INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE TENTH MEETING OF THE FANS IMPLEMENTATION TEAM FOR SOUTH-EAST ASIA (FIT-SEA/10) AND THE SEVENTEENTH MEETING OF THE SOUTH-EAST ASIA ATS COORDINATION GROUP (SEACG/17)

Singapore

24 to 27 May 2010

The views expressed in this report should be taken as those of the meetings and not of the International Civil Aviation Organization (ICAO)

Approved by the meetings
and published by ICAO Asia and Pacific Office

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Tenth meeting of FANS Implementation Team for South-East Asia (FIT-SEA/10) was held at Singapore Aviation Academy in Singapore on 24 May 2010. Subsequently, the Seventeenth meeting of South-East Asia ATS Co-ordination Group (SEACG/17) was held at the same venue from 25 to 27 May 2010.

2. Attendance

2.1 Forty-eight participants attended the meetings from Cambodia, China, Hong Kong China, Indonesia, Japan, Malaysia, Philippines, Singapore, Thailand, Viet Nam, IATA, ARINC and SITA. A list of participants is at **Attachment 1** to this report.

3. Officers and Secretariat

3.1 Mr. Kwek Chin Lin, Senior Air Traffic Control Manager (Systems), the Civil Aviation Authority of Singapore, was elected as the Rapporteur of FIT-SEA/10. Mr. Raymond Kwok-chu Li, Chief Air Traffic Control Officer (Procedures and Evaluation), Air Traffic Management Division, Civil Aviation Department, Hong Kong, China was elected to serve as the Chairperson of SEACG/17. Mr. Kyotaro Harano, Regional Officer ATM, ICAO Asia and Pacific Office acted as the Secretary for the FIT-SEA and the SEACG meetings.

4. Opening of the Meeting

4.1 Mr. Peter Rabot, Head (ANS Safety Office), on behalf of Mr Kuah Kong Beng, Chief Air Traffic Control Officer, Singapore, extended a warm welcome to the participants. He added that Singapore was happy to host FIT-SEA/10 and SEACG/17 at the request of the ICAO regional office, and expressed hope that the meeting would be fruitful for all participants.

4.2 Mr. Kyotaro Harano, on behalf of Mr. Mokhtar A. Awan, Regional Director, ICAO Asia and Pacific Office extended a warm welcome to the participants. Recognizing that the onset of the social unrest in Bangkok may result in some non-attendances or the cancellation of the meetings, Singapore kindly offered to host FIT-SEA/10 and SEACG/17 in Singapore. He deeply expressed appreciation to Singapore for their kind assistance provided to ICAO to enable both meetings to be held as planned, with good number of participants turn up at these meetings.

4.3 Mr. Harano recalled that FIT-SEA made significant progress during the past years in introducing the ADS/CPDLC operations in the South China Sea area in a very proactive manner. Singapore and Viet Nam started the regular operations of ADS/CPDLC in April 2008, which led to the implementation of 50 NM/50 NM on L642 and M771. Japan had been continuously supporting the States by providing the Central Reporting Agency (CRA) service in absorbing the costs of providing the services for the South China Sea area. Unfortunately, Japan cannot continue to provide the service due to the financial resources and other considerations. In this regard, Japan will submit a working paper to this meeting. Also, the implementations of FANS data link are necessary to achieve 50 NM/50 NM separation minima in a wider area and he welcomed the Philippines to update the meeting with their progress in introducing their data link services.

4.4 Mr. Harano reminded that SEACG/17 would be held from the next day. SEACG/17 will discuss a wide range of matters related to ATS. Although ATS providers spent past few years in implementing many major airspace projects bringing substantial benefits to operators as well as to the environment, there was still a need for States to improve their ATS. He stressed that SEACG was their group, and hoped that the participants would actively involved in the discussion. He wished the meetings a fruitful success.

4.5 Mr. Kwek Chin Lin extended a warm welcome to the participants of FITSEA/10 and SEACG/17. He remarked that FIT-SEA/10 would be significant due to two developments as highlighted by the Secretariat: a) The subject on the provision of CRA services for FIT-SEA in the future and b) the update by the Philippines on their data link implementation plans. He encouraged all delegates to participate actively in the discussions.

4.6 Mr. Raymond Kwok-chu Li extended a warm welcome to all delegates attending the SEACG/17. Mr Li thanked the Singapore CAA for offering a magnificent venue and unfailing logistical support for the SEACG/17. He also praised CAAS for the quick and efficient response in organising the meeting within one month upon receiving the request of ICAO. He also thanked members for the trust and confidence in him in steering the meeting. He then went on to advise that SEACG/17 would review the results of FIT-SEA/10, and other ATS related issues in the 3-day SEACG meeting. Towards these objectives, he encouraged active participation and involvement in the discussions by the participants and he would endeavour to facilitate discussions on the agenda items with a view to achieving positive results at the meeting.

5. Documentation and Working Language

5.1 The working language of the meeting and the language for all documentation were English. Eight working papers (WPs) and nine information papers (IPs) were presented to FIT-SEA/10, and eighteen WPs and five IPs were presented to SEACG/17. The list of papers and presentations is shown at **Attachment 2** to this report.

FIT-SEA/10

REPORT OF FIT-SEA/10

Agenda Item 1: Adoption of Agenda

1.1 The meeting unanimously elected Mr. Kwek Chin Lin, Senior Air Traffic Control Manager (Systems) from the Civil Aviation Authority of Singapore (CAAS) as the Rapporteur of FIT-SEA/10. The meeting noted the Terms of Reference (TOR) for FIT-SEA as follows:

Composition of FANS Implementation Team (FIT)

The FANS Implementation Team (FIT) will consist of representatives from aircraft and ancillary equipment manufacturers, airlines, data communication service providers (DSP), ATS providers, IATA, ICAO, IFALPA and IFATCA.

FIT-SEA Terms of Reference (TOR)

The FANS Implementation Team for the South East Asia region (FIT-SEA) shall be responsible for system configuration and oversee the end-to-end monitoring process to ensure the FANS 1/A systems are implemented and continue to meet their performance, safety, and interoperability requirements.

FIT-SEA shall:

a) Determine the common operational architecture to support CPDLC and ADS;

b) Support the implementation and operational benefits of CPDLC and ADS;

c) Authorize and coordinate system testing and operational trials;

d) Develop interim operational procedures to mitigate the effects of problems until such time as they are resolved;

e) Review de-identified problem reports and determine appropriate resolution;

f) Monitor the progress of problem resolution; and

g) Assess system performance based on information in Central Reporting Agency periodic reports.

Preparation of Reports

The Central Reporting Agency (CRA) will report, as required, to FIT-SEA. FIT-SEA will report to the South-East Asia ATS Coordination Group (SEACG). ICAO will submit reports to appropriate sub-groups of APANPIRG.

(Adopted by SEACG/11, 2003)

Agenda Item 2: Central Reporting Agency

Report of FIT-SEA

2.1 The Central Reporting Agency (CRA)-Japan was designated as FIT-SEA CRA by FIT-SEA, and has been supported by Air Traffic Control Association-Japan. The status of ATS data link operational performance provided by the Civil Aviation Authority of Singapore (CAAS) and the Civil Aviation Administration of Viet Nam (CAAV) in accordance with the established procedures were presented to the meeting. CRA-Japan noted that the system performances in the Ho Chi Minh FIR were quite satisfactory but the performances in the Singapore FIR for the downlinks did not meet the FOM criteria.

2.2 Since FIT-SEA/9 (May 2009, Bangkok), CRA-Japan had not received any problem reports (PRs) for 12 months from Viet Nam. Singapore had submitted eight PRs covering the period of past 12 months just before the meeting.

2.3 The PowerPoint charts contained in **Appendix A** to this report shows each item and data link system analyses to be covered. The meeting reviewed the information contained in the system performance analysis by FIT-SEA CRA. The meeting had a lengthy discussion why the PR was not widely reported as compared with other regions. IATA informed the meeting that the ACARS reporting system were being used in the South Pacific and this could be used for the long-term solution. The meeting encouraged FIT-SEA stakeholders to provide reports of any anomalies that they might experience. Prompt and full reporting of such events to the FIT-SEA CRA will allow any deficiencies to be identified and rectified.

Consideration of the Termination of FIT-CRA Services by CRA-Japan

FOM Definitions of FIT and CRA

2.4 Japan drew to the attention of the meeting that the current FOM Version 6.0, effective 25 September 2008, provide for the roles of FITs and CRAs in Sections 3.7 and 3.8, respectively. FITs shall oversee the monitoring process to ensure the FANS-1/A system continues to meet its performance, safety, and interoperability requirements, and that operations and procedures are working as planned.

2.5 CRAs are organizations tasked with the regular dissemination of de-identified statistical data based on monthly status reports received from FIT members. The CRAs track problem reports and publish de-identified information from those reports for dissemination to FIT members. Problem resolution is the responsibility of the appropriate FIT members. The CRAs:

a) prepare consolidated problem summaries, with references to particular States and operators removed, for dissemination to all interested parties;

b) collect and consolidate FANS-1/A Periodic Status Reports and disseminates these to all interested parties;

c) examine all data to identify trends; and

d) prepare an annual report for the FIT.

ICAO Safety Management Provisions in Annex 11

2.6 CRA-Japan had reported to FIT-SEA/9 (May 2009, Bangkok) that PR analyses could not be presented because the CRA did NOT receive any PRs after FIT-SEA/8 (May 2008, Bangkok). FIT-SEA/9 noted that there had been no PR for 12 months from Singapore and Viet Nam. From their experience in the North Pacific where hundreds of PRs are reported, the situation of no PR in the South China Sea area could not be justified.

2.7 Japan advised at the FIT-SEA/9 that FIT-SEA CRA services had been provided by CRA-Japan on a temporary basis in accordance with the TOR of FIT-SEA CRA. Japan, however, would consider extending the provision of the FIT-SEA CRA services for a couple of years if the Philippines was able to initiate the ADS/CPDLC operational trial in the Manila FIR in 2010. The Philippines informed the meeting that the operational trial in the Manila FIR would start in October 2010.

2.8 Japan further advised the meeting that she would be able to act as FIT-SEA CRA until the end of next March (March 2011) but NOT be able to continue beyond March 2011, not solely because of its financial resource but also other reasons. Japan is not able to fund these services as it is beyond her area of responsibility,

2.9 The meeting appreciated Japan and CRA-Japan for their service graciously provided free of charge for over four years and recognizes the reason why Japan is withdrawing the FIT-SEA CRA service. The Secretariat drew to the attention of the meeting that there could be three scenarios as follow:

(a) CRA-Japan is requested to continue to provide the CRA service anyway;
(b) States provide funding for CRA-Japan to continue to provide services; or
(c) States establish their own alternative CRA arrangement for the area.

2.10 After the confirmation from Japan and clarifications, the meeting noted that the scenario (c) was the only viable option and that funding issues need to be further discussed. The States were encouraged to bring this information to the relevant authorities for the further consideration.

2.11 CRA-Japan however noted that support for data link implementation in the Manila FIR would be vital and that a formal CRA for FIT-SEA should be established as soon as possible in order not to stall the implementation plans. States were urged to bring back this issue to the attention of their relevant authority and be ready for the further discussion at ATM/AIS/SAR Subgroup and APANPIRG meetings, bearing in mind the time constraint that was needed to establish a proper CRA. The meeting requested the Secretariat to submit a working paper to ATM/AIS/SAR/SG/20 for the further deliberation on this issue.

Agenda Item 3: Review of ADS/CPDLC Implementation

ADS/CPDLC Implementation in the Ho Chi Minh FIR

3.1 Viet Nam has officially started providing data link services on eight RNAV routes L625, L628, L642, M765, M768, M771, N500 and N892 in the oceanic area of the Ho Chi Minh FIR since 0001 UTC on 10 April 2008.

Operation Status

3.2 The status of ADS/CPDLC operations:

- Based on daily records, only half of 200 flights which flown those eight RNAV routes had been equipped with both ADS and CPDLC applications; and
- 65 flights initiated the logon with Ho Chi Minh daily and 98 present of them could log on successfully.

3.3 Technical status:

- Ground system: There was no modification to ground system.
- ACARs link: There was no unplanned interruption and stable.
- Data link transfers with Singapore ACC are taking place smoothly.

3.4 Periodic Status Reports: The periodic status reports had been made weekly and sent to CRA-Japan for analysis, and there was no recommendation for any correction received from the CRA. In Viet Nam's statistic, following were noted:

- CPDLC round trip performance met the FOM criteria; and
- CPDLC downlink performance was within the FOM criteria.
- Problem Reports: There was no problem report being forwarded to CRA.

3.5 Singapore queried if the interval of one week was still appropriate as Ho Chi Minh was no longer on trial. The Secretariat brought the attention of the meeting to the FOM which provides that the interval could be decided by FIT and the fact that FIT-SEA had not agreed with any interval. Accordingly, Viet Nam and CRA-Japan coordinated to review this interval. CRA-Japan agreed that Viet Nam could submit the periodic status report once every month.

Review of ADS/CPDLC Operations in Singapore FIR

3.6 Singapore advised the meeting that they had been providing data link services since 1999. As specified in FOM, the monthly periodic status reports were prepared and submitted regularly to CRA-Japan. A summary of the year's performance is in **Appendix B** to this report. The reports showed that the data link performance is within the FOM criteria except for downlinks. As previously noted at FIT-SEA/9, there were performance issues for downlink in both Singapore and Ho Chi Minh FIR last year. This was a known performance issue that was attributed to the B777 types which formed a majority of the aircraft types operating FANS in Singapore FIR.

3.7 Boeing had reported that a fix will be provided to the operators. Airborne trials with AIMS-2 (with one test originating from Singapore Changi airport) and AIMS-1 software had been completed. The upgraded AIMS-2 software will be retro-fitted to existing B777s, with AIM-1

software targeted for Jun/Jul 2010. However it is expected it would take time for all the aircraft to be updated. Update to the AIMS-2 software is expected to begin in 4th quarter 2010.

3.8 In Feb 2010, Singapore carried out a detailed study of the occurrences of the marginal downlink performance. Most of the occurrences were found to be in the VHF-SATCOM transition areas. The results validated that the poor downlink performance was correctly attributed to the B777 problem. Singapore will continue to monitor this issue and provide an update at the next meeting.

Tables of ADS/CPDLC Equipage and ATS Participation Status

3.9 Hong Kong China, the Philippines and Thailand updated the table of Southeast Asia ADS/CPDLC Equipage and ATS Participation Status as in **Appendix C** to this report. Philippines indicated that the data link service trial would start by Q4 of 2010.

Agenda Item 4: Data Link Guidance Materials

4.1 The status on the Global Operational Data Link Document (GOLD) was provided and FIT-SEA began planning and implementation for its use. The meeting recalled that the 20th Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20, September 2009) concluded to endorse the GOLD, upon its release to the North Atlantic (NAT) Region, as a replacement for the FOM. Coordination with Africa and Indian Ocean (AFI), European (EUR) and South America (SAM) Regions would require additional time after this release. However, the GOLD was expected to be satisfactorily completed in time for NAT SPG/46 conclusions. On matters related to the GOLD, APANPIRG/20 had reached Conclusion 20/31 – State and Operator aircraft information for GOLD, Conclusion 20/33 – Coordinate Implementation of Reduced Horizontal Separations with CSPs and Conclusion 20/74 − Adopt GOLD to replace FOM.

Regional Change Process for the GOLD

4.2 After the Ad Hoc Working Group releases the GOLD to ICAO Bangkok and Paris Offices for regional use, the GOLD will be maintained as a regional document in each of the regions. Change proposals (CPs) will be submitted to an ICAO regional office. The ICAO regional office will coordinate with other participating regions.

Agenda Item 5: Update Task Lists

5.1 The meeting reviewed and updated the list as in **Appendix D** to this report. Three items had been completed or closed and three new items were added to the list mostly to cater for the data link implementations in the Manila FIR.

Agenda Item 6: Any Other Business

Preparations for ADS/CPDLC Trial Operation in Manila FIR

6.1 During FIT/SEA-9, the Philippines informed the meeting that the current system of Manila ACC would be replaced by a system that has built-in data link capabilities. In connection with this, data link trials were planned for the fourth quarter of 2010.

6.2 The Philippines informed the meeting of Phase 1A of the operational trial plan, which would involve a CPDLC trial with limited airline participants in parallel use of HF voice communication and validation of ADS reports using the new Manila ACC system. Plans for the Phase 1B of the trials have already been laid-out. A detailed presentation of the preparations for the data link trials was provided in **Appendix E** to this report. The ADS/CPDLC refresher course for Manila ACC Controller was carried out as planned in 2009.

6.3 The meeting advised the Philippines that the implementation of data link systems should be closely coordinated with FIT and CRA. From the experience of the data link system introduction in the Ho Chi Minh and the Singapore FIRs, FIT-SEA meetings were held three months before the expected target date of each phase of trial to see if the system performance meets the FOM criteria.

6.4 Further, the Secretariat advised the Philippines to start data collection of the system performance as early as possible to enable a FIT-SEA meeting could be held three months before the Phase 1B, i.e. October 2010 given the Phase 1B should start in January 2011. If the FIT-SEA meeting finds that their system performance meets the FOM criteria, subsequently AIC and/or AIP Supplement will be issued with two AIRAC cycles to announce the commencement of the Phase 1B where all the aircraft use CPDLC as a primary means of communication. In total, it will be at least six months from the beginning of the data collection to the commencement of the Phase 1B. The Philippines agreed to consider the suggestion.

Data Link Implementation Table for Capacity Planning

6.5 The meeting reviewed and updated the table as in **Appendix F** to this report with the report from the Philippines on their data link trial planned in Q4 of 2010 and the planned full operations in 2012.

Outcomes of RASMAG/12

6.6 RASMAG/12 was held at the Regional Office, Bangkok, Thailand from 14 to 18 December 2009. The meeting reviewed the outcomes of RASMAG/12 in terms of data link operations and FIT/CRA.

Summary Report of the 12th Meeting of the FIT for the Bay of Bengal

6.7 FIT-BOB/12 (February 2010, Bangkok) was held in conjunction with the Second Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force.

ADS/CPDLC Problem Reports in the Bay of Bengal

6.8 ATSUs were encouraged to automate the connection sequence. If the connections must be managed manually, ATSUs are encouraged to develop and document local procedures to help ensure the connection handoff steps are followed correctly.

6.9 Ground automation systems should use the uplink message assurance (MAS) messages to inform controllers that a message was not received by the aircraft.

6.10 ATSUs were encouraged to increment the uplink Message Identification Number (MIN) from zero to sixty-three.

6.11 ATSUs were encouraged to include the optional UTC time stamp with uplink messages.

Review of the Bay of Bengal Data Link Seminar in 2009

6.12 The meeting reviewed the report of the Data Link Seminar held at ICAO Asia and Pacific Office, Bangkok, Thailand on 24 and 25 August 2009 in conjunction with the Eleventh Meeting of the FANS Implementation Team for the Bay of Bengal (FIT-BOB/11).

IPACG FIT

6.13 Informal Pacific ATC Coordinating Group (IPACG) FANS Interoperability Team (FIT) Central Reporting Agencies (CRAs) continued to process Problem Reports (PRs) received from operators and service providers in the North and Central Pacific. IPACG FIT CRAs consisted of two complementary organizations (JCAB CRA and FAA CRA), each supporting their respective area.

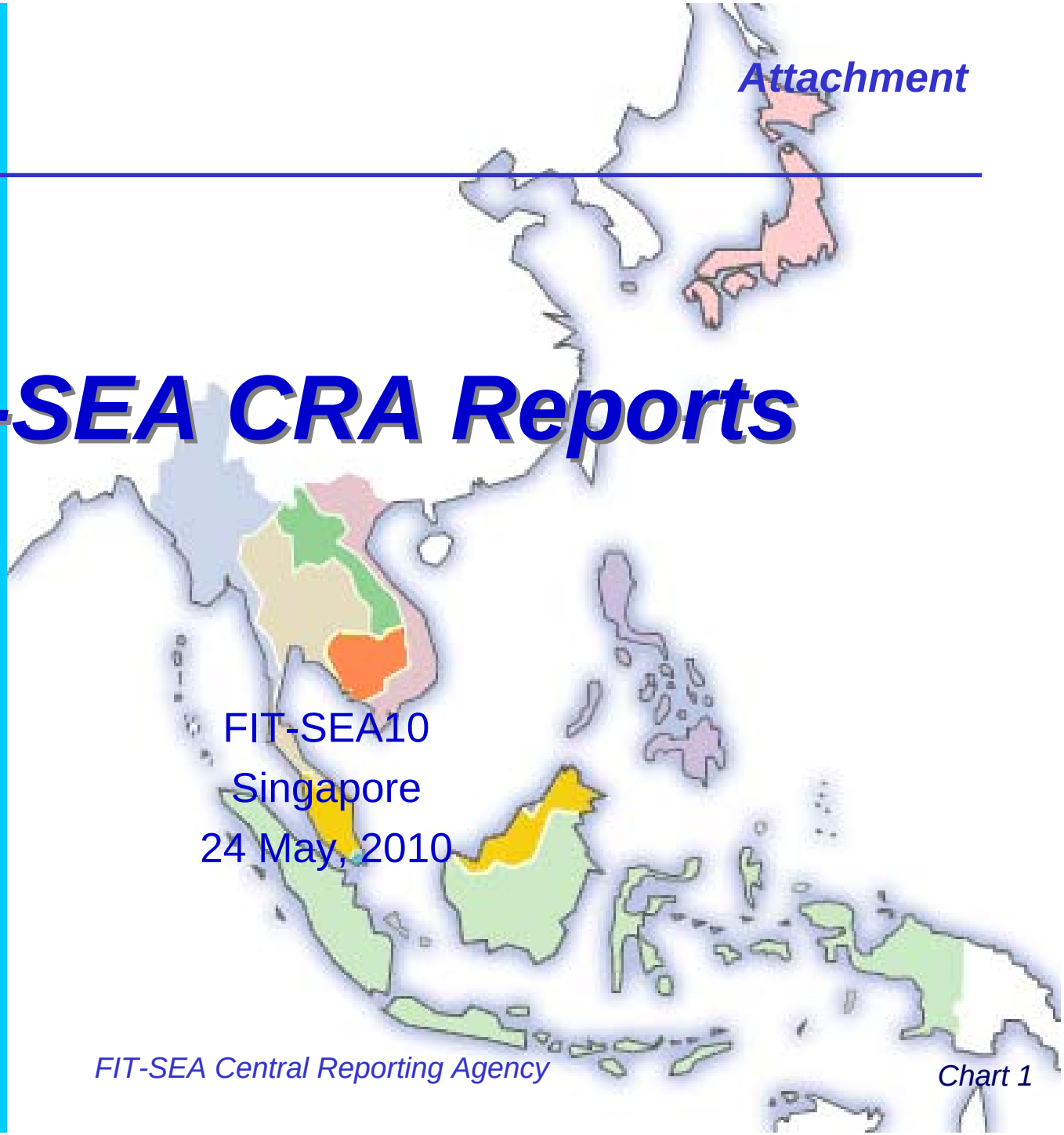
6.14 Since the beginning of IPACG/FIT, CRA-Japan had processed a number of reports submitted by stakeholders regarding the problem events in the Fukuoka FIR. At FIT/19 (10-14 May 2010, Honolulu) held in conjunction with IPACG/32, totaling 14 PRs received in recent six months were reported.

6.15 The PowerPoint charts contained in **Appendix G** to this report provide the Extracts from the PRs presented at last IPACG32 and FIT/19 that were received and processed by the CRA-Japan in Fukuoka FIR. The latter part of the Appendix G introduces the Oceanic Air Traffic Control Suit and functions in use now and in the near future at Fukuoka Air Traffic Management Center.

Agenda Item 7: Date and Venue for the Next Meeting

7.1 The meeting agreed that the next FIT-SEA/11 could be tentatively planned in October 2010 [three months before the Phase 1B of the Philippines] at [place to be determined].

FIT-SEA CRA Reports



FIT-SEA10

Singapore

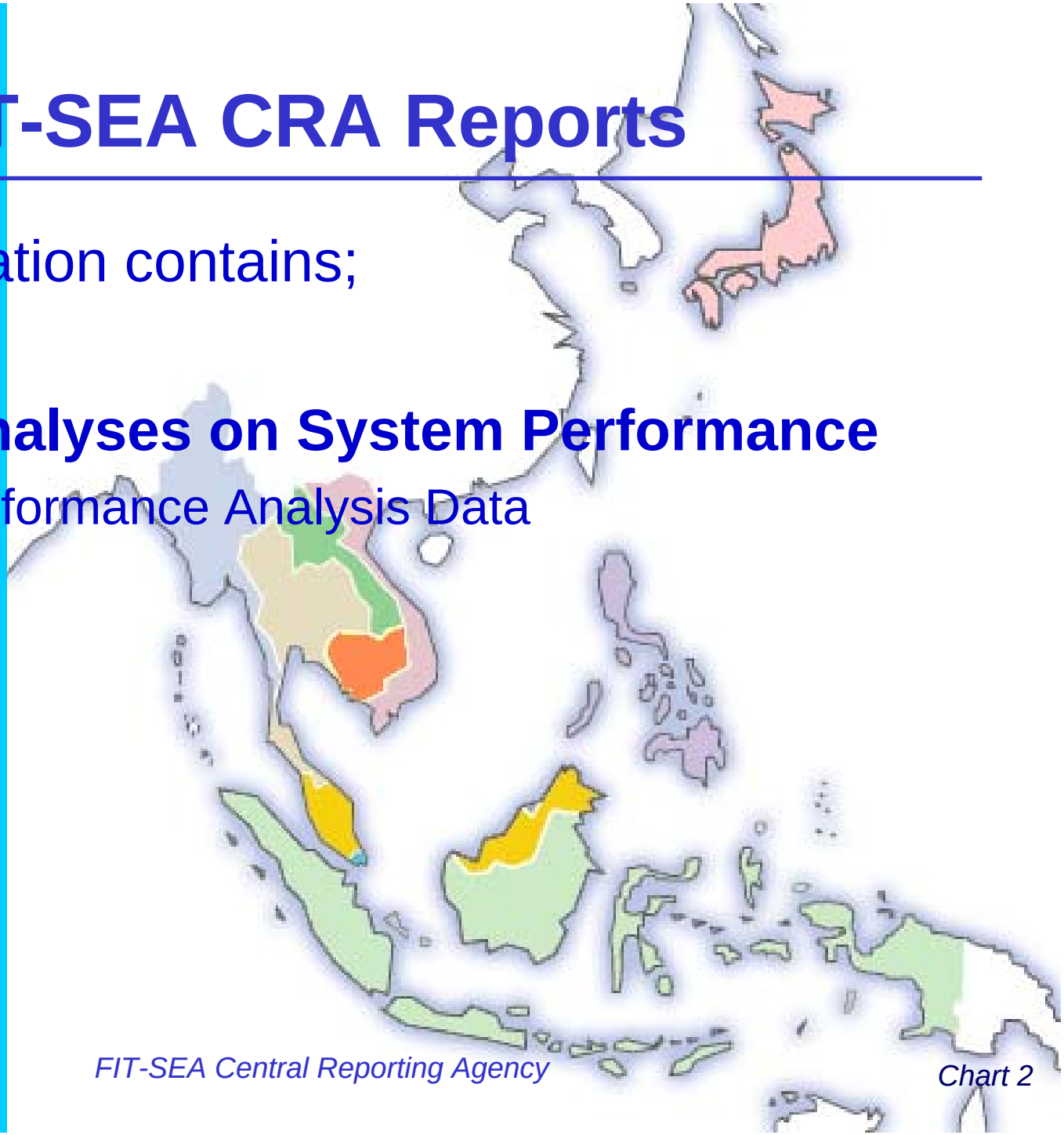
24 May, 2010

FIT-SEA CRA Reports

This presentation contains;

Statistic Analyses on System Performance

System Performance Analysis Data



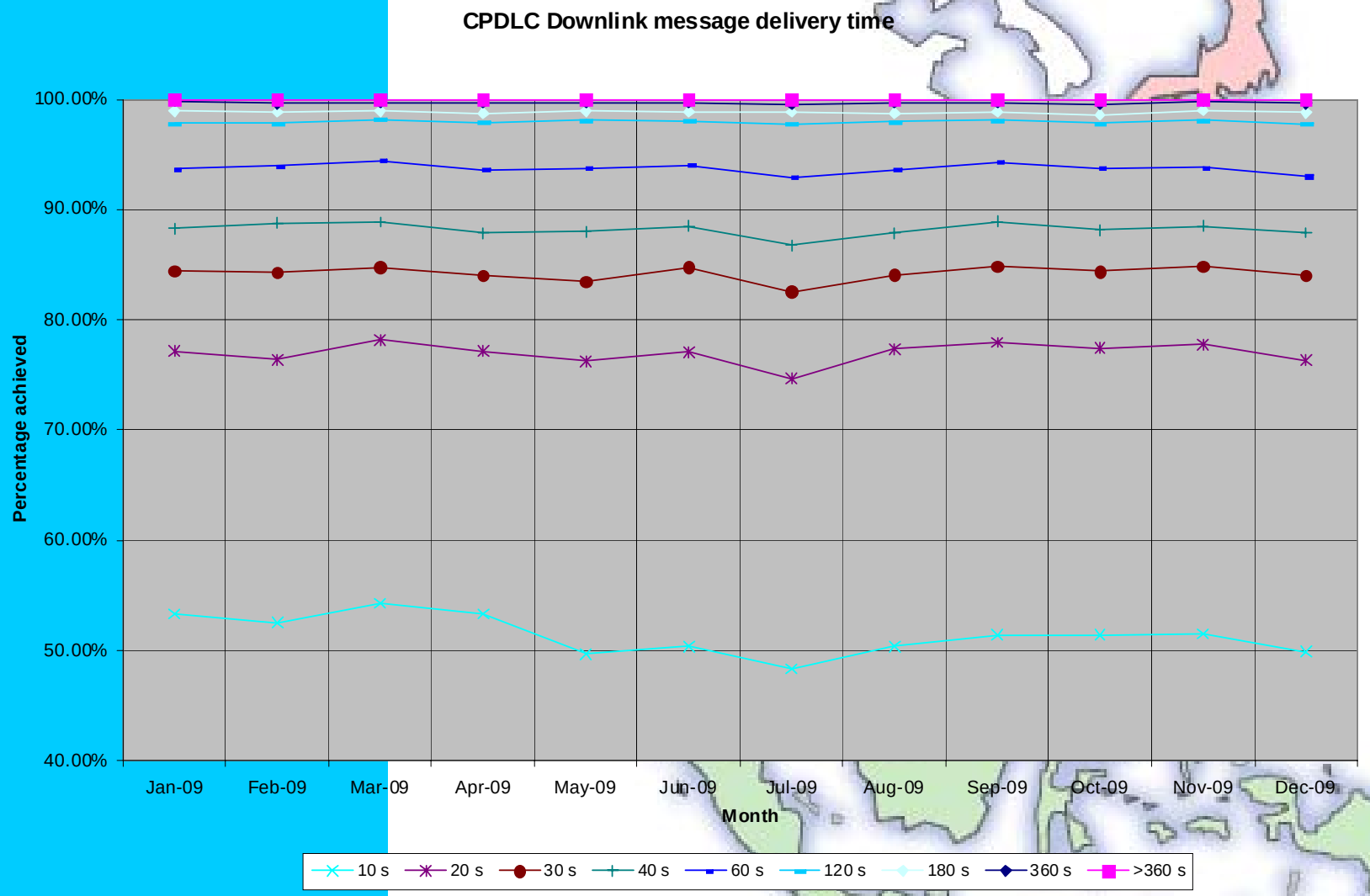
CPDLC System Performance

- In this section, we provide CPDLC system performance on:

  + CPDLC Down-link Performance
  + CPDLC Up-link Performance
  + CPDLC Up-link Message Success Rate
  + Auto Transfer Success Rate

CPDLC Down-link Performance

<SINGAPORE>



One-way Trip Time: Difference of time-stamps between the avionics and ground systems

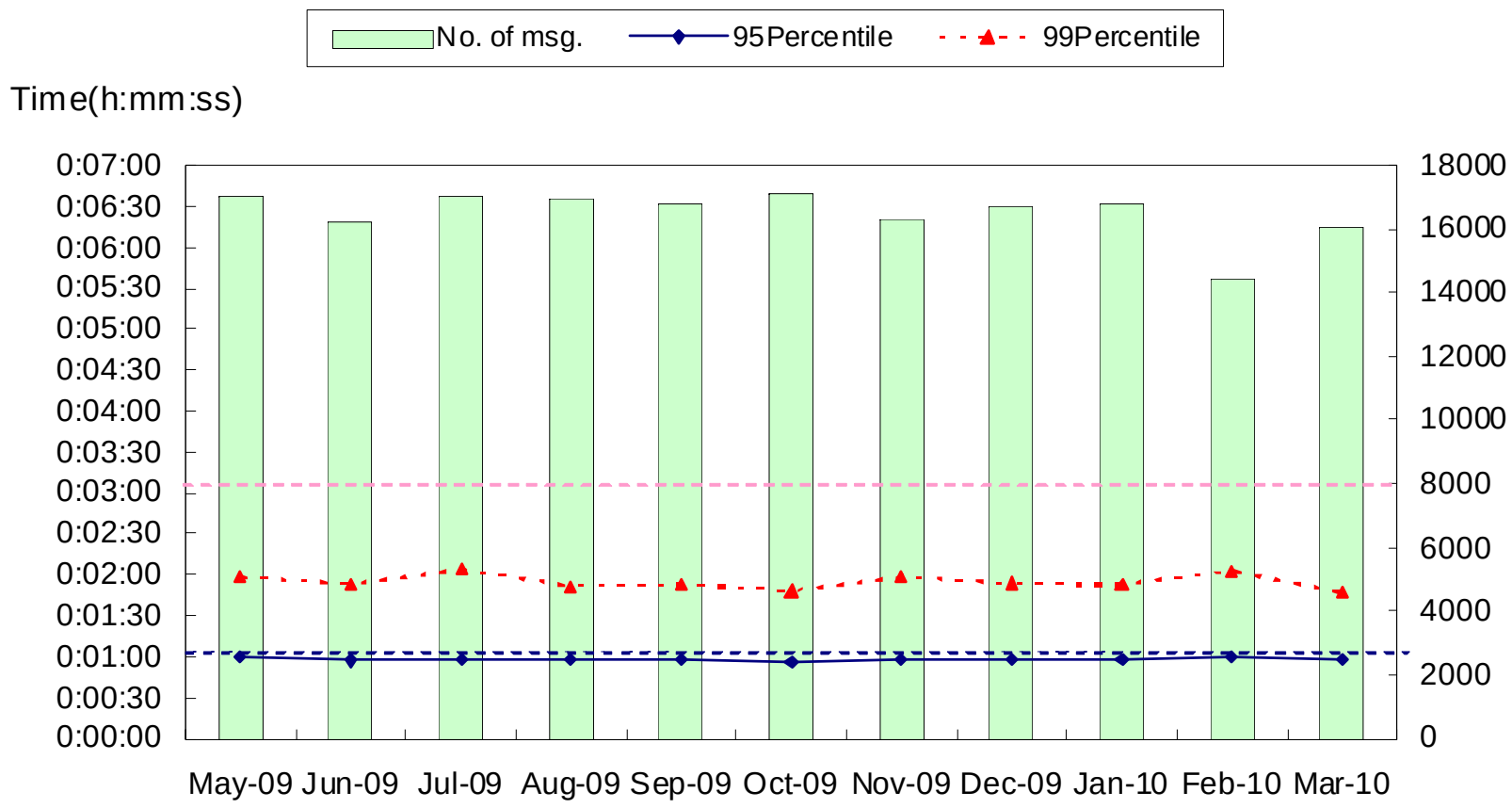
FIT-SEA Central Reporting Agency

Chart 4

CPDLC Down-link Performance

<VIET NAM>

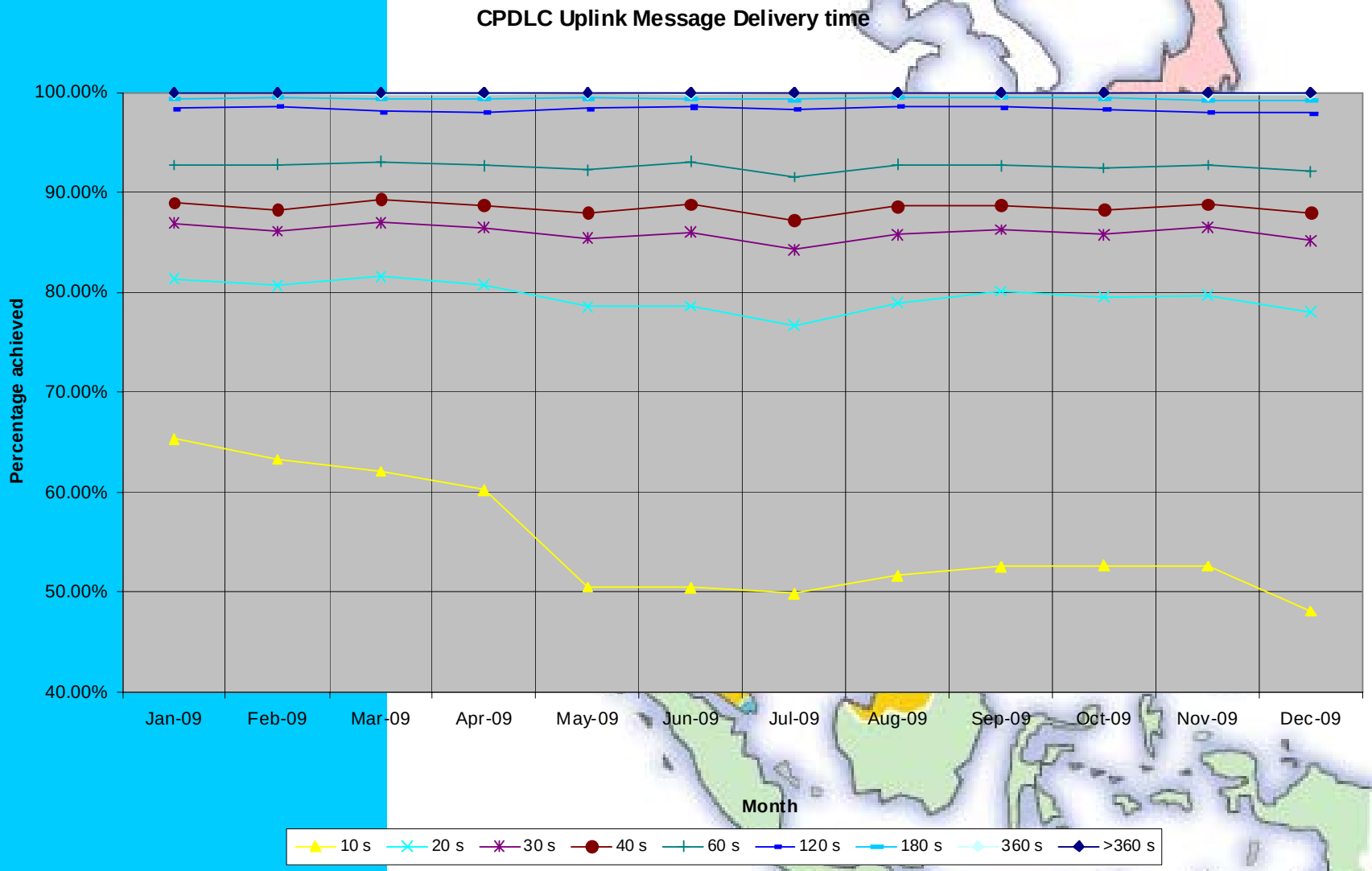
(Fig.) CPDLC Downlink 95 & 99 Percentile



