



PAWS Users Group Newsletter

Volume 17 No. 1

March 2000

First Newsletter of the new Millenium!

Greetings! We have a lot of activity to report on in this first edition! As usual, we report progress segment by segment.

First, the financial stuff...

TYX Announces 1999 Results - TYX Corporation, a Reston Virginia based company reports that their audited financials for the fiscal year 1999 shows an after tax profit of 5%, which includes wholly-owned subsidiaries Access Research Corporation (ARC), and the newly established Information Assurance Institute (ARCIAI). All the details can be viewed at our web site, on

<http://www.tyx.com/news.html>

News from the US front

TYX is looking forward to making **additional** deliveries on these major DoD programs this year:

- RTCASS for the US NAVY, Lockheed Martin, and INDRA DTD Consortia.
- IFTE (CEE) for Northrop Grumman.
- TETS for USMC via Mantech Test Systems. We are currently assisting Lockheed in their contract to provide the Electro Optics test capability for TETS.

C-17 Depot Testers

Recently, Teradyne was selected for this important program. We at TYX wish to congratulate Teradyne and look forward to working with them on this program. With over 1,000 aircraft slated for production in the coming years, this is indeed a major program. We are currently in discussions to integrate Teradyne products and TYX products for this program.

Gyro Tester

TYX continues to modernize the various platforms in use at the Warner Robins Gyro Test Area. This year we are expecting to provide *additional copies* of PAWS for this effort. Access Research Corporation, our engineering services subsidiary is involved through the San Antonio Engineering office in the modernization of an additional tester as well.

DATSA

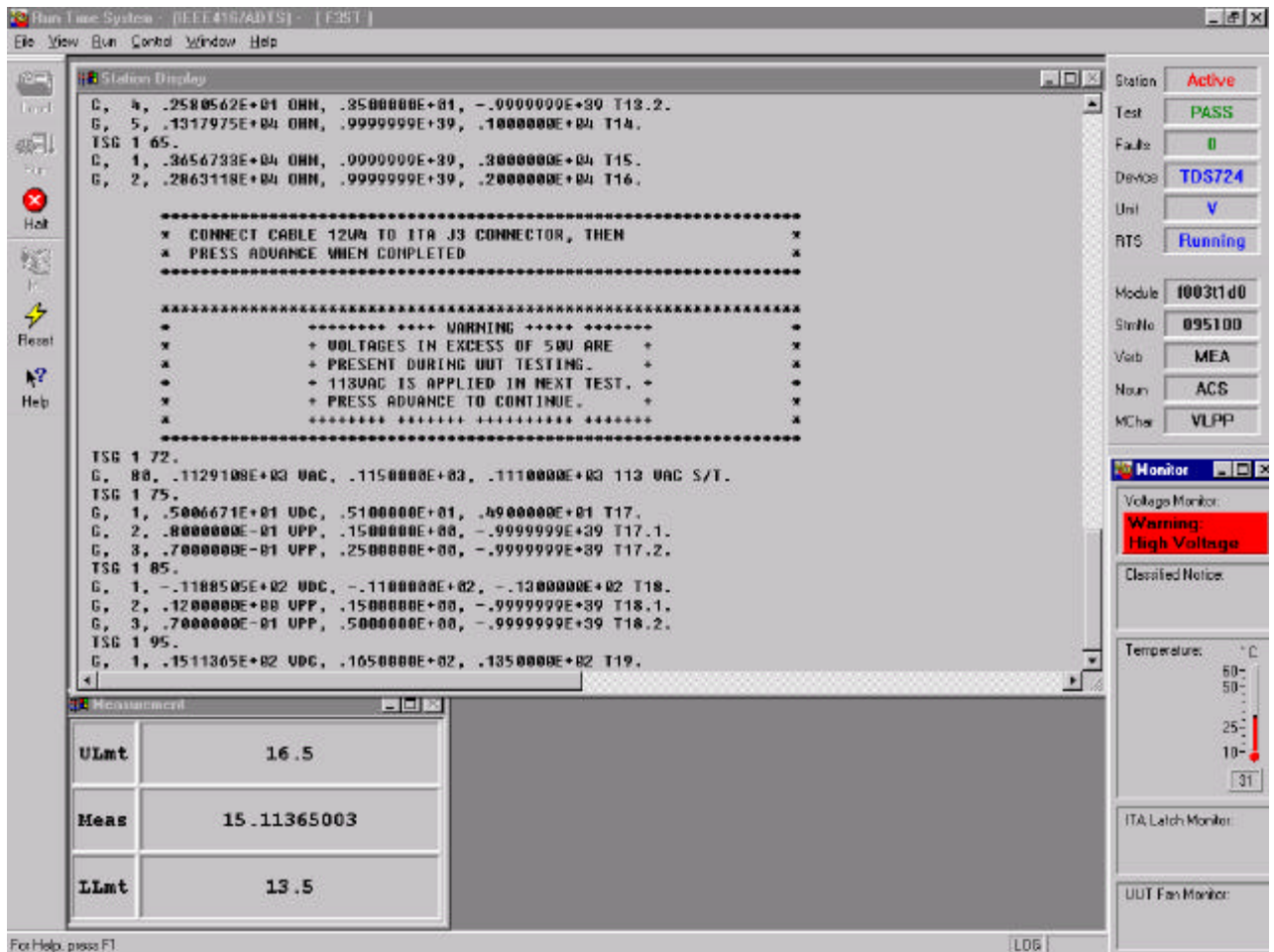
Our ARC subsidiary is involved in a program to modernize some of the DATSA instrumentation and the attendant software interfaces.

