



INTERNATIONAL CIVIL AVIATION ORGANIZATION

SEVENTH MEVA II / REDDIG COORDINATION MEETING

(MR/7)

FINAL REPORT

Mexico City, Mexico
10 to 11 June 2009

Prepared by the Secretariat
June 2009

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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HISTORICAL

ii.1 **Duration and Site of the Meeting**

The Seventh MEVA II / REDDIG Coordination Meeting (MR/7) was held at the ICAO North American, Central American and Caribbean (NACC) Regional Office in Mexico City, Mexico, from 10 to 11 June 2009.

ii.2 **Opening Ceremony**

Mr. Michiel Vreedenburgh, Deputy Regional Director of the ICAO North American, Central American and Caribbean Office, gave the opening remarks for the Meeting and welcomed the participants; he emphasized the works and agreements reached in order to achieve the MEVA II / REDDIG regional networks interconnection.

ii.3 **Organization, Officers and Secretariat**

Mrs. Dulce Roses from the United States acted as Chairperson; Mr. Julio César Siu, Regional Officer for Communications, Navigation and Surveillance from the ICAO NACC Regional Office acted as Secretary with the assistance of. Mr. Onofrio Smarrelli, Regional Officer for Communications, Navigation and Surveillance from the ICAO SAM Regional Office.

ii.4 **Working Languages**

The working languages of the Meeting were Spanish and English. The documentation and the Report of the Meeting were available to participants in both languages.

ii.5 **Agenda**

Agenda Item 1: **Current situation of the MEVA II / REDDIG networks**

Agenda Item 2: **Follow-up on the Action Plan for the implementation of the MEVA II / REDDIG interconnection**

Agenda Item 3: **Analysis of future requirements / services for the implementation of the MEVA II / REDDIG interconnection**

Agenda Item 4: **Initial Considerations Study on the implementation of the MEVA II / REDDIG networks integration**

Agenda Item 5: **Other issues**

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ii.6 Schedule and Work Mode

The Meeting agreed to hold its sessions from 09:00 to 16:30 hours, with adequate breaks. The Meeting also agreed to work in plenary.

ii.7 Attendance

The Meeting was attended by 20 participants from 9 States, Territories, and one International Organization Members of the MEVA II and REDDIG VSAT networks. The MEVA II Service Provider and the REDDIG Administrator also attended the Meeting. A list of participants is shown in pages iii-1 and iv-1 to iv-iv4.

ii.8 Conclusions

Number	Title	Page
7/1	Expedite the Approval of the RLA/09/901 Technical Co-Operation Project Between ICAO and COCESNA	2-3
7/2	Optimization of Equipment and Bandwidth Use in the MEVA II / REDDIG Interconnection	3-2
7/3	Preparation of a Preliminary Action Plan for the Study of the MEVA II / REDDIG Networks Integration	4-1
7/4	Exchange of Information for the MEVA II / REDDIG Integration	4-2

ii.9 List of Working Papers, Presentations and Information Papers

Working Papers

Number	Agenda Item	Title	Presented by
WP/01	--	Draft Agenda, Explanatory Notes, Organization and Work Schedule for the MR/7 Meeting	Secretariat
WP/02	1	MEVA II VSAT Network	Secretariat
WP/03	1	Current and Future Situation of the South American Digital Network (REDDIG)	Secretariat
WP/04	2	Follow up to MEVA II / REDDIG Action Plan Activities	Secretariat
WP/05	3	Future Services Requirements and Considerations for the Continuity and Keeping of Operations in the MEVA II / REDDIG Networks Interconnection	Secretariat
WP/06	4	Preliminary Study on Initial Considerations for the Implementation of MEVA II / REDDIG Networks Integration	Secretariat

Information Papers

Number	Agenda Item	Title	Presented by
IP/01	--	General Information	Secretariat

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Agenda Item 1: Current situation of the MEVA II / REDDIG networks

1.1 Under this Agenda Item, the Meeting took note of the current situation of the MEVA II and REDDIG networks and the infrastructure planning regarding the adjustments/changes caused by the new technology (MEMOTEC and Via SAT equipment), new services, bandwidth requirement, as well as other considerations regarding the interconnection impact and operation of the MEVA II/REDDIG Networks.

1.2 Regarding the MEVA II Network, information was provided with respect to its implementation and creation in 1996, by several Central Caribbean States and Territories in order to increase safety and regularity in the operations of the Caribbean Region. This Network was named MEVA, standing for its name in Spanish: “*Mejoras al Enlace de Voz del ATS*” (Improvements to ATS Voice Link). A description was also provided regarding the technical characteristics of the network, the transition process towards MEVA II (process carried out from 2000 to 2006); new future planning requirements as well as its membership and relevant information. **Appendix A** to this part of the Report provides a better description of the MEVA II Network.

1.3 Regarding the REDDIG Network, information was provided on its operation since 2003; a broad description of the current situation of the equipment; new services to be implemented on the network; its bandwidth analysis requirement; the planning of a Regional Multinational Organization (RMO) for the management of the REDDIG; and information on its performance and attention to failures. **Appendix B** contains more information on the REDDIG Network.

1.4 The Meeting when analyzing this information considered that it would be used for the analysis of Agenda Items 3 and 4.

APPENDIX A

MEVA II VSAT NETWORK

Introduction

The MEVA Network resulted from the regional collaboration and common effort by States/Territories on advancing Air Navigation services and in planning means and improvements based on performance objectives to satisfy future regional requirements.

In 1996, several Central Caribbean States and Territories agreed to use new technology to increase the level of safety and regularity of operations among the Caribbean Region with the implementation of a common Regional Telecommunication Network to improve reliability of the Aeronautical Fixed Services (AFS) Telecommunications Service Network. For which a regional VSAT Telecommunication Network was approved and implemented in 1996, providing AFS voice and data communications between the fifteen VSAT nodes in the area of the Central Caribbean and neighboring zones. This Network was named MEVA, standing for its name in Spanish: “Mejoras al Enlace de Voz del ATS” (Improvements to ATS Voice Link).

A brief description of the MEVA Network is presented in **Attachment 1** to this Appendix.

Transition to MEVA II and its projection for the ATN

In 2000, the MEVA TMG recognized that, although MEVA performed its intended mission adequately, the system was not technically responsive to support ICAO’s new and evolving digital communications requirements in the region in an operationally efficient and cost effective manner over the next decade. Because of the growth of the satellite communications industry, the quantities and types of voice and data circuits used by each MEVA end-user resulted in monthly recurring charges that were no longer cost competitive with other types of satellite services now in worldwide use. Newer technologies, such as the Internet Protocol and improved Frame Relay capabilities opened the door for improved services at a better value.

Considering Global Plan Initiative GPI-22 – *Communication Infrastructure*, ICAO SARPs, and guidance on the need to meet the AFS communications requirements and support CNS/ATM systems with the introduction of the aeronautical telecommunications network (ATN), the States, Territories and International Organization Members of MEVA, recognized the necessity to update the MEVA Network, to facilitate the adoption of services, systems and protocols with common equipment interface based on the Open System Interconnection reference Model (OSI) of the International Organization for Standardization (ISO), and the benefits of the interconnection/interoperability of the MEVA Network with other regional and sub regional digital networks. This initiative was denominated “MEVA II Network Project.”

The MEVA II Network Project was handled by the MEVA TMG assisted by ICAO. The major activities included the studies of the updates needed in the MEVA Network (a three year business case activity), formulation of the Request for Information document (RFI) on 2003 and the request for technical and cost proposals (RFP).

By December 2004, the Service Provider for the MEVA II Network Project was approved by the Civil Aviation Directors members of MEVA, as well as its corresponding Agreement Document. In 2005, MEVA TMG finalized the technical document that describes the network, and the transition plan towards MEVA II. Based on those documents and conformity with their respective national laws, the MEVA members arranged their contracts with the selected Service Provider. The implementation of the MEVA II nodes was completed in November 2006. The MEVA II members are: Aruba, Bahamas (Nassau and Freeport), Cayman Islands, Cuba, Dominican Republic, Haiti, Jamaica, Netherlands Antilles (Curaçao and St. Maarten), Panama, United States (Miami, Puerto Rico) and the Central American Air Navigation Corporation (COCESNA), whose member States are: Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

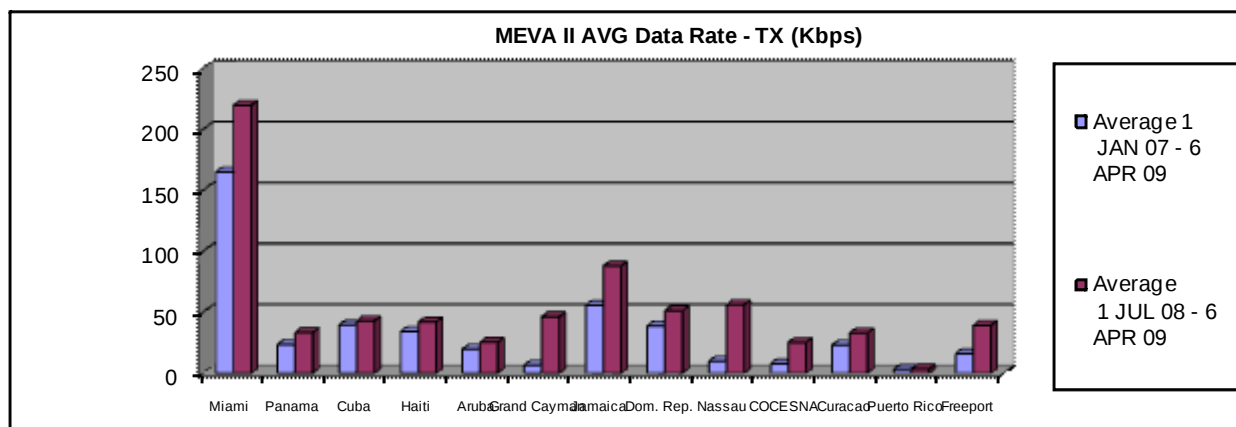
A general description of the characteristics and architecture of the MEVA II Network is given in **Attachment 2** to this Appendix.

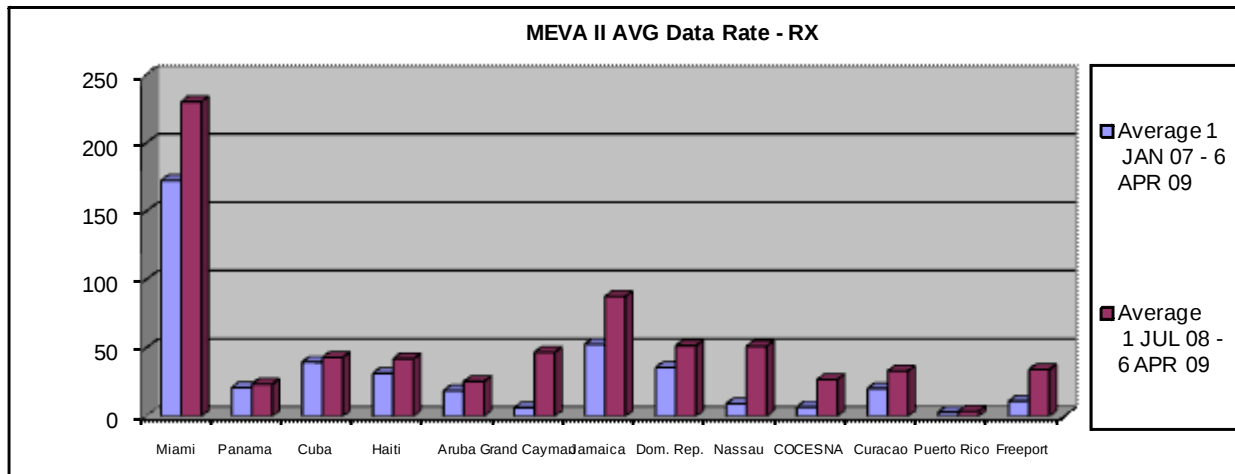
The implementation of the MEVA II Network Project represented a change in the operation and management of the network, optimum bandwidth usage, higher reliability and better monitoring capability. At each VSAT node site, all electronic and RF components were replaced with the latest COTS versions. Each site's reliability is maintained by annual preventive maintenance visits. The MEVA II Network utilizes a Website for dissemination of public information as well as means for MEVA members to share information and performance status monitoring (<http://www.mevaii.net>)

MEVA II Network Operations

Performance Evaluation

According to the conclusions of the MEVA TMG/19 Meeting, held in 2008, the overall system performance of the MEVA II Network over its first years of operation has been satisfactory. The MEVA II Network has maintained a 99.9% availability requirement, factoring in annual preventive maintenance allotment and outage caused by force major and site hurricane preparedness (temporary shut down and stow of antenna). This satisfactory operation coincides with training activities and the development of a Contingency Plan, among other activities.





MEVA interconnection with other Regional Networks

In consideration of ALLPIRG Conclusion 5/16 *Implementation of VSATs* on the expansion of existing VSAT networks, as planned in its MEVA II requirements (technical similarities and common satellite architecture) for solving or improving certain present and future requirements for the communications between the regions NAM, CAR and SAM, the States, Territories and International Organizations of the CAR/SAM regions agreed to form a common MEVA II / REDDIG Coordination Group with the participation of both Network members.

The activities and its advances of this interconnection are discussed on the following Agenda Items of the meeting. This Coordination Group also agreed on an integration phase of MEVA II and REDDIG networks. However, due to the two VSAT networks' current administrative and operational schemes differences, the integration phase could take place after a period of five years. The preparation and study of the integration phase is an on-going task of this Coordination Group.

Future Works in MEVA II

As part of the main objectives of MEVA II, the network provides flexibility and capability for the MEVA members to implement their planned ATN Applications and automation data exchange to achieve seamless interoperability of local and regional data networks in the region.

MEVA II provides the enabling infrastructure to allow the automated exchange of radar data, AMHS connectivity, flight information, and other important operational data across borders, thereby reducing operational errors, improving safety, and increasing efficiency:

- a) radar and surveillance data exchange agreements are ongoing among the Caribbean States, Territories, and International Organizations, in which MEVA II is the main telecommunication mean for this data exchange;

- b) with the modernization of AFTN systems, several AMHS systems have been implemented in the Caribbean region and ATN router connectivity assessment is planned; and
- c) several CAR Region States/Territories/International Organizations possess a high level progress in ATM automation. Considerable processing capacity and several automated functionalities, together with the surveillance data exchange would allow additional operational benefits regarding safety and efficiency, improved airspace utilization and mutual backup between adjacent ATS units, thereby significantly improving airspace harmonization.

In the last MEVA TMG/20 held in Mexico City from 8 to 9 June 2009, several issues were addressed regarding the operation and sustainability of the network such as:

- revision of Operation and Performance of the MEVA II Network (99.9% availability and increased use of bandwidth);
- agreements and actions on the MEVA II Contingency Plan, agreements for the migration of the IS-1R and IS-14 satellite service;
- study and strategy for actions to be taken for the renewal of obsolete or out of production equipment, spare parts supply and other planning on this regard;
- identification of new services and expansion of the network (radar data exchange, AMHS implementation planning and other data exchanges; and
- assessment of the MEVA II / REDDIG interconnection activities and planning for the integration phase.

ATTACHMENT 1 TO APPENDIX A

MEVA Network Description

The MEVA Network operated in the 4-6 GHz C band on satellite PAS-1R, with SCPC (single channel per carrier) and DAMA (Demand Assigned Multiple Access) technologies to allow a voice or data circuit user anywhere in the network to communicate with any other user in the network via a single satellite hop. The system was capable of providing a full mesh connectivity, dynamic reconfigurability, and service on demand using distributed network control architecture. The MEVA Network had a Network Management and Control Facility (NM&C) that allowed the monitoring of real-time operational status, end-to-end circuit performance and security of all ground and space elements of the system on a 24/7 basis. The MEVA equipment was composed of tropicalized commercial off-the-shelf (COTS) equipment, software and related supplies, with a guaranteed replacement availability of 10 years.

