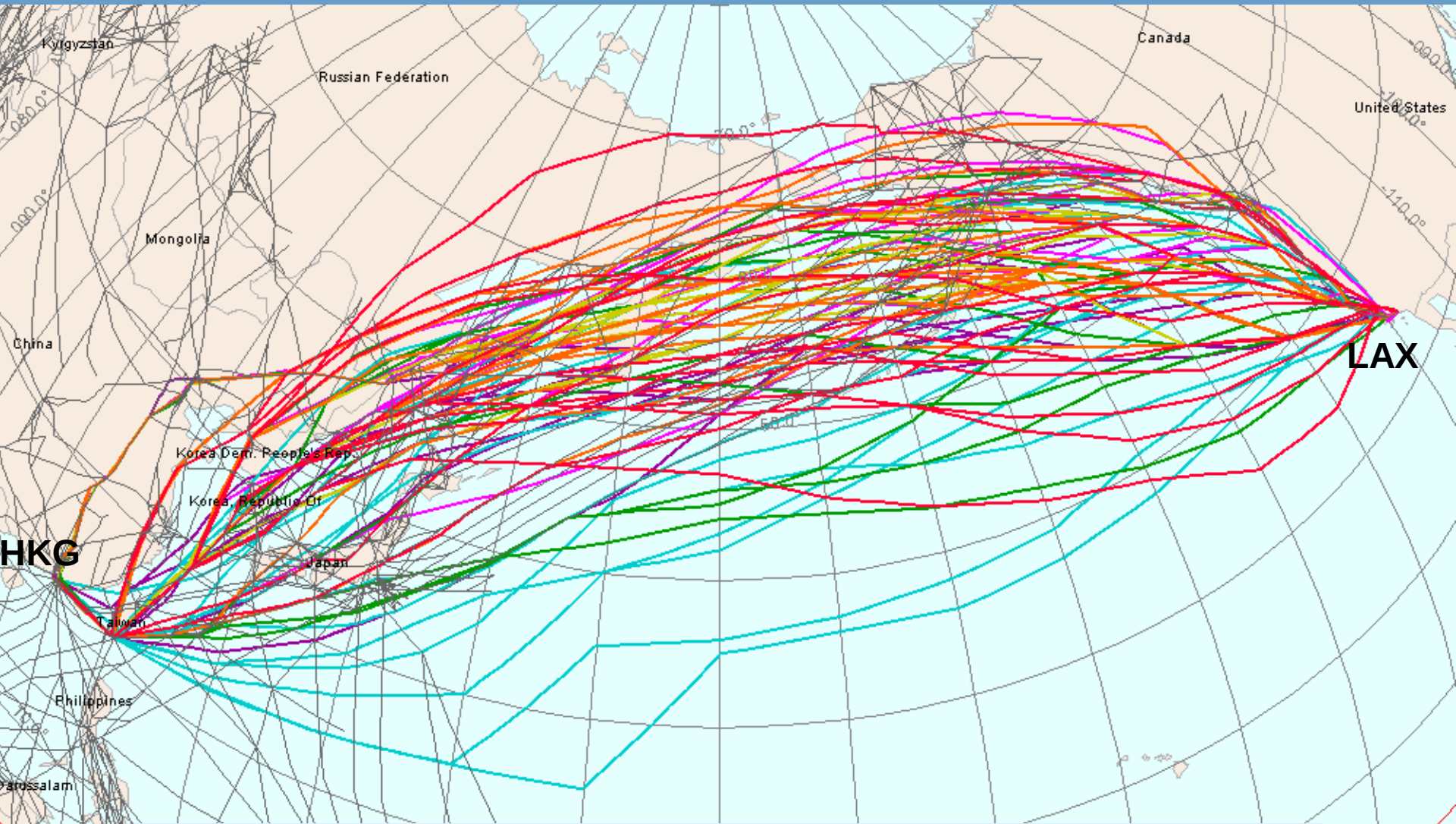




Understanding Each Other International Airline Perspective

David Behrens
Director, Infrastructure Strategy

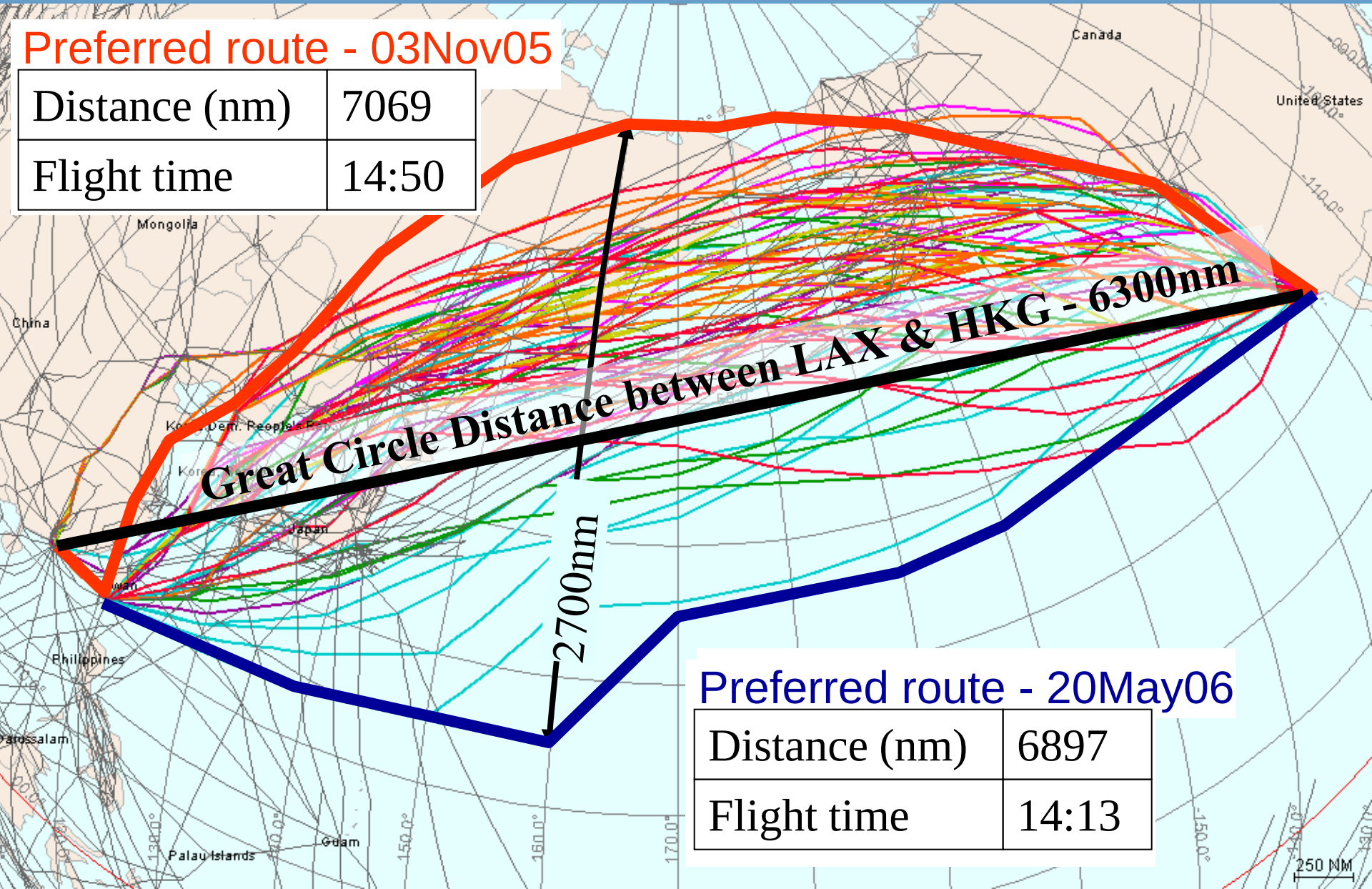




Westbound Los Angeles to Hong Kong Study

Preferred route - 03Nov05

Distance (nm)	7069
Flight time	14:50



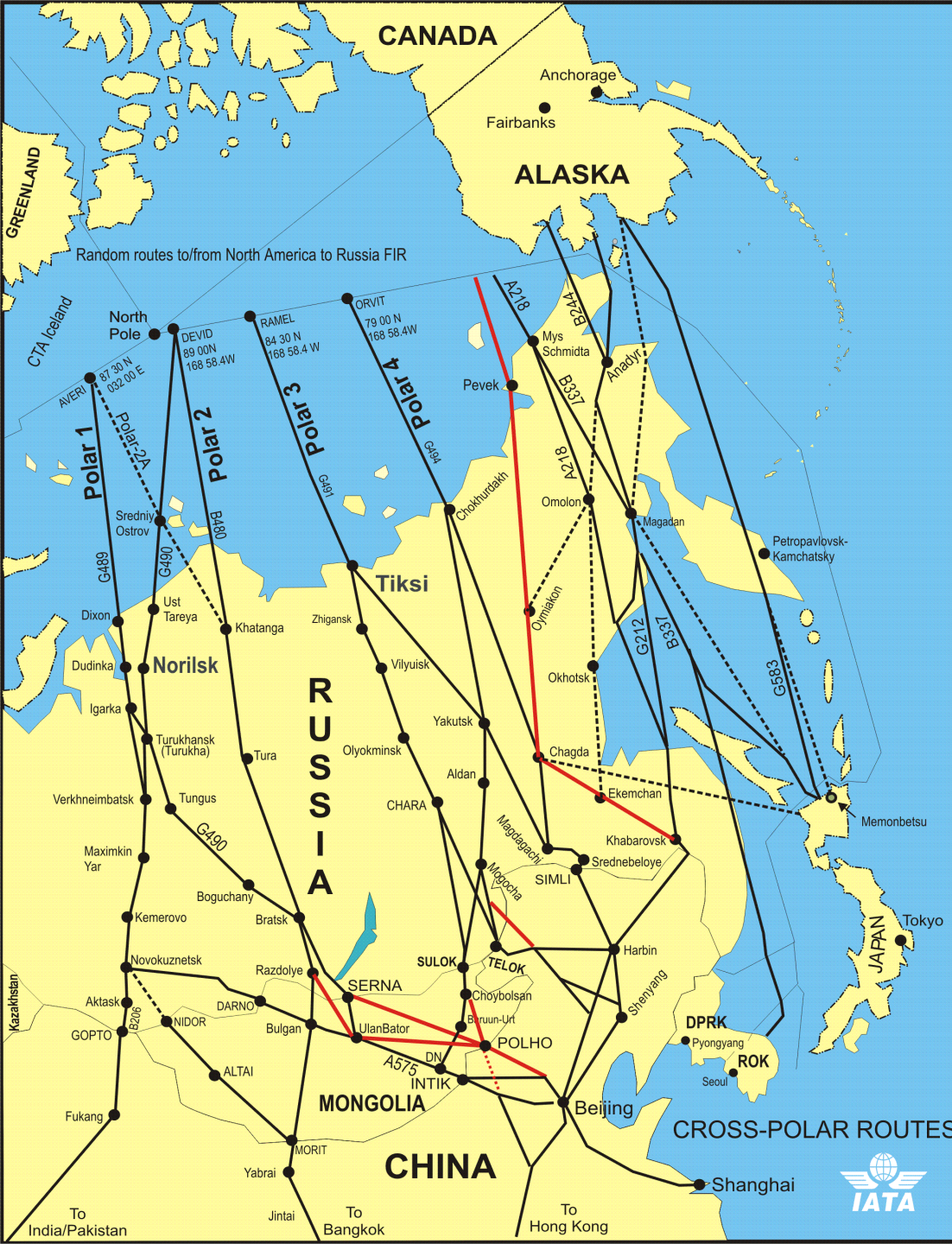
Great Circle Distance between LAX & HKG - 6300nm

2700nm

Preferred route - 20May06

Distance (nm)	6897
Flight time	14:13

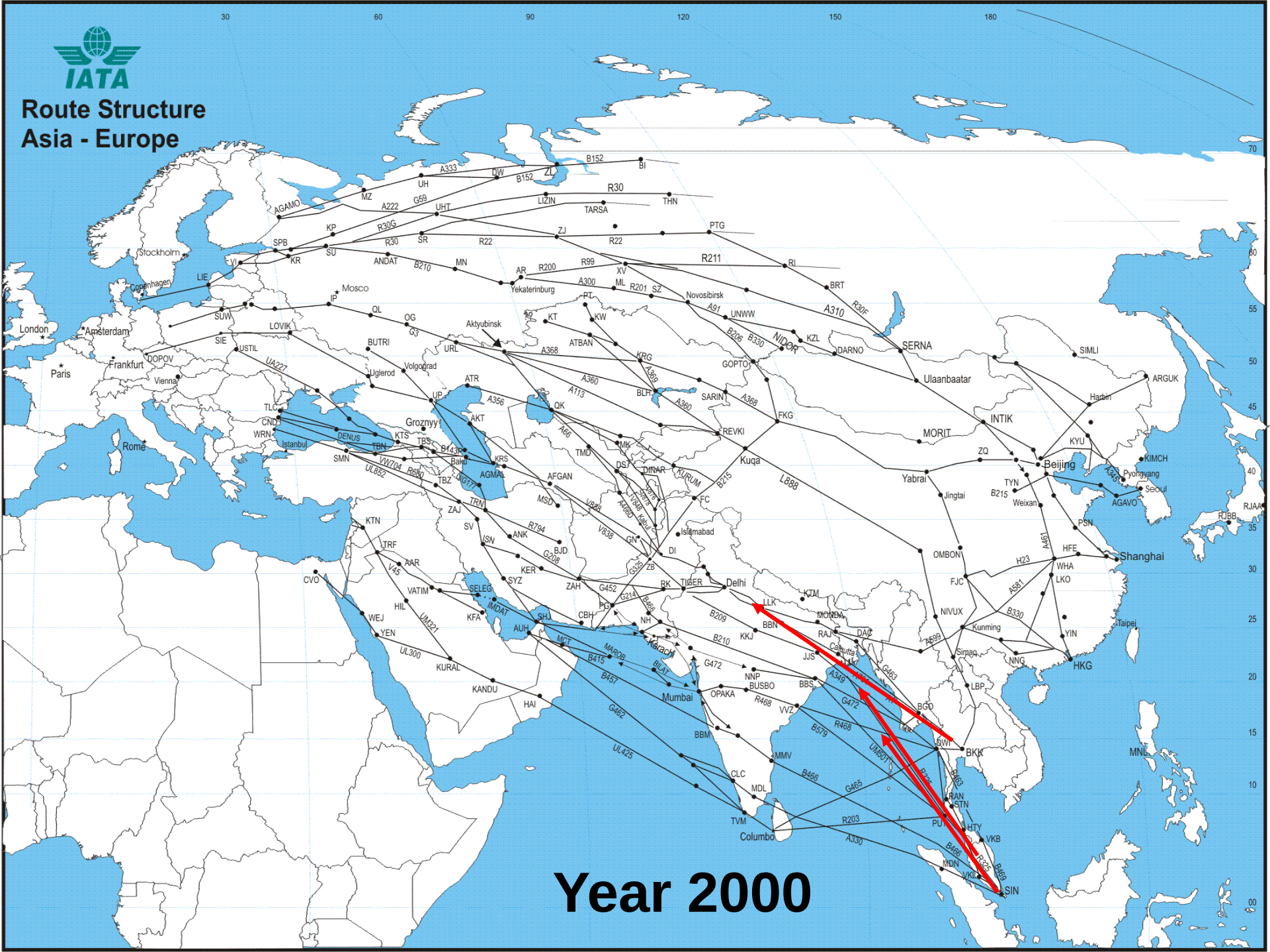
The map illustrates the Northern Hemisphere with flight routes from Chicago to Asia. Key locations marked include Chicago, Toronto, New York, Tokyo, Seoul, Beijing, Hong Kong, Bangkok, and Delhi. The North Pole is also indicated. Flight paths are labeled as 'N Pacific', 'RFE', 'Polar 4', 'Polar 3', 'Polar 2', 'Polar 1', and 'Cross-Polars'. The 'Cross-Polars' route is highlighted in yellow, showing a direct path from Chicago to Asia via the North Pole. The 'Polar' routes are shown in blue, and the 'RFE' route is in black. The 'N Pacific' route is also in black, showing a path from Chicago to Asia via the North Pacific Ocean.



