International Civil Aviation Organization

The Second Meeting of the APANPIRG ATM Sub-Group (ATM /SG/2)

Hong Kong, China, 04-08 August 2014

Agenda Item 5: ATM Coordination (Meetings, Route Development, Contingency Planning)

REGIONAL ATM CONTINGENCY PLAN TASK FORCE OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Third Meeting of the Regional ATM Contingency Plan Task force (RACP/TF/3), held in Bangkok, Thailand, from 12 to 15 November 2013.

1. INTRODUCTION

1.1 The RACP/TF/3 meeting was attended by 35 participants from Australia, Bangladesh, Cambodia, India, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Sri Lanka, Thailand, United States, Viet Nam and IATA.

2. DISCUSSION

Contingency Planning Review

2.1 The meeting reviewed its overall understanding of the work done so far and previous developments in contingency planning. The review included Annex 11 requirements for contingency planning, the history of the formation of the RACP/TF, the hierarchy and categorization of contingency plans agreed by the task force, and the concepts of capacity reduction and harmonized contingency route structures when managing contingency events.

2.2 It was noted that, unlike the cases of North America and Europe, the Asia/Pacific Region did not have the benefit of a network Air Traffic Flow Management (ATFM) capability that would help to manage contingency events. It was further noted that while it may be easy to identify contingency routes they would not necessarily always work. It was considered that it would be more useful to try to harmonize contingency routes on a sub-Regional basis. One key to managing Level 2 (inter-State) contingency arrangements was flexibility.

2.3 In reviewing the outcomes of the Combined 3rd Meeting of the South Asia/Indian Ocean ATM Coordination Group and the 20th Meeting of the South East Asia ATS Coordination Group (SAIOCG/3 & SEACG/20, Bangkok, Thailand, 18 – 22 February 2013) it was noted that, while weather deviation events may not normally be a matter for contingency planning as such, RACP/TF may consider whether there was value in including management of LSWD events in Level 2 (inter-State) contingency arrangements. The existing multi-State LSWD contingency arrangements in the South China Sea Area were discussed, and the meeting supported the addressing of LSWD considerations in the Regional ATM Contingency Plan.

2.4 It was suggested that the endorsement of the Seamless ATM Plan by APANPIRG/24, including its PASL (Preferred ATM Service Levels) Phase 1 expectations relating to ATM contingency systems and operations, should be considered for incorporation in regional contingency planning. The Seamless ATM plan highlighted the need for ATC training in contingency procedures and for the development of Level 2 contingency arrangements.

Asia/Pacific Region Contingency Readiness

2.5 RACP/TF/1 (Bangkok, Thailand, 17 – 19 April 2012) had formed a Contingency Plan Task Force Review Team to review relevant portions of Level 1 (internal State) and Level 2 (Inter-State) ATM Contingency Plans, to identify areas where ATM contingency planning required improvement and to support the development of a Level 3 (Regional) ATM Contingency plan, based on Basic Planning Elements agreed by the Task Force. The latest update of the results of the State and Regional ATM Contingency Readiness analysis is provided at **Attachment A**.

2.6 Unless changes were made to the questionnaire used for the analysis there would be no need for further reports from Administrations assessed as having *robust* Level 1 and Level 2 Contingency Plans There was, however, an on-going need for monitoring and analysis of contingency readiness including the recording of any improvement among Administrations assessed as having *marginal* or *incomplete* Level 1 or Level 2 plans, and obtaining information from those that did not respond to the survey.

RACP/TF Working Arrangements

2.7 The meeting reviewed its working arrangements to set goals to drive progress. The schedule agreed by the Task Force included the following meetings:

- RACP/TF/4 – 29 April – 2 May 2014 - *Plan Draft and Development*
- RACP/TF/5 – September/October 2014 - *Final Draft*
- RACP/TF/6 - Reserve meeting

2.8 This schedule was intended to align the finalization of the Regional ATM Contingency Plan and the Regional Framework for Collaborative ATFM, with both plans being made available before the implementation date of the Seamless ATM Plan's Phase 1 Preferred ATM Service Levels (November 2015).

2.9 Disruption of the Asia/Pacific Regional Office meetings schedule in 2014 has resulted in the postponement of RACP/TF/4 and 5. There remains the need for 2 meetings of the Task Force to meet the planned delivery of the final draft of the Plan by mid-2015.

2.10 RACP/TF/1 had formed a Contingency Plan Review Team to review Level 1 (internal State) and Level 2 ATM Contingency plans to identify areas where ATM contingency planning required improvement. The outcome of this activity was the aforementioned State and Regional ATM Contingency Readiness analysis. To conduct further work on the development of the Regional ATM Contingency Plan it was agreed that the Small Working Groups (SWG) established by the RACP/TF to develop contingency route structures and flight level allocation schemes (FLAS) should continue on a geographical, sub-Regional basis, with each SWG ideally including either a member of the Review Team, or the meeting Chair or the meeting Secretary. During the in-meeting work the composition of the SWG would be changed according to the availability of attendees from particular Administrations. Some Administrations would require representation on more than one SWG.

2.11 RACP/TF/3 agreed to the following Decision:

RACP/TF Decision 3/1: Task Force Working Arrangements

That, tasks required for development of the Regional ATM Contingency Plan are conducted by:

a) Small Working Groups (SWG) formed for in-meeting development of the Regional ATM Contingency Plan and between-meeting development and harmonization of contingency route structures and flight level allocation schemes; and

b) the RACP/TF Contingency Plan Review Team, to assist and lead SWG in-meeting activities and conduct ongoing development of the Regional ATM Contingency Plan between meetings, supported by the ICAO Secretariat;

2.12 The RACP/TF Contingency Plan Review Team and SWG are detailed in **Attachment B**.

Draft Regional ATM Contingency Plan

2.13 A draft framework for the Regional ATM Contingency Plan was presented to the meeting for review and development, including:

- Scope and objectives of the plan;
- Executive Summary;
- Abbreviations and Acronyms;
- Principles and Practices;
- Current Situation;
- Performance Improvement Plan;
- Research and Further Development;
- Milestones, Timelines, Priorities and Actions; and
- Appendices detailing;
  - Basic Plan Elements;
  - Contingency Contacts;
  - Templates for Level 1 (internal State) Contingency Plans and Level 2 (inter-State) Contingency Arrangements
  - Contingency Routes and Flight Level Allocation Schemes;
  - Pilot and ATC Procedures; and
  - Volcanic Ash Cloud and Radioactive Cloud Contingency Plans.

2.14 The initial draft of the Regional ATM Contingency Plan is appended at **Attachment C**. In considering 4 key aspects of the draft plan, the meeting agreed to the following:

- Objectives:
  - the Plan should state the objective of the continuation of aircraft operations between unaffected FIRs, through affected FIRs;
  - The requirements included in the plan in order meet its objectives must cover all events resulting in disruption to normal ATS and normal aircraft movement.
- Contingency Planning Principles:
  - the overriding contingency planning principle of safety over efficiency having primacy over optimal levels and routes;
  - there was a need to clearly establish (and justify) a benchmark for lateral separation of contingency routes that are not vertically separated in the FLAS.
  - there was a need to define airspace classification requirements during contingency events;
  - Further explanation of what events may constitute Level 1 or Level 2 contingency arrangements was required;
  - The plan should define any exclusion from contingency airspace, e.g. VFR or non-scheduled aircraft. Communications, Navigation and Surveillance capabilities required for access to contingency airspace should be defined in the plan, and the exclusion of non-conforming aircraft clearly stated;
  - The plan should include consideration of ground-based navigation aid requirements;
  - Alternate aerodromes should be included in contingency plans
  - The plan should include priorities for access to contingency airspace, and provisions for the tactical definition and coordination of additional routes/FLAS to accommodate high priority non-scheduled flights such as those engaged in humanitarian aid, medical evacuation, flood and fire relief and SAR.
  - Contingency FLAS should, wherever practicable, include consideration of allocating the optimum flight levels to routes used by long-haul aircraft, depending on the traffic density on the route.

- Basic Plan Elements:

  – Preparation time for an adjacent FIR to activate contingency procedures should be considered. Priority 1 should be the immediate handling of the situation, with priority 2 being the activation of the contingency plan;

  – the draft pilot/operator procedure to climb or descend well to the right of route may require further consideration, particularly input from IATA;

  – ATM procedures should specify where there was a reduced level of service;

  – there was uncertainty about the practicality of using ADS-C and CPDLC for communications in contingency airspace;

  – there was uncertainty about the assigning of meteorological services to an adjacent State;

  – the Plan should define SAR Alerting as a contingency plan element, rather than SAR;

  – Contingency Plans should be made readily and easily available via electronic means to ensure rapid response to events;

  – Provisions for testing and review of plans, and any post activation review should be included. The need for reporting to Regional Office was discussed, and would be further explored;

  – Contingency plans and associated procedures must be included in ATS refresher training programs;

  – Airspace classification, separation and CNS requirements should be included among BPE, in addition to any other relevant sections of the Plan; and

  – Procedures for joining or departing a contingency route should be included in plans.

- Milestones, Timelines, Priorities and Actions.

  – It was neither necessary nor desirable to prioritize contingency events for plan development.

  – Milestones and timelines for the plan would be proposed by the Contingency Review Team for consideration by the next meeting. Milestones could include, for example:

    - by XX date all airspace sectors above F245 should have a contingency plan for Category A events; and

    - by XX date all States will have a contingency plan for category B events.

Contingency Plan Template

2.15 The Task Force Terms of Reference (TOR) require that the Regional ATM Contingency Plan, where practical, provides contingency planning templates for States. A draft Level 1 contingency plan template was provided for discussion and review by the meeting. It became apparent that there was some uncertainty among participants regarding the differences between Level 1 and Level 2 plans. While formal multi-State Level 2 plans were a consideration, it was more practical to consider each contingency plan individually to ascertain if any neighboring State would be either affected or involved, thus requiring an inter-State (Level 2) contingency plan arrangement or agreement.

2.16 The meeting agreed that rather than developing separate templates for Level 1 or Level 2 plans, a single template should be developed that included Level 1 contingency *measures* and, where necessary, any Level 2 *arrangements.* **Figure 1** illustrates the concept. The latest version of the draft template is appended at **Attachment D**.

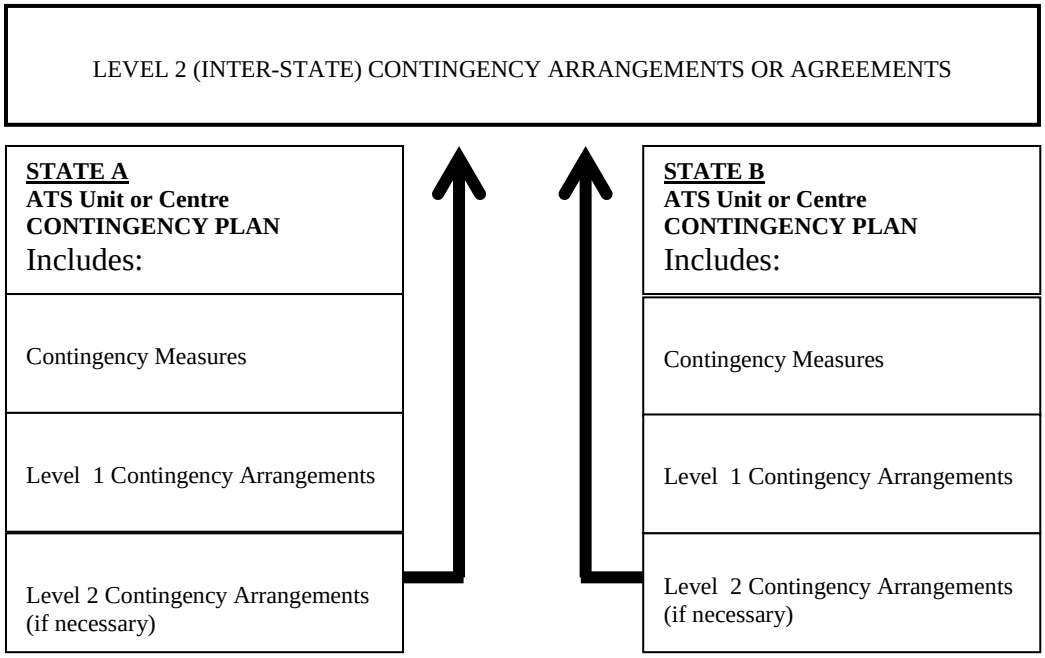

Figure 1: Level 1 Contingency Plan and Level 2 Contingency Arrangements

2.17 The meeting was reminded that Annex 11 requires that States have contingency plans in place. States without contingency plans should continue to develop them with a view to later modification to conform to the Regional ATM Contingency Plan, rather than waiting for the Plan and its templates to be produced.

Contingency Routes and Flight Level Allocation Schemes

2.18 The matter of harmonized contingency route structures had been raised at RACP/TF/1 and RACP/TF/2, and a number of single or multi-State contingency route plans had been produced.

2.19 While there was a clear need for each State's ATS contingency routes to be understood and agreed by neighbouring States, the benefits and need for fully *harmonized* contingency routes needed to be clearly defined. The circumstances and likelihood of contiguous FIRs of neighbouring States simultaneously experiencing disrupted or withdrawn ATS needed to be discussed and understood.

2.20 The meeting noted that the development of contingency route structures did not constrain states from making changes as required to ATS routes or airspace, with subsequent amendment to contingency routes.

2.21 The meeting discussed whether it was either practicable or desirable to develop a fully harmonized Regional network of contingency routes, recognizing it was unlikely that there would be a circumstance of neighbouring States simultaneously experiencing an ATM contingency event that required such a network. A fully harmonized network of contingency routes/FLAS could also reduce the flexibility that would be essential in tactical management of contingency situations. It was further recognized that managing the routing of aircraft that must first join a contingency route from the normal ATS route network and then re-join that network after exiting the affected airspace could be flexibly achieved through robust and up-to-date contingency coordination processes and contact details.

2.22 The meeting considered the work being undertaken by the Regional Air Traffic Flow Management Steering Group (ATFM/SG) which would lead to a networked ATFM solution for the Region, potentially providing far more practicable, efficient, flexible and dynamic contingency routing solutions.

2.23 There remained a need in cases of small clusters of States to harmonize to the extent practicable their contingency route and FLAS schemes. The SWG examined the contingency routes provided to date, and made a number of modifications. The State and sub-Regional contingency route plans as discussed, agreed or modified at the meeting are provided in **Attachment E**. The contingency routes and FLAS will be further developed and harmonized where practicable for inclusion in the Regional ATM Contingency Plan.

2.24 During the work of SWG South East Asia 3 Viet Nam, Philippines and Singapore exchanged views on the relevant contingency plan contents and their intention for initial contingency coordination. The 3 States would further discuss details for considering the signing of an ATS Contingency Agreement by end 2014

RACP/TF Terms of Reference

5.1 The meeting reviewed its TOR and agreed to minor amendments to reflect the recently renamed ATM Sub-Group (ATM/SG), to which the Task Force reports, and Meteorological Hazards Task Force (MET/H TF), to which RACP/TF has a link. The meeting agreed to the following draft Decision:

Draft Decision RACP/TF/3-2: **Amend RACP/TF Terms of Reference**.

That, the amended RACP/TF Terms of Reference in **Attachment F** be adopted.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss any relevant matters as appropriate; and

c) agree to the Draft Decision RACP/TF/3-2.

…….

