



International Civil Aviation Organization

Air Traffic Services Route Network Task Force (ARN TF)

Sixth Meeting

(Cairo, Egypt 22 -24 April 2013)

Agenda Item 3: Review ATS Route Network

PROPOSAL TO REDUCE TRAFFIC CONGESTIONS NORTH OF BAHRAIN

(Presented by the Bahrain)

SUMMARY
This paper summarizes the proposals presented by Bahrain that will relieve the traffic congestions north of Bahrain FIR.
Action by the meeting is at paragraph 3.
REFERENCES
- ARN TF 1 Report
- ARN TF 2 Report
- ARN TF 4 Report

1. BACKGROUND

1.1 Bahrain had presented a working paper for the ARN TF/2 (Cairo, Egypt, 18-20 March 2009) and another working paper for the ARN TF/4 (Amman, Jordan., 16-18 May 2011) in which Bahrain explained that the northern part of the Bahrain FIR is consisting of a very complex route structure due to the 'bottleneck' north of OEDF/OBBI created by large areas being reserved by various military authorities. This is supported by the MIDRMA SMR 2008, 2009, 2010, 2011 which indicated that this airspace is the most complex and congested airspace within the MID Region. This airspace, at times, is congested due to high traffic levels, and therefore, safety margins are compromised

1.2 Due to the volume of traffic utilizing the northern part of the OBBI FIR during the hours from 1400UTC to 1830UTC, and due to the significant number of Qatar Airways flights from the west destination OTBD, it would be preferable if the relevant military authorities are able to release the airspace and permit the use of UL681 and UM430 during this period; thereby increasing safety margins in the OBBI FIR.

1.3 The second and fourth ARN TF meetings supported material from Bahrain on the need for urgent development and implementation of ATS route proposals MID/RC-004, MID/RC-006 and MID/RC-009. It was noted with concern that, while the proposals were submitted initially at ARN TF/1 based on efforts to improve efficiency. Safety assessments in the Bahrain FIR indicated the need for development of the routes on safety basis. It was emphasized that existing congestion in the Bahrain FIR which is expected to increase rapidly as a result of forecast average traffic growth of 7% (4% on the pessimistic view and 11% on the optimistic view), would need a decisive and timely intervention in the interest of sustained safe implementation of RVSM.

2. INTRODUCTION

2.1 Bahrain ATC is still experiencing more than 11 percent year over year overall increase in traffic. This increase is complicated by military airspace restrictions and traffic density in measurable geographic locations in the FIR. We are currently studying means of alleviating the resulting congestion in several functional airspace blocks.

2.2 Currently, from 1430 to 1630 UTC, a significant number of flights enter the Bahrain FIR from Jeddah FIR en-route to Doha. All these aircraft, in addition to aircraft for destination Bahrain and aircraft over flying to Abu Dhabi, must route via ASPAN-UN318, thereby causing severe congestion in the Functional Airspace Block (FAB) north of KFA and Bahrain. This causes a serious hazard to air traffic.

2.3 To alleviate this congestion and the resultant hazard to air traffic, it would be of great benefit if we could re-route some of this traffic for Doha and Abu Dhabi via KIREN-UM430-SALWA and via EGNOV-UL681-SALWA by reducing the time restrictions on these airways.

3. DISCUSSION

3.1 Since ARN TF/2 no improvement has been done on the timing of airways UL681 and UM430. Bahrain Air Traffic Management proposes the establishment of one bidirectional RNAV 1 airway (H24) between position SALWA and DHA clear of OER41, which will reduce the traffic on UL681; although Bahrain proposes that the timing of airway UM430 point KIREN, SALWA and DOHA should be extended, preferably to H24, by converting this airway to RNAV-1 route through OER41. The establishing of these two airways will allow departures and arrivals to Doha to avoid the congested airspace north and east of Bahrain.

3.2 In order to achieve the required freedom of operation and to considerably increase the airspace capacity, we suggest that the presently existing Restricted Area OER 41 be subdivided into vertically and laterally defined airspace modules which can be activated and deactivated based on the real demand at any given time and we establish airways UM430 and UL681 as RNAV-1 corridors through OER41. These corridors can be established as the borders line between the suggested training areas as at **Appendix A** to this working paper.

