

Agenda Item 9.2 - Status of the life extension of the NAFISAT Network and the progress on the renovation

(Presented by ATNS)

21st NAFISAT Supervisory Board Meeting

Seychelles, 07 - 08 October 2026

Life extension and Upgrades of the NAFISAT Network

(Presented by ATNS)

SUMMARY
This working Paper presents an overview of the NAFISAT Network life extension and developments on the modernization. The network, established in 2007 and upgraded in 2016, plays a critical role in supporting Air Traffic Services (ATS) and aeronautical information exchange in the AFI region. The paper discusses the two-phase approach for sustaining the network until 2029, details the life extension and modernization efforts.
REFERENCE(S): ▪ NAFISAT MoU
This working document relates to ICAO Strategic Objectives: • Safety • Air Navigation Capacity and Efficiency

1. INTRODUCTION

- 1.1 The existing network platform for the NAFISAT Networks was established in 2007 with the following configuration:

- 1.1.1 Satellite Access Method: MF TDMA
 - 1.1.2 Network Topology: Star/Mesh
 - 1.1.3 Satellite: IS1002, positioned at 359 degrees East.
- 1.2 In 2016, the network underwent an upgrade to address obsolescence, incorporating the following components:
 - 1.2.1 Outdoor Unit: Increased RFT capacity to 60W
 - 1.2.2 Indoor Unit: Transition from SkyWAN 5000 to SkyWAN 7000
 - 1.2.3 Multiplexer (MUX): Upgrade from Memotec CX series to FAD 92X0 / FAD 8400
 - 1.2.4 Extended Network Management System (NMS): Enabled local monitoring and generation of traffic statistics.
- 1.3 The following two-phased approach was proposed to sustain the NAFISAT Network until end September 2029- and was subsequently approved by the SBM:
 - 1.3.1 Network Life Extension from 2022 to 2024 FY
 - 1.3.2 Network Modernization from 2025 to 2029 FY

2. DISCUSSION

2.1 Network Life Extension

- 2.1.1 The Network Life Extension phase focuses on managing network spare inventory and addressing the obsolescence of equipment, particularly concerning indoor units. The following equipment / components have been identified for part of the network life extension:
 - 2.1.1.1 Modem Equipment 7000 Master
 - 2.1.1.2 Modem Equipment 2570
 - 2.1.1.4 Frame Relay Access Device 91X0 and associated interfaces
 - 2.1.1.5 Frame Relay Access Device 8400 and associated interfaces
- 2.1.2 The centralized spare inventory system will remain operational to ensure network support.

- 2.1.3 Saudi Arabia opted for the decentralised maintenance model and ATNS proposes two options: Saudi Arabia purchase the new Terrasat iBUCs or ATNS will ship spare RFT units to support the operation of the terminal until November 2029.

2.1.3 Progress to Date

- 2.1.3.1 As reported in the previous SBM, the support contract has been signed between the Network Service provider and the OEM. This contract aligns the contract period with the existing SB term agreement until 2029.

The Satellite Spectrum has been secured with the service provider and aligns the contract period with the existing SB term agreement until 2029. Currently it is not possible to optimise the spectrum and move it closer to 4.2 GHz. This will mitigate the constant risk of interference from 5G operators. Discussions between the Network Service provider and the Satellite Service Provider to move the spectrum to a higher frequency range (4.2Ghz Rx) is continuing and the aim is to achieve this when implementing the new network after 2029.

The identified indoor spares for the Network Life Extension have been delivered and replenished to the stores.

2.2 Network Modernization

- 2.2.1 The Network Modernization phase targets the outdoor units, specifically addressing the obsolescence of the RFT5060 which will be replaced with the latest Terrasat iBUC-2, 60W. All RFTs will be replaced during the modernization phase as well as the Tx RF switching with management control and monitoring.

2.2.2 The Terrasat iBUCs were procured and have been delivered to FAOR stores. This shipment addresses the replacement of the RFTs in the master station. It also includes the spares to be replenished in the NAFISAT stores at FAOR. The shipping of the iBUCs to all the NAFISAT sites are currently taking place and the schedule below illustrates the planned delivery.

COUNTRY	STATUS
Egypt	Consignee appointed his own broker and agent waiting for broker to collect paperwork
Eritria	DELIVERED
Ethiopia	DELIVERED
Djibouti	DELIVERED
Kenya	Permit pending from Government and waiting for approval
Mogadishu	In RSA
Sudan	In RSA
South Sudan	New installations done with iBUCs
Uganda	ATNS provide alternative contacts for consignee - undergoing DDP clearance
Tanzania	IN COUNTRY CLEARING AGENT TO BE APPOINTED
Yemen	In RSA
Saudi Arabia	Procurement
Libya	In RSA
Seychelles	ATNS instructed us to hold back until DDP discussions are finalized in Seychelles

2.2.3 A configuration change will be implemented where one 5G rejection LNB will be deployed negating the need for a Rx RF switch. These LNBs were delivered to the NAFISAT FAOR stores and will be dispatched during the replacement of the RFTs.

3. ACTIONS BY THE MEETING

3.1 The meeting is invited to:

- a) **Note** the progress made in the network upgrades and the strategies implemented to sustain the NAFISAT VSAT networks until 2029.
- b) **Encourage** continued collaboration among stakeholders to ensure the seamless life extension and modernization of the networks.
- c) NAFISAT board members to note that the current platform and interventions made, that is, the life extension and modernization will not go beyond 2029 because of obsolescence of most platform devices.

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