COMSOFT SatelliteServices

COMSOFT‘s TMG30 Presentation

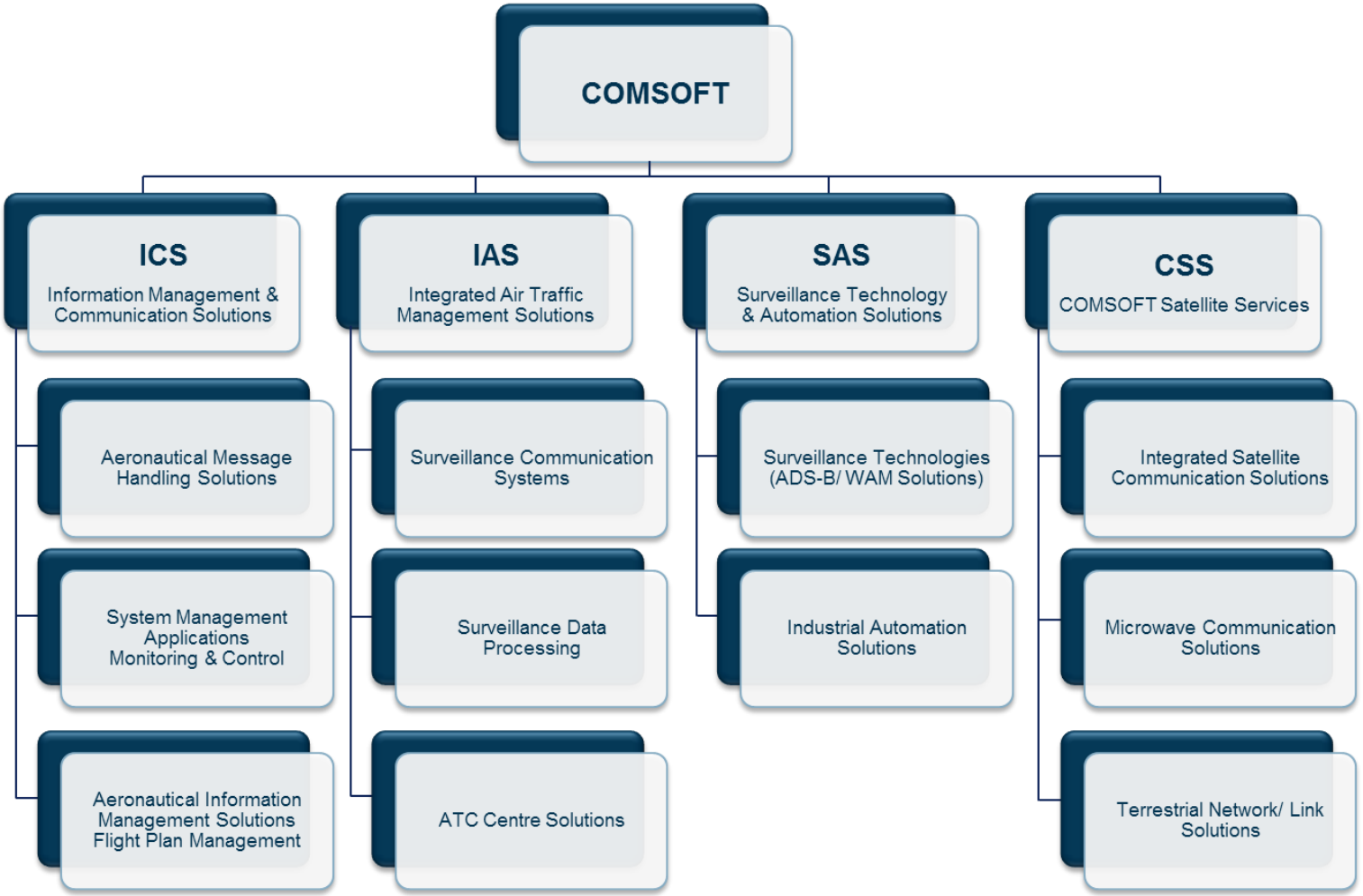
Topics

- Agenda Item 3.1
- Agenda Item 3.2
- Agenda Item 3.3
- Agenda Item 3.4

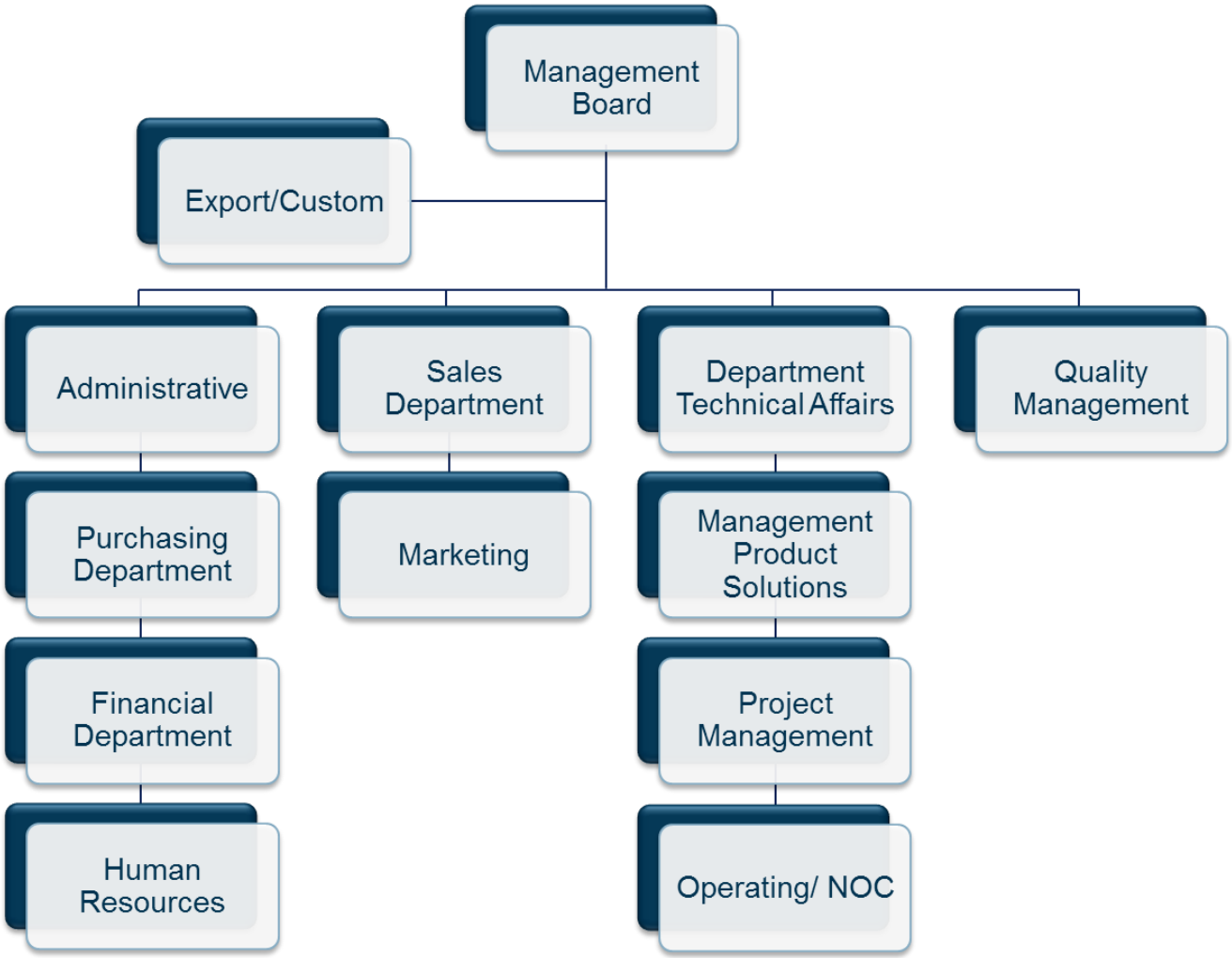
Topic

- Agenda Item 3.1 (Final Status of MEVA III Matters)

COMSOFT Technological Divisions



COMSOFT Company Structure #1



Responsibilities of Key Personnel

Responsibility	Key Personnel
Project Management (PM)	Markus Tenbeck
Deputy Project Management (Deputy PM)	Victor Pabon
Safety Manager (SE)	Lutz Krane
Quality Management (QM)	Jochen Burkhard
Quality Engineering (QE)	Markus Tenbeck
Configuration Management (CM) and Training	Dr. Wolfgang Wünderlich
Commercial and Financial Manager (CFM)	Dominik Koch
Export and Billing	Christine Klein
Working Groups:	
Software Development (SW)	Frank Kulasik
Hardware Procurement/Assembly	Andreas Gutekunst
Preventive Maintenance	Bobsmei Narciso Bontilao
Maintenance	“Local Partner”
Training Coordination	Susanne Dastig

Status Overview for the week of 5/11/2015

The following items are applicable to all sites. Items for individual sites are presented on subsequent slides.

1. BUC replacement program: Proposed dates for installation of replacement BUCs are listed per country. There's a risk of dates changing if any customs clearance issues are encountered.
2. NAT: NAT will be performed after we have transitioned to the final carrier configuration. Final carrier configuration date proposed for 6/2/2015.
3. As-Built and other documentation: COMSOFT is in the process of updating the required documentation.
4. Status Definition:
   - Red – High priority
   - Orange – Medium Priority
   - Green – No action required

Site	Circuit Status (i.e.: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement	MEVA II Status
Aruba Dual Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Dual Chain, both BUCs replace on 5/2/15 **Status Green** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**
Cuba Single Chain Configuration	AMHS non-operational, New pin-out provided as quick solution, new cable to be handed over at TMG for long term solution. **Status Red** All other circuits **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single Chain, BUC replacement pending. Need to contact customer regarding shipping. **Status Orange (ref. item #1)** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.** LNB Voltage Injector installed. **Status Green.**
Atlanta Dual Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Dual Chain Terrasat BUC returned to normal configuration. One BUC needs replacement **Status Red** No X-POL issues **Status Green**	Equipment disconnected **Status Green.**

