International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

MEVA/TMG/29 — WP/20
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Twenty-ninth MEVA Technical Management Group Meeting (MEVA/TMG/29)
Mexico City, Mexico, 9 to 12 December 2014

Agenda Item 4: MEVA III Implementation Activities
4.1 MEVA III Task Force Report and Activities

MEVAII VOICE SWITCHED CIRCUITS STATISTICS TENDENCY STUDY

(Presented by Cuba)

EXECUTIVE SUMMARY	
The voice MEVAII switched circuits statistics data supplied by SES indicates the calls grow tendency which can overload the MEVAIII bandwidth design.	
Action:	The suggested actions are detailed in section 3
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) ver 3.1 • ICAO Doc 9750 - *Global Air Navigation Plan (GANP)* • Twenty-sixth MEVA Technical Management Group Meeting (MEVA /TMG/26), ICAO NACC Regional Office, Mexico City, Mexico, 4 to 7 June 2013 • Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/02), Costa Rica, 1 to 4 June

1. Introduction

1.1 The MEVA switched voice circuits is one of the most flexible services in the network. The target is to have with one service the possibility to call any related node. The satellite bandwidth used for this proposes is share between all the network users since the communication is not permanent.

1.2 When the relationship between two nodes needs the continuous use of the same communications (for example when has RADAR transfers between two nodes) it's better to use a permanent voice circuit.

2. Discussion.

2.1 In **Appendix** to this paper, a study was made by Cuba comparing the switch voice circuits use in MEVA II in 2013 and 2014 and how this can affect in the MEVA III network.

2. Conclusions

2.2 From this study the following conclusions were made:

a) the traffic tendency is to grow over 50 calls in the peak hour; and

b) this grow can cause a switched bandwidth overload in a heavy traffic hour.

2.3 Cuba identifies two ways to solve this potential issue in the future:

- Assign more bandwidth to the switched voice circuits.
- Establish more direct circuits between the nodes with heavy switched voice traffic.

2.4 From Cuba´s experience when there is heavy traffic, the best way to have a good and safe service is to have more direct voice service with the corresponding node.

3 Suggested Action

3.1 The Members are invited to:

a) take note of the information contained in this working paper; and

b) consider the possibility of implementing new direct voice circuits between the corresponding nodes to have a better safe service, and reduce the use of the assigned switched circuits bandwidth

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APPENDIX
VOICE SWITCH CIRCUITS ANALYSIS

The following study is an approach of the switch circuits use in MEVA II and how this can affect in the MEVA III future net.

In 2013 the data provided by SES is as follow:

Node	Jan	Feb	March	April	Jun	July	Oct	Nov	Dec	Month	Day	Hour	Peak
Aruba	264	125	299	179	0	0	0	0	0	96,33	3,21	0,13	0,27
Curacao	1261	789	903	680	718	526	154	149	22	578,00	19,27	0,80	1,61
Dominican	2563	1070	1260	1431	740	827	0	0	643	948,22	31,61	1,32	2,63
Freeport	3468	2420	2712	2421	2391	1863	4027	2450	1551	2589,22	86,31	3,60	7,19
Georgetown	1555	991	456	623	493	298	983	1428	532	817,67	27,26	1,14	2,27
Haiti	0	5	22	25	25	15	49	25	29	21,67	0,72	0,03	0,06
Havana,	1141	806	638	1279	740	736	132	57	17	616,22	20,54	0,86	1,71
Kingston,	46	19	24	20	1275	1045	0	1113	516	450,89	15,03	0,63	1,25
Miami	3438	3088	3061	3785	3147	3354	5173	5132	3063	3693,44	123,11	5,13	10,26
Nassau	2373	965	1023	1557	1126	1315	2265	1335	717	1408,44	46,95	1,96	3,91
Panama Ci	1754	2164	2766	2452	2934	1125	3355	3286	651	2276,33	75,88	3,16	6,32
COCESNA	1883	927	650	400	622	808	685	500	445	768,89	25,63	1,07	2,14
San Juan, P	0	179	42	10	597	707	352	648	259	310,44	10,35	0,43	0,86
St. Maarten	0	0	0	0		0	0	0	0	0,00	0,00	0,00	0,00
Bogota							0	0	0	0,00	0,00	0,00	0,00
Caracas										0,00	0,00	0,00	0,00
total	19746	13548	13856	14862	14808	12619	17175	16123	8445	14575,78	485,86	20,24	40,49
Day average	658,20	451,60	461,87	495,40	493,60	420,63	572,50	537,43	281,50				
Hour	27,43	18,82	19,24	20,64	20,57	17,53	23,85	22,39	11,73				
Peak hour	54,85	37,63	38,49	41,28	41,13	35,05	47,71	44,79	23,46				