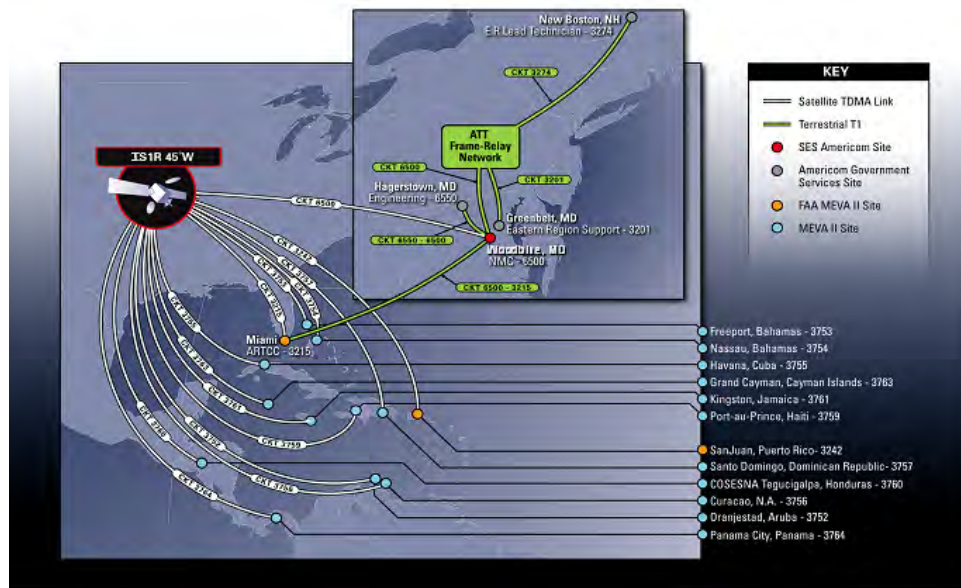
All system voice and data circuits provided a high percentage of availability. The MEVA Network made possible the implementation and improvement of the AFTN and voice circuits established in the CAR/SAM Regional Air Navigation Plan and solved the COM deficiencies that were identified in the Central Caribbean Region.

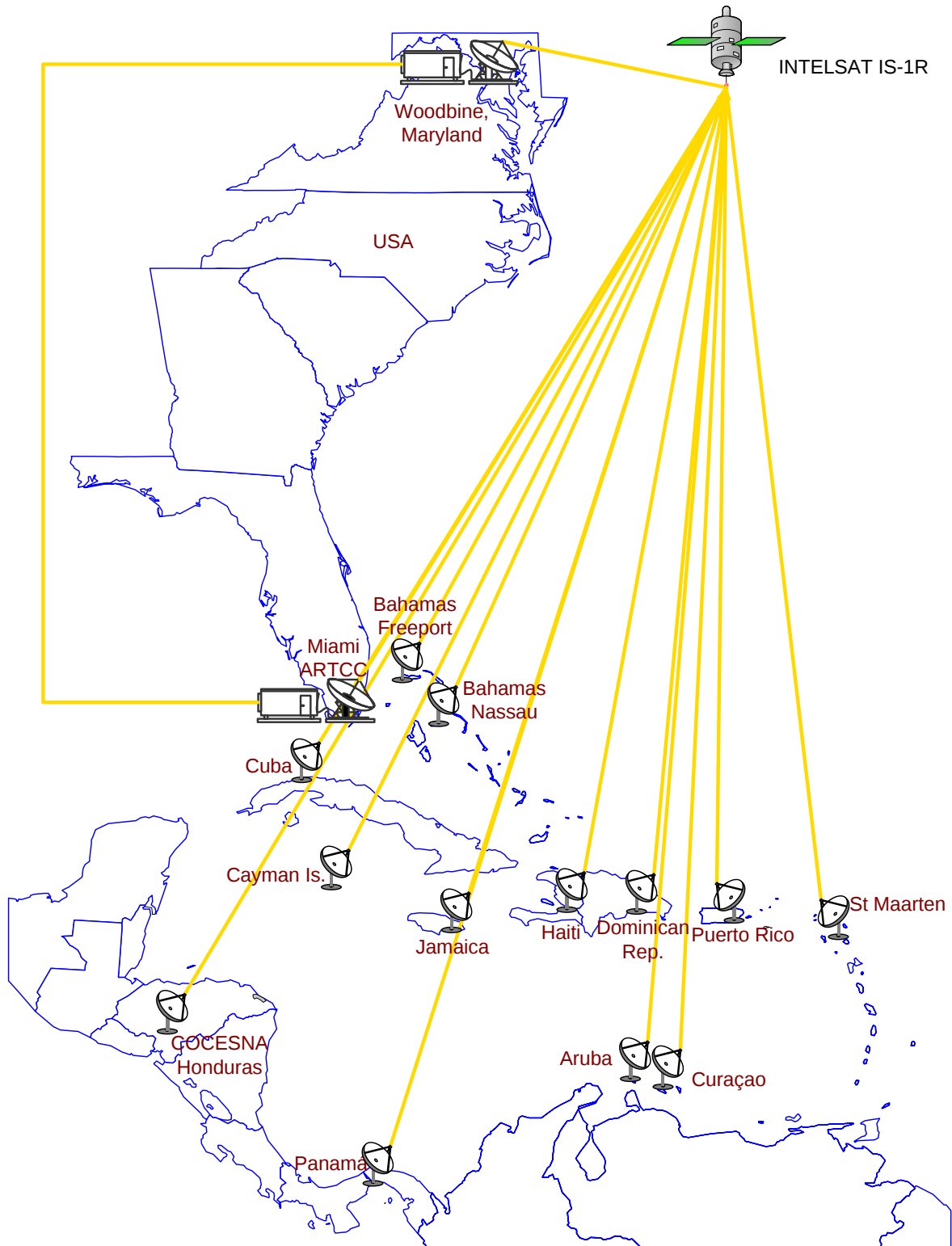
The network and operations-related topics is managed by the MEVA Technical Management Group (TMG), composed of experts of the MEVA members and the MEVA Service provider. The MEVA TMG usually met on an annually basis assisted by ICAO

ATTACHMENT 2 TO APPENDIX A

MEVA II NETWORK Characteristics

The MEVA II Network is a TDMA satellite-based frame relay network connecting air traffic control facilities and civilian airports throughout the Central Caribbean and adjacent Flight Information Regions (FIRs). The network uses satellite IS 1R's directed beam on the United States/Latin America, with operation frequencies in C band and vertical linear polarization. MEVA II provides voice and data communication between control towers in Aruba, Curacao, Jamaica, Grand Cayman, Puerto Rico, Dominican Republic, Haiti, Honduras, Panama, Freeport and Nassau, Bahamas, Miami, and Cuba. The Service Provider in coordination with MEVA members and MEVA TMG, manage network operations, perform preventive and corrective maintenance functions, and conduct advanced training sessions for interested MEVA member-states.





The MEVA II Network Project permitted several improvements to the network/system capacity and performance:

- Improved satellite bandwidth capacity availability for future services and network expansion to continue satisfying AFS communications, facilitate the implementation of ATN sub networks and to contribute to the implantation of new CNS/ATM systems and applications.
- Support and compliance with new and future OACI requirements with respect to digital communications in the air traffic control regions of the Caribbean and South America, via operationally and cost-efficient means during the next decade.
- The use of multiple access by division in time (TDMA), with satellite bandwidth on demand (BoD) and the implantation of Frame Relay, IP solution or IP over Frame Relay, proved beneficial in reducing monthly service costs as well as allocating more efficient bandwidth usage.
- COTS equipment, architecture design and real time monitoring of Network Status permitted more flexibility, a higher level of services and increased availability of the Aeronautical services.
- South American Regional VSAT Network (REDDIG) compatibility with designated MEVA II VSAT Nodes for the interconnection of the two networks.

APPENDIX B

ANALYSIS OF THE CURRENT AND FUTURE SITUATION OF THE SOUTH AMERICAN DIGITAL NETWORK (REDDIG)

The following aspects are contemplated in the current and foreseen REDDIG situation

- **Current situation of the REDDIG equipment and future actions**
- **New services to be implemented at REDDIG**
- **Bandwidth requirement**
- **REDDIG management by the RMO**
- **Logistical operations and implementations**

ViaSat Inc. Linkway system

The current Linkway 2100 system technology, REDDIG network's central platform, has been efficiently operating all its services since its start-up in 2003, and is also supporting the new IP protocol based services (AMHS, RADAR, VoIP), which have already been operationally proven within REDDIG.

With the aim of presenting pertinent recommendations to improve the Linkway system, queries were made regarding the continuity to manufacture the Linkway 2100 modem (satellite modem) and its corresponding Linkway 2100 NCC/NMS.

In this regard, note has been taken, through publications and information provided via web page www.viasat.com, that these products are no longer being promoted by ViaSat.

Information provided by the manufacturer is that ViaSat has developed the Linkway S2 modem (based on DVB-S2 technology for reception) and the Linkway S2 NCC/NMS software. In addition, information available indicates that the new Linkway S2 modem could be operated in a manner compatible to the Linkway 2100 modem, but the Linkway 2100 modem is not compatible with Linkway S2 modem.

Taking into consideration that the manufacturer will not continue with the development of the technology used by the Linkway 2100 system and that, nevertheless, this Linkway 2100 system, platform of REDDIG, has an operational life for the current and new services in the Region, the recommendation is to make no investment in the improvements (software and hardware updating) of the Linkway 2100 NCC/NMS.

In turn, it is proposed that this year (2009) REDDIG project increases the spare parts lot as regards the Linkway modem, with the aim of guaranteeing the operation of this equipment for a three-year minimum period, taking into account its failure statistics.

Memotec FRAD equipment (CX950/950e)

The equipment used by REDDIG, since their installation in 2002, were the CX950 with I/O cards for the processing of voice and data services through the network

The software of the CX950 equipment has been duly updated during the operation of REDDIG to solve any anomalies in the signalling process, as well as to adapt it to the operation requirements of some of the services run through REDDIG, having also the manufacturer developed a version which was initially exclusive for REDDIG.

The CX950 equipment, basic unit comprising of power supply and the motherboard, were discontinued since 2006. The CX950e equipment was indicated by the manufacturer as its equivalent replacement. It is important to mention that the I/O cards are compatible for both the CX950 equipment, as for the CX950e.

Some REDDIG nodes have been replacing the CX950 equipment, basic unit, with CX950e, basic unit, when a diagnosis was made indicating failure in the motherboard.

The CX950 and CX950e and I/O cards are totally inter-operable within REDDIG.

The CX950/950e equipment has been efficiently working all its services since 2003 and, also, is supporting the new IP protocol based services (AMHS, RADAR, VoIP), which have already been operationally tried at REDDIG.

Similarly to that carried out with respect to the Linkway 2100 system, investigations were made on the manufacturing continuity of the CX950e equipment and its I/O cards.

Note has been taken, through publications in web page www.memotec.com, that the products of this series are no longer commercially offered by Memotec. Information provided by Memotec is that the replacement product of CX950e is CX-960e, and that it will be sold only until 30 July 2009 (product's end-of-life).

Taking into consideration that the CX950/950e equipment count with an operational life for the current and new services passing through the Region and that, nevertheless, this equipment has been discontinued, the REDDIG RCC/12 meeting recommended that the CX960e equipment and I/O cards be purchased by 30 July 2009.

Paradise Datacom RF system (SSPA/LNB equipment)

Paradise Datacom, manufacturer of the SSPA equipment, has been developing its product since 2002, when this equipment (2K series) was installed in REDDIG. The changes made to their new SSPA models are compatible with the REDDIG stations' transmission requirements.

REDDIG project purchased a new SSPA model (100K series) in 2005 and, also, some States have purchased other new SSPA (200K series) models in the past years.

It is important to mention that, when new SSPA equipment is purchased, account should be given to the interoperability of the new SSPA M&C (Monitoring & Control) with the REDDIG's current RM&C system. For this, the Purchase Order must specify that the SSPA's M&C should have binary communications protocol with a 38400 Baud rate.

The LNB's current model will be able to continue operating and, in the event of purchasing new equivalent models, consideration should be given for the electrical and mechanical specifications to comply with the network's operational characteristics.

Antenna system

The antenna system can continue operating until migration is made to a new Communications platform, following the recommendations duly provided for their mechanical and electrical maintenance.

Plan for the change of the REDDIG technological

The REDDIG Administration has scheduled to present, at the next REDDIG coordination committee meeting (RCC/13) to be held in Lima in the first quarter of 2010, a study regarding the change of the REDDIG hardware and software platform, to be implemented within an initial three-year period, as of 2009. The changes programmed will not be affecting the activities corresponding to MEVA II / REDDIG interconnection.

During 2009, new services implementation as a result of MEVA II / REDDIG interconnection, radar data and flight plans exchange, due to automation activities planned to be implemented in the Region, and operation of AMHS international circuits among various States, are foreseen.

The services currently passing through REDDIG are the dedicated ATS speech service, switched ATS speech service, administrative, AFTN and radar data. GNSS data for SBAS trials and data for AMHS trials have also passed through.

The transmission speed used for these services is of 9200 bits/s for ATS and administrative speech services, 2400 bits/s for AFTN data and 9600 bits/s for radar data. For SBAS trial tests, a 9600 bits/s transmission speed was used, and for the AMHS service, 64Kbits/s.

REDDIG currently has a 4.38 Mhz band width availability for the transmission of the afore described services. For the transmission of information, three carriers are used, at the following frequencies:

- a) 6.014.496 Khz;
- b) 6.016.248 Khz; and
- c) 6.017562 Khz.

All REDDIG services are modulated through three carriers, two operating at a 1.25 Msym/s modulation speed, and the remaining, at 0.625 Msym/s. The 1.25 Msym/s modulation transmission speed corresponds to a 1.75 Mhz band width, and the 0.625Msym/s, to 0.875 Mhz.

REDDIG's capacity to transmit traffic among all the nodes, in terms of bursts, is the following:

CARRIER	SYMBOL RATE	16 KBIT/S BURSTS
1	1.25 Msym/s	32 bursts
2	1.25 Msym/s	34 bursts
3	0.625 Msym/s	17 bursts

REDDIG currently has 42 circuits installed for the dedicated ATS speech service, 49 circuits for the switched ATS speech service, 39 voice circuits for administrative purposes, 58 AFTN circuits, 2 radar circuits and y 6 circuits for meteorological data.

REDDIG is a TDMA network, and the transmission of information is carried out through 16 Kbits/s capacity bursts. REDDIG has 1,328 Kbps available in total to transmit traffic among all the network's terminals, equalling to 83 16 Kbits/s bursts.

During the network's peak traffic period, 976 Kbps are used, equalling to 61 bursts, i.e. 73.5% of the total maximum capacity available.

Taking into account that consideration should be given to having a 10% *minimum reserve* of the total bursts before reaching the burst maximum capacity, the total number of usable bursts would be of 75 (83-8), with the aim of avoiding congestion saturation.

Considering the current major traffic peak period, there is an appropriate band width available, remaining 14 bursts available as regards the required reserve before reaching 75, which would be the maximum usable number of bursts.

Since in the next years it has been foreseen to implement new services in REDDIG, such as the ATSMHS service, radar data and other ATS voice and AFTN data services for MEVA II / REDDIG interconnection, there would be need in taking previsions regarding an additional satellite band width requirement.

As regards the ATSMHS service, the following SAM States have it currently implemented: Argentina, Brazil, Paraguay and Peru. During the course of this year, this service will be implemented in Chile, Colombia and Panama. It is expected that by 2012 most States in the Region will have this system implemented.

In this regard, RCC/12 meeting established an Ad-hoc Group composed by Argentina, Brazil and the REDDIG Administration to analyze the necessary bandwidth increase, considering the implementation of new services, and formulated Conclusion 12/2 - *Study on the requirement of an additional bandwidth for REDDIG*, expecting to obtain results by mid- 2009.

Independently from the results of the bandwidth requirement study, RCC/12 meeting considered it convenient to include budgetary previsions, as of 2010, for a new 1.25 Msym/sec bandwidth carrier.

The management of REDDIG is carried out through RLA/03/901 ICAO regional technical cooperation project, programmed to operate until 2011, year scheduled for the startup of the RMO (Regional Multinational Organization).

The studies carried out by GREPECAS on the RMO were finalized with the formulation of Conclusions 14/5 – *Generic document concerning an agreement for the establishment of a Regional Multinational Organization* and 14/6 – *Technical cooperation project to facilitate the implementation of a Regional Multinational Organization (RMO)*.

The Eleventh Meeting of Civil Aviation Authorities of the SAM Region (RAAC/11) held in Santiago, Chile, from 6 to 8 May 2009, formulated Conclusion 11/3 - *Diplomatic conference for drafting the definitive text of the incorporation agreement for the establishment, operation and management of a Regional Multinational Organization (RMO)* as follow-up to the implementation of the RMO, with the aim that SAM States hold a diplomatic conference within the second semester of 2009 to approve the definite text for the establishment of the RMO.

