ARM Cortex-A8 Hardware Design

Summary:
This course is designed for those who are designing SOCs based around the ARM Cortex-A8 processor core. Including an introduction to the ARM product range and supporting IP, the course covers the ARM Cortex-A8 core and AXI on-chip bus architecture, integrated NEON SIMD vector processing unit, real-time trace solution, simulation models, programmer's model and instruction sets are also covered.

Prerequisites:
- Some knowledge of embedded systems
- Familiarity with digital logic and hardware/ASIC design issues
- A basic awareness of ARM is useful but not essential

Audience:
Hardware design engineers who need to understand the issues involved when designing SOCs around the ARM Cortex-A8 processor core.

Length:
4 days

Modules:
- The ARM Architecture and Processor Cores
- ARM CPU Architectures
- ARM Cortex-A8 Overview
- Memory Sub-systems, Memory Management and Memory Access Behaviour
- ARM Cortex-A8 and NEON Instruction Sets
- AHB Protocol
- AXI Protocol
- AXI Interconnection Architectures
- NIC-301 Network Interconnect
- AMBA Designer
- APB
- Introduction to TrustZone
- Introduction to IEM
- ARM Cortex-A8 Processor Architecture
- ARM Cortex-A8 L2 Memory System
- NEON Processor Architecture
- ARMv6 Memory Types
- ARM Cortex-A8 Memory Management
- ARM Cortex-A8 Exceptions
- ARM Cortex-A8 Booting
- ARM Cortex-A8 Debug and trace
- CoreSight Design Kit for Cortex-A8
- ARM Cortex-A8 Clocks, Resets and Power Management
- ARM Cortex-A8 Implementation
- ARM Cortex-A8 Interfaces
- ARM Processor Simulation Models
- NEON Coding Examples (optional)