State and Regional ATM Contingency Readiness

		Examples			Afghanistan	Australia	Bangladesh	Bhutan	Brunei Darussalam	Cambodia	China	Hong Kong, China	Macao, China	Cook Islands	DPR Korea	Fiji	French Polynesia	India	Indonesia	Japan	Kiribati	Korea, Republic of	Lao PDR	Malaysia	Maldives	Marshall Islands	Micronesia, Fed States of	Mongolia	Myanmar	Nauru	Nepal	New Zealand	Pakistan	Palau	Papua New Guinea	Philippines (working draft)	Samoa	Singapore	Solomon Islands	Sri Lanka	Thailand	Timor - Leste	Tonga	U.S.A	Vanuatu	Viet Nam	**Reported States Preparedness** (percentage)	**Regional Preparedness** (percentage)		
Reported Contingency Plan Status		1	1	0		1	1				1	1	1			1	1	1	1	1		1	1	1				1		1	1	1			*0*	1		1	1		1	1		1	X	57	**Reported Contingency Plan Status**	
Level 1 Plans																																															**Level 1 Plans**	
Level 1 Plans	Percentage of ATSU with Level 1 Plan	2	1	1		2						2	2				2	0	1				0				2			2	2			*0*	2	0	0	2	2					63	25		
Coordination, Testing and Review	Internal Coordination	1	1	0		1						0	0				0	1	1				1				0			1	1			*0*	1	1	1	1	1					73	26	Internal Coordination	**Coordination, Testing and Review**
	Regular Testing	1	0	0		1						1	0				1	1	1				0				1			1	1			*0*	1	0	0	1	1					73	26	Regular Testing	
	Routine and event driven review	1	0	0		1						1	0				1	1	1				1				1			1	1			*0*	1	1	1	1	1					93	33	Routine and event driven review	
Category 1 and 2 Events	ATM/CNS System Failure or Degradation	1	1	1		1						1	1				1	1	1				1				1			1	1			*1*	1	0	1	1	1					###	36	ATM/CNS System Failure or Degradation	**Category 1 and 2 Events**
	Staff Availability	1	1	1		1						1	0				1	1	0				0				1			0	0			*0*	1	0	1	1	1					60	21	Staff Availability	
	Volcanic Ash Cloud	1	0	0		1						0	0				1	0	1				1				1			1	0			*1*	1	0	0	0	1					60	21	Volcanic Ash Cloud	
	Earthquake	1	0	0		1						0	0				1	1	1				0				1			1	0			*1*	1	0	1	1	1					73	26	Earthquake	
	Inundation	1	1	0		1						0	0				1	1	0				0				1			1	0			*0*	1	0	1	1	1					60	21	Inundation	
	Nuclear Emergency	1	1	0		0						0	0				0	1	0				0				0			0	0			*0*	1	0	0	0	1					20	7	Nuclear Emergency	
	Pandemic	1	1	0		1						1	0				0	1	0				0				1			1	0			*0*	1	0	1	0	1					53	19	Pandemic	
	National Security	1	1	0		1						0	0				0	1	1				1				1			1	0			*0*	1	0	1	0	1					60	21	National Security	
DRAFT Basic Plan Elements (No. of sub-elements)	Administration (2)	2	1	0		2						0	1				2	2	2				2				2			2	2			*2*	2	2	2	2	2					97	35	Administration (2)	**DRAFT Basic Plan Elements**
	Plan Management (2)	2	1	0		2						2	0				2	2	2				2				2			2	2			*1*	2	2	2	1	2					93	33	Plan Management (2)	
	Airspace (1)	1	1	0		1						0	0				1	1	0				1				1			1	0			*0*	1	0	1	0	0					53	19	Airspace (1)	
	ATM Procedures (7)	7	2	1		4						3	0				5	7	7				7				7			6	5			*5*	7	6	7	6	4					82	29	ATM Procedures (7)	
	Pilot/Aircraft Operator Procedures (5)	5	2	1		3						5	0				3	5	4				3				5			4	4			*5*	3	5	5	1	2					76	27	Pilot/Aircraft Operator Procedures (5)	
	Communications Facilities and Procedures (4)	4	2	1		2						2	0				4	4	4				4				4			4	2			*2*	4	1	2	2	0					68	24	Communications Facilities and Procedures (4)	
	Aeronautical Support Services (2)	2	2	0		1						0	0				2	2	2				2				2			2	2			*2*	1	1	2	2	1					80	29	Aeronautical Support Services (2)	
	Contact Details (2)	2	2	0		0						0	0				2	2	2				2				2			2	2			*2*	1	2	2	2	1					80	29	Contact Details (2)	
LEVEL 1 PLANS SCORES		**39**	**21**	**6**		**27**						**20**	**5**				**31**	**36**	**32**				**29**				**37**			**35**	**26**			*22*	**35**	**22**	**32**	**26**	**26**					**75**	**27**	**LEVEL 1 PLANS SCORES**	
Level 1 Readiness (Incomplete, Marginal or Robust)		R	M	I		M						M	I				R	R	R				M				R			R	M			*M*	R	M	R	M	M							**Level 1 Readiness (Incomplete, Marginal or Robust)**	
Level 2 Plans																																															**Level 2 Plans**	
Level 2 Inclusions	Formal Inter-State Agreements (LoA or MoU)	1	1	0		1						0	0				1	1	0				0				1			1	0			*1*	0	0	0	1	1					53	19	Formal Inter-State Agreements (LoA or MoU)	**Level 2 Inclusions**
	Contingency Route Structure	1	0	0		1						0	0				1	0	1				0				1			0	0			*1*	1	1	1	0	0					53	19	Contingency Route Structure	
	Flight Level Allocation Scheme	1	0	0		1						0	0				1	0	1				0				1			0	0			*1*	1	1	1	0	0					53	19	Flight Level Allocation Scheme	
	Minimum Longitudinal Spacing	1	0	0		1						0	0				1	0	1				0				1			0	0			*1*	1	1	1	0	0					53	19	Minimum Longitudinal Spacing	
	Frequency Transfer Arrangements	1	1	1		1						0	0				1	0	1				0				1			1	0			*1*	1	1	1	1	0					67	24	Frequency Transfer Arrangements	
	Delegation of ATC Separation	1	1	0		0						0	0				1	0	0				0				1			0	0			*0*	1	1	0	1	0					33	12	Delegation of ATC Separation	
	Delegation of FIS and SAR Alerting Services	1	1	1		1						0	0				1	0	1				0				1			1	0			*1*	1	1	1	1	0					67	24	Delegation of FIS and SAR Alerting Services	
Level 2 Plan Scores		**7**	**4**	**2**		**6**						**0**	**0**				**7**	**1**	**5**				**0**				**7**			**3**	**0**			*6*	**6**	**6**	**5**	**4**	**1**					**54**	**19**	**Level 2 Plan Scores**	
Level 2 Plan Readiness		R	M	I		R						I	I				R	I	M				I				R			M	I			*M*	R	R	M	M	I							**Overall State Readiness**	

Level 1 Plans
0 to 15 = Incomplete
16 to 29 = Marginal
30 - 39 = Robust

Level 2 Plans
Incomplete: 0 - 2
Marginal: 3 - 5
Robust: 6 - 7

Decision 1/1 - ATM Contingency Plan Review Team Formation

That, an ATM Contingency Plan Task Force Review Team be established from the Task Force, that considered relevant portions of Level 1 (internal State) and Level 2 (Inter-State) ATM Contingency Plans, and identified areas where ATM contingency planning required improvement, in order to support the development of a Level 3 (Regional) ATM Contingency Plan, based on Basic Planning Elements agreed by the Task Force.

Contingency Plan Review Team

	Administration/Organization	Primary Contact	
1.	RACP/TF Chair	Mr. Rosly SAAD	Rosly_SAAD@caas.gov.sg
2.	India	Mr. A.K. Meena	akmeena@aai.aero
3.	Indonesia	Mr. Indra Gunawan	Ind124gunawan@yahoo.com Ind124gunawan@dephub.go.id
4.	Thailand	TBA by 22 Nov 2013	
5.	Singapore	Mr. Harrison Lim	Harrison_LIM@caas.gov.sg
6.	ICAO Secretariat	Mr. Shane Sumner	ssumner@icao.int

Small Working Groups

	State/Administration	Primary Contact	
South Asia SWG	Afghanistan		
	Bangladesh	Mr. M.A. Ashraf Siddique	ashrafcaab@gmail.com
	Bhutan		
	India	Mr. V. Somasundaram	memberans@aai.com
	Maldives		
	Pakistan		
	Nepal		
	Sri Lanka	Ms. W.C. Tissera	Head.ans@airport.lk

	State/Administration	Primary Contact	
South East Asia SWG 1	Cambodia	Mr. Chhun Sirvorn Mr. Lorn Thyrith	ans.ssca@gmail.com thyrithlorn@gmail.com
	Lao PDR	Mr. Bountaeng Symoon	bountaeng@gmail.com
	Myanmar		
	Thailand	Mr. Pawat Harnbumrungkit	pawat@aviation.go.th

	State/Administration	Primary Contact	
South East Asia SWG 2	Brunei Darussalam		
	Indonesia	Mr. Indra Gunawan	Ind124gunawan@yahoo.com
	Malaysia	Mr. Muddatstsir Mashor	Muddatstsir@dca.gov.my
	Singapore	Mr. Harrison Lim Kheng Leong	Harrison_lim@caas.gov.sg
	Viet Nam		

	State/Administration	Primary Contact	
South East Asia SWG3	China		
	Hong Kong China		
	Philippines	Mr. Michael E. Mapanao	Mikeecho905@yahoo.com
	Viet Nam	Mr. Nguyen The Hung	hungand@caa.gov.vn hungand_caav@yahoo.com

Air Traffic Management Contingency Plan

[ATS UNIT NAME]

Version X.X

Effective: [DD Month YYYY]

TABLE OF CONTENTS

SIGNATORIES

FOREWORD

(EXAMPLE)

1.1 This Contingency Plan forms part of the overall national contingency planning for [STATE], in accordance with the provisions of Annex 11 to the Convention on Civil Aviation, ICAO Doc 9462 *ATS Planning Manual* and Doc 9673 *Asia and Pacific Regions Air Navigation Plan*, and the *Asia/Pacific Region ATM Contingency Plan*. The Plan, and any activation of the Plan, is authorized by [AUTHORITY].

1.2 The Plan provides for the safe continuation of international air traffic through the [XXXX] FIR during periods when ATS may be disrupted or unavailable, or when airspace may be affected by volcanic ash cloud, radioactive cloud, severe weather events or military activity.

1.3 The Plan has been developed in close cooperation and collaboration with airspace users, military authorities and civil aviation authorities responsible for adjacent FIRs.

1.4 The plan will be activated by NOTAM as far in advance as is practicable. In the event that such prior notification is impracticable the PLAN will be activated by the designated authority using the most expeditious alternative means available.

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RECORD OF AMENDMENTS

Amendment Number	Effective Date	Date Entered	Entered By	Paragraph/ Reference

ATM CONTINGENCY PLAN FOR [ATS UNIT]

1. OBJECTIVE

1.1 The Air Traffic Management (ATM) Contingency Plan for the [ATS UNIT] details arrangements to ensure the continued safety of air navigation in the event of partial or total disruption of air traffic services in the [AIRSPACE/SERVICE DESCRIPTION] in accordance with ICAO Annex 11 ─ *Air Traffic Services*, Chapter 2, paragraph 2.29. The Contingency Plan provides the ATS procedures and contingency route structure using existing airways in most cases that will allow aircraft operators to transit the [AIRSPACE DESCRIPTION].

1.2 [DESCRIBE HERE THE SCOPE OF THE PLAN, E.G. IF THE PLAN RELATES ONLY TO THE TRANSIT OF INTERNATIONAL AIR TRAFFIC]

1.3 xxxxx

2. [ATS UNITS, CENTRES, STATES AND FIRS AFFECTED]

2.1 In the event that the [AUTHORITY] activates this Contingency Plan, the civil aviation authorities of the [XXXX ADJACENT ATS UNITS, CENTRES, STATES OR FIRS AFFECTED] will be notified in accordance with the [LETTER OF AGREEMENT, MEMORANDUM OF UNDERSTANDNG OR OTHER CONTINGENCY ARRANGEMENT]. The adjacent [ATS UNITS, CENTRES STATES OR FIRS] directly affected by this Contingency Plan are as follows:

a) [STATE]

[FIR/ACC/ATS UNIT]
[FIR/ACC/ATS UNIT]

b) [STATE]

[FIR/ACC/ATS UNIT]
[FIR/ACC/ATS UNIT

c) [STATE]

[FIR/ACC/ATS UNIT]
[FIR/ACC/ATS UNIT

d) [STATE]

[FIR/ACC/ATS UNIT]
[FIR/ACC/ATS UNIT

e) [STATE]

[FIR/ACC/ATS UNIT]
[FIR/ACC/ATS UNIT

2.2 The contact details of the civil aviation authorities, organizations and ATS units are contained in **Appendix X.** These details should be kept up to date and relevant information provided to the [AUTHORITY] as soon as practicable**.**

3. MANAGEMENT OF THE CONTINGENCY PLAN

3.1 The contingency measures set out in this Plan are applicable in cases of foreseeable events caused by unexpected interruptions in ATS caused by natural occurrences or other circumstances, which, in one way or another, may impair or totally disrupt the provision of ATS and/or of the related support services in the [AIRSPACE].

3.2 The following arrangements have been put in place to ensure that the management of the Contingency Plan provides for [INTERNATIONAL IF SO LIMITED] flights to proceed in a safe and orderly fashion through the Upper Airspace of the Jakarta FIR.

Central Coordinating Committee

3.3 As soon as practicable in advance of, or after a contingency event has occurred, the [AUTHORITY] shall convene the Central Coordinating Committee (CCC) comprised of representatives from:

Discussion Note: *This depends on the scale of the plan. E.g. a remote regional control tower would not necessarily require re-convening of a CCC*

1) [REGULATORY AUTHORITY OR ORGANIZATION]

2) [AIR NAVIGATION SERVICE PROVIDER]

3) [MILITARY AUTHORITY]

4) [OTHER RELEVANT NATIONAL AUTHORITY]

5) [AIRSPACE USER REPRESENTATIVE/S]

6) [AIRPORT AUTHORITIES]

7) [METEOROLOGICAL AUTHORITY]

8) [AIRPORT AUTHORITY]

9) [OTHER RELEVANT AUTHORITIES/AGENCIES[

3.4 The CCC shall oversee the conduct of the Contingency Plan and in the event that the [SERVICE] is disrupted for an extended period, make arrangements for and facilitate the temporary relocation of the [SERVICE] to the [ALTERNATE FACILITY OR ATS UNIT/CENTRE] and the restoration of [SERVICE]. The terms of reference for the CCC will be determined by the [AUTHORITY].

3.5 Contact details of the members of the CCC are provided in **Appendix X**.

Plan Testing and Review

Notification to the CCC

ATM Operational Contingency Group

3.6 The ATM Operational Contingency Group (AOCG) will be convened by the CCC with a primary responsibility to oversee the day to day operations under the contingency arrangements, and coordinate operational ATS activities, 24 hours a day, throughout the contingency period. The terms of reference of the AOCG will be determined by the CCC. The AOCG will include any necessary specialist personnel from the following disciplines:

- Air Traffic Control ~~Services (ATS)~~
- Aeronautical Telecommunication (COM)
- Aeronautical Meteorology (MET)
- Aeronautical Information Services (AIS)
- ATS equipment maintenance service provider

The mission of the AOCG shall include:

i) review and update of the Contingency Plan as required;

ii) keep up to date at all times of the contingency situation;

iii) organize contingency teams in each of the specialized areas;

iv) keep in contact with and update the ICAO Asia and Pacific Regional Office, the IATA Regional Office and other airspace users;

v) exchange up-to-date information with the adjacent ATS authorities concerned to coordinate contingency activities;

vi) notify the designated organizations of the contingency situation sufficiently in advance and/or as soon as possible thereafter;

vii) take necessary action for issuing NOTAMs according to this plan or as otherwise determined by the particular contingency situation. Where the contingency situation is sufficiently foreseeable vance the relevant NOTAMs will be issued 48 hours in advance of the contingency event s. NOTAM templates are provided in **Appendix X**.

viii) maintain an activity log using the form in Appendix X

4. CONTINGENCY ROUTE and FLIGHT LEVEL STRUCTURE

4.1 In the event of disruption of the ATC services provided by [ATS UNIT, CENTRE OR FIR], contingency routes will be specified to ensure safety of flight and to facilitate limited flight operations commensurate with the prevailing conditions. Existing ATS routes form the basis of the contingency routes to be used, and a flight level allocation scheme (FLAS) introduced to minimize potential points of conflict and to limit the number of aircraft operating simultaneously in the system under reduced air traffic services. The contingency route structure [FOR INTERNATIONAL FLIGHTS if necessary] is detailed in **Appendix X.** Additional contingency routes may be introduced as and when circumstances require, such as in the case of volcanic ash cloud, radioactive cloud or severe weather event.

4.2 [INSERT IF RELEVANT In regard to domestic operations, if circumstances dictate, all flights shall be temporarily suspended until a full assessment of the prevailing conditions has been determined and sufficient air traffic services restored. A decision to curtail or restart domestic operations will be made by the CCC].

4.3 Aircraft on long-haul international flights and special operations (e.g. Search and Rescue (SAR), State aircraft, humanitarian flights, etc), shall be afforded priority for levels at FL290 and above. Domestic and regional operators should plan on the basis that FL290 and above may not be available.

4.4 International operators affected by the suspension of all operations from [STATE OR FIR] airports will be notified by the relevant airport authority when operations may be resumed, and flight planning information will be made available pertaining to that airport. International flights who have received such approval may be required to flight plan via domestic routes to join international contingency routes.

4.5 International operators may elect to avoid the [AIRSPACE] by using ATS routes [DESCRIBE ATS ROUTES OR ADJACENT AIRSPACE].

