



**INTERNATIONAL CIVIL AVIATION ORGANIZATION  
EASTERN AND SOUTHERN AFRICAN (ESAF) OFFICE**

**SEVENTEENTH MEETING OF THE SADC VSAT SUPERVISORY BOARD  
(SADC-SVB/17)**

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**Agenda Item 7 (a) - Operation, maintenance and performance of the SADC Network**

*(Presented by ATNS)*

**SUMMARY**

This paper summarizes the operation, maintenance and performance of the SADC VSAT2 network.

**Reference: Report**

FRC Call Records

Interconnectivity between adjacent Networks

Network Availability

AFTN cct Availability

ATS/DS cct Availability

Yearly comparative availability

AMHS implementation

**1 INTRODUCTION:**

- 1.1 This report presents the operational performance and maintenance of the SADC VSAT2 network for the period April 2021 to March 2022. The report covers the availability of all services provided by the network, and these are measured against the agreed SLAs. Furthermore, the robustness of the maintenance strategy implemented by ATNS is reflected in the summary of trends observed throughout the reporting period and the statistics of incident reports received through the ATNS Fault Reporting Centre (FRC). The FRC is located at the Johannesburg ACC and provides a 24 hr remote service for reporting and resolution of faults. The summary of the calls (reported incidents) are also given for the period April 2021 to March 2022.

**2 Discussion**

- 2.1 The successful maintenance of the VSAT network would not be possible without the continuous commitment and assistance of the SADC member States and their personnel. The worldwide pandemic posed challenges to the Network and the skills obtained by all States' participants at the ATA training proved to be fruitful in order to ensure that the reported faults were dealt with timeously.

- 2.2 Travel restrictions and COVID protocols at the Different States restricted the movement of ATNS personnel to do site visits. This function was performed by the local Staff during the respective lockdowns. Remote preventative activities were scheduled and coordinated between ATNS and Staff to keep the terminals operating and restored where failures were detected. Travel restrictions have however been lifted and ATNS Technical staff are now conducting preventative maintenance by visiting the sites based on a preventative maintenance schedule.
- 2.3 It should be noted that assistance is constantly required with the issuance of LOI's, VISAS, some customs processes and site access permits required by some authorities. These factors remain a risk to quick on-site response and availability of spares.
- 2.4 **SADC FRC faults reported (Apr 2021 to March 2022)**

**Total: FRC = 87**

	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
FRC	16	13	6	2	4	6	9	6	5	6	6	8	87
Corrective	9	8	1	2	2	5	6	4	4	6	4	7	58
Preventative	5	4	0	0	0	0	1	0	0	0	0	0	10
External	2	1	5	0	2	1	2	2	1	0	2	1	19

Corrective – 58  
Preventative –10  
External – 19

2.5 **Yearly comparative FRC reported call totals**

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	210	248	162	128	148	163	172	118	87

2.6 **Trends**

- 2.6.1 RF Switches and RFT's remain as failure trends. ATNS put mitigation strategies in place to deal with these failures.
- 2.6.2 Currently the failures are dealt with through the normal fault and spares management process.
- 2.6.3 Should any new developments or trends arise, ATNS will follow the necessary processes to maintain the network to the previous and current standard.
- 2.6.4 ATNS is in discussions with the OEM to put stricter SLA in place for tighter turnaround times.

2.7 **Interoperability**

- 2.7.1 Seamless operations, interoperability and interconnectivity between VSAT networks in the AFI Region remains crucial and ATNS remains committed to implement the best practices as recommended by ICAO. The NAFISAT and SADC VSAT2 networks are fully integrated to ensure continuation of seamless operation by being fully interconnected and interoperable on level 1.

- 2.7.2 At present interconnectivity between AFISNET and SADC is achieved on level 3 through baseband equipment and not on the satellite level 1.
- 2.7.3 ATNS and ASECNA have agreed to the platform for the links. The links will continue to be achieved through the DATUM 500L series. The multiplexers are now changed to the NETPERFORMER FAD.
- 2.7.4 Below an indication of the progress on the transition of services to the NETPERFORMER.

