Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2)
Puntarenas, Costa Rica, 1 to 4 June 2015

Agenda Item 4   **Follow-up on the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (NAM/CAR RPBANIP)**
4.1   Progress reports of the Task Forces and the ANI/WG

AERONAUTICAL MESSAGE HANDLING SYSTEM (AMHS) TASK FORCE REPORT

(Presented by AMHS Task Force Rapporteur)

EXECUTIVE SUMMARY
This Working Paper presents the latest updated on the work carried out by the AMHS Task Force

Action:	Suggested action is indicated in section 3
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Environmental Protection
References:	• First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), Mexico City, Mexico, 29 July to 1 August 2013, Report • AMHS Task Force Teleconferences

1.   Introduction

1.1   During the first ANI/WG meeting, an AMHS Implementation Task Force was formed in order to streamline related air navigation implementation activities. This Task Force shall complete AMHS implementation in accordance with the Regional AMHS Implementation Plan as well as update and report progress to the ANI/WG based on the action plan for these tasks.

1.2   Since then, there has been little but positive results in the implementation area as well as IPv4 Addressing Scheme. With the successful transition from MEVA II to MEVA III it is expected the transition will progress.

2. **Discussion**

2.1 During the last ANI/WG/1 Meeting held at the ICAO NACC Regional Office, Mexico City, Mexico, 29 July to 1 August 2013, Representative from Dominican Republic presented a Working Paper indicating errors detected in the proposed IPv4 addressing scheme and a proposal to amend them. This proposal was reviewed and a new version was approved as Version 1.1 **(Appendix A)**. Based on this version the AMHS interconnections of Dominican Republic-Atlanta and the Cuba-Atlanta have been deploy using these addresses, similarly is being done for the rest of interconnections.

2.2 The Task Force held a Teleconference on April 2015 to review the AMHS Regional Implementation Plan. The Task Force acknowledges that, even though several States are in preparation for testing AMHS, most were waiting for the transition from MEVA II to MEVA III to continue the process. Up to date, Dominican Republic has successfully transition to AMHS. Curacao received the assistance of a *Go-Team* mission from the CAR RLA/09/801 Project, advancing in their preparation and to test now that the MEVA III network is operative. Mexico is scheduled for a similar AMHS *Go-Team* mission for 2015.

2.3 Other States such as Cuba, Cayman Island and Trinidad and Tobago continue requiring testing prior to implementation. An updated of the AMHS implementation matrix was achieved and it is presented with the implementation schedules under **Appendix B** of this working paper.

2.3 The Task Force also reviewed the AMHS Terms of Reference Work Programs without comments or modification to the existing ToRs.

3. **Suggested Action**

3.1 The Meeting is invited to

a) review the information presented in the working paper;

b) review and update the AMHS Implementation matrix shown in Appendix B; and

c) following the work programme of the AMHS TF, inform if any other task be may considered.

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PROPOSAL FOR THE UPDATE OF THE IPV4 ADDRESS PLAN FOR G-G ROUTERS BETWEEN STATES IN THE CAR REGION