5. AIR TRAFFIC MANAGEMENT AND CONTINGENCY PROCEDURES

Reduced ATS And Provision of Flight Information Services (FIS)

5.1 During the contingency period ATS including ATC may not be available, particularly communications and ATS surveillance services. In cases where services are not available, a NOTAM will be issued providing the relevant information, including an expected date and time of resumption of service. The contingency plan provides for limited flight information and alerting services to be provided by [ATS UNIT/S OR CENTRE/S].

5.2 [DESCRIBE ANY DIVISION OF RESPONSIBILITY OF ADJACENT ATS UNITS OR CENTRES FOR SERVICE PROVISION IN THE CONTINGENCY AIRSPACE]. [DESCRIBE THE LEVEL OF SERVICE AVAILABLE]. A chart depicting the airspace arrangement is provided in **Appendix X**.

ATS Responsibilities

5.3 During the early stages of a contingency event, ATC may be overloaded and tactical action taken to reroute aircraft on alternative routes not included in this Plan.

5.4 In the event that ATS cannot be provided in the [AIRSPACE] a NOTAM shall be issued indicating the following:

a) time and date of the beginning of the contingency measures;

b) airspace available for landing and overflying traffic and airspace to be avoided;

c) details of the facilities and services available or not available and any limits on ATS provision (e.g., ACC, APPROACH, TOWER and FIS), including an expected date of restoration of services if available;

d) information on the provisions made for alternative services;

e) any changes to the ATS contingency routes contained in this Plan;

f) any special procedures to be followed by neighbouring ATS units not covered by this Plan;

g) any special procedures to be followed by pilots; and

h) any other details with respect to the disruption and actions being taken that aircraft operators may find useful.

5.5 In the event that the [XXXX International NOTAM Office is unable to issue the NOTAM, the alternate International NOTAM Office at [INSERT ALTERNATE] and/or [INSERT ALTERNATE] will take action to issue the contingency NOTAM upon notification by the [AUTHORITY].

5.6 Maintain a record using the form in Appendix X

Aircraft ~~Separation~~ Spacing??

5.7 Aircraft separation criteria will be applied in accordance with the *Procedures for Air Navigation Services-Air Traffic Management* (PANS-ATM, Doc 4444) and the *Regional Supplementary Procedures* (Doc 7030).

5.8 The longitudinal separation will be 15 minutes. However, this may be reduced to 10 minutes in conjunction with application of the Mach number technique where authorized by the [AUTHORITY] and agreed in the appropriate LOA or other Contingency Arrangement.

5.9 The route structure provides for lateral separation of 100 NM and in cases where this is less, and for crossing routes, a minimum vertical separation of 2000 ft will be applied.

5.10 In the event that [ATS UNIT, CENTRE, FIR OR STATE] ATC services are terminated, a Flight Level Allocation Scheme (FLAS) utilizing, where necessary, RVSM separation minimum shall apply. Non RVSM-approved aircraft shall not operate in contingency airspace. Details of the flight level assignment on the contingency routes are contained in Appendix 1D.

Flight level restrictions

5.11 Where possible, aircraft on long-haul international flights shall be afforded priority for cruising levels.

Airspace Classifications

5.12 Depending on the degree of disruption airspace classifications may be changed to reflect the reduced level of services. Changes to airspace classification will be notified by NOTAM.

Aircraft position reporting

~~5.13 Pilots will continue to make or broadcast routine position reports in line with normal ATC reporting procedures.~~

5.14 The primary means of communication will be by VHF or HF radio except for aircraft operating Automatic Dependent Surveillance - Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) systems. When CPDLC has been authorized for use by the relevant ATC authority this will become the primary means of communication, with HF as secondary. ADS-C shall replace any requirement for voice position reporting to ATC for aircraft so equipped, and in this case

CPDLC or HF will be the secondary means of communication. Traffic Information Broadcast by Aircraft (TIBA) procedures shall apply in [DESCRIBE AIRSPACE/CIRCUMSTANCES]. Details of communications requirements are provided in **Appendix X.**

VFR operations and other exclusions/exemptions, etc

5.15 VFR flights shall not operate in the [DESCRIBE AIRSPACE] during contingency operations, except in special cases such as State aircraft, Medivac flights, and any other essential flights as authorized by the [AUTHORITY].

Procedures for ATS Units

5.16 The ATS units providing ATC services will follow their unit emergency operating procedures and activate the appropriate level of contingency procedures in line with the operational Letter of Agreement. These procedures include the following:

a) Where ATS provided by the [ATS UNIT, CENTRE, FIR OR STATE] the may be reduced or disrupted by a short-notice contingency event, ATC will inform pilots of the emergency condition and advise if it is likely that the ACC will be evacuated and ATS suspended. In the event of it becoming necessary to evacuate the ACC building, the unit evacuation procedures will be activated, and time permitting, controllers will make an emergency evacuation transmission on the radio frequency in use providing pilots with alternate means of communication;

b) during the period the contingency procedures are in effect, flight plan and other aircraft movement messages must continue to be transmitted by operators to the [ATS UNIT, CENTRE, FIR OR STATE] via the AFTN using normal procedures;

c) on notification by [AUTHORITY], the ATS authorities operating the [NEIGHBOURING ATS UNITS, CENTRES, FIRS OR STATES] will activate the contingency procedures in accordance with their respective operational Letter of Agreement or other Contingency Arrangement;

d) prior to entry to the [AFFECTED AIRSPACE] during contingency operations prior authorization must be obtained from [AUTHORITY], and flights must comply with the ATC clearance and communications instructions issued by the ATC authority responsible for the airspace immediately adjacent to the contingency airspace.

e) Coordination of aircraft boundary estimates and flight levels by the adjacent ATC authority responsible for aircraft entering the [AFFECTED AIRSPACE] shall be in accordance with the respective operational Letter of Agreement or other Contingency Arrangement.

f) the ACC responsible for aircraft entering the [AFFECTED AIRSPACE] will instruct pilots to maintain the last flight level assigned and speed (MACH number if applicable) while operating in the [AFFECTED AIRSPACE];

g) the ACC responsible for aircraft entering the [AFFECTED AIRSPACE] will not authorize any change in flight level or speed (MACH number, if applicable unless specifically authorized under the operational Letter of

Agreement or Contingency Arrangement.

h) the ACC responsible prior to aircraft entering the [AFFECTED AIRSPACE] will inform aircraft that they must establish contact with the first ATS unit after transiting the [AFFECTED AIRSPACE] not less than 10 minutes before the estimated time of entry to the [NEXT AIRSPACE/FIR],
-

i) the ACC responsible prior to aircraft entering the Jakarta FIR will inform aircraft that they must communicate with the next (downstream) ATC unit 10 minutes before the estimated time of entry into the next FIR; and

j) aircraft may also chose to avoid the [AFFECTED AIRSPACE], and the controlling authorities of the adjacent FIRs concerned will promulgate any necessary alternative contingency routes by NOTAM.

k) [DETAIL ANY ROUTE OR AIRSPACE –SPECIFIC ARRANGEMENTS]

Transition to and from contingency scheme

5.17 During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in this Contingency Plan, as well as those which may be promulgated by a State via NOTAM or AIP.

5.18 In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.

5.19 ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

Transfer of control and coordination

5.20 The transfer of control and communication should be at the common FIR boundary between ATS units unless there is mutual agreement between adjacent ATS units and authorization given to use alternative transfer of control points. These will be specified in the respective LOAs.

5.21 The ATS providers concerned should review the effectiveness of current coordination requirements and procedures in light of contingency operations or short notice of airspace closure, and make any necessary adjustments to the Contingency Plan and LOAs.

6. PILOTS AND OPERATOR PROCEDURES

Filing of flight plans

6.1 Flight planning requirements detailed in [STATE] AIP continue to apply during contingency operations, except where modified by the ATS route and requested flight levels detailed in this plan.

Overflight approval

6.2 Aircraft operators must obtain over-flight approval from the [AUTHORITY] prior to operating flights through the [AFFECTED AIRSPACE]. During the period of activation of this Contingency Plan the adjacent ATS authority will provide normal ATC clearances for aircraft to enter the Jakarta FIR on the basis that operators have obtained prior approval, and the responsibility remains with the operator to ensure such approval has been obtained.

CNS Capability

Pilot operating procedures

5.22 Pilots will continue to make or broadcast routine position reports in line with normal ATC reporting procedures.

Discussion Note: *This was moved here from section 5, but may need to be reflected in both sections.*

6.3 Pilots of aircraft operating in the [AFFECTED AIRSPACE] during contingency operations shall comply with the following procedures:

a) all aircraft proceeding along the ATS routes established in this Contingency Plan will comply with the instrument flight rules (IFR) and will be assigned a flight level in accordance with the flight level allocation scheme applicable to the route(s) being flown as specified in Appendix 1D;

b) flights are to flight plan using the Contingency Routes specified in Appendix 1D, according to their airport of origin and destination;

c) aircraft are to operate as close as possible to the centre line of the assigned contingency route;

d) a continuous communications watch shall be maintained on the specified contingency frequency as specified in Appendix 1F

e) aircraft position reports and other information as necessary shall be broadcast in accordance with TIBA procedures defined in AIP [STATE];

f) aircraft navigation and anti-collision lights shall be displayed;

g) except in cases of emergency or for reasons of flight safety, pilots are to maintain during their entire flight within [AFFECTED AIRSPACE], the last assigned flight level, mach number and SSR transponder code. If no transponder code has been assigned, aircraft shall squawk code [XXXX].

h) aircraft are to reach the flight level last assigned by the responsible ACC at least [XX] minutes before entering the [AFFECTED AIRSPACE] or as otherwise instructed by the ATC unit acting in accordance with the operational Letter of Agreement or other Contingency Arrangement;

i) pilots are to include in their last position report prior to entering the [AFFECTED AIRSPACE], the estimated time over the entry point of the [AFFECTED AIRSPACE] and the estimated time of arrival over the relevant exit point;

j) pilots are to contact the next adjacent ACC as soon as possible, and in any event not less than ten (10) minutes before the estimated time of arrival over the relevant exit point from the [AFFECTED AIRSPACE];

k) pilots are to strictly adhere to the ICAO Traffic Information Broadcasts by Aircraft (TIBA), reproduced in **Appendix X**, on the specified VHF and HF frequencies listed in **Appendix X**. When necessitated by emergency conditions or flight safety requirements, pilots are to transmit blind on these frequencies, their current circumstances and the commencement and completion of any climb and descent or deviation from the cleared contingency route;

l) whenever emergencies and/or flight safety reasons make it impossible to maintain the flight level assigned for transit of [AFFECTED AIRSPACE], pilots are to climb or descend well to the right of the centerline of the contingency route, and if deviating outside the [AFFECTED AIRSPACE], to immediately inform the ACC unit responsible for that airspace. Pilots are to broadcast details of any level change including aircraft identification, aircraft position and route, vacated flight level, intended flight level, flight level passed and cruising flight level maintained on [FREQUENCY];

m) pilots are to maintain own longitudinal separation of 15 minutes from preceding aircraft at the same cruising level; and

n) not all operational circumstances can be addressed by this Contingency Plan and pilots are to maintain a high level of alertness when operating in the contingency airspace and take appropriate action to ensure safety of flight.

Interception of civil aircraft

6.4 Pilots need to be aware that a contingency routing requiring aircraft to operate off normal traffic flows may result in interception by military aircraft. Aircraft operators must therefore be familiar with international intercept procedures contained in ICAO Annex 2 *–Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.

6.5 Pilots are to comply with instructions given by the pilot of the intercepting aircraft. In such circumstances, the pilot of the aircraft being intercepted shall broadcast information on the situation.

6.6 If circumstances lead to the closure of the [AFFECTED AIRSPACE] and no contingency routes are available, aircraft will be required to remain clear of the [AFFECTED AIRSPACE]. As much warning as possible will be provided by the appropriate ATS authorities in the event of the complete closure airspace..

6.7 Pilots shall continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set on the last discrete code assigned by ATC or select code [XXXX] if no code was assigned.

7. COMMUNICATION PROCEDURES

Degradation of Communication - Pilot Radio Procedures

7.1 When operating within the contingency airspace, pilots should use normal radio communication procedures where ATS services are available. These will be in accordance with the communication procedures in this Plan or as otherwise notified by NOTAM.

7.2 If communications are lost unexpectedly on the normal ATS frequencies, pilots should try the next applicable frequency, e.g. if en-route contact is lost then try the next appropriate frequency, that is, the next normal handover frequency. Pilots should also consider attempting to contact ATC on the last frequency where two-way communication had been established. In the absence of communication with ATC, the pilot should continue to make routine position reports on the assigned frequency, and also broadcast positions in accordance with the TIBA procedures.

Communication frequencies

7.3 A list of frequencies to be used for the contingency routes and the ATS units providing FIS and air-ground communication monitoring for the Jakarta FIR is detailed at Appendix 1F

8. AERONAUTICAL SUPPORT SERVICES

Aeronautical Information Services (AIS)

8.1 [DETAIL THE AVAILABILITY OR ALTERNATE ARRANGEMENTS FOR AIS]

8.2 XXXXXXXXX.

Meteorological Services (MET)

8.3 [DETAIL THE AVAILABILITY OF METEROLOGICAL SERVICES AND THE METHODS OF DISTRIBUTION OF INFORMATION DURING CONTINGENCY OPERATIONS.]

8.4 XXXXXXXXX..

9. SEARCH AND RESCUE

Notification and Coordination

9.1 The SAR authority responsible for the [AFFECTED AIRSPACE] is the [XXXXX] Rescue Coordination Centre (RCC)

IDD	XXXXXXXXXX
Fax	XXXXXXXXXX
AFTN	XXXXXXXX

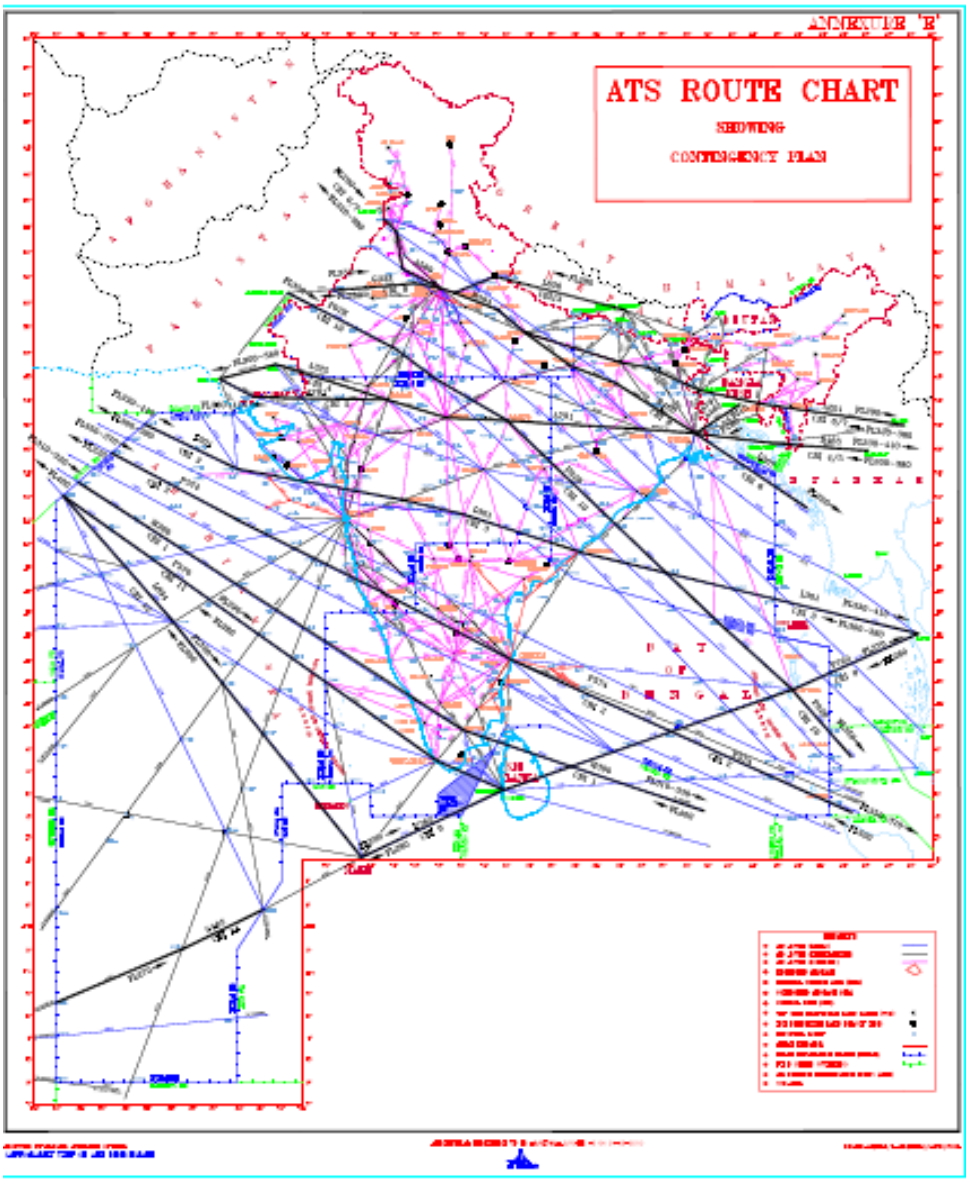
9.2 [INSERT SAR ALERTING ARRANGEMENTS AS NECESSARY. MAY INCLUDE CONSIDERATION OF NEIGHBOURING ATS UNITS PROVIDING FULL FLIGHT FOLLOWING, OR LIMITED TO RESPONSE TO IN-FLIGHT EMERGENCIES].

