

## How can you benefit from our experience?

You will need to be sure that not only is your system expertly installed, but that you are fully competent in its operation. All new projects require you or the operator to be fully trained in the use of any new system, and we offer product training at the end of every installation. Only when we are satisfied that users are competent in the use of their systems do we sign them off.

We also run individual and refresher training for organisations that may have had a change of operational staff, to ensure that new employees are competent with the operation of their systems.

## CCTV SYSTEM PROPOSAL

The following report briefs the findings of the site inspection done. In proposing the CCTV Surveillance system, we have kept the following basic principals in mind.

We need to define the Operational requirements of the system before proceeding. This is fundamental to the design and operation of an effective CCTV System. This Operational Requirement states clearly what functions Residential Management expect from the system.

1. What is to be observed? – The area to be covered and the purpose of the coverage.
2. The security response to the activity – the desired response to an incident and the conditions under which the system is expected to operate.
3. The Observer Interfaces – where is the observation done and by whom. What quality of image is needed for success?
4. The risk analysis – identifying risks, benefits, priorities and success parameters.

**Each Camera in the CCTV system should have a Particular Operational Requirement that specifies:**

- The area of observation and the purpose thereof.
- The Observer interface (where, who and the quality of the image needed.)
- The security response – time needed for response and data handling rules.
- The risks and benefits associated with the area and its priority.

The five main purposes of a CCTV System are: Monitoring, Detection, Observation, Recognition and Identification.

**Monitoring** - The image of a person should take up no less than 5% of the screen. An observer can determine the number, direction and speed of movement of people whose presence is known to him. The movement of a crowd can be observed but not the actions of an individual.

**Detection** - The image of a person should take up no less than 10% of the screen. An observer can ascertain, with a high degree of certainty, whether or not a person is visible in the image, but the identity of the person cannot be determined.

**Observation** - The image of a person should take up no less than 25% of the screen. An observer can see some characteristic details of an individual, such as distinctive clothing, but the view remains sufficiently wide enough to allow observation of surrounding activity.

**Recognition** - The image of a person should take up no less than 50% of the screen. An observer can say with a high degree of certainty whether or not the individual shown is the same as someone they have seen before.

**Identification** - The image of a person should take up no less than 100% of the screen. An observer can positively identify a person in the screen including face, footwear, clothing, and any other detail that will assist in further identification of a person.

With this in mind, we need to look at each individual camera and specify its purpose, after which we will need to make the necessary adjustments to the cameras and lenses that are installed on the premises. All cameras should have back light compensation, direct drive or amplification capabilities, and a sensitivity of a minimum of 0.1 lux.

All cameras should have a designated purpose and the views generated by that camera should be fit for purpose in both the physical quality of the image itself, and the view of the task, object, process or person to be observed.

All cameras should produce colour images to enable accurate recognition of people. As details are important to the observer, adequate lighting is essential and should be addressed accordingly in the operational requirements. The use of IR cameras should also be considered in low light conditions.

It is also recommended that whatever transmission system is used, it should allow for the transmission of a minimum of 15 frames per second but optimally 20 - 25 frames per second.

Elected systems need to integrate if required with an existing CCTV network of both IP and analogue cameras allowing for a single platform structure that is user friendly and intuitive. The system needs to provide intelligent analytics of both analogue and IP such as general motion, missing object, camera occlusion, foreign object, focus lost and signal lost.

Additional features such as people counting, vehicle counting, stabilizer and tamper detect surveillance suite including presence, enter and exit, appear and disappear, dwell, tailgating, stopping, direction and tamper detect, should be available if elected.

## Why choose an IP Based CCTV Solution?

**Greater Flexibility:** IP CCTV systems do not require local recording, they can transmit their images across Local Networks, the Internet and Wide Area Networks to a central location, where they can be recorded, viewed and managed

**Scalability** – With an IP based system additional camera can easily be added to your existing network, wired or wireless, this makes wiring IP CCTV systems simple, causing less disruption, reducing the time required to install them and minimizing unsightly cables. For anyone familiar with networking, setting up an IP based system is simple with intuitive operation and evaluation. Cameras are powered over Ethernet (PoE) allowing greater flexibility to install cameras without an available power outlet. Video is recorded and stored to a Windows or Linux based server, so storage is expandable to the size and scope of the installation.

**High Resolution Cameras** – IP cameras range from 4CIF to high resolution megapixel cameras.

**Better System Integration** – IP CCTV systems communicate using IP, allowing them to integrate and co-exist on the same network/cabling as other IP based systems, such as Access Control and IP Phone Systems etc.... Integration also means that these different systems can work together, for example an IP camera picking up movement will be able to transmit images of that movement to an IP Video Phone automatically. IP systems also allow the direct use of IP-based services as standard such as e-mail or image sending via FTP.

**Remote Management & Configuration** – IP based systems can be easily managed and configured remotely from anywhere. Changing camera settings, the way the images are recorded, and everything in between can be managed and configured from a remote location.

**IP Technology** – With technology improving every day the market for security cameras is changing rapidly towards the IP market allowing for improved usability, longer lifespan solutions that allow for increased functionality as well as compatibility with future growth platforms.

## WDR? What is it? Is it important?

The Wide Dynamic Range (WDR) feature on Video Security Cameras is one of the most important image improvements on security cameras, alongside the higher resolution cameras evolution we see in the video surveillance industry today. WDR is the camera's ability to see in contrasting levels of light such as when a camera is pointed towards a glass door or window, the background becomes "washed out" with the sun at various levels.

WDR is intended to provide clear images when the intensity of illumination varies in the FOV when there are very bright and very dark areas concurrently in the FOV. WDR correct the image for the intense lighting surrounding an object and enhances the ability to distinguish features and shapes within the image.

