INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE FIFTH MEETING OF THE FANS IMPLEMENTATION TEAM, SOUTH-EAST ASIA (FIT-SEA/5)

HO CHI MINH CITY, VIET NAM, 16 – 19 JANUARY 2007

The views expressed in this Report should be taken as those of the Meeting and not of the Organization.

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

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Fifth Meeting of the FANS Implementation Team, South-East Asia (FIT-SEA/5) was graciously hosted by Civil Aviation Administration of Viet Nam (CAAV) and Viet Nam Air Traffic Management (VATM) from 16 to 19 January 2007 at the Caravelle Hotel, Ho Chi Minh City, Viet Nam.

1.2 The Terms of Reference (TOR) for the FIT-SEA is 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 the 11th Meeting of the South-East Asia ATS Co-coordinating Group, 2003)

2. Attendance

2.1 The meeting was attended by 44 participants from Cambodia, Japan, Malaysia, Philippines, Singapore, Thailand, Viet Nam, IATA, ARINC and SITA. A list of participants is at **Appendix A** to this report.

3. Officers & Regional Office

3.1. Mr. Kyotaro Harano, Regional Officer ATM, ICAO Asia and Pacific Office, acted as the Secretary for the meeting.

3.2 The meeting requested Mr. Hiroshi Inoguchi, Special Assistant to the Director, ATS Systems Planning Division, ATS Department, Japan Civil Aviation Bureau (JCAB) to continue to be the Rapporteur of the meeting. Mr. Inoguchi accepted the request.

3.3 Mr. Nguyen Duc Lam, Ms. Nguyen Thi Hoa, Ms. Tran Thi Phuong Diep and Ms. Tran Duc Hoai Phuong from CAAV and VATM provided the administrative service for the meeting.

4. Opening of the Meeting

4.1 On behalf of the Management Board of the Civil Aviation Administration of Viet Nam, Dr. Dinh Xuan Huong, Deputy Director General, CAAV, Ministry of Transport extended the warmly welcome to all delegates attending the FIT-SEA/5. Applications of Controller-Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance (ADS) were essential component of the new CNS/ATM system. At the present, the application of CPDLC in the oceanic airspace that is not covered by VHF and surveillance radars was considered effective. In this context, the coordination amongst Japan, Philippines, Singapore and Viet Nam for the trial of harmonized ADS/CPDLC application in the oceanic airspace had an important meaning in the coordinated provision of CNS/ATM system in the region. The necessary cooperation amongst the four States was mentioned at ICAO regional meetings as well as at other meetings of the ASEAN – Japan New Air Navigation System Project.

4.2 As the Chairman of the Steering Committee of Viet Nam for the New CNS/ATM, Dr. Huong expressed his gratitude for convening this meeting in order to assist Viet Nam in the trial operation of ADS/CPDLC at Ho Chi Minh Approach and Area Control Center (AACC). In light of this, CAAV had just approved the new mode of ADS/CPDLC trial operation which was the basis for the training and trial implementation at Ho Chi Minh AACC. Dr. Huong was confident that the meeting would be fruitful and wished the meeting a great success.

4.3 On behalf of Mr. Lalit B. Shah, Regional Director of ICAO Asia and Pacific Office, Mr. Kyotaro Harano expressed appreciation to CAAV and VATM for the warm and generous support in hosting this significant meeting. Also, he welcomed all the participants to the FIT-SEA/5. Mr. Harano recalled that the last meeting of the two FITs, the FIT-SEA and the FIT-BOB were held as combined meetings in April and November 2005 and July 2006. The FIT-SEA/5 was the first meeting to be convened separately and was expected to more focus on the ADS/CPDLC in the Southeast Asia region. In this regard, the meeting had a number of matters to be considered, including an update of the ADS/CPDLC operational trial in the Ho Chi Minh and Singapore FIRs, to progress towards the implementation of an operational trial in the airspace in March this year. Mr. Harano was hopeful that the Philippines would join the operational trial after evaluating their ground system in place.

4.4 He expressed appreciation to Japan for their generous offer to provide the Central Reporting Agency (CRA) service for South China Sea airspace, which had been accepted as a result of the FIT-SEA/3 (November 2005, Bangkok).

5. **Language and Documentation**

5.1. All discussions were conducted in English. Documentation was issued in English. A total of 14 Working Papers and 12 Information Papers were considered by the meeting. A list of the meeting papers considered is at **Appendix B** to this Report**.**

PART II - REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Agenda

1.1 The meeting reviewed the revised provisional agenda that had been proposed by the Secretariat, noting the inclusion of the new Agenda Item 3 "Review of ADS/CPDLC Implementation". Accordingly, the meeting adopted the following agenda:

Agenda Item 1: Adoption of Agenda

Agenda Item 2: Review South China Sea ADS/CPDLC Operational Trial

Agenda Item 3: Review ADS/CPDLC Implementation

Agenda Item 4: Central Reporting Agency – Southeast Asia

Agenda Item 5: Data Link Guidance Materials

Agenda Item 6: Update Task Lists

Agenda Item 7: Any Other Business

Agenda Item 8: Date and Venue of the Next Meeting

Agenda Item 2: Review South China Sea ADS/CPDLC Operational Trial

Updates on ADS/CPDLC Operational Status by States

2.1 Operational status of ADS/CPDLC in the Philippines, Singapore and Viet Nam was updated as follows:

Philippines

2.2 The Philippines advised that some funding issues remained unresolved in relation to installation of the standalone equipment though a proposal had been submitted to relevant authorities. It was not possible to determine a specific target date when the Philippines could join the operational trial in the Manila FIR. The Philippines would update the next meeting of their progress.

Singapore

2.3 Singapore briefed the meeting on the history of development of ADS/CPDLC systems and services since February 1997. It was noted that an interoperability test was conducted with Airbus and Singapore Airlines in October and November 2006, and the Singapore ADS/CPDLC system was certified by the manufacturer to be capable to support all FANS-1/A equipped aircraft compliant to DO-258A or ED100A. Subsequently, Singapore announced by NOTAM that ADS/CPDLC services would be available to all FANS-1/A equipped aircraft, not limiting to B747-400 and B777 (which were operational since 1999 and 2000, respectively) in the Singapore FIR as of 13 December 2006. The current AIP concerning data link services in the Singapore FIR would be amended in January 2007.

2.4 Singapore also provided details of the current status of operations as follows:

a) Average number of aircraft logons per day has steadily increased, and that of 2006 was close to 140;

b) 90% of FANS-1/A equipped aircraft use ADS/CPDLC while 10% do not use;

c) 64% of logon aircraft were B777, 30% B747-400, and 6% Airbus; and

d) More than 50% of logon aircraft were by Singapore Airlines.

2.5 In addition, Singapore provided results of system performance analysis, such as uplink/downlink message delivery time, reject rate and service availability, over 2005 and 2006 (up to November) based on the *FANS Operations Manual* (FOM) criteria. The provided data indicated that the system demonstrated satisfactory performance.

2.6 Singapore advised the meeting from their experiences that CPDLC replaced voice communication for data link equipped aircraft, and improved safety by reducing the potential for erroneous receipt of messages. ADS also improved surveillance capability in non-radar areas and enhanced safety with automated monitoring and alert features. Thus, Singapore strongly encouraged aircraft operators to logon to ADS/CPDLC when operating over the South China Sea area.

2.7 The meeting reconfirmed that the operational status of ADS/CPDLC in the Singapore FIR should be considered as “regular operation”, not as “in operational trial”.

Viet Nam

2.8 Viet Nam provided updated information on the activities undertaken since the FIT-SEA/4 (July 2006, Bangkok) as follows:

a) ADS/CPDLC Committee was established within CAAV with participation of VATM experts, and facilitated planning and coordination process towards the trial;

b) ADS/CPDLC system in the Ho Chi Minh AACC had been tested and its performance was validated by CAAV;

c) Operational procedures for trials were developed based on the FOM Version 4.0, and approved by CAAV;

d) Training for engineers was completed through system installation and validation programmes;

e) Eight five-day training courses for 60 air traffic controllers began on 15 January 2007 and would be completed for all controllers by 10 March 2007;

f) Vietnam Airlines has 10 B777s and appropriate training was provided to pilots;

g) A coordination meeting between Viet Nam and Singapore was held in Singapore in December 2006, to exchange information on experiences and training and to develop a supplementary letter of agreement (SLOA) for the trial, which would be finalized and signed in February 2007;

h) AIC and AIP Supplement were drafted for review by the meeting;

i) CAAV decided that they would invite Cathay Pacific Airlines, Japan Airlines, Singapore Airlines and Vietnam Airlines to participate in the Phase 1 trial in the Ho Chi Minh FIR;

j) VATM contracted ARINC as the data link services provider for the Ho Chi Minh FIR, and ARINC would be responsible for collection and submission of all reports relating to failure of data link to VATM during trials; and

k) CAAV confirmed that all problem reports relating to data link operations should be forwarded to CRA-Japan by CAAV in accordance with the agreement between CAAV and CRA-Japan.

2.9 In addition, Viet Nam outlined the project of Ho Chi Minh AACC with successful operation since May 2006. VATM kindly arranged a facility visit for participants during the meeting, and a more detailed briefing was provided at the AACC.

2.10 The meeting congratulated Viet Nam on the reported progress made over the relatively short period of five months.

Step-by-step Approach Trial

2.11 The meeting recalled that the FIT-SEA/4 felt the “Step-by-step” approach, which was adopted in the ADS/CPDLC trials in the North Pacific conducted by Japan, would be appropriate for the operational trials in the South China Sea area, and suggested States concerned to take this into consideration when developing the programme for the trial. The “Step-by-step” policy noted in the presentation from Japan had been as follows:

a) Experimental Phase: The CPDLC tests in a live operational environment based on the pre-programmed scenario, inviting two operators for the purpose of controllers and pilots training, the Oceanic Data Processing (ODP) system functions tests, CPDLC application and message flow tests, and validation of some other necessary data link interoperability functions.

b) Phase 1: The CPDLC trial with a limited participation of four operators in parallel use of HF voice communication. The validation of ADS reports had been performed by using the ODP system.

c) Phase 2: The CPDLC trial with open participation of FANS-equipped aircraft of all operators applying all message sets such as position reports, requests by pilots, ATC clearances and other applications. No HF voice communication had been required for these aircraft. The ADS function test with the ODP system had been conducted to validate the system capability.

d) Phase 3: Application of 50 NM longitudinal separation minimum in RNP 10 environment with use of ADS data.

2.12 The meeting reconfirmed that this step-by-step approach was suitable for the trials in the Ho Chi Minh FIR with minor amendment to suit the local arrangement.

2.13 IATA advised that VHF was available as a voice communication means in the Ho Chi Minh FIR and the participating airlines had good operational experiences of ADS/CPDLC in other regions. IATA also advised that the parallel use of HF voice communication and data link in the Pacific trials was required because of the nature of pioneering use of the data link for ATS at that time. In light of the past experiences and advanced technologies available now, IATA was of the view that such parallel use of VHF communication and data link would not be required in the Phase 1 trial, and requested Viet Nam to consider relaxing the conditions. This would reduce workload of ATC and pilots significantly. The procedures regarding the use of CPDLC and voice communications would be detailed in the Phase 1 trial procedures described in paragraph 2.22 below.

