



# READY TO USE Inertial Platform Stabilization Solution



Elmo offers a completely ready-to-use motion control solution for inertial platform stabilization, whether on ground, in air, or by sea. The solution consists of Elmo's Standard "Off the Shelf" motion control products. Starting from controller level gyro signal input, to high precision, high dynamics, high bandwidth servo, and the ability to control any number of motion axis, the Elmo solution is a light and robust motion solution ready to stabilize any platform whatever the environment.

Elmo's advanced multi-axis control capabilities, in conjunction with intelligent servo drive technology, guarantee ultimate stabilization performance, saving platform manufacturers development of dedicated hardware or software. With advanced control features such as SIL (Software In the Loop) customers can use their own control algorithms, streamline the design process and protect any of their sensitive IP.

**A compact, light-weight solution with high bandwidth and efficient networking making it ideal for extreme inertial platform stabilization.**



Airborne  
Camera Inertial  
Stabilization



Naval Radar  
Motion  
Solutions



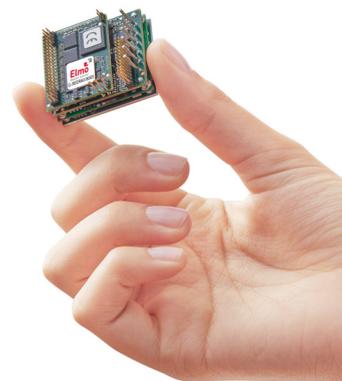
Aerial Satellite  
Tracking  
Systems

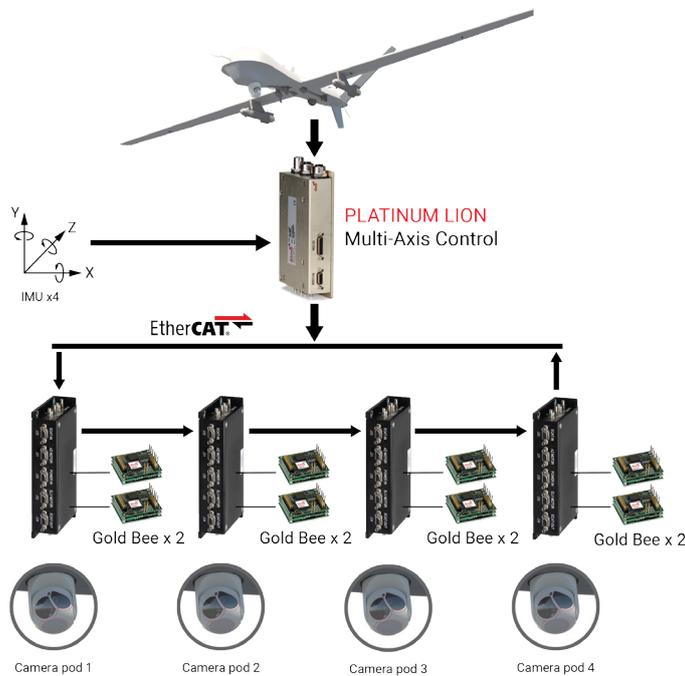


Azimuth/  
Elevations  
Systems



Aerial Satellite  
Tracking  
Systems





An example of a 4 camera pod system on a UAV, mastered by 1 P-Lion motion controller



### Platinum Lion (P-Lion) Multi-axis Motion Controller:

The miniature, light-weight controller is designed for extreme performance in harsh environments with enhanced connectivity and a flexible development environment. Its digital and analog inputs and outputs enable fast, responsive controller-level interfacing with accelerometers, encoders, serial devices, IMUs and gyroscopes. Using EtherCAT, the multi-axis controller achieves cycle times of less than 250  $\mu$ s and high-precision synchronization with a jitter of less than 5  $\mu$ s for up to four inertial stabilized platforms.



### Gold Servo Drives:

Elmo's line of powerful, high-performance, compact servo drives offers extensive power (10 W-65K W), voltage (10 V-900 V), and current (1 A-650 A) options and can process feedback in any format to ensure fast and accurate adjustments and precise synchronization. The drives comply with Safety, EMC and Environmental standards and are certified for Safe Torque Off (IEC61800-5-2, STO), Safety Integrity Level 3 (SIL 3) and Performance Level e (PLe).



### Software-in-the-loop (SIL) Control Capability:

Elmo provides a "black box" environment where users can upload their own kinematics and control design and simulation code and execute it in real-time. The customer-specific design is processed in the P-Lion and transported via the deterministic EtherCAT network to the servo drives every 100-250  $\mu$ s, initiating synchronized, corrective actions for the motors.



### Elmo Application Studio II (EASII) Software Tool:

Included in the hardware purchase, the industry-leading software tool helps users quickly create and implement motion and effortlessly manage the servo drives and motion controllers. The flexible, user-friendly interface and native IEC 61131-3, PLCopen programming tool that supports all five IEC languages enable users to easily orchestrate the entire development process in their preferred language and quickly optimize performance of the system. EASII produces accurate mechanical plant transfer functions; 1-D, 2-D and 3-D error mapping and corrections; drive feedback emulation; corrective servo tuning and more.

## About Elmo Motion Control

Elmo Motion Control (Elmo) designs, produces and implements comprehensive, field-proven motion control solutions that make clients' data-driven, smart machines smarter. The company's R&D department combines intelligent motion control technologies, real-time programming and control algorithms with advanced digital hardware to enable leaner, more flexible machines. Controlled by the Elmo application studio (EAS) - a software environment that cuts integration time and maintenance costs - Elmo's servo drives and multi-axis motion controllers minimize a machine's footprint and cabling, improve throughput, and give original equipment manufacturers (OEMs) a competitive edge. Founded in 1988, the company is headquartered in Israel, employs more than 350 staff worldwide, and has a dedicated presence in the United States, China, Germany, Italy, Korea, Poland and the United Kingdom.



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