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**Agenda Item 2:      Review of the Approval Status of the Memorandum of Understanding (MoU) for the MEVA II/REDDIG Interconnection Solution**

**STATUS OF THE VSAT MEVA II NETWORK  
AND ITS INTERCONNECTION PROCESS WITH REDDIG**

(Presented by the Secretariat)

<b>SUMMARY</b>
This paper presents an analysis of the follow-up to the development and interconnection status of the VSAT MEVA II and REDDIG Networks.
<b>References:</b> <ul style="list-style-type: none"><li>• Report of the Fourth MEVA II / REDDIG Coordination Meeting, (Lima Peru, 7-9 March 2007)</li><li>• GREPECAS/14 Report</li><li>• Report of the CAR/WG/1 Meeting, Port of Spain, Trinidad and Tobago, 21-23 June 2007</li><li>• NACC State Letters Ref. N 1/3.6.3 – EMX0282, EMX0487 and EMX0593</li><li>• SAM State Letters Ref. LN 3/20.3.4-SA223, SA352 and SA399</li></ul>



**1.                    Introduction**

1.1                This paper presents an analysis of the results of the consultation process made with MEVA II and REDDIG Member States, Territories and one International Organization, regarding the adoption of the Memorandum of Understanding (MoU), which was conducted by the ICAO NACC and SAM Regional Offices, as follow-up to Conclusion 4/3 – *Adoption of the MEVA II / REDDIG Memorandum of Understanding* drafted by the Fourth MEVA II / REDDIG Coordination Meeting (MR/4).

1.2                The MEVA II / REDDIG Memorandum of Understanding (MoU), prepared by the MR/4 Meeting, was circulated by the ICAO NACC and SAM Regional Offices to the MEVA II and REDDIG networks Member States, Territories and one International Organization through letter N1/3.6.3 – EMX0282, dated 23 March 2007 and LN 3/20.3.4 – SA223 dated 28 March 2007.

1.3 Likewise, the GREPECAS/14 Meeting reviewed the development and integration/interconnection status of both regional networks, and drafted Conclusion 14/52 – *Review for the Adoption of the Memorandum of Understanding and Implementation of the Action Plan for the MEVA II / REDDIG Interconnection.*, through which, among other aspects, it urged MEVA II / REDDIG Member States/Territories/one International Organization to “study and review the feasibility to adopt the Memorandum of Understanding (MoU).”

1.4 Taking into account the few responses received to the aforementioned communications, the ICAO NACC Office sent the MEVA II Members letter Ref. N 1/3.6.3 – EMX0593, dated 19 June 2007, stating that if no response was received before 29 June 2007, it would be considered that Administrations agreed to the proposals with no comments. The SAM Regional Office issued a similar letter to REDDIG members (Ref. LN 3/20.3.4-SA399, dated 13 June 2007).

## 2. **Analysis of the consultation process and response to the MoU and RFP for the MEVA II / REDDIG Interconnection**

2.1 **Appendix A** to this paper presents a summary of the responses received by both Regional Offices regarding the MEVA II / REDDIG MoU.

2.2 As a result of the analysis of the responses received to the MoU, it is proposed that the Meeting review and adopt the following premises:

- a) None of the responses received oppose continuation of the MEVA II / REDDIG Interconnection Process; therefore, the implementation of the Interconnection Action Plan should continue.
- b) Since several members of both networks have not signed the MoU, though many have expressed their agreement with the MoU and some have provided proposals for amendment to the MoU, the Secretariat has prepared a revised MoU proposal that groups and harmonizes all the proposals for amendment that have been received, which is attached to this paper in **Appendix B**, for the consideration of the Fifth MEVA II / REDDIG Coordination Meeting (MR/5). The changes made are related to the fact that the MoU should only include the solution to implement the MEVA II / REDDIG interconnection, as well as any aspects relevant to the form to do so. The integration agreements are contemplated to be carried out by the end of the interconnection.
- c) The MR/5 Meeting should review the proposals for amendment to the MoU and adopt the actions deemed appropriate regarding the MoU.

**3. Suggested action**

3.1 The Meeting is proposed to:

- a) take note of the information contained in this working paper;
- b) review, consider and adopt the proposals for amendment to the MoU presented in Appendix B to this paper;
- c) review and agree to apply the final adoption actions of the MoU for the MEVA II / REDDIG interconnection by all Members of the MEVA II and REDDIG Networks; and
- d) consider any other actions deemed appropriate.