One-way Trip Time: Difference of time-stamps between the avionics and ground systems

CPDLC Up-link Performance

<SINGAPORE>



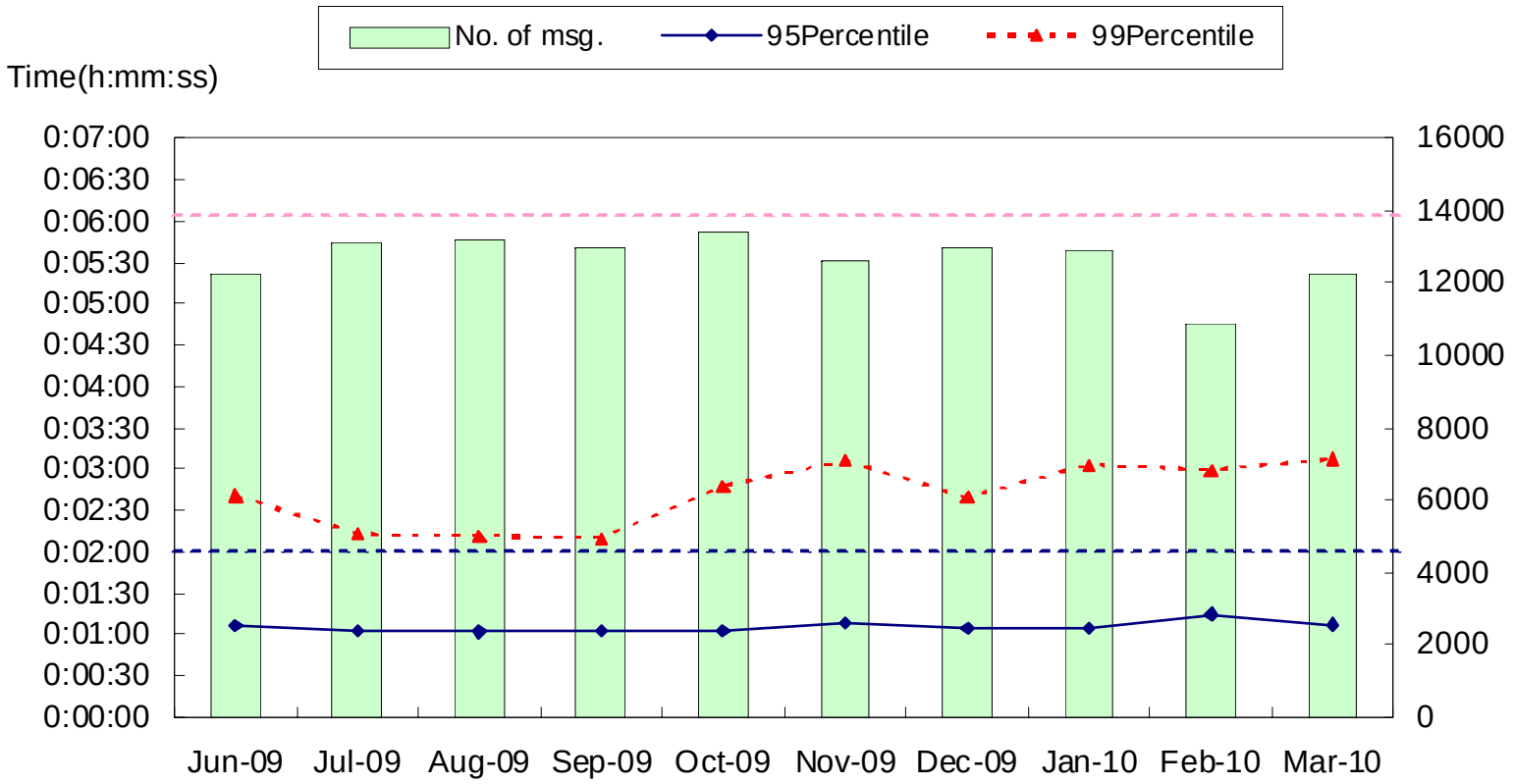
Round Trip Time: Transit-delay-time from time-stamp of up-link to receipt time of MAS

FIT-SEA Central Reporting Agency

CPDLC Up-link Performance

<VIET NAM>

(Fig.) CPDLC Uplink 95 & 99 Percentile

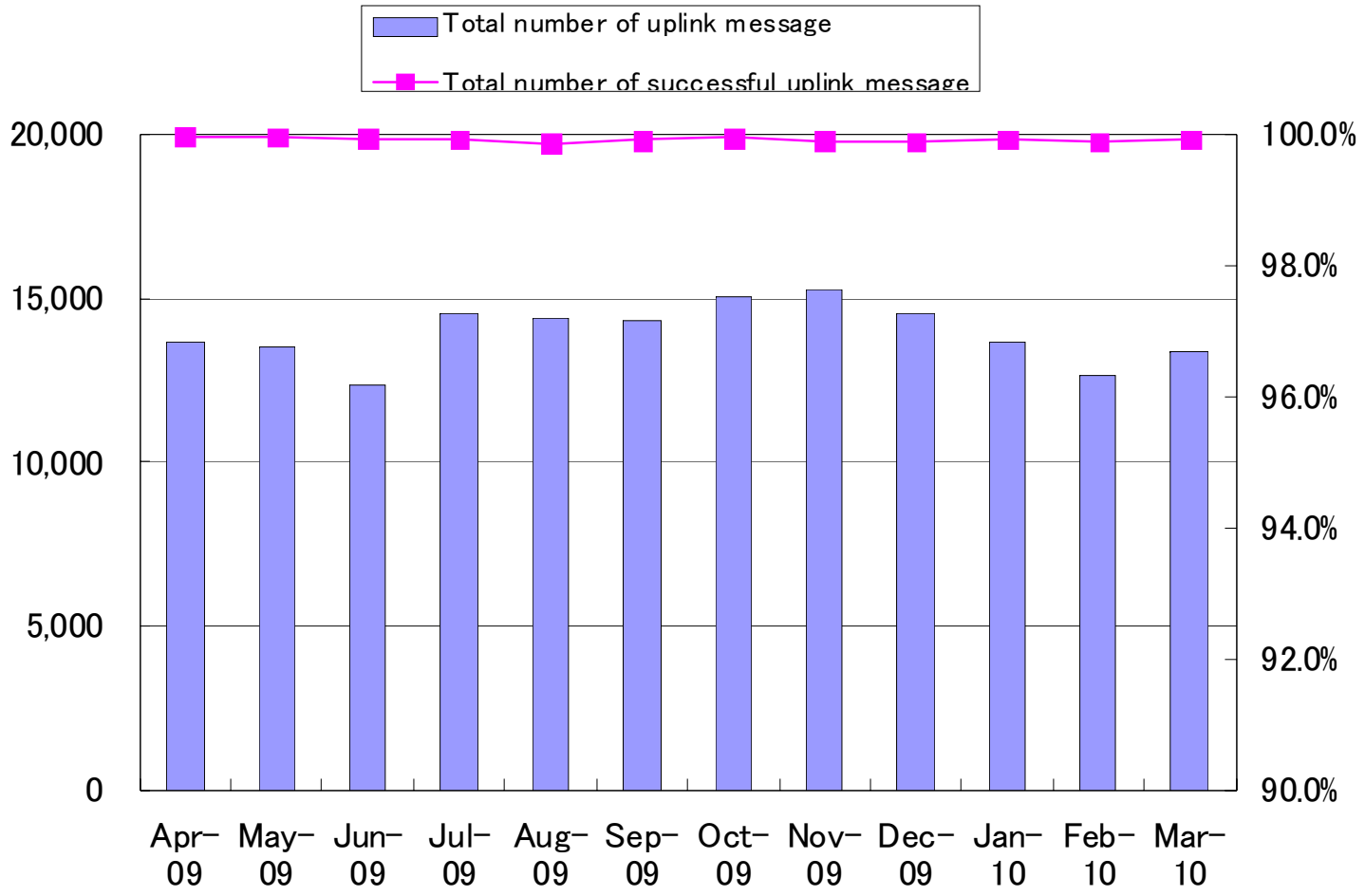


Round Trip Time: Transit-delay-time from time-stamp of up-link to receipt time of MAS

CPDLC Up-link Message Success Rate

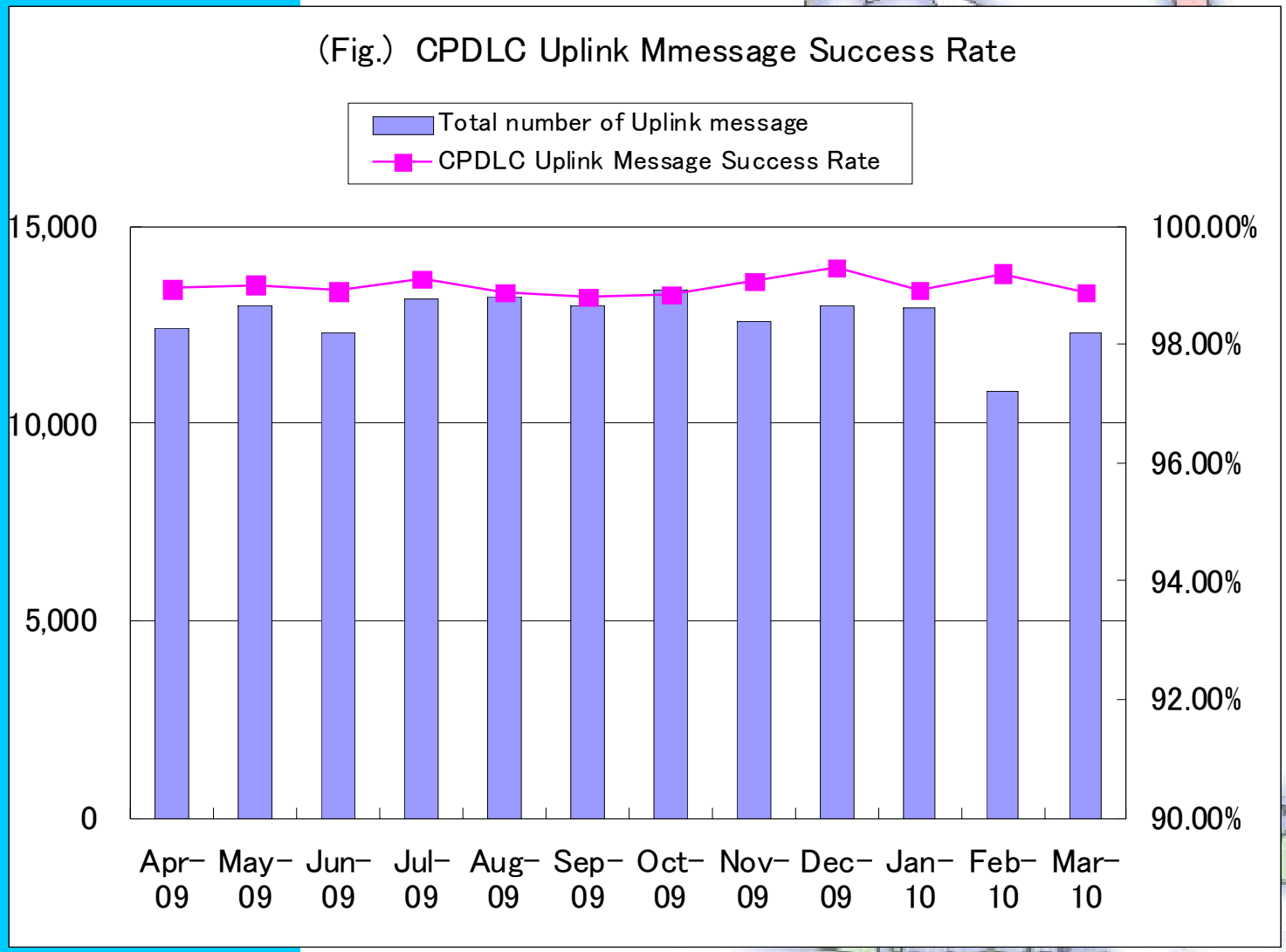
<SINGAPORE>

(Fig.) CPDLC Uplink Mmessage Success Rate



CPDLC Up-link Message Success Rate

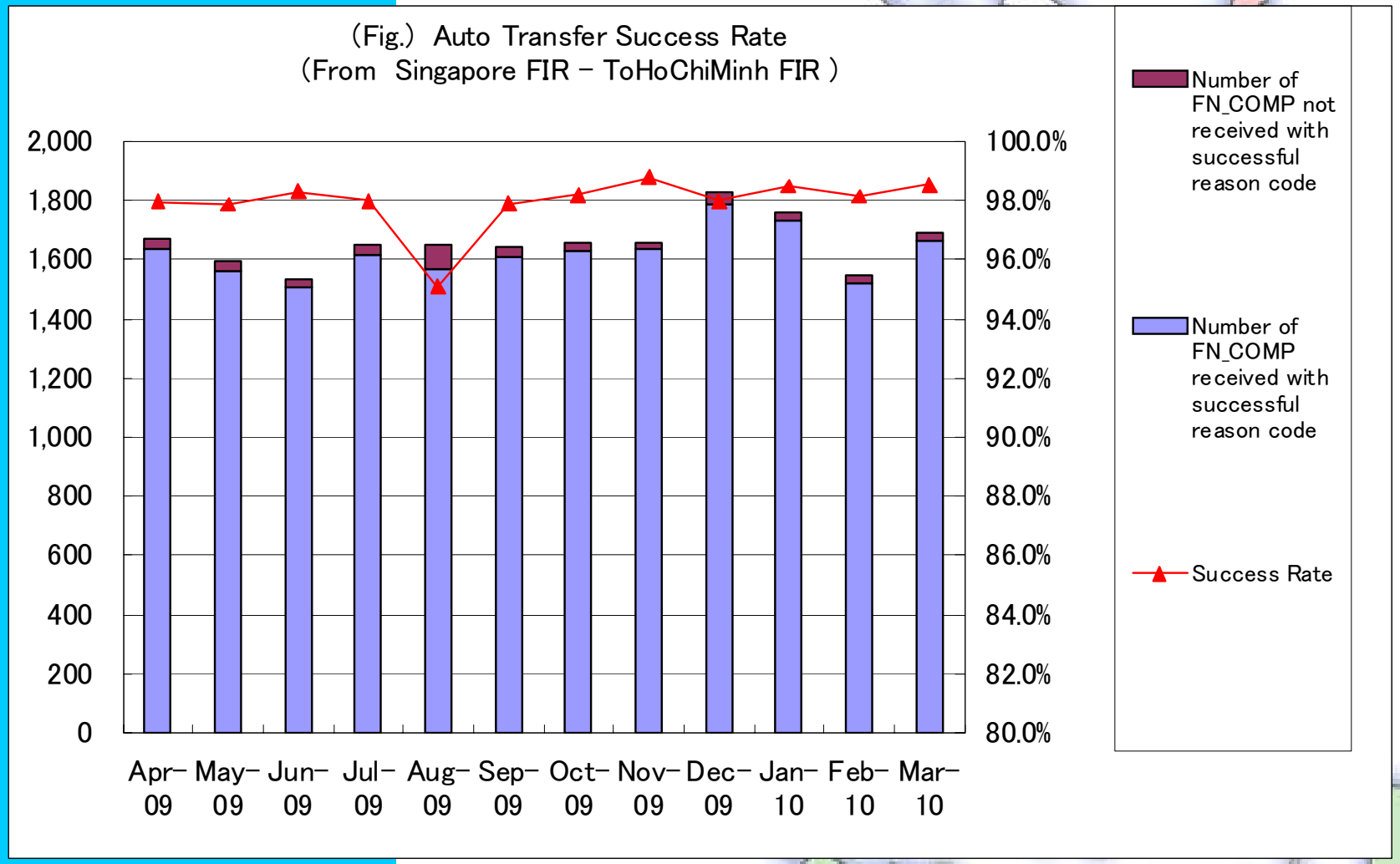
<VIET NAM>



Auto Transfer Success Rate

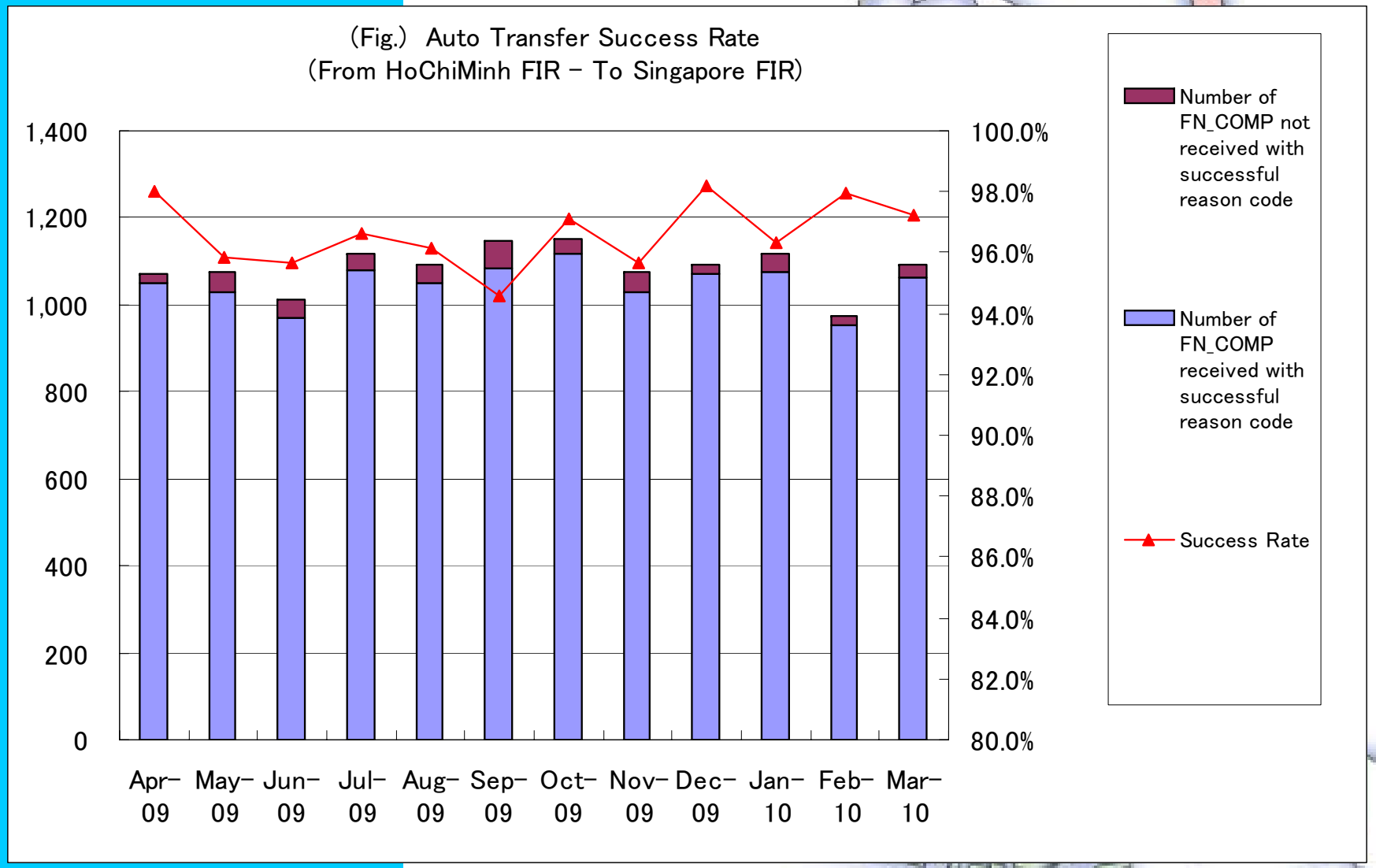
<SINGAPORE>

(Fig.) Auto Transfer Success Rate
(From Singapore FIR – ToHoChiMinh FIR)



Auto Transfer Success Rate

<VIET NAM>



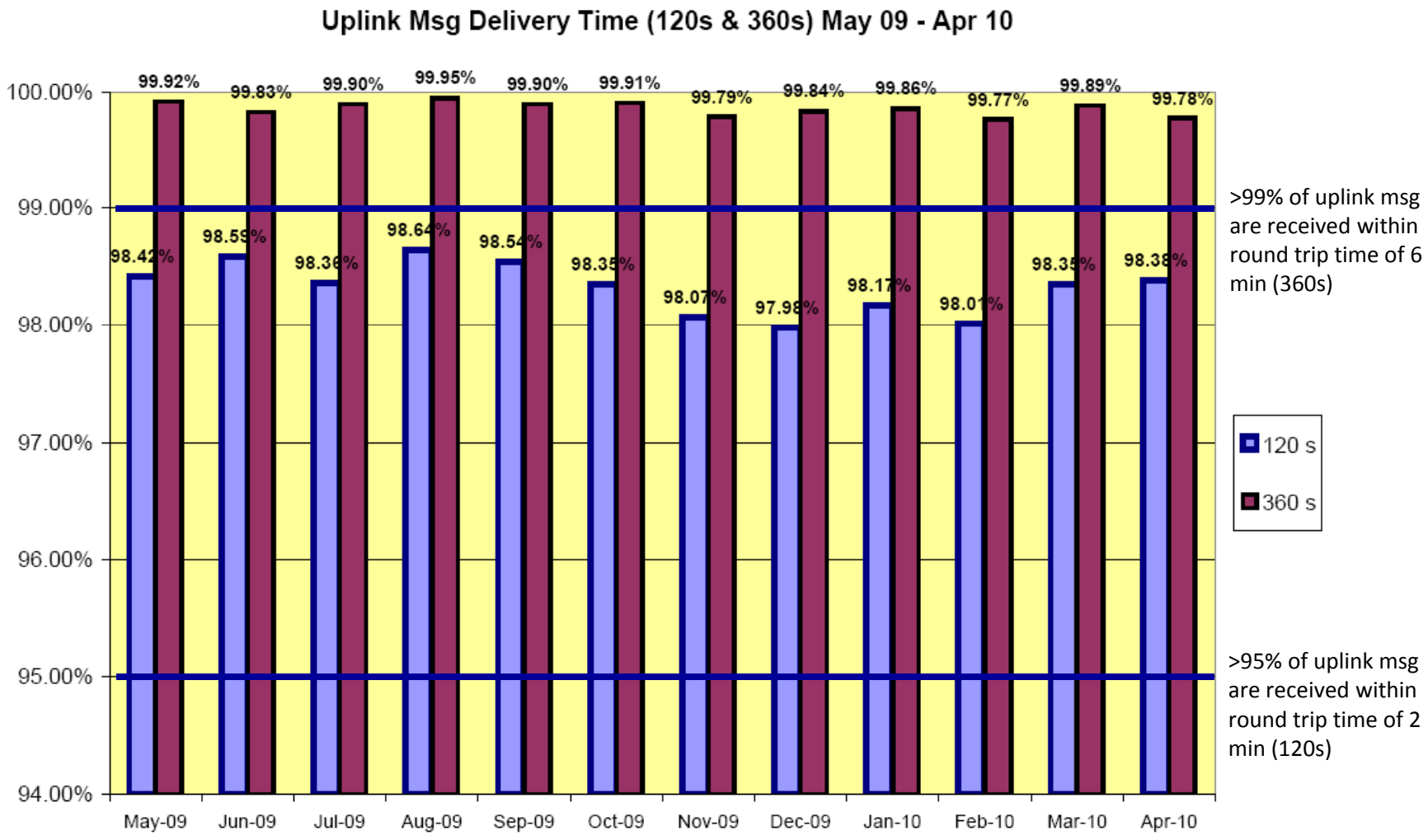
Thank you for your attention!

ATS Datalink System Performance / Operator Review

Presented by Singapore
24 May 2010

Civil Aviation Authority of Singapore

System Performance

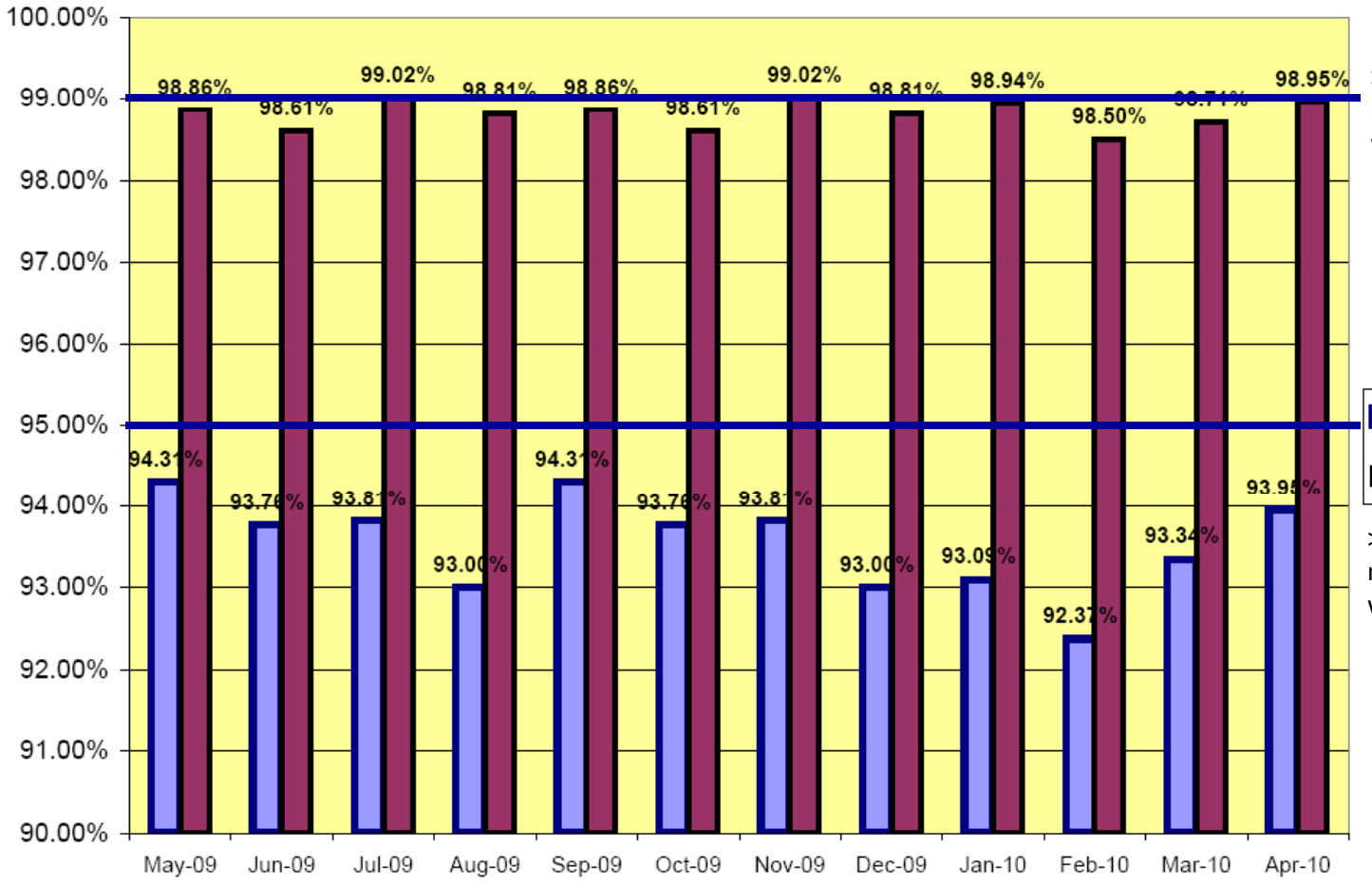


>99% of uplink msg are received within round trip time of 6 min (360s)

>95% of uplink msg are received within round trip time of 2 min (120s)

System Performance

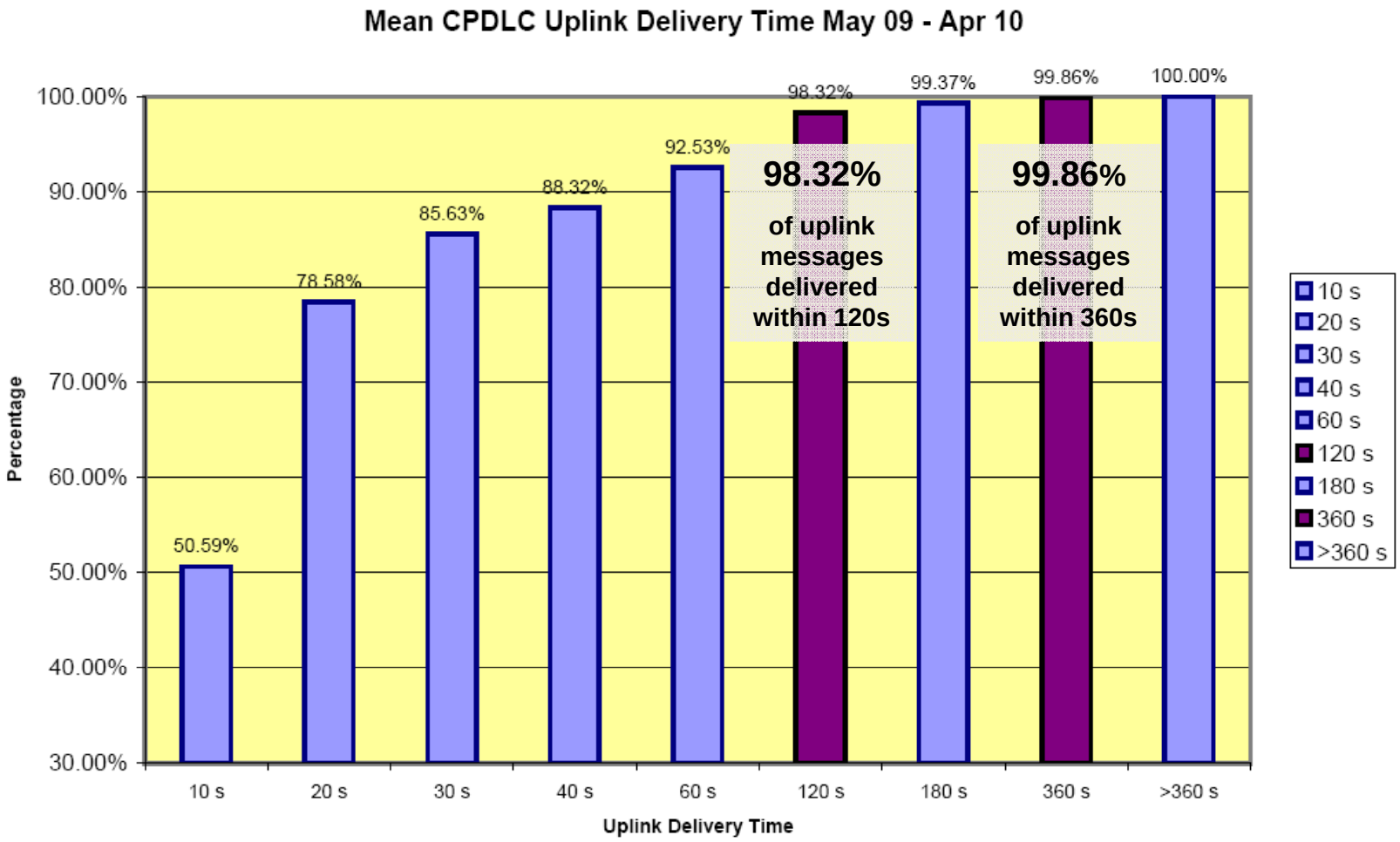
Downlink Msg Delivery Time (60s & 180s) May 09 - Apr 10



