INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE FOURTH TASK FORCE MEETING ON A REVISED ATS ROUTE STRUCTURE – ASIA TO MIDDLE EAST/EUROPE, SOUTH-OF-THE-HIMALAYAS (EMARSSH TF/4)

PARIS, FRANCE, 22 to 26 OCTOBER 2001

This Report is Appendix C to the Summary of Discussions of the Eleventh Meeting for the Planning and Coordination of Implementation of ATS Routes through the Airspace of the Eastern Part of the ICAO European Region including Middle Asia (TARTAR/11)

The views expressed in this Report should be taken as those of the Task Force and not of the Organization.

Adopted by the Task Force
and published by the ICAO Asia and Pacific Office

APPENDIX C – EMARSSH TASK FORCE/4 REPORT

1. Introduction

1.1 The Fourth Meeting of the EMARSSH Task Force was held in the Paris ICAO EUR/NAT Office from 22 to 24 October 2001 in conjunction with the TARTAR/11 Meeting (the Eleventh Meeting for the Planning and Coordination of Implementation of ATS Routes through the airspace of the Eastern Part of the ICAO European Region including Middle Asia).

1.2 The opportunity was taken to conduct the EMARSSH Task Force/4 meeting in conjunction with the TARTAR/11 meeting as the representation included appropriate Eastern European, Central Asian and some Middle East States who were also within the area under consideration of the EMARSSH project.

1.3 The EMARSSH Core Team was represented by:

Mr. John Richardson, ICAO Regional Officer ATM (Asia/Pac) and Core Team Leader of EMARSSH Project

Mr. Mohamed Khonji, ICAO Deputy Regional Director (MID)

Mr. Davood Khodaverdi, Director-General – Legal, Aeronautical and International Affairs – Civil Aviation Organisation - Islamic Republic of Iran

Mr. Mervyn Fernando, Senior ATC Manager – Airspace, Civil Aviation Authority of Singapore

Mr. David Behrens, IATA Assistant Director – Infrastructure Asia/Pac

Mr. Ron Rigney, FIR Manager – Brisbane Centre, Airservices Australia

2. Background

2.1 The Meeting was given an update to the EMARSSH Project. Taking into account the existing navigation capabilities of modern aircraft, the operational limitations of long haul flights and new CNS/ATM technologies, it was considered appropriate that a revised route structure between Asia, Middle East and Europe be put in place. It was noted that this project has been endorsed by States and stakeholders concerned and is a model of inter-regional cooperation and co-ordination in line with the strategic objectives of the ICAO Global Air Navigation Plan for CNS/ATM Systems. The revised route structure will undoubtedly enhance safety and is a step forward in achieving the implementation of a seamless, global air traffic management system that will enable operators to meet their planned times of departure and arrival and adhere to preferred flight profiles with minimum constraints. In developing this route structure, the needs of domestic and regional operations are also considered.

2.2 The Meeting noted that the concept of EMARSSH had already been discussed and endorsed by various Asia/Pacific and Middle East regional meetings. The end result will be presented to the respective regional planning groups for endorsement and eventual inclusion in the Air Navigation Plans. It was also noted that an ICAO Inter-Regional Co-ordination Group Meeting comprising Regional Directors from Bangkok, Cairo and Paris assisted by the Chief of the Regional Affairs Office in ICAO Headquarters, further endorsed the EMARSSH Project.

2.3 Utilizing Area Navigation (RNAV), the introduction of Required Navigation Performance (RNP), radar coverage and the planned introduction of Reduced Vertical Separation Minimum (RVSM) in the Western Asia and Middle East regions, it was appropriate to review the ATS route structure, especially with regard to the medium and long-haul inter-regional operations.

2.4 States as well as the aviation industry were investing in modern ground and airborne equipment as well as the training of staff in the use of this new technology. It was agreed to exploit the opportunity to maximise the use of airspace and give greater flexibility to aircraft operations.

2.5 The Meeting noted that the purpose of the EMARSSH project was to devise ATS routes which will focus on end-to-end routing (city pairs) for long-haul and medium-haul flights from Asia to the Middle East and Europe.

3. Review of Progress from previous EMARSSH Task Force Meetings

3.1 Three Task Force meetings, led by a Core Team, involving representatives of States, ICAO and IATA had been successfully held. Each meeting concentrated on a specific sub-region as follows:

a) EMARSSH TF/1 Australasia to Southeast Asia

b) EMARSSH TF/2 Bay of Bengal States, India and Pakistan

c) EMARSSH TF/3 Middle East States

3.2 It was noted that during previous Task Force meetings, States took into consideration any constraints to the route development within their FIRs such as:

a) Special use airspace,

b) Route choke points,

c) High terrain areas,

d) Radar coverage limitations,

e) VHF coverage, and

f) Significant weather phenomena such as seasonal jet streams, volcanic events and cyclonic activity.

