International Civil Aviation Organization

Fifteenth Meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/SG/15)

Bangkok, Thailand, 25 – 29 July 2005

Agenda Item 3:   Review and progress the tasks assigned to the ATM/AIS/SAR/SG by APANPIRG

IMPLEMENTATION OF ATS ROUTE REQUIREMENTS

(Presented by the Secretariat)

SUMMARY

This paper presents information on the tasks assigned to the ATS Route Network Review Task Force (ARNR/TF) to carry out a thorough review of the ATS routes in the Asia/Pacific Region, to update the Basic Air Navigation Plan for the Asia/Pacific Region and identify further route requirements.

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1.   INTRODUCTION

1.1   Significant changes to the ATS route structures in the Asia/Pacific Region in particular in the South China Sea area and under the EMARSSH (Revised ATS Route Structure, Asia to Middle East/Europe, South of the Himalayas) project for routes from Asia to the Middle East and Europe have taken place since 2001. Other route changes had been made by many States in the region, and unfortunately much of this information had not yet been recorded by the ICAO Asia and Pacific Office, and the *Air Navigation Plan – Asia and Pacific Regions* (Doc 9673), Volume I, Basic ANP (BANP) had not been amended, including the EMARSSH routes.

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1.3   With all the ATS route changes that have taken place in recent years, there was an urgent need to incorporate these changes in the BANP and prepare a master database of the routes that have been implemented. At the same time, there was a need to update the five-letter name-codes and coordinates that have been assigned to the significant points on these routes.

2.   DISCUSSION

2.1   In view of the magnitude of the task, the 14th Meeting of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/14, August 2003) was of the opinion that a Task Force should be formed to carry out this work, and accordingly developed the following Conclusion:

> ***Conclusion 14/5   – ATS Route Network Review Task Force***
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> *That, a Task Force comprising representatives from States and appropriate International Organizations be formed to review the ATS route network for the Asia/Pacific Region with draft Terms of Reference as shown in Appendix B to the Report on Agenda Item 2.1.*

2.2   The Task Force met three times as shown below:

        ARNR/TF/1:   6 – 10 September 2004, Bangkok, Thailand

        ARNR/TF/2:   14 – 18 February 2005, Bangkok, Thailand

        ARNR/TF/3:   2 – 3 May 2005, Bangkok, Thailand

        <u>ARNR/TF/1 Meeting</u>

2.3   The ARNR/TF/1 noted that there was an urgent need to update the BANP to include a large number of changes to the ATS routes and assignment of five-letter name-codes with corresponding coordinates for the significant points on these routes, and the route network database maintained by the Regional Office.

2.4   Further, the ARNR/TF/1 recalled that the APANPIRG/15 (August 2004) acknowledged that updating the BANP ATS routes and determining present and future route requirements was a high priority, as States required this information to plan for and provide the appropriate level of air navigation services to meet user requirements.

2.5   The ARNR/TF/1 noted that in support of the work of ARNR/TF/1, APANPIRG/15 had formulated the following Conclusion:

        Conclusion 15/3   –   Review of ATS Route Requirements

        That, States and users undertake a thorough review of their ATS route requirements (including future requirements) and any changes that have been made to existing routes, and submit this information to the ATS Route Network Review Task Force meeting on 6-10 September 2004.

2.6   In light of the foregoing, the ARNR/TF/1 started its work by reviewing the list of ATS routes in Table ATS-1 of the First Edition of the BANP dated 2001, and identified routes no longer required, changes necessary to the routes and new routes that need to be included in the BANP.

2.7   Cambodia presented the ARNR/TF/1 with a proposal to realign and link ATS/RNAV routes to facilitate air traffic movement on routes from Hong Kong – Phnom Penh – Phuket and beyond. The ARNR/TF/1 was advised by Hong Kong, China that the segment IGNIS - Quangngai would need to be reviewed by China in respect to A1 and P901. In this regard, China was planning to improve operations for A1/P901 to be available 24 hours. Also, there would be operational difficulties with the adjacent RNP 10 route L642 in regard to lateral separation and weather deviation procedures. In view of these problems, the implementation of this segment would need to be taken into account by China in its overall airspace planning. Also, safety studies would need to be carried out in respect of other operational factors. Consideration would also need to be given to the harmonization of RVSM flight level orientation schemes being looked at by the RVSM Implementation Task Force.

