

Testwell CTC++ Code Coverage Analyzer

Code Coverage compliant to highest safety requirements



Code Coverage with Testwell CTC++

- ▶ Fulfill requirements of standards
- ▶ Write better test cases
- ▶ Avoid redundant test cases
- ▶ Find dead code
- ▶ Prove code coverage to your customers
- ▶ Demand proof of code coverage from your suppliers
- ▶ Find bottlenecks by examining runtime behavior



Optimal Solution

- ▶ Very small instrumentation overhead
- ▶ Analyses code coverage on all targets
- ▶ Works with even the smallest targets
- ▶ Works with any compiler/cross compiler
- ▶ No modifications necessary for existing code
- ▶ Support of existing make files
- ▶ Very fast execution speed
- ▶ Seamless integration into common IDEs
- ▶ Support for C and C++



Coverage Levels

- ▶ Statement Coverage
- ▶ Function Coverage
- ▶ Decision Coverage/Branch Coverage
- ▶ Condition Coverage
- ▶ Modified Condition/Decision Coverage (MC/DC)
- ▶ Multicondition Coverage (MCC)



Code Coverage Results

- ▶ Summary Coverage Reports
- ▶ Directory
- ▶ Files
- ▶ Functions
- ▶ Execution Profile Listing
- ▶ Untested Code Listing
- ▶ Coverage Summary Listing
- ▶ Execution Time Listing

Meet the Code Coverage Requirements of ISO 26262 and IEC 61508

In order to evaluate the completeness of test cases, ISO 26262 requires the measurement of structural coverage. Depending on the Automotive Safety Integrity Level statement coverage, branch coverage and/or MC/DC (Modified Condition/Decision Coverage) is required (see 8.4.5 of 26262-6).

Coverage Level	ASIL A	ASIL B	ASIL C	ASIL D
Statement Coverage	++	++	+	+
Branch Coverage	+	++	++	++
MC/DC (Modified Condition/Decision Coverage)	+	+	+	++

++ + stands for "highly recommended", + stands for "recommended"

Qualification Kit for Standards:

DO-178C - IEC 61508 - EN 50128 - ISO 26262-IEC 60880