Site	Circuit Status (i.e..: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement	MEVA II Status
Miami Dual Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Dual Chain, both BUCs replace on 4/28/15 **Status Green** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**
Dominican Republic Dual Chain Configuration	. All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Dual Chain, both BUCs replace on 5/5/15 **Status Green** Exchange of 1 old LNB against new one. **Status Orange** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**
Haiti Dual Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Dual Chain, both BUCs replace on 5/7/15 **Status Green** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**

Site	Circuit Status (i.e..: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement And X-POL	MEVA II Status
Jamaica Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single Chain, BUC replaced on 4/22 **Status Green** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**
Grand Cayman Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single Chain, BUC replaced on 5/8/15 **Status Green** Antenna requires alignment current isolation 25 dBm **Status Orange**	Equipment connected disconnect needs to be scheduled with customer after LNB injector installation. **Status Orange** LNB Voltage Injector on site installation needs to be scheduled with customer. **Status Orange**
COCESNA (Honduras) Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single chain BUC pending replacement installation date **Status Orange**	Equipment disconnected. **Status Green.**

Site	Circuit Status (i.e.: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement	MEVA II Status
Bahamas-Freeport Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single chain BUC installation 5/14/15 **Status Green.** Antenna requires some alignment **Status Orange**	Equipment disconnected. **Status Green.** LNB Voltage Injector installed. **Status Green.**
Bahamas-Nassau Single Chain Configuration	All circuits non operational due to antenna feed issue. Customer using commercial lines. Customer working on solution with SES but not ETR at this time. Once feed issue resolved site must be re-commissioned. **Status Red**	SAT not performed, needs to be performed after commissioning. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single chain BUC proposed installation 5/15/15 **Status Green** Antenna requires alignment after feed is reinstalled. **Status Red**	Equipment disconnected. **Status Green.** Feed arrived and installed but no alignment done. LNB Voltage Injector on site scheduled for installation with Peak and POL. **Status Orange**

Site	Circuit Status (i.e.: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement	MEVA II Status
Curacao Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single chain BUC proposed installation 5/25/15 **Status Orange** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.** LNB Voltage Injector installed. **Status Green.**
Panama Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT has not been provided. Needs to be scheduled. **Status Orange**	Single chain BUC proposed installation 5/20/15 **Status Orange** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.** LNB Voltage Injector installed. **Status Green.**
Puerto Rico Dual Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT has not been provided. Needs to be scheduled. No answer from customer. **Status Orange**	Dual Chain, 1 BUC replaced, 2nd BUC proposed installation 5/18/15 **Status Orange** No X-POL issues **Status Green**	Equipment disconnected. **Status Green.**

Site	Circuit Status (i.e.: FXS, E&M, FTN)	Site Acceptance Test	On-the-Job Training	BUC Replacement	MEVA II Status
Venezuela Indoor Unit only	FXS operational. **Status Green** AFTN circuits pending router solution. Equipment to be shipped week of 4/20,testing date will be determined after equipment arrival notification. **Status Red**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	N/A	NA
Colombia Indoor Unit only	Installation completed on 5/7/15. Waiting on customer to test voice lines.. AFTN circuits require router solution. PAD pending shipment. Installation without PAD to start on 5/4/15. **Status Red**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	N/A	N/A
St. Maarten Single Chain Configuration	All circuits operational. **Status Green**	SAT document delivered. **Status Green**	OJT provided to customer - confirmed. **Status Green**	Single chain BUC pending replacement installation date **Status Orange**	Equipment disconnected. **Status Green.**

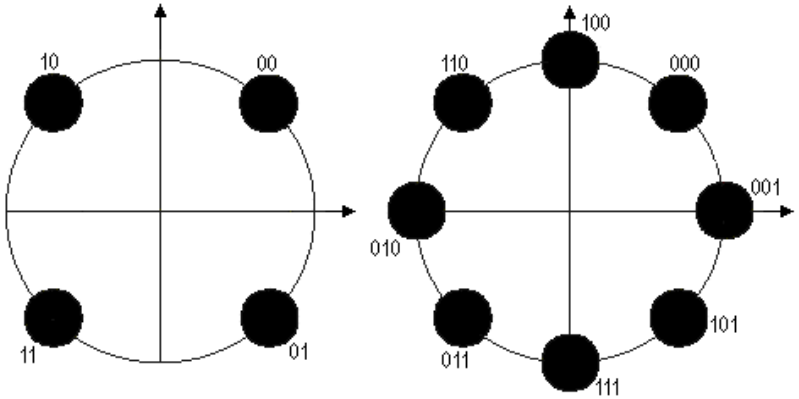
Switch to Final Carrier Configuration

Due to the need of parallel running MEVA II and MEVA III during transition phase COMSOFT used a low coding (QPSK ½) for the network carrier.

