DRAFT REPORT

OF

MEKONG AIR TRAFFIC MANAGEMENT

COORDINATION GROUP MEETING

2011

(MK-ATMCG-2011)

Bang Saen, Chon Buri, Thailand, 24 – 26 April 2011

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

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History of the Meeting

Draft Report of MK-ATMCG-2011

Appendices

1.1 Introduction

1.1.1 The Mekong ATM Coordination Meeting (MK-ATMCG-2011) was held at The Tide Resort, Bang Saen, Chon Buri, Thailand from 24 to 26 April 2011.

1.1.2 The MK-ATMCG meeting was originally held as "ATS Coordination Meeting" among Cambodia, Lao PDR, Thailand and Viet Nam with previous meetings held in Cambodia, Thailand and Laos respectively with previous meetings discussing ATM coordination issues focusing within the region surrounding the Mekong River.

1.2 Officers, Secretariat and Participants

1.2.1 The meeting was facilitated by Mr. Tinnagorn Choowong, Senior Director, Enroute Air Traffic Management Bureau, Aeronautical Radio of Thailand Limited (AEROTHAI). Mr. Piyawut Tantimekabut, Executive Officer, Systems Engineering, Airspace Management Centre, Aeronautical Radio of Thailand Limited (AEROTHAI), acted as Secretariat of the Meeting.

1.2.2 Forty (40) participants from Cambodia (Cambodia Air Traffic Services Co. ,Ltd.: CATS), Hong Kong, China (Hong Kong Civil Aviation Department: HKCAD), Lao PDR (Department of Civil Aviation of Lao PDR: DCAL and Lao Air Traffic Management: LATM), Thailand (Department of Civil Aviation of Thailand: DCA Thailand and Aeronautical Radio of Thailand: AEROTHAI) and Viet Nam (Civil Aviation Administration of Viet Nam: CAAV and Viet Nam Air Traffic Management Corporation: VATM) attended the meeting. A list of participants is in **Appendix A**.

1.3 Opening of the Meeting

1.3.1 Mr. Siri Pichiensopon, Executive Vice President, Aeronautical Radio of Thailand Limited (AEROTHAI) welcomed all participants to the Mekong ATM Coordination Group Meeting.

1.4 Documentation and Working Language

1.4.1 The meeting was conducted in English. All meeting documentation was in English.

Agenda Item 1: Adoption of Agenda

1.1. The meeting adopted the following agenda:

Agenda Item 1:	Adoption of Provisional Agenda
Agenda Item 2:	Review of Operational LOAs
Agenda Item 3:	Air Traffic Management (ATM) Matters
	3.1 Airspace Management (ASM)
	3.2 Air Traffic Flow Management (ATFM)
	3.3 ATS Coordination
Agenda Item 4:	CNS Matters
Agenda Item 5:	Operational Contingency Plan
Agenda Item 6:	Future Direction
Agenda Item 7:	Other Related Issues

1.2. It was agreed to change the group's name to "**Mekong ATM Coordination Group (MK-ATMCG)**" in order to harmonize naming with similar groups in the Asia-Pacific region such as "East Asia ATM Coordination Group," "Informal Pacific ATM Coordination Group," and "Informal South Pacific ATM Coordination Group."

1.3. The meeting discussed and agreed to the Terms of Reference attached in **Appendix B**.

Agenda Item 2: Review of Operational Letters of Agreement (LOAs)

2.1. The meeting discussed inclusion of contingency plan in Operational LOAs among members. There were concerns on that inclusion of contingency plan in Operational LOAs would expand signatory required to sign the expanded Operational LOAs which would include contingency plans. Nevertheless, there were discussions that contingency plans can be split into State Contingency Plan and Operational Contingency Plan, latter of which can be readily included in Operational LOAs.

