Is Understand™ Right For You?

Understand™
by SciTools

Ideal for...

Software Developers

QA/ IV&V (Independent Verification & Validation)

Software Architects

Security Analysts

Legal / IP / Compliance Teams

DevOps / CI / CD Engineers

Technical Project Managers / Team Leads

Certification Bodies & Auditors

Onboard to an Existing Codebase

- Identify complex & critical code
- Conform to coding standards
- Visualize with detailed graphs
- AI descriptions (offline)
- Quickly find dependencies

Maintain Legacy Code

- Isolate high-risk & fragile code
- Incrementally refactor & update
- AI descriptions (offline)
- Prioritize efforts & measure progress
- Determine technical debt and complexity

Verify and Assure Code Quality

- Ensure standards enforcement
- Apply and enforce quality gates
- Remove & block risky dependencies
- Measure complexity & maintainability

Understand™

Code Knowledge Platform

Intellectual Property Analysis

- Trace code origins and code reuse
- Identify licensing concerns
- Verify compliance
- Visually identify risky areas

Review and Document Code

- Generate graphs, flowcharts, and dependency diagrams
- Quickly jump between definitions and references
- Access complexity, coupling, and other key quality metrics
- Automate documentation

Assess Project Health and Metrics

- Measure complexity and maintainability
- Track trends to catch degradation early
- Ensure code meets standards
- Identify hotspots & technical debt
- Automate results for every checkin

Supported Standards

MISRA C/C++
AUTOSAR
Meyers Effective C++
HIS Metrics
SEI CERT C/C++/Java

ISO 26262
IEC 61508
EN 50128
ISO 21434

Supported Languages

Ada
C/C++
C#
FORTRAN
Java
JOVIAL

Delphi/Pascal
Python
VHDL
VisualBasic
Web Languages

Supported Platforms

Windows
Linux
MacOS

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Technical Brief

Understand™
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AI Code Descriptions - No internet required

- **AI-Powered Clarity**: Instantly generate human-readable explanations of complex code.
- **Fully offline**: Works entirely without an internet connection - ideal for secure or air-gapped environments.
- **Integrated Workflow**: Seamlessly fits into your existing development and analysis processes.
- **Boost Developer Productivity**: Reduce ramp-up time and improve collaboration across teams.
- **Privacy First**: No data leaves your machine - ever.

Code Comprehension & Navigation

- **Detailed code browsing**: Jump to definitions, references and call trees.
- **Dependency analysis**: Visualize and understand architecture, file, and class dependencies.
- **Hyper Cross-referencing**: Fully indexed database of all entities (functions, classes, variables, etc.)
- **Call & Callby Trees & Graphs**: Trace function calls across your codebase.

Static Code Analysis

- **CodeCheck:** Hundreds of included checks to improve software quality.
- **Enforce Industry Standards**: MISRA, AUTOSAR, SEI CERT
- **Custom Rule Support**: Full Python API for writing custom rules.
- **Auto-fix & Jump to Violation**: Quickly navigate to code to resolve violations.
- **CI/CD Support**: Automate violation reports.

