

AGENDA

MISRA DAY am 29. September 2010

9:00 Uhr Begrüßung

(Andreas Sczepansky, QA Systems GmbH & Wirtschaftsförderung Region Stuttgart)

9:15 Uhr  Key Note "The Case for C in embedded systems"

(Prof. Dr. Les Hatton)

Abstract:

In embedded systems, reliability is of paramount importance because of the cost of recall. All current evidence suggests that the programming language has a much smaller effect on the system reliability than the fluency of the programmer in that language. C is a far simpler language than C++ enabling such fluency to be achieved more quickly and widely. In addition, the defect discovery profile of C++ systems has been observed to lead to later (and much more expensive) defect discovery than procedural languages such as C and Pascal. It is no surprise then that some of the most reliable systems in the world, including the Linux kernel, are written in C with asymptotic defect densities close to 0.1 per thousand executable lines of code, the formidable benchmark set by the NASA Shuttle software. You still have to know what you are doing though.

10:00 Uhr  Key Note "The Case for C++ in Embedded Systems"

(Dr. Scott Meyers)

Abstract:

Compared to C, C++ offers higher levels of abstraction, greater modelling power, better support for object-oriented and generic programming, and a more extensive standard library. The need to use macros and untyped pointers is reduced, type checking is strengthened, and the language offers the ability to enforce domain constraints that C cannot even express. Furthermore, given good compilers and proper language use, C++ incurs no cost in time or space compared to equivalent functionality in C.

10:45 Uhr Kaffeepause

11:15 Uhr  Debate „C vs. C++“

(Prof. Dr. Les Hatton and Dr. Scott Meyers)

Abstract:

Discussion with the audience about C and C++.

11:45 Uhr  MISRA-C Working Group Update

(Paul Burden, Programming Research)


Abstract:

Two versions of the MISRA-C Guidelines have been published over the last 12 years and a further version is now in preparation. This session will give an update of the rationale and motivation behind the ongoing development work, the reformulation of the MISRA-C Working Group and its ongoing activities, and some of the topics which are under discussion.

12:30 Uhr Mittagessen

13:30 Uhr  **MISRA Erfahrungsbericht
(N.N.)**


Abstract: wird nachgereicht

14:15 Uhr  **MISRA Compliance and Software Quality Management Techniques
(Fergus Bolger, Programming Research):**

Abstract:

This session will explore a variety of techniques to introduce and adopt software quality management principles into a MISRA compliance environment. Alternatives presented will range from strict certification-level compliance through to an incremental approach to quality improvement, and incorporating both rule-based and metric-oriented compliance strategies. The session will be practical in nature, and based on a sophisticated web-based system for automating software quality management.

15:00 Uhr Kaffeepause

15:30 Uhr  **Pragmatische Verbesserung von Softwarequalität für sicherheitskritische eingebettete Systeme
(Dr. Felix Gutbrodt, Vector Consulting Services GmbH):**

Abstract:

Versagende Fahrzeugmotoren, fehlerhaft auslösenden Airbags und manipulierte Tachographen sind Probleme, die alle durch fehlerhafte Software verursacht wurden. Insbesondere bei sicherheitskritischen eingebetteten Systemen, die z. B. in Kraftfahrzeugen eingesetzt werden, können Softwarefehler Sachschäden, Verletzungen und Todesfälle verursachen. Bei sicherheitskritischen Systemen ist daher neben stringentem Requirements Engineering und Design eine hohe Qualität des Softwarecodes zwingend erforderlich. Im Rahmen unseres Vortrags zeigen wir anhand von Praxisbeispielen, welche Beiträge die MISRA-Regeln zur Software-Safety/Security liefern. Ausgehend von unseren Erfahrungen bei zahlreichen Kraftfahrzeug-OEMs und -Zulieferern stellen wir die oftmals gegensätzlichen Vorstellungen bezüglich des Einsatzes von MISRA-Regeln dar und geben Tipps zur kostenorientierten Einführung und Umsetzung.

16:15 Uhr ENDE
