



International Civil Aviation Organization

CAR/SAM Regional Planning and Implementation Group (GREPECAS)

Fourteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/14)

San Jose, Costa Rica, 16 to 20 April 2007

GREPECAS/14 - WP/26

12/03/07

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- Agenda Item 3: Assessment of development of regional air navigation and security infrastructure**
3.6 Report of the ATM/CNS/SG/5 Meeting

RESULTS OF THE FOURTH MEVA II/REDDIG COORDINATION MEETING

(Presented by the Secretariat)

SUMMARY

This paper presents the results of the Fourth MEVA II / REDDIG Coordination Meeting, including the Memorandum of Understanding and the Action Plan for the interconnection of these networks and proposes that GREPECAS adopts measures to contribute to this implementation and continue the follow-up of this issue.

1. Introduction

1.1 The Fifth Meeting of the CNS Committee of the ATM/CNS Subgroup held in Lima, Peru from 13 to 17 November 2006, followed up on the status of the VSAT MEVA II and REDDIG networks. The Meeting has recommended to GREPECAS to adopt Draft Conclusion CNS/5/1 – *Action plan for the implementation of the MEVA II and REDDIG VSAT Networks Interconnection*. The Meeting also followed up the results of the previous MEVA II / REDDIG coordination meetings. After the Meeting, the management mechanisms of both networks continued their work and subsequently held the Fourth MEVA II / REDDIG Coordination Meeting (MR/04), in Lima, Peru, from 7 to 9 March 2007, which was coordinated by the NACC and SAM Regional Offices.

1.2 The MR/04 Meeting was attended by 24 participants from Argentina, Brazil, Chile, Colombia, Ecuador, Panama, Paraguay, Peru, Trinidad and Tobago, United States, Venezuela and COCESNA, all of them members of the VSAT MEVA II or REDDIG regional networks; and it was also attended by the REDDIG Administrator and by the MEVA II Service Provider. The Meeting was held in order to agree and coordinate actions to implement the interconnection of the mentioned networks.

2. Results of the MEVA II / REDDIG Coordination Meeting

2.1 The MR/04 Meeting reviewed all technical-operational aspects for the implementation of the interconnection solution in the Bogota and Caracas REDDIG nodes; in the Tegucigalpa COCESNA MEVA II node; as well as the impact that the interconnection would have in the Aruba, Curaçao, Kingston, Miami, San Juan and Panama MEVA II nodes; and in the Guayaquil, Lima and Manaus REDDIG nodes. Among these aspects, the meeting reviewed the following:

- a) Interconnection communications service requirements.
- b) Premises, equipment and required devices for the interconnection.
- c) Requirements for the Bogota REDDIG node.
- d) Requirements for the Caracas node.
- e) Impact on the Guayaquil, Lima and Manaus REDDIG nodes.
- f) Requirements for the COCESNA MEVA II node.
- g) Impact on the Aruba, Curaçao, Kingston, Miami, Panama and San Juan MEVA II nodes.

2.2 The Meeting agreed on the need to prepare a Request for Proposal (RFP) in order to define all the MEVA II / REDDIG interconnection requirements, thus it started the preparation of the MEVA II / REDDIG Interconnection RFP. Therefore, the Meeting drafted Conclusion 4/2 – *Approval and response to the MEVA II / REDDIG RFP*, through which it oriented that the RFP has to be finalized before 30 April 2007. The responses to the RFP to the REDDIG Administrator and the MEVA II Services Provider have to be received before 16 July 2007 and the Fifth MEVA II / REDDIG Coordination Meeting (MR/05), to be held in Mexico City in August 2007.

2.3 Additionally, the Meeting reviewed the MEVA II / REDDIG Memorandum of Understanding (MoU) and consequently adopted Conclusion 4/3 – *Adoption of the MEVA II / REDDIG Memorandum of Understanding*, through which Member States/Territories/International Organization of the corresponding networks are expected to adopt the MoU presented in **Appendix A** to this paper.

