

ITCN, INC.

INSTRUMENTING EMBEDDED SOFTWARE BEHAVIOR VIA BUSSES



SystemTrace ST-201 VME Backplane Monitor

22

Topic Number: N98-160
(NAVAIR)

SBIR Investment: \$1.1M
Project Revenue: \$1.3M

ITCN, Inc.

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About the Technology

Navy mission critical systems are designed with built-in monitoring ports to allow real time software behavior data extraction for debugging and integration execution. New systems, designed for desktop workstations, use multiple Commercial-Off-The-Shelf (COTS) processors and high performance processors, but do not include built-in monitoring signals. Given the rapid move to multiple processor COTS systems, the Navy needs an instrumentation system for COTS based multi-processors that satisfies software debug and integration requirements, which is applicable to both commercial and military system development. ITCN's SystemTrace®, satisfies the Navy's need for an interactive, user-configurable command and control system, that records, monitors, fuses, and displays real-time data from multiple airborne payloads, and disseminates graphs and tabular data to remote users via SATCOM and the Internet.

ITCN's instrumentation technology monitors multiple data paths, including backplanes, data busses and processors. The software is capable of monitoring and analyzing all data streams of a multi-processor, embedded system simultaneously and in real-time with no functional intrusion to system operation. The Navy uses SystemTrace to help develop software and systems for several platforms supporting the War on Terror including, the F/A-18, AH-1, P-3 Orion, TPX-42, and C2P Radar Simulator.

Military and Commercial Significance

Maintenance of embedded real-time systems is by far the largest cost element in the life cycle of DoD systems. ITCN's SystemTrace significantly reduces the time required to understand the cause of system problems. Legacy systems require multiple tools with multiple interfaces and an engineering effort to coordinate the operator's control and collection of input data. SystemTrace provides a single interface for the test operator to setup and monitor a complete system performing at full speed. The operator is able to monitor the system in the normal environment with minimal or no intrusion, resulting in life cycle cost savings and improved system performance.

About the Company

ITCN designs and manufactures embedded systems instrumentation, and develops custom instrumentation systems for the Military/Aerospace market. The SystemTrace® product line has broadened ITCN's market base from a specialized application in Software Development and Integration Laboratories to general-purpose applications in operations and maintenance. ITCN received the 2006 Tibbetts Award, which exemplify the very best in SBIR achievement.

APPLICATIONS

- Navy: Anti-submarine Aircraft P-3, TPX-42, AH-1 - Software testing and integration, F/A-18 - Operational Flight Program development
- Air Force: F-15, C-130 - System software testing and integration
- Industrial Process Control, telecommunications, transportation, medical, and aerospace