

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



**REPORT OF THE THIRD MEETING OF THE  
ASIA/PACIFIC AIRSPACE SAFETY MONITORING TASK FORCE  
(APASM TF/3)**

BANGKOK, THAILAND, 22 – 24 JULY 2002

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

Adopted by the Task Force  
and published by the ICAO Asia and Pacific Office

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## **PART I – HISTORY OF THE MEETING**

### **1. Introduction**

1.1 The Third Meeting of the Asia/Pacific Airspace Safety Monitoring (APASM) Task Force was held in Bangkok from 22 to 24 July 2002 at the ICAO Asia/Pacific Office.

### **2. Attendance**

2.1 The meeting was attended by 22 experts from 7 States and 1 International Organization. A list of participants is at Appendix A to this report.

### **3. Officers and Secretariat**

3.1 Ms. Leslie McCormick, Acting Deputy Manager ATS International Staff, Federal Aviation Administration of the United States acted as Chairperson and presided over the meeting throughout its duration.

3.2 Mr. John E. Richardson, Regional Officer ATM, was the Secretary for the meeting. He was assisted by Regional Officers ATM, Messrs. David J. Moores and Hiroshi Inoguchi.

### **4. Opening of the Meeting**

4.1 The meeting was opened by Ms. Leslie McCormick, the Chairperson of the meeting. Ms. McCormick advised the meeting that additional work had been accomplished on the Business Plan for the Regional Airspace Safety Monitoring Agency (RASMA) since the second Task Force meeting and that the focus for this meeting would be to continue to work towards finalization of the Plan.

4.2 Mr. John E. Richardson on behalf of Mr. Lalit Shah, Regional Director of the Asia/Pacific Regional Office, welcomed the participants to Bangkok. Mr. Richardson stated that ICAO considered that the work by the Task Force was extremely important to the Asia/Pacific region. It would enable the region to be prepared to meet the deadline for implementation of 27 November 2003, when the acceptable level of safety objectives applicable to the provisions of ATS within airspaces and at aerodromes should be established by the State or States concerned. This is in accordance with Annex 11 to the Convention on International Civil Aviation.

### **5. Language and Documentation**

5.1 All discussions were conducted in English. Documentation was issued in English. A total of 6 Working Papers and 2 Information Papers were considered by the meeting. A list of the Working and Information Papers is at Appendix B.

## **PART II - REPORT ON AGENDA ITEMS**

### **Agenda Item 1: Adoption of Agenda**

1.1 The meeting considered the provisional agenda and adopted it as the agenda for the meeting:

- Agenda Item 1: Adoption of Agenda
- Agenda Item 2: Review of the airspace safety system performance monitoring structure
- Agenda Item 3: Review the proposed Business Plan
- Agenda Item 4: Financial arrangements
- Agenda Item 5: Review the action plan
- Agenda Item 6: Future Work – Meeting Schedule
- Agenda Item 7: Other Business

### **Agenda Item 2: Review of the airspace safety system performance monitoring structure**

#### Datalink and RVSM Monitoring Services by Japan

2.1 The meeting recalled that at APASM/TF/2 Japan presented two Working Papers (WPs/9 and 11), which outlined the current arrangements for the Central Reporting Agency (CRA) under IPACG - FANS Interoperability Team (FIT), and expressed their intention to provide datalink and RVSM monitoring services for adjacent FIRs in addition to Japan's FIRs, and a framework for the monitoring services under consideration.

2.2 In regard to datalink, the meeting was advised that Japan would be able to provide datalink monitoring services under the framework agreed by ICAO. The area covered by this service would be expanded to East Asia and include FIRs adjacent to Japan's FIRs. Since the multi-purpose transport satellite (MTSAT) was designed to cover most of the Asia/Pacific Region, it would also be appropriate for Japan to offer its service to the South China Sea area.

2.3 With regard to monitoring of RVSM, the meeting noted that Japan had been a member of the ICAO Separation and Airspace Safety Panel (SASP) for many years and had contributed to its work to provide RVSM procedures. Also, Japan had developed the Navigation Accuracy Measurement System (NAMS). Thus, Japan was confident it had the capability to provide RVSM monitoring services covering Japan's FIRs and adjacent FIRs, and to implement the necessary systems agreed by ICAO through the RMA.

#### Monitoring of RVSM Operations in the Asia/Pacific Region

2.4 The meeting was provided with comprehensive background information concerning the development of RVSM activities, including the establishment of the ICAO RVSM Implementation Task Force (RVSM/TF) and APARMO, which was the RVSM monitoring agency for the Region.

2.5 The meeting recalled that APANPIRG/12 was informed by Thailand that Aeronautical Radio of Thailand (AEROTHAI) was willing to assist ICAO on behalf of the Department of Aviation (DOA) of Thailand in the safety assessment programme for the implementation of RVSM and other monitoring requirements as determined by APANPIRG. Such services would be provided on cost-recovery basis of AEROTHAI's operating expenses only. The APASM/TF/2 meeting was advised that

APANPIRG had acknowledged the offer from AEROTHAI to become the Regional Monitoring Agency. However, until this offer was endorsed by APANPIRG, AEROTHAI would only make internal preparations. In the event that an endorsement was given by APANPIRG, AEROTHAI would be functional and able to assume responsibilities for the Asia Region within 6 months of notification.

2.6 Thailand provided the meeting with updates on the status of transition arrangements for RVSM monitoring responsibilities for Asia from the FAA Technical Center to AEROTHAI. The meeting noted that the RVSM Task Force at its fourteenth and fifteenth meetings (RVSM/TF/14 and 15) held in Bangkok, 30-31 May and 3-7 June 2002 respectively, acknowledged information on the progress of the transfer of responsibility for RVSM monitoring between the FAA Technical Center and AEROTHAI. The RVSM/TF was informed of the recent engagement between the AEROTHAI and FAA Technical Center in the area of airspace analysis and data collection process pertaining to RVSM, as well as arrangements for training of personnel from AEROTHAI at the FAA Technical Center. The RVSM/TF meetings were also informed of progress under way for the signing of a Memorandum of Understanding (MOU) between AEROTHAI and FAA.

2.7 Following the RVSM/TF/14 and 15 meetings, AEROTHAI advised that they were preparing an infrastructure for the monitoring agency for RVSM implementation, which included:

- a) arranging a working area for the monitoring operations;
- b) installing equipment required for airspace analysis and data collection process pertaining to RVSM implementation;
- c) conducting the website of the monitoring agency for RVSM operations in the Asia Region; and
- d) determining the cost of monitoring services.

2.8 AEROTHAI had proposed to FAA dates for safety assessment training at the FAA Technical Center for RVSM implementation. The exact dates for training would be confirmed by the FAA. Nonetheless, this training was expected to be completed by the end of September 2002.

2.9 The infrastructure of the monitoring agency for RVSM implementation would be expected to be in place and ready for use by the time training with FAA was completed. AEROTHAI reassured the meeting of its commitment and readiness to assume responsibility as the monitoring agency for RVSM operations in the Asia Region by October 2002.

2.10 The meeting recognized that transition of APARMO responsibilities for Asia is an urgent issue and should not be delayed until the work of the APASM/TF is finished. Recalling that APASM/TF/2, in principle, considered that AEROTHAI would likely be given a role in the proposed regional structure, and should continue to put in place the necessary arrangements. The meeting agreed to take into account AEROTHAI's progress in the development of a regional airspace safety monitoring structure, including the arrangements in progress between AEROTHAI and FAA.

**Agenda Item 3: Review the proposed Business Plan**

3.1 The meeting reviewed the RASMA Business Plan, which had been developed by members from the framework completed at the APASM TF/2 meeting. The Business Plan was the primary output of the Task Force and provided the means for APANPIRG/13 to evaluate the rationale for establishing a regional airspace safety monitoring agency. The meeting discussed the plan in detail and further improvements were incorporated. Also, the meeting agreed that it was important that the plan presented an accurate picture of the cost of operating RASMA and further detailed information was required before a final draft could be completed. To assist in obtaining an accurate estimate of navigation charges that could be collected in the region, the latest traffic forecast figures for 2001 prepared by the Asia/Pacific Traffic Forecast Group were presented to the meeting.

Development and Processing of a Proposal for a Multinational ICAO Asia/Pacific Air Navigation Facility/Service

3.2 The meeting noted that Part II of the *Facilities and Services Implementation Document (FASID), Asia and Pacific Regions (Doc 9673)* contains general guidelines on the establishment and provision of a multinational ICAO ASIA/PAC air navigation facility/service. These guidelines reflect ICAO policies for regional planning and implementation of facilities and services required for air navigation within the region. They also recognize that costs may be recovered for facilities and services provided for under the ASIA/PAC Regional Plan as approved by the Council.

3.3 It was considered by the meeting that it was relevant to use these general guidelines when developing the RASMA Business Plan.

3.4 It was further noted that these guidelines were developed by APANPIRG for incorporation in the ASIA/PAC ANP and for use in the ASIA/PAC Regions to facilitate State's collective efforts for cost effective implementation. They also recognize the principles that costs may be recovered for facilities and services provided for and implemented under the ASIA/PAC Regional Plan as approved by the Council.

3.5 The guidelines also covered areas such as:

- a) Definitions of a Multinational ICAO Air Navigation Facility/Service;
- b) Development and Processing of a proposal for a Multinational ICAO ASIA/PAC Air Navigation Facility/Service; and
- c) Financial, Managerial and other Contractual aspects.

3.6 The meeting recognized that all of these areas would assist in the development of the RASMA Business Plan in accordance with ASIA/PAC FASID. The RASMA Business Plan Version 4.4 is contained in Appendix C.

3.7 A copy of the General Guidelines on the Establishment and Provision of a Multinational ICAO ASIA/PAC Air Navigation Facility/Service is at Appendix D to this Report.

Proposal for a Regional Airspace Safety Monitoring Agency Implementation Task Force

3.8 Based on APANPIRG accepting the proposal of this Task Force to establish a RASMA, the meeting considered that it would then be necessary for further activities to occur in order to implement this agency. Those activities would include, but not be limited to, the following:

- a) identification of States and agencies to provide monitoring services;
- b) prepare an appropriate amendment to the ASIA/PAC Regional Air Navigation Plan for the establishment of RASMA;
- c) prepare appropriate multi-national “administrative agreement(s)” for the development, implementation, operation and maintenance of RASMA;
- d) identify responsibilities for States to provide data to RASMA;
- e) determine responsibilities and coverage of monitoring agencies (regional, by State, by function or major traffic flow);
- f) determine appropriate support and expertise for RASMA; and
- g) examine information to determine an appropriate level for user charges for safety monitoring.

3.9 The meeting noted that to accomplish the tasks identified above, as well as in the FASID General Guidelines on the Establishment and Provision of a Multinational ICAO ASIA/PAC Air Navigation Facility/Service, this would require specialized expertise, especially in the financial and legal areas not currently available in the APASM/TF.

3.10 To undertake the above tasks, it was agreed to recommend to APANPIRG/13 that a RASMA Implementation Task Force be established.

3.11 The meeting discussed the implications of Amendment 40 to Annex 11 in regard to airspace safety management programmes on the functioning of RASMA, and whether States were in a position to provide the necessary safety management services. The meeting recognized that the Annex 11 provisions were not supported by detailed guidance material and States may have difficulty implementing these provisions. Therefore, the meeting considered it was important for ICAO to provide adequate guidance material. Further, the meeting agreed that it was not the responsibility of this Task Force to deal with these matters in detail, and it was expected that APANPIRG/13 would address this subject.

**Agenda Item 4: Financial arrangements**

4.1 Financial arrangements have been addressed in the Business Plan mentioned under Agenda Item 3. The meeting agreed that funding of RASMA would be provided by user charges and in the financial part of the Business Plan it would be necessary to provide more detailed information on costs. It was recognized that further work was required on the Plan to provide more comprehensive information. In regard to collecting user charges, the meeting agreed that IATA was in the best position to provide this service. In this regard, IATA advised the meeting that they would be willing to collect these charges.

**Agenda Item 5: Review the action plan**

5.1 The APASM TF Action Plan, which was formulated at APASM TF/1 and updated at APASM TF/2, was further updated and is at Appendix E.

**Agenda Item 6: Future Work – Meeting Schedule**

6.1 The meeting reviewed progress to complete its work programme, and agreed that the following issues had been resolved:

- a) there is an urgent requirement to establish RASMA;
- b) a Business Plan would be used to present the case for RASMA to APANPIRG/13;
- c) cost recovery for the establishment and operation of RASMA would be met by user charges and these should be levied by a single charge to all users;
- d) IATA was in the best position to collect charges directly from users; and
- e) the basic organizational structure, duties and responsibilities had been prepared.

6.2 The meeting recalled APANPIRG/12 Decision 12/44 - **Establishment of a Task Force to Develop an Airspace Safety System Performance Monitoring Structure for the Asia/Pacific Region**, and agreed that this Task Force could complete its work prior to APANPIRG/13 to examine in detail the requirements for and functionality of a regional airspace safety monitoring agency as required by APANPIRG. In view of progress achieved at this meeting, and outstanding issues to be resolved to complete the Business Plan, further material would need to be developed. Therefore, the meeting agreed that in order to ensure that APANPIRG/13 was given sufficient detailed information on the establishment of RASMA, it would be necessary to convene one more meeting of the Task Force before APANPIRG/13.

6.3 The meeting noted that completing the Business Plan was the primary outstanding task. However, to complete the Plan, it would not be necessary to hold a meeting of the full Task Force. It was agreed that the outstanding work could be best dealt with by a working group and the following members agreed to participate: Australia, Japan, Singapore, Thailand, US and IATA. The meeting recognized that holding an additional meeting could lead to funding difficulties, and it would be necessary for members to confirm with their organizations whether they would be able to attend. Also, the venue would need to be decided, although Bangkok would be preferred if members could obtain the necessary funds. In view of the short time available before APANPIRG/13 (9-13 September), it was agreed that the working group meeting would be held from 21 to 23 August, and a venue would need to be decided by the end of July.

**Agenda Item 7: Other business**

Services Available from Australia to Support Asia/Pacific Airspace Safety Monitoring Agency

7.1 The meeting was informed by Australia that Australian organizations with experience in the development of standards for and the implementation and monitoring of enhancements to airspace, had met to consider what services could be offered by Australia to an Asia/Pacific Airspace Monitoring



Agency, if the Agency as currently envisaged was established. The organizations represented at that meeting were an aviation safety regulator (CASA), the Australian government department responsible for transport (DOT), the air navigation service provider (Airservices Australia) and a specialist commercial company. The meeting produced a list of the range of services that could be provided by individual organizations or by a teaming relationship within the group.

7.2 Australia presented the meeting with this list of services to assist the Task Force in identifying the resources needed and available within the region to support the role or activities of a regional monitoring agency. It was noted that this list did not, at this stage, represent a formal offer by Australia to provide these services even on a cost recovery basis. The services available from Australia include the following:

- a) Safety Management Systems: The implementation of safety management systems is a requirement of Amendment 40 to Annex 11. The safety management system provides a methodology for the analysis, monitoring and reporting of safety aspects of air traffic management. The methodology may be applied in the assessment of change proposals and on-going operations.
- b) Establishment and Maintenance of Approval Databases: Experience with the implementation of RVSM within the Region and also in domestic airspace has demonstrated an ability to manage aircraft approval registers.
- c) Monitor Height-Keeping and Horizontal Position-Keeping Performance: Monitor vertical and horizontal achieved position against intended position utilising independent truth systems. Achieve accurate data through the correction for external influences such as barometric pressure and GNSS position and time corrections.
- d) Data collection: Utilizing the capabilities of the safety management system, Australia is able to effectively capture and collate performance discrepancies.
- e) Analyzes: Analyze a full range of data to evaluate predicated and achieved safety levels.

CSSI, Inc. Offer to Support Asia/Pacific Airspace Safety Monitoring

7.3 The meeting was informed by the representative of CSSI, Inc. that CSSI has been providing support to the Asia/Pacific Approvals Registry and Monitoring Organization (APARMO). CSSI, Inc. is an award-winning, privately owned, technical and engineering services company headquartered in Washington, D.C. specializing in system analysis and engineering, application development, information technology, and technical program management. Principal clients include the FAA, the National Aeronautics and Safety Administration, and the U.S. Department of Defense. In addition, CSSI has a working relationship with Integrity Scientific Research, Inc. The meeting was advised that CSSI, Inc is prepared to provide support to the regional group or States assuming Safety Performance Monitoring duties in the Asia/Pacific Region.

