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## Upcoming Tradeshow

### SATELLITE 2009

**When:** 24-27 March  
**Where:** Washington, DC

### NAT'L SPACE SYMPOSIUM

**When:** 30 March -3 April  
**Where:** Colorado Springs, CO

### FIESTA CROW

**When:** 20-23 April  
**Where:** San Antonio, TX

### AEROSPACE TEST EXPO-EUROPE

**When:** 21-23 April  
**Where:** Munich, Germany

### RESPONSIVE SPACE CONF.

**When:** 27-30 April  
**Where:** Los Angeles, CA

### FOCUS - MARCH 2009

Published for customers of L-3 Telemetry & RF Products.

Send feedback to:  
[Focus.TW@L-3Com.com](mailto:Focus.TW@L-3Com.com)

## L-3 ADVANCED TECHNOLOGY & SYSTEMS JOINS L-3 TELEMETRY & RF PRODUCTS GROUP

In October 2008, L-3 Advanced Technology & Systems (L-3 AT&S) joined the L-3 Telemetry & RF Products Group. With expertise in signal processing, antenna, receiver development and IR&D in specialized antennas and signal processing algorithms, they are a welcomed addition to an already strong L-3 specialized products group.

L-3 AT&S established in 1978 as Advent Systems, Inc. is located in its original location in Mountain View, CA. In 2003 Advent became a part of the Titan Corporation which became a part of L-3 Communications in 2005.

L-3 AT&S has two other locations in Aurora, CO and Sarasota, FL. They are a provider of SIGINT Systems Engineering, Specific Emitter Identification, Novel Geolocation Techniques, RF Polarimeter Processing, Technical Studies and Analyses, Software Development, and Rapid Prototyping.

Burt Smith, President of L-3 Telemetry & RF Products Group says, "The addition of AT&S' technology capability to an already strong product capability is a combination with tremendous growth potential, while expanding our portfolio of offering for programs of national importance."



### SERVICES

- Systems Engineering
- Systems Integration
- Mission Management
- Payload Engineering
- Spacecraft Engineering
- SIGNIT Analysis and Processing

### TECHNOLOGY

- CMOP Specific Emitter Identification
- TDOA/FDOA/AOA Emitter Geolocation
- RF Polarization Measurement
- Signal Processing Algorithms
- Wideband RF Receivers
- Wideband RF Antennas
- Millimeter Wave Antennas

*Excellence You Can Measure*

## Space Solutions



### NEW PRODUCT – SPACE COMMON DATALINK

The **Space Common Datalink (CDL)** from L-3 provides lightweight, wide-band data link capability adaptable to a variety of space based applications. It consists of separate Transmitter and Receiver modules that can be matched with a variety of antenna and power amplifier options based on mission requirements.



### KEY FEATURES

- RAD Hard
- IP-Enabled
- Interoperable with Extensive
- Full Duplex or Simplex Available
- Embedded Type 1 Encryption
- Compatible with typical LED satellite

### PRODUCT UPDATE—INCONTROL™

InControl™ continues to add contracts in the Satellite Integration and Test market in addition to its already thriving Satellite Operations business.

L-3 TW has recently signed 4 contracts with new customers to provide InControl™ as the satellite Factory Test executive in their facilities. InControl™ will be used as the command and telemetry processing platform for all phases of factory integration and test on these 4 programs. Factory test customers are especially impressed with the InControl™ scripting language and Report Generation capabilities.

InControl™ continues to make the philosophy of “test as you fly, fly as you test” a reality in the satellite command and control marketplace.