Network: 10.31.224.0/19

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
1	10.31.224.0/30	Anguila	E/CAR	Network Address	10.31.224.0/30
				Trinidad & Tobago (Piarco)	10.31.224.1/30
				Anguila	10.31.224.2/30
				Broadcast Address	10.31.224.3/30
2	10.31.224.4/30	Antigua	E/CAR	Network Address	10.31.224.4/30
				Trinidad & Tobago (Piarco)	10.31.224.5/30
				Antigua	10.31.224.6/30
				Broadcast Address	10.31.224.7/30
3	10.31.224.8/30	Aruba	MEVA	Network Address	10.31.224.8/30
				Jamaica (Kingston)	10.31.224.9/30
				Aruba	10.31.224.10/30
				Broadcast Address	10.31.224.11/30
4	10.31.224.12/30	Bahamas / Nassau	MEVA	Network Address	10.31.224.12/30
				Haiti (Port-au-Prince)	10.31.224.13/30
				Bahamas / Nassau	10.31.224.14/30
				Broadcast Address	10.31.224.15/30
5	10.31.224.16/30	Barbados	E/CAR	Network Address	10.31.224.16/30
				Barbados	10.31.224.17/30
				Trinidad & Tobago (Piarco)	10.31.224.18/30
				Broadcast Address	10.31.224.19/30
6	10.31.224.20/30	Belice / Belice	CAMSAT	Network Address	10.31.224.20/30
				Belice / Belice	10.31.224.21/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.22/30
				Broadcast Address	10.31.224.23/30
7	10.31.224.24/30	British Virgin Islands / Tortola	MEVA	Network Address	10.31.224.24/30
				British Virgin Islands / Tortola	10.31.224.25/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
				United States of America (Miami)	10.31.224.26/30
				Broadcast Address	10.31.224.27/30
8	10.31.224.28/30	Cayman I.	MEVA	**Network Address**	10.31.224.28/30
				Cayman I.	10.31.224.29/30
				Jamaica (Kingston)	10.31.224.30/30
				Broadcast Address	10.31.224.31/30
9	10.31.224.32/30	Costa Rica (San José)	CAMSAT	**Network Address**	10.31.224.32/30
				Costa Rica (San José)	10.31.224.33/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.34/30
				Broadcast Address	10.31.224.35/30
10	10.31.224.36/30	Cuba / La Habana	MEVA	**Network Address**	10.31.224.36/30
				Cuba (La Habana)	10.31.224.37/30
				Haiti (Port-au-Prince)	10.31.224.38/30
				Broadcast Address	10.31.224.39/30
11	10.31.224.40/30	Cuba / La Habana	MEVA	**Network Address**	10.31.224.40/30
				Cuba (La Habana)	10.31.224.41/30
				Jamaica (Kingston)	10.31.224.42/30
				Broadcast Address	10.31.224.43/30
12	10.31.224.44/30	Cuba / La Habana	MEVA	**Network Address**	10.31.224.44/30
				Cuba (La Habana)	10.31.224.45/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.46/30
				Broadcast Address	10.31.224.47/30
13	10.31.224.48/30	Cuba / La Habana	TBD	**Network Address**	10.31.224.48/30
				Cuba (La Habana)	10.31.224.49/30
				México (Mérida)	10.31.224.50/30
				Broadcast Address	10.31.224.51/30
14	10.31.224.52/30	Curaçao	MEVA	**Network Address**	10.31.224.52/30
				Curaçao	10.31.224.53/30
				Dominican Republic	10.31.224.54/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
				Broadcast Address	10.31.224.55/30
15	10.31.224.56/30	Curaçao	MEVA	**Network Address**	10.31.224.56/30
				Curaçao	10.31.224.57/30
				Haiti (Port-au-Prince)	10.31.224.58/30
				Broadcast Address	10.31.224.59/30
16	10.31.224.60/30	Curaçao	MEVA	**Network Address**	10.31.224.60/30
				Curaçao	10.31.224.61/30
				Puerto Rico (San Juan)	10.31.224.62/30
				Broadcast Address	10.31.224.63/30
17	10.31.224.64/30	Dominican Republic / Santo Domingo	MEVA	**Network Address**	10.31.224.64/30
				Dominican Republic (Santo Domingo)	10.31.224.65/30
				Haiti (Port-au-Prince)	10.31.224.66/30
				Broadcast Address	10.31.224.67/30
18	10.31.224.68/30	Dominican Republic / Santo Domingo	MEVA	**Network Address**	10.31.224.68/30
				United States of America (Miami)	10.31.224.69/30