Since the transition phase is due and all risky BUCs are exchanged COMSOFT would like to change the network carrier to a higher code rate (8-PSK ¾).

There is no impact on the provided network data rate but the space segment consumption will be at half.

Constellation diagrams for QPSK and 8PSK:



Switch to Final Carrier Configuration #1

The purposed date for the carrier transition is June 2nd 2015 at 12 midnight or 0000Z

The planned outage duration is max. 30 min, all actions will be performed remotely.

Sequences

- Update of configuration files (SkyNMS)
- Upload to „on-net“ active units via satellite (SkyNMS)
- Automatic re-boot of SkyWAN IDUs
- After reboot, units will lock on new carrier

Fallback scenario: Units which are not able to lock on new carrier will automatically re-boot to old carrier.

Therefore a roll-back to todays (QPSK) configuration will take part.

MEVA Web Page

Presentation of MEVA Web Page „Life Demonstration“

Topic

- Agenda Item 3.2 (MEVA Network Performance & Maintenance)

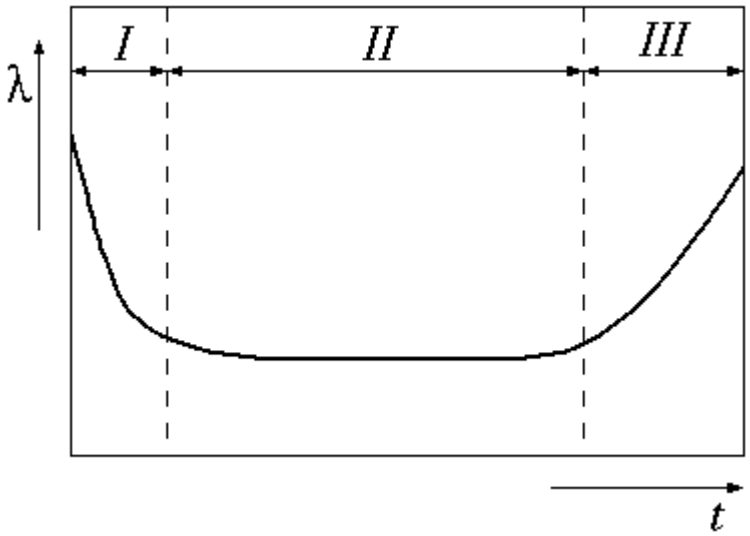
MEVA Network Performance & Maintenance

COMSOFT has implemented the MEVA III to a fully operational status at April 1st > in time.

The first months of a new network operation are most critical to failures.

Typically most equipment related outages occur within the first months (I) and to the end of life-time (III)

- Frequency distribution chart



MEVA Network Maintenance

COMSOFT has identified following issues relevant to maintenance:

- One defective Terrasat BUC in the dual chain at Atlanta
  - Replecement unit sent from St. Maarten. Replacement on the schedule
- One defective RJ45 card of the RSS switches at Miami FAA
  - Customer has replaced defective part by spare usage
- One defective LNB in the dual chain at Dom.-Rep.
  - Technician has replaced it by available Terrasat LNB

MEVA Network Maintenance

Presentation of Monthly Report Document

Topic

- Agenda Item 3.3 (Review of Transition Issues)

Review of Transition Issues

PAD devices at Venezuela and Colombia (REDDIG interconnection)

As to the tender documentation and agreed SDD data circuit description the interfaces were delivered as „sync“.

I was turned out that the related circuits needs to have a converter to receive async traffic from REDDIG.

COMSOFT is going to implement PAD devices based on CISCO routers at both locations.

The CISCO proposed configuration is premilinary and not tested on life circuit so far.

Review of Transition Issues #1

Data Interfaces at MEVA III network.

COMSOFT has delivered the related data interfaces as DTE (DB 25 male at not redundant sites and DB 25 female at redundant sites).

During installation it turned out that DCE interfaces were expected.

As a work-around at most sites cross-over cables were used to provide DCE functionallity.

Review of Transition Issues #2

CPI BUCs at MEVA III network.

COMSOFT has delivered/implemented brand new CPI BUC solutions.

Exception: Atlanta where the existing Terrasat solution was taken over.

Most of the delivered BUCs turned out to be defective (regular outages).

The manufacturer is going to replace the whole bunch of BUCs site-by-site (on-going process).

Most of the sites are already working on the final BUC solution.

Review of Transition Issues #3

Working hours during MEVA III network transition.

During the on-site transition work, it turned out that most of the sites permits transition/work on equipment only at night time.

Longer working periods as expected and additional costs resulting to COMSOFT.

Review of Transition Issues #4

ODU condition of MEVA II network sites.

COMSOFT was informed upfront by several different measurements that the BUC power needs are quite different at several locations as expected (link budget calculations) resulting in most cases from bad X-Pol isolations.

COMSOFT technicians were abe to re-align the antennae at most related sites during transition and reached acceptance by Intelsat.