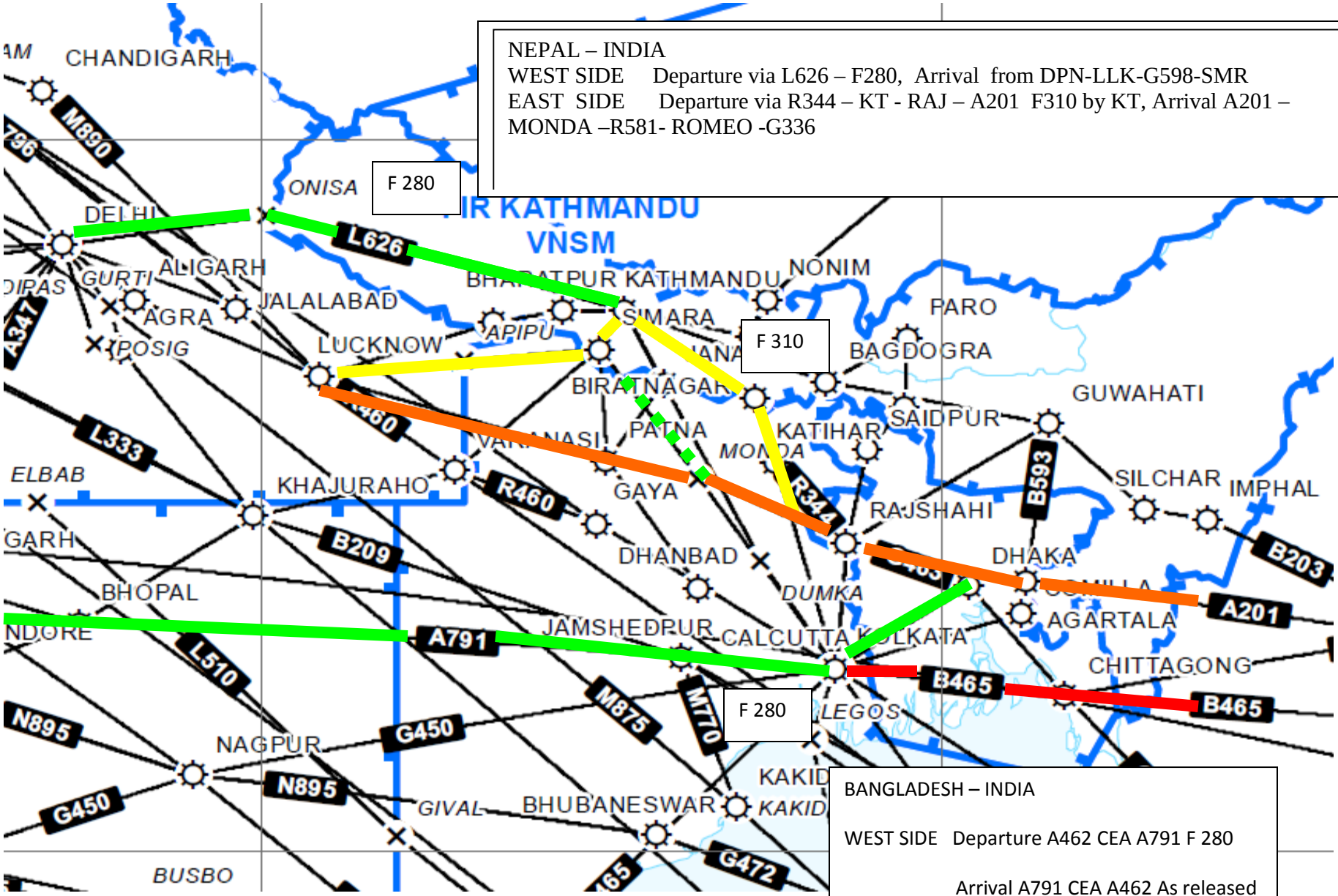
9.3 **XXXXXX**

SUB-PLANS

LIST OF APPENDICES

Bangladesh, India and Nepal: ATS Contingency Routes.





NEPAL – INDIA
WEST SIDE Departure via L626 – F280, Arrival from DPN-LLK-G598-SMR
EAST SIDE Departure via R344 – KT - RAJ – A201 F310 by KT, Arrival A201 – MONDA –R581- ROMEO -G336

BANGLADESH – INDIA

WEST SIDE Departure A462 CEA A791 F 280

Arrival A791 CEA A462 As released

EAST SIDE Departure G 463 CTG B 465 F270
Coord MY

Hong Kong China, Philippines ATS Contingency Routes

Proposed Contingency Plan between Hong Kong China and Philippines on RACP/TF/2 (12-15 March 2013)

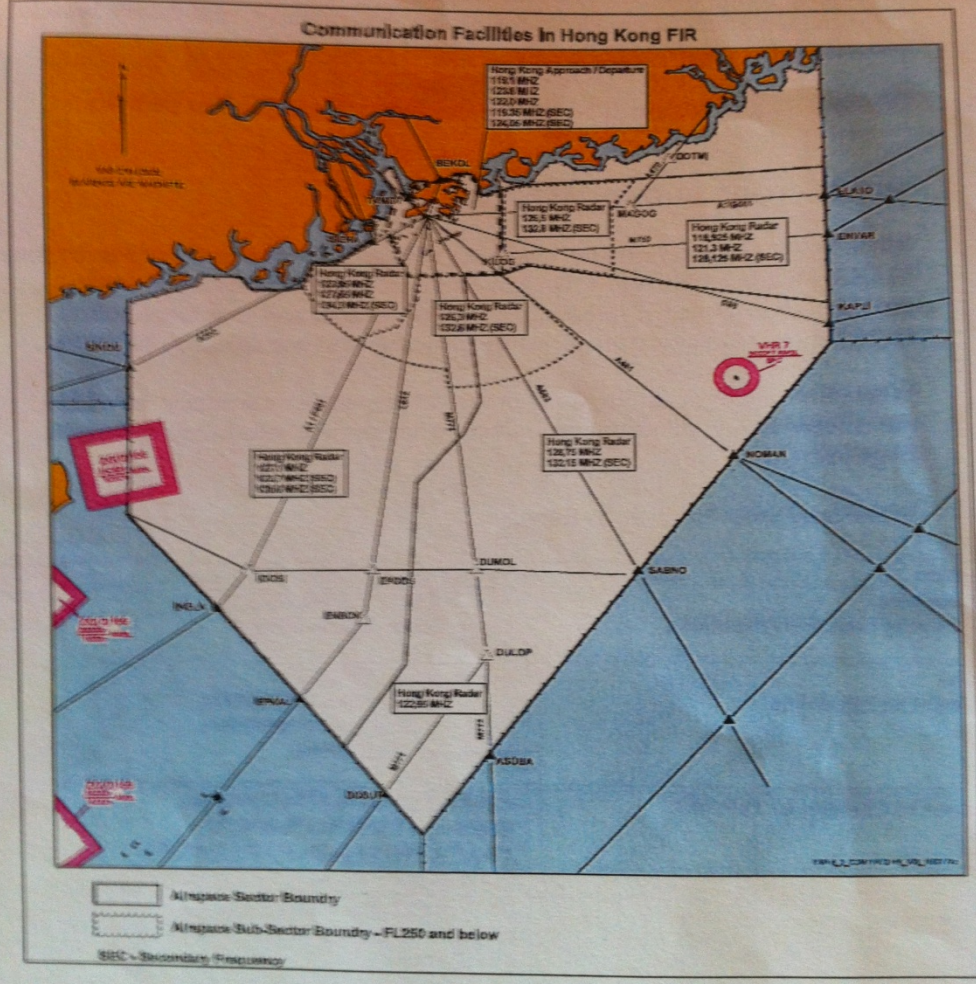
	Hong Kong China	Philippines
1. Contingency Routes	Airway A461 - Southeast bound only	
	Airway A583 - Northwest bound only	
2. Proposed Flight Levels subject to Manila final proposal.	A461 - 290, 330, 370 A583 - 310, 350, 390 See Map 1	A461 - 290, 310, 330 A583 - 300, 320, 340
3. Separation standards	As stated in Letter of Agreement	
4. Back-up facilities	Back-up Air Traffic Control Centre and Back-up Control Tower (activation in accordance with CAD Emergency Procedure Manual which require a period of approximately 60 mins transition time)	Nil
5. Details of specific procedures	NOTAM	NOTAM
6. Authorization	Assistant Director-General of Civil Aviation (Air Traffic Management) ADG(ATM) or his authorized representative	Director General of Civil Aviation Authority of Philippines
7. Long Term Unavailability of ATS	Pilots to follow Traffic Information Broadcast by Aircraft (TIBA) procedures See Map 2	Not established yet

Hong Kong FIR Contingency Routes

Fig. 1

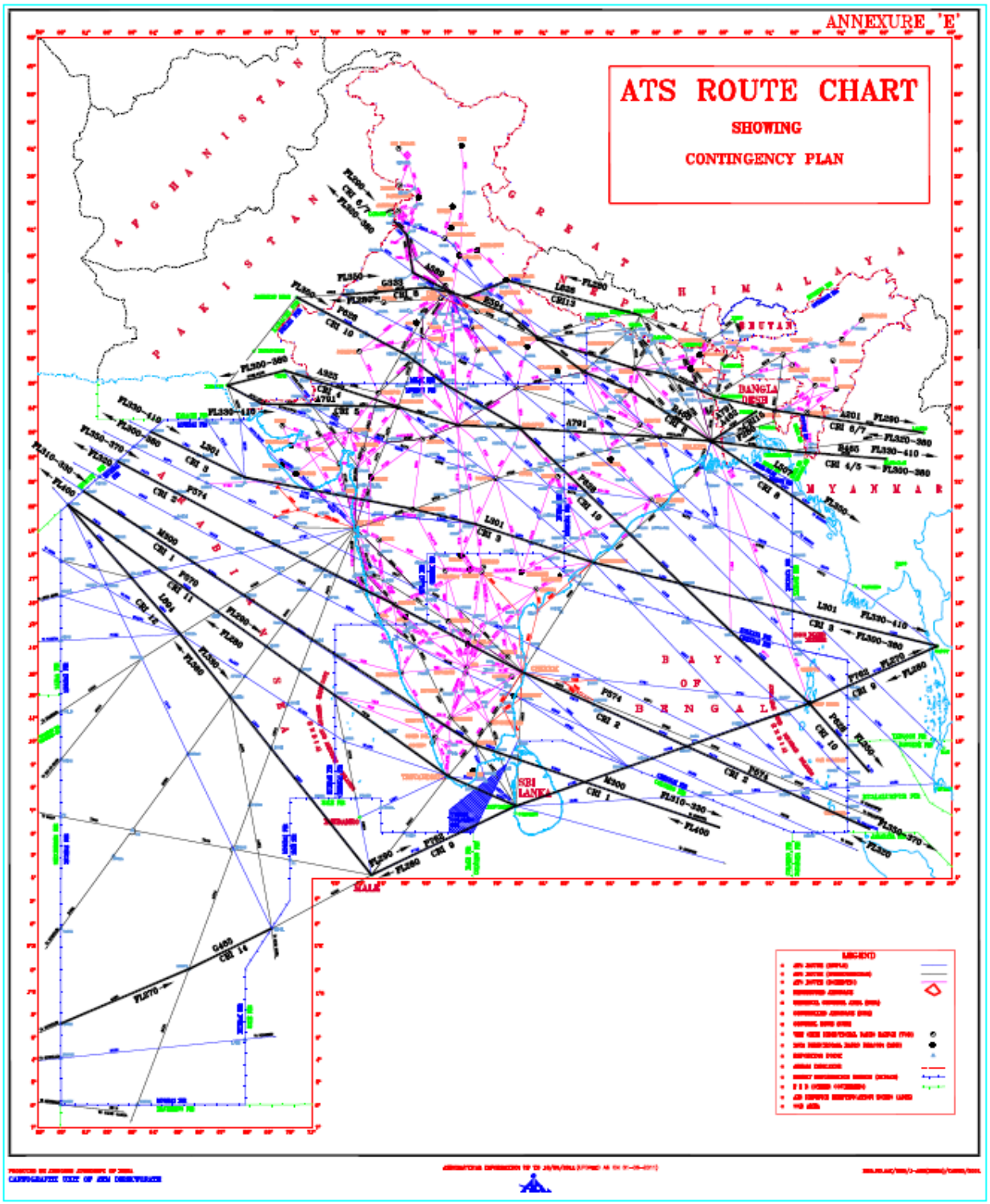
Contingency Operating Procedures

2.1.2 FIS and SAR alerting will be provided as remaining capability permits.



2.2 Approach Control Service Not Available

India ATS Contingency Routes



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AIRPORTS AUTHORITY OF INDIA

ANNEXURE D

International Route structure and communications for transit of the Chennai FIR During Contingency situation

Contingency Route	ATS Route	Segment	Flight Level (Eastbound)	Flight Level (West bound)	Remarks
CRI-1	M300	IGAMA- ATETA	FL310, FL330,	FL400	
CRI-2	P574	NOPEK- GULAM	FL350, FL370,	FL320	
CRI-9	P762	LULDA-DUGOS	FL270,	FL280	
CRI-10	P628	VATLA- IGREX	FL350	------	
CRI - 11	P570	BASUR - POMAN	FL290	FL 280	

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AIRPORTS AUTHORITY OF INDIA

APPENDIX 'D'

International Route structure and communications for transit of the Delhi FIR During Contingency situation

Contingency Route	Route	Segment	Flight Level (Eastbound)	Flight Level (West bound)	Remarks
CRI - 4 / 5	A 791	ASOPO - ARIVO	F 330, F 410	F 300 , F 380	
CRI-6	A 201 -R594-G333/A589	PPT -LLK-DPN-TIGER / LLK-DPN-SAMAR	--------	FL 320, FL 380	
CRI-7	A466-R460- A 201	SAMAR--DPN-LLK-PPT	FL 290	-------	
CRI-8	G452-R460	TIGER--DPN- GGC	FL 350	------	
CRI-10	P628	VIKIT - IBANI	FL 350	-------	
CRI - 13	L 626 – G 433	ONISA - TIGER	----	FL 280	

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Appendix - D

International Route Structure and Communication
For Transit of the KOLKATA FIR
During Contingency Situation

Contingency Route	ATS Route	Segment	Flight Level (Eastbound)	Flight Level (Westbound)	Remarks
CRI 3	L301	RINDA – MEPOK	FL330 – FL410	FL300 – FL380	
CRI 4 / 5	B465 / A791	APAGO – ARIVO	FL330 – FL410	FL300 – FL380	
CRI 6 / 7	A201	ANSOS – PPT	FL290	FL320 – FL380	
CRI 8	R460 / L507	GGC - TEBOV	FL350	---------	
CRI 10	P628	IKINA - VATLA	FL350	---------	
CRI 15	A 462 / A 791	BEMAK - ARIVO	--------	F 280	

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AIRPORTS AUTHORITY OF INDIA

APPENDIX D

International Route Structure and Communications for Transit of the Mumbai FIR During Contingency Situation

Contingency Route	ATS Route	Segment	Flight Level (East bound)	Flight Level (West bound)	REMARKS
CRI-1	M 300	LOTAV-IGAMA	FL310-FL 330	FL400	
CRI-2	P 574	TOTOX-GULAM	FL350-FL370	FL320	
CRI-3	L 301	RASKI-MEPOK	FL330- FL410	FL300-FL380	
CRI-4	A 791 – A 325	ASOPO - TASOP	--------	FL300-FL380	
CRI-5	A 791	TELEM-ASOPO	FL330-FL410	-------	
CRI - 10	P 628	IKINA - IBANI	Fl 350	-------	
CRI-11	P 570	KITAL-POMAN	FL290	FL280	
CRI-12	L 894	KITAL-BIBGO	FL330	FL360	
CRI-14	G 465	ELKEL - OTKIR	FL270	------	