# InControl™

TRADESHOWS DISPLAYING OUR PRODUCTS

**SATELLITE 2009**

Walter E. Washington Convention Center

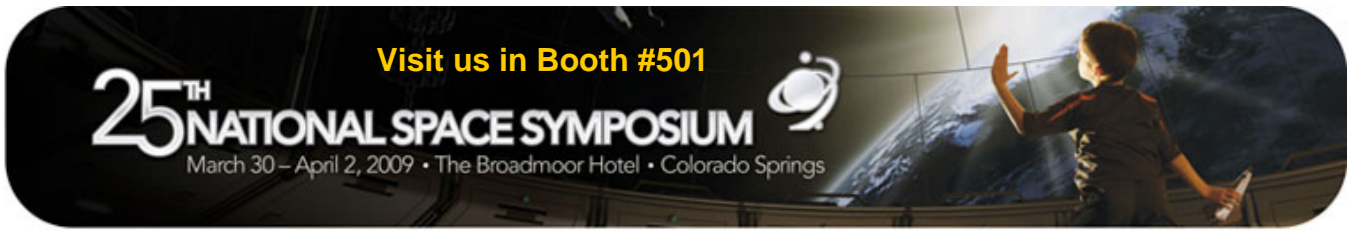
Visit us in Booth #401

CONFERENCE March 24-27  
EXHIBITION March 25-27

Visit us in Booth #501

**25<sup>TH</sup> NATIONAL SPACE SYMPOSIUM**

March 30 – April 2, 2009 • The Broadmoor Hotel • Colorado Springs



April 27-30, 2009

**Responsive Space<sup>®</sup>**

LAX Westin Hotel  
Los Angeles, CA



ON THE GROUND OR IN SPACE,  
WE ARE IN CONTROL OF YOUR MISSION.

**InControl** Command & Control Software for Factory and On-Orbit

Onboard Hi-Rel Hardware

Our success started with the Apollo program in 1966...  
and continues today.

L-3's InControl™ — the software designed from the ground up to manage satellite constellations with one control center is now better than ever. We have a long history of designing and manufacturing TT&C satellite transponders and receivers that are SCLS/STDN/USB-compatible, with optional embedded encryption, a wide variety of standalone COMSEC products and telemetry ground system components. To see how L-3 Telemetry & RF Products can make your mission successful, call us at 800.351.8483 or visit [L-3com.com/telemetry](http://L-3com.com/telemetry).

SPECIALIZED PRODUCTS > C<sup>3</sup>ISR > GOVERNMENT SERVICES > AM&M  
Telemetry & RF Products Words and photos courtesy of NASA.

L-3com.com



## Airborne Telemetry Solutions



### L-3 TELEMETRY-EAST PARTICIPATES AT THE US AIR FORCE INDUSTRY DAY

**28 January 2009** – L-3 Telemetry-East (L-3 TE) presented capabilities and their specific recommended concepts at the US Air Force’s (USAF) SFSS (Sub Miniature Flight Safety System) Industry Day. The event was hosted by the 308th Systems Wing/46th Test Wing located at Eglin AFB in Florida. The US Air Force SFSS Program goal is to develop a common, cost-effective, subminiature, non-intrusive flight test package that meets Range and Test Facility Base and Range Commander’s Council safety requirements.

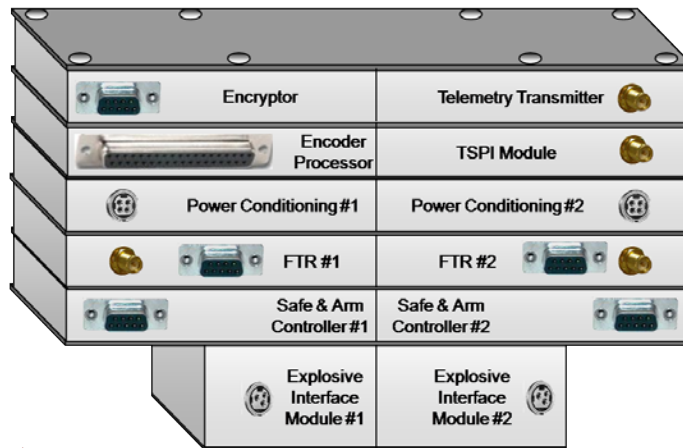
L-3 led a cross functional team made up of multiple L-3 divisions and other participating companies, each with a specific technology expertise aimed at accomplishing, if not exceeding, the system-level requirements of the SFSS Program. Specific technology applications were presented that met the direction and modular requirements of the SFSS system, including a number of technologies where advanced development work by the L-3 team had already exhibited prototype capabilities in an operational environment.

L-3 divisions, L-3 TE and L-3 Cincinnati Electronics, are currently under technology risk mitigation contracts to further mature and miniaturize product offerings that should significantly advance the SFSS “vision.”

Todd Warton, Director of Business Development for L-3 TE and team leader, was pleased with the team’s efforts.

“The team assembled by L-3 is unmatched in the industry for providing a suitable and miniaturized Flight Safety system for the USAF. We have already identified areas of improvement where additional features and improved performance characteristics can be added. Many L-3 team members have spent years developing suitable technologies that are well positioned for exactly this type of application and opportunity.”

Previously, several different “notional” sizes and form factors have been conceptualized by the USAF, but the Government continues to be open to flexible packaging recommendations for other ideal form factors to best meet weapon volume requirements.