Some sites (Nassau „offline“ & Cayman “online“) still facing problems. On-site working is scheduled.

Review of Transition Issues #4

OJT at MEVA II network sites.

COMSOFT scheduled during site related installation to provide OJT.

Some sites were not able to sent local staff in time.

Re-schedule is needed.

Review of Transition Issues #5

Technicians knowledge

In the first phase of the installation phase it turned out that some of the technicians had a lack of knowledge.

COMSOFT immediately sents a „replacement“ technician to related sites and updates training/knowledge.

Review of Transition Issues #6

Contracts

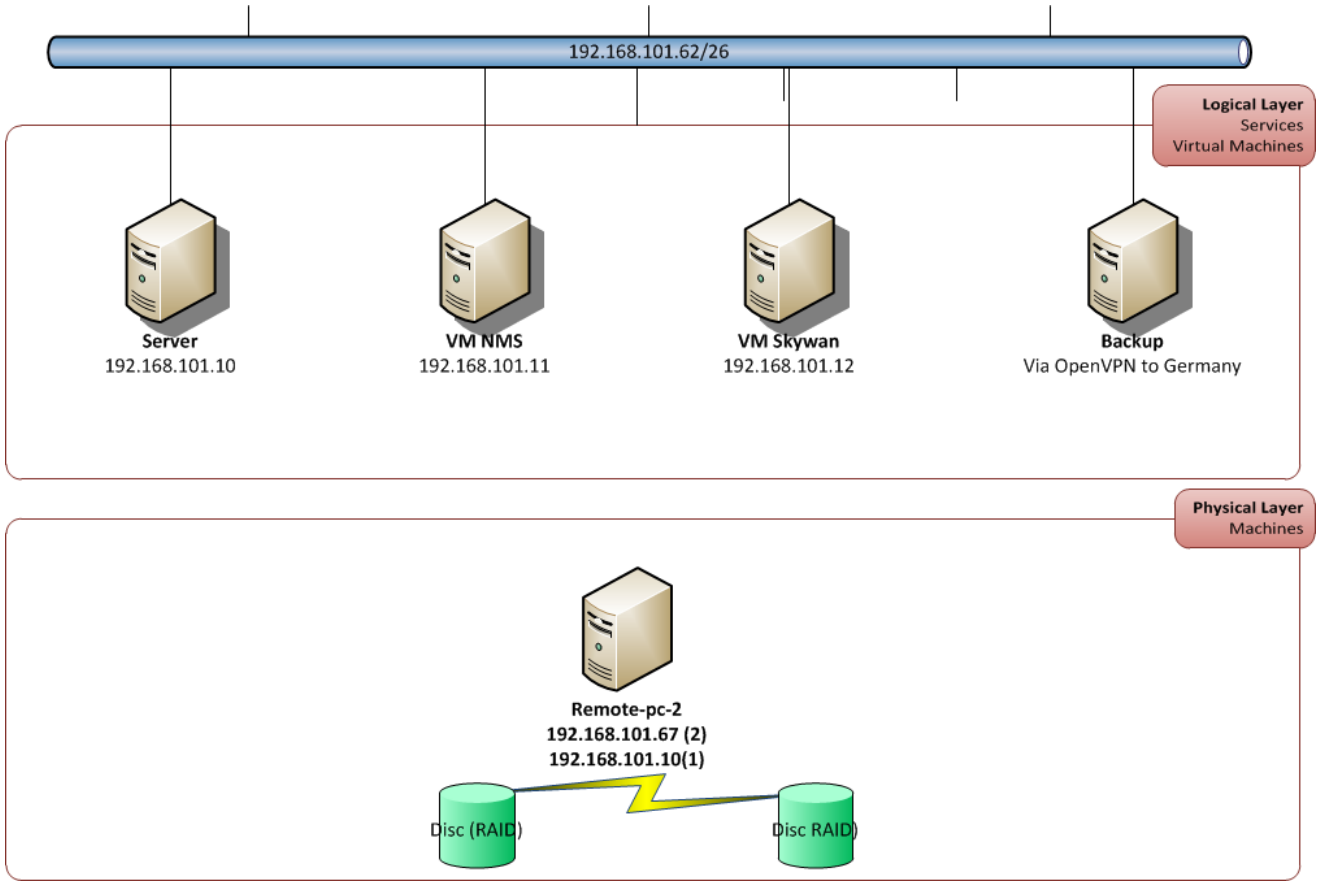
The contract with Mexico is still not in place.

Topic

- Agenda Item 3.4 (MEVA III Monitoring & Reporting)

MEVA III Server Setup

The MEVA III network monitoring computer is located at the master station Miami Teleport.



MEVA III Server

The MEVA III monitoring and network configuration systems are setup as virtual machines which are hosted on a HP server.

The virtual machines are backed up on a regular basis on the host server.

The host server copies via an SSL connection all backups regulary to a server in COMSOFT´s NOC Germany.

Failure or outages on the HP Server will not have any impact on the MEVA III network, only statistics are affected.