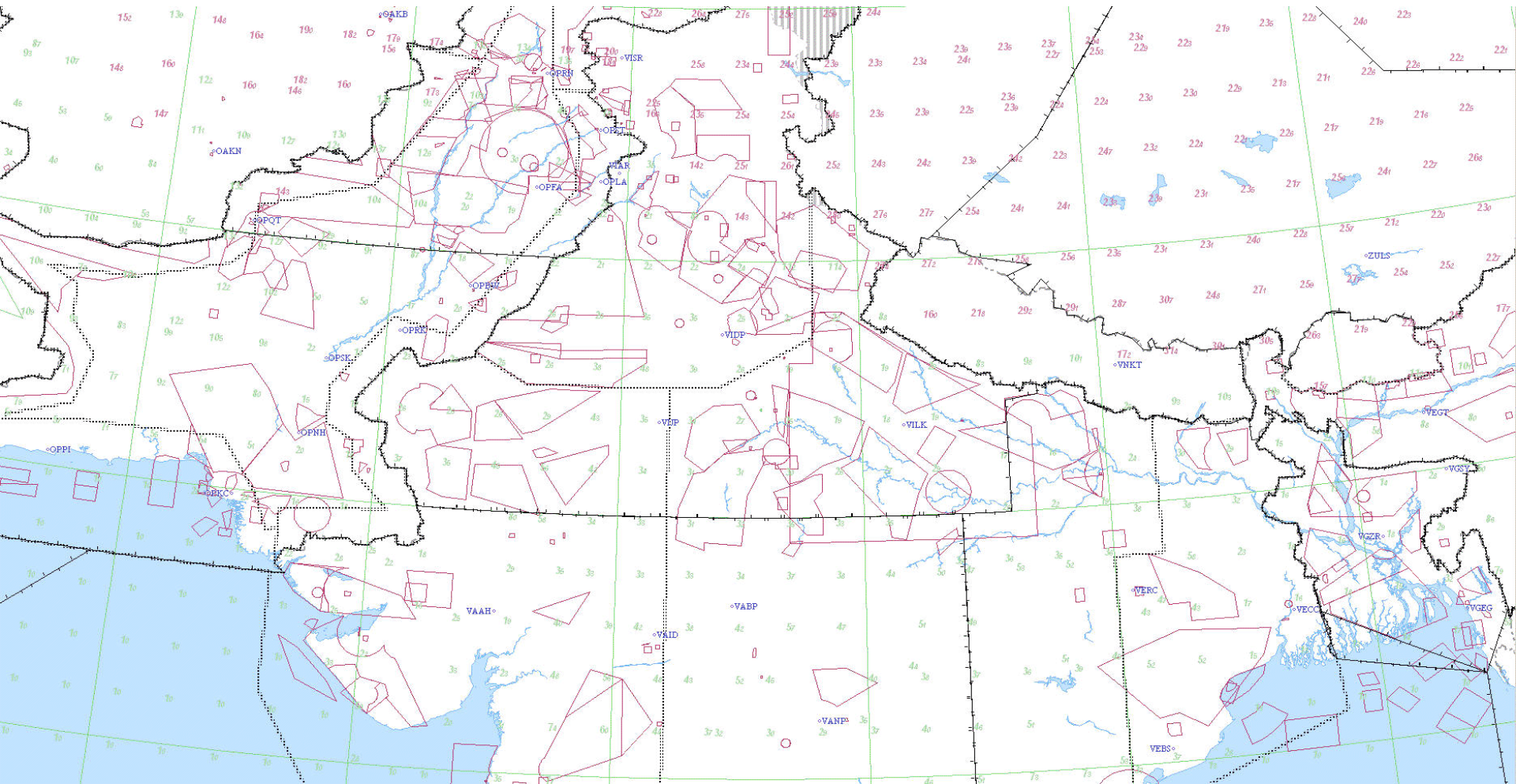
Cross Polar Flight Plan Requirements

➤ Operational

- Upper winds,
 - Air temperature (winter ultra-cold temps),
 - Solar Radiation,
 - HF propagation,
 - Suitable alternate airfields for ETOPS, and
 - Flow control slots.
- These change daily!



Military Restricted Airspace



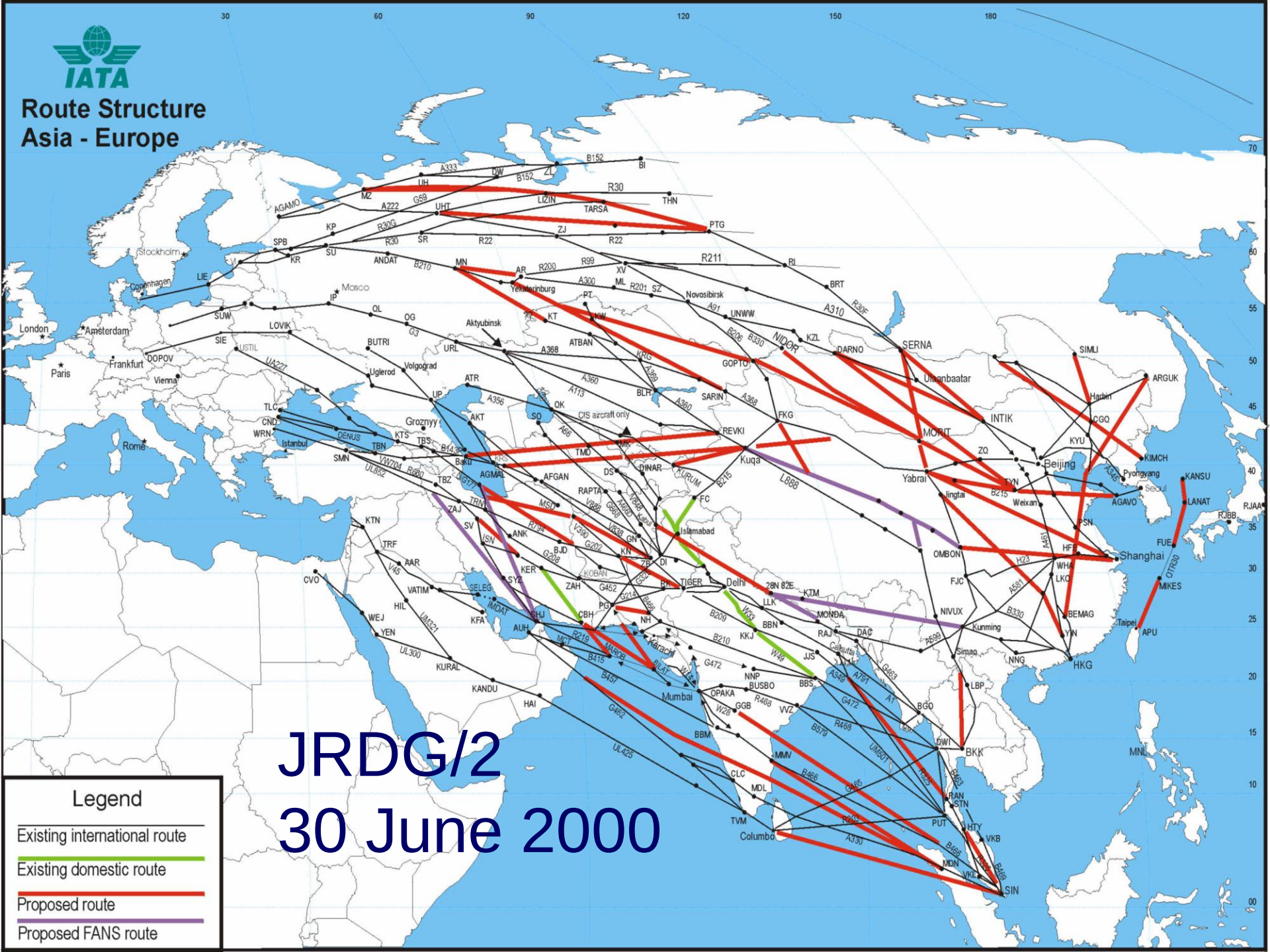
Military Restricted Airspace

Joint Route Development Group (JRDG) Meetings

- JRDG/1: Singapore; 17 February 2000
- Beijing, China; 29 May 2000
- JRDG/2: Frankfurt, Germany; 30 June 2000
- Beirut; 17-18 Aug 2000
- Karachi, Pakistan; 18-19 April 2000
- Tehran, Iran; 23-24 September 2000
- JRDG/3: Karachi, Pakistan; 27-28 September 2000
- JRDG/4: Singapore; 14 February 2001
- Delhi, India; 12-13 April 2001
- Bahrain; 15 - 16 April 2001
- India/Pakistan Trilat Mtg – Karachi, Pakistan, Aug 2001
- Kabul, Afghanistan Aug 2001



