

Scandinavian Academy Training Center

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Course: ATM: Advanced Concepts and Developments

Code	City	hotel	Start	End	price	Language - Hours
IT-434SA	Al Baha	Hotel Meeting	2027-01-31	2027-02-04	10950 SR	En - 25

Overview

This course is designed for those with a basic knowledge of ATM and provides a understanding of those more advanced mechanisms that allow ATM components to work together to provide a multi-service platform. It discusses the techniques and facilities that enable key business applications and services to operate over ATM in a robust, scalable and feature rich manner, in both the corporate and carrier network. It also discusses how the same ATM platform is ready to support future network architectures. The topics covered here will enable delegates to understand how ATM products can support networks spread over large geographic areas, with large numbers of users and will allow them to identify the key requirements in vendors` product offerings. The seminar covers issues relating both to service providers and corporate users, and discusses the new areas of application for broadband services such as mobile and residential implementations of ATM.

Modules

Introduction (2 topics)

- Building multiservice network platforms
- The objectives of this seminar

Addressing and Signalling (5 topics)

- What addressing structure should be used and by whom?
- Developments in ATM addressing architectures
- Bi-level ATM addressing

- Address translation in ATM
- ATM name and directory services

Private Network-Network Interface (PNNI) (30 topics)

- The concept of PNNI Peer Groups
- Configuring a PNNI environment
- How switches learn the topology of their Peer Group
- Scalability in PNNI
- The peer group hierarchy
- Split switches
- Peer group leaders and their function
- Summarising topology information
- Aggregation tokens
- Complex Peer Group representations
- Address reachability issues
- How PNNI carries QoS related information
- Controlling traffic with PNNI
- How PNNI routes are selected and when
- Specifying the route through a PNNI network
- Example call set-up via designated transit list stacks
- Crankback for resilience in call-setup
- Additional features
- Leaf initiated join support
- Support for closed user groups
- Multipoint to point connections
- Secure PNNI
- Network call correlation identifiers
- Re-routeing ATM connections
- Connection tracing
- Modification of active connections
- Support for supplementary services
- Mobility support

- PNNI Augmented Routeing (PAR)
- Proxy PAR

Call routeing in E.164 based networks (3 topics)

- Limitations of B-ICI
- The ATM Inter-Network Interface (AINI)
- Developments to B-ISUP to support dynamic routeing

Traffic management (5 topics)

- Alignment with ITU-T I.371 service classes
- ATM support for IP Differentiated Services
- Guaranteed Frame Rate (GFR)
- Implementing per-hop behaviours in an ATM environment
- Integration of IEEE 802.1D priorities and ATM QoS

ATM in access networks (18 topics)

- The advantages of using ATM based access networks
- Wireless ATM
- Fixed wireless and mobile ATM users
- System level requirements
- Radio PHY MAC and radio control
- Handover and location management
- Frame based ATM
- FUNI version 1.0 and 2.0
- Frame format
- Adaptation and FUNI-AAL5 mapping
- Physical layer and SAR requirements
- Signalling ILMI TM OAM over FUNI
- Residential ATM Services
- Access network options (HFC HTTC HTTH)

- ATM and xDSL integration
- The alternatives to ATM over ADSL (PPP over ADSL)
- The 802.14 MAC protocol for ATM delivery
- ATM Layer issues: traffic management OAM signalling

ATM Security Architecture (5 topics)

- Provision of authentication confidentiality data integrity anonymity and accountability in ATM networks
- Security related signalling
- The ATM Security Message Exchange protocol
- Supporting multiple security associations per connection
- Security OAM functions

Voice and Telephony Over ATM (14 topics)

- Initial support for voice over ATM
- Circuit emulation support
- Dynamic trunking at the E1/T1 or bundled DS0 level
- Dynamic trunking at the individual call level
- Using AAL2 adaptation for voice over ATM
- The ITU trunking protocol standard I.366.2
- Voice compression techniques
- Telephony control issues
- Dialled Digits
- Options for handling CCS and CAS
- Demodulated facsimile
- Support for modem calls
- Integrating voice over ATM with voice over IP
- H.323 control and Media Gateway Control Protocol (MGCP)

ATM multimedia services (6 topics)

- Video-conferencing over ATM
- Support for IP based video applications
- Using gateways between different multimedia environments
- Video distribution over ATM
- Video in a residential environment
- On-line gaming over ATM

LAN Emulation (2 topics)

- Review of LANE approach
- Distributed LANE services (LES

Multiprotocol over ATM (MPOA) (1 topic)

- BUS

Finale (2 topics)

- and LECS) in LANE 2.0
- Distributed LANE services (LES

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

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