



**SCANDINAVIAN ACADEMY**  
For Training and Development

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# Course: ATM: Networking and Internetworking

Code	City	Hotel	Start	End	Price	Language - Hours
IT-433	Zurich (Switzerland)	Hotel Meeting Room	2027-03-29	2027-04-02	5450 €	En - 25

## Overview

This seminar covers all aspects of ATM technology concerned with building an ATM network in either a service provider or private backbone environment to function as a multi-service platform. It explores the objectives and mechanisms of ATM, especially its ability to provide quality of service and describes how these are used to carry voice data and video applications. A high quality workbook that contains fully documented text as well as a copy of all the slides accompanies the course. The intention is that the workbook should provide a useful reference volume for delegates long after they have attended the course.

## Modules

### Basic Concepts (6 topics)

- What does an ATM network look like?
- How ATM is different from other packet switching technologies
- The basic principles of cell switching
- Connection identifiers and how they are used
- The advantages of the ATM approach in delivering quality of service
- Comparison of ATM with other QoS technologies

### ATM Connections (3 topics)



- ATM connection characteristics
- The significance between permanent and on-demand connections
- Virtual channels and virtual paths

### **The ATM cell (3 topics)**

- why they are there and when they are used
- The principle of point to multipoint connections
- What are Soft/smart PVCs and where are they used

### **Above and Below (2 topics)**

- What we mean by the UNI and NNI interfaces.
- The ATM Cell header format

### **Implementation Scenarios (4 topics)**

- at the UNI and NNI
- The need for ATM Idle/unassigned and management cell
- ATM layer Operation And Maintenance (OAM) cells
- When are where these functions used?

### **ATM Standards (7 topics)**

- What is ATM adaptation and why do we need it
- The layered approach to adaptation
- The old and new ATM protocol architecture
- Common layer ATM adaptation protocols (AAL1/AAL2/AAL5)
- Adaptation convergence sublayer and SAR sublayers
- The main physical layers used by ATM
- ATM over SDH and PDH networks

### **Traffic Management and Quality of Service (5 topics)**



- How is a public ATM network presented to the customer
- Different ATM service network architectures
- What ATM features are available in today`s ATM services?
- How will ATM be provided as a service option in the future
- Inhibitors to ATM deployment

### **Addressing (5 topics)**

- Who is in charge of ATM standardization?
- Who are the main players?
- The evolution of ATM standards
- What is the role of the ATM Forum?
- What standards are available now and what`s coming along soon

### **Signalling (16 topics)**

- What is Quality of Service (QoS) and why is it ATM`s biggest advantage
- ATM service categories revisited (CBR/VBR/UBR/ABR)
- ATM traffic contracts
- Sizing considerations for ATM networks
- The essential principles of traffic management
- The differences between traffic policing and traffic shaping
- Blocking and non-blocking switches
- Traffic Control Functions
- Early Packet Discard and Partial Packet Discard
- The Generic Cell Rate Algorithm (Leaky Bucket Algorithm)
- What is meant by Dual Leaky Buckets
- ABR flow control procedures
- Where will ABR be used
- What QoS is available now?
- Differences between the QoS available on PVCs and SVCs
- Quality of service features in products



## **ATM Network Management (8 topics)**

- The difference between private and public ATM networks
- Private and public ATM address structure
- How to obtain registered ATM addresses
- How do I assign addresses to my ATM network
- How ATM addresses will be used in the future
- Group addresses Anycast and scope
- ATM address registration via ILM1
- The ATM name service

## **LAN Emulation (9 topics)**

- The various components of ATM signalling
- The UNI signalling protocol and its modular structure
- A walk through of connection set-up
- Setting up point to multipoint connections
- The evolution of signalling capabilities from 3.x to 4.0
- The future of ATM signalling - Leaf Initiated Join
- Prefix based call routing
- Overview of Private Network Network Interface (PNNI) call routing
- Comparison with public routing protocols

## **Other ATM Services (1 topic)**

- SS7 and BISUP



The Scandinavian Academy for Training and Development 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 will receive comprehensive training materials, including theoretical content, practical exercises, and supporting resources, provided in both printed and digital formats. 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 and Development.

### **Program Timings:**

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

### **The program includes:**

- A daily Coffee Break provided during the sessions to ensure participants comfort.