7.4 It was noted that CSSI's relevant experience included:

- a) establishment of the APARMO source documentation, database, website and additional program support from inception to present;
- b) development of aircraft operations and airworthiness approval documentation;

- c) development of the ICAO Asia-Pacific RVSM Task Force Program Plan and aircraft fleet upgrade estimates;
- d) GPS-based Monitoring System operations;
- e) acting Chairman of Aircraft Operations and Airworthiness (OPS/AIR) Working Group of the ICAO Asia-Pacific RVSM Task Force;
- f) Collision Risk Modeling support;
- g) development of cost-benefit analysis and State regulatory documentation for RVSM implementation in the Asia-Pacific, West Atlantic Route System (WATRS), and U.S. Domestic airspace;
- h) planning and presenting technical presentations at nine RVSM seminars associated with the implementation of RVSM in the North Atlantic, Asia-Pacific, West Atlantic Route System and Middle East Regions;
- i) providing technical expertise to Asia-Pacific RVSM Task Force Working Groups;
- j) active participants in various regional and safety forums;
- k) support of pre-implementation safety assessment for Northern Canadian domestic airspace;
- l) maintenance of RVSM aircraft manufacturer service bulletin data;
- m) support of analysis of traffic data and fleet equipage to assess system readiness, perform cost analysis, and simulate the ATC environment;
- n) support of technical assistance and training to States and aircraft operators regarding the RVSM approval process and monitoring procedures;
- o) development of aircraft operator training package for self monitoring;
- p) content development and maintenance of FAA RVSM web pages; and
- q) implementation support and data analysis associated with RNP-10 in the Pacific.

7.5 It was also noted that CSSI would be offering support to the Regional Group or States that would assume the duties and responsibilities of the new safety monitoring organization, which included the following:

*Vertical/RVSM*

- 1) Safety Oversight/Monitoring (reoccurring or ongoing process)
  - a. Risk Calculation/Target Level of Safety Assessment
  - b. Data Analysis/Collision Risk Parameters
  - c. Data Scrutiny/Evaluation
- 2) Data Collection
  - a. Approvals

- b. Traffic
  - c. Monitoring Measurements
  - d. Large Height Deviations
- 3) RMA Operations
    - a. Work flow definition
    - b. Documentation
    - c. Procedures
    - d. Internal/external coordination
  - 4) Remedial Action
    - a. Coordination
    - b. Tracking
    - c. Follow-up
  - 5) Documentation/State ATS Provider and Operator Information
    - a. Web Presence
    - b. Data Format
    - c. Procedures
    - d. Forms
    - e. Monitoring Goals
  - 6) Aircraft Height Keeping Performance Monitoring
    - a. Monitoring Infrastructure
    - b. Monitoring Data Analysis
  - 7) Database Operations
    - a. Design/Structure
    - b. Procedures
    - c. Work flow establishment
    - d. Data Exchange with Other RMAs
  - 8) Reporting
    - a. Technical papers
    - b. Briefings
    - c. Data summaries

*Horizontal/RNP*

- 1) Data Collection/Analysis/Scrutiny
    - a. Approvals
    - b. Gross Navigation Errors
  - 2) Risk Calculation
  - 3) Remedial Action
  - 4) Reporting
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**LIST OF PARTICIPANTS**

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**LIST OF WORKING and INFORMATION PAPERS**

**WORKING PAPERS**

<b>WP No.</b>	<b>Date</b>	<b>Agenda Item</b>	<b>Presented by</b>	<b>Subject</b>
1	22/7/02	1	Secretariat	Provisional Agenda
2	22/7/02	5	Secretariat	APASM Task Force Action Plan
3	22/7/02	3 & 5	Australia U.S.A.	Development and Processing of a Proposal for a Multinational ICAO ASIA/PAC Air Navigation Facility/Service
4	22/7/02	3	IATA	Proposed Business Plan
5	22/7/02	3 & 5	United States	Proposal for a Regional Airspace Safety Monitoring Agency Implementation Task Force
6	23/7/02	2	Japan	Progress of Study of Datalink and RVSM Monitoring Services by Japan
7	22/7/02	2	Secretariat	Monitoring for RVSM Operations in the Asia/Pacific Region

**INFORMATION PAPERS**

<b>IP No.</b>	<b>Date</b>	<b>Agenda Item</b>	<b>Presented by</b>	<b>Subject</b>
1	22/7/02	2	Secretariat	Terms of Reference and Guiding Principles for the APASM/TF
2	22/7/02	7	Australia	Services available from Australia to support an Asia/Pacific Airspace Safety Monitoring Agency
3	23/7/02	7	United States	CSSI, Inc. offer to support Airspace Safety Performance Monitoring for the Asia/Pacific Region



**DRAFT**

**REGIONAL AIRSPACE SAFETY  
MONITORING AGENCY  
(RASMA)**

**BUSINESS PLAN**

**Prepared**  
**for the**  
**APASM Task Force**

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**LIST OF ABBREVIATIONS**

ACC	Area Control Centre
ADS	Automatic Dependent Surveillance
ADS – B	ADS - Broadcast
ADC – C	ADS - Contract
AEROTHAI	Aeronautical Radio of Thailand
APAC	Asia Pacific
APANPIRG	Asia Pacific Air Navigation Planning and Implementation Regional Group
APARMO	Asia Pacific Airspace Monitoring Organisation
APASM	Asia Pacific Airspace Safety Monitoring Task Force
ARINC	Aeronautical Radio Incorporate
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Services
BAC	Boeing Aircraft Corporation
BoB	Bay of Bengal
CENPAC	Central Pacific
CEPAC	Central East Pacific
CNS/ATM	Communication, Navigation and Surveillance
CPDLC	Controller to Pilot Data Link Communications
CRA	Central Reporting Agency
CRM	Collision Risk Modelling
EMARSSH	Europe, Middle East, Asia Route Structure South of the Himalayas
FAA	Federal Aviation Administration
FANS	Future Air Navigation Systems (Refers particularly to FANS1/A systems of Boeing and Airbus)
FATBOB	FANS Action Team for Bay of Bengal
FIR	Flight Information Region
FIT	FANS Interoperability Team
GMS	GPS Monitoring System
GMU	GPS Monitoring Unit
GPS	Global Positioning System
IPACG	Informal Pacific ATS Co-ordinating Group
ISPACG	Informal South Pacific ATS Co-ordinating Group
JAA	Joint Aviation Authority
JAR	Joint Aviation Regulations
NOPAC	North Pacific
PAC	Pacific
PACOTS	Pacific Organised Track System
RASMA	Regional Airspace Safety Monitoring Agency
RNAV	Area Navigation
RNP	Required Navigation Performance
RVSM	Reduced Vertical Separation Minimum
SITA	Société Internationalé de Telecommunications Aeronautiques
SCS	South China Sea
SOPAC	South Pacific
TLS	Target Level of Safety ( $5 \times 10^{-9}$ fatal accidents per flight hour per dimension for en-route systems in the Asia Pacific Region.

## 1. EXECUTIVE SUMMARY

1.1 Airspace safety monitoring activities are currently being undertaken by numerous States and Organisations in the Asia Pacific region. Taking into account the technological and geographical diversity of the necessary organisational scenarios, it was agreed by APANPIRG that a consolidation of activities under one regional programme would be in the best interests of air safety for the Asia and Pacific Region. An initial safety monitoring systems matrix was developed taking into consideration current and future requirements and whilst not conclusive, by adopting a generic management structure, flexibility would allow the timely introduction of new CNS/ATM systems applications as they are implemented.

1.2 Pursuant to the conclusion at APANPIRG/12, the Asia Pacific Airspace Safety Monitoring (APASM) Task Force was established to investigate the modalities for the formation of a regional business unit to manage airspace safety monitoring activity. APASM TF/1 decided to develop a business plan that could be used as a template for the establishment of a Regional Airspace Safety Monitoring Agency (RASMA). This Business Plan sets out those necessary modalities and procedures to achieve APANPIRG objectives.

1.3 Information on establishing a target level of safety (TLS) of  $5 \times 10^9$  fatal accidents per flight hour per dimension for en-route systems is contained in Annex 11, Attachment B, which was adopted by the Twelfth Meeting of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) as the TLS for the Asia Pacific Region

1.4 The business will be known as the Regional Airspace Safety Monitoring Agency – Asia Pacific (RASMA – APAC) to reflect the prime functions and mandated responsibilities of the enterprise.

1.5 The RASMA will be operated under the delegated Authority of the member States in the form of a multinational administrative agreement. Those member States who are party to the RASMA Agreement are listed in Appendix A –1.

1.6 The initial objective of RASMA is to establish a robust and functional management team to ensure that the required functions of the RASMA are provided to all regional airspace and safety authorities, air traffic service providers and aircraft operators, in an efficient and cost effective manner.

1.7 A five member Board will be appointed by a simple majority of APAC States for a period of three years. In addition the Board will have a member appointed by Aircraft Operators. The ICAO Regional Director, or nominated representative, will be an ex-officio member.

1.8 The success of this business enterprise on behalf of the region must be assured. Without the cost-effective availability of airspace safety monitoring and evaluation services, the region will be unable to sustain the current development of airspace efficiencies and communications services. Because of the mandatory and very specialised nature of these services, they will be provided by a monopoly provider (RASMA). The services form an essential part of the international airspace operational management and as such have an equal draw on adequate operational funds.

1.9 At present, airspace safety initiatives such as APARMO and the ISPACG CRA operate with financial and operational independence. It is proposed that this income be formally collected through RASMA and the requisite technical services then be contracted out to the respective companies for the provision of safety monitoring services.

1.10 The region has, on a collective basis, already been successful in establishing aircraft altimetry system performance monitoring services on a “user pays” basis. In addition airspace data collection, reduction and safety risk assessments have been carried out for the region using human and technical resources donated by some States. The former will continue to be used, while the users under the management of the RASMA will reimburse the latter.

1.11 The States within the Asia Pacific region have decided through APANPIRG that it would be in their best collective safety, efficiency and administrative interests to have one central agency take the overall responsibility for the functions associated with airspace safety monitoring and safety assessments. In many cases, because of the large oceanic areas of the Region, RASMA will also be asked to provide services within the sovereign airspace of some smaller States encompassed by the high seas. The RASMA will hold an exclusive contract for regional airspace safety monitoring and safety assessment services.

1.12 It is recognised that the cost of many of these safety services will be recovered either directly or indirectly from the users of the airspace. The provision of resources to meet States' obligatory safety obligations will be met through a user charges levy based on a unit cost per flight in the Asia Pacific region. The following table outlines the current estimated costs for regional safety monitoring services.

Description	Estimated Annual Cost (US\$)
RASMA Office Overheads	300,000
Airspace traffic collision risk modelling (CRM)	100,000
Aircraft altimetry system monitoring functions (APARMO)	760,000
Database maintenance for the region (APARMO)	500,000
FANS Central Reporting Agency (CRA)	2,000,000
TOTAL	3,660,000

1.13 From traffic figures supplied by both IATA and ICAO, it is estimated that there will be 800,000 flights in the Asia Pacific Region in 2002. Based on these figures and assuming that all airspace users will equally contribute to the RASMA financing process, the overhead cost is calculated at US\$5.00 per flight.

1.14 The stakeholders served by RASMA are a diverse group, not all of which have a financial obligation, or in some cases a financial capability, to contribute to its operation. All however have an interest in the output of the agency in terms of the safety assurance product due to its mandate by ICAO provisions or the use of the airspace for international operations by their national aircraft. It is expected that benefits in the form of better utilisation of airspace through the timely implementation of CNS/ATM will transform directly into cost savings to both the airspace users and ATM providers.

1.15 This Business Plan will be put into effect through Regional Agreement and suitable administrative arrangements being undertaken through the appropriate establishment of Authority.

## 2. INTRODUCTION

2.1 Provision for the establishment of safety management and monitoring programmes is provided for by ICAO standards and recommended practices as specified in Annex 11 to the Chicago Convention. As stated in Annex 11, Section 2.26 – ATS Safety Management: *States shall implement systematic and appropriate safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes.* Further, Annex 11 requires that, *as of 27 November 2003, the acceptable level of safety and safety objectives applicable to the provisions of ATS within airspace and at aerodromes shall be established by the State or States concerned.* When applicable, safety levels and safety objectives should be established on the basis of regional air navigation agreements. ATS safety management activities are further emphasised in PANS ATM, ICAO DOC 4444, Paragraph 2.3.

2.2 Information on establishing a target level of safety (TLS) of  $5 \times 10^9$  fatal accidents per flight hour per dimension for en-route systems is contained in Annex 11, Attachment B, which was adopted by the Twelfth Meeting of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) as the TLS for the Asia Pacific Region

2.3 The current airspace safety monitoring activities are currently being undertaken by numerous States and Organisations in the Asia Pacific region. Taking into account the technological and geographical diversity of the necessary organisational scenarios, it was agreed that a consolidation of activities under one regional programme would be in the best interests of air safety for the Asia and Pacific Region. An initial safety monitoring systems matrix was developed taking into consideration current and future requirements and whilst not conclusive, by adopting a generic management structure, flexibility would allow the timely introduction of new CNS/ATM systems applications as they are implemented.

2.4 Pursuant to the conclusion at APANPIRG/12, the Asia Pacific Airspace Safety Monitoring (APASM) Task Force was established to investigate the modalities for the formation of a regional business unit to manage airspace safety monitoring activity. APASM TF/1 decided to develop a business plan that could be used as a template for the establishment of a Regional Airspace Safety Monitoring Agency (RASMA). This Business Plan sets out those necessary modalities and procedures to achieve APANPIRG objectives.

2.5 The States within the Asia Pacific Region decided through APANPIRG that it would be in their best collective safety, efficiency and administrative interests to have one central agency take the overall responsibility for the functions associated with airspace safety monitoring and safety assessments. In many cases, because of the large oceanic areas of the Region, the agency will also be asked to provide services within the sovereign airspace of some smaller States encompassed by the high seas. The RASMA will be responsible for assigning and managing contracts for regional airspace safety monitoring and safety assessment services as required.

2.6 Adequate resources are available in the region from various States and commercial entities, but there is no centralised management of these resources. With the ICAO requirement for more formal and collective airspace safety assessments, the idea of creating a single regional airspace safety monitoring and assessment agency was developed.

2.7 In developing the RASMA organisational structure and functions, the information provided in the Asia Pacific Facilities and Services Implementation Document (FASID) for establishment of has been taken into account.

### **3. BUSINESS NAME**

3.1 The business will be known as the Regional Airspace Safety Monitoring Agency – Asia Pacific (RASMA – APAC) to reflect the prime functions and mandated responsibilities of the enterprise.

### **4. ESTABLISHMENT OF AUTHORITY**

4.1 The RASMA will be operated under the delegated Authority of the member States in the form of a multinational administrative agreement. Those member States who are party to the RASMA Agreement are listed in Appendix B.

### **5. GEOGRAPHICAL AREA**

5.1 The boundaries of RASMA activity will be initially confined to the ICAO ASPAC Region. This represents approximately 35% of the world's commercially used airspace and contains the world's three most populated countries. The region also contains the world's largest oceanic area and the most dispersed island archipelagos.

## 6. OBJECTIVES

### 6.1 Business Objectives

6.1.1 The initial objective of RASMA is to establish a robust and functional management team to ensure that the required functions of the RASMA are provided to all regional airspace and safety authorities, air traffic service providers and aircraft operators, in an efficient and cost effective manner.

6.1.2 The objectives proposed for the airspace safety monitoring agency are to:

- a) Contribute to compliance with Annex 11 changes requiring system airspace safety management within the Asia Pacific region by 2003;
- b) Contribute to meeting the agreed quantitative safety goal for Asia Pacific region established by Conclusion 12/41 of APANPIRG/12 and any goals established by future regional agreements;
- c) Contribute to making the Asia Pacific region a model for comprehensive airspace safety system performance monitoring structure; and
- d) Contribute to fostering timely implementation of CNS/ATM within the Asia Pacific region.

6.1.3 The establishment of a professional management team, which will provide the necessary daily services to the air transport industry to meet their safety monitoring obligations, will achieve the objectives of RASMA.

### 6.2 Management Organisation

#### 6.2.1 Board Members

A five member Board will be appointed by a simple majority of APAC States for a period of three years. In addition the Board will have a member appointed by Aircraft Operators. The ICAO Regional Director, or nominated representative, will be an ex-officio member.

#### 6.2.2 Member Limitations

6.2.2.1 Board members will not be directly involved in the delivery of any contract, or service<sup>1</sup> and will not be rewarded<sup>2</sup> for their services.

6.2.2.2 Board membership will include qualified management, financial, technical and operational expertise.

#### 6.2.3 Roles of the Board

The role of the Board is to establish the scope of works to be undertaken to meet regional requirements for:

- a) the airspace functions to be monitored;
- b) the airspace to be monitored, and
- c) the contractors to be appointed in order to achieve the required scope of works.

<sup>1</sup> This does not preclude a State with a Board member from participating as a contractor or as a provider of a service to the RASMA.

<sup>2</sup> RASMA may pay travel costs for Directors traveling for Agency business purposes.

