Soft4Soft
RESORT Code Analysis

RESORT Static Analysis Tool

❑ Static Analysis Tool

- RESORT for C, C++, C#, Java(JSP), R, Python, JavaScript, Flex, ABAP
- RESORT for iOS (Swift, Objective-C)
- RESORT for Android (Kotlin, Android-Java)
- RESORT for JavaFP

❑ *Plug-in*

- Eclipse, Intellij, Android Studio, Visual Studio, Xcode, etc.
- Jenkins/Hudson

❑ Static Analysis Process

Check Environment
Rule

↓

Code Verification
Defect Code
Security Hole

↓

Code Evaluation
Code Violation
Rule Compliance

↑

SW Testing & Consulting Service

❑Product Certification

- CWE Compatibility
- ISO 26262:2011, IEC 61508-3 ed2.0, EN 50128:2011

Static and dynamic tools support everything from code verification to system testing by analyzing the source code once

The RESORT static analysis tool checks and verifies code defects and security holes with the advanced code defect verification technology of inter-procedural path analysis to ensure the program's reliability, safety, security, and code metrics.

❑ Code Analysis Features

- **(no Compile Step)** Works on static analysis without the compiler build step
- **(no False Positive)** Verification of code bugs and security holes by precisely analyzing dynamic state values of variables based on Inter-procedural path analysis
- **(no Rule Option)** All detection of reliability, safety, security, and code metrics
  - Supporting the concept "One Guide to One Rule" to prevent duplicate detection
- **(Tool Qualification)** ISO 26262, IEC 61508, EN 50128, CWE Compatibility, etc.

Reliability (Coding Guide)

•MISRA-C, MISRA-C++, JSF++, Java Code Convention, JPL Java & C
•Automotive Embedded C, C++ Coding Guide Compliance
•Coding Guide: JavaScript, Python, R, ABAP, Mobile(iOS, Android)

Safety (Run-time Error)

•CWE-658(for C), CWE-659(for C++), CWE-660(for Java), AUTOSAR C++14
• Automotive Embedded C, C++ Run-time Compliance

Security (Security Vulnerability)

•CWE, OWASP, CERT (C, C++, Java)
•Automotive Embedded C, C++, Java Security Compliance

Code Metrics (Complexity)

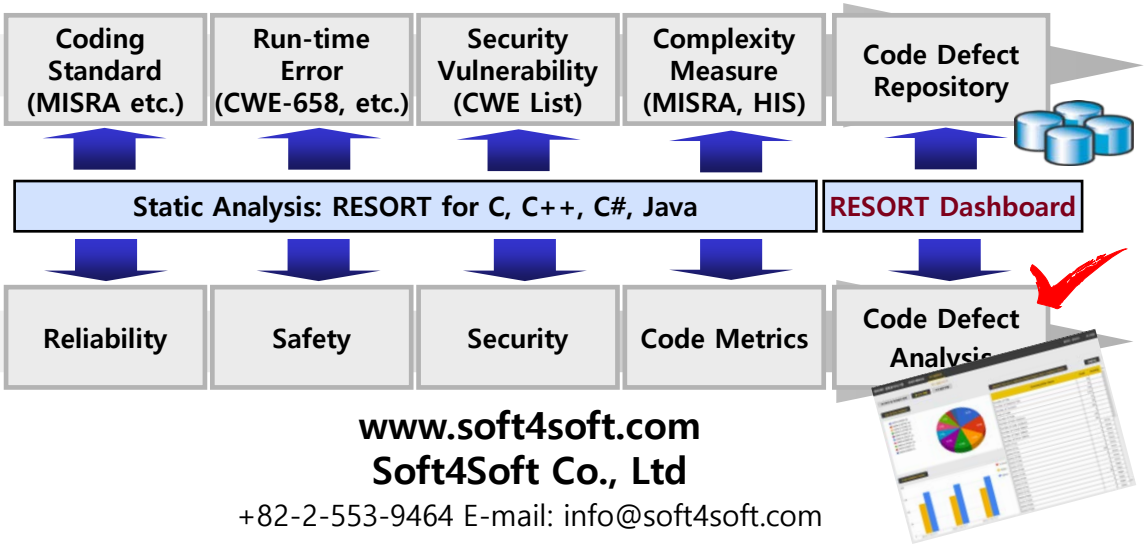
•MISRA Software Metrics, HIS Source Code Metrics
- Automotive Embedded Code Metrics Compliance

Static Analysis Dashboard

•Defect Analysis: Evaluation Summary, Top 10 Rule Violation, Violation Trend, etc.
•Defect Exception Transaction: Exception Request, Review & Approval, Automated Exclusion of Exception Codes, etc.