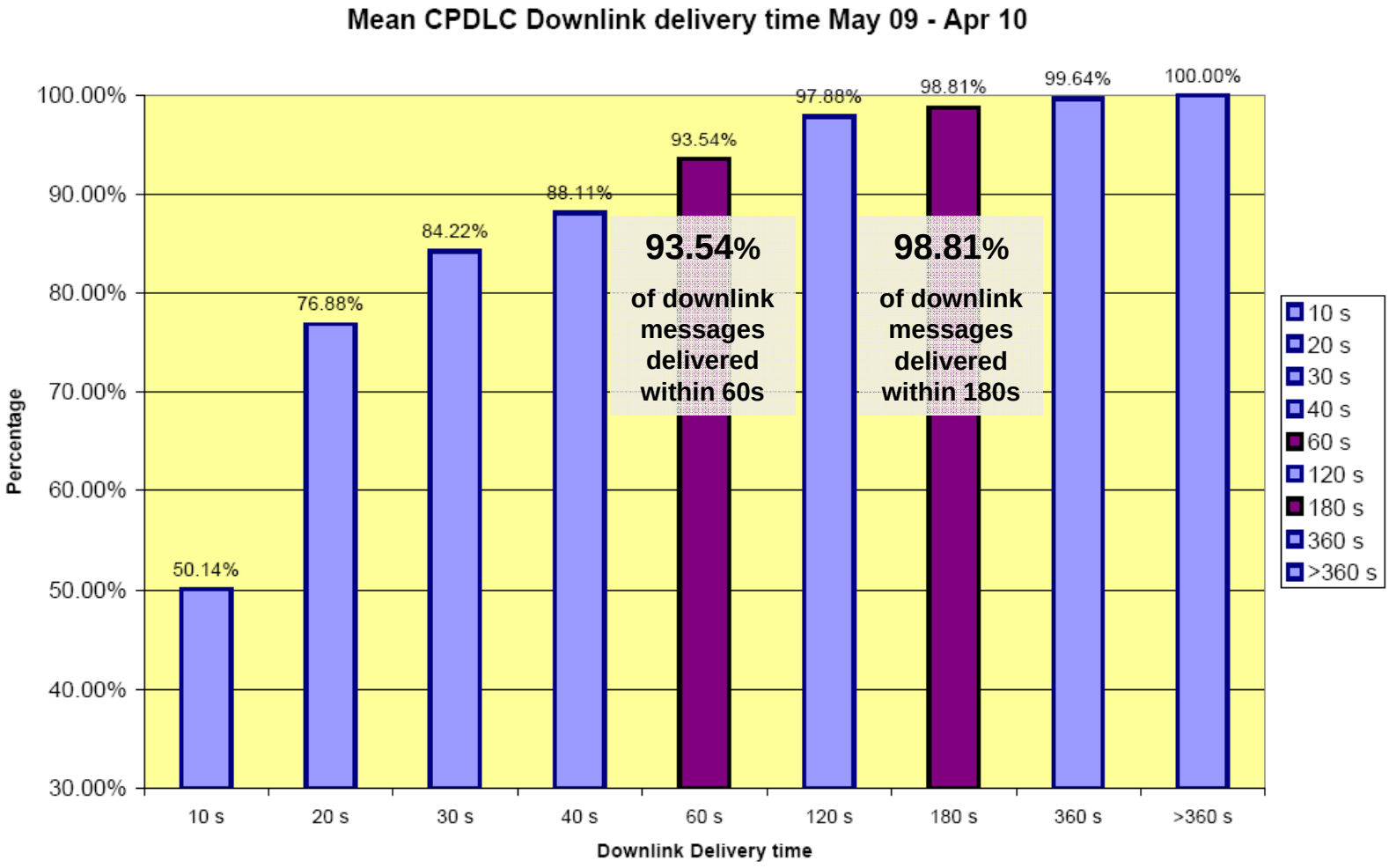
>99% of downlink msg are received within 3 min (180s)

>95% of downlink msg are received within 1 min (60s)

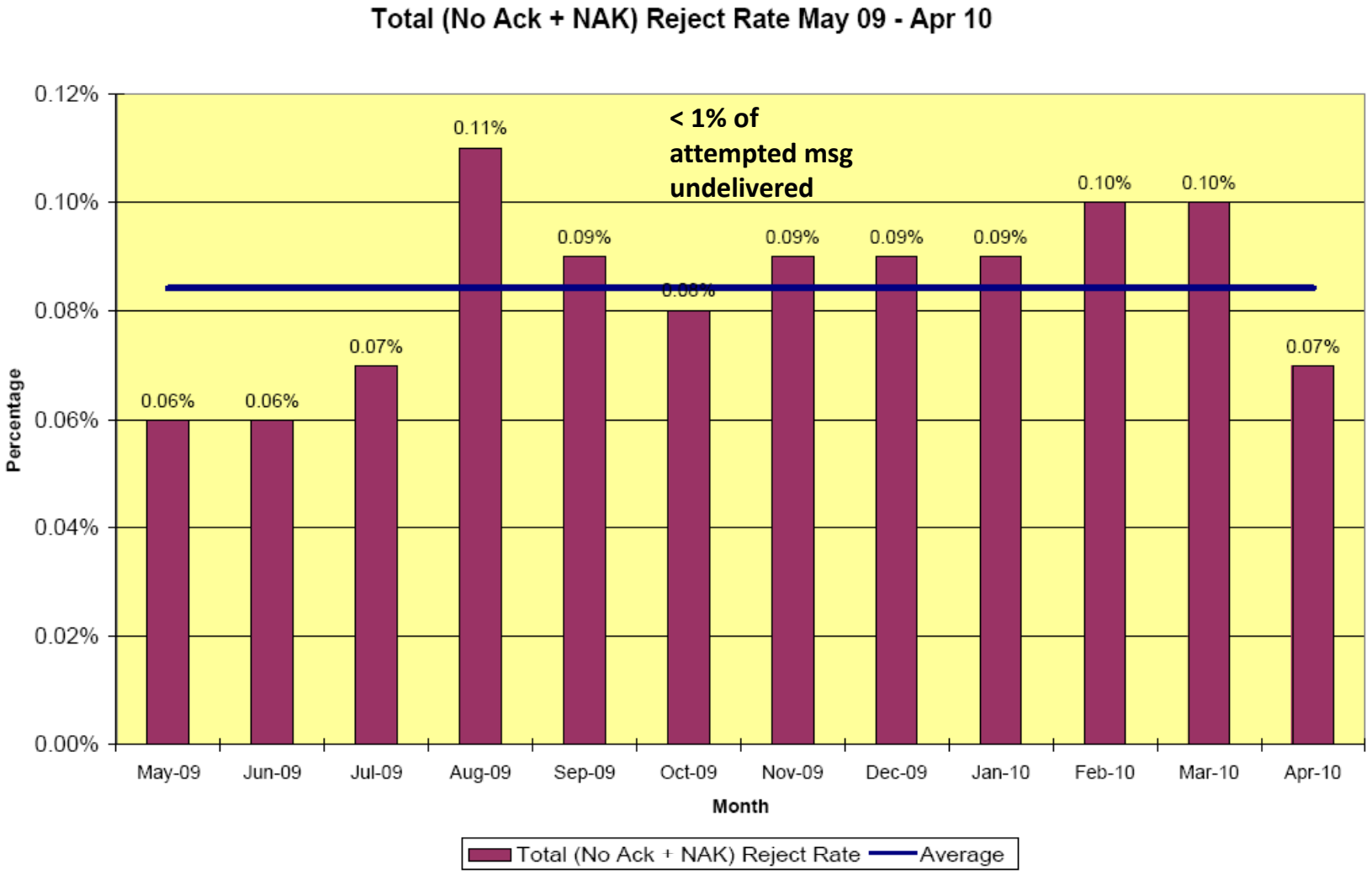
System Performance



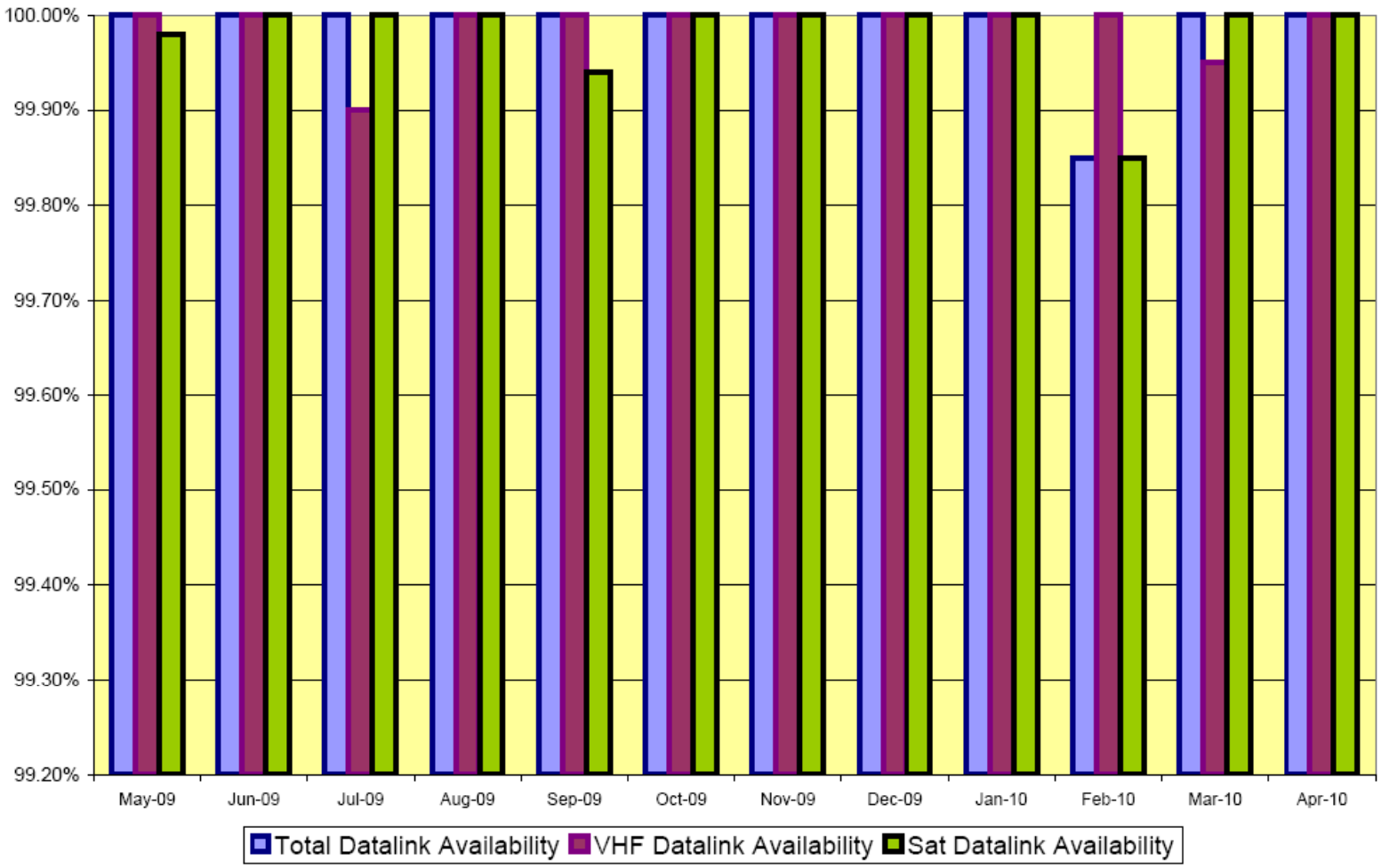
System Performance



System Performance

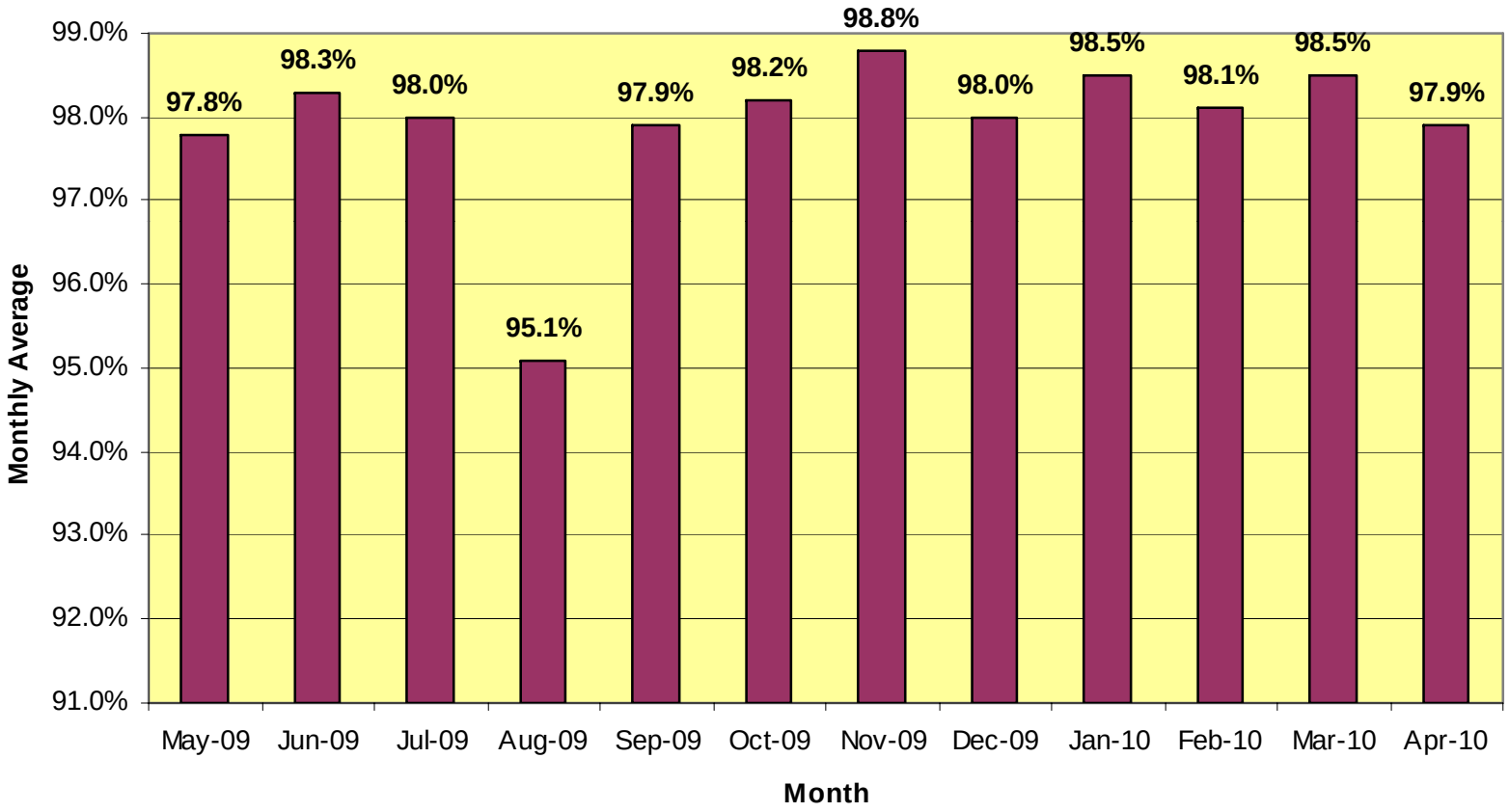


System Performance



System Performance

Auto Transfer Success Rate May 09 - Apr 10



System Performance

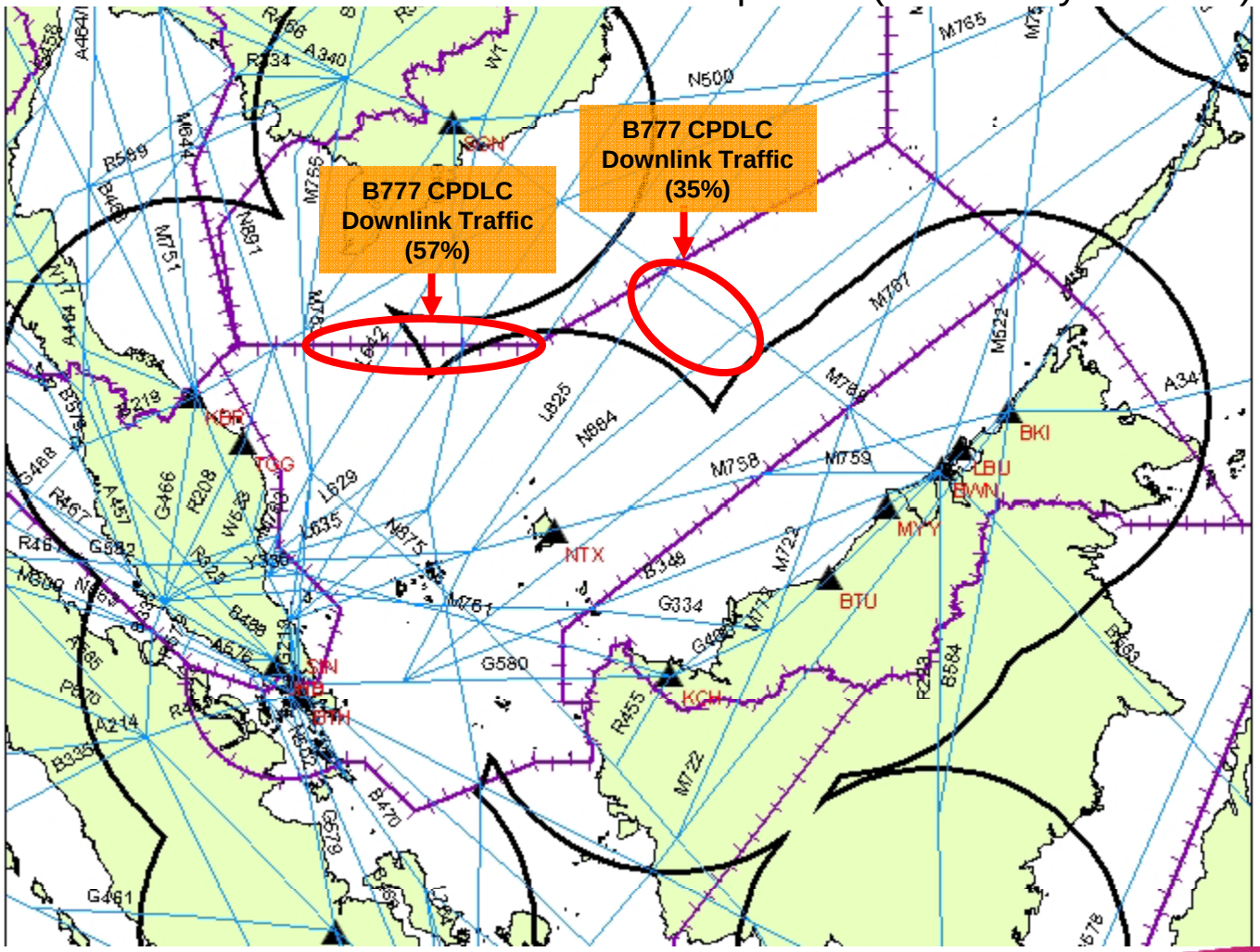
- At last FIT-SEA meeting, it was reported that the B777 aircraft type was have affected the overall downlink performance.
- Update 1: Boeing completed trials on the AIMS-2 and AIMS-1 software.
- Update 2: Singapore Airlines (SIA) B777 fleet contributed more than 70% of downlink traffic, and planned to upgrade AIMS-2 software in May/June 2010 (AIMS-1 software likely to begin in Q4 2010).

System Performance

- Validation of correct diagnostic on B777 issue:
  - Co-related traffic with downlink peformance greater than 60 secs
  - Position plotted
  - Results matched VHF / SATCOM transition areas

System Performance

B777 CPDLC downlink traffic distribution pattern (for delivery > 60 sec)

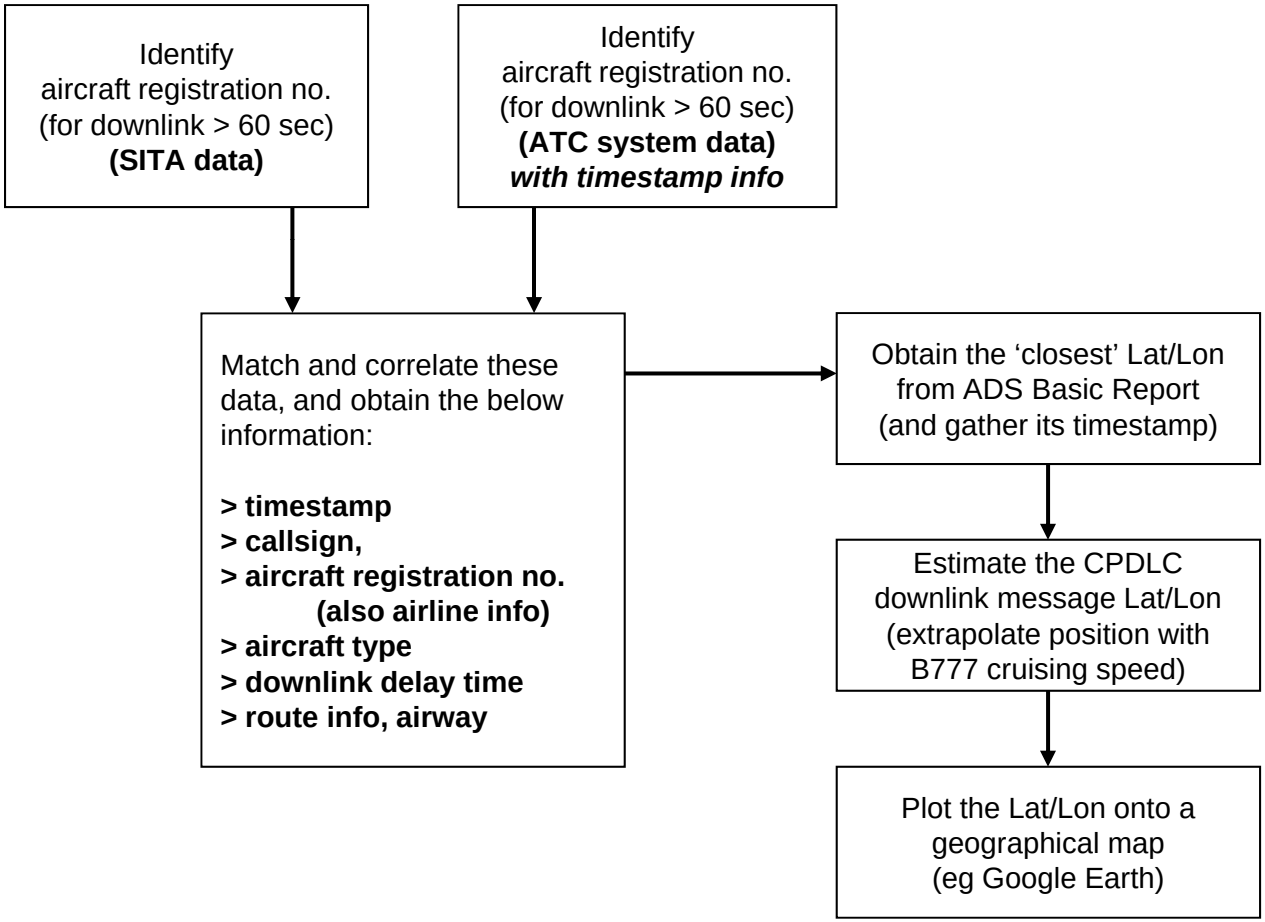


B777 CPDLC downlink traffic based on weekly flight data (1 to 7 Feb 2010)

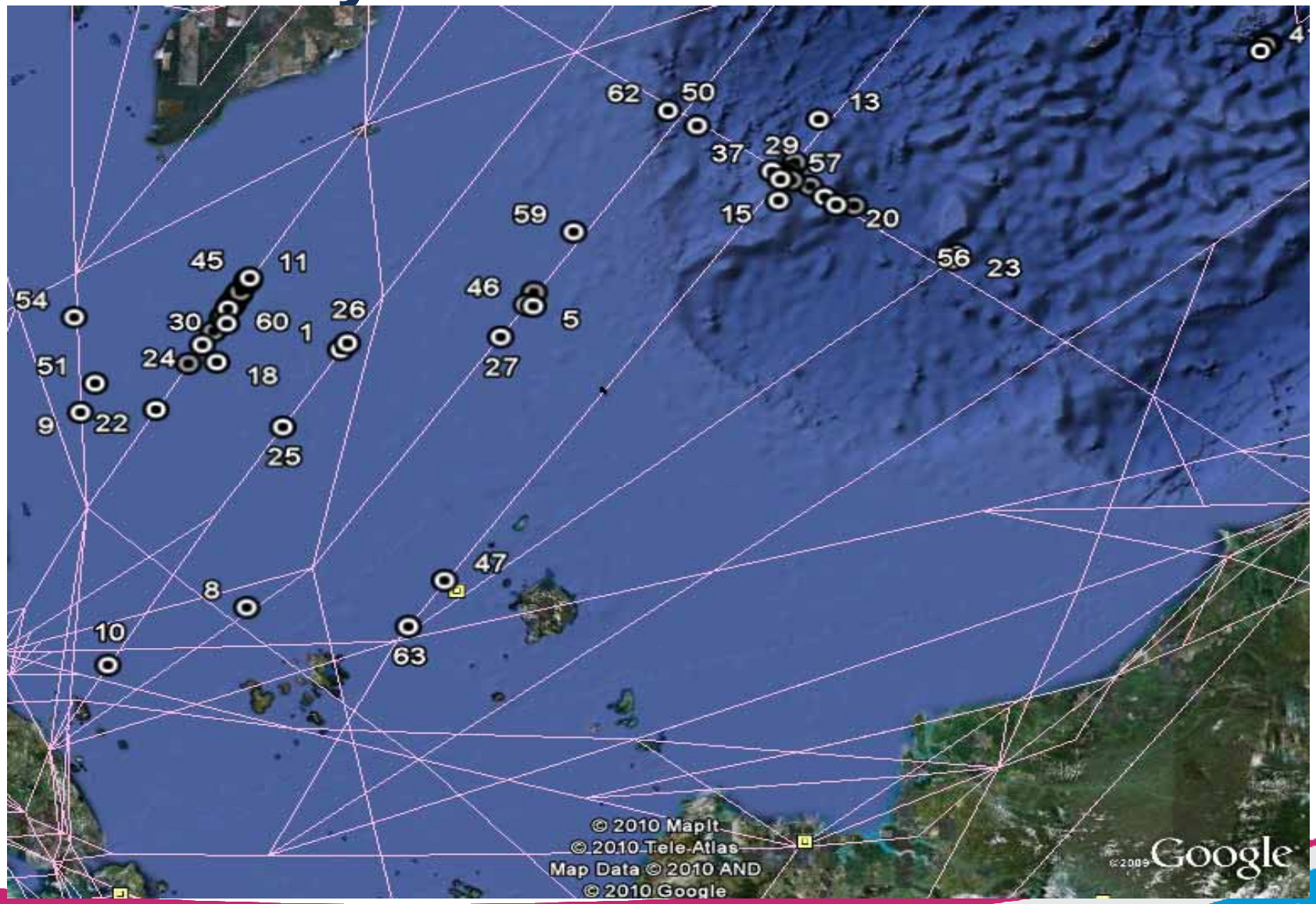
CAAS

System Performance

- How the statistics was derived?



System Performance



CAAS

System Performance

No.	Airline	Aircraft Type	Airway
1	SIA	B777-200	M771
2	SIA	B777-300ER	L642
3	SIA	B777-200	N884
4	SIA	B777-200	L642
5	SIA	B777-200	N892
6	THA	B777-200	M768
7	SIA	B777-200	L642
8	SIA	B777-200	N892
9	SIA	B777-200	M753
10	SIA	B777-200	M771
11	SIA	B777-300ER	L642
12	THA	B777-200	M768
13	SIA	B777-200	L625
14	SIA	B777-200	L625
15	SIA	B777-200	L625
16	SIA	B777-200	L642
17	SIA	B777-200	N892
18	SIA	B777-200	L642
19	SIA	B777-300ER	L642
20	THA	B777-200	M768
21	SIA	B777-200	L625
22	SIA	B777-200	L642
23	SIA	B777-200	N884
24	SIA	B777-200	L642
25	SIA	B777-200	M771
26	SIA	B777-200	M771
27	KAL	B777-300	N892
28	VNA	B777	M768
29	SIA	B777-200	L625
30	SIA	B777-200	L642
31	SIA	B777-300ER	L642

No.	Airline	Aircraft Type	Airway
32	SIA	B777-200	L642
33	SIA	B777-200	N884
34	SIA	B777-300	L642
35	THA	B777-200	M768
36	SIA	B777-300ER	L642
37	THA	B777-200	M768
38	THA	B777-300	M768
39	SIA	B777-300ER	L642
40	SIA	B777-200	L642
41	SIA	B777-200	N884
42	SIA	B777-200	L642
43	THA	B777-200	M768
44	SIA	B777-300	L642
45	SIA	B777-200	L642
46	SIA	B777-300ER	N892
47	SIA	B777-200	L625
48	SIA	B777-300ER	L642
49	SIA	B777-200	L642
50	HVN	B777	M768
51	SIA	B777-200	M753
52	SIA	B777-300	L642
53	SIA	B777-200	L642
54	SIA	B777-200	M753
55	SIA	B777-300ER	L642
56	SIA	B777-200	N884
57	THA	B777-200	M768
58	SIA	B777-200	N884
59	SIA	B777-300ER	N892
60	SIA	B777-200	L642
61	THA	B777-200	M768
62	MAS	B777	L625
63	KAL	B777-300	L625

Thank you for your attention

Southeast Asia - ADS/CPDLC Equipage and ATS Status

(last update - May ~~2008~~ 2009)

STATE/ ORGANIZATION	**FIR**	**LOGON CODE**	**Ground Station Manuf-acturer**	**DSP** (e.g. SITA, ARINC)	**ADS**	**CPDLC**	**AIDC**	**FDP**	**Test, Ops Trial or Operational**	**Procedures Published**	**ADS/CPDLC TRIAL**	**CONTACTS** (ATM contact in **bold)**	**REMARKS**
CHINA CAAC - General Administration of Civil Aviation of China	Sanya FIR												
HONG KONG, CHINA CAD - Civil Aviation Department	Hong Kong FIR				YES (trial equipment)	YES (trial equipment)	YES	YES	Stopped	NO	conducted from 1997 to 2002	Mr. ~~P F Wong~~Simon TC LI Acting Assistant Director-General of Civil Aviation (Air Traffic Engineering and Standards) Tel: (852)2591 5000 Fax: (852)2845 7160 Email: ~~phwong~~stcli@cad.gov.hk	
JAPAN JCAB - Civil Aviation Bureau of Japan	Fukuoka FIR	RJJJ		SITA	YES	YES	YES (with Oakland & Anchorage, trial with Incheon)	YES	Operational	PUBLISHED	completed in July 2006	**Mr. Takahiro Morishima** Special Assistant to the Director, JCAB ATS Systems Planning Division, Tel: +81-3-5253-8111 ext 51128 Fax: +81-3-5253-1663 E-mail: morishima-t2zq@mlit.go.jp	FUKUOKA FIR Oceanic participating in the IPACG FIT

STATE/ ORGANIZATION	**FIR**	**LOGON CODE**	**Ground Station Manuf-acturer**	**DSP** (e.g. SITA, ARINC)	**ADS**	**CPDLC**	**AIDC**	**FDP**	**Test, Ops Trial or Operational**	**Procedures Published**	**ADS/CPDLC TRIAL**	**CONTACTS** (ATM contact in **bold)**	**REMARKS**
MALAYSIA Department of Civil Aviation	Kuala Lumpur FIR (FIT-BOB)	WMFC		ARINC			NO	YES	Ops trial from 1 June 2008		No	**Mr. Ahmad Nizar Zofakar** Director ATS Tel: 603-88714000 Fax: 603-88714290 E-mail: nizar@dca.gov.my **Mr Omran Zakarina** Deputy Director ATS Email:omran@dca.gov.my:	Control on-going, equipement , ops trial 1 Jun.
	Kota Kinabalu FIR	WBFC		ARINC			NO	YES			No		
PHILIPPINES Civil Aviation Authority of the Philippines	Manila FIR	RPHI									No	**Mr. Salvador G. Rafael** Chief, ATC Division Tel: 632-8799160 Fax: 632-8799160 E-mail: zulu_whiskey52@yahoo.com	Ops Trial planned in Q3 or 4 2010
SINGAPORE Civil Aviation Authority of Singapore	Singapore FIR	WSJC	Thales	SITA	YES	YES	NO	YES	Operational	PUBLISHED	Completed	Mr. Yeo Cheng Nam Senior Engineer (Surveillance) yeo_cheng_nam@caas.gov.sg **Mr. Kwek Chin Lin** ATC Manager (Systems) kwek_chin_lin@caas.gov.sg Mr. Kwek Chin Lin ATC Manager (Systems) E-mail: kwek_chin_lin@caas.gov.sg	Ops Trial completed 1999, integrated system

STATE/ ORGANIZATION	**FIR**	**LOGON CODE**	**Ground Station Manuf-acturer**	**DSP** (e.g. SITA, ARINC)	**ADS**	**CPDLC**	**AIDC**	**FDP**	**Test, Ops Trial or Operational**	**Procedures Published**	**ADS/CPDLC TRIAL**	**CONTACTS** (ATM contact in **bold)**	**REMARKS**
THAILAND AEROTHAI	Bangkok FIR	VTBB	ARINC	ARINC	YES	YES	YES	YES	Ops Trial	NOTAM every three months	No	Mr. Choosit Kuptaviwat Tel: 66-285 9457 Fax: 66-228 59538 Email: choosit.ku@aerothail.co.th **Mr. Tinnagorn Choowong** Tel: 66-2-287 8423 Mobile: 66-09-816 6486 Fax: 66-2-287 8424 E-mail: tinnagorn.ch@aerothai.co.th	Pending an operational trial in the Bay of Bengal after six months period and will study CPDLC aplication over the continental area base on ATN protocal.
VIETNAM Civil Aviation Administraion of Viet Nam	Ho Chi Minh FIR	VVTS	Thales	ARINC	YES	YES			Operational	PUBLISHED	Completed	**Mr. Nguyen Manh Quang** Tel: (84-4) 8725272 Fax: (84-4) 8725281 e-mail: vatmats@n.vnn.vn	Phase 1 started in March 2007 and Phase 2 started in August 2008. Operational since 10 Aprtil 2008
	Hanoi FIR										No		

STATE/ ORGANIZATION	**FIR**	**LOGON CODE**	**Ground Station Manuf-acturer**	**DSP** (e.g. SITA, ARINC)	**ADS**	**CPDLC**	**AIDC**	**FDP**	**Test, Ops Trial or Operational**	**Procedures Published**	**ADS/CPDLC TRIAL**	**CONTACTS** (ATM contact in **bold)**	**REMARKS**
CENTRAL REPORTING AGENCY (CRA) CRA-Japan	Ho Chi Minh, Manila and Singapore FIRs	N/A										Mr. ~~Masahisa Hayashi~~Mitsuo Hayasaka K-1 Building, 3rd floor 1-6-6, Haneda Airport. Ota-ku, Tokyo 144-0041, Japan Telephone: +81-3-3747-1231 Fax: + +81-3-3747-1231 E-mail: crasa@cra-japan.org ~~hayashi~~hayasaka@atcaj.or.jp	FIT-SEA CRA, operated by CRA Japan

STATE/ ORGANIZATION	**FIR**	**LOGON CODE**	**Ground Station Manuf-acturer**	**DSP** (e.g. SITA, ARINC)	**ADS**	**CPDLC**	**AIDC**	**FDP**	**Test, Ops Trial or Operational**	**Procedures Published**	**ADS/CPDLC TRIAL**	**CONTACTS** (ATM contact in **bold)**	**REMARKS**
IATA	N/A											Mr. Geoff Hounsell Assistant Director ATM, SO&I, Asia Pacific, IATA Tel: 65 64992253 Fax: 65 62339286 E-mail: hounsellg@iata.org	
IFALPA	N/A											Capt. Korn Masumitchtai 484 Rachadanivet Soi 12, Bangkok, Thailand 10320 Tel: +66-81-344-6055 Fax: +66-2-513-0030 Email: captainkorn@gmail.com	
ARINC	N/A											Mr. Sarawut Assawachaichit Program Manager, Globalink Asia Tel: 66 2 2859435-6 Fax: 66 2 2859437 E-mail: sassawac@arinc.com	
SITA	N/A											Mr. David Fung SITA Regional Manager, Asia AIRCOM CNS Services Room 1201, 12/F Centre Point 181-185 Glovcester Road Wanchai Hong Kong, China Tel: 852-9400 7979 E-mail: david.fung@sita.aero	
ICAO	N/A											Mr. Kyotaro Harano Regional Officer ATM Tel: 66 2 5378189, ext. 159 Fax: 66 2 537 8199 E-mail: kharano@bangkok.icao.int icao_apac@bangkok.icao.int	