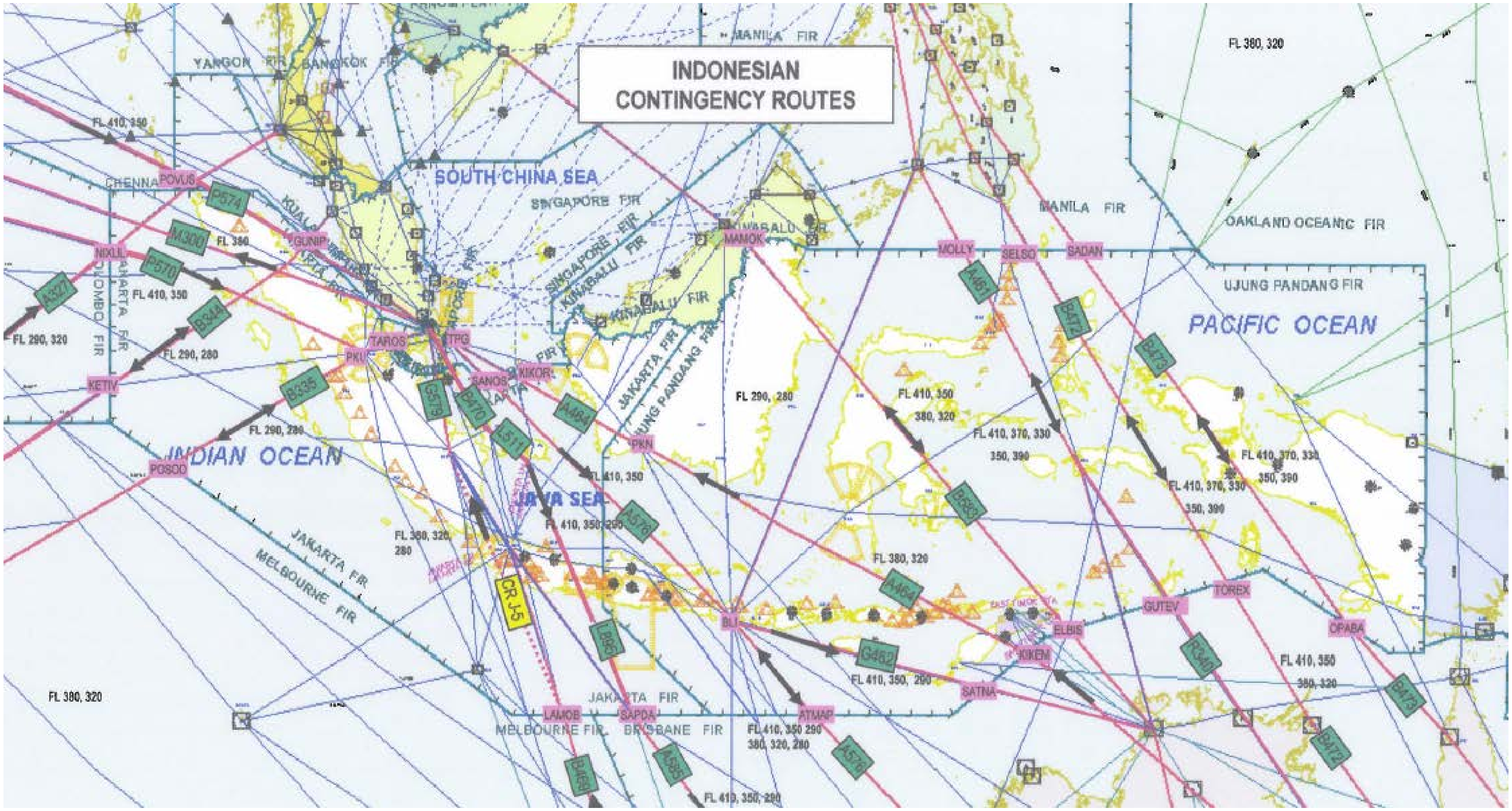
Indonesia ATS Contingency Routes

INTERNATIONAL ROUTE STRUCTURE AND COMMUNICATIONS FOR TRANSIT OF THE JAKARTA FIR WHEN NO ATS AVAILABLE IN INDONESIAN AIRSPACE

Contingency Routes Jakarta (CRJ)	ATS Route	Direction	FL Assignment	ACCs	COM (Frequency Details in Appendix X)
CRJ-1	A464 Darwin-KIKEM-KIKOR-TPG-SINJON	Northbound (One-way)	380, 320	Brisbane Singapore	HF, ADS/CPDLC HF, VHF, ADS/CPDLC
CRJ-2	A576-G462 SINJON-TPG-SANOS-BLI-SATNA-Darwin	South East bound (One-way)	410, 350, 290	Singapore Brisbane	HF, VHF, ADS/CPDLC HF, ADS/CPDLC
CRJ-3	A576 SINJON-TPG-SANOS-BLI-ATMAP-Alice Springs	Southbound (One-way)	410, 350, 290	Singapore Brisbane	HF, VHF, ADS/CPDLC HF, ADS/CPDLC
CRJ-4	B470-L511/L895-A585 SINJON-S00 02.4 E104 042.1-ANITO-PKP(L511/L895)-MIMIX(L895)-SAPDA	Southbound (One-way)	410, 350, 290	Singapore Melbourne	HF, VHF, ADS/CPDLC HF, ADS/CPDLC
CRJ-5[2]	B469-G579 LAMOB-DCT-PLB(G579)-PARDI-S00 16.1 E104 09.3-SINJON	Northbound (One-way)	380, 320, 280	Brisbane Singapore	HF, ADS/CPDLC HF, VHF, ADS/CPDLC
CRJ-6	R469- B335 SINGAPORE-SAMKO-TAROS-PKU(B335)-POSOD	Two-way	290 280	Singapore Melbourne	HF, VHF, ADS/CPDLC HF, ADS/CPDLC

CONTINGENCY ROUTES JAKARTA (CRJ)	ATS ROUTES	DIRECTION	FL ASSIGNMENT	ACCS PROVIDING FIS	COM (DETAILS OF FREQUENCIES ARE IN APPENDIX X)
CRJ-7	B344-G468 VPG-GOTLA-MDN(B334)-KETIV-ELATI	Two-way	290 280	Kuala Lumpur Colombo+	HF, VHF HF, ADS/CPDLC
CRJ-8	A327 POVUS - NIXUL	Two-way	290, 320	Kuala Lumpur Colombo+	HF, VHF HF, ADS/CPDLC
CRJ-9	P570-R469 NIXUL – MABIX - PKU(R469) - TAROS-SINJON	Eastbound (One-way)	410, 350	Colombo+ Kuala Lumpur Singapore+	HF, ADS/CPDLC HF, VHF VHF
CRJ-10	A576-M300 SINJON-DUMOK(M300)-SALAX-TOPIN	Westbound (One-way)	380	Singapore+ Kuala Lumpur	VHF HF, VHF
CRJ-11	P574-R461 ANSAX-PUGER(R461)-VKL	Eastbound (One-way)	410, 350	Chennai+ Kuala Lumpur	HF, ADS/CPDLC HF, VHF

+ ACCs not providing FIS in the Jakarta FIR for these routes


INDONESIAN
CONTINGENCY ROUTES
SOUTH CHINA SEA
INDIAN OCEAN
PACIFIC OCEAN
JAVA SEA
MANILA FIR
YANGON FIR
BANGKOK FIR
SINGAPORE FIR
KINABALU FIR
UJUNG PANDANG FIR
OAKLAND OCEANIC FIR
JAKARTA FIR
MELBOURNE FIR
BRISBANE FIR
POVUS
NIXUL
KETIV
POSOO
GUNIP
TAROS
PKU
TPG
SANOS
KIKOR
PKN
MANOK
MOLLY
SELSO
SADAN
GUTEV
TOREX
OPABA
ELBIS
KIKEM
SATNA
BLI
ATMAP
LAMOB
SAPDA
P574
M300
P570
A327
B345
B335
G579
B470
L511
A464
A576
B583
A461
B472
B473
R340
G462
L895
A585
B469
CR J-5
FL 410, 350
FL 380
FL 290, 320
FL 290, 280
FL 380, 320
FL 410, 350, 290
FL 380, 320, 280
FL 410, 370, 330
350, 390
FL 410, 370, 330
350, 390
FL 410, 350
380, 320
FL 410, 350, 290
FL 410, 350 290
380, 320, 280
FL 410, 350
FL 380, 320
FL 410, 350, 290
FL 290, 280
FL 380, 320
280

Malaysia ATS Contingency Routes

INTERNATIONAL ROUTE STRUCTURE KUALA LUMPUR FIR

ATS Route (Flight Plan Route)	Direction	Flight Level (FL)	ACC/FIC
L510	Eastbound	350	Chennai ACC; Bangkok ACC
P628	Westbound	300/340/380/400	
P574 NOPEK	Eastbound	370	Chennai ACC; Jakarta ACC
	Westbound	300/340/380/400	
POVUS RUSET	Eastbound	290/310	Bangkok ACC; Jakarta ACC
	Westbound	360	
IGARI	Eastbound	290	Bangkok ACC; Ho Chi Minh ACC
	Westbound	280	
VPL/TAMOS	Eastbound	390/410	Bangkok ACC
	Westbound	300/340/380/400	
VKB VPK	Eastbound	350/370/390/410	Bangkok ACC; Singapore ACC
	Westbound	300/320/340/380/400	

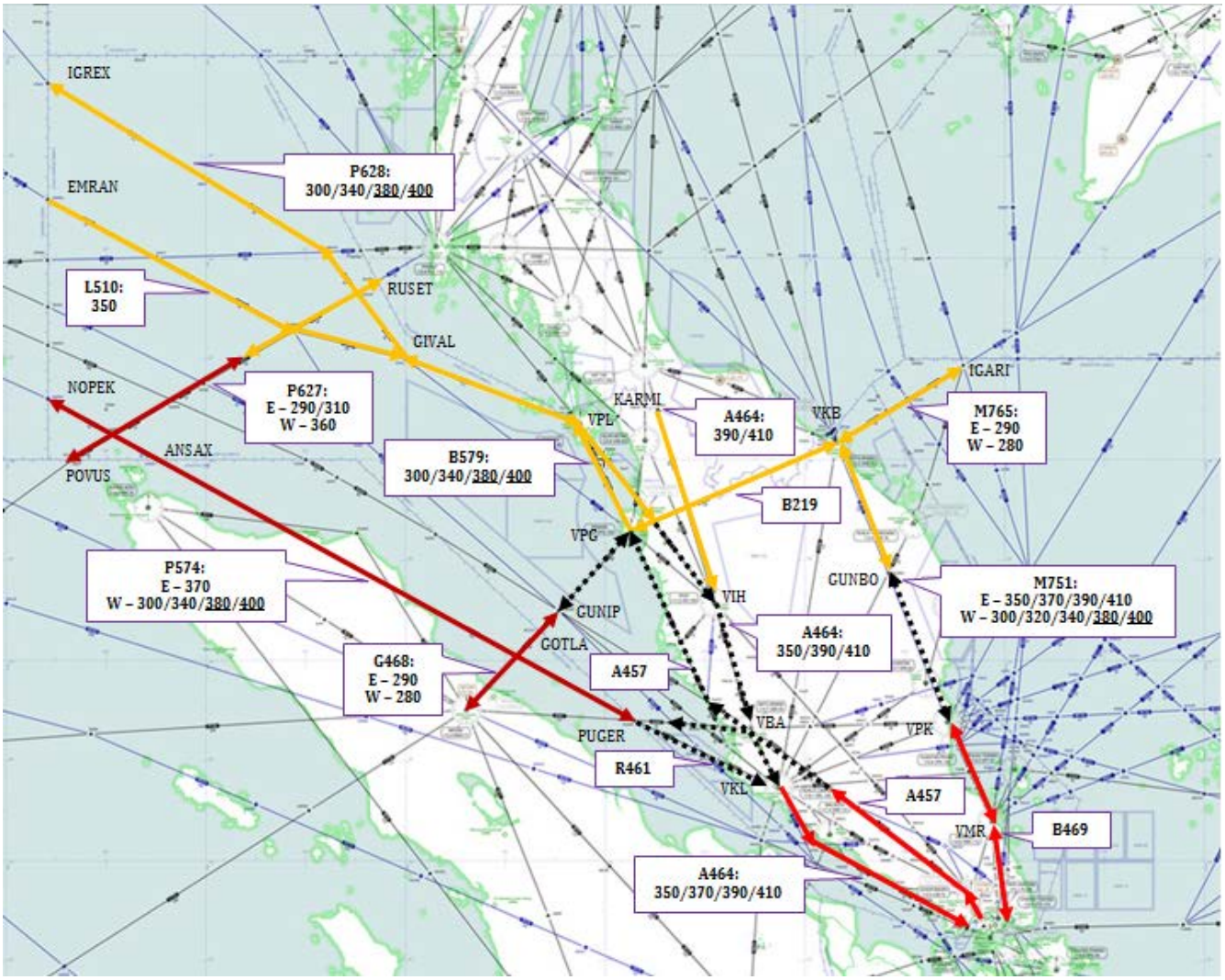
i. Eastbound/Westbound: to maintain 10 mins separation for aircraft at the same level, on the same route.

ii. Eastbound (VTSP DEP) joining M751: FL 350/370/390/410; to maintain level by VKB, ATS service by Bangkok ACC.

iii. Westbound (WSSS DEP) on A457/P574/P628: FL300/340; to maintain level by A/VKL, ATS service by Singapore ACC.

iv. Westbound (WSSS DEP) on M751: FL300/320/340; to maintain level by VPK.

v. Westbound Overflight: FL380/FL400.



i. Eastbound/Westbound: to maintain 10 mins separation for aircraft at the same level, on the same route.

ii. Eastbound (VTSP DEP) joining M751: FL 350/370/390/410; to maintain level by VKB.

iii. Westbound (WSSS DEP) on A457/P574/P628: FL300/340; to maintain level by A/VKL.

iv. Westbound (WSSS DEP) on M751: FL300/320/340; to maintain level by VPK.

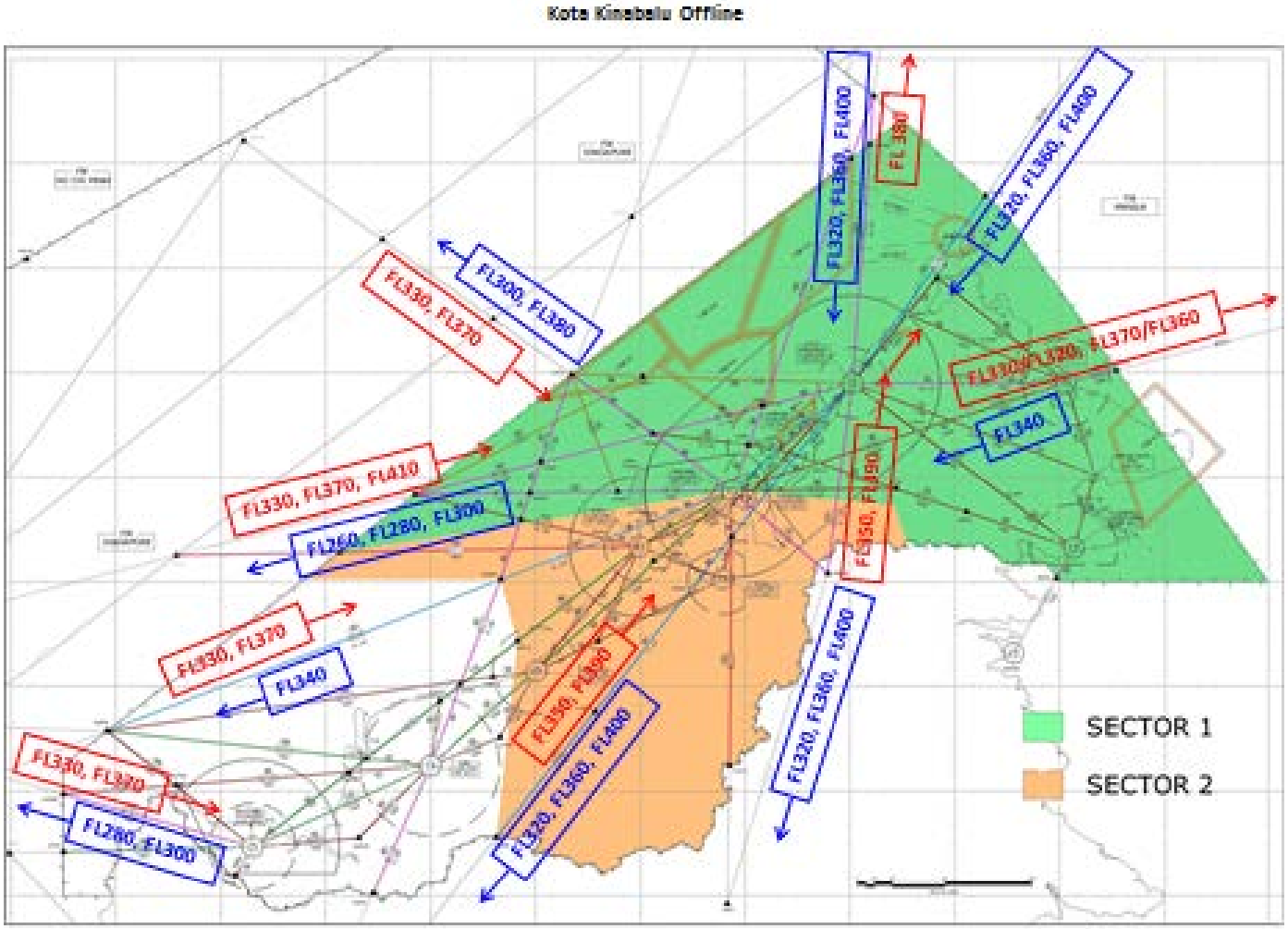
v. Westbound Overflight: FL380/FL400.