3.3 This will allow H24 traffic operation on Airways UM430 and UL681 for all Doha arrival flights or for the traffic overflying the Qatari peninsula and landing or overflying the southern Emirates FIR which will improve the safety north of Bahrain in addition it will save approximately **50 NM per flight** compared to the current routing requirement.

4. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) develop the appropriate conclusion to support the States concerned in their effort with their relevant military authorities in:
 - extending the opening hours of airways UM430 all the way to Doha and UL681 as soon as possible, as a first step.
 - discussing the proposal in Para 3.2 above with their respected military Authority and obtain their approval/comments to operate H24.
- b) implement the new RNAV-1 route SALWA-DHA H24 as soon as possible.

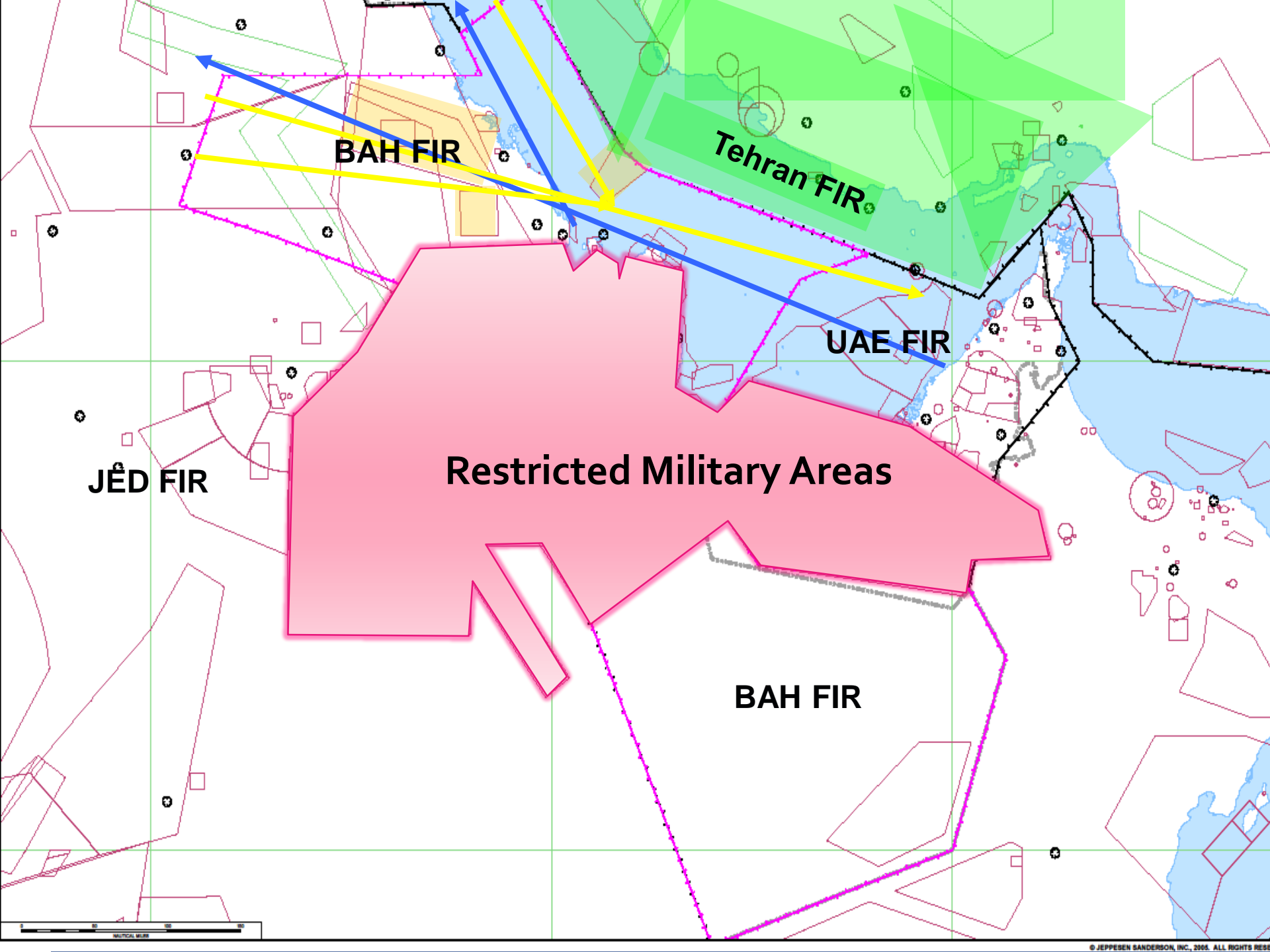
**Sixth Meeting of the Air
Traffic Services Route
Network Task Force
(ARN TF/6)
(Cairo, Egypt, 22– 24 April 2013)**

