Full Spectrum Operations Demonstration

Enabling many-on-many multi-domain operations in a cyber contested environment.

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

Full Spectrum Operations (FSO) Demonstration delivers prototype command and control (C2) mission applications to enable integration of Kinetic/Non-Kinetic (K/NK) effects, and scalable execution of cyber operations in support of combatant commanders. With our full-spectrum cyber capabilities, our military can eliminate enemy threats…at the push of a button. We demonstrate these capabilities in a mission thread delivering many vs many engagements in a cyber contested environment. Our Course of Action (COA) Integration application optimizes and integrates K/NK and cyber options early in the Joint Targeting cycle, enabling Strategic and Operational-level Joint Force Commanders' staffs to optimize apportioned forces in support of the objectives. Our tactical-level cyber operations Planning and Assessment applications automate many manual processes, and enable operations at scale to support Service/Joint needs.

Embedded Cyber Resilience

Northrop Grumman recognizes military operations are being challenged by our adversaries using cyber. Our demonstration incorporates a suite of capabilities to detect the adversary inside the end points of the FSO environment, options to protect and restore, and ability to return to a trusted state to continue FSO operations. We apply resiliency to the FSO mission thread to identify critical elements within the SOA framework, applications, and data, as well as a multifunction device used to provide access and delivery of cyber capabilities.

Kinetic/Non-Kinetic/Cyber COA Integration

Strategic and operational command and control fuses DoD cyberspace ops and plans, coordinates, integrates, synchronizes, and conducts activi-
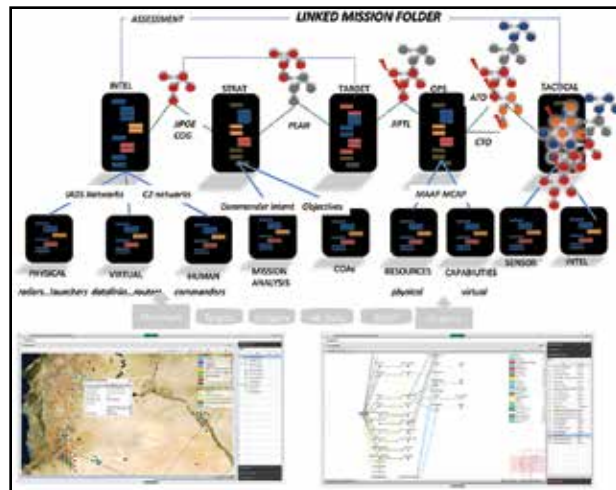
Full-spectrum, RDF-enabled Mission Data with Semantic Graph Visualization/Analysis

ties to lead cyber operation execution. COA Integration addresses the complexity of battle management with fully correlated analysis and planning at strategic, operational, and tactical levels, providing full spectrum intel of targets, dynamic in-theatre updates, synchronization of the COA and JIPTL, and JFC-aware agile targeting and re-planning. Our semantically linked knowledge store approach delivers decision makers mission critical information to translate the strategy and plans for multiple cyber target systems integrated with K/NK tactics. Our solution defines full-spectrum cyber operations machine readable workflows to translate strategic and operational objectives into cyber COAs that apply cyber effects based on commander intent.

Cyber Operations Planning and Assessment

Our cyber operations Planning service consists of modular, Ozone Widget (OWF) compliant applications to automatically ingest, parse, and decompose the Cyber Tasking Order (CTO) while at same time enabling optimization of available resources (personnel, platforms, and weapons). Our orchestration wizard enables evolution to support 100's of operators conducting many vs

Attack Sequencer
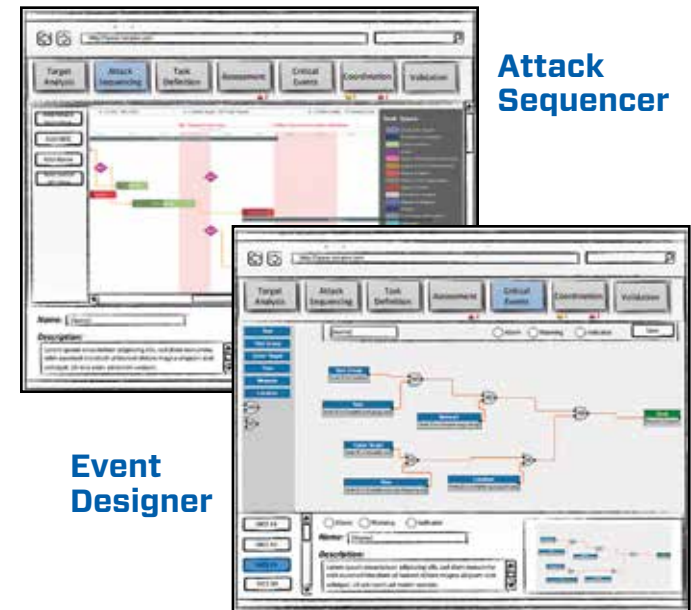
Event Designer

Suite of Ozone Widget Framework (OWF) Apps

many cyber enemy threat engagements, while supporting synchronization with other missions. Our cyber execution Assessment service applications ingest data sources (structured and unstructured; prescriptive and ad hoc) to assess cyber execution performance against the defined MOEs and MOPs. The Assessment enables the operators to determine effectiveness of their cyber operations, and adjust as required linking back to Planning, Generation or Execution applications.

For more information, please contact:

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