#### **6.2.4 Contract Establishment**

The Board will establish contract scopes for:

- a) What is to be monitored;
- b) What area is to be monitored, and
- c) What tasks form an integral part of the respective contracts.

#### **6.2.5 Evaluation and Selection of Contractors**

The Board will maintain overall responsibility for:

- a) Contract supervision
- b) Approval of payments
- c) Financial management
- d) Budget
- e) Revenue
- f) Expenses

#### **6.2.6 Reporting**

The Board will report<sup>3</sup> on behalf of RASMA to member States and APANPIRG.

#### **6.2.7 Governance**

Financial and general governance will follow international practices.

### **6.3 Business Success**

The success of this business enterprise on behalf of the region must be assured. Without the cost-effective availability of the required standard of airspace safety monitoring and evaluation services, the region will be unable to sustain the current development of airspace efficiencies and communications services. Because of the mandatory and very specialised nature of these services, they will be provided by a monopoly provider (RASMA). The services form an essential part of the international airspace operational management and as such have an equal draw on adequate operational funds.

### **6.4 Financial History**

6.4.1 Adequate resources have been made available in the region for the provision of all of the services now envisaged as being placed under the management control of RASMA. There is no reason to believe that a single agency should be anything other than cost effective to the industry as a whole.

6.4.2 At present, airspace safety initiatives such as APARMO and the ISPACG CRA operate with financial and operational independence. It is proposed that this income be formally collected through RASMA and the requisite technical services then be contracted out to the respective companies for the provision of said services.

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<sup>3</sup> The Board is responsible to the Contracting States under the terms of the Regional Agreement.



## 7 DUTIES AND RESPONSIBILITIES

The following is a provisional list of duties and responsibilities for the RASMA:

### 7.1 General

- a) To assume overall responsibility for application of all specialised systems used to monitor navigational, height-keeping and communications system performance;
- b) To conduct periodic examinations of traffic movements within Asia Pacific airspace as a means to estimate parameters of models used in application of approved risk methodologies;
- c) To develop the means to communicate information related to adverse trends in risk to specialist groups and to States within the Asia Pacific region for appropriate review and action;
- d) To conduct periodic assessments of risk within Asia Pacific airspace;
- e) To develop the means for summarising and communicating the results of risk assessments and related information to the APANPIRG and other appropriate groups and organisations within the Region, and
- f) To draft consequential amendments to the ICAO Regional Supplementary Procedures and other associated documentation.
- g) To establish and maintain databases containing the results of navigation performance monitoring, large lateral navigation deviations, aircraft height keeping performance monitoring, altitude deviations of 300 ft or more within Asia Pacific region airspace; and to include in the databases the results of Asia Pacific region requests to operators and States for information explaining the causes of observed deviations;
- h) To provide a means for identifying non-approved operators using Asia Pacific airspace where a State approval for RVSM, RNP or other CNS/ATM operations is required; and notifying the appropriate State approval authority;
- i) To assess compliance of operators, aircraft and communications systems in meeting performance requirements related to implementation and safe use of changes to separation standards and other relevant CNS/ATM improvements in Asia Pacific airspace;
- j) To provide timely information on changes of RVSM monitoring status of aircraft type classifications to State authorities and operators;
- k) To establish and maintain central registries of State approvals of operators and aircraft using Asia Pacific region airspace for reduced vertical separation minima (RVSM), required navigation performance (RNP) and other CNS/ATM applications;
- l) To coordinate and liaise with other regional organisations to facilitate the transfer of aircraft approval data ensuring inter-regional harmonisation and coordination;
- m) To provide timely information on changes of RVSM monitoring status of aircraft type classifications to State authorities and operators;
- n) To establish and maintain databases containing the results of monitoring the performance of communication systems, and to include in the databases the results of

Asia Pacific region requests for information in response to observed unsatisfactory performance;

- o) To undertake overall responsibility for assessing compliance of operators, aircraft and communications systems with performance requirements related to implementation and safe use of changes to separation standards and other relevant CNS/ATM improvements in the airspace of the Asia Pacific region;
- p) To manage data confidentiality agreements with all FIT members who provide problem reports;
- q) To develop and administer the problem report processes;
- r) To coordinate and support FIT meetings;
- s) To schedule and coordinate FANS procedure testing;
- t) To administer and monitor an informal end-to-end configuration process;
- u) To develop (as recommendations) new end-to-end system performance requirements;
- v) To receive, decode and process monthly status reports from the ATSU's, and
- w) Liaise and coordinate activity and processes with the Board and APANPIRG as required in a timely manner.

**7.2 Managerial – Job Description to be inserted**

**7.3 Technical – Job Description to be inserted**

**7.4 Office – Job Description to be inserted**

## **8 BUSINESS PLAN APPROACH FOR THE ESTABLISHMENT OF RASMA**

### **8.1 General**

Within the Asia Pacific region a number of actions have been taken under numerous ICAO Task Forces to oversee airspace operations and safety. With respect to the implementation of reduced vertical separation minima (RVSM), the monitoring of aircraft altimetry system performance has been delegated by APANPIRG to the Asia Pacific Approvals Registry and Monitoring Organisation (APARMO). CRA's have also been established for monitoring datalink performance integrity, amongst others.

### **8.2 Achievements to Date**

8.2.1 The region has, on a collective basis, already been successful in establishing aircraft altimetry system performance monitoring services on a "user pays" basis. In addition airspace data collection, reduction and safety risk assessments have been carried out for the region using human and technical resources donated by some States. The former will continue to be used, while the users under the management of the RASMA will reimburse the latter.

8.2.2 The United States Federal Aviation Administration (FAA) currently performs the functions of the APARMO. In addition, the FAA has provided airspace safety performance assessments and oversight for the implementation of both vertical and lateral separation minima in various parts of the region. The assessment, based on sound mathematical and analytical practices, have been accepted by States in their

decision to implement new separation minima. Other States' safety authorities, for example Australia, have also successfully provided safety assessment services to States and ATS providers through either collective arrangements of States, such as the Informal South Pacific ATS Co-ordinating Group (ISPACG), or at the request of the ICAO Asia Pacific Regional Office for areas such as the South China Sea and the Bay of Bengal. ICAO has also made arrangements with individual States for the ongoing overview of safety data for specific parts of the region, one example being Singapore for the South China Sea. Other States, such as Thailand, India and Japan, have indicated a willingness to provide regional or sub-regional safety monitoring and/or oversight services.

8.2.3 Additionally, considerable experience also has been gained in the system performance monitoring and enhancement of data link equipment and procedures used to provide communications based applications for air traffic control services. The States that are signatories to ISPACG and the Informal Pacific ATC Co-ordination Group (IPACG) have carried out the latter function co-operatively by their respective CRAs and FANS Interoperability Teams (FITs). All of the States and aircraft operators concerned with CRA and FIT activities have expressed satisfaction with the standards of the services provided. A third FIT, the FANS Action Team – Bay of Bengal (FATBOB), has been established by ICAO for the Bay of Bengal area, but to date actual progress in this area has been limited. It is the intention that the RASMA also be responsible for the administrative responsibilities for airspace monitoring from all of these CRAs/FITs.

## **9 PREREQUISITES TO ESTABLISHING THE REGIONAL AIRSPACE SAFETY MONITORING AGENCY (RASMA)**

### **9.1 Provision of Credentials to the Structure**

The RASMA will need to deal directly with States, aircraft operators, and monitoring agencies in other ICAO regions. Without APANPIRG designation or regional agreements, these interactions would not be possible. The RASMA requires formal recognition and credentials as provided by the States through a multilateral regional agreement..

### **9.2 Provision of Safety Goals**

The primary objective proposed of RASMA is to assist States in achieving those safety goals set for the Asia Pacific Region. The agency itself cannot set these goals because they apply within international, and in some cases sovereign, airspace and because of their potential effect on ATS providers and airspace users. Thus, these goals must be established either by APANPIRG, or through regional agreements, or as a consequence of global ICAO provisions.

### **9.3 Provision of Methodology for Assessing Risk**

In order to achieve the second objective of RASMA, it will be necessary to estimate risk and then compare it to the applicable safety goal. Because the structure will be applied to communications, navigation, surveillance and air traffic management (CNS/ATM) applications and other systems that have a global application, there is a need for an established structure to assess risk in a manner consistent with other ICAO regions. Hence, the methodology for assessing risk also needs to be agreed by APANPIRG or provided through ICAO channels.

## **10 DELIVERY OF RASMA PRODUCTS**

10.1 The potential market for these services consists of the majority of States within the Asia Pacific region. With respect to vertical separation minima, the provision of services for altimetry system error verification to aircraft operators is presently being catered for by companies providing approved GPS

Monitoring System (GMS) equipment and compiling the GMS data. The processing of the altimetry system error is to be performed and recorded by RASMA.

10.2 With respect to the new CNS systems, the provision of services for error verification for aircraft operators and ATS service providers will need to be established by companies with the appropriate expertise, tools and equipment, such as aircraft simulators and avionics test benches. Investigating regional problem reports submitted by aircraft operators or ATS providers as well as assessing monthly ATS data link communications performance will be performed by Central Reporting Agency (CRA) assigned specifically to the region or that CRA. The RASMA will take responsibility for the acquisition or payment for the provision of those specialised services by suitably qualified contractors as required from time to time..

## **11 PREVIOUS BUSINESS EXPERIENCE**

The regional air navigation service providers and safety regulators have always been responsible for developing and ensuring standards of flight safety within their sovereign airspace and in that international airspace for which they have accepted responsibility to provide air navigation services. Several States within the Asia Pacific Region have already established sound arrangements for the collective overview of airspace safety with regard to vertical and horizontal separation minima, as well as end-to-end communications system performance.

## **12 MARKET APPLICATIONS**

12.1 This is a captive specialist aviation market without competition. In commercial terms, however, it is a very specialised niche market that will attract bidders for the provision of services as time passes, especially if the RASMA can properly establish cost effective services and products. It will be important to the region that RASMA be able to effectively manage the technical resources and services offered to the region by both commercial and state enterprises.

12.2 The focus of this enterprise is that of a single market within the whole of the airspace of the Asia Pacific region, although it may be possible to segment the marketing of some services to separate parts of the region. This reference to segmentation refers to the provision of services, e.g. aircraft altimetry system performance monitoring and airspace collision risk modelling assessments.

## **13 SAFETY FOCUS**

The States within the Asia Pacific region have decided through APANPIRG that it would be in their best collective safety, efficiency and administrative interests to have one central agency take the overall responsibility for the functions associated with airspace safety monitoring and safety assessments. In many cases, because of the large oceanic areas of the Region, the agency will also be asked to provide services within the sovereign airspace of some smaller States encompassed by the high seas. The RASMA will hold an exclusive contract for regional airspace safety monitoring and safety assessment services.

## **14 MARKET**

### **14.1 Ready for Market**

Because the region has in the past decade been developing its abilities through the collective efforts of individual States' aviation authorities, aircraft operators with the assistance of the major commercial aircraft manufacturers, and communications service providers, the region is well placed to create a 'business' entity in the form of RASMA to provide the airspace safety monitoring and safety assessment functions in an economical and businesslike manner.

## 14.2 Uniqueness

14.2.1 This business plan is a unique opportunity for APANPIRG and the Asia Pacific region to establish an essential and ICAO-mandated airspace safety monitoring service, which will introduce uniform airspace safety monitoring standards. The Contracting States of ICAO and the international air transportation industry have already generally accepted these standards on a global basis.

14.2.2 Provided the agency is properly established and managed there should be no reason for airspace users, airspace managers or safety regulators to duplicate the services of the RASMA. It should also be unique in its demand for funding and therefore be a cost effective regional facility.

## 14.3 Growth Potential

If the experience with APARMO is to be repeated, then there is strong potential for RASMA to expand its full range of airspace safety monitoring and safety assessment services on a cost effective commercial basis. This will help any sovereign State or other region meet their obligations for airspace safety monitoring and safety assessments.

## 15 FINANCING

15.1 It is envisaged that resources will be sourced and utilised from within the region to finance RASMA operations. Provision will be made from existing financial sources/contributors to provide start up funds. The majority of the work that needs to be completed to establish RASMA should be achieved by 'in kind' funding by States and other involved institutions. Therefore, initially the demand on any cash reserve should be low.

### Funding Resources

15.1.1 It is recognised that the cost of many of these safety services will need to be recovered either directly or indirectly from the users of the airspace in accordance with ICAO provisions. The necessary provision of resources to meet States' obligatory safety monitoring obligations may be acquired by RASMA in one of two ways:

- a) Direct injection: Cash from State civil aviation authorities, air navigation service providers, air transport operators, air-to-ground communications service providers, aircraft manufacturers; and
- b) Indirect injection: Provision of technical services and human resources provided in-kind by any entity.

15.1.2 The preferred collection mechanism would be through a direct levy on the airlines to be collected by already established IATA mechanisms through the ATC Enhancement and Financing processes. It would be necessary to establish a contractual relationship between RASMA and IATA in this regard.

15.1.3 The following table outlines the current estimated costs for regional safety monitoring services.

Description	Estimated Annual Cost (US\$)
RASMA Office Overheads	300,000
Airspace traffic collision risk modelling (CRM)	100,000
Aircraft altimetry system monitoring functions (APARMO)	760,000
Database maintenance for the region (APARMO)	500,000
FANS Central Reporting Agency (CRA)	2,000,000
TOTAL	3,660,000

15.1.4 From traffic figures supplied by both IATA and ICAO, it is estimated that there will be 800,000 flights in the Asia Pacific region in 2002. Based on these figures and assuming that all airspace users will equally contribute to the RASMA financing process, the overhead cost is calculated at US\$5.00 per flight.

15.1.5 The above costs do not take into account any start-up costs associated with purchase of appropriate testing and monitoring equipment such as that currently provided by Boeing and Airbus for aircraft simulation, software development, etc. These costs are currently contributed in-kind by Boeing and Airbus. At some future time it may be necessary to consider funding for lease costs for utilisation of such equipment in the event this in-kind assistance is withdrawn. No account has been taken for in-kind manpower and resource support costs currently provided by the FAA.

## 15.2 Level of Gearing

15.2.1 There will be no need at this time to financially gear this agency with commercial loans. The States with mandatory responsibilities under the ICAO provisions for airspace safety monitoring, along with other industry beneficiaries of these services, will be asked to make provision for these services in their budgets.

## 15.3 Cash Flow Predictions

15.3.1 The following table summarises the cash flow predictions for the operation of RASMA on an annualised basis for the initial 5 year operating period..

Year	2002	2003	2004	2005	2006
	US\$	US\$	US\$	US\$	US\$
<b>Fixed Assets</b>	<b>27,000</b>	<b>15,440</b>	<b>12,172</b>	<b>9,645</b>	<b>7,669</b>
<b>Current Assets</b>					
Balance c/f	0	51,400	332,372	616,417	1,401,586
Safety Monitoring Levy	3,700,000	3,700,000	3,200,000	3,200,000	3,000,000
Stock	3,000	5,000	7,500	8,000	7,500
Debtors	14,500	15,500	19,500	23,000	25,000
Bank	7,460	10,000	10,000	10,000	10,000
Cash	500	500	500	500	500
GST Refund	100	600	700	800	900
<b>Total Current Assets</b>	<b>3,725,560</b>	<b>3,783,000</b>	<b>3,570,572</b>	<b>3,858,717</b>	<b>4,445,486</b>
<b>Less Current Liabilities</b>					
Creditors	1,800	2,000	3,000	4,000	5,000
Office/Management costs	3,687,800	3,460,800	2,960,800	2,460,800	1,760,800
Depreciation	11,560	3,268	2,527	1,976	1,557
<b>Total Current Liabilities</b>	<b>3,701,160</b>	<b>3,466,068</b>	<b>2,966,327</b>	<b>2,466,776</b>	<b>1,767,357</b>
<b>Net Current Assets</b>	<b>24,400</b>	<b>316,932</b>	<b>604,245</b>	<b>1,391,941</b>	<b>2,678,129</b>
<b>Net Total Assets</b>	<b>51,400</b>	<b>332,372</b>	<b>616,417</b>	<b>1,401,586</b>	<b>2,685,798</b>

<b>FINANCED BY</b>					
Stakeholders Capital	3,700,000	3,700,000	3,200,000	3,200,000	3,000,000
Net profit	51,400	332,372	616,417	1,401,586	2,685,798

## **15.4 Sales**

15.4.1 As a result of the data collection process and database establishment, there will be significant amounts of valuable information that could attract a retail sales value for additional income generation. Likely fee paying customers for such information as can be released into the public domain are identified as statistics gathering organisations such as IATA with saleable publications, CNS equipment manufacturers and the international press, to name a few.

