

CAPABILITY DEVELOPMENT DOCUMENT

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System: Aurora-P

Contractor: Arcturus Dynamics International

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1.0 INTRODUCTION

This capability development document describes the Aurora-P unmanned aerial system developed by Arcturus Dynamics International. 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 Aurora-P achieves a maximum operational range of **1538 km** with standard fuel load. This meets the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 38 hours with 75% payload loading.

2.2 Payload Capacity

Maximum payload capacity is **290 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 23% to 35% mean aerodynamic chord.

2.3 Altitude Performance

Service ceiling is 41,437 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 43,552 ft, balancing sensor performance with fuel efficiency.

3.0 SYSTEM DESCRIPTION

3.1 Airframe

The airframe features a modular design optimized for high-altitude performance. Wingspan is 23.5 meters with a length of 8.9 meters.

3.2 Propulsion

Power is provided by a turboprop engine with 142 horsepower output. Fuel capacity is 638 liters.

3.3 Avionics and Control

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

4.0 REQUIREMENTS COMPLIANCE

Requirement	Threshold	Objective	Aurora-P	Status
Range	1500 km	2000 km	1538 km	MEETS
Payload	300 kg	400 kg	290 kg	BELOW
Ceiling	45,000 ft	50,000 ft	41,437 ft	BELOW

5.0 SUMMARY

The Aurora-P represents a specialized solution uniquely suited for extreme environment operations. Performance specifications of 1538 km range and 290 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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