SPARTAN CORP

SOLUTION BRIEF

Contested-Environment Resilient C3

Command, Control & Communications for Autonomous Maritime Operations

PATENT PENDING • U.S. Provisional Patent Application Filed December 2025

The Challenge

Autonomous maritime systems in contested environments face a fundamental problem: maintaining reliable C3 when adversaries actively jam, spoof, and interfere with RF links. Conventional systems treat sea-state dynamics, emission constraints, and cyber threats as separate concerns—resulting in brittle architectures that fail under combat conditions.

Our Solution

Spartan's C3 Architecture is purpose-built for contested maritime operations. It integrates predictive link assessment, autonomous multi-path routing, mission-aware emission control, and embedded intrusion detection into a unified system that anticipates failures and adapts in real-time.

The architecture runs on dual redundant compute modules with safety-first arbitration—when systems disagree, the more conservative decision always wins. Every decision is logged for after-action reconstruction.

Wraith AUSV
C3 Architecture Platform

Key Capabilities

- ✓ **Predictive Link Assessment:** Anticipates degradation before failures
- ✓ **Sea-State Aware:** Mast geometry informs all routing decisions
- ✓ **Mission-Profile EMCON:** Emission control integrated into path selection
- ✓ **AI Intrusion Detection:** Distinguishes jamming from sea-state anomalies
- ✓ **Dual-Compute Arbitration:** Safety-first redundancy
- ✓ **Explainable Autonomy:** Full black-box logging for OT&E

Supported Mission Profiles

Blue-Water ISR	**Littoral Interdiction**	**Covert Approach**	**High-Speed Intercept**
Extended Loiter	**Distributed Loiter**	**Contested Autonomy**	**Fleet Operations**

Why It Matters

Operational Trust

Every decision logged, explainable, and reconstructable for after-action analysis.

Mission Continuity

Predictive failure handling ensures mission continues when links are compromised.

Combat Survivability

Purpose-built for contested environments where attacks are expected, not exceptional.

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