## **15.5 Profitability**

15.5.1 RASMA is a non-profit organisation that will function in a completely businesslike manner if it is to attract the funding support needed to provide the quality of service expected. RASMA will use a balance sheet approach to the provision of financial planning and accounting practices. It is expected that within the budget process it will be preferable for the agency to work with a small annual surplus rather than a deficit.

## **15.6 Financial Objectives**

### **15.6.1 Short Term Objectives**

The short term objectives are to obtain sufficient financial and human resources to continue, at a minimum, the present airspace safety monitoring and safety assessment services for the region.

### **15.6.2 Long Term Objectives**

The long term objectives are to be a well managed, not for profit, regional airspace safety and monitoring agency that is capable of providing for all the airspace safety monitoring and safety assessment needs of the Asia Pacific region. The data collection process progressively validates the safety case for the timely implementation of CNS/ATM with improved airspace utilisation and safety oversight.

### **15.6.3 Other Objectives**

Other objectives include:

- a) To be recognised globally for its performance and effectiveness as an airspace safety monitoring and safety assessment agency in a diverse regional airspace setting, and
- b) To progress the RASMA model to other ICAO regions who are establishing new CNS/ATM safety monitoring and safety assessment services within their respective regions.

## **16 AGENCY STRUCTURE**

### **16.1 Functional Description**

16.1.1 The functional description of RASMA structure and linkages is attached as Appendix A-1. This provides an overview of the functional manner in which the agency staff will discharge their respective duties and responsibilities. System inputs are in the form of provision and use of ATS services that produce system operations. These are shown in the flow across the top of the figure from left to right. In turn, these operations

provide various types of monitoring data, as are shown in the upper box at the left side of the figure. The monitoring results flow into the safety assurance process, leading first to the risk assessment and, if necessary, to link with specialist groups and States which develop remedial safety actions. All remedial safety actions are then fed back into the ATS system as safety inputs, resulting in, for example, changes to the ATS procedures.

## **16.2 Legal Structure**

16.2.1 A formalised legal structure is essential in order to comply with the obligations of State civil aviation authorities in accordance with the Annexes to the Convention on International Civil Aviation.

16.2.2 A formalised legal structure could be enacted by multilateral regional agreement through APANPIRG.

16.2.3 Having a legal structure would also protect the agency in such matters as recruitment, employment terms and conditions, staff gratuities, contract terms and conditions, tax liability, insurance and risk management, salaries, transport, etc.

16.2.4 Individual States will need to enact appropriate air navigation legislation to accept the quality of the RASMA safety assessment outputs as valid for use within the airspace under their control.

## **16.3 Legal Requirements on States**

16.3.1 This will be similar to existing co-operative efforts for airspace safety management in the region. e.g., ATC letters of agreement. Each contracting ICAO State within the Region will be required to enact legislation to give authority to RASMA to effectively and efficiently function on their behalf as an airspace safety monitoring agency. This will be accomplished through a multilateral administrative agreement.

## **17 THE MANAGEMENT TEAM**

### **17.1 Staffing Structure**

17.1.1 It is envisaged the RASMA Office will require the services of the following full time staff:

Technical Officer – Airspace Safety Management and Liaison  
 Technical Officer – Database Management and Support  
 Administration Officer  
 Secretary  
 Administration Support Clerk/Driver

17.1.2 Job Descriptions for the above positions are listed in Appendix D.

### **17.2 Business Experience**

17.2.1 Considerable expertise and experience has already been accumulated in the Asia Pacific region through the various regional co-ordinating groups and task forces. An overview of regional airspace monitoring and safety assessment experience and the States and organisations involved is listed below:

- a) Pacific reduced horizontal and vertical separation to include longitudinal separation for North Pacific (NOPAC), South Pacific (SOPAC), Central Pacific (CENPAC), Pacific Oceanic Track System (PACOTS), Tasman Sea 50/50NM separation and monitoring of RVSM height keeping performance:

Australia, Japan, United States, and CSSI Inc (under contract by IATA for operation of the GPS Monitoring System for RVSM);



- b) North, Central and South Pacific, FANS Interoperability Team (FIT) (ADS/CPDLC):  
Boeing Commercial Airplane Group, Japan, United States;
- c) Asia, reduced horizontal and vertical separation:  
Australia, United States;
- d) South China Sea New Route Structure including RNP10 and 50NM lateral separation between tracks:  
Singapore;
- e) Europe, Middle East Asia Route Structure South of the Himalayas (EMARSSH);  
Technical and operational support for all programmes is provided but not necessarily limited to the following:  
Airbus, Boeing, ARINC, SITA, etc;

*(need to list the present resources being deployed. Should include titles of important human resources.)  
(this to followed by possible content of the RASMA management team at appendix 1 that sensibly should comprise a major component of the present providers)*

### **17.3 Skills and Experience/Qualifications**

17.3.1 Not all of the personnel with the necessary technical and administrative skills and the experience required to provide the RASMA services are presently employed directly in the Asia Pacific region. States' safety and regulatory authorities, aircraft manufacturers, communications service providers, aircraft operators and international and regional organisations outside of the region contribute considerably to the present airspace safety monitoring efforts.

17.3.2 It will be necessary for the agency to either continue to use the present human resources on the same donated or contractual basis, or to recruit the services of competent human resources on a commercial basis to provide the expertise required. The qualifications and experience needed for the airspace safety risk monitoring and safety assessments are very specialised and limited in availability. These specialised human resources will need to be developed to provide a sustainable safety service in the long term.

17.3.3 Human resources for the maintenance of aircraft and air traffic databases, together with airspace modelling capacity, will need to be funded by the agency.

### **17.4 Skill Transfer**

17.4.1 It is envisaged that the current responsible States and organisations will arrange for training and necessary skill transfer in order that other regional organisations may achieve the capability to undertake airspace safety monitoring tasks under RASMA.

### **17.5 Job Descriptions**

17.5.1 The RASMA Office staff job descriptions are listed at APPENDIX D.

### **17.6 Recruitment Policy**

17.6.1 RASMA will be an equal opportunity employer and will recruit technical staff internationally. All consultancy work will be tendered internationally as required.

## **17.7 Professional Advisers**

17.7.1 RASMA will be required to utilise the services of professional advisers from time to time including ex-officio members of the staff. Ex-officio staff should initially be limited to a Legal Adviser and Accountant/Auditor. In the case of the Auditor, the States on a rotating basis may assume this role on a gratis basis.

## **17.8 Board of Directors**

17.8.1 It is envisaged that the Board of Directors will initially be kept to a minimum number to ensure efficiencies of operation are maintained. The Board would be made up of appointed officials from the participating States e.g., USA, Australia, New Zealand, Thailand, IATA, ICAO, airframe manufacturers, air traffic and communications service providers, and other experienced sources. The Chairman would be an elected official appointed by the Board of Directors.

## **18 STAKEHOLDER NEEDS AND BENEFITS**

### **18.1 Introduction**

18.1.2 Stakeholders comprise a cross section of the aviation community from the air traffic service providers and airspace users through to the communications service providers. Their needs are diverse but all have a safety obligation to meet international standards and recommended practices. The establishment of a regional airspace safety monitoring agency centralises the tasks under one management organisation and therefore will maximise functionality, data reliability, economical resource management and the provision of airspace safety management information to internationally recognised standards. The benefits to be realised by all stakeholders with the judicious application of this information into improved airspace safety management will be significant.

### **18.2 Stakeholder Involvement**

18.2.1 The financially involved stakeholders are:

- a) The States of the Asia Pacific region and their associated air traffic service providers who are responsible to provide airspace modelling and safety assessments in selected areas of regional airspace.
- b) The aircraft operators using this airspace;
- c) International organisations representing their aircraft operators, flight crews and public safety, and
- d) Other service providers within the airspace, such as communications service providers and other service industry related companies, who will also be beneficiaries of the RASMA.

18.2.2 The stakeholders served by this agency are a diverse group, not all of which have a financial obligation, or in some cases a financial capability, to contribute to the agency. All however have an interest in the output of the agency in terms of the safety assurance product due to its mandate by ICAO provisions or the use of the airspace for international operations by their national aircraft. It is expected that benefits in the form of better utilisation of airspace through the timely implementation of CNS/ATM will transform directly into cost savings to both the airspace users and ATM providers.

### **18.3 Needs**

18.3.1 The stakeholders both on the ground and in the air need airspace safety monitoring and safety assessment services to continue the development and reorganisation of the regional airspace, and to provide a safe and efficient environment for aircraft operators. This development is not confined to individual stakeholders but is reliant on continuous close and financially equitable co-operation between all the stakeholders.

18.3.2 The RASMA must be able to provide for all needs of the stakeholders under the mandate from which it is created. The RASMA must be a stakeholder-driven enterprise that is fully responsive to not only the safety requirements of the region but also to the commercial realities of the need for cost effective safety services. Without the benefit of cost effectiveness it will be difficult for RASMA to fulfil its primary role of providing standardised airspace safety assessments to the region.

### **18.4 Benefits**

18.4.1 The benefits for Stakeholders are:

- a) Airspace safety assurance that meets the highest standards and expectations of the regional population for air transportation;
- b) Assurance of one source for the cost-effective and timely provision of regional safety data from airspace safety and aircraft system monitoring services to be used for safety analysis by all interested parties;
- c) Regional standardisation of airspace safety assessments; and
- d) Availability of high quality airspace safety assessment resources to all regional States.

### **18.5 Stakeholder Expectations**

18.5.1 The stakeholders would expect that charges would be determined and presented in a manner acceptable to all the participating States. Costs will be fully recovered through user charges in accordance with the ICAO User Charges principles as provided for in Article 15 of the Chicago Convention as well as in ICAO DOC 9082.

### **18.6 GUARANTEES AND PROTECTION**

## **19 BUSINESS STRATEGY**

### **19.1 Policy Statement**

**TO PROVIDE HIGH QUALITY AIRSPACE SAFETY MONITORING SERVICES AT MINIMUM COST.**

### **19.2 Accountability**

19.2.1 RASMA will provide full accountability to its Board of Directors, contributing States and the user community. Fully audited accounts will be prepared at the end of each financial year for presentation to the Board of Directors.

### **19.3 Promotion and Planning**

19.3.1 Other than the normal practice of utilising business stationery and business cards of RASMA staff, it is envisaged that advertising and promotion of RASMA activity will be undertaken through the ICAO Journal, IATA's Airline Magazine and other aviation journals and promotional interfaces. All Press statements will require advance approval by the Board of Directors.

### **19.4 Office Premises and Facilities**

19.4.1 The accommodation requirements for the administration of the RASMA are modest and of low cost. This may not however be the case with some of the services that RASMA may be required to contract with during the course of its work, e.g., test bench and analytical tools. The location of the administration of the agency in the ICAO Regional Office building or other donated space could minimise the overall cost of running the business enterprise.

### **19.5 Requirements**

19.5.1 An open plan facility meeting reasonable office accommodation standards is envisaged. An allocation of 20m<sup>2</sup> per staff member is proposed. Total office space required is therefore estimated at 100m<sup>2</sup>.

### **19.6 Location**

19.6.1 It is proposed that RASMA be co-located with the ICAO Regional Office in Bangkok, however, it is recognised that the same function could be provided directly by a signatory State and the premises could be collocated.

### **19.7 Hours of Business**

19.7.1 Hours of business will follow those of the ICAO Regional Office, i.e. 0730 – 1530 Monday to Friday, excluding public holidays.

## **20 FINANCIAL REPORTING**

### **20.1 Balance Sheet Approach**

20.1.1 In accordance with international accounting standards (IAS), RASMA will adopt a balance sheet approach for accounting purposes. This approach will provide a detailed indication of available assets, liabilities and the requisite finances for meeting all acquisitions and debt servicing at any particular time.

### **20.2 Current Assets**

20.2.1 At the time of start-up, current assets will be of very low value.

### **20.3 Current Liabilities**

20.3.1 At the time of start-up, current liabilities will amount to the cost of setting up and running the Office. Current liabilities will gradually increase as the existing CRA activity management is absorbed into RASMA.

### **20.4 Financing Requirements**

#### **Start-up Funds**

20.4.1 RASMA will require advance funding to meet initial start-up costs in order that salaries and running costs can be met. There will then need to be a further period of grace so that appropriate on-the-job

training and technology transfer requirements can be undertaken prior to contracting out and overseeing the required safety management services. It is expected that this initial start-up funding will be sourced from the Stakeholders.

### **Cash Balance**

20.4.2 A cash balance equivalent to at least 3 months financial commitments should be retained by RASMA for the first year of operation. This will ensure any large fluctuations in commitment by the States can be adequately provided for.

### **Gearing Ratio**

20.4.3. The gearing ratio for RASMA should be very small in favour of self financing. It is not envisaged that RASMA will require any commercial financing.

### **Funding Options**

20.4.4 In the long term funding requirements will be fully met from User Charges collected on behalf of RASMA by the participating States and their respective air traffic service organisations. Other funding options such as cash and kind will also be considered. Possible sources include governmental technical assistance grants, aviation equipment manufacturer resources, aircraft manufacturers, etc.

## **21 BUSINESS CONTROLS**

### **21.4 Accounting Standards**

21.1.1 International accounting standards shall be used. A balance sheet accounting system will be adopted for RASMA.

### **21.5 Auditors**

21.2.1 All accounts will be audited. It is envisaged that auditing services will be provided “in kind” on a rotational basis by the member States.

### **21.6 Performance Indicators**

21.3.1 A regular review process will be established. The RASMA will submit financial and operational status reports to the Board clearly showing the indicators for both financial efficiency and operational data compilation. The Board of Directors will undertake this review, initially at quarterly intervals for the first year, and thereafter at minimum annual periods or as required by the Board from time to time.

#### **21.3.1 Products and Services**

21.3.1.1 Current resources are provided through the APARMO and are predominantly those resources of the FAA Technical Centre and those of Air Services Australia (ASA). Aeronautical Radio of Thailand (AEROTHAI) has also indicated their willingness to actively participate in the RASMA activity.

#### **21.3.2 Database Summary**

The safety information contained in the database shall be made available to the stakeholders on a quarterly basis in the form of a safety summary assessment. This safety summary shall include but not necessarily be limited to a calculated TLS for the reported period.

### **21.3.3 Personnel Records**

21.3.3.1 A detailed record will be maintained for all permanent and consultancy staff of RASMA. These records will be held in confidence and will include but not necessarily be limited to a record of all financial transactions, administration matters and human resource development recommendations. Detailed job descriptions will provide a listing of the respective duties and responsibilities, remuneration, tax liability and pension details.

### **21.6.4 Accident Statistics**

21.3.4.1 A comprehensive record of accident and incident statistics will be maintained by RASMA for the Asia Pacific region. These records will be submitted to the Board for publishing in the annual report and also as an information paper to the annual APANPIRG meeting.

### **21.6.5 Quality Control**

21.3.5.1 Quality control standards will conform to those produced by the International Standards Organisation series 9000 (ISO 9000).

