International Civil Aviation Organization

Fourth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/4) and Twenty-First Meeting of the South-East Asia ATM Coordination Group (SEACG/21)

Hong Kong, China, 24 – 28 February 2014

Agenda Item 2: Review Outcomes of Related Meetings

MEKONG ATM COORDINATION GROUP MEETING

(Presented by Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and IATA)

SUMMARY

This paper presents update of collaboration among Air Navigation Service Providers (ANSPs) bordering Mekong River to enhance cross-border safety and efficiency to cope with future air traffic growth in the Asia-Pacific region in support of ICAO Asia and Pacific office on Air Traffic Management (ATM) initiatives in a smaller scale.

1. **INTRODUCTION**

1.1   The Mekong ATM Coordination Group was established to discuss ATM coordination issues focusing on the region surrounding the Mekong River with agreed annual meetings. The first meeting using the current group name, MK-ATM/CG/1 was held from 24-26 April 2011 in Bangsaen, Chonburi, Thailand. The second meeting, MK-ATM/CG/2, between 29 -30 May 2013 in Bangkok, Thailand.

1.2   Delegates from Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and IATA participated in the meeting. While invitations were also sent to China and Hong Kong, China, but they were regrettably unable to participate in the meeting. Nevertheless, through prior coordination, Hong Kong, China sent valuable traffic data information as well as AIDC implementation experience for the MK-ATM/CG/2 meeting's review, which was highly appreciated by all participants.

1.3   Similar Information Paper as this paper was submitted to APANPIRG/24 meeting for review of progress of the Mekong ATM Coordination Group.

2. **DISCUSSIONS**

2.1   With most members being member of the Association of South East Asia Nations (ASEAN), work of the Mekong ATM coordination group would help drive ATM harmonization towards Seamless ASEAN Sky supporting ASEAN Single Aviation Market (ASAM) initiative, which is the aviation aspect of ASEAN Economic Community (AEC) planned in 2015.

2.2   Delegates at the MK-ATM/CG/2 worked together to discuss and ultimately agree upon the much-needed implementation, which will drive ATM harmonization towards seamless ATM operations among countries surrounding the Mekong River. Mostly the issues of concerned involve challenge of supporting growing traffic with limited capacity. Therefore, main conclusions of the meeting dealt with RNAV5 En-Route Harmonization, AIDC Implementation and Surveillance Data Sharing principle, designed to enhance and optimize airspace capacity in the region.

RNAV5 En-Route PBN Harmonization

2.3   To create a harmonized airspace procedure, designation of harmonized spacing/separation parameters is necessary. Therefore, the MK-ATM/CG/2 meeting agreed to implement harmonized spacing parameters on international routes at FL 290 or above with the implementation of RNAV5 on such routes by 2015, leveraging available communications and surveillance coverage in the Mekong sub-region. States will also implement route structure realignment based on RNAV5 by 2018. Since most aircraft have been readily equipped to fly RNAV5, ANSPs should drive the implementation of RNAV5 and reduce spacing parameters to increase airspace capacity. More details are in the latest draft report of MK-ATM/CG/2 meeting in **Attachment A**.

2.4   The meeting is advised that RNAV5 En-Route PBN Harmonization activity by Thailand is presented in a separate Working Paper presented at the SAIOACG/4 & SEACG/21 meeting.

AIDC Implementation

2.5   To support the reduction of spacing parameters, countries agreed to the necessity of implementing harmonized AIDC since it facilitates the electronic transfer of control with spacing parameters below 30 NM. Moreover, according to B0-FICE (B0-25), improved coordination between ATS facilities can be achieved by using AIDC. Therefore, Mekong states agreed to AIDC implementation among en-route ACCs by 2015. To ensure effective communication across countries for the implementation of AIDC, appropriate AIDC points of Contact will be designated to coordinate AIDC Technical Test starting in 2014 with AIDC implementation planned in 2015. More details are in the latest draft report of MK-ATM/CG/2 meeting in **Attachment A.**

2.6   The meeting is advised that AIDC implementation activity by Thailand is presented in a separate Working Paper presented at the SAIOACG/4 & SEACG/21 meeting.

Surveillance Data Sharing

2.7   According to the ICAO Asia-Pacific Seamless ATM plan, the implementation of Preferred ATM Service Level (PASL) is targeted to be completed by 2018. With PASL Phase I, ATS surveillance data particularly from ADS-B will be shared among neighboring ATC units. Therefore, ANSPs of Cambodia, Lao PDR, Vietnam, Myanmar and Thailand agreed to the principle of Surveillance Data sharing through ADS-B data sharing and through radar data sharing where practicable. More details are in the latest draft report of MK-ATM/CG/2 meeting in **Attachment 1**.

2.8   In addition to the three (3) major conclusions from the MK-ATM/CG/2 meeting, seven (7) action items were also agreed in order to facilitate transition towards seamless ATM operations in the sub-region as detailed in **Attachment 1**.