				Dominican Republic (Santo Domingo)	10.31.224.70/30
				Broadcast Address	10.31.224.71/30
19	10.31.224.72/30	Dominica	E/CAR	**Network Address**	10.31.224.72/30
				Dominica	10.31.224.73/30
				Trinidad & Tobago (Piarco)	10.31.224.74/30
				Broadcast Address	10.31.224.75/30
20	10.31.224.76/30	El Salvador / San Salvador	CAMSAT	**Network Address**	10.31.224.76/30
				El Salvador	10.31.224.77/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.78/30
				Broadcast Address	10.31.224.79/30
21	10.31.224.80/30	French Antilles (Guadeloupe) / Point-a-Pitre	E/CAR	**Network Address**	10.31.224.80/30
				French Antilles (Martinique) / Fort-de-France	10.31.224.81/30
				Trinidad & Tobago (Piarco)	10.31.224.82/30
				Broadcast Address	10.31.224.83/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
22	10.31.224.84/30	French Antilles (Guadeloupe) / Point-a-Pitre	E/CAR	Network Address	10.31.224.84/30
				French Antilles (Guadeloupe) / Point-a-Pitre	10.31.224.85/30
				Trinidad & Tobago (Piarco)	10.31.224.86/30
				Broadcast Address	10.31.224.87/30
23	10.31.224.88/30	Grenada	E/CAR	Network Address	10.31.224.88/30
				Grenada	10.31.224.89/30
				Trinidad & Tobago (Piarco)	10.31.224.90/30
				Broadcast Address	10.31.224.91/30
24	10.31.224.92/30	Guatemala (La Aurora)	CAMSAT	Network Address	10.31.224.92/30
				Guatemala (La Aurora)	10.31.224.93/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.94/30
				Broadcast Address	10.31.224.95/30
25	10.31.224.96/30	Haiti / Port-au-Prince	MEVA	Network Address	10.31.224.96/30
				Haiti (Port-au-Prince)	10.31.224.97/30
				Jamaica (Kingston)	10.31.224.98/30
				Broadcast Address	10.31.224.99/30
26	10.31.224.100/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	Network Address	10.31.224.100/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.101/30
				Honduras (San Pedro Sula)	10.31.224.102/30
				Broadcast Address	10.31.224.103/30
27	10.31.224.104/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	Network Address	10.31.224.104/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.105/30
				Panamá	10.31.224.106/30
				Broadcast Address	10.31.224.107/30
28	10.31.224.108/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	Network Address	10.31.224.108/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.109/30
				United States of America (Miami)	10.31.224.110/30
				Broadcast Address	10.31.224.111/30
29	10.31.224.112/30	Honduras / Tegucigalpa (COCESNA)	MEVA	Network Address	10.31.224.112/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
				Honduras (COCESNA) Tegucigalpa	10.31.224.113/30
				México (Mérida)	10.31.224.114/30
				Broadcast Address	10.31.224.115/30
30	10.31.224.116/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address**	10.31.224.116/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.117/30
				NAM (Atlanta)	10.31.224.118/30
				Broadcast Address	10.31.224.119/30
31	10.31.224.120/30	México / Mérida	TBD	**Network Address**	10.31.224.120/30
				México (Mérida)	10.31.224.121/30
				NAM (Atlanta)	10.31.224.122/30
				Broadcast Address	10.31.224.123/30
32	10.31.224.124/30	Montserrat	E/CAR	**Network Address**	10.31.224.124/30
				Montserrat	10.31.224.125/30
				Trinidad & Tobago (Piarco)	10.31.224.126/30
				Broadcast Address	10.31.224.127/30
33	10.31.224.128/30	Puerto Rico / San Juan	E/CAR	**Network Address**	10.31.224.128/30
				Puerto Rico (San Juan)	10.31.224.129/30
				United States of America (Miami)	10.31.224.130/30
				Broadcast Address	10.31.224.131/30
34	10.31.224.132/30	Puerto Rico / San Juan	MEVA / REDDIG	**Network Address**	10.31.224.132/30