2.8   Indonesia advised the ARNR/TF/1 that under a continuing restructuring programme, seven new RNP 10 routes and modification to existing routes were programmed to be implemented on 25 November 2004; N645, M635, M774, P763, P648, M522 and M768. The upper level would be changed to the existing non-RNP 10 routes, i.e. A576, A464, G464, B592, B584 and B583. Indonesia proposed to extend A211 from TRK VOR/DME to MNO VOR/DME.

2.9   The Secretariat informed the ARNR/TF/1 that Nepal had presented its requirements to implement routes established by the EMARSSH Task Force in the Kathmandu FIR that could not be implemented as part of the EMARSSH project. These routes were presented to the EMARSSH One-Year Review Meeting in January 2004. It was also noted that implementation planning would be carried out by the Bay of Bengal ATS Coordination Meeting (BBACG). Details of these routes are provided.

2.10   Tahiti who was unable to attend the ARNR/TF/1 had submitted information on the routes contained in the Tahiti AIP to update the regional database. The ARNAR/TF/1 appreciated receiving details of the routes in Tahiti's AIP, however, it was not in a position to comment on the proposal to change G594 without Tahiti and the neighboring States being present.

2.11   Viet Nam presented new route proposals and realignment of routes. Implementation of L644 had been agreed by the States concerned at the Manila Special Coordination Meeting (August 2004), and would be implemented as a southbound route for traffic between Hong Kong, China and Jakarta as well as for traffic to other destinations. The ARNR/TF/1 was informed that the route would be implemented on 20 January 2005.

2.12   In view of the above, the ARNR/TF/1 noted there were constraints in designing airspace that would result in not always being able to provide users with preferred routing. These constraints were well known, and the fact that a direct route could not be implemented, for justifiable reasons, would not in itself constitute a deficiency. In this regard, the ARNR/TF/1 noted that the BANP contained a number of routes that were on the APANPIRG List of Deficiencies that could not be implemented since they were included in the BANP arising from the Third Regional Air Navigation Meeting in 1993.

2.13   IATA used a format to present its route requirements, which was similar to the one used by the Russian/American Coordinating Group for Air Traffic Control (RACGAT). The ARNR/TF/1 agreed that this would be an ideal way to compile and collate the list of routes proposed by States and users. It would also be useful to include a section containing the routes listed in the BANP. Further, in view of the comments made by IATA in respect to the BANP routes not implemented, another section should be included to show these routes. Accordingly, the ARNR/TF/1 agreed to establish the *Asia/Pacific ATS Route Catalogue*. Further information on the development of the Route Catalogue is contained in WP/4.

2.14   The ARNR/TF/1 was advised that the ATS Route Master Database was being prepared by the Regional Office to contain data on ATS routes required in the BANP, ATS routes actually implemented and significant points. This might also be of use as a comparison table showing the ANP requirements and the actual ATS routes implemented. "ATS routes required in the BANP" shows the requirements with data on navaids/significant points that have been implemented. "ATS routes actually implemented" shows all the routes currently implemented regardless of whether it is required by the BANP or not. "Significant Points" lists the actually implemented significant points in an alphabetical order.

ARNR/TF/2 Meeting

2.15   The ARNR/TF/2 reviewed and updated the APANPIRG List of Deficiencies in respect to ATS routes. The Secretariat advised that subsequent to the review of the ATS route deficiencies at the ARNR/TF/1, progress had been reported to the Regional Office by the States concerned.

2.16   The ARNR/TF/2 noted that all routes contained on the APANPIRG List of Deficiencies would be included in the Route Catalogue and full details would be provided on the status of the routes, action being taken, and regular updates would be provided as appropriate. The ARNR/TF/2 considered that the fact that a route was not implemented or partially implemented should not be considered as a deficiency, as the reasons for this were not safety-related. In some cases, the requirement for a route had been established a long time ago and circumstances had since changed. There were also cases that routes could not be implemented for a variety of reasons beyond the capability of the ATS provider to overcome. IATA recognized these problems and where a route was no longer required by users, they would not object to its deletion from the BANP.

2.17   The ARNR/TF/2 agreed that the Route Catalogue fully captured all these circumstances and there was no longer a need to retain them on the List of Deficiencies. Accordingly, it was recommended that APANPIRG/16 should delete them from the List of Deficiencies. The updated List of Deficiencies to be presented to the ATM/AIS/SAR/Sub-Group was provided.

