



INTERNATIONAL CIVIL AVIATION ORGANIZATION
TENTH MEETING OF THE NAFISAT SUPERVISORY COMMITTEE
(SHARM EL-SHEIKH, EGYPT, 21-24 APRIL 2015)

Agenda Item 9(a) Operation, maintenance and performance of Network

(Presented by ATNS)

SUMMARY	
This paper summarizes the operation, maintenance and performance of the NAFISAT network.	
Reference:	Report - FRC call record
	- Interconnectivity between other Networks
	- AFTN circuit availability
	- ATS/DS circuit availability
	- Network availability
	- Four level reporting structure

1 Introduction: Operation and maintenance of the Network

1.1 The ATNS Fault Reporting Center continues to provide a 24-hour service. The summary of the calls are given for the period of April 2014 to February 2015.

2 Discussion

2.1 The successful maintenance of the system is achieved through the continuous commitment and assistance of the relevant States. The ongoing training of Engineers on the VSAT system and equipment has proven to be successful in raising the skill level of the participating technical and engineering staff in the NAFISAT region. The interaction of ATNS staff and these trained Engineers had positive and beneficial results in terms of minimizing the corrective maintenance trips and keeping the availability figures well within the SLA.

2.2 Occurrences reported to FRC:

Total: FRC = 179

	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
FRC	12	19	29	11	19	21	10	13	13	15	17	0	179
Corrective	8	15	13	10	12	18	6	8	10	6	9		115
Preventative	2	0	1	1	2	1	1	2	2	1	7		20
No Fault	1	2	5	0	3	2	1	0	0	1	1		16
External	1	2	10	0	2	0	2	3	1	7	0		28

Corrective – 115
Preventative – 20
No Fault found – 16
External – 28

2.3 ATNS noted an increase in the occurrences reported to FRC and more specifically related to RFT, IDU and MEMOTEC failures.

2.4 Trend of failure of the following units has increased.

- RFT - Failures
- SKYWAN- Resets
- MEMOTEC-Resets
- UPS- Batteries and failures

2.5 An agreement with the OEM has been reached to increase the capacity of the spares. Three additional RFT's are in the process of being procured and are due for delivery at end of March 2015. Turnaround time of repairs has been discussed with ND SATCOM to ensure the continuation of availability of the identified spares as well as meeting the Network service Level of Availability.

2.6 The obtaining of LOI's and VISAS has improved and difficulties were dealt with on an individual basis with the relevant States.

2.7 The clearance of equipment and spares has received great effort and support from some States. Isolated instances were reported where it is still a lengthy process. Some States require the involvement of a local shipping agent for the clearance of equipment and results in increase of costs and also delays in having the equipment and spares cleared even if ATNS supplies a list of spares with the serial numbers prior to travel.

The involvement of Civil Aviation Authorities is crucial in the speedy process of custom clearance.

2.8 The interoperability and interconnectivity between VSAT networks in the AFI Region remains crucial. ATNS remains committed to the seamless operation of these networks. Maintenance and monitoring of interconnections are performed with the assistance of the related network managers in the region. ATNS is closely monitoring and recording the interoperability between NAFISAT, SADC VSAT II and AFISNET.

			Availability
NAFISAT -AFISNET interconnectivity			94.33%
NAFISAT - SADC interconnectivity			99.97%

3. Performance of the Network

3.1 Data was collated from April 2014 to February 2015 and is presented to the meeting for information.

PRESENTATION

3.2 Network availability without Tripoli in equation

NETWORK AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.99	100	99.99	99.74	99.98	99.98	100	100	99.99	99.99	100	

Average = 99.97%

3.3 Network availability with Tripoli in equation

NETWORK AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.99	100	99.99	99.74	91.65	95.81	99.88	99.88	99.99	99.99	100	

Average = 98.81%

3.4 AFTN circuit availability

AFTN CIRCUIT AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.97	92.86	98.71	99.56	85.68	92.83	99.73	99.74	99.97	99.99	99.99	

