

Welcome to

CPD for CCTV, Access
Control, Satellite and Fire
Alarms

Whitecode Consulting



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Introduction

- ▶ The following presentation aims to describe the fundamental components and design requirements of the following systems:
 - Closed Circuit Television (CCTV)
 - Audio/Video Door Entry
 - Electronic Access Control
 - Satellite and TV Integrated Reception Systems
 - Fire Alarm Systems
- ▶ These systems are generally installed by specialist contractors who design, supply and install the systems based on a performance specification

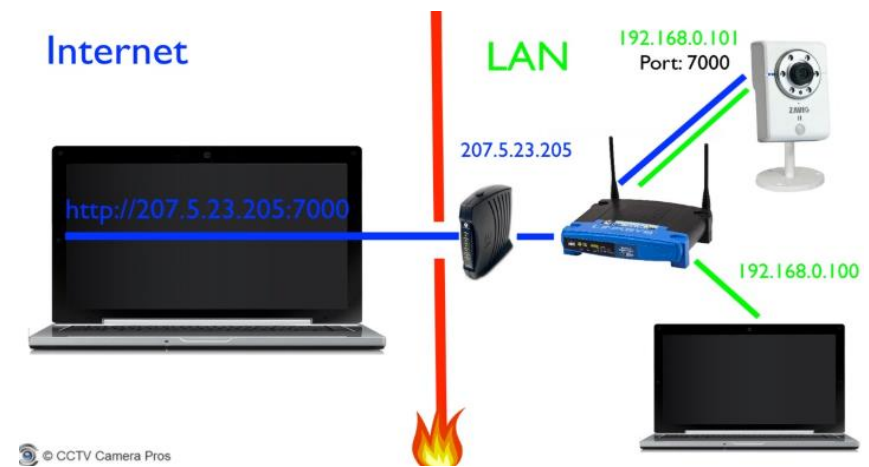
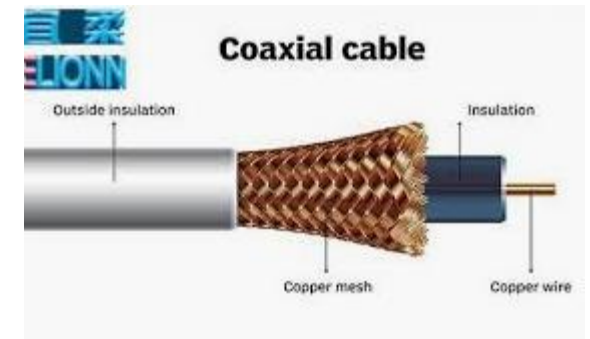
Closed Circuit Television (CCTV)

- ▶ CCTV is generally designed to meet the requirements of 'Secured by Design' as well as to the clients' specification/preference
- ▶ 'Secured by Design' (SbD) is not specific on CCTV, but the SbD Officer may have their own project-specific requirements in this area
- ▶ Cameras are generally installed to cover entrances, circulation/communal areas, car parks and external areas of the site



Analogue vs Internet Protocol (IP)

- ▶ Analogue typically utilises co-axial cable, similar to TV cables
- ▶ Traditional video uses Internet Protocol (IP) and transmits images over IP
- ▶ Analogue systems are generally more cost-effective than IP systems
- ▶ IP systems can be more cost-effective, depending on the size of the system:
 - e.g. in expansive sites where co-axial cable runs would require higher specification cables and repeater equipment, IP systems become more cost comparable
- ▶ The cabling used for IP systems is cheaper compared to co-axial cable, but the Ethernet switches and IT infrastructure make the overall system more costly
- ▶ IP can be more cost-effective if other systems share the same backbone; e.g. if CCTV access control, IRS, etc., runs over the same backbone, there will be small but significant savings across all packages, which can equate to a more substantial overall saving



Camera Types

5

- ▶ **Static** – this camera is fixed in position and cannot be moved using CCTV control
- ▶ **Pan, Tilt and Zoom (PTZ)** – this camera is motorised and can be adjusted using a CCTV control panel to either pan (rotate on horizontal axis), tilt (rotate on vertical axis) or zoom in an out of image
- ▶ **360°** - this camera has a 'fisheye' lens allowing 360° view; it is an alternative to PTZ and can reduce the number of static cameras required; it is generally more expensive than a static camera