2.4 Taking into account Draft Conclusion CNS/5/1 formulated by the CNS Committee, the Meeting prepared the Action Plan presented in **Appendix B** to this paper and drafted Conclusion 4/4 – *Adoption of the action plan for MEVA II / REDDIG Interconnection*; all actions related to this Plan are expected to be carried out before 30 November 2007, eventually implementing the MEVA II / REDDIG interconnection. For this reason, the following Draft Conclusion is presented:

DRAFT

CONCLUSION 14/XX

**MEMORANDUM OF UNDERSTANDING AND ACTION PLAN
FOR THE MEVA II / REDDIG INTERCONNECTION**

That in order to implement the interconnection of the VSAT MEVA II and REDDIG networks, the Member States/Territories/International Organizations of these networks adopt the Memorandum of Understanding, approve and implement the tasks related to the Action Plan presented in Appendices A and B, respectively, to this working paper.

3. **Action by GREPECAS**

3.1 The GREPECAS/14 Meeting is proposed to:

- a) take note of the information contained in this working paper;
- b) review the Memorandum of Understanding and Action Plan to implement the MEVA II / REDDIG interconnection contained in Appendixes A and B respectively to this paper;
- c) review and approve the Draft Conclusion presented in paragraph 2.4;
- d) adopt follow-up measures for the implementation of the MEVA II / REDDIG Interconnection Action Plan; and
- e) adopt other measures deemed necessary.

APPENDIX A

MEMORANDUM OF UNDERSTANDING BETWEEN STATES/TERRITORIES/INTERNATIONAL ORGANIZATIONS MEMBERS OF MEVA II AND REDDIG PROJECT ORGANIZATION

1. SECTION 1. INTRODUCTION AND PURPOSE OF THIS DOCUMENT

1.1 INTRODUCTION

1.1.1 The RAN CAR/SAM/3 and GREPECAS Meetings identified the need to interconnect and integrate the MEVA II and REDDIG VSAT digital networks of the Caribbean and South American Regions (CAR/SAM). With the aim of efficiently meeting aeronautical telecommunications requirements in these regions, the members of the mentioned networks decide to interconnect and/or integrate the two networks. To reach this goal, the Members decided to establish this Memorandum of Understanding (MOU). This Agreement is being established jointly under coordination of the ICAO North American, Central American, and Caribbean (NACC) Office in Mexico City and the ICAO South American (SAM) Office, in Lima, Peru.

1.1.2 The Third MEVA II / REDDIG Coordination Meeting (MR/3) concluded that the best option, based on a technical-operational analysis carried out, would be their integration, but the most viable would initially be their interconnection, with the objective of integrating the networks after a five-year period.

1.1.3 The main body of this document consists of four (4) sections and 4 Appendices. The content of the sections and appendices is summarized below:

- a) Section 1.0: Presents a brief overview and statement of purpose.
- b) Section 2.0: Provides an explanation of the Technical Cooperative Agreement process.
- c) Section 3.0: Describes the technical terms of reference.
- d) Section 4.0: Describes the financial responsibilities of the parties to this agreement.
- e) Appendix A: A list of reference documents used in support of this Agreement.
- f) Appendix B: Objectives and technical operational principle of the interconnection solution
- g) Appendix C: Objectives and technical operational principle of the homogeneous solution (to be developed).
- h) Appendix D: Objectives, terms of reference, and responsibilities of the Multi-Regional Organization (to be developed).

1.2 **PURPOSE**

1.2.1 The goal of this MoU is to foster a coordinate planning in the development and implementation of MEVA II and REDDIG networks, that shall ultimately lead to the creation of a homogeneous Pan-American V SAT network covering the CAR/SAM Regions.

1.2.2 This MoU is a living document through which members of the MEVA II and REDDIG networks shall convene, as necessary and at locations agreed upon, to review or amend the details of the Agreement. Revised versions of this Agreement, or paragraph changes, shall be coordinated and distributed by the ICAO NACC and SAM Offices to the signatory parties of the Agreement as appropriate.

1.2.3 This MoU document establishes the following process:

- a) The holding of meetings and discussions to identify the requirements and preferred technical solution(s), alternatives, and options for achieving integration/interconnection of the MEVA II and REDDIG VSAT networks via a common satellite and use of similar equipments.
- b) The exchange of technical reports and documentation, program plans and schedules, as may become necessary, to assure the successful and timely completion of these efforts.
- c) Technical coordination between the Parties involved in MEVA II and REDDIG networks, as necessary.
- d) Planning, technical coordination, and development participating member States/Territories/International Organizations of the MEVA II and REDDIG Networks.