Delegated to Singapore ACC for provision of ATS.

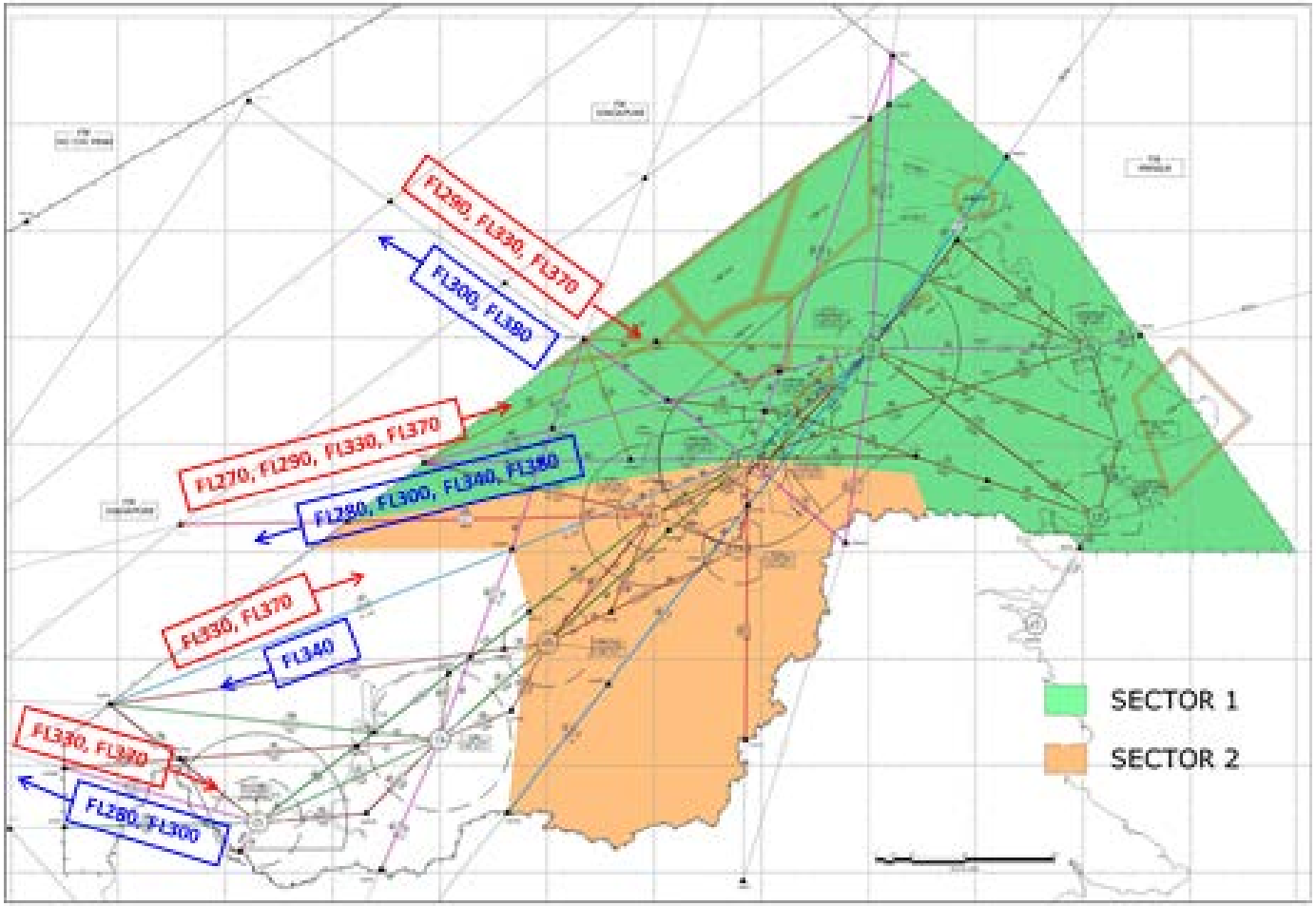
Delegated to Bangkok ACC for provision of ATS.

Delegated to Jakarta ACC for provision of ATS.

INTERNATIONAL ROUTE STRUCTURE <u>KOTA KINABALU</u> FIR



Singapore Offline



KK ACC UNDER TOTAL DISRUPTION

- All Domestic Routes suspended
- RNP Route M772 suspended
- Singapore ACC to inform Brunei ATC of KK disruption and seek radar assistance
- Singapore ACC to transfer active flights to Brunei Approach on 127.1 or 121.3 MHz
- All flights bound for Sandakan and Tawau must descend to maintain FL310 by OLKIT

INTERNATIONAL ROUTES STRUCTURE

- M768 (ASISU-MAMOK) –FL330, FL370
  - Singapore ACC to pass TNR to Makasar ACC at least 30 minutes before TCP MAMOK (ASISU estimate + 23 minutes)
  - Singapore ACC to inform aircraft to establish communication with Makasar ACC 10 minutes prior to TCP MAMOK
  - Singapore ACC to transfer aircraft to Makasar ACC at or before TCP MAMOK (VHF 132.5MHz or HF 11396/6556KHz)

- M768 (MAMOK-ASISU) – FL300, FL380
  - Makasar ACC to pass EST to Singapore ACC at least 30 minutes before TCP ASISU(MAMOK estimate + 23 minutes);
  - Makasar ACC to inform aircraft to establish communication with Singapore ACC 10 minutes prior to TCP ASISU;
  - Makasar ACC to instruct aircraft to contact Singapore Radio at or before TCP ASISU(8942/5655KHz).
  - For Northbound Departure from Brunei via M768 – Brunei ATC shall coordinate with Singapore ACC through own link
  - For Southbound Arrival into Brunei via M768 – Singapore ACC must ensure communication link with Brunei is available before accepting such flight

- M761/M646/A341(SABIP-VIMAG) – FL330, FL370
  - Singapore ACC to pass VIMAG transfer to Manila ACC at least 30 minutes prior to TCP VIMAG
  - Required level change by Manila ACC (FL330 to FL320 and FL370 to FL360) can only be achieved after passing VSN DVOR
  - Singapore ACC to ensure separation with M768/M758 traffic at same allocated flight level

- A341/M646/M761 (VIMAG-SABIP)—FL340
  - Manila ACC to pass VIMAG transfer to Singapore ACC (Singapore shall work out KAMIN or SABIP estimate)
  - Manila and Singapore ACC shall maintain flight at FL340 through KK FIR

DOMESTIC ROUTES STRUCTURE

- All flights suspended or
- Case to case basis subject to severity of disruption
- M758 (Westbound) – FL260, FL280, FL300
  - Use diversionary routes Y446/Y447
  - Singapore ACC can climb aircraft once in their FIR
- M758 (Eastbound) – FL330, FL370, FL410
  - Singapore ACC shall provide separation between same level traffic operating M768, M758 and M646
  - For traffic bound for Sandakan or Tawau, descend aircraft to FL310 before crossing OLKIT
- M646 (BRU/VMI/VJN-KAMIN) – FL300
- M646 (KAMIN-VMI/BRU/VJN) –FL330, FL370
- M768 (ASISU/BRU) – FL290
- M768 (BRU/ASISU) – FL280
- M761, M761/W459, M761/W447 (EASTBOUND) – FL330, FL370
- M761, W459/M761, W447/M761 (WESTBOUND) – FL280, FL300
- G580 (EASTBOUND) – FL330, FL370
- G580 (WESTBOUND) – FL280, FL300
  - Singapore ACC can climb aircraft once in their FIR and subject to traffic

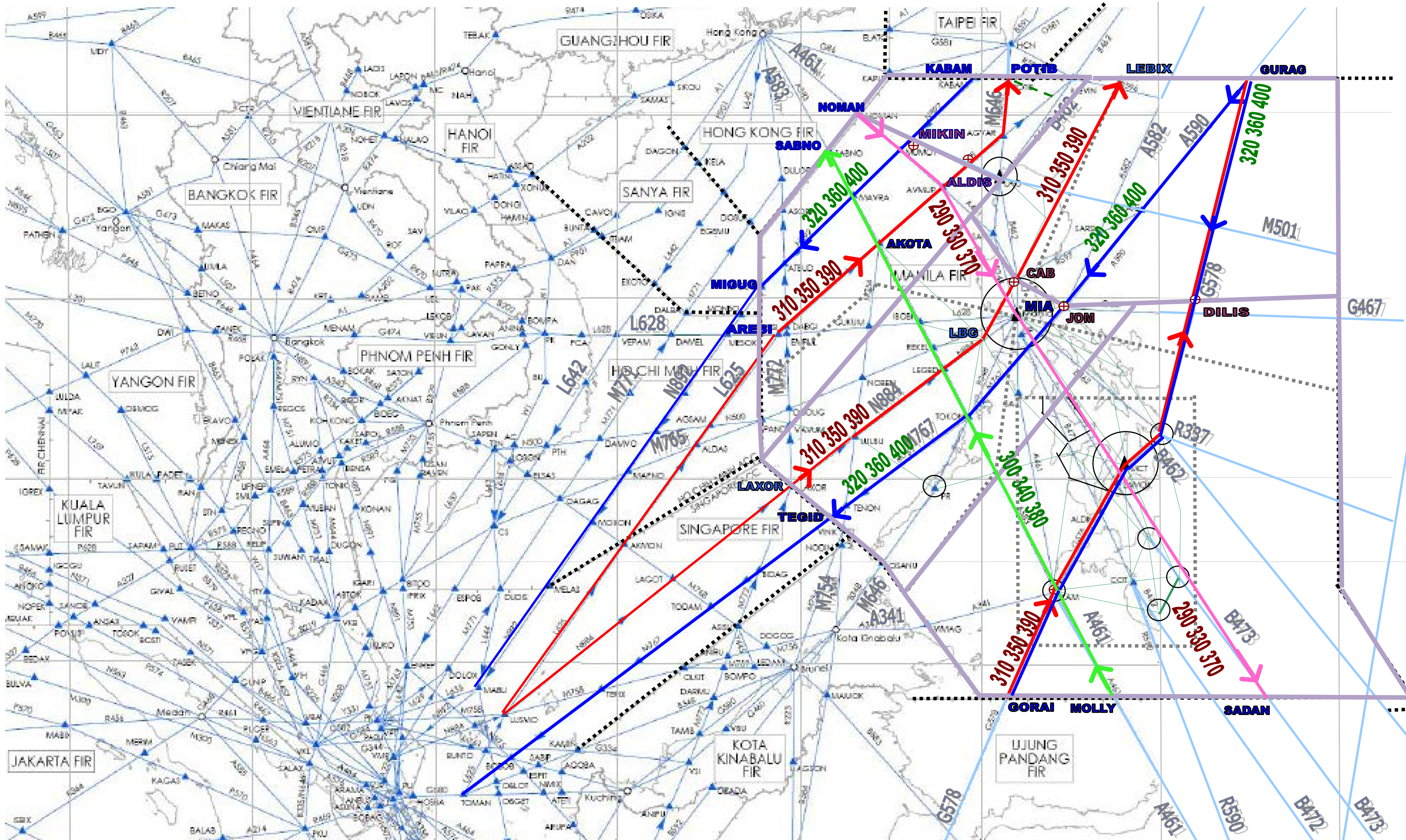
SINGAPORE ACC UNDER TOTAL DISRUPTION

- International Routes:
- M768 (Northbound) – FL300, FL380
  - Kinabalu ACC to pass ASISU or XXX transfer to Ho Chi Minh ACC
  - All aircraft to maintain level by TCP ASISU
- M768 (Southbound) – FL290, FL330, FL370
- Ho Chi Minh ACC to pass XXX or ASISU transfer to Kinabalu ACC
- All aircraft to maintain level by TCP XXX
- Singapore ACC shall suspend RNP Route M772
- M646 ?
- M758 ?
- L517/M758 ?
- M761/W459/M761 ?
- M761/W447/M767 ?
- M761 ?

- G580 ?
- G334 ?

Contingency Routes Manila	ATS Route	Direction	FL Assignment	ACCs	COM
CRM-1	KABAM N892 MIKIN N892 MIGUG	Southwestbound (unidirectional)	320, 360, 400	Taipei Ho Chi Minh	HF, VHF HF,ADS-CPDLC
CRM -2	ARESI L625 AGVAR B348 POTIB	Northeastbound (unidirectional)	310, 350, 390	Ho Chi Minh Taipei	HF,ADS-CPDLC HF, VHF
CRM-3	LAXOR N884 CAB N884 LEBIX	Northeastbound (unidirectional)	310, 350, 390	Singapore Naha	HF,ADS-CPDLC HF,VHF
CRM-4	GURAG A590 JOM M767 TEGID	Southwestbound (unidirectional)	320, 360, 400	Fukuoka Singapore	HF,ADS-CPDLC HF,ADS-CPDLC
CRM-5	GORAI G578 DILIS G578 GURAG	Bidirectional	Northeastbound: 310, 350, 390 Southwestbound: 320, 360, 400	Ujung Pandang Fukuoka	HF,ADS-CPDLC HF,ADS-CPDLC
CRM-6	NOMAN A461 AVMUP W16 CIA MIA LIPA B473	Southeastbound	290, 330, 370	Ujung Pandang	HF, ADS-CPDLC

	SADAN	(unidirectional)			
CRM-7	MOLLY A461 ZAM A583 SABNO	Northwestbound (unidirectional)	300, 340, 380	Ujung Pandang	HF, ADS-CPDLC


TAIPEI FIR
GUANGZHOU FIR
HONG KONG FIR
VIENTIANE FIR
HANOI FIR
SANYA FIR
BANGKOK FIR
MANILA FIR
PHNOM PENH FIR
YANGON FIR
HO CHI MINH FIR
KUALA LUMPUR FIR
SINGAPORE FIR
JAKARTA FIR
KOTA KINABALU FIR
UJUNG PANDANG FIR
KABAM
POTIB
LEBIX
GURAG
NOMAN
MIKIN
SABNO
ALDIS
AKOTA
CAB
MIGUG
MIA
JOM
DILIS
ARESI
LBG
LAXOR
TEGID
GORAI
MOLLY
SADAN
320 360 400
310 350 390
290 330 370
300 340 380
A461
A583
M646
B462
A582
A590
M501
G578
G467
L628
L642
M771
N892
L625
M772
N884
M765
M767
M754
A341
R337
B473
B472
R590

