Course ID
M2M-ML
Course Duration
3-5 days

Course Title
M2M Training: Machine-to-Machine Communications and Machine Learning

Aimed At

This M2M Training is for technical professionals who need to understand the technology and applications of M2M Communications and Machine Learning.

Prerequisites

Understanding of networking, wireless, and Internet technologies.

Course in a Nutshell

This M2M training undertakes a detailed study of M2M (Machine-to-Machine) Communications including its drivers and benefits, business trends, relationship with Machine Learning and the IoT (Internet of Things), Machine Learning algorithms, M2M standardization efforts, M2M ecosystem and applications, M2M network infrastructure technologies, M2M network planning and implementation, M2M over Wireless Optical, and other key topics.

Customize It!

Since M2M is a broad field with many facets and applications, we will customize your M2M training session to your team's requirements by including content on M2M devices, technologies, and case studies relevant to your industry and applications. We can tailor this M2M course to make it more or less technical. We can also make this M2M course longer or shorter, ranging in duration from two to five days, depending on the depth desired.

Course Outline

- **M2M Training: M2M Overview**
  - What is M2M (Machine-to-Machine) Communications?
  - M2M as a part of the IoT (Internet of Things)
  - Why M2M?
  - Benefits of M2M
  - M2M business trends
  - M2M opportunities
  - Components of an M2M system

- **M2M Training: Machine Learning Overview**
  - What is Machine Learning?
  - Why Machine Learning?
  - Machine Learning and M2M/IoT
  - Classification
  - Linear Regression
  - Deep Learning
  - Machine Learning examples

- **M2M Standardization**
  - ITU
  - IEEE
  - IETF
  - 3GPP/5GPPP

- **M2M Ecosystem and Applications**
  - Automotive technology
  - Automation and industry; machine control
  - Health care services
  - e-Vending machines
  - Smart Home
  - Smart Grid
  - Smart Cities
  - Green Energy
  - M2M and cellular technologies
  - M2M and the cellular defined Vehicular Communication (V2V)
  - M2M and Cloud Computing
  - Applications of interest to the client

- **M2M Network Infrastructure Technologies**
  - Wireless Sensor Networks (WSN)
  - Wireless Ad-Hoc Networks (WANET)
  - Cellular technologies (GPRS, HSPA, LTE-U, LTE Advanced Pro)
  - WiFi
  - 5GPPP 5G standards
  - Mesh Networks
  - Software Defined Networks (SDN)
  - M2M over satellite
  - Li-Fi (VLC) technologies
  - NFC: Near Feld Communication (mm-wave technologies)

- **M2M and Network Planning**
  - M2M IP/MPLS transport network requirements
  - M2M over GPRS: Requirements and implementation
  - M2M over HSPA: Requirements and implementation
  - M2M over LTE-A: Requirements and implementation
  - M2M over LTE Advanced Pro: Requirements and implementation
  - 3GPP LTE Advanced Pro advanced features for M2M devices
  - ***Case study A: Mesh Network and cellular topology***
  - ***Case study B: Wireless Sensor Networks (WSN) over cellular infrastructure***

- ***Case study C: LTE-A radio planning for Sensor devices deployment***

- **M2M over Wireless Optical**
  - What is Li-Fi?
  - Li-Fi standards
  - Li-Fi planning considerations
  - M2M and Li-Fi merging
  - ***Case study: Li-Fi implementation for M2M indoor communication***

- **M2M Training Wrap-up: Course Recap, Discussion, and Evaluation**

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