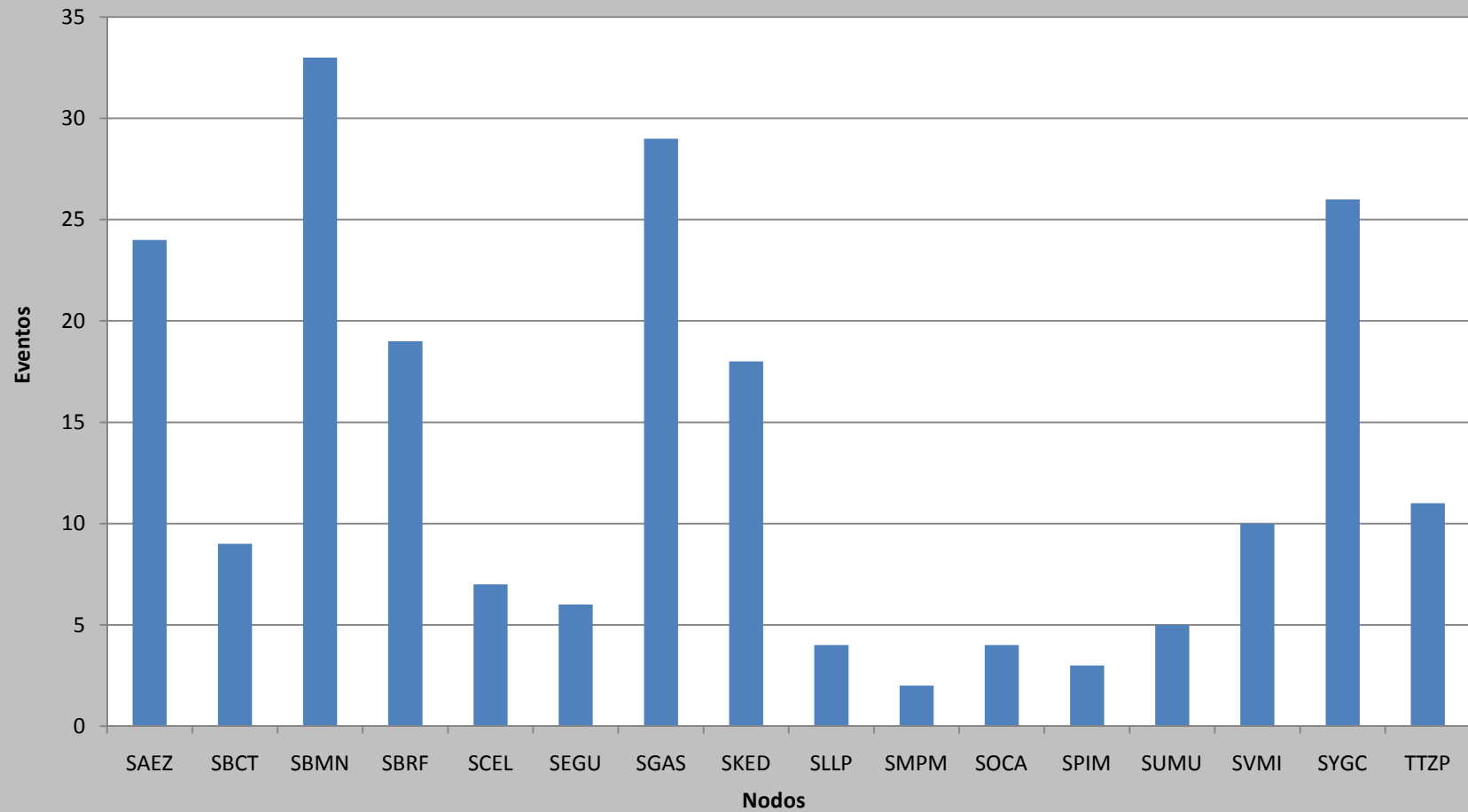
In addition, during RAAC/11 meeting, the need to determine the headquarters for the RMO was requested, asking ICAO to send a letter to the States of the Region for them to present proposals to be headquarters of the RMO, formulating Conclusion 11/4 - *State proposals for determining the headquarters of the Regional Multinational Organization (RMO)*.

For the implementation of the RMO, a technical cooperation project was drafted for its initial phase, with the aim of being able to provide the necessary technical assistance to States. This project will be circulated to the States of the Region for its approval. In this regard, RAAC/11 meeting formulated Conclusion 11/5 - *Technical assistance for the implementation of a Regional Multinational Organization (RMO)*.

Attachment 1 to this Appendix presents 2008 statistics pertaining to the number of services given to the network nodes, as well as the distribution regarding the type of equipment originating the service.

A backup circuit was implemented at the REDDIG Trinidad & Tobago node. Same is programmed so that, upon occurrence of a failure of the Trinidad & Tobago node, all the services at the Trinidad node will be sent to the Lima node.

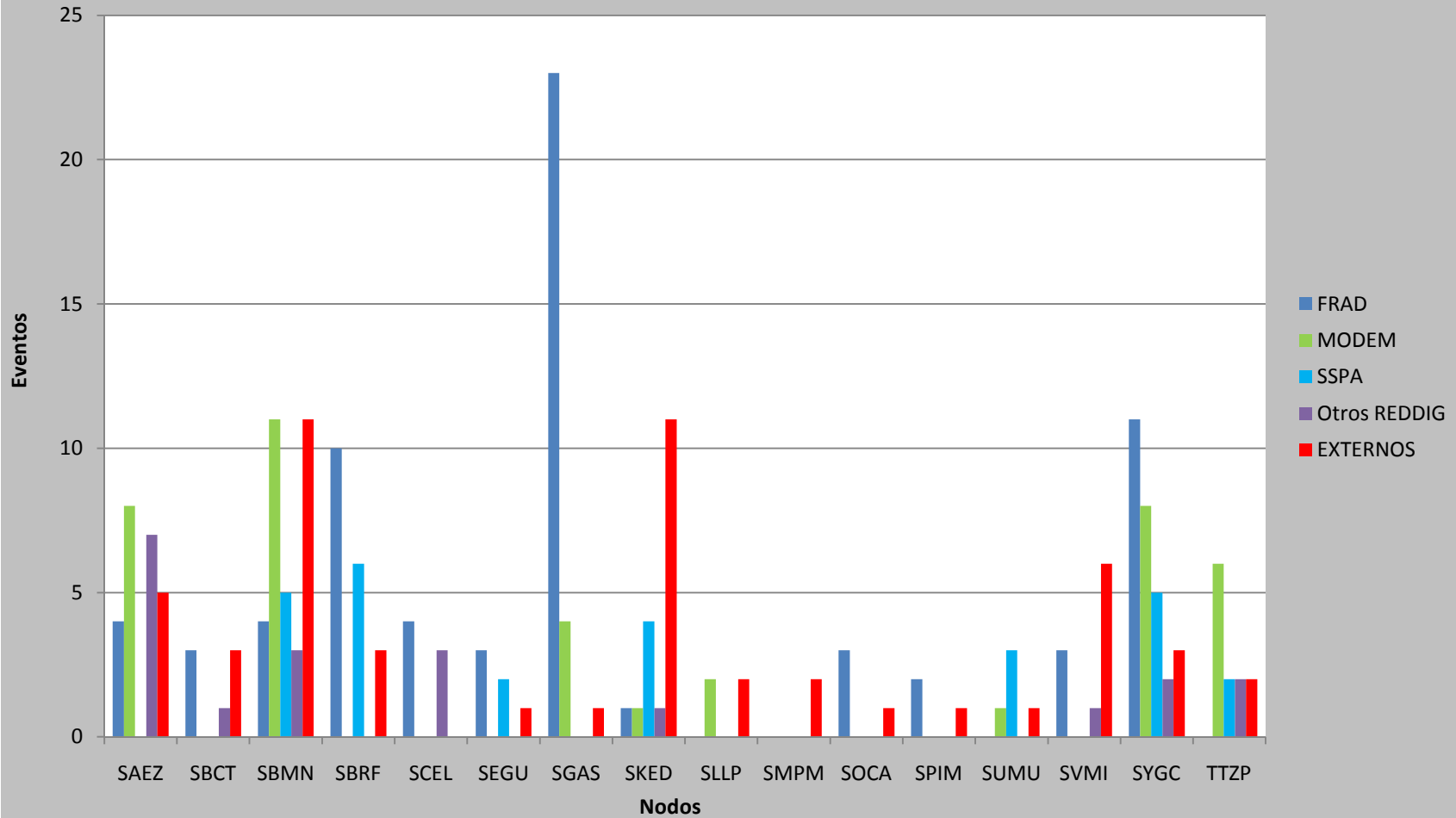
REDDIG 2008
SERVICE TO NODES / ATENCIONES A LOS NODOS = 210



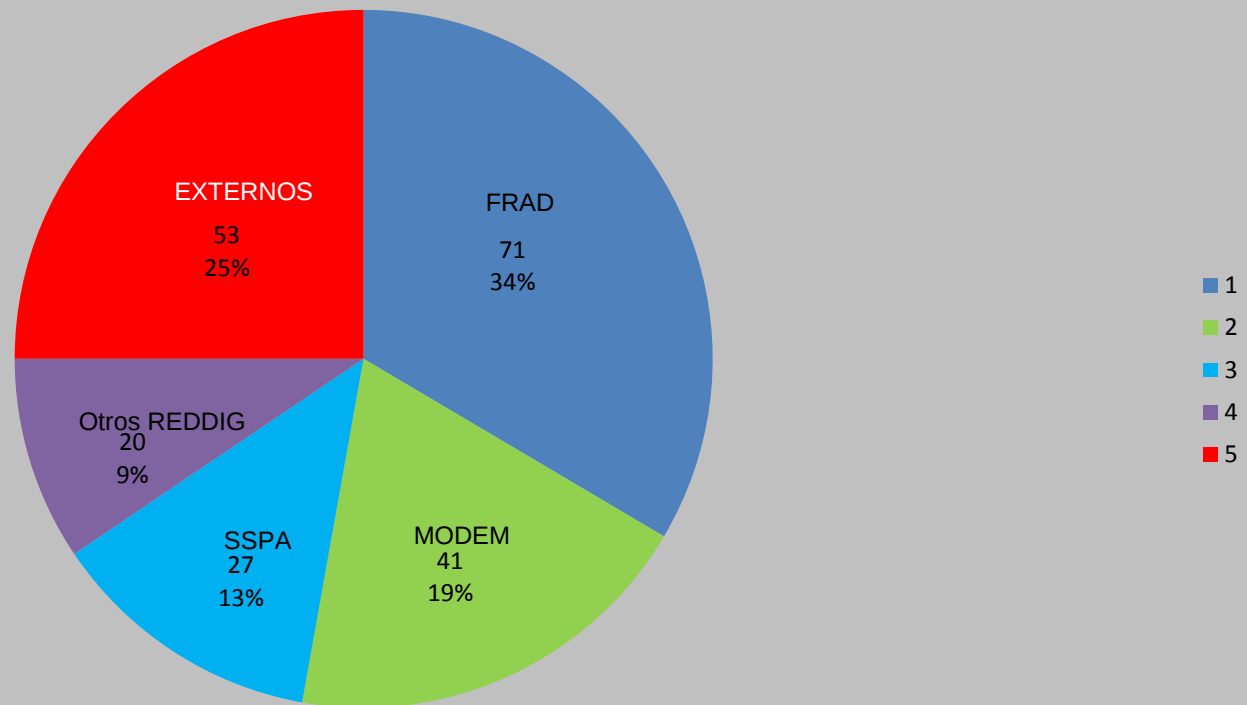
Attachment 1 to Appendix B to the Report on Agenda Item 1
 Adjunto 1 al Apéndice B al Informe sobre la Cuestión 1 del Orden del Día

REDDIG 2008

DISTRIBUTION OF SERVICE/DISTRIBUCION DE ATENCIONES



REDDIG 2008
DISTRIBUTION OF SERVICE BY EQUIPMENT CATEGORY /
DISTRIBUCION DE ATENCION POR CATEGORIA DE EQUIPO



Agenda Item 2: Follow-up on the Action Plan for the implementation of the MEVA II / REDDIG interconnection

2.1 The Meeting took note of the activities carried out for MEVA II / REDDIG interconnection, as follow up to its action plan. The activities that were analyzed were:

- the status of the contract between ICAO and the MEVA II Service Provider;
- the provision of the equipment to be installed at the REDDIG nodes;
- the agreement between AGS and the MEVA II members, related with MEVA II / REDDIG interconnection;
- the agreement between ICAO and COCESNA for MEVA II / REDDIG interconnection (RLA/09/901 project);
- the naming of focal points, and
- the amendment to the MEVA II / REDDIG action plan.

Status of the contract between ICAO and the MEVA II Service Provider

2.2 The Meeting was informed that the Contract No. 22500187 between ICAO and Americom Government Services, Inc. (AGS), the MEVA II Service Provider, for the interconnection of the MEVA II and REDDIG satellite telecommunications networks, was signed on 25 March 2009.

2.3 The Meeting considered that Conclusion MR 6/03 – *Speed up MEVA II Provider contract revision and signature and as well as the public bidding for the MEVA II REDDIG interconnection necessary equipment purchase* is now completed.

2.4 The Meeting took note that the contract covers all activities related with MEVA II / REDDIG interconnection at the Bogota and Caracas REDDIG nodes, and the voice and data recurrent services for access to MEVA II network by Brazil, Colombia, Peru and Venezuela, this contract is valid for a year and is extendable to another year or beyond, without exceeding nine years after the initial one-year rental period. Likewise, the prices specified in the contract for recurrent voice and data services will remain invariable for **120** months, as of the interconnection services activation date.

2.5 The Meeting was informed that AGS will be responsible for carrying out the following tasks:

- a) On site survey of the Bogota and Caracas REDDIG node;
- b) Installation of equipment necessary for interconnection at Bogota and Caracas;
- c) Configuration in the MEVA II / REDDIG networks; and
- d) Activation and operation of the services programmed in the interconnection.

2.6 In this regard, the Meeting took note that site surveys of the REDDIG nodes in Bogota and Caracas had been carried out from 28 April to 1 May 2009. The AGS delegate informed that the site survey results will be sent to ICAO by mid-June 2009.

2.7 The Meeting was informed that AGS is offering an optional basic training when the installers are working at the sites involved in the interconnection. The training will have a four-hour duration and will provide the corresponding training material. In the case of requiring this on-site training, it should be requested ten days before the programming of the on-site installation. The cost of the course is of US\$1,306.25 per site and includes the training of a maximum of five people.

2.8 When analyzing the action plan, attached to the contract N° 22500187 for the implementation of the MEVA II / REDDIG interconnection, AGS confirmed the Meeting that they would keep all the dates for the implementation of activities indicated in the Action Plan. The Plan is presented as **Appendix A** to this part of the report.

2.9 The Meeting requested to AGS the preliminary documentation of the installation and configuration in the Caracas and Bogota nodes. In this regard, AGS informed that this information was already available and that it would be delivered to ICAO. In addition, they informed that once the installation is completed they will deliver the related final documentation.

Provision of equipment to be installed at the REDDIG nodes

2.10 The Meeting took note that the ICAO Technical Co-operation Procurement Section acquired the equipment to be installed at the REDDIG nodes involved in the interconnection (Bogotá, Caracas and Guayaquil). The list of equipment is contained in **Appendix B** to this part of the report.

2.11 With the exception of the MODEM Linkway 2100, all the equipment indicated in Appendix B was purchased and sent to AGS to be homologated, as decided by the Fifth MEVA II / REDDIG Coordination Meeting (MR/5). The card for Ecuador was purchased and sent accordingly to Ecuador.

2.12 The MODEM VIASAT 2100 equipments for Colombia and Venezuela have not been purchased yet, since the manufacturer discontinued the production of this model. The Meeting was informed that ICAO requested a quote to AGS to supply the equipment and in turn AGS informed the Meeting that the MODEM equipments will be supplied and installed in the dates indicated on the action plan.

2.13 The Meeting took note that Conclusion MR 6/04 – *Possible adjustment of the REDDIG administration budget approved during the Eleventh Coordination Meeting of Regional Project RLA/03/901* was completed since the Twelfth REDDIG Coordination Meeting made the necessary budget adjustments for the signing of the contract between AGS and ICAO.