Java Function Point

•Java Function Point Counting based on IFPUG
-Automatic/semi-automatic/manual Function Point based on reverse engineering



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Soft4Soft
RESORT Code Analysis

RESORT White-box Testing Tool

❑ Testing Tool

- RESORT for C, C++, C#, Java
  - Automated White-box Path Test
  - Path-based Fault Injection Test
  - GUI-based Coverage Test

❑Supported Compilers

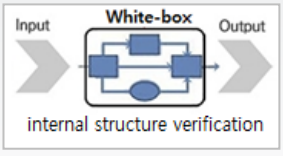
- C/C++ test supports all compiler families based on big-bang technique

❑ Automated White-box Path Testing Process

Test Environment
Target Compiler
↓
Auto Test Design
Path Test Case
Path Instrument
↓
Test Evaluation
Code Coverage
Pass/Fail
↑
SW Testing & Consulting Service

❑Product Certification

- CWE Compatibility
- ISO 26262:2011, IEC 61508-3 ed2.0, EN 50128:2011



We are looking for business partners in America, EU, and Japan

The RESORT automated white-box path testing tool provides integrated testing from unit to system testing based on host or target.

❑ Automated White-box Path Testing Features

- **(no Compile Step)** Works on dynamic test without the compiler build step
- **(Path Test)** White-box path test of "how" perspective in the aspect of program logic
  - Automated generation of test cases and automated extraction of test data
  - Code coverage analysis and MBD (Model-Based Design)-based path verification
  - Integrated support for path-based fault injection test
- **(GUI-based Coverage Test)** Desktop/web/mobile GUI software test based on code
  - Verification/validation of code coverage on each client and/or server system with record & play on desktop, web, and mobile GUI software
  - Validation of GUI-based program functionality, interface operation, performance
- **(Fully Test Methods)** Integrated support from unit to system tests based on code
- **(White-box vs. Black-box)** "How" of the program vs. "What" of the functionality
  -(White-box Code Coverage) Achieving higher levels of code coverage quickly
  -(White-box Code Verification) Verifying program bugs based on MBD
- **(Test Approach: Test Design/Test Execution/Coverage)** White/White/White

Unit & Integration Test

- Automated white-box Path Test (Path Test Case Design, Path Instrument Design)
- Path-based Fault Injection Test

System Test

- GUI-based Coverage Test (GUI Component Scenario: Client and/or Server Application)

Code Coverage Analysis

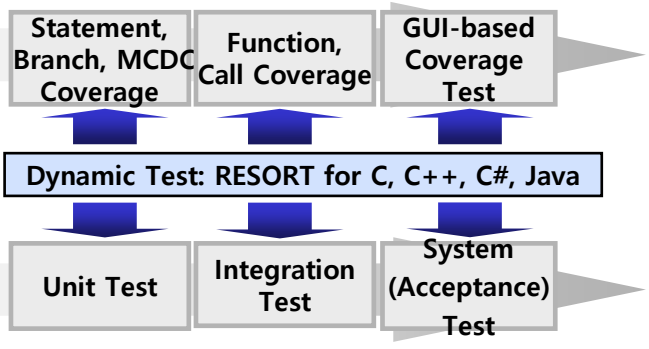
- Unit/ Integration Coverage: Statement, Branch, MC/DC, Path, Function, Call Coverage
- Requirement Coverage: Requirement Traceability, Requirement Consistency

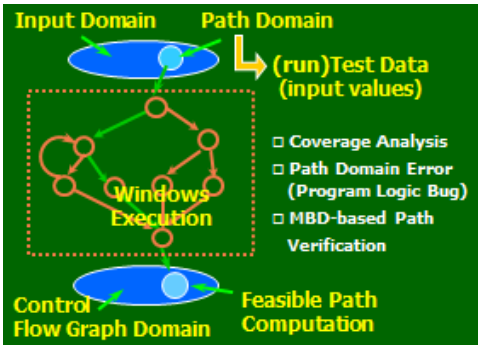
MBD-based Path Verification

- (input path-to-executed path) Verification for "program logic" by comparing before and after the feasible path's test execution of the tested Statement, Branch, MC/DC
- (test-to-graph) Identification of bug based on MBD of Extended Control Flow Graph
- (test-to-code) On source code, indication of the coverage types and the tested codes

Safety Standard Compliance

- ISO 26262(Automotive), DO-178B/C(aerospace), IEC 61508(electrical and electronic)
- EN 50128(railway), IEC 61513(nuclear), IEC 62304 (medical), etc.





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