3.   **ACTION BY THE MEETING**

3.1   The meeting is invited to note information presented in this paper.

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DRAFT REPORT

OF

THE SECOND

MEKONG AIR TRAFFIC MANAGEMENT

COORDINATION GROUP MEETING

(MK-ATM/CG/2)

Bangkok, Thailand, 29 – 30 May 2013

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

History of the Meeting

Meeting Report

Appendices

1.1   Introduction

1.1.1   The First Mekong ATM Coordination Meeting (MK-ATM/CG/1) was held at The Tide Resort, Bang Saen, Chonburi, Thailand from 24th to 26th April 2011.

1.1.2   The Second Mekong ATM Coordination Meeting (MK-ATM/CG/2) was held at The AETAS Lumpini Hotel, Bangkok, Thailand from 29th to 30th May 2013.

1.1.3   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 (2006), Thailand (2008) and Lao PDR (2009) respectively. The previous meetings discussed ATM coordination issues focusing the region surrounding the Mekong River.

1.2   Officers, Secretariat and Participants

1.2.1   The meeting was facilitated by Mr. Tinnagorn Choowong, Vice President (Air Traffic Management), Aeronautical Radio of Thailand Limited (AEROTHAI) and Mr. Somchit Vinitkeophavanh, Director General, Lao Air Traffic Management (LATM). The Secretariat team of the meeting consists of Mr. Piyawut Tantimekabut, Executive Officer, Systems Engineering, Network Operations Air Traffic Management Centre, AEROTHAI, supported by Mr. Dolsarit Somseang, Engineer, Network Operations Air Traffic Management Centre AEROTHAI, and Ms. Kittiprapha Jivasantikarn, Administration Officer, Policy and Strategy Management Bureau (Group of Policy Analysis and Strategy Planning), AEROTHAI.

1.2.2   Forty-five (45) participants from Cambodia (Cambodia Air Traffic Services Co., Ltd.: CATS), Lao PDR (Department of Civil Aviation of Lao PDR: DCAL and Lao Air Traffic Management: LATM), Myanmar (Department of Civil Aviation Myanmar: DCA Myanmar), Thailand (Department of Civil Aviation of Thailand: DCA Thailand and Aeronautical Radio of Thailand: AEROTHAI), Viet Nam (Civil Aviation Administration of Viet Nam: CAAV and Viet Nam Air Traffic Management Corporation: VATM) and The International Air Transport Association (IATA) attended the meeting. A list of participants can be found in **Appendix A**.

1.3   Opening of the Meeting

1.3.1   Sqn.Ldr. Prajak Sajjasophon, President of Aeronautical Radio of Thailand Limited (AEROTHAI), welcomed all participants to the second Mekong ATM Coordination Group Meeting stressing need for cooperation among Mekong ANSPs as all members of the Association of South East Asia Nations (ASEAN), which is planning to establish ASEAN Economic Community (AEC) by 2015. It is expected that AEC will be associated with further traffic increase posing challenges to air navigation service provision regionwide.

1.3.2   Mr. Tinnagorn Choowong, Vice President (Air Traffic Management) Aeronautical Radio of Thailand Ltd. (AEROTHAI), as the meeting's facilitator, welcomed all participants to the second Mekong ATM Coordination Group Meeting, and also invited Mr. Somchit Vinitkeophavanh, Director General, Lao Air Traffic Management (LATM) to be a co-facilitator.

1.4   Documentation and Working Language

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

1.4.2   A set of presentation slides was prepared as to support deliberation of the meeting as attached in **Appendix B**.

Summary of Conclusions:

Conclusion 1: **RNAV 5 En Route Harmonization**: *Mekong ANSPs agree to the following:*
   a) *By 2015, on international routes at FL290 and above, Mekong ANSPs will be using a single harmonized spacing parameter less than 30NM. RNAV5 will also be designated on international routes. Tentatively, the possible spacing parameter is 20 NM. However, this is to be finalized.*
   b) *By 2018, states agree to the route structure realignment based on RNAV 5 implementation.*

Conclusion 2: AIDC Implementation
Mekong states agreed to AIDC implementation among en-route ACCs by 2015 with system test planned from 2014 to be determined through coordination among Mekong States' AIDC Point of Contacts. And AIDC Message Set is to be coordinated in accordance to APAC Seamless ATM Plan

Conclusion 3: Surveillance Data Sharing
The five Mekong ANSPs for Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam, agreed to the principle Surveillance Data Sharing particularly through ADS-B; where practicable, radar data sharing should also be considered.

Summary of Action Items:

Action Item 1: RNAV 5 Readiness Template and Draft AIC
The secretariat team agreed to prepare RNAV5 implementation readiness template, draft Aeronautical Information Circular (AIC) and circulate for comments by the next MK-ATM/CG meeting for approval in preparation for harmonized RNAV 5 implementation in 2015 and route structure realignment in 2018 among Mekong States.