Agreements between AGS and the MEVA II members related to MEVA II / REDDIG interconnection

2.14 The Meeting was informed that AGS had contacted the MEVA II members involved in the MEVA II / REDDIG interconnection (Aruba, Curacao, Jamaica, Panamá and United States) for the purchasing and installation of the equipment necessary for the interconnection.

Agreement between ICAO and COCESNA for MEVA II / REDDIG interconnection (RLA/09/901 project)

2.15 The Meeting took note that for the interconnection and operation of the COCESNA MEVA II node with REDDIG, RLA/09/901 technical cooperation project was drafted between ICAO and COCESNA, which contains technical, of service and economical aspects for the interconnection.

2.16 The project document was reviewed by COCESNA since February 2009 for its implementation. In order to be implemented it is necessary that ICAO (Technical Co-operation Bureau) review and sign the document. The meeting considered that ICAO should expedite the review and signing process of the project and therefore drafted the following:

CONCLUSION MR 7/1 EXPEDITE THE APPROVAL OF THE RLA/09/901 TECHNICAL CO-OPERATION PROJECT BETWEEN ICAO AND COCESNA

That ICAO, through its Technical Co-operation Bureau expedite the approval process of the Technical Co-operation RLA/09/901 Project between ICAO and COCESNA for the interconnection of the COCESNA MEVA II node with the REDDIG.

2.17 The Meeting reviewed the Schedule of activities for the interconnection of the COCESNA MEVA II node with REDDIG, prepared by the REDDIG Administration. It was informed that if the signature of the project is accomplished before the end of June, the dates established in the schedule would be kept. The schedule is presented in **Appendix C** to this part of the report.

Nomination of focal points

2.18 The Meeting updated the list of people who will act as focal points for the coordination of MEVA II / REDDIG interconnection activities, and it is contained in **Appendix D** to this part of the report.

Amendment to the action plan for MEVA II / REDDIG interconnection

2.19 Taking into account the action plan prepared by AGS and the schedule of activities prepared by the REDDIG Administration, the Meeting updated the action plan for the MEVA II / REDDIG interconnection. The updated plan is contained in **Appendix E** to this part of the report.



AMERICOM GOVERNMENT SERVICES

MEVA REDDIG Implementation Plan

DOCUMENT # MVR-PLN-IMP-001-U
REV 0

Document Administration

ORIGINATOR Matthew Toney	QUALITY ASSURANCE
PROGRAM MANAGER Matthew Toney	DATE RELEASED 4/6/09
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0	4/6/09	Draft



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Approvals

NAME	TITLE
Matthew Toney	Program Manager
SIGNATURE	DATE

NAME	TITLE
SIGNATURE	DATE

NAME	TITLE
SIGNATURE	DATE

NAME	TITLE
SIGNATURE	DATE

NAME	TITLE
SIGNATURE	DATE

Client Acceptance

☐

ACCEPTED

☐

ACCEPTED WITH CHANGES

NAME	TITLE
SIGNATURE	DATE



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1.0 Introduction

1.1 Executive Summary

The REDDIG and MEVA II networks both provide communications critical to air traffic safety in the South American, Caribbean, and Central American operating regions. Each member state, brought together by the International Civil Aviation Organization (ICAO), is networked to provide voice (switched, hotline, and administrative) and data (flight plans) that are used to help ensure the safety of thousands of commercial flights each year. Currently, these two networks are separate and cannot be used to inter-communicate as flights pass between the Caribbean and Central American region and the South American region. Although the two networks are currently separate entities, they are designed so that an individual node may be added into either network with additional hardware and configuration. MEVA II and REDDIG members defined the requirement for the interconnection of circuits between designated MEVA II nodes and designated nodes in the REDDIG VSAT network.

The AGS MEVA - REDDIG Interconnection solution minimizes the amount of integration necessary to accomplish this goal by using the same frame relay device that breaks out the individual voice or data circuit required for both networks. Our technical solution, which places particular emphasis on the availability and reliability performance factors, is designed under the following premises:

REDDIG and MEVA II VSAT Interconnection Network will both operate under a full-mesh network topology, using TDMA/Frame Relay satellite access, employing a IS-IR satellite transponder with a beam directed over United States /Latin America, C-Band operational frequencies and colinear vertical polarization.

Installation of MEVA II compatible modems in the REDDIG nodes in Bogotá, Colombia and Caracas, Venezuela, and a REDDIG compatible modem in the MEVA II node in COCESNA using the existing FRADS will allow communications from any MEVA II site to Bogotá and Caracas and from any REDDIG site to COCESNA.

For all new equipment to meet the service requirements of our solution, AGS will use only commercial-off-the-shelf (COTS) equipment and/or software from reputable manufacturers and suppliers.

Our design for the MEVA II / REDDIG Interconnection solution is modular and technologically upgradeable, state of the art, compatible with existing modules in the existing VSAT nodes, thereby permitting a



high degree of flexibility for implementing future changes in communications services when requested to do so by ICAO.

1.2 Plan Introduction

1.2.1 Purpose

The purpose of the Implementation Plan is to describe the organizational resources and management controls to be employed to meet the cost, performance, and schedule requirements for the MEVA REDDIG implementation.

1.2.2 Assumptions and Constraints

This effort is to be carried out IAW Contract No. 22500187 for the Provision of the Interconnection of the MEVA II and REDDIG Satellite Telecommunications Network.

1.2.3 Scope and Objectives (Program Deliverables)

AGS is tasked with the successful interconnect of the Bogota and Caracas REDDIG sites to the MEVA II network. Via separate service order modifications with applicable MEVA II sites, AGS will be tasked to implement components necessary to support the interconnect. AGS will fulfill all requirements set forth in Contract No. 22500187 for the Provision of the Interconnection of the MEVA II and REDDIG Satellite Telecommunications Network.

2.0 References

Contract No. 22500187 for the Provision of the Interconnection of the MEVA II and REDDIG Satellite Telecommunications Network.

MEVA II Operations and Maintenance Plan

3.0 Program Organization

3.1 AGS Program Team

Name	Phone	Mobile	E-mail	Role
Matthew Toney	301-797-5042	717-977-5867	Matthew.toney@americom-gs.com	Program Manager
Devaraj Sahu	703 610-0986	301-728-2107	devaraj.sahu@americom-gs.com	Systems Engineer
Ron Teske	410-549-4314	410-382-3846	Ron.teske@americom-gs.com	Operations Manager



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David Benning	703 610-0908		David.benning@americom-gs.com	Sales Director
Angie Steever	703-610-1020		Angela.Steever@americom-gs.com	Contracts / Legal
Stacey Elwood	301-992-2992		Stacey.elwood@americom-gs.com	Contracts Manager
David Jackson	703 610-1026		david.jackson@americom-gs.com	Program Sponsor – AGS COO

Table 1 – AGS Program Team

3.2 Customer Team

Name	Phone	Mobile	E-mail	Role

Table 2 – Customer Team

3.3 Key Vendors / Subcontractors

Name	Phone	Mobile	E-mail	Role
C-Systems	321-636-7588	321-591-2654	lloyd.brownhill@c-systemsinc.com	Installation Contractor

Table 3 – Key Vendors / Subcontractors

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3.4 AGS Escalation List / Organization Chart

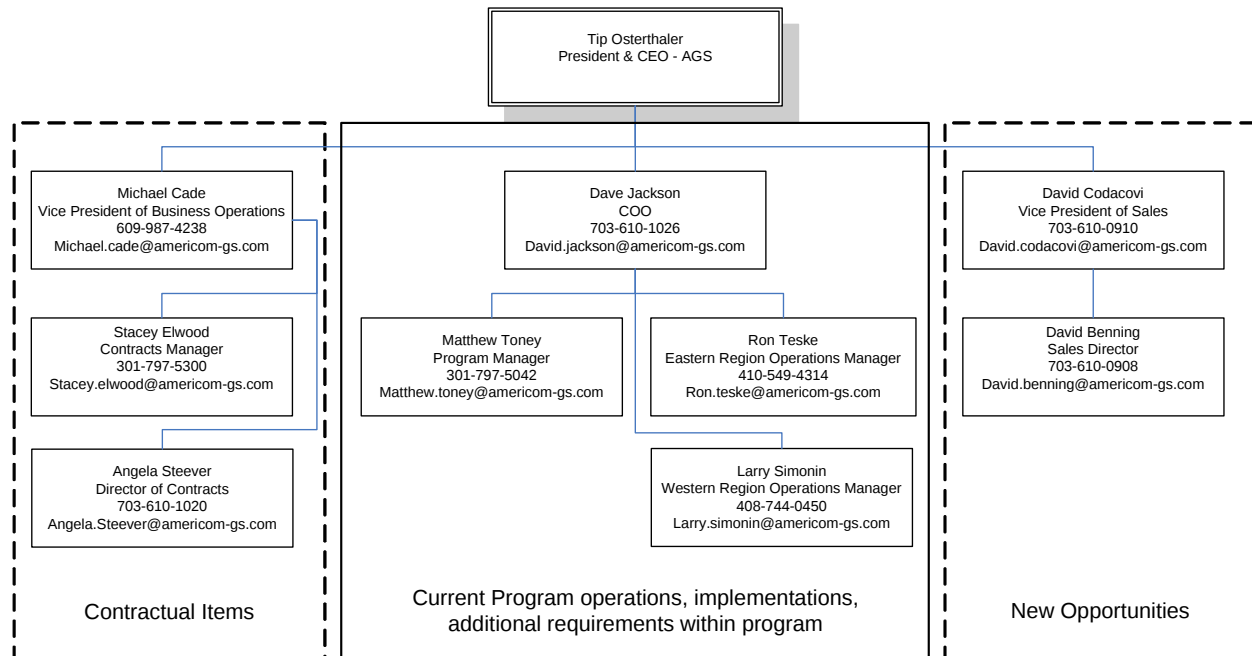


Figure 1 – AGS Escalation List

3.5 Roles and Responsibilities

3.5.1 Program Manager (PM)

The Program manager will:

Be the primary point of contact for AGS and the customer with regards to product or service delivery

Ensure that team members know their responsibilities

Track team member performance

Prepare a detailed implementation plan, and obtain agreement to that plan from the AGS and Customer management teams

Maintain a Program binder containing all pertinent Program data

Report Program status to management



Oversee the effort to finalize a Statement of Work that is acceptable to AGS and the customer

The Program manager's authority include:
Authority to direct Program team

Access to customer representatives on all matters related to this effort

Access to the AGS management team on all matters related to this effort

Control of the Program budget

Access to financial reports related to Program expenditures, including time and attendance

Renegotiation with the AGS management team to delegate responsibility and authority to functional organization

3.5.2 Program Engineer (PE)

The Program Engineer will:

Review all technical requirements listed in the customer SOW

Oversee the technical design to ensure requirements are met

Provide technical oversight with regards to subcontract work

Perform duties as described in the Subcontract Management Plan

AGS MEVA REDDIG Subject Matter Expert (SME)

With the PM, develop operating procedures for the Network Operations Center and AGS Operations to support ongoing operations of the MEVA REDDIG network

3.5.3 Field Operations

Field Operations staff will be used to implement and test the components to be installed in the existing MEVA II sites.

3.5.4 Configuration Management (CM) & Process Lead

The Configuration Manager is responsible for formal releases of documentation, revision level control, and management of Functional



Configuration Audit (FCA) and Physical Configuration Audit (PCA). The Process Lead is responsible for ensuring the proper processes are being followed as described in all project plans and procedures, and that the correct metrics are being gathered, analyzed, monitored and adjusted when needed.

3.5.5 Quality Assurance (QA) Manager

The Quality Assurance Manager supports all phases of the program in accordance with AGS processes and procedures. These activities include performing reviews and audits as required by the QA Plan.

3.5.6 Project Control (PC)

The Project Control representative (or project controller – PC) evaluates applicability of all project control related procedures, as required by AGS Policies and Procedures. The PC works with the PM to assess the overall performance, identifies trouble areas and helps with the development of corrective actions, conducts Cost Account Management (CAM) reviews to develop Estimate to Complete (ETCs) and assess Earned Value, prepares inputs for, and participates in, the monthly PMRs and assesses financial metrics based on the Metrics Plan to be include in the monthly PMR.

3.5.7 Contracts Manager

The Contracts Manager is responsible for the day-to-day contract administration of the program and will conduct any proposal preparation and/or contract negotiation as a result of any changes to the effort. The Contracts Manager will conduct continual reviews to ensure that all terms and conditions are being met and that the contract is in accordance with legal requirements, customer specifications and government regulations. The contracts representative interfaces with the Program Manager and technical staff and is responsible for preparing and disseminating information regarding contract status, compliance, modification, and negotiation to the appropriate personnel working the project. In addition, the contracts representative participates in internal and external program reviews. The Contracts Manager is the primary interface with the Government Contract Specialist and/or Contracting Officer.

3.5.8 Procurement Manager

The Procurement Manager is responsible for project material purchases and negotiation of subcontracts. The procurement manager works with the Program Manager and technical lead to monitor subcontractor



performance to ensure compliance with subcontract requirements. The procurement manager reviews, approves and processes all invoices received from suppliers or subcontractors. The procurement manager is responsible for negotiations of price, schedule and terms and conditions with each subcontractor.

3.5.9 Subcontractors

The following section identifies the key roles performed by the subcontractors on the MEVA REDDIG Interconnect implementation.

C-Systems

C-Systems will be tasked to perform site surveys, and installation and test services in Bogota, Colombia and Caracas, Venezuela. Their primary point of contact will be considered a member of the AGS core Program Team.

4.0 Managerial Process Plans

4.1 Plan of Action and Milestones (POA&M)

4.1.1 Schedule

The AGS Program Team has used data collected from the MEVA II implementation effort, vendor inputs, and industry knowledge to develop a comprehensive estimation plan that captures the scope, cost, and time related to successfully implement the MEVA REDDIG Interconnect. An MS Project Schedule is located in APPENDIX A of this plan.

4.1.2 Staffing Plan

Based on the tasks and timeframe identified in the MS Project Schedule, AGS has determined the internal staffing necessary to successfully complete the program. Their duties and responsibilities are detailed in the Roles and Responsibilities section of this plan. Other AGS staff duties are also detailed in this section and will be used as necessary.

4.1.3 Program Staff Training Plan

From the MEVA II network implementation, AGS has staff trained in the management and maintenance of the network equipment used. The AGS PM ensures that Network Operations Center staff have the training and documentation needed to support the customer.



4.2 Work Plan

4.2.1 Work Activities

Work activities are detailed in APPENDIX A of this plan.

4.2.2 Schedule Allocation

Schedule Allocation is detailed in APPENDIX A of this plan.

4.2.3 Resource Allocation

Resource Allocation is detailed in APPENDIX A of this plan.

4.3 Control Plan

4.3.1 Requirements control plan

The AGS PM will use a deliverables matrix to keep track of all requirements and regularly track and update the MS Project Schedule tasks to ensure requirements are being completed. These updates will be conducted prior to each weekly status report submission.

4.3.2 Schedule control plan

The AGS PM will track and update the MS Project Schedule on a regular basis to ensure accuracy. The PM will use the weekly status report to notify all parties of changes to the schedule and will issue a change request form that will analyze the impact of changes in scope and schedule. The Change Request Form and Weekly Report template are located in APPENDIX B of this plan.

4.3.3 Budget control plan

The AGS PM and the AGS Project Controller will conduct regular reviews to ensure budget parameters are kept intact. The PM will review the budget each time a purchase requisition is entered or an invoice is received, and will conduct a budget review with the project controller prior to a monthly Program Management Review (PMR).

4.3.4 Reporting plan

The following list details reports and meetings that will take place to ensure all stakeholders are kept informed of program status, upcoming events, and issues encountered. The AGS PM will be responsible for ensuring reports are completed accurately and on time, and meeting are conducted with agendas, and action items, and meeting minutes.



REPORT / MEETING	WHEN	WHO
Kickoff Meeting	Startup	AGS Program Team Customer Team AGS Management
Closedown Meeting	Upon Customer Acceptance	AGS Program Team Customer Team AGS Management
Status Report	Weekly	Sent to all
PMR	Monthly	AGS Program Team AGS Management
Other Meetings	As Necessary	TBD

Table 4 – Report and Meeting Plan

4.4 Plan Closeout

AGS will conduct the program closeout as per the MS Project Schedule located in APPENDIX A of this plan.

