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Tutorial

Surveillance Technologies
Beyond State-of-the-Art

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Topics:

* Advanced Surveillance Techniques
* Communication Technologies for Surveillance
* Processing Power driving Surveillance Business
* Multi-Sensor Surveillance Technologies
* Surveillance and Physical / Cyber Security
* Smart Home & Home Security
* Satellite Surveillance
Advanced Surveillance Techniques:

Security Management Process
Video Surveillance Local Control
Nearly Indestructible System
Wireless Self-contained VS Unit
Security Management Process: Overview

Security Management Process
In Video Surveillance Networks

Physical Security  Operational Security  Network Security  Application Security

Access Control  Business Continuity

PERFOMANCE
Availability  Confidentiality  Integrity
Security Management Process: The Big Picture

- Physical Security
  - Security against natural disaster
  - Physical Access Control
  - Design of right perimeters
- Operational Security
  - Operational Processes
  - Backup & Restore
- Application Security
  - SW development SW complexity
  - Charge Control
- Access Control
- Network Security
  - Analysis & differentiation
  - Security Measures (DMZ, tunnels,...)
- Adheres to
- Providers
- Availability, Confidentiality, Integrity of CCTV-System
  - Law, Ethics
  - Business Continuity
Security Management Process: Overview

- Cryptography
  - Authentication
  - PKI
- Network Security
  - Firewalls
  - IDSs
- Application Security
  - Security Access
  - (e.g., avoid SQL poisoning)
- Access Control
  - Biometrics
  - IDSs (weight detectors)
  - Role definitions
  - (security admin)
  - Definition of possible information flow direction
- Physical Security
- Operational Security
- Security Models
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SmartHome Security

- **CAMERA**: home camera can be monitored via internet
- **MOOD**: creating entertainment atmosphere
- **CURTAINS**: opening curtains
- **GARDEN**: watering the garden
- **SECURITY**: lock security systems
- **HVAC**: turn on heating, ventilation and air-condition
- **GARAGE**: opening the garage door
- **APPLIANCES**: time activated appliances
- **LIGHTING**: creating lighting effects
- **SHUTTERS**: closing shutters
Advanced Surveillance Techniques:

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NIVSS: Nearly Indestructible Video Surveillance System

Periphery
- Camera with Image Processing Unit
- Misc. Sensors
- Smart Camera

Wireless LAN

Data Processing Center
- Pr
- S1
- Sn
- Data Processing
- Storage

User Interfaces
- Surveillance HQ
- Mobile Surveillance
- External Access

GSM/Wireless LAN

DMZ
- Application Server

Internets
NIVSS: VS SmartCam Unit
NIVSS: Attacks on a Single Site NIVSS Infrastructure
NIVSS: Attacks on a Multiple Site NIVSS Infrastructure
Thank you, Klemens Kraus

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