

Agenda Item 9.4 – Future Developments of the NAFISAT Network beyond 2029

(Presented by ATNS)

21st NAFISAT Supervisory Board Meeting

Seychelles, 07 - 08 October 2026

Future Developments of the NAFISAT Network beyond 2029

(Presented by ATNS)

SUMMARY
This Working Paper provides an update on the developments of the NAFISAT Network and the progress made by the Task Team established to assess the future technology and development of the network beyond 2029. The paper further reports on the status of the business case and financial model developed in support of the future NAFISAT Network and presents recommendations for consideration and endorsement by the NAFISAT Supervisory Board.
REFERENCE(S): ▪ NAFISAT MOU ▪ Meeting record of the 19th NAFISAT Supervisory Board Meeting. ▪ Meeting record of the 20th NAFISAT Supervisory Board Meeting. ▪ Global Air Navigation Plan (GANP)
This working document relates to ICAO Strategic Objectives: • Safety • Air Navigation Capacity and Efficiency

1. INTRODUCTION

1.1 During the **19th NAFISAT Supervisory Board Meeting**, the Board discussed the future of the NAFISAT Network beyond 2029. The meeting recognised the need to determine an appropriate way forward for the network beyond the current contractual period.

1.2 It was therefore agreed that an assessment of available and emerging technologies should be undertaken to determine their suitability for supporting the future communication requirements of the NAFISAT Network. The outcome of this assessment was to be presented to a subsequent Supervisory Board Meeting for consideration.

1.3 Following the outcome of the 19th Supervisory Board Meeting, a **Task Team** was established comprising representatives from SADC VSAT and NAFISAT - nominated Member States, together with representatives from the Service Provider.

The Task Team comprised representatives from the following States:

- Botswana
- Zambia
- Namibia
- South Africa
- Kenya
- Egypt
- Uganda
- Sudan

Representatives from the Service Provider also participated in the Task Team and provided technical and operational support.

1.4 In addition, a **Research Team** was established and made available by the Service Provider to support the Task Team in conducting the required research, technology assessments, and comparative analysis of alternative communication technologies.

2. DISCUSSION

2.1 The Research Team conducted a technology evaluation to assess available and emerging alternatives to the existing VSAT platform.

The assessment considered the evolving requirements of the aviation industry within the Africa-Indian Ocean (AFI) Region, particularly in relation to the increasing demand for reliable communications, surveillance, information services, and connectivity in support of growing air traffic.

2.2 While traditional Very Small Aperture Terminal (VSAT) satellite systems have historically provided an essential communications platform for aviation operations, technological developments have introduced alternative solutions that may offer potential benefits in areas such as latency, capacity, scalability, and cost efficiency.

The assessment therefore considered the suitability of alternative technologies in relation to their intended operational purpose and the critical requirements of the services being supported.

2.3 The evaluation considered, among other factors:

- operational requirements.
- network reliability and availability.
- latency and performance.
- scalability.
- geographical coverage.
- resilience and service continuity.
- security.
- environmental considerations.
- implementation requirements.
- lifecycle considerations; and
- overall cost-effectiveness.

2.4 The assessment also recognised that the selection of a future communication technology must consider the specific operational environment of the AFI Region, including remote and underserved locations, security requirements, budgetary considerations, and the critical nature of aviation services.

- 2.5 The aviation industry in the AFI Region continues to experience increasing demands for reliable communication, surveillance, and information services to support the growth and modernisation of air traffic management operations.
- 2.6 Any future communication infrastructure adopted for the NAFISAT Network must therefore be capable of supporting critical aviation services, including:
- Air Traffic Management (ATM) communications.
 - surveillance data exchange, including ADS-B and radar data.
 - flight information services.
 - Aeronautical Fixed Telecommunication Network (AFTN) and Aeronautical Message Handling System (AMHS) services.
 - Controller–Pilot Data Link Communications (CPDLC); and
 - resilient communications and continuity of service, particularly at remote and underserved locations.
- 2.6 The technology assessment therefore focused on the ability of potential solutions to meet the required levels of reliability, resilience, security, availability, and performance associated with aviation-critical communications.

3. TECHNOLOGIES CONSIDERED

- 3.1 The following three technologies were shortlisted and presented for consideration by the NAFISAT Supervisory Board:
- **Very Small Aperture Terminal (VSAT).**
 - **Low Earth Orbit (LEO) Satellite Internet; and**
 - **Virtual Private Network (VPN) Solutions.**
- 3.2 The evaluation considered the respective technical specifications, latency, scalability, environmental resilience, security, geographical coverage, operational reliability, and suitability of each technology for aviation-related applications.
- 3.3 Following consideration of the technology evaluation and the operational requirements of the NAFISAT Network, the Supervisory Board supported the recommendation to **continue using VSAT as the technology of choice** for the network.

- 3.4 This decision was based on the critical nature of the services supported by the network and the requirement for reliable, resilient, secure, and geographically appropriate communications infrastructure.
- 3.5 The Board nevertheless recognised the importance of ensuring that the future network remains technologically relevant, operationally sustainable, and financially viable beyond 2029.
- 3.6 Accordingly, it was further recommended that:
- a comprehensive **cost-benefit analysis** be undertaken.
 - a detailed **business case** be developed
 - the Service Provider engage with all relevant stakeholders and airspace users regarding the reliability and operational requirements of the VSAT technology
 - the business case should inform the development of an appropriate **financial model**
 - the future network architecture should continue to take account of emerging technologies and evolving aviation communication requirements.

4 **STATUS OF THE BUSINESS CASE AND FINANCIAL MODEL**

- 4.1 Following the recommendations of the Supervisory Board, the business case for the future NAFISAT Network has been developed, together with a corresponding financial model.
- 4.2 The business case and financial model are currently being discussed and reviewed with the relevant stakeholders.
- The purpose of the ongoing stakeholder engagement is to ensure that the proposed future network is supported by an appropriate and sustainable financial model and that the operational requirements of the participating States and airspace users are adequately reflected.
- 4.3 The outcomes of these engagements will inform the finalisation of the business case, financial model, and associated implementation arrangements for the future network beyond 2029.

4.4 The Task Team will resume its activities following the conclusion of the ongoing stakeholder consultations and once an agreed or sufficiently conclusive position has been reached on the business and financial arrangements for the future network.

4.5 Further activities of the Task Team may include:

- reviewing the outcomes of stakeholder consultations.
- validating the proposed future network architecture.
- reviewing emerging technologies and their potential applicability.
- assessing implementation and transition requirements.
- supporting the finalisation of the cost-benefit analysis.
- reviewing operational and technical requirements beyond 2029
- providing further recommendations to the Supervisory Board.

5. ACTIONS BY THE MEETING

The meeting is invited to:

a) **Note** the progress made in the development of the business case and financial model for the future network

b) **Ensure** continued collaboration and engagement among Member States, the Service Provider, airspace users, and other relevant stakeholders to ensure a seamless transition to the future network beyond the current contractual period ending in 2029

c) States to provide an indication of their existing and planned **VPN infrastructure and capabilities** that could be incorporated into, or interfaced with, the future network architecture.

d) **Ensure** the continuation of engagement with airspace users and other relevant stakeholders to validate operational requirements and inform the finalisation of the business case and financial model.

e) **Endorse** the development and completion of a comprehensive **cost-benefit analysis** based on the agreed business case and financial model

f) **Agree** that the Task Team should resume its activities following the conclusion of the ongoing stakeholder consultations and provide further recommendations to the Supervisory Board regarding the implementation and transition arrangements for the NAFISAT Network beyond 2029.