Total volume 10.52 in<sup>3</sup>

US Air Force SFSS Concept



MALD ADM-160 Flight Vehicle

Image from Northrop Grumman

### PRODUCT UPDATE—AIRBORNE DATA ACQUISITION SYSTEM (AirDAS™ ) TAKES OFF

Responding to significant customer interest, L-3 TE unveiled its new AirDAS™ data acquisition system (DAS) at the International Telemetry Conference (ITC) in October 2008. AirDAS™ has been under development since early 2007, and is an upgraded successor to the acclaimed PCU-800 (Aydin) and MicroDAS (Microcom) product lines.

“AirDAS was designed to address both traditional PCM and future networked data requirements, including the upcoming iNET standards,” stated Chris Dehmelt, Lead Engineer on the AirDAS development project. “AirDAS includes two separate internal data buses, a TE Bus for traditional PCM data, and a high-speed packet bus for packetized Internet Protocol data.”

AirDAS can also be combined with NetDAS and/or IntelliBus™ encoders, with each device type selected to address the signal types and space requirements of its installation location.

L-3 TE’s widely known VistaTEC software is the single point of control for system configuration and setup, and AirDAS seamlessly integrates with L-3 Telemetry-West’s Vista software for data management and JADE™ software for live data visualization. For more information, go to [www.L-3Com.com/TE](http://www.L-3Com.com/TE)



## Ground Telemetry Solutions

### L-3 TELEMETRY-WEST INTRODUCES NEW DATA PROCESSING SYSTEM

L-3, Telemetry-West (L-3 TW) delivers new data processing element of the Telemetry Ground Station (TGS) for an international customer. The L-3 TW TGS data processing system consists of Commercial-Off-The-Shelf (COTS) components providing a comprehensive data processing capability. Use of COTS equipment allows a high performance system to be supplied with minimum cost and lowest risk.

L-3 TW is a major supplier of telemetry processing equipment and systems to the world's flight and weapons test and training ranges and is uniquely qualified to provide the TGS data processing system. The L-3 TW data processing system is based on the 550 telemetry data processor with L-3 TW's Vista applications software, a modular product architecture allowing substitution of alternate or newer equipment components to meet specific customer requirements.

The L-3 TW TGS data processing system receives real-time or recorded telemetry data from the on-board aircraft data acquisition system and allows system users to acquire, store and display processed and/or raw data for flight test analysis. This system guarantees a high level of performance and provides a cost-effective solution for any program's flight test strategy.

For more information, contact [Sales.TW@L-3com.com](mailto:Sales.TW@L-3com.com)



L-3 TW 550 Processor



Fiber Channel RAID



Vista Control Server



FDS Server



PDPS Server

## L-3 GIVES BACK



James Yates, Mindy Collins, Lynnette Martin, Heather Kunkle & Burt Smith Present Check to Rady Children's Hospital

### L-3 TELEMETRY-WEST & SOUTHERN CALIFORNIA MICROWAVE DONATE TO RADY CHILDREN'S HOSPITAL

L-3 TW and L-3 Southern California Microwave (L-3 SCM) donated \$13,500 to Rady Children's Hospital, up from \$7,000 last year. The funds were received from the 2008 Holiday Party silent auction, and the generous donations of our employees.

L-3 is now part of the 150 contributors that make up the Rady Miracle Maker program. Rady Children's Hospital is the San Diego region's only designated pediatric trauma center and the only area hospital dedicated solely to pediatric care. Read more information about Rady Children's Hospital at [www.chsd.org](http://www.chsd.org)

### L-3 TELEMETRY-WEST & SOUTHERN CALIFORNIA MICROWAVE RAISE THOUSANDS FOR THE AMERICAN CANCER SOCIETY

L-3 TW/SCM raised \$3,110 for the American Cancer Society Daffodil Days program.

The money raised helps the American Cancer Society provide assistance to those facing cancer, save lives, and empower people to fight back against the disease.

For more information, go to [www.daffodil.acsevents.org](http://www.daffodil.acsevents.org)



The American Cancer Society

# Daffodil Days

Give Daffodils. Give Hope.™



## RECENT ACTIVITIES

### L-3 TELEMETRY-EAST/WEST TAKE INITIATIVE TO ELIMINATE FOREIGN OBJECT DEBRIS (FOD)

In 2008, L-3 Telemetry-East (L-3 TE) and L-3 Telemetry-West (L-3 TW) responded to customers demand for an increasing level of attention regarding elimination of FOD/ESD threats in their production environments. L-3 TE and TW responded by realizing developing Foreign Object Debris (FOD) Teams is essential to ensure high quality and reliable products.