				Puerto Rico (San Juan)	10.31.224.133/30
				SAM (Caracas)	10.31.224.134/30
				Broadcast Address	10.31.224.135/30
35	10.31.224.136/30	Saint Kitts & Nevis / Saint Kitts	E/CAR	**Network Address**	10.31.224.136/30
				Saint Kitts & Nevis / Saint Kitts	10.31.224.137/30
				Trinidad & Tobago (Piarco)	10.31.224.138/30
				Broadcast Address	10.31.224.139/30
36	10.31.224.140/30	Saint Kitts & Nevis / Nevis	E/CAR	**Network Address**	10.31.224.140/30
				Saint Kitts & Nevis / Nevis	10.31.224.141/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
				Trinidad & Tobago (Piarco)	10.31.224.142/30
				Broadcast Address	10.31.224.143/30
37	10.31.224.144/30	Saint Lucia	E/CAR	**Network Address**	10.31.224.144/30
				Saint Lucia	10.31.224.145/30
				Trinidad & Tobago (Piarco)	10.31.224.146/30
				Broadcast Address	10.31.224.147/30
38	10.31.224.148/30	Sint Marteen	MEVA	**Network Address**	10.31.224.148/30
				Sint Marteen	10.31.224.149/30
				United States of America (Miami)	10.31.224.150/30
				Broadcast Address	10.31.224.151/30
39	10.31.224.152/30	Sint Marteen	E/CAR	**Network Address**	10.31.224.152/30
				Sint Marteen	10.31.224.153/30
				Trinidad & Tobago (Piarco)	10.31.224.154/30
				Broadcast Address	10.31.224.155/30
40	10.31.224.156/30	Saint Vicent & the Grenadines	E/CAR	**Network Address**	10.31.224.156/30
				Saint Vicent & the Grenadines	10.31.224.157/30
				Trinidad & Tobago (Piarco)	10.31.224.158/30
				Broadcast Address	10.31.224.159/30
41	10.31.224.160/30	Turks & Caicos / Grand Turk	MEVA	**Network Address**	10.31.224.160/30
				Turks & Caicos / Grand Turk	10.31.224.161/30
				United States of America (Miami)	10.31.224.162/30
				Broadcast Address	10.31.224.163/30
42	10.31.224.164/30	Trinidad & Tobago / SAM (Venezuela)	E/CAR	**Network Address**	10.31.224.164/30
				Trinidad & Tobago (Piarco)	10.31.224.165/30
				SAM (Caracas)	10.31.224.166/30
				Broadcast Address	10.31.224.167/30
43	10.31.224.168/30	CAR/SAM (TBD)	E/CAR	**Network Address**	10.31.224.168/30
				CAR	10.31.224.169/30
				SAM (Caracas)	10.31.224.170/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
				Broadcast Address	10.31.224.171/30
44	10.31.224.172/30	Aruba	MEVA	**Network Address**	10.31.224.172/30
				Aruba	10.31.224.173/30
				Curaçao	10.31.224.174/30
				Broadcast Address	10.31.224.175/30
45	10.31.224.176/30	Bahamas / Nassau	MEVA	**Network Address**	10.31.224.176/30
				Bahamas / Nassau	10.31.224.177/30
				United States of America (Miami)	10.31.224.178/30
				Broadcast Address	10.31.224.179/30
46	10.31.224.180/30	Cayman I.	MEVA	**Network Address**	10.31.224.180/30
				Cayman I.	10.31.224.181/30
				Cuba (La Habana)	10.31.224.182/30
				Broadcast Address	10.31.224.183/30
47	10.31.224.184/30	Cuba / La Habana	MEVA	**Network Address**	10.31.224.184/30
				Cuba (La Habana)	10.31.224.185/30
				United States of America (Miami)	10.31.224.186/30
				Broadcast Address	10.31.224.187/30
48	10.31.224.188/30	Curaçao	MEVA	**Network Address**	10.31.224.188/30
				Curaçao	10.31.224.189/30
				Jamaica (Kingston)	10.31.224.190/30
				Broadcast Address	10.31.224.191/30
49	10.31.224.192/30	Dominican Republic / Santo Domingo	MEVA	**Network Address**	10.31.224.192/30
				Dominican Republic (Santo Domingo)	10.31.224.193/30
				Puerto Rico (San Juan)	10.31.224.194/30
				Broadcast Address	10.31.224.195/30
50	10.31.224.196/30	Honduras / Tegucigalpa (COCESNA)	CAMSAT	**Network Address**	10.31.224.196/30
				Honduras (COCESNA) Tegucigalpa	10.31.224.197/30
				Nicaragua (Managua)	10.31.224.198/30
				Broadcast Address	10.31.224.199/30