Average = 97.18%

3.5 ATS/DS circuit availability

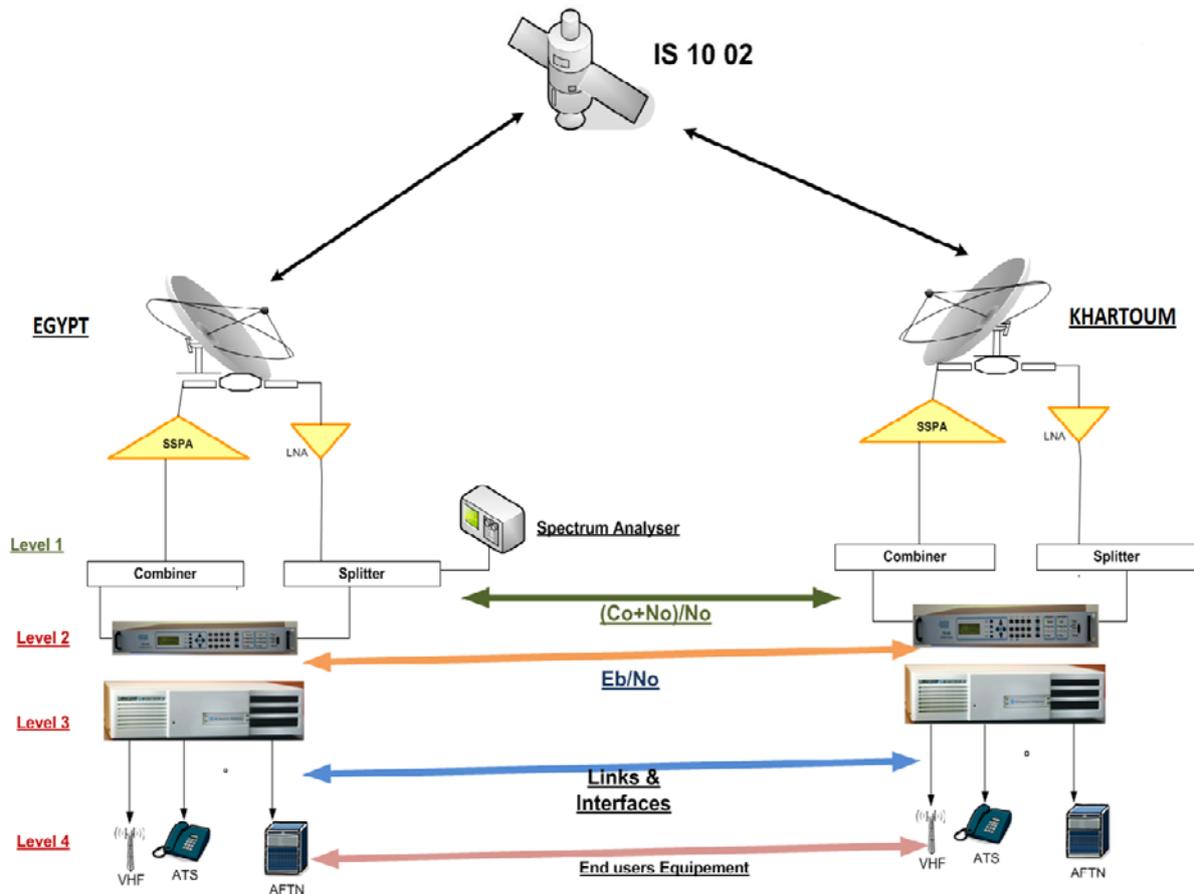
ATS/DS CIRCUIT AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.96	90.19	98.92	99.73	89.16	94.55	99.83	99.83	99.98	99.98	99.99	

Average = 97.47%

4. Four level reporting structure as proposed by ICAO

4.1 The APIRG meeting in Senegal approved the 4 level reporting structure of VSAT networks.

- Level 1 captures the space segment of the network.
- Level 2 captures the RF and related equipment.
- Level 3 captures the multiplexer or interfaces.
- Level 4 captures the end user equipment.



4.2 ATNS is currently applying all necessary systems to capture all parameters required to produce the 4 different levels of statistics. The NAFISAT system with its current configuration is not capable of producing all the parameters required and will ensure that future upgrades will have this functionality.

	Addis Ababa	Asmara	Cairo	Djibouti	Entebbe	Jeddah
TX (dBm)	35	39	40	36	36	38
Es / No	10	10.6	11.30	9.5	10.4	9.8

	Khartoum	MMC	Mogadishu	Nairobi	Sana'a	Tripoli	Victoria
TX (dBm)	40	35	38	37	38	37	40
Es / No	11.2	12.8	10.6	11	11.5	12.7	9.8

4.3 A template for the capturing of level 4 outages for ATS/DS and AFTN services was distributed to all States. Due to a lack of feedback the statistics as captured by ATNS were forwarded to ICAO.

4.4 Currently the statistics for NAFISAT are recorded and extracted on the ATNS MMS against the 4 levels but only faults reported to ATNS FRC are recorded on level 4.

5. Distribution of statistics

5.1 Distribution of statistics is done on a monthly basis.

5.2 Statistics are published on the ATNS website (<http://www.atns.co.za/vsat>) monthly for State Members to view.

6. Action to be taken by the Meeting

5.1 The meeting is invited to note the above information. More information on specifics will be made available upon request.

5.2 States are requested to submit the statistics recorded on the template to ATNS for the completion of the document to be sent to ICAO

5.3 States are requested in assisting with the difficulties experienced at the respective customs for the clearing and releasing of equipment and spares.

5.4 A laminated fault reporting procedure is supplied to all stations where all contact details are indicated.

5.2 States are urged to report all NAFISAT network faults to the ATNS FRC on + 2711 9286477 or frc@atns.co.za and to copy to the Satellite Manager ruip@atns.co.za.

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