

CANTATA



INTELLIGENT TESTING

Supplied by UK Distributor:

Phaedrus Systems Ltd

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- › Cantata is the most cost effective way to dynamically prove code with intelligent unit and integration testing
- › Cantata provides a complete test development environment built on Eclipse
- › It easily integrates with the developer desktop, compilers and embedded target platforms



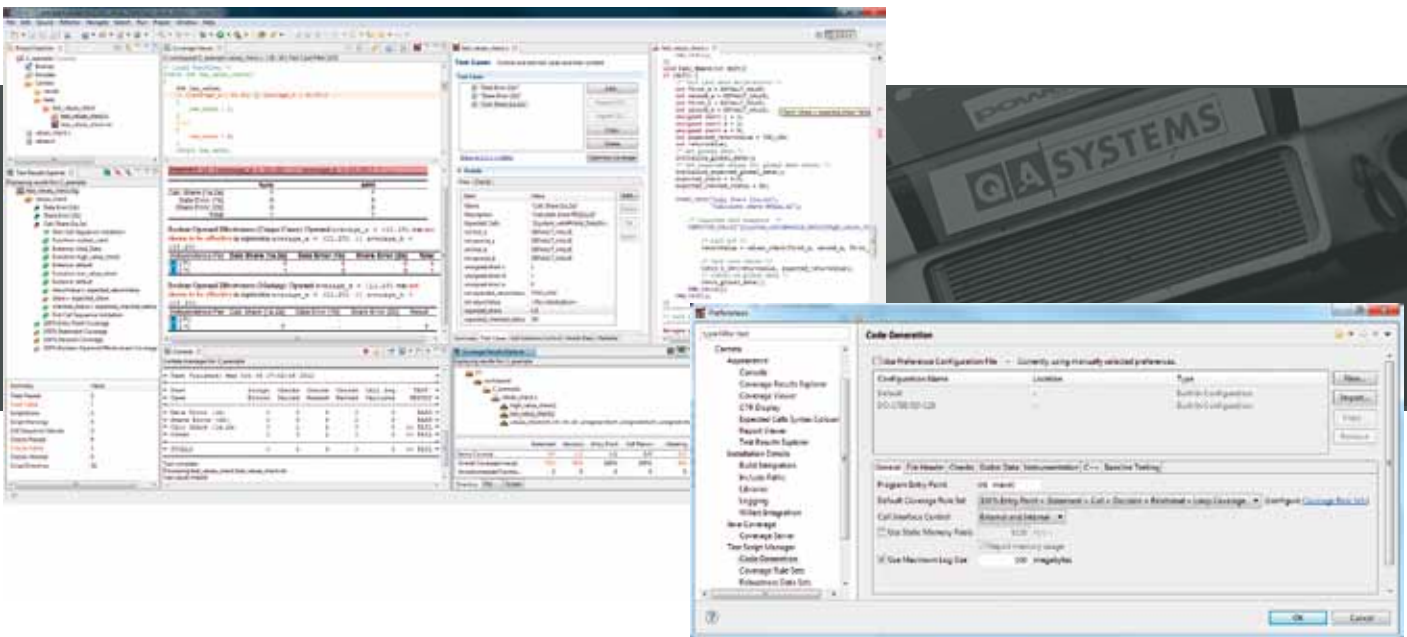
Free Trial

Free trial of Cantata on your host or embedded target platform

REQUEST NOW

Or contact your local supplier.





Why Unit/Integration Test

Standards Compliance

International standards for most safety related industries require evidence of low level testing, and of how much of the code was tested, to be provided in order to obtain certification for the device software.

In addition most standards require or provide certification credit for the test tool to be qualified / certified or proven through use.

Cantata has been successfully used by customers worldwide since the 1990s to meet all the international safety related standards including; IEC 61508 and its various sector specific derivatives, (ISO 26262 for Automotive, EN 50128 for Railways and IEC 60880 for Nuclear Power), DO-178B/C for Avionics, and IEC 62304 / FDA Guidelines for medical devices.

Commercial Risk

Thorough software testing, only possible at the developer level due to application complexity, is necessary to ensure that shipping devices:

- perform reliably
- do not negatively impact brand or corporate reputations
- provide a defence against litigation on grounds of fitness for purpose

Cost of Testing

Unit testing and low level integration testing are the earliest tests performed during software development.

