INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE THIRD MEETING OF THE WESTERN PACIFIC/SOUTH CHINA SEA RVSM SCRUTINY WORKING GROUP (WPAC/SCS RSG/3)

BANGKOK, THAILAND, 30 OCTOBER TO 2 NOVEMBER 2007

The views expressed in this Report should be taken as those of the WPAC/SCS RSG and not of the Organization.

Adopted by the WPAC/SCS RSG
and published by the ICAO Asia and Pacific Office

TABLE OF CONTENTS

PART I - HISTORY OF THE MEETING

PART II - REPORT ON THE WPAC/SCS RSG/3 MEETING

APPENDICES

PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Third Meeting of the Western Pacific/South China Sea RVSM Scrutiny Working Group (WPAC/SCS RSG/3) was held in Bangkok, Thailand from 30 October to 2 November 2007 at the Kotaite Wing of the ICAO Asia and Pacific Office.

2. Attendance

2.1 The meeting was attended by 30 experts from Hong Kong China, Indonesia, Japan, Lao PDR, Malaysia, Philippines, Singapore, Thailand, United States, Viet Nam, IATA, IFALPA and IFATCA. A list of participants is at **Appendix A** to this report.

3. Officers and Regional Office

3.1. Mr. David Maynard, Manager, Oceanic and Offshore Services for the United States Federal Aviation Administration chaired the meeting.

3.2. Mr. Andrew Tiede, Regional Officer ATM, was the Secretary for the meeting. He was assisted by Mr. Kyotaro Harano, Regional Officer ATM.

4. Opening of the Meeting

4.1 During his opening remarks, Mr. Tiede welcomed all delegates to the third meeting of the WPAC/SCS RSG on behalf of Mr. Lalit Shah, the Regional Director of the ICAO Asia/Pacific Office. He highlighted that the implementation of RVSM throughout the airspace of China would occur on for 22 November 2007 as scheduled, drawing attention to the need to harmonize the WPAC/SCS FLOS/FLAS arrangements with the FLOS adopted by China for their RVSM implementation. Mr. Tiede expressed appreciation to Japan for their excellent work in convening and hosting the first meeting of the East Asia ATS Coordination Group and for conveying the outcomes to the RSG.

4.2 The challenge for this meeting was to continue effective work in the two main focus areas of the RSG – to identify activities which will further reduce the numbers of LHD and also to agree to implement a revised FLAS for the WPAC/SCS area. Mr. Tiede wished the meeting every success.

4.3 The Chairman, Mr. Maynard, welcomed the members of the WPAC/SCS RSG to the third meeting of the RVSM Scrutiny Group. He acknowledged the significance of the continued support by the States. The successes of the first two meetings were highlighted and it was pointed out that the group's efforts were recognized at APANPIRG/18 in September 2007.

4.4 The Chairman stated that the primary goals for this meeting were to finalize the FLAS for the WPAC/SCS region, determine an implementation date, continue the work of identifying causal factors for the LHDs that are occurring and develop mitigation strategies. The Chairman noted the papers that had been submitted and thanked the author's for their advance work and preparation for the meeting.

5. Language and Documentation

5.1. All discussions were conducted in English. Documentation was issued in English. A total of 8 Working Papers and 4 Information Papers were considered by the meeting. A list of the Working and Information Papers is at **Appendix B.**

PART II - REPORT ON THE WPAC/SCS RSG/3 MEETING

Agenda Item 1: Adoption of Agenda

1.1 The meeting reviewed the agenda proposed by the Secretariat and adopted for the meeting:

Agenda Item 1: Adoption of Agenda

Agenda Item 2: RMA update for WPAC/SCS area

Agenda Item 3: LHD Reduction Arrangements

Agenda Item 4: Scenario 3 FLAS Developments

Agenda Item 5: Safety Analysis and Airspace Monitoring Issues

Agenda Item 6: Future direction and arrangements

Agenda Item 7: Update WPAC/SCS RSG Task List

Agenda Item 8: Any other business

Agenda Item 9: Date and venue of the WPAC/SCS RSG/4 Meeting

Agenda Item 2: RMA update for WPAC/SCS area

2.1 The Monitoring Agency for the Asia Region (MAAR) provided a comprehensive summary of airspace safety oversight for the proposed Scenario 3 FLAS based on a one-month traffic sample data (TSD) collected in December 2006 and monthly Large Height Deviation (LHD) reports for the rolling 12 months between September 2006 and August 2007, as submitted by the affected States in the WPAC/SCS region.

2.2 The meeting noted that TSD for December 2006 from all affected states had been submitted to MAAR and the Secretariat highlighted that this was a commendable result from States in terms of data provision. In the case of LHD data, there was still some data to be submitted to MAAR and MAAR would follow up with Cambodia, Thailand and Vietnam in this respect.

2.3 Based on the received LHD reports, the number of LHD occurrences and associated LHD duration (in minutes) by month in the WPAC/SCS RVSM airspace since September 2006 are summarized in **Table 1** below.

Month-Year	No. of LHD Occurrences	LHD Duration (Minutes)
September 2006	6	21
October 2006	4	12
November 2006	5	9
December 2006	5	104
January 2007	7	25
February 2007	4	12
March 2007	3	9
April 2007	8	17
May 2007	2	5
June 2007	4	4
July 2007	2	3
August 2007	6	19
Total	**56**	**240**

Table 1: Summary of LHD Occurrences and Duration in WPAC/SCS RVSM Airspace

2.4 Additionally**, Table 2** below summarizes the number of LHD occurrences and associated LHD duration by cause of the deviation.

LHD Category Code	LHD Category Description	No. of LHD Occurrences	LHD Duration (Min)
A	Flight crew failing to climb/descend the aircraft as cleared	3	3
B	Flight crew climbing/descending without ATC clearance	1	1
D	ATC system loop error; (e.g. ATC issues incorrect clearance or flight crew misunderstands clearance message)	5	81
E	Coordination errors in the ATC-to-ATC transfer of control responsibility as a result of human factors issues (e.g. late or non existent coordination, incorrect time estimate/actual, flight level, ATS route etc not in accordance with agreed parameters)	45	155
I	Turbulence or other weather related causes	1	1
M	Others	1	1
Total		**56**	**240**

Table 2: Summary of LHD Causes in the WPAC/SCS RVSM Airspace

2.5 In reviewing the LHD data, the meeting recognized that there had been a significant reduction in the numbers of LHD reported overall, with notable improvement in May, June and July. Notwithstanding, the meeting noted the continuing prevalence of coordination errors in the ATC-to-ATC transfer of control responsibility, which required ongoing investigation.

2.6 In December 2006, 104 minutes of the LHD annual total (i.e. 240 minutes) were recorded, and 72 of the 104 minutes were attributable to a radio communication failure in Category D. The meeting recalled that the radio communication failure incident had been discussed during previous meetings and that remediation had been put in place by the State concerned immediately after the incident had occurred. Since that time, no repetition of the incident had been recorded, suggesting that an effective solution had been found and it was a reasonable to expect that the incident was unlikely to be repeated.

2.7 Additionally, the meeting recognized that the use of a rolling 12 months of LHD data for the safety assessment meant that after a few months, the December 2006 data would be excluded from the sample. This would result in movement of the trend below the target level of safety (TLS).

Risk Assessment - Scenario 3 FLAS

2.8 **Table 3** below summarizes the results of the airspace safety assessment, as of August 2007, in terms of the technical, operational, and total risks for the Scenario 3 RVSM FLAS in the WPAC/SCS RVSM airspace. The meeting noted that if the one-off 72 minutes radio communication failure from December 2006 was excluded, this resulted in a risk estimate of 4.67 x 10^{-9} - which satisfied the regional TLS.

Source of Risk	Lower Bound Risk Estimation	TLS	Remarks
Technical Risk	0.63 x 10^{-9}	2.5 x 10^{-9}	Below Technical TLS
Operational Risk	5.77 x 10^{-9}	-	-
Total Risk	6.40 x 10^{-9}	5.0 x 10^{-9}	**Exceeds Overall TLS**

Table 3: Risk Estimates for the RVSM Implementation in WPAC/SCS Airspace

2.9 The risk estimate is depicted in graphical format in **Figure 1** below, which presents the trends of collision risk estimates for each month using the appropriate cumulative 12-month of LHD reports since September 2006.

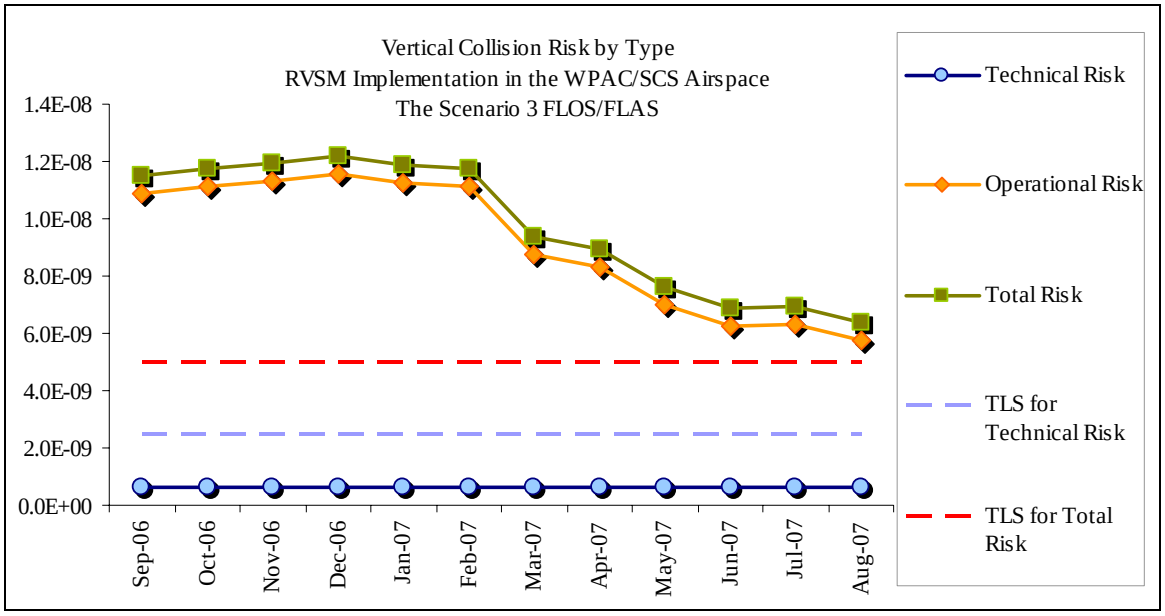


Figure 1: Trends of Risk Estimates for the RVSM Implementation in WPAC/SCS Airspace

2.10 The meeting noted that the level of technical risk for the Scenario 3 FLAS/FLAS is well below the technical TLS as presented in **Table 3** above, but that the technical risk is relatively higher compared to the existing FLAS arrangement. This occurs because the current vertical separation between the adjacent flight levels on the main ATS routes including six parallel routes and A1/P901 is 2,000 feet, whereas the separation minima between routes for Scenario 3 would become 1,000 feet. Hence, the occupancy values for the same and opposite direction parameter increases in the Scenario 3 context. However, the increase in technical risk due to the increasing number of same track proximate pairs is partially offset by the decrease in the occupancy value of the crossing tracks.