MEVA III Software

The MEVA III host server is based on a Debian OS, the SkyNMS and Monitoring virtual machines hosted on a Windows OS.

The SkyNMS server is only used to perform special measurements and device configuration for SkyWAN units.

The Monitoring server is used to check network unit status and report errors.

The HP server hosts the applications for long term graphing.

MEVA III Monitoring & Reporting

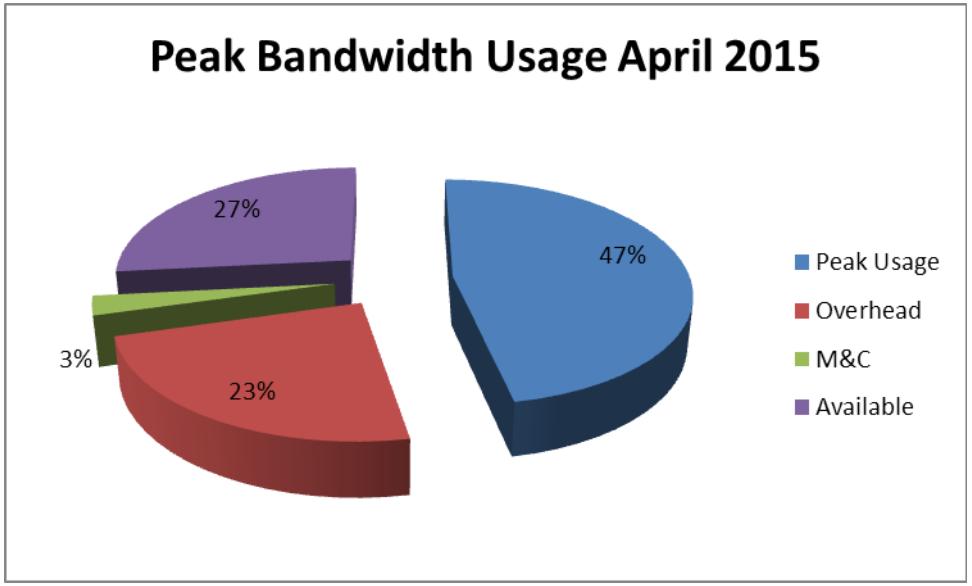
Today we can only report on a one month based period (April 2015).

All circuits are available on the FADs, but not all data-/voicelines are connected so far.

As of mid May 2015 the average network load is at 40% (Graph view May 3rd to May 16th).
Long term estimation is at 80% average load (incl. Mexico).

MEVA III Monitoring & Reporting #2

Allotted Information Rate:	1.820,00 kbps
Peak Usage:	855,00 kbps
Overhead:	430,00 kbps
M&C:	50,00 kbps
Available:	485,00 kbps