	Network	AFTN	ATS/DS
Luanda/Accra	serviceable	serviceable	Serviceable on old platform
Luanda/Abidjan	serviceable	N/A	serviceable
Luanda/Brazzaville	serviceable	Ready needs setup	serviceable
Luanda/Dakar	serviceable	N/A	u/s Dakar equipment not ready yet
Kinshasa/Brazzaville	serviceable	u/s	u/s Not implemented on new platform

2.7.5 The availability of these links and services are recorded as follows:

	Network	AFTN	ATS/DS
Luanda/Accra	100,00%	99.01	99,99
Luanda/Abidjan	100,00%		99.10
Luanda/Brazzaville	100,00%	0	99.96
Luanda/Dakar	100,00%		99,98
Kinshasa/Brazzaville	100.00%	0	0

AVE 100.00% 33.00 79.81

The achieved availability of the links; i.e. level 1 and 2 are within specification above 99.9%

The availability of the voice circuits was 79.81%

The availability of the AFTN services were deteriorating and were operating below acceptable levels at 33%. As can be seen the services were reaching breakdown level. After migrating to the new NETPERFORMER, we can already see better figures reported.

## 2.8 Implementation of AMHS service on the SADC network

2.8.1 AMHS service implementation is currently as per below;

SADC	Site 1 / HP SW	Site 2 / HP SW	Active Yes /No	REMARKS
	Lusaka	JHB	Y	
	Kinshasa	JHB	Active IP	10.43.40.207 AFTN IP / SERV 10,43,40,40
	Entebbe	JHB	Y	
	Manizni	JHB	Y	
	Lilongwe	JHB	Test	
	Gaborone	JHB	Y	
	Windhoek WX	JHB	Test	Erros IWXXM service
	Windhoek CAD	JHB	Y	CAD Backup line VSAT temp GW 10.11.75.65
	Windhoek CAD	JHB	Y	Cad backuo 8Dec 2020 solution
	Plaicance	JHB	Y	
	Mogadishu	Johannesburg	Test	suplier conf issue, will adz ready

### 3 Performance of the Network

3.1 Data was collated from April 2021 to March 2022 and is presented to the meeting for information.

#### (PRESENTATION)

3.2 Network availability (April2021 to March2022)

NETWORK AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.92	100	100	100	100	100	100	100	100	99.91	100	100

Average =99.99%

3.3 MMC AVAILABILITY (April2021 to March 2022)

MMC AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.93	100	100	100	100	100	100	100	100	100	100	100

Average = 99.99%

3.4 AFTN circuit availability (April2021 to March2022)

AFTN CIRCUIT AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.93	100	96	92	91.10	92.00	91.86	92.00	91.87	91.11	91.98	91.99

Average = 93.49%

3.5 ATS/DS circuit availability (April2021 to March2022)

ATS/DS CIRCUIT AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
99.91	99.94	100	98.11	98.11	98.11	98.02	98.11	98.11	97.68	98.11	97.62

Average =98.49%

3.6 AMHS circuit availability (April2021 to March2022)

AMHS CIRCUIT AVAILABILITY											
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
23.97	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00

Average = 24.91%

3.7 Data collected on Services (April 2021 to March 2022)

Number of voice calls recorded since April 2021 to March 2022 = 169988                      91876  
 Number of Bytes transmitted since April 2021 to March 2022 = 273503514                      351755162

3.8 Yearly comparative availabilities

Yearly Network availability

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Average	99.90	99.93	99.97	99.95	99.88	99.93	99.97	99.98	99.99

Average = 99.94%

Yearly AFTN availability

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Average	99.84	99.90	99.96	99.93	99.75	98.50	99.50	99.42	93.49

Average = 98.92%

Yearly ATS/DS availability

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Average	99.79	99.90	99.94	99.91	99.66	98.40	99.87	99.00	98.49

Average = 99.44%

#### **4 Distribution of statistics**

- 4.1 Distribution of statistics is done on a monthly basis.
- 4.2 Statistics are published monthly on the ATNS website for State Members to view. Member states receive an e-mail alert that the statistics are available on the website.
- 4.3 ATNS continuous to provide the level 4 statistics as required from ICAO on a monthly basis.

#### **5 ACTION TO BE TAKEN BY THE MEETING**

- 5.1 The meeting is invited to take note of the above information. More information on specifics will be made available upon request.
- 5.2 States are requested to continue submitting the statistics recorded on the level 4 template to ATNS for the completion of the document to be sent to ICAO.
- 5.3 Relevant States are requested to assist in timeously supplying Letters of Invitation and all States are requested to assist in resolving difficulties experienced at the respective customs for the clearing and releasing of equipment and spares as well as the facilitation to access the site during maintenance.
- 5.4 States are encouraged to implement AMHS services as per the ICAO block Upgrades and the network proposed design.
- 5.5 States are reminded to follow the fault reporting procedure and report all SADC network faults to the ATNS FRC on +27 11 928 6477 or [frc@atns.co.za](mailto:frc@atns.co.za) and to copy to the Manager Technical Support [ruip@atns.co.za](mailto:ruip@atns.co.za)