Rational. software

IBM Rational Logiscope software

Highlights

- ***Methodically track software quality to address SEI CMMI process area requirements.***
- ***Address the "Review and Analysis of the Source Code" and the "Structural Coverage Analysis" compliance as required by the avionics standard.***
- ***Automatically verify compliance of C source code with programming rules specified in the MISRA guidelines.***
- ***Address Galileo Software Standard requirements.***
- ***Verify software using techniques and measures that are highly recommended when developing safety-related systems from SIL 1 to SIL 4.***

Manage change across heterogeneous change repositories

In addition to meeting project requirements, software developers must produce a reliable product while minimizing time to market. While these objectives may seem contradictory, reducing costs and eliminating errors in software during development go hand-in-hand. Early detection is cost-effective for projects because the sooner a problem is found, the shorter the repair time. For instance, locating and fixing bugs during the coding phase is cheaper than doing so during the testing phase because it's not necessary to trace the source code and then retest. The origin of the error and the resulting problem are found and fixed at the same time. Moreover, when large projects involve several companies, error detection techniques and the corresponding verification processes are defined by the contracting company but must be carried out by its subcontractors.

Organizations also adopt, or are required to adopt, verification processes that are described by international standards such as DO-178B (Software Considerations in Airborne Systems and Equipment Certification), Motor Industry Software Reliability Association (MISRA), Galileo Software Standard (GSWS), IEC 61508, Software Engineering Institute (SEI) Capability Maturity Model Integration (CMMI) and ISO/IEC 9126 and 9001.

IBM® Rational® Logiscope software supports improved product quality and productivity while helping to reduce time to market.

The IBM Rational Logiscope RuleChecker tool

The IBM Rational Logiscope RuleChecker tool automatically checks your code against a set of project-defined programming rules to help avoid language traps and code misunderstandings. The Logiscope solution comes with a configurable set of coding and naming rules.

The IBM Rational Logiscope QualityChecker tool

The IBM Rational Logiscope QualityChecker tool locates error-prone modules, quantifies the information based on software metrics and presents the information graphically. This helps you diagnose problems and improves your decision making—should you rewrite the module or test it more thoroughly? Software metrics templates used to evaluate the code are ISO 9126 compliant and configurable to project-specific requirements.

The IBM Rational Logiscope TestChecker tool

The IBM Rational Logiscope TestChecker tool measures structural code coverage and shows uncovered source code paths. By uncovering bugs hidden in untested source code, Logiscope helps to improve program reliability. The TestChecker tool is based on source code instrumentation techniques that are designed to be adaptable to your test environment constraints, both on host and target platforms.

The bottom line

The quality of a software product is constructed throughout its lifecycle. Quality requirements should be defined during the earliest phases of development and verified in all subsequent phases. The IBM Rational Logiscope solution is designed to provide organizations with the verification necessary to ensure that quality requirements have been fulfilled in the development process.

System requirements

The IBM Rational Logiscope solution supports the following operating systems:

- Microsoft® Windows® NT 4
- Microsoft Windows 2000
- Microsoft Windows XP
- Sun Solaris
- RedHat Enterprise Linux®

The IBM Rational Logiscope solution supports the following languages and dialects:

- C
- C++
- Ada 83 and 95
- Java™

For more information

To learn more about IBM Rational software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/rational

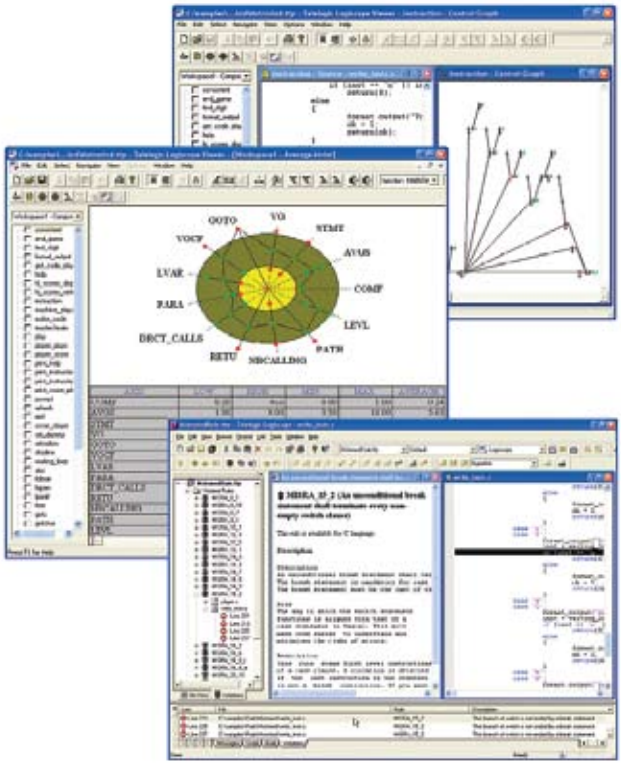

Figure 1. From top: control graph, Kiviat graph and rule violation display

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