Last fall, Paul Altimore of L-3 TE and Matt Strickland of L-3 TW joined the FOD Council to learn more about the Defense Industry's focus towards a strong commitment to eliminate FOD-related issues on all programs. Over 100 Council members from numerous prime and subcontractors around the country meet quarterly to share best practices and utilize a maturity metrics system for tracking progress toward a superior FOD program.

Several initiatives were set in motion to address FOD from instituting a more stringent approach to the control of FOD, aggressive employee training and awareness campaigns, to the establishment of dedicated teams of employees at each site with the goal to drive change in the area of FOD elimination.

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“Our customers have recognized our effort not only through outstanding audit scores, but by referring other L-3 divisions and companies to review our work environment as a model of excellence in FOD/ESD elimination.”

- Jim Kloberdanz, Vice President of Operations, L-3 Telemetry-West

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The L-3 TW **FOD Squad** as they have come to be known is a team of 25 volunteer members across all product lines that have been empowered to lead their teams towards continuous improvement to eliminate potential FOD sources, improve on the control of tools, and to drive a culture change on the production floor with regard to FOD.

Established in March 2008 the goal of the team was to inspire each production area to make changes to their areas in eliminating potential FOD sources. The **FOD Squad** accepted the challenge and in a few short months was able to clear all audit findings and establish a sustainable “FOD Free” environment.

Follow on audits by NASA and a Mission Assurance Policy Program Review (MAPPR) resulted in no findings with regard to FOD and very positive comments from the audit teams to the level of cleanliness and sustainability of a FOD Free environment. L-3 TW is now being recommended by our customer as a benchmark facility.

L-3 TE formed a **FOD Action Team** last fall and trained the entire L-3 TE workforce. The team is currently implementing program solutions, which includes self-auditing, process improvements and operating procedures, which are similar to Lean or 5S program structure. The L-3 TE **FOD Action Team** pictured below meets regularly to review their periodic audit findings and provide help and guidance for areas of concern.

Jim Kloberdanz, Vice President of Operations for L-3 TW says, “Much credit goes to the FOD focal point personnel who monitor and sustain this effort daily, our facilities crew who continue to upgrade the L-3 TE and TW facilities and equipment, and the leadership provided by Matt Strickland and Paul Altimore.”

He goes on to say, “Improving this aspect of our performance has been a critical step in building customer confidence in the quality and reliability of our products and services. Thanks to all who made this a huge success.”



L-3 TW FOD SQUAD



L-3 TE FOD ACTION TEAM

## 40-Year Career Marked with Pride & Heritage at L-3 Telemetry-West

Byron Frankenberger, who celebrated his 40th anniversary with the company in February, is indeed a legend at L-3 Telemetry-West (L-3 TW). Frankenberger joined CONIC at 12 years old in 1962. He started out sorting resistors & capacitors from surplus electronics CONIC bought at Naval Electronics Labs (NEL).



1983



1966

CONIC which was formed in 1962, started in National City in Frankenberger's grandfather's Radio/TV repair shop. It had five original owners who each invested \$1,000 to start the company. They started making VCOs (voltage controlled oscillators) and Frankenberger's father was chief engineer at the time.

In 1974, CONIC became LORAL CONIC, Lockheed Martin CONIC in 1996, L-3 Communications CONIC in 1997 and finally L-3 Communications Telemetry-West in 2003.

Byron served in the Army from 1968-1970 and says other than the attack on 9/11, these two events have changed him the most, especially his attitude towards life.

When he returned to San Diego in 1970, he continued working at CONIC. He spent the next 5-6 years in the Vibe Lab while also going to school at night.

He recalls his best memory was at 15 years old. "I couldn't drive yet, and a lead assembler from the clean room gave me a ride home. We stopped at a Beauty Parlor and I learned how to coif a hairdo." He says while laughing. In 1978 Frankenberger became Program Manager and has been with this group ever since. He is currently Vice President of Program Management for L-3 TW.

He says one of the biggest industry changes since he started was government reform in the 80's and 90's. The norm became more formal relationships between Government and industry. "This put up communication walls, which potentially impacted quality & delivery for some suppliers, making it more challenging to do business."

He goes on to say, "The key to success and longevity is focusing on 'process' - not over doing it - but understanding what you are doing. As a small company growing up, we didn't see the importance of it. But as we grew the business we saw the necessity - driven by some of our present leaders where I have learned a tremendous amount - especially as applied to the L-3 TW Program Management process."

