TimeWeaver combines static path analysis with real-time instruction-level tracing to provide worst-case execution time estimates. The computed time bounds provide valuable feedback for assessing system safety and for optimizing worst-case performance.

**Why do you need TimeWeaver?**

- **TimeWeaver** analyses all potential execution paths and computes the *longest path* based on the execution times of trace segments observed in real-time traces.
- TimeWeaver supports *non-intrusive tracing*, e.g. Nexus branch history target messages. The computed time bounds are compliant to requirements of safety standards like ISO-26262.
- TimeWeaver reports *test coverage* information at the instruction level with respect to all possible execution paths for all considered trace segments. This gives valuable feedback for improving the test coverage of the system.
- TimeWeaver generates custom[izable reports](#) for documentation and certification purposes, including:
  - global end-to-end time, based on the maximum observed trace segment times combined to an overall bound
  - end-to-end time bounds for specific functions, depending on trace points
  - trace coverage
  - time variance of each trace segment
  - maximum possible (based on static program analysis) and maximum observed iteration counts for loops
- TimeWeaver supports batch mode execution and integration in continuous integration frameworks.
- On TriCore AURIX devices TimeWeaver supports highly efficient interactive MCDS tracing via Infineon DAS.

**Supported architectures and trace formats**

- All PowerPC boards able to emit Nexus program trace messages (IEEE-ISTO 5001, class 2 or higher), e.g.:
  - PowerPC QorIQ P204x/P30xx/P40xx/P50xx (e500mc core),
  - PowerPC QorIQ T series (e5500/e6500 core),
  - PowerPC Qorivva line MPC55xx/MPC56xx/MPC57xx (e200 core).
- ARM using cycle-accurate ETM traces, e.g.: Cortex-A53, Cortex-R5F.
- TriCore AUDO family (e.g. TC1796), TriCore AURIX (e.g. TC275), and TriCore AURIX 2nd Generation (e.g. TC3xx).

For further targets, please contact us.