Arrangement for Operational Trials

Starting Date

2.14 The meeting recalled that the FIT-SEA/4 had agreed on the target date of the Phase 1 as March 2007. To this end, Viet Nam proposed 0001 UTC on 15 March 2007 AIRAC date as the date to commence the Phase 1 trial in the Ho Chi Minh FIR, taking into account the progress reported to the meeting. The meeting agreed on this proposed timing.

Applicable ATS Routes

2.15 The Phase 1 trial in the Ho Chi Minh FIR was proposed to be carried out on the six RNAV routes of L625, N892, M768, N500, L628 and M765. It was recognized that the number of possible flights (35 per day) by FANS-1/A equipped aircraft on these routes by participating airlines would be sufficient for the Phase 1 trial and would not create ATC workload exceeding reasonable level at the beginning. Viet Nam advised the meeting that due consideration would be given to the possible application of ADS/CPDLC to the rest of RNAV routes within the oceanic airspace of the Ho Chi Minh FIR, taking into account experiences gained through future operations and operational benefits.

Participating Airlines

2.16 Viet Nam informed the meeting that they would like to limit the number of participating airlines in the Phase 1 trial to the four airlines, i.e. Cathay Pacific Airlines, Japan Airlines, Singapore Airlines and Vietnam Airlines. These operators were selected based on the number of schedule flights, equipage rate, operational experiences in other regions, etc.

2.17 All Nippon Airways (ANA) expressed that they were also able to participate in the Phase 1 trial, and Viet Nam welcomed ANA's participation since this additional operation of B767 by ANA was considered beneficial to ensure the interoperability of variety of aircraft types.

2.18 IATA expressed their support to the trial and the above-mentioned five airlines confirmed their participation in the Phase 1 trial.

AIC and AIP Supplement

2.19 The meeting agreed that Viet Nam would issue an AIC to announce the implementation of the limited trials. Viet Nam would also write officially to the participating airlines and provide the ATC and pilot procedures for the trials following the meeting.

2.20 The meeting was of view that the AIP supplement concerning the Phase 1 trial would not be required, and the letter of request to participate in the Phase 1 trial should contain the information that the AIP supplement was intended to include. The Phase 2 trial procedures should be promulgated by AIP with two AIRAC cycles before the commencement of the Phase 2.

2.21 Viet Nam agreed NOT to publish the AIP supplement for the Phase 1, and will inform the five operators of the operational procedures as soon as possible.

2.22 Draft AIC and the Phase 1 trial procedures coordinated amongst Viet Nam, Singapore and IATA are attached in **Appendices C** and **D** to this Report, respectively. The trial procedures would be finalized through further coordination by the parties concerned.

Problem Report Submission Procedures

2.23 IATA was of view that the Problem Report (PR) should be reported directly to the CRA, and requested the meeting to consider in the future that the procedures be simplified to expedite the reporting process in the South China Sea area.

2.24 The meeting noted the concern but recalled the similar discussion took place at the FIT-SEA/4. It was reiterated that requirement was due to the institutional and funding arrangements by JCAB and the needs of VATM to carry out in-house scrutiny and to coordinate with ARINC. The meeting decided that the PR submission procedures be kept as agreed at the FIT-SEA/4 in order to advance the trials.

Timeframes of the Phases 1 and 2

2.25 IATA requested to keep the duration of the Phase 1 trial to minimum. IATA expected the Phase 2 to take place as soon as possible once the Phase 1 operations demonstrated satisfactory to airlines as well as ATS providers.

2.26 Having reviewed the schedule of the next FIT-SEA/6 to be held on 28 and 29 May 2007, the meeting decided that an interim report of the Phase 1 be made from Singapore, Viet Nam and FIT-SEA CRA for a period of 7 or 8 weeks. The meeting agreed that it can be decided whether the Phase 1 be continued or the States could move on to the Phase 2, based on the interim report.

2.27 If the interim report finds that the joint trial performance is satisfactory, the Phase 2 can be started with the two AIRAC cycles after the publication by an AIP supplement. In this case, the probable date to move on to the Phase 2 would be the August 2007 AIRAC date. In this connection, IATA suggested that AIP supplement could be prepared in advance if Viet Nam considered feasible; this may facilitate the commencement of the Phase 2 trial.

2.28 The meeting agreed that the transition from the Phase 1 to 2 would be considered at the FIT-SEA/6.

Year	2007												2008
Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	
FIT-SEA	5				6								7
Event	AIC	LOA				AIP							
Trial				Phase 1					Phase 2				
Reports					Interim Report (Phase 1)							Interim Report (Phase 2)	

Review of ADS/CPDLC Equipage and ATS Status Table

2.29 The meeting recalled that the FIT-SEA/4 requested the Secretariat to review the background of the development of the table of ADS/CPDLC Equipage and ATS Status. Accordingly the Secretariat provided the meeting with the historical background of the development of the table as follows.

2.29.1 For the Bay of Bengal area, the Second Meeting of the FANS Implementation Team – Bay of Bengal (FIT-BOB/2, September 2003) agreed to start an operational trial of ADS/CPDLC performance capability by States operating ADS/CPDLC systems in the area on the AIRAC date of 19 February 2004. As a requirement to participate in the trial, the FIT-BOB/2 agreed that the ATS providers must have ADS/CPDLC systems that could be evaluated with the objective of bringing these systems into full operational use at the end of the trial period.

2.29.2 To implement the operational trial, it was necessary to determine the status of the ADS/CPDLC systems being operated by States or being brought into operational service in time to participate in the operational trial, based on the present and future functional capability of the ATM systems to operate ADS/CPDLC systems by ATC. In this regard, the States capable of participating in the operational trial need to be identified.

2.29.3 A matrix of the States' functional availability was provided for the first time to FIT-BOB/3 (February 2004). From the purpose of the matrix, it appears that the "Contacts" was established in order to facilitate the introduction of the hardware of ADS/CPDLC systems. Similarly, the "Ground Station Manufacturer" can be understood by the same token.

2.29.4 States were urged by the 15th Meeting of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/15, August 2004) to give appropriate priority to progressing their implementation planning, in particular in the area of data link communications and ATM automated systems.

2.29.5 Consequently, the Regional Office encouraged States to continue the implementation of data link systems in accordance with the regional air navigation plan and urged States in both the Bay of Bengal and Southeast Asia areas to assign a high priority towards participating in ADS/CPDLC operational trials to the maximum extent possible.

2.30 With regard to the Southeast Asia area, a similar table developed by FIT-BOB was for the first time presented to the FIT-SEA/2 (April 2005). In light of the foreseen delays in commencing an integrated operational trial of ADS/CPDLC in the South China Sea area, the FIT-SEA/1 (May 2004) had agreed that the development of the main work programme would be deferred to the FIT-

SEA/2, at which further information was expected to be available on the status of the facility upgrades of a number of States which were currently at an early stage, and the consequent preparedness of States to commence a trial.

2.31 The Combined FIT-BOB/7 & FIT-SEA/4 (July 2006, Bangkok) reviewed and updated the Tables of ADS/CPDLC Equipage and ATS Status for the Bay of Bengal/Arabian Sea/Indonesian FIRs and the South China Sea/Southeast Asia, respectively. In reviewing and updating the Tables, the Combined Meeting felt that the primary purpose of the current table was to identify the status of systems and equipment installation, and in some cases, the listed contact officers were not for coordination of operational trials of ADS/CPDLC. Thus, the FIT-SEA/4 identified additional officers as the primary State contact responsible both for coordination of ADS/CPDLC operational trials in the South China Sea area and for coordination with CRA-Japan. These contacts for operational trials are shown with **bold** letters at the Table of ADS/CPDLC Equipage and ATS Status.

2.32 The Secretariat had reviewed the background of the development of the Table. Even though the specific basis on which each item was established could not be found, it was felt that the "Ground Station Manufacturer" had been included in order that the end-to-end capability as a total system was ensured and ATM automated systems were progressed as urged by APANPIRG/15.

2.33 The meeting appreciated the efforts by the Secretariat to clarify the intention of the table, and considered the current format appropriate for Southeast Asia region. The table was updated as in the **Appendix E** to this report.

Agenda Item 3: Review ADS/CPDLC Implementation

Data Link Implementation Table Requested by SITA

3.1 The meeting noted that the Ground Earth Station (GES) capacity was shared by all aircraft in the coverage of the satellites that they access, which for example in the case of the Perth GES is the area from Pakistan to Los Angeles between 80° latitude north and south, so that the capacity/performance needs to be planned at the activity level of the region. Ongoing global capacity planning by all stakeholders was necessary to draw up a plan for maintaining the availability of the classic aeronautical service at an acceptable level of performance as the traffic levels evolve.

3.2 The meeting was advised that SITA was launching a global satellite capacity/performance planning initiative to obtain from customer airlines and air navigation service providers their expectations of traffic evolution and feed them into a performance model that will identify the number of channel units needed to provide the required level of performance. Ongoing global capacity planning by all stakeholders was necessary to draw up a plan for maintaining the availability of the classic aeronautical service at an acceptable level of performance through 2018. This would enable SITA to guarantee that if the traffic stays within the predicted level the required level of performance will be delivered.

3.3 The Combined FIT-BOB/7 & FIT-SEA/4 recognized the importance of the concerns expressed by SITA and commenced preparation of a suitable table of ADS/CPDLC implementation planning for all FIT-BOB and FIT-SEA FIRs including estimated dates for implementation of CPDLC communications, ADS/CPDLC full implementation, 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 the data link service provider network planning. The table was expected to be updated at each meeting of the FIT-SEA and the FIT-BOB.

3.4 SITA advised the meeting that the Global Capacity Planning Team of the Informal South Pacific ATS Coordination Group (ISPACG) considered the capacity planning and developed the draft table of "Air Traffic Forecasting Form", which is updated twice a year with the past 12 months record and predicts the capacity for the 12 month period. The meeting noted the information provided by SITA and was of view that the table developed by the ISPACG was more useful.

3.5 As the global satellite capacity/performance planning initiative was initiated by SITA and the new table contains highly technical matter, the meeting requested SITA to present to the next meeting the table developed by ISPACG to replace the current Data Link Implementation Table and continue presenting the new table to future meetings to be updated. Accordingly, the meeting decided NOT to update the table presented by the Secretariat.

Review of the 17th Meeting of APANPIRG

Asia/Pacific Air Navigation System and Related Activities

3.6 The meeting noted that APANPIRG/17 (August 2006, Bangkok) recognized that the lack of current horizontal safety assessment for the South China Sea route structure should be urgently addressed and adopted the following Conclusion:

Conclusion 17/6 – Completion of the horizontal safety assessment for the South China Sea route structure

That, recognizing that no horizontal safety assessment for the South China Sea parallel route structure had been conducted since implementation in 2001, the ICAO Regional Office urges concerned States to complete, by 30 June 2007, a horizontal safety assessment in accordance with ICAO ATS safety management provisions.

3.7 APANPIRG/17 noted that FIT-SEA had previously agreed that the South China Sea area ADS/CPDLC operational trial would be carried out by the Philippines, Singapore and Viet Nam to commence as soon as suitable ground equipment was commissioned. In noting the delay to implementation in the Philippines, FIT-SEA agreed that a step-by-step approach should be adopted in relation to the implementation of ADS/CPDLC in the South China Sea area, with implementations occurring as soon State's operational capability became available.