2.11 On the other hand, the operational risk is significantly high, resulting from the large number of LHD occurrences in the past year. Consequently, the total risk for the proposed Scenario 3 FLAS has exceeded the overall target level of safety.

2.12 MAAR highlighted that it is important to understand that this risk estimate captures only the increased impact of Scenario 3 on the technical risk because of the objective nature of technical risk, whereas the influence of Scenario 3 on operational risk is not captured in the estimation because the information is variable. Such impact on operational risk includes the potential reduction of LHD occurrences arising from reduced FLAS complexity.

2.13 The meeting was pleased to note that since the WPAC/SCS/RSG/1 meeting in January, significant reductions in numbers and duration of LHD occurrences have occurred, as described in **Table 4** and **Figure 2** below.

Reference	LHD Period (12-Month)	No. of LHD Occurrences	LHD Duration (Min)	% Change	
				No. of LHD Occurrences	LHD Duration (Min)
WPAC/SCS/RSG/1 Meeting (Jan 2007)	Jan06 – Dec06	84	481		
WPAC/SCS/RSG/2 Meeting (June 2007)	May06 - Apr07	75	345	-11%	-28%
WPAC/SCS/RSG/1 Meeting (Oct 2007)	Sep06 - Aug07	56	240	-25%	-30%

Table 4: Trends of Risk Estimates for the RVSM Implementation in WPAC/SCS Airspace

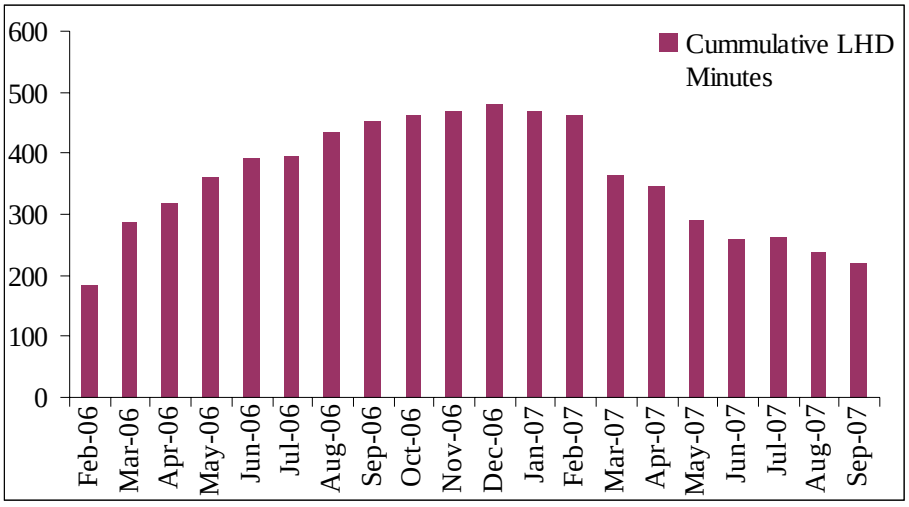


Figure 2: Trends of Risk Estimates for the RVSM Implementation in WPAC/SCS Airspace

Agenda Item 3: LHD Reduction Arrangements

3.1 Each of the States present at the meeting provided a summary of the activities directed at reducing LHD occurrences that had taken place since the last meeting updated. The meeting reviewed details of each of the 12 LHD occurrences that had been reported since the last meeting and, where possible, identified remedial strategies. The meeting was informed that investigations were regularly conducted into specific LHD occurrences and coordination completed with airlines which had been involved.

3.2 Instances of turbulence and pilot level bust were still evident and were beyond the scope of the Scrutiny Group to address. The guidance provided by previous WPAC/SCS RSG meetings had been helpful in identifying areas of weakness in ATC to ATC coordination and many States had implemented changes in this regard. However, 8 of the 12 LHD occurrences were directly related to erroneous ATC coordination between ACCs and affected States agreed to intensify their efforts in this respect.

Agenda Item 4: Scenario 3 FLAS Developments

Outcomes of the Discussion on the New FLAS in the Fukuoka, Manila and Taipei FIR

4.1 Japan informed the meeting that rrepresentatives of Fukuoka Air Traffic Management Center (ATMC), Hong Kong Area Control Center (ACC), Manila ACC, Naha ACC, Taipei ACC and the International Federation of Air Traffic Controllers' Association (IFATCA) had formed an ATS coordination group, which is called the East Asia ATM Coordination Group (EATMCG). The first meeting of EATMCG (August 2007, Fukuoka) was hosted by Air Traffic Control Association, Japan (ATCA-J) with 29 experts attending the meeting.

4.2 On behalf of EATMCG, Japan reported that all the EATMCG participants agreed to adopt the new FLAS in the SCS area (**Table 5** below refers). The new FLAS accommodated the Scenario 3 proposals.

Flight Level Allocation	Airway and Direction of Flight											
	Taipei-Manila						Fukuoka-Manila					
	N892		B348		~~R596 to be decommissioned~~		B462		CAB-YURIX*/ A582		A590	
	NE	SW	NE	SW	~~SE~~	~~NW~~	NE	SW	NE	SW	NE	SW
410			410						410		410	
400		400					400			400		400
390		390	390				390		390		390	
380				380				380		380		380
370			370						370		370	
360		360					360			360		360
350		350	350				350		350		350	
340				340		~~340~~		340		340		340
330			330						330		330	
320		320					320			320		320
310		310	310				310		310		310	
300				300				300		300		300
290			290**		~~290~~							

*Note: * New route is considered so as to connect LBG - CAB - YURIX.*
*Note: ** Only available for landing in the Taipei FIR.*

Table 5: New FLAS between the Fukuoka, Manila and Taipei FIR

4.3 The meeting was informed that agreement on the transition tasks was reached as described in **Table 6** below.

Route	Direction	Transit from	Transit to	Transition area	Responsibility of Transition
N892	Southwest	300 320 340 360 380 400	310 320 350 360 390 400	By KABAM	Taipei
L625 – B348 POTIB	Northeast	310 320 350 360 390 400	290* 310 330 350 370 390 410	By POTIB	Manila
L625 MEVIN B462	Northeast	310 320 350 360 390 400	310 330 350 370 390 410	After MEVIN	Naha
N884 LBG-CAB-YURIX	Northeast	310 320 350 360 390 400	310 330 350 370 390 410	By LEBIX	Manila
A582- A590 JOM M767	Southwest	300 320 360 380 400	310 320 350 360 390 400	After BISIG/GURAG	Manila
N884 – A590 GURAG	Northeast	310 320 350 360 390 400	310 330 350 370 390 410	By GURAG	Manila

*Note: * Only available for landing in the Taipei FIR.*

Table 6: Transition Tasks between the Fukuoka, Manila and Taipei FIRs

4.4 Japan informed that EATMCG/1 also discussed a suitable FLAS for the management of Large Scale Weather Deviations (LSWD). The single alternate FLAS would ensure separation on the parallel routes and on the crossing tracks. EATMCG/1 agreed with the new FLAS in case of LSWD as shown in **Table 7** below.

Flight Level Allocation (LSWD)	Parallel Airways Taipei-Manila				Parallel Airways Singapore-Manila				Crossing Airways Naha-Manila-Taipei			
	N892		L625		N884		M767		A582/B462 R596		A590 R596	
		SW	NE		NE			SW	E	W	E	W
410									410			
400		400						400				400
390			390		390						390	
380										380		
370									370			
360		360						360				360
350			350		350						350	
340										340		
330									330			
320		320						320				320
310			310		310						310	
300										300		
290									290			

Table 7: New FLAS for Large Scale Weather Deviations

4.5 EATMCG/1 agreed that EATMCG meetings should be held periodically with the intention of ensuring good collaboration with the ICAO activities in the Region. The Secretariat commended Japan and the members of the EATMCG for the initiative in forming this ATS coordination group. The Secretariat routinely encouraged bilateral and multilateral discussions between States as a way of encouraging regional ATS implementations.

4.6 The Chairman thanked Japan for the effort to hold EATMCG/1 and for these well thought out arrangements. He noted that the LSWD procedures were also agreed among the Fukuoka, Manila and Taipei FIR, and appeared to be good arrangements for this particularly complex airspace.

4.7 IATA also commended Japan and the members of EATMCG for the practical arrangements on the transition activities. In light of the collaborative approach to the transition issues and the fruitful agreement among the ATS providers, IATA expected overall improvement and supported the new FLAS.

4.8 Hong Kong, China reported that under the revised FLAS, Taipei ACC would not be required to carry out transition tasks for flights from Incheon and Fukuoka FIRs through Taipei FIR into Hong Kong FIR via KAPLI (ATS Route G86) from single alternate FLOS to a modified single alternate FLOS.

Extending N884 via LBG-CAB-LEBIX

4.9 Philippines reported that Scenario 3 even flight levels on the northeast-bound RNAV Route N884 should be transitioned to odd flight levels when enroute to A582 or A590 while even flight levels for the southwest-bound flights on A582 and A590 should be transitioned to Scenario 3 odd flight levels when enroute to M767. If the transition is not completed prior to joining A582 or A590, even flight levels from N884 would be on the same flight levels as the flight levels from A582 and A590 in opposite direction.