Camera Types

Bullet



Dome



Hidden/Covert



Infrared



Box



Outdoor



PTZ



Wireless

Wall-Mounted



Pole-Mounted *(can be combined with external lighting columns)*



Audio/Video Door Entry Systems

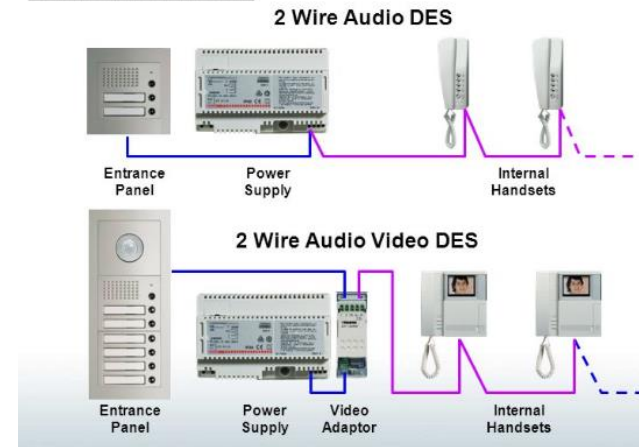
- ▶ Often confused with 'Access Control', but they are completely separate entities. There is, however, an interface between the two to allow the front door to be released
- ▶ Systems can be audio-only or audio and video
- ▶ Allows communication between visitors and residents
- ▶ Resident can then decide whether to release the door or 'meet & greet'
- ▶ Resident can see image of caller without having to enter into communication
- ▶ With a video system, the visitor can hear the resident, but cannot see them



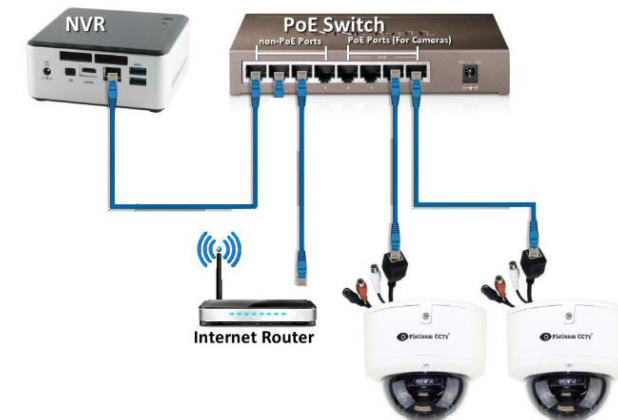
Two Wire vs Internet Protocol

- ▶ A two-wire bus was used traditionally, but is still an option today should there be a requirement
- ▶ Non-polarised bus wiring is a very simple and cost-effective installation
- ▶ IP systems have been around for many years
- ▶ Wiring and communication is based on IP
- ▶ Involves increased capital and installation costs, but more recently costs are starting to lower
- ▶ For very large sites, IP can be more cost-effective than two wire, especially when using IP backbone for other systems, such as CCTV and access control

BASIC INSTALLATION



Basic IP Camera System Setup



Examples of Entry Panels and Handsets



Electronic Access Control

- ▶ Proximity readers and electronic locks replace traditional keys and locks
- ▶ Can be keypad and pin number, but rarely used on multi-dwelling developments
- ▶ Locks specified as part of ironmongery package
- ▶ Control system specified as part of M&E package so co-ordination required between the two



Electronic Access Control

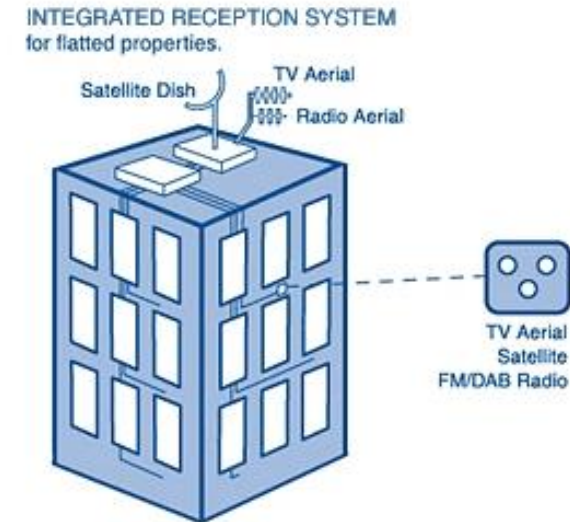
- ▶ Separate to, but interfaced with, the door entry system; allows visitor entrance doors to be released remotely
- ▶ Logs can be retained showing which fob released which door, and when
- ▶ Any securely held doors need to have a manual way of overriding the locks locally (*either green break glass unit or handle will suffice*)

The screenshot displays the iGuard Security System interface. The main content area shows an 'Access Log' table with the following columns: No., ID, Name, Date, Time, Terminal, and In / Out. The table contains 35 records of access events. The interface also includes a search bar, navigation buttons (First, Previous, Next, Last, Help), and a sidebar with various system management options.

