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MIDANPIRG/23 & RASG-MID/13

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Role of the QCAA Through the General Directorate of Aviation Operation and Services

During the Regional Crisis Situation

Presented by the State of Qatar - Qatar Civil Aviation Authority (QCAA)
General Directorate of Aviation Operations and Services



Paper Overview

AGENDA ITEM - AIR NAVIGATION AND CONTINGENCY PLANNING

1 Operational Measures
ANS, Fire & Rescue, Virtual Tower Control

2 Contingency Arrangements
ESCAT, routing, civil-military coordination

3 Challenges & Mitigations
Six key challenges addressed

4 Lessons Learned & Performance
Key improvements and traffic statistics



INTRODUCTION

Crisis Response Framework

During regional security developments affecting Middle East airspace and FIRs, QCAA activated a **comprehensive crisis-management framework** to ensure continuity, safety, and resilience of aviation operations within Doha FIR.

Air Operations

Contingency ATM, ESCAT, and emergency ATS procedures across Doha FIR

Emergency Response

Enhanced Fire & Rescue readiness, strategic deployment, and NCC coordination

Regional Coordination

Continuous liaison with adjacent FIRs, ICAO MID partners, military, and airline stakeholders



CHAPTER 01

Operational Measures Implemented



2.1.1 Air Navigation Services

OPERATIONAL MEASURES

Coordination & Readiness

- Continuous coordination with adjacent FIRs and military authorities
- Enhanced controller briefings and operational coordination procedures
- Evacuation and relocation readiness for operational units
- Maintenance of minimum ATS staffing at all units
- Continuous NOTAM publication and operational updates

ATM & Contingency Actions

- Activation of contingency ATM procedures
- Implementation of ESCAT
- Development of temporary routing structures and contingency corridors
- Tactical traffic flow management during restricted operations
- Flexible sectorization and staffing arrangements



2.1.2 Fire and Rescue Services

ENHANCED EMERGENCY READINESS

Readiness & Deployment

- Raised operational readiness across all fire stations
- Strategic redistribution of firefighting vehicles and personnel
- Reinforced technical inspections and equipment checks
- Sufficient firefighting materials stockpiles maintained

Coordination & Monitoring

- Continuous coordination with NCC, airport security, and military
- Updated airport emergency response plans
- Enhanced shift management and manpower allocation
- Uninterrupted emergency response capability throughout the crisis



2.1.3 Virtual Tower Control

AERODROME RESILIENCE VIA REMOTE OPERATIONS

QCAA activated Virtual Tower Control as an alternative means of aerodrome control - leveraging HD cameras, real-time data, and digital displays to provide full situational awareness without physical tower presence.



Remote Position Activation

Dedicated safe-location virtual tower position enabled uninterrupted services during primary tower evacuation.



Controller Training

Familiarization on Virtual Tower HMI, degraded-mode procedures, and human factors for remote ops.



Seamless ATC Coordination

Handover protocols with approach and area control maintained; integrated with contingency ATM.



Multi-Sensor Integration

Panoramic cameras, CCTV, and SMR combined to replicate physical tower situational awareness.



Technical Redundancy

Backup comms, power continuity, and cybersecurity safeguards protecting Virtual Tower infrastructure.



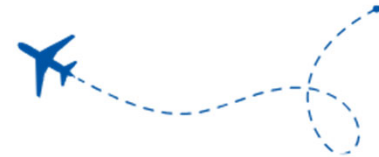
ICAO Regulatory Compliance

All measures compliant with ICAO standards and national regulations governing virtual tower operations.



CHAPTER 02

Contingency & Emergency Arrangements



2.2 Contingency & Emergency Arrangements

Fire & Rescue Emergency Plans

- Emergency Plan Activation and Resource Mobilization
- Operational Continuity and Facility Protection Measures
- Emergency Communication and Coordination
- Ongoing Situation Monitoring and Assessment

ANS Contingency

- ESCAT operation and Temporary ATS Contingency routes established .
- Civil-military coordination procedures enforced
- Emergency evacuation procedures for ATS units
- Operational fallback between units secured





CHAPTER 03

Challenges & Mitigation Actions



2.3 Key Challenges and Mitigation Actions

Challenge

- Closure of several regional airspaces
- Increased operational workload
- Requirement for continuous civil-military coordination
- Potential evacuation of operational facilities
- Proximity of facilities to fuel storage areas

