



MISRA C:2012 – The rules for the development of safety-critical software

16th November 2022



Driving embedded software quality



MISRA C:2012 – The rules for the development of safety-critical software

Date:	16 th November 2022
Duration:	1 day, 9:00 am – 5:00 pm UTC/GMT+1
Location:	Online
Speaker:	Ralf Schneeweiß
Language:	EN
Price:	€ 825 (plus the legally applicable tax of the recipient of the service)
1. Early bird (20%):	€ 660 (plus the legally applicable tax of the recipient of the service) <u>register before 30-Apr-2022</u>
2. Early bird (10%):	€ 742,50 (plus the legally applicable tax of the recipient of the service) <u>register before 21-Oct-2022</u>

Testimonials:

"Super seminar, perfectly organised, expectations were fully met."

"The examples were very interesting and helped me to understand many things better. Seminar is recommendable."

"Dry topic brought across well."

Benefits

In this one-day seminar learn about the objective of MISRA rules for error prevention in safety-critical software. In addition to the practical applicability of the rules, the integration of rule checking in the development process will be discussed. How to achieve MISRA conformance?

Target group

- ✓ Software developer
- ✓ Technical project manager

Prerequisites

- ✓ Any C Compiler that is compatible with ANSI C89 or ISO C90 can be used. **For MISRA C:2012 the compiler must support the C99 standard**, which is the case for most compilers in use today. The recommended platforms are Windows, MacOSX, UNIX or Linux systems.
- ✓ The only important thing is that course participants master the C programming language and simple data operations on the system they use. A selection of rules are explained with real program examples.

Handouts

MISRA C:2012 guidelines (PDF) licensed for each participant.

Overview

In this MISRA C course, the development of safety-critical software written in ANSI/ISO C (C89/90 and C99 variants) for embedded systems in the automotive field is covered. The possible reasons for failure are analysed and discussed. Typical failures occurring in the implementation with standard C are classified and associated to the MISRA rules. In addition to the rules, the structure of MISRA Rule Documents from 2012 are discussed. The rules themselves are covered in detail and the documentation requirements necessary to prove compliance are discussed. The aim of the seminar is to get to know the principles and rules that MISRA offers for failure prevention in C projects. To approach this technical subject matter, the introduction of coding guidelines in software projects may also be discussed.

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Topics Outline

- ✓ The Motivation behind the MISRA rule catalogue.
- ✓ The Errors in Software.
- ✓ The Errors in Coding (Implementation).
- ✓ Thoughts on Development of Embedded Systems.
- ✓ Safety-relevant and Safety-critical Software.
- ✓ Special Sources of Error in C.
- ✓ Undefined Behaviour of C.
- ✓ Implementation-dependent Behaviour of C.
- ✓ Common Errors in C.
- ✓ Legibility and Clearness of C Code.
- ✓ The C Language and the Developer's Intuition.
- ✓ Improved Description of the Rules compared to older MISRA Standards.
- ✓ Simplification of the Rule Description.
- ✓ Clear Classification of Rules and Guidelines.
- ✓ Automatic Verifiability.
- ✓ Rule Scope.
- ✓ Required and Recommended Rules.
- ✓ Rules for ISO C99.
- ✓ Static Code Analysis.
- ✓ Programming Guidelines and Coding Styles.
- ✓ Development Process.

About the speaker Ralf Schneeweiß



In several projects, before and during his freelance work, Ralf Schneeweiß acquired profound knowledge in the practical use of C and C++ on several operating systems. In addition to the practical knowledge, he has also mastered the theoretical basics of these programming languages. In 1989 he learned C and developed in the university area. With C++, Mr. Schneeweiß came into contact with object-oriented programming for the first time in 1990 and has followed the development of this technique ever since. The first contact with Java took place in 1997 and at the same time the internalisation of pattern-oriented software development.

Since 1990 his professional career took place across many IT projects besides his studies. He first delivered professional training in 1995 for C, C++, some older programming languages, application programs and Lotus Notes. Mr. Schneeweiß has undertaken many freelance projects since 1995, becoming a full-time freelance consultant in 1998.

Registration for the seminar: MISRA C:2012

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- 6 to 2 weeks before the event, 20% of the fee will be charged
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