3.8 In considering matters relating to funding arrangements for regional airspace safety monitoring, APANPIRG/16 (August 2005, Bangkok) noted the emphasis placed by the third meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/3, June 2005) on addressing how States could best organize and finance the safety monitoring services necessary for the international airspaces in the region, such as were required for the application of RVSM and reduced horizontal separation.

3.9 APANPIRG/16 recognized the urgent need to develop feasible and sustainable funding solutions for the regional safety monitoring so that on-going initiatives to carry out trials and to implement CNS/ATM systems in Asia/Pacific would not be delayed and that safety and efficiency were not compromised. Recalling that APANPIRG's CNS/ATM technical experts had previously found it difficult to resolve the complex legal, financial and organizational issues involved in establishing a regional safety monitoring agency, the meeting considered that this matter should be addressed by States' experts in these specialist fields.

3.10 The meeting recognized that the matter had been included on the agenda for the fifth meeting of ALLPIRG (ALLPIRG/5, March 2006) in recognition that issues of multinational funding were global in nature and would be best addressed via a model that is applicable globally.

3.11 In order to allow States time to consult within their own administrations and consider the funding mechanism thoroughly, APANPIRG/17 agreed to establish the Task Force to draft implementation proposals for the regional monitoring "committees" formulating the following Decision:

Decision 17/47 – Task Force to establish Regional Airspace Safety Monitoring Committees

That a Task Force be established to develop and distribute to States by 30 June 2007 implementation proposals for the establishment of Regional Airspace Safety Monitoring Committees. The Task Force would work in accordance with the terms of reference in Appendix A to the Report on Agenda Item 2.4 and use, inter alia, recent ICAO guidance materials in relation to the global approach for the funding of airspace safety monitoring.

3.12 The meeting was informed that the United States provided information to APANPIRG/17 in relation to the current arrangements for the provision of Regional Monitoring Agency (RMA) and CRA services in the Pacific. The United States was currently funding the CRA services for monitoring the end-to-end system performance of the FANS-1/A systems for the Pacific international airspace delegated to Australia (Brisbane Oceanic), Fiji, New Zealand, Tahiti and the United States.

3.13 Over the years, the United States had voluntarily funded over US$1 million to establish and sustain the RMA and CRA services, and offered to continue to fund 50% of the annual cost of these services in future years as a measure of goodwill toward resolving an equitable funding arrangement. However, the United States requested that the regional partners involved commit to reimbursing the United States 50% of the cost for the CRA and RMA services rendered on behalf of the Pacific region for calendar year 2007 onward, by formalizing administrative agreements or modifying existing bi-lateral agreements in order to equitably distribute the cost of these services.

3.14 In addressing the concerns, APANPIRG/17 formulated the following Conclusion:

Conclusion 17/48 − Funding of Pacific RMA & CRA

In recognizing that the United States/FAA was the current service provider of CRA and RMA services for the Pacific Region (with the exception of CRA services for Japan), it was acknowledged that:

a) FAA would remain the interim service provider for the Pacific Region until more formal arrangements have been made, and

b) Pacific States using these FAA services commit to reimburse the FAA for those CRA and RMA services rendered effective 30 June 2007.

Note: The FAA will be formally notifying each of these individual states that if reimbursement agreements are not in place by 30 June 2007, these services are at risk of being suspended.

CNS/ATM Implementation and Related Activities

3.15 The meeting noted that APANPIRG/17 was presented with the CNS/ATM Implementation Planning Matrix updated by the CNS/MET Sub-group. States are encouraged to provide their updates regularly through the Sub-group meetings.

Agenda Item 4: Central Reporting Agency – Southeast Asia

Automatic CPDLC Connection Transfer

4.1 Japan advised the meeting that in order to provide seamless and uninterrupted data link operations which allow the continuous application of 50 NM or 30 NM longitudinal separations, the automatic CPDLC connection transfer was required.

Preparation for Trial of Automatic Connection Transfer

4.2 FIT-SEA CRA informed the meeting that the required process to complete the automatic transfer was to exchange the messages between the initiating (active) ATS unit (ATSU), aircraft and the next ATSU.

4.3 FIT-SEA CRA advised that for the successful implementation of automatic connection transfer function between Ho Chi Minh AACC and Singapore ACC, both AACC and ACC needed to agree on the specific timing of sending the NDA message and the EOS message to the aircraft. Singapore informed the meeting that Singapore and Viet Nam had finalized the SLOA of the Phase 1 operational trial, which includes the arrangement for the NDA message exchange.

Use of ATS Interfacility Data Communication (AIDC)

4.4 FIT-SEA CRA further advised that when the AIDC systems of the *Asia/Pacific Interface Control Document* (ICD) Version 2.0 was used in the message exchange arrangement for the automatic connection transfer between ATSUs, the procedure would be simpler because most of the steps of message exchange process could be shifted to the AIDC.

Report of the FIT-SEA CRA

4.5 FIT-SEA CRA informed that they had received no problem reports (PRs) or periodic report to date because the data confidentiality agreement had not been concluded with any State authorities.

4.6 FIT-SEA CRA provided the meeting with the information on the CRA activities for the Fukuoka FIR, instead of those in the South China Sea area, for the purpose of information sharing. This information included the trend of ATS data link operations with the statistic analysis data of end-to-end system performance and some problem reports which were received from the aircraft operators and ATSU.

Trend of Data Link Operations

4.7 The number of problems related to message delivery accounted for approximately 50% of all PRs. The number of message delivery problems caused by avionics was relatively small but network-related problems shared a large number.

System Performance

4.8 FIT-SEA CRA informed the meeting that the system performance with the transit delay time of CPDLC downlink and uplink messages operated in the Fukuoka FIR was contained in monthly status reports.

Problem Reports (PRs)

4.9 FIT-SEA CRA reported that 36 PRs which had been received from the Informal Pacific ATC Coordinating Group (IPACG) FIT members during the period from January 2006 to August 2006 were analyzed.

4.10 The 36 PRs were sorted based on functions as follow:

a) ADS (14%);

b) CPDLC (19%);

c) connection/logon (16%);

d) message delivery (37%); and

e) others (14%).

4.11 FIT-SEA informed that the number of connection/logon related problems had been decreasing, and the trend of PRs sorted by the functions shows an increase of message delivery problems in number.

Typical Events in ATS Data Link Operations and Causes

4.12 FIT-SEA CRA informed the meeting that CRA-Japan had received more than 428 PRs from the IPACG FIT stakeholders by the end of 2006. The majority of these typical events were associated with the ATS Facilities Notification (AFN) logon failure, ADS message errors and CPDLC message errors.

CPDLC Message Errors

4.13 FIT-SEA CRA advised the meeting that when the CRC function of ATS systems detected a disordered form of bits, the controller would be informed of “CPDLC Message Decode Error”. This event tends to occur on the free text messages in many cases.

4.14 Another type of error in CPDLC operations was the case that, though the message successfully passed the validation check with CRC, the message contained the meaningless word, dialog or incorrect message form. One of the examples is that an ATSU received a CPDLC position report with the coordinates presented not in the ICAO form but in the ARINC 424 form, *e.g.* 38E60. When receiving the message with such an error form, the controller should confirm the pilot about the meaning via CPDLC free text message or voice.

Note: The FANS-1/A Operations Manual, *paragraph 5.8.9 prescribes that crews should be aware that ATC ground systems can not process latitudes and longitudes encoded as fix names in the ARINC 424 format.*

4.15 The meeting noted that CRA-Japan would conduct a seminar at the Ho Chi Minh AACC with the support of CAAV and VATM during the meeting. This seminar was intended for operational air traffic controllers and engineers, focusing on data link related events and the process of PRs.

Data Confidentiality Agreement

4.16 The meeting was advised that CAAV and Civil Aviation Authority of Singapore were to conclude the data confidentiality agreement with the CRA-Japan shortly, and this arrangement would enable the CRA-Japan to start its activities as the FIT-SEA CRA in accordance with the TOR agreed by the FIT-SEA.

RASMAG List of Competent Airspace Safety Monitoring Organizations

4.17 The meeting was presented with the "RASMAG List of Competent Airspace Safety Monitoring Organizations" as in **Appendix F** to this Report, which was reviewed and updated by RASMAG/6 (November 2006, Bangkok).

Agenda Item 5: Data Link Guidance Materials

Guidance Material for ADS/CPDLC/AIDC Ground Systems Procurement and Implementation

5.1 The meeting was informed that the RASMAG had commenced work towards drafting suitable regional guidance material in relation to the procurement, deployment and implementation of integrated data link systems (including AFN, ADS, CPDLC and AIDC).

5.2 RASMAG/6 suggested a number of editorial corrections and additions, including the insertion of additional information explaining that data link implementation was ultimately aimed at enabling reduced lateral and longitudinal separations for RNP10 and RNP4 flights with the ultimate objective of achieving 30 NM/30 NM separation minima.

5.3 The meeting was informed that the primary authors from Japan and New Zealand considered that the material was now complete, but suggested that it be circulated to FIT-BOB, FIT-SEA, IPACG and ISPACG for comment. Final adjustments would be made to the draft during the next RASMAG/7, with a view to presenting the guidance material to APANPIRG/18 in September 2007 for adoption as regional guidance material.

5.4 Japan generously provided the meeting with the hard copies of the *Asia/Pacific Guidance Material for ADS/CPDLC/AIDC Ground Systems Procurement and Implementation* for review by States. The States were requested to comment, if any, to the Secretariat prior to the RASMAG/7 (planned in June 2007).

FANS 1/A Operations Manual Version 4

5.5 The meeting recalled that APANPIRG/15 (August 2004) agreed that the *FANS 1/A Operations Manual* (FOM) provided the necessary procedures for ATS providers and should be used as a basis to operate ADS and CPDLC for aircraft equipped with the FANS-1/A systems.

5.6 The meeting was informed that the Version 4.0 of the FOM had been published effective 28 September 2006, and there were four controlled copies and they could be found at any of the following websites:

http://www.crasa.cra-japan.org/pr/gdoc/doctop.html (the CRASA Japan web page)
http://www.faa.gov/ats/ato/data_link.htm (the FAA Oceanic Operations Standard Group web page)
http://www.faa.gov/ats/ato/ipacg.htm (the IPACG web page)
http://www.faa.gov/ats/ato/ispacg.htm (the ISPACG web page)

5.7 The FIT-SEA members were encouraged to access the above websites regularly and obtain the updated version of the FOM.

Request for Change to the FOM

5.8 The meeting noted that the current FOM version 4.0 did not contain any information with reference to FIT-SEA and FIT-SEA CRA though other FITs, such as those of IPACG, ISPACG, Informal Indian Ocean Coordinating Group (IIOCG) and the Bay of Bengal ATS Coordination Group, were described in the FOM. In this regard, the FIT-SEA/4 considered it necessary to add FIT-SEA related information in Sections 1, 1.2, and 8.8 of the FOM.

