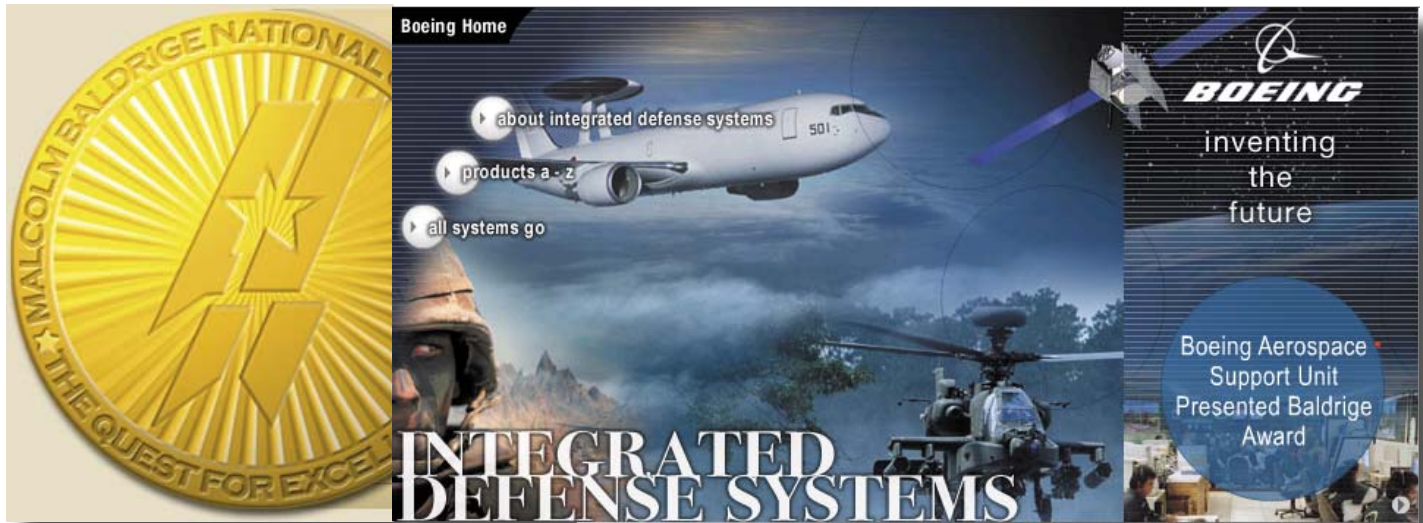


DSI congratulates Boeing on it's receipt of one of this year's Baldrige Awards



NEWS RELEASE Thursday, December 04, 2003 1:46 PM EST. Congratulations to Baldrige recipients. In 1947, a World War II veteran named Malcolm Baldrige began his career in the manufacturing industry as a foundry hand at a Connecticut iron company. By 1981, he was U.S. Secretary of Commerce and had developed a reputation as a proponent of quality management as a key to this country's prosperity and long-term strength. In 1987, Congress acknowledged Baldrige's many contributions to the United States by naming a national award to celebrate a commitment to quality excellence and continuous improvement in his honor.

The Malcolm Baldrige National Quality Award is annually presented by the President of the United States to organizations for achievements in quality and performance and to raise awareness about the importance of quality and performance excellence as a competitive edge. It is the highest recognition of quality excellence that a company can achieve.

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I am honored and pleased to offer my congratulations to our Aerospace Support team, led by David Spong, for being named as 2003 recipients of this prestigious award. This is especially significant in light of the challenges we've all faced this year, and the team should be recognized for staying focused on what's truly important - our customers' expectations and our responsibility to perform on our commitments.

We have all faced distractions this year and I am proud of the way the IDS team has responded. Through changes and challenges, the men and women of Boeing have demonstrated a commitment to excellence that is unparalleled across the industry. Your efforts have been noticed at the highest levels with the awarding of the Malcolm Baldrige Award, and I know we can build on this recognition by continuing to find better ways of doing things and working with our customers to provide them with the best solutions possible. Congratulations to the Aerospace Support team for this tremendous honor and thanks to all of you who are working every day to ensure that the Boeing name continues to be synonymous with quality and performance.

DSI International is pleased to have been part of the Boeing/Sikorsky Comanche effort on the IDS team.

Cost Savings by Using a Tool that Supports Hybrid Modeling

Hybrid Diagnostic Model® – An extension of diagnostic dependency modeling that allows the inter-relationships between tests, functions and failures to be captured within a single representation of a system, device or process.

One of the primary reasons why **eXpress** is good at supporting the entire life cycle development, and why the investment into modeling makes sense, is that **eXpress** is the only tool that takes a system level, multi-design discipline perspective to iteratively drive a design through the entire development cycle. Spreadsheets, flat models and commercial tools either force a late entry into modeling, or force the model to be rebuilt sometime during the process. The simple fact is that the investment into non-reusable modeling does not pay off.