Agenda Item 3: Air Traffic Management Matters

Agenda Item 3.1: Airspace Management (ASM)

ATS Route Review: Previously Coordinated Routes

3.1. The meeting discussed progress of ATS route proposals coordinated at various ICAO meetings with route map shown in **Appendix C**:

3.1.1.M752 (Utapao-ENREP):

3.1.1.1. Thailand proposed route name change to M904 pending ICAO Regional Office coordination and approval process.

3.1.1.2. Cambodia raised potential issue of the new route merging with M753 at ENREP.

3.1.1.3. Thailand reminded the meeting that it is likely traffic on M904 (M752) would most likely be shared with N891. Traffic information would be passed to Ho Chi Minh ACC and Phnom Penh ACC in the case coordination is required.

3.1.2. Ha Noi – BGO and NAN – TATEL

3.1.2.1. The portion of route proposal between CMA-BGO in the proposed LPB-CMA-BGO option was not considered due to crossing through large danger area.

3.1.2.2. Thailand Airspace Panel agreed to consider establishing ATS route between PAE-TATEL since there is already an ATS route linking PAE-NAN with final decision expected by the end of May 2011.

3.1.3. VTN – SAV: A formal letter from DCAL was handed over to DCA Thailand during the meeting. The proposal would be discussed at the next Thailand Airspace Panel.

3.1.4. SRE-UBON-VILAO

3.1.4.1. Due to security situation along the Cambodia-Thailand border and the proposed route crossing through large danger area, discussion is postponed from the previous Thailand Airspace Panel.

3.1.4.2. Cambodia had no objection to the proposed route.

3.1.4.3. Laos expressed concerns on additional traffic merging at VILAO and suggested the use of recently established B329 to access VILAO instead.

ATS Route Review: Recently Proposed Routes

3.2. The meeting discussed progress of recently proposed ATS routes in **Appendix C**:

3.2.1. Extension of A206 between Luang Prabang (LPB) to CMA
3.2.2. VTN – TANGO
3.2.3. VTN – TONPEUNG
3.2.4. NAN – SAGAG
3.2.5. KKN – HAN

3.2.5.1. Thailand proposed the KKN-HAN route to provide shorter route linking Thailand to Ha Noi as well as further destinations in China

3.2.5.2. Viet Nam expressed concerns on military activities south of NOB while requesting potential traffic information.

Southeast Asia Route Review Task Force Follow-Up Items

3.3. The meeting discussed circumstances around ATS route A1 and A202, which, based on Hong Kong FIR's Traffic Sample Data supported approximately 190 flights/day (1,325 flights/week) and 105 flights/day (735 flights/week) on the third week of December 2010. There were concerns of how these two ATS routes could support future traffic growth in the region.

3.4. Thailand presented a visualization of city pairs being serviced by A1 based on Traffic Sample Data in **Figure 1**. City pairs with traffic contribution of approximately 10 percent are shown in orange, while others are shown in green. It was noted that traffic through the Bangkok FIR including overflying traffic from the Bay of Bengal contributes approximately 50-60 percent of the traffic on A1 with destinations in East Asia. Traffic originating from Viet Nam and Cambodia contributed approximately 20 and 8 percent accordingly.