FIT- SEA TASK LIST

(Last updated May2009~~9~~10)

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
1.	ATS providers to use the *FANS Operations Manual* (FOM)/*Global Operational Data Link Document* (GOLD), and to review and update their ATS operating procedures to align with the FOM/GOLD.	Ongoing activities	All States	Ongoing	Important that all ATSU adopt common operating procedures. APANPIRG/15 (August 2004) agreed that the FOM be used as the basis for ADS and CPDLC operations in conjunction with Annex 10, PANS-ATM and regional guidance material. GOLD Version 1 will be available in June 2010.
2.	ATS provider to coordinate with adjacent area control centres (ACCs) to review and update letters of agreement (LOA) for introduction of ADS/CPDLC services on a trial basis.	Ongoing activities as additional States join the operational trial.	Philippines	Ongoing	Ensure common ATC procedures applied. Letter of agreement between Singapore and Viet Nam for trial was finalised and signed in February 2007 and would be amended for the regular operations in April 2008. LOA between Manila and the ACCs concerned should be finalised and singed before moving on to the Phase 1B , and would be amended for the Phase 2.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
3.	ATS providers issue AIC/AIP supplement on the commencement of the operational trial.	AIC prior to the Phase 1A commencement and AIP Supplement prior to Phase ~~2~~1B commencement	Philippines	As required	Publications of AIC and AIP Supplement by the Philippines are subject to the readiness in the Manila FIR.
4.	Coordinate with Southeast Asia States on the operational trial.	Ongoing activities as additional States join the operational trial.	ICAO, State	Ongoing	Determine status on trial participation Philippines planning to commence trial in the ~~3~~rd ~~or~~ 4th quarter~~s~~ 2010.
5.	Collect ADS/CPDLC Problem Reports (PR) and submit to the Central Reporting Agency (CRA) from the State.	Ongoing activities	States, operators	Ongoing	To be submitted as soon as practicable to facilitate analysing the reports. FIT-SEA CRA operated by CRA Japan undertakes CRA services from March 2007. PR has not been reported to CRA since FIT-SEA/8 (May 2008).
6.	Provision of monthly monitoring ADS/CPDLC system performance data to the CRA.	Monthly	States	Ongoing	Essential for evaluating overall system performance. FIT-SEA CRA operated by CRA Japan undertakes CRA services from March 2007.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
7.	Training of controllers and technical staff on ADS/CPDLC operational procedures based on the FOM/GOLD.	Ongoing activities as additional States join the operational trial.	States	Ongoing	Philippines will hold refresher course starting at the end of May 2009
8.	Nominate contact person (technical and ATS) and keep details updated.	Ongoing activities as additional States join the operational trail	States, operators	Ongoing	Important that CRA has contact with engineering and operational personnel to analyse problem reports and performance data. Contact persons to be included in the Table of ADS/CPDLC Equipage and ATS Status retained by FIT-SEA FIT-SEA CRA operated by CRA Japan undertook CRA services in March 2007.
9.	Conclude data confidentiality agreements between State and the CRA, and the State and operators participating in the trial.	Prior to the commencement of trial	CRA, Philippines and operators	Open	To conclude agreement between States, operators and data providers for release of data and to de-identify reports. Singapore and Viet Nam have singed.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
~~10.~~	~~Update ICAO Guidance Material on CNS/ATM Operations in APAC Region.~~	~~As soon as practicable~~	~~ICAO~~	~~Ongoing~~ COMPLETED	~~Part III harmonized with FOM.~~ ~~ICAO Headquarters continuing the review/harmonisation of Guidance Material.~~ ~~International Data Link Manual (IDLM) in preparation under the auspices of ICAO EUR/NAT Office.~~ ~~The Global Operational Data Link Document (GOLD) is being considered by the Ad Hoc Working Group.~~ GOLD was adopted by APANPIRG/20 (Conclusion 20/73) and will be published in June 2010.
9.	Update table of ADS/CPDLC implementation planning for all FIT-SEA flight information regions (FIRs) including estimated dates for trial, implementation of CPDLC communications, 50 NM/50 NM reduced separation and 30 NM/30 NM reduced separation to provide basis for long-term satellite traffic load estimates to assist data service providers (DSP) network planning.	As required	~~SITA,~~ ANSP	Ongoing	

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
~~12~~	~~Issue NOTAM reminding operators of the correct PR procedures~~	~~Immediate~~	~~Singapore and Viet Nam~~	~~Open~~ CLOSED	~~In light of the no PR reported in the South China Sea area, NOTAM to draw attention of operators to the correct PR procedures in the Singapore and the Viet Nam AIP supplements.~~ ~~(Raised at FIT-SEA/9)~~ Direct air to ground reporting should be envisaged in the long term.
~~13~~	~~Update on the plan for the operational trial for the consideration of CRA service temporarily provided by CRA Japan~~	~~Long-term FIT-SEA/10~~	~~Philippines~~	~~Open~~ COMPLETED	~~To decide the future direction of CRA service provided by Japan, the Philippines is requested to update FIT-SEA/7 on their operational trial.~~ ~~(Raised at FIT-SEA/9)~~

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
~~14~~10	Consider the establishment of the formal FIT-SEA CRA to take over the role from CRA Japan.	~~Long term~~ ATM/AIS/SAR/SG/20	States	~~Open~~ Ongoing	CRA service is provided by Japan on a voluntary basis until the formal FIT-SEA CRA is established. Japan indicated the possible withdrawal of the service unless the data link service trial starts in 2010 as planned. (Raised at FIT-SEA/9)
11	Training of air traffic controllers and engineers	Immediate	Philippines	Open	Philippines to start and complete controllers/engineers training as soon as possible so that the Phase 1A can be started earlier than planned. (Raised at FIT-SEA/10)
12	Collect ADS/CPDLC Problem Reports (PR) and submit to the Central Reporting Agency (CRA)-Japan from the State.	Immediate	Philippines	Open	To be submitted as soon as practicable to facilitate analysing the reports. CRA Japan will continue to provide assistance.
13	Provision of monthly monitoring ADS/CPDLC system performance data to the CRA.	Monthly	Philippines	Open	Essential for evaluating overall system performance. CRA Japan will continue to provide assistance.

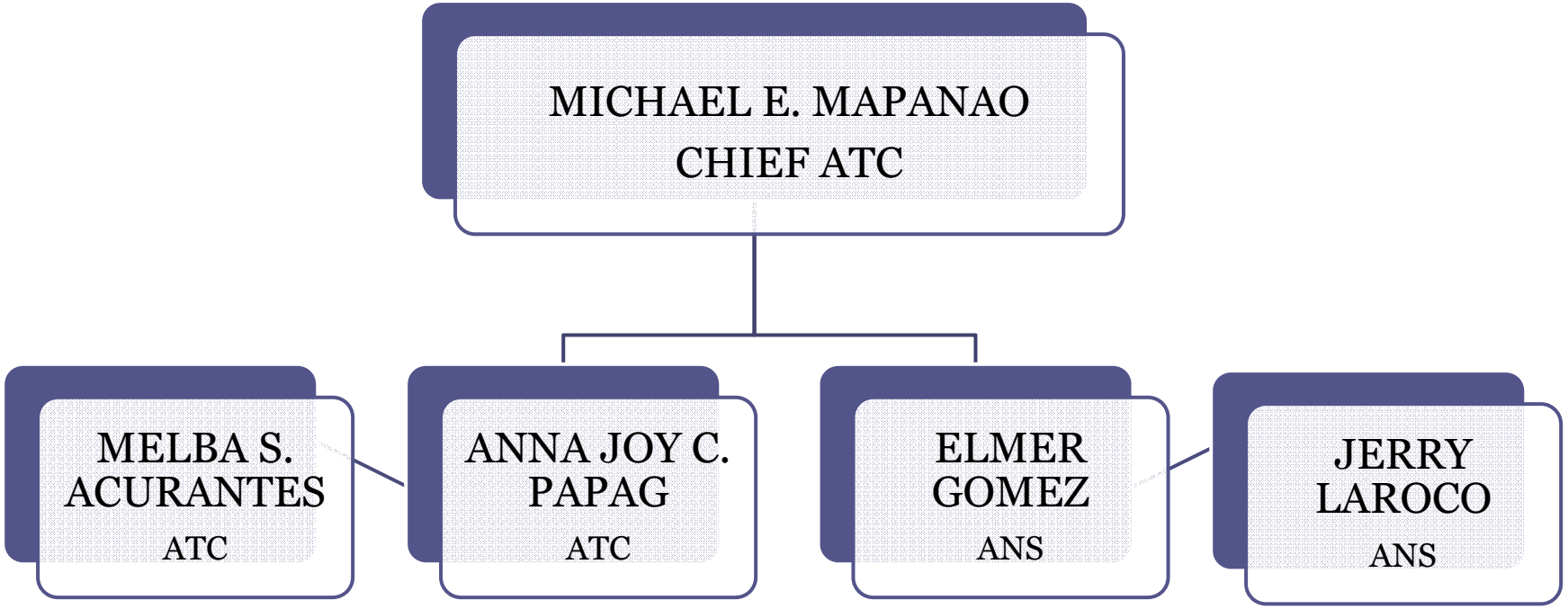
……

CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATION IN MANILA FIR

PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATION IN MANILA FIR

- Task Force committee was created.



PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATION IN MANILA FIR

- ADS/CPDLC Refresher Course Training for En route Controllers has been completed. (May-Nov.2009)

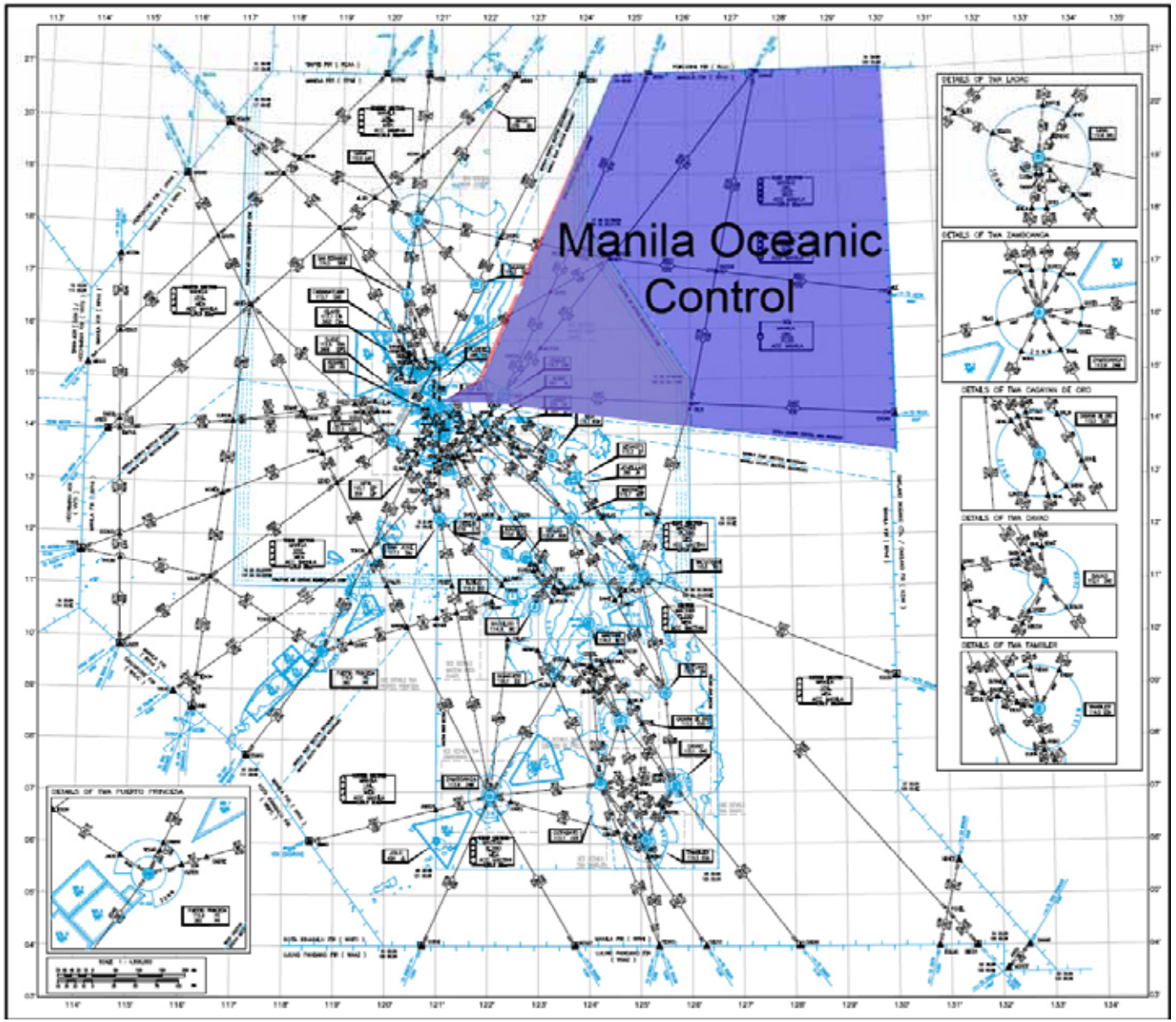
- Review on the ADS/CPDLC operational procedures and hands-on training will be conducted from August – September 2010.

PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATION IN MANILA FIR

- Installation of ADS/CPDLC Trial Equipment.
  - ADS/CPDLC function is part of the new Manila ACC ATC system.
- System validation test was conducted from May 7 -14, 2010.
  - Validation results/Problem reports were submitted to SITA for evaluation.
- Continuation of the system validation test is planned to be conducted simultaneously with the scheduled hands-on training of ATCs.

ADS/CPDLC TRIAL OPERATION PLAN

2010				2011			2012
AUG	SEPT.	OCT.	DEC.	JAN.	MAR	TBD	.....
TRAINING		PHASE 1-A		PHASE 1-B		PHASE 2	OPERATIONAL PHASE
		-----REPORT TO CRA-----				-----CRA ASSESSMENT----	


Manila Oceanic
Control

ADS/CPDLC TRIAL OPERATION PLAN

PHASE 1-A	PURPOSE:
Communications: HF and CPDLC Primary means: HF CPDLC: Assessment only ADS: Assessment only	1 . System Assessment
Data link airspace: East Sector Oceanic Timeframe: 0100-0900 UTC Target Date: Oct. 2010-Dec 2010	PROCEDURES: 1. Operations. 1.1 AFN Log on 1.2 Exchange of CPDLC messages. 1.3 Transfer of CPDLC connection. 1.4 Intra-facility coordination. 2. Submit Problem Reports to CRA.
Participating Airlines:	CAAP will send requests to IATA/ airlines if they can join the trial.

AFN Log on Procedures

a) The pilot manually send an AFN CONTACT message (FN_CON) containing the 4 character ICAO code of Manila which is **RPHI** at least 15 minutes prior to entering Manila FIR.

b) Manila departures should log on to RPHI not earlier than 45 minutes prior to ETD.

Exchange of CPDLC messages

- Both voice (HF) and CPDLC will be used as means of communication.

  a.) HF as primary means
  b.) CPDLC as secondary

  - Pilots' /ATCs' requests will be sent through voice (HF) first, then via CPDLC.
  - HF Operator shall advise Oceanic sector of the pilots' acknowledged clearance; after which, the same clearance will be sent through CPDLC.
  - Pilots execute " ONLY" clearance received from voice communication. (HF)

Transfer of CPDLC connection between RPHI and Adjacent ACCs.

- Transferring ACC shall terminate the CPDLC connection by:

  a) An uplink message of ““MONITOR (OR CONTACT) [icaounitname] [frequency] or a NDA message.

  c) Then pilot logs on to the next ATSu.

Communication Systems Failure

- In the event of unexpected data link (CPDLC) shutdown or any other difficulties have been observed, the Oceanic controller shall advise ANS (Maintenance) and AMS (HF Operator) of the CPDLC system failure.

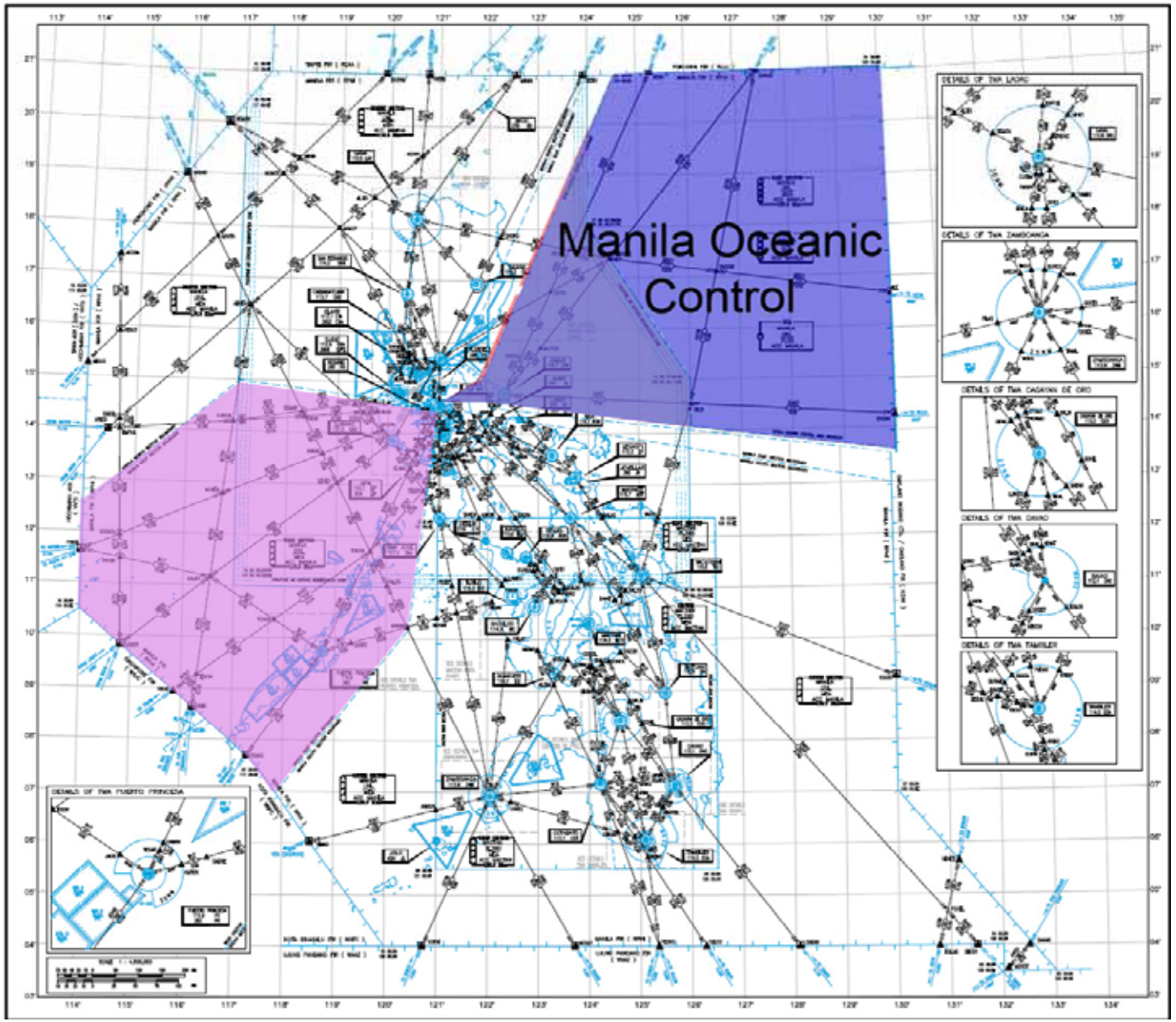
- HF operator shall advise ADS/CPDLC aircraft of the system failure and to remain on HF or to contact VHF.

PHASE 1-B	PURPOSES:
Communications: CPDLC and HF **Primary means:** CPDLC **Secondary:** HF **CPDLC:** Evaluation **ADS:** Data collection and evaluation	**1.System Evaluation** **2.Compare CPDLC position reports to ADS position reports**
Data link airspace: East Sector Oceanic **Timeframe:** 24 hrs operation **Target Date :** Jan. 2011-Mar.2011	**PROCEDURES:** **1.Operations.** **1.1 AFN Log on** **1.2 Exchange of CPDLC messages.** **1.3 Transfer of CPDLC connection.** **1.4 Intra-facility coordination.** **2.Submit Problem Reports to CRA.**
Participating Airlines:	**CAAP will invite airlines through IATA to join the trials.**

Phase 1-B

- Exchange of CPDLC messages

  - Both CPDLC and voice (HF) will be used as means of communication.
  - CPDLC as the primary means and HF as back-up.


Manila Oceanic
Control

PHASE 2	Purposes:
Communications: HF and CPDLC **Primary means:** CPDLC **Secondary:** HF **ADS:** Collection of data/ Evaluation of reduction separation minima.	1.System Evaluation 2.Compare CPDLC position reports to ADS position reports.
Data link airspace: East Oceanic Sector , West Sector and airways L625/N892 **Timeframe:** 24 hrs operation **Note:** Phase 2 will commence as CPDLC integrates on all work stations.	**PROCEDURES:** 1.Operations. 1.1 AFN Log on 1.2 Exchange of CPDLC messages. 1.3 Transfer of CPDLC connection. 1.4 Intra-facility coordination. 2.Submit Problem Reports to CRA.
Participating Airlines: open participation of FANS-equipped aircraft of all operators	

Coordination with Adjacent ACC

- Philippines coordinated a visit Ho Chi Minh ACC to conduct exploratory discussions and learn from the experiences they had on their operational trial.

- Philippines also intends to visit Singapore ACC after the 4-day meeting.

Coordination with Airlines

- CAAP will invite Philippine Airlines to participate in the ADS/CPDLC trial.

- Philippines is requesting assistance from IATA to encourage other airlines to take part on the operational trial

Data Link Provider

- SITA has been contracted to provide data link service for ADS/CPDLC trial.

- SITA will also be responsible for collecting and sending problem reports related to failure of data link during the trial.

Central Reporting Agency

- Japan CRA has volunteered to provide CRA services for Manila during the ADS/CPDLC trial.
- Monthly Problem reports will be collected from ATCs, pilots and the data link provider.
- All problem reports will be sent to CRA Japan.

Conclusion

- ADS/CPDLC implementation in the Manila FIR will meet APANPIRG Conclusion 19/12 for the state to accelerate application of data link based technology .

Thank you!

SOUTHEAST ASIA DATA LINK IMPLEMENTATION

STATES	FIR	ESTIMATED/ STARTED DATE	DATE COMPLETED	NOTES
Commence ADS/CPDLC Operational Trial				
Malaysia	Kuala Lumpur	July 2008	–	Participated in the Bay of Bengal (BOB) trials in Q1 2008.
Philippines	Manila	Q~~3 or 4~~ 2010		
Singapore	Singapore	1997	1997	
Thailand	Bangkok	TBA		Had previously participated in BOB trials, some equipment issues.
Viet Nam	Ho Chi Minh	15 March 2007	10 Apr 2008	
Implement CPDLC - Data Link Communications only				
Malaysia	Kuala Lumpur	TBA	–	Only for FIT-BOB
Philippines	Manila	~~TBA~~2012		
Singapore	Singapore	1997		
Thailand	Bangkok	TBA		
Viet Nam	Ho Chi Minh	2008		
Implement 50 NM/50 NM Based on RNP 10				
Malaysia	Kuala Lumpur	13 January 2011		
Philippines	Manila	~~TBA~~2012		
Singapore	Singapore	3 July 2008		
Thailand	Bangkok	TBA		
Viet Nam	Ho Chi Minh	3 July 2008		Based on VHF on L642 and M771

STATES	FIR	ESTIMATED/ STARTED DATE	DATE COMPLETED	NOTES
Implement 30 NM/30 NM Based on RNP 4				
Malaysia	Kuala Lumpur	TBA		
Philippines	Manila	TBA		
Singapore	Singapore	2010		
Thailand	Bangkok	TBA		
Viet Nam	Ho Chi Minh	TBA		

Extracts from the Problem Reports, presented at IPACG FIT/19

FIT-SEA10

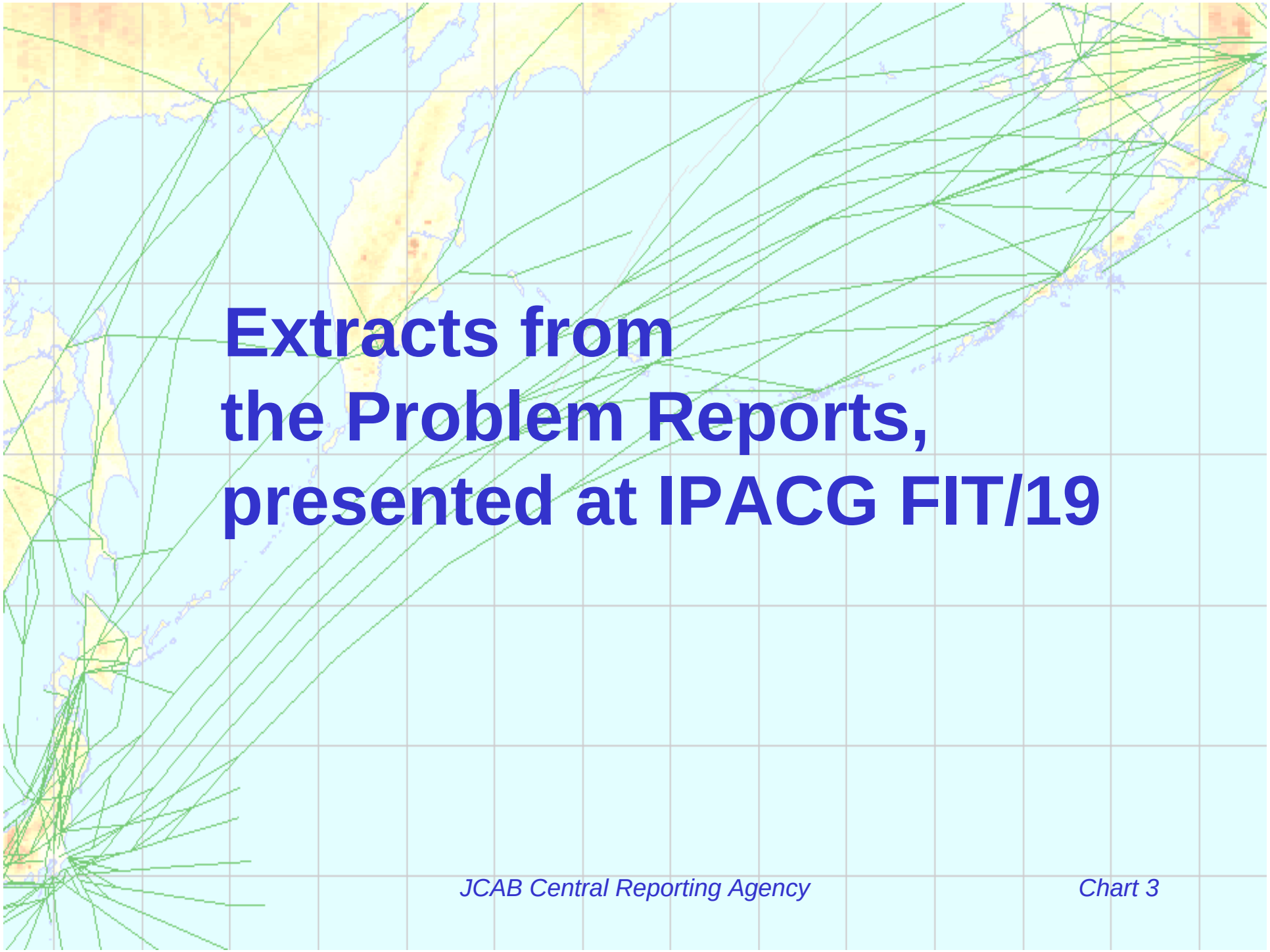
Singapore

24 May, 2010

Contents

- Extracts from
  the Problem Reports,
  presented at IPACG FIT/19

- FUKUOKA ATMC



Extracts from the Problem Reports, presented at IPACG FIT/19

Specific PRs

- Unable to establish ADS-C.(PR10472)
- Incorrect ADS reports downlinked.(10509)
- Augmented ADS periodic rate.(PR10524)
- Unable to talk via SATVOICE.(PR10525)

Unable to establish ADS-C

PR Number: PR10472

- CPDLC operable, unable to establish ADS-C.
- After the CPDLC reset, ADS remains inoperative until ATSU(=CMU FANS/1) box manually reset.
- Recommended upon the “INVAILED DATA” message on the DCDU per the QRH (Quick Reference Handbook).
- Corrected on FANS-A+.

Incorrect ADS reports downlinked

PR Number: PR10509

- An ATSU end system received the incorrect ADS reports.
- The ATSU end system uplinked an ADS demand request in response to the received incorrect ADS report.
- The incorrect ADS reports included default value in ADS predicted route group.
- Amounted to 560 ADS data exchanged between Air/Ground in about two hours.

Periodic Report

- Periodic reports to be downlinked by the specified interval.
- In Fukuoka FIR, the following fields are included in the report.
  1. Basic ADS: Current position
  2. Flight ID
  3. Intermediate projected intent points
     Distance (NM), True bearing (degree) , Altitude (feet), ETA (hhmmss)
  4. Fixed projected point
     Latitude (degree), Longitude (degree), Altitude (feet), ETA (hhmmss)
  5. Predicted Route (Next) (Next+1)
     Latitude (degree), Longitude (degree), Altitude (feet), ETA (hhmmss)
  6. Earth Reference
     T-Angle (degree), Speed (Knots), V-Rate (feet/min)
  7. Air Reference
     T-Angle (degree), Speed (Knots), V-Rate (feet/min)

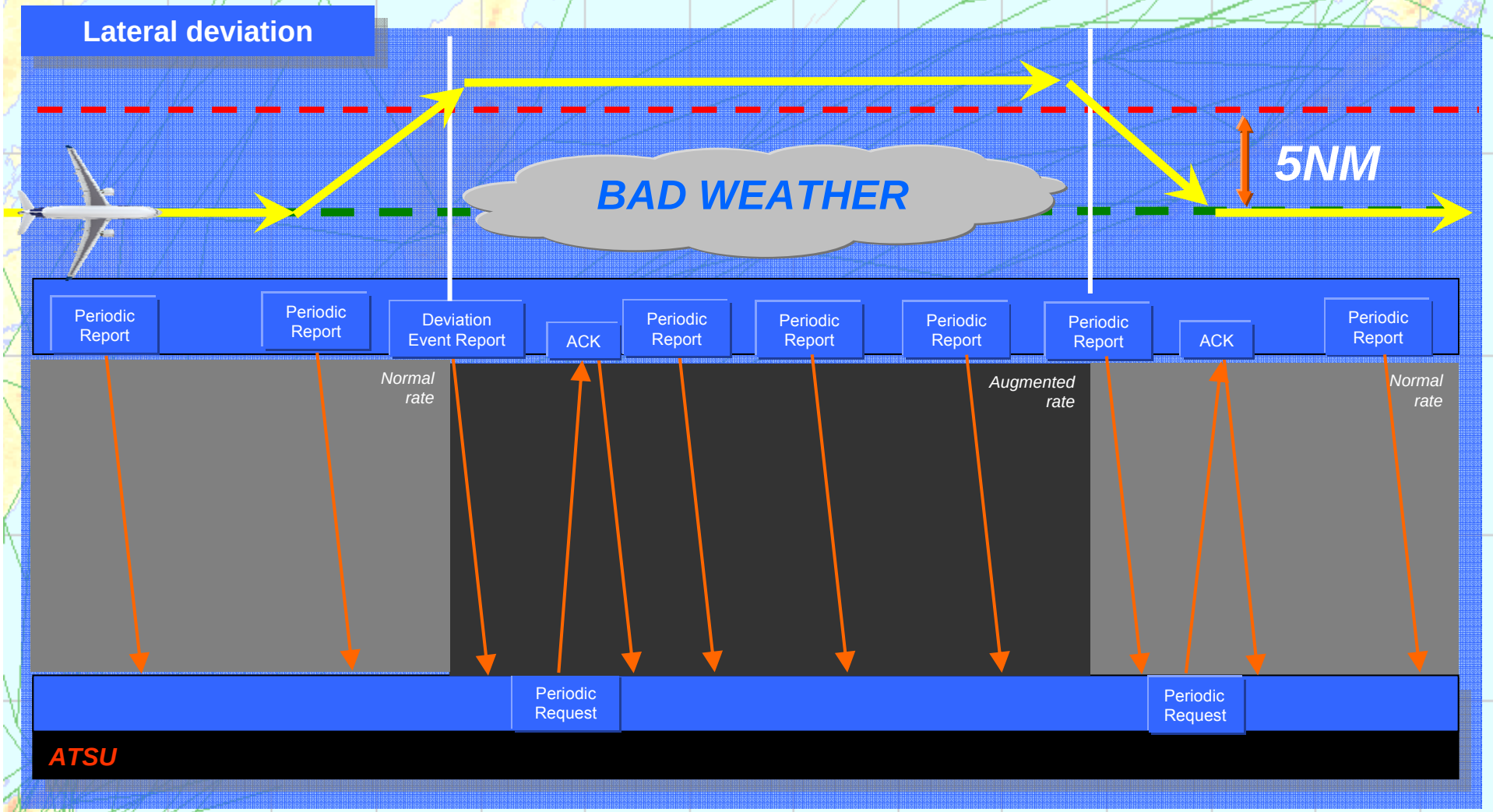
The RTCA DO-258A describes that in case Flight Management System takes more than 5 seconds in computing such ADS data as Predicted Route data and Intermediate Projected Intent Group data, those ADS data fields can be filled with default values.

Augmented ADS periodic rate

PR Number: PR10524

- An airline questioned the number of ADS reports downlinked.
- In the FIR, nominal ADS periodic rate is 9 min 36 sec in considering TLS with RNP4 operation.
  (Refer to IPACG/28 WP/15)
- Because ATSU detected the aircraft did not reach the assigned altitude yet, ATSU requested ADS periodic contract with 5 min 20 sec.
- The aircraft deviated because of weather and the ATSU again requested ADS periodic contract with 5 min 20 sec.

