PAWS Newsletter

Volume 23 No. 1 **September 2007**

We have been rather lax in publishing this Newsletter, having missed a whole year! In the interim, we have been quite busy as you will see here, and we are excited to be back on the air again. We have completely revamped our website and encourage you to visit. We have received some accolades already from customers who have visited the new web site, so we are excited to be on a good track…

Three decades of use indicate that the two main ideas in ATLAS, *the Signal Abstraction, and the Unit Under Test (UUT) orientation,* are powerful enough to have withstood the test of time. PAWS, with over 5000 licenses deployed to support various platforms worldwide, has become the de facto standard for ATLAS applications. The success of PAWS is linked to TYX's adherence to published IEEE standards, coupled with the continuous injection of the latest test software technologies and interfaces into the product line. TYX continues to be very active in incorporating new standards, ATML, IVI, and P1641 into our product offerings.

ATML

We are supporting the IEEE SCC20 goal to define XML schemas that allow ATE test information to be exchanged in a standardized format called Automatic Test Markup Language, or ATML. TYX has assisted by prototyping identified ATS architectural elements and critical interfaces for potential implementation of the emerging ATML specifications and standards. Several of the ATML standards have been implemented in our product lines. PAWS, TestBase, and the Test Requirements Document (TRD) products make use of the emerging ATML standards. Certain ATML interfaces, namely, ATML Test Results and ATML Test Description have been delivered to customers for integration into their fielded test systems. The results of the field test will be reported to the IEEE SCC20 to assist in refining the standards.

IVI

The TYX development team is integrating direct support for the IVI Class Specifications into the PAWS Run Time System (RTS). Support of IVI COM drivers will reduce the NRE required to link instrument drivers to the PAWS RTS. This will alleviate the need to develop and integrate CEM driver wrappers for common instruments. For test system development, a user will perform software driver configuration rather than software wrapper coding, integration, and test. The goal is to provide built-in PAWS support for an off-the-shelf configurable solution consisting of a PC, PAWS Software, IVI COM drivers, and test instruments packaged in a VXI, PXI, or LXI configuration.

In January 2007, we released PAWS RTS version 1.35.00 providing IVI-4.2: DMM Class Compliant driver interfaces. This version of PAWS RTS is able to load an IVI-COM DMM type class compliant driver and perform the following basic measurements:

AC voltage	AC period
AC current	DC current
AC frequency	DC voltage
Four-wire resistance	

Documentation exists with step-by-step procedures for configuring the PAWS system with the IVI COM software driver. There is also an extension mechanism for adding functionality beyond the published IVI Class Spec. The extension capability is in-line with the IVI Class Architecture. Two of our distributors (Germany & China) are currently integrating and testing the IVI COM interface.

The paper, “ATLAS Using IVI Drivers”, authored by TYX’s Christophe Grard is available from the TYX website (www.tyx.com).

P1641

In 2004 the IEEE published the 1641 Std., Standard for Signal Description (STD) the successor to ATLAS, emphasizing graphical generation and manipulation of Signals. STD also maintains links to legacy ATLAS by incorporating a TPL (Test Procedural Language) an ATLAS vocabulary-based syntax. TYX has been actively involved with IEEE SCC20 (Standards Coordinating Committee) in supporting the development of this standard. TYX has developed prototype systems based on the P1641 specification and is currently planning the implementation of P1641 support into our product offerings.

Program News

We are continuing to make PAWS deliveries on major CONUS DoD programs as well as multinational programs in Europe.

ARGCS (Agile Rapid Global Combat Support)

TYX was involved in the ARGCS demonstration program with our counterparts at EADS Test & Services North America who are under contract to Northrop Grumman. Several PAWS licenses have been provided for the ARGCS program. Prototype ARGCS systems have been completed and delivered with PAWS Studio and RTS as an integral element of these systems. On ARGCS, the PAWS RTS was fully integrated with a Northrop Grumman diagnostic reasoner solution.