F-15 AADTS

The new tester is scheduled to run a couple of UUT TPS at the end of March. As we go to press, we are pleased to report that this event has occurred. This program has proceeded on schedule, a major milestone for such a complex activity. Completion is in the pipeline for later this year. We show the tester below, as well as the PAWS RTS GUI. The notable item in the GUI is the integrated panel for over temp. conditions, and also the red warning symbols highlighted when the Operator needs notification.

F-15 AADTS Tester





PAWS RTS GUI for F-15 AADTS

That pretty much covers the action on the majority of the family of DoD Testers in the good ol' USA.

Boeing PIP

Subsequent to our delivery late last year, we embarked on a Phase II development and delivery plan for this important program for the Comanche Helicopter. We refer you the article in Avionics magazine in the April 2000 issue that describes this application elegantly, and it even states that the PMA-PIP interface uses the best commercial technology; which of course is nothing other than PAWS!

We refer the reader to the section on R&D efforts to learn about other exciting developments.

News from around the World

On the European front, we look forward to supporting the GPATE effort this year. There are a number of re-host efforts underway in Europe:

- Replacement of obsolete ATEs': this program covers Tank testers and involves a lot of legacy TPS, some of which are written in HP BASIC! Our German Distributor, SEKAS GmbH, is heavily involved in this program.
- Tornado mid-life update: this program is alive and kicking and we are delivering a number of PAWS systems for this update.
- Embedded Systems: TYX is providing a Windows NT Embedded based PAWS system in support of this tank application.
- All the EUODASS consortia members have purchased upgrade systems to migrate to the NT platform.
- A number of other companies have indicated that they will be procuring PAWS for their programs this calendar year.

The integration of PAWS + QUOTIS has been achieved utilizing the new Data Logger (described later in this issue); the new Data Logger and the QUOTIS QDA Interface have already been distributed and supplied for application in production and maintenance testing. QUOTIS is a Quality Management System developed by SEKAS GmbH, Germany and it is available from TYX and their distributors. Here are some of its outstanding features:

- Capture, management and analysis of test and repair data at each stage of the manufacturing and maintenance process;
- integration of paperless repair and capture of quality data;
- online analysis for the test and repair processes;
- one-to-one acceptance of quality data from automatic test systems;
- statistical error analysis based on reports.

