

Course ID: M4

# MIFARE SAM Training

This one day training presents the features of MIFARE SAM AV2 with the hints for optimum usages. It includes practical workshop sessions and application specific hands-on.

## Audience

- MIFARE System designer
- MIFARE Solution developers

## Prerequisites

- Participation of M2 and/or M3 training
- Watching MIFARE SAM AV2 Introduction video from [www.mifare.net](http://www.mifare.net)
- Knowledge of basic cryptography e.g. TDES, AED, CMAC, CRC, RSA

## Recommendations

At least a 'quick going through' of the MIFARE SAM AV2 short data sheet available at [www.nxp.com](http://www.nxp.com)

**This course includes the MIFARE Workshop Package! (Details on page 15)**

**Duration:**  
 09:00 – 17:00

**Dates:**  
<http://www.nxp.com/products/related/customer-training.html>

## Course Contents

### MIFARE SAM Introduction

Welcome and Introduction  
 MIFARE SAM evolutions  
 MIFARE SAM AV2 Positioning and Feature overview  
 MIFARE SAM AV2 operative modes  
 SAM communication interfaces (ISO/IEC 7816 and I2C)  
 HW/SW tools installation and introduction  
Workshop: Switching MIFARE SAM AV2 to AV2 mode

### MIFARE SAM AV2 Architecture

Features and Functionalities, 4-logical channels  
 Secure Key storage, key types and configuration  
 Key usages counters, Key versioning and diversification

### MIFARE SAM AV2 Host Communication and Personalization

MIFARE SAM AV2 commands  
 Secure host communication, SAM personalization.  
 Key management, usages of PKI from MIFARE SAM AV2  
Workshop: Personalization of MIFARE SAM AV2

### MIFARE SAM AV2 & MIFARE DESFire

Principles of using MIFARE SAM AV2 for MIFARE DESFire EV1  
 Configuration of key entries for MIFARE DESFire EV1  
Workshop: Personalization and validation of MIFARE DESFire EV1 using MIFARE SAM AV2  
 Use of MIFARE SAM AV2 for MIFARE Ultralight C authentication

### MIFARE SAM AV2 & MIFARE Plus

Principles of using MIFARE SAM AV2 for MIFARE Plus  
 Configuration of key entries for MIFARE Plus  
Workshop: Personalization and validation of MIFARE Plus using MIFARE SAM AV2

### X –functionalities

Design of X-interface, Advantages of using X-functionalities  
Workshop: Use of MIFARE SAM AV2 in X-interface for MIFARE DESFire EV1 and MIFARE Plus.