



# **Achieve Secure Software Compliance with TBsecure**<sup>®</sup>

With increased system connectivity, breaches in software security have become all too common. LDRA has developed *TBsecure*<sup>®</sup> to secure software and to enable developers to certify to common security standards such as the CERT C Secure Coding Standard (CERT C) and the Homeland Security's Common Weakness Enumeration (CWE), which identify the common programming errors behind the majority of software security attacks.

CERT C, a secure coding standard developed by Carnegie Mellon Software Engineering Institute, provides a set of secure C coding guidelines designed to eliminate insecure coding practices and undefined behaviours that can lead to exploitable software vulnerabilities.

CWE, developed by the National Cyber Security Division of US Homeland Security, provides a unified, measurable set of software weaknesses that identifies weaknesses in source code and operating systems. CWE guides the architecture and design of secure software and its tools.

*TBsecure* identifies security vulnerabilities and common programming errors and extends secure programming and security standards throughout the complete software development lifecycle.



- Easily identifies potentially exploitable security vulnerabilities in source code
- Enforces CERT C and CWE guidelines for secure coding in the C programming language
- Automates coding standards compliance, eliminating the tedium and errors associated with manual code standards enforcement
- Support software lifecycle from requirements through coding, analysis and verification

# TBsecure Programming Rules classifies standard security risks as:

Dynamic Memory Allocation (A) concerns

A common source of programming flaws, dynamic memory management can lead to security issues such as memorybuffer overflows, dangling pointers, and double-free issues. *TBsecure* monitors how the software allocates memory, reads and writes to memory, deallocates memory as well as any other memory management activities

#### Vulnerabilities (V)

Vulnerability rules eliminate insecure coding practices not associated with dynamic memory such as out-of-range array indices and dereferencing a null pointer.

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	<ul> <li>O Parameters</li> <li>Return Type - void</li> <li>get_port</li> <li>Return Type - UINT_16</li> <li>get_ptr</li> </ul>	<ul> <li>Identifier name reused</li> <li>Macro parameter not in brackets.</li> <li>Use of function like macro.</li> <li>A Procedure Parameter has a type but no identifier.</li> <li>finale</li> </ul>	2	High Low Low High	
	<ul> <li>initialise</li> </ul>	No cast when ~ or << applied to small types.		Medium	

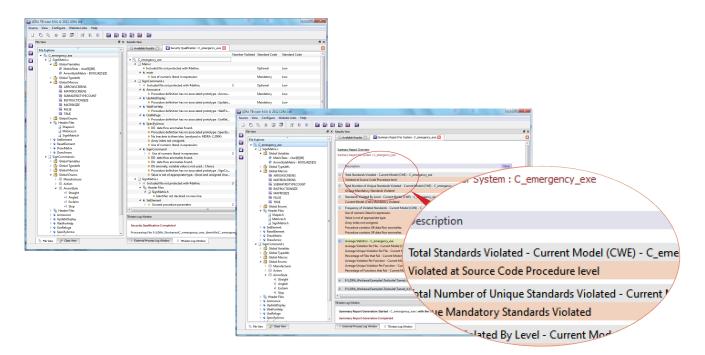
# *TBsecure* automates documentation for security compliance and certification.

TBsecure performs a code review against CERT C and CWE secure coding guidelines and developers gain:

- Graphical mapping of code under development to standard violations
- Code complexity and coverage metrics
- Data flow analysis

- Run-time error checking
- Complete documentation for certification
- Management of all certification assets

TBsecure's tangible benefits deliver an immediate return on investment.



# LDRA Leads Industry in Quality and Standards Compliance

## **Proven Standards Conformance**

LDRA boasts a long-time commitment to programming standards, actively participating on many language and standards committees throughout the industry. Adherence to the CERT C Secure Coding Standard and Homeland Security's CWE extend LDRA's leadership in providing software developers with the tools they need to certify in a connected world.

#### **Top Manufacturers Rely on LDRA**

LDRA's products and services are widely used by companies whose names are synonymous with security-sensitive embedded systems including Elbit Systems, eSysTech, Honeywell, Lockheed Martin, NASA, Presagis, Raytheon and Rockwell Collins.

## **Certified Quality Products**

LDRA is certified to have Quality Management System - ISO 9001:2008.

For more information or to arrange a demonstration www.ldra.com : info@ldra.com

