√EROCEL

Verocel, Inc has been in business since 1999 and specializes in software verification. Verocel's management and engineering team expertise has been applied to RTCA/DO-178, IEC61508, ISO 26262, EN51028 and IEC 62304 certification standards. Our unique skills in certification of software components, partitioning and constraining run-time applications for use in safety critical platforms have enabled dozens of customers to succeed. We have skills in Ada, C, C++, Java and most other higher-order languages.

Verocel's tools enable safety critical developers to comply with the stringent and arduous certification requirements for software such as ensuring full life cycle artifact traceability, source and object code coverage analysis, stack analysis and more. Verocel has participated in many advisory committees across industries to bolster our knowledge and capabilities. We have certified software for use in medical, rail and aerospace applications such as heart monitors, train braking systems and avionics platforms on large commercial and military aircraft.

info@verocel.com

www.verocel.com

United States
Verocel, Inc.
239 Littleton Road, Suite 2B
Westford, MA 01886
United States
T: +1 978-392-8850
F: +1 978-392-8501

Germany
Verocel, GmbH.
Emmy-Noether-Str. 11
76131 Karlsruhe
Germany
T: +49 721 89310-0
F: +49 721 89310-19

Poland
Verocel-Polska Sp. z o.o.
ul. Glogowska 161 lok. 102
60-126 Poznan
Poland
T: +48 616 630645
F: +48 616 630646

√EROTRACE

Application Life Cycle Management (ALM) Environment for Automotive, Industrial, Medical and Aerospace Applications

Industrial

Medical

Automotive

Aerospace

√EROCEL

Overview

The VeroTrace tool provides a complete end-to-end life cycle verification management environment that allows full configuration control, traceability and review tracking for software development. It maintains all development and verification life cycle artifacts for your software application, as well as their relationships and review status. It is the ideal environment to handle development, review, authorization and sign-off status of complex software systems. VeroTrace is ideal for software that requires some form of regulatory approval and has features and capabilities that are superior to competitive ALM products.

Benefits

VeroTrace was developed to meet the real world needs of the activities necessary to develop and certify software systems. VeroTrace has been used on multiple successful safety or security certifications by Verocel and its customers to meet DO-178B/C, ISO 26262 for automotive, IEC 62304 for medical, IEC 61508 SIL 3 for industrial, and EN 50128 rail certification. Users of VeroTrace will reduce certification risk, time-to-market and total lifecycle cost. Developers can use the tool from anywhere world-wide with VeroTrace's client/server architecture. Cost of change is minimized with VeroTrace using its unique impact analysis feature that identifies what lifecycle data is affected by software changes. With VeroTrace's import and export capability users are not locked into a single vendor any longer. VeroTrace and accept imports from popular tools such as DOORSTM and Polarion®.

Features

A VeroTrace project database can uniquely identify and manage all artifacts from system requirements to high and low-level requirements, to source code, design components, test procedures, test result files, structural coverage analyses, problem reports and documents. VeroTrace may be integrated with any configuration management (CM) system to track version control and change management of life cycle artifacts maintained outside the tool. Engineering and Quality Assurance reviews can be conducted directly within VeroTrace using configurable review checklists and process enforcements enabled by the tool – such as review independence. A powerful query feature allows developers and reviewers to quickly hone in on the requirements, sources or tests that require their attention for update or review. For project managers, VeroTrace reports allow visibility into the status of an overall system down to the granularity of subsystems, collections or individual life cycle artifacts. This allows for the quick review of the status of a system being certified. At any point during the development and verification life cycle, or at the end of a project, VeroTrace can provide all life cycle artifacts in their linked hierarchy structure in a form that can be delivered as a complete set of safety or security certification evidence. This feature is qualified and may be used to produce complete certification data packages for delivery to an auditor or certification authority.

Qualified impact analysis

VeroTrace supports the implementation of multiple mapping types and relationships between the artifacts maintained within the database and its linked CM system. Within any verification project, there is significant effort required to assess the full engineering impact when an artifact – such as a source file – is updated. VeroTrace simplifies this effort and reduces human error with its built-in impact analysis function. Whenever the development state of an artifact is moved from complete to incomplete within the tool, the developer will be prompted to review a complete list of potentially impacted artifacts and determine which, if any, require update due to the change being made. This function provides a comprehensive impact analysis log maintained under the history of each artifact.

The impact analysis function is fully qualified as defined by DO-178B/C so that its use and output can be trusted by the certification review authorities.

Qualified completeness check

Many tools may offer a build or baseline capability. VeroTrace has a qualified capability to guarantee the completeness of verification deliveries generated from the tool. This is commonly used when generating a delivery baseline in the form of a hyperlinked media image, such as a DVD-ROM.

VeroTrace has a qualified capability to guarantee the completeness of verification deliveries. This is the proven method used by Verocel to produce certification packages for delivery to a customer or certification authority.

Repository may be local or distributed

- Offers option for a local repository baseline or snapshot
- Local copy can be frozen while work continues on the main-line copy
- Media images may be generated without disrupting main project verification progress

VeroTrace allows a unique baseline to be applied to any subset of artifacts for delivery or archival. Project threads may be saved.

Multi-directional traceability and report generation

VeroTrace can generate a wide variety of reports that commonly describe the traceability and interrelationships between artifacts. The tool allows users to generate a variety of pre-defined reports based on the user-defined queries run against the project database. Documents generated by VeroTrace include:

- System/Software Requirement Specifications
- Requirements Traceability Matrices
- Test procedure templates
- Life cycle phase status reports
- CM baseline reports
- and many more relationship-based documents

Hyperlinked traceability is the hallmark of VeroTrace output

VeroTrace can generate a hyperlinked browseable certification data package containing all life cycle artifacts with bi-directional traceability. VeroTrace combines XML traceability files (generated by VeroTrace and translated into hyperlinked HTML files) and the artifacts (requirements, designs, source, tests, tests results, review checklists) extracted from VeroTrace and its linked CM system. The hyperlinked files point to one another as well as to the artifacts and their review evidence. VeroTrace also verifies the accuracy of the generated links (which can number in the tens of thousands) and the existence of the expected artifacts in their expected locations.

Document and file management

VeroTrace maintains documents developed for a certification project, including their version control, baseline and review state identification. Documents may be saved directly in VeroTrace or held in a linked CM system. Non-document files can also be maintained in VeroTrace to allow artifacts such as build binaries, test scripts and test result summaries to be included on a certification data package.

Problem reporting

An optional problem reporting process is built into VeroTrace at no added cost. Problem reports managed within VeroTrace enable the same sort of linking to artifacts and attachment of other supporting evidence to provide the full problem description together with review, commentaries, and authorized sign-off.

VeroTrace key artifact relationships