5.0 Supporting Plans

5.1 Risk Management Plan

The purpose of the Risk Management Plan is to identify items that may impact AGS' ability to deliver with regards to scope, time, or budget for this program. Once the risk is identified it is classified into categories: Threats or Opportunities.

Threats are dealt with in the following ways:

Accept – Preparing for and dealing with a risk's consequences, either actively (contingency) or passively (doing nothing)

Mitigate – Reducing the probability and/or consequences of a threat to an acceptable threshold

- Transfer – Shifting a threat's consequence to a third party
- Avoid – Eliminating the threat, usually by eliminating its potential cause

Opportunities are dealt with in the following ways:

Accept – Same as threat response strategy

Enhance – Modify the potential of an opportunity by increasing probability and/or positive impact, and by identifying and maximizing key drivers



- Exploit – Ensure that the opportunity is realized; eliminate the uncertainty associated with a particular upside risk by making the opportunity definitely happen
- Share – Allocate ownership to a third party who is best able to capture the opportunity

The following table list risks identified for this plan. Risk status will be updated and reported in the weekly status report.



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ID	Description	Probability %	Impact 1-5	Exposure	Impact Horizon	Strategy	Date Recognized	Responsibility
001	Delay in delivery of Equipment to AGS	25	5	1.25	NEAR	MITIGATE – 1) Frequent contact with manufacturers to establish and keep promised delivery dates 2) Prompt ordering of equipment 3) Order long lead items as early as possible 4) Assign additional engineering resources if necessary to make up time during configuration and FAT	4/5/09	ALL
002	Delays in Custom Clearance	45	5	2.25	MID	MITIGATE – 1) AGS to complete all necessary export paperwork in a timely fashion 2) Prompt shipment of equipment 3) AGS to provide each applicable site with full export paperwork 4) Site contact to work to get equipment cleared through Customs	4/5/09	ALL
003	Loss Factor of IFL	20	5	1.00	NEAR	MITIGATE – 1) Perform site survey to determine if IFL adequate 2) If IFL needs to be replaced, provide quote to ICAO / REDDIG as soon as possible after the site survey report is received	8/22/07	AGS

Table 5 – Risk Assessment Worksheet



5.2 Configuration Management Plan

The purpose of this plan is to maintain revision control of plans, templates, technical documentation, and software. Configuration Management shall be carried out in accordance with AGS company policies and procedures. All documents will have a document control number assigned and will be updated and review by the CM Manager each time a revision is made. All stakeholders will be notified of revision changes, and current versions will be made available. The vehicle for notification on the MEVA REDDIG Interconnect implementation will be the weekly status report.

5.3 Subcontractor Management Plan

The purpose of this plan is to provide guidance in the management and oversight of subcontractors in the implementation of the MEVA REDDIG Interconnect

The Program manager will:

Be the primary point of contact between AGS and customer points of contact with regards to product or service delivery

Review and approve Statements of Work to be issued

Review and approve purchase requisitions in SAP

Report subcontractor progress and issues to the AGS Management Team as required.

Review and approve vendor invoices

Be the primary point of contact between AGS and subcontractors, pertaining to delivery schedule, cost, and scope of services and solutions being provided

Develop the Statement of Work to be submitted to the subcontractor for quote / proposal response

Work with the SES AMERICOM Sourcing Manager to add vendors to the SES AMERICOM approved vendor list, if necessary

Coordinate related or dependent activities between subcontractors



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The Program Engineer will:

Be the primary point of contact for between AGS and subcontractors, pertaining to specific technical requirements, questions, and issues

Assist the Subcontracts Program Manager in the development of subcontractor Statements of Work, with regards to technical requirements and test and acceptance criteria

Review and provide recommendations to the AGS Program Manager pertaining to any changes, additions, or deletions of subcontractor scope of work

Enter purchase requisitions for subcontract work

Sign off on test and acceptance results

Statements of work shall be submitted for all subcontract work to be performed. The AGS Program Manager shall retain copies of the following in the Program binder that pertain to subcontractors:

Request for Quotes / Proposals to the vendor

Vendor RFQ / RFP responses

SES AMERICOM Purchase Order

Vendor invoices

5.4 Installation Plan

The Installation Plan is a separate document, and will be submitted at a later date.

5.5 Quality Assurance Plan

The purpose of this plan is to ensure that technical deliverables are met, processes and procedures are adhered to, and any deviation is documented and approved. The following reviews / audits will take place as part of the QA Plan:



ITEM	WHEN	WHO
Technical Deliverables *Customer Acceptance Sheet signed	Upon Delivery	Program Manager Program Engineer QA Manager Vendor Representative Customer Representative
Configuration Management Audit	Upon Completion and Quarterly	Program Manager CM Manager
Technical Documentation Review	Upon Completion Upon Changes / Updates Periodic Inspection	Program Engineer Engineering Dept Peer Review

Table 6 – QA Review List

5.6 Change Management Plan

The purpose of this plan is to provide guidance in implementing and documenting changes to the scope of work with regards to the MEVA REDDIG Interconnect

The Program manager will be responsible for ensuring any change of scope is documented and approved using the Program Change Request Form. A blank Change Request Form is located in APPENDIX B of this plan. The Program manager will keep a copy of each change request in the Program binder and will be responsible for updating the Program Schedule to reflect the change.

A proposed change will be noted and tied to a corresponding Work Breakdown Structure (WBS) item. AGS will perform an impact analysis in the following areas: technical, budget, schedule, performance, and contract. The AGS approving authority (sponsor) will sign the change request form, which will then be submitted by the customer for review and approval.

Upon customer signoff, the AGS Program Manager will update the Program Schedule accordingly

5.7 Test and Acceptance Plan

The Installation Plan is a separate document, and will be submitted at a later date.

5.8 Process Improvement Plan

As part of Program Closedown, the AGS Program Team will collaborate to complete a Lessons Learned document that reviews all aspects of the program. A template of the Lessons Learned Document is located



in APPENDIX B of this plan. The completed document will be submitted for review by AGS senior management and the Quality Assurance Manager.

6.0 APPENDICES

6.1 APPENDIX A – MS Project Schedule

6.2 APPENDIX B – Templates



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ID		% Complete	Task Name	Duration	Start	Finish	Predecessors	'09					Mar 1, '09					Mar 8, '09					Mar 15, '09					Mar 22, '09					Mar 29, '09					
								T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T
1		4%	MEVA / REDDIG INTERCONNECT	110.75 days	Wed 3/25/09	Wed 8/26/09																																
2		0%	CONTRACTS	25 days	Wed 3/25/09	Tue 4/28/09																																
3		100%	ICAO Contract Award	0 days	Wed 3/25/09	Wed 3/25/09																																
4		0%	MEVA II Member State Contracts	10 days	Wed 4/15/09	Tue 4/28/09																																
5		0%	Tegucigalpa, Honduras (COCESNA)	10 days	Wed 4/15/09	Tue 4/28/09																																
8		0%	Miami, FL	10 days	Wed 4/15/09	Tue 4/28/09																																
11		0%	San Juan, Puerto Rico	10 days	Wed 4/15/09	Tue 4/28/09																																
14		0%	Curacao	10 days	Wed 4/15/09	Tue 4/28/09																																
17		0%	Kingston, Jamaica	10 days	Wed 4/15/09	Tue 4/28/09																																
20		0%	Panama City, Panama	10 days	Wed 4/15/09	Tue 4/28/09																																
23		0%	Oranjestad, Aruba	10 days	Wed 4/15/09	Tue 4/28/09																																
26		100%	PROGRAM INITIATION	6 days	Thu 3/26/09	Thu 4/2/09																																
27		100%	Reviews	6 days	Thu 3/26/09	Thu 4/2/09	3																															
28		100%	Technical Review	6 days	Thu 3/26/09	Thu 4/2/09																																
29		100%	Review RFP and Proposal	1 day	Thu 3/26/09	Thu 3/26/09																																
30		100%	Generate Technical Requirements Document (TRD)	0 days	Thu 4/2/09	Thu 4/2/09	29FS+1 wk																															
31		9%	PROGRAM PLANNING	45 days	Wed 3/25/09	Tue 5/26/09																																
32		62%	Implementation Plan Review and Update	14 days	Thu 3/26/09	Tue 4/14/09																																
33		100%	Plan review and update	8 days	Thu 3/26/09	Mon 4/6/09	3FS+1 day																															
34		100%	Implementation Plan Complete	0 days	Mon 4/6/09	Mon 4/6/09	33																															
35		100%	AGS Management approval of Program Plan	0 days	Tue 4/7/09	Tue 4/7/09	34FS+1 day																															
36		0%	Customer review of Program Plan	5 days	Wed 4/8/09	Tue 4/14/09	35																															
37		0%	Customer approval of Program Plan	0 days	Tue 4/14/09	Tue 4/14/09	36																															
38		0%	Engineering	15 days	Wed 4/22/09	Tue 5/12/09	37FS+1 wk																															
45		0%	Administrative	0 days	Wed 4/15/09	Wed 4/15/09																																
48		0%	Procurement	45 days	Wed 3/25/09	Tue 5/26/09																																
49		0%	Shipment of CFE	8 wks	Wed 3/25/09	Tue 5/19/09	3																															
50		0%	Memotec	5.25 days	Thu 4/16/09	Thu 4/23/09																																
54		0%	Integration Materials	2 wks	Wed 5/13/09	Tue 5/26/09	56																															
55		0%	PROGRAM EXECUTION	70.75 days	Wed 4/29/09	Wed 8/5/09																																
56		0%	Site Survey	10 days	Wed 4/29/09	Tue 5/12/09	37FS+2 wks																															
57		0%	REDDIG Sites	10 days	Wed 4/29/09	Tue 5/12/09																																
58		0%	Caracas, Venezuela	7 days	Wed 4/29/09	Thu 5/7/09																																
61		0%	Bogota, Colombia	7 days	Mon 5/4/09	Tue 5/12/09	37FS+2 wks,59FS																															
64		0%	System Manufacturing and Integration	6.25 days	Tue 5/19/09	Thu 5/28/09																																
65		0%	Receive Major Equipment	1.25 days	Tue 5/19/09	Thu 5/21/09																																
70		0%	Equipment Configuration	5 days	Thu 5/21/09	Thu 5/28/09	66,68																															
72		0%	System Testing	6 days	Thu 5/28/09	Fri 6/5/09	64																															
76		0%	Shipping	23 days	Thu 5/21/09	Tue 6/23/09																																
102		0%	Installation	26.5 days	Tue 6/16/09	Wed 7/22/09																																
103		0%	REDDIG Sites	6.5 days	Tue 7/14/09	Wed 7/22/09																																
104		0%	Caracas, Venezuela	2.75 days	Tue 7/14/09	Thu 7/16/09																																
105		0%	AGS Installer Arrive	0 days	Tue 7/14/09	Tue 7/14/09	83FS+3 wks																															

Project: MEVA REDDIG INTERCONN
Date: Thu 4/9/09

Task

Split

Progress

Milestone

Summary

Project Summary

External Tasks

External Milestone

Deadline

Page 1

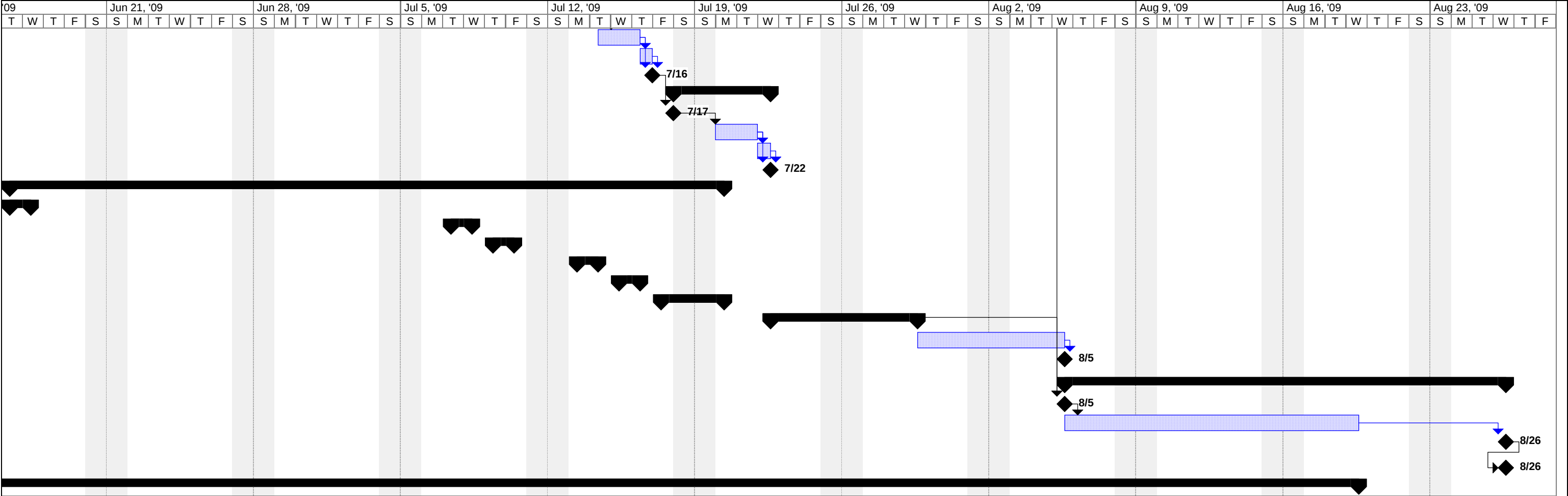
ID		% Complete	Task Name	Duration	Start	Finish	Predecessors	'09					Mar 1, '09					Mar 8, '09					Mar 15, '09					Mar 22, '09					Mar 29, '09				
								T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W
106		0%	Installation	2 days	Tue 7/14/09	Thu 7/16/09	105																														
107		0%	Downtime / Interconnect	6 hrs	Thu 7/16/09	Thu 7/16/09	106																														
108		0%	Installation Complete	0 days	Thu 7/16/09	Thu 7/16/09	106,107																														
109		0%	Bogota, Colombia	2.75 days	Fri 7/17/09	Wed 7/22/09																															
110		0%	AGS Installer Arrive	0 days	Fri 7/17/09	Fri 7/17/09	86FS+2 wks,108F																														
111		0%	Installation	2 days	Mon 7/20/09	Tue 7/21/09	110																														
112		0%	Downtime / Interconnect	6 hrs	Wed 7/22/09	Wed 7/22/09	111																														
113		0%	Installation Complete	0 days	Wed 7/22/09	Wed 7/22/09	111,112																														
114		0%	MEVA II Sites	24 days	Tue 6/16/09	Mon 7/20/09																															
115		0%	Miami, FL	1 day	Tue 6/16/09	Wed 6/17/09																															
119		0%	San Juan, Puerto Rico	1 day	Tue 7/7/09	Wed 7/8/09																															
123		0%	Kingston, Jamaica	1 day	Thu 7/9/09	Fri 7/10/09																															
127		0%	Curacao	1 day	Mon 7/13/09	Tue 7/14/09																															
131		0%	Oranjestad, Aruba	1 day	Wed 7/15/09	Thu 7/16/09																															
135		0%	Panama City, Panama	1 day	Fri 7/17/09	Mon 7/20/09																															
139		0%	Documentation	5 days	Wed 7/22/09	Wed 7/29/09																															
142		0%	AGS Compile Documentation Package	1 wk	Wed 7/29/09	Wed 8/5/09	141																														
143		0%	Submit Documentation Package to Customer	0 days	Wed 8/5/09	Wed 8/5/09	142																														
144		0%	PROJECT CLOSEDOWN	15 days	Wed 8/5/09	Wed 8/26/09																															
145		0%	Customer Acceptance Form Signed	0 days	Wed 8/5/09	Wed 8/5/09	139FS+1 wk,102																														
146		0%	Handoff to Operations	2 wks	Wed 8/5/09	Wed 8/19/09	145																														
147		0%	Implementation Closed out of Deltek and Axapta	0 days	Wed 8/26/09	Wed 8/26/09	146FS+1 wk																														
148		0%	Implementation Close down Complete	0 days	Wed 8/26/09	Wed 8/26/09	147																														
149		0%	REPORTS AND MEETINGS	85.75 days	Tue 4/21/09	Wed 8/19/09																															



Appendix A to the Report on Agenda Item 2

[illegible]





