LDRA
Software Technology

MISRA C:2012 Amendment 1 at a Glance

MISRA C is a software development language subset that was originally created to promote the use of the C programming language in safety-critical embedded applications within the automotive industry. Updates over the years have included extensions and improvements to help mitigate software-related risks for a wide range of safety-critical applications, while allowing programmers to spend more time coding and less time on compliance efforts. While MISRA guidelines are designed to help developers write high-quality code—which is by nature more safe and secure—increased industry awareness of security risks has led to the addition of new guidelines to address these security risks.

MISRA C:2012 Amendment 1 adds new rules specifically for secure coding practices to extract the security coverage of the most recent version of the MISRA guidelines. The amendment is an enhancement to, and is fully compatible with, all existing editions of the MISRA language guidelines and becomes the standard approach for all future editions of the MISRA guidelines. By following these guidelines, developers can avoid coding practices that could introduce security vulnerabilities and can write code that is more understandable and maintainable. With the aid of appropriate standards-checking tools, developers can thoroughly analyse their code and assure regulatory authorities and OEMs that they followed safe and secure coding practices.

Key Details

- **Establishes 14 new C coding rules to extend the coverage of security concerns highlighted by the ISO C Secure Guidelines**
- **Addresses specific issues pertaining to the use of “untrustworthy” data—a well-known security vulnerability**
- **Is supported by MISRA C:2012 Addendum 2, which maps the coverage by MISRA C:2012 of ISO/IEC 17961:2013**
- **Is an enhancement to and fully compatible with all existing editions of the MISRA language guidelines**

Related Updates

The MISRA committee released several related documents along with the MISRA C:2012 Amendment 1. These documents provide additional information for developers who need to provide full assurance for their secure coding practices to OEMs and regulatory authorities. Those documents include:

- MISRA C:2012 Addendum 2: Maps coverage of MISRA C:2012 against ISO/IEC TS 17961:2013 “C Secure” and justifies the viewpoint that MISRA C is equally applicable in a security-related environment as it is in a safety-related one.
- MISRA Compliance 2016: Provides guidance on achieving and demonstrating compliance with MISRA Coding Guidelines, including a definition of what is meant by MISRA Compliance and clearer guidance on the use of deviations and for tailoring the classification of MISRA guidelines.
- MISRA C:2004 Permits: Provides a mechanism for establishing pre-approved permits for deviation.
- LDRA has demonstrated long-standing leadership in the development and support of safety- and security-critical industry standards. LDRA representatives comprise four of the 11 positions on the MISRA C committee, and the company provides the most comprehensive support for MISRA rules through the LDRA tool suite, LDRArules, and LDRAlite for ARM DS-5 software products.

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