHANGES: Baghdad ACC south secondary frequency changed.

ATFM Objectives

1

Enhance air traffic flow
efficiency

2

reduce congestion

3

optimize capacity

4

improve safety at major
airports and en-route
sectors.

Key elements of ATFM

1

Strategic Planning

2

Pre-Tactical Coordination

3

Tactical Execution

4

Post-Operational Review

Current ATFM framework in Iraq

Nationwide ATFM strategy developed to align with ICAO MID
ATFM Plan V2.0 that contains:

1

Sector-Based
Flow
Management
(DORATASK
Model)

2

Airport
Capacity
recalculation
s in progress

3

Monitoring
(ATFM
Operations
coordination's)

4

Military
Airspace
Coordination
(40% reduction
in restricted
areas)

Iraq's ATFM Plan based on ICAO MID Guidelines

1- Strategic Phase (Long-Term Planning)

We have

- AI-based traffic prediction
- Nationwide ATFM strategy
- Training programs

Next to come

- Integration with MID ATM Data exchange
- Legal & Regulatory Framework: (LOAs with neighboring FIRs are partially completed) and high coordination with ICAA is currently in place

Iraq's ATFM Plan based on ICAO MID Guidelines

2- Pre-Tactical Phase (Medium-Term Planning)

We have

- Sector capacity calculations
- Congestion identification
- Slot coordination
- Sharing ADPs with Qatar, UAE and KSA

Next to come

- Integration with real-time traffic updates

Iraq's ATFM Plan based on ICAO MID Guidelines

3- Tactical Phase (Real-Time Execution)

We have

- Flow control measures
- Real-time traffic adjustments
- Cross-Border coordination with Qatar, UAE and KSA

Next to come

- ATFM Dashboard Integration in the ATC Ops room

Iraq's ATFM Plan based on ICAO MID Guidelines

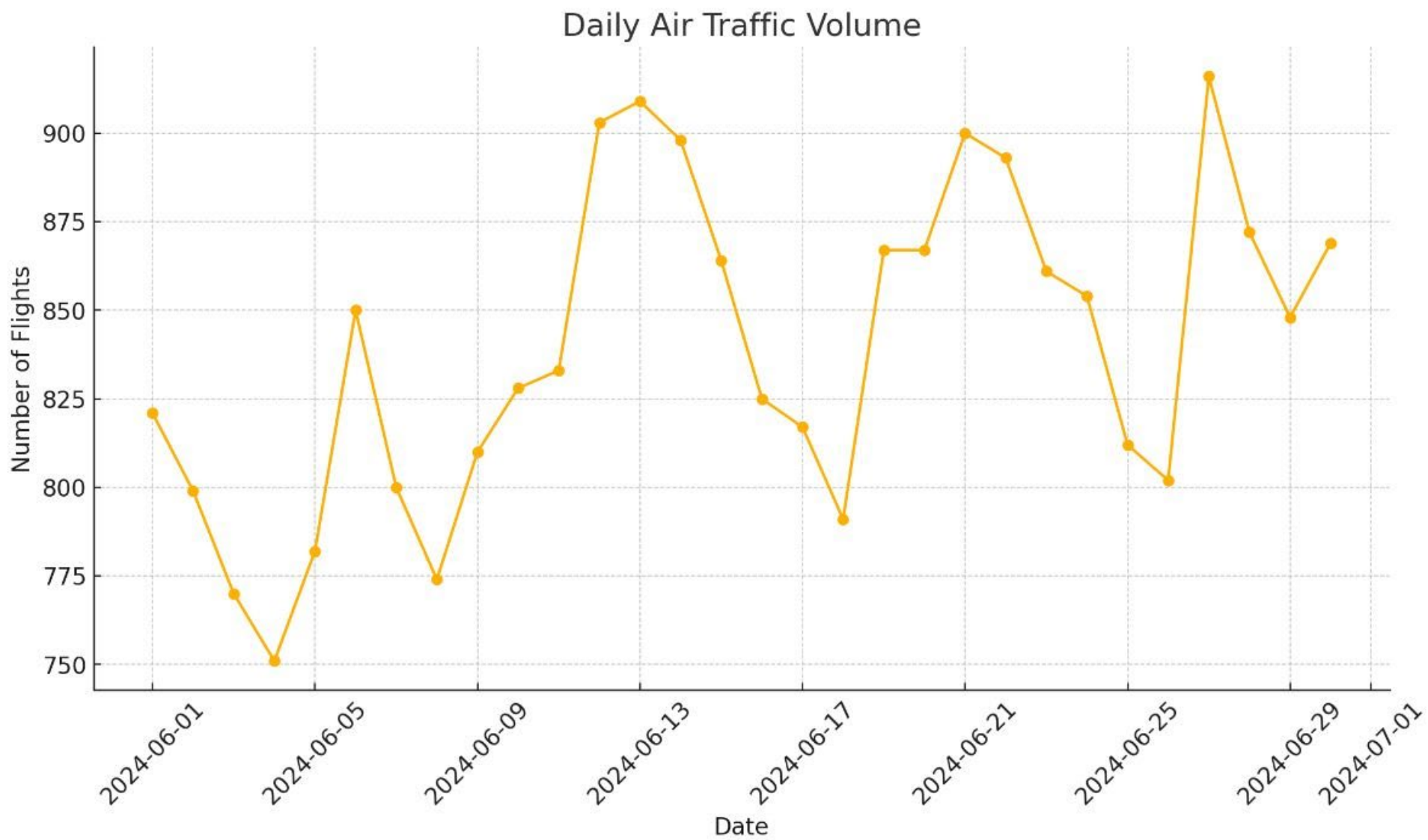
4- Post-Operational Phase (Review & Improvement)

