HCL OneTest Embedded
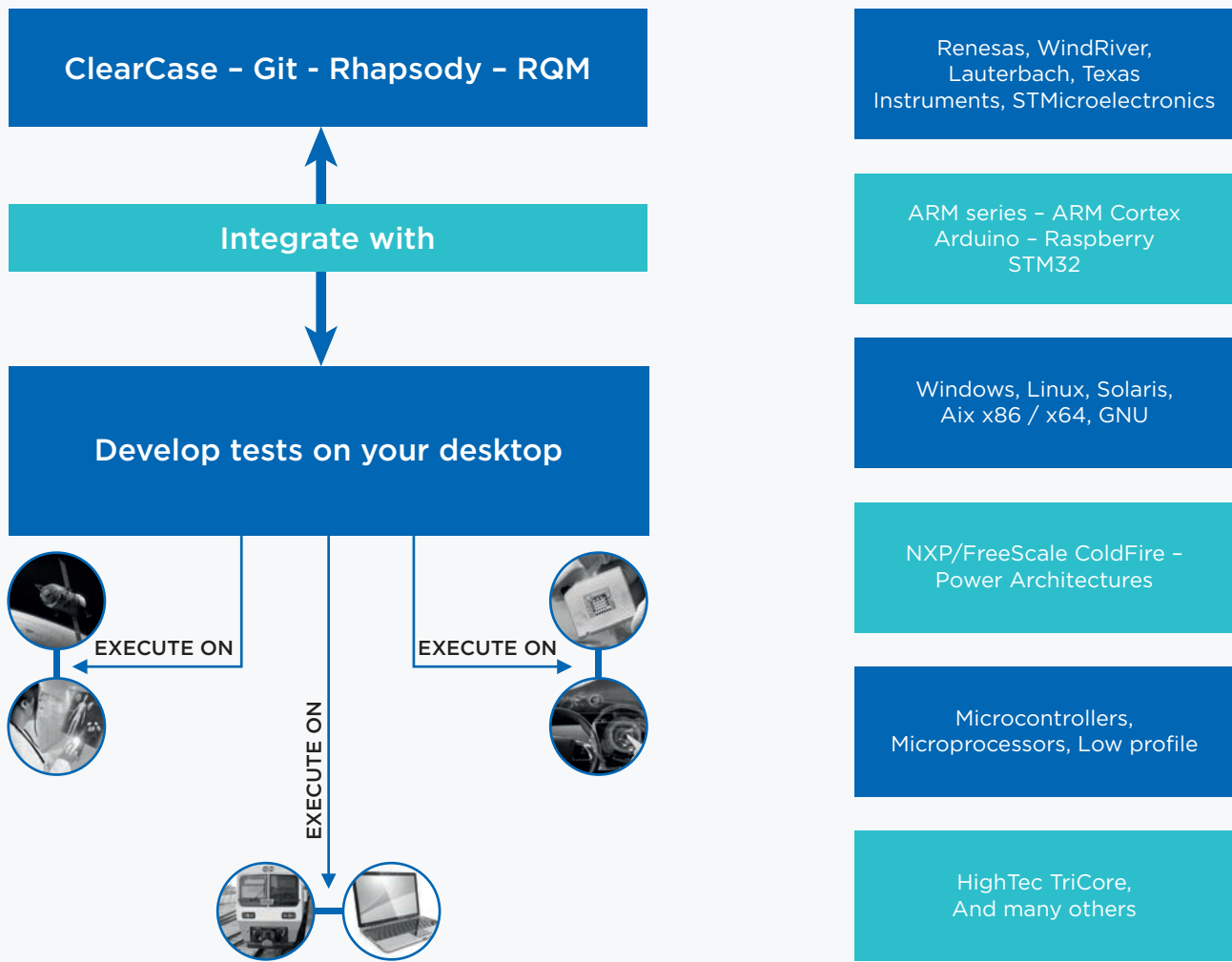
A cross-platform solution for component testing and runtime analysis

HIGHLIGHTS

- Automates component testing and runtime analysis for host and target from a **single testing environment**

- Automates creation and deployment of **component test harnesses,** test stubs, and test drivers

- Profiles **memory and performance**, analyzes code coverage, and visually illustrates runtime tracing

- Host-based tests easily adapted to different targets without **rewriting test procedures**

- Test and analyze directly on the target. Supports all common platforms—from an 8-bit microchips to a 64-BIT RTOS

- Provides detailed code coverage information required for safety and mission-critical certification

- Code coverage and runtime tracing on-the-fly reports. Consolidated reports.

- Qualification Kits for certification processes are available on request

HCL OneTest Embedded is a cross-platform solution for component testing and runtime analysis. HCL OneTest Embedded was designed specifically for those who write code for embedded, real-time, and other types of commercial software products. HCL OneTest Embedded allows you to be more proactive in your debugging, enabling you to fix your code before it breaks.