Change Request

Program Information

Program Name MEVA REDDIG INTERCONNECT	SAP #	Customer ICAO / MEVA II / REDDIG
Prepared By Matthew Toney	Phone # 301-797-5042	E-Mail Matthew.toney@americom-gs.com
Date Prepared		

Proposed Change

Baseline Description
Change Description
Rationale

Modified Activities

WBS NO.	Activity Name / Title
WBS NO.	Activity Name / Title
WBS NO.	Activity Name / Title
Other References	

Impact Review

Meeting Date
Technical Impact
Budget Impact
Schedule Impact
Performance Impact
Contract Impact

AGS Approvals

Name (Print)	Signature	Date
Telephone	Fax	E-Mail

Customer Decision

	Approved	Comments
	Tabled	
	Disapproved	

Customer Signature

Name (Print)	Signature	Date
Telephone	Fax	E-Mail



Lessons Learned Document

Program Information

Program Name MEVA REDDIG INTERCONNECT	SAP #	Customer ICAO / MEVA II / REDDIG
Prepared By Matthew Toney	Phone # 301-797-5042	E-Mail Matthew.toney@americom-gs.com
Date Prepared		

Summary

Program Background
Learning Highlights
Recommendations Summary

Technical Review

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

Administrative Review

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements



Lessons Learned Document

Program Information

Program Name MEVA REDDIG INTERCONNECT	SAP #	Customer ICAO / MEVA II / REDDIG
Prepared By Matthew Toney	Phone # 301-797-5042	E-Mail Matthew.toney@americom-gs.com
Date Prepared		

Contract Management Review

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

Risk Management Review

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

Financial Management Review

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

Lessons Learned Document

Program Information

Program Name MEVA REDDIG INTERCONNECT	SAP #	Customer ICAO / MEVA II / REDDIG
Prepared By Matthew Toney	Phone # 301-797-5042	E-Mail Matthew.toney@americom-gs.com
Date Prepared		

Customer Relationship Management

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

Team Relationship Management

Program Experience
Recommended Process Improvements
Proposed Tool Modifications or Improvements

APÉNDICE B / APPENDIX B

**LISTADO DE EQUIPAMIENTO PARA LA INTERCONEXIÓN MEVA II / REDDIG
CORRESPONDIENTES A LOS NODOS REDDIG
LIST OF EQUIPMENT FOR MEVA II / REDDIG INTERCONNECTION RELEVANT TO THE
REDDIG NODES**

Location	Additional Equipment/Parts Needed	Quantity
Caracas	Linkway 2100 with frame-relay card and V.35 cable	1
	Memotec DAV Card (<i>2 for MUX A, 2 for MUX B</i>)	4
	Memotec FXS SLIM LID (<i>3 for MUX A, 3 for MUX B</i>)	6
	2-port L-band Splitter	3
	2-port L-band Combiner	3
	Paradise 75W BUC	2
Bogota	Linkway 2100 with frame-relay card and V.35 cable	1
	Memotec V.35H Card	1
	Memotec E1 DIM (<i>1 for MPS A, (1) for MPS B to be installed in slot 2</i>)	2
	2-port L-band Splitter	3
	2-port L-band Combiner	3
Ecuador	E-1 Daughter Card for Memotec A and Memotec B	2

APPENDIX C

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Interconnection of the COCESNA MEVA II node to REDDIG

IMPLEMENTATION PROGRAMME

May 2009

CONTENTS

	Page
1. Executive Summary	3
2. References for implementation	3
2.1 RLA/09/901 project	3
2.2 Technical specifications	3
2.3 Services to be provided	4
3. Coordination	5
Focal points	
a) ICAO / REDDIG Administration	
b) COCESNA	
c) AGS	
4. Activities of the COCESNA node activation to REDDIG	6

INTERCONNECTION OF THE COCESNA MEVA II NODE TO REDDIG IMPLEMENTATION PROGRAMME

1. Executive Summary

1.1 On the basis of communications requirements of the COCESNA node for the interconnection of the MEVA II / REDDIG nodes and on the technical specifications indicated in the proposal, the integral solution consists in the provision, installation and test of the equipment, as well as the operation of the COCESNA node in REDDIG, hereon COCESNA/REDDIG node, with the highest service availability, reliability and quality standards to pass through the network.

1.2 The solution presented takes into consideration the maximum use of the equipment currently available at the COCESNA/MEVA II node to optimize investment costs. An additional Linkway 2110 modem will be used with the current RF chain, decision which is backed by the link budget analyses carried out to this effect. In addition, the slots available in the current FRAD equipment to install additional carts to support the COCESNA/REDDIG node communications channels.

1.3 In addition to the two ATS exclusive voice channels, an on-net administrative voice channel will be configured for the carrying out of tasks and maintenance coordinations, with the consequent savings in international long distance calls.

1.4 The installation of the equipment in the node will be carried out in coordination with COCESNA and AGS, with the aim of reducing to a minimum the communications services interruption lapse in the node. The satellite line up tests and the start up of the COCESNA/REDDIG node will be carried out under the coordination and supervision of the REDDIG Centre of Operations.

1.5 The COCESNA/REDDIG node will have the technical facilities as REDDIG has, such as 24X365 technical support from the Manaus, Brazil, Centre of Operations, the network's master reference terminal geographical redundancy, the local redundancy of both Manaus, Brazil, and Ezeiza, Argentina, NCCs and, in the event required, the activation of the alternate Centre of Operations in Ezeiza.

2. References for the implementation

2.1 RLA/09/901 project

Services Management Agreement subscribed between the Corporación Centroamericana de Servicios de Navegación Aérea (COCESNA) and ICAO.

2.2 Technical Specifications

2.2.1 On the basis of the communications requirements of the COCESNA node for the interconnection of the MEVA II / REDDIG Networks, the solution consists in the equipment provision, installation and tests, as well as the operation of the COCESNA MEVA II node in REDDIG, with the highest service availability, reliability and quality standards to pass through the network.

2.2.2 The technical solution is to maximize the use of the equipment currently installed in the COCESNA node, with the additional equipment necessary for the node to operate in REDDIG. The Memotec cards, one V.35H and two DAV with three FXS interfaces will be provided and installed in the COCESNA CX960e equipment, upon request.

2.2.3 In addition to the configuration of the two exclusive ATS voice channels, an on-net administrative voice channel will also be configured, for the carrying out of tasks and maintenance coordination.

2.2.4 The installation of the equipment in the node will be made in coordination with COCESNA and the MEVA II Service Provider, with the aim of reducing to a minimum the communications services interruption time in the node. The satellite line-up tests and the start-up of the COCESNA/REDDIG node will be carried out under the coordination and supervision of the REDDIG Centre of Operations.

2.2.5 The COCESNA/REDDIG node will have available the technical facilities that the REDDIG counts with, such as 24x365 technical support from the Manaus, Brazil, Centre of Operations, the network's master reference terminal geographical redundancy, the local redundancy of the NCCS in both Manaus, Brazil, and Ezeiza, Argentina, and in the event required, the activation of the alternate Centre of Operations in Ezeiza.

2.2.6 The Communications requirements of the COCESNA node are:

- (1) ATS speech channel at the Bogota, Colombia, control centre; and
- (1) ATS speech channel at the Guayaquil, Ecuador control centre.

2.2.7 The performance expected is to count with all-round free and available channels with a 0.05 (5%) call loss probability at the COCESNA/REDDIG node speech channel traffic flow.

2.3 Services to be provided

2.3.1 The COCESNA/REDDIG node implementation programme will comprise the carrying out of related services until the activation of the COCESNA/REDDIG node, then automatically and transparently passing over to the Operation Service.

Equipment to be provided

- (1) One Linkway 2100 modem with AC feeding source
- (1) One serial ground interface with frame relay protocol
- (1) One V.35 cable
- (2) Two band L combiners/dividers
- (1) One coaxial cable lot, connectors and adaptors

2.3.2 The installation of the equipment will be carried out under the implementation programme, in coordination with COCESNA and the MEVA II service provider, with the aim of reducing to a maximum the interruption of services.

2.3.3 Satellite access and line up tests will be made to the Linkway 2100 modem, together with the current RF chain, with the aim of obtaining the nominal potential of the satellite downlink that REDDIG has contracted.

2.3.4 The administration of REDDIG will provide the COCESNA/REDDIG node, under the 24H x 365D modality, the following services and facilities during the whole period of the contract. It is important to mention that the services and facilities which the COCESNA/REDDIG will count with are the same that all States member of REDDIG receive.

2.3.5 Configuration:

- a) Configuration of the COCESNA/REDDIG node on the basis of the REDDIG NCC data base.
- b) Configuration of the CX-960e Memotec equipment with the functions required for the interconnection.
- c) Configuration of the CX-950 Memotec equipment with the Guayaquil, Bogotá, Manaus and Ezeiza nodes with the functions required for the interconnection, as well as administrative/maintenance purposes.
- d) End to end tests and activation of the COCESNA/REDDIG node.

2.3.6 Operational support:

2.3.6.1 The REDDIG administration has a Centre of Operations in Manaus, Brazil, that provides operational maintenance support to the REDDIG nodes, under a 24H x 365D modality. This support includes, among other main activities, to preventively report the nodes of any anomaly detected by the NCC, to receive calls from the nodes, to carry out troubleshooting procedures, to carry out operational tests, to make necessary coordinations and tests with the counterpart nodes with the objective of keeping operational the node requiring support.

3. **Coordination**

3.1 The REDDIG administration will coordinate all aspects necessary with the COCESNA and AGS Service Provider representatives for the carrying out of the present implementation programme.

3.2 To obtain this objective, the focal points will be the following:

- a) ICAO –SAM Regional Office
 - Focal Point: Onofrio Smarrelli
CNS Regional Officer – SAM
 - Place: Lima, Peru
 - Telephone: 51 1 611-8686
 - E-mail: os@lima.icao.int
- REDDIG Administration - ADM
 - Focal Point: Luis Alejos
REDDIG Administrator – SAM
 - Place: Manaus, Brazil
 - Telephone: +55 92 3652-5714
 - E-mail: lat@lima.icao.int

b) COCESNA
Focal Point:
Place:
Telephone:
E-mail:

c) AGS
Focal Point:
Place:
Telephone:
E-mail:

4. **Activities for the activation of the COCESNA node for REDDIG**

1. Purchasing of equipment and parts
Start: 5 June 2009
Duration: 45 days
Responsible: ICAO TCB
2. On site inspection
Start: 9 July 2009
Duration: 2 days
Responsible: ICAO ADM REDDIG
3. Remittance of equipment and parts
Start: 10 July 2009
Duration: 10 days
Responsible: ICAO TCB
4. Satellite configuration of COCENSA node at REDDIG NCC
Start: 27 July 2009
Duration: 5 days
Responsible: ICAO ADM
5. Configuration of COCESNA CX960e Memotec equipment
Previous action:
 - a) Deliver ICAO ADM the archive (.cxt) with the latest configuration of the CX-960e equipment
 - b) Install 2 DAV+1V.35H with CX960e equipment
Target date: 24 July 2009
Responsible: AGS
Start: 27 July 2009
Duration: 5 days
Responsible: ADM

-
6. Configuration of Memotec equipment at SEGU, Guayaquil-Ecuador
Previous action:
 - a) Install 1 DVP2 in each equipmentTarget date: 24 July 2009
Responsible: ICAO ADM
Start: 27 July 2009
Duration: 5 days
Responsible: ICAO ADM
 7. Configuration of Memotec equipment at SKED, Bogotá-Colombia
Previous action:
 - a) Deliver ICAO ADM the archive (.cxt) with the latest SKED configuration, including the circuits with MEVA IITarget date: 24 July 2009
Responsible: AGS
Start: 27 July 2009
Duration: 5 days
Responsible: ADM
 8. Configuration of Memotec equipment at SAEZ and SBMN
Start: 27 July 2009
Duration: 5 days
Responsible: ICAO ADM
 9. Installation of the Linkway2100 at COCESNA node
Start: 6 august 2009
Duration: 1 day
Responsible: ICAO ADM, AGS, COCESNA
 10. Satellite line up of Linkway 2100 at COCESNA node
Start: 6 August 2009
Duration: 1 day
Responsible: ICAO ADM, AGS
 11. End to end tests and activation of COCESNA node with REDDIG
Start: 6 August 2009
Duration: 2 days
Responsible: ICAO ADM
 12. Communications evaluation
Start: 6 August 2009
Duration: 2 days
Responsible: ICAO ADM, COCESNA
 13. Service acceptance
Start: 7 August 2009
Duration: 1 day
Responsible: COCESNA

APENDICE D/APPENDIX D

**PUNTOS FOCALES PARA COORDINAR LA IMPLANTACIÓN DEL PLAN DE ACCIÓN
PARA LA INTERCONEXIÓN MEVA II/REDDIG**

**FOCAL POINTS FOR COORDINATING THE IMPLEMENTATION OF THE ACTION PLAN
FOR MEVA II/REDDIG INTERCONNECTION**

ESTADO ORG./ STATE ORG.	NOMBRE-TITULO/ NAME-TITLE	DATOS DE CONTACTO/ CONTACT INFORMATION
BRASIL/ BRAZIL	Athayde Licerio Viera Frauche Coordinador de la REDDIG/REDDIG Coordinator Jorge Mauricio Motta Coordinador Técnico REDDIG/REDDIG Technical Coordinator Alessandro Stefson Mamede Alves Coordinador Técnico REDDIG/REDDIG Technical Coordinator	DECEA Av. General Justo 160 Castelo, Rio de Janeiro, Brasil Tel +55 21 21016584 Fax +55 21 21016219 Email dcte5@decea.gov.br CINDACTA IV Av. Do Turismo sin Taruma Manaus – AM, Brasil Tel +55 92 36525536 Fax +55 92 36525501 Email mauriciojmm@cindacta4.decea.gov.br CINDACTA IV Av. Do Turismo sin Taruma Manaus – AM, Brasil Tel +55 92 36525470 Fax +55 92 36525501 Email ttaa@cindacta4.decea.gov.br
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ECUADOR	Raúl Avellán Oña Asuntos técnicos:/Technical matter Aida Justina Moreno Gómez Jefe Comunicaciones Satelitales RI – Asuntos Administrativos/Chief RI satellite communications	Aeropuerto José Joaquín Olmedo Guayaquil, Ecuador Tel +593 42 692829 Cel +593 84 362441 REDDIG 2308 / 2309 Email ravellan1@yahoo.com Dirección General de Aviación Civil Cerro Mojas, Edificio Servicio para la Navegación Aérea Quito, Ecuador Tel. + 593 260 1434 Fax + 593 260 1434 E-mail aida_moreno@dgac.gov.ec; aidamg@hotmail.com
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ESTADO ORG./ STATE ORG.	NOMBRE-TITULO/ NAME-TITLE	DATOS DE CONTACTO/ CONTACT INFORMATION
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UPDATED ACTION PLAN FOR IMPLEMENTATION OF MEVA II AND REDDIG INTERCONNECTIONS
PLAN DE ACCIÓN ACTUALIZADO PARA LA IMPLANTACIÓN DE LAS INTERCONEXIONES MEVA II Y REDDIG

Date/Fecha: February/Febrero 2009

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
1	RFP Completion/Finalización del RFP	COCESNA	30-Apr-07	Completed / Finalizado
2	Required connections: / Conexiones requeridas: Aruba COCESNA Ecuador Colombia Peru Venezuela Brazil / Brasil Panama United States / Estados Unidos Jamaica Curacao / Curazao	MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	30-Apr-07 / 30-Abr-07	Completed / Finalizado
3	Identification of Current Equipment / Identificación de Equipo Actual	MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	28 Sep-07	Completed / Finalizado
4	Completion of SLA / Finalización de SLA	MEVA II Service Provider and REDDIG Administrator / Proveedor Servicio MEVA II y Administración REDDIG	Mar/09	Valid/Valido Is part of the Service Contract/Es parte del Contrato de Servicio

Legend / Leyenda:

MoU: Memorandum of Understanding / Memorando de Entendimiento

RFP: Request for Tecnical and Econmic Proposal / Solicitud de Propuestas Técnicas y Económicas

SLA: Service Level Agreement / Acuerdo de Nivel de Servicio

Item No.	Action / Acción		Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2		3	4	5
5	Review of RFP / Revisión de RFP		MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	29 June -07/ 29 Junio 07	Completed / Finalizado The RFP was reviewed and approved by all MEVA II / REDDIG Member Administrations. / El RFP fue revisado y aprobado por todas las Administraciones miembros de las redes MEVA II y REDDIG.
6	Proposals response / Respuesta de propuestas		MEVA II Service Provider and REDDIG Administration / Proveedor Servicio MEVA II y Administración REDDIG	26 Sep.-07	Completed / Finalizado The response for the RFP from the MEVA II Service Provider and REDDIG Administration was presented at the MR/5 Meeting/ Las respuestas al RFP por parte del Proveedor de Servicio MEVA II y la Administración de la REDDIG se presentó en la Reunión MR/5.
7	Proposals review / Revisión de propuestas		Coordination meeting / Reunión de coordinación	5 Oct.-07	Completed / Finalizado The proposal was reviewed in the MR/5 Meeting. / La propuesta se revisó en la Reunión MR/5.
8	Focal nomination / Nombramiento Punto Focal	Send a letter to MEVA II / REDDIG Member Administrations / Envío carta a las Administraciones miembros de las redes MEVA II y REDDIG.	ICAO Regional Offices / Oficinas Regionales OACI	15 Oct. 07	Completed / Finalizado The ICAO Regional Offices sent to the States/Organization involved in the MEVAII REDDIG interconnection a letter in order to nominate focal points. Las oficinas regionales de la OACI enviaron una carta invitando los Estados/Organización involucrados en la interconexión la nominación de puntos focales.