2. **SECTION 2. THE TECHNICAL COOPERATIVE AGREEMENT PROCESS**

2.1 To reach the goal of this MoU, the MEVA II and REDDIG members have developed an interconnection solution that shall be implemented during an initial phase. During this initial phase, the members of these networks shall also develop a solution that shall enable the integration of the two networks at a later stage. This initial phase shall last as long as the contractual agreements with the MEVA II Service Provider last.

2.2 **RELATIONSHIPS AND RESPONSIBILITIES OF THE PARTIES**

2.2.1 In order to achieve the interconnection/integration of the networks in a timely and mutually beneficial way, the parties to this Agreement recognize the need to coordinate their actions and exchange updated technical information.

2.2.2 The Parties also recognize the need to develop common technical solutions for interconnecting and/or integrating these networks, in a manner that shall not negatively impact the planned operation, performance, or management of the either network.

2.2.3 ICAO NACC and SAM Regional Offices shall convene coordination meetings, as needed.

2.2.4 The Parties of this MoU agree to exchange pertinent technical-economical to reach the interconnection/integration of these networks.

2.2.5 The Parties of this MoU agree to implement during the initial phase the interconnection solution as presented in Appendix B.

2.2.6 The Parties of this MoU agree to implement, during the consolidation phase, the integration solution, which shall be duly elaborated.

3. **SECTION 3. TECHNICAL TERMS OF REFERENCE**

3.1 The interconnection solution's objectives and their technical operational principles are described under the Appendix B of this document.

4. **SECTION 4. FINANCIAL RESPONSIBILITIES OF THE NETWORK PARTIES**

4.1 MEVA II / REDDIG members shall, as individual administrations, be responsible for any financial obligations necessary to cover direct or indirect expenses related with the compliance of this MoU.

4.2 The Parties to this Agreement understand that they shall not commit to any action that may result in a financial obligation to other Parties, without first obtaining an Agreement, in writing, from all other parties to this Agreement.

NOTES:

MEVA II - The term "MEVA II", as used in this document, refers to the VSAT network currently providing voice and data aeronautical telecommunications services to States/Territories/International Organizations in the Caribbean Region. The network is managed by Caribbean States/Territories/International Organizations members, through the Technical MEVA Group (TMG), and is coordinated by the ICAO NACC Regional Office.

REDDIG - The term "REDDIG", as used in this document, refers to the VSAT network presently implemented in the South American region under the technical cooperation project RLA/03/901 coordinated by the ICAO Lima Office.

ATTACHMENT TO APPENDIX

TECHNICAL-OPERATIONAL DOCUMENT OF AGREEMENT FOR THE ESTABLISHMENT OF MEVA II AND REDDIG NETWORKS INTERCONNECTION

1. SECTION 1. PURPOSE OF THIS DOCUMENT

1.1 PURPOSE

1.1.1 To establish technical, operational and administrative aspects necessary for MEVA II and REDDIG networks interconnection, to meet aeronautical telecommunications requirements between the CAR/SAM Regions.

2. SECTION 2. CO-OPERATIONAL TECHNICAL PROCESS OF THE AGREEMENT

2.1 RELATIONSHIP AND RESPONSIBILITIES OF THE PARTIES

2.1.1 During this stage, the management of MEVA II and REDDIG shall continue with their respective service providers, i.e, REDDIG shall continue under RLA/03/901 project, and MEVA II, with the MEVA II Service Provider.

2.1.2 States/Territories/International Organizations members of MEVA II and REDDIG networks shall be responsible for the normal operation of each of their nodes, having to establish mechanisms necessary to ensure the degree of availability required for each of the services under consideration.

3. Section 3 – TECHNICAL TERMS OF REFERENCE

3.1 TECHNICAL TERMS OF REFERENCE

3.1.1 Members of MEVA II and REDDIG networks have mutual interest in establishing the interconnection and/or integration of their respective communications networks in a manner that they provide the capacity to provide current and future voice and data aeronautical telecommunications services between the designated nodes within these networks, so as to support aeronautical communications in the CAR/SAM Regions.