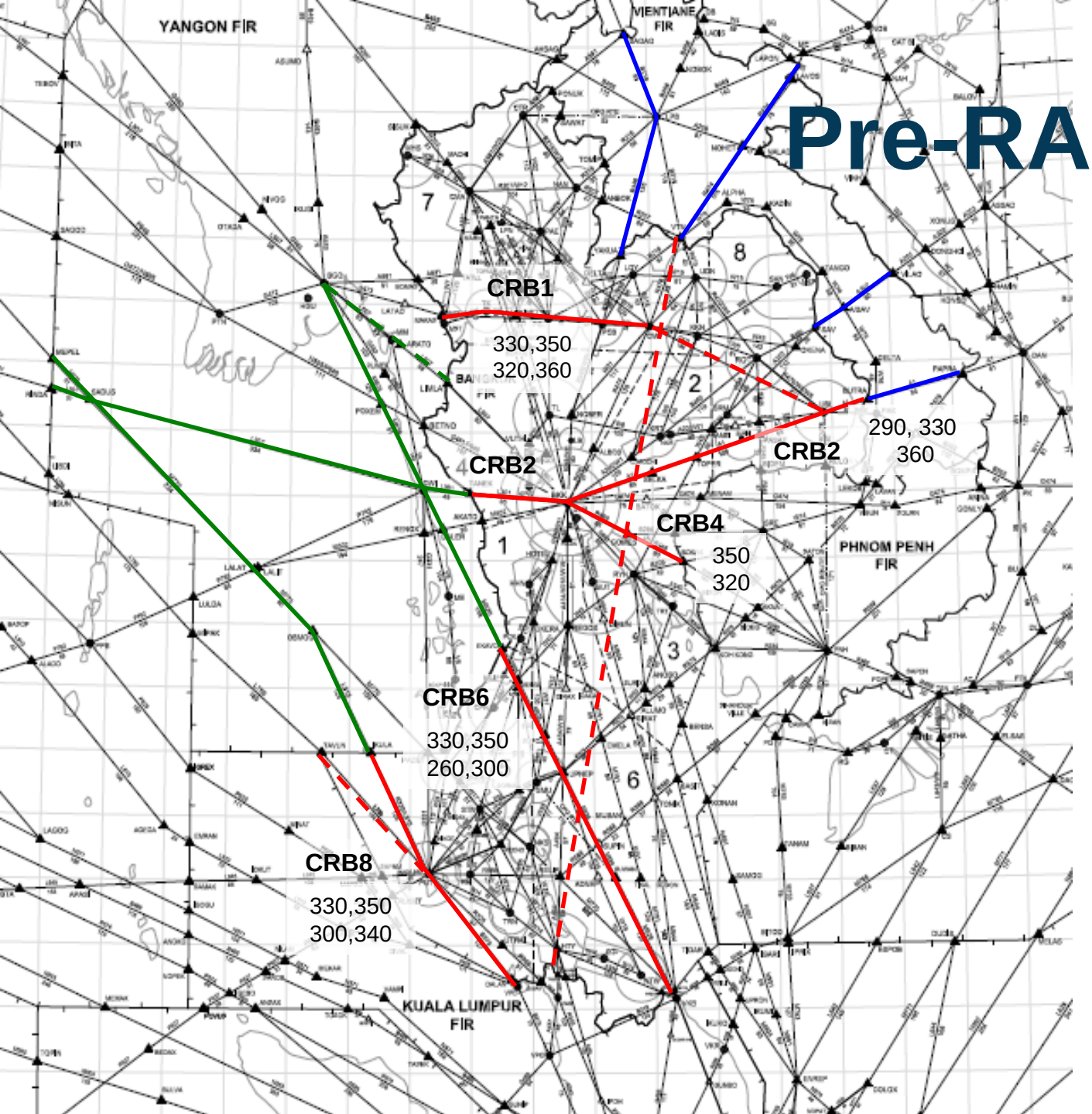
Contingency Route	ATS Route	ADJACENT ACC	COMMUNICATION
CRM-1	KABAM N892 MIKIN	Taipei	VHF: 127.9/ 129.1
	MIKIN N892 MIGUG	Ho Chi Minh	VHF: 120.7 ADS-CPDLC LOG ON: VVTS
CRM -2	ARESI L625 ALDIS	Ho Chi Minh	VHF: 120.7 ADS-CPDLC LOG ON: VVTS
	ALDIS L625 AGVAR M646 POTIB	Taipei	VHF: 127.9/ 129.1
CRM-3	LAXOR N884 CAB	Singapore	HF: 8942/ 5655 ADS-CPDLC LOG ON: WSJC
	CAB N884 LEBIX	Naha	HF: 4666/3455 (TOKYO RADIO) VHF: 123.9 (LEBIX)
CRM-4	GURAG A590 JOM	Fukuoka	HF: 4666/3455 (TOKYO RADIO) ADS-CPDLC LOG ON: RJJJ
	JOM M767 TEGID	Singapore	HF: 8942/ 5655 ADS-CPDLC LOG ON: WSJC
CRM-5	GORAI G578 DILIS	Ujung Pandang	HF: 11396/ 6556 VHF: 128.1 (GORAI) ADS-CPDLC LOG ON: WAAF
	DILIS G578 GURAG	Fukuoka	HF: 4666/ 3455 ADS-CPDLC LOG ON: RJJJ
CRM-6	NOMAN A461 AVMUP W16 MIA LIPA B473 SADAN	Ujung Pandang	ADS-CPDLC LOG ON : WAAF HF: 11396/ 6556
CRM-7	MOLLY A461 ZAM A583 SABNO	Ujung Pandang	ADS-CPDLC LOG ON : WAAF HF: 11396/ 6556

SWG Southeast Asia 1

Cambodia, Lao PDR, Myanmar, Thailand

Contingency Routes and FLAS

Pre-RACP/TF/2


YANGON FIR
VIENTIANE FIR
BANGKOK FIR
PHNOM PENH FIR
KUALA LUMPUR FIR
CRB1
330,350
320,360
CRB2
290, 330
360
CRB2
CRB4
350
320
CRB6
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260,300
CRB8
330,350
300,340
1
2
3
4
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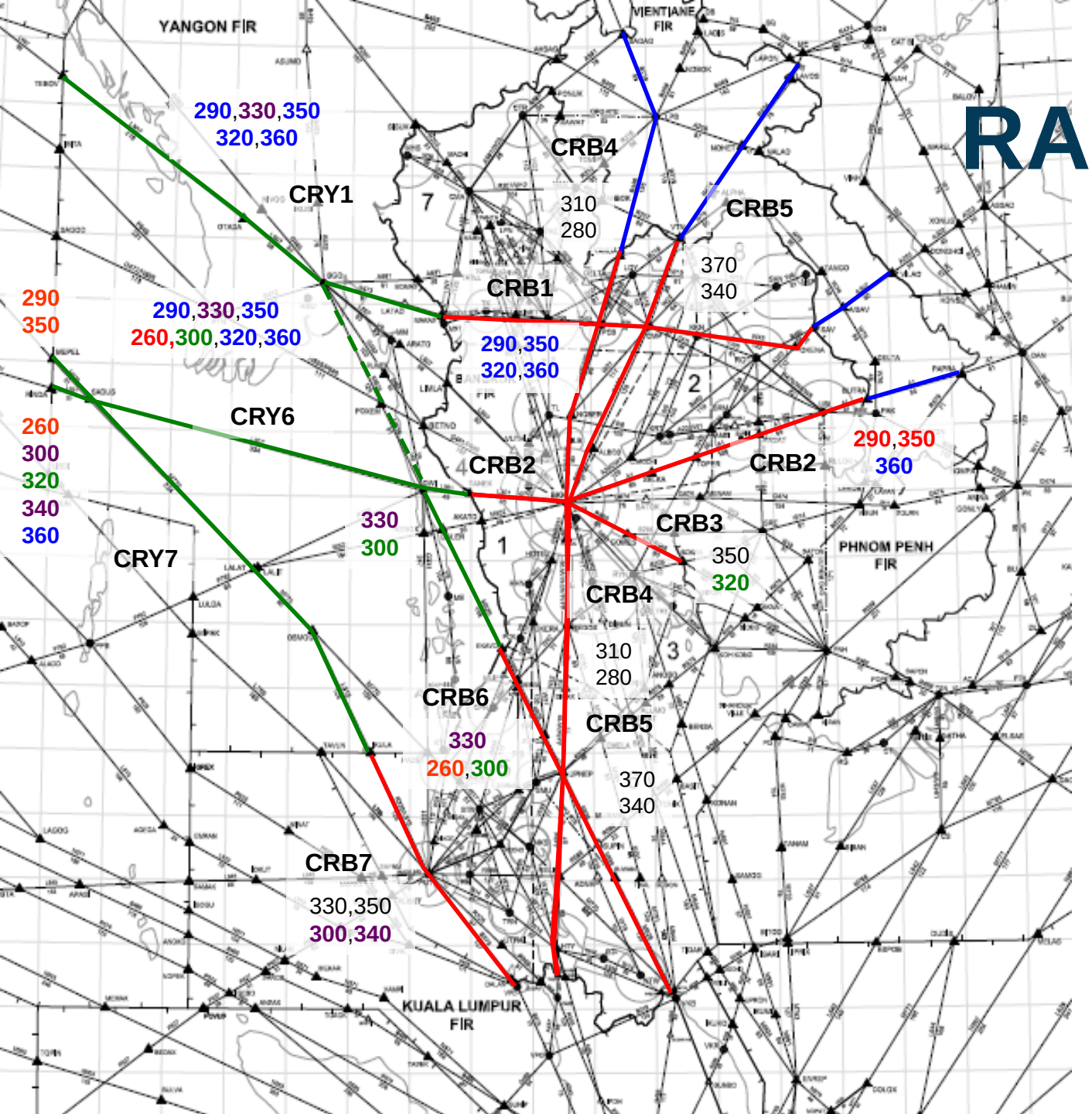
7
8

RACP/TF/2


YANGON FIR
VIENTIANE FIR
PHNOM PENH FIR
KUALA LUMPUR FIR
290,330,350
320,360
CRY1
CRB4
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CRB5
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CRB1
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CRY6
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340
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CRB2
CRB2
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CRB3
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320
CRY7
CRB4
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CRB6
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CRB5
370
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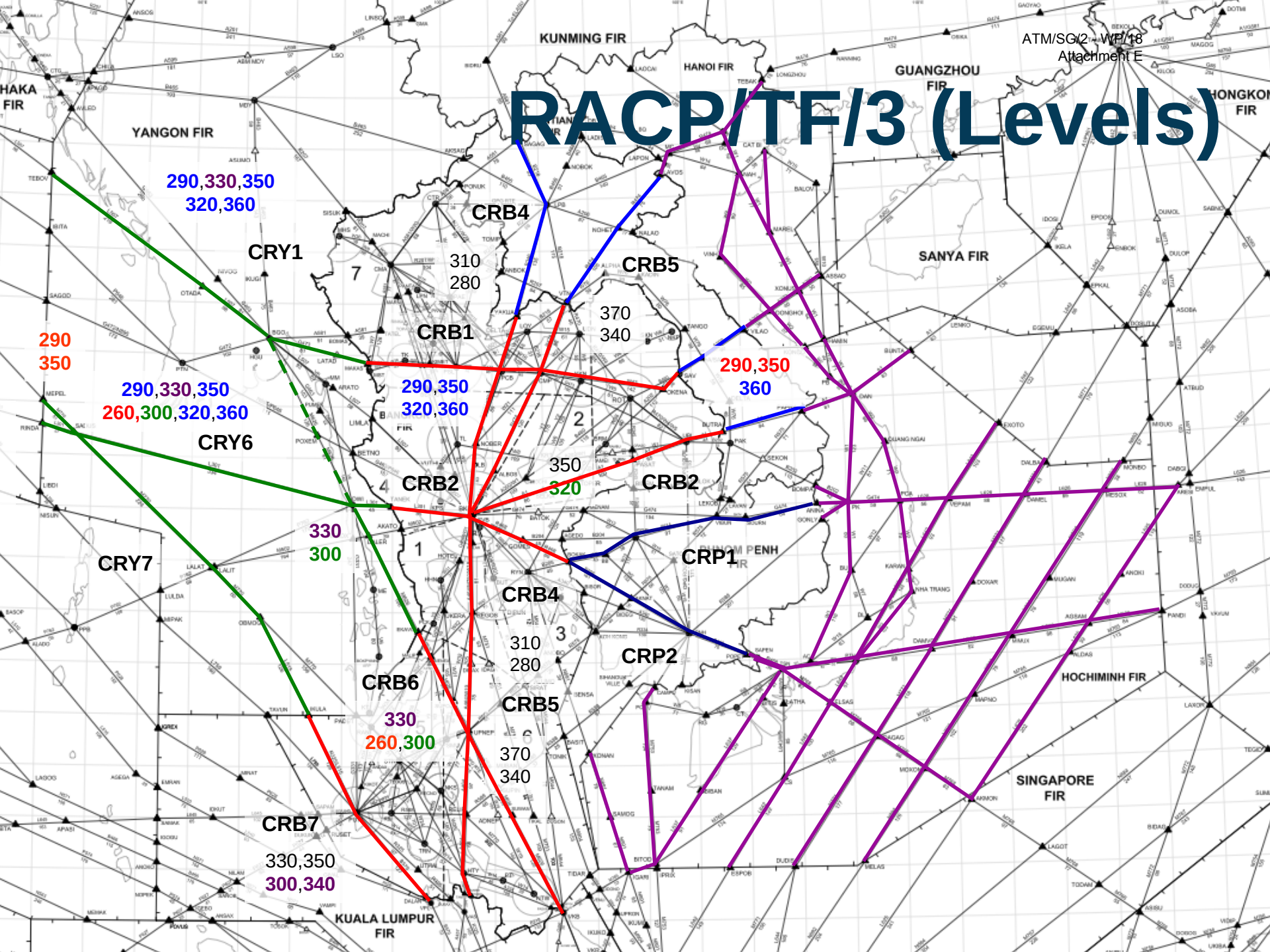
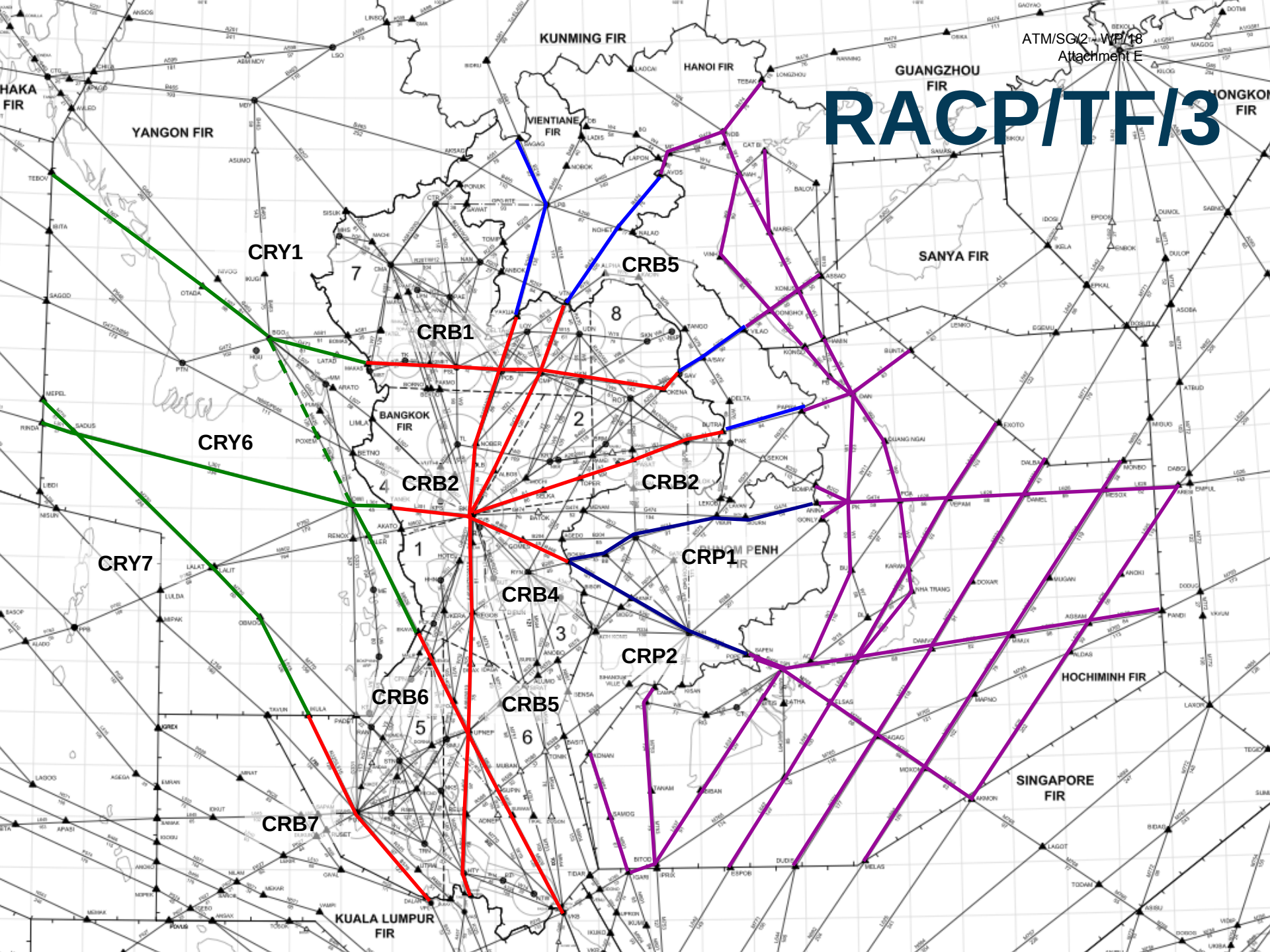
CRB7
330,350
300,340