Item No.	Action / Acción		Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2		3	4	5
		Focal point designation/ Designación punto focal	MEVA II and REDDIG Members involved / Miembros de MEVA II y REDDIG involucrados	30-Oct-07	Completed / Finalizado All the States/Organization members of MEVA II and REDDIG network involved in the interconnection nominated focal points. Todos los Estados/Organización miembros de la REDDIG y MEVA II involucrados en la interconexión nominaron puntos focales.
9	Application of MoU reviewed / Aplicación del MoU revisado		MEVA II / REDDIG Member Administrations / Administraciones miembros de las redes MEVA II y REDDIG	30-Oct-07	Completed / Finalizado The ICAO Regional Offices sent to the States/Organization of MEVA II and REDDIG network in order to sign the MoU reviewed.
10	Review and acceptance of equipment costs for the MEVA II / REDDIG interconnection by the REDDIG Member Administrations / Revisión y aceptación por parte de las Administraciones Miembros de la REDDIG sobre costo de equipamiento para la interconexión MEVA II / REDDIG		All the REDDIG Member States / Todos Estados miembros de REDDIG	30 Oct-07	Completed / Finalizado No comments were received No se recibieron comentarios al respecto
11	Review and acceptance of equipment costs for the MEVA II / REDDIG interconnection by the MEVA II Member Administrations involved / Revisión y aceptación por parte de las Administraciones Miembros de la MEVA II involucradas sobre costo de equipamiento para la interconexión MEVA II / REDDIG		Aruba, Curaçao, Jamaica, Panama, USA (Miami and Puerto Rico) and COCESNA / Aruba, Curaçao, Jamaica Panamá, USA (Miami y Puerto Rico) y COCESNA	30 Oct -07	Completed / Finalizado No comments were received No se recibieron comentarios al respecto

Legend / Leyenda:

MoU: Memorandum of Understanding / Memorando de Entendimiento

RFP: Request for Tecnical and Econmic Proposal / Solicitud de Propuestas Técnicas y Económicas

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Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
12	Review and acceptance of proposed recurrent costs for the MEVA II / REDDIG interconnection/ Revisión y aprobación costos recurrentes propuestos para la interconexión MEVA II REDDIG	MEVA II/ REDDIG Member Administrations involved / Administraciones Miembros de la MEVA II y REDDIG involucradas	30 Oct- 07	Completed / Finalizado No comments were received No se recibieron comentarios al respecto
13	Revised MoU Signature / Firma del MoU Revisado	MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	30 Nov 07	Completed / Finalizado The following States sent the MoU reviewed signed/Los siguientes Estados enviaron el MoU revisado firmado: Argentina, Brasil, Chile, Cuba, COCESNA, Estados Unidos, Guyana, Peru y/and Uruguay
14	Review, approval and signing of contracts or contract amendments to carry out the MEVA II / REDDIG interconnection presented by the MEVA II Service Provider / Revisión, aprobación y firma de los contratos o enmienda de los mismos para llevar a cabo la interconexión MEVA II/REDDIG presentada a través del Proveedor de Servicio de la MEVA II	MEVA II Member Administrations involved and REDDIG Administration / Administraciones Miembros de la MEVA II involucradas y Administración REDDIG	Mar/ 2009	ICAO reviewed and coordinate with AGS the contract for the provision of the interconnection of the MEVA II and REDDIG Satellite Telecommunication network. The Review contract was accepted by both parts and its signature is pending. La OACI revisó y coordinó con AGS el contrato para la provisión de la interconexión de las redes de telecomunicaciones por satélite MEVAII y REDDIG quedando pendiente la firma del mismo.

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
15	To ensure that all MEVA II and REDDIG nodes work with IS-IR Satellite, using Band C transponder with US/Latin America hemispheric beam and Co-Linear Vertical polarization / Asegurar que todos los nodos de la MEVA II y REDDIG operen en el satélite IS-1R, empleando transpondedores de banda C con haz hemisférico US/Latin America y polarización co-lineal vertical.	MEVA II Service Provider and REDDIG Administration/ Proveedor Servicio MEVA II/ Administración REDDIG	Nov /08	Completed / Finalizado In the month of November 2008 AGS proceeded to change the polarity from horizontal to vertical of the MEVA II nodes. With this implementation all the preliminary requirements for the interconnection were satisfied. En el mes de noviembre de 2008 AGS procedió a la implantación del cambio de polaridad de horizontal a vertical de los nodos de la MEVA II. Con esta implantación todos los requerimientos preliminares para la interconexión MEVAII REDDIG están satisfechos.

Legend / Leyenda:

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Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
16	Equipment and spare parts acquisition for MEVA II/REDDIG interconnection/ Adquisición de equipamiento y repuestos para la interconexión MEVA II / REDDIG.	REDDIG Administration and MEVA II involved Member Administrations / Administración de la REDDIG y Administraciones Miembros de la MEVA II involucradas	Mar/ 09	The ICAO Technical Cooperation completed the bid process in the month of May 2008. The purchase of the equipments will be made once ICAO signs the Contract for the provision of the interconnection of the MEVA II and REDDIG Satellite Telecommunication network. with AGS La Cooperación Técnica de la OACI completó el proceso de licitación para la adquisición de los equipos en mayo de 2008. La adquisición de los equipos se hará una vez que la OACI firme el contrato para la provisión de la interconexión de las redes de telecomunicaciones por satélite MEVAII y REDDIG con AGS.
17	Site survey for Bogota, Caracas and COCESNA, / Inspección sitio para Bogota, Caracas and COCESNA,	MEVA II Service Provider and REDDIG Administration / Proveedor MEVA II y Administración REDDIG	May/ 09	Site survey is considered as part of the services to be provided. El estudio de sitio se considera parte de los servicios a ser provistos.
18	Site preparation for equipment installation for MEVA II / REDDIG interconnection / Preparación de los sitios para albergar equipamiento para la interconexión MEVA II / REDDIG	Colombia, Venezuela and/y COCESNA	Jun/09	Site preparation completed as replied in ICAO State Letter / Preparación del sitio finalizada como se respondió en la carta a los Estados de la OACI.
19	Delivery of purchased equipment at the required sites. / Entrega de equipamiento adquirido en los sitios requeridos	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Jul/09	

Item No.	Action / Acción	Responsible / Responsable	Completion Date / Fecha de Finalización	Status- Encountered Difficulties / Estado-Dificultades encontradas
1	2	3	4	5
20	Equipment installation / Instalación equipamiento	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Jul/09	
21	Satellite line-up, configuration of site equipment and NCC for the interconnection/ Line-up satelital, configuración equipamiento en sitio y NCC para interconexión	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Jul/09	
22	End-to-end trials for voice and data circuits / Pruebas de extremos a extremos para los circuitos de voz y datos	MEVAII Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Aug/09	
23	System Performance Evaluation / Evaluación de la performance del sistema	MEVA II Service Provider and REDDIG Administration / Proveedor de Servicio MEVA II y Administración REDDIG	Aug/09	
24	Service acceptance / Aceptación de los servicios /	MEVA II / REDDIG Member Administrations / Administraciones miembros de las redes MEVA II y REDDIG	Aug/09	
25	MEVA II / REDDIG Interconnection Implementation / Implantación de la interconexión MEVA II / REDDIG	MEVA II / REDDIG Member Administrations, MEVA II Service Provider and REDDIG Administrator / Administraciones miembros de las redes MEVA II y REDDIG, Proveedor Servicio MEVA II y Administración REDDIG	Sep/09	

- END / FIN -

Legend / Leyenda:

MoU: Memorandum of Understanding / Memorando de Entendimiento

RFP: Request for Tecnical and Econmic Proposal / Solicitud de Propuestas Técnicas y Económicas

SLA: Service Level Agreement / Acuerdo de Nivel de Servicio

Agenda Item 3: Analysis of future requirements / services for the implementation of the MEVA II / REDDIG interconnection

3.1 The Meeting analyzed the following aspects on this subject:

- Future services to be considered in the MEVA II / REDDIG interconnection.
- Considerations to maintain the continuity and keeping of the services in the MEVA II / REDDIG interconnection

Future services to be considered in the MEVA II / REDDIG interconnection

3.2 The Meeting took note that in the CAR/SAM Regions, it was expected that in the next years most States/Territories/International organization make progress in the implementation of the aeronautical telecommunications network (ATN), particularly in the ground-ground applications such as the AMHS systems, that the surveillance coverage is widened and improved, and that the systems control data processing capacity also progress, such as the automation systems in the ACC (radar data, meteorological data, operational coordination, flight plans, etc.).

3.3 Regarding the AMHS systems implementation in the States/Territories and International Organization involved in the MEVA II / REDDIG interconnection, the Meeting was informed that in 2010 Brazil, Colombia, Panama, Peru, United States and Venezuela will have the AMHS Systems implemented. The interconnection of these AMHS systems, in accordance to CAR/SAM FASID Table CNS 1Bb, will be made through MEVA II / REDDIG.

3.4 With the implementation of new radar systems and the improvement of this coverage, specifically in the common areas of several States/Territories/International Organization, the increase of automated systems in the ACCs and ATS units in the CAR/SAM Regions, the implementation of automatic data transfers will be required, such as flight plans and radar data between adjacent ACCs.

3.5 The Meeting took note that the initial circuit requirements for the implementation of the above-mentioned services (**Appendix A** to this part of the Report), as well as of the bandwidth requirement for their implementation.

3.6 The Meeting when analyzing the circuit requirements and bandwidth requirement, after a thorough debate, considered that there was a need to study a proper network configuration to optimize the use of equipment and required bandwidth.

3.7 The Meeting considered that this study could consider a network configuration that supports the IP protocol. In this regard, the Meeting considered that the MEVA II Administration, as well as the REDDIG, should prepare a network configuration study to optimize the bandwidth and equipment use in the MEVA II / REDDIG interconnection. On this respect, the following Conclusion was drafted:

CONCLUSION MR 7/2

**OPTIMIZATION OF EQUIPMENT AND BANDWIDTH USE IN
THE MEVA II / REDDIG INTERCONNECTION**

That the MEVA II and REDDIG Administrations,

- a) review the initial future circuit requirements contained in Appendix A to this part of the Report;
- b) undertake a preliminary network configuration study to optimize the use of the equipment and bandwidth for the implementation of new services; and
- c) present the results indicated in a) and b) to the Eighth MEVA II / REDDIG Coordination Meeting.

Considerations to maintain the continuity and keeping of the services in the MEVA II / REDDIG interconnection

3.8 Considering that the Linkway 2100 satellite MODEM and the CX950/960e Memotec bandbase equipment was unavailable, the Meeting took note that both the MEVA II and REDDIG Administrations have decided to purchase a spare parts lot to operate for an appropriate period.

3.9 In addition, the Meeting considered that any equipment change made in both the MEVA II and REDDIG networks should not affect the MEVA II / REDDIG interconnection.

REDDIG management by the RMO

3.10 Likewise, the Meeting was informed that by 2011, it is expected that the current management of REDDIG, carried out through an ICAO technical cooperation project, will end and that the REDDIG management passes over to a Regional Multinational Organization (RMO).

3.11 In this regard, the REDDIG administration informed that both the agreement signed by ICAO and COCESNA as well as the agreement sent by ICAO and AGS would be maintained for the established interconnection period.

APPENDIX

FUTURE INITIAL FRAME RELAY CIRCUIT REQUIREMENTS AT MEVA II AND REDDIG NETWORKS

SITE	FRAME RELAY CIRCUIT	AMOUNT
From Caracas (Venezuela) to:		
Curacao	64Kbits/sec duplex AMHS data channel	1
	9.6 Kbps-16 Kbps duplex radar data channel	1
Aruba	9.6 Kbps-16 Kbps duplex radar data channel	1
Puerto Rico	64Kbits/sec duplex AMHS data channel	1
From Bogota (Colombia) to:		
Curacao	9.6 Kbps-16 Kbps duplex radar data channel	1
Aruba	9.6 Kbps-16 Kbps duplex radar data channel	1
Panama	64Kbits/sec duplex AMHS data channel	1
	9.6Kbits/sec duplex radar data channel	1
COCESNA	9.6 Kbps-16 Kbps duplex radar data channel	2
Miami	64Kbits/sec duplex AMHS data channel	2*
From COCESNA to:		
Bogota	9.6 Kbps-16 Kbps duplex radar data channel	2

* Both circuits correspond to the AMHS circuits:
Lima (Peru) - Atlanta (USA)
Brasilia (Brazil) - Atlanta (USA)

Agenda Item 4: Initial Considerations Study on the implementation of the MEVA II / REDDIG networks integration

4.1 It was recalled that the GREPECAS/14 Meeting approved the conclusion of the Third MEVA II / REDDIG Coordination Meeting (MR/3) *Conclusion 3/1 “Technical Operational Analysis for the MEVA II / REDDIG interconnection solution”* where the complete or homogeneous total integration represented the best operational technical solution, in view that this will allow having a single control, facilitating management, as well as the implementation of required services between the CAR and SAM Regions. Nevertheless, it was determined that the integral solution implementation as first stage would be difficult to accomplish considering existing diverging aspects in the operation and administration of the REDDIG and MEVA II. In this regard, the most feasible solution in the initial stage would be interconnection, aimed at integrating the networks after a five year period.

4.2 In this regard, the Meeting took note that regarding conclusion MR 06/04 of the Sixth MEVA II / REDDIG Coordination Meeting “Study about the initial considerations for the implementation of the MEVA II and REDDIG networks integration”, ICAO compiled the initial considerations for both networks integration and prepared a preliminary study on the technical configuration of an integrated network, and the services that will initially be supported, which is presented in the **Appendix** to this part of the Report.

4.3 It is considered that in this moment, initial considerations achieved through the MEVA II / REDDIG coordination and working group meetings, related to operational, administrative and institutional aspect are very premature, if it is taken into account that the MEVA II/REDDIG networks interconnection is still not implemented and there is no operational experience.

4.4 The Meeting recalled that the analysis and initial evaluation carried out by the MEVA II / REDDIG coordination and working group meetings have determined implementation viability of MEVA II / REDDIG networks integration, and therefore, it is reasonable to continue studying in depth the aspects and initial considerations, including actions planning and similar works to this objective. These plans should be contemplated and finished within the five year period once the MEVA II and REDDIG networks interconnection is implemented and in operation

4.5 Considering that some aspects and considerations to study in-depth are elements and topics typical of the networks operation and management, the Meeting agreed that in-depth and completion of these elements should be assigned as a task within each one of the MEVA II and REDDIG managing groups, within the five year period. Therefore agreed to formulate the following Conclusion:

CONCLUSION MR 7/3 PREPARATION OF A PRELIMINARY ACTION PLAN FOR THE STUDY OF THE MEVA II / REDDIG NETWORKS INTEGRATION

That the MEVA II and REDDIG managing groups, complete the initial study of the MEVA II / REDDIG networks integration and prepare a preliminary action plan to be presented to the Eighth MEVA II / REDDIG Coordination Meeting.