### **21.6.6 Stakeholder Feedback**

## **22 APPENDICES**

**APPENDIX A – 1 Functional Description of Structure and Linkages**

**APPENDIX A – 2 RASMA Organisational Chart**

**APPENDIX B List of Participating States**

**APPENDIX C Finances**

**APPENDIX C-1 Cash Flow Forecast**

**APPENDIX C-2 Profit/Loss Account**

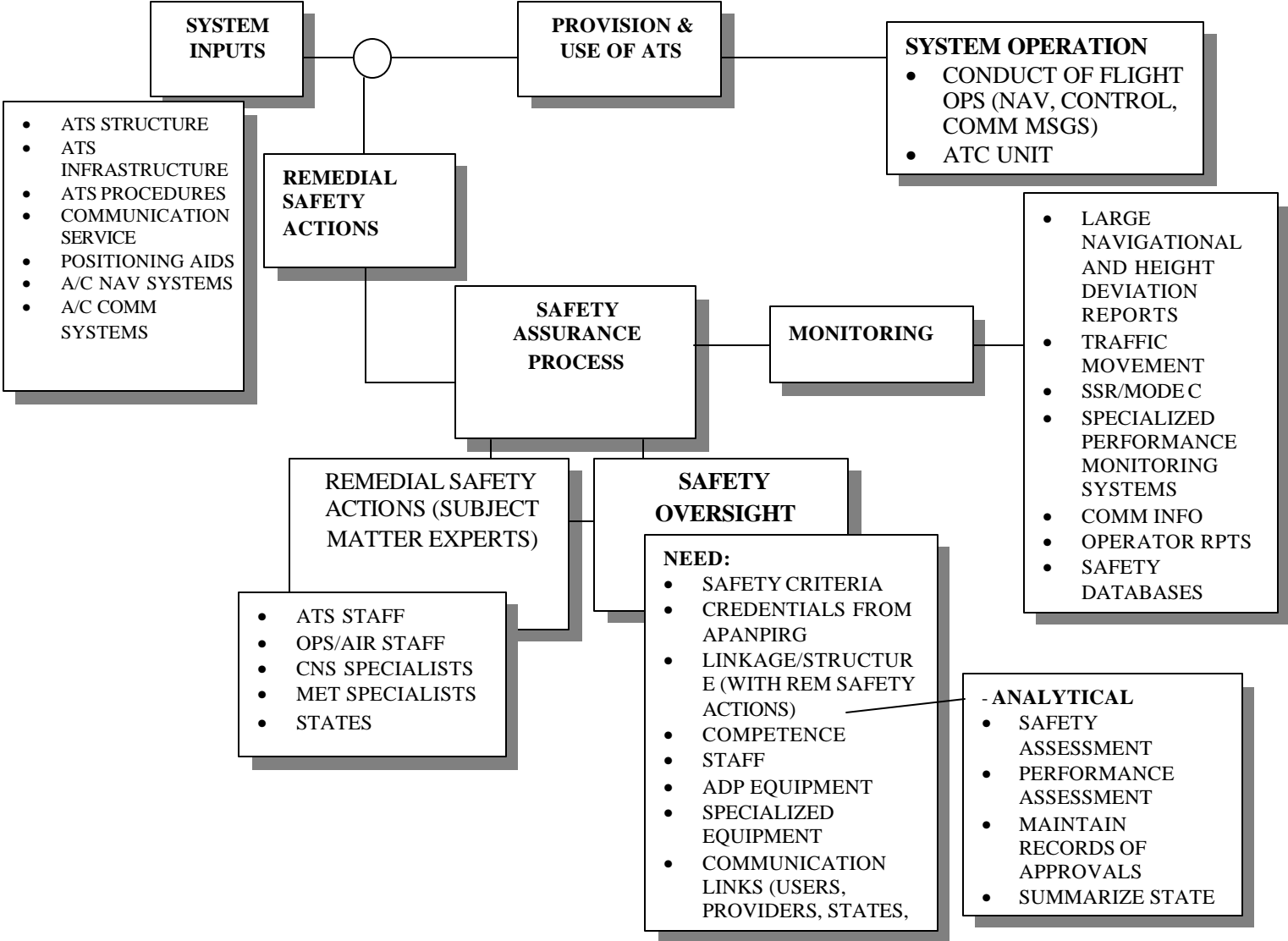
**APPENDIX C-3 Balance Sheets**

**APPENDIX C-4 Depreciation Schedule**

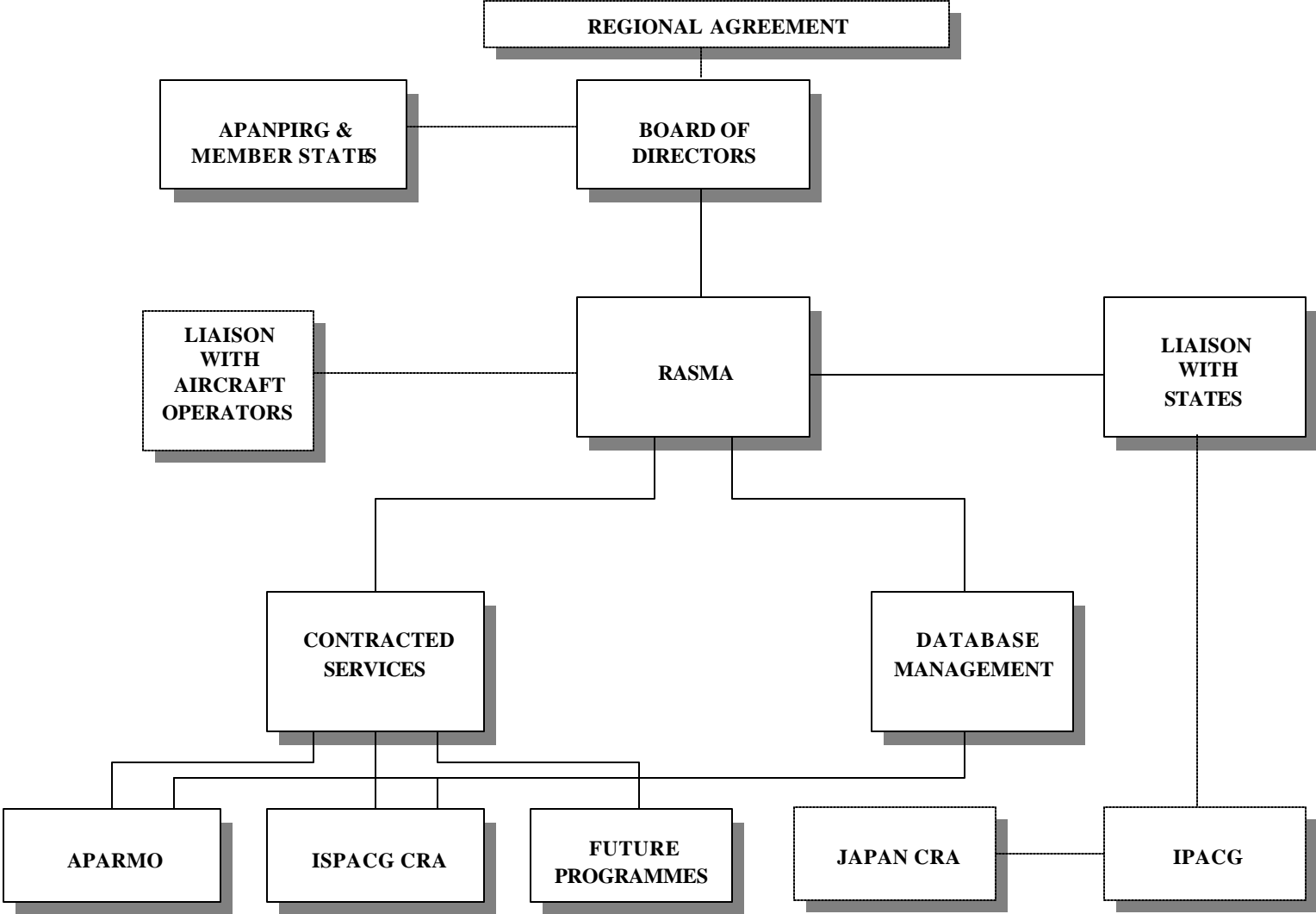
**APPENDIX D Job Descriptions**

**To be completed**

Appendix A -1 – Functional Description of Structure and Linkages



APPENDIX A – 2 – RASMA Functional Chart





**APPENDIX B**  
**LIST OF PARTICIPATING STATES in RASMA**

**Primary Countries**

~~Afghanistan~~  
Australia  
~~Canada~~  
Cambodia  
China  
Chinese Taipei  
DPR Korea  
Fiji  
French Polynesia  
Hong Kong  
India  
Indonesia  
Japan  
~~Kazakhstan~~  
Laos  
Malaysia  
Maldives  
Mongolia  
Myanmar  
Nauru  
Nepal  
New Zealand  
Pakistan  
Papua New Guinea  
Philippines  
RO Korea  
~~Russian Federation~~  
Singapore  
Solomon Islands  
Sri Lanka  
Thailand  
USA  
Vietnam

**Interface Countries**

Middle East (~~Afghanistan~~, Oman, Iran)  
Europe (Turkey, Russian Federation)  
Central Asia (Uzbekistan, Turkmenistan, Tajikistan, Kyrgyzstan)  
North America (Canada)  
South America (Chile)  
Africa (Seychelles, Kenya, South Africa)

**GENERAL GUIDELINES ON THE ESTABLISHMENT AND  
PROVISION OF A MULTINATIONAL ICAO ASIA/PAC AIR NAVIGATION  
FACILITY/SERVICE**

1. **INTRODUCTION**

1.1 These guidelines were developed by the ASIA/PAC Planning and Implementation Regional Group (APANPIRG) for incorporation in the ASIA/PAC ANP and for use in the ASIA/PAC Regions to facilitate State's collective efforts for cost effective implementation.

1.2 They reflect relevant ICAO provisions and established policies of the Organization's regional planning for and implementation of facilities/services required for air navigation applicable in the ASIA/PAC Regions. They also recognize the principle that costs may be recovered for facilities and services provided for and implemented under the ASIA/PAC Regional Plan as approved by the Council.

2. **DEFINITION**

**Multinational ICAO Air Navigation Facility/Service**

2.1 The meeting considered that multinational facilities/services would now be required to facilitate implementation of the ASIA/PAC Air Navigation Plan, especially the new ICAO CNS/ATM systems implementation Plan. Because of their uniqueness, their impact on the system as a whole as well as their implications for users and providers of the multinational facilities/services, they would need early identification. The following definition of a multinational ICAO ASIA/PAC air navigation facility/service would permit this in a rational manner:

"A facility/service specifically identified as such and included in the ICAO ASIA/PAC Regional Plan for the purpose of serving international air navigation in airspace extending beyond the air space serviced by a single State in accordance with the ASIA/PAC Regional Plan."

**Applicability of ICAO provisions**

2.2 Pursuant to Article 28 of the Convention and in line with the ICAO policies concerning the formulation of regional plans and their implementation, any multinational facility/service would be set forth in the Regional Plan as established by the Council. In turn, when establishing the cost basis for route facility charges the council approved principles are to be applied, i.e. the costs to be taken into account should be those assessed in relation to facilities and services provided for and implemented under the ASIA/PAC Regional Plan.

**Multinational character**

2.3 In ICAO rules and procedures the term "facility/service" for air navigation is well understood. Contrary to the term "project" or any other term which may relate only to certain segments or phases of an undertaking it does not exclude research, development, operation and eventually the phasing out of a joint venture. In this context, there is therefore no need to depart from the well known term "facility/service" for air navigation. There is, however, room for amplifying the definition by additional elements in order to dissociate the common undertaking from those facilities/services which are provided by one State only.

2.4 The purpose of a multinational facility/service to serve international air navigation in airspace extending beyond the airspace serviced by a single State is a useful and qualifying element. It is a crucial criterion in that it unambiguously discards other possibilities which the machinery for regional planning and implementation of requirements for facilities/services provides for under Article 28 of the Convention, in accordance with Standards and Recommended Practices and relevant Assembly Resolutions, e.g. delegation of airspace, operating agencies, bi- and multilateral agreements or as a last resort, joint financing under Chapter XV of the Convention. While in any such case States would individually remain responsible under Article 28 for the provision of facilities/services within the area of their jurisdiction a "multinational" facility/service by its very

nature would extend beyond the individual airspace of a State.

### 3. DEVELOPMENT AND PROCESSING OF A PROPOSAL FOR A MULTINATIONAL ICAO ASIA/PAC AIRNAVIGATION FACILITY/SERVICE

3.1 The following constitutes the step by step development and processing of a proposal for a multinational ICAO ASIA/PAC air navigation facility/service. Comments on individual steps are set forth in subsequent paragraphs.

- a) Proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:
  - APANPIRG
  - a State or a group of States
  - an international organization recognized by ICAO
- b) Proposals for such a facility/service should be supported by material relating to the following aspects:
  - purpose of the proposal and operational and technical justifications;
  - financial implications and cost-effectiveness;
  - managerial implications; and
  - alternative solutions.
- c) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.
- d) APANPIRG will then, if in preliminary agreement, through the regional office(s) concerned:
  - consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizing it; and as necessary concerned international organizations; and
  - re-evaluate the proposal in the light of comments made by

these States and international organizations and to decide either to proceed or to discontinue the proposal.

- e) APANPIRG develops, in consultation with all concerned, a complete proposal for amendment of the ASIA/PAC Regional Plan for processing in accordance with the procedure approved by the Council.

### Comments on the process

3.2 In the light of the basic elements as contained in the definition and their obvious consequence of fully integrating the proposal for a multinational ASIA/PAC facility/service into the ICAO planning and implementation processes for the ASIA/PAC Regions, it follows that:

- A) proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:
  - APANPIRG or
  - a State or a group of States.
  - an international organization recognized by ICAO

3.3 In this context it is recalled that APANPIRG at all times takes an active posture. For the permanent and co-ordinating machinery this is a prerequisite to remain responsive to the specific requirements of the ASIA/PAC Regions and is reflected in the objectives of the group, namely to:

- a) ensure the continuous and coherent development of the ASIA/PAC Regional Plan as a whole taking into consideration the effect of such development on the regional plans of adjacent regions; and
- b) identify specific problems in the air navigation field and propose, in appropriate form, action aimed at resolving these problems.

3.4 The ASIA/PAC planning processes and the working methods of APANPIRG as reflected in its Procedural Handbook ensure continued intensive information of and co-ordination with States members of the ASIA/PAC Regions. Although maximum transparency is inherent in these procedures, specific attention is required from the outset when dealing with multinational projects which may have far reaching

implications for all concerned. This would include the financial problems which are a major cause of deficiencies in the implementation of the ASIA/PAC Regional Plan.

3.5 The procedures for the amendment of approved regional plans and the management of the ASIA/PAC Regional Plan on a continuous basis are described in the Introduction to the ASIA/PAC Regional Plan.

3.6 At the time a proposal is originated within APANPIRG or submitted for its consideration by a State/group of States, basic information must be available to permit preliminary evaluation. Therefore, as a principle:

a) Proposals for such a facility/service should be supported by material relating to the following aspects:

i) purpose of the proposal and operational and technical justifications

This material should include the overall plan and targets for the development and the establishment of the facility/service. The likely implications if any, on regulations, working-routines, equipment, premises and maintenance should be included in the supporting documentation. Information on the expected consequences on the overall ASIA/PAC air navigation system or any part thereof should also be included.

ii) financial implications and cost-effectiveness

Related information should include estimates of the total costs of the multinational facility/service covering, as required, research and development, implementation, operation and maintenance, administration, and capital costs; how all costs incurred prior to the operational phase will be financed; assessing savings which may accrue from the implementation of the facility/service (these can be measured in monetary and/or physical terms for example air traffic controller positions, communications facilities, etc.) and comparing these savings to the total cost estimates; proposals as to how cost shares of States participating in the provision of the project are to be

determined. Also, assessment needs to be provided on impact on users from charges for the facility/service concerned.

c) managerial implications

As a minimum, information on the organizational infrastructure (operational and administrative) and on staff should be included.

d) alternative solutions

Although it may not normally be expected that all proposals from the outside submitted to APANPIRG for consideration will contain relevant information to the extent necessary for preliminary assessment, APANPIRG itself should at all times have due regard to any possible alternative which may satisfy the operational requirement in a more cost/effective manner. Such information should be part of the information provided to those who are to be consulted.

3.7 Once necessary information is available, the consequential next phase to be initiated with minimum possible delay is that:

a) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.

b) The APANPIRG will then, if in preliminary agreement, through the ICAO regional offices in Cairo, Dakar, Nairobi and Paris:

i) consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizing it; and

ii) re-evaluate the proposal in the light of comments made by these States and decide either to proceed or to discontinue the proposal.

3.8 APANPIRG terms of reference, as well as the procedures adopted for the conduct of its activities, enable it to receive advice in the field of economics as necessary and appropriate. APANPIRG would be in the very best position to establish the need for and the form such assistance should take when considering a proposal for a specific multinational facility/service.

3.9 After completion of the above-mentioned preparatory work the process of including a multinational facility/service in the ASIA/PAC Regional Plan requires that:

- a) APANPIRG develops in consultation with all concerned, a complete proposal for amendment of the ICAO Regional Plan for processing in accordance with the procedure approved by the Council.

#### 4. FINANCIAL, MANAGERIAL AND OTHER CONTRACTUAL ASPECTS

##### Introduction

4.1 The participation of States in the provision of a multinational facility/service is based on the assumption that any State having supported and agreed to the implementation of such a facility/service and making use of it, should also shoulder its respective share of the costs involved (paragraph 4.27 refers). The participating States would need to formalize the terms under which the multinational facility/service is to be provided in an agreement. A primary aim of the agreement should be to ensure that the costs involved are shared amongst the participating States in a fair and equitable manner.

4.2 This part of the guidelines is concerned with the main contractual aspects, financial, managerial and other, that should normally be considered when initiating work on a potential multinational facility/service. The basic provisions that would need to be considered for incorporation in such an agreement are outlined, including provisions concerning cost sharing and cost determination. However, the guidance does not extend to the presentation of a draft model agreement or clauses, since circumstances related to the planning, implementation and operation of individual multinational facilities/services may vary considerably.

*Note: The guidelines generally refer to "agreement" as a generic term covering one or more agreements as the case may be.*

##### Types of agreement

4.3 An agreement covering the development, implementation, operation and maintenance of a multinational facility/service could either take the form of a formal international treaty or an "administrative agreement". Both forms establish an international obligation but a treaty requires the signature of the head of state or government and will also require the ratification or approval of the national legislative assembly, which, as a rule, is a time-consuming process. An "administrative agreement", on the other hand, is at a lower level of requirement in respect of formalities and procedures than a treaty, can be signed by a minister or director of civil aviation or some other authorized person, and could be concluded by an exchange of letters or notes.

