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INTERNATIONAL CIVIL AVIATION ORGANIZATION

THE FOURTEENTH MEETING OF THE NAFISAT SUPERVISORY BOARD (NAFISAT-SVB/14) (CAIRO, EGYPT, 27 – 28 NOVEMBER 2019)

Agenda Item 2: Operation, maintenance and performance of the NAFISAT Network

(Presented by ATNS)

SUMMARY
This paper summarizes the operation, maintenance and performance of the NAFISAT network.
Reference: Report   FRC Call Records   Interconnectivity between adjacent Networks   Network Availability   AFTN cct Availability   ATS/DS cct Availability   Yearly comparative availability   Four level report to ICAO

1. **Introduction:**

1.1   This report presents the operational performance and maintenance of the NAFISAT network for the period April 2018 to March 2019. 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 2018 to March 2019.

2.   **Discussion**

a.   The successful maintenance of the VSAT network would not be possible without the continuous commitment and assistance of the relevant States. In order to ensure that the competency and skills level of all role players are improved and maintained, the ATNS Training Academy continues to provide refresher training on the upgraded platform.

b.   Both initial and refresher training for VSAT maintenance personnel should be arranged with ATNS. This training ensures raised skills levels of the local technical staff and shortens the outage times.

c.   Timely on-site response by ATNS maintenance personnel is key to the resolution of critical faults/failures. It should be noted that issuance of LOI's, VISAS, some customs processes and site access permits required by some authorities remain a risk to quick on-site response and availability of spares.

d.   NAFISAT FRC faults reported (Apr 2018 to March 2019)

Total: FRC   = 115

	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
FRC	8	4	11	9	11	13	11	12	8	6	8	14	115
Corrective	2	3	5	6	5	6	5	7	7	5	7	9	67
Preventative	0	0	3	0	1	0	1	1	0	0	1	2	9
External	6	1	3	3	5	7	5	4	1	1	0	3	39

Corrective   – 67
Preventative   – 09
External   – 39

e.   **Yearly comparative FRC reported call totals**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total	72	81	109	156	200	159	171	103	115

f.   **Trends**

i.   Previous trends have been resolved and stabilization of certain failures were achieved.

ii. Currently the failures are dealt with through the normal fault and management process.

iii. Should any new developments or trends arise, ATNS will follow the necessary processes to maintain the network to the previous and current standard.

g.   **Upgrade**

i.   Currently the Yemen terminal in Sana'a is still not upgraded. Ongoing engagements with the relevant Yemen authorities are yielding some progress towards finding a solution to facilitate the upgrade of that terminal to the IDU 7000 series platform.

ii. The spectrum was successfully optimized in November 2018.

iii. The Sana'a terminal was kept on the IDU 5000 series platform and all sites connecting maintained the services. This network is operating separately from the optimised spectrum as part of the BERT spectrum.

iv. A new terminal was installed in Saudi Arabia, Jeddah and is fully integrated to the IDU 7000 series platform.

v. A new terminal was installed in Somalia, Mogadishu and is fully integrated to the IDU 7000 series platform. Currently we are investigating external interference and possible solutions are to be implemented soon. The terminal in Nairobi was decommissioned and shipped to Mogadishu.

vi. As previously discussed the network is ready for the implementation of IP services and AMHS has been implemented between a couple of countries as per the tributary and backbone plan. A bilateral circuit between Entebbe and Johannesburg as well as the tributary circuit between Cairo and Jeddah have been implemented. The Network Service Provider reiterates that the NAFISAT network is 100% capable and ready to carry AMHS services as per the tributary circuits and awaits Member States to activate the services on their end-user equipment.

h.   **Interoperability**

i. 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.

ii. At present co-operation between ASECNA, Ghana CAA and ATNS ensures interoperability of the networks although more efficient ways should be established to accomplish seamlessness interoperability and interconnectivity on level 1 of the networks ensuring greater efficiency.

iii. During the bilateral forum interactions with ASECNA in June 2019, it was decided that the upgrade of the baseband equipment will be upgraded in November 2019. This will deal with the obsolescence of ageing equipment

iv. ATNS noticed an improvement on the connections to AFISNET, however due to the terminal being off in Libya, the availability is heavily affected.

	Network Availability
NAFISAT - SADC VSAT2 interconnectivity	99.98%
NAFISAT - AFISNET interconnectivity	96.78%

2. **Performance of the Network**

a.   Data was collated from April 2018 to March 2019 and is presented to the meeting for information.

(PRESENTATION)

b.   Network operational availability

NETWORK AVAILABILITY											
Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
99.88	100	99.96	100	98.74	91.64	99.99	99.72	99.99	100	99.98	99.99

Average = 99.16%

These percentages represent all outages including all exclusions as per the bilateral agreements where all delays are calculated. Some of these are logistical delays, political situations, acts of nature etc.

c.   **Network achieved availability**

NETWORK AVAILABILITY											
Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
100	100	99.96	100	99.99	99.98	99.99	99.72	99.99	100	99.98	99.99

Average = 99.97%

These percentages represent outages which does not include the exclusions but includes the preventative maintenance outages.

d.   **AFTN circuit availability**

AFTN CIRCUIT AVAILABILITY											
Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
96.28	100	99.93	99.55	99.67	86.19	99.98	99.64	99.97	100	99.99	99.99

Average = 98.43%

e.   **ATS/DS circuit availability**

ATS/DS CIRCUIT AVAILABILITY											
Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
97.01	100	99.95	99.99	99.96	89.15	99.98	99.59	99.99	95.30	99.39	99.97

Average =98.36%

f.   **MMC Availability**

MMC AVAILABILITY											
Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
100	100	100	100	100	100	100	99.72	100	100	100	99.99

Average = 99.98%

g.   **Data collected on Services for the period between April 2018 to March 2019**

Number of Bytes transmitted = 7565435891   <u>Number of Voice calls = 899935</u>

h.   **Yearly comparative availabilities**

Yearly Network availability

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average	99,99	99,98	99,94	99,97	99,93	99,97	99,98	99.97	99.97

Average =99.97 %

Yearly AFTN availability

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average	99,33	99,86	99,69	96,58	97,41	97,62	98,91	98.41	98.43

Average =98.49%

Yearly ATS/DS availability

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average	99,96	99,83	99,75	97,37	97,68	96,56	99,2	99.15	98.36

Average = 98.62%

Four level reporting structure as proposed by ICAO

a.   ATNS provides the level 4 statistics as required from ICAO on a monthly basis. This is a comprehensive document where space segment, IDU, ODU and end user equipment statistics are collected.

b.   Level four statistics templates for ATS/DS and AFTN services were distributed to all NAFISAT member States. ATNS would like to express gratitude to the States that are submitting those statistics on a regular basis. Feedback with regards to end user outages remains a challenge.

Distribution of statistics

c.   Distribution of statistics is done on a monthly basis.

d.   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.   **ACTION TO BE TAKEN BY THE MEETING**

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

b.   States are requested to submit the statistics recorded on the level 4 template to ATNS for the completion of the document to be sent to ICAO.

c.   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.

d.   States are encouraged to implement AMHS services as per the ICAO block Upgrades and the network proposed design.

e.   States are reminded to follow the fault reporting procedure and report all NAFISAT network faults to the ATNS FRC on +27 11 928 6477 or frc@atns.co.za and to copy to the Manager ruip@atns.co.za.