3.1.2 The interconnection technical solution shall be carried out under premise that the REDDIG and MEVA II VSAT network develop under a full mesh network topology, using TDMA/Frame Relay satellite access, as well as a PAS 1R satellite transponder with a beam directed over United states / Latin America, C band operation frequencies and co-linear vertical polarization.

3.1.3 For the interconnection of the additional equipment to be initially installed at each node involved, MODEMs Linkway 2100, AST 4100 IF splitters, necessary FRAD cards, as well as any other necessary, shall be acquired.

3.1.4 The interconnection implies the following implementations:

- a) Additional equipment at Bogota, Colombia and Caracas, Venezuela, REDDIG nodes; and

- b) Additional equipment at Tegucigalga, Honduras, COCESNA MEVA II node.

3.2 **MANAGEMENT TERMS OF REFERENCE**

3.2.1 Implementation of the interconnection option shall not involve modifications to the technical, operational and control management of MEVA II and REDDIG networks, with exception of the necessary maintenance coordination procedures detailed in paragraph 3.2.5 of this Attachment.

3.2.2 The configuration, synchronization, supervision and control of additional MODEMs participating in the interconnection and installed at REDDIG nodes, shall be carried out by the MEVA II network NCC. Also, the configuration, synchronization, supervision and control of additional MODEMs participating in the interconnection and installed at MEVA II nodes, shall be carried out by the REDDIG NCC.

3.2.3 The band-width or number and type of circuits installed in the MEVA II node for communications with REDDIG, shall be managed by REDDIG.

3.2.4 The band-width or number and type of circuits installed in the REDDIG node for communications with MEVA II, shall be managed by MEVA II.

3.2.5 **Maintenance coordination procedures between the NCCs**

3.2.5.1 When there is any problem in a REDDIG node, with the MODEM or other equipments permitting the interconnection with MEVA II, the following shall be applied:

- a) MEVA II Service Provider shall call the REDDIG Administrator informing of the happening;
- b) The REDDIG Administrator shall phone the respective node and shall establish an audio conference between MEVA II Service Provider and Caracas or Bogota local technicians, as necessary;
- c) REDDIG NCC, under control of the Administrator, shall supervise communications between MEVA II Service Provider and REDDIG nodes technicians.
- d) The MEVA II Service Provider is the only one that may call the REDDIG Administrator to start or close the respective trouble ticket.

3.2.5.2 When there is any problem in a MEVA II node, with the MODEM or other equipment permitting the interconnection with REDDIG, the following shall be applied:

- a) The REDDIG Administrator shall call the MEVA II Service Provider informing of the happening;
- b) The MEVA II Service Provider shall call the respective node and shall establish an audio conference between REDDIG Administrator and local technicians, as necessary;
- c) MEVA II NCC, under control of the Service Provider, shall supervise communications between REDDIG Administrator and MEVA II nodes technicians.

- d) The REDDIG Administrator is the only one that may call the MEVA II Service Provider to start or close the respective trouble ticket.

3.2.6 **Security requirements**

3.2.6.1 The minimum security arrangements required by REDDIG, and that should be followed by the MEVA II, are:

- a) MEVA II network have no direct communications with public networks.
- b) The equipment is not shared with services different to MEVA II.
- c) Access restriction to equipment belonging to the network, through the use of a password.
- d) The network must exclusively support services to which it was originally constituted for.

3.2.6.2 The minimum security arrangements required by MEVA II, and that shall be followed by REDDIG, are:

- a) REDDIG network have no direct communications with public networks.
- b) The equipment is not shared with services different to REDDIG.
- c) Access restriction to equipment belonging to the network, through the use of a password.
- d) The network must exclusively support services to which it was originally constituted for.

4. **Section 4 – FINANCIAL RESPONSIBILITIES OF THE PARTIES**

4.1 **EQUIPMENT PURCHASING**

4.1.1 Additional equipment to be installed at REDDIG nodes, with MEVA II MODEMS requirements, shall be purchased by the REDDIG members, through project RLA/03/901.