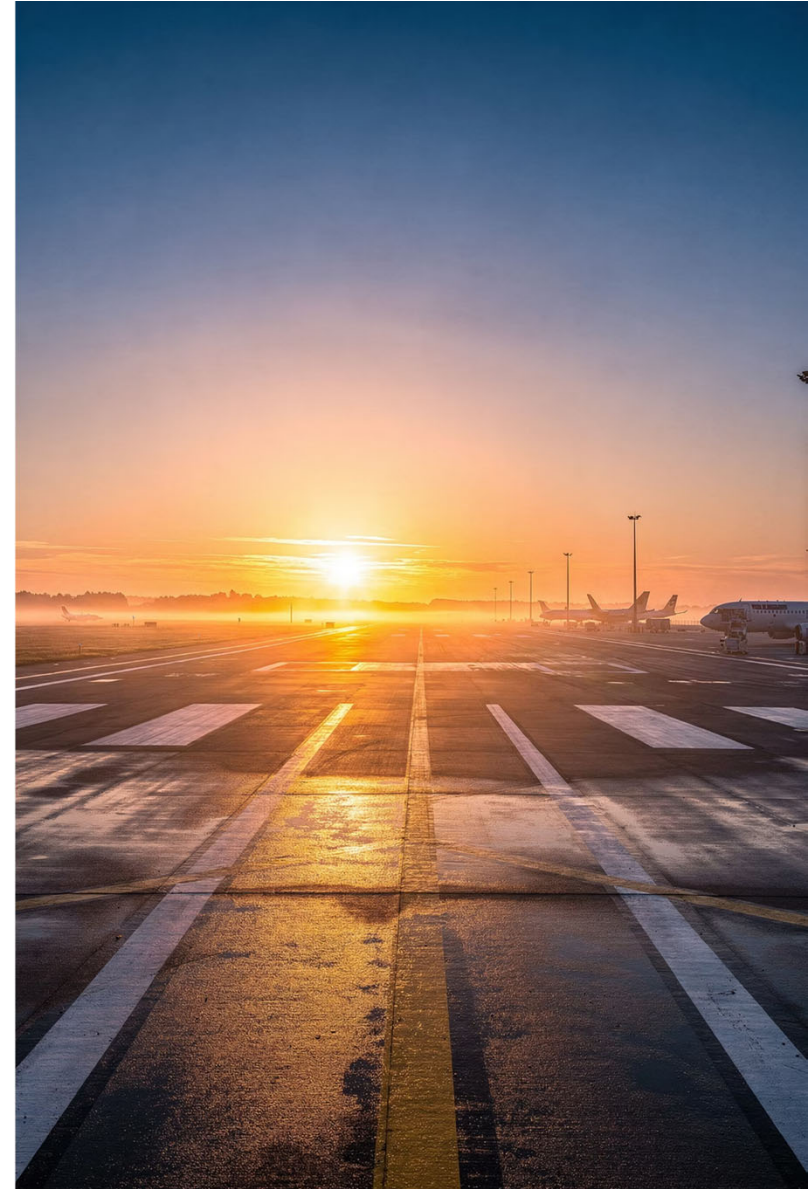
Mitigation Action

- Alternative routing structures and intensive regional coordination
- Enhanced shift management and redistribution of operational resources
- Direct and continuous coordination channels established
- Activation of alternative evacuation and contingency plans
- Redistribution of resources to safer locations



CHAPTER 06

Lessons Learned, Improvements & Performance



2.8 Lessons Learned and Improvements Implemented

Improvements Implemented

- Enhancement of contingency routing structures
- Review and update of emergency response procedures
- Additional training for operational and emergency personnel
- Development of additional firefighting infrastructure plans
- Improvement of water distribution and emergency support systems
- Strengthening of staff wellbeing and psychological support initiatives
- Resilient staffing and evacuation readiness protocols reinforced

Key Lessons Identified

- **Structured Civil-Military Coordination**
Formal channels proved critical to operational continuity
- **Pre-Established Procedures**
Contingency plans reduced response time significantly
- **Operational Flexibility**
Rapid adaptation essential in dynamic threat environments
- **Regional Cooperation**
Information sharing with adjacent FIRs was indispensable



2.9 Performance Indicators and Operational Outcomes

1,982

Total ESCAT Movements

Handled safely within Doha FIR during the crisis period

989

Departures

Successfully managed under ESCAT conditions

993

Arrivals

Safely processed under contingency arrangements

Critical ATS Continuity

Uninterrupted provision of air traffic services throughout

Zero Major Disruptions

No major operational events affecting airport safety recorded

Progressive Traffic Recovery

Managed traffic increased steadily during ESCAT operations

Stakeholder Coordination

Improved effectiveness with military, airlines, and adjacent FIRs



Action by the Meeting

The meeting is invited to:

1

Note

The information presented regarding QCAA's crisis response across air navigation, fire & rescue, and virtual tower control.

2

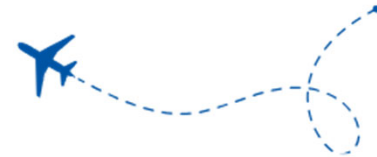
Recognize

Operational coordination efforts by QCAA during the regional crisis, including sustained regulatory compliance and ATCO competency assurance.

3

Encourage

Continued regional cooperation and exchange of lessons learned to strengthen aviation resilience within the MID Region.



Thank You

Qatar Civil Aviation Authority (QCAA)

General Directorate of Aviation Operations and Services

Captain Saif Alkuwari

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