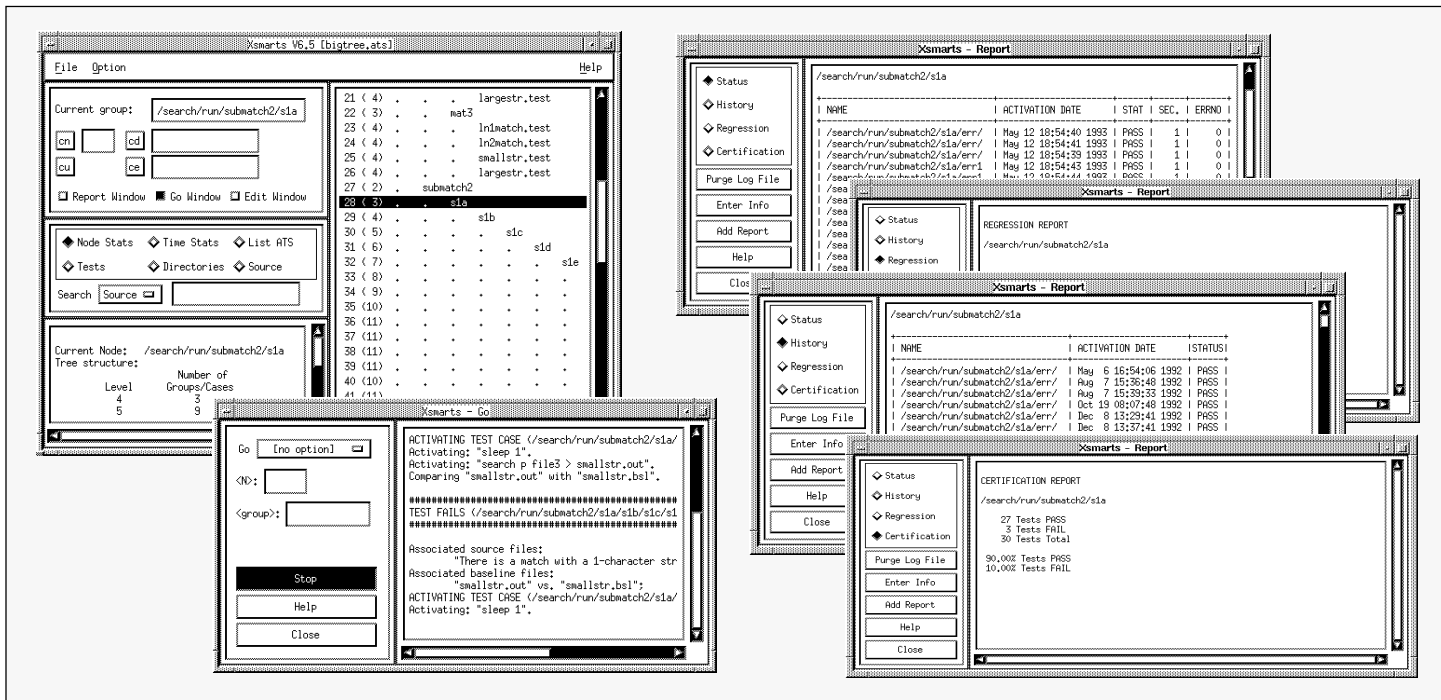




SOFTWARE RESEARCH, INC.

SMARTS

SOFTWARE MAINTENANCE AND REGRESSION TEST SYSTEM



SMARTS allows you to build test scripts as baseline files to be compared against following modifications. By clicking on a group or test case in the hierarchical tree (represented by the highlighted line), you can execute a test in the Go window (bottom left). SMARTS automatically generates the four reports (shown right, top to bottom): Status Report, Regression Report, History Report and Certification Report.

PRODUCT DESCRIPTION

When creating a test suite for an application, the number of tests always grows into the hundreds or thousands. Without tools to manage these tests, it becomes a largely manual and time consuming process. Through developing and re-running a library of tests, efforts can be focused on constructing new tests, evaluating test results, and detecting defects rather than on the largely mechanical task of test management, execution and output verification.

As a stand alone or within the **STW/Regression™** tool set, **SMARTS™** automates and simplifies the testing process by:

- Organizing the tests into a hierarchical tree.
- Providing the capability to automatically execute all or a subset of tests.
- Generating a variety of reports based on the test results.

