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ACCEPTANCE TEST PROCEDURE

Document ID: ATP-NORTHWIND-001

System: Sentinel-X

Contractor: Northwind Aerospace Corporation

Date: 25 March 2025

1.0 INTRODUCTION

This acceptance test procedure describes the Sentinel-X unmanned aerial system developed by Northwind Aerospace Corporation. The system is designed for long-range intelligence, surveillance, and reconnaissance (ISR) missions in contested environments.

2.0 PERFORMANCE CHARACTERISTICS

2.1 Range and Endurance

The Sentinel-X achieves a maximum operational range of **2254 km** with standard fuel load. This exceeds the OVERWATCH program objective requirement. Mission endurance at optimal cruise altitude is 21 hours with 75% payload loading.

2.2 Payload Capacity

Maximum payload capacity is **465 kg**, sufficient for a comprehensive ISR sensor suite. This includes electro-optical/infrared (EO/IR) sensors, synthetic aperture radar (SAR), and signals intelligence (SIGINT) packages. Center of gravity limits accommodate payload distribution from 24% to 35% mean aerodynamic chord.

2.3 Altitude Performance

Service ceiling is 46,979 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 43,413 ft, balancing sensor performance with fuel efficiency.

3.0 SYSTEM DESCRIPTION

3.1 Airframe

The airframe features a high-aspect-ratio wing optimized for endurance. Wingspan is 18.9 meters with a length of 12.0 meters.

3.2 Propulsion

Power is provided by a turboprop engine with 125 horsepower output. Fuel capacity is 650 liters.

3.3 Avionics and Control

Flight control is provided by a redundant triple autopilot system with SATCOM data link. Navigation uses GPS with INS backup for GPS-denied operations.

4.0 REQUIREMENTS COMPLIANCE

Requirement	Threshold	Objective	Sentinel-X	Status
Range	1500 km	2000 km	2254 km	EXCEEDS OBJ
Payload	300 kg	400 kg	465 kg	EXCEEDS OBJ
Ceiling	45,000 ft	50,000 ft	46,979 ft	MEETS

5.0 SUMMARY

The Sentinel-X represents a premium solution with superior performance characteristics. Performance specifications of 2254 km range and 465 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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