4.10 To prevent a potential hazard between N884 and A582/A590, the meeting agreed that traffic on N884 should be rerouted via a new extension to N884 from LBG-CAB-LEBIX-ALBAX-YURIX. Japan and the Philippines agreed to establish this new extension to N884 and recommended the northeast-bound RNP 10 route LBG-CAB-LEBIX-ALBAX-YURIX and the southwest-bound ATS route A582 utilize the single alternate FLOS.

4.11 The meeting noted that the establishment of this new route was integral to the implementation of the Scenario 3 FLAS. Flight inspection activities for the new route required by Japan were expected to take place in January/February 2008. AIP supplements could be issued by Japan and Philippines after the flight inspection activities with a target date for implementation of the route on AIRAC 8 May 2008.

Replacement of ATS Route R596

4.12 As highlighted by EATMCG/1, the meeting noted that the route R596 between Guam and Hong Kong was through four FIRs: Oakland, Manila, Fukuoka (Naha ACC) and Taipei. Accordingly, management of R596 traffic required significant coordination between the four ACCs and different coordination procedures were necessary for eastbound and westbound traffic.

4.13 All coordination has to be completed 30 minutes before the respective FIR boundary, thereby prohibiting any level change within this period. Any revision of an estimate has to be passed to all parties as soon as possible due to traffic restrictions and strict military requirements and any flight not correctly coordinated may be subject to interception by military aircraft. IFATCA also highlighted that there were a number of operational ATC problems with respect to ATS Route R596. These problems included safety concerns and the efficient operation of traffic on this route including excessive ATC co-

ordination with opportunity for missed or incorrect transfer of information and restricted flight profile because of lengthy co-ordination procedures and congested airspace.

4.14 The meeting was informed the EATMCG/1 had heard recommendations for the realignment of ATS route R596 due to the problems with missed transfers, incorrect/incomplete transfer information, wrong/incorrect frequency change and military interceptions. Fukuoka ATMC and Manila ACC recognized the difficulty of preventing potential conflicts on R596 due to limitations in radio and radar coverage, the proximity of R596 to the common multi FIR boundary and weather diversion issues.

Proposed Routing

4.15 The meeting agreed with the proposal from EATMCG/1 to simplify the routing between Guam and Hong Kong by implementing a new route to the south of R596 through the Manila and Oakland FIRs and clear of the Fukuoka and Taipei FIRS, which would then join the existing routes W12 and A461 to Hong Kong. The existing R596 would be decommissioned as it would be replaced by the new route.

4.16 The proposed routing was UNZ – LADSS – SKATE – LAO – W12 – NOMAN – A461 – CH. The total mileage of this route was approximately 1873 NM, an increase of about 25NM over the existing R596**.** The chart depicting the current R596 and the proposed route is at **Appendix C** to this Report. The final alignment of the new route would be agreed between the Philippines and the United States in close coordination with the Regional Office.

4.17 IATA supported the realignment of this route, noting that although IATA policy was not to increase route segment lengths, the operational advantages of the proposed Guam/Hong Kong routing included:

- reduced and simplified ATC co-ordination;
- although the track distance is slightly greater, this is off-set by reduced en route charges;
- increased opportunities for optimum flight profile in less busy airspace; and
- the sole user of the route had been consulted and had agreed to the change.

4.18 The meeting recognized that the implementation of this new Guam - Hong Kong route could proceed independently of the FLAS implementation. Accordingly, the meeting requested Philippines, United States and the Regional Office to proceed as soon as possible with this implementation, setting a target date of AIRAC 14 February 2008 for implementation.

State Assessments of Scenario 3 FLAS

Hong Kong China Update

4.19 Preliminary analysis by Hong Kong, China indicated support for the implementation of the Scenario 3 FLAS, as amended by the meeting, although considerable preparation would be necessary. This included risk assessment and safety case activities, revision of some internal routes and operating procedures within Hong Kong FIR and significant controller training.

4.20 Hong Kong China also provided a comprehensive briefing to the meeting in relation to a large number of ATS implementation activities that were occurring during the foreseeable future, including construction of new ATC buildings and facilities. A copy of the traffic statistics provided for the Hong Kong FIR is included as **Appendix D**.

Indonesia Update

4.21 Indonesia presented the meeting with the assessment of simulation of Scenario 3 operations within Ujung Pandang FIR as follows:

a) Safety

The changing from non standard levels to standard level based on Scenario 3 FLAS resulted in a positive impact to RVSM operations in Ujung Pandang FIR. Conflicts caused by assigning the same level for flights on reciprocal routes would be avoided because Scenario 3 harmonizes flight level arrangements between Kinabalu FIR, Manila FIR, Ujung Pandang FIR, Brisbane FIR and Port Moresby FIR, thus enhancing safety.

b) Capacity

Indonesia implemented the RVSM level band between FL310 and FL410 (inclusive) within exclusive RVSM airspace. FL300 can not be assigned for north west bound traffic on B462, B473, B472, R590 and A461. This limitation of level band meant reduced RVSM capacity.

Following discussion with ANSP Angkasa Pura I, the Indonesian DGCA had agreed to a proposal regarding amendment of the RVSM level band in Indonesia to become FL290 to FL410 inclusive. The views of operators will be collected by DGCA during the next ATM Open House in Surabaya on 13 November 2007.

c) Efficiency

Level changes due to potential conflicting traffic can be avoided and therefore more economic levels can be utilized.

d) ATC Workload

Controllers can easily memorize the Scenario 3 levels (i.e. using standard levels) instead of having to review the FLAS diagram before assigning every level. Use of non standard levels in the existing arrangements mean level changes are very frequent with associated ATC to ATC coordination. Controllers check and re-check the assigned levels many times to ensure accuracy and whether the assigned levels and level changes have been passed or not, as well as whether the pilot has been executed the instruction or not. Most of this work is removed by the use of Scenario 3, thus reducing ATC workload.

4.22 Indonesia supported the implementation of the revised FLAS and once implementation arrangements were confirmed by the WPAC/SCS RSG, Indonesia intended to proceed as follows:

a) Publication of revised FLAS by DGCA
b) Publication implementation RVSM level band between FL290 and FL410 by DGCA

c) Updating LOAs between Indonesia – Malaysia and Indonesia – Philippines
d) Deliver ATC training relating to revised FLAS.

Japan Update

4.23 As recorded elsewhere in this report, Japan supports the implementation of the new FLAS and will implement new routes and undertake transition activities to enable implementation.

Lao PDR Update

4.24 Lao PDR would not experience much effect from the implementation of the new FLAS, but would study the arrangements in order to identify and undertake any supporting arrangements necessary within the Vientiane FIR.

Malaysia Update

4.25 Malaysia provided summary information to the meeting as follows:

a) Safety assessments were conducted based on the Scenario 3 FLOS/FLAS. Assessment results show that there are no effects on the flight safety for aircraft departing from and into Malaysia airspace.

b) Based on the proposed FLOS there will be no reduction on the number of allocated flight levels on these particular routes and Malaysia expects there will be no decrease on the capacity and efficiency of flights. However, Malaysia expects an increase in controller workload. Flights arriving into Malaysian airspace under the new FLAS will be traffic in situations which previously were not in conflict. Close coordination between Malaysia, Indonesia and Singapore will have to be carried out.

c) Nevertheless, Malaysia supports the implementation of the new FLAS and would make arrangements with Indonesia to streamline traffic handling and reduce workload.

Philippines Update

4.26 As recorded elsewhere in this report and previous Scrutiny Group reports, the Philippines supports the implementation of the new FLAS and will implement new routes and undertake transition activities to enable implementation as soon as possible.

Singapore Update

4.27 Singapore provided the meeting with an assessment of the impact of the Scenario 3 FLAS on safety, efficiency and capacity within the Singapore FIR in the South China Sea area, and also provided up to date traffic movement statistics for review (**Appendix E** refers). The meeting was informed that simulations were conducted based on the proposed FLAS and the following outcomes were observed:

a) Safety

At the intersection points, a 1,000 feet vertical separation was assured for flights operating on the parallel and crossing routes using the proposed FLAS. Flight safety was not compromised.

b) Capacity

There was a reduction in airspace capacity for flights operating on ATS Routes M753 and N891. Currently, northbound flights operating on these two ATS Routes were allocated two levels, i.e. FL280 and FL310 for M753, FL310 and FL350 for N891, of which FL310 was the common flight level allocated for the 2 routes. In effect, there were 3 levels for the 2 routes.

However, in the proposed FLAS, two flight levels, i.e. FL300 and FL380 were allocated and shared for northbound flights operating on M753 and N891. Simulations showed that departing flights could be delayed on the ground or coordination would need to be effected with the adjacent ACCs to obtain a no-delay level for the departing flight. Therefore, it would increase the workload of controllers.

c) Efficiency

In the proposed FLAS, there was no decrease in efficiency as the same number of flight levels, i.e. 6 flight levels were made available for the parallel routes

d) ATC Workload

Transition activities were not eliminated or minimized in the proposed FLAS. Controllers would still need to carry out transition activities for flights operating between Singapore and Kuala Lumpur FIRs. There was no improvement in the transition workload for controllers.

4.28 The meeting thanked Singapore for the feedback in respect to the Scenario 3 proposal, noting that the capacity constraints described at paragraph 4.27 b) above presented an area of concern for Singapore. In this respect, discussions between Malaysia, Singapore, Vietnam and IATA agreed that FL260 would be included as a No- PDC level for routes M753 and N891 on the basis that FL260 and was only one of the three No-PDC levels available and that coordination would be undertaken to make a higher level available as soon as possible after departure. The meeting also agreed that the arrangement would be revisited during the 90 day review meeting and would be subject to continual review with the objective of increasing capacity.

4.29 Singapore was agreeable to the proposed FLAS implementation as it would benefit the region as a whole, and supported the June 2008 implementation date.

Thailand Update

4.30 Thailand described a number of positive operational outcomes as a result of the imminent implementation of RVSM in China. Also, they have prepared a draft LOA amendment between the Bangkok and the Vientiane ACCs that, amongst other things, includes provision for the management and reporting of LHD.