Augmented periodic rate

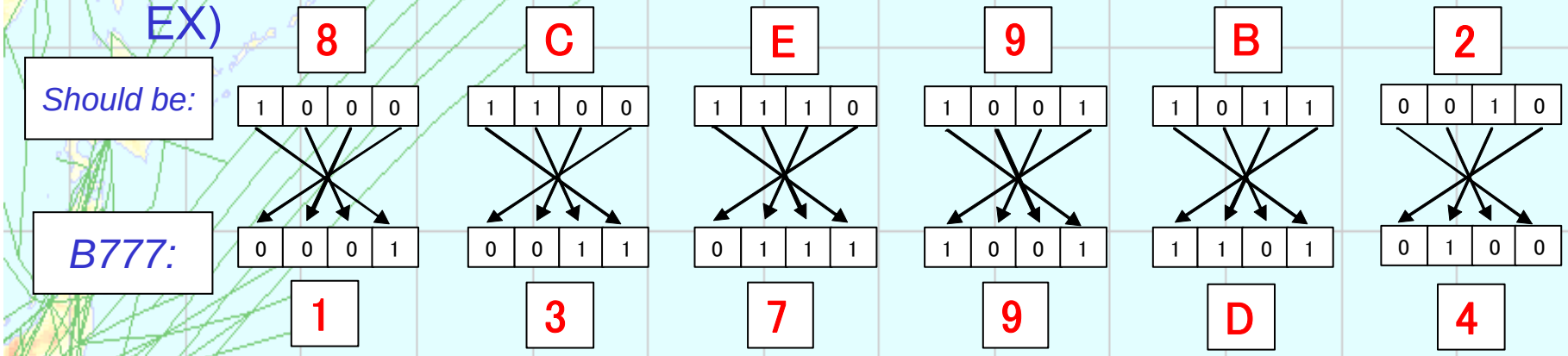


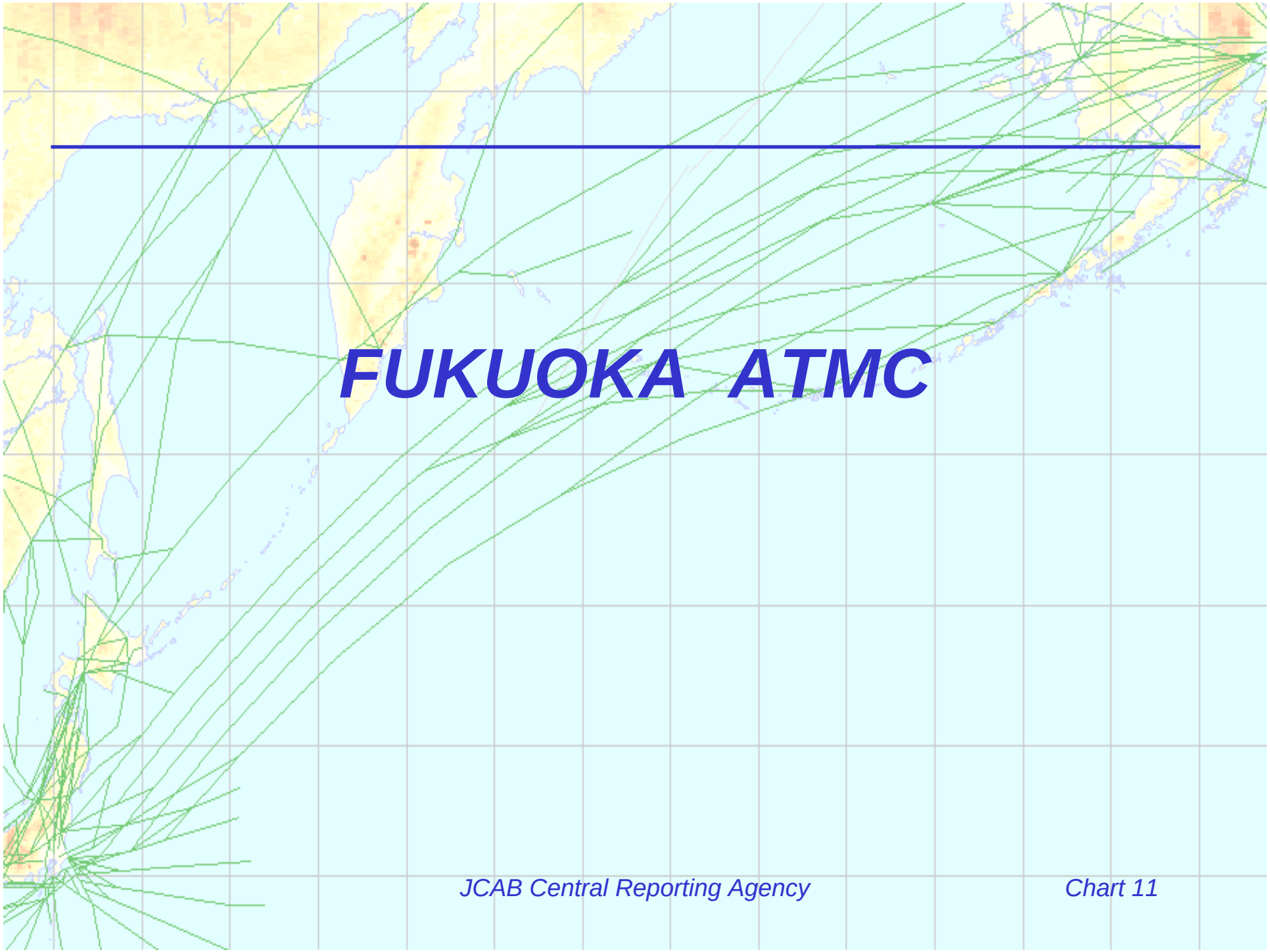
Unable to talk via SATVOICE

PR Number: PR10525

- The ATSU extracts SATVOICE number (ICAO 24 bit ID code) out of a FN_CON message.
- The bit order of the ICAO 24 bit ID code put into the AFN FN_CON message was actually reversed on every 4 bits.
- Symptomatic to B777.
- The ICAO 24 bit ID code is set in an optional field of the FN_CON message.

EX)





FUKUOKA ATMC

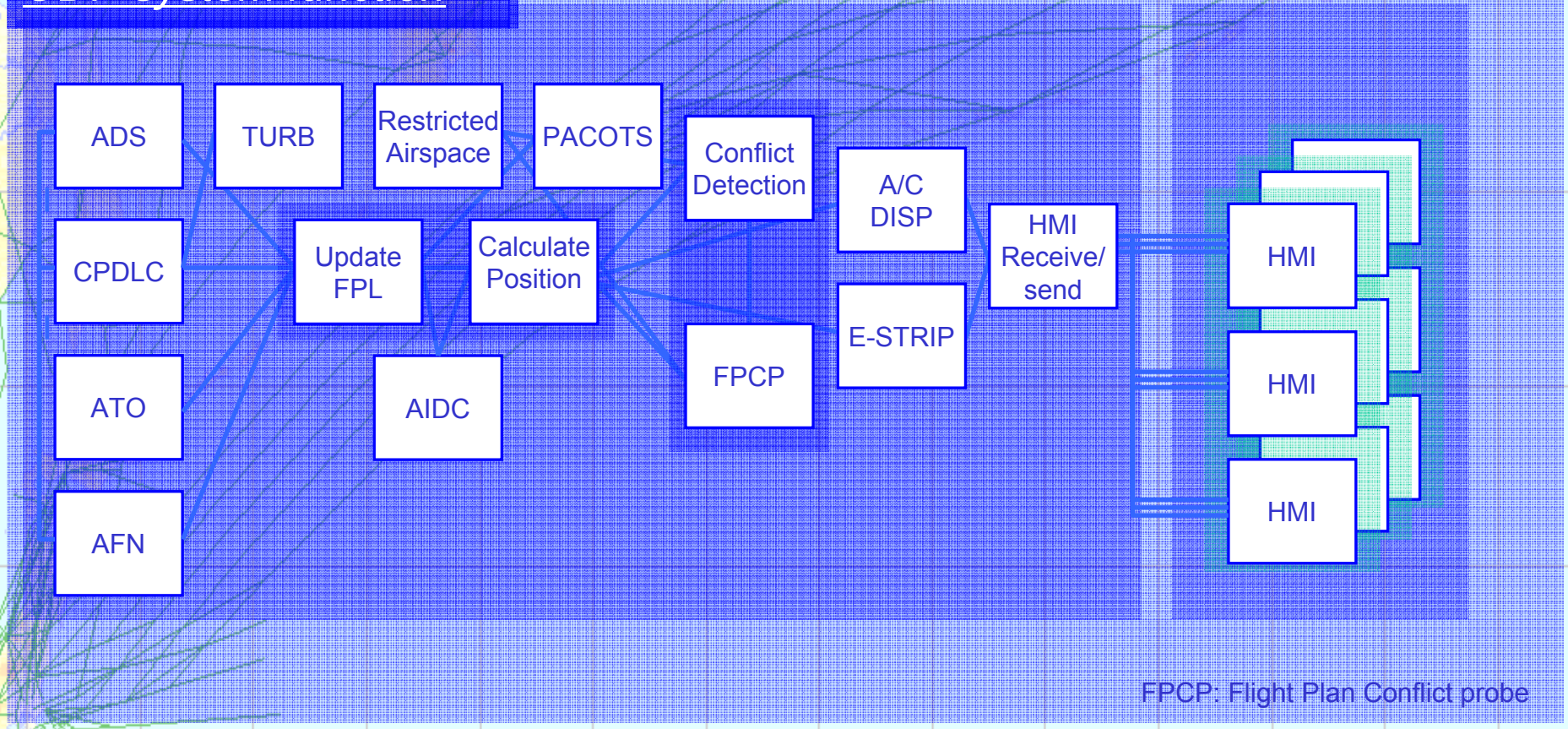
Oceanic ATC system in FUKUOKA FIR

ODP (Oceanic Air Traffic Control Data Processing System)

Oceanic ATC system in FUKUOKA FIR

ODP (Oceanic Air Traffic Control Data Processing System)

ODP system function



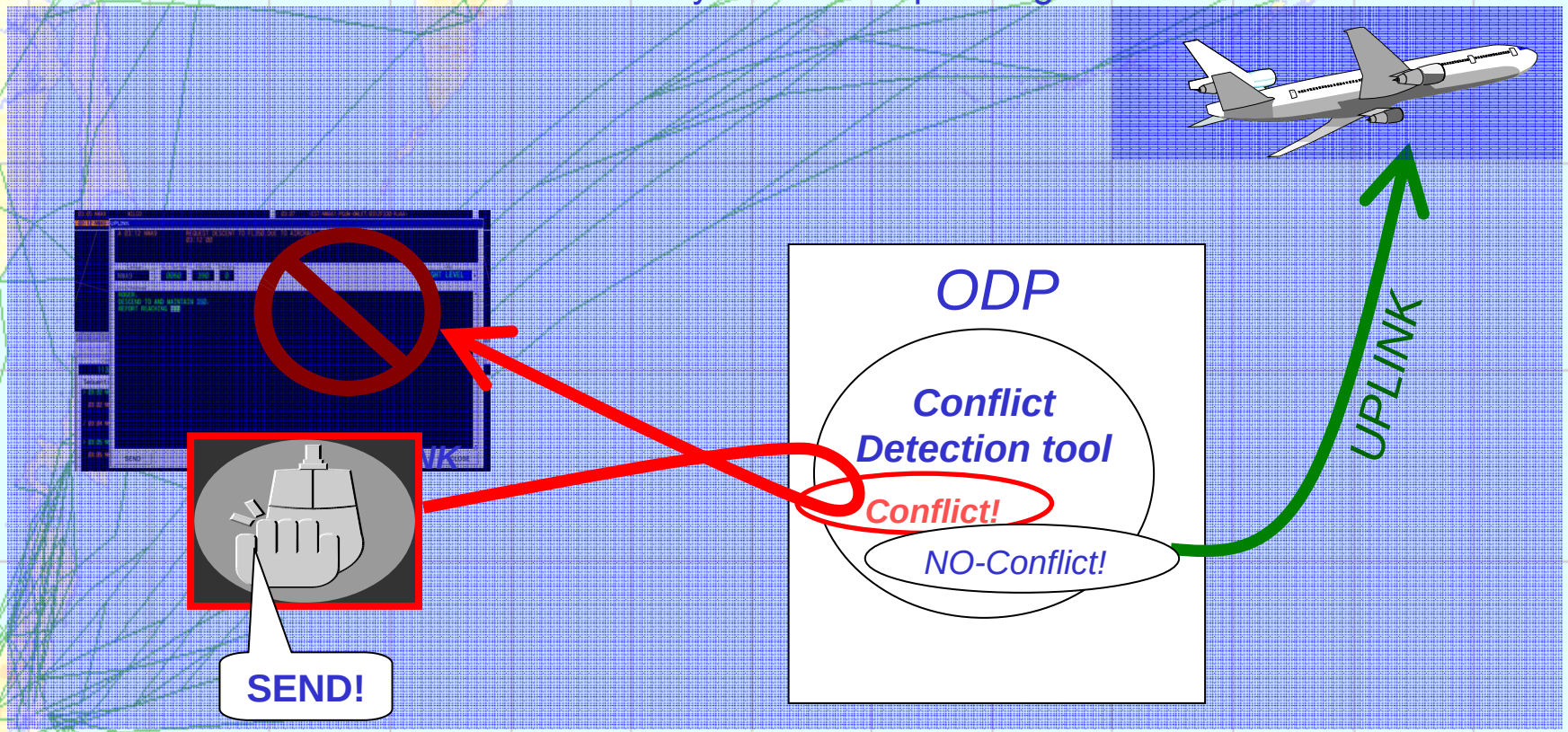
Oceanic ATC system in FUKUOKA FIR

ODP functions

- Trial command function : Check if a controller's clearance to a pilot's request is safe or not. In response to a Trial Clearance command the function checks for the existence of conflict.

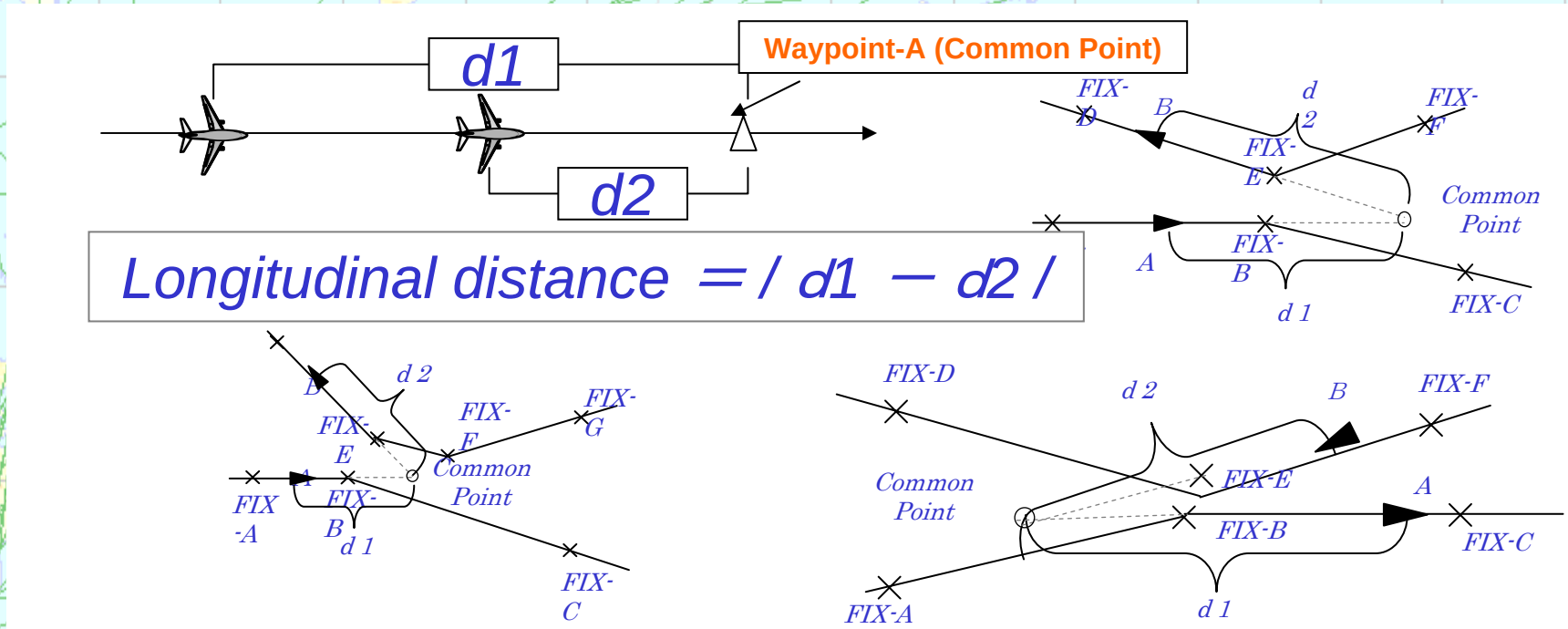
Oceanic ATC system in FUKUOKA FIR

- Clearance check function : When issuing a clearance via CPDLC, the function automatically checks for conflicts based on the clearance. If there detected any conflicts, the function prevent the system from up linking the clearance.



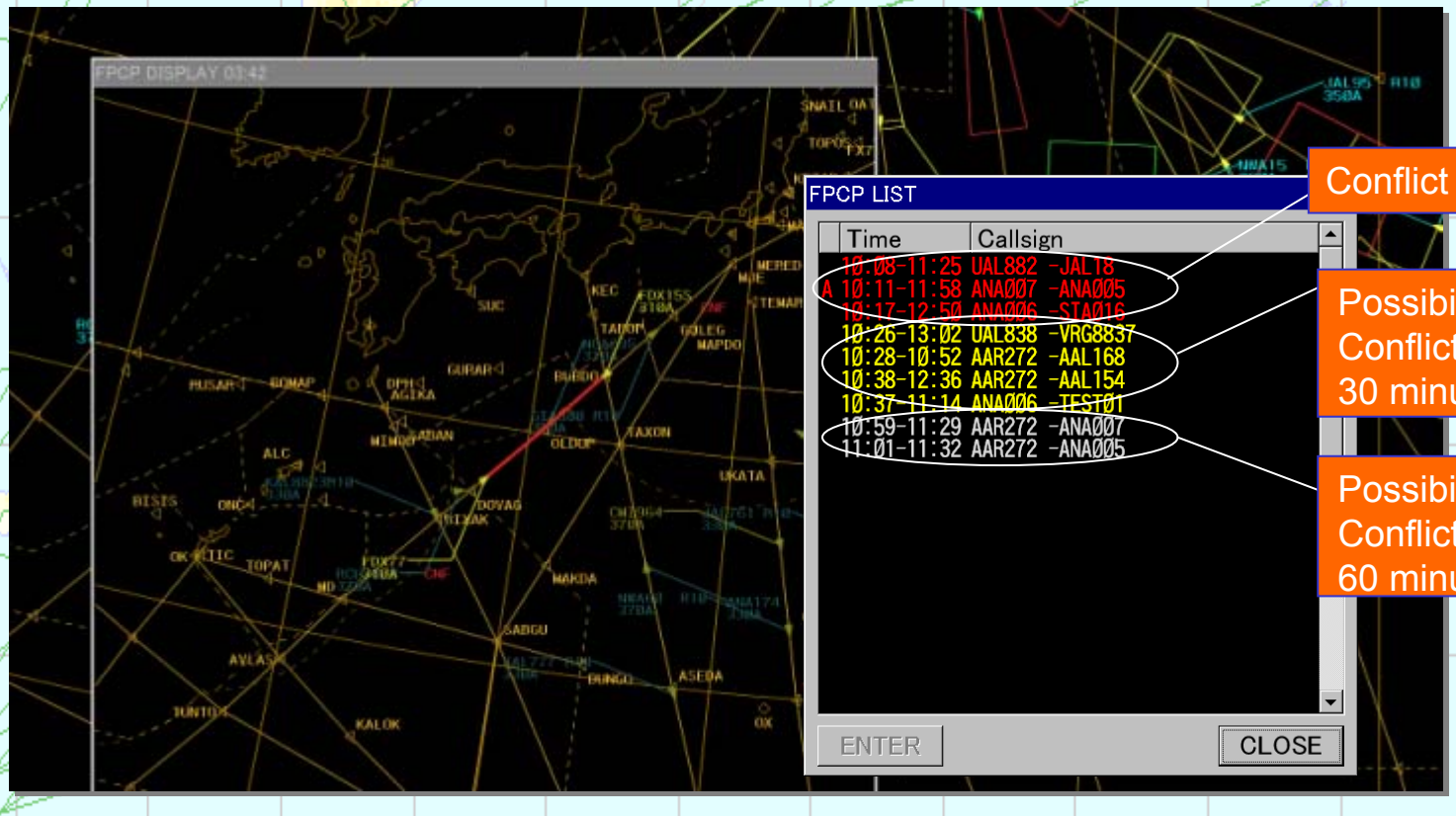
Oceanic ATC system in FUKUOKA FIR

- Conflict detection using Common Point method : Applying the Common Point method to the data-linked aircraft pair.
  (Common Point method is based on the ICAO standard)



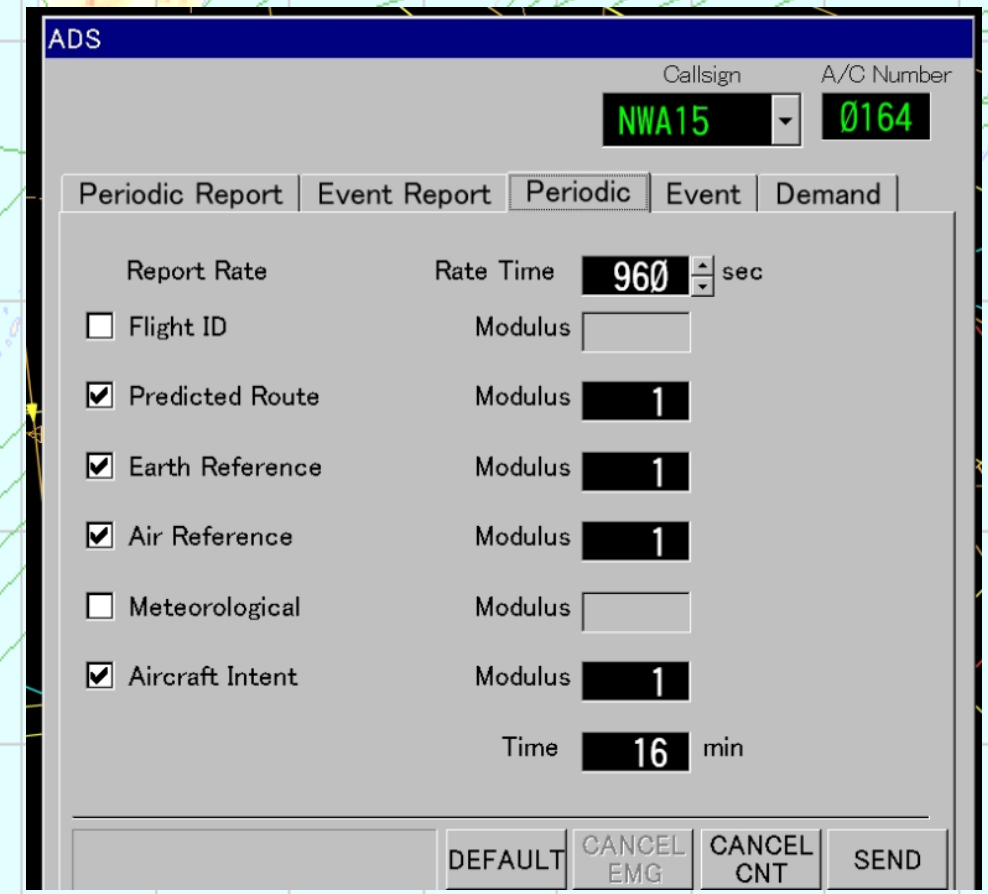
Oceanic ATC system in FUKUOKA FIR

- FPCP
  (Flight Plan Conflict Probe) : Capable of detecting conflicts for 3 hours in advance, preventing the emergence of conflicts.



Oceanic ATC system in FUKUOKA FIR

- Altering periodic interval function : Capable of altering ADS reporting rate arbitrarily



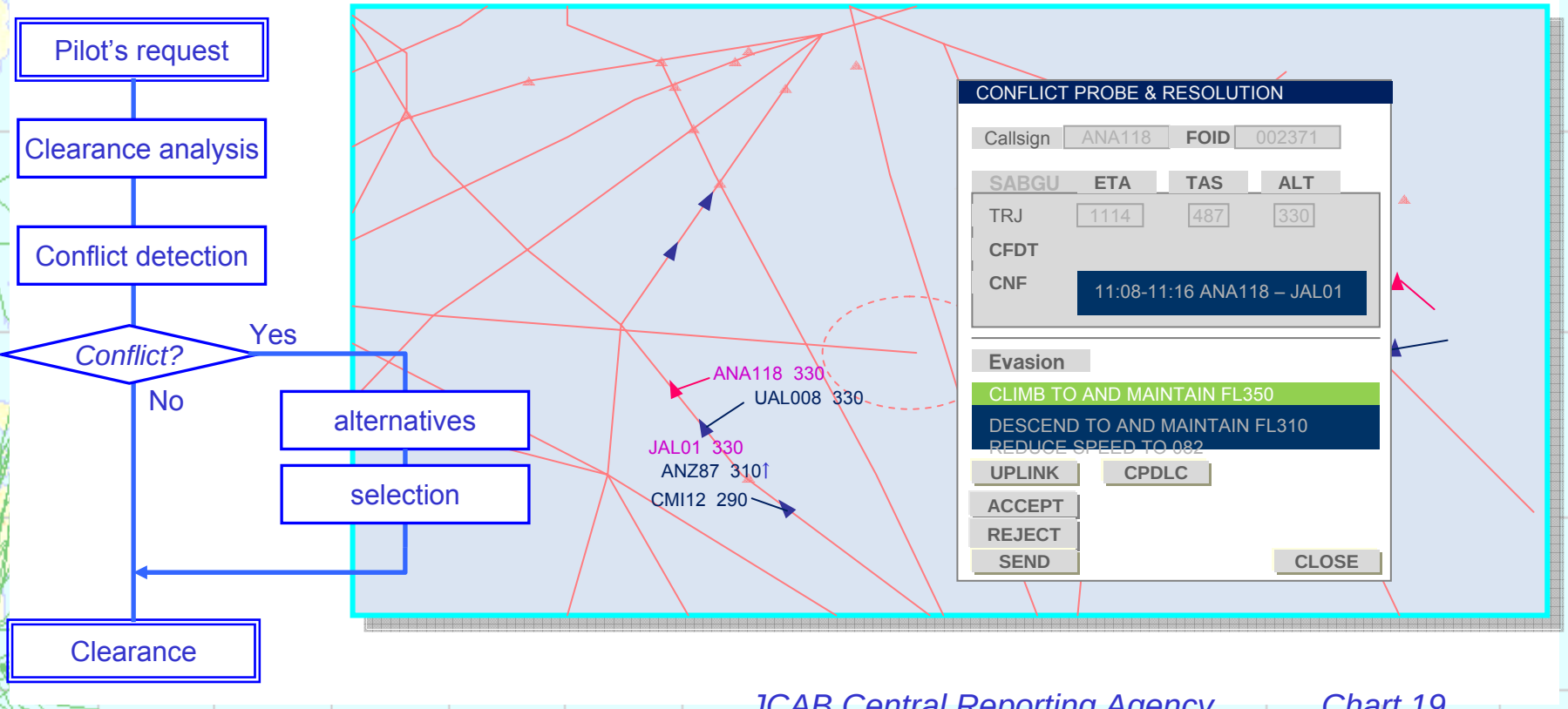
Oceanic ATC system in FUKUOKA FIR

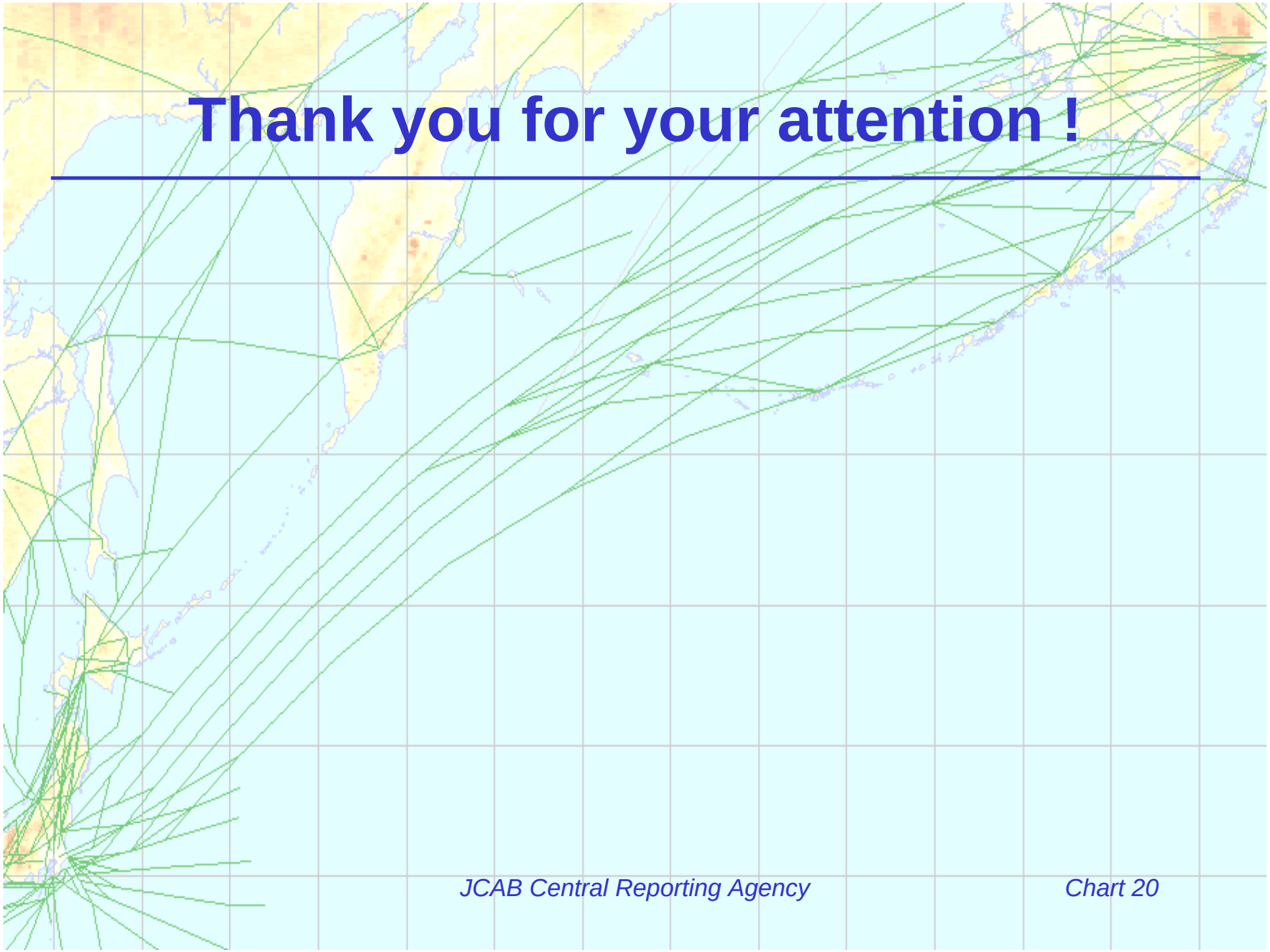
<Function currently in production (to go into service in 2012) Service in)>

Conflict Probe & Resolution

Automatically determines if pilot's request for clearance is acceptable.

If a conflict is detected, then presents a possible alternative to the controller.





Thank you for your attention !

SEACG/17

REPORT OF THE SEACG/17

Agenda Item 1: Adoption of Agenda

1.1 The meeting unanimously elected Mr. Mr. Raymond Kwok-chu Li, Chief Air Traffic Control Officer (Procedures and Evaluation), Air Traffic Management Division, Civil Aviation Department, Hong Kong China as the Chairperson of SEACG. Subsequently, the meeting adopted the agenda for the meeting as proposed.

Agenda Item 2: Adoption of Terms of Reference of the Group

Draft Terms of Reference

2.1 Hong Kong, China indicated that SEACG had been working without the Terms of Reference (TOR). In order to provide members with a clear focus of work as well as to avoid duplication of work with other grouping(s) and/or Task Force(s), Hong Kong, China proposed the SEACG adopting a TOR and provided a draft in the attachment of the WP/2 for the meeting's consideration. The meeting agreed that a TOR for SEACG would be appropriate, and after discussion, a TOR had been finalized as attached in **Appendix A** to this report. Hong Kong, China would undertake to present the finalized TOR at the upcoming ATM/AIS/SAR/SG/20 for consideration and endorsement.

Agenda Item 3: Review Outcomes of Related Meetings

Outcomes of the 12th Meeting of the Regional Airspace Safety Monitoring Advisory Group

3.1 The meeting reviewed the outcomes of the 12th Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/12, December 2009).

EMA Handbook PBN Approvals Database Format

3.2 A format had been developed that specifically includes all current PBN and data link approval type. New Zealand had proposed combining the RVSM, PBN and data link approvals databases, and so, in anticipation, the proposed format also allows for RVSM approvals.

Unified Approvals Database

3.3 At RASMAG/11, it was agreed not to pursue the regional database at the present time but had requested States to consider the proposal and how to best provide data for inclusion when it was eventually established. There are a number of navigation specifications that must be allowed for; the approvals are not hierarchical and may be airspace-dependent. For example, an aircraft's navigation equipment may qualify it to hold an RNP 1 approval but not an RNP 4 approval, and that RNP 1 approval may only apply in airspace where the required navigation infrastructure is in place.

RVSM Approved Aircraft ADS-B Equipage in Australia

3.4 Given the extensive coverage of ADS-B within the RVSM flight levels in Australia, the Australian Airspace Monitoring Agency (AAMA) had been undertaking an analysis to determine which operators and aircraft type had the potential to be monitored using ADS-B surveillance system in the short-term.

Outcomes of APANPIRG/20

3.5 The meeting reviewed the outcomes of the 20th meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/20, September 2009). A brief summary of key technical and operational outputs of APANPIRG/20 was presented as below:

- States, organizations and stakeholders collect and process data to support the regional metrics adopted by APANPIRG, leveraging to the extent possible all existing data and ongoing efforts, and provide a progress report to APANPIRG/21.

- The 'Interim Strategy for the Implementation of New ICAO Flight Plan Format and Supporting ATS Messages' should be adopted and published as the interim edition, and States and users should be urged to commence implementation planning based on the interim strategy.

- In order to align regional implementation planning, States inform the Regional Office by 1 July 2010 of their scheduled date and implementation methodology for transition to the new Flight Plan and ATS Message formats.

- A survey of Asia/Pacific States should be conducted with the objective of benchmarking the current status of Air Traffic Flow Management (ATFM) activities in the Asia/Pacific Region.

- In addition to the continuous update of RVSM Approvals data called for by Conclusion 19/15 and APANPIRG RMA requirements, States were requested to provide an update of RVSM Approvals data in conjunction with the annual December traffic sample data submission required by Conclusion 16/4.

- The term En-route Monitoring Agency (EMA) should be used to describe an organization providing airspace safety assessment, monitoring and implementation services for international airspace in the Asia/Pacific Region to support implementation and operation of reduced horizontal (lateral and longitudinal) separation.

- a) States should be urged to provide Region & State Information for inclusion in the GOLD Appendix E, by sending the completed forms(s) provided in Annex 1 to the Report on agenda item 3.4 for their flight information regions (FIRs) or control areas (CTAs) by 30 October 2009; and

  b) IATA should be urged to coordinate with member airlines for providing operator & aircraft information for the GOLD Appendix F by sending completed form(s) as provided in Annex 2 to the Report on agenda

item 3.4 for each variance, clarification, or addition to applicable aircraft type by 30 October 2009.

- States should be urged to use the PBN Implementation Progress Report Template provided in Appendix K to the Report on Agenda Item 3.4 for all future reporting of their status of PBN implementation. The Report should be submitted at each of the future PBN Task Force Meeting.

- The Asia/Pacific Regional PBN Implementation Plan provided in Appendix L to the Report on Agenda Item 3.4 should be adopted as Version 1.0.

- States should be urged to give detailed considerations to the operational need, safety and cost benefits prior to deciding on RNP AR Approach implementation.

- Upon release of the Global Operational Data Link Document (GOLD) by the Ad-Hoc GOLD Working Group in first quarter 2010, the FANS-1/A Operations Manual (FOM) should be withdrawn and replaced by the GOLD as Asia/Pacific regional guidance material for use by States and airspace users as the basis for operating Automatic Dependent Surveillance – Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC), in conjunction with Annex 10 – Aeronautical Telecommunications Volume II – Communications Procedures including those with PANS status and the Procedures for Air Navigation Services – Air Traffic Management (PANS–ATM Doc 4444).

AIS Update from the Second Meeting of ICAO AIS-AIM Study Group

3.6 The meeting noted that the Second Meeting of the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIMSG/2, November 2009) was held at the ICAO headquarters in Montréal, Canada.