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## APPENDIX A

<b>Table 1 – Responses of the MEVA II Members on the MoU</b>	
<b>Signed the MoU:</b>	<b>Comments</b>
United States	No comments
COCESNA	Needs clarification regarding the MoU Appendices.
<b>Did not sign the MoU, but sent comments:</b>	
Bahamas	Has no objection to the interconnection process. The MoU signature is pending depending on the economic implications that the MEVA II / REDDIG Interconnection may cause for the State.
Cuba	The MoU should be limited to the interconnection, the content of the pertinent Appendices should be completed and proposed modification to the text.
<b>No response has been received:</b>	
No responses have been received from the remaining MEVA II Members.	According to letter Ref. N1/3.6.3 – EMX0593, dated 19 June 2007, even after no comments have been received, it is considered that administrations agree with the MoU.

<b>Table 2 – Responses of the REDDIG Members on the MoU</b>	
<b>Signed the MoU:</b>	<b>Comments</b>
Argentina, Chile, France, French Guyana, Guyana, Paraguay, Suriname and Venezuela	Have accepted the MoU and the RFP with no comments.
<b>Did not sign the MoU, but sent comments:</b>	
Brazil, Colombia, Peru and Uruguay	Have accepted the MoU and the RFP.
<b>No response has been received:</b>	
Bolivia, Ecuador and Panama	According to letter Ref. LN 3/20.3.4-SA399, dated 13 June 2007, even after no comments have been received, it is considered that administrations agree with the MoU.

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## APPENDIX B

### *Proposal for amendment to the*

#### 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 *effective and* efficiently ~~meeting~~ *fulfilling* aeronautical telecommunications requirements in these regions, the members of the ~~mentioned MEVA II and REDDIG VSAT~~ networks decide to interconnect ~~and/or integrate~~ the two networks. ~~To reach this goal~~ *For this purpose*, the Members decided to establish this Memorandum of Understanding (~~MOUMoU~~). This Agreement is being established jointly under coordination of the ICAO North American, Central American, and Caribbean (NACC) Office in Mexico City, *Mexico* and the ICAO South American (SAM) Office, in Lima, Peru.

1.1.2 *According with* ~~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 *implementation will be carried out to operate for a five-year period, as an initial basis, 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 ~~24~~ Appendices. The content of the sections and appendices is summarized below: *In accordance with the interconnection development and when considered necessary, and if the interested Parties of both networks agree to do so, other Appendices could be added as necessary.*

- 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 **SECTION 1 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 ~~and its interconnection implementation, 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 ~~dynamic~~*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 *Regional* Offices to the signatory parties of the Agreement as appropriate.

1.2.3 This MoU document establishes the following *coordination and cooperation* process:

- a) The holding of *coordination* meetings ~~to analyse and~~ *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) ~~Operational-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 *technical* solution that shall be implemented *to operate* during an initial *five-year* phase. During this initial phase, the members of these networks shall also *define and* develop a *technical* solution that shall enable the integration of the two networks at a later stage, *which will be properly protected in a separate document*. 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 *operational*-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 *reports, technical documents, plans and programming that may be necessary in order to guarantee the successful and timely fulfilment of the 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 *MEVA II / REDDIG* 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, *in accordance with the Agreement contained in Appendix B* ~~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 APPENDIX B****TECHNICAL-OPERATIONAL ~~DOCUMENT-OF~~COORDINATION AGREEMENT FOR THE ESTABLISHMENT OF VSAT MEVA II AND REDDIG NETWORKS INTERCONNECTION****1. SECTION 1. PURPOSE OF THIS ~~DOCUMENT~~AGREEMENT****1.1 PURPOSE**

1.1.1 To establish technical, operational and administrative aspects necessary for *the digital VSAT* 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 *with its under-REDDIG Administration under the* 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 *tele*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 equipments 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~~ *Network Control Centre (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 Administrat~~ion~~ informing of the happening;
- b) The REDDIG ~~Administrator~~ *Administration* 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 *REDDIG* Administrat~~ion~~, 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 Administrat~~ion~~ 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 Administration~~ion~~ 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 Administration~~ion~~ and local technicians, as necessary;
- c) MEVA II NCC, under control of the Service Provider, shall supervise communications between REDDIG Administration~~ion~~ and MEVA II nodes technicians.
- d) The REDDIG Administration~~ion~~ 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, *in accordance with the requirements established for the interconnection.*

##### 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 Administration~~ion~~.

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 Co-operation *Bureau under* 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 Administration~~ion~~, and the respective consumption payment shall be made by COCESNA to the ICAO Technical Co-operation *Bureau under* Project RLA/03/901.