Action Item 2: Capacity Assessment Priorities
Mekong States agree to designate priority list of airspace and aerodromes in need of CDM/ATFM capacity assessment in the Mekong region to facilitate capacity assessment planning.

Action Item 3: ATM Points of Contact
Mekong States agreed to provide appropriate ATM Points of Contact for ATM coordination by the end of the MK-ATM/CG/2 meeting. Listing of ATM Points of Contact is attached in **Appendix E**.

Action Item 4: AIDC Points of Contact
Mekong States agreed to designate appropriate AIDC Points of Contact to coordinate AIDC test from 2014 and implementation in 2015 by 14 June 2013. Listing of AIDC Points of Contact is attached in **Appendix F**.

Action Item 5: Bilateral Coordination on Level 2 Contingency Plan
The meeting agreed to the bilateral coordination to work on each state's contingency plan including but not exclusive to connectivity of ATM Contingency Plan with Cambodia and ATM Contingency Plan coordination among Lao PDR, Thailand and Viet Nam; States agree to update progress of bilateral coordination work to AEROTHAI ATM coordinators within 6 months.

Action Item 6: B465 Route Alignment
Lao PDR supported the B465 route alignment proposal of Myanmar and, therefore, requested Myanmar to submit a formal request letter.

Action Item 7: R207 Route Alignment
Thailand supported the R207 route alignment proposal of Myanmar and, therefore, requested Myanmar to submit a formal request letter.

Agenda Item 1:   Adoption of Agenda

1.1   The meeting adopted the following agenda:

Agenda Item 2:   Review of Related Meetings

Agenda Item 2.1: MK-ATM/CG/1

2.1   The meeting reviewed report of MK-ATM/CG-1, which mainly discussed route structure review and Airspace Management. The final report of MK-ATM/CG-1 is attached in **Appendix C.**

Agenda Item 2.2: ICAO Air Navigation Conference (AN-Conf/12)

2.2   From ICAO AN-Conf/12, the meeting reviewed:

a) ASBU concept and implementation progress, consisting of the four Performance Improvement Areas namely (1) airport operations, (2) globally Interoperable systems and data, (3) optimum capacity and flexible flights and (4) efficient flight path. To prevent confusion, the meeting was urged to note that there have been

slight changes in names of the performance area. Each module has been assigned various level of priority within the ICAO Asia-Pacific Seamless ATM Plan, as presented in **Appendix B, Slide 15**.

b) Development from ASBU Block 0 to Block 1 and an overview of the transition from Block 1 to Block 2 and 3,

c) ICAO Asia-Pacific Initiatives including Asia Pacific Seamless ATM Planning work under APANPIRG by ICAO Asia-Pacific Seamless ATM Planning Group (APSAPG),

d) Asia-Pacific Seamless ATM Plan including APAC airspace categorization, APAC Performance Objectives, APAC Preferred Airport and Route Specification (PARS)/ Preferred ATM Service Level (PASL), Upper Airspace Classification. The meeting was urged to note airspace categorization into Category R (remote), Category S (serviced) and Category T (terminal). Performance objectives being emphasized in the plan are the preferred aerodrome/airspace & route specification and the preferred ATM service levels. Details were presented in **Appendix B, Slides 19 – 22**.

Agenda Item 2.3: ICAO ATM/SG/1

2.3   The meeting reviewed the outcomes of the ICAO ATM/SG/1 with 6 conclusions: Reliance and FPL and ATS Message Converters, ATM Capacity Assessment, ATFM Information Sharing, South China Sea ATS Facilities, AIDC Implementation, and Electronic AIP, and 2 decisions: Dissolution of the FPL&AM Implementation Task Force, and Asia/Pacific ATFM Steering Group.

Agenda Item 2.3.1: ICAO SEACG/20

2.4   At ICAO SEACG/20, states were urged to conduct ATFM Capacity Assessment, ATFM Information Sharing, and AIDC Implementation.

Agenda Item 2.3.2: ICAO SEA-RR/TF/6

2.5   At ICAO SEA-RR/TF/6, states were following up on the Route Structure for Route 7 (LPB-CMA-BGO), Route 8 (TATEL-NAN), Route 9 (A202/A1), and Route 10 (Unidirectional route for L628) with details presented in **Appendix B**.

Agenda Item 2.3.3: ICAO RACP/TF/2

2.6   At ICAO RACP/TF/2, the Level 2 ATM Contingency Plan was discussed and, as a result, regional contingency routes were selected. With agreement only on route selection, flight level utilization has yet to be decided. This would be later discussed in Agenda Item 6.

Agenda Item 2.4: ASEAN ATWG/27 ATTC/6

2.4   ATWG/27&ATTC/6 was held in April in Krabi, Thailand. The meeting discussed:

a) EU-ASEAN Air Transport Integration Project (AATIP),

b) Analyzed the region's traffic flow,

c) Initiated interoperability assessment, and,

d) Identified key regional initiatives and enabling technologies.

e)   Moreover, the meeting agreed on "the template of activities to achieve optimal separation/spacing parameters for regional major traffic flow" (**Appendix B, Slides 28 – 29**), which should help enhance the capacity of network in ASEAN airspace.

f)   In terms of ASBU modules, the initiatives by ASEAN ATWG are mapped nicely to the ICAO Asia-Pacific Seamless plan (**Slide 30 of Appendix B**). The mapping has been approved by ASEAN Air transport Working Group.

