



ICAO

International Civil Aviation Organization

The Second Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/2)

Bangkok, Thailand, 20 – 24 March 2023

Agenda Item 5: ATS Route Development

THE UPGRADE OF CONVENTIONAL ROUTES TO REGIONAL PBN ROUTES FOR EN-ROUTE AIRSPACE PROPOSAL

(Presented by Malaysia)

SUMMARY

This paper presents the proposal for PBN implementation in Kuala Lumpur and Kota Kinabalu FIRs. These proposals suggest an extension of existing regional ATS routes to improve city pair connection between the states concerned. This paper also proposes the harmonization of ATS routes Navigational Specification between Malaysia and adjacent states.

1. INTRODUCTION

1.1 Malaysia has adopted a phased approach for the implementation of PBN in line with the ICAO Asia-Pacific Regional PBN Implementation Plan. This approach is made based on the demand of airspace users for city pairs taking into consideration the aircraft capabilities and air navigation facilities as well as reducing the confusion of filing multiple routes in Kuala Lumpur and Kota Kinabalu Flight Information Regions (FIRs).

1.2 Some of the conventional routes need to be retained in order to cater non-PBN flights and will be gradually upgraded to PBN routes by phases. As the skies become busier with more planes, PBN will help to improve airspace safety, capacity, and efficiency. Flight times will also be reduced with optimal flight paths designed using PBN specifications, resulting in fuel savings and improved environmental protection.

2. DISCUSSION

Extension of PBN routes proposal

2.1 Malaysia is committed and progressively moving towards the full PBN implementation within Kuala Lumpur and Kota Kinabalu FIR for better air traffic management in this region. These proposals essentially focus on extending the existing regional PBN routes and establishing new regional PBN routes to replace the conventional regional routes. The list of ATS routes is as follows:

Item	Proposed PBN ATS routes	Routes to be replaced	FIRs involved	Timeline
1.	M757 (extension)	Y508	Kuala Lumpur Bangkok	Q4 2023
2.	M765 (extension)	W546 G468	Kuala Lumpur Singapore Ho Chi Minh Jakarta	
3.	M758 (extension)	G582 R461 (PUGER to MDN)	Kota Kinabalu Singapore Kuala Lumpur Jakarta	
4.	New PBN Regional routes	G580 (VKG to VJN)	Kota Kinabalu	
5.	New PBN Regional routes	R223	Kota Kinabalu Ujungpandang	