Route Structure Asia - Europe



JRDG/2
30 June 2000

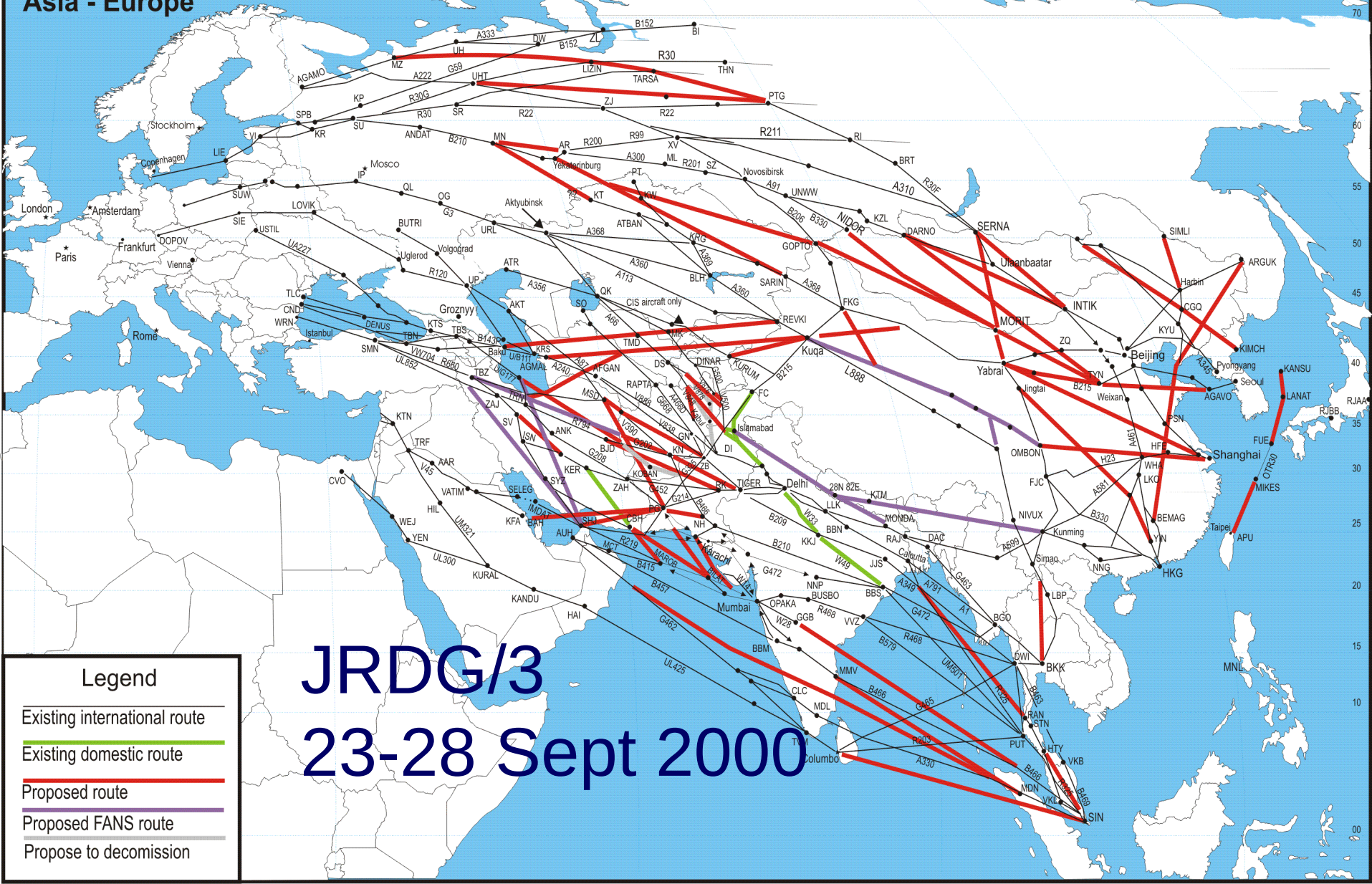
Legend

Existing international route

Existing domestic route

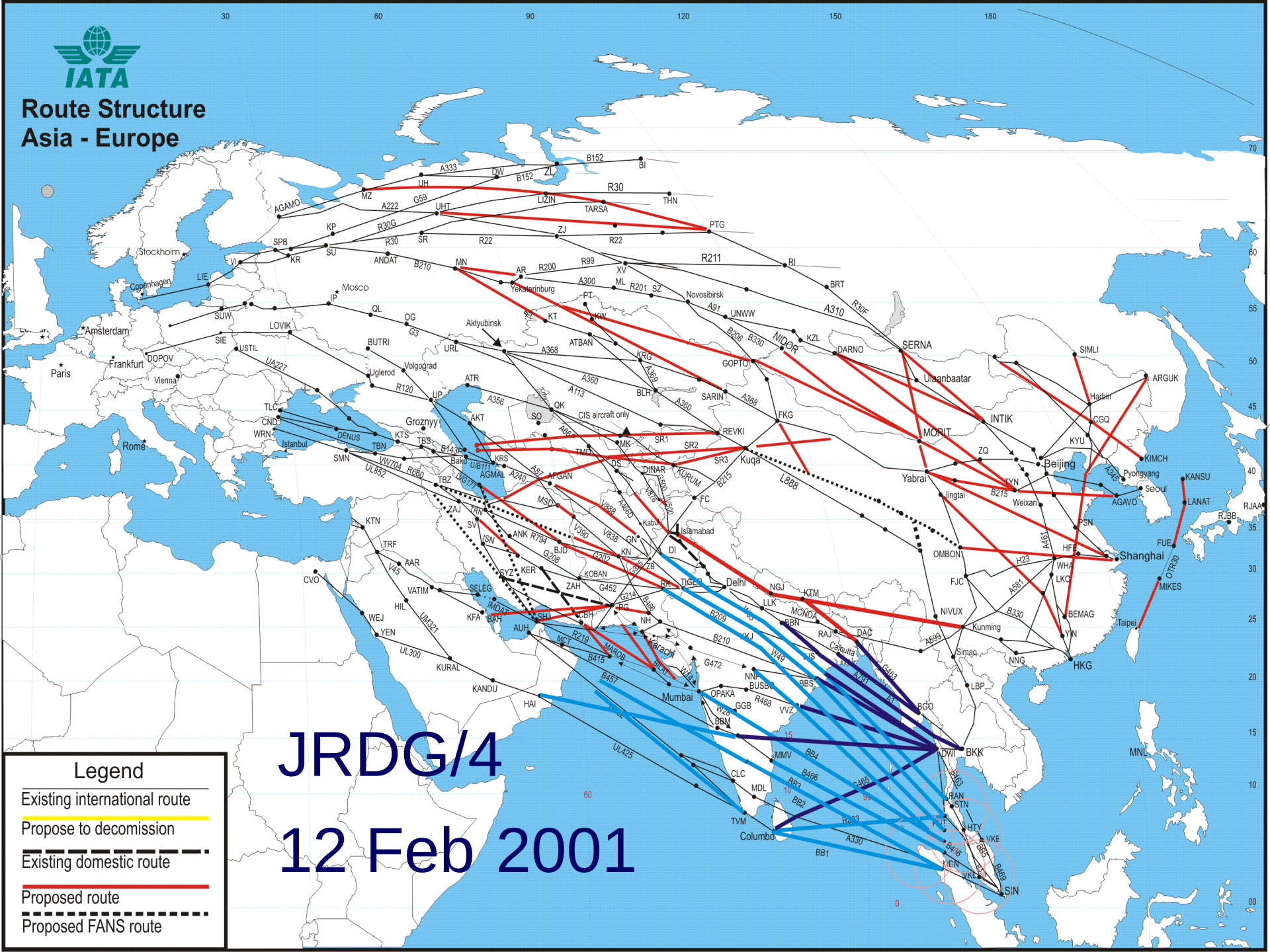
Proposed route

Proposed FANS route





Route Structure Asia - Europe



Legend

Existing international route

Propose to decommission

Existing domestic route

Proposed route

Proposed FANS route

JRDG/4

12 Feb 2001

2001 Handoff to ICAO

Formation of EMARSSH Task Force

(Europe, Middle East, Asia, Route Structure South of the Himalayas)