4.4 It is recommended that, whenever possible, the agreement be established in the form of an "administrative agreement" rather than a formal international treaty because this would allow the agreement to come into force with minimum delay and also permit greater flexibility in incorporating any subsequent modifications required. It is recognized, however, that in some States constitutional or legal circumstances may require the approval of the legislative assembly for financial obligations to be accepted by the State, particularly if these are of a substantial magnitude and/or extend over a period of time. Whatever form is used, the agreement(s) should be structured to provide for easy subsequent amendments as developments may require. To this end, material of detail which is more likely to require modifications, and which will not affect the basic provisions of the agreement, should be contained in annexes or appendices.

4.5 It is further recommended that whenever possible only one general agreement (treaty/"administrative agreement") be adopted covering all aspects of the facility/service concerned through all its phases. However, this may not always be possible. In certain circumstances it might be necessary or preferable to have more than one agreement (treaty/"administrative agreement") differing in scope and content. In those circumstances the aim should be to cover as many aspects as possible in the "administrative agreement" and limit the use of the treaty to those aspects for which this form of agreement is essential for the States concerned. Recognizing this, one agreement for example, might cover the activities, including prefinancing, to be undertaken by those States that accept the responsibility for bringing the facility/service up to operational status, with another agreement to be concluded between all the States (including the first group of States aforementioned), which would use or be served by the facility/service

once it became operational. In such circumstances the former agreement would be important because the first group of States would have to ensure the provision of funds from their own resources to ensure the implementation of the facility/service, since no inflow of revenues from charges on users (aircraft operators) would take place until the multinational facility/service becomes operational.

4.6 Another possible approach, if required by circumstances, would be for all the participating States to conclude an agreement covering, in general terms, their commitment to participate in the provision of the multinational facility/service, and then developing a separate agreement covering all aspects relating to the financing and operation of the multinational facility/service.

4.7 The various basic provisions that would normally have to be covered in an agreement of this nature are addressed below in the sequence they would usually appear, as follows:

- a) Objective of the agreement
- b) Obligations of States party to the agreement
- c) Definition and description of the facility/service
- d) Establishment and operation of the facility/service
- e) Legal responsibility
- f) Liability aspects
- g) Managerial aspects:
  - i Governing bodies and decision-making arrangements
  - ii Organization and staffing
  - iii Consultation
- h) Financial aspects:
  - i) Cost determination
  - ii) Cost sharing
  - iii) Budgeting
  - iv) Authority to approve the budget
  - v) Financial auditing
- i) Taxation and other government levies
- j) Procedures for settlement of disputes

- k) Accessions, withdrawals, amendments to and termination of agreement.

### **Basic contractual provisions**

#### **a) Objective of the agreement**

4.8 In its introductory text the agreement should set out the objective underlying the participating States' decision to jointly arrange for the provision of the multinational facility/service concerned.

#### **b) Obligations of States party to the agreement**

4.9 The agreement should at the outset briefly set forth the basic obligations of the participating States. These include the obligation (by a participating State or group of States individually or collectively or as assigned to an organization or agency) to establish and operate the facility/service concerned; the obligation of each participating State to pay its share of the costs involved; the obligation to observe ICAO policies and practices, including those addressing cost recovery by States from aircraft operators, etc.

#### **c) Definition and description of the facility/service**

4.10 The agreement should contain a clear and accurate definition and description of the multinational facility/service to be provided and the functions it is to perform, including to the extent possible and desirable, the supporting services required. It may be advisable in certain cases to make specific reference to functions which the multinational facility/service will not be performing.

#### **d) Establishment and operation of the facility/service**

4.11 The agreement should specify who will establish and operate the facility/service concerned, namely whether this is to be done by one State, two or more States, an existing international organization, an existing national or international agency, or a new agency to be established specifically for this purpose.

Note: The decision as to who should provide the facility/service could be influenced, in particular, by the anticipated capital investment and annual costs involved, as well as the extent to which the alternative providers (i.e. a participating State or States, international

organization or agency) have been engaged in the function(s) concerned.

e) **Legal responsibility**

4.12 If an international organization or agency (as referred to in Assembly Resolution A22-19) is to establish and/or operate the facility/service concerned, it will have to be endowed with proper legal responsibility to have the capacity to contract, to acquire and dispose of property and to institute and answer legal proceedings.

f) **Liability aspects**

4.13 Closely related to legal responsibility are the liability aspects which may have to be addressed in the agreement. This involves such aspects as the determination of the extent to which liability is to be assumed in connexion with the provision of the multinational facility/service. Other aspects also include whether the entity providing the facility/service concerned, whether an international organization agency or State(s), should alone assume such responsibility or whether this should be shared amongst all the participating States.

g) **Managerial aspects**

a) **Governing bodies and decision making arrangements**

4.14 The nature of the governing body or bodies required to administer the agreement needs to be established and a description of their functions provided. Should a new agency be established to operate the multinational facility/service, this would need to be stipulated in the agreement, where reference should also be made to the functions and responsibilities of the executive head of the agency and to whom he or she would be responsible.

4.15 Voting arrangements should be specified. It would need to be decided whether each participating State should have equal voting power (as is for example the practice of ICAO). Alternatively, each State's vote may be weighed in accordance with a predetermined formula, which would need to be specified, for example, by determining the voting power according to that participant's share of total contributions to the facility/service or agency concerned. A maximum and/or a minimum limit may be set for the number of votes that can be assigned to any individual participant regardless of that participant's share of total contributions.

4.16 Another voting aspect which has to be decided on, and specified in the agreement, is whether a simple majority would apply in all cases or whether for particular issues a large majority vote (to be specified) or even unanimity would be required. Where different degrees of majority voting would apply depending on the matter or subject being voted on, these would also need to be clearly identified in the agreement.

b) **Organization and staffing**

4.17 The agreement should refer to the manner in which the entity actually operating the facility/service would structure or organize its functions. This would apply in particular if the operation is to be assigned to a new agency.

4.18 Various aspects of staffing (nationality, numbers and type etc.) will also need to be addressed and, as appropriate, incorporated in the agreement (or an annex to it). If the participating States agree that the multinational facility/service is to be provided by one State or by two or more States (each providing separate components or parts of the project involved), the nationality of staff should not give rise to any problems, and need not be covered in the agreement. However, operation by an international organization or agency may require that certain stipulations be included in the agreement concerning the selection of qualified staff from participating States. Other aspects to be considered, aside from the number and types of staff, are the various elements of conditions of service including status to be accorded to any expatriate staff, tax exemptions, etc., which will reflect on the over-all costs of the venture.

c) **Consultation**

4.19 Provision should be made in the agreement to ensure adequate consultation with States being party to the agreement but not represented on the governing body, and appropriate aircraft operators organizations. Such consultations should at least be undertaken in advance of any developments that could materially affect cost share to be allocated to these States, user charges, and the quality of the services provided.

h) **Financial aspects**

a) **Cost determination**

**Pre-implementation considerations**

4.20 The determination and presentation of the costs attributable to the provision of the multinational facility/service concerned should proceed in a manner

acceptable to all the participating States. In this context it should be noted that bringing the facility/service up to implementation status can involve the costs of implementation being financed by one or more of the participating States. However, once the facility/service has been implemented, these costs would be capitalized and then included as depreciation (together with accumulated interest) in the over-all cost base to be shared among the States participating in the provision of the facility/service concerned.

#### **Determination of costs**

4.21 In order to formalize the manner in which the costs to be shared should be arrived at, the agreement between the States participating in the provision of a multinational facility/service should contain clauses referring to the determination of the related costs. The agreement should also stipulate that the approach towards cost determination be based on that recommended in Chapter 1 of the ICAO Manual on Route Air Navigation Facility Economics (Doc 9161). Should more comprehensive instructions, based on Doc 9161, be required, it is preferable that these be presented in an annex in view of their relative volume and detail, and also because it may be expected that they would need to be updated and modified more frequently than the main text of the agreement. (Amendments to the annexes to the agreement would normally be subject to the approval of the governing body of the multinational facility/service).

4.22 In line with the approach adopted in Doc 9161, the annex would normally contain an inventory of the various components of the multinational facility/service (e.g. buildings, equipment, number of staff by function, etc.). It would also cover the determination of annual costs, i.e. costs of operation and maintenance, administrative and common costs, and capital costs (depreciation and interest) as well as special capital outlays. Finally, where a multinational facility/service or any of its components serve other than the multinational functions specified in the agreement (i.e. functions serving one State only, or non- aeronautical functions), instructions should be provided to ensure the accurate determination of the "multinational" costs to be shared among the participating States.

#### **Presentation of costs**

4.23 The agreement would also need to specify, normally in an annex, the basic format to be used for the presentation of the annual costs for approval. The scope and detail of the format will depend on the particular circumstances involved.

#### **b) Cost sharing**

##### **Responsibility for the sharing of costs**

4.24 As stated in 4.1 above, once a State has supported and agreed to the implementation of a multinational facility/service and making use of it, it would be expected to assume responsibility for its share of the costs involved. This basic obligation should be reflected in the agreement between the participating States.

##### **Determination of cost share of each participating State**

4.25 The agreement should outline the procedure to be applied for determining the cost share to be borne by each participating State. Any cost sharing method should, to the extent possible, be equitable, simple and easy to apply. The question of equity should not only be considered in the context of the participating States, but also with respect to the final users (aircraft operators) since it may be assumed that in most instances the participating States would include the costs they incur in the cost base for their air navigation facility charges, where levied.

4.26 In general, it does not appear feasible to recommend one specific method or approach to cost sharing because the situation will vary, depending particularly on the technical and operational characteristics of the multinational facility/service involved, the views or policies of the participating States on how costs should be shared, and the volume of these costs.

4.27 In the interest of equity, however, any method of cost sharing should, in principle, be based on the extent of the use of the multinational facility/service concerned by each participating State. Thus, the parameters or keys used to determine each State's cost share should reflect the extent of such use. However, if the use made of a multinational facility/service can only be measured by applying complex procedures and at a cost which is not commensurate with the costs to be shared, other methods of cost sharing based on readily available and relevant statistical data could be applied. Whatever method is selected it must provide for the just and equitable sharing of the costs involved.

##### **Tangible national benefits to the State(s) actually operating the multinational facility/service**

4.28 A multinational facility/service might be operated by one or more States with other States contributing their share of the costs involved. In such



circumstances, all the States concerned must decide whether or not the total costs should be subject to sharing or if any allowances should be made to reflect any tangible benefits accruing to the State(s) engaged in the actual operation of the facility/service concerned. Such benefits would usually be in the form of employment of nationals, contracts awarded to national companies, etc. with their associated multiplier effect on the economies of the State(s) concerned. It should be noted that the States actually operating the facility/service would, like other State(s) using it, be obliged to pay its (their) share of the total costs to be shared.

### **Recovery of costs from users**

4.29 As a rule, a multinational facility/service would have to be "multinationally" financed or prefinanced by a State, group of States or, by an agency as established under the authority of an agreement by States. However, any of these could recover the costs so incurred from users once the facility/service has been implemented. Nevertheless, States may also choose to recover less than full costs in recognition of local, regional or national benefits (Doc 9082, paragraph 29 refers). Where an agency has been authorized to recover its costs through charges, the authorizing States would nevertheless need to make up for revenue shortfalls where, for example, the States had decided certain flights should either be exempted from or pay reduced charges.

4.30 It would be up to each participating State to decide whether or not it wishes to recover its cost share from the users (aircraft operators). A State could either include these costs in its cost base for route facility charges (if it levies such charges), or, alternatively, recover the costs by levying a separate charge (normally a more complex and costly procedure to administer). While the recovery of such cost shares from users might normally not be referred to in an agreement on a multinational facility/service, the agreement could include a provision to the effect that such recovery must be based on Article 15 of the Chicago Convention as well as the principles and recommendations in Doc 9082.

4.31 If the participating States were to assign the operation of a multinational facility/service to an international organization or an international agency and decide that it should levy charges on aircraft operators for the purpose of full or partial cost recovery, this would need to be covered in the agreement. In such instances the agreement would usually also stipulate (probably in a separate annex) the charging formula to be used, reductions and

exemptions granted, billing and payment arrangements, etc. Such procedures would, of course, need to conform with the provisions of Article 15 of the Chicago Convention and Doc 9082.

### **c) Budgeting**

4.32 Proper financial control will require costs and revenues to be estimated in advance. The itemization of the costs should basically correspond with that used for the presentation of costs (see 4.23 above). This will enable actual costs to be compared with estimated costs, and actual revenues with those estimated.

### **d) Authority to approve the budget**

4.33 The agreement should also stipulate who has the authority to approve the budget and thus authorize the use of funds to meet operating expenses and capital expenditures. This authority would normally be vested in the governing body of the multinational facility/service concerned.

### **e) Financial auditing**

4.34 The financial audit function forms an integral part of the determination of the costs to be shared and the cost share to be borne by each participating State as well as of proper financial control. The agreement between States participating in the provision of a multinational facility/service should therefore specify that an annual financial audit be performed by a certified independent external auditor.

### **f) Taxation and other government levies**

4.35 The subject of tax exemptions and other aspects related to taxation will need to be addressed in the context of the over-all operations of the multinational facility/service. Similarly, with regard to other government levies such as custom fees and duties, value added tax, etc., it may also need to be considered whether the import or export, purchase or sale of any equipment, supplies, etc. required for the operation of the multinational facility/service concerned should be exempted from all such levies in the participating States. The inclusion of clauses to that effect would be likely to require an agreement subject to ratification, such as a treaty.

### **g) Procedures for settlement of disputes**

4.36 The agreement should contain stipulations setting out the procedures to be followed for settlement or disputes between the participating States arising

from the provision of the facility/service concerned. Regarding the settlement of disputes arising from different interpretations being given to the agreement, the States concerned would have to agree on the procedures for negotiation or arbitration and on the body to which an appeal for a final ruling could be made.

**h) Accessions, withdrawals, amendments to and termination of agreement**

4.37 The agreement should contain provisions, including those describing the financial implications involved, to:

- a) cover the subsequent accession by any additional qualifying State(s) after the agreement is in force; and
- b) specify the procedure to be applied when a signatory State wishes to withdraw from the agreement as well as procedures to follow in the event of termination of the agreement.

4.38 Similarly, the agreement should specify the procedures to be followed if amendments are to be made to the main text or to any annexes (for which different procedures would normally apply).

### Homogeneous Areas and Major Traffic Flows Defined

1. The major traffic flows identified in the homogeneous areas are given in the table below.

**TABLE 6-1. MAJOR TRAFFIC FLOWS - ASIA/PACIFIC REGION**

Area of Routing (AR)	Traffic flows	FIRs involved	Type of area Covered	Remarks
<b>Asia/Pacific (ASIA/PAC) Region</b>				
AR-1	Asia/Australia – Africa	Melbourne, Jakarta, Singapore, Kuala Lumpur, Bangkok, Yangon, Madras, Colombo, Male, Bombay, and African FIR/UIRs	Oceanic low density	Major traffic flow AFI/ASIA/MID
AR-2	Asia (Indonesia, north to China, Japan and Republic of Korea) and Australia/New Zealand	Nadi, Auckland, Nauru, Honiara, Oakland, Brisbane, Port Moresby, Melbourne, Biak, Ujung Pandang, Bali, Jakarta, Singapore, Kota Kinabalu, Manila, Ho Chi Minh, Hanoi, Phnom Penh, Vientiane, Bangkok, Kuala Lumpur, Yangon, Hong Kong, Taipei, Naha, Tokyo, Shanghai, Taegu, Guangzhou, Wuhan, Beijing	Oceanic high density	Major traffic flow ASIA/PAC
AR-3	Asia and Europe via north of the Himalayas	Bangkok, Ho Chi Minh, Phnom Penh, Hanoi, Vientiane, Yangon, Kathmandu, Guangzhou, Kunming, Wuhan, Beijing, Urumqi, Shanghai, Shenyang, Lanzhou, Hong Kong, Taipei, Naha, Tokyo, Taegu, Pyongyang, Ulaanbaatar, Almaty, [Russian Federation FIRs, and European FIRs]	Continental high density/Continental low density	Major traffic flow ASIA/EUR/MID
AR-4	Asia and Europe via south of the Himalayas	Manila, Ho Chi Minh, Hanoi, Vientiane, Phnom Penh, Bangkok, Yangon, Ujung Pandang, Bali, Kota Kinabalu, Jakarta, Singapore, Kuala Lumpur, Hong Kong, Colombo, Madras, Calcutta, Dhaka, Kathmandu, Kunming, Delhi, Bombay, Lahore, Karachi, [and Middle East/European FIR/UIRs]	Continental low density	Major traffic flow ASIA/EUR/MID
AR-5	Asia and North America via the Russian Far East and the polar tracks via the Arctic Ocean and Siberia	Anchorage, Beijing, Canadian FIRs, Guangzhou, Hong Kong, Pyongyang, Russian Far East of 80E, Shanghai, Shenyang, Taegu, Tokyo, Wuhan and Ulaanbaatar.	Continental low density/Continental high density	Major traffic flow ASIA/EUR/NAM/NAT
AR-6	Asia and North America (including Hawaii) via the Central and North Pacific	Anchorage, Oakland (at and north of a line drawn by LAX - HNL - Guam - MNL), Vancouver, Tokyo, Manila, Taipei, Hong Kong and Naha	Oceanic low density	Major traffic flow ASIA/NAM/PAC
AR-7	Australia/New Zealand and South America	Brisbane, Auckland, Nadi, Tahiti, (and South America FIR/ UIRs)	Oceanic low density	Major traffic flow ASIA/PAC/SAM
AR-8	Australia/New Zealand, the South Pacific Islands and North America	Oakland (southern region), Nadi, Nauru, Honiara, Auckland, Tahiti, Brisbane and Port Moresby	Oceanic low density	Major traffic flow ASIA/NAM/PAC
AR-9	South-East Asia and China, Republic of Korea and Japan	Ujung Pandang, Bali, Jakarta, Singapore, Kota Kinabalu, Manila, Ho Chi Minh, Phnom Penh, Hanoi, Vientiane, Guangzhou, Kunming, Wuhan, Shenyang, Beijing, Bangkok, Kuala Lumpur, Yangon, Hong Kong, Taipei, Naha, Tokyo, Shanghai, Taegu, Pyongyang	Oceanic high density	Major traffic flow ASIA

**GENERAL GUIDELINES ON THE ESTABLISHMENT AND  
PROVISION OF A MULTINATIONAL ICAO ASIA/PAC AIR NAVIGATION  
FACILITY/SERVICE**

1. **INTRODUCTION**

1.1 These guidelines were developed by the ASIA/PAC Planning and Implementation Regional Group (APANPIRG) for incorporation in the ASIA/PAC ANP and for use in the ASIA/PAC Regions to facilitate State's collective efforts for cost effective implementation.