We have

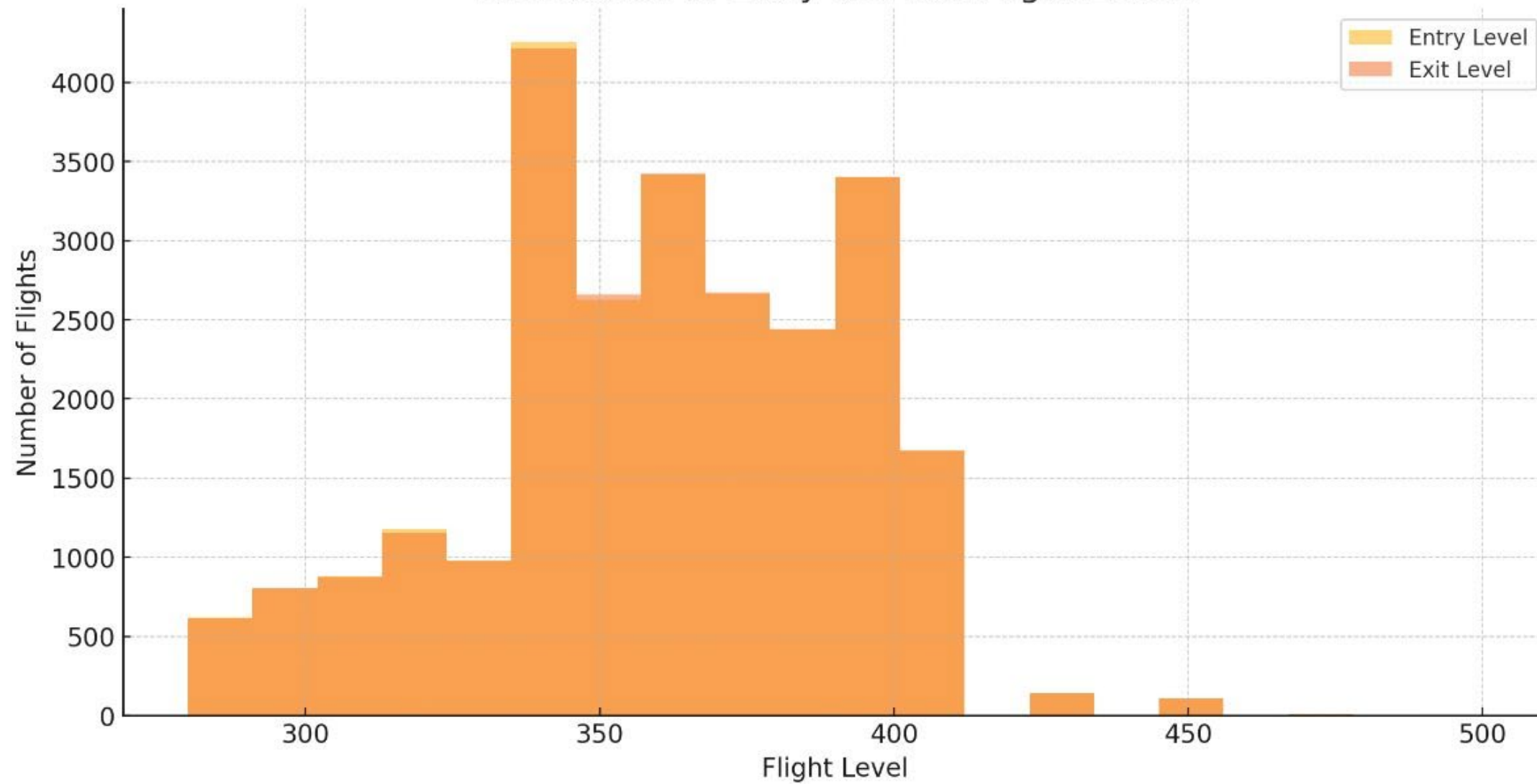
- KPI tracking
- Data analytics
- Annual ATFM Performance reports