Agenda Item 3:   Information Sharing

Agenda Item 3.1: Traffic Growth

3.1   Lao PDR presented a paper to the meeting the information paper on the flight statistics within the Vientiane FIR. This is to support the airspace planning and to review a flexible ATS route structure to enhance the provision of effective Air Traffic Management. The paper showed a significant traffic volume on routes A1 and A202, especially during New Year and Chinese New Year. Most importantly, Lao PDR has been experiencing a large increase in the traffic volume during these past few years.

3.2   Thailand presented the data of traffic movement in Thailand. During 2011-2012, there has been general increase in the flight movement in Bangkok FIR. For international flights, the northeast-bound traffic with destination to Hong Kong Seoul, Tokyo Taipei Shanghai and Ha Noi contributes to such an increase with flights of which destination to Mumbai Dubai Frankfurt Kolkata London and Paris being the second main contributor to the growth. Domestically, southbound short hauls flight to Phuket, Samui contribute to a rapid growth. Market expansion of the Low Cost Carriers (LCCs) serves to explain this phenomenon. With such an increase in traffic movement, Thailand has been faced with heavy traffic loads in particular sectors. The demand for air transport will eventually saturate the current capacity. Regional collaboration will play a key role in alleviating such a problem.

3.3   Viet Nam shared the traffic data as follows:

a)   Flight movements were reported at 420,662 flight movements in 2011, and 457,172 flight movements in 2012 with overflying flights being slightly over 50% of the total traffic,

b)   Traffic growth was reported at 8.68% during 2011 – 2012, expected at 6.7% for 2013 – 2015, and 5.66% for 2016 – 2020.

3.4   Cambodia reported to the meeting of its total flight movement in 2012 was 60,828. From 2002-2012, the traffic has increased approximately 10-fold. It should be noted that the overflying flights contribute to more than 50% of the total flights.

3.5   IATA gave the presentation on the overview of the current issues in the region. The Mid East – Asia traffic has grown 13.4% and Asia/Pacific is already the largest aviation market with double digit growth forecast for a number of areas in the region.. The continuing high cost of fuel remains a significant issue for airlines and has risen to around 40% of Operating costs.. Of note was the fact that of forecast Passenger traffic to 2015 46% will be within Asia, reflecting the importance of Regional connectivity. The following issues were highlighted:

a)   The issues facing ANSPs include:
   a.   lack in capacity optimization,
   b.   lack in regional wide view,

    c. lack of short-term plan,

    d. underutilization of airports,

    e. lack of linkage to ATFM,

    f. uncoordinated ATM, and

    g. the main focus being domestic rather than regional integration and efficiency.

b) The major issues facing users include:

    a. major airlines reported increased sector times in most major routes,

    b. key airport capacity challenged through increased taxi times at most major airports,

    c. major air routes busier, and

    d. airlines costs increasing.

c) However, there have been initiatives to mitigate such a problem including:

    a. Thailand, Singapore, Hong Kong China sub regional ATM initiative,

    b. ADS-B data sharing,

    c. AIDC growing,

    d. UPR zone in Indian Ocean Arabian sea,

    e. South China Sea efficiency plans, and

    f. Surveillance based separations ADS-B mandates.

d) The Asia Pacific Seamless draft plan is aimed to provide strategic guidance. However, there should also be an emphasis on the sub regional or regional implementation of the plan. IATA estimate , approximate near-term investments of USD 1.5 billion to boost ATM capability is underway and/or planned. Benefit from this investmentmaybe limited to the FIR in question without regional collaboration ,harmonized procedures and interoperability.. The Mekong ATM Coordination Group can take a leading role in ensuring interoperability, harmonization and collaboration are being achieved.

Agenda Item 4:   Air Traffic Management (ATM) Matters

Agenda Item 4.1: Airspace Management (ASM)

4.1   The meeting discussed the airspace management related matters including route structure review and En-route PBN Harmonization, as follows:

Agenda Item 4.1.1: Route Structure Review

ATS Route Review: Previously Coordinated Routes

a) *A1/A202*
   - Thailand reported to the meeting that the aircraft spacing has been changed to 30 NM and proposed an establishment of A1/A202 as parallel unidirectional routes to increase the airspace capacity.
   - In principle, Viet Nam supported Thailand's proposal above. However, it was Viet Nam's concern that the issue of eastbound traffic has been blocked by Sanya FIR and aircraft are being handed over at 15-minute interval time of transfer.
   - Lao PDR already began facility installation in support for restructuring A1/A202 as unidirectional routes.
   - Thailand provided Traffic Sample Data received from Hong Kong, China on hourly traffic load of A1 and A202 on a typical day.