1.2 They reflect relevant ICAO provisions and established policies of the Organization's regional planning for and implementation of facilities/services required for air navigation applicable in the ASIA/PAC Regions. They also recognize the principle that costs may be recovered for facilities and services provided for and implemented under the ASIA/PAC Regional Plan as approved by the Council.

2. **DEFINITION**

**Multinational ICAO Air Navigation Facility/Service**

2.1 The meeting considered that multinational facilities/services would now be required to facilitate implementation of the ASIA/PAC Air Navigation Plan, especially the new ICAO CNS/ATM systems implementation Plan. Because of their uniqueness, their impact on the system as a whole as well as their implications for users and providers of the multinational facilities/services, they would need early identification. The following definition of a multinational ICAO ASIA/PAC air navigation facility/service would permit this in a rational manner:

"A facility/service specifically identified as such and included in the ICAO ASIA/PAC Regional Plan for the purpose of serving international air navigation in airspace extending beyond the air space serviced by a single State in accordance with the ASIA/PAC Regional Plan."

**Applicability of ICAO provisions**

2.2 Pursuant to Article 28 of the Convention and in line with the ICAO policies concerning the formulation of regional plans and their implementation, any multinational facility/service would be set forth in the Regional Plan as established by the Council. In turn, when establishing the cost basis for route facility charges the council approved principles are to be applied, i.e. the costs to be taken into account should be those assessed in relation to facilities and services provided for and implemented under the ASIA/PAC Regional Plan.

**Multinational character**

2.3 In ICAO rules and procedures the term "facility/service" for air navigation is well understood. Contrary to the term "project" or any other term which may relate only to certain segments or phases of an undertaking it does not exclude research, development, operation and eventually the phasing out of a joint venture. In this context, there is therefore no need to depart from the well known term "facility/service" for air navigation. There is, however, room for amplifying the definition by additional elements in order to dissociate the common undertaking from those facilities/services which are provided by one State only.

2.4 The purpose of a multinational facility/service to serve international air navigation in airspace extending beyond the airspace serviced by a single State is a useful and qualifying element. It is a crucial criterion in that it unambiguously discards other possibilities which the machinery for regional planning and implementation of requirements for facilities/services provides for under Article 28 of the Convention, in accordance with Standards and Recommended Practices and relevant Assembly Resolutions, e.g. delegation of airspace, operating agencies, bi- and multilateral agreements or as a last resort, joint financing under Chapter XV of the Convention. While in any such case States would individually remain responsible under Article 28 for the provision of facilities/services within the area of their jurisdiction a "multinational" facility/service by its very

nature would extend beyond the individual airspace of a State.

### 3. DEVELOPMENT AND PROCESSING OF A PROPOSAL FOR A MULTINATIONAL ICAO ASIA/PAC AIRNAVIGATION FACILITY/SERVICE

3.1 The following constitutes the step by step development and processing of a proposal for a multinational ICAO ASIA/PAC air navigation facility/service. Comments on individual steps are set forth in subsequent paragraphs.

- a) Proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:
  - APANPIRG
  - a State or a group of States
  - an international organization recognized by ICAO
- b) Proposals for such a facility/service should be supported by material relating to the following aspects:
  - purpose of the proposal and operational and technical justifications;
  - financial implications and cost-effectiveness;
  - managerial implications; and
  - alternative solutions.
- c) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.
- d) APANPIRG will then, if in preliminary agreement, through the regional office(s) concerned:
  - consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizing it; and as necessary concerned international organizations; and
  - re-evaluate the proposal in the light of comments made by

these States and international organizations and to decide either to proceed or to discontinue the proposal.

- e) APANPIRG develops, in consultation with all concerned, a complete proposal for amendment of the ASIA/PAC Regional Plan for processing in accordance with the procedure approved by the Council.

#### Comments on the process

3.2 In the light of the basic elements as contained in the definition and their obvious consequence of fully integrating the proposal for a multinational ASIA/PAC facility/service into the ICAO planning and implementation processes for the ASIA/PAC Regions, it follows that:

- A) proposals for a multinational ICAO ASIA/PAC air navigation facility/service might originate from:
  - APANPIRG or
  - a State or a group of States.
  - an international organization recognized by ICAO

3.3 In this context it is recalled that APANPIRG at all times takes an active posture. For the permanent and co-ordinating machinery this is a prerequisite to remain responsive to the specific requirements of the ASIA/PAC Regions and is reflected in the objectives of the group, namely to:

- a) ensure the continuous and coherent development of the ASIA/PAC Regional Plan as a whole taking into consideration the effect of such development on the regional plans of adjacent regions; and
- b) identify specific problems in the air navigation field and propose, in appropriate form, action aimed at resolving these problems.

3.4 The ASIA/PAC planning processes and the working methods of APANPIRG as reflected in its Procedural Handbook ensure continued intensive information of and co-ordination with States members of the ASIA/PAC Regions. Although maximum transparency is inherent in these procedures, specific attention is required from the outset when dealing with multinational projects which may have far reaching

implications for all concerned. This would include the financial problems which are a major cause of deficiencies in the implementation of the ASIA/PAC Regional Plan.

3.5 The procedures for the amendment of approved regional plans and the management of the ASIA/PAC Regional Plan on a continuous basis are described in the Introduction to the ASIA/PAC Regional Plan.

3.6 At the time a proposal is originated within APANPIRG or submitted for its consideration by a State/group of States, basic information must be available to permit preliminary evaluation. Therefore, as a principle:

a) Proposals for such a facility/service should be supported by material relating to the following aspects:

i) purpose of the proposal and operational and technical justifications

This material should include the overall plan and targets for the development and the establishment of the facility/service. The likely implications if any, on regulations, working-routines, equipment, premises and maintenance should be included in the supporting documentation. Information on the expected consequences on the overall ASIA/PAC air navigation system or any part thereof should also be included.

ii) financial implications and cost-effectiveness

Related information should include estimates of the total costs of the multinational facility/service covering, as required, research and development, implementation, operation and maintenance, administration, and capital costs; how all costs incurred prior to the operational phase will be financed; assessing savings which may accrue from the implementation of the facility/service (these can be measured in monetary and/or physical terms for example air traffic controller positions, communications facilities, etc.) and comparing these savings to the total cost estimates; proposals as to how cost shares of States participating in the provision of the project are to be

determined. Also, assessment needs to be provided on impact on users from charges for the facility/service concerned.

c) managerial implications

As a minimum, information on the organizational infrastructure (operational and administrative) and on staff should be included.

d) alternative solutions

Although it may not normally be expected that all proposals from the outside submitted to APANPIRG for consideration will contain relevant information to the extent necessary for preliminary assessment, APANPIRG itself should at all times have due regard to any possible alternative which may satisfy the operational requirement in a more cost/effective manner. Such information should be part of the information provided to those who are to be consulted.

3.7 Once necessary information is available, the consequential next phase to be initiated with minimum possible delay is that:

a) The proposal will be evaluated by APANPIRG particularly in respect of requirement, acceptability and cost-effectiveness.

b) The APANPIRG will then, if in preliminary agreement, through the ICAO regional offices in Cairo, Dakar, Nairobi and Paris:

i) consult with States which would directly be concerned with the provision of the potential multinational facility/service, as well as those States who would be utilizing it; and

ii) re-evaluate the proposal in the light of comments made by these States and decide either to proceed or to discontinue the proposal.

3.8 APANPIRG terms of reference, as well as the procedures adopted for the conduct of its activities, enable it to receive advice in the field of economics as necessary and appropriate. APANPIRG would be in the very best position to establish the need for and the form such assistance should take when considering a proposal for a specific multinational facility/service.

3.9 After completion of the above-mentioned preparatory work the process of including a multinational facility/service in the ASIA/PAC Regional Plan requires that:

- a) APANPIRG develops in consultation with all concerned, a complete proposal for amendment of the ICAO Regional Plan for processing in accordance with the procedure approved by the Council.

#### 4. FINANCIAL, MANAGERIAL AND OTHER CONTRACTUAL ASPECTS

##### Introduction

4.1 The participation of States in the provision of a multinational facility/service is based on the assumption that any State having supported and agreed to the implementation of such a facility/service and making use of it, should also shoulder its respective share of the costs involved (paragraph 4.27 refers). The participating States would need to formalize the terms under which the multinational facility/service is to be provided in an agreement. A primary aim of the agreement should be to ensure that the costs involved are shared amongst the participating States in a fair and equitable manner.

4.2 This part of the guidelines is concerned with the main contractual aspects, financial, managerial and other, that should normally be considered when initiating work on a potential multinational facility/service. The basic provisions that would need to be considered for incorporation in such an agreement are outlined, including provisions concerning cost sharing and cost determination. However, the guidance does not extend to the presentation of a draft model agreement or clauses, since circumstances related to the planning, implementation and operation of individual multinational facilities/services may vary considerably.

*Note: The guidelines generally refer to "agreement" as a generic term covering one or more agreements as the case may be.*

##### Types of agreement

4.3 An agreement covering the development, implementation, operation and maintenance of a multinational facility/service could either take the form of a formal international treaty or an "administrative agreement". Both forms establish an international obligation but a treaty requires the signature of the head of state or government and will also require the ratification or approval of the national legislative assembly, which, as a rule, is a time-consuming process. An "administrative agreement", on the other hand, is at a lower level of requirement in respect of formalities and procedures than a treaty, can be signed by a minister or director of civil aviation or some other authorized person, and could be concluded by an exchange of letters or notes.

4.4 It is recommended that, whenever possible, the agreement be established in the form of an "administrative agreement" rather than a formal international treaty because this would allow the agreement to come into force with minimum delay and also permit greater flexibility in incorporating any subsequent modifications required. It is recognized, however, that in some States constitutional or legal circumstances may require the approval of the legislative assembly for financial obligations to be accepted by the State, particularly if these are of a substantial magnitude and/or extend over a period of time. Whatever form is used, the agreement(s) should be structured to provide for easy subsequent amendments as developments may require. To this end, material of detail which is more likely to require modifications, and which will not affect the basic provisions of the agreement, should be contained in annexes or appendices.

4.5 It is further recommended that whenever possible only one general agreement (treaty/"administrative agreement") be adopted covering all aspects of the facility/service concerned through all its phases. However, this may not always be possible. In certain circumstances it might be necessary or preferable to have more than one agreement (treaty/"administrative agreement") differing in scope and content. In those circumstances the aim should be to cover as many aspects as possible in the "administrative agreement" and limit the use of the treaty to those aspects for which this form of agreement is essential for the States concerned. Recognizing this, one agreement for example, might cover the activities, including prefinancing, to be undertaken by those States that accept the responsibility for bringing the facility/service up to operational status, with another agreement to be concluded between all the States (including the first group of States aforementioned), which would use or be served by the facility/service

once it became operational. In such circumstances the former agreement would be important because the first group of States would have to ensure the provision of funds from their own resources to ensure the implementation of the facility/service, since no inflow of revenues from charges on users (aircraft operators) would take place until the multinational facility/service becomes operational.

4.6 Another possible approach, if required by circumstances, would be for all the participating States to conclude an agreement covering, in general terms, their commitment to participate in the provision of the multinational facility/service, and then developing a separate agreement covering all aspects relating to the financing and operation of the multinational facility/service.

4.7 The various basic provisions that would normally have to be covered in an agreement of this nature are addressed below in the sequence they would usually appear, as follows:

- a) Objective of the agreement
- b) Obligations of States party to the agreement
- c) Definition and description of the facility/service
- d) Establishment and operation of the facility/service
- e) Legal responsibility
- f) Liability aspects
- g) Managerial aspects:
  - i Governing bodies and decision-making arrangements
  - ii Organization and staffing
  - iii Consultation
- h) Financial aspects:
  - i) Cost determination
  - ii) Cost sharing
  - iii) Budgeting
  - iv) Authority to approve the budget
  - v) Financial auditing
- i) Taxation and other government levies
- j) Procedures for settlement of disputes

- k) Accessions, withdrawals, amendments to and termination of agreement.

### **Basic contractual provisions**

#### **a) Objective of the agreement**

4.8 In its introductory text the agreement should set out the objective underlying the participating States' decision to jointly arrange for the provision of the multinational facility/service concerned.

#### **b) Obligations of States party to the agreement**

4.9 The agreement should at the outset briefly set forth the basic obligations of the participating States. These include the obligation (by a participating State or group of States individually or collectively or as assigned to an organization or agency) to establish and operate the facility/service concerned; the obligation of each participating State to pay its share of the costs involved; the obligation to observe ICAO policies and practices, including those addressing cost recovery by States from aircraft operators, etc.

#### **c) Definition and description of the facility/service**

4.10 The agreement should contain a clear and accurate definition and description of the multinational facility/service to be provided and the functions it is to perform, including to the extent possible and desirable, the supporting services required. It may be advisable in certain cases to make specific reference to functions which the multinational facility/service will not be performing.

#### **d) Establishment and operation of the facility/service**

4.11 The agreement should specify who will establish and operate the facility/service concerned, namely whether this is to be done by one State, two or more States, an existing international organization, an existing national or international agency, or a new agency to be established specifically for this purpose.

Note: The decision as to who should provide the facility/service could be influenced, in particular, by the anticipated capital investment and annual costs involved, as well as the extent to which the alternative providers (i.e. a participating State or States, international



organization or agency) have been engaged in the function(s) concerned.

e) **Legal responsibility**

4.12 If an international organization or agency (as referred to in Assembly Resolution A22-19) is to establish and/or operate the facility/service concerned, it will have to be endowed with proper legal responsibility to have the capacity to contract, to acquire and dispose of property and to institute and answer legal proceedings.

f) **Liability aspects**

4.13 Closely related to legal responsibility are the liability aspects which may have to be addressed in the agreement. This involves such aspects as the determination of the extent to which liability is to be assumed in connexion with the provision of the multinational facility/service. Other aspects also include whether the entity providing the facility/service concerned, whether an international organization agency or State(s), should alone assume such responsibility or whether this should be shared amongst all the participating States.

g) **Managerial aspects**

a) **Governing bodies and decision making arrangements**

4.14 The nature of the governing body or bodies required to administer the agreement needs to be established and a description of their functions provided. Should a new agency be established to operate the multinational facility/service, this would need to be stipulated in the agreement, where reference should also be made to the functions and responsibilities of the executive head of the agency and to whom he or she would be responsible.

4.15 Voting arrangements should be specified. It would need to be decided whether each participating State should have equal voting power (as is for example the practice of ICAO). Alternatively, each State's vote may be weighed in accordance with a predetermined formula, which would need to be specified, for example, by determining the voting power according to that participant's share of total contributions to the facility/service or agency concerned. A maximum and/or a minimum limit may be set for the number of votes that can be assigned to any individual participant regardless of that participant's share of total contributions.