Next to come

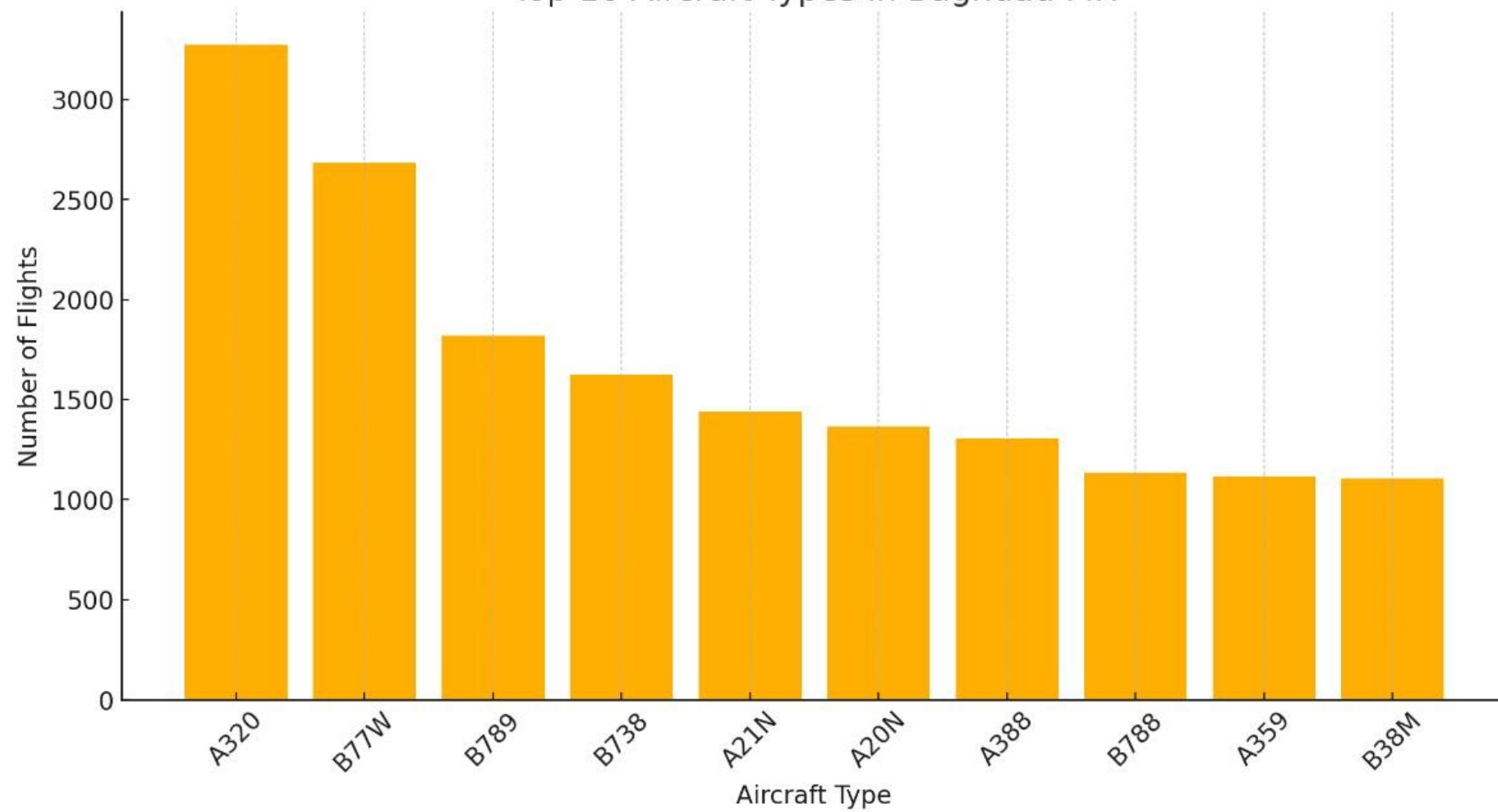
- Benchmarking against ICAO MID KPIs
- Performance Feedback Mechanisms

