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IE236:
Practical CCTV Installation

Training Description:

This training course covers a detailed and up-to-date overview of practical CCTV installation. It covers the CCTV system design and system requirements; the CCTV system design considerations and the components of CCTV systems comprising of cameras, lenses, housing and mounts; the video monitors, switchers and multiplexers; the digital video recorders (DVR), data compression methods, hard drive recorders, network video recorder (NVR), portable storage devices, video monition detection and other recording options; and the wired transmission, wireless transmission and IP network transmission.

Further, this training course will also discuss the video storage covering media storage, scalable network storage, interface protocols, direct attached storage, storage area network and network attached storage; the video analytics, system integration, system approach and other considerations; and the emerging technology, digital technologies, improvement to existing technology and major IT trends.

During this interactive course, participants will learn the vendor selection considerations comprising of selection criteria and vendor resources; the configuration of cameras, selection, connection and installing cables over UTP and configuring an IP/network CCTV solution; running the cable properly and terminating cable with connectors; the configuration and programming of digital/analogue recording devices; handling video and data storage media; setting up a range of color, monochrome, day/night and dome cameras and using test equipment effectively; the proper commissioning on fault finding and routine maintenance; and setting up and terminating display screens and checking features of NVR.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Apply and gain an in-depth knowledge on CCTV installation
- ✓ Describe CCTV system design and define system requirements
- ✓ Identify CCTV system design considerations and the components of CCTV systems comprising of cameras, lenses, housing and mounts
- ✓ Review video monitors, switchers and multiplexers
- ✓ Recognize digital video recorders (DVR), data compression methods, hard drive recorders, network video recorder (NVR), portable storage devices, video monition detection and other recording options
- ✓ Discuss wired transmission, wireless transmission and IP network transmission
- ✓ Describe video storage covering media storage, scalable network storage, interface protocols, direct attached storage, storage area network and network attached storage
- ✓ Carry out video analytics, system integration, system approach and other considerations
- ✓ Recognize emerging technology, digital technologies, improvement to existing technology and major IT trends
- ✓ Apply vendor selection considerations comprising of selection criteria and vendor resources
- ✓ Configure cameras, select, connect and install cables over UTP and configure an IP/network CCTV solution
- ✓ Run cable properly and terminate cable with connectors
- ✓ Configure and programme digital/analogue recording devices as well as handle video and data storage media

- ✓ Set up a range of color, monochrome, day/night and dome cameras and use test equipment effectively
- ✓ Apply proper commissioning on fault finding and routine maintenance
- ✓ Set up and terminate display screens and check features of NVR

Training Designed for:

This course is intended for those who are involved in the installation, commissioning and maintaining CCTV systems. The course is specifically designed to enhance the competence of both technical and non-technical personnel such as managers, superintendents, engineers, heads of departments, team leaders and unit supervisors.

Training Program:

DAY ONE:

- ❖ Introduction to CCTV Installation
- ❖ CCTV System Design
  - Defining System Requirements
  - Multidisciplinary System Design Team
  - Needs Assessment
  - CCTV Site Survey
  - System Layout Considerations
- ❖ CCTV System Design Consideration
  - Lightning
  - Power Distribution
  - Video Transmission
  - Scalability
  - Cost
  - Infrastructure
  - Reliability and Maintainability
  - Annunciation, Assessment and Response
  - Requirements and Design Worksheets
- ❖ Components of CCTV Systems
  - Cameras
  - Fixed Cameras
  - PTZ Cameras
  - Connectivity Type
  - Day/Night Cameras
  - Low-Light or Night Vision Cameras
  - Thermal Imaging Cameras
  - Miniature or Covert Features
  - Types of Images Sensors

DAY TWO:

- ❖ Lenses
  - Fixed Focal Length Lenses
  - Varifocal Lenses

- Zoom Lenses
- Optical Versus Digital Zoom Ranges
- Features of Lenses
- Image Quality and CCTV Lenses
- Resolution
- Filters

❖ Housing & Mounts
- Camera Housing
- Housing Features
- Indoor Camera Mounts
- Outdoor Camera Mounts

❖ Video Monitors
- Pixels
- Size
- Monitors
- Video Walks

❖ Switches & Multiplexers
- Switchers
- Multiplexers
- Multiplexer Networks

DAY THREE:

❖ Video Recorders
- Digital Video Recorders (DVR)
- Data Compression Methods
- Hard Drive Recorders
- Network Video Recorder (NVR)
- Portable Storage Devices
- Video Motion Detection
- Other Recording Options

❖ Transmission
- Wired Transmission
- Coaxial Cable
- UTP Wire
- Fiber Optics
- Telephone Network
- Category 5 Cable

❖ Wireless Transmission
- Wireless Network (AP)
- Laser
- Infrared
- Radio Frequency
- Microwave

❖ IP Network Transmission
- Benefits of IP-Based Systems

- IP-Based System Components
- Cyber Security

DAY FOUR:

- ❖ Video Storage
  - Media Storage
  - Scalable Network Storage
  - Interface Protocols
  - Direct Attached Storage
  - Storage Area Network
  - Network Attached Storage
- ❖ Video Analytics
- ❖ System Integration
  - Systems Approach
  - Integrating CCTV Components
  - Other Considerations
- ❖ Emerging Technology
  - Digital Technologies
  - Improvements to Existing Technology
  - Major IT Trends
- ❖ Vendor Selection Considerations
  - Selection Criteria
  - Vendor Resources

DAY FIVE:

- ❖ Practical Sessions
  - Configure Cameras
  - Selecting, Connecting & Installing Cables Over UTP
  - Configure an IP/Network CCTV Solution
  - Run Cable Properly & Terminate Cable with Connectors
  - Configure & Programme Digital/Analogue Recording Devices
  - Handling Video & Data Storage Media
  - Set Up a Range of Color, Monochrome, Day/Night & Dome Cameras
  - Use Test Equipment Effectively
  - Commissioning, Fault Finding & Routine Maintenance
  - Setting Up & Terminating Display Screens
  - Checking Features of NVR
  - Health & Safety
- ❖ Course Conclusion
- ❖ Post-Assessment and Evaluation

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Practical session will be organized during the course for participants to practice the theory learnt. Participants will be provided with an opportunity to carryout various exercises using the **"CCTV Equipment's"** application.

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:
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