



Training Courses 2019

QTronic GmbH

Silver Basics

- Introduction (Slides)
 - SiL, MiL, HiL and prototypes in comparison
 - Usage of the SiL in the V-Cycle
 - Software architecture of the SiL
- Silver Tutorial (Training Material including Exercises)
 - The Silver window
 - Widgets
 - Co-simulation
 - Scripting
 - Record and replay
 - Measuring and calibration
 - Flashing vECUs
- Questions and Answers
- Duration
8 Hours
- Costs per head
750,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver including the demos

*Prices only apply to training at a QTronic location

Building virtual ECUs (Basics)

- Introduction (Slides)
 - Motivation for virtual ECUs
 - Silver Simulation loop and events
 - SBS build
- SBS build (Training Material including Exercises)
 - Configuration of vECU with SBS-file
 - Scheduling, events
 - Defining inputs, outputs and parameters
 - Adding a2I parameter files (*.dcm)
 - Configuring a bus (CAN)
 - Writing replacement functions
 - Closed-loop simulation with plant model
 - Accessing Silver with INCA (XCP)
- Questions and Answers
- Duration
4 Hours
- Costs per head
375,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver including the demos
 - Installation of a Visual Studio C compiler
 - Training 'Silver Basics'

*Prices only apply to training at a QTronic location

Silver and MATLAB/Simulink

- Hands-on Training
 - Training Material including Exercises
 - Generating S-Functions with Silver
 - Transferring Simulink-Models to Silver-Modules
 - Integration of existing S-Functions in Silver
 - Co-Simulation Silver-Simulink
 - Bypassing single functions with Simulink-models
 - Questions and Answers
- Duration
4 Hours
 - Costs per head
375,- €* (net costs)
 - Requirements
 - Windows computer
 - Installation of Silver including the demos
 - Training 'Silver Basics'
 - Installation of Simulink including the Simulink Coder
 - Installation of a Visual Studio C compiler that is usable with the Simulink Coder

*Prices only apply to training at a QTronic location

Chip-Simulation for TriCore Processors

- TriCore Processor family
 - Docu from Infineon: cores, EABI, chips
 - TriCore architecture: register, function calls, traps, interrupts
- Sample tool chains: compiler, IDE, chips, ECUs
 - Startup code and Silver frame code
 - GCC projects, Tasking projects
 - OSEK: task lists
- Connecting INCA and CANape
 - Patching the A2L file
- TriCore peripherals
 - PCP, CAN, WDT, STM
- Working with Silver
 - Process: how to setup/validate/debug/deploy a simulation
 - Disassemble commands hex to asm
 - Using the debugger
- Duration
8 Hours
- Costs per head
750,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver including the demos
 - Installation of a Visual Studio C compiler
 - Training 'Silver Basics'

*Prices only apply to training at a QTronic location

Chip-Simulation for PowerPC Processors

- PowerPC Processor family
 - History, generations, cores and chips
 - Docu from Power.org and Freescale: architecture, cores, EABI, chips
 - How Silver handles on-chip devices
 - PowerPC architecture: register, function calls, traps, interrupts
- Sample tool chains: compiler, IDE, chips, ECUs
 - Startup code and its emulation in Silver
 - GCC projects
- Connecting INCA and CANape
 - Patching the A2L file
- Working with Silver
 - Process: how to setup/validate/debug/deploy a simulation
 - Disassemble commands hex to asm
 - Using the debugger
- Duration
8 Hours
- Costs per head
750,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver including the demos
 - Installation of a Visual Studio C compiler
 - Training 'Silver Basics'

*Prices only apply to training at a QTronic location

Automation in the Context of Silver

- Aspects of Automation (Hands-on Training)
 - Repeat scenarios based on measurements or script definitions like CSV/MDF, Python and Excel.
 - Comparison tools provided by Silver
 - Remote Control Silver
 - Automation of the build process
- Use Cases
 - Test automation with Silver and Excel
 - Graphical SiL-Builder
- Questions and Answers
- Duration
8 Hours
- Costs per head
750,- €* (net costs)
- Requirements
 - Installation of Silver including the demos
 - Training 'Silver Basics'
 - Basic knowledge about programming languages
- Related trainings
 - Test automation with TestWeaver Light
 - Large Coverage Testing with TestWeaver

*Prices only apply to training at a QTronic location

Real-Time Applications of virtual ECUs

- Setting up a CAN-Network (Hands-on Training)
 - Silver's CAN module
 - Real-Time capabilities
 - Connecting CANape via XCP
 - Remote control Silver via CAN
- Use Cases
 - Car: Rapid Control Prototyping
 - HiL: mix of real and virtual ECUs
- Questions and Answers
- Duration
4 Hours
- Costs per head
375,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver including the demos
 - Training 'Silver Basics'
 - Basic knowledge about bus systems

*Prices only apply to training at a QTronic location

Test Automation with TestWeaver Light

- Hands-on Training
- Training Material including Exercises
 - Introducing the user interface
 - Instrumentation of a system under test (Silver)
 - Writing test scripts with Python
 - Introducing stimulus independent testing
 - Writing Requirement Watchers
- Questions and Answers
- Duration
4 Hours
- Costs per head
375,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver and TestWeaver including the demo examples
 - Training 'Silver Basics'

*Prices only apply to training at a QTronic location

Large Coverage Testing with TestWeaver

- Introduction (Slides)
- Training Material including Exercises
 - Instrumentation library and equivalence classes
 - Automatic generation of scenarios
 - Using 'constraints' and 'state coverage tables' to optimize run-time and search-space.
 - Regression tests using test data bases
 - Parallel and serial execution of TestWeaver experiments
 - Criteria for stopping experiments
- Questions and Answers
- Duration
4 Hours
- Costs per head
375,- €* (net costs)
- Requirements
 - Windows computer
 - Installation of Silver and TestWeaver including the demo examples
 - Training 'Silver Basics'
 - Training 'TestWeaver Light'

*Prices only apply to training at a QTronic location

A futuristic blue car with glowing wheels is shown on a city grid at night. The car is positioned on the right side of the frame, with its rear wheel prominently displayed. The wheel has a glowing blue and white circular pattern. The background is a cityscape at night, with many lights and buildings. The ground is a dark grid pattern.

Order now!

training@qtronic.de