4.31 In relation to the implementation of the new FLAS, all studies and simulations undertaken by Thailand had shown very positive outcomes. A number of transition areas had been eliminated, ATC workload had decreased and flexibility had increased. Thailand considered that the No PDC assignments prepared by the Scrutiny Group were safe and expeditious for their operations. Thailand strongly supported the implementation of the new FLAS and considered that an implementation that was sooner rather than later would be the best outcome. However, noting the complexities for the other States involved in the implementation, Thailand had no objection to a June 2008 implementation.

United States Update

4.32 The United States would be marginally affected by the proposed changes but, in recognizing the overall system benefits of implementing the new FLAS, supported the changes. They would continue to work closely with the Scrutiny Group and would take action, in coordination with affected States, to implement the new Guam - Hong Kong route and realign the FIR boundary with Indonesia and the Philippines.

Viet Nam Update

4.33 In relation and to the management of LHD between Viet Nam and the Philippines, Viet Nam proposed that both States undertake improvement works to the ground-ground communications networks to overcome existing infrastructure interface difficulties. The two States would coordinate this matter.

4.34 Viet Nam expressed support for the implementation of the new FLAS. Studies of the Scenario 3 FLAS undertaken by Viet Nam highlighted an increase in capacity in Viet Nam's airspace and the elimination of a number of transitions with resulting reduction in controller workload. Viet Nam's studies had highlighted advantages on transition activities and large scale weather deviations and had demonstrated that safety was not compromised. Viet Nam would support an implementation in June 2008.

4.35 Viet Nam highlighted that the implementation of the new FLAS would be complex because of the number of parties involved and they considered that the implementation would be of similar complexity to an RVSM implementation. Viet Nam urged the Scrutiny Group to make thorough preparations for implementation.

4.36 Viet Nam also proposed a further alignment of the proposed Large Scale Weather Deviation FLAS with the existing LSWD. This proposal was agreed by the meeting and amendments were incorporated to the LSWD, as shown at Appendix F.

4.37 Subsequent to the close of the meeting, Viet Nam advised the Regional Office that the No-PDC levels agreed by the Scrutiny Group for ATS route A202 (Appendix F refers) will be implemented on 22 November 2007. From 22 November 2007, the CAAV will implement a single alternate FLOS to replace the modified single alternate FLOS in the Hanoi FIR and will adopt the No–PDC levels at this time. Operational LOAs have been agreed with relevant ACCs to support this implementation.

IFATCA Update

4.38 IFATCA was very pleased to see the positive outcomes from the Scrutiny Group. States and Organizations had come a long way in addressing the concerns of IFATCA in relation to WPAC/SCS operations. In noting that there was still work to be done including a significant amount of controller training, IFATCA considered that the implementation of the new FLAS would bring many benefits but, in a way, would be a change of similar magnitude to that of a change from CVSM to RVSM operations. As such, much care should be taken with the implementation. IFATCA was pleased to be involved with the Scrutiny Group and would continue to offer assistance as required.

IFALPA Update

4.39 IFALPA had no comment from IFALPA members.

IATA Update

4.40 IATA reiterated their position that any change in the WPAC/SC FLAS should be systemically beneficial and preferably should show an increase in safety of operations and airspace capacity. IATA was pleased to hear the outcomes of the studies by States and noted the many advantages and benefits that had been expressed by ANSPs. These included reductions in complexity and ATC workload resulting in likely safety benefits without overtly compromising airspace capacity or efficiency. On this basis IATA was able to support the implementation of the new FLAS.

4.41 IATA expressed appreciation for the efforts by States and applauded the positive interactions demonstrated by the States involved in this complex project. They considered that a comparative document that describes the differences between the 'old' FLAS and the 'new' FLAS would be beneficial in readily demonstrating the advantages of the new arrangements. A comparative document highlighting the changes in available flight levels and reduction in transition areas will be prepared by the Secretariat for review by the RSG/4 meeting in February 2008**.**

Agenda Item 5: Safety Analysis and Airspace Monitoring Issues

Safety Assessment of FLOS Changes

5.1 The meeting recalled that WPAC/SCS RSG/2 had recognised that, in accordance with ICAO's safety management provisions in Annex 11 – *Air Traffic Services*, detailed safety assessments would need to be carried out by the States concerned. Also, MAAR would be required to undertake a safety assessment of the proposed FLOS for RVSM operations.

5.2 In this context, the meeting thanked MAAR for their excellent work in conducting the RVSM oversight safety assessment as described above. The meeting was pleased to note the continued positive trend towards the TLS in the safety performance of this airspace and, although the results were still above the TLS, the positive trend was expected to continue and therefore the TLS would be met in due course.

5.3 Importantly, there was no evidence in the MAAR assessment of the Scenario 3 FLAS that would preclude, on a safety basis, the implementation of the new FLAS. This situation was supported by the respective safety assessments that had been conducted by States, as reported above and elsewhere in this report. Accordingly, the meeting agreed that it would be safe to proceed with a managed implementation of the new FLAS arrangements.

Agenda Item 6: Future direction and arrangements

6.1 The meeting recognized that a number of agreements had been reached, as follows:

Realignment of R596

6.2 ATS route R596 between Guam and Hong Kong would be decommissioned and replaced by new RNP10 ATS route M501 to the south of the existing route. This change would reduce complexity at the FIR boundaries between Japan, Philippines, Taipei and the United States and was also anticipated to assist in the reduction of LHD events. As the introduction of this route could be undertaken independently of the FLAS implementation, M501 would be implemented by normal AIP supplement process with target date of AIRAC 14 February 2008.

6.3 The Philippines and the United States would coordinate closely with the Regional Office to identify the final coordinates for the new route and they would submit a joint amendment proposal to the Regional Office in due course.

Extension of N884

6.4 Implementation of a new ATS route between LBG and YURIX as an extension of N884 would reduce complexity at the Philippines/Japan FIR boundary and would directly assist in reducing LHD occurrences in this area.

6.5 Japan and the Philippines would work closely with the Regional Office to identify the final coordinates for the new route and would submit a joint amendment proposal to the Regional Office in due course. As this route extension was integral to the operation of the new FLAS, the meeting recognised that the implementation should occur at the same time as the FLAS implementation. Accordingly, the meeting agreed to a target date of AIRAC 5 June 2008, concurrent with the FLAS implementation, and the N884 extension would be implemented by normal AIP supplement process.

'Go' Decision - Implementation of Revised FLAS for WPAC/SCS

6.6 Recognizing that no safety issues had been identified by the safety analyses conducted by any of the affected States or MAAR, a number of systemic benefits would result, consensus between all affected States had been reached and ICAO Regional Office and IATA supported the implementation, the meeting took a 'Go' decision for the implementation of the new FLAS in the WPAC/SCS area. Taking into account the implementation complexities expressed by States, the meeting set a target date of AIRAC 5 June 2008 to implement the final version of the WPAC/SCS FLAS as shown at **Appendix F.**

6.7 The meeting noted the strong concerns expressed by Hong Kong, China as to their likely inability to meet this date and the strong preference for an implementation on AIRAC 3 July. Although recognising the genuine concerns of Hong Kong, China in relation to their significant workload in managing a number of other ATS changes over the next half year, the meeting also recognized the many benefits that would accrue from the early implementation of the new FLAS in the WPAC/SCS area. Accordingly, the meeting encouraged Hong Kong, China to make every effort to achieve the June implementation date.

6.8 An important step in the implementation of the new FLAS was to ensure that all affected States and operators were made aware of the changes well in advance. In this context, the meeting agreed that an implementation strategy using an AIP Supplement was necessary. The AIP supplement would serve as the primary implementation document and would ensure standardization in State operational preparations. Publication of an AIP supplement also enabled operators and providers of aeronautical navigation/charting products adequate time to prepare for this complex change.

6.9 The Regional Office would prepare a preliminary draft of the AIP Supplement and circulate by email for comment. This would ensure that an advanced draft of the model AIP Supplement was available for final adoption by the February 2008 meeting of the Scrutiny Group.

6.10 All participants at the meeting were urged to continue a thorough review of all aspects of the new FLAS implementation, including operational and safety issues. The WPAC/SCS RSG/4 meeting in February 2008 would provide an opportunity to 'fine tune' the implementation arrangements if necessary.

Agenda Item 7: Update WPAC/SCS RSG Task List

7.1 In reviewing the WPAC/SCS RSG task list, the meeting was apprised of the status of items considered complete and suitable for closure as well as those remaining open, noting the progress that had been made. The meeting agreed that the updated task list included as **Appendix G** accurately reflected the work programme of the WPAC/SCS RSG.

Agenda Item 8: Any Other business

Review of the 32nd Meeting of the RVSM Implementation Task Force (RVSM/TF/32)

8.1 The meeting reviewed the outcomes of RVSM/TF/32 (September 2007, Beijing), noting that a 'Go' decision had been taken to implement RVSM throughout China's airspace from 22 November 2008. The China RVSM would use the east odds, west evens plus 100 feet FLOS and transition areas would be required at the interface with China airspace

Review of WPAC/SCS RSG/2

8.2 The meeting reviewed the outcomes of WPAC/SCS RSG/2 (June 2007, Bangkok) The meeting recalled that all participants at WAPC/SCS RSG/2 were urged to conduct a thorough review of all aspects of the Scenario 3 proposal, including operational and safety issues. WPAC/SCS RSG/3 would conduct a comprehensive review of the Scenario 3 FLAS based on State submissions, with a view to making a "Go/No Go" decision in relation to formal implementation of the Scenario 3 FLAS.

RVSM Operation within the Vientiane FIR

8.3 Lao PDR informed the meeting that the implementation of RVSM within the Vientiane FIR had been initiated since October 2002, with a responsibility for the various transition areas which were being carried out on the basis of single alternate FLAS.

8.4 The meeting noted that LHD occurrences seldom occurred for the transition from modified single alternate FLAS to the single alternate FLAS due to short distance of route segment. The transition procedures were applied to westbound traffic only and seven transition areas were established.

8.5 Two new transition areas had been established in the Vientiane FIR since 4 August 2006. The airspace capacity was increased to a greater number of flight levels especially for the westbound traffic. Lao PDR was of view that the Letter of Agreement (LOA) between Vientiane and Myanmar should be revised. The pending implementation of RVSM in China's airspace would provide the opportunity to update operational LOAs.