| No. | ID | Name | Date | Time | Terminal | In / Out |
|-----|-------|-------------------|------------|----------|----------|----------|
| 1. | B1011 | Leung, Wei Kun | 04/08/2014 | 11:38:31 | 68 | In |
| 2. | B1004 | Mo, Lee Fong | 04/08/2014 | 10:41:51 | 68 | In |
| 3. | BB01 | Leung, Brian SK | 04/08/2014 | 10:28:57 | 68 | In |
| 4. | BB13 | Chung, Andy | 04/08/2014 | 10:24:32 | 252 | Out |
| 5. | BB15 | Chan, Grace123 | 04/08/2014 | 09:44:19 | 68 | In |
| 6. | BB11 | Sia, Tony | 04/08/2014 | 09:33:24 | 68 | In |
| 7. | A168 | Wong, Jeffery | 04/08/2014 | 09:27:43 | 68 | In |
| 8. | BB17 | Yiu, Anna | 04/08/2014 | 09:15:56 | 68 | In |
| 9. | BB12 | Ng, Raymond | 04/08/2014 | 09:02:07 | 68 | In |
| 10. | B1105 | LUO, MAY | 04/08/2014 | 08:17:08 | 68 | In |
| 11. | A1050 | Chan, KC | 04/08/2014 | 07:54:57 | 68 | In |
| 12. | BB13 | Chung, Andy | 04/08/2014 | 07:46:05 | 68 | In |
| 13. | A1050 | Chan, KC | 04/07/2014 | 19:14:30 | 252 | Out |
| 14. | B1004 | Mo, Lee Fong | 04/07/2014 | 18:49:31 | 252 | Out |
| 15. | BB01 | Leung, Brian SK | 04/07/2014 | 18:46:31 | 252 | Out |
| 16. | BB02 | Hui, Wah Cheong | 04/07/2014 | 18:21:19 | 252 | Out |
| 17. | BB17 | Yiu, Anna | 04/07/2014 | 18:09:47 | 252 | Out |
| 18. | BB12 | Ng, Raymond | 04/07/2014 | 18:07:27 | 252 | Out |
| 19. | BB11 | Sia, Tony | 04/07/2014 | 18:05:52 | 252 | Out |
| 20. | BB11 | ting fung, cheung | 04/07/2014 | 18:04:42 | 252 | Out |
| 21. | BB15 | Chan, Grace123 | 04/07/2014 | 18:02:51 | 252 | Out |
| 22. | B1105 | LUO, MAY | 04/07/2014 | 17:35:48 | 252 | Out |
| 23. | B1004 | Mo, Lee Fong | 04/07/2014 | 17:22:22 | 68 | In |
| 24. | B1004 | Mo, Lee Fong | 04/07/2014 | 17:01:36 | 68 | In |
| 25. | BB17 | Yiu, Anna | 04/07/2014 | 16:30:56 | 68 | In |
| 26. | A1050 | Chan, KC | 04/07/2014 | 15:35:31 | 68 | In |
| 27. | A168 | Wong, Jeffery | 04/07/2014 | 14:38:17 | 68 | In |
| 28. | BB17 | Yiu, Anna | 04/07/2014 | 14:09:54 | 68 | In |
| 29. | BB13 | Chung, Andy | 04/07/2014 | 14:00:55 | 252 | Out |
| 30. | BB31 | ting fung, cheung | 04/07/2014 | 12:13:54 | 68 | In |
| 31. | BB02 | Hui, Wah Cheong | 04/07/2014 | 11:57:40 | 68 | In |
| 32. | B1011 | Leung, Wei Kun | 04/07/2014 | 11:30:24 | 68 | In |
| 33. | B1011 | Leung, Wei Kun | 04/07/2014 | 11:04:12 | 68 | In |
| 34. | BB01 | Leung, Brian SK | 04/07/2014 | 10:47:28 | 68 | In |
| 35. | BB11 | Sia, Tony | 04/07/2014 | 10:42:16 | 68 | In |

Integrated Reception Systems

- ▶ Reception system for TV, FM Satellite
- ▶ May be one satellite service or multiple, e.g. Sky+, Hotbird, Arabsat, Turksat
- ▶ Array installed on roof, usually tallest block, but at very least a position with good line of sight to transmitters
- ▶ TV and FM signals combined and distributed over a single cable throughout system; signals later split in the apartment
- ▶ Satellite signals kept separate in riser, combined to apartment
- ▶ Multi-switches allow all the signals to be combined over two cables to each apartment (assuming only one receiver per apartment)
- ▶ Signals actually transmitted over cable depend on which receiver is connected within the dwelling