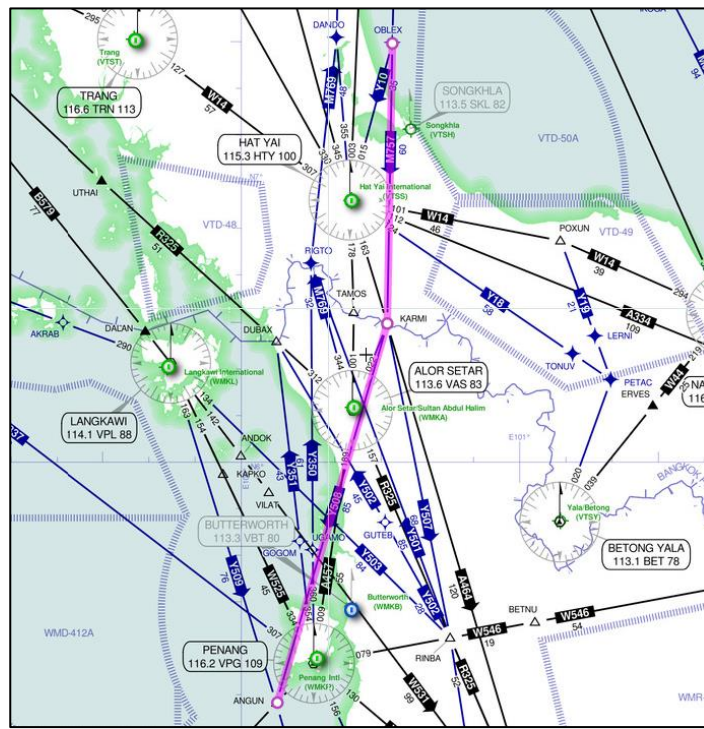


Figure 1. Extension of M757

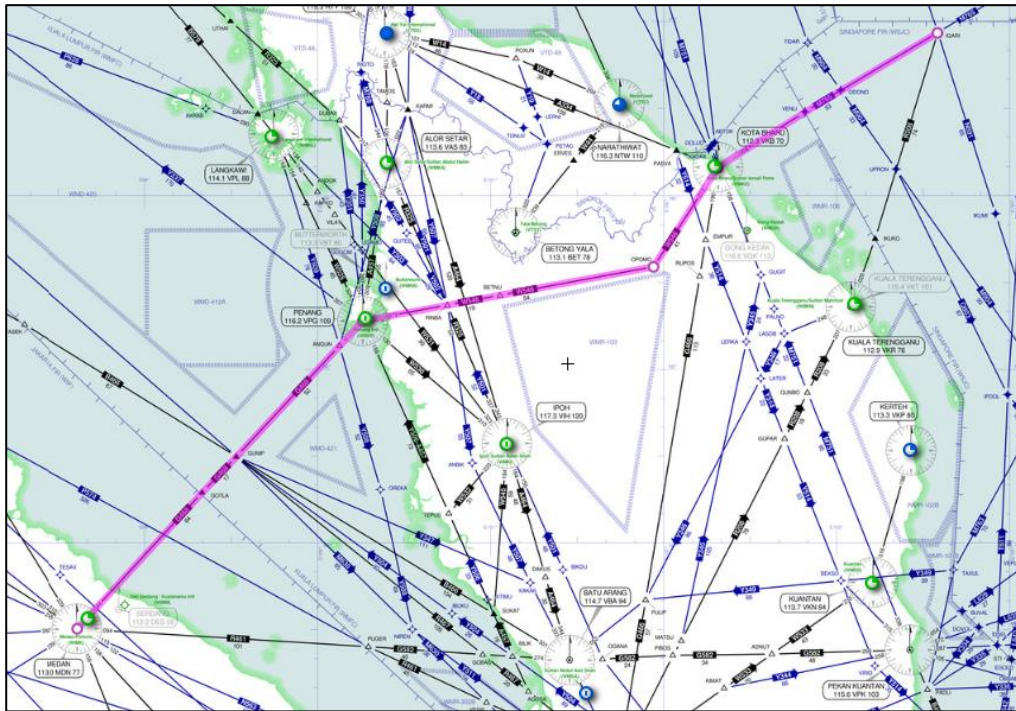


Figure 2. Extension of M765



Figure 3. Extension of M758

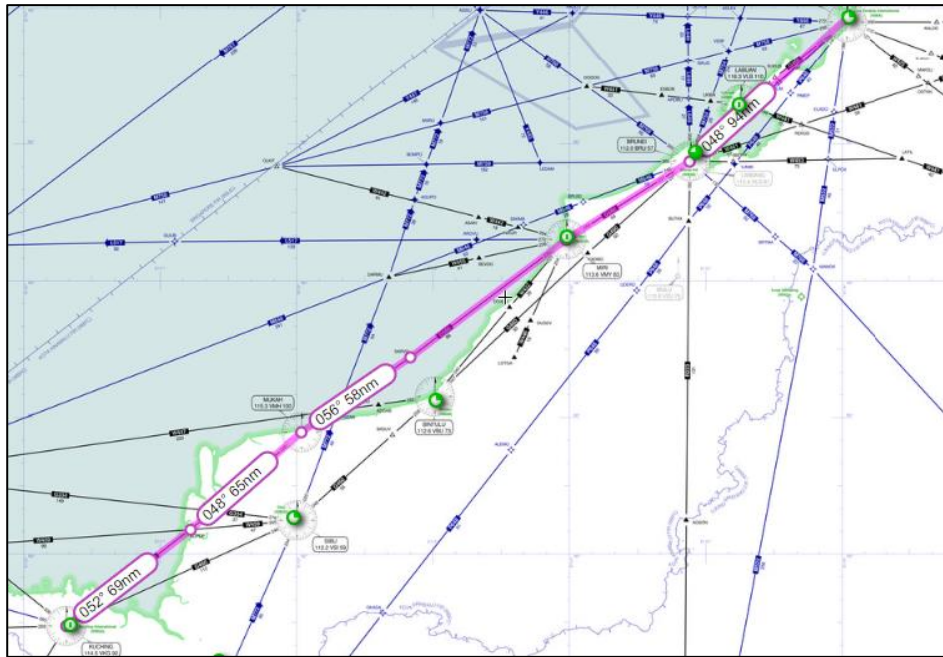


Figure 4. New Regional PBN route replacing G580 from VKG to VJN

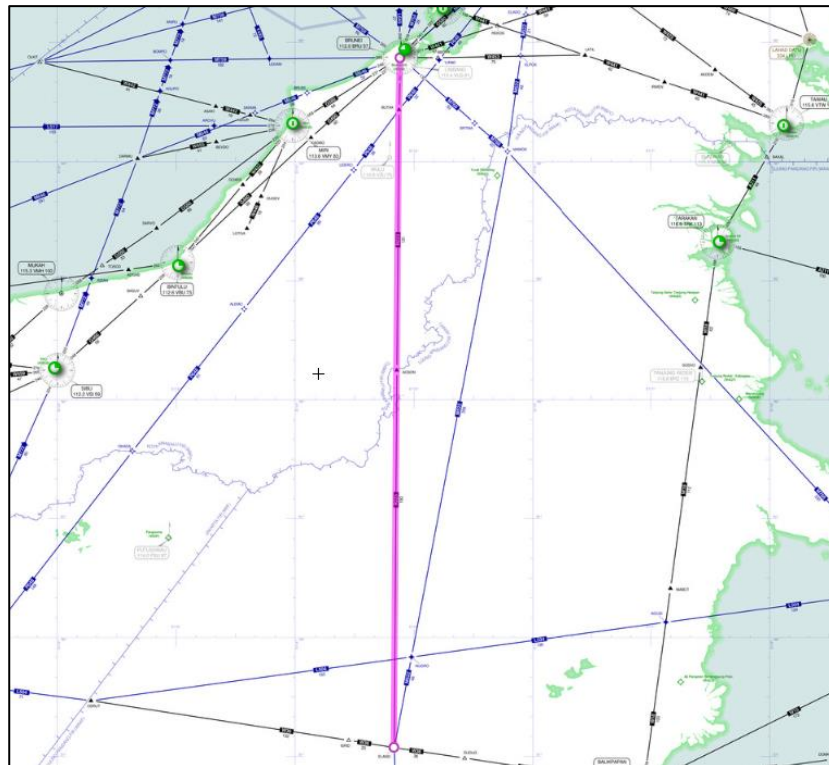


Figure 5. New Regional PBN route replacing R223

ATS routes navigational specification

2.2 Prior to deciding on the ATS route navigation specification, it is mandatory to engage with stakeholders relating to fleet equipage study to ensure that all airlines could comply with the proposed specification. Malaysia believed that, based on current aircraft technology, all aircraft should be equipped with at least RNAV 5 specifications in order to improve air traffic management safety and efficiency.

2.3 Malaysia aims to upgrade all ATS routes to RNAV 2 specification for the areas within surveillance coverage. This would allow routes to be spaced closer to one another and increases capacity within the same finite amount of airspace, particularly in high-traffic areas.

Progressive reduction of longitudinal separation

2.4 These routes are covered by surveillance and direct controller pilot communications in the Kuala Lumpur and Kota Kinabalu FIRs, and Malaysia intends to use a longitudinal separation of 20NM at the TOC points between neighbouring FIRs and 10NM in the future to improve route utilization and operational efficiency as specified in the Asia Pacific Seamless ANS Plan V3.0.

Proposal for Amendment (PfA) and application of ATS route designator

2.5 Noting that ICAO requires the submission of a Proposal for Amendment (PfA) prior to the amendment of these regional ATS routes, Malaysia would like to seek support from member states to ensure that this plan is effectively implemented.

2.6 The clear workflow and timeframe for the PfA approval will greatly assist states in airspace planning and restructuring. Rapid approval of the PfA by the ICAO and the application of an ATS route designator are required to assist member states in expediting the state's PBN implementation plans.

2.7 The five Route proposals within the ATS Route Template for consideration by *Asia Pacific ATS Route Catalogue* are in **Attachment A**.