3.3 The Meeting noted the requirement for documentation that would need to be in place well in advance of the implementation date. This documentation included:

a) AIC on proposed changes to the present route structure and procedures which will be used;

b) Changes to Operational Letters of Agreement between adjacent States;

c) AIP Supplement to be published at least 3 months in advance of the implementation;

d) Any amendment of DOC 7030;

e) Amendments to respective Regional Air Navigation Plans;

f) Publication of Charts for air traffic controller displays (including SIDs and STARs);

g) ATC training syllabus prepared, and

h) State ATC procedures and documentation modified.

RNP Routes/Airspace

3.4 The Meeting was advised that the use of Required Navigation Performance procedures was being implemented in certain areas of the EMARSSH project especially over oceanic areas.

3.5 It was noted that 50 NM Lateral Separation is achievable in RNP10 airspace without any further enhancements to air-ground communication or surveillance. However, for application of 50 NM Longitudinal Separation, Direct Controller Pilot Communication (DCPC) is required which can be satisfied by voice or CPDLC. If DCPC is not available, then the appropriate longitudinal separation standard should be applied. This, however, would not prohibit the implementation of RNP10 with 50 NM lateral separation. To achieve the full benefit of RNP10, States are encouraged to consider the provision of DCPC in their future modernization plans.

3.6 The Meeting was informed that the MID Region had implemented RNP5 on 14 June 2001 on selected priority routes as Phase 1, and that in order to make maximum flexible use of airspace, they will establish RNP/RNAV areas instead of RNP/RNAV routes.

Dynamic transition from old to new route structure

3.7 The experience of other regions/States who implement major ATS route changes should be used as guidance for transition to the EMARSSH route structure. Examples where similar transition planning has been undertaken, include the South China Sea restructure, and the Y2K transition procedure. Industry/airline advice and guidance would also be sought.

3.8 The Meeting noted the strategy which had been developed at these previous Task Force meetings and agreed this methodology should be used in the area under consideration at this meeting. This will enable a harmonised approach between all States concerned in the EMARSSH project.

4. EMARSSH Phase 1 – Australasia to Southeast Asia

4.1 It was noted that the implementation of EMARSSH Phase 1 (Australia/Indonesia/Singapore/Malaysia) is scheduled to take place on 29 November 2001, one year ahead of the 28 November 2002 planned date and that the introduction of RNP10 is an essential element of this phase.

4.2 The Meeting was informed that Australia implemented RNP10 in all of their airspace on 4 October 2001, and that Indonesia will also introduce RNP10 on specific routes prior to implementation.

4.3 States involved with EMARSSH Phase 1 have worked in close cooperation to finalise plans for EMARSSH implementation. Having finalised details for each EMARSSH route between States concerned, new ATS Route Designators and Waypoints were assigned by ICAO (Asia/Pacific).

4.4 As RNP10 is an essential element of EMARSSH routes between Australia and Indonesia, it was necessary to implement a Navigation Error Monitoring Programme, together with data analysis and safety assessment in accordance with ICAO procedures.

4.5 In developing new routes, States recognised the benefits that could be achieved through the application of reduced lateral separation standards associated with RNP10 and adjacent military airspace. Within Indonesia, close Civil/Military liaison has enabled two EMARSSH routes to be aligned in close proximity to military areas, whilst achieving a benefit to civil airspace users. These two routes would not have been possible, had it not been for close Civil/Military liaison, and the reduced separation permitted under RNP10 with these military areas.

4.6 All States involved with EMARSSH Phase 1 have developed their own individual AIC/AIP documentation and charting. In the case of Australia and Indonesia, the existing ATS Letter of Agreement has been amended to incorporate the new EMARSSH routes and associated procedures (e.g. Transfer of Control Points TCP). Other tasks such as ATC training, new procedures and safety assessments, are being finalised by individual States.

4.7 EMARSSH phase one is on schedule and this has been made possible by the excellent cooperation and liaison between States, ICAO (Asia/Pacific) and industry representatives.

4.8 In line with the early implementation of routes by Australia, Indonesia, Singapore and Malaysia, it was suggested to the meeting that all States involved in the EMARSSH project, may wish to consider the implementation of appropriate segments of the EMARSSH routes at the earliest possible opportunity, in coordination with adjacent States where necessary, to realize early benefits of this revised route structure.

