



The heritage of the L-3 Space & Navigation (L-3 S&N) division lies with The Bendix Corporation (1924) and the Bendix Aviation Corporation (1929), founded by Vincent Bendix with the acquisition of a number of companies. Two of these companies, the Eclipse Machine Company (1902) and the Pioneer Instrument Company (1919), are the foundation of the present Space & Navigation Division.

In May 2003, the division was relocated from Teterboro, New Jersey (headquarters since 1939) to its current facility in Budd Lake, New Jersey. L-3 S&N has manufactured millions of aircraft indicators, control devices, gyroscopes, and other navigation systems as well as precision guidance systems for missiles and space applications. Customers include the main airframe corporations in the U.S., military (Air Force, Army and Navy), NASA, and various other Aerospace Corporations.

L-3 S&N has been a significant force since the early days of the U.S. manned space program and is also a key supplier of precision pointing and land navigation systems, fire control and digital battlefield solutions, and integrated fire control systems for the global market.



MISSION-CRITICAL
PRECISION

CORPORATE CHRONOLOGY

L-3 S&N has a proven heritage in the design, integration, qualification and production of space- and land-based, precision inertial guidance and navigation systems.



1929



1938



1966



1983



1985



1999

L-3 Space & Navigation

450 Clark Drive
Budd Lake, NJ 07828
Tel: 973.446.4000
Fax: 973.446.4268
email: BusinessDevelopment.SPNV@l-3com.com
www.L-3com.com/SpaceNav

L-3 Space & Navigation Division's Quality Management System has been certified to conform to Quality Standard ISO 9001 and to Aerospace Quality Standard AS-9000

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PRECISION POINTING SYSTEMS | LAND NAVIGATION SYSTEMS
FIRE CONTROL SYSTEMS | DIGITAL BATTLEFIELD SOLUTIONS | INTEGRATED FIRE CONTROL SYSTEMS



L-3 Space & Navigation (L-3 S&N) is a premier provider of navigation and guidance systems to the global marketplace and is a major supplier of high-quality targeting, pointing, guidance, navigation, control and positioning equipment to the land, sea, air and space markets. Our products include fiber optic and ring laser gyros, position navigation units, fire control solutions, inertial survey systems, reaction wheel assemblies and star trackers/sensors. With over 80 years of heritage design experience in inertial and space-based applications, L-3 S&N is the only choice for applications where FAILURE IS NOT AN OPTION.

CORE CAPABILITIES/ TECHNOLOGY

- Inertial Navigation Systems (INS) for land, sea, air and space applications
- Inertial Measurement Units (IMU)
- Inertial Reference Units (IRU)
- Inertial / GPS-denied navigation solutions
- GPS Navigation — SAASM and M-code capable
- Ring Laser Gyros (RLG)
- Fiber Optic Gyros (FOG)
- Fire control solutions
- Inertial flight controls
- Man-rated space applications
- Star trackers/sensors
- Control Moment Gyroscopes (CMG)
- Reaction wheels / momentum wheels
- Design engineering, development, test & qualification and manufacturing capability
- Environmental stress screening
- Precision assembly capabilities, including complete clean room
- Circuit Card Assembly (CCA) and test

COMMON PRECISION FIRES CAPABILITY

Dynamic Reference Unit — Hybrid Replacement (DRU-H-R)

The DRU-H-R is an advanced precision delivery system that provides accurate position, gun azimuth, and elevation data to the weapon system. The DRU-H-R uses high-accuracy, combat-proven inertial sensors currently fielded by the U.S. Army on various weapons and radar platforms. Selected and the precision navigation system and targeting solution for the U.S. Army's Paladin (M109) and Paladin Integrated Management (PIM), the DRU-H-R is nuclear compliant, integrates SAASM (Selective Availability Anti-Spoofing Module) and M-code capabilities, and provides mission-critical precision when and where you need it!