2.18   The ARNR/TF/2 was reminded by the Secretariat that with the extensive implementation of RVSM throughout the Asia/Pacific Region since February 2000, considerable overall improvements had been made to the airspaces in this region. In parallel with the airspace developments, APANPIRG had established the Regional Airspace Safety Monitoring and Advisory Group (RASMAG) to oversee the airspace safety management activities being undertaken to support implementation and ongoing operations in the international airspaces in the region. Attention was drawn to that any airspace change should be accompanied by an appropriate safety assessment as required under Annex 11 – *Air Traffic Services*. A reassessment by these agencies of the these safety assessments, especially in cases where a target level of safety had been established and collision risk model used to determine the safety level, may be necessary as a result of the proposed changes.

2.19   In regard to the EMARSSH route structure, India requested operators to make greater use of under utilized routes such as N877 and P628 to alleviate congestion on L759. IATA advised that L759 was the preferred route to Europe for operators, as it was shorter than N877 by about 185 NM. When the upper winds were favorable, flights would spread more across the route structure. For example, in November 2004, P628 was used by about 50 percent of the flights crossing the Bay of Bengal. IATA advised that operators were in full agreement with utilizing the route structure but would flight plan the shortest route due to operational constraints, and the fact that they did not have advance information during flight planning on route congestion and delays to be expected. In this regard, IATA expressed its full support for early introduction of an ATFM plan for the Bay of Bengal area.

2.20   The ARNR/TF/2 noted that the realignment and linkage of new routes which was proposed by Cambodia at the ARNR/TF/1 would bring positive benefits to airline operators and users in facilitating traffic movement from Hong Kong to Phuket and beyond, and vice versa, with more direct routings, less heading changes, shorter distances, less traffic congestion, time saving, less fuel consumption and more optimum cruising levels. IATA expressed support for the proposal. The States concerned reviewed the proposal and agreed to make changes to the existing routes taking into account the requirements of all parties concerned. The ARNR/TF/2 agreed to include the draft proposal in the Route Catalogue, Chapter 4: *Future Requirement – States*.

2.21   China advised that they had improved the operation on A1/P901 for 24 hour operation, which was implemented on 23 December 2004 as notified by NOTAM. Further improvement was under consideration and studies were ongoing. China advised the ARNR/TF/2 that they agreed with implementation of route segment Quangngai – ITBAM – CAVOI, which could meet the route requirements of Cambodia and IATA. Viet Nam advised that with respect to the portion of the routes under consideration which related to China and Viet Nam, they would consider the issues further when China had completed its studies of the A1/P901 arrangements.

2.22   Vietnam proposed that the ARNR/TF/2 consider implementation of three new ATS routes to meet the traffic demand and to facilitate the current traffic operation as follows:

> a)   between Noibai and Kunming;
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> b)   between Noibai – CATBI – SAMAS − Hong Kong; and
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> c)   between ASSAD and Luang Prabang.

2.23   The ARNR/TF/2 reviewed the new route requirements proposed by Viet Nam. China noted the potential benefits of these routes for airlines. However, due to the small traffic demand and consideration of cost/benefits of their ATC system, the route requirements a) and b) would be a long term consideration, and China required further studies on route requirement c) as well as a) and b).

2.24   As a follow-up item to the ARNR/TF/1, the ARNR/TF/2 reviewed the requirements for A202, A203, A218, A223, R216, R333 and R335 which had not been implemented or partially implemented. The ARNR/TF/2 was advised that IATA had agreed to delete these routes or portions thereof from the APANPIRG List of Deficiencies.

2.25   The ARNR/TF/2 recalled that the ARNR/TF/1 agreed that the Route Catalogue would be an ideal way to compile and collate the list of routes proposed by the States and users. It was also be useful to include the routes listed in the BANP as Chapter 1. This would provide APANPIRG, ICAO, States and users with a comprehensive and user friendly document of all the route characteristics, implementing status and future requirements of ATS routes in the Asia/Pacific region.

2.26   It was noted that the BANP was an official and formal document which took time to amend. Therefore, recent amendments to the BANP would not be published in a timely manner. With the objective of supplementing the BANP and making more timely information available, the Route Catalogue was developed as a living document to be maintained by the Regional Office and updated at least annually and to be posted on the ICAO APAC website: www.icao.int/apac. In light of this, Viet Nam suggested that a foreword to the document should be included on the purpose of the Route Catalogue, the history of the document and relationship with the BANP.

2.27   The ARNR/TF/2 adopted the draft Route Catalogue as updated at this meeting. The ARNR/TF/2 recognized that in developing of the document to this present stage, a considerable effort had been made and expressed appreciation to IATA for the support provided.