B1-B IATE Replacement Program

TYX has completed delivery of PAWS software on 35 test platforms for the B1-B program. TYX developed automation tools for the re-host of TPSs to the B1-B platform.

C-17

A significant number of PAWS licenses were delivered last year to support the C-17 program. Although the bulk of deliveries have been completed, a number of additional licenses will be required this year to support the planned additional CATE resources.

eCASS

TYX is working to incorporate enhancements to PAWS software such that PAWS meets requirements and specifications for the eCASS program. We stand ready to support all bidders on the program with our world-class product offerings.

ESTS (ELECTRONIC SYSTEMS TEST SET)

TYX delivered 61 PAWS licenses to Northrop Grumman to support deployment of the Air Force's ESTS (Electronic Systems Test Set) tester. ESTS is a technically advanced, open-architecture test system built to provide intermediate test capability for the USAF F-15. It is designed utilizing the versatility and flexibility of commercial VXI instrument standards. ESTS offers portable, state-of-the-art digital, analog, video, and RF test capability and is a highly mobile member of IFTE.

VDATS

TYX delivered PAWS licenses to Warner Robins Air Logistics Center to support migration of IE-OS390 ATLAS to the new VDATS platform. The Air Force is pursuing a parallel effort using General Purpose Programming (GPL) languages, with the intent to re-write all TPSs. The economic advantage of re-hosting ATLAS TPSs, which were designed for re-host, is so favorable as compared to costs for a total TPS re-write that TYX believes that budgetary influences will prevail. Having said that, we continuously seem to go through these exercises where we opt to take the curved road instead of the straight road and end up running out of gas… Given the price of gas these days one would think that we would think twice about this approach!

V6

TYX has completed development of the IFTE ATLAS subset for the IFTE V6 program. Final enhancements to the subset are expected to be completed in the near term as directed by Northrop Grumman. A number of prototype V6 test stations have been delivered configured with PAWS software.

PAWS in Europe

We continue to ship licenses in support of various programs such as Tornado, EuroFighter, KMW Leopard Tank support, etc.

PAWS in the Far East

We are expanding the user base in both China and Japan. Recently a Chinese customer has adopted the TRD System 3.0. We believe that this is just the tip of the iceberg for this product in this region.

We have also penetrated the transportation industry, providing support software through our distributor in Japan for the NY Metro system upgrade currently ongoing. We expect to also penetrate the automobile industry in the near term given that the automobile is rapidly becoming a complex system… with the attendant difficulties in diagnosis and repair.

TRD System 3.0

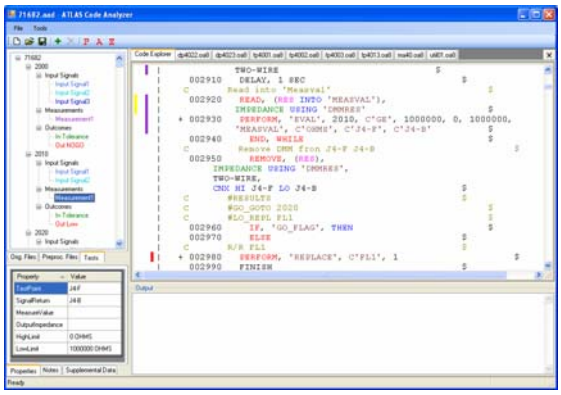
TYX's TRD product was developed to support the delivery of TRDs (Mil Standard 1519) required as part of TPS deliverables. With the abolition of Mil-Stds in the 1990's it was felt that TRDs were no longer necessary, that they were some kind of anachronism. However, customers soon realized that this information is crucial regardless of whether or not there is a mandate to provide the TRD information; hence, TRDs are now being required as a matter of course to document and automate Test Specification development and re-host.