Including AIM in Annex 15

3.7 The group was informed that the objective of the MET/AIM Divisional Meeting planned for 2014 would be to present a restructured Annex 15- *Aeronautical Information Services*. The restructuring of an Annex was considered to have such significant implications on all Contracting States that an international consensus should be sought. It could not be included in a routine amendment. Amendment 37, scheduled for applicability in 2013, would need also to include AIM elements. Some key elements may be included as Recommended Practices which may be upgraded to Standards in a subsequent amendment after consideration by the divisional meeting. It was further considered that the need to include elements of AIM in Annex 15 would form a parallel activity to the actual restructuring of the Annex.

3.8 The group noted that the ad-hoc group on including AIM in Annex 15 had looked into ways and means to restructure the Annex to fully reflect the move to AIM. In an effort to provide assistance with this task, the group considered which elements and features a future restructured Annex 15 should contain.

AIS-MET Data Link Services

3.9 The group reviewed a draft note for inclusion in Amendment 37 to Annex 15 relating to supplying aeronautical data directly to flight crews via data link. Discussion centred on aligning such a note with specifications for AIRAC. It was suggested that text supporting the use of data link be included in Chapter 6 of Annex 15 which deals with the AIRAC system.

World Geodetic System — 1984 (WGS-84) Manual (Doc 9674)

3.10 While the group acknowledged that the addition of guidance on resolution for the conversion of coordinates from degree, minutes and seconds to the decimal degrees representation was valuable, it considered that the proposed text did not address problems raised by rounding of calculated values. The suggested new wording would state instead that "For applications processing coordinates in decimal degrees, the resolution is expressed in terms of the number of significant digits of decimal degrees as specified in Table 2-8. For example, a coordinate published in degrees, minutes and seconds when converted into decimal degrees will have a resolution value of 4 (e.g. a latitude of 355418N is converted into a decimal of 35.9050). Note that when calculations are done on decimal values and depending on the rounding process (single final application or intermediate applications), end results may differ slightly."

Electronic Terrain and Obstacle Data (eTOD)

3.11 The group was informed that EUROCONTROL was developing eTOD guidance material which would be made available to ICAO in the second half of 2010. The group adopted Action agreed 2/23 — eTOD guidance material.

Legal and Institutional Issues Related to AIM

3.12 It was noted that the State's responsibility for the provision of aeronautical information was already included in Annex 15. The group was informed that the resolution of liability issues rested with States and it was not within ICAO's purview to address liability through Annex material.

Information on NextGen and SESAR

3.13 The meeting took note of SESAR information management. In view of the numerous data domains to be modeled and possible spill over into AIXM, concern was expressed that AIXM should not be allowed to expand to an unmanageable extent. There was also discussion on the total cost of SESAR and associated cost savings including those that may be brought about by enterprise architecture methodology. The meeting recognized that it should monitor developments concerning NextGen and SESAR, and that members should endeavour to share information in this regard with the group at the next meeting. Accordingly the meeting agreed to Action agreed 2/30 — Information on SESAR and 2/31 — Information on NextGen.

Flight and Flow Information for a Collaborative Environment (FF-ICE)

3.14 The group concluded that there was little overlap between the FF-ICE concept and the work of the AIS-AIMSG at the current level of conceptual development expressed in the draft FF-ICE concept document. However, once FF-ICE would be progressed beyond concept and into systems development, there could be a considerable impact, and that the systems envisioned by FF-ICE would need to be aware and interoperable with AIM systems and information management principles. In this regard, the group was interested in knowing how the work on the concept was intended to be further progressed. It was agreed that that members should contact their counterparts on the ATM

Requirements and Performance Panel (ATMRPP). The group adopted Action agreed 2/34 — Review of FF-ICE concept document.

Future Work Programme of the Group

3.15 The group considered that the next meeting should be convened in Montreal from 9 to 12 November 2010. It was agreed that 8 November 2010 could be used by the ad-hoc groups for informal meetings.

Outcomes of the First and the Second Meetings of the South-East Asia Route Review Task Force (SEA-RR/TF)

3.16 The meeting reviewed the outcomes of the First and the Second Meetings of the South-East Asia Route Review Task Force (SEA-RR/TF/1 and 2). SEA-RR/TF/1 noted that, at the ATM/AIS/SAR/19 Sub-Group meeting, the Route Review Task Force was established to undertake a review of ATS routes in this area. After much deliberation and discussion, the meeting agreed to rename Southeast Asia RNP Implementation Task Force (RNP-SEA/TF) to Southeast Asia Route Review Task Force and set a prime task of reviewing the ATS route structure in the Western Pacific/South China Sea (WPAC/SCS) airspace south of the Fukuoka FIR boundary.

Outcomes of SEA-RR/TF/1

3.17 In order to achieve additional traffic data collection, cooperation from States was required over the period of the data sample. In addition, the assistance of an organization who can then translate the collected data was considered necessary so as to present the best way to structure a new ATS route network to gain maximum efficiencies in the area concerned.

3.18 The meeting was further requested to consider that crossing routes and/or conflict points should be planned to occur within direct surveillance coverage where possible. An extended track of a few nautical miles may be more beneficial for all stakeholders to enable the utilisation of greater surveillance capability and reduced separations.

3.19 The eastern SCS routes were not covered by direct surveillance and must be based on RNP 10 and RNP 4 principles. Implementation of RNP 10 50 NM longitudinal and RNP 4 30/30 NM will be reliant on the implementation of ADS-C/CPDLC within Manila FIR, which is expected to commence trialling in late 2010.

3.20 IATA put forward an indicative proposal for consideration. The first proposal was the establishment of uni-directional routes and realignment of A1 and A202 between Hong Kong and Bangkok. The routes were completely covered by radar surveillance and VHF communication therefore could be RNAV 5 (or RNAV 2) routes in alignment with the ICAO Regional PBN plan. The current routes should be straightened where able to do so and utilising radar spacing in the longitudinal plane. A1 could also be moved further north, clearing an area used for arrivals and departures by Hong Kong.

3.21 Routes crossing the six SCS routes were seeing increasing traffic numbers but were still not as heavily utilised as the primary SCS flow. They are however bi directional at present and the establishment of uni-directional routes could potentially realise increased level availability on the primary routes.

3.22 Crossing routes that could be established as uni-directional routes in the short term are L628 (Manila to Bangkok)**,** M768 between Brunei and Ho Chi Minh/ Bangkok) and finally A461 (Hong Kong to Manila). It was suggested that these routes should be realigned where possible but due to incomplete DCPC/ADS-C/CPDLC coverage could only be established as RNAV 10 routes in the short term.

3.23 The meeting recalled that, taking into consideration the amount of work required especially in regard to the required safety assessment process as well as other considerations, after a consistent and methodical process over two and half years, L642 and M771 were approved for use for 50 NM lateral and 50 NM longitudinal separations on 2 July 2008. Considerable discussion took place and it was finally decided that the same philosophy should also be used for the other established parallel routes in the South China Sea area. The meeting therefore endorsed six recommendations.

3.24 In recognising the need to provide an operational environment which could cater for the forecast traffic growth and, at the same time, adequately address environmental issues, the meeting was of the opinion that full surveillance coverage over the area under consideration (radar, ADS-B Out, ADS-C, CPDLC as appropriate) and the harmonisation of the operational application of this surveillance across FIR boundaries was fundamental in planning to achieve these targets.

3.25 It was decided to concentrate on the route structure itself. It was finally agreed that, as this was the first operational task, it would be more appropriate to have all involved, due to the relatively small area under consideration.

Outcomes of SEA-RR/TF/2

3.26 It was recalled that there were several ATS routes which cross the main traffic flow serving major airports in the northeast/southwest portions of the SCS. These crossing aircraft also need to be accommodated with economical efficient levels. By duplicating these crossing routes and using a spacing of 60 NM, fewer levels would be required for these aircraft by establishing a unidirectional system using same levels, which should provide additional flight levels to the primary routes within the SCS.

3.27 Malaysia presented a safety study on the proposed unidirectional route to M768 crossing the South China Sea. This detailed safety study arrived at the conclusion that the proposed parallel route to M768 should be located to the East of the present M768 rather than west of the present route. This alternative proposal was considered to have merit as it would reduce conflictions with other traffic proceeding from/to West Malaysia and Singapore to airports in East Malaysia and Brunei in particular.

3.28 Philippines advised the meeting they support the establishment of a unidirectional parallel route to L628 which crosses the major traffic flow from Manila to Bangkok. They also pointed out that L628 also interacts with three other routes, namely M772, M754 and A583.

3.29 To address operational issues (merging and bunching of traffic) and to prevent potential conflictions at the intersecting points, the Philippines recommended an additional route parallel route to the existing RNAV Route L628 so as to enable the establishment of a unidirectional traffic flow. This will allow airspace users more access to optimum flight levels, ATC has more flexibility in selecting alternative flight levels and ultimately, to the environment through reduced carbon emissions.

3.30 It was recalled that, at SEA-RR/TF/1, in order to increase efficiency in route design which would also reduce track miles and carbon emissions, consideration should be given to some variations of the present route structure as well as looking at the feasibility of using specific unidirectional routes where traffic density demanded. Two examples where this strategy could be used was in respect to ATS route A202 and also to A1. Both of these routes were between Bangkok and Hong Kong. The diagram presented was generic in nature, however, it gave examples of two pairs of routes approximately 20 NM apart, under full radar coverage, where significant benefit could be obtained to both the users and the providers of the ATS service.

3.31 It was, however, recognized that there were other considerations to consider such as military issues which could affect the nature of this proposal. Nevertheless, consideration of this methodology, with appropriate civil/military coordination, has brought positive results in the past.

3.32 Based on the traffic data available, there was potential benefit in pursuing the application of RNP 4 separation between suitably equipped aircraft. With the potential for RNAV 5, there is no need to redesignate the route, but availability could provide ATC with increased efficiencies and capacity. Singapore supported the proposal that RNP 4 separation should be available on L642/M771 in the short-term.

Reduced Horizontal Separations

3.33 IATA noted that 50 NM longitudinal separations were currently applied on the two primary routes, M771/L642. The separation is provided utilising either CPDLC or VHF communications. Noting the discussions regards data link capability within the Manila FIR, it will be unlikely that this capability can be extended to other South China Sea routes until late 2011 or 2012 at the earliest.

3.34 While waiting for this capability to be delivered, IATA believed there still existed the potential to provide further benefits on the primary routes. The ANSPs experienced with the application of reduced separations and data link equipment are well established in those FIRs providing data link services.

3.35 Current aircraft equipage suggests that majority of aircraft on these two primary routes are data link capable and an overwhelming majority of these aircraft are also capable of better than RNP4 navigation performance. IATA also noted that RNP4 was the preferred navigation specification in the APAC Regional PBN plan in the short term.

3.36 The availability of RNP4 30/30 NM on the two primary routes would provide improved efficiencies in the short term, including potential to reduce ATC workload. The longitudinal application would be particularly beneficial for climb and descent although potential for in trail spacing could be applied as well. The lateral application would be particularly beneficial during weather deviations, providing ATC an easy means for de-confliction between suitably equipped aircraft.

3.37 IATA noted that the actual in-trail spacing of aircraft was based on traffic management requirements. As such, it would remain subject to LOA or equivalent agreement and would be unlikely to change in the short-term, in particular within FIRs where ATC service is provided utilising radar and VHF communications. Noting that in-trail spacing would likely not to change, IATA believed that significant benefits could still be enabled even if only one or two States were able to provide RNP 4 type separations.

3.38 The Secretariat observed that the introduction of 30/30 NM separations were based on data link requirements and FIT-SEA CRA need to be involved. Suitable monitoring of system performance must be completed to ensure requirements are met.

3.39 Hong Kong, China advised the meeting that their current surveillance capabilities concerning L642 and M771 required further strengthening on redundancy. Their future plans had been finalized and involve ADS-B capability but was still some way from realizing the operational capability to support these reduced separations. Hong Kong, China did not object to the proposal but was not in the position yet to be able to participate.

3.40 During subsequent discussion, IATA reaffirmed that the in-trail requirements remained within the purview of the individual States. As such, for States that could not accommodate an increase in traffic flow, the current procedures would remain unchanged. However for those States who could realise benefits by the enablement of RNP4 30/30, the application should not be delayed. IATA also noted that the application would be on an opportunity basis only between suitably equipped aircraft. As such it would not involve any re-designation of routes.

3.41 It was agreed that the application of RNP4 30/30 separations could be enabled if States felt benefits could be enabled. The application would be on an opportunity basis only between suitably equipped aircraft. In-trail spacing requirements between FIRs would be specified by agreement between those States and it would be the responsibility of the adjacent States to ensure that these requirements were complied with.

Agenda Item 4: Review of FIT-SEA/10

Review of FIT-SEA/10

4.1 The meeting reviewed the outcomes of FIT-SEA/10.

4.2 Japan informed FIT-SEA/9 that FIT-SEA CRA services had been provided by CRA-Japan on a temporary basis in accordance with the TOR of FIT-SEA CRA. Japan, however, would consider extending the provision of the FIT-SEA CRA services for a couple of years if the Philippines was able to initiate the ADS/CPDLC operational trial in the Manila FIR in 2010. Philippines had informed FIT-SEA/9 that the operational trial in the Manila FIR would start in October 2010.

4.3 Japan would be able to act as FIT-SEA CRA until the end of next March (March 2011) but not be able to continue beyond March 2011, not solely because of its financial resource but also other reasons. Japan was not able to fund these services as it was beyond her area of responsibility.

4.4 The meeting appreciated Japan and CRA-Japan for their service graciously provided free of charge for over three years and recognized the reason why Japan was withdrawing the FIT-SEA CRA service. CRA-Japan, however, noted that support for data link implementation in the Manila FIR would be vital and the CRA for FIT-SEA should be formally established as soon as possible in order not to stall the implementation plans. States were urged to bring back this issue to the attention of the authority and be ready for the further discussion on how States could establish a formal CRA for the South China Sea Area at the ATM/AIS/SAR Sub-group and APANPIRG meetings, bearing in mind the time constraint. In this connection, the meeting requested the Secretariat to submit a working paper to ATM/AIS/SAR/SG/20 for the further deliberation on this issue.

4.5 Philippines informed the meeting of the Phase 1A of their operational trial plan, which will involve a CPDLC trial with limited airline participants in parallel use of HF voice communication and validation of ADS reports using the new Manila ACC system. Plans for the Phase 1B of the trials have already been laid-out. A detailed presentation of the preparations for the data link trials was provided. The ADS/CPDLC refresher course for Manila ACC controller was carried out as planned in 2009.

4.6 The meeting advised the Philippines that the implementation of data link systems should be closely coordinated with FIT-SEA and CRA-Japan. From the experience of the data link system introduction in the Ho Chi Minh and the Singapore FIRs, FIT-SEA meetings were held three months before the expected target date of each phase of trial to see if the system performance meets the FOM criteria.

4.7 Further, the Secretariat advised the Philippines to start data collection of the system performance as early as possible to enable a FIT-SEA meeting could be held three months before the Phase 1B, i.e. October 2010 given the Phase 1B should start in January 2011.

Agenda Item 5: Review Current Operations across South-East Asia and Identify Problem Areas

Radar Coverage Chart of the South China Sea Area and the Status Matrix of Application of Radar Handover Procedures

5.1 SEACG/14 (May 2007, Hanoi) reviewed the radar coverage chart of the South China Sea and the table of the Status of Application of Radar Handover in the Southeast Asia developed by SEACG/13 (May 2006, Bangkok) and updated the table. SEACG/14 was of view that there was a feasibility to implement radar spacing along some ATS routes, and encouraged States to carry out the bilateral coordination to apply the radar spacing and report to SEACG/15 (May 2008, Bangkok) of the outcomes.

5.2 Malaysia and Viet Nam updated the radar coverage chart of the South China Sea. The radar coverage chart was updated accordingly as in **Appendix B** to this report. The meeting noted the Status of the Application of Radar Handover Procedures as in **Appendix C** to this report.

Flow Control Restriction on A1/G86

5.3 At the Third Meeting of East Asia ATM Coordination Group, Taipei ACC was advised that the flow control restriction imposed in association with their ATS system maintenance had caused significant delays between 1525–1840 UTC on eastbound departures from Bangkok International Airport and other airports within the Bangkok FIR. Taipei ACC subsequently advised Hong Kong, China that they had rescheduled the maintenance of ATS system to between 1400 and 1700 UTC to avoid the peak departure period at airports within the Bangkok FIR.

5.4 The meeting noted that Taipei ACC also had indicated that there might still be a very low possibility that maintenance could require extension passed 1700 UTC. If that should happen, Taipei ACC would issue a NOTAM in good time to notify the affected FIRs of the flow control measure. The meeting thanked Hong Kong China and Japan for their collaborative efforts contributing to the rescheduling of the ATS system maintenance period by Taipei ACC.

Updates on ATS Activities in Vietnam

5.5 Viet Nam reported that currently the Civil Aviation of Viet Nam provided ATS services and other air navigation services to more than 100 airlines, in two FIRs, and at four international airports as well as more than 16 domestic airports in the country. In April 2010, the average traffic volume was approximately 974 flights per days, including 545 overflights. The main activities carried out in 2009 to 2010 were:

(1) Finalizing and promulgation of:

(a) ATS Manuals;

(b) ATS Contingency Plan;

(c) Flight operations and flight procedures at certain aerodromes;

(d) Operational Approval for ANS systems/equipments as well as ATS, CNS, MET and AIS units;

(e) Draft Circular and Guidance on ATS safety and ATS incident investigation procedure and capabilities; and

(f) ICAO Audit Team's findings/recommendations in ATS.

(2) Extension, Establishment and Revision of ATS routes/segments:

(a) Completed - Domestic:

(i) W10 and W12 extended.
(ii) W17 and W22 established since July 2009.

(b) Completed - International:

(i) Extension of routes B329 and G221 in February 2010.
(ii) Establishment of new routes B214 and Q15 in March 2010.

(c) Being progressed:

(i) New ATS routes R213 from Can Tho to Phnom Penh (to be implemented in July - August 2010).

(ii) Extension of ATS route R334 from Shihanoukville to Phu Quoc (to be implemented in July - August 2010).

(iii) The new route/corridors to/from Chu Lai airport, which has planned to upgrade to int'l airport, would be implemented in Quarter IV/2010 – Quarter I/2011.

(iv) ATS routes B224 (Cat Bi –Nankang),

(v) One way route M756 (ENREP – Tan Son Nhat) to be further coordinated and safety assessment performed in Quarter IV/2010 – Quarter I/2011.

(vi) Further coordination for the establishment of new ATS route Siem Riep – UBON – VILAO serving an increasing traffic between Ha Noi and Siem Riep.

(3) ATS activities.

Viet Nam continued to support a number of ATS regional arrangements such as the Revised RVSM Flight Level Allocation Scheme over the South China Sea, ADS/CPDLC operations in Ho Chi Minh FIR, BOBCAT, and coordination for the implementation of 50NM lateral separation and 50NM longitudinal separation minima on RNP 10 routes L625 and N892 as well as for harmonization ATS Contingency Plans.

(4) Coordination between adjacent ACCs:

(a) Ha Noi ACC: ATC LOAs with Ho Chi Minh ACC, Nanning ACC, and Vientiane ACC respectively have been revised.

(b) Ho Chi Minh ACC:

(i) ATC LOAs between Ho Chi Minh ACC and Ha Noi ACC and Sanya ACC respectively have been revised.

(ii) The revised ATC LOA between Ho Chi Minh ACC and Kuala Lumpur ACC initiated by CAAV at SEACG/15 was awaiting Kuala Lumpur ACC's signing; Malaysia advised that it should be completed in approximately six weeks from now.

(iii) Monitoring the performance ATS-DS circuit between Ho Chi Minh ACC and Manila ACC and to coordinate with Manila ACC to achieve a satisfactory level of performance if necessary.

(iv) Ho Chi Minh ACC encountered certain difficulties in coordination with Sanya ACC for Northeast bound traffic during night time associated with flow control restriction imposed by Taipei FIR. Hong Kong, China reported in WP7 that Taipei ACC had revised their ATS system maintenance schedule to minimize disruption to neighbouring FIRs.

(5) CNS/ATM Developments:

(a) New Noi Bai and Tan Son Nhat Aerodrome Tower.

(b) Feasibility studies of New Hanoi AACC Project and New Phu Quoc Aerodrome Tower Project.

(c) Agreement to implement AIDC between Ho Chi Minh ACC and Sanya ACC has been made.

Agenda Item 6: Implementation of the New CNS/ATM Systems in the Region

Outcomes of the Second Meeting of Flight Plan & ATS Messages Implementation Task Force (FPL&AM/TF/2)

6.1 The meeting reviewed the outcomes of the Second Meeting of Asia/Pacific Flight Plan & ATS Messages Implementation Task Force Meeting and Seminar (FPL&AM/TF/2, November 2009).

Matters for Clarification Arising from FPL&AM/TF/1

6.2 FPL&AM TF/1 (March 2009, Bangkok) identified a number of items in respect to the Amendment 1 of the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) that warranted assistance/guidance from ICAO Headquarters. The meeting discussed the clarifying responses provided by ICAO HQ to the queries raised during FPL&AM TF/1 as follows:

6.3 The meeting considered that the clarification relating to Item 18 and Date of Flight (DOF) has implications on the composition of ATS messages as published in the Amendment. The clarification provided for the requirement to include Field Type 18 in CHG, CNL, DLA, DEP and RQS messages states *"Field Type 18 with DOF specified is meant to uniquely identify the flight when the FPL is presented more than 24 hours in advance and there is no need to include all other Item 18 information"*. The meeting adopted the following interpretation as an Asia/Pacific regional approach:

- Insert DOF/YYMMDD in Field 18 if the indicator was previously specified; or
- If the DOF/ indicator was not previously specified insert zero (0) in Field 18.

Development of Asia/Pacific Regional Guidance Material

6.4 In order to record the approaches, interpretations and resolutions agreed by the Task Force for use as Asia/Pacific guidance material, the meeting commenced work on a repository of coding guidelines and associated material for application in affected automation systems. A draft document titled *Asia/Pacific Guidance Material for the Implementation of Amendment 1 to Procedures for Air Navigation Service – Air Traffic Management, (PANS-ATM, DOC 4444), 15th Edition,* was prepared.

Flight Plan Implementation Tracking System

6.5 A demonstration of the ICAO Flight Plan Implementation Tracking System (FITS) website (**http://www2.icao.int/en/FITS/Pages/home.aspx**) was conducted by the Secretariat. The meeting offered comments/suggestions that may be useful in making FITs even more effective.

India

6.6 India recognized the critical need for regional coordination between States to develop appropriate guidelines and highlighted the need for in depth testing arrangements to be developed to facilitate testing between ANSPs, and between ANSPs and users. India was interested in understanding how other ANSPs would approach this issue and would appreciate feedback to the next meeting in this regard.

Japan

6.7 There would be a significant issue with AIDC messaging in NEW format as Japan Civil Aviation Bureau (JCAB) has to update the interface with AIDC connected States to include the item 10 and 18 changes that are utilized in at least messages for CPL, ABI, PAC, MAC and CDN as an option field. Consequently, JCAB was exploring whether it would be possible to simultaneously switch over the systems to NEW AIDC between connecting area control centres as Anchorage, Incheon, Oakland and Taipei, and will commence coordination with affected them shortly. However, as it is anticipated that such an approach will require significant coordination and management to be successful, JCAB is also investigating an alternative whereby the JCAB systems are configured to handle both PRESENT and NEW AIDC messaging simultaneously.

Thailand

6.8 AEROTHAI system developers have raised a number of concerns in relation to the implementation of NEW. At the moment, concern was experienced regarding the fact that there was no explicit way to distinguish between NEW and PRESENT. AEROTHAI would like to know how other ANSPs plan to address this issue.

IATA

6.9 IATA noted that nearly 18 months has passed and while Asia/Pacific Region was now conducting FPL&AM TF/2, IATA was concerned that the corresponding effort in other regions was not as apparent. As such IATA believed it was vital for the implementation of the amended FPL provisions to be very carefully managed on a global basis. While coordination could be undertaken on a regional basis, the necessary guidance, controls, coordination and motivation must be controlled on a global basis. IATA noted that the meeting had already discussed the effects on flight safety arising from ATC automation failures.

6.10 From IATA's perspective, unfortunately there is already enormous variation in preparation and approach to the FPL amendment, with some States already identifying that they have no intention of meeting the effective date. At the first meeting of the European FPL TF in Sep 09, NATS UK and AENA Spain announced they would not be capable of accepting the NEW format in 2012 with NATS expecting late 2013/early 2014 and AENA indicating early 2013.

Regional Strategies for Implementation

6.11 The meeting recalled discussions during FPL&AM TF/1 in relation to airspace users targeting a fixed transition date of 15 November 2012 globally. The meeting expressed concern that such an approach would not allow adequate testing of the interfaces between airline and ground systems and would represent a critical risk to transition.

6.12 The meeting considered that the implementation strategy being considered by IATA, whereby all user switchovers occurred on the same day, would result in an unmanageable impact on ANSPs systems with a very real risk of system crashes. As such, ANSP safety case hazard analysis was likely to find that mitigation of some kind was necessary. Under the phased arrangements, users would have the opportunity to switch to the NEW format at a time of their choosing during an identified users testing and implementation period, supported by operational ANSPs systems able to assist with testing and the user transition, whilst at the same time maturing their own systems. A transition period was declared, commencing 1 January 2012 and ending 15 November 2012. The transition period is sub-divided as follows:

- **Phase 1** - ANSPs software delivery and internal testing
  - 1 January to 31 March 2012,

- **Phase 2**– ANSPs external testing and implementation
  - 1 April to 30 June 2012, and

- **Phase 3** – Airspace users testing and implementation.
  - 1 July to 15 November 2012

6.13 Following 30 June 2012, airspace users would be invited by AIC or NOTAM to commence testing with ANSPs from 1 July 2012.

Date of Flight (DOF) – Five Day (120 Hour) Issues

6.14 The meeting recalled that FPL&AM TF/1 had expressed strong reservations about the NEW provision under which flight plans could be lodged up to five days (120 hours) in advance of EOBT. Present experience in the Asia/Pacific region with plans submitted well in advance of EOBT (within the present 24 hour window) is that this practice precipitates a large number of CHG messages as operators changed aircraft type, or tail number on a same type but with different equipage, or varied the ETD, or a variety of other modifications to what had originally been filed. As meteorological conditions change after the FPL has been filed, route changes and altitude changes also manifest, requiring modification messages as well.

6.15 Following significant discussion, the meeting did not support a compulsion on all States to meet the 120 hour lodgement provision by 15 November 2012 and strengthened the position previously adopted by FPL&AM TF/1 in the regional implementation strategy from *"..consider a constraint…"* to *"…adopt a regional approach that does not require processing of flight plans more the 24 hours prior to EOBT during the declared transition period…"*.

6.16 The meeting reviewed related discussions from FPL&AM/TF/2 and was of view that SEACG would keep in view the situation and continue to monitor the development on the subject. In this regard, the Secretariat requested States which did not participated in FPL&AM/TF/2 to bring the above information back home and start preparation for the transition and implementation of the NEW flight plan format targeted in November 2012.

Fifth Meeting of the South East Asia Sub-Regional ADS-B Implementation Working Group

6.17 The meeting reviewed the outcomes of the Fifth Meeting of South-East Asia Sub-Regional ADS-B Implementation Working Group (ADS-B SEA WG/5, January 2010) hosted by Directorate General of Civil Aviation (DGCA), Indonesia. The Working Group reports to APANPIRG through ADS-B Study and Implementation Task Force.

6.18 ADS-B SEA WG/4 recognized that the area of interest to the working group for sharing ADS-B surveillance data was not only limited to airspace between Australia and Singapore, and Southeast Asia but also covered most part of the South China Sea area, the working group agreed to invite other States that have interest to participate in the future meetings of the working group. The Secretariat was requested to invite China and Hong Kong China to the next meeting of the working group.

6.19 At ADS-B SEA WG/5, Hong Kong, China informed the meeting that Hong Kong, China would confirm later its readiness for joining the working group as a member. While reviewing the TOR, ADS-B SEA WG/5 discussed following relevant issues:

- coordination with ATS groups of APANPIRG for the South China Sea; and
- coverage chart based on additional information for review by the working group.

Indonesia

6.20 Indonesia informed the meeting that 27 ADS-B Ground stations with dual system had been installed at Makassar, Sorong, Natuna, Kupang, Merauke, Banda Aceh, Matak, Cilacap, Soekarno Hatta Airport-Jakarta, Tarakan, Pangkalan Bun, Palu, Kintamani - Bali, Waingapu, Alor, Galela, Ambon, Saumlaki, Medan, Pakanbaru, Palembang, Pontianak, Timika, Biak, Kendari, Manado, and Surabaya. Amongst which 18 Stations in the Eastern part of Indonesia are connected to Makkasar Air Traffic Service (MAATS) ATM system and 9 ADS-B Ground Station in the Western part of Indonesia are linked to the Remote Control Monitor System (RCMS) in JAATS-Jakarta. The Test-Bed system at DGCA Headquarters is able to monitor and control the ADS-B Data from these 27 ADS-B Ground Stations.

6.21 In response to a query, it was clarified that ADS-B based separation service was expected to be provided in 2013. ADS-B SEA WG/5 also supported the intension of Indonesia for ADS-B data sharing from which huge benefits could be derived.

Singapore

6.22 Singapore informed the meeting that the Civil Aviation Authority of Singapore (CAAS) installed an ADS-B station and an ADS-B data processor in Singapore on 7 December 2009. It was also informed that the ADS-B data was currently used mainly for technical evaluation and familiarization. Singapore is ready to share ADS-B data with other States.

Malaysia

6.23 Malaysia provided following updates:

- DCA Malaysia had a discussion with DGCA Indonesia at Special Coordination Meeting which was held in June 2009 regarding ADS-B data sharing from Banda Aceh for ATC surveillance in Bay of Bengal;
- Malaysia had started upgrading the ATM System which would be able to integrate all the surveillance data inclusive of ADS-B;
- Malaysian airspace is covered by radar except for a small portion in the Bay of Bengal which at the moment is covered by ADS-C; and
- DCA Malaysia expected the timeline for ADS-B mandatory equipage in the Kuala Lumpur and the Kota Kinabalu FIRs to be before 2020.

Hong Kong, China

6.24 Hong Kong, China reconfirmed its plan for:

- mandate ADS-B carriage, by end 2013 for aircraft flying over ATS routes L642/M771;
- mandate ADS-B carriage, by end 2014, for aircraft flying within Hong Kong FIR; and

– mandate ADS-B carriage, after 2015 to be confirmed, for low flying aircraft including general aviation aircraft and helicopters.

Australia-Indonesia Data Sharing Project

6.25 Australia and Indonesia provided an update on their data sharing project. Airservices Australia had approved Phase 1A. Indonesia's DGCA has also approved Phase 1A and an ADS-B Filter has been installed in MAATS, Makassar. The ADS-B Filter has been tested and integrated into the ATC System in MAATS (Eurocat-X). The tests were conducted between two States and the result of the test was successful. The need to re-establish satellite channel previously used between Bali and Brisbane had been identified.

6.25.1 The meeting noted that four ADS-B ground stations at Saumlaki, Merauke, Thursday Island and Gove have been installed and are operating. A draft agreement is in the final stage of co-ordination for signature by the two States. The draft is based on large part of the sample agreement developed by SEA ADS-B WG.

6.25.2 It should be clarified that no issue of sovereignty is involved as the data derived from aircraft has been shared in ADS-C applications for years. It is not like radar data which may involve liability concerns. The target date of using ADS-B data for situational awareness and safety nets by ATC is set for 2010 for Australia and 2011 for Indonesia.

6.25.3 The project was expected to extend to the Phase 1B and possibly to the Phase 2. The Phase 1A shall be operational before requesting approval to commence the Phase 1B. Phase 2 would transit to radar-like separation when both parties have in place suitable infrastructure such as duplicated data communication links and DCPC capability.

Updates on ADS-B Data Sharing in South China Sea area

6.26 Singapore updated the implementation plan in the South China Sea area. Indonesia, Singapore and Vietnam have been jointly working on the installation of ADS-B ground stations and VHF radios. Discussions were also held between the parties concerned on the ADS-B data sharing and the use of the VHF radio facilities at other party's premises. It was explained that confirmation to the final version of the paper was not received from Viet Nam.

6.26.1 ADS-B operations will be implemented in the Singapore FIR in 2 phases. In the Phase I, ADS-B operations will apply to RNAV routes L642 and M771 while other ATS routes in the Singapore FIR could be covered in the Phase II. ADS-B operations will be exclusive and applicable between FL310 and FL410. Aircraft intending to operate in ADS-B airspace will need to be ADS-B equipped and certified accordingly.

6.26.2 IATA supported efforts made by the three States to enable ADS-B data and DCPC capability sharing. Member Airlines are expecting to receive early benefits as best equipage should be able to receive best service.

6.27 The meeting noted information and efforts being made by ADS-B SEA WG currently focusing on the Phase I ADS-B operations which will apply to RNAV routes L642 and M771. The meeting noted that ADS-B operations would be applicable between FL 310 and FL 410, however, the ATC operational requirement including the exclusivity should be more appropriately considered by the ATS group.

Agenda Item 7: ATS Route Development

ATS Route Catalogue

7.1 The ATS Route Network Review Task Force (ARNR/TF, disbanded) developed the draft *Asia/Pacific ATS Route Catalogue*, which was accepted by APANPIRG/16 as a regional planning tool, to be maintained and updated on regular basis. Version 1 of the Catalogue was published in August 2005. The most recent Version 6 is available from the ICAO Asia/Pacific website (http://www.bangkok.icao.int/) under the menu "APAC eDocuments". On-going updates have been undertaken by the Regional Office based on the information made available by States and airspace users.

7.2 In considering the role of the Catalogue at ARNR/TF/2 (February 2005, Bangkok), it was intended that the Catalogue should be an informal document that consolidates material from the BANP and related documents to serve as an aid to States and users for route planning purposes. As such, the Catalogue does not replace the BANP or provide a basis to be used in an operational context. It is primarily a one stop information document, showing which routes are contained in the BANP, the status of implementation and amendment of routes, and future route requirements of States and users. In considering updating and amendment of the Catalogue, as the document is meant to be an aid to States and should be a living document, its amendment should be kept to an informal level.

7.3 IATA noted that the route catalogue provided an important point of reference for all Stakeholders containing proposals for the entire region. They requested all States to review the various proposals and update the Status at the appropriate ICAO meetings on a regular basis. IATA considered that in the short term, States should clearly identify the status of existing route proposals including details precluding implementation.

Restriction on G581

7.4 Japan drew to the attention of the meeting that the current flight level allocation scheme (FLAS) on ATS route G86 was discussed and agreed at a Western Pacific/South China Sea RVSM Scrutiny Group (WPAC/SCS RSG) meeting and an East Asia ATM Coordination Group (EATMCG) meeting, and was implemented on 3 July 2008. Hong Kong, China had subsequently issued a NOTAM which said that FL 400 was not available to flights entering the Hong Kong FIR at KAPLI between 0001 and 1600 UTC for safety consideration from 3 July 2008. In return, Taipei ACC imposed a restriction that FL 400 was not available at IGURU on G581 to flights overflying the Taipei FIR entering Hong Kong FIR at KAPLI between 0001UTC and 1500UTC, on Fukuoka FIR.

7.5 Hong Kong, China had recently incorporated the restriction into the Hong Kong AIP and hence the NOTAM was cancelled. Although Japan was affected by the restriction, Japan had not had any prior coordination from Hong Kong, China on this issue. Japan thought that the discussion and agreement among relevant parties should have been necessary before describing it on the AIP because Japan and Hong Kong China, and Taipei were still under coordination for harmonized arrangement. Japan was of the view that while the discussion and coordination for harmonized arrangement was in progress, FL 400 restriction at KAPLI should be eliminated.

