



## **ARMv8-A Software Development**

### **Summary:**

This training course covers the issues involved in developing software for platforms powered by ARMv8 processors.

### **Prerequisites:**

- Thorough knowledge of the ARMv7-A Architecture
- Familiarity with ARM assembler and C programming
- Experience of embedded system development is an advantage

### **Audience:**

This course is aimed at software developers and system architects developing for systems powered by ARMv8 processors. It is relevant for operating system development, device drivers, low-level coding and for application software. The course assumes prior knowledge of the ARMv7-A architecture and an optional introductory day is required for teams who do not have this.

### **Length:**

3+ days

### **Modules:**

#### **Optional AArch32 Fundamentals:**

For customers who require it, we are able to provide an overview of the ARMv7-A Architecture (AArch32) as part of the course. This can be substituted for other modules in the course agenda.

### **Day 1-3**

- Introduction to ARMv8-A
- AArch64 A64 ISA Overview
- A64 ISA Workbook
- AArch64 Exception Model
- ARMv8 Exception Model Workbook
- ARMv8-A Memory Management
- ARMv8-A Memory Model
- Caches and Branch Prediction
- MMU and Cache Initialization Workbook
- Barriers
- Synchronization
- Cache Coherency
- OS Support
- Booting
- Security
- Virtualization
- Power Management for Cortex-A (Optional)
- GIC Programming (Optional)
- GICv2 Workbook
- Debug (Optional)