New Multi-Mode MC/DC Coverage

2023-07-31 - Comments (0) - Functional Safety

MC/DC coverage is recommended in most safety standards for adequate testing of software with a high safety level. Lauterbach first introduced its solution for MC/DC coverage in 2018. In our initial solution, we focused on MC/DC coverage solely based on program flow tracing. The goal was to support the widest possible range of core architectures and trace protocols. However, practical experience has shown that we need to extend this approach with some instrumentation to achieve completeness. Lauterbach calls the extended solution TRACE32 Multi-Mode MC/DC Coverage. Multi-mode coverage includes three types of instrumentation: no instrumentation, targeted instrumentation, and full instrumentation only as a fallback. For instrumentation, the goal was to ensure minimal memory footprint and almost no runtime overhead.

The attached technical article introduces TRACE32 Multi-Mode MC/DC Coverage. The basis for code coverage remains the program flow trace. The article gives a brief introduction to this technology and summarizes the challenges that motivated the introduction of the new TRACE32 Multi-Mode MC/DC Coverage.

Minimum software: TRACE32 Release R.2023.09.

Supported core architectures: all those who support the generation of program flow traces.

For more information refer to TRACE32 Multi-Mode MC/DC Coverage