

Topic: N00-062

Trident Systems Incorporated

Force Level Automated Certification of Downward Compatible Baseline Software

Trident Systems develops software solutions for many critical military applications. After 3 decades experience, Trident has developed an innovative tool, SCIAT, which reduces time, effort, cost of testing, and overall life cycle cost while improving system reliability. Currently Trident is assisting two Primes with metric determinations within their software build and qualification testing framework. SCIAT's innovative code-2-code automated comparison methodology determines the indirect impact of changes on the unchanged code, recommends improvements to the tests to maintain code coverage, and identifies the tests to execute to verify the changes within the new build. This automation provides an objective code assessment with reduced oversight. Trident seeks companies that desire to improve their software quality while reducing their development and testing costs.

Technology Category Alignment:

Test, Evaluation, Validation, and Verification

Advanced Computing/Software Development

Modeling, Simulation & Test Infrastructure

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SYSCOM: NAVSEA

Contract: N00024-16-C-4043

 Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N00024-16-C-4043

Department of the Navy SBIR/STTR Transition Program

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NAVSEA #17-529

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WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS 2

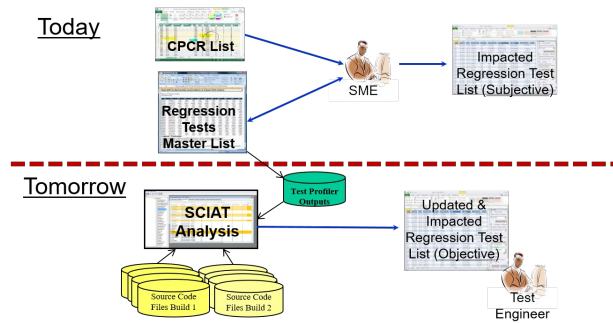
Transition Target: AN/SPY-6

TPOC:

(812)854-4804

Other transition opportunities:

AEGIS, Patriot, SWFTS



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WHAT

Operational Need and Improvement:

Provide a means to shorten development times and reduce costs of maintaining software systems without sacrificing quality or reliability by automating the change impact analysis to identify and prioritize test coverage that allows for the identification and fixing of problems earlier in the process.

Specifications Required:

- Achieve 20-30% reduction in T&E cost and schedule.
- Achieve >95% coverage of impacted code at all levels of regression testing.
- Increase system reliability with 3x increase in bug detection.

Technology Developed:

Software Change Impact Analysis Tool (SCIAT) is a software application that optimizes regression testing by performing analyses to determine the impact of software changes on tests to focus testing on each new build. SCIAT's static analysis parses two builds of software source code to determine the changes and possible impacts. SCIAT's dynamic analysis develops the traceability between the parsed source code and tests to recommend the tests to execute on the new build based on the code changes. SCIAT's test completeness analysis identifies the impacted code not tested and recommends changes to the tests to insure test coverage of impacted code.

Warfighter Value:

The benefit of this solution is a reduction in regression testing, a significant increase in accuracy and efficiency of regression testing while reducing time and cost of software upgrades with improved quality and reliability.

WHEN

Contract Number: N00024-16-C-4043 **Ending on:** March 10, 2019

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Test completeness at method level	Low	SCIAT demonstrated in relevant environment	6	February 2017
Test completeness at class level	Low	Prime demonstrates SCIAT within operational environment	7	September 2017
Test completeness at subsystem level	Low	Prime qualifies SCIAT through test and demonstration	8	March 2018
Assimilation into AN/SPY-6 testing process	Low	Prime using SCIAT on AN/SPY-6 program	9	August 2018

HOW

Projected Business Model:

Trident Systems is productizing this software package to license commercially for both government and industry use.

Company Objectives:

Trident Systems is looking for partners, both industry and government, to evaluate SCIAT within their software development and quality assurance/testing processes and, if reduced costs with improved quality is achieved, commit to a full implementation.

Potential Commercial Applications:

This software tool could be used by any software development company, commercial or government, health care or defense, embedded software, Internet of Things or autonomous driving vehicles.

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