- The average hour had 20.24 calls, the estimated peak is 40.49.
- Except January the peak hour is below 50 calls in an hour.
- 50 calls in the peak hour is the number given to COMSOFT for the voice switched circuits.
- Miami, Freeport, Panama and Nassau were the more frequent users of this service as you can see in the graphic below:

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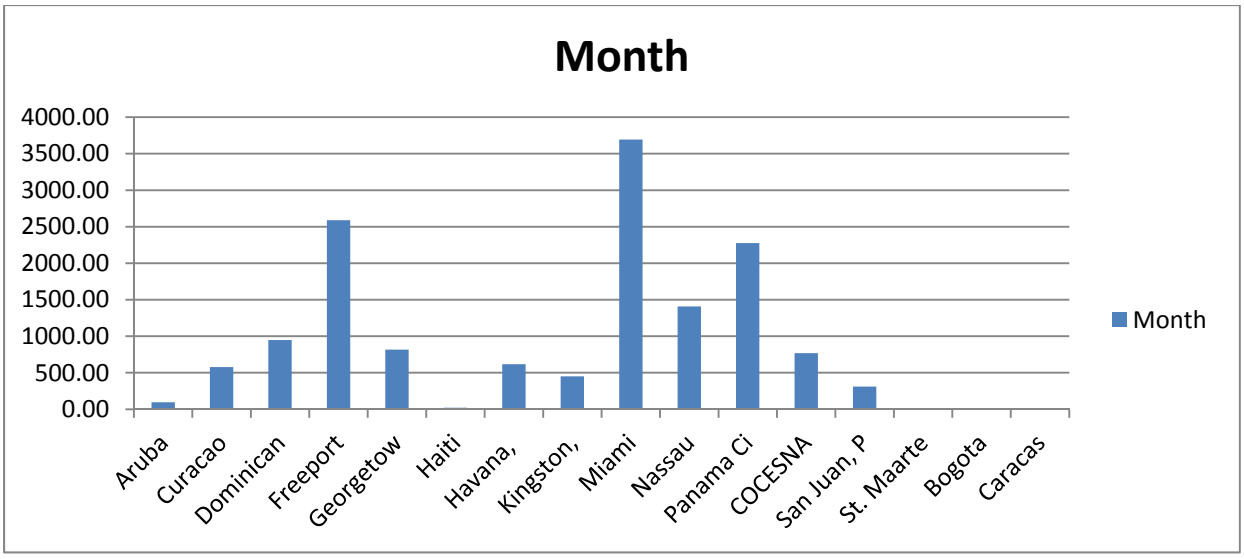
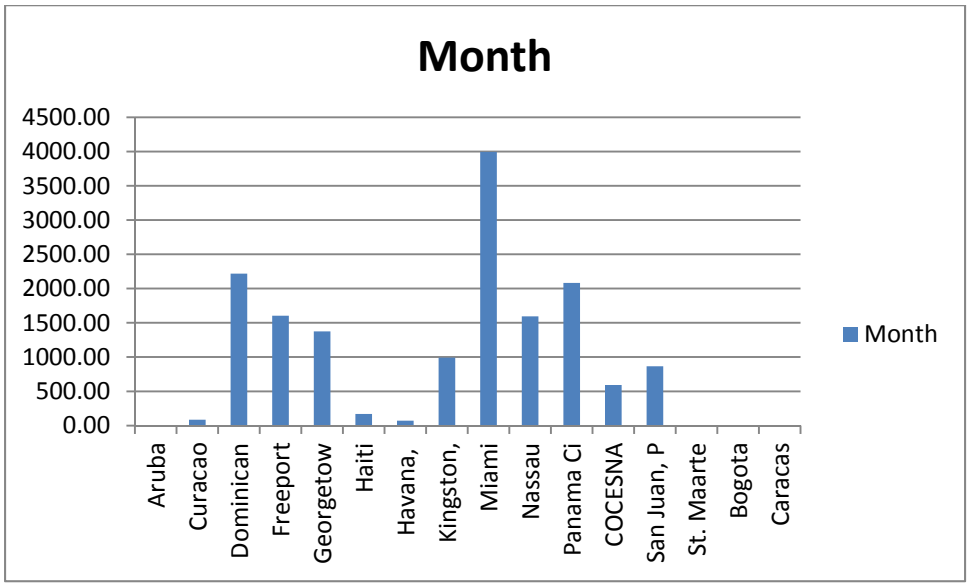


