



INTEGRATED CONTROL ACTUATION SYSTEM (iCAS)

GUN HARDENED | MINIATURIZED | HIGH AUTHORITY | MULTI-MISSION

MUNITIONS **PRECISION GUIDANCE SYSTEMS**

McCormick Stevenson's Integrated Control Actuation System, iCAS, is a next generation precision guidance system engineered to survive extreme launch environments while delivering fast, agile, high-accuracy control. Built on an advanced, integrated architecture, it combines a Guidance Electronics Unit (GEU) and Control Actuation System (CAS) into a compact, rugged Guidance Navigation and Control (GNC) package suitable for multiple mission profiles.

Originally designed for the Defense Advanced Research Projects Agency, DARPA's medium caliber guided munition initiatives, iCAS is now adaptable to a wide range of defense, aerospace, unmanned, and commercial applications requiring miniature, high performance guidance, and control.



Why iCAS?

- Proven under DARPA sponsorship
- Demonstrated to 35kG+
- Designed for mass production & straightforward technology evolution
- Scalable, adaptable, and ready for integration into multiple mission sets

McCORMICK™ STEVENSON
A PALIGEN TECHNOLOGIES COMPANY

iCAS
Munitions
Precision Guidance System

Integrated Control Actuation System (iCAS)

KEY CAPABILITIES

» **Gun Launch Survivable:** Demonstrated to 35kG+

» **Integrated Guidance Navigation & Control (GNC):** Guidance computing, inertial sensing, actuation & SDR in one package

» **High Control Authority:** 4 independently controlled canards for rapid maneuvering

» **Software Defined Radio (SDR):** Two-way Dual-channel command guidance or telemetry

» **Open Architecture Framework:** Reconfigurable for alternate missions & payloads

» **Extreme Miniaturization Size Weight & Power (SWaP):**
- Diameter reduced 4:1
- Weight reduced 20:1

» **Mission Configurable Processing:** Hardware architecture supports user defined algorithms

» **Scalable Design:** Demonstrated in 40mm; adaptable to other calibers and platforms

TECHNICAL ADVANTAGES

» **Guidance Processor (GP):** High-capacity onboard computing for user defined GNC algorithms

» **Inertial Sensor Assembly (ISA):** Continuous linear acceleration, angular rate, and magnetic field sensing

» **Control Actuation System (CAS):** Electro-mechanical 4 independent controlled canard actuation produces aerodynamic forces for agile maneuvering

» **Dual-Channel SDR Transceiver:** Two-way RF communications for command guidance and telemetry

» **Physical Properties:**
- Length: 4.17 in
- Diameter: 1.57 in
- Weight: 1.07 lb.
- Power: 15.5 ± 2.5 VDC (3A avg, 17A surge)

ABOUT MCCORMICK STEVENSON

McCormick Stevenson delivers engineering excellence in weapon systems design, Hi-G survivability, precision guidance solutions, and advanced actuation technologies. With decades of performance supporting the DoW and tier one defense contractors, MCCST combines innovation with disciplined engineering rigor.

PRECISION GUIDANCE APPLICATIONS

Based on its capabilities, iCAS is commercially viable for at least eight major application areas:

Defense / Military

» *Medium Caliber Guided Munitions:* High hit probability with deep magazine capacity for naval, ground, and airborne defensive systems

» *Gun Launched Intercept Systems:* Supports next-generation precision, multi-mission interceptor layer and other rapid fire threat engagement systems

» *Close-In Defense Against Fast, Agile Targets:* Guided projectiles for countering drones, rockets, swarms, and maneuvering air threats

» *Smart Payload Delivery:* Gun or tube launched payloads requiring controlled flight for precision placement

Aerospace

» *Micro Satellites / LEO Craft:* Miniaturized inertial sensing, processing, and SDR capabilities ideal for small spacecraft control systems

» *Hi-G Ruggedized Electronics:* GEU subsystem applicable to any aerospace platform needing shock hardened electronics

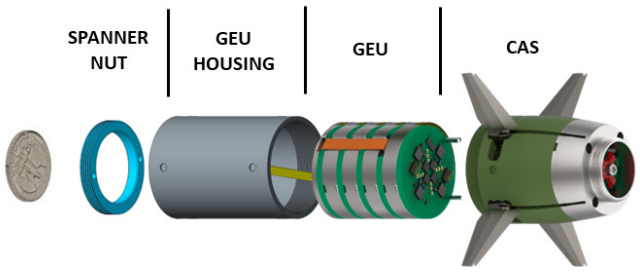
Unmanned Systems

» *Micro and Small UAVs:* Guidance electronics enabling enhanced maneuverability, extended mission duration, and reduced size

» *Autonomous Robotics:* SWaP-optimized sensing and control for rugged ground or airborne robotic platforms

Commercial / Industrial

» *Miniature Precision Control Systems:* Any application requiring small, rugged, high-speed sensing and actuation (survey tools, inspection drones, industrial robotics)



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