

PRESS RELEASE

Thanks to partnership with BUGSENG, Evidence releases a MISRA-ready version of Erika Enterprise

ECLAIR advanced static analysis technology proves value

Parma/San Giuliano Terme (Pisa), Italy, November 11th, 2015.

A joint project conducted by Evidence, the makers of the Erika Enterprise open-source OSEK/VDX hard real-time operating system, and BUGSENG, the makers of the ECLAIR software verification platform, has resulted in the release of the first version of Erika Enterprise that can rightfully claim to be MISRA-ready, that is, essentially free of violations of the MISRA-C:2004 guidelines. The ERIKA Enterprise version that has been the object of the joint project has been a single OS configuration targeting Freescale MPC5674F. The previous version of Erika Enterprise, which was believed to be MISRA-compliant, was in fact unintentionally violating 39 of the 142 guidelines with a total of about 2500 violations. Half of those violations could be justified according to the MISRA approved deviation process. The remaining half had to go and where almost completely removed: less than 30 innocuous violations remained in code that is about to be rewritten for the next version of Erika Enterprise. Moreover, after a rigorous peer review by Evidence and BUGSENG on the code and also on the ECLAIR reports, Erika Enterprise will now have a formal MISRA-C compliance matrix. This compliance matrix has been obtained from the very same information provided to ECLAIR to drive its rigorous deviation workflow, without any duplication of effort.

Software quality, safety and security are big issues in today's industry, and Evidence pays a lot of attention to these aspects. "The quality of our software is essential to all our customers and true MISRA-C compliance is important to many of them. Even though we never had access to a sophisticated tool like ECLAIR before, we always tried to adhere to the MISRA-C guidelines. This, together with the competence of BUGSENG's personnel and the high quality of ECLAIR reports, allowed completing the project smoothly and in just a few weeks." says Paolo Gai, CEO of Evidence.

"As far as we can tell, all visible-source systems you can download from the Internet that claim compliance with MISRA-C/C++ do in fact violate 30 to 50 rules, totaling thousands of violations not declared in the respective compliance matrices. This was true until yesterday." says Roberto Bagnara, CEO of BUGSENG. "We investigated this phenomenon starting from 2012 and found that this is essentially due to inadequate software verification technology and lack of proper training. We are pleased that Evidence's commitment to excellence has prompted them to partner with us to provide their customers with a state-of-the-art RTOS that is truly compliant with MISRA-C."

Evidence and BUGSENG have agreed to cooperate further in achieving better standards in software quality, safety, security and reliability, capitalizing on the power of their combined know-how and technologies. This will result, among other things, in Erika Enterprise/ECLAIR combined offers whereby customers will acquire the kernel and the ECLAIR MISRA-C:{1998,2004,2012} verifier with an easy-to-customize configuration that will enable them to fully verify MISRA-C compliance of the whole system code.

About BUGSENG

BUGSENG srl was founded in 2010 and has offices in Parma, Italy and California, USA. The company has a long tradition in automated software verification: the founders, who work in the field since around 20 years, made important contributions to the theory and practice of program verification. ECLAIR is a powerful, flexible and extensible platform for the analysis of C, C++ and Java source-code as well as Java bytecode. It supports both syntactic analyses and semantic analyses based on the latest developments of abstract interpretation, model-checking and constraint-based reasoning. The MISRA-C/C++ checkers that run on top of ECLAIR achieve the best coverage available on the market and produce very high-quality reports.

More information on BUGSENG and its products and services is available at bugseng.com.

About Evidence

Based in Italy, Evidence srl was established at the end of 2002 and operates in the field of software for real-time embedded (RTE) systems and provides innovative software solutions for the design and development of RTE systems, with a special focus on multi-core hardware platforms. Evidence is one of the main contributors of the Erika Enterprise RTOS, as well as one of the authors of the SCHED_DEADLINE patch available since Linux 3.14.

More information on Evidence and its products and services is available at evidence.eu.com.

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