No.	Subnet	Admin & local host	Via	Links	IPv4 Address
51	10.31.224.200/30	Puerto Rico / San Juan	E/CAR	**Network Address**	10.31.224.200/30
				Puerto Rico (San Juan)	10.31.224.201/30
				Trinidad & Tobago (Piarco)	10.31.224.202/30
				Broadcast Address	10.31.224.203/30
52	10.31.224.204/30	Vacant		**Network Address**	10.31.224.204/30
				Vacant	10.31.224.205/30
				Vacant	10.31.224.206/30
				Broadcast Address	10.31.224.207/30
53	10.31.224.208/30	Vacant		**Network Address**	10.31.224.208/30
				Vacant	10.31.224.209/30
				Vacant	10.31.224.210/30
				Broadcast Address	10.31.224.211/30
…	…	…		**…**	…
				…	…
				…	…
				…	…
2048	10.31.255.252/30	Vacant		**Network Address**	10.31.255.252/30
				Vacant	10.31.255.253/30
				Vacant	10.31.255.254/30
				Broadcast Address	10.31.255.255/30

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APPENDIX B

CAR Region AMHS Implementation Matrix

Administration	STATUS	System Description					System implementation milestones				(COM CHART) Connection with	POC	Remarks
		Location of Facility	AMHS Facility Type	AMHS Vendor	Current Facility Type	Current Vendor	AMHS System Procurement Date	AMHS System Implementation Date	AMHS Interoperability Test	AMHS Service Cutover			
Antigua & Barbuda	see Trinidad and Tobago	Antigua									Port-of-Spain		**5-2015** Interoperabiity testing in process. Connected to Piarco
Aruba	Under Study	Aruba									United States	Joselito Andrade	**5-2015** In the process of changing AFTN PAD. No projected date for AMHS
Bahamas		Nassau					1Q2011 mtg FAA Feb11	Jun 2011	Jun2011 begin testing		United States	Hillard Walker	Q2 2011: will engage an Isode Integrator to provide an AMHS **5-2015 No recent updates**
Cayman Islands	Establishment of Testing Circuit	Grand Cayman	MTA + UA	Frequentis	AFTN switch	~~Copperchase~~ Frequentis	end 1Q2011	~~1Q2012~~ 4Q 2014	2Q2015	TBD	United States	Wayne DaCosta	**5-2015 System implemented but not operational. Interoperability testing in process**
Dominican Republic	Implemented	Santo Domingo	AMHS - MTA/UAs	Ubitech	AFTN Switch		already	Jan2011	May 2012	Sep 2012	United States	Fernando Casso	Originally implemented on MEVA II. Succesfully transitioned to MEVA III
Cuba	Interoperability Testing in process	La Habana	AMHS - MTA/UAs	ISODE/ In-house	AFTN Switch	Own system	N/A	TBD	2014Q4 - 2015Q2	TBD	United States	Carlos Jimenez y Layla Rodriguez, ~~Carmen de Armas~~	**5 2015**Parts of the Interoperability Testing was performed over a test circuit on MEVA II; Testing resumed once the test cicuit was migrated to MEVA III
Haiti	Under Study	Port-au-Prince	TBD	TBD	AFTN User	DSA	TBD	TBD			United States	Emmanuel Jacques	**5 2015 No recent updates**
COCESNA	System Implemented- ready for testing	Tegucigalpa	AMHS Gateway	ISODE/ In-house	AFTN Switch	COCESNA	N/A	TBD	TBD	TBD	Belize - MTA	Mayda Avila	**5-15 Testing with FAA on hold pending notification from COCESNA**
								TBD	TBD	TBD	Guatemala - MTA	Oscar Villela	
								1Q 2013	1Q 2013	1Q 2013	Managua - MTA		
								TBD	1Q 2013	TBD	Mexico - MTA		
								TBD	TBD	TBD	San Jose - MTA		
								1Q 2013	1Q 2013	1Q 2013	San Pedro Sula - MTA		
								TBD	TBD	TBD	San Salvador - MTA		
								1Q2011	Jun 2012	Sep 2012	United States		
Jamaica	System Implemented - ready for testing	Kingston	AMHS G/W	TBD	AFTN Switch	TBD	Q2-2012		Aug 2012	Oct 2012	United States	Gordon/Derrick Grant	5-15 No updates
Mexico	Coordination initiated	Mexico									Centro-America United States		5 2015 Initiated coordination with SENEAM
Curacao	Scheduled for testing	Curacao	AMHS MTA	Ubitech	AMHS System	Ubitech	May 2012	Jul 2012	Oct 2012		Caracas- MTA	~~Cedric Ballentien Phylogene Mattheeuw~~ Jean Baptiste Getrouw	5-15 no updates
Trinidad and Tobago	Implemented- for testing	Port-of-Spain	AMHS MTA/UAs/Gateway	Comsoft	AFTN Switch	Thales	Apr 2012	Sep 2012	Sep 12	Sep 12	Anguilla	Veronica Ramdath Randy Gomez	5-15 Interoperabiity testing in process
									Sep 12	Sep 12	Antigua		
									Sep 12	Sep 12	Barbados-UA		
									Oct 2012		Caracas- MTA		
									Sep 12	Sep 12	Dominica - UA		
									Sep 12	Sep 12	Fort-de-France- UA		
									Sep 12	Sep 12	Georgetown-UA		
									Sep 12	Sep 12	Grenada-UA		
									Sep 12	Sep 12	Montserrat-UA		
									Sep 12	Sep 12	Pointe-a-Pitre- MTA		
									Sep 12	Sep 12	Saint Kitts and Nevis- UA		
									Sep 12	Sep 12	Saint Lucia-UA		
									Sep 12	Sep 12	Saint Vincent-UA		
	In Interoperability								2015Q2	TBD	United States		
Turks and Caicos	Scheduled for testing	Providenciales	MTA	Stonefield Sys	AFTN Term	Stonefield Sys	1Q 2012	2Q 2012	Feb 2013	Mar 2013	United States	Emmanuel Rigby John T. Smith	**5 2015 No updates**
Sint Maarten	Coordination Initiated		AMHS MTA	IDS	AFTN Switch		2014Q1		2015Q3	TBD	United States	Lloyd Hinds	Project to resume after implementation of MEVA III
United States		Atlanta	AMHS G/W	U.S.A.	AFTN Switch	U.S.A.	now	now			Aruba Brazil Caracas Cayman Centro America Curazao Grand Turk La Habana Kingston Lima Mexico Nassau-S Panama Port-au-Prince Port-of-Spain Saint Maarten Santa Domingo Tortola	Dulce Roses	5-15 see notes