Realignment of Oakland, Manila, Ujung Pandang FIR Boundary

8.6 Indonesia, Philippines, and the United States reached in-principle agreement for the realignment of the complex joint FIR boundary in the vicinity of position N0400 E13220. The affected States would continue discussions and, once a new boundary was formally agreed, would raise a joint BANP amendment proposal for processing via the Regional Office.

Agenda Item 9: Date and venue of the WPAC/SCS RSG/4 meeting

9.1 The meeting acknowledged that in order to prepare a model AIP Supplement and finalize arrangements for the implementation of the new FLAS in June 2008, an additional meeting of the Scrutiny Group in early 2008 would be necessary. Accordingly, the Regional Office allocated a 4-day period from 26 – 29 February 2008 for the RSG/4 meeting and would make arrangements accordingly. The meeting would be held at the ICAO Regional Office premises in Bangkok.

10. Closing Remarks

Chairman

10.1 The Chairman expressed his thanks to the members of the WPAC/SC SRSG for their participation and commitment to working through difficult issues in order to achieve the goals set forth for the third meeting. Once again the work of the group has resulted in positive steps towards resolving the issues surrounding the previous inability to meet the TLS for RVSM. It was noted that if the current trend continues, that the TLS will be reached by the next meeting. This is an outstanding achievement, especially considering that the RSG first met only 9 months ago. Adding that to the fact that there is now an agreed FLAS and implementation date, the RSG has certainly surpassed any expectations.

10.2 Even though we are enjoying many successes there is still work to be done. The number one causal factor for LHDs continues to be “controller to controller” coordination; mainly the lack of revision altitudes after the initial transfer coordination has occurred. With this in mind, the Chairman asked the members to continue to look closely at the causal factors of the LHDs with particular attention to the timing of transfer coordination between ANSPs to ensure that this coordination is not occurring to soon.

10.3 The Chairman wished to express his sincere thanks to JCAB for taking the lead in establishing the East Asia ATM Coordination Group (EATMCG). The Chairman also acknowledged the efforts of IFATCA in assisting in the coordination/facilitation of several meetings which support the RSG efforts. The efforts of all the States and organizations involved have had a direct and positive impact on the efforts of the WPAC/SCS RSG.

10.4 The Chairman thanked the Secretariat for their invaluable support which is a significant contributor to the overall progress that the WPAC/SCS RSG is achieving. The Chairman also thanked the Asia/Pacific Office for providing such a wonderful forum for the meeting which is also important to achieving results.

Secretariat

10.5 In closing the meeting, Mr. Tiede also highlighted that the many positive interactions between States had led to the very positive outcomes in the work of the Scrutiny Group. Strategies implemented by States for the management of LHDs were already having an effect and this resulted in very positive trends in safety performance that were expected to ensure the regional TLS was met in the foreseeable future. Implementation of the new routes and revised FLAS would lead to a number of systemic improvements in WPAC/SCS RVSM operations.

10.6 Mr. Tiede thanked the United States FAA for their ongoing support of the Scrutiny Group. The availability of Mr. Maynard as Chairman was very valuable in the work processes of the group and had measurably assisted the excellent progress made so far. He thanked Mr. Maynard for his professional efforts over the last few days and wished all participants a safe trip home.

LIST OF PARTICIPANTS

STATE/NAME	DESIGNATION/ADDRESS	TEL/FAX/E-MAIL
HONG KONG, CHINA		
Mr. Lucius Fan	Senior Safety and Quality Officer (Enroute) Air Traffic Management Division Civil Aviation Department 4/F, Air Traffic Control Complex Hong Kong International Airport Lantau Hong Kong, China	Tel: 852-2910 6448 Fax: 852-2910 0186 E-mail: lwcfan@cad.gov.hk
INDONESIA		
Mr. Tavip Wibowo	Senior Staff of ATS Head Office PT. Angkasa Pura I Kota Baru Bandar Kemayoran Blok B-12 Kav. No.2 Jakarta 10610 Indonesia	Tel: 62-21-6541961 Fax: 62-21-65866838 E-mail: tavip@angkasapura1.co.id tavipwibowo@yahoo.com
JAPAN		
Mr. Natsuki Ibe	Chief, Operations Section Air Traffic Control Division JCAB 2-1-3 Kasumigaseki, Chiyoda-ku Tokyo 100-8918 Japan	Tel: 81-3-5253-8749 Fax: 81-3-5253-1314 E-mail: ibe-n2z7@mlit.go.jp
LAO PDR		
Mr. Bountaeng Symoon	Chief ACC Lao Airports Authority Wattay International Airport P.O. Box 3175, Vientiane Lao PDR	Tel: 856-21-512006 Fax: 856-21-512216 E-mail: bountaeng@yahoo.com
Mr. Phouthone Phrakaysone	Deputy Director of Air Navigation Division Department of Civil Aviation Wattay International Airport P.O. Box 119, Vientiane Lao PDR	Tel: 856-21-512164 Fax: 856-21-520237
MALAYSIA		
Mr. Thayalan Simon	Air Traffic Control Officer, KL ATCC Department of Civil Aviation Sultan Abdul Aziz Shah Airport 47200 Subang Malaysia	Tel: 603-78473573 Fax: 603-78473572 E-mail: tsimon62@streamyx.com
PHILIPPINES		
Mr. Michael E. Mapanao	Chief Manila Area Control Center Manila Area Control Center Air Transportation Office MIA Pasay City Metro Manila Philippines	Tel: 632 851 0639 Fax: 632 8510 639 E-mail: mikeecho905@yahoo.com

STATE/NAME	DESIGNATION/ADDRESS	TEL/FAX/E-MAIL
Mr. Herminio A. Dario, Jr.	Supervising Air Traffic Controller, Air Traffic Service Air Transportation Office MIA Pasay City Metro Manila Philippines	Tel: 632 8799168 Fax: 632 8799168
SINGAPORE		
Mr. Lim Kim Chuan Sebastian	Chief Singapore Air Traffic Control Centre Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: 65-6541 2430 Fax: 65-6545 6252 E-mail: sebastian_lim@caas.gov.sg
Mr. Heng Cher Sian Edmund	Project Officer (Air Traffic Management) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: 65-6541 2457 Fax: 65-6545 6516 E-mail: edmund_heng@caas.gov.sg
Mr. Ying Weng Kit	Air Traffic Control Officer Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: 65-6541 2686 Fax: 65-6545 6252
THAILAND		
Mr. Weerawath Thaitakul	Senior Air Transport Technical Officer Airport Standards and Air Navigation Facilitating Division Department of Civil Aviation 71 Soi Ngarmduplee, Rama IV Rd Bangkok 10120, Thailand	Tel: 66-2-2862909 Fax: 66-2-2868159
Mr. Tinnagorn Choowong	Director, Air Traffic Management Centre Aeronautical Radio of Thailand Ltd. 102 Ngarmduplee, Tungmahamek Sathorn, Bangkok 10120 Thailand	Tel: 66-2-287 8780 Fax: 66-2-287 8424 E-mail: tinnagorn.ch@aerothai.co.th
Dr. Paisit Herabut	Engineering Manager Aeronautical Radio of Thailand Ltd. 102 Soi Ngarmduplee Tungmahamek, Sathorn Bangkok 10120, Thailand	Tel: 66-2-285 9191 Fax: 66-2-285 9716 E-mail: paisit@aerothai.co.th
Mr. Nuttakajorn Yanpirat	Executive Officer, Systems Engineering Aeronautical Radio of Thailand Ltd. 102 Ngamduplee Thungmahamek, Sathorn Bangkok 10120, Thailand	Tel: 66-2-287 8268 Fax: 66-2-285 9716 E-mail: nuttakajorn.ya@aerothai.co.th
Capt. Apiluk Permpol	Deputy Manager International Aviation Affairs and Development Operations Support Department Thai Airways International Public Co., Ltd. 89 Vibhavadi Rangsit Rd Bangkok 10900, Thailand	Tel: 66-2-545 2665 Fax: 66-2-545 3849 E-mail: apiluk.p@thaiairways.com

STATE/NAME	DESIGNATION/ADDRESS	TEL/FAX/E-MAIL
Mr. Weerapan Meewannasukkul	First Officer/Flight Operation Training Bangkok Airways Company Limited 99 Moo 14, Vibhavadi Rangsit Rd Chatuchak, Bangkok 10900 Thailand	Tel: 66-8-17393300 E-mail: weerapan@bangkokair.com
Mr. Pairat Wonganan	Flight Dispatch Manager Bangkok Airways Company Limited 99 Moo 14, Vibhavadi Rangsit Rd Chatuchak, Bangkok 10900 Thailand	Tel: 66-2-328 3353 Fax: 66-2-325 0664 E-mail: pairat@bangkokair.com
UNITED STATES		
Mr. Dan Hanlon	ATO Representative, Asia Pacific Region US Federal Aviation Administration American Embassy Singapore 27 Napier Road Singapore 258508	Tel: 65-6543 1466 E-mail: dan.hanlon@faa.gov
Mr. David M. Maynard	Manager, Oceanic and Offshore Operations U.S. Federal Aviation Administration 800 Independence Ave. S.W. Washington, D.C. 20591 U.S.A.	Tel: 1-202-267 3448 Fax: 1-202-493 4403 E-mail: david.maynard@faa.gov
VIETNAM		
Mr. Nguyen The Hung	Manager ATM-AIS Section/Air Navigation Dept Civil Aviation Administration of Viet Nam 119 Nguyen Son Long Bien District Hanoi The Socialist Republic of Viet Nam	Tel: 84-4-8723600 Fax: 84-4-8274194 E-mail: hungand@caa.gov.vn hungand_caav@yahoo.com
Mr. Ngo The Vinh	ATS Officer ATS-AIS Division Vietnam Air Traffic Management Civil Aviation Administration of Viet Nam The Socialist Republic of Viet Nam	Tel: 84-4-8730320 Fax: 84-4-8725281 E-mail: ngothevinh71@vnn.vn
Mr. Nguyen Manh Kien	ATC Instructor of NORAT Vietnam Air Traffic Management Civil Aviation Administration of Viet Nam The Socialist Republic of Viet Nam	Tel: 84-48865352 Fax: 84-48866185 E-mail: banlchongluu@yahoo.com.vn
Mr. Dang Dang Van	ATC Instructor of SORAT ATS Southern Regional Centre Vietnam Air Traffic Management Civil Aviation Administration of Viet Nam Ho Chi Minh City The Socialist Republic of Viet Nam	Tel: 84-8-8457152 Fax: 84-8-8443774 E-mail: phanthanhats@hcm.vnn.vn atc_hcm@hcm.fpt.vn
IATA		
Mr. Soon Boon Hai	Assistant Director – Safety Operations & Infrastructure – Asia/Pacific International Air Transport Association 77 Robinson Road #05-00 SIA Building Singapore 068896	Tel: 65-6239 7267 Fax: 65-6536 6267 E-mail: soonbh@iata.org