4.1.2 Additional equipment to be installed at MEVA II nodes, with REDDIG MODEMS requirements, shall be purchased by MEVA II members (States, Territories, Organizations) to the MEVA II Service Provider.

4.2 **SPARE PARTS LOT PURCHASING**

4.2.1 The spare parts for the additional equipment to be installed at the REDDIG nodes, with MEVA II MODEM and other device requirements, shall be purchased by REDDIG, and would form part of the spare parts lot existing in REDDIG.

4.2.2 The spare parts for the additional equipment to be installed at the COCESNA MEVA II node, with REDDIG MODEM and other device requirements, shall be purchased by COCESNA.

4.3 MAINTENANCE

4.3.1 The additional equipment that would be installed in the REDDIG nodes and that would route communications requirements with MEVA II nodes, shall be maintained by the respective REDDIG member States, under the coordination of the REDDIG Administrator.

4.3.2 The additional equipment that would be installed in the MEVA II node, with communications requirements with REDDIG nodes, shall be maintained by COCESNA, in coordination with the MEVA II Service Provider.

4.4 SPACE SEGMENT

4.4.1 The carriers, as well as the band width requirement for communications between REDDIG nodes shall be the same as those currently rented with INTELSAT. The payment of the space segment to INTELSAT shall continue being carried out through the ICAO technical cooperation, who shall be in charge of collecting contributions from each SAM State member of REDDIG.

4.4.2 The carriers, as well as the band width requirement for communications between MEVA II nodes shall be done through the MEVA II Service Provider. MEVA II members shall pay the band width consumption to the MEVA II Service Provider.

4.4.3 The number of circuits necessary for communications between REDDIG nodes having MODEMs participating in the interconnection (Colombia and Venezuela) shall be administrated by the MEVA II Service Provider. The amount charged for circuits used by the States mentioned shall be provided by the MEVA II Service Provider, and the respective consumption payment to the provider shall be made through ICAO technical cooperation project RLA/03/901.

4.4.4 The number of circuits necessary for communications between MEVA II node having MODEMs participating in the interconnection (COCESNA) shall be administrated by REDDIG. The amount charged for circuits used by the mentioned node shall be provided by the REDDIG Administrator, and the respective consumption payment shall be made by COCESNA to the ICAO technical cooperation Project RLA/03/901.

APPENDIX B
ACTION PLAN FOR IMPLEMENTATION OF MEVA II AND REDDIG INTERCONNECTIONS
PLAN DE ACCIÓN PARA IMPLANTACIÓN DE LAS INTERCONEXIONES MEVA II Y REDDIG

Date/Fecha: 9 March/Marzo 2007

Item No.	Action / Acción	Responsible / Responsable	Date of Implementation/ Fecha de Implantación	Difficulties encountered/ Dificultades encontradas
1	2	3	4	5
1	RFP	COCESNA	30-Apr-07	
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 Administrator / Proveedor Servicio MEVA II y Administrador REDDIG	30-Apr-07	
3	Identification of Current Equipment / Identificación de Equipo Actual	MEVA II Service Provider and REDDIG Administrator / Proveedor Servicio MEVA II y Administrador REDDIG	30-Apr-07	
4	Completion of SLA / Finalización de SLA	MEVA II Service Provider and REDDIG Administrator / Proveedor Servicio MEVA II y Administrador REDDIG	30-Apr-07	
5	Review of RFP / Revisión de RFP	MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	31-May-07	

Item No.	Action / Acción	Responsible / Responsable	Date of Implementation/ Fecha de Implantación	Difficulties encountered/ Dificultades encontradas
1	2	3	4	5
6	Proposals response / Respuesta de propuestas	MEVA II Service Provider and REDDIG Administrator / Proveedor Servicio MEVA II y Administrador REDDIG	16-Jul-07	
7	Proposals review / Revisión de propuestas	Coordination meeting / Reunión de coordinación	06-Aug-07	
8	MoU Signature / Firma del MoU	MEVA II and REDDIG Members / Miembros MEVA II y REDDIG	18-May-07	
9	Implementation	MEVA II and REDDIG Members, MEVA II Service Provider and REDDIG Administrator / Miembros MEVA II y REDDIG, Proveedor Servicio MEVA II y Administrador REDDIG	30-Nov-07	

- FIN -