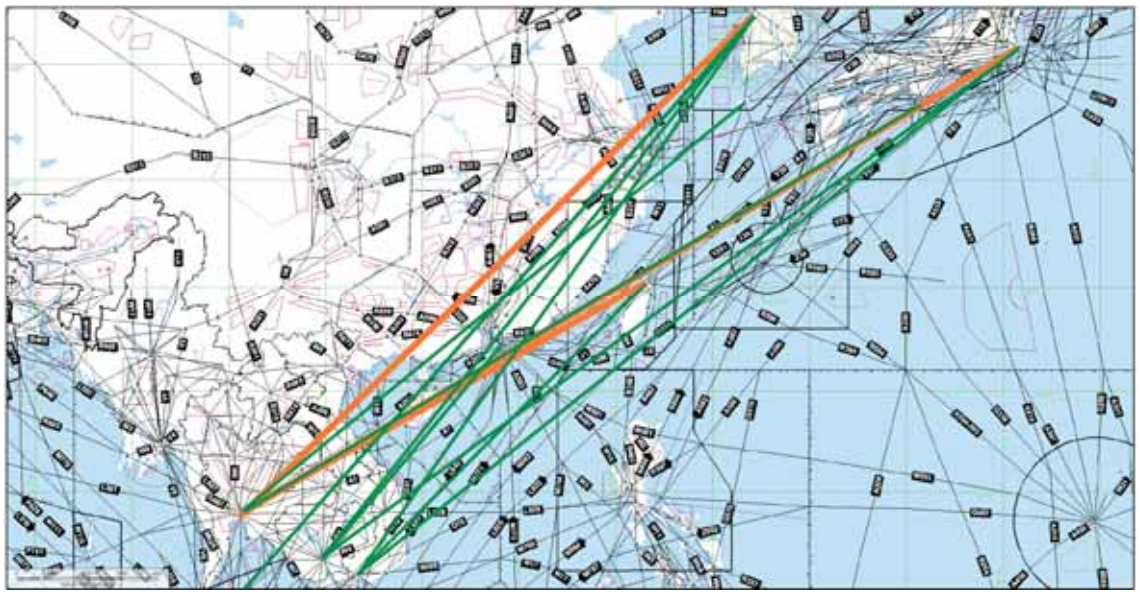

Figure 1: Visualization of Key City Pairs Serviced by A1 based on Traffic Sample Data

3.5. It was also noted that there were also some traffic from Kuala Lumpur and Singapore that actually used A1 instead of L625 to reach Hong Kong and East Asian destinations. Hong Kong, China mentioned that the change could be due to airspace restructure within the Hong Kong FIR, which could save flight time of about 10 minutes for each flight, resulting in A1 becoming contingency route for traffic from Malaysia and Singapore as well as traffic from Thailand, Viet Nam, Cambodia and Lao PDR.

3.6. As a result of the change in traffic pattern, traffic growth on A1 is expected to be higher than those of other routes within the South China Sea.

A1 Arrangement

3.7. After considerable deliberation, the meeting agreed to the following plans to enhance traffic flow on A1:

3.7.1. ***Short Term:*** reduction of radar spacing from 40NM to 30NM in order to increase capacity in the short-term.

3.7.2. ***Medium Term:*** realignment of A1 and/or re-designation as RNAV 5 to take advantage of extensive surveillance coverage in order to increase efficiency of operations.

3.7.3. ***Longer Term:*** Parallel route south of current A1 in order to provide additional capacity, efficiency and safety in traffic management.

3.8. In the short term, Cambodia, Hong Kong, China, Lao PDR, Thailand and Viet Nam were agreeable to reduction of radar spacing on A1 to 30NM with operational procedure to be completed.

3.9. In the longer term, it was discussed that spacing of the proposed parallel route south of current A1 may be as close as 30NM or less due to availability of surveillance while taking advantage of RNAV 5 capability.