STATE/NAME	DESIGNATION/ADDRESS	TEL/FAX/E-MAIL
Capt. Aric Oh	Deputy Chief Pilot (Technical) Singapore Airlines Limited Flight Operations Technical SIA Training Centre, SIN-STC-04C 720 Upper Changi Road East Singapore 486852	Tel : 65-6540 3694 Fax : 65-6543 4053 E-mail: aric_oh@singaporeair.com.sg
Mr. Owen Dell	Manager International Operations Cathay Pacific Airways Limited International Affairs Department 9/F Central Tower, Cathay Pacific City 8 Scenic Road Hong Kong International Airport Lantau, Hong Kong, China	Tel : 852 2747 8829 Fax : 852 2141 8829 E-mail: owen_dell@cathaypacific.com
Mr. Yusuke Chaki	Assistant Manager Operations Standards Section Nippon Cargo Airlines Co., Ltd. NCA Global Operations Center Narita International Airport Terminal 2 Narita-shi, Chiba 282-0004 Japan	Tel : 81-476-32 9739 Fax : 81-476-32 9788 E-mail: yusuke.chaki@nca.aero
IFALPA		
Capt. Koichi Sano	IFALPA Representative 3-2-11 Higiriyama, Konan-Ku Yokohama 2330015 Japan	Tel: 81-45-845 2154 Fax: 81-45-845 2154 E-mail: sano-koichi@alpajapan.org
IFATCA		
Mr. David Cheung	IFATCA Representative 3C, T3, Hillsborough Court 18 Old Peak Road Hong Kong, China	Tel: 852-9303 9921 Fax: 852-2868 3868 E-mail: dkwcheung@cad.gov.hk
ICAO		
Mr. Andrew Tiede	Regional Officer, ATM ICAO Asia & Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak Bangkok 10900 Thailand	Tel: 66-2-537 8189 ext 152 Fax: 66-2-537 8199 E-mail: atiede@bangkok.icao.int
Mr. Kyotaro Harano	Regional Officer, ATM ICAO Asia & Pacific Office 252/1 Vibhavadi Rangsit Road Chatuchak Bangkok 10900 Thailand	Tel: 66-2-537 8189 ext 159 Fax: 66-2-537 8199 E-mail: kharano@bangkok.icao.int

---

LIST OF WORKING PAPERS (WPs) AND INFORMATION PAPERS (IPs)

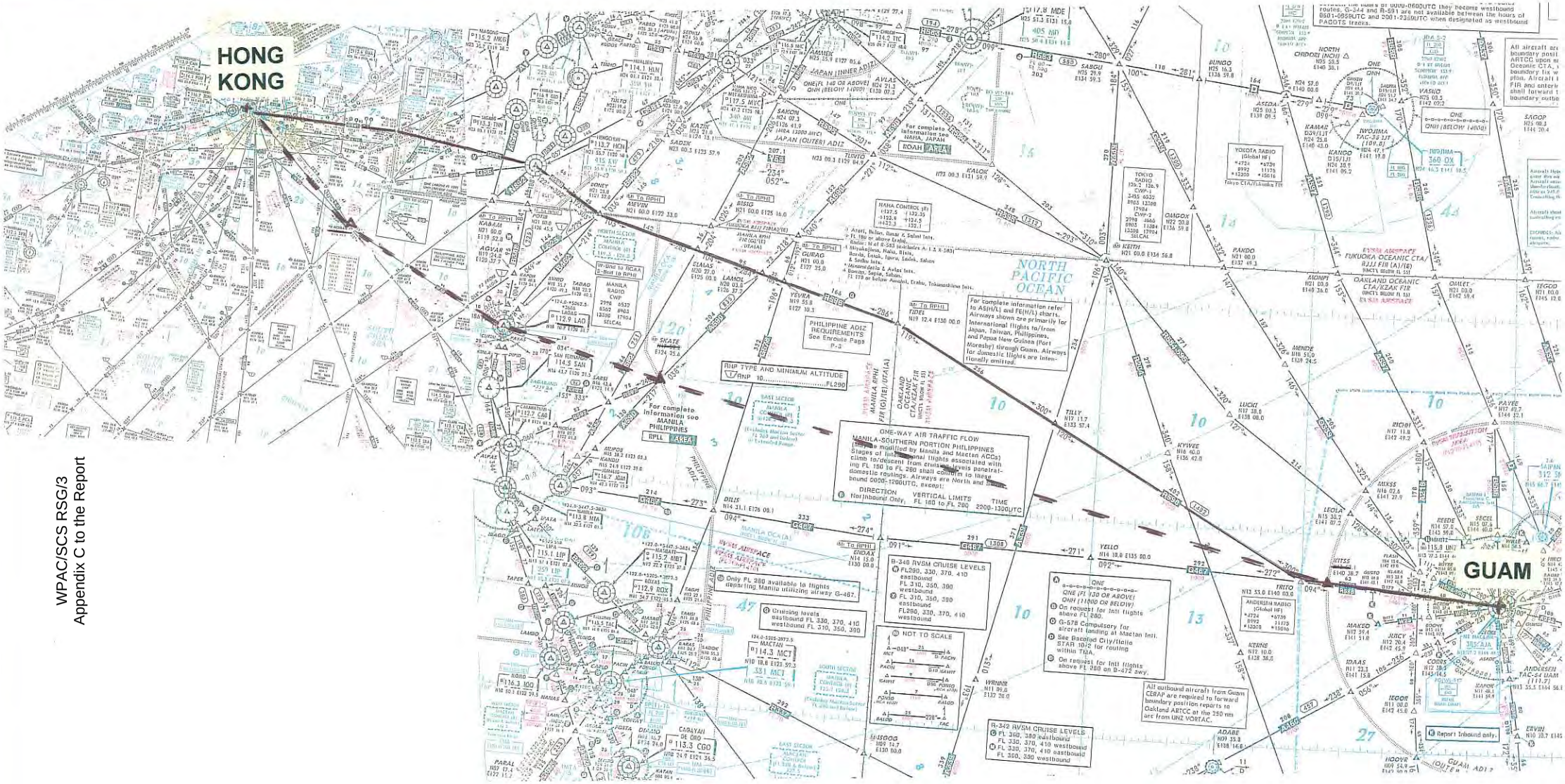
WORKING PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
WP/1	1	Provisional Agenda for WPAC/SCS RSG/3	Secretariat
WP/2	4	Outcomes of the Discussion on the New FLAS in the Fukuoka, Manila and Taipei FIR	Japan
WP/3	8	Update Task List from WPAC/SCS RSG	Secretariat
WP/4	4	Proposed Establishment of RNAV Route LBG-CAB-LEBIX, Decommissioning of ATS Route R596 and Establishment of ATS Route 16N130E-SKATE-LAO-NOMAN	Philippines
WP/5	4	Study on Flight Level Allocation Scheme (FLAS) in Singapore FIR for Scenario 3	Singapore
WP/6	4	Summary of the Airspace Safety Review for the Scenario 3 RVSM FLOS/FLAS in the Western Pacific/South China Sea (WPAC/SCS) RVSM Airspace	MAAR
WP/7	4	Proposed Replacement of ATS Route R596	IFATCA
WP/8	4	Assessment of Simulation of Scenario 3 FLOS within Ujung Pandang FIR	Indonesia

INFORMATION PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
IP/1	-	List of Working Papers (WPs) and Information Papers (IPs)	Secretariat
IP/2	9	RVSM Operation within the Vientiane FIR	Lao PDR
IP/3	9	Review of the 32nd Meeting of the RVSM Implementation Task Force	Secretariat
IP/4	9	Review of the Second Meeting of the Western Pacific/South China Sea RVSM Scrutiny Group (WPAC/SCS RSG/2)	Secretariat