Frankenberger celebrates with his two daughters, Shannon and Brittney.



1995

### WE ASKED MR. FRANKENBERGER TO REFLECT ON A VARIETY OF TOPICS...



**Byron Frankenberger**  
Vice President of Program  
Management.  
L-3 Telemetry-West

**QUESTION:** You must have many memorable moments from your 40 years in this business. Does anything particular stand out as a significant event worthy of note?

**ANSWER:** I would say when the LRCU (Lunar Rover Communications Unit) was launched. It was the first significant space product from CONIC in orbit and very exciting for the company.

**QUESTION:** What technology changes have most improved the Telemetry world in the last 40 years?

**ANSWER:** The ability to take 1,000,000 transistors and put them on 1 wafer. Also, getting away from tubes and going to solid-state.

**QUESTION:** Where do you see our industry 40 years from now?

**ANSWER:** The way we communicate with each other will be totally different. Not in 5 or 10 years, but 20-40 years down the road. We'll be communicating with light/lasers, magnetics, high-speed inductors - all this leading to the "transporter".

**QUESTION:** What's your secret? How did you stay with one company for this many years?

**ANSWER:** We became a family. As a kid I started working with the "adults" and learned from them. We did everything together. I never wanted to leave - I knew everyone - we stayed close and continue to. There's no other place I'd rather have spent my career or life experiences.



## Telemetry & RF Products

Today, L-3 Telemetry & RF Products serves commercial, military and civilian customers worldwide with a products offering that includes TT&C satellite transponders, high data rate satellite transmitters, high-power amplifiers, high-reliability receivers/transmitters, encryption/decryption units, video compression/decompression units, tactical intelligence/tactical HF/SSB microwave radios, telemetry ground system components and solutions, specialized telemetry and surveillance products, telecommunications products and specialized networks.

### L-3 Telemetry & RF Products Group is made up of the following divisions:

**ADVANCED TECHNOLOGY & SYSTEMS**

**SOUTHERN CALIFORNIA MICROWAVE**

**TELEMETRY-EAST/GLOBAL NETWORK SOLUTIONS**

**TELEMETRY-WEST**



### L-3 Advanced Technology & Systems

355 Ravendale Drive | Mountain View, CA 94043

Phone: 619-670-3414 | Website: [www.L-3Com.com/ATS](http://www.L-3Com.com/ATS)

L-3 Advanced Technology & Systems is a provider of SIGINT Systems Engineering, Specific Emitter Identification, Novel Geolocation Techniques, RF Polarimeter Processing, Technical Studies & Analyses, Software Development, and Rapid Prototyping .



### L-3 Southern California Microwave

2732 Via Orange Way, Suite E | Spring Valley, CA 91978

Phone: 619-670-3414 | Website: [www.L-3Com.com/SCM](http://www.L-3Com.com/SCM)

L-3 Southern California Microwave is a leading manufacturer of microwave transmitters, receivers, power amplifiers, repeaters and antennas for military test ranges, UAVs, RPVs, UGVs, robots and law enforcement agencies. Additionally, L-3 SCM provides standard FM PCM telemetry systems.



### L-3 Telemetry-East/Global Network Solutions

1519 Grundy's Lane | Bristol, PA 19007

Phone: 267-545-7000 | Website: [www.L-3Com.com/TE](http://www.L-3Com.com/TE) | [www.L-3Com.com/GNS](http://www.L-3Com.com/GNS)

L-3 Telemetry-East/Global Network Systems is a preeminent supplier of airborne telemetry products and systems for the aircraft and missile flight test, airborne telemetry and ground receiver markets. Additionally, L-3 TE/GNS is a worldwide supplier and integrator of quality telecommunications products and end-to-end communications solutions.



### L-3 Telemetry-West

9020 Balboa Ave | San Diego, CA 92123

Phone: 858-694-7500 | Website: [www.L-3Com.com/TW](http://www.L-3Com.com/TW)

L-3 Telemetry-West is a premier provider of tailored flight hardware and systems solutions for missile, UAV and spacecraft telemetry, tracking and control (TT&C); software & HPAs for satellite command & control; COTS telemetry ground system solutions; tactical intelligence receivers; and terrestrial HF and microwave radios.

**How do we measure up? [www.L-3Com.com/TW/VOC](http://www.L-3Com.com/TW/VOC)**