For 2014 the data is:

Node	Jan	Feb	March	June	July	Aug	Sept	Month	Day	Hour	Peak
Aruba	0	0	1	0	0	0	0	0,14	0,02	0,00	0,00
Curacao	126	205	20	103	39	94	11	85,43	12,20	0,41	0,81
Dominican	3466	2597	635	293	2582	3785	2163	2217,29	316,76	10,56	21,12
Freeport	4719	3263	3237	0	0	0	0	1602,71	228,96	7,63	15,26
Georgetow	1411	1266	637	608	1486	3781	432	1374,43	196,35	6,54	13,09
Haiti	129	130	122	161	137	366	139	169,14	24,16	0,81	1,61
Havana,	119	58	50	87	36	142	8	71,43	10,20	0,34	0,68
Kingston,	2455	2003	1458	621	134	212	56	991,29	141,61	4,72	9,44
Miami	5966	5828	2935	594	3845	6657	2142	3995,29	570,76	19,03	38,05
Nassau	3118	1230	0	590	2223	3452	542	1593,57	227,65	7,59	15,18
Panama Ci	1186	1656	1473	361	2157	5880	1870	2083,29	297,61	9,92	19,84
COCESNA	790	561	144	310	778	1155	416	593,43	84,78	2,83	5,65
San Juan, P	415	601	587	427	960	1854	1213	865,29	123,61	4,12	8,24
St. Maarten	0	0	0	0	0	0	0	0,00	0,00	0,00	0,00
Bogota	0	0	0	0	0	0	0	0,00	0,00	0,00	0,00
Caracas								0,00	0,00	0,00	0,00
Total	23900	19398	11299	4155	14377	27378	8992	15642,71	521,42	21,73	43,45
Day average	770,97	692,79	364,48	138,50	463,77	883,16	299,73				
Hour	32,12	28,87	15,19	5,77	19,32	36,80	12,49				
Peak	64,25	57,73	30,37	11,54	38,65	73,60	24,98				

- The average hour had 21.73 calls, the estimated peak is 43.75.

- January, February and August the peak hour is over 50 calls in an hour (50 % of the months sample).
- Miami, Freeport, Panama and Nassau were the more frequent users of this service in that is sustained, Dominican Republic and Cayman are added, as you can see in the graphic below:



- The nodes: Miami, Nassau, Freeport and Dominican Republic are the most frequent switched connection.
- Miami - Nassau have one direct voice circuit
- Miami - Freeport don't have any direct voice circuit.
- Miami - Dominican Republic have one direct voice circuit.
- The nodes: Panama and Bogota are the most frequent switched connection at that node.
- Panama –Bogota have one direct voice circuit

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