CACI SMART Is Modernizing the Kill Chain

Introduction:

Cognitive deep sensing, enhanced by advanced data analytics and connected by resilient communications networks, will enable the U.S. Department of Defense (DoD) Joint All Domain Command and Control (JADC2) vision of decision dominance across all domains.

CACI's **SMART** (Sense, Make Sense, Act, and Resilient Technologies) portfolio combines decades of mission-focused expertise and leading-edge technology to **modernize the kill chain** in three critical categories to enable JADC2: Joint Network Modernization & Integration, Mission Management Applications & Solutions, and Modular & Integrated Mission Payloads.

Joint Network Modernization & Integration

CACI's expertise in this area answers the JADC2 goal of providing assured network connectivity from enterprise to edge for the Joint force to rapidly share critical information across secure, "always on" *resilient communications* networks to fight through a contested environment. Multi-path, multi-orbit space, aerial, and terrestrial network connectivity, with smart routing and self-healing solutions, provide the Joint force spectrum advantage, cyber resilience, and multiple options for warfighters to link any sensor to the best effector and the right C2 node.

Mission Management Applications & Solutions

CACI's innovative technologies answer the JADC2 goal of securely accessing, storing, curating, and connecting required data to custom applications that reduce the cognitive load in the decision cycle. Well-trained, trusted artificial intelligence/machine learning (AI/ML) algorithms and deep learning methodologies convert lakes of data into human understanding. By leveraging cloud computing and optimized edge computing with smart applications, warfighters have access to the data they need with simplified applications – accelerating the speed of decision-making.

Modular & Integrated Mission Payloads

CACI's Modular & Integrated Mission Payloads answer the JADC2 goal of enabling a hyper-connected grid of interoperable sensors and convergence of all-domain effects. CACI provides

integrated payloads to enable deep sensing from multi-purpose space, aerial, and terrestrial platforms for intelligence, surveillance, and reconnaissance (ISR), electronic warfare (EW), counter unmanned aircraft systems (C-UAS), and cyber effects. The sensors extend the reach and accuracy of human understanding and create kill chain options for maximum kinetic and non-kinetic effects.

INDOPACOM Mission Thread

An all-domain mission thread illustrates how CACI's **SMART** portfolio modernizes the kill chain. Intelligence reports indicate possible adversary activity in the second island chain nearest Australia. Coalition forces need to conduct reconnaissance to identify the threat and determine a course of action.

Sense: Analysts using CACI's Dark Blue open source/deep/dark web tool suite identify activities that suggest an emerging island campaign by a near-peer adversary to disrupt U.S. operations. An Australian Defense Forces (ADF) modern unmanned aerial vehicle (UAV) equipped with a CACI micro-gimbal electro-optical/infrared (EO/IR) sensor conducts a reconnaissance flight and obtains a visual confirmation on adversary forces that the onboard AI/ML determines to be a small near-peer adversary element preparing defensive positions. Imagery from the UAV is sent via the Mission Partner Environment (MPE) into the INDOPACOM Joint Intelligence Operations Center element supporting the region.

Make Sense: CACI analysts supporting the J2 Targets Division, INDOPACOM JIOC use the CACI-developed Harbinger intel-support-to-targeting capability to determine target packages for the near-peer adversary element. Harbinger migrates the highly manual target system/threat system analysis process to a set of DevSecOps-produced applications and internal data model for target development, significantly streamlining the sensor-to-shooter timeline. The analysts recommend a primary course of action to disrupt the near-peer adversary's communications and cut them off from higher level support until coalition forces can conduct an assault mission.

Act: CACI analysts use Harbinger to task EW assets for a two-pronged, non-kinetic effects mission. The CACI Kraken system on a nearby Navy Special Warfare Combatant Craft (SWCC) and a CACI Pit Viper payload on an Air Launched Effects UAV work in tandem to deliver exquisite cyber and radio frequency (RF) denial attacks that disable the near-peer adversary's C2 nodes. When the amphibious assault force lands on the island, Marines tactically emplace CACI's Magpie RF signature decoy systems to obfuscate their movements as they close in on the adversary's positions.

Resilient Technology: Underpinning this entire kill chain is a collection of resilient technologies that link every node and system in the kill chain. The ADF UAV is integrated into the MPE by CACI's Archon Commercial Solutions for Classified (CSfC) edge solution. Stealthy communications such as CACI's photonic optical inter-satellite links (OISLs) on Space Defense Agency's LEO constellations and CACI's ShadowBeam millimeter wave IETF 5G automatic beam-forming nodes move massive amounts of data to enable decision dominance and conduct C2.

Summary

CACI is the partner of choice to enable JADC2 for INDOPACOM. The **SMART** portfolio combines Joint Network Modernization & Integration, Mission Management Applications &

Solutions, and Modular & Integrated Mission Payloads to modernize the kill chain to enable JADC2 from data to dominance.

CACI is a premier provider of expertise and technology serving the DoD's JADC2 vision by tailoring research and development, investments, and acquisitions to meet the needs of our nation's most critical national security missions. CACI's comprehensive **SMART** portfolio of proven technologies and expertise enables our customers to achieve critical common operational goals with their partner of choice.