The CARS ATE (Computer Aided Repair System) based on PAWS and QUOTIS has been finalized (see photograph) and was officially inaugurated by the Belgian Army in February.



All in all, a busy year so far on the European front!

On the Far Eastern front, we continue to deliver additional PAWS licenses to the F-2 program, and there are a number of other initiatives under way. We can state that a major new program has selected PAWS and we expect to make deliveries in the Second Quarter. We cannot say much more, as we are sworn to secrecy on a number of these programs. The NEC TOW Missile re-host was completed at the end of last year, and the interesting highlight is that about 50% of the TPS show a reduction in run time of 50%! This project replaced an obsolete proprietary tester with a HP COTS tester including new ITAs'.

IVI and Signal Interfaces

The Signal Interface Working Group held their introductory session at the recently concluded IVI Foundation meeting in Austin, TX. The session had good attendance, and a presentation on Signal Interfaces was made by TYX. After some discussion, points for the charter of the group were noted, and a white paper and functional requirements document will be prepared prior to the next meeting in May. The May meeting is being hosted by TYX, at the Blue Knob Resort and Conference Center, in Claysburg, PA. from May 22 – 25, 2000.

ARTS Delivery

The Next Generation of tools has taken flight in the form of the **A**daptive, **R**e-configurable **T**est System **S**oftware (**ARTS**). On top of the Hughes Analog Payload Module Test system, TYX is involved in a program in the UK to deliver the next ARTS system. Details on ARTS can be found on our web site. One of the exciting developments on ARTS is the addition of the capability of the Test Controller to provide APIs to support multiple Test environments, including PAWS and LabWindows/CVI. This concept is easily extensible to support other vendor offerings such as HP-VEE. The TestBase section of this newsletter describes this functionality.

TYX R&D Efforts

TYX was awarded an SBIR (Small Business Innovation Research) Program from the USAF on the topic JAVA Based Automatic Test System and Test Program Set Environment. This Phase I award was announced in the spring of 1999.

We are pleased to report at press time that our customer likes what we have demonstrated as a result of Phase I and has announced that we have been selected for Phase II. We will keep you abreast on progress throughout this year.

During the RTCASS development, the PAWS system gained the ability to interface with different Graphics formats directly from the ATLAS world. Various multi media formats such as MPEG, JPG, GIF, BMP, HTML etc. can be accessed from ATLAS. Please refer to our web site if you would like more information about these features.

In the process of adapting PAWS to the IFTE CEE platform, the PAWS system has gained the ability to mirror the IFTE Station displays. This is further evidence of the component ware and middle ware which the PAWS product line is rapidly evolving into. With the adoption of such open architecture, it is quite straightforward to plug in additional requirements using Java, C++, or Visual Basic.

DCOM RTS

In this development effort, TYX has separated the Run Time System GUI and engine components. The reasoning behind this is twofold: to provide a distributed architecture and to allow our customers to “bolt-on” custom man machine interfaces. Our design presents a DCOM interface to the external world thus allowing other software components to *plug into* our RTS. Some of the goals of this design were to specify a set of services that:

- Facilitate the encapsulation of the RTS to be an open server component capable of runtime collaboration with other control, monitoring and input / output components
- Permit multiple clients to monitor RTS performance and obtain state information.
- Provide fully configurable notification mechanisms for a variety of events
- Minimize the real-time impact of GUI and notification overhead
- Support for RTS / GUI distribution on different machines
- Employ method parameter types compatible with Visual Basic, Java and C++ bindings.

Our first delivery of this technology was for the Boeing PIP. In this scenario, the RTS server engine resides on the PIP and the client is controlled by an IETM located on the Sikorsky Portable Maintenance Aid. We demonstrated this concept further in Japan where the customer has built GUI clients providing native Kanji support.