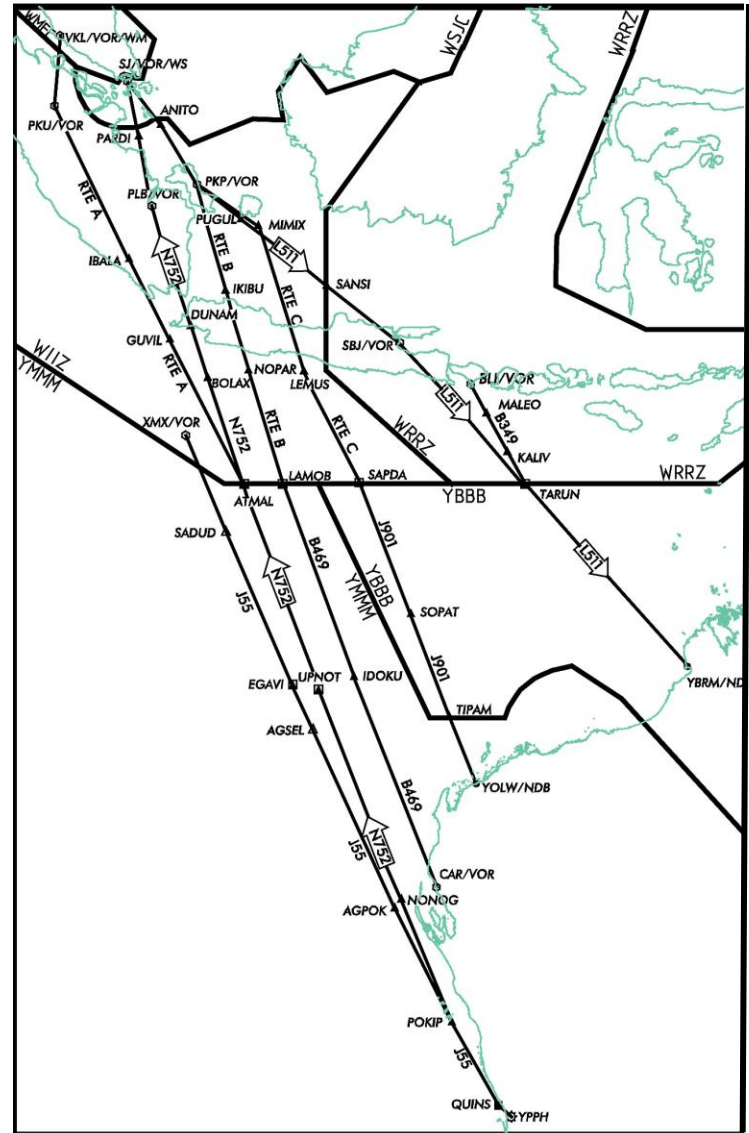
EMARSSH/1 5-9 Feb 2001

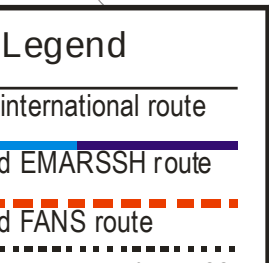
Phase I

➤ Implemented

➤ 29 Nov '01

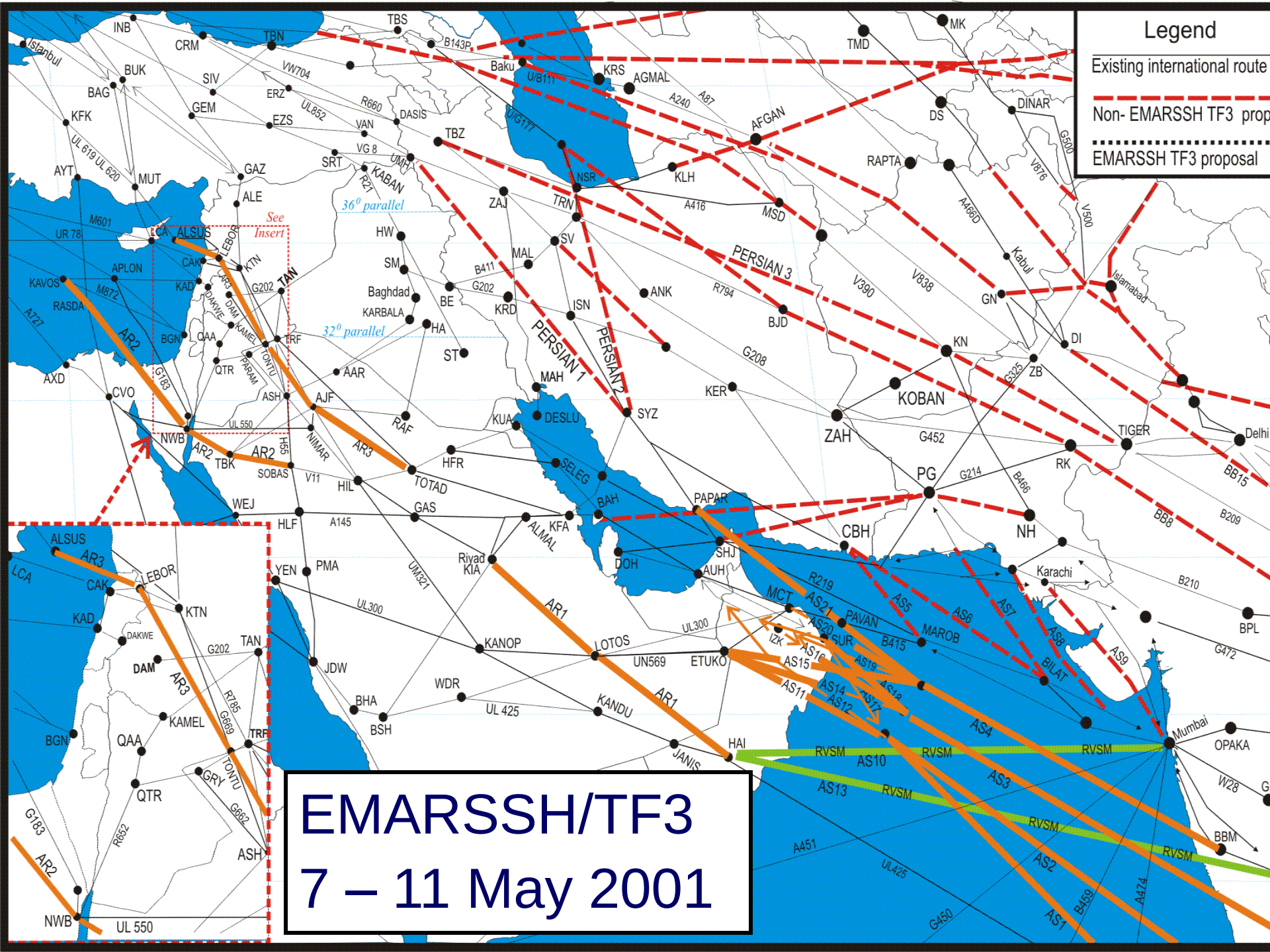
➤ RNP-10





EMARSSH/TF2

12-16 March 2001



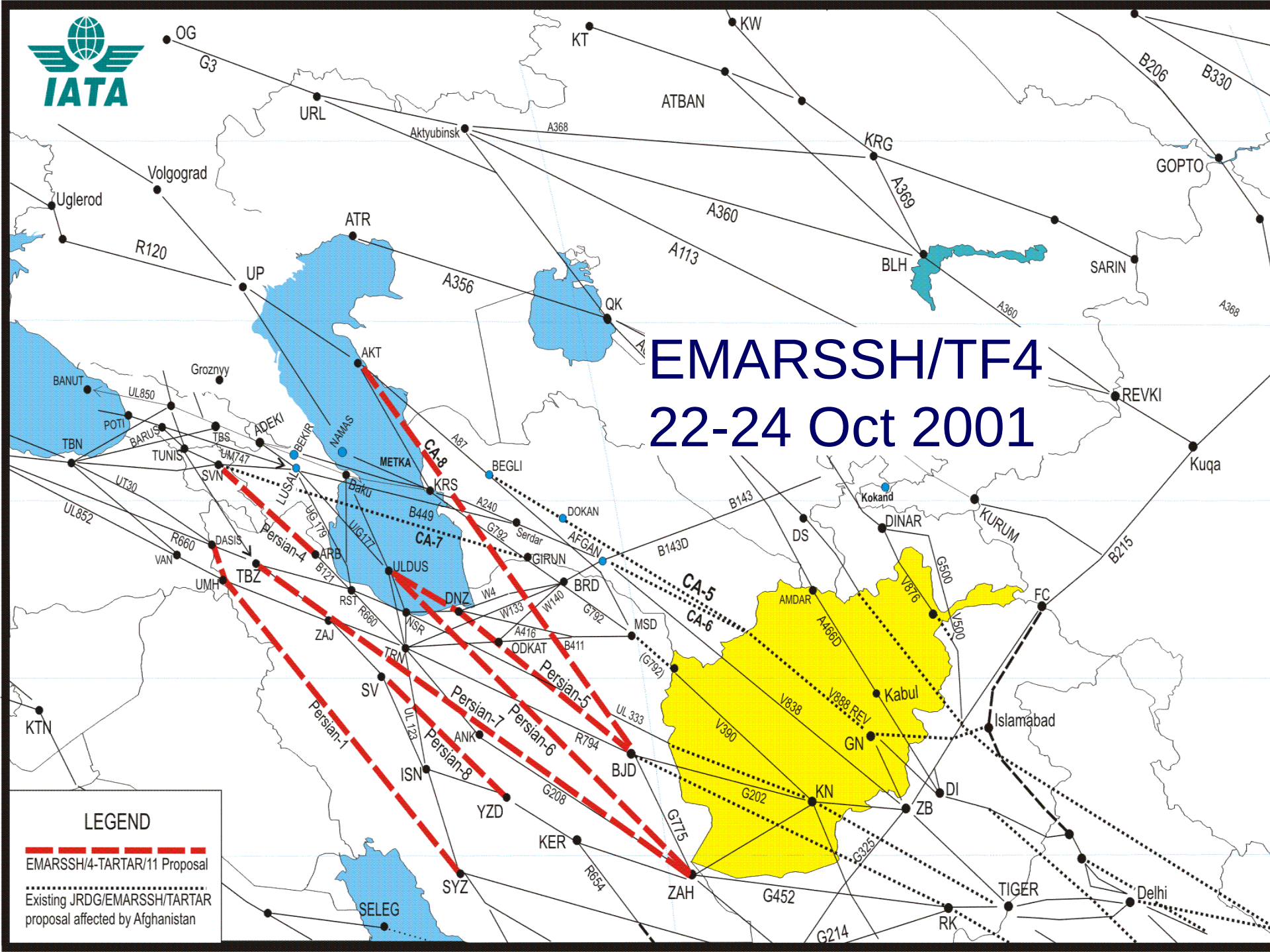
Legend

Existing international route

Non- EMARSSH TF3 proposal