3.10. Thailand presented a revised proposal for ATS route parallel to A1 in **Figure 2**.

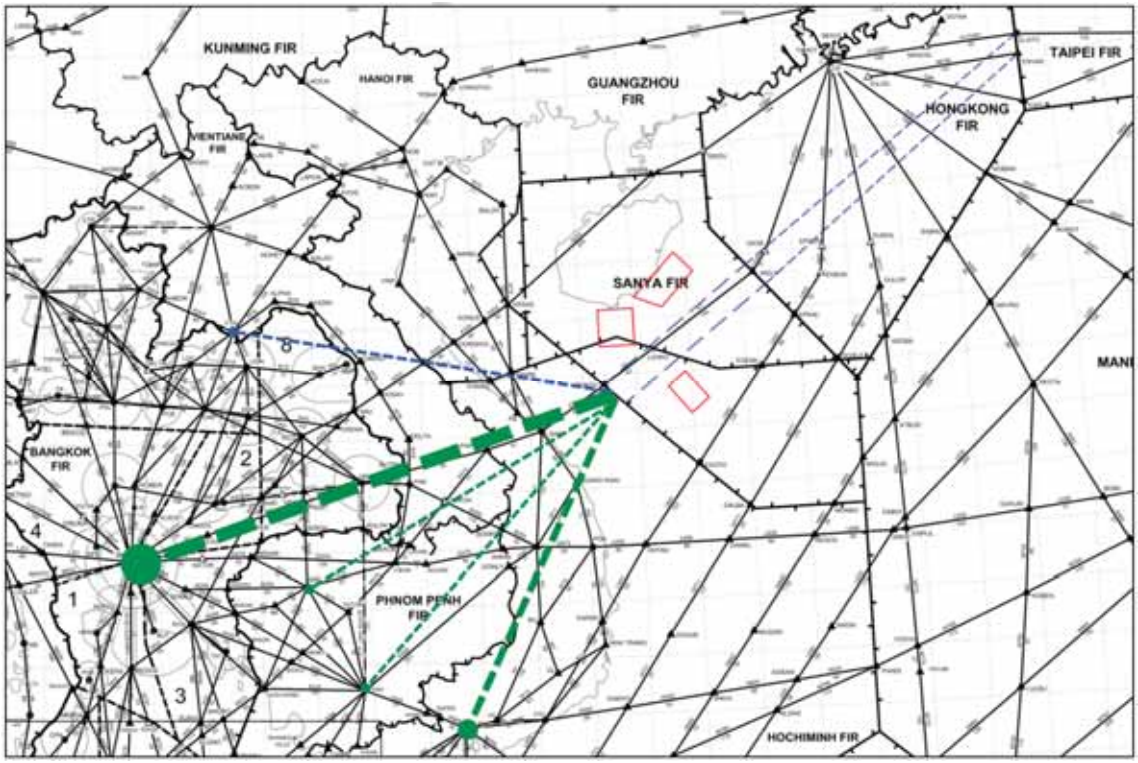

Figure 2: Proposal of ATS route parallel to A1 presented during the meeting

3.11. The proposal presented in **Figure 2** shows published danger area within Sanya FIR in red boxes. Therefore, in order to avoid excessive military coordination with Sanya FIR, the parallel ATS route may be better situated south of current A1. While relying on RNAV 5 specification, these ATS routes could be spaced as close as 30NM apart or closer. In addition, dotted line between the Ho Chi Minh – Sanya FIR boundary is scaled to percentage of traffic from these key airports on A1. In addition, based on comparison of **Figure 1** and **Figure 2**, current A1 location presents a compromise in order to facilitate traffic joining from Cambodia, Lao PDR, Thailand and Viet Nam.

3.12. Lao PDR supported the conceptual proposal with the proposal of new ATS route from Vientiane also joining at the Ho Chi Minh – Sanya FIR boundary in order to facilitate additional traffic from Vientiane to East Asian destinations as well as joining into current A202 to Hong Kong, China and other destinations in China.

A202 Arrangement

3.13. In respect to A202, Cambodia, Lao PDR, Thailand and Viet Nam were agreeable to a proposal to reduce radar spacing on A202 from current 40NM to 30NM pending coordination with China.

Minimum Longitudinal Spacing Applied in Hong Kong, Taipei and Fukuoka FIRs

3.14. It was also noted that once traffic from Southeast Asia enters the Hong Kong FIR, radar spacing used to handover traffic to further upstream FIRs is 30NM with pending discussion to further reduce radar spacing on A1 and M750 to 20NM assisted by radar handover arrangements.

En-Route PBN Harmonization

3.15. The meeting discussed re-designation of routes in compliance to the Asia-Pacific Regional PBN Implementation Plan. It was agreed that routes within surveillance coverage should be re-designated as RNAV 5, while routes outside surveillance coverage should be re-designated as RNP 10, with further plan to re-designate as RNP 4 at a later stage.