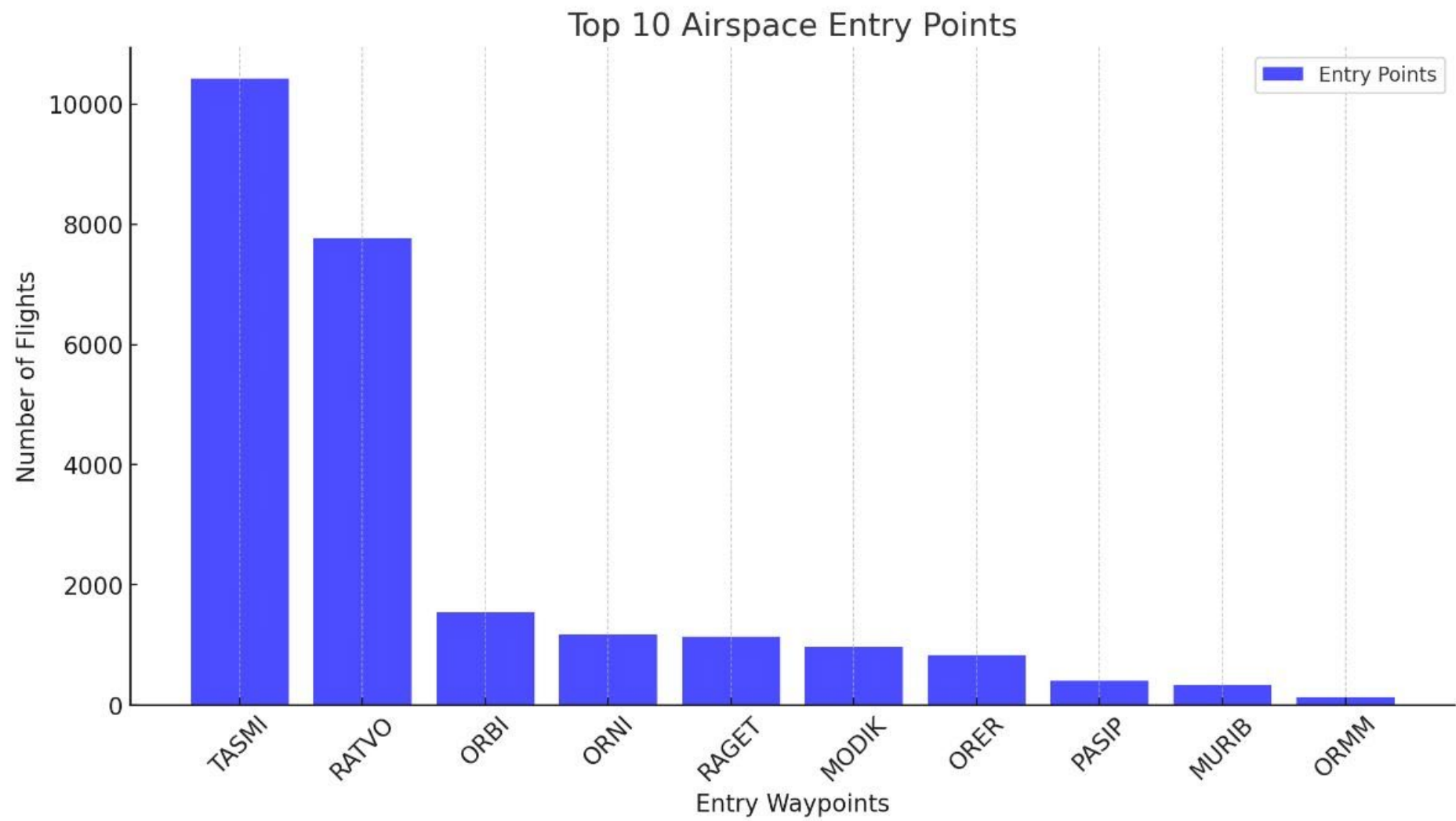


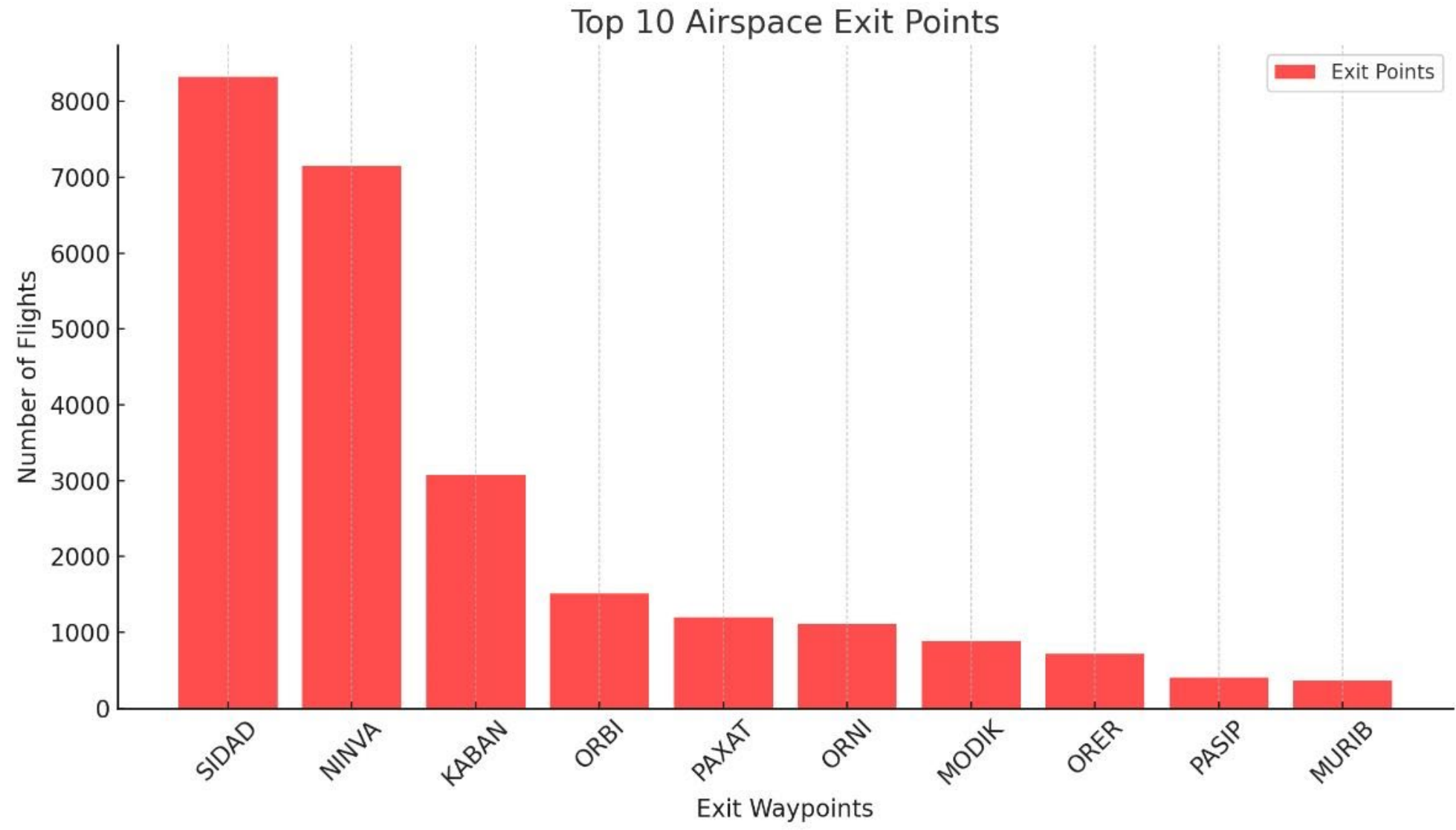
Distribution of Entry and Exit Flight Levels