2.28   The ARNR/TF/2 adopted the Route Catalogue Version 0.1 as updated.

ARNR/TF/3 Meeting

2.29   The ARNR/TF/3 was informed by Lao PDR that the implementation of B218, B346 and R474 had been agreed among States. B202 and SEA 1 were requested by the States concerned for which coordination had not started.

2.30   The ARNR/TF/3 noted that B465A, which was established between Luan Prabang and Dienbien, was not an appropriate designator due to there being an ATS route requirement for B465 in the BANP. The ARNR/TF/3 considered that retaining B465A may lead to confusion. The ARNR/TF/3 recognized that B346 had been in place for some time but the BANP did not require this route. The proposed realignment of R474 would provide direct routing between Vientiane and LAVOS by bypassing TABOK and NONGHET.

2.31   The ARNR/TF/3 also noted that Lao PDR would start coordination with States concerned on routes B202 and SEA 1. Viet Nam would closely coordinate with the States concerned to revise the designator of B465A, realign R474 and for implementation of the SEA 1 between Luang Prabang – NOHET − Vinh – ASSAD.

2.32   It was recalled that the ARNR/TF/1 examined the ATS Route deficiencies contained on the List of Deficiencies, and noted some progress had been made by the States concerned to address these deficiencies.

2.33   It was recalled that the ARNR/TF/2 noted that all routes contained on the APANPIRG List of Deficiencies would be reviewed and action taken by ARNR/TF, and full details would be provided on the status of the routes, action being taken, and regular updates would be provided as appropriate. These routes have been included in the draft ATS Route Catalogue, which would be submitted to APANPIRG/16 for approval. The ARNR/TF/2 recognized that, in some cases, the requirement for a route had been established a long time ago and circumstances had since changed. There were also cases that routes could not be implemented for a variety of reasons beyond the capability of the ATS provider to overcome.

2.34   The ARNR/TF/3 noted that the amendments to the BANP were an ongoing process to reflect operational needs. Thirteen amendment proposals were developed in 2003 and eleven amendment proposals in 2004. Seventeen amendments were developed so far in 2005, two of which had been approved.

2.35   In light of the foregoing, the Secretariat developed a table showing the current status of the amendment proposals which had been proposed after the finalization of the First Edition of the BANP in 2000. Seventeen amendment proposals relating to ATS route requirements were developed and eight of the proposals had been approved so far since 2000.

2.36   Cambodia advised the ARNR/TF/3 that pursuant to APAC 05/7, they would hold a meeting with Thailand to develop an amendment proposal.

2.37   The ARNR/TF/3 recalled that ARNR/TF/2 had agreed to finalize the Route Catalogue at ARNR/TF/3. Based on the suggestion from a State at ARNR/TF/2, the Secretariat included a foreword to the Route Catalogue on the purpose and the history of the document, and relationship with the BANP. It had also been suggested that a flow chart showing the amendment procedures for the Route Catalogue would be useful and these had been included.

2.38   In considering the role of the Route Catalogue, it was intended that this should be an informal supplementary document to the BANP containing consolidated material from the BANP and related documents, to serve as an aid to States and users for route planning purposes. As such, the Route Catalogue did not replace the BANP or provide material to be used in an operational context. It was noted that the Route Catalogue was primarily a one stop information document on what routes were contained in the BANP, status on implementation and amendment, and future route requirements of States and users intended for planning purposes.

2.39   The ARNR/TF/3 noted that in considering updating and amendment of the Route Catalogue, as the document was meant to be an aid to users, it should be a living document and the amendment process should be kept at an informal level. All the material in Chapters 1, 2 and 3 in respect to the BANP were developed and amended in accordance with established procedures. In this regard, the ARNR/TF/3 agreed that the Route Catalogue simply recorded the current status of the routes in the BANP and did not require any formal approval to be included in the Route Catalogue; therefore it could be left to the Regional Office to update.

2.40   However, in regard to material in Chapters 4 and 5, this would require some additional prior approval process and not simply submitted to the Regional Office on an ad hoc basis by the originator(s). For the material to be placed in the Chapters 4 and 5 of the Route Catalogue, it was suggested that a State, a recognized international organization and/or the related State/ICAO ATS coordination group should be the approving body. States would submit their route proposals in accordance with established ICAO procedures. In the case of route proposals by IATA member airlines, these would be submitted to IATA for processing in accordance with their established practices. For airlines not IATA members, proposals should be submitted to the States concerned who would then consider the amendment proposal.