5.9 The meeting was informed that Japan submitted the Request For Change (RFC) form as in **Appendix G** to this Report to the Twelfth Meeting of the IPACG FIT (IPACG FIT/12, October 2006) which was held in conjunction with the Twenty-Fifth Meeting of IPACG (IPACG/25). The IPACG FIT/12 considered this RFC an editorial change, not requiring IPACG FIT approval, and the FIT welcomed the new group and congratulated JCAB on their outstanding assistance in spreading the safety standard for data link operations. The RFC was accepted and the information will be added to the next edition of the FOM.

Guidance Material of the End-to-end Monitoring of Data Link Systems

5.10 APANPIRG/16 noted that the draft *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region* had also been reviewed by FIT-BOB, FIT-SEA, IPACG and ISPACG and enhancements had been incorporated based on the experience of those groups and that RASMAG/3 (June 2005, Bangkok), in noting the maturity of the material, had submitted it to the Fifth Meeting of the ATM/AIS/SAR/SG (ATM/AIS/SAR/SG/15, July 2005) with a request that the material be considered for submission to APANPIRG/16 for adoption as regional guidance material.

5.11 After reviewing the Guidance Material**,** and noting the history of its development under the auspices of RASMAG, including the reviews that had been undertaken by the FITs and ATM/AIS/SAR/SG/1, APANPIRG/16 adopted the following conclusion:

Conclusion 16/20 – Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region

That the, as shown in Appendix B to the Report on Agenda Item 2.1, be circulated as regional guidance material by the Regional Office, in accordance with established procedures.

5.12 The meeting noted that the *Guidance Material for End-to-End Safety and Performance Monitoring of Air Traffic Service (ATS) Data Link Systems in the Asia/Pacific Region* had been circulated by the Regional Office with the State letter Ref: T 3/10.1.17 – AP048/06 (ATM) dated 5 June 2006 and was now available on the website of the Asia/Pacific Regional Office under the 'eDocuments" menu

Agenda Item 6: Update Task Lists

6.1 The meeting reviewed and updated the FIT-SEA Task List. The FIT-SEA Task List as updated during the meeting is included as **Appendix H** to this Report.

Agenda Item 7: Any Other Business

Airbus A380 Wake Vortex – Revised Guidance Material

7.1 After the release of the study result by an ad hoc working group of experts under the auspices of the United States Federal Aviation Administration, the European Organization for the Safety of Air Navigation (EUROCONTROL), the Joint Aviation Authorities and the manufacturer, the Regional Office issued a State letter Ref.: T3/4.4 – AP099/06 (ATM). The State letter includes revised guidance on the wake vortex separation criteria for the A380 based on the completed flight test programme and current outcome of the work group, and strongly encourages the implementation of this revised guidance as soon as possible.

ICAO Website of the Flight Safety Information Exchange

7.2 Cooperation between States and information exchange are essential elements for the success of any aviation safety-related activity, in pursuit of the common goal to improve aviation safety. The meeting noted that the Flight Safety Information Exchange (FSIX) website had been established at http://www.icao.int/fsix/ as a portal to existing safety related websites as well as a place to exchange information through various newsgroups.

Amendment 44 to Annex 11

7.3 The meeting noted that ICAO Headquarters issued the State letter Ref.: AN 13/13.1-06/32 titled "Adoption of Amendment 44 to Annex 11" on 24 March 2006. The amendment introduced:

a) new and revised standards, as well as guidance material on the concept of acceptable level of safety, to harmonize safety management requirements in Annex 6 - *Operation of Aircraft*, 11 - *Air Traffic Services* and 14 - *Aerodromes*, in response to the need to complement the prevailing approach to the management of safety based upon regulatory compliance with a performance-based approach; and

b) a recommended practice that air traffic control units be equipped with devices that record background communication and the aural environment at air traffic controller work stations, which may offer additional information to the accident investigation authority.

ICAO Language Proficiency Provisions

7.4 A global survey of the status of implementation of language proficiency requirements was conducted in early 2006 (APANPIRG Conclusion 16/21 refers) through all ICAO regional offices, in order to provide the Air Navigation Commission (ANC) with up-to-date information for their review.

7.5 A paper was presented to the meeting on a brief summary of the main points of the Commission's review, which was based on the ANC working paper (AN-WP/8138, 19/5/06) as in **Appendix I** to this Report.

7.6 The meeting noted that the Language Proficiency Survey had been carried out by the Regional Office in accordance with APANPIRG Conclusion 16/21, the outcome of the ANC's review of the ICAO language proficiency provisions, and the issuance of the State letter AN 12/44-06/90 dated 27 October 2006, including the questionnaire concerning implementation of language proficiency requirements to be completed by 15 January 2007.

JCAB Activities to Support the Data Link Operational Trial in Viet Nam

7.7 The meeting recalled that Japan informed at the FIT-SEA/4 that a seminar on data link operations was held in Ho Chi Minh City, Viet Nam, on 10 and 11 April 2006. Japan also informed the meeting of activities under the ASEAN-Japan New Air Navigation System Project, which was an initiative by Transport Ministers of ASEAN and Japan.

7.8 Japan dispatched two technical experts from JCAB to Viet Nam as part of the Japan International Cooperation Agency (JICA) program for four months from June to October 2007. One particular seminar held in Ho Chi Minh City in September 2006 focused on data link operations with participation of air traffic controllers of Ho Chi Minh AACC. The meeting noted the continued collaborative activities between Japan and Viet Nam towards ADS/CPDLC operational trial in the Ho Chi Minh FIR.

7.9 Viet Nam acknowledged with appreciation such close cooperation between Japan and Viet Nam.

Agenda Item 8: Date and Venue for the Next Meeting

8.1 The meeting recalled that the FIT-SEA had been held combined with FIT-BOB to facilitate the coordination between the FITs. The Secretariat advised the meeting that FIT-SEA and FIT-BOB were now held individually to focus on each region and in conjunction with the parental bodies of South-East Asia ATS Coordination Group (SEACG) and the Bay of Bengal ATS Coordination Group (BBACG), respectively.

8.2 The Secretariat further informed the meeting that SEACG and FIT-SEA are normally held once a year in May unless otherwise required to address a specific issue.

8.3 Viet Nam generously offered to host the FIT-SEA/6 which will be held in conjunction with SEACG in May at Hanoi, Viet Nam. The Chairman of SEACG, Mr. Tinnagorn Choowong, was present at the meeting and he accepted the offer from Viet Nam.

8.4 The meeting also agreed that an additional FIT-SEA meeting would be needed to review interim reports in the course of the Phase 2 joint trial.

8.5 Accordingly, the meeting agreed tentatively on the meeting schedule as follows:

FIT-SEA/6 and SEACG/14 -	28 May-1 June 2007 (Hanoi, Viet Nam)
FIT-SEA/7 -	January 2008 (Bangkok, Thailand)
FIT-SEA/8 and SEACG/15 -	May 2008 (Bangkok, Thailand)

Closing of the meeting

9.1 Mr. Inoguchi thanked all participants for their active involvement in the meeting. Good progress had been made towards the operational trial in the Ho Chi Minh and Singapore FIRs on15 March 2007. He expressed appreciation to CAAV and VATM for hosting the meeting.

9.2 Mr. Harano also thanked Viet Nam for the hospitality shown during the meeting and efficient management of the meeting. He thanked the secretariat team provided by CAAV and VATM.

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LIST OF WORKING AND INFORMATION PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Title	Presented by
1	1	Provisional Agenda	Secretariat
2	2	Future Planning of Operational Trial Based on the Step-by-step Approach	Secretariat
3	2	ADS/CPDLC Equipage and Participation Status in Operational Trials of ADS/CPDLC	Secretariat
4	3	Data Link Implementation Table	Secretariat
5	3	Review of the 17th Meeting of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/17)	Secretariat
6	4	Funding Arrangements for Regional Airspace Safety Monitoring	Secretariat
7	5	– Withdrawn –	Secretariat
8	5	Guidance Material – Data Link Ground Equipment Procurement and Implementation	Secretariat
9	6	Update FIT-SEA Task List	Secretariat
10	2	Preparation for ADS/CPDLC Trial in Hochiminh FIR	Vietnam
11	5	FANS 1/A Operations Manual Version 4	Japan
12	4	Automatic CPDLC Connection Transfer	FIT-SEA CRA
13	4	Report of FIT-SEA CRA	FIT-SEA CRA
14	5, 6	Request for Change to the FANS-1/A Operations Manual (FOM) to Include FIT-SEA in the Document	Japan

INFORMATION PAPERS

IP/No.	Agenda Item	Title	Presented by
1	-	List of Working and Information Papers	Secretariat
2	-	Terms of Reference of FIT-SEA	Secretariat
3	4	Review of RASMAG List of Competent Airspace Safety Monitoring Organizations	Secretariat
4	5	Guidance Material for the End-To-End Monitoring of Data Link Systems	Secretariat
5	7	Airbus A380 Wake Vortex - Revised Guidance Material	Secretariat

IP/No.	Agenda Item	Title	Presented by
6	7	ICAO Website of the Flight Safety Information Exchange	Secretariat
7	7	Adoption of Amendment 44 to Annex 11	Secretariat
8	7	ICAO Language Proficiency Provisions	Secretariat
9	2	Vietnam Air Traffic Management & the Project of Hochiminh Area and Approach Control Center	Vietnam
10	7	Typical Events in ATS Data Link Operation and Causes	FIT-SEA CRA
11	7	JCAB Activities to Support the Data Link Operational Trial in Viet Nam	Japan
12	2	ADS/CPDLC Operations in Singapore FIR	Singapore

FLIMSY

Flimsy/No.	Agenda Item	Title	Presented by
1	2	Summary of the Side Meeting on the Phase 1 Trail in the Ho Chi Minh and Singapore FIRs	Rapporteur

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AIC
A 03/07
01 FEB 2007

ADS/CPDLC TRIAL IN OCEANIC CONTROL AREA WITHIN HO CHI MINH FIR

1. Introduction

1.1 Vietnam has completed the installation of an Advanced Automated Air Traffic Management System with integrated ADS/CPDLC capabilities in the Ho Chi Minh ACC. Operational tests with aircraft have also been successfully conducted. ATC personnel have also completed the required training and Vietnam is ready to conduct limited operational trials.

1.2 The purpose of the limited trial is to familiarize controllers with ADS/CPDLC applications on specific routes in the Ho Chi Minh FIR, and to resolve any problems arising, before full operations are implemented. ADS/CPDLC procedures will be based on the FANS Operations Manual (FOM) version 4.0 dated 28th September 2006. A copy of the FOM may be obtained from the FAA website address http://www.faa.gov/ats/ato/ispacg.htm

1.3 In order to limit the inconvenience and costs to operators and to meet the specific objectives of the trials, the Civil Aviation Administration of Vietnam has requested a small number of operators for their assistance in conducting this trial. The operators are Vietnam Airlines, All Nippon Airways, Japan Airlines, Cathay Pacific Airways and Singapore Airlines. Following the successful completion of this phase of the trials, it is expected that full operational trials with the participation of all FANS-1/A equipped aircraft will be implemented. This will be advised in an AIP Supplement in due course.

2. Implementation of limited operational trials

2.1 With effect from 0001UTC on 15 March 2007, CPDLC and ADS services will be available on a 24 hour basis on ATS routes L625, L628, M765, M768, N500 and N892 to FANS-1/A equipped aircraft of Vietnam Airlines, All Nippon Airways, Japan Airlines, Cathay Pacific Airways and Singapore Airlines.