PRECISION POINTING & LOCATING

Position Navigation Unit (PNU)

This family of products is currently fielded on the MLRS M270 (Multiple Launch Rocket System), HIMARS M245 (High-Mobility Artillery Rocket System), IPADS/IPADS-G (M111), Firefinder radar sets (TPQ-36/37) and many other weapons and radar platforms. Our PNU truly points the way for the future direction of inertial navigation, targeting and guidance. Utilizing precision sensors, advanced electronics and software, integrated SAASM and aiding (GPS and odometer), the PNU delivers precisely what today's international armies demand — a system designed to remain operationally effective, cost-effective and sustainable well into the future.

MAN-RATED SPACE AVIONICS

We provide high-performance Integrated Electronics Assemblies (IEA) for Solid Rocket Boosters (SRB). Our IEAs are essential avionics components on the SRB of the Space Transportation System (STS). Four IEAs, one forward IEA and one aft IEA in each SRB, are used during each shuttle flight. Our IEAs control SRB motor and ignition systems, booster separation, hydraulics, thrust vector, rate gyro assemblies, ranger safety systems and the SRB recovery system. Our IEAs have successfully performed on all Space Shuttle missions since 1981!

HIGH-PRECISION ARTILLERY & FIRE CONTROL SURVEY SYSTEMS

Improved Position & Azimuth Determining Systems (IPADS)

Our IPADS and IPADS-G (with embedded GPS) is the premier, self-contained inertial survey system developed to meet today's demanding battlefield survey needs. Proven in combat with the U.S. Army and Marine Corps for over a decade, and fielded around the world by international armies, the L-3 IPADS survey system provides survey operations functionality, navigational accuracy, transportability and survivability — all in an affordable package! IPADS provides significant enhancements to artillery and fire-control survey teams in the battle space through a proven, reliable, lightweight, off-the-shelf solution that is vehicle agnostic. The next-generation survey system includes the addition of GPS M-code capability, an even smaller package size, a handheld computer tablet and the capability to interface with onboard vehicle/aircraft display systems.



THE POWER TO MOVE THE SPACE WORLD

Attitude Control Systems

We are a premier supplier of momentum wheels, reaction wheels, and Control Moment Gyros (CMGs). Our products provide non-propulsion, electrically-powered attitude control to maintain many manned and unmanned platforms in the desired attitude and orbit.



Our products act to cancel or absorb, momentum generated by disturbance torques acting on space vehicles, providing the key stabilization function critical to mission success. Our CMGs have been flawlessly performing on the International Space Station (ISS) since its inception and have been positioned on multiple space-based platforms for over 30 years!

THE LEADER IN RATE GYRO ASSEMBLIES

As a premier supplier of precision-rate and rate-integrating gyroscopes, L-3 produces the highest performance-grade gyros available. Our gyros are the sensor of choice for the most demanding, low-noise space applications. Our systems are currently performing as the primary pointing reference on leading edge platforms such as the Hubble Space Telescope, attitude control sensor for the International Ultraviolet Explorer, and on the High-Energy Astronomy Observer.



PRECISION POINTING IN SPACE

Reaction Wheel Assemblies (RWA)

Our RWAs have been positioning spacecraft for over 30 years to pinpoint precision in areas of exploration! With more than nine million hours in space, our reaction wheel assemblies have an outstanding design heritage based on hundreds of space qualified units launched to date. Many of these units remain in orbit today, with the longest unit operating for more than seven years. Designed for long life in the extreme environmental conditions of space without degraded performance, our RWAs have exceptionally low-torque ripple over full speed and provide demonstrated high torque and high performance/accuracy with integrated electronics. Our RWA series has performed brilliantly on platforms such as IKONOS, LEO, QuickBird, SWIFT, QSCAT and the International Space Station.

GUIDANCE & NAVIGATION CONTROL FOR LAUNCH VEHICLES

Rate Gyro Electronics Assemblies (RGEA) and Redundant Inertial Flight Control Assemblies (RIFCA)

Our RGEA guides and controls the Delta's boosters, while our RIFCA guides Delta into proper space orbit. With missions lasting several hours in length, L-3's high-performance RGEAs and inertial flight controls routinely achieve guidance accuracy of at least three times better than mission requirements. Delta has delivered some of the world's most prominent payloads including the Mar's Rover Spirit and Opportunity, and the Phoenix Mars Lander. For failure-free performance, reliable operation and long-life expectations under the most extreme conditions, look to L-3 Space & Navigation as your partner.