**Proposal To Reduce Traffic
Congestions North Of Bahrain**

**Prepared by:
Saleem Mohammed Hassan
Chief ATM
Bahrain**

Summary

This paper summarizes the need to establish one RNAV 1 AWYs from SALWA to DHA and extend the timing of AWY UM430 from KIREN – SALWA - DOHA. & AWY UL681 from EGN OV to SALWA and proposed subdividing OER 41 to establish airways UM430 and UL681 as RNAV-1 corridors



BAH FIR

Tehran FIR

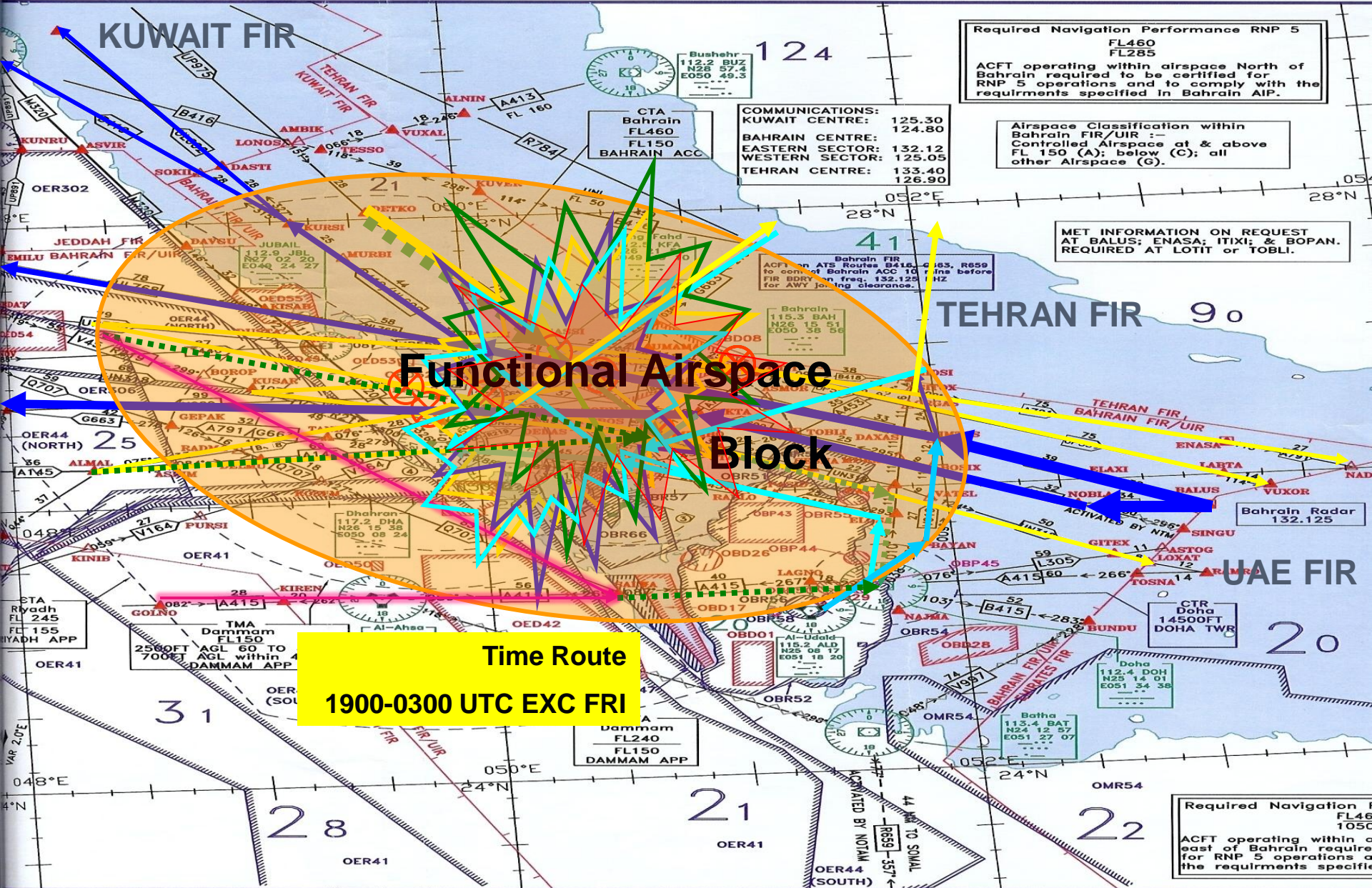
UAE FIR

JED FIR

Restricted Military Areas

BAH FIR

ENROUTE CHART - ICAO (NORTH)



KUWAIT FIR

TEHRAN FIR

UAE FIR

Functional Airspace Block

Time Route
1900-0300 UTC EXC FRI

Required Navigation Performance RNP 5
FL460
FL285
ACFT operating within airspace North of Bahrain required to be certified for RNP 5 operations and to comply with the requirements specified in Bahrain AIP.

Airspace Classification within Bahrain FIR/UIR :-
Controlled Airspace at & above FL 150 (A); below (C); all other Airspace (G).

MET INFORMATION ON REQUEST AT BALUS; ENASA; ITIXI; & BOPAN. REQUIRED AT LOTIT or TOBLI.

Required Navigation Performance RNP 5
FL460
FL285
ACFT operating within airspace east of Bahrain required for RNP 5 operations at the requirements specified in Bahrain AIP.

Bushehr
112.2 BUZ
N26 57.4
E050 49.3

CTA Bahrain
FL460
FL150
BAHRAIN ACC

COMMUNICATIONS:
KUWAIT CENTRE: 125.30
124.80
BAHRAIN CENTRE: 132.12
EASTERN SECTOR: 125.05
WESTERN SECTOR: 133.40
TEHRAN CENTRE: 126.90

Bahrain FIR
ACFT on ATS Routes B416, G663, R659 to contact Bahrain ACC 10 mins before FIR BDRY on freq. 132.125 MHz for AWY joining clearances.