2.2 The concerned airlines participating in the trials will be advised individually in writing by separate letters from CAAV on the procedures for the limited trials.

For Director General
Civil Aviation Administration of Viet Nam

Procedures for Limited trials for ADS/CPDLC in the Ho Chi Minh FIR wef 15 March 2007

1. Introduction

1.1 Vietnam has completed installation of an Advanced Automated Air Traffic Management System with integrated ADS/CPDLC capabilities in the Ho Chi Minh ACC. Operational tests with aircraft have also been successfully conducted. ATC personnel have also completed the required training and Vietnam is ready to conduct limited operational trials.

1.2 The purpose of the limited trial is to familiarize controllers with ADS/CPDLC applications on specific routes in the Ho Chi Minh FIR, and to resolve any problems arising, before full operations are implemented. ADS/CPDLC procedures will be based on the FANS Operations Manual (FOM) version 4.0 dated 28th September 2006. A copy of the FOM may be obtained from the FAA website address http://www.faa.gov/ats/ato/ispacg.htm

1.3 In order to limit the inconvenience and costs to operators and to meet the specific objectives of the trials, the Civil Aviation Administration of Vietnam has requested a small number of operators for their assistance in conducting this trial. The operators are Vietnam Airlines, All Nippon Airways, Japan Airlines, Cathay Pacific Airways, and Singapore Airlines. Following the successful completion of this phase of the trials, it is expected that full operational trials with the participation of all FANS 1/A equipped aircraft will be implemented. This will be advised in an AIP Supplement in due course.

2. Implementation of limited operational trials

2.1 With effect from 0001UTC on 15 March 2007,ADS/CPDLC services will be available on a 24 hour basis on ATS routes L625, L628, M765, M768, N500 and N892 to FANS-1/A equipped aircraft of Viet Nam Airlines, Singapore Airlines, Japan Airlines, All Nippon Airways and Cathay Pacific Airways.

2.2 The concerned airlines participating in the trials will be advised individually in writing by separate letters from CAAV on the procedures for the limited trials.

3 Data Link Airspace

3.1 ADS/CPDLC services are available in the oceanic controlled airspace within Ho Chi Minh FIR, on ATS routes L625, L628, M765, M768, N500, and N892 to FANS-1/A equipped aircraft. As Singapore ACC is already currently providing data link services within the Singapore FIR, close coordination between Ho Chi Minh and Singapore ACC for address forwarding function is necessary for a seamless ADS/CPDLC service within the two FIRs.

3.2 ADS/CPDLC connection will be established by either automatic or manual logon procedures in the Ho Chi Minh FIR.

FANS-l/A equipped aircraft shall conduct VHF or HF radio check (as appropriate) with Ho Chi Minh ACC prior to entering the data link airspace and confirm that ADS/CPDLC connection is established with VVTS.

4 ADS/CPDLC LOGON Procedures

4.1 The ATS Facility Notification (AFN) logon is prerequisite to any ADS/CPDLC connection.

4.2 The flight identification number and registration contained in the logon shall be identical to the flight identification number and registration as filed in the ATS flight plan.

4.3 The AFN logon address of Ho Chi Minh ACC that provides the ATS data link services is "VVTS".

4.4 FANS-l/A equipped aircraft shall logon to VVTS between 15-45 minutes prior to entering the Ho Chi Minh FIR. On the initial contact with Ho Chi Minh Radio or Ho Chi Minh Control, the pilot should confirm that ADS/CPDLC connection is established.

4.5 FANS-1/A equipped aircraft already established on data link services in Singapore FIR will be transferred automatically by address forwarding or instructed by Singapore ACC to terminate the connection with Singapore and logon manually at an appropriate time prior to the FIR boundary. The pilot should inform Ho Chi Minh Radio or Ho Chi Minh Control on initial voice contact that ADS/CPDLC communication is established with "VVTS" and should downlink a CPDLC position report.

4.6 If address forwarding is not automatically processed and "VVTS" is not the active centre, the pilot shall within 3 minutes of crossing the Ho Chi Minh FIR boundary disconnect by selecting “ATC Com Off” and then initiate a new AFN logon to the currently controlling authority i.e. "VVTS". If the address forwarding failure is detected by ATC, and “End Service” message will be sent and the pilot will be requested to logon to VVTS.

5. ADS/CPDLC Procedures in Ho Chi Minh FIR

5.1 Once ATC data link communications are established with Ho Chi Minh ACC and a CPDLC position report has been sent per FOM procedures the pilot shall initiate voice contact with Ho Chi Minh ACC via VHF/HF to ensure ADS/CPDLC controller/pilot communications are properly established. This additional voice contact procedure will only be used for the first phase of the trial.

5.2 The downlink response "WILCO" indicates that the instruction is understood and will be complied with.

5.3 Pilot read back for ATS clearance/instruction issued via CPDLC is not required.

5.4 Per FOM procedure 5.6.1, only uplink elements that are related to the overall message should be combined into a single message. Messages that contain unrelated elements could either cause confusion or result in the crew rejecting the entire message when one of the elements on its own could have been acceptable.

5.5 If the response to a multi-element message is **UNABLE** then the reply applies to all elements of the original message. The aircraft’s current clearance shall not be re-stated. A separate message containing a response to those requests that can be met will then be sent by the controller.

5.6 Free text messages shall be used only when an appropriate pre-formatted message element does not exist. In particular, the creation of a clearance request and the issuing of a clearance shall be performed by the use of pre-formatted message elements only. The use of pre-formatted message elements allows on board data processing such as the automatic insertion of the clearance information into the FMC. It also allows the controller to respond more quickly when the ATS system has the capability to automatically link a pre-formatted request to a pre-formatted response. Additionally, this process minimizes the risk of input errors.

5.7 When a free text message is required, standard ATC phraseology and format shall be used. Non-essential words and phrases should be avoided. Abbreviations should only be included in free text messages when they form part of standard ICAO phraseology, e.g. ETA.

6. Limitations to ADS/CPDLC Services in HO CHI MINH FIR

6.1 The pilot shall notify ATC of emergency situations by the most effective means available (voice or CPDLC).

6.2 If a MAYDAY or PAN message is received on CPDLC the air traffic controller will respond with the free text uplink message ROGER MAYDAY or PAN.

6.3 Special and other non-routine aircraft observations of moderate or severe turbulence, volcanic activity, etc should be reported by voice to ATS.

7. Termination of DATA LINK Service

7.1 Termination of DATA LINK Service for flights bound for the Singapore FIR

7.1.1 The ADS/CPDLC connection for FANS-1/A equipped aircraft being provided with data link services bound for the Singapore FIR will be automatically transferred to Singapore ACC 15 minutes before crossing the FIR boundary. The "CONTACT [ATS unit name] -– [frequency] message will be up-linked 5 minutes before crossing the FIR boundary and "END SERVICE" messages will be automatically up-linked at the boundary, when Singapore ACC accepts the flight. In the event of a failure of the address forwarding function, an "END SERVICE" messages will be manually up-linked not later than the time the flight is crossing the FIR boundary or as soon as possible..

7.2 Termination of DATA LINK Service for flights leaving Ho Chi Minh FIR

7.2.1 The following CPDLC message will be up-linked to FANS-1/A aircraft leaving the Ho Chi Minh FIR for non-data link airspace..
"CONTACT [ATS unit name] [frequency]"

7.2.2 The pilot should acknowledge this message by sending "WILCO". When departing the data link airspace, an "END SERVICE" message will be uplinked to terminate the CPDLC connection with "VVTS"

8. Flight Plan Procedures

8.1 ATS systems use Item 10 (Equipment) of the standard ICAO flight plan to identify an aircraft's data link capabilities. The operator is responsible for inserting the following items in the ICAO flight plan:

- Item 10 - The letter "J" to indicate data link capability;
- Item 10 - The letter "D" in the Surveillance field to indicate ADS-C capability;
- Item 18 - The letters DAT/ followed by one or more letters as appropriate to indicate the type of data link equipment carried when "J" is entered in Item 10. (Refer ICAO PANS/ATM)

Example:
ICAO Item 10: .....**J**...../…**D**
ICAO Item 18: **REG/**..……...**DAT/SV** (for a satellite and VHF data link equipped aircraft)

Letter following DAT/	Type of data link
S	Satellite data link
H	HF data link
V	VHF data link
M	SSR Mode S data link

9. Data Link Failure

9.1 When CPDLC connection cannot be established successfully, the pilot should select "ATC Com off" if possible and then initiate another AFN logon. If the pilots continue experiencing the inability to establish CPDLC connection, the pilot shall inform ATS of the situation via voice.

9.2 When the pilot recognizes a failure of the CPDLC connection, the pilot should inform ATC of the situation via voice and terminate the CPDLC connection, if possible, by selecting "ATC Com Off".

10 Addressee for Problem Reports

10.1 Pilots or operators who have encountered problems with data link service shall report to the Air Navigation Department/ Civil Aviation Administration of Viet Nam, at the following address:

Civil Aviation Administration of Viet Nam
Air Navigation Department
119 Nguyen Son Street, Long Bien District,
Ha Noi, Viet Nam
Tel: 84-4-8 274 191 or 8 723 600
Fax: 84-4-8 274 194
AFS: VVVVYAAN
E-mail: and@caa.gov.vn

Director General
Civil Aviation Administration of Viet Nam

Southeast Asia - ADS/CPDLC Equipage and ATS Status

(last update ~~July 2006~~ January 2007)