5. Europe/Middle East Interface Planning

5.1 A number of the proposed EMARSSH routes were optimised for long-haul operations through Afghanistan (Kabul FIR).

5.2 The Meeting was presented with a chart showing the proposed EMARSSH ATS route structure which is shown in **Attachment B**. The meeting noted that this chart took into account the possibility that routes through Afghanistan may not be available on the proposed implementation date of 28 November, 2002. However, other routes were proposed that would satisfactorily allow circumnavigation of the Kabul FIR until such time as this airspace was available for operational use.

5.3 The Meeting noted that Persian 1, 2 and 3 had previously been accepted by EMARSSH TF/3. Iran informed the Meeting that the Persian 2 and 3 had been implemented and proposed new ATS routes Persian 4, 5, 6, 7 and 8 (see **Attachment A**). These route proposals would be presented, as a draft proposal to the Middle East ATM/SAR/AIS SG/5 meeting to be held early in November. The outcome will be reported to the EMARSSH TF/5 meeting to be held in Delhi from 30 October to 2 November 2001. The meeting noted that the Iranian airspace modernisation plan will be implemented on 1 November 2001.

5.4 IATA expressed appreciation for the support shown by all States, and observed that whilst there is presently a loss of efficient routes due to the Afghanistan crisis, States can and are working together to make the best possible routes available under the circumstances.

5.5 The Meeting was advised that it is expected that the overall effectiveness of the project will enhance operational efficiencies and maximise benefits to the ATS providers as well as the users of the service.

5.6 The Meeting also noted that, as EMARSSH is designed to take advantage of existing airborne and ground CNS/ATM systems, this model with some variations, could be used on other long to medium-haul traffic flows in other areas.

5.7 EMARSSH Task Force/5 will be held in Delhi (India) from 30 October to 2 November 2001. The purpose of this Task Force meeting is to review the progress of work required

by Asia/Pacific States in this project as well as interface issues with Middle East States bordering the Asia/Pacific region.

6. Afghanistan Airspace closure and related issues

6.1 The view was expressed that when the Kabul FIR is reopened, there was a strong possibility that there could be little or no Civil ATS infrastructure remaining. This would have a direct effect on the proposed EMARSSH route plan, as many of these routes pass through Afghanistan airspace.

6.2 IATA acknowledged the excellent cooperation shown by Iran, Azerbaijan and other States, in providing timely responses to contingency plans associated with the closure of the Kabul FIR.

6.3 IATA also expressed support for additional EMARSSH routes through Iranian airspace to accommodate additional traffic from Pakistan and south of Iranian airspace via Muscat, UAE, Bahrain and Kuwait.

7. Contingency Routing, Asia/Middle East/Europe (CRAME)

7.1 The Meeting noted that contingency routing was introduced as a result of military actions within Afghanistan which also affected several ATS routes within some States adjoining Afghanistan.

7.2 The Meeting was advised that several ATS Routes within the Karachi FIR (Pakistan) were closed to all civil operations, and that others were closed to civil operations between FL 250 and FL 330 inclusive.

7.3 As a result of the Afghanistan airspace closure and related impact on air traffic, ICAO (Asia/Pacific) in consultation with affected States, IATA and individual operators devised a series of ATS Contingency routes referred to as CRAME, which could be utilized depending on the theatre of military operations.

7.4 CRAME is an immediate, short-term fix to permit the continuation of civil flights from Southeast and Southern Asia to the Middle East and Europe.

7.5 The Meeting noted and acknowledged the immediate response by the Islamic Republic of Iran in implementing additional ATS routes within the Tehran FIR to accommodate the many international aircraft operations that would normally operate through the Kabul FIR.

8. Conclusion

8.1 The Meeting endorsed the EMARSSH concept as presented and agreed that action should take place to implement the routes proposed. Accordingly, States present agreed to take the necessary steps as appropriate with the aim of implementing those portions of route segments that fall within their area of responsibility by no later than the EMARSSH implementation target date of 28 November 2002.

8.2 States were advised that the necessary implementation actions will be followed up by the respective ICAO Regional Offices in a timely manner to ensure a coordinated and harmonized implementation process. This may involve a requirement for further Regional or Sub-Regional meetings.

LOWER AND UPPER ATS ROUTES

Central Asia Five

XXXXX	36 05N 64 08E
DOKAN	39 28.9N 057 59.6E
BEGLI	40 52.5N 055 00.9E

Central Asia Six

XXXXX	36 05N 64 08E
AFGAN	38 24.0N 058 17.0E

Central Asia Seven

GIRUN	3806.2N 05620.3E
TUNIS	4110.0N 04346.9E

Central Asia Eight

Aktau	43 51.5N 051 06.1E
Birjand	3258.4N 05912.0E

G792

CHARN	35 10.0N 61 08.0E
Mashhad	36 13.9N 59 39.0E

LOWER AND UPPER ATS ROUTES

Persian 1

Shiraz	29 32.4N 052 35.3E
Uromiyeh	37 41.2N 045 05.1E
DASIS	38 54.5N 044 12.5E

Persian 4

Ardabil	3819.9N 04824.9E
Sevan	4032.0N 04456.9E

Persian 5

Birjand	3258.4N 05912.0E
ODKAT	3540.6N 05457.2E
Dasht-E-Naz	3638.7N 05311.4E
ULDUS	3800.0N 05101.0E