MEVA III Reporting Voice Utilization

Call Statistics April 2015

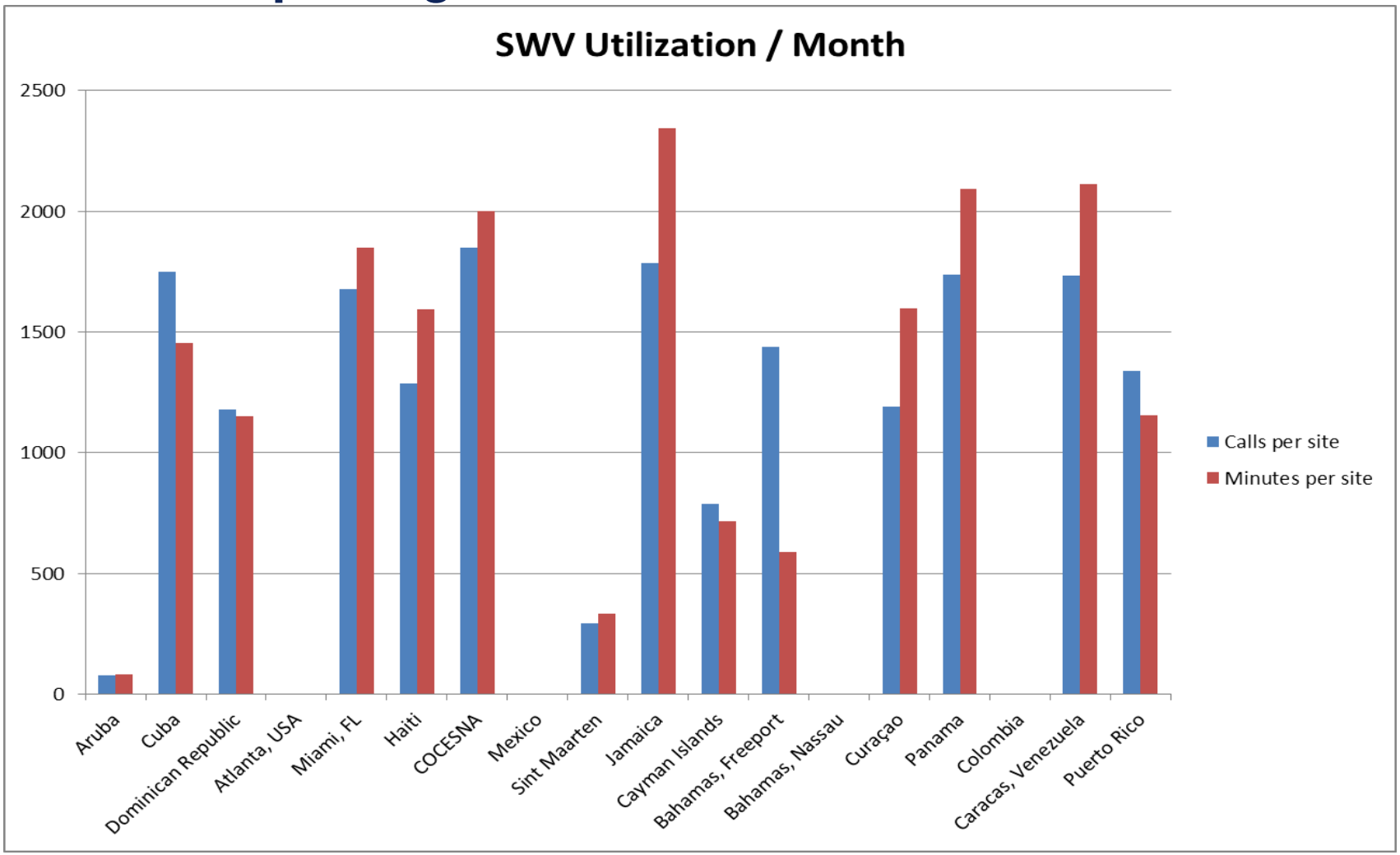
	Aruba	Cuba	Dominican Republic	Atlanta, USA	Miami, FL	Haiti	COCESNA	Mexico	Sint Maarten	Jamaica	Cayman Islands	Bahamas, Freeport	Bahamas, Nassau	Curaçao	Panama	Colombia	Caracas, Venezuela	Puerto Rico	Total Outgoing calls
Aruba		0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	76	0	79
Cuba	0		1	0	25	140	944	0	0	95	556	0	0	0	0	0	0	0	1761
Dominican Republic	0	0		0	389	249	0	0	0	0	0	0	0	35	0	0	0	535	1208
Atlanta, USA	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miami, FL	0	48	824	0		21	0	0	0	0	0	782	0	0	0	0	0	0	1675
Haiti	0	81	908	0	15		0	0	0	218	0	0	0	73	1	0	0	0	1296
COCESNA	0	435	0	0	0	0		0	0	315	52	0	0	0	1045	0	0	0	1847
Mexico	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
Sint Maarten	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	301	301
Jamaica	0	29	0	0	0	288	343	0	0		3	0	0	367	756	0	0	0	1786
Cayman Islands	0	682	0	0	0	0	105	0	0	19		0	0	0	0	0	0	0	806
Bahamas, Freeport	0	0	0	0	1436	0	0	0	0	0	0		0	0	0	0	0	0	1436
Bahamas, Nassau	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Curaçao	0	0	275	0	0	16	0	0	0	159	0	0	0		0	0	685	56	1191
Panama	0	0	0	0	0	0	1372	0	0	365	0	0	0	0		0	0	0	1737
Colombia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
Caracas, Venezuela	100	0	0	0	0	0	0	0	0	0	0	0	0	1357	0	0		277	1734
Puerto Rico	1	0	914	0	1	0	0	0	7	0	0	0	0	129	0	0	286		1338
Total Incoming Calls	101	1275	2922	0	1866	714	2764	0	7	1171	611	782	0	1964	1802	0	1047	1169	