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 - Civil Aviation Authority of China	Sanya FIR												
HONG KONG, CHINA CAD - Civil Aviation Department	Hong Kong FIR				YES (trial equipment)	YES (trial equipment)	YES (trial equipment)	YES	Stopped	NO	conducted from 1997 to 2002	Mr.W Y Leung Assistant Director-General of Civil Aviation (Engineering & Systems) Tel: (852) 2591 5000 Fax: (852) 2845 7160 email: wyleung@cad.gov.hk	
~~**INDONESIA** Directorate General of Air Communications~~ ***~~Note: All datalink matters for the Jakarta and Ujung Pandang FIRs are managed by the FIT-BOB and BOB-CRA~~***	~~Jakarta~~	~~WIIZ???~~	~~ARINC~~	~~ARINC~~	~~YES~~	~~YES~~	~~NO~~	~~YES~~	~~Stop~~	~~AIP Sup Nr:03/01 17May01~~	~~NO~~	~~Mr. Nanang S. Taruf Deputy Director System & Procedure Air Navigation Directorate of Aviation Safety E-mail: cns-atm@telkom.net~~ **~~Mr. Wiyono~~** ~~ATC System Specialist Soeta Itnl Airport Tel: 62 21 5506178 E-mail: dss97@centrin.net.id~~	~~Present stand alone equipment withdrawn from trial, intend to rejoin BOB trial in 2007. Jakarta Advanced ATM Centre to be commissioned 2010~~
	~~Ujung Pandung~~	~~WAAZ???~~	~~Thales~~	~~ARINC~~	~~YES~~	~~YES~~	~~NO~~	~~YES~~	~~Test Trial~~	~~NO~~	~~NO~~	~~Mr. Nanang S. Taruf Deputy Director System & Procedure Air Navigation Directorate of Aviation Safety E-mail: cns-atm@telkom.net~~ **~~Mr. Harjoso~~** ~~Deputy Director of ATS AP1 Telp : 62 21 6541961 ext 2310 Fax. 62 21 65866838 E-mail atc@angkasapura1.co.id~~	~~Makassar Advanced ATM Centre comissioned 2006, datalink not yet operational~~
JAPAN JCAB - Civil Aviation Bureau of Japan	Fukuoka FIR	RJJJ		SITA	YES	YES	YES (with Oakland & Anchorage)	YES	Operational	PUBLISHED	completed in July 2006	**Mr. Hiroshi Inoguchi** Special Assistant to the Director, JCAB ATS Systems Planning Division, Tel: +81-3-5253-8111 ext 51128 Fax: +81-3-5253-1663 E-mail: inoguchi-	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	WMFC		ARINC			NO	YES	In early 2007 Malaysia will issue tender documentation for new installation.		NO	**Mr.Harizan Mohammad Yatim** Director ATS Tel: 603-88714000 Fax: 603-88714290 E-mail: accwmfc@tm.net.my harizan@atsdca.gov.my	
	Kota Kinabalu FIR	~~WBKK~~ WBFC		ARINC			NO	YES			NO	**Mr Omran Zakarina** Deputy Director ATS Email:omran@dca.gov.my:	
PHILIPPINES Air Transportation Office	Manila FIR										NO	**Mr. Salvador G. Rafael** Chief, ATC Division Tel: 632-8799160 Fax: 632-8799160 E-mail: raffy_thunder92@yahoo.com	State to provide information for FIT-SEA/4
SINGAPORE Civil Aviation Authority of Singapore	Singapore FIR	WSJC	Thales	SITA	YES	YES	NO	YES	Operational	YES	conducted from 1997	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	Expects to join Viet Nam in operational trial commencing in 2007
THAILAND AEROTHAI	Bangkok FIR	VTBB	ARINC	ARINC	YES	YES	YES	YES	Ops Trial	NOTAM every three months	NO	**Mr. Tinnagorn Choowong** Tel: 66-2-285 9975 Mobile: 66-09-816 6486 Fax: 66-2-285 9077 E-mail: tinnagorn.ch@aerothai.co.th	

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**
VIETNAM Civil Aviation Administraion of Viet Nam	Ho Chi Minh FIR	VVTS	Thales	ARINC	YES	YES			system test. Operationa trial will be in March 2007		YES	**Mr. Nguyen Manh Quang** Deputy Director of ATS/AIS/MET/SAR Tel: (84-4) 8725272 Fax: (84-4) 8725281 e-mail: vatmats@n.vnn.vn	to be ready for operational trial in 2007.
	Hanoi FIR										NO		
CENTRAL REPORTING AGENCY (CRA) CRA-Japan	Ho Chi Minh, Manila and Singapore FIRs										YES	Mr. Yoshiro NAKATSUJI 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	FIT-SEA CRA, operated by CRA Japan.
IATA											YES	Soon Boon Hai Assistant Director Safety Operations & Infrastructure Tel: 65 62397267 Fax: 65 65366267 E-mail: soonbhd@iata.org	
IFALPA											YES	Capt. Suresh Menon Regional Vice President ASIA/East Tel: 61 2 99487532 Fax:(65) 6584 8869 E-mail: menon@pacific.net.sg	
ARINC												Mr. Sarawut Assawachaichit Program Manager, Globalink Asia Tel: 66 2 2859435-6 Fax: 66 2 2859437 E-mail: sassawac@arinc.com	
SITA											YES	Mr. David Fung SITA Regional Manager, Asia AIRCOM CNS Services Room 1201, 12/F Centre Point 181-185 Glovcester Road Wanchai	

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**
ICAO											YES	Mr. Kyotaro Harano Regional Officer ATM Tel: 66 2 5378189, ext. 159 Fax: 66 2 537 8199 E-mail: kharano@bangkok.icao.int	

APANPIRG Asia/Pacific Airspace Safety Monitoring

RASMAG LIST OF COMPETENT AIRSPACE SAFETY MONITORING ORGANIZATIONS

The Regional Airspace Safety Monitoring Advisory Group of APANPIRG (RASMAG) is required by its terms of reference to recommend and facilitate the implementation of airspace safety monitoring and performance assessment services and to review and recommend on the competency and compatibility of monitoring organizations. In order to assist in addressing these requirements, RASMAG updates and distributes the following list of competent airspace safety monitoring organizations for use by States requiring airspace safety monitoring services. In the context of the list, abbreviations have meanings as follows:

- RMA – Regional Monitoring Agency – safety assessment in the vertical plane (i.e. RVSM);
- SMA – Safety Monitoring Agency – safety assessment in the horizontal plane (i.e. RHSM, RNP10, RNP4); and
- CRA – Central Reporting Agency – technical performance of data link systems (i.e. ADS/CPDLC)
- FIT – FANS 1/A Interoperability/Implementation Team – parent body to a CRA.

(last updated 10 November 2006)

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
Airservices Australia (Mr Robert Butcher, Manager Human Factors and Analysis, Safety Management Group, email robert.butcher@airservicesaustralia.com)	Australia	RMA	Current	Brisbane & Melbourne FIRs not including oceanic airspace east of Australian mainland.
		SMA	Current	Brisbane & Melbourne FIRs

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
FIT/BOB (ICAO Regional Office email icao_apac@bangkok.icao.int & Mr. Bradley Cornell, Boeing Engineering, email Bradley.D.Cornell@Boeing.Com)	ICAO Regional Office & Boeing USA	FIT & CRA	Current	Bay of Bengal FIRs
CRA Japan (Mr. Yoshiro Nakatsuji, Director, Air Traffic Control Association Japan, email: naka@atcaj.or.jp)	Japan	CRA	Current	Fukuoka FIR for IPACG/FIT Ho Chi Minh, Manila, Singapore FIRs for FIT-SEA
IPACG/FIT (Mr. Hiroshi Inoguchi, JCAB Co-Chair, email: Inoguchi-h2hh@mlit.go.jp & Mr. Reed Sladen, FAA Co-Chair, email reed.b.sladen@faa.gov)	Japan & USA	FIT & CRA	Current	North & Central Pacific (Oceanic airspace within Fukuoka FIR, and Anchorage & Oakland FIRs)
ISPACG/FIT (Mr. Bradley Cornell, Boeing Engineering, email Bradley.D.Cornell@Boeing.Com)	Boeing USA	FIT & CRA	Current	South Pacific

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
FIT/SEA (ICAO Regional Office email icao_apac@bangkok.icao.int & CRA Japan (Mr. Yoshiro Nakatsuji, Director, Air Traffic Control Association Japan, email: naka@atcaj.or.jp)	ICAO Regional Office & Japan	FIT & CRA	Current	South China Sea
Japan Civil Aviation Bureau (JCAB) (Mr. Takashi Imuta, Chief of Airspace Safety Monitoring Section, email: imuta-t2in@mlit.go.jp	Japan	RMA	Available second quarter – 2007	Fukuoka FIR
		SMA	Available second quarter – 2009	Fukuoka FIR

Organisation *(including contact officer)*	State	Competency	Status	Airspace assessed
Monitoring Agency for the Asia Region (MAAR) (Dr. Paisit Herabat Executive Officer, Systems Engineering,Aeronautical Radio of Thailand Ltd. Email: paisit@aerothai.co.th	Thailand	RMA	Current	Bangkok, Calcutta, Chennai, Colombo, Delhi, Dhaka, Hanoi, Ho Chi Minh, Hong Kong, Jakarta, Karachi, Kathmandu, Kota Kinabalu, Kuala Lumpur, Lahore, Male, Manila, Mumbai, Phnom Penh, Sanya FIR, Singapore, Taibei, Ujung Pandang, Vientiane, Yangon FIRs
		SMA	Available third quarter-2006	Bangkok, Calcutta, Chennai, Colombo, Delhi, Dhaka, Hanoi, Ho Chi Minh, Hong Kong, Jakarta, Karachi, Kathmandu, Kota Kinabalu, Kuala Lumpur, Lahore, Male, Manila, Mumbai, Phnom Penh, Sanya FIR, Singapore, Taibei, Ujung Pandang, Vientiane, Yangon FIRs
Pacific Approvals Registry and Monitoring Organization (PARMO) (Mr Brian Colamosca Manager, Separation Standards Analysis Group, FAA, email: brian.colamosca@faa.gov.)	USA	RMA	Current	Anchorage Oceanic, Auckland Oceanic, Brisbane (east of Australian mainland), Honiara, Incheon, Melbourne (east of Australian mainland), Nadi, Nauru, Oakland Oceanic, Port Moresby, Tahiti FIRs
Civil Aviation Authority of Singapore (CAAS) (Mr. Kuah Kong Beng, Chief Air Traffic Control Officer, email: KUAH_Kong_Beng@caas.gov.sg)	Civil Aviation Authority of Singapore (CAAS)	Monitoring Authority for Gross Navigation Error (GNE)	Current	Hong Kong, Ho Chi Minh, Manila, Sanya, Singapore FIRs,

1.1 Request For Change form

RFC Nr:	**06-012**

1. SUBJECT:

Amend Sections 1, 1.2, and 8.8 to include FIT-SEA information

2. REASON FOR CHANGE:

ATS datalink implementation in South East Asia is in progress, and FANS Implementation Team (FIT) has been established. The current FOM version 4.0 needs to incorporate such activity.

3. DESCRIPTION OF PROPOSAL: [attach additional pages if necessary]

1) ***Add*** **the following 3 FIRs in Section 1-Introduction, which lists FIRs where the FANS-1/A procedures and requirements detailed in FOM are applicable: Singapore, Ho Chi Minh, and Manila.**

2) ***Add*** **the South-East Asia ATS Coordination Group (SEACG) in the statement of Section 1.2- Document Management. The SEACG principal point of contact is ICAO Asia and Pacific Office.**

ICAO Regional Office

e-mail: icao_apac@bangkok.icao.int

and

FIT-SEA CRA (CRA Japan)

Mr. Yoshiro Nakatsuji, Director,

Air Traffic Control Association Japan,

e-mail: naka@atcaj.or.jp

3) ***Add*** **a new sub-section 8.8.7 South East Asia in Section 8.8-Central Reporting Agency Members as follows:**

FIT-SEA CRA – CRA Japan

Mr. Yoshiro Nakatsuji, Director,

Air Traffic Control Association Japan,

Fax: +81-3-3747-1231

Tel: +81-3-3747-1231

E-mail: naka@atcaj.or.jp

Website: http://www.crasa.cra-japan.org

4. REFERENCE(S):	**FOM Sections 1, 1.2, 8.8**		
5. PERSON INITIATING:	**Yoshiro Nakatsuji**	DATE:	**20 Oct 2006**
ORGANISATION:	**CRA Japan**		
TEL/FAX/EMAIL:	**naka@atcaj.or.jp**		

6. CONSULTATION — RESPONSE DUE BY DATE:

Organisation	Name	Agree/Disagree	Date

7. ACTION REQUIRED:			
8. FOM EDITOR		DATE REC'D:	
9. FEEDBACK PASSED		DATE:	

FIT- SEA TASK LIST

(Last updated January 2007)