SMARTS reads a user-designed Automated Test Script (ATS). The hierarchically organized tests can be supplemented with test activation commands, comparison arguments and pass/fail evaluation methods. The ATS can also be augmented with system calls to tools, such as the **STW/Regression tool CAPBAK/X™**, which replays captured user sessions. The ATS automatically generates a directory type listing of tests, providing a means of interactively executing the test script or viewing results of previous runs.

All **SMARTS** commands are context sensitive. Test execution and reporting is based on the selection, either of an individual test or group of tests, from the displayed ATS "test tree hierarchy". When executed, **SMARTS** performs the pre-stated actions, runs a difference check on the outputs against the baseline, and accumulates a detailed record of the test results.

Using the **STW/Regression** comparison system **EXDIFF™**, differencing capabilities

can be extended to ignore specified character strings and text line differences in ASCII files and masked areas in image files.

Four reports can be generated from test outcomes:

- The **Status** report lists the most recent test execution outcomes.
- The **History** report includes current and past test results for every test executed.
- The **Regression** report lists only those tests whose outcome has changed, identifying bugs which have been fixed or introduced since previous test activation.
- The **Certification** report summarizes the total number and percentage of tests that have passed and failed, providing an overview of testing status.

SMARTS facilitates the testing process by providing an effective means of automatically determining discrepancies and monitoring the effects of regression testing.



AUTOMATED TEST SCRIPT (ATS) MANAGEMENT

- *User-Designed Test Description File* — Organizes and manages an extensive number of test scripts for the purpose of automating the testing process. The ATS "test tree hierarchy" emulates the modularity and functionality of the tested application.
- *Test Script Augmentation* — Allows test cases to be supplemented with activation commands, comparison arguments, system calls, evaluation methods, and control structures (i.f., else and while clauses).
- *Including Other ATS Files* — Incorporates other ATS files, allowing for a modular organization of multiple test scripts.
- *makeats utility* — Based on minimal test case information, the **makeats** utility expedites ATS creation by generating a hierarchical **SMARTS** test structure consisting of an unlimited number of groups, sub-groups and test cases.

TEST EXECUTION CAPABILITIES

- *Unattended Test Processing* — Automatically executes all or a selected groups of tests.
- *Test processing options* — Runs tests according to criteria such as: executing tests a specified number of times, executing only new tests, running only tests which have failed during the previous execution, failing tests which exceed a pre-determined execution time and executing tests until a failed outcome.

FOUR EVALUATION MODES

- *No Evaluation* — Automatically passes tests.
- *Manual Evaluation* — Allows the user to determine the appropriate test outcome for tests requiring manual inspection.
- *Evaluation with Baseline* — Automatically compares baseline and response files.
- *Evaluation with Function* — Allows an evaluation utility or special program comparable to the standard Unix **diff** utility to be used as the evaluation procedure.

DIFFERENCING UTILITIES

- *diff* — Differences ASCII files.
- *exdiff* — Differences both ASCII and binary files.
- *Xexdiff* — Differences X Window bitmap files.
- *User Specified* — Allows other comparison utilities to be set in the default configuration file for the GUI and ASCII menu interface.

GUI CAPABILITIES

- *ATS Test Tree Display* — Displays a directory type listing of the ATS and provides a means of selectively executing only those tests of interest.
- *Editing capabilities* — Displays the ATS file in an xterm-like window, with a cursor indicating the currently selected test group or case from which test execution will be initiated. When the selected test group or case is modified, the cursor relocates accordingly within the displayed ATS.

TEST OUTCOME MANAGEMENT

- *Test Outcome Archival* — Saves a detailed record of test outcomes and timing statistics to a default log file.
- *Report Generation* — Automatically generates a variety of reports based on the existing log file.

SUPPORTED PLATFORMS

- Sun SPARC
- x86 Solaris
- SCO
- SGI
- IBM RS/6000
- HP 9000 - 700/800
- DEC Alpha
- UNIXWare

TECHNICAL SUPPORT

- Telephone hot-line assistance for installation and technical questions is available.
- Maintenance contracts provide continuing product support and upgrades.



For more details on **SMARTS**, contact:



SOFTWARE RESEARCH, INC.

1663 MISSION STREET, SUITE 400
SAN FRANCISCO, CA 94103 USA
PHONE: (415) 861-2800
TOLL FREE: (800) 942-SOFT
FAX: (415) 861-9801
E-MAIL: info@soft.com
http://www.soft.com



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