RACP/TF/3 (Levels)



RACP/TF/3

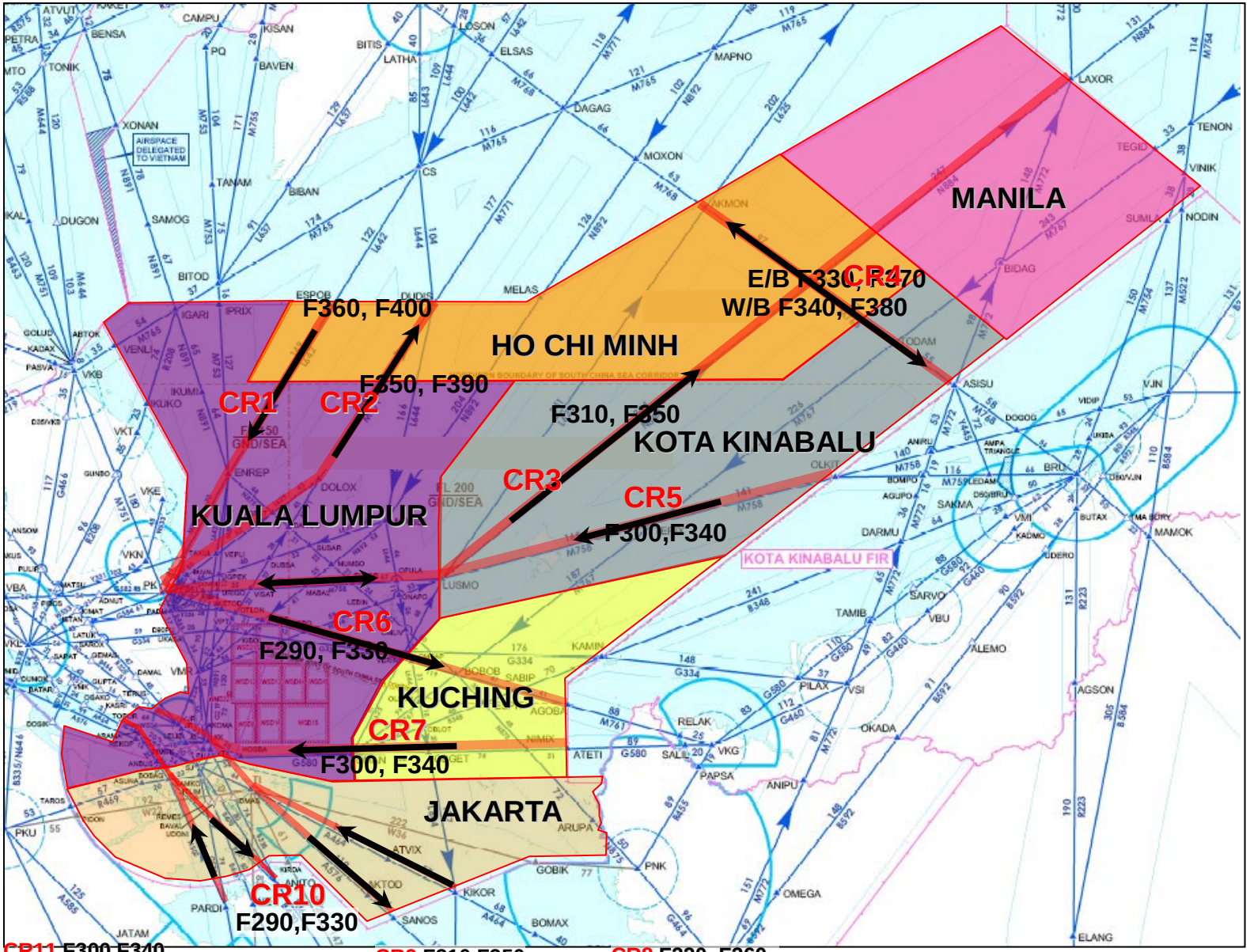

KUNMING FIR
HANOI FIR
GUANGZHOU FIR
VIENTIANE FIR
YANGON FIR
SANYA FIR
BANGKOK FIR
PHNOM PENH FIR
HOCHIMINH FIR
SINGAPORE FIR
KUALA LUMPUR FIR
CRY1
CRY6
CRY7
CRB1
CRB2
CRB2
CRB4
CRB5
CRB5
CRB6
CRB7
CRP1
CRP2
1
2
3
4
5
6
7
8

Cambodia ATS Routes/FLAS

CR	ATS Route	Direction	FL	ATC Unit	Comm
CRC1	BOKAK W3 SRE W14 VIBUN G474 ANINA			VTBB/VVTS	135.5 123.3
CRC2	BOKAK R468 SAPEN			VTBB/VVTS	135.5 120.1/120.9

Contingency Route	ATS Route	Direction	Flight Level Assignment	ATC Unit	Communications
CR1	L642	W/B	F400/F360	WMKK/VVTS	123.7 , 5655
CR2	M771	E/B	F350/F390	WMKK/VVTS	123.7 , 5655
CR3	M758/N884	E/B	F310/F350		133.8 , 5655
CR4	M768	E/B , W/B	F330/F410 F300/F380		8942
CR5	M758	W/B	F300/F340		133.8 , 5655
CR6	M761	E/B	F290/F330		134.2
CR7	G580	W/B	F300/F340		134.2
CR8	M774	W/B	F320/F360*		134.4
CR9	M635	E/B	F310/F350*		134.4
CR10	B470	E/B	F290/F330*		134.4
CR11	G579	W/B	F300/F340*		134.4

CONTINGENCY ROUTES STRUCTURE IN SINGAPORE FIR



Viet Nam ATM Contingency Routes

Affected States and FIRs:

No.	States	FIR	ATS units
1	Cambodia	Phnom Penh	Phnom Penh ACC
2	China	Kunming Guangzhou Sanya	Kunming ACC ACC Nanning ACC Sanya
3	Laos	Vientiane	Vientiane ACC
4	Malaysia	Kuala Lumpur	Kuala Lumpur ACC
5	Philippines	Manila	Manila ACC
6	Singapore	Singapore	Singapore ACC

Contingency route structure:

a) Ha Noi FIR:

ATS routes	Orientation	Flight levels
R474	Eastbound	270, 290, 330, 370
	Westbound	260, 300, 340, 380
A202	Eastbound	290, 330
	Westbound	300, 340
W1, W20	Southbound	320, 360
	Northbound	310, 350
W2	Southbound	140, 240
	Northbound	150, 250

b) Ho Chi Minh FIR:

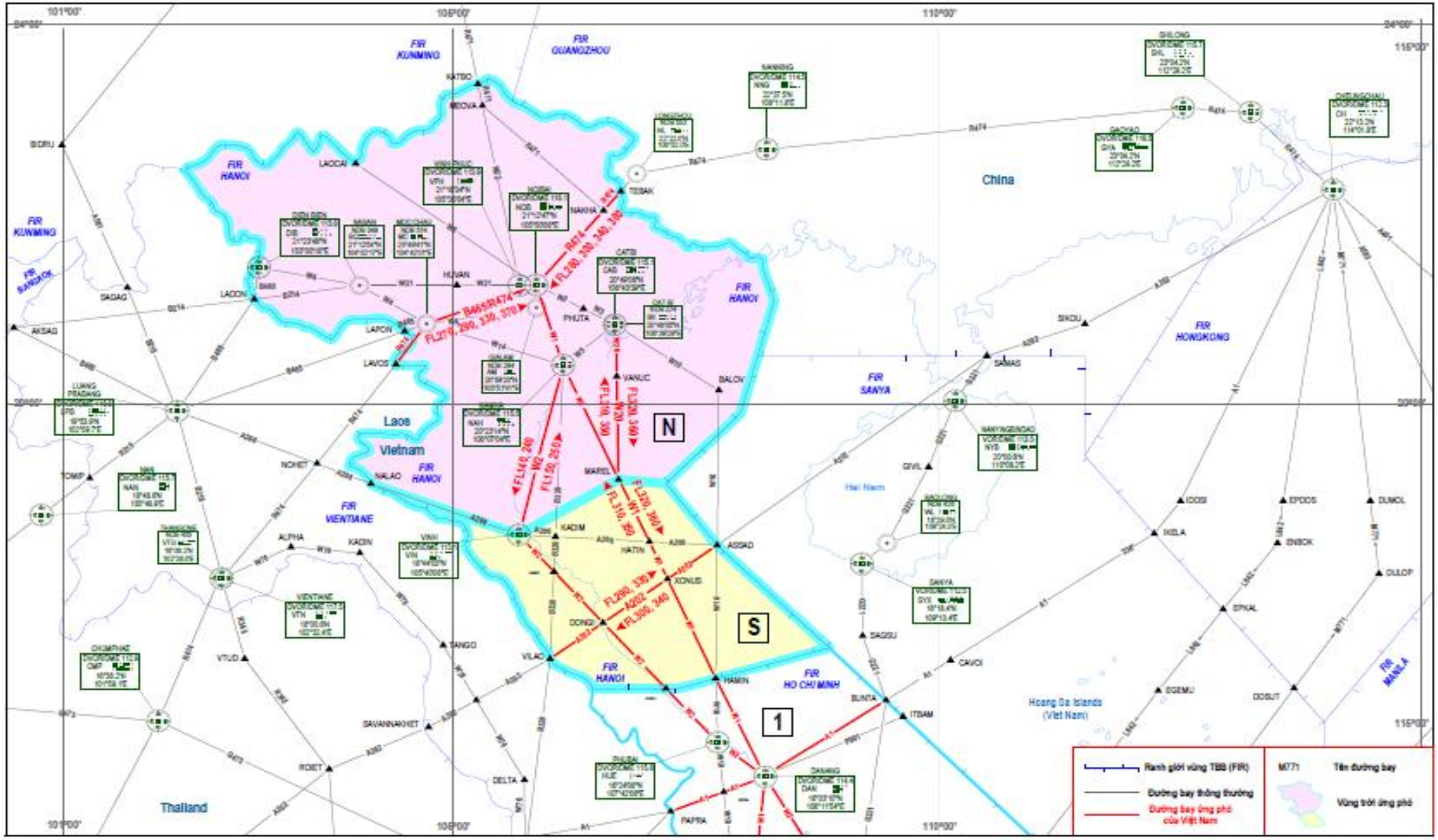
ATS routes	Orientation	Flight levels
L642, N892, M771, L625		310, 320 390, 400
A1	Eastbound	290, 330
	Westbound	300, 340
B202, G474, R588, L628	Eastbound	290
	Westbound	280
M753	Northbound	270
	Southbound	260
N891	Northbound	300
	Southbound	330
M765	Eastbound	390
	Westbound	280
N500	Eastbound	330
	Westbound	300
L637	Northeast bound	250
	Southwest bound	240

R468, M768	Southeast bound	270
	Northwest bound	380
W1	Northbound	310, 350
	Southbound	320, 360
W2	Southbound	140, 240
	Northbound	150, 250

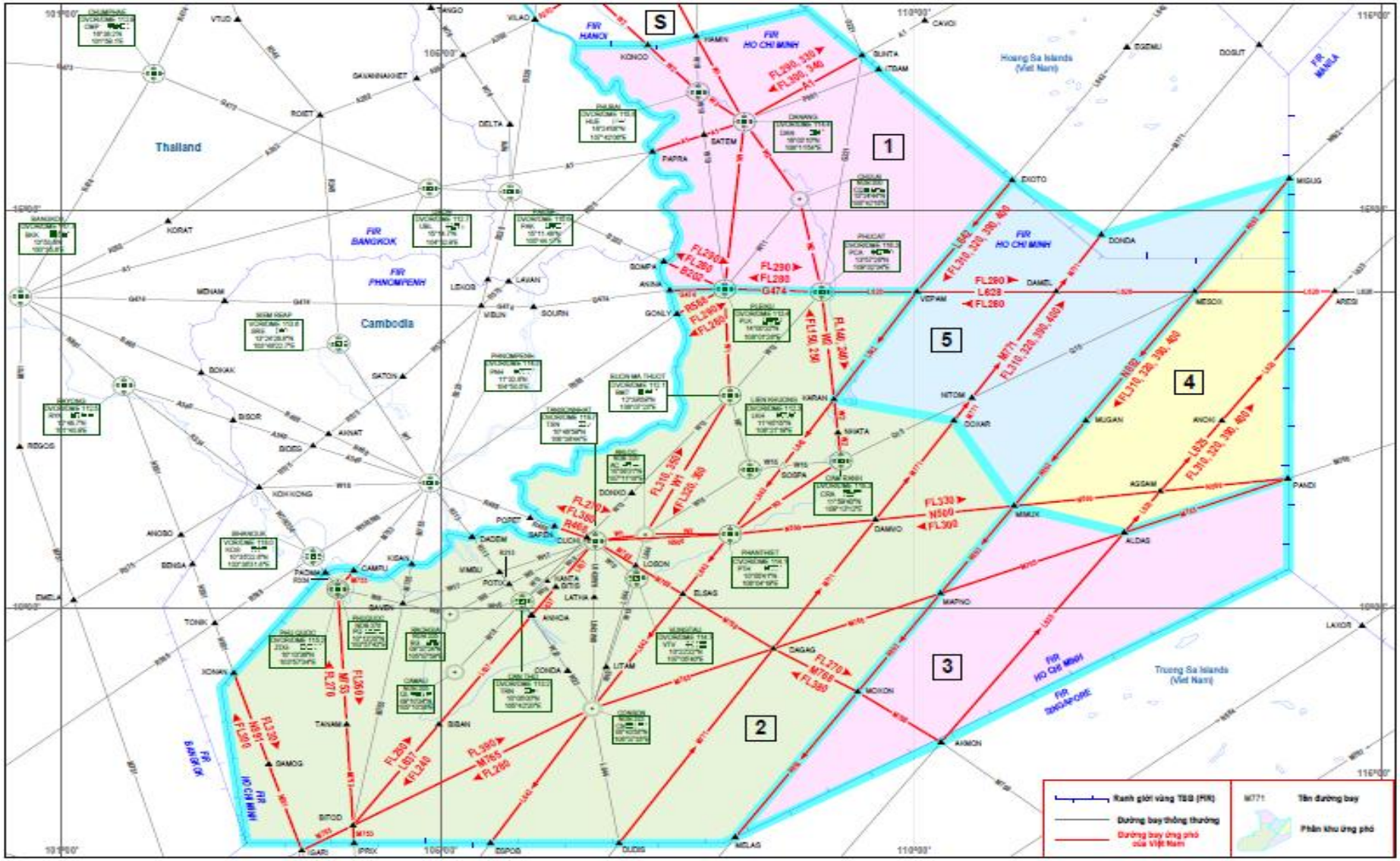
<u>Note</u>: Other ATS routes, FLs will be added subject to contingency process.

…….

Appendix 1: ATM CONTINGENCY ROUTES AND SECTORS WITHIN HA NOI FIR



Appendix 2: ATM CONTINGENCY ROUTES AND SECTORS WITHIN HO CHI MINH FIR



Terms of Reference

Regional ATM Contingency Plan Task Force (RACP/TF)

1) The objective of the Regional ATM Contingency Plan Task Force is:

In collaboration with affected stakeholders and ensuring inter-regional harmonization, develop and implement a Regional ATM Contingency Plan that:

i) provides a contingency response framework for States;

ii) ensures a timely, harmonised and appropriate response to events that affect the provision of Air Traffic Services (ATS), or which ATS is involved in; and

iii) provides a greater degree of certainty for airspace and aerodrome users during contingency operations.

2) To meet this objective the Task Force shall:

a) Review the current status of ATM Contingency Plans and the contingency preparedness of Asia and Pacific Region States;

b) Identify areas where ATM contingency planning requires improvement in terms of compliance with Annex 11 and accepted best practice, and to make recommendations on those areas of improvement;

c) Analyse contingency procedures in use in other ICAO Regions, and cooperate with other groups which are involved with similar work in adjacent airspaces, in order to achieve harmonized inter-regional solutions;

e) Develop a Regional ATM Contingency Plan that:

i) takes into account the varying levels of contingency response necessary, commensurate with precipitating events;

ii) takes into account the varying levels of State contingency capability;

iii) provides principles for Regional ATM Contingency planning;

iv) details recommended Regional contingency practices to events such as severe meteorological and geological phenomena, health emergencies (pandemics, etc), military conflicts and industrial relations issues; and

v) where practical, provides contingency planning templates for States.

The Task Force reports to APANPIRG through the ~~ATM/AIS/SAR~~ ATM Sub-Group for planning, coordination and implementation of a regional ATM contingency plan, with a link to the ~~METWARN/I~~ MET/H Task Force.