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
1.	ATS providers to use the *FANS Operations Manual* (FOM) and to review and update their ATS~~U~~ operating procedures to align with the FOM.	Ongoing activities as additional States join the operational trial.	All States	Ongoing	Important 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.
2.	ATS providers to coordinate with adjacent ACCs to review and update letters of agreement for introduction of ADS/CPDLC services on a trial basis.	Ongoing activities as additional States join the operational trial.	~~All States~~ Philippines, Singapore and Viet Nam	Ongoing	Ensure common ATC procedures applied. Letter of Agreement between Singapore and Viet Nam to be finalised and signed in February 2007
3.	Issue ~~NOTAM~~ AIC/AIP Supplement on the commencement of the operational trial ~~in line with the model NOTAM provided by FIT-BOB/3~~.	AIC prior to the Phase 1 commencement and AIP Supplement prior to Phase 2 commencement	~~All States~~ Philippines and Viet Nam	Ongoing	Singapore has already issued ~~NOTAM~~ AIP on availability of ADS/CPDLC services in the Singapore FIR AIC to be issued by Viet Nam in January 2007 and AIP Supplement in due course.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
					Publications of AIC and AIP Supplement by the Philippines are subject to the readiness in the Manila FIR.
4.	Coordinate with ~~SEA~~Southeast Asia States on implementation of the operational trial.	Ongoing activities as additional States join the operational trial.	ICAO, All States	Ongoing	Determine status on trial participation
5.	~~As States join the operational trial~~ Collect ADS/CPDLC Problem Reports (PR) and submit to CRA through the State.	Immediate	States, operators	Ongoing	To be submitted as soon as practicable to facilitate analyzing the reports. FIT-SEA CRA operated by CRA Japan to undertake CRA services from late 2005. Singapore to provide data to FIT-SEA CRA.
6.	~~Establish~~ Provision of monthly monitoring ~~date~~ ADS/CPDLC system performance data to be submitted to the CRA.	Monthly	States	Ongoing	Essential for evaluating overall system performance within the trial airspace. FIT-SEA CRA operated by CRA Japan to undertake CRA services from late 2005.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
7.	Compile data on aircraft ADS/CPDLC equipped in the trial airspace.	Biannually	States, IATA	Ongoing	To keep record of aircraft participating in the trial and determine overall benefits derived by population of aircraft operating in the trial airspace.
8.	Training of controllers and technical staff on ADS/CPDLC operational procedures based on the FOM.	Ongoing activities as additional States join the operational trial.	~~States~~Philippines and Viet Nam	Ongoing	Eight five-day training courses for 60 air traffic controllers began in 15 January 2007 and would be completed for all controllers by 10 March 2007.
9.	Nominate contact person (technical and ATS) and keep details updated.	~~As soon as practicable~~Ongoing activities as additional States join the operational trail	States, operators	Ongoing	Important that CRA has contact with engineering and operational personnel to analyze 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 to undertake CRA services from late 2005.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
10.	Establish data confidentiality agreements between States and CRA, and States and operators participating in the trial airspace.	~~Prior to commencement of operational trial~~ Immediate	CRA, ~~States~~ Philippines, Singapore and Viet Nam, and operators	As required	To establish agreement with States , operators and data providers for release of data and to de-identify reports. Viet Nam and Singapore have singed.
11.	Update ICAO Guidance Material on CNS/ATM Operations in APAC Region.	As soon as practicable	ICAO	Ongoing	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.
12.	Coordinate with the FOM editorial group on Request for Change (RFC) to the FOM.	As required	CRA, SEA FOM editor	Ongoing	SEA FOM ~~editor~~ principle contact point to be nominated. FOM includes Request for Change (RFC) processes.
~~13.~~	~~Provide details of processes necessary to set up and operate the FIT SEA CRA~~	~~FIT SEA/3~~	~~SEA States/ CRA Japan/ participating industry partners~~	Completed	~~CRA Japan to provide information at FIT SEA/3~~ ~~FIT SEA/3 endorsed terms of reference, task list and problem reporting arrangements for FIT SEA CRA operated by CRA Japan.~~

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
14.	Prepare suitable table of ADS/CPDLC implementation planning for all FIT-SEA FIRs including estimated dates for implementation of CPDLC communications, ADS/CPDLC full implementation, 50/50 NM reduced separation and 30/30 NM reduced separation to provide basis for long term satellite traffic load estimates to assist DSP network planning.	~~As soon as practicable~~As required	~~ICAO, FIT-SEA States and IATA~~SITA	Ongoing	SITA has launched global satellite capacity/performance planning initiative to collect data from ANSPs and users to ensure timely network enhancement to meet future network requirements (Raised FIT-SEA/4)
15.	Standardize the reporting arrangement for Problem Reports.	As soon as possible	ICAO, CRA	Ongoing	The use of different procedures from those of FIT-BOB was undesirable and agreed that the matter should be further studied, with a view to aligning the procedures if at all possible. (Raised at FIT-SEA/4)
16.	Letter of Request to Participate in the Phase 1 Trial	As soon as possible	Viet Nam, IATA and participating airlines		The Phase 1 involves the limited participation of airlines and the letter of request will be sent from Viet Nam to the participating airlines with the operational procedures to be attached to the letter. (Raised at FIT-SEA/5)

International Civil Aviation Organization

AN-WP/8138
19/5/06

WORKING PAPER

AIR NAVIGATION COMMISSION

ANC Task No. PEL-0402: Radiotelephony speech for international aviation

PROGRESS REPORT ON THE IMPLEMENTATION OF LANGUAGE PROFICIENCY REQUIREMENTS AND REVIEW OF THE REQUIREMENTS AS NECESSARY

(Presented by the Director of the Air Navigation Bureau)

SUMMARY

This paper presents the results of a survey in each ICAO region to assess the status of implementation of the language proficiency requirements. The paper also presents an amendment proposal to paragraph 1.2.9.4 of Annex 1 further to a petition from IAOPA.

Action by the Air Navigation Commission is in paragraph 6.

COORDINATION

ATM

REFERENCES

∗C-DEC 168/9
C-WP/12620
Doc 9835, *Manual on the Implementation of ICAO Language Proficiency Requirements*
∗APANPIRG/16 Report

This working paper relates to Strategic Objective A1, A2 and A4.

∗Principal references

1. INTRODUCTION

1.1 On 5 March 2003, the Council (168/9) adopted Amendment 164 to Annex 1 – *Personnel Licensing.* During the deliberations on the amendment, the question of the applicability date of 5 March 2008 for the part of the amendment dealing with the language proficiency rating scale was raised. The

President of the Commission indicated to the Council that the progress of implementation of the new language proficiency requirements would be monitored through existing mechanisms such as the Planning and Implementation Regional Groups (PIRGs). The Secretariat also retained a suggestion made by the Representative of Japan to conduct a survey to assess the progress of implementation of the language proficiency provisions (C-DEC 168/9). The understanding was that if States encountered major difficulties in implementing the language proficiency Standards in paragraph 1.2.9 of Annex 1, it would be possible for the Council to consider reviewing the applicability date. Accordingly, a survey on the progress of implementation of the language proficiency requirements was issued through all ICAO Regional Offices.

1.2 The ICAO language proficiency requirements as contained in Annex 1 have been effective since 14 July 2003. Since that time, several steps have been taken to assist States with the implementation of these requirements: the *Manual on the Implementation of ICAO Language Proficiency Requirements* (Doc 9835) and the training aid entitled *ICAO Language Proficiency Requirements – Rated Speech Samples* were produced. The ICAO Aviation Language Symposium was conducted in September 2004 and regional seminars were conducted in Tokyo, Japan (December 2004); Beijing, China (June 2005); Kiev, Ukraine (March 2005); Buenos Aires, Argentina (September 2005); EUROCONTROL (October 2005) and Baku, Azerbaijan (December 2005). A seminar will be conducted in Dakar, Senegal in September 2006.

2. SURVEY ON STATUS OF IMPLEMENTATION OF LANGUAGE PROFICIENCY REQUIREMENTS

2.1 Development and Distribution of the Survey

2.1.1 Further to Conclusion 16/21 of APANPIRG/16 (Bangkok, August 2005), the ICAO Bangkok Office was requested to conduct a survey to assess the level of implementation of the language proficiency provisions in the Asia/Pacific Region and to identify the difficulties encountered thus far. Subsequently, the ICAO Bangkok Office and Headquarters jointly developed a survey to comply with C-DEC 168/9 and Conclusion 16/21 of APANPIRG/16. The survey contained core items to which additional questions could be added reflecting the specificity of each region. The survey was circulated to all ICAO regions for comment in September 2005. Each region was also requested to identify a focal point for this issue. On 15 November 2005, the survey was sent to all ICAO regions for onward transmittal to their accredited States with a request to provide Headquarters with the results of the survey by 30 March 2006.

2.1.2 The core survey consisted of thirty-eight questions that addressed six issues as follows: demographic information, regulations, testing for English language proficiency, training for English language proficiency, ICAO guidance and international cooperation.

2.2 Survey Results

2.2.1 Thirty-six States and two international organizations replied to the survey. The average rate of response to the survey was 19 per cent. The Lima Regional Office had the highest level of response (38.5 per cent) and the Nairobi Regional Office the lowest (0 per cent). The results in each region were also affected by the proportion of responses from States where English is a first language. The list of States and international organizations that responded to the survey, as well as a synopsis of the survey results can be found in Appendix A.

Demographic Information

2.2.2 Several respondents provided partial information to the survey, namely as regards the number of pilots or air traffic controllers involved in international operations. This may be due to the fact that in larger States information is not centrally located, or that the information was not available.

Regulations

2.2.3 While more than half of the States indicated that they had introduced regulations necessary to support language proficiency requirements, a majority had not yet issued guidance on the implementation of the provisions.

Testing for English Language Proficiency

2.2.4 The majority of States indicated that the Civil Aviation Authority would develop, administer and rate the English language proficiency tests. In cases where the authority would not, a majority of States indicated that they would establish an oversight mechanism.

2.2.5 A majority of States indicated that they had an insufficient number of raters. However, their active raters had undergone training. Civil Aviation Authorities, followed closely by educational institutions, were or would be providing rater training.

Training for English Language Proficiency

2.2.6 The majority of respondents indicated that educational institutions would be responsible for language training, while civil aviation authorities would establish oversight mechanisms for training.

2.2.7 A majority of respondents indicated that they expected pilots, air traffic controllers and aeronautical station operators involved in international operations to meet the English language proficiency operational Level 4 by 5 March 2008.

ICAO Guidance

2.2.8 A majority of respondents indicated that they had participated in regional ICAO language proficiency seminars and used the *Manual on the Implementation of the ICAO Language Proficiency Requirements (*Doc 9835). A majority indicated that they would use the training aid *ICAO Language Proficiency Requirements – Rated Speech Samples.*

International Cooperation

2.2.9 A majority of States indicated that they were not providing assistance to other States in their region on language proficiency, and half of the respondents indicated they would consider assistance from another State.

2.3 **Comments on the survey**

2.3.1 The analysis of the data brought to light several factors affecting the quality and reliability of the results. For example, the results were biased by the high level of respondents of English-as-a-first-language States (10 out of 36 responses). These results in turn provide an incomplete and potentially inaccurate view of the status of implementation of the language proficiency requirements. In

other regions, the low number of responses does not allow firm conclusions to be drawn. For example, no responses have been received from States accredited to the Eastern and Southern African Office.

