

...pioneering satellite control

San Diego Office – Headquarters

9020 Balboa Avenue
San Diego, CA 92123
USA
+1 800.351.8483

Denver Office

3033 S. Parker Rd., Suite 1200
Aurora, CO 80114
USA
+1 303.369.4410

E-mail:

sales.tw@L-3Com.com

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InControl is the most powerful and flexible command and control software solution available on the market today.

Real-World Operations Concept

InControl was designed to support real-world systems by engineers with extensive operational experience. To simplify operations, InControl allows a single user to control a variety of spacecraft and ground equipment from a single control point. InControl also ensures a more efficient control room by bringing the work to the user rather than requiring the user to move between computers as operational focus changes.

In addition to a **user-centric** approach, InControl is highly graphical and customizable by the end user. It is easily adapted to specific mission goals and operations concepts, while minimizing hardware, software, and operations personnel requirements.

InControl **standardizes the control room and simplifies operations**. With a solution using InControl, operations no longer require multiple instances of TT&C software from different vendors — with the associated hardware, specialized staff, and system administration support issues historically required to support multiple spacecraft. Instead, any authorized user can **control any fleet entity** from any of the local or remote control points.

The Automation Advantage

For more than a decade, L-3 Telemetry & RF Products (T&RF) has led the industry in control system automation. Today, more and more satellite operators recognize that automation is a path to **increase operational efficiency, reduce operations costs**, and ensure overall satellite safety. InControl provides complete control over the level of implemented automation — from performing nominal system activities to complete “lights-out” operations.

InControl gives the operator the flexibility to select and increase the degree to which system activities are automated, including:

- **Station keeping**
- **Ground monitor and control**
- **Maneuver execution**
- **Ranging**
- **Eclipse and blinding operations**
- **ACS ephemeris application management and more...**

Delivering powerful capabilities, InControl reduces the overall effort required to handle routine operations, **minimizes the possibility of human error**, and improves the response time required to resolve anomalies.

Unprecedented Fleet Capability

Whether through consolidation or business growth, operators today are responsible for larger fleets of spacecraft comprised of a variety of spacecraft models from different manufacturers. As the complexity of the fleet increases, operators require a **flexible command and control solution** that allows them to do “more with less.” InControl was architected to monitor and control activities from a single control point and provide a consistent set of system-wide displays, supporting:

- **Single spacecraft operations**
- **Ground hardware**
- **Status “at a glance” for the entire system**
- **Heterogeneous spacecraft fleets**
- **Payload control**
- **Scalability for fleet expansion**

InControl was architected to make it **easy to add new spacecraft** to an existing system without requiring large development efforts or changes to the operations concept. Standardizing on a system that supports fleet management also reduces the amount of hardware, software, and operators required for daily operations and fleet expansion.

Designed for Change

InControl is more than just a software product — it is a **comprehensive system architecture** that allows requirements and capabilities to evolve without impacting the fundamental design. This flexibility includes the ability to add fleet entities, change operations concepts, and integrate third-party hardware and software — all without requiring additional software, hardware, personnel, or L-3 TW development support.

Well-defined APIs allow the end user to add new ground equipment and to incorporate in-house software tools, as well as third-party products, with minimal effort.

InControl provides **platform independence**, which removes concerns over hardware obsolescence and takes advantage of hardware improvements without affecting the software. Utilizing **cutting-edge technologies** (e.g., Java™ and CORBA®) guarantees product flexibility for years to come.

As business plans and operations concepts evolve, InControl provides an industry-unique ability to quickly add new ground equipment, spacecraft, and remote locations without increasing personnel.

Minimizing the Total Cost of Ownership

Many companies make procurement decisions based primarily on the initial system acquisition price. L-3 T&RF solutions focus on the entire system life cycle, which includes acquisition, operations, and continued maintenance/evolution. Consumers who fail to consider the total cost of ownership often end up with higher risk and higher cost solutions. L-3 T&RF utilizes field-tested COTS and open source products to reduce custom development, schedule, and cost. Using a **highly scalable, platform-independent architecture**, InControl is designed specifically to minimize life cycle costs — offering a total value solution that is unmatched in the industry.



- **Minimized development effort**
- **Reduced hardware cost**
- **Accelerated delivery**
- **Auto-install for easy activation**
- **ISO-certified development process**
- **User-centric design**
- **Common system-wide GUI**
- **Workforce optimization**
- **Reduced control room footprint**
- **Simplified system administration**
- **Ability to easily add new assets**
- **Support for changing operations concepts**
- **Flexibility to incorporate emerging technologies**
- **Scalable system minimizes hardware/software additions**

InControl provides operators with more flexibility to optimize their workforce. Automation improves operational efficiency — saving money and **maximizing spacecraft safety**. InControl's auto-install feature, common system-wide user interface, and flexible operations concept minimizes hardware, software, operations staff, training, and system administration costs. As new technologies and business conditions emerge, InControl makes it possible to add satellites, upgrade hardware, and expand software functions. InControl is the **low-cost, low-risk** solution to help meet your business plan today... and as it changes in the future.