The problem in supporting complex analyses, such as Testability, Reliability, etc. from a spreadsheet, is that spreadsheets do not handle a number of key functions required for such analyses. In contrast, **eXpress** addresses these issues:

- **eXpress** is geared toward working with multidimensional data
- **eXpress** provides support for hierarchies
- **eXpress** supports dimensional calculations
- **eXpress** offers simple ways to rearrange views
- **eXpress** separates the structure of a model from the views of that model

Spreadsheets have attempted to move in the direction to support these problems through the incorporation of pivot tables, etc. However, the fundamental limitations of the grid arrangement of data prohibits the simplicity required for analyzing the same set of data in multiple ways. The spreadsheet user is forced to reorganize the data for different analyses.

One of the most important points of the hybrid model in **eXpress** is that one often models tests differently (functionally or based on failure) depending on whether you are testing nearer the system level or nearer the component level. However, there is a much more compelling reason for a hybrid model that becomes less arguable by those with competing approaches (including the spreadsheet approach). We've mentioned this before, but it is easily forgotten.

The earlier you are in system design, the more likely you don't understand many of the failure modes. During conceptual trade-offs, where you have the most flexibility to make really big differences in the final supportability of the system being designed, you don't want to be encumbered by necessarily thinking about modes of failure just to build a model. In these phases, **eXpress**'s functional approach allows the basic testing approach to be created, much like the ideas behind a Functional FMECA. By "allocating" the approach and being able to assess it through purely functional tests, you can begin to understand partitioning problems, problems with visibility and isolation, etc.

Now, that by itself justifies becoming involved early. However, where **eXpress** uniquely addresses this, is the fact that

eXpress will help the engineer maintain their investment into these early models built for early trade-offs and analyses. As failure modes become more apparent, and as lower levels are built, the initial model and testing philosophy can be transitioned over to incorporating failure modes as the predominant element that the model uses. The functions drop down to forming the fabric, but no longer act as the element of highest concern. This transition would normally require an entirely new model to be built in the case of spreadsheets, or other modeling tools with the exception of **eXpress**. Even math models and similar approaches would require a complete rethought of the model. **eXpress**, however, allows test definitions to be changed piecemeal as failure modes pop up for any of the covered objects. Tests themselves can be hybrid, of course, just as the model can be.

It is this transition that maintains the investment into the model that justifies becoming involved early, since the model will "see the engineer through" from the original thoughts to the final diagnostic design. This avoids a double-hit for modeling, the possible introduction of errors when the model is rebuilt again. In addition, one of the most dangerous things that can occur is that the final design can completely diverge from the original concept. **eXpress** solves this problem by using a hybrid model which allows the original model to mature and evolve throughout the design phase by maintaining a single modeling environment. Without the capability to develop hybrid models, multiple models must be created as the design changes. Normally two or more different models are not easily compared to ensure the original concept has been maintained. Although different departments all try to maintain the concept, they are themselves often working to different specifications. **eXpress** becomes the only tool looking across the disciplines from a system perspective as the design matures through the entire development cycle.

Reference: Thomsen, Erik. 2002. OLAP Solutions, Building Multidimensional Information Systems, Second Edition, New York, NY. John Wiley & Sons, Inc. ISBN 0-471-40030-0

Things to Come...

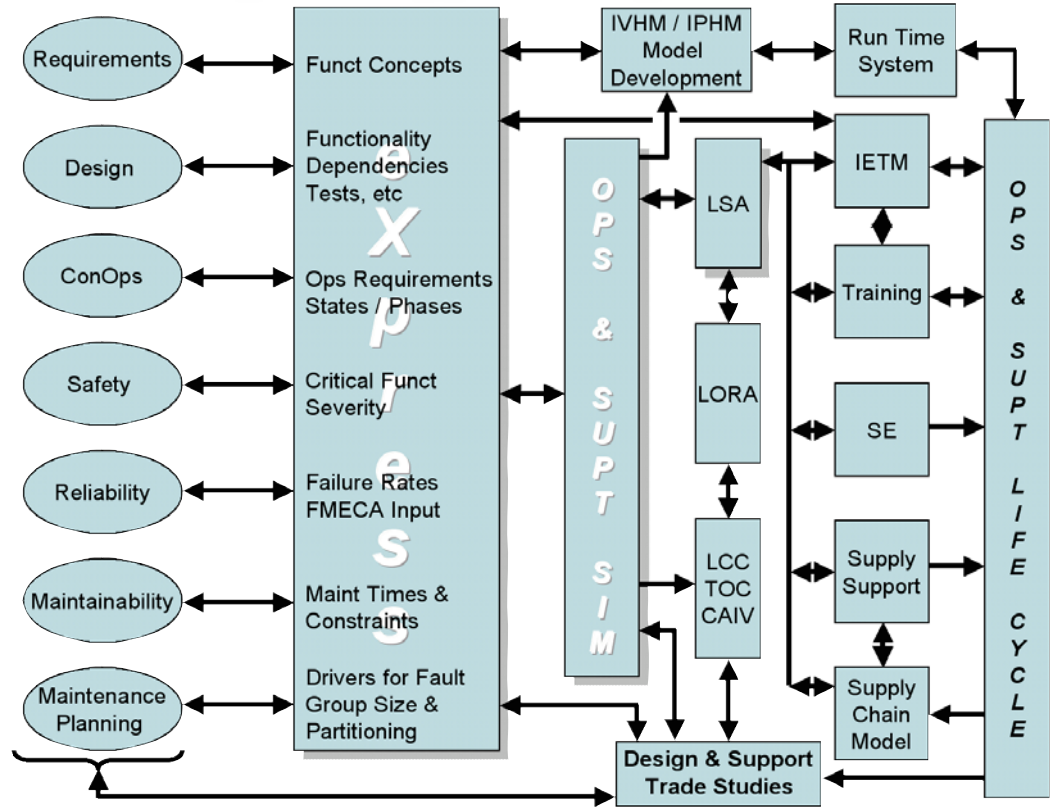
- Operation and Support Simulation
- Maintenance Predictions
- Supply Chain Management
- Import Enhancements
- Interface Enhancements
- Model Verification Tools
- Draft Data Item Description (DID) for Diagnostics Interface Requirements
- Glossary of Standardized Diagnostic Terms
...and much more!