……

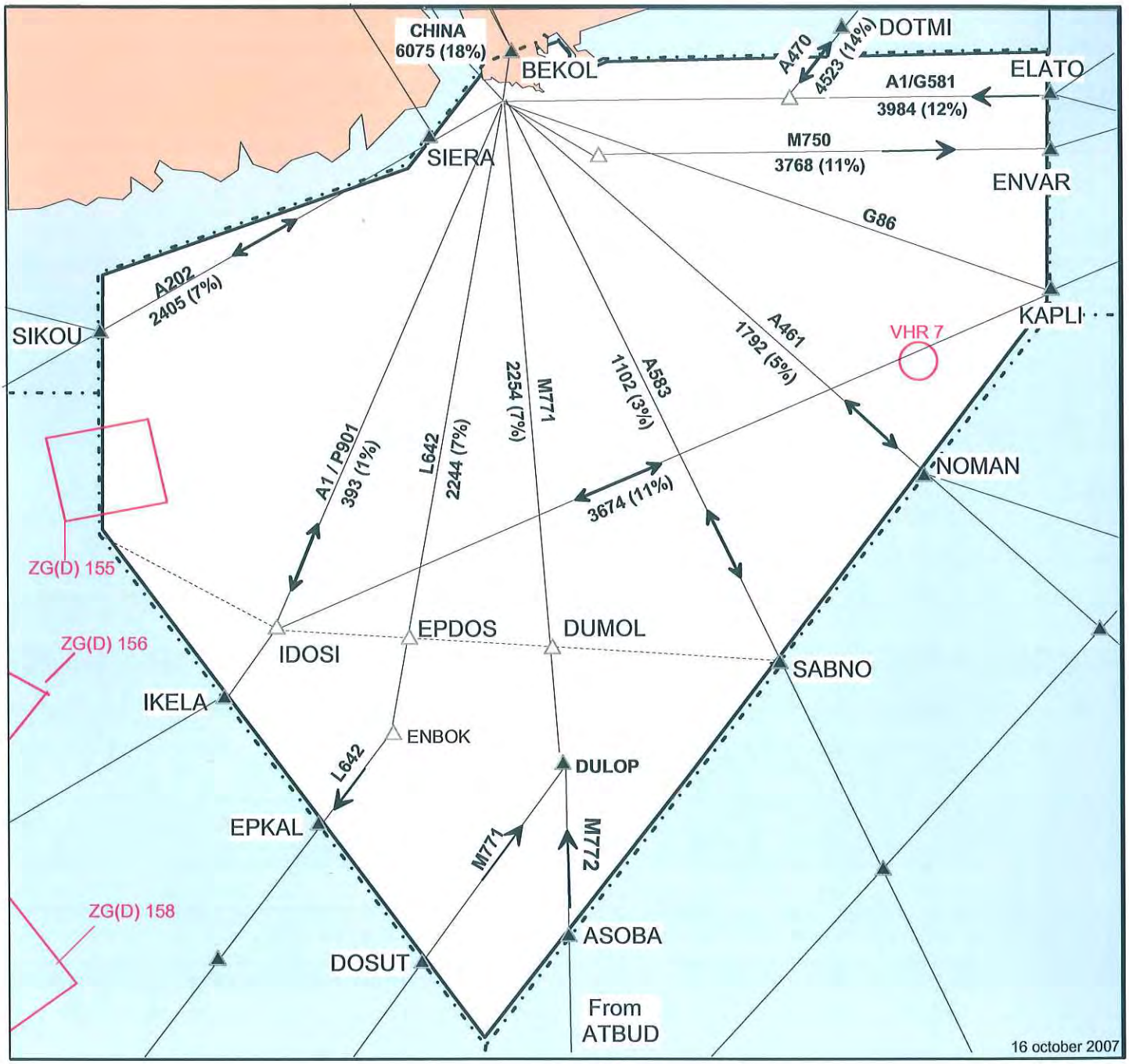


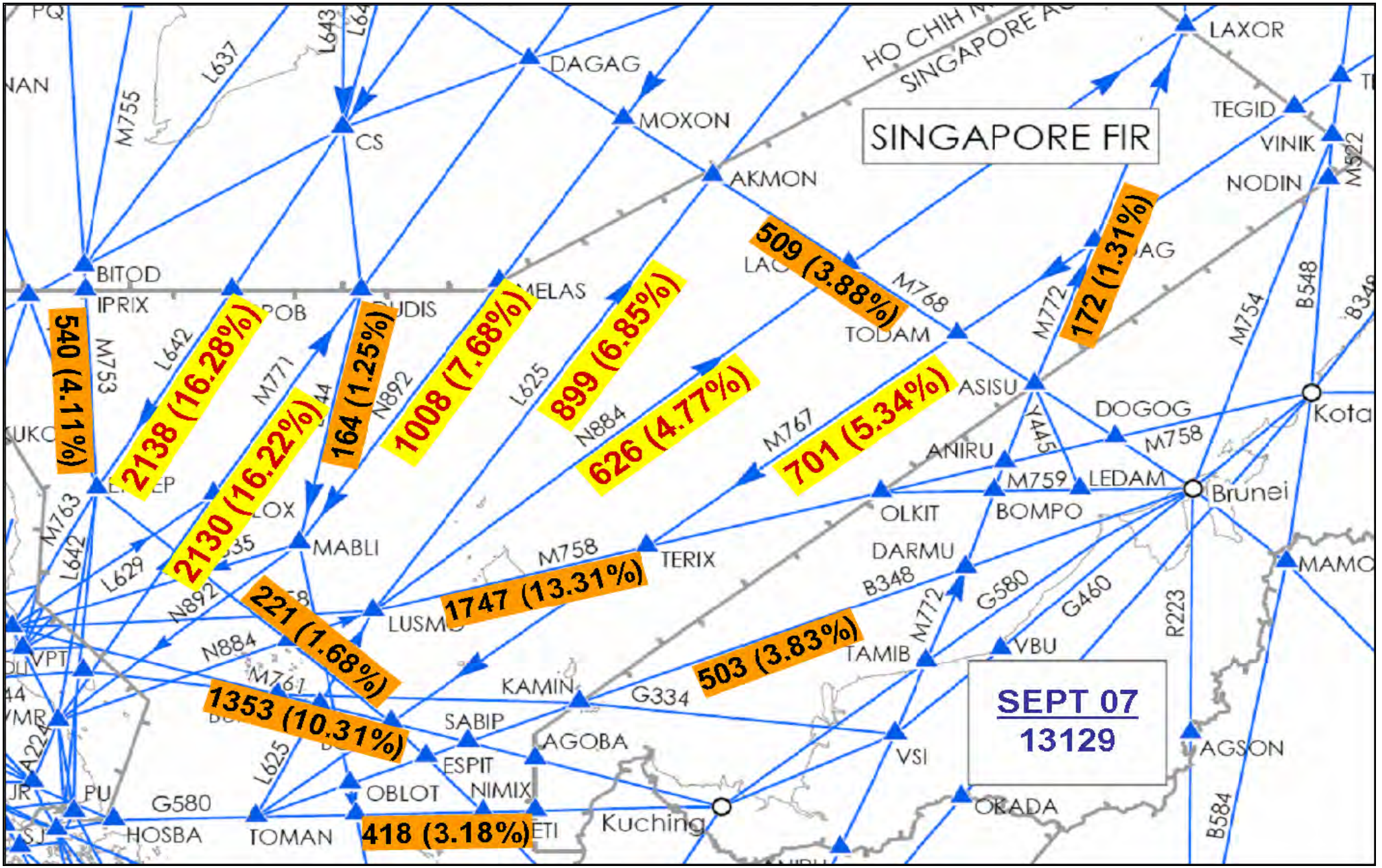
GUAM / HONG KONG ROUTE

——— Current R596 Route

- - - - - - Proposed New Route

Hong Kong FIR - Traffic Survey August 2007




SINGAPORE FIR
SEPT 07
13129
540 (4.11%)
2138 (16.28%)
2130 (16.22%)
164 (1.25%)
1008 (7.68%)
899 (6.85%)
626 (4.77%)
509 (3.88%)
701 (5.34%)
172 (1.31%)
1747 (13.31%)
221 (1.68%)
1353 (10.31%)
503 (3.83%)
418 (3.18%)
BITOD
IPRIX
CS
DAGAG
MOXON
AKMON
MELAS
TODAM
LAXOR
TEGID
VINIK
NODIN
ASISU
DOGOG
ANIRU
OLKIT
BOMPO
LEDAM
Brunei
Kota
MABLI
TERIX
LUSMU
DARMU
TAMIB
VBU
KAMIN
SABIP
AGOBA
ESPIT
NIMIX
OBLOT
ETI
VSI
ORADA
AGSON
MAMO
Kuching
HOSBA
TOMAN
PU
M755
L637
M753
L642
M771
N892
L625
N884
M768
M772
M754
B548
M767
M758
M759
Y445
M763
L629
B348
G580
G460
R223
M761
G334
L625
B584

ICAO WPAC/SCS RVSM Scrutiny Working Group

Flight Level Allocation Scheme (FLAS) for Western Pacific/South China Sea Area (WPAC/SCS) – target date for implementation AIRAC 5 June 2008

Route	No-Pre-Departure Coordination (No-PDC) Flight Levels. *Other levels available with prior approval*	Flight Information Regions	Transition
L642 M771 N892 L625	Eastbound (EB) & Westbound (WB) FL 310, 320, 350, 360, 390, 400	Hong Kong, Sanya, Ho Chi Minh, Manila, Singapore, Taipei	For L642, L625 (refer B348 & B462 below) & M771 – NIL
			For N892 -**Taipei ACC** from FL 300, 340, 380 to FL 310, 350, 390 before KABAM
L628	EB – FL 330, 370, 410 WB – FL 280, 340	Manila, Ho Chi Minh	NIL
N500	EB – FL 330 WB – FL 300	Manila, Ho Chi Minh	NIL
M765	EB – FL 290, 370, WB – FL 280, 340	Kuala Lumpur, Manila, Ho Chi Minh	NIL
M768	EB – FL 270, 330, 410 WB – FL 300, 380	Singapore, Ho Chi Minh, Kota Kinabalu	NIL
M753 M755	Northbound (NB) & Southbound (SB) NB – FL 260, 300, 380 SB – FL 270, 330	Singapore, Ho Chi Minh, Phnom Penh	NIL
L644	SB - FL 330, 410	Singapore, Ho Chi Minh	NIL
N891	NB – FL 260, 300, 380 SB – FL 330, 390	Singapore, Ho Chi Minh Kuala Lumpur	NIL
A1/P901	EB – FL 290, 330, 370, 390, 410 WB – FL 280, 300, 340, 380, 400	Hong Kong, Sanya, Ho Chi Minh, Bangkok, Vientiane	NIL
A202	EB – FL 290, 330, 370, 390, 410 WB – FL 280, 300, 340, 380, 400 ***Note: To be implemented 22 Nov 2007***	Hong Kong, Sanya, Hanoi, Bangkok, Vientiane	NIL

Route	No-Pre-Departure Coordination (No-PDC) Flight Levels. ***Other levels available with prior approval***	Flight Information Regions	Transition
N884	FL 310, 320, 350, 360, 390, 400	Singapore, Manila, Fukuoka	**Manila ACC** from FL 320, 360, 400 to odd levels after LBG on A590 or after LBG on extension of N884 LBG-CAB-LEBIX-YURIX *(to be implemented)*
M767		Manila, Singapore	**Manila ACC** from FL300, 340, 380 to FL 310, 350, 390 after TOKON on A582 or after TOKON on A590
A341	EB – FL 310, 370 WB – FL 320, 360, 400	Kota Kinabalu, Manila	NIL
M754	NB – FL 300, 340, 380 SB – FL 290, 330, 370, 410	Kota Kinabalu, Manila, Singapore	NIL
A461,R590 B472,B473 B462	EB – FL 290, 330, 370, 410 WB – FL 300, 340, 380	Hong Kong, Manila, Ujung Pandang	NIL
A339	EB – FL 310, 350, 390 WB – FL 320, 360, 400	Ujung Pandang, Manila	NIL
G578	EB – FL 350, 390 WB – FL 320, 360, 400	Ujung Pandang, Manila	NIL
B583	EB- FL 290, 330, 370, 410 WB- FL 300, 340, 380	Kota Kinabalu. Ujung Pandang	NIL
B348	EB – FL 310, 350, 390 WB- FL 320, 360, 400	Kota Kinabalu, Manila	NIL
M772	FL - 300, 340 until ANIPU, 380	Jakarta, Kota Kinabalu, Manila, Singapore, Hong Kong	NIL
B584	EB – FL 310, 350, 390 WB – FL 320**,** 360, 400	Kota Kinabalu, Ujung Padang	NIL
B462/L625	NB- FL 310, 320, 350, 360, 390, 400 SB – FL 300, 340, 380	Manila, Fukuoka	For B462 – **Naha ACC** from FL 320, 360, 400 to odd levels after MEVIN
B348/L625	NB – FL *290** 310, 320, 350, 360, 390, 400 SB – FL 300, 340 380 ***Note:** FL290 only for landing Taipei FIR*	Manila, Taipei	**Manila ACC** from FL 320, 360, 400 to odd levels by POTIB, or FL290 only for landing Taipei FIR
A583	EB – FL 290, 330, 370, 410 WB – FL300, 340, 380	Hong Kong, Manila	NIL