EMARSSH TF3 proposal

EMARSSH/TF3
7 – 11 May 2001



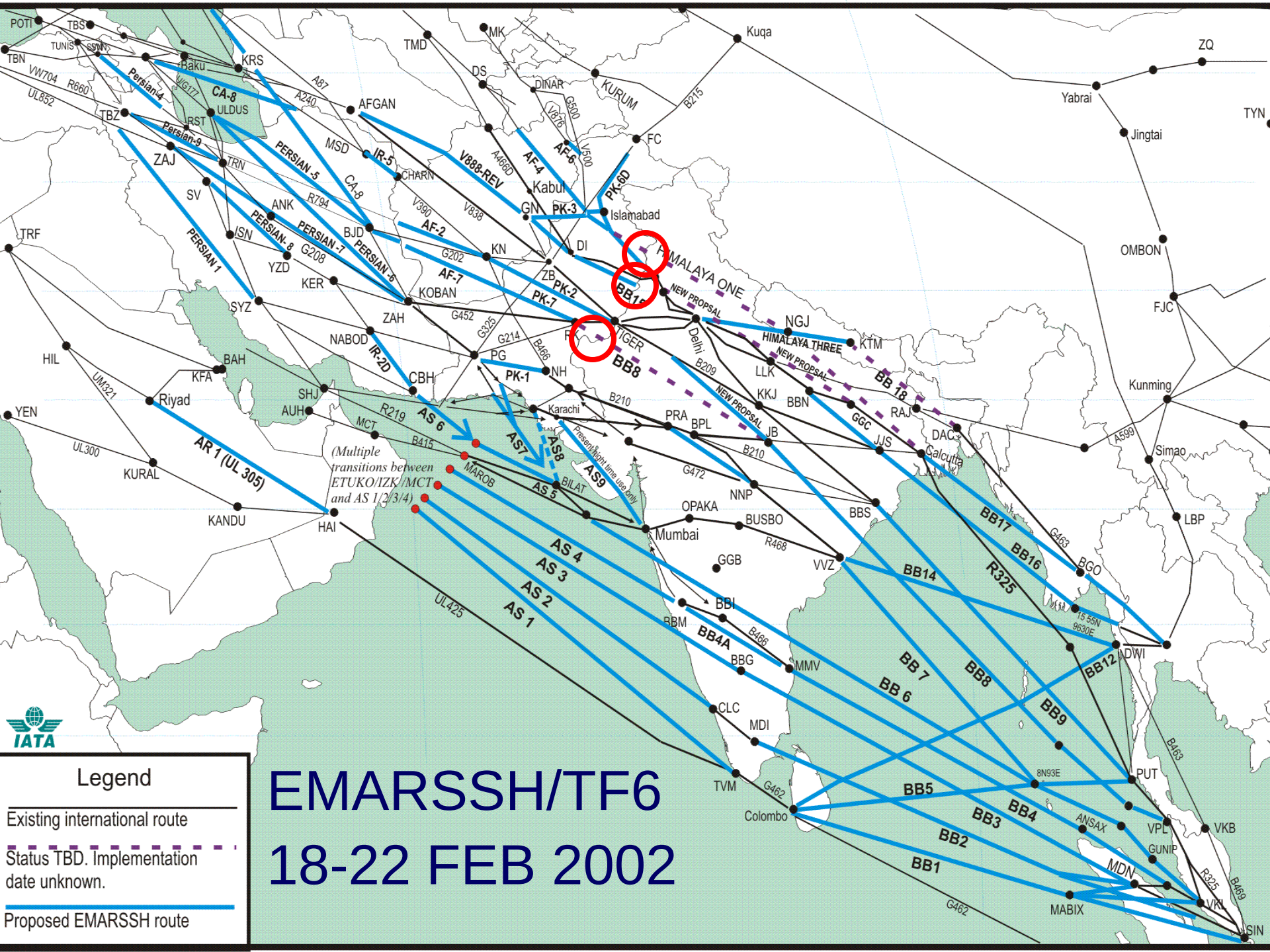
EMARSSH/TF4

22-24 Oct 2001

LEGEND

EMARSSH/4-TARTAR/11 Proposal

Existing JRDG/EMARSSH/TARTAR
proposal affected by Afghanistan



Legend

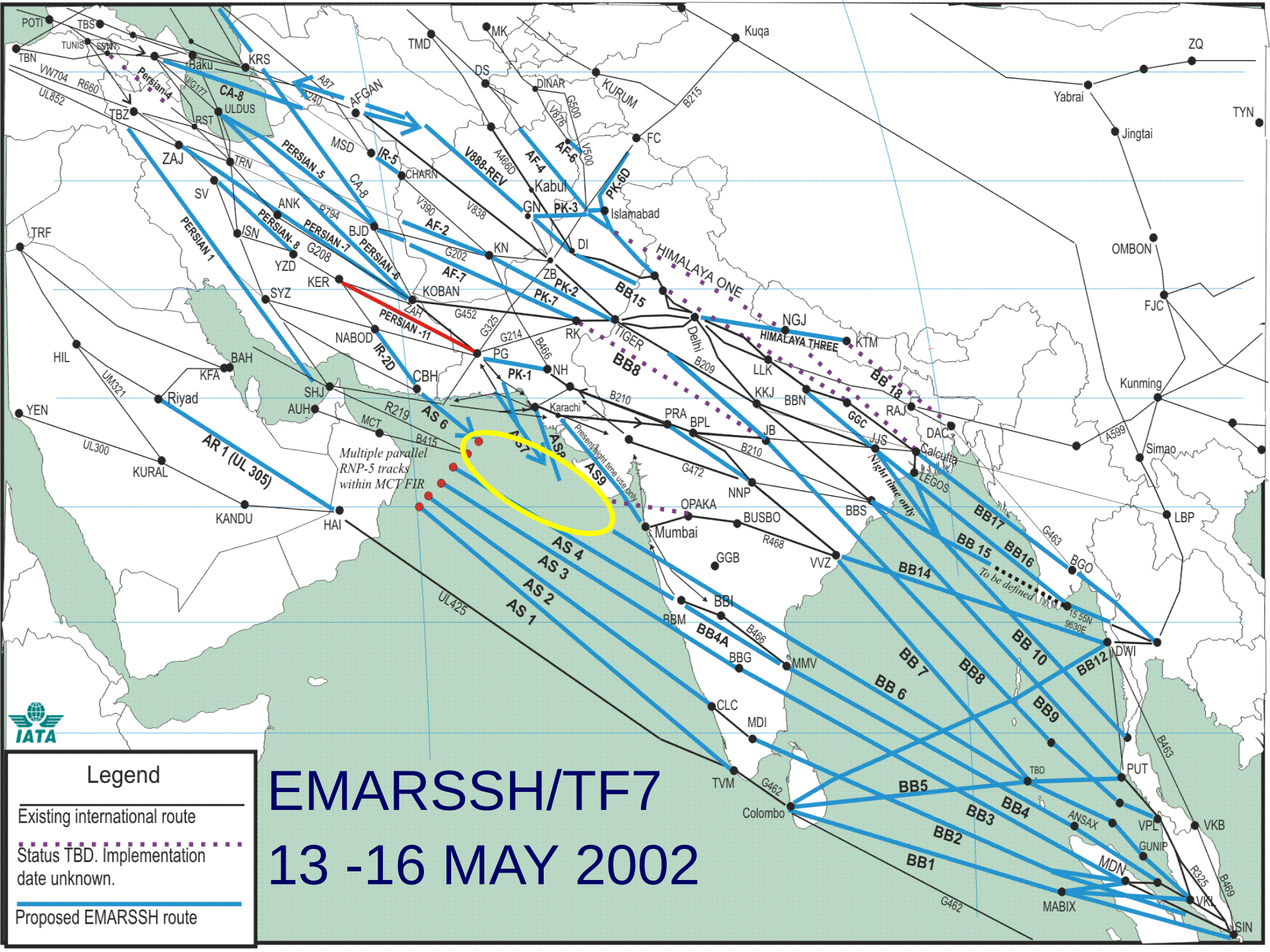
Existing international route

Status TBD. Implementation date unknown.