4.16 Another voting aspect which has to be decided on, and specified in the agreement, is whether a simple majority would apply in all cases or whether for particular issues a large majority vote (to be specified) or even unanimity would be required. Where different degrees of majority voting would apply depending on the matter or subject being voted on, these would also need to be clearly identified in the agreement.

b) **Organization and staffing**

4.17 The agreement should refer to the manner in which the entity actually operating the facility/service would structure or organize its functions. This would apply in particular if the operation is to be assigned to a new agency.

4.18 Various aspects of staffing (nationality, numbers and type etc.) will also need to be addressed and, as appropriate, incorporated in the agreement (or an annex to it). If the participating States agree that the multinational facility/service is to be provided by one State or by two or more States (each providing separate components or parts of the project involved), the nationality of staff should not give rise to any problems, and need not be covered in the agreement. However, operation by an international organization or agency may require that certain stipulations be included in the agreement concerning the selection of qualified staff from participating States. Other aspects to be considered, aside from the number and types of staff, are the various elements of conditions of service including status to be accorded to any expatriate staff, tax exemptions, etc., which will reflect on the over-all costs of the venture.

c) **Consultation**

4.19 Provision should be made in the agreement to ensure adequate consultation with States being party to the agreement but not represented on the governing body, and appropriate aircraft operators organizations. Such consultations should at least be undertaken in advance of any developments that could materially affect cost share to be allocated to these States, user charges, and the quality of the services provided.

h) **Financial aspects**

a) **Cost determination**

**Pre-implementation considerations**

4.20 The determination and presentation of the costs attributable to the provision of the multinational facility/service concerned should proceed in a manner

acceptable to all the participating States. In this context it should be noted that bringing the facility/service up to implementation status can involve the costs of implementation being financed by one or more of the participating States. However, once the facility/service has been implemented, these costs would be capitalized and then included as depreciation (together with accumulated interest) in the over-all cost base to be shared among the States participating in the provision of the facility/service concerned.

#### **Determination of costs**

4.21 In order to formalize the manner in which the costs to be shared should be arrived at, the agreement between the States participating in the provision of a multinational facility/service should contain clauses referring to the determination of the related costs. The agreement should also stipulate that the approach towards cost determination be based on that recommended in Chapter 1 of the ICAO Manual on Route Air Navigation Facility Economics (Doc 9161). Should more comprehensive instructions, based on Doc 9161, be required, it is preferable that these be presented in an annex in view of their relative volume and detail, and also because it may be expected that they would need to be updated and modified more frequently than the main text of the agreement. (Amendments to the annexes to the agreement would normally be subject to the approval of the governing body of the multinational facility/service).

4.22 In line with the approach adopted in Doc 9161, the annex would normally contain an inventory of the various components of the multinational facility/service (e.g. buildings, equipment, number of staff by function, etc.). It would also cover the determination of annual costs, i.e. costs of operation and maintenance, administrative and common costs, and capital costs (depreciation and interest) as well as special capital outlays. Finally, where a multinational facility/service or any of its components serve other than the multinational functions specified in the agreement (i.e. functions serving one State only, or non- aeronautical functions), instructions should be provided to ensure the accurate determination of the "multinational" costs to be shared among the participating States.

#### **Presentation of costs**

4.23 The agreement would also need to specify, normally in an annex, the basic format to be used for the presentation of the annual costs for approval. The scope and detail of the format will depend on the particular circumstances involved.

#### **b) Cost sharing**

##### **Responsibility for the sharing of costs**

4.24 As stated in 4.1 above, once a State has supported and agreed to the implementation of a multinational facility/service and making use of it, it would be expected to assume responsibility for its share of the costs involved. This basic obligation should be reflected in the agreement between the participating States.

##### **Determination of cost share of each participating State**

4.25 The agreement should outline the procedure to be applied for determining the cost share to be borne by each participating State. Any cost sharing method should, to the extent possible, be equitable, simple and easy to apply. The question of equity should not only be considered in the context of the participating States, but also with respect to the final users (aircraft operators) since it may be assumed that in most instances the participating States would include the costs they incur in the cost base for their air navigation facility charges, where levied.

4.26 In general, it does not appear feasible to recommend one specific method or approach to cost sharing because the situation will vary, depending particularly on the technical and operational characteristics of the multinational facility/service involved, the views or policies of the participating States on how costs should be shared, and the volume of these costs.

4.27 In the interest of equity, however, any method of cost sharing should, in principle, be based on the extent of the use of the multinational facility/service concerned by each participating State. Thus, the parameters or keys used to determine each State's cost share should reflect the extent of such use. However, if the use made of a multinational facility/service can only be measured by applying complex procedures and at a cost which is not commensurate with the costs to be shared, other methods of cost sharing based on readily available and relevant statistical data could be applied. Whatever method is selected it must provide for the just and equitable sharing of the costs involved.

##### **Tangible national benefits to the State(s) actually operating the multinational facility/service**

4.28 A multinational facility/service might be operated by one or more States with other States contributing their share of the costs involved. In such

circumstances, all the States concerned must decide whether or not the total costs should be subject to sharing or if any allowances should be made to reflect any tangible benefits accruing to the State(s) engaged in the actual operation of the facility/service concerned. Such benefits would usually be in the form of employment of nationals, contracts awarded to national companies, etc. with their associated multiplier effect on the economies of the State(s) concerned. It should be noted that the States actually operating the facility/service would, like other State(s) using it, be obliged to pay its (their) share of the total costs to be shared.

### **Recovery of costs from users**

4.29 As a rule, a multinational facility/service would have to be "multinationally" financed or prefinanced by a State, group of States or, by an agency as established under the authority of an agreement by States. However, any of these could recover the costs so incurred from users once the facility/service has been implemented. Nevertheless, States may also choose to recover less than full costs in recognition of local, regional or national benefits (Doc 9082, paragraph 29 refers). Where an agency has been authorized to recover its costs through charges, the authorizing States would nevertheless need to make up for revenue shortfalls where, for example, the States had decided certain flights should either be exempted from or pay reduced charges.

4.30 It would be up to each participating State to decide whether or not it wishes to recover its cost share from the users (aircraft operators). A State could either include these costs in its cost base for route facility charges (if it levies such charges), or, alternatively, recover the costs by levying a separate charge (normally a more complex and costly procedure to administer). While the recovery of such cost shares from users might normally not be referred to in an agreement on a multinational facility/service, the agreement could include a provision to the effect that such recovery must be based on Article 15 of the Chicago Convention as well as the principles and recommendations in Doc 9082.

4.31 If the participating States were to assign the operation of a multinational facility/service to an international organization or an international agency and decide that it should levy charges on aircraft operators for the purpose of full or partial cost recovery, this would need to be covered in the agreement. In such instances the agreement would usually also stipulate (probably in a separate annex) the charging formula to be used, reductions and

exemptions granted, billing and payment arrangements, etc. Such procedures would, of course, need to conform with the provisions of Article 15 of the Chicago Convention and Doc 9082.

### **c) Budgeting**

4.32 Proper financial control will require costs and revenues to be estimated in advance. The itemization of the costs should basically correspond with that used for the presentation of costs (see 4.23 above). This will enable actual costs to be compared with estimated costs, and actual revenues with those estimated.

### **d) Authority to approve the budget**

4.33 The agreement should also stipulate who has the authority to approve the budget and thus authorize the use of funds to meet operating expenses and capital expenditures. This authority would normally be vested in the governing body of the multinational facility/service concerned.

### **e) Financial auditing**

4.34 The financial audit function forms an integral part of the determination of the costs to be shared and the cost share to be borne by each participating State as well as of proper financial control. The agreement between States participating in the provision of a multinational facility/service should therefore specify that an annual financial audit be performed by a certified independent external auditor.

### **f) Taxation and other government levies**

4.35 The subject of tax exemptions and other aspects related to taxation will need to be addressed in the context of the over-all operations of the multinational facility/service. Similarly, with regard to other government levies such as custom fees and duties, value added tax, etc., it may also need to be considered whether the import or export, purchase or sale of any equipment, supplies, etc. required for the operation of the multinational facility/service concerned should be exempted from all such levies in the participating States. The inclusion of clauses to that effect would be likely to require an agreement subject to ratification, such as a treaty.

### **g) Procedures for settlement of disputes**

4.36 The agreement should contain stipulations setting out the procedures to be followed for settlement or disputes between the participating States arising

from the provision of the facility/service concerned. Regarding the settlement of disputes arising from different interpretations being given to the agreement, the States concerned would have to agree on the procedures for negotiation or arbitration and on the body to which an appeal for a final ruling could be made.

**h) Accessions, withdrawals, amendments to and termination of agreement**

4.37 The agreement should contain provisions, including those describing the financial implications involved, to:

- a) cover the subsequent accession by any additional qualifying State(s) after the agreement is in force; and
- b) specify the procedure to be applied when a signatory State wishes to withdraw from the agreement as well as procedures to follow in the event of termination of the agreement.

4.38 Similarly, the agreement should specify the procedures to be followed if amendments are to be made to the main text or to any annexes (for which different procedures would normally apply).

### Homogeneous Areas and Major Traffic Flows Defined

1. The major traffic flows identified in the homogeneous areas are given in the table below.

**TABLE 6-1. MAJOR TRAFFIC FLOWS - ASIA/PACIFIC REGION**

Area of Routing (AR)	Traffic flows	FIRs involved	Type of area Covered	Remarks
<b>Asia/Pacific (ASIA/PAC) Region</b>				
AR-1	Asia/Australia – Africa	Melbourne, Jakarta, Singapore, Kuala Lumpur, Bangkok, Yangon, Madras, Colombo, Male, Bombay, and African FIR/UIRs	Oceanic low density	Major traffic flow AFI/ASIA/MID
AR-2	Asia (Indonesia, north to China, Japan and Republic of Korea) and Australia/New Zealand	Nadi, Auckland, Nauru, Honiara, Oakland, Brisbane, Port Moresby, Melbourne, Biak, Ujung Pandang, Bali, Jakarta, Singapore, Kota Kinabalu, Manila, Ho Chi Minh, Hanoi, Phnom Penh, Vientiane, Bangkok, Kuala Lumpur, Yangon, Hong Kong, Taipei, Naha, Tokyo, Shanghai, Taegu, Guangzhou, Wuhan, Beijing	Oceanic high density	Major traffic flow ASIA/PAC
AR-3	Asia and Europe via north of the Himalayas	Bangkok, Ho Chi Minh, Phnom Penh, Hanoi, Vientiane, Yangon, Kathmandu, Guangzhou, Kunming, Wuhan, Beijing, Urumqi, Shanghai, Shenyang, Lanzhou, Hong Kong, Taipei, Naha, Tokyo, Taegu, Pyongyang, Ulaanbaatar, Almaty, [Russian Federation FIRs, and European FIRs]	Continental high density/Continental low density	Major traffic flow ASIA/EUR/MID
AR-4	Asia and Europe via south of the Himalayas	Manila, Ho Chi Minh, Hanoi, Vientiane, Phnom Penh, Bangkok, Yangon, Ujung Pandang, Bali, Kota Kinabalu, Jakarta, Singapore, Kuala Lumpur, Hong Kong, Colombo, Madras, Calcutta, Dhaka, Kathmandu, Kunming, Delhi, Bombay, Lahore, Karachi, [and Middle East/European FIR/UIRs]	Continental low density	Major traffic flow ASIA/EUR/MID
AR-5	Asia and North America via the Russian Far East and the polar tracks via the Arctic Ocean and Siberia	Anchorage, Beijing, Canadian FIRs, Guangzhou, Hong Kong, Pyongyang, Russian Far East of 80E, Shanghai, Shenyang, Taegu, Tokyo, Wuhan and Ulaanbaatar.	Continental low density/Continental high density	Major traffic flow ASIA/EUR/NAM/NAT
AR-6	Asia and North America (including Hawaii) via the Central and North Pacific	Anchorage, Oakland (at and north of a line drawn by LAX - HNL - Guam - MNL), Vancouver, Tokyo, Manila, Taipei, Hong Kong and Naha	Oceanic low density	Major traffic flow ASIA/NAM/PAC
AR-7	Australia/New Zealand and South America	Brisbane, Auckland, Nadi, Tahiti, (and South America FIR/ UIRs)	Oceanic low density	Major traffic flow ASIA/PAC/SAM
AR-8	Australia/New Zealand, the South Pacific Islands and North America	Oakland (southern region), Nadi, Nauru, Honiara, Auckland, Tahiti, Brisbane and Port Moresby	Oceanic low density	Major traffic flow ASIA/NAM/PAC
AR-9	South-East Asia and China, Republic of Korea and Japan	Ujung Pandang, Bali, Jakarta, Singapore, Kota Kinabalu, Manila, Ho Chi Minh, Phnom Penh, Hanoi, Vientiane, Guangzhou, Kunming, Wuhan, Shenyang, Beijing, Bangkok, Kuala Lumpur, Yangon, Hong Kong, Taipei, Naha, Tokyo, Shanghai, Taegu, Pyongyang	Oceanic high density	Major traffic flow ASIA

APASM TF/3  
Appendix E to the Report

**APASM/TF ACTION PLAN**

<b>ID</b>	<b>Description</b>	<b>Start</b>	<b>Finish</b>	<b>Resource Names</b>
1	<b>Examine requirements of regulatory bodies, operators and service providers</b>	12-Dec-01	8-Mar-02	Task Force
2	— Review ICAO documentation on regulatory and legal framework	12-Dec-01	14-Dec-01	Task Force
3	— Identify the duties and responsibilities of organizations currently monitoring separation and other safety critical systems	12-Dec-01	8-Mar-02	Task Force
4	<b>Clearly describe airspace monitoring requirements in accordance with ICAO provisions</b>	12-Dec-01	Ongoing	Task Force
5	Follow the development of ICAO Separation and Airspace Safety Panel guidance as it relates to RVSM regional monitoring agencies	12-Dec-01	Ongoing	Task Force
6	<b>Develop the organization and structure of an airspace safety monitoring organization for the Asia/Pacific Region</b>	12-Dec-01	9-Sep-02	Task Force
7	— Identify States/agencies to provide monitoring services	12-Dec-01	24-Jul-02	Transfer to Implementation Task Force, APANPIRG
8	— Develop system monitoring matrix to identify initial functions and tasks of airspace safety monitoring organizations	13-Dec-01	8-Mar-02	Task Force
9	Develop a business plan for the airspace safety monitoring organization	14-Dec-01	9-Sep-02	Task Force
10	— Identify responsibilities for States to provide data to the airspace safety monitoring organization	14-Dec-01	24-Jul-02	Transfer to Implementation Task Force
11	— Establish a core management team to oversee regional airspace safety monitoring	14-Dec-01	24-Jul-02	Task Force
12	<b>Determine the size and functions of the monitoring services to meet safety goals</b>	12-Dec-01	24-Jul-02	Task Force
13	— Obtain terms of reference, size and functions of current monitoring organizations	12-Dec-01	8-Mar-02	
14	<b>Integrate all regional monitoring activities in a regional monitoring structure under APANPIRG</b>	12-Dec-01	24-Jul-02	Transfer to Implementation Task Force
15	— Determine responsibility and coverage of monitoring agency (Regional, by State, by function, or major traffic flow)	12-Dec-01	24-Jul-02	Transfer to Implementation Task Force, APANPIRG
16	— Determine appropriate support and expertise	12-Dec-01	24-Jul-02	Transfer to Implementation Task Force, APANPIRG
17	<b>Identify the cost of operating monitoring services and system for its funding</b>	12-Dec-01	9-Sep-02	Task Force
18	— Identify methods of collecting charges from ANS charges for providing monitoring services in accordance with ICAO policies	12-Dec-01	24-Jul-02	States/organizations performing monitoring activities
19	Obtain information on the cost of performing current monitoring services	14-Dec-01	9-Sep-02	States/organizations performing monitoring activities
20	— Examine information to determine an appropriate level of user charges for airspace safety monitoring	14-Dec-01	24-Jul-02	Transfer to Implementation Task Force
21	<b>Coordinate with other regional monitoring organizations to ensure inter-regional harmonization of charges for ANS</b>	14-Dec-01	Ongoing	ICAO, Task Force
22	<b>Provide support and assistance to the regional safety oversight programme</b>	14-Dec-01	Ongoing	Australia, Japan, US, Singapore, Boeing, CSSI
23	Encourage current States/agencies providing airspace safety monitoring services to share technology and information	14-Dec-01	Ongoing	Australia, Japan, US, Singapore, Boeing, CSSI
24	Consider the need to develop documentation for airspace safety monitoring organizations (collision risk models, ICAO guidance, etc)	14-Dec-01	9-Sep-02	Australia, Japan, US, Singapore, Boeing, CSSI, ICAO