Architecture Design & Enforcement

- **Graph-based architecture views:** Visualize how modules and components interact.
- **Architecture models**: Define and enforce intended system architecture (physically or virtually).
- **Layer violation detection**: Customize rules and automate notifications for unwanted dependencies.
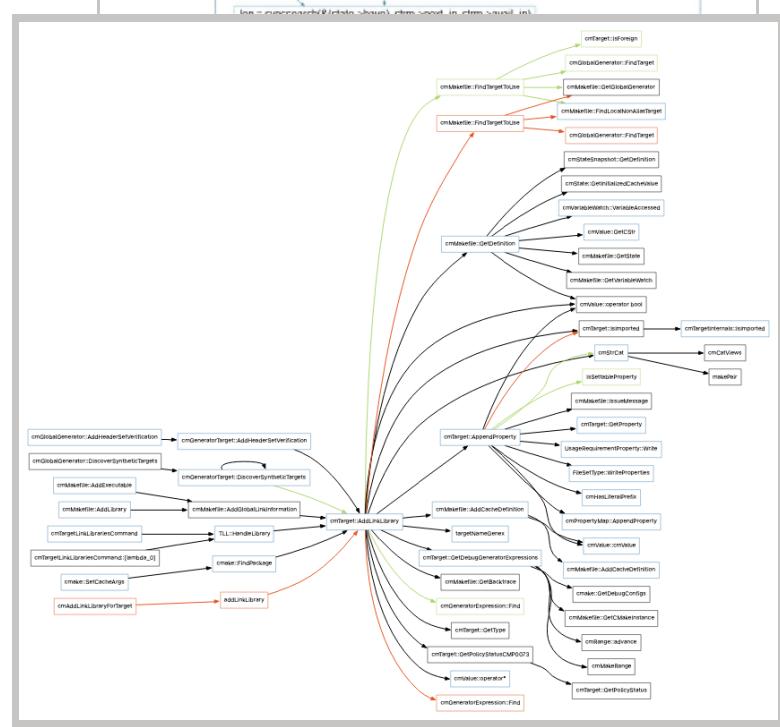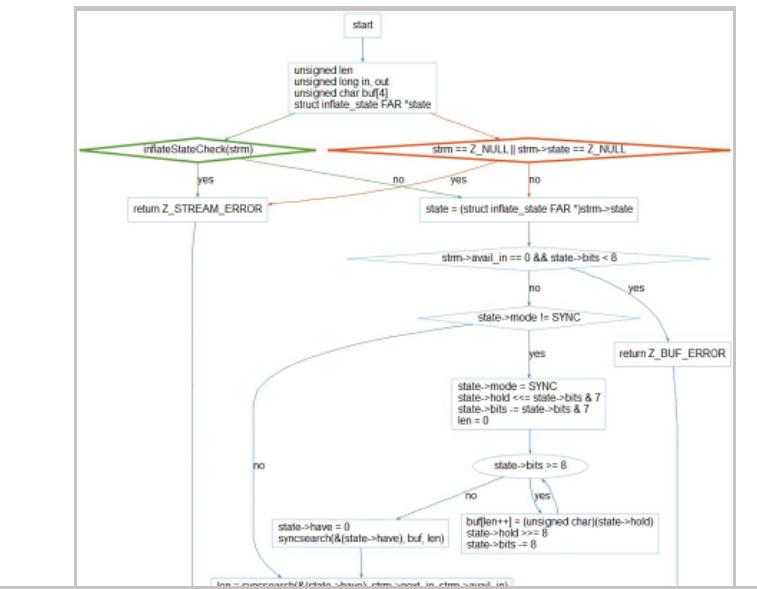
Metrics & Reporting

- **Metrics based measuring:** Set goals and plan changes, and analyze areas for high risk and improvement.
- **Dozens of built-in metrics**: Cyclomatic Complexity, Lines of Code, Coupling and Cohesion, Maintainability Index, etc.
- **Custom Metrics & Reports**: Python API for writing custom metrics and reports (HTML, CSV, XML, etc.).
- **Built-in Reports**: Insights into code quality, complexity, dependencies, compliance, and more.
- **Custom Reports**: Tailor the report to what you need using the Python API.
- **Automate Results**: Improve productivity with automated results when and where you need them.

Change Impact Analysis

- **Visualize affects of change**: Use graphs, trees, metrics, and reports to see the affect of a change.
- **Hyper Cross-Referencing**: Show where and how code elements are used, making it easier to assess impact.
- **Report & Automate**: Improve productivity by automating change reports that show code quality, complexity, dependency, etc.

Visualize Code through Graphs

- **Dependency Graph**: Quickly see where the dependencies are within your code base.
- **Call & Callby Graph**: Instantly see execution flow for better debugging and impact analysis (shown below).
- **Conrol Flow Graph**: Identify logic paths and optimize code performance (shown below).
- **UML Sequence Diagrams, Heatmaps, Treemaps, and more.**
- **Custom Graphs**: Use the Python API to generate custom graphs.

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