Bahrain
115.3 BAH
N26 15 51
E050 38 56

Dammam
FL150
DAMMAM APP
2500FT AGL 60 TO 7000FT

Dammam
FL240
FL150
DAMMAM APP

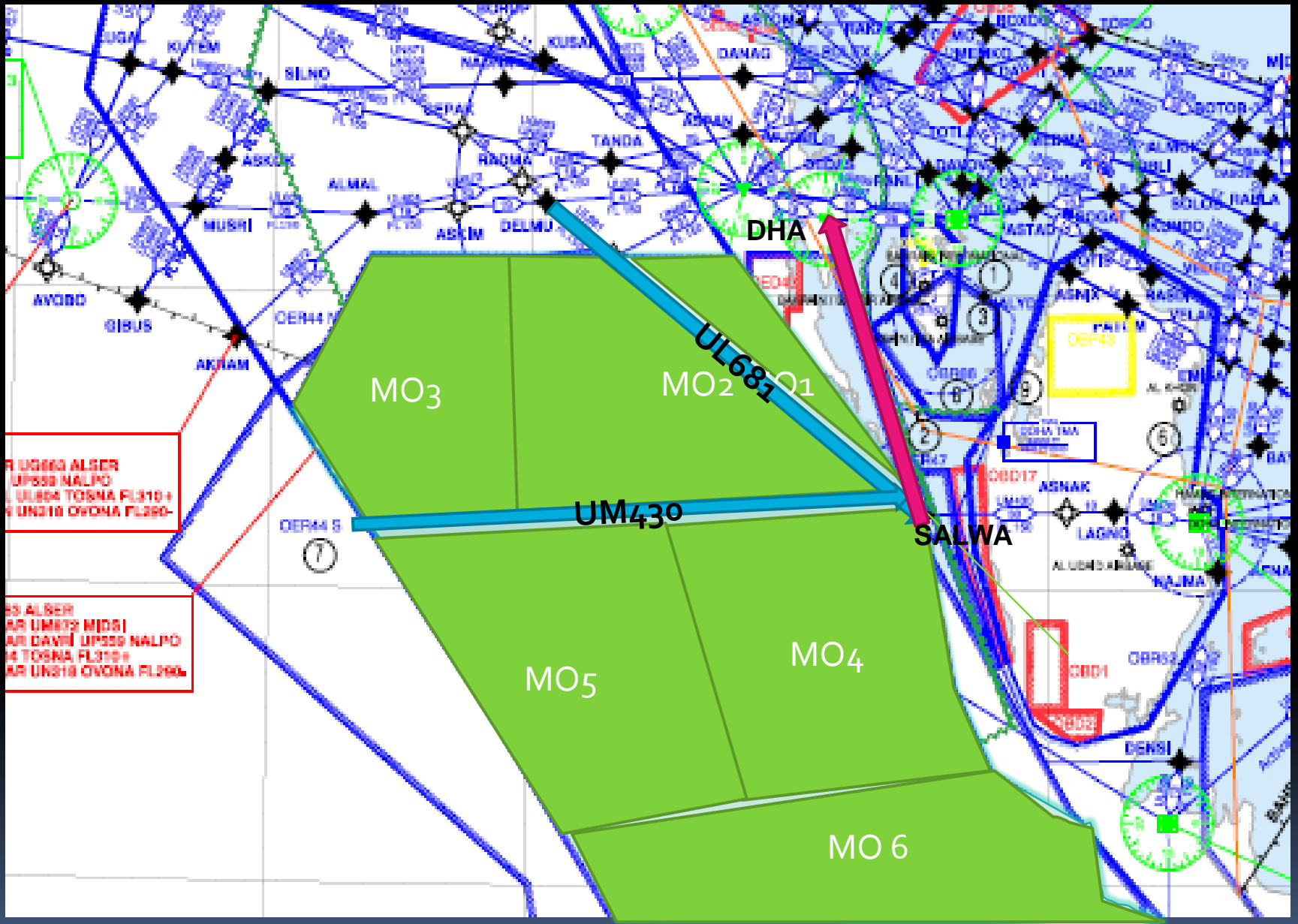
CTR Doha
14500FT
DOHA TWR

Batha
113.4 BAT
N24 12 57
E051 27 07

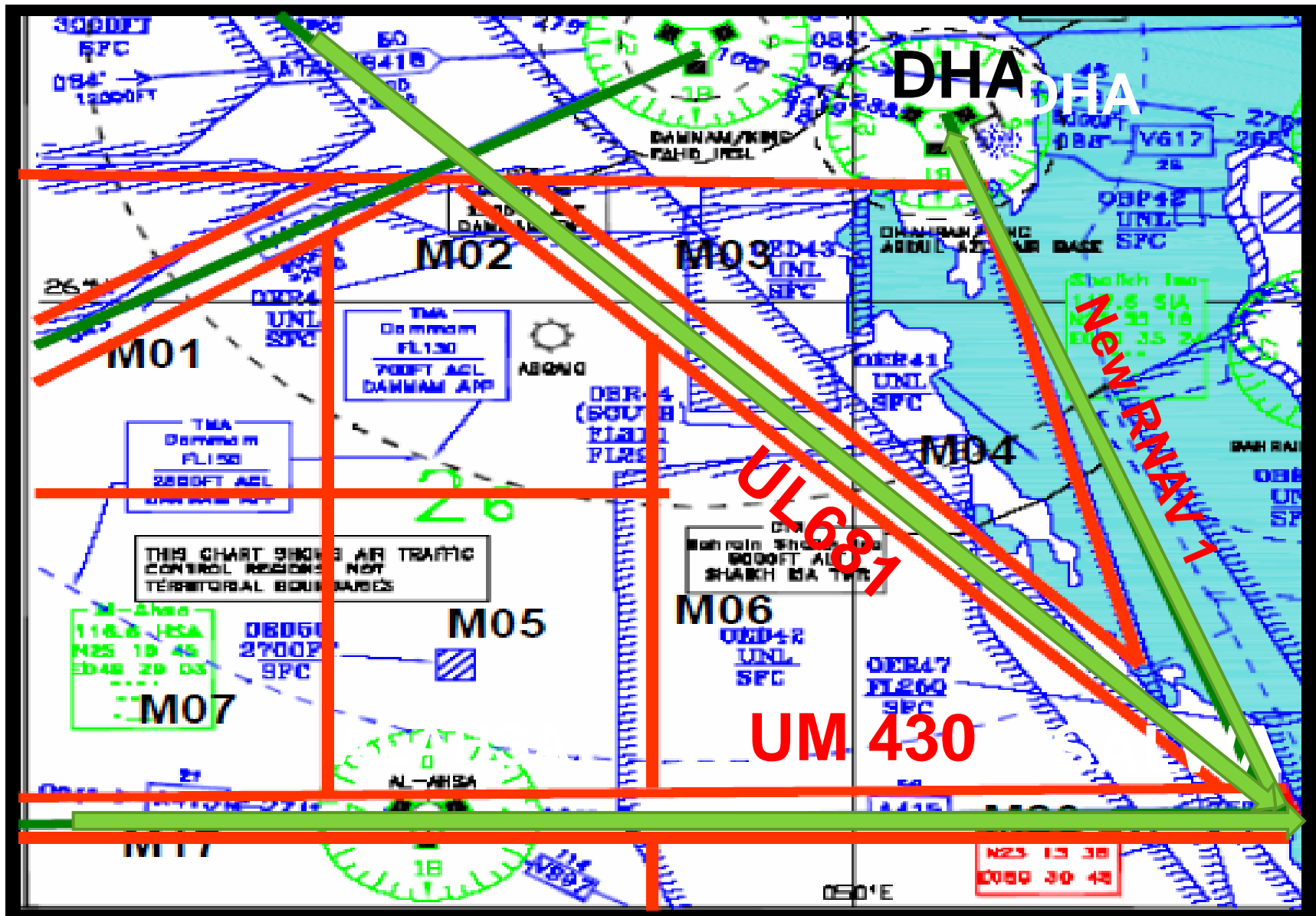
Doha
112.4 DOH
N23 14 01
E051 34 38

Bahrain Radar
132.125

Required Navigation Performance RNP 5
FL460
FL285
ACFT operating within airspace east of Bahrain required for RNP 5 operations at the requirements specified in Bahrain AIP.



Training Airspace Modules (Illustration)



ACTION BY THE MEETING

- a) Note the information in this paper.
- b) Urge states concerned to consider extending the opening hours of airways UM430 all the way to Doha and UL681 as soon as possible as first step.
- c) Urge State concerned to discuss the proposal in para 3.2 above with their respected military Authority and obtain their approval/comments to operate H24.
- d) States concerned implement the new RNAV-1 route SALWA-DHA H24 ASAP.
- e) request the meeting to reflect this request in the final report due to safety issues which required to be resolved as soon as possible.



Thank You

UAGS BAH KFA FL240-
UAGS SOLOB UNST1 BPN
UAGS SOLOB UNSS3 GBU5

KFA APPROACH
JAMMAM APPROACH

UNST7 - MESE
UL802 - DAVUS
UNSS0 - KUMBO

UL798 - COPH
UNST1 - BOPAN
UNSS3 - GBU5

UP888 - KFA