Proposed EMARSSH route

EMARSSH/TF6

18-22 FEB 2002



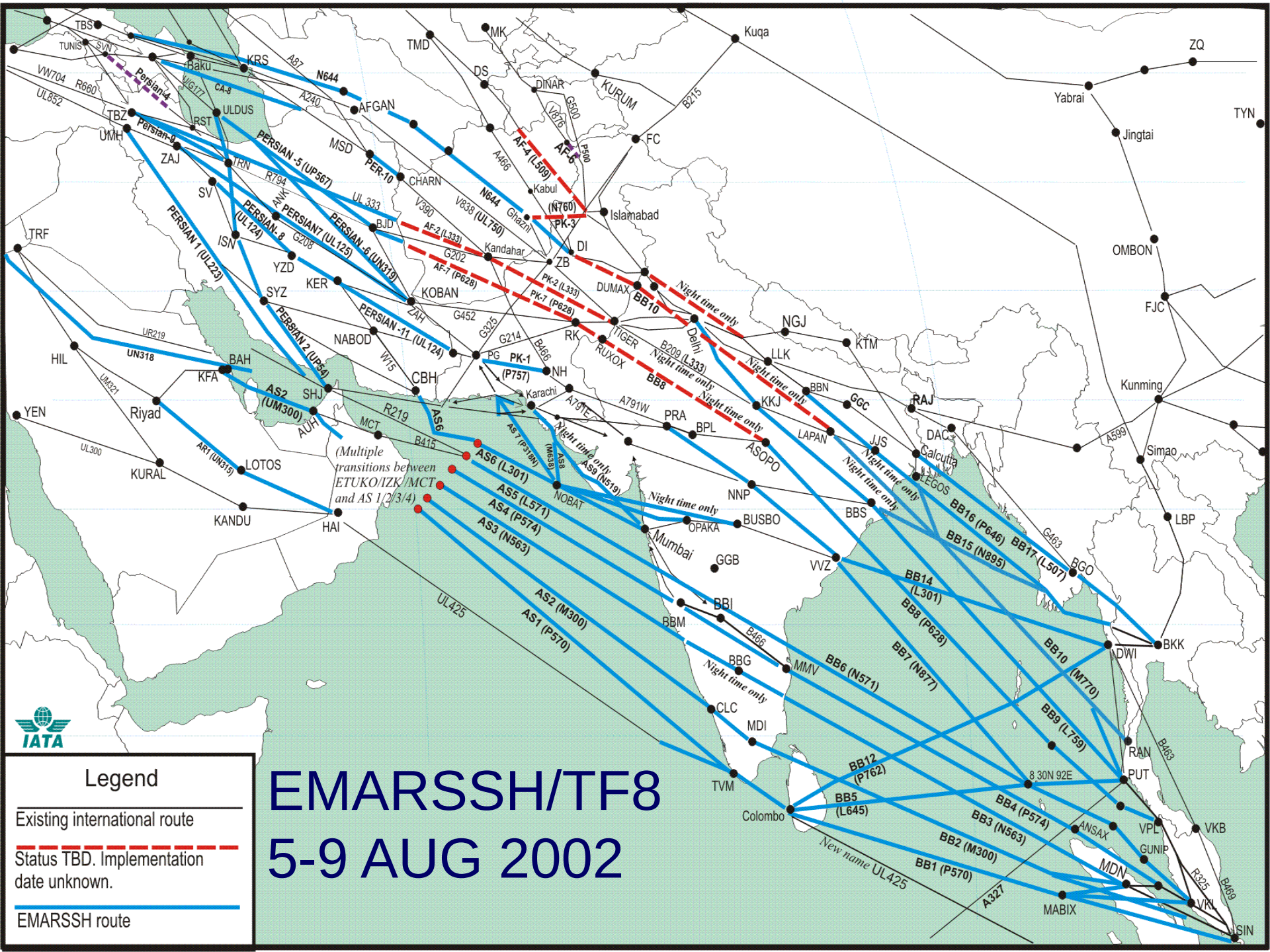
Legend

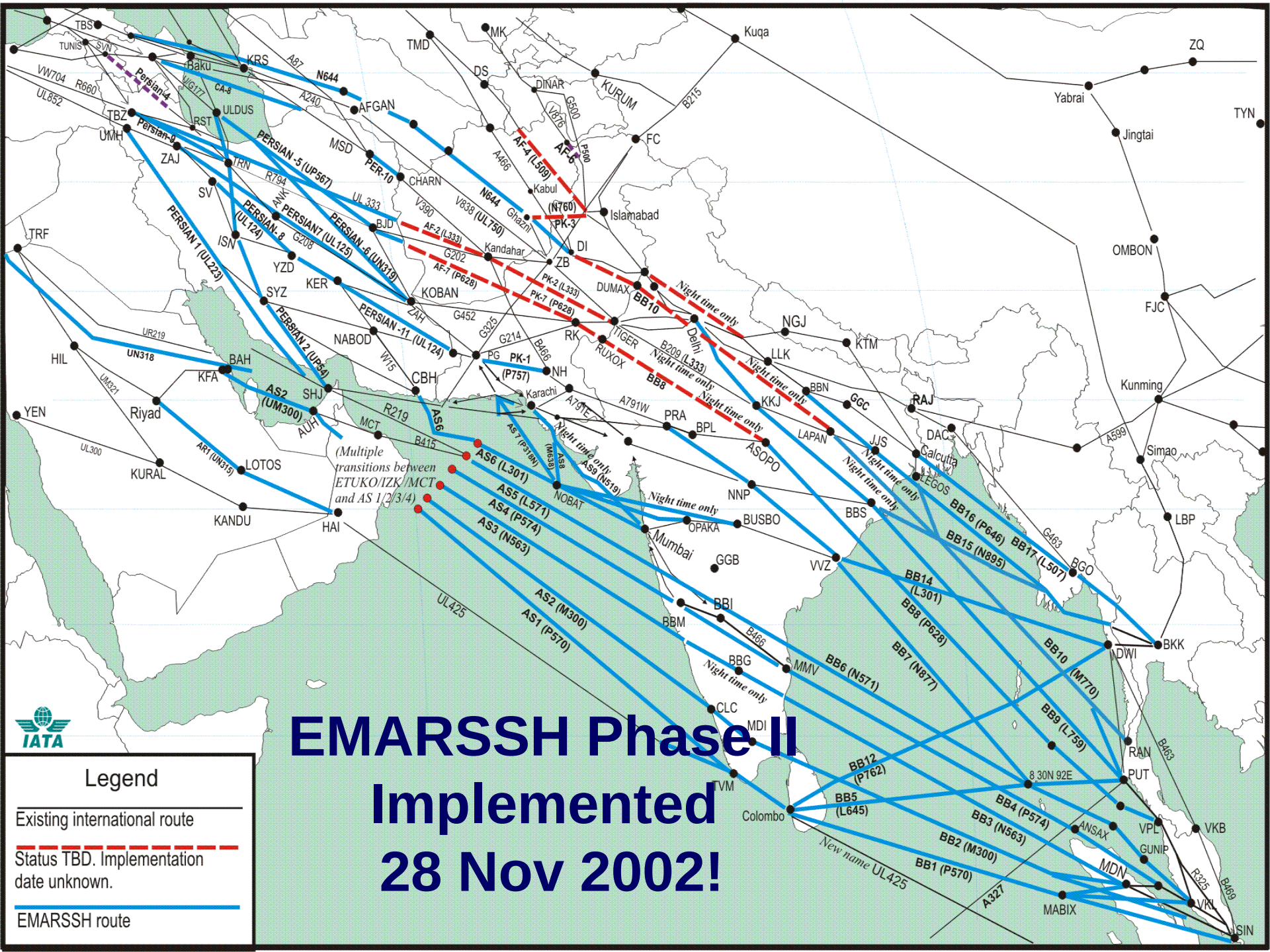
Existing international route

Status TBD. Implementation date unknown.

Proposed EMARSSH route

EMARSSH/TF7 13 -16 MAY 2002





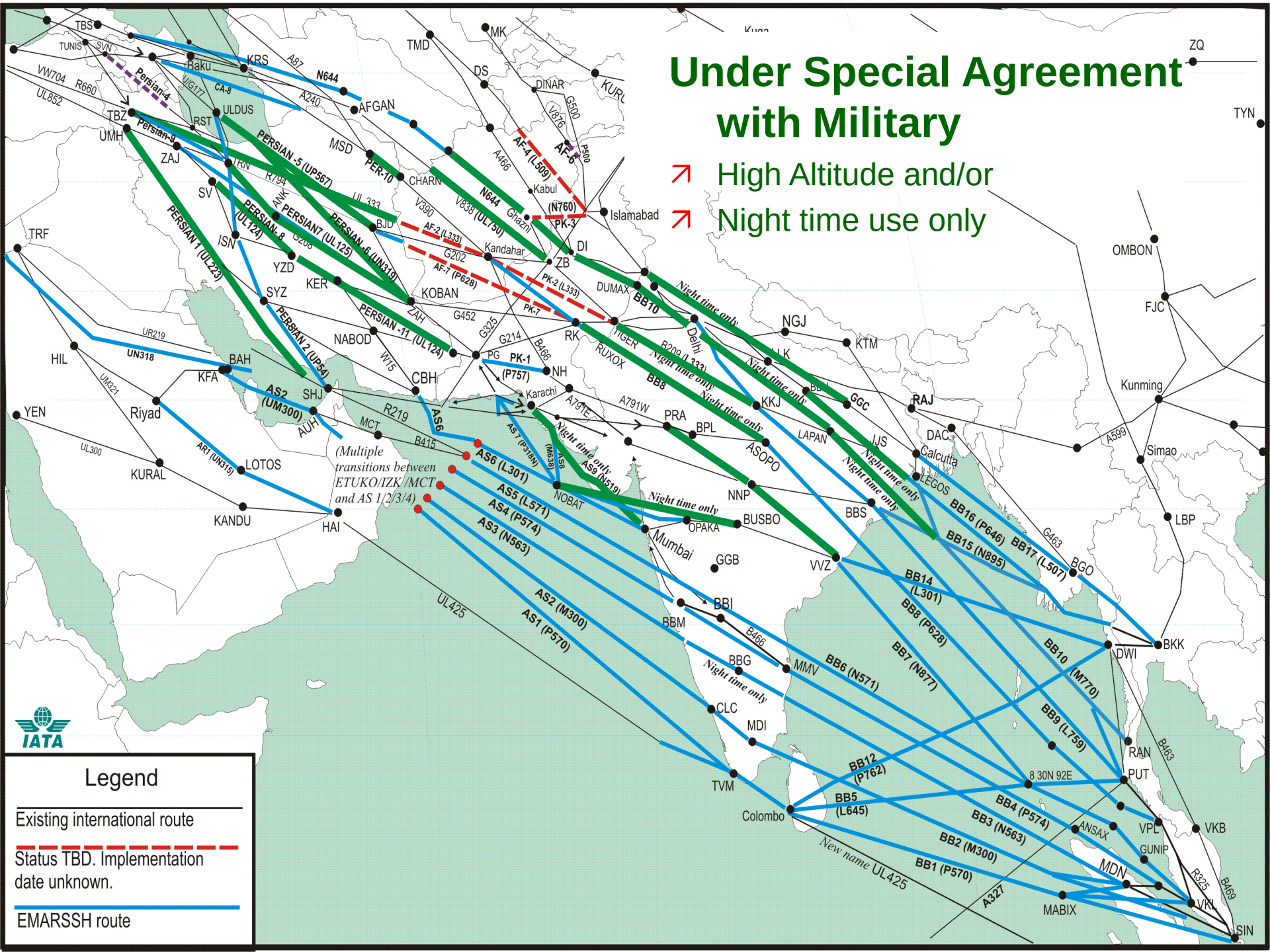
Legend

- Existing international route
- Status TBD. Implementation date unknown.
- EMARSSH route

**EMARSSH Phase II
Implemented
28 Nov 2002!**

Under Special Agreement with Military

- ↗ High Altitude and/or
- ↗ Night time use only



Legend

- Existing international route
- Status TBD. Implementation date unknown.
- EMARSSH route

Summary

- Operational Flight Planning Requirements
 - Change daily
 - Critical to safety of flight
 - Longer the flight – greater the variance
- Airlines need options
 - Greater the flexibility – greater the savings
- Need routine dialogue with military
 - To understand each other's needs
 - To find solutions together - without compromise



to represent, lead and serve the airline industry