MEVA III Reporting Voice Utilization #1

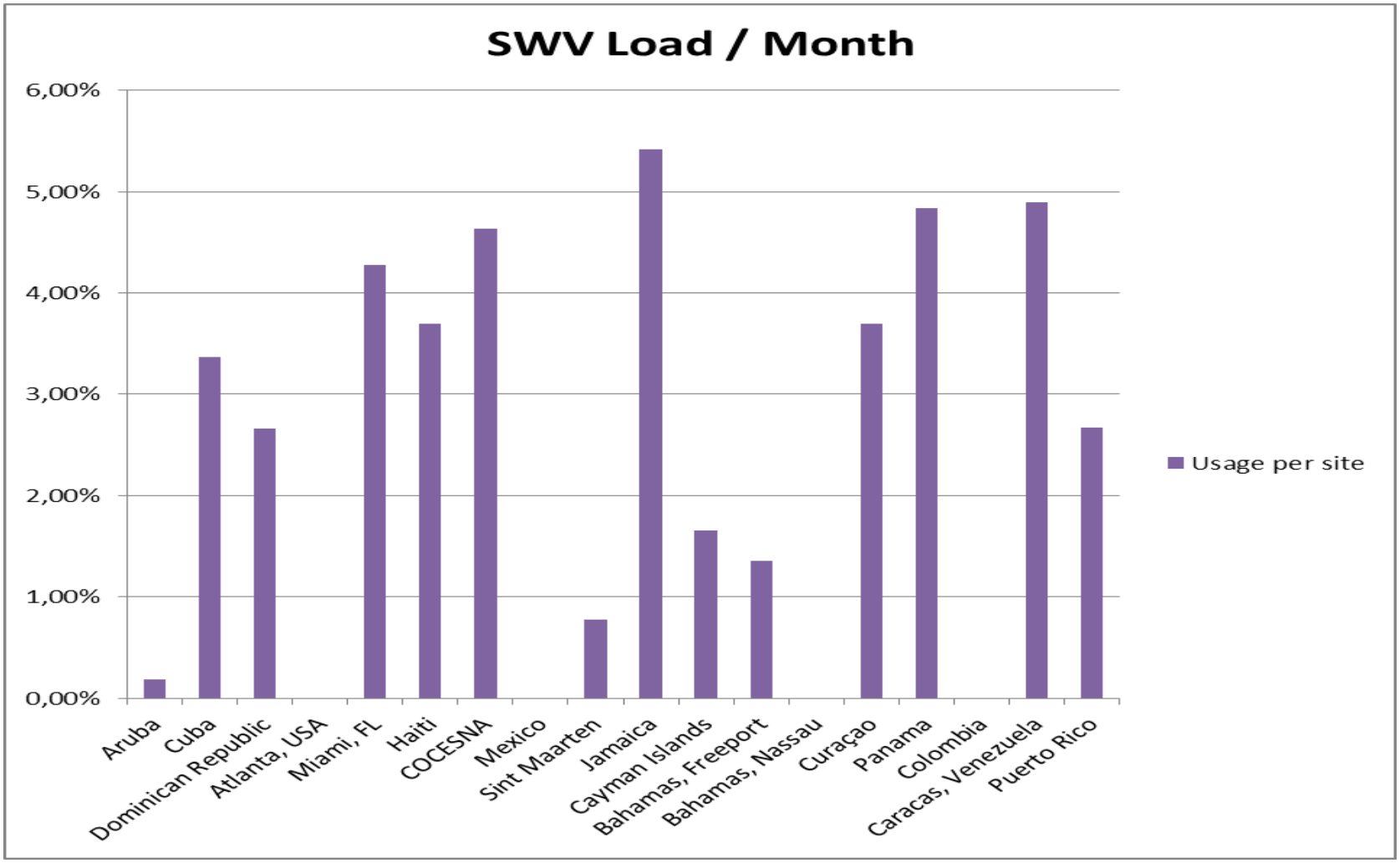
Call Minutes April 2015

	Aruba	Cuba	Dominican Republic	Atlanta, USA	Miami, FL	Haiti	COCESNA	Mexico	Sint Maarten	Jamaica	Cayman Islands	Bahamas, Freeport	Bahamas, Nassau	Curaçao	Panama	Colombia	Caracas, Venezuela	Puerto Rico	Hotline	Total Outgoing Minutes
Aruba		0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	59	0	18	80
Cuba	0		1	0	10	139	635	0	0	80	448	0	0	0	0	0	0	0	142	1.455
Dominican Republic	0	0		0	294	333	0	0	0	0	0	0	0	59	0	0	0	464	1	1.151
Atlanta, USA	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miami, FL	0	33	1.460	0		29	0	0	0	0	0	325	0	0	0	0	0	0	0	1.847
Haiti	0	72	1.230	0	8		0	0	0	222	0	0	0	62	0	0	0	0	0	1.594
COCESNA	0	325	0	0	0	0		0	0	364	46	0	0	0	1.267	0	0	0	0	2.002
Mexico	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Sint Maarten	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	331	2	333
Jamaica	0	40	0	0	0	358	381	0	0		2	0	0	367	1.194	0	0	0	1	2.343
Cayman Islands	0	612	0	0	0	0	102	0	0	1		0	0	0	0	0	0	0	0	715
Bahamas, Freeport	0	0	0	0	583	0	0	0	0	0	0		0	0	0	0	0	0	3	586
Bahamas, Nassau	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0
Curaçao	0	0	413	0	0	23	0	0	0	187	0	0	0		0	0	936	39	0	1.598
Panama	0	0	0	0	0	0	1.541	0	0	526	0	0	0	0		0	0	0	23	2.090
Colombia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Caracas, Venezuela	62	0	0	0	0	0	0	0	0	0	0	0	0	1.836	0	0		215	0	2.113
Puerto Rico	0	0	754	0	6	0	0	0	12	0	0	0	0	99	0	0	282		0	1.153

MEVA III Reporting Voice Utilization #2



MEVA III Reporting Voice Utilization #3



COMSOFT SatelliteServices

Markus Tenbeck

Tel: +49 (0) 7062 / 91651 – 14

Email: sales@comsoft-sat.com

www.comsoft-sat.com

Thank you for your attention!