TYX has recently incorporated several enhancements to the TRD product. These enhancements include:

- Testability analysis
- Conversion of older ATLAS specifications to IEEE 1989 ATLAS
- Extraction of test requirements from legacy ATLAS source code
- Automatic code generation
- Import of Test Strategies from *DSI eXpress*®, a system engineering tool which facilitates the diagnostic development process

Testability Analysis

Version 3.0 of the TYX TRD System features failure mode definition and fault coverage analysis capabilities. Users can input failure mode information for the UUT components. This information is readily available in failure mode reports. Users assign detected and isolated faults to various tests that form the TRD's test strategy. With this information, the TRD system performs automatic fault coverage analysis, compares calculated performance to program requirements and displays results in *Microsoft Excel* reports. To increase development efficiency, users can create libraries of failure mode definitions for frequently used component types.



ATLAS Requirements Extractor

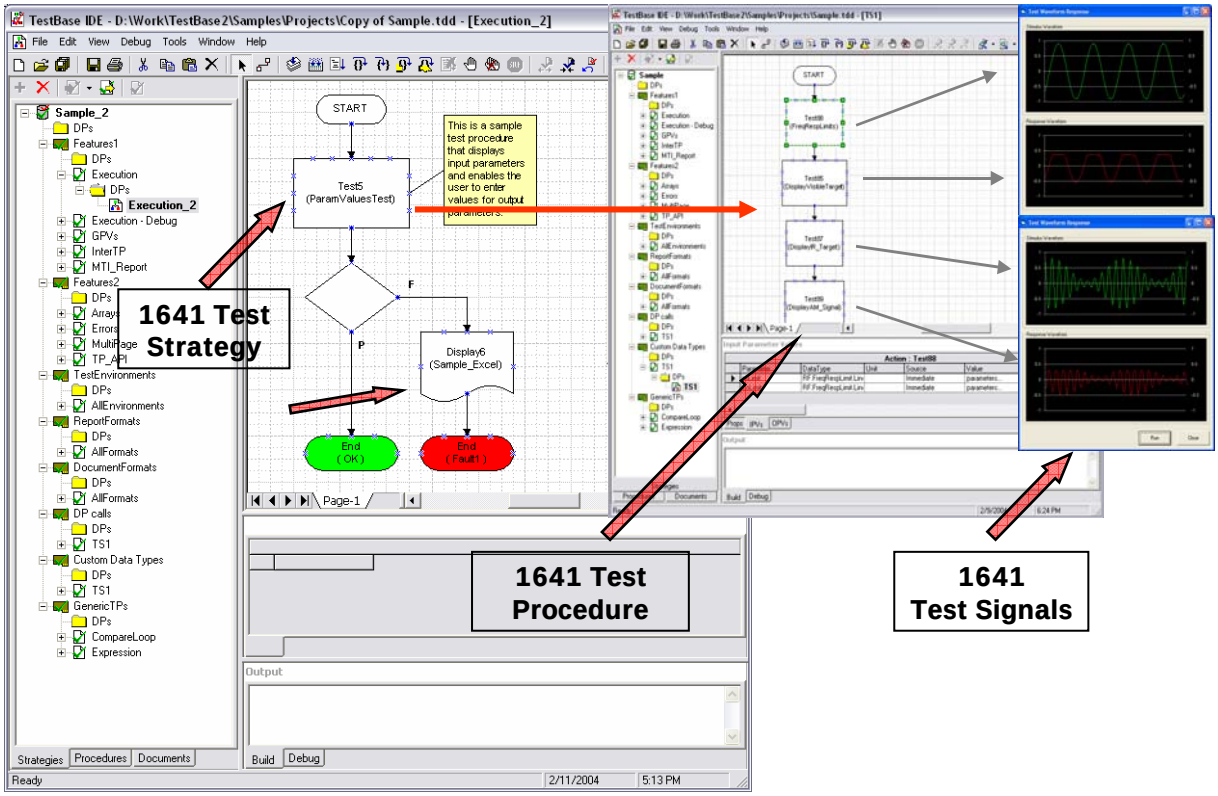
The ATLAS Requirements Extractor builds a library of information extracted from the ATLAS source code, including test boundaries, test attributes (number, type, objective), stimulus and measurement characteristics, signal connections, and control flow information. The Extractor supports automatic analysis algorithms while allowing manual input from the engineer performing TPS analysis as required to correct or enhance the results of the automatic analysis.

