

TECHNOLOGY READINESS ASSESSMENT

Document ID: TRA-FALCON-002

System: Raptor-MQ

Contractor: Falcon Defense Systems Inc.

Date: 07 December 2025

1.0 INTRODUCTION

This technology readiness assessment describes the Raptor-MQ unmanned aerial system developed by Falcon Defense Systems Inc.. 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 Raptor-MQ achieves a maximum operational range of **1823 km** with standard fuel load. This meets the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 20 hours with 75% payload loading.

2.2 Payload Capacity

Maximum payload capacity is **348 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 22% to 34% mean aerodynamic chord.

2.3 Altitude Performance

Service ceiling is 50,944 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 44,752 ft, balancing sensor performance with fuel efficiency.

3.0 SYSTEM DESCRIPTION

3.1 Airframe

The airframe features a high-aspect-ratio wing optimized for payload capacity. Wingspan is 22.9 meters with a length of 10.7 meters.

3.2 Propulsion

Power is provided by a heavy-fuel piston engine with 121 horsepower output. Fuel capacity is 525 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	Raptor-MQ	Status
Range	1500 km	2000 km	1823 km	MEETS
Payload	300 kg	400 kg	348 kg	MEETS
Ceiling	45,000 ft	50,000 ft	50,944 ft	EXCEEDS OBJ

5.0 SUMMARY

The Raptor-MQ represents a proven, low-risk solution with extensive operational heritage. Performance specifications of 1823 km range and 348 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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