

Course ID

EVDO

Course Duration

3 days

Related Courses

Course Title

1xEVDO: Network Architecture, Operation, and Design

- UMTS-FDD: Network Architecture, Operation, and Design (UMTS-FDD, 3 days)
- UMTS-TDD: Network Architecture, Operation, and Design (UMTS-TDD, 2 days)
- HSDPA: Network Architecture, Operation, and Design (HSDPA, 2 days)
- HSUPA: Network Architecture, Operation, and Design (HSUPA, 2 days)
- IP-Based Systems: TCP/IP and Mobile IP (IPSYS, 2 days)
- Multimedia Applications: IMS, SIP, and VoIP (MULTIMEDIA, 2 days)
- IMS: The Technology, Applications, and Challenges (IMS, 2 days)
- Traffic Engineering Models for 3G Network Design (TRAFFIC3G, 3 days)
- RF Systems Optimization Workshop: GSM, GPRS, EDGE, UMTS, cdmaOne, 1xRTT, EVDO (RFOPT, 3-5 days)

Aimed At

Those familiar with 1xRTT who wish to understand 1xEVDO.

Group Size

5-25

Prerequisites

- 1xRTT: Network Architecture, Operation, and Design (1XRTT, 2 days)

You should possess good working knowledge of cellular network architecture and operation, at least one year work experience with any CDMA-based technology, and prior exposure to 1xRTT.

Course In a Nutshell

Following IS95's worldwide success, its evolution to bigger and better technologies was all but inevitable. The cdma2000 family of standards represents this evolution. While cdmaOne is certainly data-capable, its voice-centric roots are hard to hide. Designed specifically for data, 1xEVDO offers a rich set of capabilities, optimized for fast downlink data transfers with system throughput optimization as the major metric of performance.

Building on your knowledge of the 1xRTT networks, you'll learn all the additional capabilities and complexities that EVDO brings to the network design, operation, and optimization process. This will help you interact more effectively with the equipment vendors as well as design better EVDO networks. Being conceptually simple, EVDO offers up only a handful of new ideas that must be mastered. However, it relegates a number of implementation issues to the vendor's discretion. This course will allow you ask the right questions about the vendor-specific implementation details, which in turn will enable you to make smarter

design decisions.

Customize It! At minimal to no additional cost, we can adapt this course to the specific needs of diverse audiences such as wireless and fixed network design/optimization engineers, research and development personnel, device or software designers, and those interested in business, managerial, or operational rather than technical issues (e.g., strategists and planners, marketing and sales, operations and support).

This is a 'sister' course to HSDPA: Network Architecture, Operation, and Design (HSDPA, 2 days). HSDPA accomplishes for UMTS what EVDO does in the cdma2000 environment. If your job requires comparative understanding of EVDO and HSDPA, they combine into a natural four-day course. Enquire with us about the 'combo discount'.

Course Outline

- Course Overview
- Where 1xEVDO Fits into the cdma2000 Landscape
 - 3GPP2 and cdma2000 standardization process
 - cdma2000 evolution
 - 1xRTT (cdma2000 Release 0)
 - cdma2000 Release A
 - cdma2000 Release B
 - cdma2000 Release C and D (1xEVDV)
- Introduction to EVDO and Relationship to IS856 (HRPD)
- Operational and Technical Benefits of 1xEVDO
- Evolution of 1x EVDO (Data Only)
 - EVDO Revision 0
 - EVDO Release A
 - EVDO Release B
 - EVDO Release C (UMB)
- 1xEVDO Air Interface
 - EVDO protocol structure
 - Physical and logical channelization
 - Forward link structure and channel descriptions
 - Pilot channel
 - Medium access control
 - Control channel
 - Traffic channel
- Reverse Link Structure and Channel Descriptions
 - Reverse access channel mode
 - Pilot channel
 - Data channel

- Reverse traffic channel mode
 - Pilot channel
 - Medium access channel
 - Reverse rate indicator
 - Data rate control channel
 - ACK channel
 - Data channel
- Forward Physical Channel Structure
 - Forward link frame and slot structure
 - Forward traffic channel and control channel
 - Modulation types and data rates
 - Forward MAC channel
 - Forward channel quadrature spreading and modulation
- Reverse Physical Channel Structure
 - Reverse traffic channel components
 - Data channel
 - ACK channel
 - Pilot channel
 - DRC channel
 - Reverse access channel
 - Reverse channel quadrature spreading and modulation
- Data Transmission on the Forward Channel
 - Forward rate selection
 - Forward link packet scheduling
 - Hybrid AEQ and multislot data transmission
- Data Transmission on the Reverse Link
 - Data rate selection for reverse data channel
 - Power control on the reverse traffic channel
 - Cell sector reselection
- 1x EVDO Network Architecture
 - Access terminal
 - Access network
 - Packet data serving node
 - AAA sever
 - Radio and core network interfaces
- Overview of 1xEVDO Release A of IS856
 - Reverse link physical and MAC layer enhancements
 - Higher rate physical layer packet transmission
 - Higher order modulation
 - Multicode uplink data transmission
 - Uplink auxiliary pilot
 - Improved link adaptation
 - Reverse link improvements

- Higher rate physical layer packet transmission
 - Improved link adaptation
 - Forward link improvements
 - New physical layer packets
 - Multi-user data packets
 - Broadcast/multicast services
 - Improved QoS, handoff and call setup
 - Multiflow QoS control
 - Improved cell switching
 - Flexible sleep time and fast cell setup
- Overview of 1xEVDO Release B
 - Performance improvements over Release A
 - Multi-carrier operation
 - Multi-carrier active set management
 - Hybrid frequency re-use
- Overview of 1xEVDO Release C
 - Advanced Ultra Mobile Broadband (UMB) technologies
 - Higher mobile data rates
 - Introduction of OFDM, OFDMA air interface features
 - New antenna Multiple Input Multiple Output (MIMO) features
 - Support for VoIP
- Course Wrap-up: Recap, Q/A, and Evaluation

How You Will Learn

- You will learn in a participative lecture format from an instructor who combines subject matter expertise in cdma2000 with excellent presentation skills.
- Along with lecture, we will utilize exercises and interesting group activities to make the class more practical and interesting.
- If you already know something about cdma2000, we will build on that. We'll compare and contrast what's new with what you already know, making the new information easier to understand as well as more job relevant.
- If you are less technical, we will employ interesting and apt examples and analogies to simplify the complex subject matter and drive home the essential points.
- You will receive a student guide that contains a copy of the instructor presentation, to which you can add notes and insights in real time to make it a handy reference you can use back on your job.

Revised

April 24f, 2007