

Course Name: Installation and Maintenance of Wireless Video Surveillance

Course Length: 3 days

Course Overview:

This course is designed to explore the world of Wireless Video Surveillance in depth and to provide a comprehensive picture of the technology, equipment and applications. It is divided into three modules and each module can be delivered independently or combined with other TESSCO training courses.

- Module I: Video Surveillance
- Module II: Wireless Systems, Backhaul and Network Design
- Module III: IP and Networking for Surveillance

Who should attend?

- Anyone Considering Migrating to IP Video Surveillance
- Value-Added Resellers
- Municipality Staff
- Government Planners, Engineers or Technicians
- Educational Staff
- Security Managers and Staff
- Government Agents and Security Staff
- Traffic Operators and Engineers

You will learn:

- IP Video Surveillance and Security Basics
- TCP/IP Basics
- IP Networking Requirements for IP Video
- IP Video Network Design
- Common IP Video Applications and Deployment
- Legal Requirements and Liabilities for Surveillance Cameras & Systems Installation
- Testing and Troubleshooting of the IP Video Network
- Hands-on Use of IP Network Equipment and Configuration of the Video Surveillance System

Prerequisites: None

Customizable Course: Yes

Course Outline:

Module I: Video Surveillance



IP Video Security and Surveillance

- Basic Overview
- Applications for IP Video Surveillance
- Components of IP Video
- Benefits of IP Video
- Challenges of IP Video

Video Equipment

- Cameras
- Recorders
- Backhaul
- Networking Planning and Engineering

IP Video Software

- Video Management Software System Basics
- Camera Configuration
- System Setup and Configuration
- DVR, NVR, RVR
- Monitoring Tools
- Alarming
- False Alarm Detection
- Intelligent Video Analytic Tools
- Intelligent Motion Detection
- Intelligent Object Detection
- Setting Filters and Alarm Triggers
- Setting Virtual Borders and Areas
- Quick Review and Audit of Recorded Video – Smart Monitoring and Smart Search Techniques
- On-demand Recording Configuration – Reducing Storage Capacity

Understanding the Legal Side of Surveillance

- Liability for Installed Surveillance Cameras
- Legal Requirements for Surveillance Camera Installation
- Parameters for Privacy
- The Legal System & Whether Video is Admissible

Version 1.2 11/5/2007

Module II: Wireless Systems, Backhaul and Network Design

Bandwidth and Throughput

- Planning for the Network
- Verifying Quality Video Service



Video Network Backbones – LAN and WAN Technologies

- Networking for Video Solutions
- Wireless and Wireline Network Options
- 802.3 – Ethernet 10/100/1000Mbps
- 802.11– WiFi
- 802.16 – WiMAX
- Mesh Network Technology
- ATM
- Fiber Optics
- Internet Access

Network Design for IP Video Surveillance

- Basics of Video Network Design
- Bandwidth Requirements and Calculation
- Camera Selection and Placement
- Storage Systems and Requirements
- Backups and Redundancy
- QoS Implementation
- Workstation Configuration
- Wireless System Design

Module III: Networking for Surveillance

Basic Networking Review

IP Primer

- OSI Model
- IP Addressing
- TCP/IP Networking
- IP Routing
- Video IP Basics
- TCP/IP Protocols Essential to Video Surveillance
- IP Video Design
- TCP/UDP Protocols
- QoS and CoS
- Firewalls and Network Access and Security
- Broadcasting vs. Multicasting
- IP Troubleshooting Basics

Version 1.2 11/5/2007

IP Video Hardware

- Types of IP Network Cameras
- Video Servers and Recorders



- Cabling
- IP Network Hardware – Routers, Switches, Wireless Access Points, Firewalls
- Computers and Workstations

Common IP Video Applications

- Setup a Wireless Network and Configure a Multi-site Video Surveillance System
- Access Cameras and Monitor Video From an Internet Connection
- Integrate an Existing CCTV System with an IP-based System
- Retail Applications
- Banks and ATM Machines
- Local Government Applications
- Law Enforcement
- Highway and Traffic Applications
- Banking and Finance
- Schools and Universities
- Manufacturing and Industrial Applications
- Site Monitoring

Installation Testing and Troubleshooting

- Common IP Routing Configuration Problems
- IP Video Network Testing and Troubleshooting Tools and Techniques
- Common Installation and Connectivity Problems
- Camera Installation Troubleshooting
- Testing the Network

Hands-on

- Configure a Network Using Wired and Wireless Devices
- Install a PTZ IP Video Surveillance System
- Configure an IP Camera
- Configure and Monitor an IP Video Surveillance System Using Intelligent Analytic Tools
- Test and Troubleshoot Network Bandwidth and Configuration Problems

