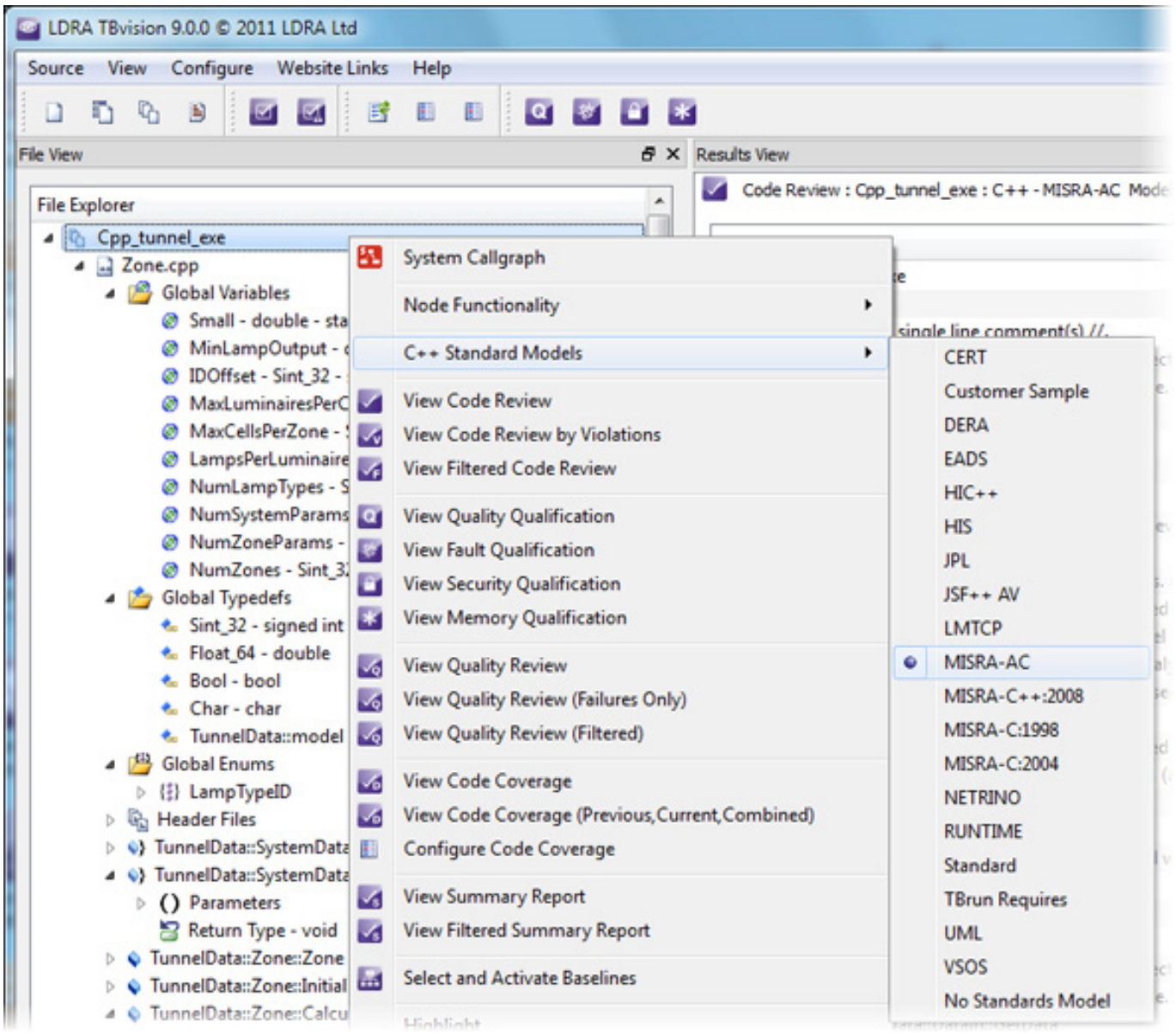
LDRA Integrates MISRA AutoCode for Model-Generated Code

Monks Ferry, Wirral, UK - October 31, 2011. LDRA has integrated MISRA Autocode (MISRA AC) into its broad portfolio of programming standards and certification offerings. With the increased complexity of software projects and the maturity of model-generated code, more companies auto generate code from the model to meet time-to-market pressures. Adoption of LDRA's MISRA AC provides independent verification of the auto generated code—a critical factor in stringent certification requirements.

With MISRA AC, the Motor Industry Software Reliability Association (MISRA) offers a set of guidelines for users of modeling tools. MISRA AC aims to provide a set of rules—in a similar fashion to MISRA C rules—which encourage good modeling practices and avoid poorly defined features of the modeling language. Catering to the industry's implementing the MISRA standard, MISRA AC rules cater to the use of automatic code generators in safety-related systems.



Although a standard directed by the automotive industry, MISRA has gained widespread acceptance in other vertical markets such as rail, aerospace, military, and medical sectors. Since many of these same industries are moving to model-driven design and the use of automatic code generators, MISRA AC was a natural step in the evolution of the programming standard. LDRA's rapid adoption of MISRA AC demonstrates the company's commitment to ensuring that its clients are able to comply fully with the latest standards and certifications.

"With companies such as General Motors, NASA, and Lear now generating large quantities of code from model-driven design, there's a pressing need for software testing and verification suites that integrate the model and its generated code into the overall testing process," confirmed Ian Hennell, LDRA Operations Director. "Within the LDRA tool suite, all aspects of the model, automatically generated code, test cases, and requirements are fully verified and independently shown to meet with even the most rigorous compliance standards. MISRA AC assists in that overall verification process."

Following guidelines for MISRA-C:2004, MISRA AC provides a framework for

understanding the individual rules of the standard. Using the LDRA tool suite, developers can decide which individual rules apply to their project code generator and whether additional rules are required at the model level to address deviations from any given MISRA C rule, thus creating either a superset or subset of the standard which is then managed by the LDRA tool suite.

Building on the requirements traceability supported within the LDRA tool suite, all model and autocode artifacts become part of the overall requirements traceability matrix, enabling developers to bidirectionally trace the fulfilment of requirements through model, code, and tests in the overall software development process. Developers can quickly pinpoint unfulfilled requirements and failed tests and drill down to the relevant code, speeding the overall testing process.

Hennell adds, “The MISRA standard draws together programming guidelines that help reduce the number of defects found in code. Once the model is proven to generate code correctly, the percentage of errors drops even more. It’s exciting to play such a pivotal role in the evolution of quality programming. We trust that the popularity of the MISRA standard will continue to grow and become best practice with manufacturers and component suppliers across all safety-related industries.”

MISRA represents a collaboration between automotive manufacturers, component suppliers and engineering consultancies which seeks to promote best practice and commonality in the development of safety-related automotive electronic and other embedded systems through the publication of standard guidelines. Since its launch, the success of MISRA C as a “best practice” solution has not only seen its application spread throughout the worldwide automotive industry, but it has also been increasingly adopted for safety-related and safety-critical software development projects and applications in a wide variety of industries.

For more information of how LDRA can assist with verification of auto generated code, please visit www.ldra.com/misraac.asp [1]. For general information on MISRA AC, please visit www.misra.org.uk [2]

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