- ICAO Flight Procedure Program Office (FPP Office) proposed a step-by-step approach towards increasing airspace capacity. The step-by-step approach includes:

  1. Turn routes into RNAV routes
  2. Reduce the separation/spacing
  3. Break down one route into two routes

b) *Establishment of R202 (Ha Noi to Yangon)*
  Effective on AIRAC 2 May 2013, the route proposal originally from Ha Noi to Yangon was implemented as R202 (PAE – TATEL in Thai airspace), which saved 25 NM distance or up to 3 minutes flight time from original route.

c) *VTN-SAV*
  This route has yet been approved due to military concerns.

d) *SRE-UBON-VILAO*
  This route has yet been approved due to military concerns.

e) *Routes proposed before MK-ATM/CG/1*
  The meeting reviewed the route proposal before MK-ATM/CG/1

<u>*ATS Route Review: Recently Proposed Routes*</u>

f) *Establishment of ATS Routes from 'ATP' VOR\DME to PAKSE, SAVANNAKHET, PLEIKU, and PHNOMPENH*
  - Lao PDR presented a paper to the meeting the construction of ATTAPEU New CIQ Airport and its establishment of ATS Routes from 'ATP' VOR\DME to PAKSE, SAVANNAKHET, PLEIKU, and PHNOMPENH. The construction of this airport will be completed and commissioned in November 2014. Lao PDR invited the meeting to share experience in establishment of these ATS Routes and comment for further smooth operation of this airport.
  - The meeting discussed an alternative to establish an RNAV route, instead of the presented conventional ATS route. For the interest of time, it is recommended to connect the international routes to the SID/STAR of the airport, as opposed to designing completely new routes.

Agenda Item 4.1.2: En Route PBN Harmonization

4.2   Thailand presented to the meeting the communication and surveillance coverage in the South China Sea area. RNAV 5 and RNP 10 are the PBN concepts being implemented. Therefore, Thailand proposed to the meeting as follows:

  a) declare RNAV 5 where equipage is sufficient,
  b) adjust lateral profile where applicable in a phased manner, and
  c) adopt the application of 10 NM spacing parameters at FIR boundary where possible.

4.3   ICAO Regional Sub Office stated that most of the current commercial aircraft's equipage is ready to fly RNAV5, and only need state approval to do so. Meanwhile, ICAO Regional Sub Office (Flight Procedure Program Office: FPP Office) expects to organize RNAV 5 Operational Approval seminar to provide States with sufficient training for RNAV 5 Operational Approval by end of 2013, to be hosted by Myanmar. Cambodia, Lao PDR, Thailand and Viet Nam also requested

invitation to such seminar to ensure sufficient understanding of RNAV 5 Operational Approval process.

4.4   The meeting discussed the harmonization of en-route PBN implementation and agreed to the **Conclusion 1** as follows:

> *Conclusion 1: **RNAV 5 En Route Harmonization**: Mekong ANSPs agree to the following:*
> a) *By 2015, on international routes at FL290 and above, Mekong ANSPs will be using a single harmonized spacing parameter less than 30NM. RNAV5 will also be designated on international routes. Tentatively, the possible spacing parameter is 20 NM. However, this is to be finalized.*
> b) *By 2018, states agree to the route structure realignment based on RNAV 5 implementation.*

4.5   Cambodia, Myanmar and Lao PDR supported the En-Route PBN Harmonization among Mekong states.

4.6   Cambodia, Myanmar and Lao PDR requested assistance from ICAO FPP Office for training RNAV5 aircraft certification.

4.7   In order to support implementation of En Route PBN Harmonization, the meeting agreed to **Action Item 1**.

> *Action Item 1: RNAV 5 Readiness Template and Draft AIC*
> *The secretariat team agreed to prepare RNAV5 implementation readiness template, draft Aeronautical Information Circular (AIC) and circulate for comments by the next MK-ATM/CG meeting for approval in preparation for harmonized RNAV 5 implementation in 2015 and route structure realignment in 2018 among Mekong States.*

Agenda Item 4.2: Air Traffic Flow Management (ATFM)

4.8   Thailand presented the following items to the meeting:

a) *Doc 9971: Manual on Collaborative ATFM*

The meeting was briefed on development of ICAO Doc 9971 Manual on Collaborative ATFM and results from ICAO Air Navigation Conference (AN-Conf/12) as well as updates since ICAO AN-Conf/12.

b) *CDM/ATFM Concept*

Thailand updated the meeting on the progress of Bangkok-Singapore Whole-Flight CDM project.

The project is aimed at improving ATM efficiency of flights between Bangkok Suvarnabhumi Airport and Singapore Changi Airport, achieved through the integration of CDM concepts.

The project makes use of provision of information to appreciate entities to facilitate efficient operations gate to gate.

Through efficiency, predictability and punctuality to the air traffic management network and stakeholders, measurable improvements in operational efficiency can be achieved.