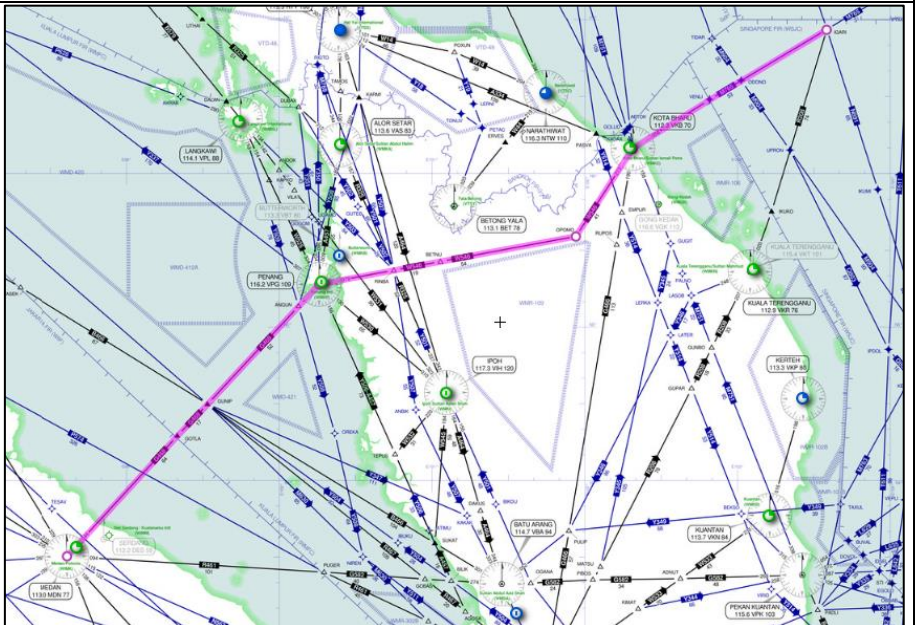
3. ACTION BY THE MEETING

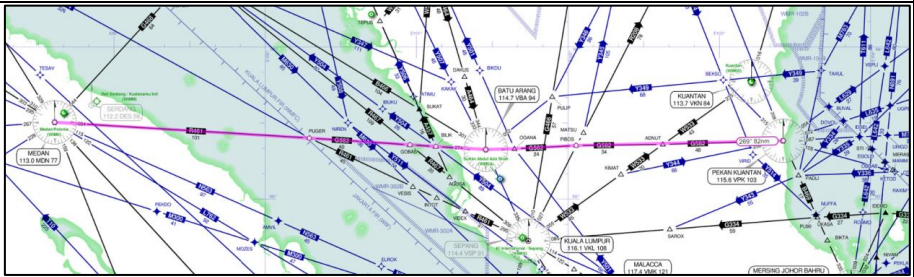
3.1 The meeting is invited to:

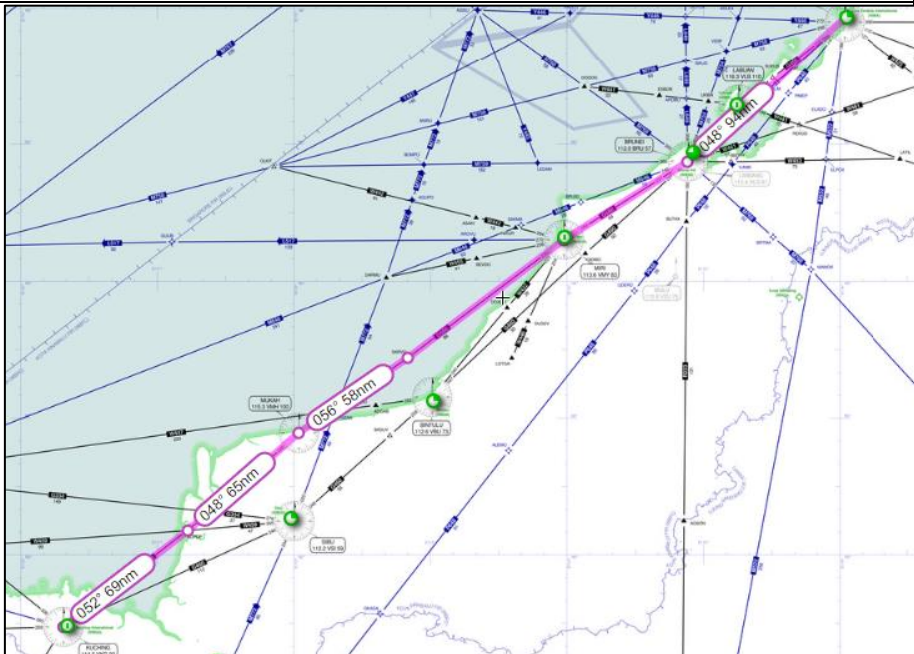
- a) note the suggestion and for related states to review the proposal
- b) review the workflow and timeframe for PfA approval.
- c) discuss any relevant matters as appropriate.