3.16. It was agreed that re-designation would start with routes crossing more than two FIRs as traffic on those routes are more likely to be in compliance with RNAV 5 or RNP 10 requirements.

Agenda Item 3.2: Air Traffic Flow Management (ATFM)

Cooperative Traffic Demand Sharing

3.17. Thailand advised the meeting of FIR boundary crossing information available within flight plans, which would represent latest traffic demand, especially when spacing or separation standard used to hand over flights between FIRs remain as key air traffic constraints in the sub-region. Flight Plan-based-traffic demand at FIR boundary can be compared against Traffic Sample Data (TSD) collected during the same time period similar to those collected under the Southeast Asia Route Review Task Force.

3.18. While workload related to collection of TSD may be relatively high for various ANSPs, software can be written based on current geographical data to automate the process of extracting FIR boundary traffic demand from flight plans.

3.19. It is advised that traffic demand at FIR boundaries of an FIR may be incomplete for a traffic flow. In other words, traffic demand perceived by FIR at the beginning of a traffic flow would be different from those in the middle of the flow and towards the end of a particular traffic flow. Therefore, it was recommended that ANSPs should exchange traffic demand information on key traffic flow to reach better understanding of traffic within those traffic flows.

3.20. Once ANSPs involved reach better understanding of those traffic flows, collated traffic demand can be used to:

3.20.1. optimize aircraft spacing;
3.20.2. optimize flight level allocation;
3.20.3. optimize manpower requirement for related ANSPs; and,
3.20.4. optimize sectorization in relevant airspace.

3.21. AEROTHAI and Hong Kong CAD have already reached agreement to exchange traffic demand data during the 6th Global ATFM Conference held in Phuket, Thailand between 28 February and 2 March 2011 in the hope to reach better understanding of traffic between the Bangkok FIR and the Hong Kong FIR.

3.22. Cambodia also expressed agreement in exchanging traffic demand data in order to enhance understanding of key traffic flows relevant to Cambodia, Hong Kong, China and Thailand.

Collaborative Decision Making (CDM)

3.23. Thailand informed the meeting of their initiative to enhance traffic management in the Bangkok FIR using software automation to extract traffic demand information from flight plan in

combination with other traffic management information such as those found in BOBCAT slot allocation.

3.24. Such initiative, currently known as "Collaborative Departures Planner" (CDP) is on Operational Trial since 11 April 2011 to enhance management of traffic exiting the Bangkok FIR westbound between 1400 – 1859UTC on P646 (BETNO) and L507 (LIMLA), key routes normally used by BOBCAT departures. In the current stage of CDP trial, key airport CDM milestone of "Target Take-Off Time window" (TTOT window) would be planned along with flight level used exiting the Bangkok FIR.

3.25. It is expected that pre-planning of TTOT window and flight level used to exit the Bangkok FIR taking into account BOBCAT slot allocation would enhance the probability that aircraft would obtain slot allocation flight level in the Kabul FIR, further enhancing quality of service. Current feedback from airlines and ATS units involved were generally positive.

3.26. At a later stage, CDP Trial would be extended to include airline operators. Specifically, airlines would be asked to provide "Departures Flexibility Window" to increase flexibility of the CDP planning process. In return, TTOT window information would be provided to airlines to enhance operational predictability.

3.27. It is advised that CDM activities may be an effective short-term measure to ensure that airspace capacity is used optimally. In the case of CDP, such capacity includes both FIR boundary between the Bangkok FIR and the Yangon FIR in compliance with ATFM/BOBCAT procedure.

3.28. It is also noted that due to increasing traffic from Singapore and Malaysia in combination with upcoming reduced horizontal separation in the Bay of Bengal sub-region and upcoming implementation of RVSM in Afghanistan airspace, CDM activities could be needed.