This project can be used to establish best practices for other city pairs in the region. Thailand also updates the meeting on the progress of the whole-flight CDM project.

Moreover, the meeting was updated on expansion of City-Pair CDM project into Bangkok – Singapore – Hong Kong CDM/ATFM concept.

In the first stage, twice-daily telephone conference will be conducted among Bangkok ACC, Hong Kong ACC and Singapore ACC, leveraging existing traffic demand – capacity balance. These telephone conferences would provide participants with expected traffic congestion both at destination aerodromes and en route.

In the second stage, fast-time and human-in-the-loop (HITL) simulations would be conducted to suggest benefits of networked implementation of ATFM coordinated through CDM principle, supplemented by Airport CDM implementation at major airports.

c) *ATFM Advisory*

Within the Bangkok FIR, ATFM Advisory is set up to address saturation of Bangkok ACC Sector 1, servicing largely domestic Thai air traffic in April 2013.

ATFM tools used include the ATC sector traffic load prediction or ATFM-ISS and Microsoft Excel-based ATFM Advisory spreadsheet.

The ATFM Advisory project's objective is to balance traffic demand against airspace capacity, while avoiding unnecessary Minimum Departure Interval ATFM requirements from departure aerodromes.

d) *BOBCAT-CDM System (CDM Platform)*

Thailand presented to the meeting on-going project to leverage information in FPL&ATS messages and Aircraft Stand allocation as a part of BOBCAT software update plan.

ATFM tools used include CDM Platform combining Flight Plan, ATS Messages and BOBCAT Slot Allocation. Automated integration with AODB, ASMGCS planned.

It is expected that BOBCAT CDM implementation would improve pre-departure coordination for flights with slot allocation and will be expanded to include other departures, other ANSPs, Airport Operators and Airlines.

e) *APEC ATM Emissions Reduction Project*

Thailand presented to the meeting Asia-Pacific Economic Cooperation (APEC) funded Air Traffic Management Emissions reduction Project, which would involve consultant study on benefits on CDM/ATFM implementation on cross-FIR boundary city pair in respect to general benefits and carbon dioxide emissions.

This project involves the USA, as a lead economy, along with Thailand and Malaysia as co-sponsor economies.

The project's scope is to study CDM/ATFM benefits for Bangkok – Kuala Lumpur flights with report expected by December 2013.

4.9   The meeting is informed of EU ASEAN Air Transport Integration Project (AATIP)'s likely proposal to provide training for airport and airspace capacity assessment, which would facilitate implementation of ATFM in the ASEAN airspace. Since capacity assessment is a time-consuming process, it is recommended that Mekong ANSPs prepare priority listing of congested or expected to be congested airport or airspace for capacity assessment as in **Action Item 2**.

Action Item 2: *Capacity Assessment Priorities*
Mekong States agree to designate priority list of airspace and aerodromes in need of CDM/ATFM capacity assessment in the Mekong region to facilitate capacity assessment planning.

Agenda Item 4.3: ATS Coordination

Agenda Item 4.3.1: Operational Difficulties

4.10   Lao PDR thanked all neighboring FIRs for the great help. However, Lao PDR faced difficulties when contacting Phnom Penh and Yangon during peak hours. Therefore, connection with Thailand and Viet Nam helped ease the problem.

4.11   Cambodia also thanked the neighboring states for the cooperation and collaboration. As for difficulties, Cambodia requested that Lao PDR provide eastbound traffic information on B202 through Cambodia delegated airspace bound for PLEIKU to facilitate coordination of Phnom Penh – PLEIKU traffic on G474 among Cambodia – Ho Chi Minh.

4.12   Thailand requested ATCOs in Yangon ACC to speak slowly while relaying the information to Bangkok ACC so that air traffic controllers can promptly write down the information during the transfer of control procedure.

4.13   Thailand also requested for 50 NM spacing to be used while transferring aircraft to Yangon FIR rather than the current 10 minutes spacing on L507, P646 and N895 especially during the busy night time hours when aircraft are departing in accordance with BOBCAT slot allocation.

4.14   Myanmar updated the meeting that Myanmar is now improving its communication system in collaboration with JCAB, especially in the Bay of Bengal. This would help alleviate the communication difficulties in the Bay of Bengal area. Moreover, testing on integrated ADS-C/CPDLC system in Yangon ACC is expected to be completed by June 2013

4.15   Cambodia pointed out that aircraft departing from Phnom Penh to Hong Kong are not facilitated to climb higher than FL280 because Cambodia cannot get approval from Ho Chi Minh ACC to climb. Cambodia would like to request for cooperation from Viet Nam to approve an optimum level for climb when appropriate. Thailand also experienced the similar issue for aircraft departing from Phuket to Taipei via A1. Bangkok ACC was on standby for optimum flight level to climb often times for 30 minutes. Therefore, Thailand also asked the concerned states to look into this issue.