4.6 Taking into account the information provided under Agenda Item 1 related to the study for a change in the REDDIG hardware and software platform, due to the non-availability of several equipments like the ViaSAT and Memotec 950, as well as evaluations that the MEVA TMG is performing for this reason, the Meeting considered necessary that these studies and information be exchanged among the Managing Groups of both networks for their consideration in the works for the interconnection of both networks. In this regard, the Meeting agreed to formulate the following Conclusion:

**CONCLUSION MR 7/4 EXCHANGE OF INFORMATION FOR THE MEVA II / REDDIG
INTEGRATION**

That the MEVA II and REDDIG administrations, with a view to the future MEVA II and REDDIG integration, exchange information of studies being carried out, and other related considerations, related to the possible changes in the current MEVA II and REDDIG networks platform.

APPENDIX

PRELIMINARY STUDY ON INITIAL TECHNICAL CONSIDERATIONS FOR THE IMPLEMENTATION OF THE MEVA II / REDDIG NETWORKS INTEGRATION

Background and References for Digital Networks Integration

The Third Regional Air Navigation Caribbean and South America Meeting (RAN CAR/SAM/3) (Buenos Aires from October 5th to 15 of 1999) alert GREPECAS the need to develop criteria and pertinent orientation in order to obtain the interconnection among several available and emerging digital networks. Recommendation 9/1 – *Implementation of digital networks to improve the current AFS and to facilitate the introduction of the ATN.*

In order to set up criteria for digital networks interconnection in a regional and interregional level, two informal meetings: CAR/SAM Informal Meeting 01/00 (Mexico, from June 26 to 29, 2000) and CNS-CAR/SAM Informal Meeting 01/01 (Bogota, Colombia, from October 9 to 11, 2001) were held, as well as MEVA and REDDIG networks Interconnection Coordination Meeting (Lima, from November 11 to 12, 2002). In these meetings several proposals of interconnection alternatives were displayed, including the adoption of an memorandum of understanding for the establishment of an homogeneous digital platform based in MEVA II and REDDIG networks interconnection, as well as the transitory implementation of Colombian network nodes in Jamaica, Panama and COCESNA; it was agreed that these measures be applied until the MEVA II / REDDIG interconnection is achieved.

The GREPECAS/10 Meeting (Las Palmas, Spain, October 23 to 27, 2001) adopted a preliminary orientation material referred to digital networks interconnection for aeronautic communications (Conclusion 10/27). Also, the Conclusion 10/28 indicates the need of capacity provision of massive information exchange through aeronautic communications digital networks.

The GREPECAS/12 Meeting (La Habana, Cuba, June 7 to 11, 2004) highlighted the importance to continue efforts in order to achieve interconnection and homogeneous interoperability among CAR/SAM regional digital networks, considering present and future communication requirements of voice and data and, in this sense, formulated Conclusion 12/39 – *Additional inter-connection points for regional and inter-regional digital networks.*

The GREPECAS/13 Meeting, based in the recommendation of CNS/COMM/4 Meeting, considered:

- o the need to continue interconnection/interoperability efforts between two networks, using, in this respect, the coordination meetings of ICAO Technical Cooperation Projects, related with MEVA II y la REDDIG.
- o research alternatives, such as implementation of an homogeneous type interconnection or the establishment of interconnection points for a non-homogeneous solution.
- o it is important to achieve the purpose of interconnection/inter-performance between MEVA II and REDDIG and consequently, Conclusion 13/70 (*Establishment of Agreements to achieve the MEVA II – REDDIG interconnection/interoperation*) was formulated.

The Fifth Meeting of the ALLPIRG/Advisory Group (ALLPIRG/5), held in ICAO Headquarters, Montreal, Canada, 23 to 24 March 2006, among issues related to VSAT networks implementation, formulated Conclusion 5/16 – Implementation of very small aperture terminals (VSATs), which discourage proliferation of VSAT networks where one/some of the existing ones can be expanded to serve new areas of interest.

Considerations and Initial Operational Technical Aspects for the Integration

Under this networks integration concept, VSAT MEVA II and REDDIG networks interoperability will be allowed in a homogeneous way, as if only one VSAT network exist without the need to implement other communication means for interconnection.

Interoperability is possible since the technical characteristic of both (MEVA II and REDDIG) are similar: network topology type Full Mesh, using TDMA/Frame Relay typical satellite access modality, IS 1R satellite with beam addressed over the United States / Latin America, band C and vertical lineal polarization operation frequency. In the same way, both network use similar and compatible equipment, such as those corresponding to FRAD and satellite MODEM.

One of the fundamental parameters for establishing a homogeneous MEVA II – REDDIG network is synchronization of MEVA II and REDDIG carriers. This synchronization could be carried out with the MRT (Master Reference Terminal, located in the Viasat Linkway MODEM) of the REDDIG NCC or the MEVA II NCC.

Due to the MRT importance and in order to avoid collapsing the network when this fails, it is necessary to have an alternate MRT, as presently in the REDDIG. When a MRT fails, the NCC will use the alternate to maintain the network synchronism. This change will be automatic and transparent for the network users. The principal and alternate MRT should be geographically separated and joined in a direct way through a communications mean. For the MEVA II – REDDIG integration, the REDDIG MRT (operating in Manaus) and the MEVA II MRT could be considered.

The MEVA II and REDDIG networks, being integrated in the same transponder, could operate with different groups of nodes or users according to the traffic between them and to respective frequencies being used. In this way, a group with all the REDDIG nodes and other with all the MEVA II nodes could be established, as well as a last group including REDDIG and MEVA II nodes requiring voice and data service between them. This third users group would be conformed by the nodes of Colombia, Ecuador and Venezuela (REDDIG), and Aruba, Curacao, Panamá, Jamaica, Puerto Rico and COCESNA (MEVA II). Only one reference carrier (MRT) would be used for the synchronization of the homogeneous network.

In the same way, the following particular premises could be identified:

- a) Network Management Centre
 - Equipment redundancy with hemispherical geographical diversity.
 - Use of the MRT and AMRT with geographical diversity to avoid solar interference
 - Dedicate circuit between MRT and AMRT.
 - Operation of the Network Management Centre during 24x7x365 in English, Spanish and Portuguese languages.
 - Use of carriers up to 1.25 Msps with QPSK and FEC ½. modulation.
 - Conformation of three groups of users NAM-CAR, SAM and NAM-CAR /SAM.
 - Minimum availability: 99.95%.
 - The network is exclusive and closed for member States and should not be interconnected to any Public Network.
- b) Remote Nodes
 - Redundant equipment desirable.
 - Minimum availability: 99.95%.
 - BER equal or above 10^{-6} .

Present communications requirements identified for integration between the SAM Region and CAR Region and the SAM Region and NAM Region.

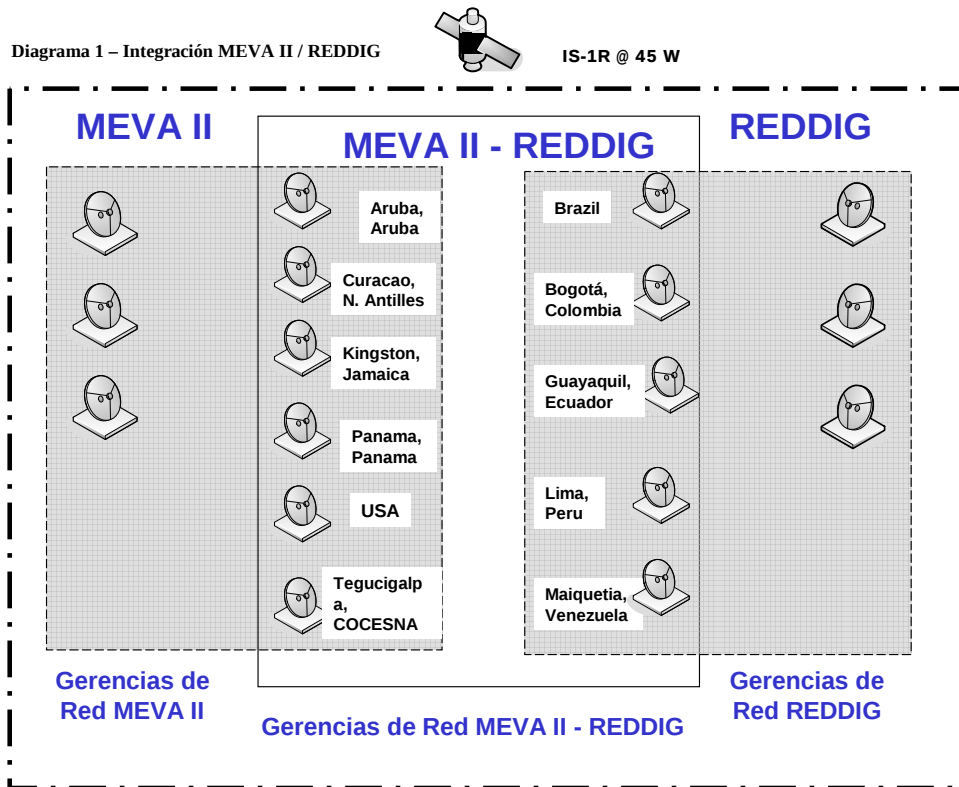
Within the networks integration, initially the voice and data communications requirements between the SAM and CAR Regions (presented in table 1) have been considered, as well as data requirements between the SAM and NAM regions (presented in table 2).

Table No. 1 – Summary of CAR/SAM interoperability requirements																		
No.	State/Station	ARUBA, Aruba	COLOMBIA	Barranquilla	Bogota	Cali	Medellín	San Andrés	ECUADOR, Guayaquil	JAMAICA, Kingston	NETHERLANDS A. Curacao	PANAMÁ, Panamá	PUERTO RICO, San Juan	VENEZUELA	Caracas	Josefa Camejo	COCESNA, Tegucigalpa	Total per State
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	ARUBA, Aruba															V		1 Voice
2	COLOMBIA																	8 Voice + 1 Data
2.1	Barranquilla									V	V	V						
2.2	Bogotá											D,V					V	
2.3	Cali											V						
2.4	Medellín											V						
2.5	San Andrés											V						
3	ECUADOR, Guayaquil																V	1 Voice
4	JAMAICA, Kingston			V														1 Voice
5	NETHERLANDS A. Curacao			V											D,V			2 Voice + 1 Data
6	PANAMÁ, Panamá			V	D,V	V	V	V										5 Voice + 1 Data
7	PUERTO RICO, San Juan															D,V		1 Voice + 1 Data
8	VENEZUELA																	3 Voice + 2 Data
8.1	Caracas										D,V		D,V					
8.2	Josefa Camejo	V																
9	COCESNA, Tegucigalpa				V				V									2 Voice
	Total per Station	1 Voice		3 Voice	2 Voice + 1 Data	1 Voice	1 Voice	1 Voice	1 Voice	1 Voice	2 Voice + 1 Data	5 Voice + 1 Data	1 Voice + 1 Data		2 Voice + 2 Data	1 Voice	2 Voice	

Note: Additionally to requirements expressed in Table No. 1, ATN routers interconnection should be added, as well as new services for the radar data Exchange and other communications services, all of which is in process of revision an definition. .

Table No. 2 – Summary of NAM/SAM interoperability requirements		
No.	Communications services	Type
1	2	3
1	Main AFTN circuit BRASIL , Brasilia – UNITED STATES	Data
2	Main AFTN circuit PERU , Lima – UNITED STATES	Data
3	Main AFTN circuit VENEZUELA , Caracas – UNITED STATES	Data
4	ATN routers interconnection No. 1 (Plan under review)	Data
5	ATN routers interconnection No. 2 (Plan under review)	Data
6	Other future services	Data

Initial architecture proposed by the MEVA II / REDDIG Coordination meetings for integration of both networks and their suggested operation:



Note: The interrupted dark line represents a total network operator

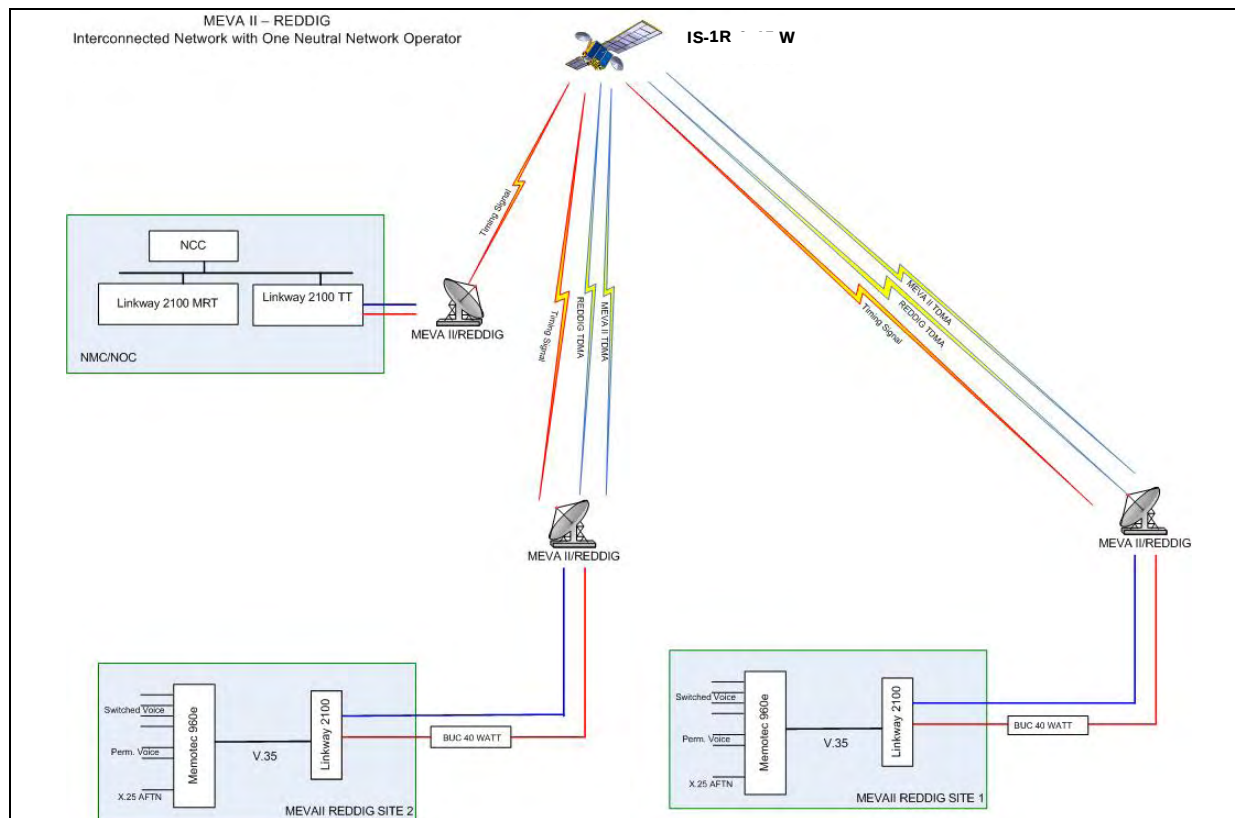


Diagram 2 – MEVA II – REDDIG Networks Interconnected with only one Network Operator

CONCLUSION:

Taking into account these initial considerations on operational technical aspects for the MEVA II and REDDIG networks integration, failing to study in-depth operational, administrative and institutional aspects, as well as review other considerations from the experience in operating both networks interconnection, it could be concluded that both networks integration is technically feasible and among the principal advantages that could be achieved are:

- For any communication between any of the MEVA II and REDDIG nodes only one satellite hop will be used keeping at minimum the delay in voice and data communications.
- Independent and transparent operation for users of groups without interconnection, there should not be interference on those groups traffic.
- Being a homogeneous network in technology and equipments, interconnection and interoperability among MEVA II and REDDIG would be carried out without mayor additional investments in principal equipments or stations.
- Flexibility to increase new interconnection users in any of the networks
- Fulfils interoperability principles of regional digital networks
- Facilitates implementation of ATN applications.

Agenda Item 5: Other issues

5.1 Taking into account that, in accordance with the Action Plan discussed by the meeting, the interconnection will be in operation until the last quarter of 2009, besides from the existence of some issues to be dealt with that are associated to the interconnection, such as:

- evaluating new requirements to be considered in the interconnection;
- evaluating the performance of the interconnection and lessons learned;
- planning of the study for implementation of the integration stage; and
- other related issues,

the Meeting agreed on the need to convene a next meeting. This meeting will be held in the ICAO SAM Regional Office in Lima at the beginning of the second quarter of 2010.