Some of the features provided by the DCOM RTS are listed below:

- Multi Resource and Multilingual support --- In addition to the isolation of all strings and visible GUI elements, all GUI components have been isolated, thus allowing resources to be edited either in place or as an external DLL.
- Distributed Multiple CEM Instrument Drivers --- The RTS supports multiple CEM DLLs. This eliminates the restriction of having to combine all drivers into one DLL; DLLs can be remotely accessed with just changes to the Bus Configuration file. This facilitates grouping based on criteria such as RF

instrumentation rack, EO, etc., thereby reducing the cost of integration, maintenance, and configuration control.

- Fully redesigned Data Logger product --- This is now shipped as a set of COM components which can be easily replaced by either the customer or TYX. The EFA 2000 Project at DASA LFK is currently using this tool. The components are as follows:
- XML Data Logger Recorder – XML format for flexibility and portability. Output can be manipulated easily or customized.
- IE5 / XSL presentation – Data Logger output viewer developed using the support provided by the Internet Explorer 5. Customers have full access to the presentation format and processing of data.
- COM Data Logger GUI – Flexible component provides support for user defined fields. A variety of events can be used to display and collect information.
- Main Data Logger Component – interacts with the RTS and links the other components together. Highly configurable and collects a wealth of information as testing proceeds.
- ActiveX controls which are automation compatible and support a variety of needs including Visual C++, Visual Basic, Visual J++, VBA, HTML Pages, VB Script, Java Script, Access, and Excel. Such wide coverage provides for flexibility and an open and simple interface. Several flavors of ActiveX controls are available as follows:
- RTS Monitor – monitors the RTS and can provide support for custom GUIs. It can only monitor server behavior.
- RTS Control – provides support to control the RTS. Its visual appearance is a toolbar with controls. It can fully control the RTS and provides access to the RTS Server.
- RTS Combo – combines the functionality of monitoring and control.
- RTS Sync – provides synchronization services, wait for TPS to load, unload or execute. Support for program control of TPS.
- Enhanced CEM Wizard – Redesigned GUI with independent selection of modifiers and an intuitive presentation. LEX independence and selection of C or C++ Output files.

RTS Switch Server

The PAWS RTS has been enhanced to enable improved handling of ATLAS connection variables. The algorithm for determining switch paths involving connection variables was modified to achieve the following main goals:

1. Minimize relay resource conflicts. Previously, driven by the need to minimize run-time computer resources, the information regarding a single point to point route that was handed to the RTS was limited to a single route, the shortest. In many instances that would be sufficient; but situations exist where the set of the shortest paths between the multiple pair points that appear in an ATLAS connection field is not necessarily the desired solution. This is because conflicting use of a specific switch may be introduced when multiple pairs of points are introduced. With the current enhancement, path computation is performed with the objective of minimizing such conflicts.
2. Minimize sneak paths. When switches are ganged, unwanted sneak paths may result when multiple pairs of points appear in an ATLAS connection statement. With the current enhancement, path computation is performed with the objective of minimizing such sneak paths.

Interactive Switch ITA Modeling Tool

A beta prototype version of this toolset is available through your friendly TYX Sales Representative. Please ask to be shown the features of this embryonic tool so that we may benefit from your insights during the development phase and who knows, you may just get a product with only the features you need!

Flowcharter

A complete revamp of this popular tool was recently released to customers. The first customer using it is quite pleased as it is:

- Blindingly fast, over 10 times faster than the previous version
- It generates PDF output for seamless integration with your Desktop tools.
- It also provides hyper links for electronic thumbing through the flowchart.