7.6 Hong Kong, China reported that the attempt had been made with Naha ACC to have a meeting in April 2008 to confer on the subject. Hong Kong, China further reported regular reviews were made on the traffic situations and restriction period had been revised progressively to between 0600 and 1300 UTC with effect from 24 May 2010.

7.7 Hong Kong, China and Japan agreed that they would hold a tripartite meeting including Taipei ACC and report the outcomes to the Regional Office as soon as possible.

Implementation of 50 NM Lateral Separation Standard for RNAV Routes L625, M767, N884 and N892

7.8 Singapore presented a report on the progress of discussion amongst Singapore, the Philippines and Vietnam on using 50 NM lateral separation standard for RNAV routes L625, M767, N884 and N892 arose from SEA-RR/TF/2. The proposal was supported by a safety assessment conducted by SEASMA, which was presented at RASMAG/12 in December 2009 and the 3 States also supported the proposal. China advised the meeting that N892 is partially within the Sanya FIR and the responsibility of ATS on that portion of N892 has been delegated to Ho Chi Minh ACC. China supported the proposal from the operational point of view. Due to the procedural considerations, China required further coordination to be conducted amongst the concerned parties and more time would be needed to process it further. After some discussions, the four States agreed to continue discussion off-line and would report the progress to ATM/AIS/SAR/SG/20 to be held in early July 2010, with a tentative implementation date of the separation standard of 26 August 2010.

Agenda Item 8: Development of State Contingency Plan

Harmonisation of State Contingency Plans

8.1 The ICAO model of a State ATM contingency plan based on the Indonesian National ATM Contingency Plans of Jakarta and Ujung Pandang FIRs serves as an excellent example for States to take guidance in developing their contingency plan. This sample plan has been made available by the ICAO Asia Pacific regional office since May 2007 on their website. The general methodology and considerations for States to undertake in developing their contingency plan can be identified as follows:

(a) identifying the major international traffic flows to ensure minimal disruption when contingency plan is activated;

(b) determining the flight level assignments on the contingency routes to ensure vertical separation and ease of managing the air traffic flows; and

(c) demarcating the segment of the contingency routes for apportioning to the adjacent air traffic service providers taking into account the air-ground, ground-ground communication as well as some form of surveillance capabilities.

8.2 Singapore gave a PowerPoint presentation as in **Appendix D** to this report to share their experience in the development of their contingency plan and emphasized the importance of the consultative processes between adjacent FIR authorities which would require numerous multi-lateral meetings and travelling to take place before the plan could be finalized. The meeting took note that States in developing their plan may only cater for a scenario of a singular activation of the plan. In a scenario where multiple plans are required to be activated, there is a possibility that the established fixed contingency routes in one plan may not be harmonised with the routes in the adjacent plan. Similarly the established levels assigned for the contingency routes in one plan may not match the flight levels assigned in the other plan.

8.3 In such cases, the activation of multiple adjacent contingency plans would pose a challenge to ensure continuity of safe international air traffic movements across the affected FIRs. This would render the individual plans to be ineffective to serve its purpose.

8.4 It is therefore advantageous for States to harmonise their contingency plans through a coordinated regional effort to ensure that these plans remain effective and relevant. This not only serve to fulfil States' requirement to meet the ICAO Annex 11 requirements on contingency arrangements but also ensure that the disruption of international air traffic movements would be minimised across the affected FIRs. IATA supported the proposal and pointed out to the meeting the importance for States to ensure their contingency plans were robust and catered to multiple scenarios, as well as the need to be kept up-to-date in order that as and when such plans are required to be activated, the appropriate contact points could be established in the most effective manner.

8.5 Hong Kong, China enquired if RVSM operations should be continued or suspended in the event of activation of the contingency plan. In response, both IATA and Singapore remarked that the RVSM classification only took account of aircraft capability, and that the ATM infrastructure in the airspace concerned has no bearing in the classification. Hence, any activation of the contingency plan in an FIR would not impact on the RVSM classification in its airspace.

8.6 The meeting thanked Singapore for the comprehensive presentation and took note of the discussions as well as the importance on the need for harmonisation of contingency plans to ensure that these plans remain relevant should there be a need to activate more than one adjacent plan.

Agenda Item 9: Civil Military Coordination

There was no discussion under this agenda item.

Agenda Item 10: Develop a Coordinated Plan for Implementation of Actions agreed by the Meeting

10.1 The meeting reviewed and updated the Action Plan as in **Appendix E** to this report on the basis of discussion made at the meeting.

Agenda Item 11: Any Other Business

Outcomes of the 46th DGCA Conference

11.1 The 46th Conference of Directors General of Civil Aviation (DGCAs), Asia and Pacific Region was hosted by JCAB in Osaka, Japan from 12 to 16 October 2009.

Action Item 46/1 – Seamless Sky - ATM

11.2 Japan, while acknowledging the regional planning process of ICAO, highlighted the need to plan future ATM systems for the region and stated that whether the regional plan was short- or long-term, it should be developed by a planning and implementation regional group (PIRG), i.e. the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) for Asia and Pacific Regions. The Conference noted that the *Global ATM Operational Concept* (doc 9854) and the *Global Air Navigation Plan* (Doc 9750) provided the global framework, but at the same time, felt that NextGen and SESAR type planning could be useful to the region. The Conference requested ICAO Regional Office to take a leadership role and arrange for further discussion on this matter.

11.3 The ICAO Council President stated at the conference that seamless sky was a priority of ICAO and was a mandate of ICAO Assembly. The President stressed on the need for developing specific Terms of Reference to support this concept and establish a starting point. After that, it will be necessary to find agreements of all States involved and keeping in mind the different considerations like political, economic and operational issues.

Outcome of the Third Meeting of East Asia ATM Coordination Group (EATMCG/3)

11.4 Japan reported the outcome of the third meeting of East Asia ATM Coordination Group (EATMCG/3, December 2009). A total of 20 papers (14 working papers and 6 information papers) were submitted to the meeting.

Improvement of Operations on ATS routes A1/B576/M750

11.5 Hong Kong Air Traffic Control Association proposed the application of reduced longitudinal separation for B576 when radar hand-off procedure for this route commenced between the Fukuoka, Incheon and Taipei FIRs. Taipei ACC presented the current situation on B576 and proposed to make radar hand-off at SALMI (B576). Japan Federation of Air Traffic Controllers (JFATC) proposed the application of 25 NM in-trail intervals for radar hand-off for B576 after installation of the new radar which is planned in July 2010.

11.6 Currently, 25NM, 5minutes ensuring 25 NM and 60 NM in-trail intervals are applied for radar hand-over between the Fukuoka and the Taipei FIR. JFATC proposed the trial of applying 20 NM in-trail intervals for radar hand-over between the Fukuoka, Taipei and Hong Kong FIRs in order to enhance capacity, reduce controller's workload and support efficient aircraft operation.

FLAS

11.7 At EATMCG/2, Naha ACC made several proposals to Manila ACC. Those were to restructure ATS routes A590 and A582 for applying lateral separation, to revise the FLAS for northbound traffic through MEVIN (B462 and L625) to odd FLs and to divert the northeast bound aircraft of ATS route B462 to N884 so as to simplify the traffic flow within Fukuoka FIR. In response to the first proposal, Manila ACC recommended to make R597 northeast-bound unidirectional and for south-bound flights on A590 proceeded to JOM. For the second proposal, Manila ACC specified the conditions under which the level transition could manage. For route restructuring of ATS route B462 and N884, there will be need for more study and coordination.

Other business

11.8 Naha ACC presented that one of Naha sector would be transferred to Fukuoka ACC in 11th February 2010. The sector covers the area along A1, M750 and B576.

11.9 The meeting took note of the contributions of the EATMCG in facilitating the coordination and harmonisation regarding ATS matters between the northern and southern part of the East Asia Region. IATA noted the important role played by EATMCG and contribution towards improved efficiency. IATA and airlines would welcome the opportunity to participate in this forum in the future.

RNAV 5 Preferential Operation

11.10 In September 2007, JCAB introduced the RNAV1/5 standards in accordance with ICAO PBN manual, and replaced existing Japanese RNAV routes as RNAV5 routes. In order to increase airspace capacity, improve efficiency and ensure safety, JCAB introduced parallel RNAV5 routes between major city pairs, and limited some RNAV5 routes for one-way using. Currently 114 RNAV5 routes are operating, and continue to establish new RNAV5 route for shortening flight routes and alternating conventional VOR routes.

11.11 This circumstance where RNAV 5 routes and VOR routes are established in the same airspace leads to increasing of air traffic controllers' workload. Air traffic controllers always have to care of separation between aircraft on RNAV 5 route established close to VOR route, because lateral separation between RNAV 5 route and VOR route is not considered when establishing RNAV 5 route. And aircraft on RNAV 5 route has much possibility to overtake aircraft on VOR route.

11.12 Increasing air traffic controllers' workload means decreasing of ATC capacity. In order to make the most of capacity enhancement using RNAV5, JCAB plans to introduce RNAV 5 preferential operation named the Sky Highway Project.

11.13 The Sky Highway is to segregate flights on RNAV 5 routes and VOR routes operationally at FL 290. The Sky Highway will be in force in October 2010 at when the fourth runway of the Tokyo International Airport (Haneda) will be opened.

Operational Procedure

11.14 Air traffic controller will assign cruising altitude between FL 290 and FL 410 for only RNAV 5 approved aircraft. For aircraft coming from adjacent FIR or oceanic airspace, air traffic controller will change cruising altitude to at or below FL 280 or at or above FL 430 if the aircraft is not RNAV5 approved.

Flight Plan

11.15 Operators are requested to file flight plan according to the aircraft capability whether the RNAV 5 approved or not. If the aircraft is RNAV 5 approved and plans to operate between FL 290 and FL 410, the operator shall file flight plan along RNAV 5 routes; and if the aircraft is not RNAV 5 approved, the operator shall file flight plan at or below FL 280, or at or above FL 430. Air traffic controller will assign cruising altitude based on the notation in the flight plan.

Aeronautical Information Circular

11.16 An Aeronautical Information Circular regarding the Sky Highway (AIC JAPAN Nr 056/09 dated 22 October 2009) has been published as **Appendix F** to this report. The meeting supported the Sky Highway as one of the program to ensure airspace capacity and efficiency, and requested IATA to circulate this information to all member airlines.

Volcanic Contingency Arrangements

11.17 In view of the recent volcanic activity in Europe, IATA felt that there was a need for SE Asian States to review existing contingency arrangements and consider establishing an effective coordination arrangement among States so as to provide clear guidelines to enable appropriate decision making and effective communication in such eventuality. The Meeting noted the concern of IATA and the Chairman urged States to review their relevant arrangements. In this connection, States were encouraged to participate in the forthcoming MET/ATM Task Force meeting to be held in

Fukuoka, Japan in January 2011, which would cover volcanic contingency procedures development under the agenda.

11.18 IATA also urged States to supply appropriate contact points to ATM/AIS/SAR/SG/20 to be held in July 2010 so that appropriate contacts could be established/ maintained in the interim period prior to the MET/ATM Task Force meeting as required. The meeting agreed to submit the information at the ATM/AIS/SAR/SG/20.

Agenda Item 12: Date and Venue for the Next Meeting

12.1 The meeting agreed that the next SEACG/18 was tentatively scheduled in May 2011 in conjunction with a FIT-SEA meeting in Bangkok, Thailand.

Closing of the meeting

12.2 In closing the meeting, Mr. Kyotaro Harano thanked delegates for the excellent work achieved. He expressed appreciation to Mr. Raymond Kwok-chu Li for his excellent chairing.

12.3 Mr. Raymond Kwok-chu Li thanked all the participants for the success of the meeting. Special thanks went to the Civil Aviation Authority of Singapore who supported FIT-SEA/10 and SEACG/17.

Revised Draft Terms of Reference

Southeast Asia ATM Co-ordination Group
(SEACG)

1) Identify current problems or deficiencies in ATM being experienced in the South East Asia area.

2) Develop solutions to resolve noted problems or deficiencies in the South East Asia Region;

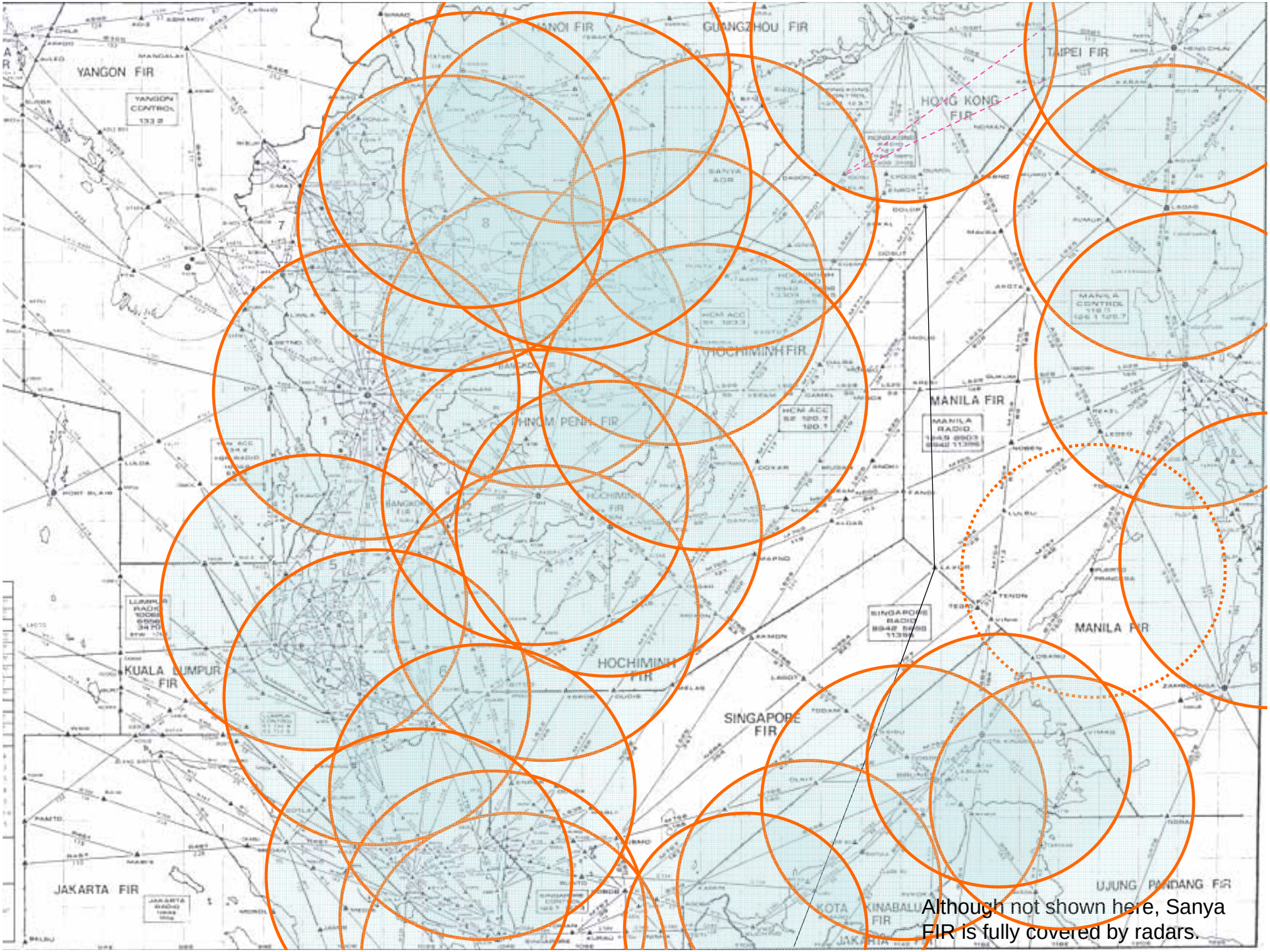
3) Prepare a co-ordinated action plan with time lines for implementation of the agreed actions in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs and Global Air Navigation Plan (Doc 9750);

4) Make specific recommendations to the APANPIRG through the ATM/AIS/SAR Sub-Group, aimed at improving ATM/AIS/SAR services within the South East Asia Region and the adjacent Regions.

5) The SEACG will consist of representatives from:

Australia, Brunei Darussalam, Cambodia, China, Hong Kong China, Indonesia, Japan, Lao PDR, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, Viet Nam, IATA, IFALPA and IFATCA.

6) Report to the ATM/AIS/SAR Sub-Group of the APANPIRG.


YANGON FIR
HANOI FIR
GUANGZHOU FIR
TAIPEI FIR
HONG KONG FIR
HOCHIMINH FIR
PHNOM PENH FIR
MANILA FIR
KUALA LUMPUR FIR
SINGAPORE FIR
JAKARTA FIR
UJUNG PANDANG FIR
KOTA KINABALU FIR
Although not shown here, Sanya FIR is fully covered by radars.

Status of Application of Radar Handover in Southeast Asia

Yes: Implemented
No: Not Implemented
N/A: Not Applicable (radar converages not overlap,thus impossbile)

FIR	Bangkok	Guangzhou	Hanoi	Ho Chi Minh	Hong Kong	Jakarta	Kota Kinabalu	Kuala Lumpur	Manila	Fukuoka	Phnom Penh	Sanya	Singapore	Taibei	Ujung Pandang	Vientiane
Bangkok		N/A	N/A	N/A	N/A	N/A	N/A	YES	N/A	N/A	YES	N/A	N/A	N/A	N/A	YES
Guangzhou	N/A		YES	N/A	NO	N/A	N/A	N/A	N/A	N/A	N/A	TBD	N/A	N/A	N/A	N/A
Hanoi	N/A	YES		YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	N/A	N/A	N/A	YES
Ho Chi Minh	N/A	N/A	YES		N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A	YES
Hong Kong	N/A	NO	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	NO	N/A	YES	N/A	N/A
Jakarta	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	NO	N/A	N/A	N/A
Kota Kinabalu	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kuala Lumpur	YES	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	YES	N/A	N/A	N/A
Manila	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	YES	N/A	N/A
Fukuoka	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	YES	N/A	N/A
Phnom Penh	YES	N/A	N/A	YES	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	YES
Sanya	N/A	NO	YES	YES	NO	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
Singapore	N/A	N/A	N/A	N/A	N/A	NO	N/A	YES	N/A	N/A	N/A	N/A		N/A	N/A	N/A
Taibei	N/A	N/A	N/A	N/A	YES	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A		N/A	N/A
Ujung Pandang	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
Vientiane	YES	N/A	YES	YES	N/A	N/A	N/A	N/A	N/A	N/A	YES	N/A	N/A	N/A	N/A	

Harmonisation of State Contingency Plans

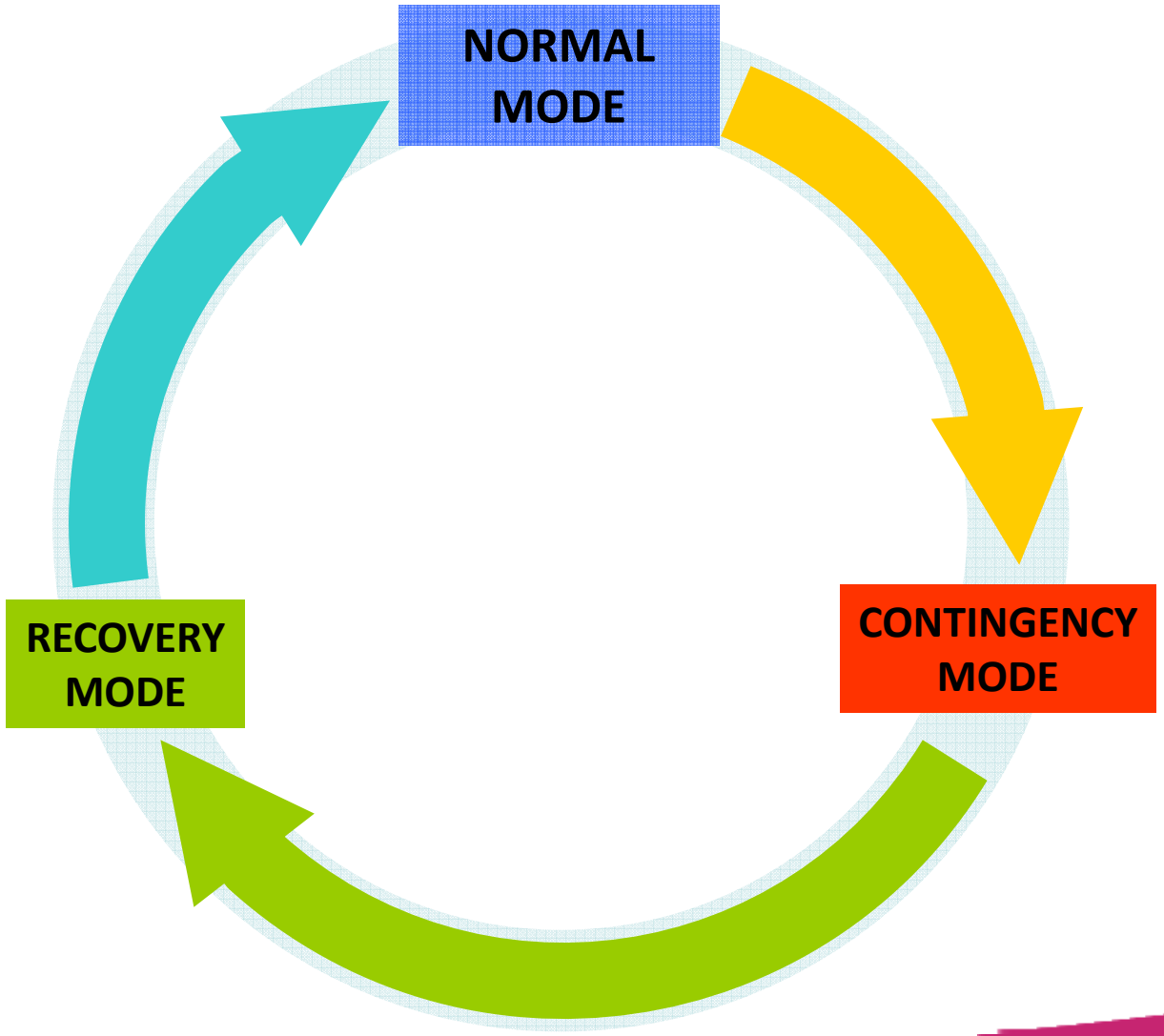
17th Meeting of the South-East Asia ATS Coordination Group (SEACG/17)
Singapore, 24-27 May 2010

CAAS
Civil Aviation Authority of Singapore

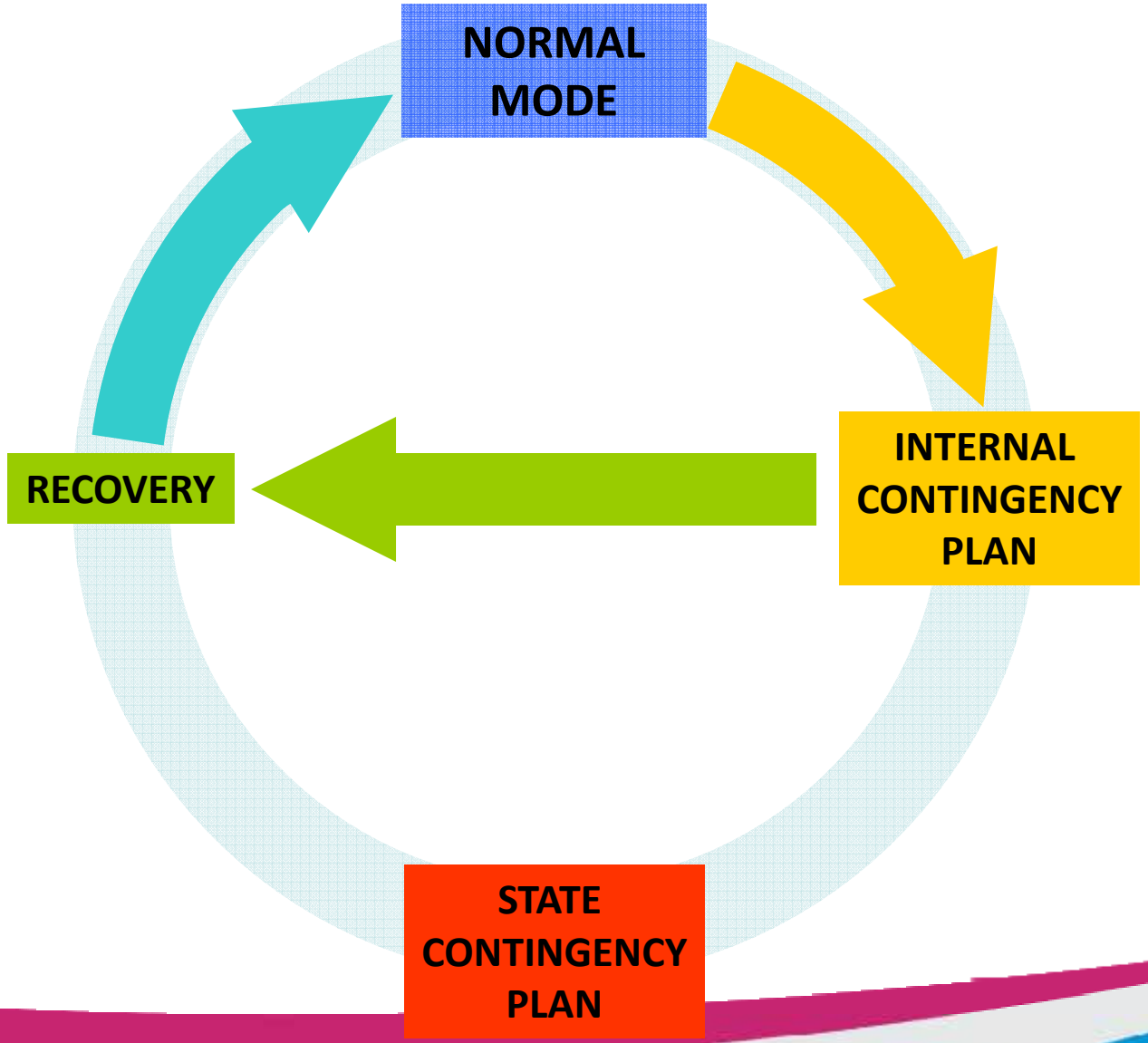
Introduction

- Contingency Arrangements - An ICAO Annex 11 requirement
- States need to go through multiple consultative process to get it right
- Take advantage of SEACG to formulate plans
- More cost-effective and efficient
- Fragmented Plans could render ineffective
- A coordinated regional drive is necessary to ensure relevance

TYPICAL CONTINGENCY LIFECYCLE



ATM STATE CONTINGENCY PLAN LIFECYCLE



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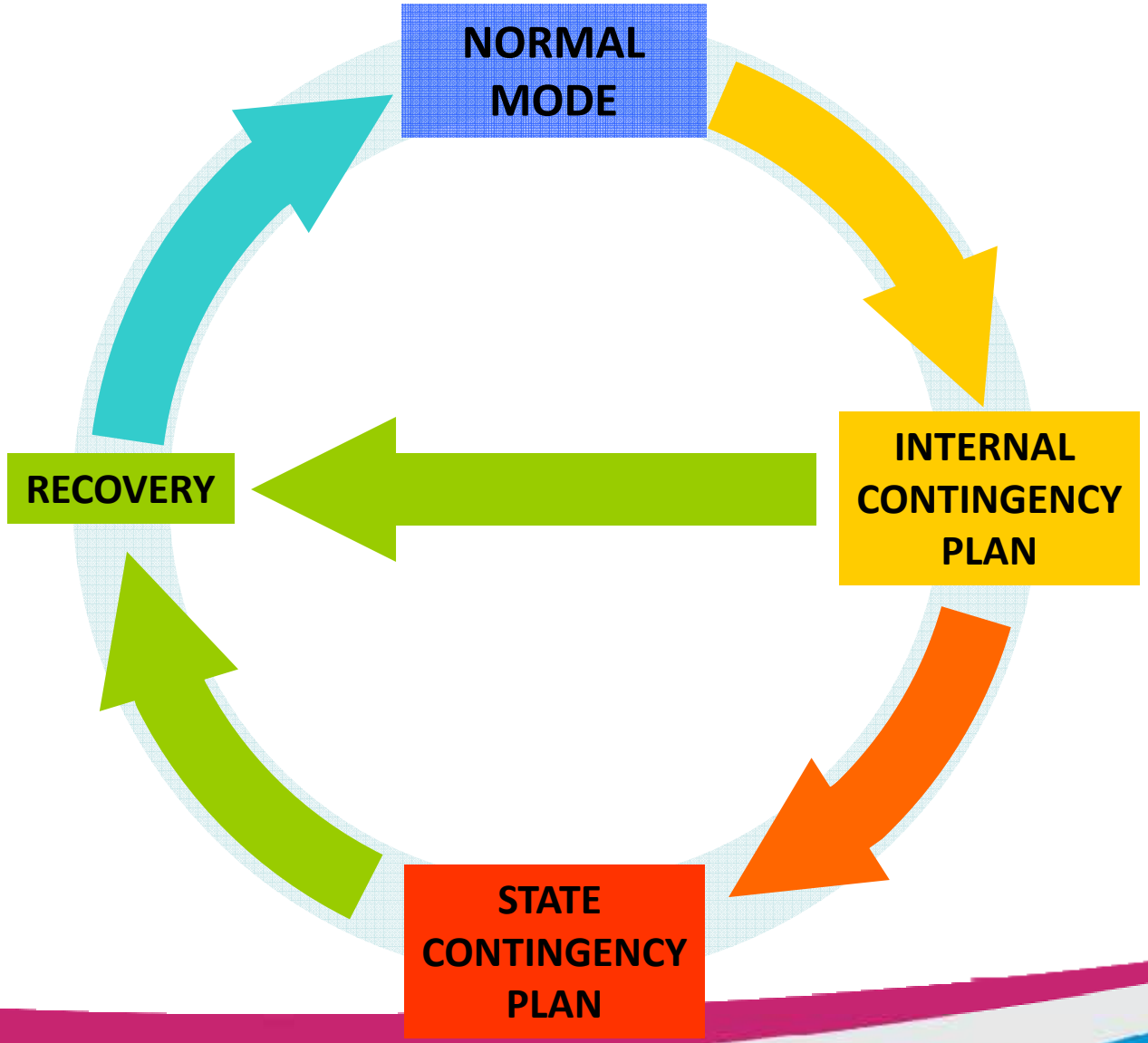
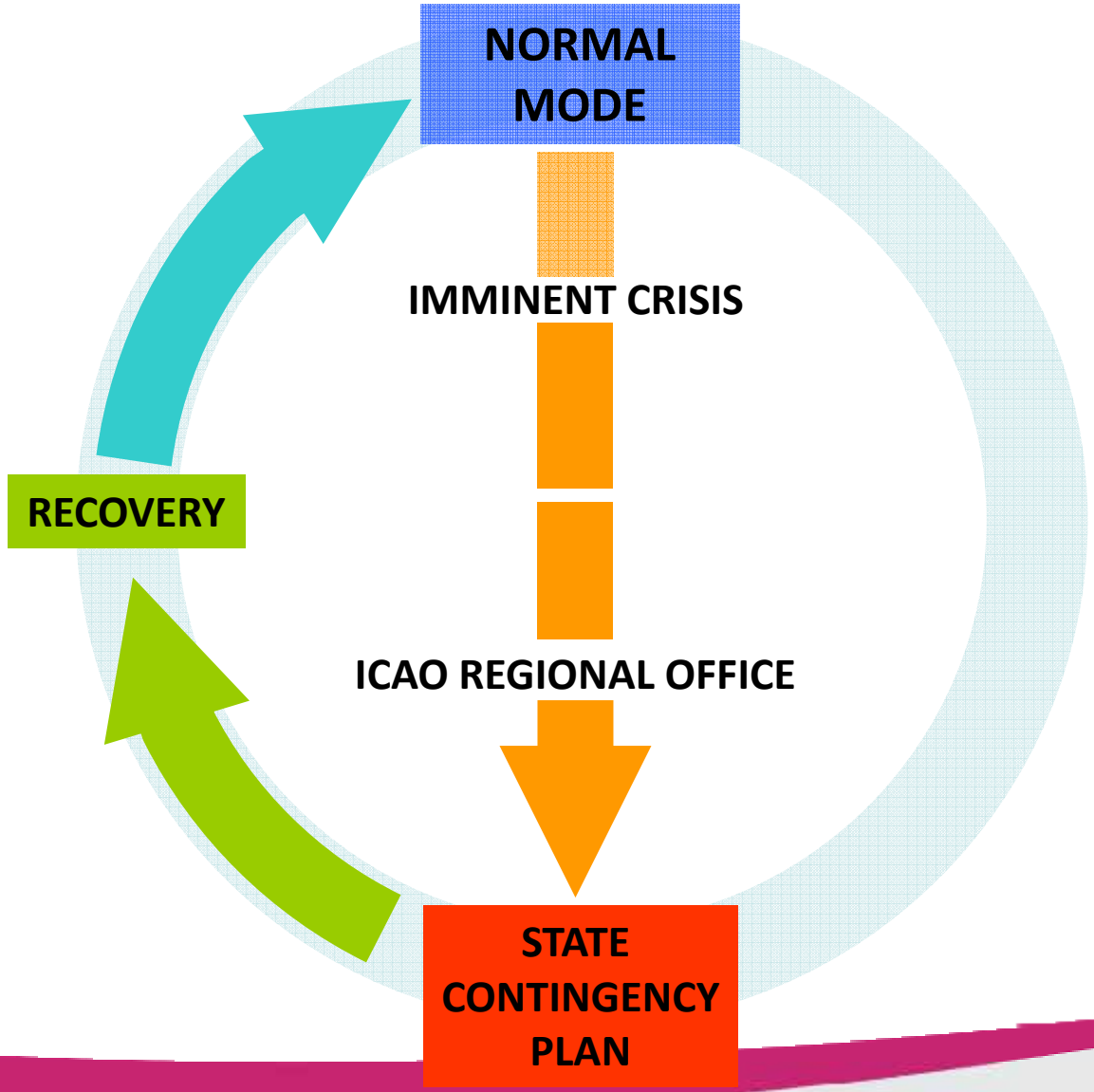
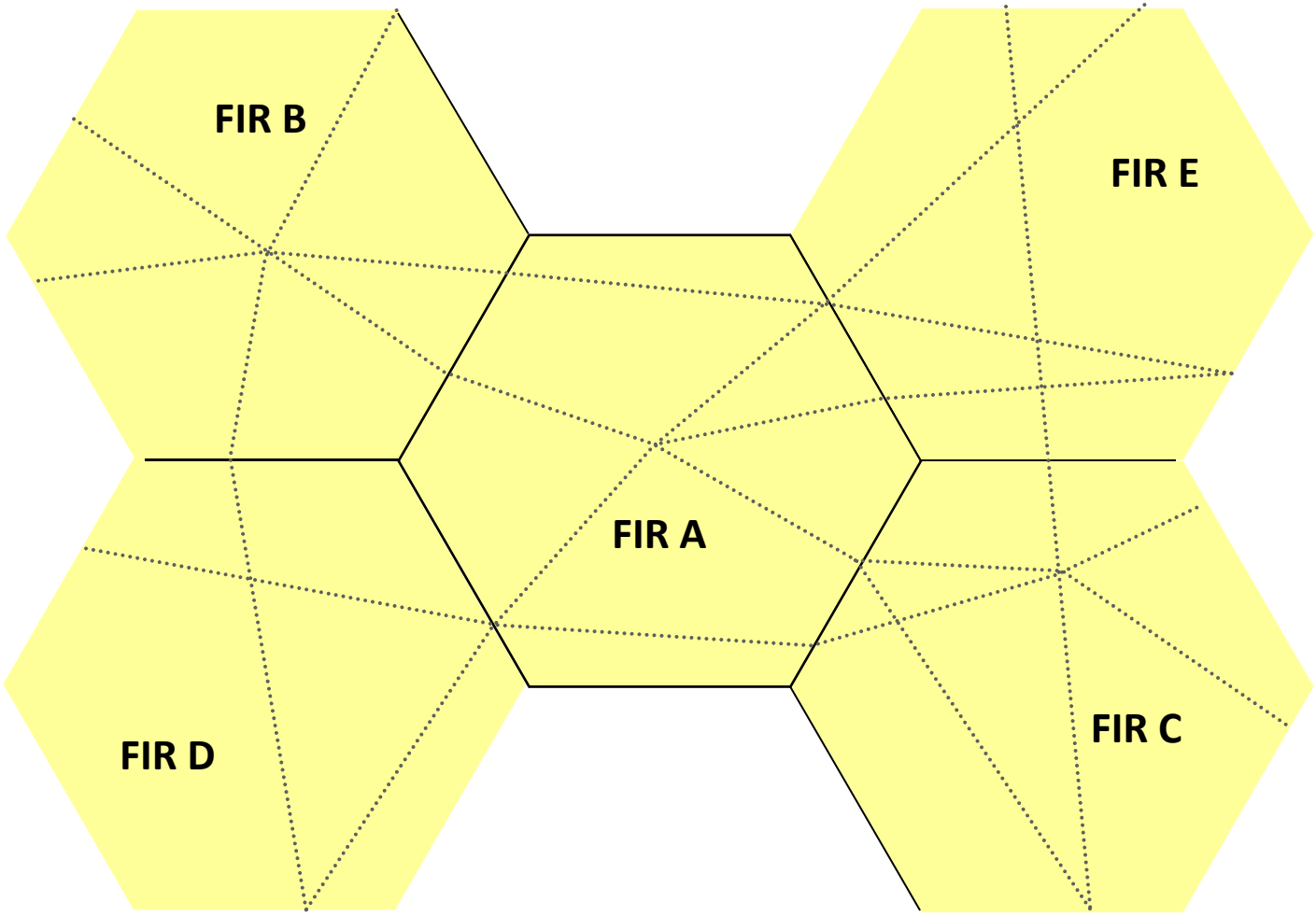


