Soft4Soft
RESORT Code Analysis

RESORT Static Analysis Tool

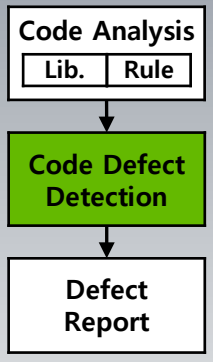
❑ Tool

- 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

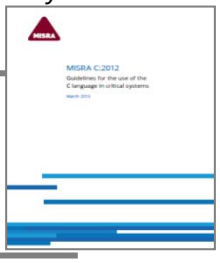


RESORT Static Analysis Tool analyzes the source code only without compile step and verifies Reliability(Coding Guide), Safety(Run-time Error) and Security(Security Vulnerability), and Code Metrics through advanced inter-procedural path analysis.

❑ Static Analysis Features

- **(No Compile Step)** Works on source code only using "RESORT Code Analysis" technology without building (compile) step
- **(No False Positive)** Advanced Inter-procedural Path Analysis
- **(Fully Code Assurance)** All detection of reliability, safety, security, metrics
  - Supporting "One Guide to One Rule" to avoid duplicate defect detection
- **(Tool Qualification)** ISO26262, IEC61508, EN50128, CWE Compatibility

Reliability (Coding Guide)

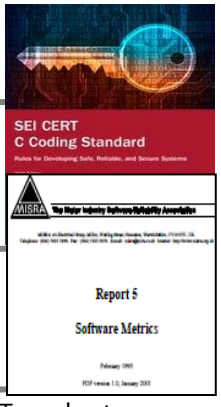


- MISRA-C, MISRA-C++, JSF++, Java Code Convention, JPL Java & C
- Automotive Embedded C, C++ Coding Guide Compliance
- Coding Guide: JavaScript, Python, R, ABAP, Mobile(iOS, Android)

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 Error Compliance

Security (Security Vulnerability)



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

Code Metrics

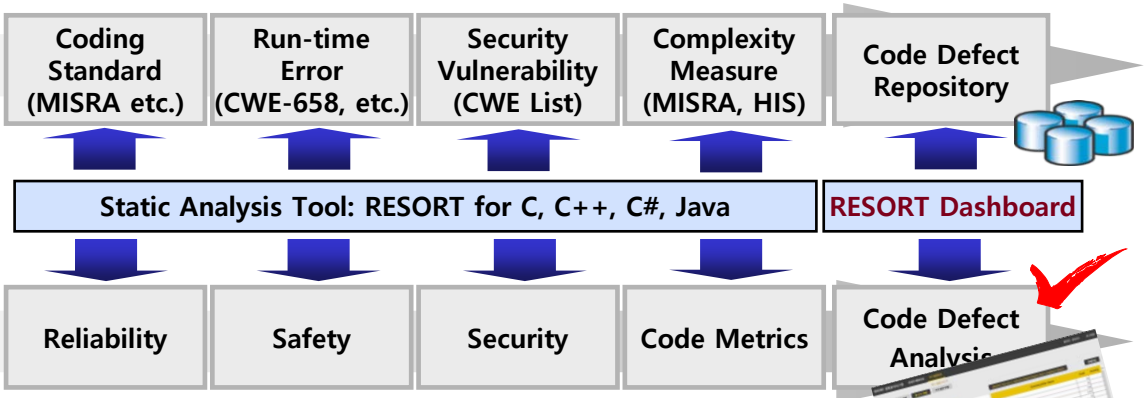
- MISRA Software Metrics, HIS Source Code Metrics
  - Automotive Embedded Code Metrics Compliance

Defect & Exception Dashboard

- Defect Analysis: Evaluation Summary, Top 10 Rule Violation, Violation Trend, etc.
- Defect Exception Transaction: Exception Request, Review & Approval, Automatic 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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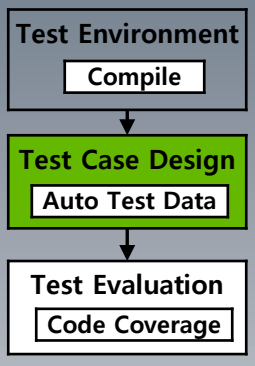
RESORT Code Analysis

RESORT Dynamic Analysis Tool

❑ **Tool**
- RESORT for C Testing
- RESORT for C++ Testing
- RESORT for Java Testing

❑ ***Plug-in***
- Jenkins/Hudson

❑ **Dynamic Analysis Process**



RESORT Path Testing is an automated unit & integration testing tool that automatically generates test data the feasible path to evaluate the code coverage of international safety standards such as ISO 26262, IEC 61508, IEC 62304, DO-178, etc.

❑ Path Testing Features

- **(Tool Chain)** Integrated support for static analysis and dynamic analysis with only one source code analysis
- **(Requirements-based Test)** Code requirement-base automatic path testing
  - Path testing automation through the big-bang technique
  - Automatic test data(domain, Input) generation based on Equivalence Analysis
  - Automated regression testing based on test cases of the feasible path
  - Test execution on target
- **(Fault Injection Test)** Injection of arbitrary faults based on the feasible path
  - Fail verification for the logical structure of code by injecting fault values for each test cases
- **(V&V Process)** Reduce code verification time with static & dynamic analysis

Automated Test Case Design

- Automatic extraction of test case execution path (Feasible Path)
- Automatically generate test data(path domain, input value) for each path
- Unit Test: Statement, Branch, MC/DC, Path Coverage
- Integration Testing: Function, Call Coverage

Test Evaluation

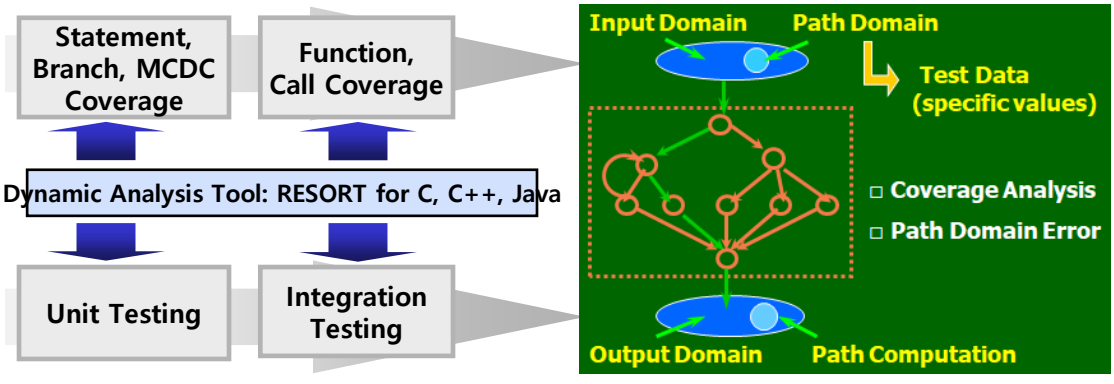
- Pass/Fail verification for "program logic" with the path before and after the execution of each Statement, Branch, MC/DC test cases
- Execution Path Analysis for pass/fail with Execution Trace in Control Flow Graph

Test Domain Analysis

- Logical Flow Analysis: Boolean Table, Control Flow Graph, Data Flow Graph
- Global Variable Analysis: Global Variable Graph
- Code Metrics: Cyclomatic Complexity, Structuring(Call) Level

Safety Standard

- 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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