3.29. Thailand also advised the meeting of the planned CDM Meeting with Singapore during the CANSO Annual General Meeting in Bangkok in June 2011. The CDM meeting aims to explore the possibility of further CDM activities between Singapore and Thailand.

3.30. Since traffic between Singapore and Thailand would need to proceed through the Malaysian airspace, while the three States currently cooperate in handling BOBCAT traffic, it is highly likely that Malaysia would also be invited to the CDM meeting.

Demand and Capacity Management

3.31. Thailand advised the meeting of its development of the ATFM Information Support System (ATFM-ISS), which focuses on processing visualization of traffic demand in comparison with capacity, while being similar to the Air Traffic Capacity Display System (ATCDS) system also deployed by HKCAD using presentation in **Appendix C**.

3.32. It was emphasized that while capacity of airports, both for departure and arriving traffic, and airspace need to established for planning purposes, these capacity numbers should not be taken as fixed capacity. Instead, planning capacity should be adjusted into tactical capacity in order to take into account tactical situation.

Agenda Item 3.3: ATS Coordination

Operational Difficulties

3.33. It was mentioned that Bangkok ACC experienced difficulties in handing over aircraft eastbound on A1 at the current 40NM radar spacing potentially due to traffic management issues within a downstream ACC. This issue should also be addressed within 30NM radar spacing operational procedure.

3.34. Hong Kong, China mentioned operational issues in handling eastbound A1 traffic within the Hong Kong FIR prior to handing aircraft over to the Taipei FIR. As a result, traffic on A1 with onward destinations in East Asia was occasionally rerouted to G86 within the Taipei FIR.

Agenda Item 4: CNS Matters

Surveillance Data Sharing

4.1. Thailand informed the meeting on surveillance data sharing discussions with neighboring ANSPs. Thailand Airspace Panel is in conceptual agreement with surveillance data sharing.

Pre-Departure Clearance (PDC) over Data-Link (DCL)

4.2. Thailand briefed the meeting on its operational trial of pre-departure clearance over data link based on procedures adopted from those graciously provided by HKCAD using presentation in **Appendix C**.

Agenda Item 5: Operational Contingency Plan

5.1. Thailand briefed the meeting on their Operational Contingency Plan, which would be included in updated Operational LOAs.

Agenda Item 6: Future Direction

6.1. The meeting agreed that the MK-ATMCG would convene at least once every year. In case of urgent issues, ad hoc meeting may be organized between annual meetings.

6.2. Since previous meetings were already held in Cambodia, Lao PDR and Thailand, the next meeting in will be held in Viet Nam in 2012.

6.3. It was agreed that for the next meeting, Myanmar would also be invited to enhance ATM coordination within the MK-ATMCG membership. Where necessary, Hong Kong, China and China may also be invited to ensure completeness of discussions.

6.4. It was agreed that progress of the MK-ATMCG would be reported to SEACG meeting and other relevant ICAO meetings.

Agenda Item 7: Other Business

Seamless ASEAN Sky (SAS) Initiative

7.1. The Mekong ATM Coordination Group (MK-ATMCG) brings together ANSPs with various degrees of relationship to the Mekong River, key member States of which are also members of the Association of the Southeast Asia Nations (ASEAN). Therefore, the meeting discussed recent agreement at the level of ASEAN Air Transport Working Group of the Seamless ASEAN Sky concept. There was a general consensus among the meeting participants that membership of the MK-ATMCG should work towards seamless and harmonized delivery of Air Traffic Management (ATM) and related services across FIR boundaries

Closing of the Meeting

7.2. In closing the meeting, the facilitator, Mr. Tinnagorn Choowong, thanked all delegations for attending and actively participating in the meeting's discussions.

7.3. Mr. Bui Van Vo, Director, Air Navigation Department, Civil Aviation Administration of Viet Nam, thanked Thailand for hosting the meeting and inviting Viet Nam to the meeting.

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