Top 10 Aircraft Types in Baghdad FIR



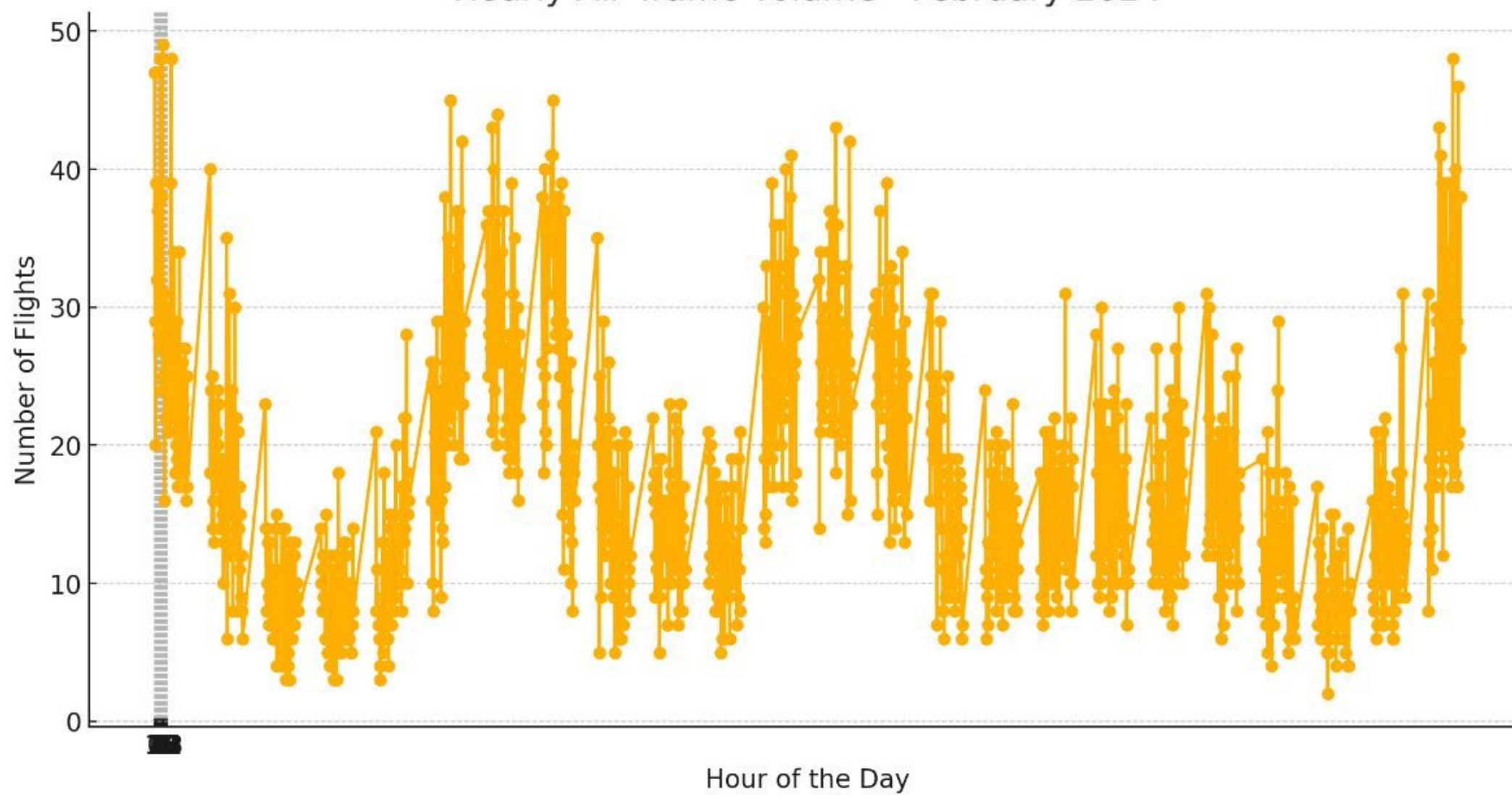




Air Traffic Forecast for Next 15 Days



Hourly Air Traffic Volume - February 2024



Multi-Nodal ATFM

What is Multi-Nodal ATFM?

- Decentralized Flow Management
- Regional Coordination ADP only (Qatar, UAE, Saudi Arabia ,Amman, Egypt)
- Data Exchange with Other FIRs
- Cross-Border CDM

Iraq's Role:

- Define Baghdad ATFM Node
- Participate in Regional ATFM Coordination
- Implement Daily ATFM Planning (ADP)

AI-Driven ATFM Model for predicting Traffic

Python-based AI Model developed for peak traffic prediction.

Analyzes:

- Congestion patterns for historical data
- Weather & METAR influences (For towers)
- En-route sectors workload

Enhances:

- Real-time traffic flow management
- Demand-capacity balancing
- Airport & airway slot allocation (for Najaf airport)

Roadmap for progressing ATFM in Iraq

Short Term

- ✓ Start KPI Tracking in ATC Towers
- ✓ Improve AI-based traffic prediction system
- ✓ Enhance Daily ATFM Plan (ADP) Coordination
- ✓ Activate Multi-Nodal ATFM Operational Data-Exchange

Roadmap for progressing ATFM in Iraq

Mid Term

- ✓ Include Airlines & ANSPs to get more impact on the decision-making
- ✓ Expand Real-Time Data Sharing
- ✓ Create a partial FUA

Roadmap for progressing ATFM in Iraq

Long Term

- ✓ Optimize Runway Utilization to Enhance Capacity
- ✓ Implement Full ATFM-Operational Review System
- ✓ Implement a FF-ICE roadmap

Challenges of ATFM Iraq

01

Resistance to Change & Stakeholder Buy-In – Hesitation from key aviation stakeholders, including civil and military sectors, slowed the adoption of Collaborative Decision-Making (CDM), delaying decision-making processes.

02

Data Limitations for AI-Powered Prediction – Inconsistent and missing historical air traffic data made it difficult for AI models to provide accurate predictions, requiring extensive fine-tuning.

03

Integration of Military and Civil Airspace – Despite partial easing of airspace restrictions, integrating military-controlled areas with civil ATFM operations remained complex.

Challenges of ATFM Iraq

04

Limited Real-Time Traffic Monitoring – Many ATC units lacked modern hardware and software for automated data sharing, increasing reliance on manual reporting and slowing response times.

05

Sector Capacity Calculation Complexity – Adapting existing airspace capacity formulas to Iraq's structure proved challenging, especially given the varying experience levels of air traffic controllers.

06

Airport Constraints & Slot Management – Airports, particularly Najaf, struggled with slot coordination, especially during religious events, leading to congestion and increased operational costs.

Challenges of ATFM Iraq

07

Regional Coordination Delays – restricted timely data sharing with neighboring FIRs, limiting real-time traffic flow optimization.



Thank you

