ARM Cortex-M3/M4 Software Development

Summary:
This course is designed for engineers developing software for platforms based around the ARM Cortex-M3 or Cortex-M4 processors. The course includes an introduction to the ARM product range and supporting IP, the Cortex-M3/M4 core, programmers’ model, instruction set and debug architecture. The course includes a number of hands-on practical exercises to reinforce the lecture material.

Prerequisites:
- Some knowledge of embedded systems
- A basic awareness of ARM is useful but not essential
- Knowledge of programming in C
- Experience of assembler programming is not required but would be beneficial

Audience:
Software engineers writing application and system software for platforms using the ARM Cortex-M3 processor core.

Length:
3 days

Modules:
- Introduction to ARM
- Cortex-M3/M4 Overview
- ARMv7-M Programmers’ Model
- Tools Overview for ARM Microcontrollers
- Keil MDK-ARM Introductory Workbook
- CMSIS Overview
- Cortex-M3/M4 Microarchitecture
- ARMv7-M Assembly Programming
- ARMv7-M Memory Model
- ARMv7-M Exception Handling
- ARMv7-M Complier Hints & Tips
- ARM Complier Workbook
- ARMv7-M Linker and Libraries Hints & Tips
- ARMv7-M Synchronization
- Embedded Software Development for Cortex-M Processors
- Embedded Software Development Workbook
- ARMv7-M Debug
- ARMv7-M Memory Protection
- ARMv7-M Extensions (Optional)