4.16   Thailand asked Cambodia for cooperation between the two ACCs. In one case when Phnom Penh ACC already agreed to descend aircraft before handing over to Bangkok FIR, often times, the aircraft still remained almost at the same flight level between westbound flights on A340 or

R340 and another westbound flight on W42. Cambodia realized that this issue is concerned with safety and, hence, agreed to brief this issue to their ATCs.

4.17   In order to facilitate ATM coordination, the meeting agreed to **Action Item 3** as follows:

> *Action Item 3: ATM Points of Contact*
> *Mekong States agreed to provide appropriate ATM Points of Contact for ATM coordination by the end of the MK-ATM/CG/2 meeting. Listing of ATM Points of Contact is attached in* ***Appendix E***.

Agenda Item 5:   CNS Matters

Agenda Item 5.1: ATS Inter-Facility Data Communication (AIDC)

5.1   The meeting discussed and shared experiences concerning AIDC implementation.

5.2   Thailand presented to the meeting the concept of AIDC and pointed out the necessity to acquire AIDC since it facilitates transfer of control with spacing parameter below 30 NM.

5.3   According to B0-25, there needs to be an improved coordination between ATS facilities by using AIDC. Also, ICAO Asia-Pacific Seamless ATM Plan states that AIDC is set as priority 1 implementation.

5.4   Hong Kong, China provided AIDC experience as a case study.

a)   Hong Kong, China faced with challenges posed by the implementation of AIDC.

b)   Main challenges in implementing AIDC include the low system speed to handle the overloads of information and the requirement for intense training and learning curve of staff members.

c)   Therefore, in Hong Kong and China's case, the direct input of EST to FDPS, saving the data input by FD is appreciated by all staff, especially error free for strip printing.

d)   Currently, Hong Kong and China are working on improvement to have more accurate or real time pop-up of window reminding to action a transfer for overflying flights.

e)   China and Hong Kong can be taken as a case study to see if any improvement with the integrated AIDC functions with the new ATMS can be achieved by Mekong Coordination group.

5.5   The meeting appreciated Hong Kong, China input on AIDC implementation experience notwithstanding their inability to attend the meeting.

5.6   Lao PDR updated the meeting on its plan to install AIDC in 2014 – 2015.

5.7   Thailand informed the meeting of Thailand installed an AIDC version 1 system in 2009. Based on trial experience, Thailand does not support the use of stand-alone AIDC due to ATC workload concerns. Thailand also informed the meeting that integrated AIDC will be ready for testing and implementation with the installation of Thailand's new facilities (TMCS Project) by Q4 2014 to early 2015.

5.8   Viet Nam informed the meeting of its progress on AIDC implementation as follows:

a) Viet Nam currently has AIDC trial in progress between Hanoi ACC and Ho Chi Minh ACC and expects to be operational in the Q4 2013.
b) A trail between Ho Chi Minh ACC and Singapore ACC is currently being discussed and expected in 2014.

5.9   The meeting agreed to **Conclusion 2** and **Action Item 4** to facilitate AIDC implementation in Mekong sub-region as follows:

Conclusion 2: AIDC Implementation
Mekong states agreed to AIDC implementation among en-route ACCs by 2015 with system test planned from 2014 to be determined through coordination among Mekong States' AIDC Point of Contacts. And AIDC Message Set is to be coordinated in accordance to APAC Seamless ATM Plan.

Action Item 4: AIDC Points of Contact
*Mekong States agreed to designate appropriate AIDC Points of Contact to coordinate AIDC test from 2014 and implementation in 2015 by 14 June 2013. Listing of AIDC Points of Contact is attached in **Appendix F**.*

Agenda Item 5.2: Surveillance Data Sharing

5.10   Thailand briefed the meeting on the ICAO Asia-Pacific Seamless ATM Plan concerning the PASL of which the phases of development are divided into two. PASL I is set to be completed by Nov 2015. With PASL I, ATS surveillance data particularly from ADS-B should be shared with neighboring ATC units within high density FIRs. PASL II is targeted to be implemented by Nov 2018. With PASL II, ATS surveillance data particularly from ADS-B should be shared with all neighboring ATC units.

5.11   Cambodia stated that ADS-B was already installed at 3 locations since 2011 and currently implemented as a supplementary surveillance system. Cambodia also informed the meeting that more than 70% of aircraft flying over Phnom Penh FIR are readily ADS-B equipped.

5.12   Lao PDR informed the meeting that there is a plan to install ADS-B at 5 locations after 2015 (2016 – 2025).

5.13   Viet Nam informed the meeting of its plan to conduct an ADS-B trial with Singapore by 2015.

5.14   Myanmar also updated the meeting that Myanmar already signed an agreement with India to share ADS-B surveillance data.

5.15   Thailand briefed the meeting on its ADS-B implementation plan in 2014 at Ubon Ratchathani, Chiang Mai, Bangkok, Samui and Hat Yai.

5.16   IATA suggested that states may find useful information and implementation experiences on ADS-B from the ICAO ADS-B Study and Implementation Task Force (ADS-B SITF).