This level of testing is also the least expensive time to fix software bugs, and can be done before bugs pollute the wider code stream, or affect shipping devices.



Quality Pedigree

Cantata has been developed under the control of IPL's Quality Management System which is certified to ISO 9001:2008 (TickIT).

Cantata has been proven through use in all high integrity sectors including: medical, air-traffic control, avionics, rail transport, automotive, space, defence, nuclear energy; as well as for business critical sectors such as telecoms and financial and digital broadcast systems.

See customer case studies and Sector Briefs for more information on how customers have proven their code with intelligent unit testing using Cantata.

A Cantata Tool Qualification Kit is available free of charge for customers wishing to qualify the tool themselves for DO-178B/C or other high integrity standards.

Flexible Use

Cantata provides a flexible tool kit for C/C++ developers to perform unit and integration testing on host or embedded target platforms more efficiently.

Static analysis metrics aid planning most efficient tests.

Powerful in-built EDG C/C++ parser generates detailed understanding of code, for automatic generation of test cases as thorough or light touch as required.

Preferences for the appearance of all views, reports and installation details can be saved in user specific configurations.

Test and Analysis Generation options for test script layout, source language, memory, global data and testability instrumentation can all be user configured.

Test harness automates testing as appropriate for:

black-box / white-box	call simulation / interception
positive / negative testing	isolation / integration test
requirements / robustness	host / target execution
single / large input data sets	requirements / baseline test
procedural / object oriented	

Unique testability instrumentation and wrapping provide precision test control and verification.

Integrated code coverage and test optimisation pin-points gaps and efficiently directs test effort.

Results and diagnostics are used for rapid error identification and to support certification. Automated repeatable execution through Cantata Makefiles retains value of tests whenever code is built.



Intelligent Testing Benefits

Meets Key Technical Tool Challenges

- › Planning Test Effort
- › Knowing where to focus my test effort and how much work it will be
- › Set up
 - Being easy to install and use for my host and target platforms
- › Maximising Test Harness Automation
 - Finding time to create reusable test harnesses to test all my functionality
- › Call Interface Control
 - Making it simple for me to test object interactions with the rest of the system
- › Flexible Test Techniques
 - Having a full tool-kit to efficiently test the way I need to
- › Code Coverage
 - Confidence that my tests on the target cover the important code
- › Testing Legacy Code
 - Needing to create unit regression tests for my existing code to safely modify it
- › Tool Dependability
 - Not fighting the tool, but easing my path
 - Path to certification

Eases Tool Adoption

- › Eclipse IDE, target integrations, and tests written in C/C++ reduce adoption barriers and learning curve
- › Increases Efficiency and Professionalism
 - Intelligent techniques, applied with powerful automation and diagnostics focus effort only where needed.
 - Structured, repeatable thorough testing imposes coding discipline on developers

Major Features

- > Unit and Integration testing
- > C and C++
- > Development host and embedded target platforms
- > Highly automated developer testing reducing cost and increasing quality
- > Re-usable test harness
- > Test script generation written in C/C++
- > Unique call interface control to simulate and intercept calls
- > Automatic white-box accessibility
- > Large data sets and robustness testing
- > Automated regression testing
- > Automatic generation of complete baseline of unit tests for legacy C code
- > Most advanced integrated code coverage analysis available for C/C++ and Java
- > Fully qualifiable for safety critical use

Platform Availability

Host Platforms

Windows XP, Vista, 7
Linux 2.4 & 2.6 Kernel
GNU GCC/g++ compiler
Microsoft Visual C++ compiler

Embedded Target Platforms

Cantata can be deployed on almost any target platforms on request.

Further Information

Available at www.qa-systems.com

Standards Papers showing how to test for IEC 61508, 60880, 62304, ISO 26262 and DO-178B/C compliance

Tool Certification and Qualification Kit

Customer Case Studies by sector

Detailed Feature Briefs on specific capabilities

Product Videos

Sector Briefs documenting customers, standards and technologies where Cantata has been successfully used

White Papers covering test management and technical issues

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