FLAS for Large Scale Weather Deviations (LSWD) in Western Pacific/South China Sea area

as applicable by

Fukuoka ATMC, Ho Chi Minh, Hong Kong, Manila, Naha, Sanya, Singapore and Taipei ACCs

Flight Level Allocation (LSWD)	ATS Route and Direction of Flight									
	N892	**L625**	**N884**	**M767**	**A582/B462**		**A590**		**L642**	**M771**
	SW	NE	NE	SW	E	W	E	W	SW	NE
410					410					
400	400			400				400	400	
390		390	390				390			390
380						380				
370					370					
360	360			360				360	360	
350		350	350				350			350
340						340				
330					330					
320	320			320				320	320	
310		310	310				310			310
300						300				
290					290					

WPAC/SCS RSG — TASK LIST

(last updated 2 November, 2007)

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~**1/2**~~	~~States neighbouring the Philippines consider possible ways to undertake flight level transition tasks on behalf of Philippines.~~	~~WPAC/SCS RSG/3~~	~~Philippines, Neighbour States to Philippines~~	~~Open~~ **~~Completed~~**	~~Revised FLAS and transition areas agreed for implementation~~
~~**1/3**~~	~~Urgently review and implement amended FLOS/FLAS arrangements at the Manila FIR/Taipei FIR/Fukuoka FIR boundary involving ATS routes L625, B462 and B348 in proximity to AGVAR, POTIB, MEVIN that are compatible with Scenario 3 FLOS/FLAS proposal.~~	~~WPAC/SCS RSG/3~~	~~States - Philippines, Japan, China (Taipei), WPAC/SCS RSG~~	~~Open~~ **~~Completed~~**	~~Revised FLAS and transition areas agreed for implementation. ATS Route R596 to be decommissioned. Replacement new route M501 to be implemented Feb 2008. Extension of N884 LBG-YURIX to be implemented May 2008.~~
1/4	Conduct traffic sampling to identify traffic loading on each of the ATS routes involved to enable prioritization of routes. Identify most frequent used flight levels on each route to enable underutilized flight levels to be reallocated to another route whilst considering the flight level requirements of ultra long range operations.	WPAC/SCS RSG/3	States	~~Open~~ Ongoing	
1/5	Consider introduction of additional parallel “crossing” ATS routes to enable bi-directional routes to be treated as uni-directional routes to increase capacity and availability of optimum flight levels	SEACG/15 then WPAC/SCS RSG/4	States	~~Open~~ Ongoing	Present proposals to SEACG/15 in May 2008
1/6	Review ATC coordination procedures and practices between ACCs to ensure procedures and/or practices do not contribute to LHD.	WPAC/SCS RSG/4	States	~~Open~~ Ongoing	WPAC/SCS RSG/3 reviewed actions taken so far, States to continue work in this area

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
1/7	Review outstanding LHD data to ensure non-LHD are not being reported and submit remaining LHD reports to MAAR	July 2007	~~Jakarta, Ujung Pandang, Sanya, Vientiane~~, Hanoi, Ho Chi Minh, Bangkok, Phnom Penh	~~Open~~ Ongoing	
~~**1/8**~~	~~Provide update on LHD reports to WPAC/SCS RSG/3.~~	~~WPAC/SCS RSG/3~~	~~MAAR~~	~~Open~~ **~~Closed~~**	~~Present MAAR working paper to WPAC/SCS RSG/3~~ ~~Carried forward to Action 3/1~~
~~**1/9**~~	~~Prepare a "know your airspace" analysis of WPAC/SCS area for RSG/3 review.~~	~~WPAC/SCS RSG/3~~	~~MAAR~~	~~Open~~ **~~Closed~~**	~~Carried forward to Action 3/2~~
~~**1/10**~~	~~Update RSG/3 with arrangements for ACC Supervisor to ACC Supervisor coordination when LHD occurs.~~	~~WPAC/SCS RSG/3~~	~~States~~	~~Open~~ **~~Closed,~~**	~~WPAC/SCS RSG/2 informed that LHD MOU implemented between Fukuoka ATMC, Naha ACC & Manila ACC, urged all States to consider implementing similar MOU. Overtaken by Action 2/4~~
1/13	Increase awareness of identified pilot contributory factors to LHD	Update WPAC/SCS RSG/3	States, IFALPA, IATA	~~Open~~ Ongoing	State reports of specific LHD occurrences identified as having pilot contributory factor to be provided to operators. IATA Singapore Office will assist to relay this information if required.
~~**2/1**~~	~~Conduct full review including Annex 11 compliant safety assessment of the Scenario 3 FLOS/FLAS agreed by WPAC/SCS RSG/3 with objective of implementing Scenario 3 FLOS/FLAS. Report results to next RSG meeting to enable WPAC/SCS RSG/3 to make 'Go/No Go' implementation decision.~~	~~Update WPAC/SCS RSG/3~~	~~States~~	~~Open~~ **~~Completed~~**	~~State and MAAR safety assessments reviewed by RSG/3, 'Go' decision taken to implement revised FLAS.~~

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~**2/2**~~	~~Conduct RMA safety assessment of the Scenario 3 FLOS/FLAS agreed by WPAC/SCS RSG/3 with objective of implementing Scenario 3 FLOS/FLAS. Report results to next RSG meeting to enable WPAC/SCS RSG/3 to make 'Go/No Go' implementation decision.~~	~~Update WPAC/SCS RSG/3~~	~~MAAR~~	~~Open~~ **~~Completed~~**	~~State and MAAR safety assessments reviewed by RSG/3, 'Go' decision taken to implement revised FLAS.~~
2/3	Bring concerns raised by IFALPA in relation to loss of communications being included as LHD to the attention of RASMAG for review	RASMAG/8 December 2007	IFALPA, IATA, Secretariat	Open	
2/4	Consider implementation of MOU between States in relation to mutual reporting of LHD occurrences	Update WPAC/SCS RSG/3	States	~~Open~~ Ongoing	Use existing MOU between Fukuoka ATMC, Naha ACC & Manila ACC as the model
~~**2/5**~~	~~Include tick box question on MAAR standard LHD reporting template '*Were the Supervisors of the affected ACCs advised of this LHD occurrence*'~~	~~Update WPAC/SCS RSG/3~~	~~MAAR~~	~~Open~~ **~~Completed~~**	~~MAAR eTemplate amended~~
~~**2/6**~~	~~Contact Lao PDR in relation to non-submission of LHD data~~	~~Update WPAC/SCS RSG/3~~	~~Thailand AEROTHAI~~	~~Open~~ **~~Completed~~**	~~Lao PDR data available to MAAR~~

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~**2/7**~~	~~Arrange working group meeting between affected parties to finalise Scenario 3 transition arrangements on N892 and L625.~~	~~Update WPAC/SCS RSG/3~~	~~Japan to convene working group meeting~~	~~Open~~ **~~Completed~~**	~~First meeting of East Asia ATS Coordination Group (EATMCG) held 27-29 August 2007, convened and hosted by Japan at Fukuoka ATMC. EATMCG will continue to meet periodically.~~
~~**2/8**~~	~~In order to assist States to submit LHD reports, including 'NIL' reports, MAAR to send reminder Email prior to the periodic update of the safety assessment being conducted.~~	~~Update WPAC/SCS RSG/3~~	~~MAAR~~	~~Open~~ **~~Closed~~**	~~MAAR has adopted this as SOP.~~
~~**2/9**~~	~~Implement new ATS route LBG-CAB-YURIX adjoining N884 in Manila and Fukuoka FIRs~~	~~Update WPAC/SCS RSG/3~~	~~Philippines, Japan~~	~~Open~~ **~~Closed~~**	~~Regional Office to send letter to Philippines and Japan requesting assistance in implementing this route urgently.~~ ~~Regional Office transmitted letter Ref.: T3/10.1.19 – AP-ATM0245 on 19 June. .EATMCG/1 continued this work. RSG/3 agreed to implementation of this route segment, target date 8 May 2008~~
3/1	Provide update on LHD reports to WPAC/SCS RSG/4.	WPAC/SCS RSG/4	MAAR	Open	Present MAAR working paper to WPAC/SCS RSG/4
3/2	Prepare a "know your airspace" analysis of WPAC/SCS area for RSG/4 review.	WPAC/SCS RSG/4	MAAR	Open	

ACTION ITEM	DESCRIPTION	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
3/3	Provide coordination to China about outcomes of RSG/3 meeting in relation to Sanya operations.	December 2007	Regional Office	Open	China did not attend RSG/3
3/4	Prepare and circulate draft AIP Supplement for implementation of revised WPAC/SCS FLAS.	December 2007	Regional Office	Open	Ensure advanced draft is available for review and adoption by RSG/4 in March 2008.
3/5	Circulate State letter to affected States and Organisations about outcomes of RSG/3 and highlighting target date of 5 June 2008 for new FLAS implementation, include new FLAS as Appendix.	December 2007	Regional Office	Open	
3/6	Conduct preliminary preparations for implementation of new FLAS including preparation of ATCO training materials, amendments to operational LOAs, changes to procedures etc	WPAC/SCS RSG/4	States	Open	

……