TestBase News

TestBase continues to build up market share by penetrating new application niches. TestBase is penetrating industries such as transportation, synthetic fuels, and others.

Significant enhancements to TestBase include:

1. Implementation of ATML test results and P1641 capability
2. Import of test strategies from *DSI eXpress*, supporting the design-to-test paradigm
3. Integration with the *DSI eXpress* product and a "Reasoner" for a practical diagnostic approach for determining system performance and degradation.

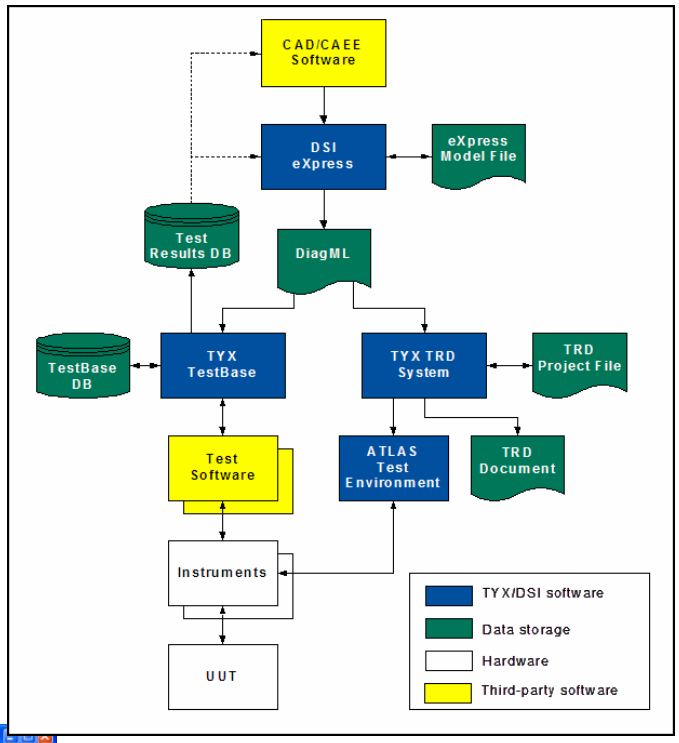


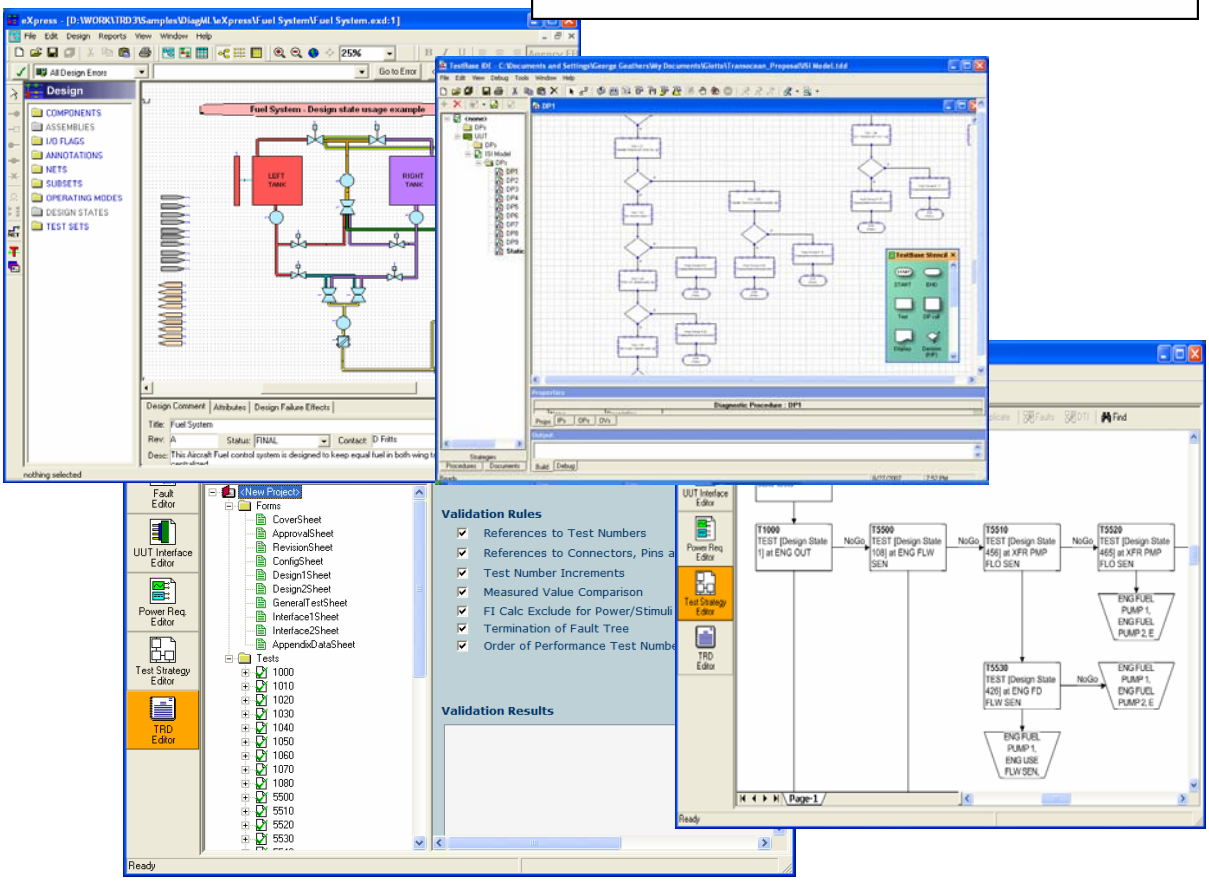
1641 Test Strategies, Procedures & Signals in TestBase

DSI eXpress

TYX worked with *DSI International* to develop “DIAGML”, a protocol allowing test strategies from *eXpress* to be imported into TYX’s TestBase and our TRD products. The import of test strategies to the TestBase test executive and to the TRD product (with automatic code generation) supports a “system engineering” approach to diagnostic test. The advantages of this approach:

- Eliminates redundancy of dual test strategy development
- Starting point is “validated” test strategies
- Automatic code generation based on design test strategies
- Integrates design and test disciplines





FLD (Forward looking Diagnostics)

TYX has teamed with *DSI International* and *Giotto Technologies* to integrate TestBase into a systems environment which is capable of extrapolating dynamically-generated profiles of equipment degradation. FLD offers a practical approach with significant advantage when compared to standard prognostic approaches, for faster and more economical determination of system performance degradation for a wide variety of operating modes.

In developing the FLD specification, DSI, GTI, and TYX worked with a number of leading engineering data acquisition and analysis experts, development tool vendors, as well as a diverse and experienced CBM development community. The result is an approach that balances unexpected interactions between subsystems and the external and internal environments with ease of degradation path determination for system/equipment operators and life-cycle support applicators.

A white paper, authored by Mr. Zbigniew Karaszewski of *Giotto Technologies* provides an overview of the FLD approach and is available on the TYX website (www.tyx.com).

PAWS User Group Meetings

We started off the year with a meeting in March in Munich, attended primarily by the German user base. We subsequently followed with a meeting in Japan on July 4 (the Japanese turned a deaf ear to our pleas that this was a holiday)! We are currently planning a meeting in China in October to be held in the ancient city of Xi'an in northern China. Xi'an is famous for the thousands of terra cotta warriors guarding the tomb of the Qin dynasty's founder.