Non-Domestic Fire Detection and Alarm Systems

13

- ▶ Designed to BS 5839-1
- ▶ Fire detection and alarm systems are generally provided in areas requiring simultaneous evacuation, e.g. basement car parks or 'back of house' areas
- ▶ Fire alarm systems are not usually provided to communal areas of apartment blocks which have enhanced fire separation
- ▶ Mechanical smoke clearance systems are a type of fire detection system, but do not sound an alarm in order to simultaneously evacuate occupants; they are there solely to operate the smoke clearance equipment, so there is usually a requirement for detectors in communal corridors and 'Alert AOV' panels in any concierge areas or lobbies, which may be interfaced with main FA, dependent on the fire strategy laid down



Domestic Fire Alarm Systems

- ▶ Designed to BS 5839-6
- ▶ Inspection and testing will form part of BS 7671 testing; following this, a fire system certificate for design, installation and commissioning is issued
- ▶ A copy of the certificate will form part of the resident handover pack and needs to include the manufacturers instructions for the equipment installed
- ▶ Testing is carried out in accordance with manufacturers instructions, which is usually a button on the device, however there may be remote test facilities (e.g. where detectors are installed on high ceilings or where dwellings are designed specifically for wheelchair users, etc.)

CERTIFICATE OF DESIGN, INSTALLATION AND COMMISSIONING OF FIRE DETECTION AND FIRE ALARM SYSTEM OF GRADE B, C, D, E OR F GRADE SYSTEMS

| Business Details | Job Address | Client/Landlord's Details |
|-----------------------------------|-------------------------------|-------------------------------|
| Register No. <input type="text"/> | Name <input type="text"/> | Name <input type="text"/> |
| Operative <input type="text"/> | Address <input type="text"/> | Company <input type="text"/> |
| Company <input type="text"/> | <input type="text"/> | Address <input type="text"/> |
| Address <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | Postcode <input type="text"/> | Postcode <input type="text"/> |
| Postcode <input type="text"/> | Tel No. <input type="text"/> | Tel No. <input type="text"/> |
| Tel No. <input type="text"/> | Email <input type="text"/> | Email <input type="text"/> |
| Email <input type="text"/> | <input type="text"/> | <input type="text"/> |

2 DETAILS OF THE FIRE DETECTION SYSTEM

Extent of the fire detection and alarm system covered by this certificate: The installation is:

3 DESCRIPTION OF SYSTEM GRADE AND SYSTEM CATEGORY

System Grade: System Category:

4 COMMISSIONING

| | | |
|---|---|---|
| Test buttons checked <input type="checkbox"/> | Simulated smoke or aerosol test <input type="checkbox"/> | Dedicated circuit(s) provide <input type="checkbox"/> |
| All alarm warning devices operate <input type="checkbox"/> | Heat test <input type="checkbox"/> | Protected device labelled <input type="checkbox"/> |
| Silencing system checked <input type="checkbox"/> | Bedroom sound level (Class 1,2) <input type="checkbox"/> | Audible and visual indication of mains failure <input type="checkbox"/> |
| Sound level test instrument model and serial No: <input type="text"/> | Serial No. of associated Electrical Installation or Minor Works Certs: <input type="text"/> | |

5 USER INSTRUCTIONS

We the undersigned declare that the occupier of the dwelling (or owner in the case of a house in multiple occupancy) has been provided with written information about essential aspects of the operation and maintenance of the system, as follows:

| | |
|--|--|
| Operation of the system <input type="checkbox"/> | The need to keep clear space around all detectors and manual call points <input type="checkbox"/> |
| Action to be taken in the event of a fire alarm signal <input type="checkbox"/> | Special precautions relevant to any lithium batteries used in the system <input type="checkbox"/> |
| Avoidance of false alarms and action in the event of a false alarm <input type="checkbox"/> | Checking the system on reoccupation of the dwelling after a vacation etc. <input type="checkbox"/> |
| Warning that apparent false alerts from carbon monoxide detector may not be false alarms <input type="checkbox"/> | The need to avoid contamination of detectors by paint as fitted drawing <input type="checkbox"/> |
| Routine testing of the system <input type="checkbox"/> | |
| Service and maintenance of the system (including intervals at which any batteries should be replaced) <input type="checkbox"/> | |

6 CERTIFICATE OF DESIGN, INSTALLATION AND COMMISSIONING

We, being the person(s) responsible (as indicated by my/our signature(s) below), for the design, installation, and commissioning of the fire alarm system, particulars of which are set out above, CERTIFY that the said work for which I/we have been responsible complies to the best of my/our knowledge and belief with the recommendations of BS 5839: Part 6 for the system described above, except for the variations, if any, stated below:

Variations (if any):

The extent of liability of the signatory is limited to do work described above as the subject of this certificate.

For the DESIGN, INSTALLATION AND COMMISSIONING of the system:

Name: Position: Signature: Date:

Thank You For Listening

Any Questions?