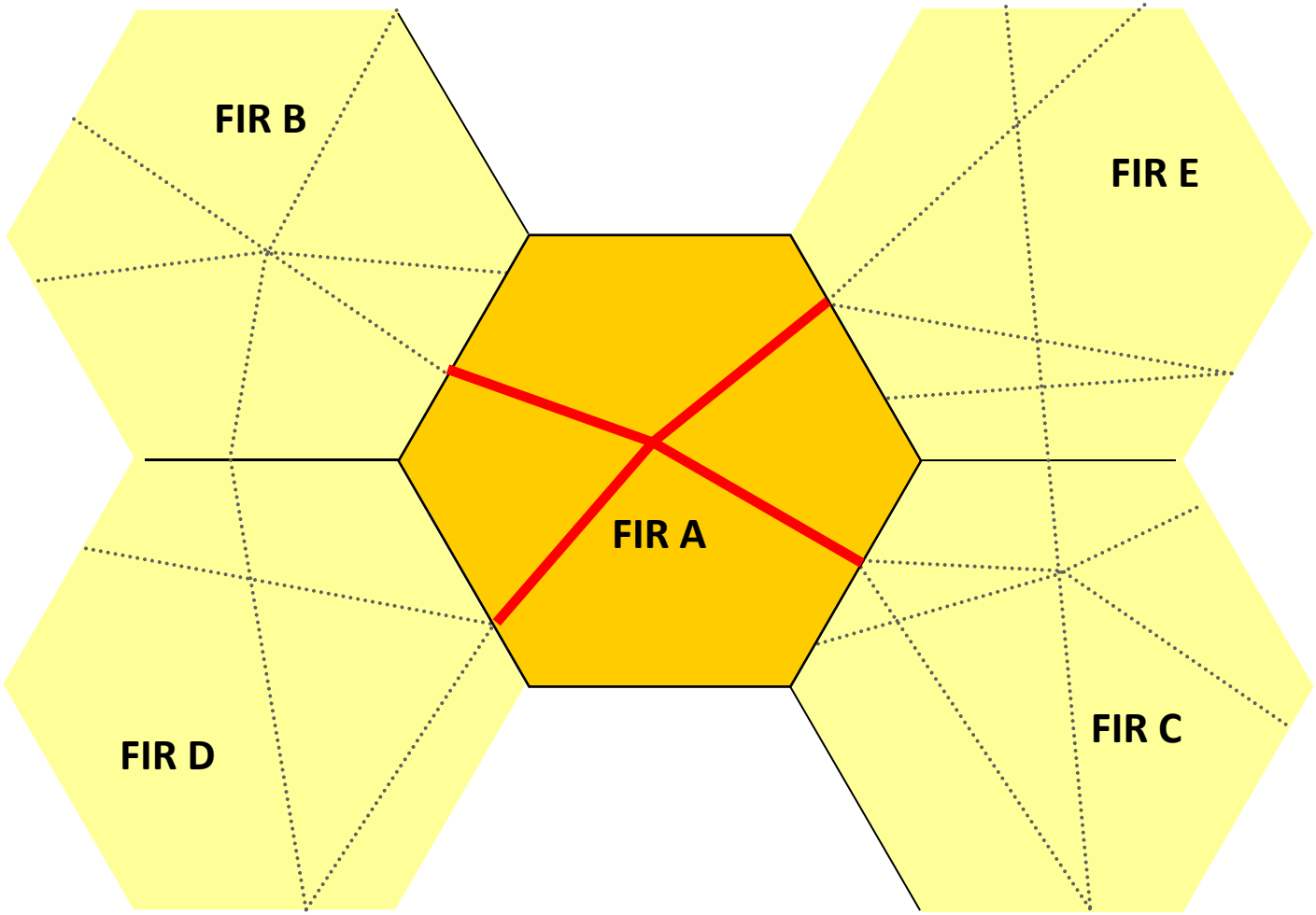
ATM STATE CONTINGENCY PLAN LIFECYCLE



Typical FIRs and ATS Routes



Singular Scenario – FIR A



Activated Contingency Plan

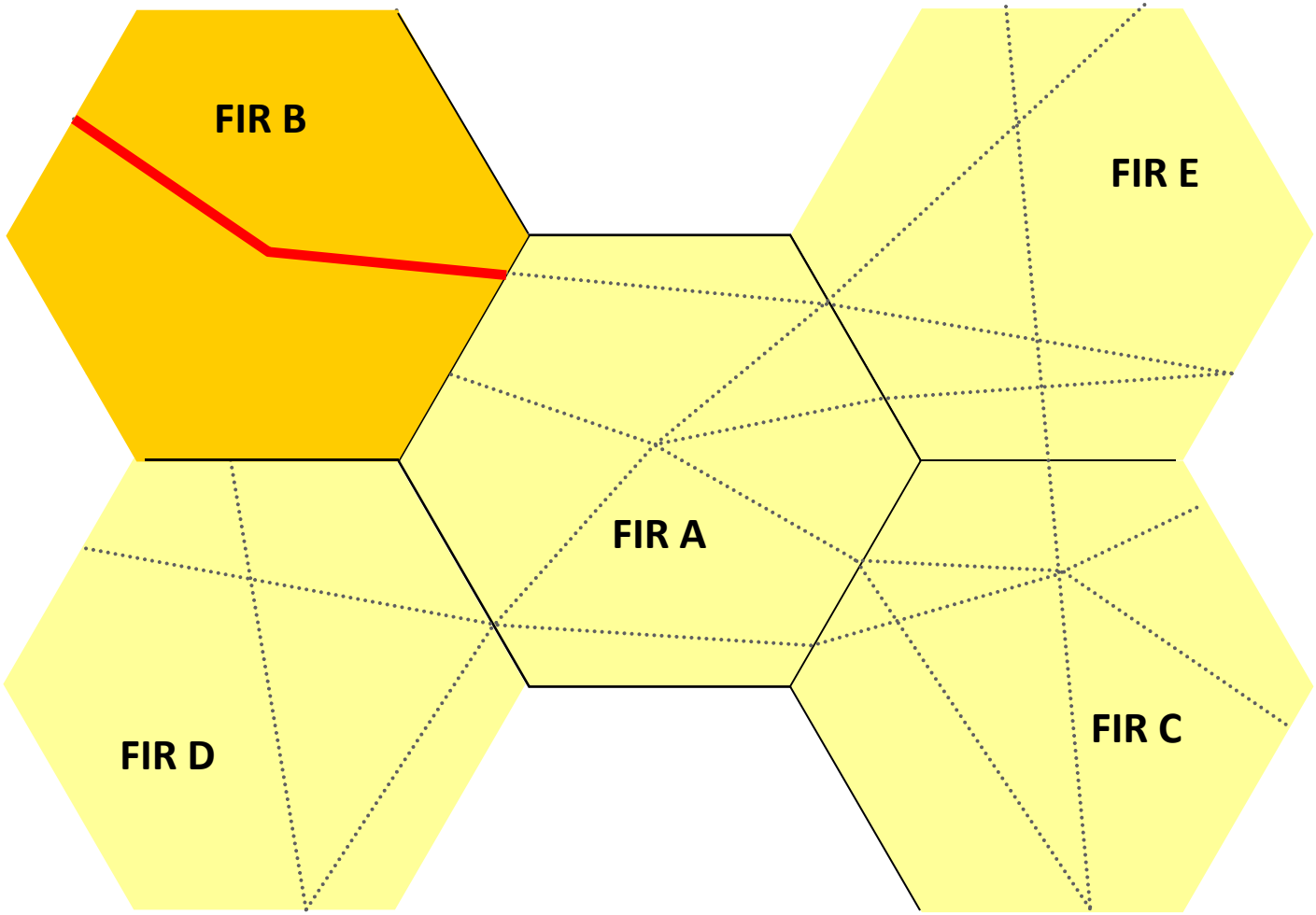
Normal Operations

Contingency Routes

ATS Routes

CAAS

Singular Scenario – FIR B



Activated Contingency Plan

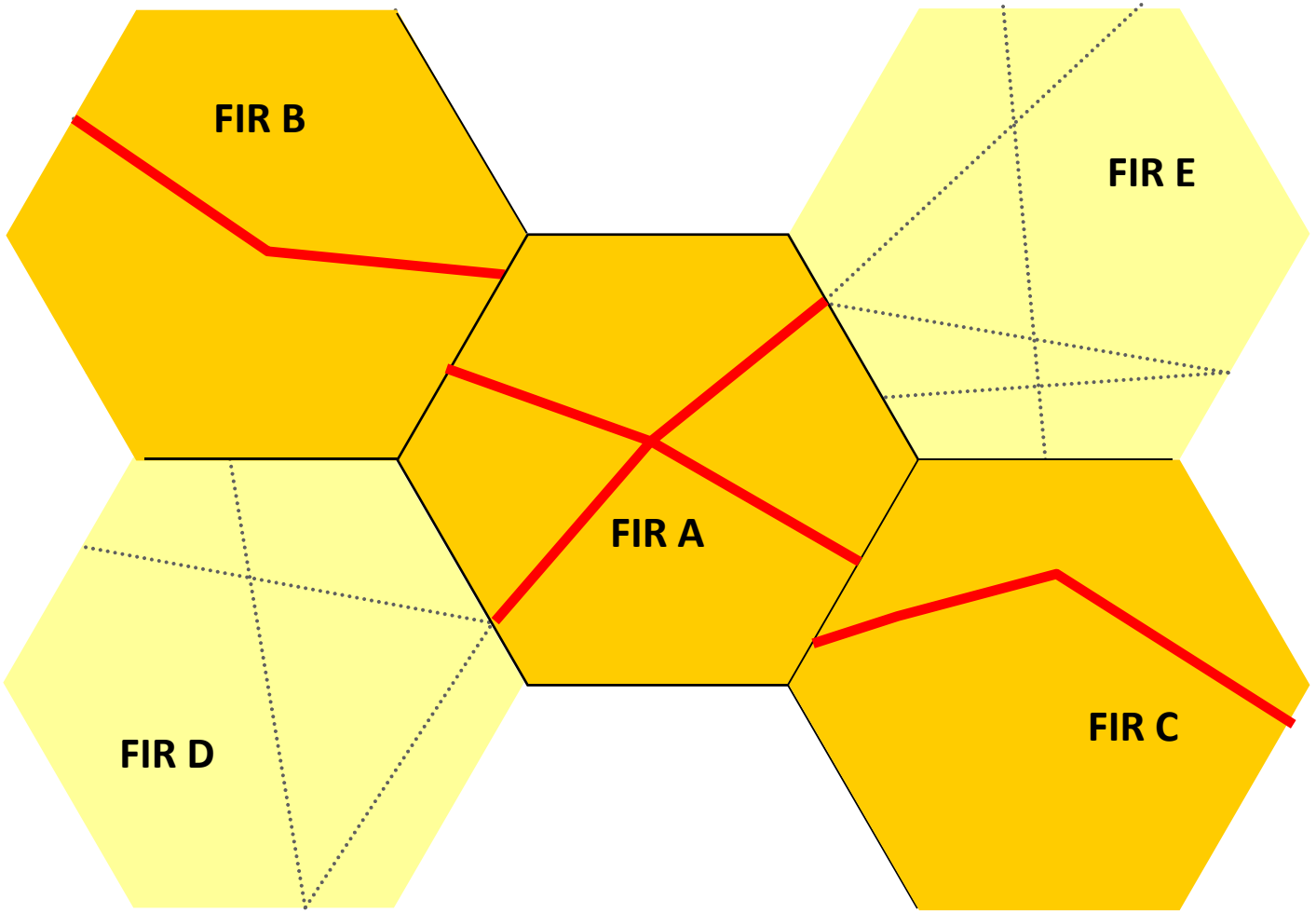
Normal Operations

Contingency Routes

ATS Routes

CAAS

Multiple Activation – Fragmented Plans



Activated Contingency Plan

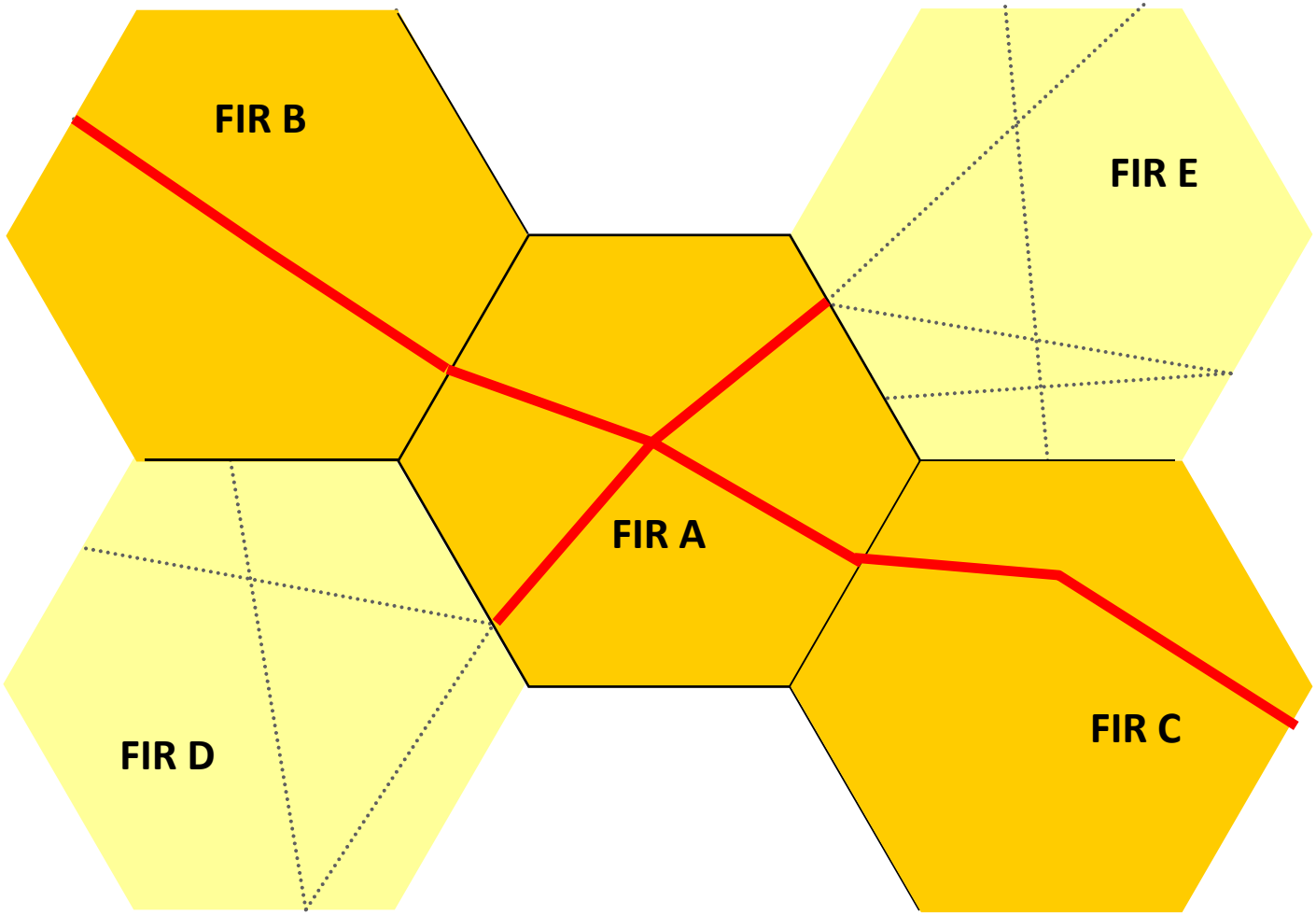
Normal Operations

Contingency Routes

ATS Routes

CAAS

Harmonised Contingency Plan



Activated Contingency Plan

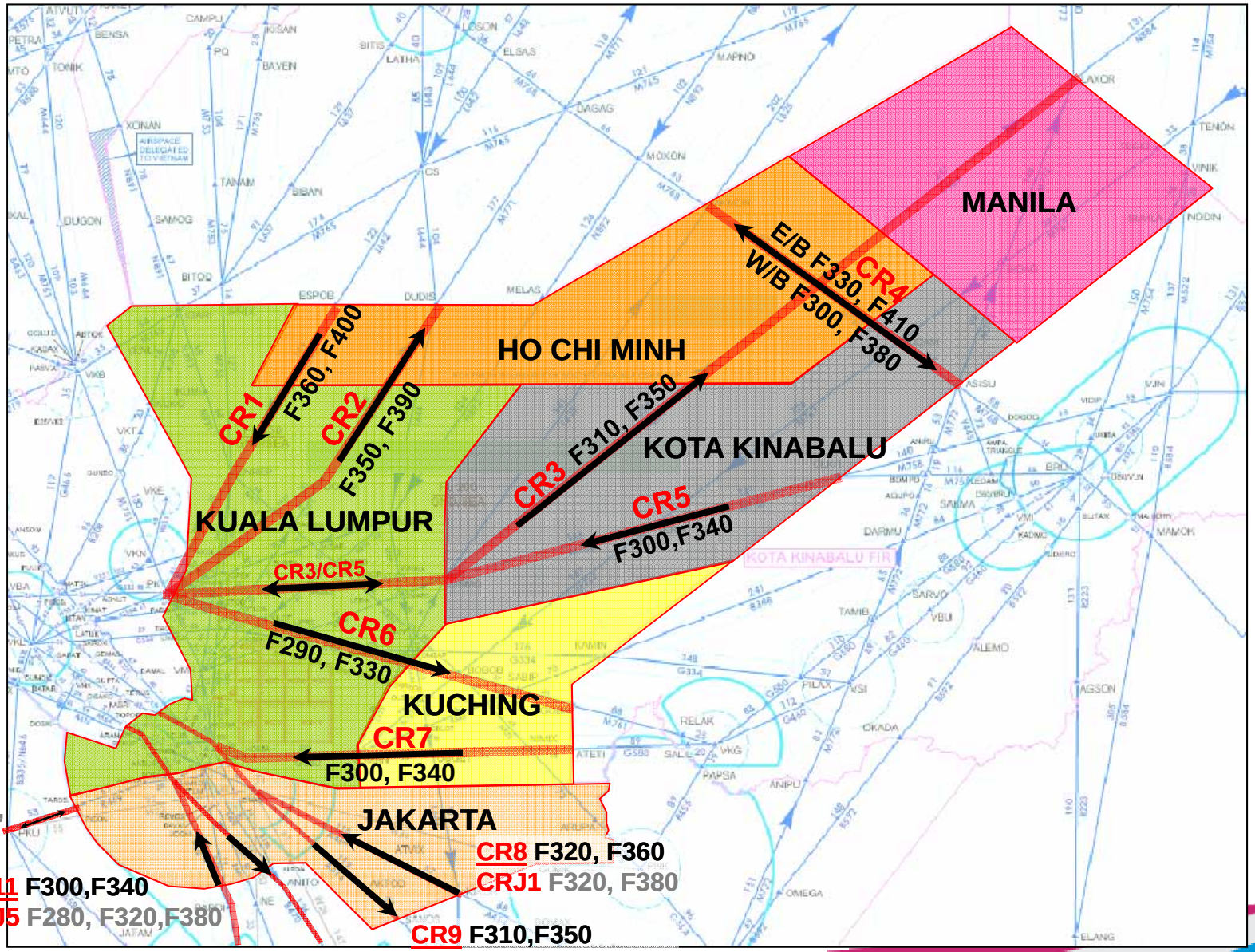
Normal Operations

Contingency Routes

ATS Routes

CAAS

Proposed Contingency Routes Structure In Singapore FIR



CRJ6
W/B F280,
E/B F290

CR11 F300,F340
CRJ5 F280, F320,F380

CR8 F320, F360
CRJ1 F320, F380

CR9 F310,F350
CRJ2 F290,F350, F410

CR10 F290,F330
CRJ4 F290,F350, F410

Action by the Meeting

- note the intensive resources and time required for each State to embark on developing their Contingency Plan without a coordinated regional approach;

- note that States would naturally develop their contingency plans to cater for a scenario of singular activation affecting only their own FIR; and

- discuss on the harmonisation of contingency plans to ensure that these plans remain relevant should there be a need to activate more than one adjacent plan.

Thank You

Civil Aviation Authority of Singapore

SEACG/17 — ACTION PLAN

IMMEDIATE: Action to be taken immediately after the conclusion of the meeting
MID-TERM: Action to be taken within six months
LONG-TERM: Action to be taken one year

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
1.	**Consideration of the Implementation of RNP 10 Routes and Reduced Horizontal Separation of 50 NM in Southeast Asia**	LONG TERM	SEACG	OPEN	Raised at SEACG/11. Ongoing implementation of RNP 10 routes as required and introduction of 50 NM separation. Identify areas suitable for RNP 4 and reduction of en-route separation to 30 NM. ~~RNP-SEA/TF~~SEA-RR/TF to undertake study of implementation. L642 and M771 implemented on 3 July 2008.
2.	**Update the Progress on State Contingency Plan Development**	LONG TERM	STATES	OPEN	Raised at SEACG/16. States to develop and promulgate contingency plans according to Annex 11 – *Air Traffic Services* and update the progress to the SEACG/17.
~~3.~~	~~**Report the Outcomes of Large Height Deviation (LHD) Investigations Undertaken by States**~~	~~LONG TERM~~	~~STATES~~	~~OPEN~~ CLOSED	~~Raised at SEACG/16~~ ~~States to conduct Safety Management System investigations into LHDs with the objective of identifying and correcting causal factors.~~ ~~WP02 from the Monitoring Agency for Asia~~

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
					~~Region (MAAR) to the sixth meeting of the Western Pacific/South China Sea RVSM Scrutiny Group (WPAC/SCS RSG/6, April 2009) to be used as reference material. Outcomes of SMS investigations to be reported to SEACG/16 and RASMAG/11~~
4	**ATS Routes Developments**				
	~~ATS Route B214 NASAN – LADIS – AKSAG~~	~~LONG TERM~~	~~Lao PDR/ Viet Nam~~	~~OPEN~~ COMPLETED	~~Raised at SEACG/16.~~ ~~Lao PDR and Viet Nam agreed to establish the route. Lao PDR to coordinate with Myanmar. Lao PDR and Viet Nam to implement.~~
	~~M756 Tan Son Nhat – ENREP~~	~~LONG TERM~~	~~Singapore/ Viet Nam~~	~~OPEN~~ CLOSED	~~Raised at SEACG/16.~~ ~~Singapore will look into the possibility. Singapore and Viet Nam establish the route.~~ Transferred to SEA-RR/TF.
	~~Vientiane (VTN) – Phnom Penh (PNH) through the Bangkok FIR~~	~~LONG TERM~~	~~Cambodia/Lao PDR/Thailand/ Viet Nam~~	~~OPEN~~ CLSOED	~~Raised at SEACG/16~~ ~~Viet Nam proposed this direct route. Cambodia and Lao PDR supported the proposal at SEACG/16. Thailand will consider the proposal.~~ Transferred to SEA-RR/TF.
	~~Phucat (PCA) – BUNTA~~	~~MID-TERM~~	~~Viet Nam~~	~~OPEN~~ COMPLETED	~~Raised at SEACG/16.~~ ~~Viet Nam to implement.~~

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
	~~ENDAX – Tacloban (TAC) – Kota Kinabalu~~	~~LONG TERM~~	~~Malaysia, Philippines~~	~~OPEN~~ CLOSED	~~Raised at SEACG/16.~~ ~~Philippines in coordination with Malaysia will look into possibility in establishing the proposed route.~~ Transferred to SEA-RR/TF.
5	**Radar Data Sharing**	LONG TERM	Lao PDR/ Thailand	OPEN	Raised at SEACG/16. Lao PDR and Thailand agreed to share the radar data. Lao PDR and Thailand will further coordinate.
~~6~~	~~**Restrictions Imposed on Traffic Operating on A1 and M771**~~	~~MID TERM~~	~~Hong Kong, China/Japan/ Singapore/ Thailand~~	~~OPEN~~ COMPLETED	~~Raised at SEACG/16.~~ ~~Hong Kong China and Japan would bring the issue to the attention of Taibei Area Control Centre (ACC) at the East Asia ATM Coordination Group (EATMCG) in June 2009.~~ ~~Hong Kong, China agreed to regularly review the situation and Endeavour to place traffic regulation only as a last resort so as to minimize the impact on the upstream ACCs.~~
6	**Terms of Reference of SEACG**	IMMEDIATE	Hong Kong, China	OPEN	Raised at SEACG/17 Hong Kong, China will report to ATM/AIS/SAR/SG/17 for the endorsement, on behalf of the group.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
7	**Establishment of CRA Arrangement for the South China Sea**	IMMEDIATE	Secretary States	OPEN	Raised at FIT-SEA/10 and SEACG/17 Secretary will request ATM/AIS/SAR/SG/17 to consider the arrangement to establish CRA for the South China Sea area, on behalf of FIT-SEA. States should be ready for the discussion at the Sub-group. States were urged to consider the funding for the CRA establishment for the South China Sea area.
9	**FL 400 Restriction on G581**	MID-TERM	Hong Kong, China Japan	OPEN	Raised at SEACG/17 A tripartite meeting should be held to seek resolution to FL 400 by Hong Kong, China and report the outcome to the Regional Office as soon as possible.
~~10~~	~~**50 NM Lateral Separation on N892**~~	~~MID-TERM~~	~~China Philippines Singapore Viet Nam~~	~~OPEN~~	~~Raised at SEACG/17~~ ~~The proposed use of 50 NM lateral separation on N892 should be further pursued with China. China will bring this issue back to their authority for further deliberation. Tentative implementation date on 26 August 2010.~~

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helpdesk@ais.mlit.go.jp

JAPAN

MINISTRY OF LAND, INFRASTRUCTURE,
TRANSPORT AND TOURISM
CIVIL AVIATION BUREAU
AERONAUTICAL INFORMATION SERVICE CENTER

AIC

Nr 056/09
22 OCT 2009

056/09

RNAV5 優先運用（スカイハイウェイ）について

東京国際空港の新滑走路供用開始日（平成 22 年 10 月予定）から、福岡 FIR における FL290 以上 FL410 以下の国内空域全域において、RNAV5 優先運用（スカイハイウェイ）が実施される。

1．概要

我が国では、飛行経路の短縮及び空域容量の拡大を目的として、RNAV5 経路の設定を進めており、平成 22 年 10 月までに主要な RNAV5 経路の設定を完了する。

現在の航空路網は、VOR 等の航空保安無線施設を結ぶ航空路（VOR 経路）と RNAV 経路が混在して設定されているため、FL290 以上 FL410 以下の国内空域においては、航空交通の輻輳により管制業務が複雑化し、管制官のワークロードは増大している。

平成 22 年 10 月に予定されている東京国際空港の新滑走路供用後においては、更に交通密度が高まるものと予測される。

このため、今後、増加する交通量に対し、管制官が安全に処理することが可能な空域容量を確保することを目的として、巡航する航空機が集中する FL290 以上 FL410 以下の国内空域を RNAV5 航行許可機の優先空域として運用するものである。

2．運用方式

FL290 以上 FL410 以下の高度は、原則として RNAV5 経路を計画する RNAV5 航行許可機のみに承認される。

3．適用除外

次に掲げる場合においては、交通状況に応じ RNAV5 航行許可機以外の航空機であっても FL290 以上 FL410 以下の高度が承認される。

1) 乱気流や悪天候回避等のため、FL280 以下の高度での飛行が困難である場合
2) 管制間隔設定のため、FL290 以上の高度を飛行させる必要があると管制官が判断した場合
3) 夜間等交通量の少ない時間帯において、管制機関が対応可能と判断した場合
4) 国の航空機であり、その任務上 FL290 以上の高度で飛行する必要がある場合

4．飛行計画

RNAV5 優先運用開始後は、以下の飛行計画が要求される。

1) RNAV5 航行許可機が FL290 以上 FL410 以下の高度を飛行する場合は、RNAV5 経路を計画すること。
2) VOR 経路を飛行する航空機は、FL280 以下または FL430 以上の高度を計画すること。

5．RNAV5 優先運用の詳細については、追って航空路誌改訂版により通知される。

6．問い合わせ窓口
国土交通省航空局管制保安部管制課
TEL：03-5253-8749
FAX：03-5253-1663

056/09

Implementation of RNAV5 Preferential Operation (Sky Highway)

From the date of opening of the new runway at Tokyo International Airport (scheduled for OCT 2010), preferential operation for RNAV5 approved aircraft will be implemented within whole domestic airspace of Fukuoka FIR between FL290 and FL410 inclusive.

1. General

Japan has introduced RVAV5 standards and established RVAV5 aiming for shortening route distance and increasing airspace capacity. By OCT 2010, the establishment of RVAV5 routes will be completed for the most of part.

The present route network in Japan is a mix of airways that are connected by ground-based navigation aids such as VOR (VOR routes) and RNAV routes. As a consequence, increasing traffic nowadays in domestic airspace between FL290 and FL410 inclusive has caused complexity in ATC and increased controller workload.

It is expected that traffic density of domestic airspace will rise further after the opening of the new runway at Tokyo International Airport scheduled for OCT 2010.

Thus, in order to ensure airspace capacity in which efficient and safe ATC can be provided, domestic airspace between FL290 and FL410 which is cruising aircraft congested airspace, will be operated as preferential airspace for RNAV5 approved aircraft.

2. Operation procedure

Generally, controller will assign cruising altitude between FL290 and FL410 for only RVAV5 approved aircraft planning RNAV5 routes.

3. Exceptions

Aircraft/cases listed below are exceptions. Depending on traffic situation, aircraft other than RNAV5 approved aircraft may be assigned altitude between FL290 and FL410 inclusive.

1) In order to avoid turbulence or bad weather area;
2) ATC instruction for establishment of ATC separation;
3) Low traffic situation such as night time, and when ATC units accept it; and
4) The state aircraft which has to fly at or above FL290 for their operational reasons.

4. Flight plan

It is requested for aircraft operators to flight plan as follows after implementation of RNAV5 preferential operation.

1) RNAV5 approved aircraft shall flight plan RNAV5 routes when cruising between FL290 and FL410 inclusive.
2) Aircraft intending to fly VOR routes shall flight plan cruising altitude below FL290 or above FL410.

5. Details of RNAV5 preferential operation will be notified by further AIP AMDT.

6. For further information
Air Traffic Control Division,
Air Traffic Services Department, Civil Aviation Bureau,
Ministry of Land, Infrastructure, Transport and Tourism
TEL : +81-3-5253-8749
FAX : +81-3-5253-1663

ATTACHMENTS TO THE REPORT

List of Participants

	Name		Title/Organization	Tel/Fax/e-mail
1.	**CAMBODIA (1)**			
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2.	**CHINA (2)**			
	2.	Mr. Liu Yonggang	Engineer of Air Traffic Control Division ATMB of CAAC No. 12 Middle of the East Third Ring Road Chaoyang District Beijing China	Tel: 86-10-8778 6818 Fax: 86-10-8778 6810 E-mail: lygangak@163.com
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1	1	Provisional Agenda – FIT-SEA/10	Secretariat
2	-	Terms of Reference of FIT-SEA	Secretariat
3	3	ADS/CPDLC Equipage and ATS Status for the Operational Trials of ADS/CPDLC	Secretariat
4	5	Update FIT-SEA Task List	Secretariat
5	6	Data Link Implementation Table for Capacity Planning	Secretariat
6	6	Global Operational Data Link Document (GOLD) Update and Action	Secretariat
7	2	Consideration of the Termination of CRA-Japan for FIT-SEA	Japan
8	2	Report of FIT-SEA CRA	Japan

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1	-	List of Tentative Working and Information Papers	Secretariat
2	-	Terms of Reference of FIT-SEA CRA	Secretariat
3	6	Outcomes of RASMAG/12	Secretariat
4	6	Summary Reports of APANPIRG on SEACG, FIT-SEA and Southeast Asia RNP Implementation Task Force	Secretariat
5	6	Summary Reports of the 12th Meeting of the FIT for the Bay of Bengal	Secretariat
6	6	Review of the Bay of Bengal Data Link Seminar in 2009	Secretariat
7	3	ADS/CPDLC Operational Implementation in Ho Chi Minh FIR	Viet Nam
8	2	Extracts from the Problem Reports, presented at IPACG FIT/19	Japan
9	3	Review of ADS/CPDLC Operations in the Singapore FIR	Singapore

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1	1	Provisional Agenda – SEACG/17	Secretariat
2	2	Draft Terms of Reference	Hong Kong, China
3	3	Outcomes of the 12th Meeting of the Regional Airspace Safety Monitoring Advisory Group	Secretariat
4	3	Outcomes of APANPIRG/20	Secretariat
5	5	Radar Coverage Chart of the South China Sea Area and the Status Matrix of Application of Radar Handover Procedures	Secretariat
6	7	Review of the Asia/Pacific ATS Route Catalogue	Secretariat
7	5	Flow Control Restriction on A1/G86	Hong Kong, China
8	3	AIS Update from the Second Meeting of ICAO AIS-AIM Study Group	Secretariat
9	6	Outcomes of the Second Meeting of Flight Plan & ATS Messages Implementation Task Force (FPL&AM/TF/2)	Secretariat
10	10	Review Action Plan from SEACG/16	Secretariat
11	11	Outcomes of the 46th DGCA Conference	Secretariat
12	3	Outcomes of the First and the Second Meetings of the Southeast Asia Route Review Task Force (SEA-RR/TF)	Secretariat
13	7	Restriction on G581	Japan
14	4	Review of the 10th Meeting of the FANS Implementation Team for Southeast Asia (FIT-SEA/10)	Rapporteur of FIT-SEA/10
15	7	Implementation of 50 NM Lateral Separation Standard for RNAV Routes L625, M767, N884 and N892	Singapore
16	8	Harmonisation of State Contingency Plan	Singapore
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1	-	List of Tentative Working and Information Papers	Secretariat
2	11	Outcome of the third meeting of East Asia ATM Coordination Group (EATMCG/3)	Japan
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4	5,6,7	Updates on ATS Activities in Viet Nam	Viet Nam
5	6	The Fifth Meeting of the South East Asia Sub-Regional ADS-B Implementation Working Group	Secretariat

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