Persian 6

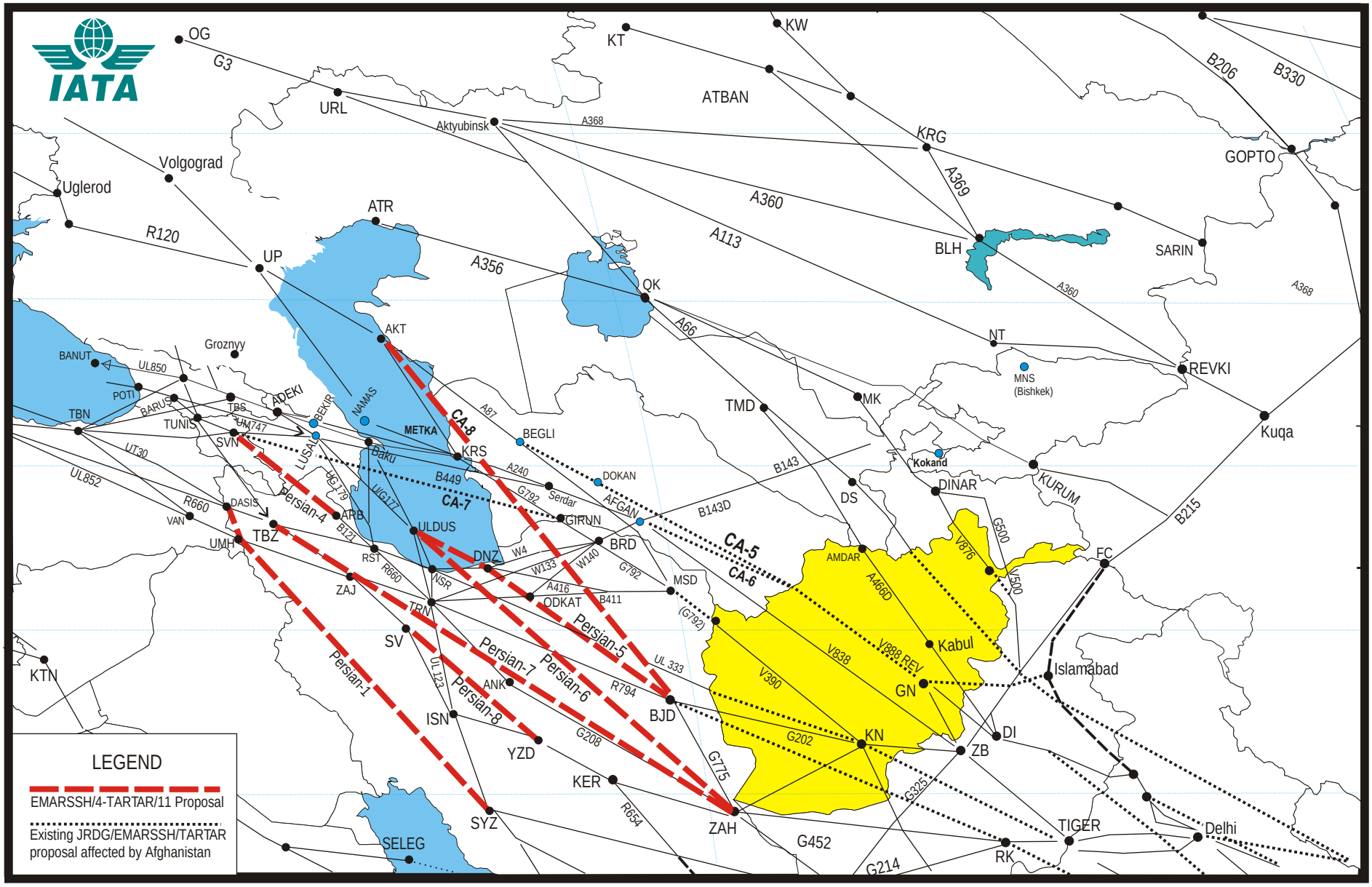
Zahedan	29 27.8N 060 54.3E
ULDUS	3800.0N 05101.0E

Persian 7

Zahedan	29 27.8N 060 54.3E
Tabriz	38 08.3N 046 13.9E

Persian 8

Yazd	31 53.1N 054 18.0E
Saveh	35 01.1N 050 22.3E



Attachment B