2.41   In the first instance, as the Route Catalogue was a product of the work of the ARNR/TF established by APANPIRG, its status would need to be decided by APANPIRG, and the means by which it was amended be delegated by APANPIRG to the Regional Office or by some other agreed procedure determined by APANPIRG. Accordingly, the ARNR/TF should make an appropriate recommendation to APANPIRG through ATM/AIS/SAR Sub-Group. The ARNR/TF/3 considered a recommendation to APANPIRG/16 through the 15th Meeting of the ATM/AIS/SAR Sub-Group to adopt the Route Catalogue as a supplement to the BANP, and agreed on the status and method of amending the document (this matter is covered in WP/4 of this meeting).

2.42   The ARNR/TF/3 adopted the Route Catalogue Version 0.2 as updated.

2.43   The ARNR/TF/3 reviewed the draft Catalogue *Foreword* including the flow charts on *Amendments to the Catalogue.* The ARNR/TF/3 finalized the layout and content structure to be included in the Route Catalogue.

2.44   The ARNR/TF/3 was advised that APANPIRG/15 had tasked ARNR/TF to prepare the master database of the routes that had been implemented as well as to thoroughly review and update the ATS routes in the BANP, update the five-letter name-codes and co-ordinates that had been assigned to the significant points on the ATS routes, and undertake a study of future route requirements.

2.45   With regard to the latitude/longitude data, India raised a question concerning how accurate the coordinates should be in the BANP. Some significant points were provided with one digit below a decimal point and others had two digits below a decimal point. The Secretary advised that Appendix 5 of Annex 11 − *Air Traffic Services* provided the aeronautical data quality requirements for en-route navaids and fixes, holding and STAR/SID points, and these were required to meet an accuracy of 100 m. On the other hand, the BANP was not an operational document but a regional planning document, and as such, the BANP was not required to record 100 m accuracy. By established practice, the BANP used one digit below a decimal point and this should be applied to the Route Catalogue entries, as ultimately these were intended to become BANP amendment proposals**.**

2.46   IATA raised a question concerning whether the master database should be maintained considering the laborious work required by the Regional Office and the need to compile accurate data in view of there being widely available commercial sources of this data. The ARNR/TF/3 agreed that, as the data required was provided in the Route Catalogue, there was no longer a need for the Regional Office to compile and maintain a separate master database, and therefore, it could be discontinued.

2.47   Japan was of the opinion that APANPIRG/14 (August 2003, Bangkok) had agreed that there was a need to prepare the master database of the routes and the reason for discontinuation of the master database should be reported to the ATM/AIS/SAR/SG/15 and APANPIRG/16. The ARNR/TF/3 agreed to submit the outcome of that meeting to the ATM/AIS/SAR/SG/15 and APANPIRG/16 and an action item was included in the ARNR/TF Action Plan. .

2.48   The ARNR/TF/3 agreed that the ARNR/TF had met the Terms of Reference established by APANPIRG/15 and its work had been substantially completed. The output of the Task Force was consolidated in an Asia/Pacific ATS Route Catalogue which provided a comprehensive and detailed listing of ATS route requirements and implementation status in the Asia/Pacific region. The routes contained on the APANPIRG List of Deficiencies have been incorporated in the Route Catalogue and the status recorded, which would facilitate future follow-up action. Any outstanding matters could be adequately dealt with by the Regional Office and through correspondence, and there was no need for a further meeting before APANPIRG/16. Accordingly, the ARNR/TF/3 agreed to recommend to APANPIRG/16 that the ARNR/TF be disbanded. Following the disbanding of the ARNR/TF, it was expected that APANPIRG would refer any outstanding work to the appropriate ICAO/State ATS coordination groups and Regional Office.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to

   a)   note the information provided by ARNR/TF and the discussion on the ATS routes contained on the APANPIRG List of Deficiencies in the ATM field;

   b)   consider the recommendation of ARNR/TF to delete the ATS routes from the APANPIRG List of Deficiencies as full details of these routes were contained in the Route Catalogue, which would be kept under review and recommend to APANPIRG/16 that these be deleted;

   c)   consider the ARNR/TF position that the Regional Office does not need to compile and maintain a separate ATS route master database to the Route Catalogue and that this work should be discontinued; and

   d)   note that the ARNR/TF has successfully met the Terms of Reference established by APANPIRG/15, and consider a recommendation to APANPIRG/16 that the ARNR/TF be disbanded.