HCL

ClearCase – Git - Rhapsody – RQM

Integrate with

Develop tests on your desktop

EXECUTE ON

EXECUTE ON

EXECUTE ON

Renesas, WindRiver, Lauterbach, Texas Instruments, STMicroelectronics

ARM series – ARM Cortex Arduino – Raspberry STM32

Windows, Linux, Solaris, Aix x86 / x64, GNU

NXP/FreeScale ColdFire – Power Architectures

Microcontrollers, Microprocessors, Low profile

HighTec TriCore, And many others

TEST, ANALYZE AND RESOLVE DURING DEVELOPMENT

The best time to find and fix bugs is during development. Therefore HCL OneTest Embedded is focused on developer testing – the kind only you as the author of the code can perform effectively. You need to easily test the components you write and to analyze the reliability and performance of your applications as they run on your host development system.

HCL OneTest Embedded automates the creation and deployment of component test harnesses, test stubs,

and test drivers. With a single click from your development environment, you can also profile memory and performance, analyze code coverage, and visualize the behavior of your program execution.

Fully detailed test and runtime analysis reports are hyperlinked to the relevant source code.

HCL OneTest Embedded combines component testing and runtime analysis into a single, integrated developer-centric testing solution.
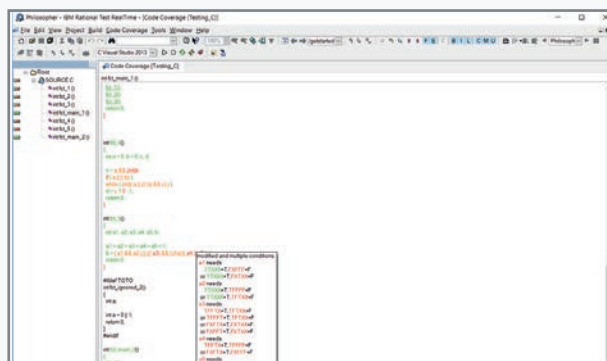
1 Code coverage Analysis
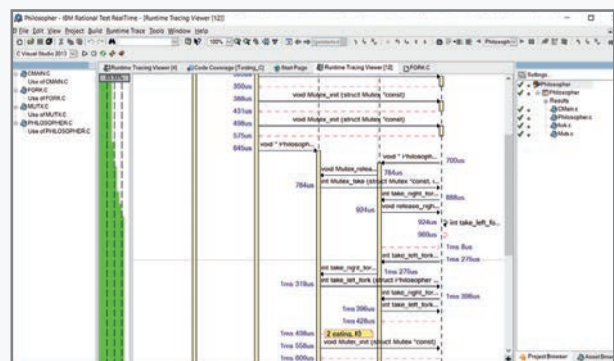
2 Runtime Analysis

HCL OneTest Embedded's graphical user interface links your runtime analysis results (coverage above, runtime trace below) directly to your source code, enabling code repairs without ever having to leave the tool.

Feature	Description	Benefits
Component Testing	Automates creation and deployment of host and target-based component tests. High level test orientated languages allow sophisticated tests to be easily written.	Increases developer tester productivity through automation. Allows a virtual cycle of test generation, execute, review and then test improvement to rapidly achieve full test coverage. One click to build, to execute on the target and to generate the report.
Memory profiling	Illustrates how a program's memory is being consumed and possibly leaked. Detects memory leaks, potential memory leaks, buffer under and over runs, misuse of memory after liberation and many other memory management errors.	Identifies the source of memory management errors at the testing phase before they occur in production, preempting performance issues and program crashes. Can be adapted to work with custom memory management methods used in embedded software.
Thread profiling	Detects and analyzes multithreading problems, such as deadlocks and race conditions as they occur in programs	Improves the reliability of multi- threaded applications. Provide visibility on thread execution and switching to develop a deep understanding of the behavior of the system under test. Integrates Test Results and Code Coverage data.
Code coverage	Identifies which portions of the source code that have not been tested from function call up to MC/DC coverage levels.	Helps the developer tester to develop pertinent test cases. Avoids delivering code that is executed for the first time by the user or the target system running the application
Runtime tracing	Illustrates thread execution function calls, and variable values in programs as a function of time via UML sequence diagrams	Developer can go back in time to review how a program behaved after the execution has completed. The integrates Test Results and Code Coverage data helps to provide a deep understanding of the behavior of the system under test. This information can be gathered on-the-fly whilst the system under test is running.
Target Deployment Technology	Provides a versatile, low- overhead technology for enabling target-independent tests and runtime analysis	Develop tests on your host and validate on your target. Your tests won't need to change when your environment does; test script deployment, execution and reporting remain easy to use without changing your test scripts.
Qualification kit	Specifications and test suites are available to qualify HCL OneTest Embedded with your environment and your target device	Allows qualification against many industry standards. See the last page of this brochure for a full list
Reporting	Generation of reports in various formats (XML, HTML, text...)	Consolidated reports facilitate certification process. Linking of reports allows detailed understanding of the test results.

Programming Languages	Popular Targets, others on demand
C	Renesas - WindRiver - Lauterbach - Texas Instruments
C++	STMicroARM series – ARM Cortex - Arduino – Raspberry – Windows Linux – Solaris – Aix - x86 / x64 – GNU toolchains - NXP/FreeScale - ColdFire – Power Architectures - HighTec Tricore,
Ada (component Testing and Code Coverage)	And many others …

Industry	Standards
Aeronautical	DO178B/C, DO-278
Automotive	MISRA, ISO-26262
Defence	Def Stan 00-55
Medical / Industrial	IEC 62304
Rail	EN 50128

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