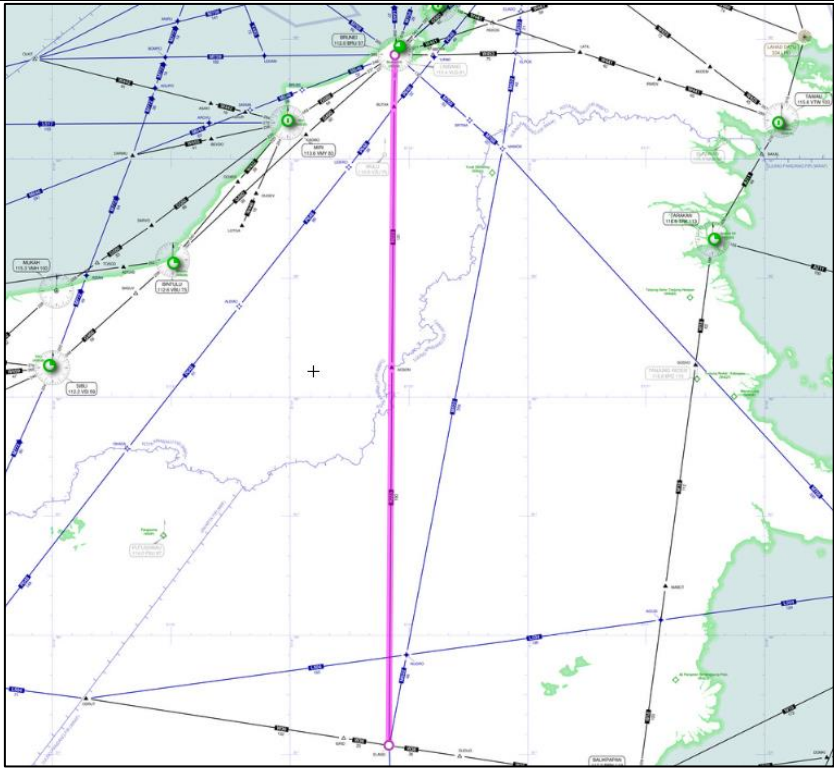
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ATS Route Name	SCSXX
State Priority	A
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	Malaysia (SAIOCEACG/2)
States/Administrations Involved	Malaysia, Thailand
Route Description	This proposal essentially focuses on extending M757 to replace the conventional route Y508
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks:	

ATS Route Name	SCSXX
State Priority	B
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	Malaysia (SAIOCEACG/2)
States/Administrations Involved	Malaysia, Singapore, Indonesia, Viet Nam
Route Description	This proposal essentially focuses on extending M765 to replace the conventional routes W546 and G468.
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks:	

ATS Route Name	SCSXX
State Priority	B
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	Malaysia (SAIOCEACG/2)
States/Administrations Involved	Malaysia, Singapore, Indonesia
Route Description	This proposal essentially focuses on extending M758 to replace the conventional routes G582 and R461 (PUGER to MDN).
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace and to simplify FPL in Kuala Lumpur FIR.
Operational Information (potential airlines, flight frequency)	
Remarks:	

ATS Route Name	SCSXX
State Priority	B
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	Malaysia (SAIOCEACG/2)
States/Administrations Involved	Malaysia, Singapore, Indonesia
Route Description	Upgrade a portion of conventional ATS routes G580 (VKG to VJN) to PBN Route
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace.
Operational Information (potential airlines, flight frequency)	
Remarks:	

ATS Route Name	SCSXX
State Priority	B
IATA Priority	HIGH/MEDIUM/LOW
Requested by (when)	Malaysia (SAIOCEACG/2)
States/Administrations Involved	Malaysia, Singapore, Indonesia
Route Description	Upgrade from conventional ATS routes R223 to PBN Route
Flight Level Band	
Benefit (fuel, environmental)	The implementation of PBN Airspace.
Operational Information (potential airlines, flight frequency)	
Remarks:	 <p>The image is an aeronautical chart of the region between Singapore and Kuala Lumpur, Malaysia. A prominent pink vertical line represents the proposed PBN route SCSXX, extending from the Singapore area in the north to the Kuala Lumpur area in the south. The chart shows various other flight paths in blue and black, along with navigation aids, altitudes, and geographical features like coastlines and islands. A small black crosshair is visible in the center of the chart area.</p>