Full Systems Design & Support Integration

DSI is currently developing simulation technology that can represent full operational scenarios, resolved into individual mission phases. The simulation can accurately predict expected time to first failure, the number of unique and total failures over a given period, the probability of a fault resulting in a loss of mission, loss of vehicle, or loss of crew, and other predictions that can be easily added using a built-in scripting language. This simulation can be run for an individual platform or be rolled up to an entire fleet. Results can then be integrated with automated logistics to provide accurate supply chain management information as well as other logistics factors.

Some significant statistics that can be calculated by simulation include:

- Maintenance Down-Times
- Sortie-generation Time
- Sustainment Costs
- Time to First Failure
- FMECA-based Likelihood and Severity of Failures
- Diagnostic Impacts on Life Cycle Costs
- Spares Consumption
- Operational Availability
- Other Support Requirements



DSI's **eXpress** diagnostics engineering tool, along with our Operation and Support Simulation (OSS) tool and integration with third party runtime and/or logistics tools, provide the technology needed to make existing platforms significantly less labor intensive. DSI's integration with TYX Corporation's TestBase through DiagML (Diag-ml.com) and DSI's new integration with Giordano Automation's runtime & support technology (see p. 4) really enhance system interoperability.

Training Schedule

Course Number	Pre-requisite	Course Description	Dates	Location	POC
100		Concepts and Applications	3 May, 2004	Orange, CA	Denise Aguinaga , DSI
110		Basic Modeling	3 May - 6 May, 2004	Orange, CA	Denise Aguinaga , DSI
120	110	Test Concepts and Development	6 - 7 May, 2004	Orange, CA	Denise Aguinaga , DSI
200	120	Diagnostic Development and Assessment	10-11 May, 2004	Orange, CA	Denise Aguinaga , DSI
210	200	FMECA Development and Assessment	12 May, 2004	Orange, CA	Denise Aguinaga , DSI
100		Concepts and Applications	14 Jun, 2004	Orange, CA	Denise Aguinaga , DSI
110		Basic Modeling	14 - 17 Jun, 2004	Orange, CA	Denise Aguinaga , DSI
120	110	Test Concepts and Development	17 - 19 Jun, 2004	Orange, CA	Denise Aguinaga , DSI

News and Press Releases

DSI teams up with Giordano Automation, Corp.

DSI International has initiated a strategic partnering relationship with Giordano Automation, makers of tool sets for advanced reasoning technologies to support operations monitoring and efficient maintenance. With a goal of integrating Giordano Automation's dynamic run-time reasoning engine with DSI's comprehensive modeling and testability analysis tools, we expect to offer the best and widest ranging solutions to your integrated diagnostics needs.

For the ability to use your **eXpress** models in a dynamic run-time environment for embedded diagnostics, IETMs and/or Test Program Sets, go to: www.Giordano.com



International Business

DSI International continues to reach out across the oceans to our friends abroad. Business contacts currently being supported by DSI:

- Training in Europe for EADS, coordinated by EADS Test & Services UK representative Keith Ellis.
- Expansion of World Wide business interests as Singapore technologies evaluates products from DSI.
- Training in France for Airbus by our representative with Seriem Industries, Michel Schieber.

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As the leading seller of Diagnostic Software & related Diagnostic Engineering Services, DSI understands the importance of quality service and support. To meet the needs of our customers, we offer a wide array of technical support and service programs developed to address the time-critical issues and stringent diagnostic requirements prevalent on many of today's programs. DSI is ready to help with specialized software development, diagnostic modeling and analysis, advanced mentoring, data management processes and a host of customizable support services to address specific customer needs.

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