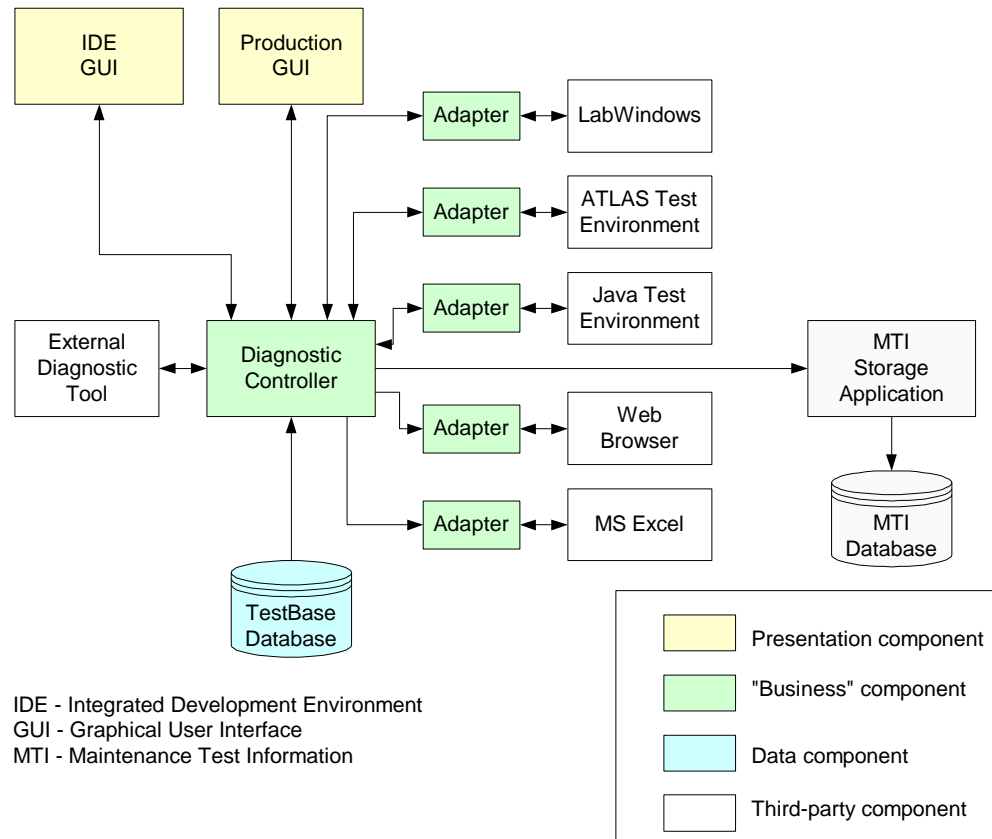
TestBase

TestBase is a *diagnostic controller adequate for system-level testing*, providing visual development, database storage and run-time execution of “fault tree” test strategies. TestBase may act as the backbone of a *modular, open and distributed ATS framework*, integrating third-party products such as: diagnostic reasoners, test procedure execution environments, document/report display applications, maintenance information storage applications, etc.

The main features of TestBase are:

- uses *“fault tree” test strategies* modeled by Control Flow Diagrams, which include calls to *external test procedures*
- supports the *execution of test procedures developed in multiple languages and environments*; support for additional environments may be added by system integrators
- supports the *display of documents and reports with multiple formats*
- contains an *Integrated Development Environment (IDE)* allowing the visual design and debugging of test strategies
- provides *database storage for test, diagnostic and maintenance data*
- Compared with similar products, TestBase offers the following benefits:
 - *combines the simplicity of visual design for test strategies with the versatility of textual languages for test procedure development*
 - supports the *system-level diagnosis of complex UUTs* by providing high-capacity database storage for test strategies and parametric data and by allowing the integration of intelligent diagnostic reasoners
 - supports the *increase of development productivity* by separating the diagnosis from the actual testing operations
 - favors *code reuse*

High level view of the architecture



PAWS User Group Meetings

We lead off this year's series on June 14, 2000 with a meeting in Tokyo, Japan hosted by Y-MAX Systems, our Japanese Distributor. This is to be followed by a meeting in the UK on June 28, 2000. The UK meeting is being hosted by Apsys, our UK Distributor.

The Munich PUG, hosted by SEKAS GmbH, is being tentatively planned for September 15, 2000 which just happens to coincide with the opening festivities of Oktoberfest in Munich. The meeting is usually sold out well in advance without question!

Next in the schedule is the US PUG which is traditionally held during Autotestcon week. This year the tentative date is Monday September 18, 2000. We look forward to seeing you all at one of our User Group Meetings.