5.17   The meeting agreed to **Conclusion 3** as follows:

Conclusion 3: Surveillance Data Sharing
The five Mekong ANSPs for Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam, agreed
to the principle Surveillance Data Sharing particularly through ADS-B; where practicable,
radar data sharing should also be considered.

Agenda Item 5.3: AIS Automation

5.18   Lao PDR presented a working paper on Lao PDR's AIS automation system at 4 major
international airports which will be completed by 2015.

5.19   Myanmar updated the meeting of its automation system's certification.

Agenda Item 6:   Operational Contingency Plan

Agenda Item 6.1: Harmonization of Level 2 ATM Contingency Plan

6.1   Lao PDR presented the outcome of the ICAO RACP/TF/2, showing contingency
routes among Yangon FIR, Bangkok FIR, and Vientiane FIR. Lao PDR also requested delegates from
the involved states to further discuss the plan of action after the meeting.

6.2   Cambodia also supported the work on Level 2 Contingency Plan and informed the
meeting of Cambodia's four contingency routes.

6.3   The meeting agreed to **Action Item 5** to support Level 2 ATM Contingency Plan
coordination.

Action Item 5: Bilateral Coordination on Level 2 Contingency Plan
The meeting agreed to the bilateral coordination to work on each state's contingency plan
including but not exclusive to connectivity of ATM Contingency Plan with Cambodia and
ATM Contingency Plan coordination among Lao PDR, Thailand and Viet Nam; States agree
to update progress of bilateral coordination work to AEROTHAI ATM coordinators within 6
months.

Agenda Item 6.2: ASEAN Contingency Plan Questionnaire

6.4   The meeting urged States to complete and submit the ASEAN Contingency Plan
Questionnaire to ASEAN secretariat by 22 June 2013 as attached in **Appendix G**.

Agenda Item 7:   Future Direction

Agenda Item 7.1: Thailand Modernization CNS/ATM System (TMCS)

7.1   Thailand updated the meeting on the progress of its Modernization CNS/ATM
System.

7.2   To resolve current issues including aged system and rigid structure, to prepare for
future demand and to respond to ICAO's demand for the Asia Pacific plan to cope with the growing
traffic, Thailand carries out the Air Navigation Service infrastructure Development Project to increase
its capacity. The modernization of CNS/ATM System is part of the Air Navigation Service
infrastructure Development Project. The modernization of CNS/ATM system includes the
establishment of ATM center, nation-wide enhancement of CNS systems & ATM network and flight

inspection capability increasing. This is to enhance the pre-tactical work in response to growing traffic demand. This project is targeted to be completed by 2014. More details can be found in the attached slide presentation by Thailand (AI-7.1)

Agenda Item 7.2: Myanmar CNS/ATM issues and plans

7.3   Myanmar presented to the meeting its CNS/ATM issues and plans. With the increasing traffic growth, Myanmar proposed several routes realignment. In doing so, Myanmar has asked Thailand and Laos for their cooperation as in **Action Item 6** and **Action Item 7**.

Action Item 6: B465 Route Alignment
Lao PDR supported the B465 route alignment proposal of Myanmar and, therefore, requested Myanmar to submit a formal request letter.

Action Item 7: R207 Route Alignment
Thailand supported the R207 route alignment proposal of Myanmar and, therefore, requested Myanmar to submit a formal request letter.

7.4   The CNS issues facing Myanmar include VHF blind spots, ADS/CPDLC, quality of HF communications and satellite link between Yangon-Bangkok ACC.

7.5   With the help of JCAB, Myanmar is currently trying to identify areas where CNS matters are affecting ATM and resolve the issues. Details can be found in the attached slide presentation by Myanmar (AI-7.2).

Agenda Item 8:   Any Other Business

8.1   The meeting reviewed proposed Working Paper to ICAO Asia-Pacific Seamless ATM Planning Group in regard to comments on the Asia-Pacific Seamless ATM Plan originally drafted by Thailand and agreed to re-submit the Working Paper to the meeting as a joint Working Paper by Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam with minor adjustments as in **Appendix D**.

8.2   The meeting agreed to submitting latest version of the meeting report to relevant ICAO meetings including the upcoming ICAO Asia-Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/24) in June 2013 and meeting of Asia-Pacific Director General Civil Aviation (DGCA/50) in July 2013.

Agenda Item 9:   Date and Venue of the Next Meeting

9.1   Thailand and Viet Nam expressed willingness to be the host of the meeting.

9.2   The meeting agreed that the next meeting will be held in Ha Noi, Viet Nam in June 2013 with dates to be confirmed to avoid major ICAO meetings in the region.

Closing of the Meeting

10.1   In closing the meeting, Mr. Tinnagorn and Mr. Somchit, as co-facilitators of the meeting, thanked all delegates for attendance and active participation in the meeting's discussions.

10.2   IATA thanked Thailand for hosting the meeting and inviting IATA to the meeting. IATA also congratulated the meeting on its efficiency and the good outcomes.