2.3.2 The responses to the survey also present some characteristics which impact its reliability. For example, several respondents did not provide replies to all questions. In some cases, this may be due to the fact that personnel filling the questionnaire did not have access to all information. For example, personnel providing information on air traffic controllers may not have access to information concerning pilots and vice versa. While a majority of respondents indicated they expect pilots, air traffic controllers and aeronautical station operations involved in international operations to meet the ICAO Operational Level 4 by 5 March 2008, they also indicated that very few of these personnel have been tested.

2.3.3 In addition, Question 1.2 of the survey (Appendix A refers) asked, "presently, what is the estimated number of pilots, air traffic controllers and aeronautical station operators who are at English Proficiency Level 4 or higher". This formulation led to some misinterpretation because the question did not include "in international operations". In some responses, the number of personnel provided included all personnel, including those not involved in international operations.

3. FIFTH MEETING OF THE PROFICIENCY IN COMMON ENGLISH STUDY GROUP (PRICESG/05)

3.1 Several requests for assistance regarding the selection of competent language testing services arose during seminars and other meetings. It was therefore considered necessary to clarify and expand parts of the *Manual on the Implementation of the ICAO Language Proficiency Requirements (*Doc 9835) to address these concerns.

3.2 In September 2004, participants in the ICAO Aviation Language Symposium proposed that ICAO establish an endorsement mechanism for language testing services as this part of the industry was largely unregulated on the understanding that such a mechanism would be established on a cost-recovery basis. The Secretariat conducted a market survey to determine the level of interest in such a mechanism. The response to the market survey did not demonstrate a strong degree of interest in establishing a language testing endorsement mechanism and it was therefore decided that it would not be viable to pursue this initiative at this point.

3.3 While it is not possible to establish the endorsement mechanism described in paragraph 5.2, the need to provide assistance and additional guidance on language testing services remained. Consequently, the fifth meeting of the PRICE SG was convened from 24 to 28 April 2006. The discussion focused on establishing minimum test requirements, tasks lists and qualifications for personnel involved in the design and administration of language test. The Secretariat will be expanding the guidance materials based on the discussion of the PRICE SG.

4. CONCLUSIONS ON THE SURVEY ON STATUS OF IMPLEMENTATION OF LANGUAGE PROFICIENCY REQUIREMENTS

4.1 The lessons that can be drawn from the survey are limited for the reasons that are exposed in paragraph 2.3. However, the survey does not contain indications that States require a postponement of the applicability date of 5 March 2008 for the introduction of the language testing based on the holistic descriptors and the rating scale. The Secretariat, through its contacts, received information that, while some States may not be fully ready by 2008, the applicability date should still be maintained.

States indicated that it provides them with the focus required to implement as soon as practicable the safety standards related to language proficiency. The Secretariat, taking into account these considerations and also the compelling safety reasons that have led to the adoption of the Standards, therefore recommends to maintain the applicability date of 5 March 2008 for the introduction of the language testing based on the holistic descriptor and the rating scale.

5. ICAO LANGUAGE PROFICIENCY REQUIREMENTS FOR LIGHT GENERAL AVIATION AIRCRAFT OPERATORS

5.1 The International Council of Aircraft Owner and Pilot Associations (IAOPA) forwarded a petition to modify ICAO Language Proficiency Requirements for Light General Aviation Aircraft Operators 20 April 2006 (See Appendix B for text of the IAOPA petition). IAOPA indicated that:

> "Compliance with the requirement as stated in the Standard would involve months of training and the equivalent of thousands of dollars for each individual attempting to achieve a Level 4 language proficiency.
>
> The great majority of pilots, regardless of licence level, (perhaps as much as 80 per cent) will never fly under IFR nor penetrate closely controlled airspace. Therefore the blanket requirement to impose a language proficiency requirement for all pilots is unnecessary."

5.2 IAOPA therefore recommended that the wording of Annex 1, paragraph 1.2.9.1 be changed. Two alternative wordings were proposed:

> "Aeroplane and helicopter pilots and those flight navigators whose flights will operate under IFR or VFR within Class A, B or C airspace shall demonstrate the ability to speak and understand the language used for radiotelephony communications."
>
> or
>
> "Only those pilots who have demonstrated the ability to speak and understand the language or radiotelephony communications shall be permitted to operate under IFR or VFR within Class A, B or C airspace."

5.3 It is recognized that the language proficiency requirements could be relaxed for pilots that are operating under VFR in airspace where they are unlikely to mix with international commercial air transport activities. However, the IAOPA proposal could potentially allow a pilot to operate into airspace where radio communication is required without being able to speak and understand the language use for radiocommunication. The ICAO Secretariat is recommending an alternative proposal: the requirement to demonstrate language proficiency at ICAO operational level 4 would be waived for VFR flight in Airspace E, F and G while maintaining the provisions requiring pilots to be able to speak and understand the language used for radio communication. The Secretariat believes that the waiving of ICAO Operational Level 4 will address the most important issues raised in the IAOPA's petition. It will allow more flexibility in testing language proficiency, including the continuation of testing schemes already implemented. The proposed modification to paragraph 1.2.9.4 of Annex 1 can be found at Appendix C of this paper.

6. ACTION BY THE AIR NAVIGATION COMMISSION

6.1 The Air Navigation Commission is invited to:

a) note the information provided in Paragraphs 2, 3 and 5;

b) note the Conclusions in Paragraph 4;

c) review the proposal for the amendment of Annex 1 contained in Appendix C to this paper;

d) agree that the proposals for the amendment of Annex 1 contained in Appendix C as modified by b) above, be circulated to States and international organizations for comment; and

e) agree that the consultation in c) above be consolidated with other amendment proposals to Annex 1 to be applicable in 2007.

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APPENDIX A

COMPLETED SURVEYS - IMPLEMENTATION OF ICAO LANGUAGE PROFICIENCY REQUIREMENTS

Regional Office	Surveys received from:
Cairo (3 out of 19 States, 15.8%)	Egypt Saudi Arabia Pakistan
Paris (8 out of 53 States, 15.1%)	Belarus Belgium Czech Republic Germany Serbia and Montenegro Slovakia Slovenia United Kingdom
Dakar (3 out of 24 States, 12.5%)	Cameroon Ghana Niger
Bangkok (12 out of 36 States, 33.3%)	Australia Cambodia China China, Hong Kong China, Macau Fiji India Korea, Republic of Malaysia Maldives Myanmar New Zealand Singapore Thailand Other Territories: French Polynesia
Nairobi (0 out of 23 States, 0%)	
Lima (5 out of 13 States, 38.5%)	Bolivia Chile Colombia Guyana Peru
Mexico (5 out of 21 States, 23.8%)	Barbados Costa Rica Guatemala Nicaragua United States
International Organizations	COCESNA IFALPA
Total **(36 out of 189 States, 19%)**	

APPENDIX B

PETITION TO MODIFY ICAO LANGUAGE PROFICIENCY REQUIREMENTS FOR LIGHT GENERAL AVIATION AIRCRAFT OPERATORS

20 April 2006

In March 2003 ICAO issued Amendment 164 to Annex 1 which imposed language proficiency requirements on pilots and air traffic controllers. Specifically, these personnel "shall demonstrate the ability to speak and understand the language used for radiotelephony communications." Rather vaguely, the standard for aeroplane and helicopter pilots is necessary for those who "are required to use the radio telephone aboard the aircraft." These requirements become effective in March 2008.

The International Council of Aircraft Owner and Pilot Associations (IAOPA) affiliates in 63 states, comprising more than 470,000 pilots and aircraft operators, are quite interested in this subject.

IAOPA has twice commented on this subject stating, in essence, that the required proficiency level will prove difficult and costly to both attain and maintain. While this requirement may be justified for those using the IFR ATS system it is difficult to justify for the casual VFR user.

Background

The language proficiency requirement was triggered by a resolution generated by the 32nd ICAO Assembly in September 1998. Resolution A32-16: *Proficiency in the English language for radiotelephony communications,* urged the ICAO Council:

> *to direct the Air Navigation Commission to consider this matter with a high level of priority, and complete the task of strengthening the relevant provisions of Annex 1 and Annex 10 with a view to obligating Contracting States to take steps to ensure that air traffic control personnel and flight crews involved in flight operations in airspace where the use of the English language is required, are proficient in conducting and comprehending radiotelephony communications in the English language.*

I believe that the operative phrase here is, *flight operations in airspace where the use of the English language is required.* Unfortunately, neither the letter nor intent of this phrase has been incorporated in the Annex 1 standard, 1.2.9.1.

Discussion

The framers of the resolution correctly realized that there were specific locations and situations that required precise and comprehensible communications between pilots and air traffic controllers. Yet, this fact is not conveyed to the standard. Instead, a vague requirement is levied on pilots "who are required to use a radio telephone aboard an aircraft." Does this mean that language proficiency is required of pilots who may *ever* be required to use the radio telephone or just for a specific flight? And, when is radio telephone communication actually required – for airport advisory services? For closely-controlled airspace? For IFR communications?

Thus, the actual requirement stated in the standard is vague and indistinct, creating doubt regarding the actual requirement.

Annex 11 states that the primary purpose of air traffic control service is to *prevent collisions.* Secondarily it is for *expediting and maintaining an orderly flow of air traffic.* And, control is exercised to separate air traffic only in certain types of airspace. Namely, separation services are provided between all types of aircraft in Class A, B and C airspace.

Impact

More than one million pilots worldwide potentially will be affected by this standard. Compliance with this standard will involve months of training and the equivalent of thousands of dollars for each individual attempting to achieve level 4 language proficiency.

The great majority of pilots, regardless of licence level, (perhaps as much as 80 percent) will never fly under IFR nor penetrate closely controlled airspace. Therefore, the blanket requirement to impose a language proficiency requirement for all pilots is unnecessary.

Recommendation

With this as a background it is reasonable to assume that radio communications only should be required in conjunction with the primary objective of air traffic control, that of collision prevention through the provision of separation services. If so, then ATC radio communication should only be required in Class A, B or C airspace.

Therefore, to realize the initial objective of resolution A32-16 the wording of Annex 1, ¶ 1.2.9.1 should be changed to read,

> *Aeroplane and helicopter pilots and those flight navigators whose flights will operate under IFR or VFR within Class A, B or C airspace shall demonstrate the ability to speak and understand the language used for radiotelephony communications.*

Or,

> *Only those pilots...who have demonstrated the ability to speak and understand the language of radiotelephony communications shall be permitted to operate under IFR or VFR within Class A, B or C airspace.*

I will be pleased to discuss this issue with you.

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APPENDIX C

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

PERSONNEL LICENSING

ANNEX 1
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

1. The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~	text to be deleted
2. New text to be inserted is highlighted with grey shading.	new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.	new text to replace existing text

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

PERSONNEL LICENSING

ANNEX 1
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

. . .

CHAPTER 1. DEFINITIONS AND GENERAL RULES CONCERNING LICENCES

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1.2 General rules concerning licences

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1.2.9 Language proficiency

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1.2.9.4 As of 5 March 2008, aeroplane and helicopter pilots, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communication to the level specified in the language proficiency requirement in the Appendix except for aeroplane and helicopter pilots operating VFR flights in E, F and G airspace.

. . .

— END —