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### Wide Dynamic Range Applications

Not every camera in a CCTV System needs to incorporate WDR functionality. Applications are scenarios in which stark contrasts and differences in darkness and brightness within the same image view can be expected. A typical scenario:

**Exit/Entry Doors:** A camera is focusing in visitors entering the building through glass doors. The background outdoor scene is very bright and the camera uses AES or an Auto-Iris to tune the overall image brightness down. This results in the display of too dark faces of the entering visitors and facial details are lost. The CCTV Installer activates the Wide Dynamic Range function => The outdoor area brightness is tuned down without affecting the image area displaying the customer.



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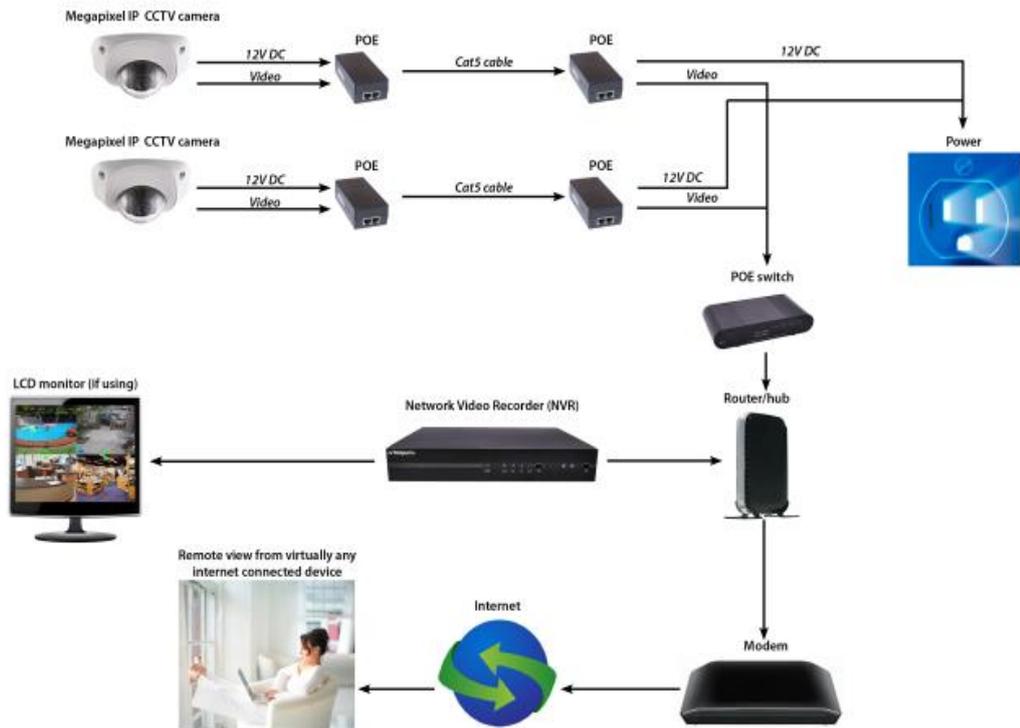
Security video applications have various lighting situations that cannot be controlled, therefore the proper camera selection is critical to covering selected FOVs. In many video security situations there will be many locations with very contrasting brightness areas, which are not managed effectively by a standard non-WDR camera. Place a 1080p nice camera without WDR at the west-setting sun covering a parking lot, and you will get high-resolution flash-out with the results being useless video and poor results.

True WDR vs Software WDR – Digital WDR (D-WDR) is a software-based technique that optimizes image quality by adjusting the gamma ( $\gamma$ ) value to enhance dark areas. Digital WDR does not offer the same quality as True WDR. True WDR is achieved by a double exposure technique that takes one exposure with longer exposure time to get the detail in dark area. Then another exposure is taken with a shorter exposure time to get the detail in very bright areas. The two or more exposures are then combined into a single frame. WDR is a feature that would benefit most all camera locations and should be a requirement for any outdoor camera covering any critical areas



Simulation effect of WDR technology

## System Architecture



## **Additional Services Offered**

### **Why do you need CCTV maintenance?**

The continued effectiveness of your CCTV system can only be guaranteed with planned preventative maintenance. Without regular maintenance, even the most modern and effective equipment will deteriorate. As such, it's important that one of our highly qualified engineers at NetSec Technologies checks your system regularly. This will ensure your equipment continues to meet current standards, is working efficiently and is less likely to develop defects in the future.

Many CCTV systems are external, resulting in the wear and tear that results from interaction with the elements. Minor alterations such as cleaning and adjusting camera housings and lenses, are required in order to maintain the optimum recorded picture quality. If your CCTV develops faults there are numerous issues that can arise: -

- Not meeting conditions set out for necessary insurances
- Breaches of security if the ineffectiveness of your equipment becomes known
- No remote link to check on areas of your residential, or to monitor activity
- Footage not of evidential quality, as demanded by the prosecution in the event of a legal dispute

### **What are the benefits of maintenance?**

There are many benefits to our CCTV maintenance contracts. As well as pre-empting any issues that may lead to an emergency call out, our expert team of engineers become familiar with your working environment, on-site procedures and system history. We will also perform the maintenance service for your integrated security solution in one visit to minimise disruption. Our contracts ensure: -

- Regular preventative maintenance inspections at a time to suit you
- Rapid prioritised response service
- Service parts held on hand
- Dedicated customer service assistance
- Out of hours' service
- Comprehensive maintenance contracts for all your security systems
- Industry standard trained maintenance and support staff

### **What does a maintenance visit involve? Inspection**

- Check whether the customer has experienced any problems with the system
- Check mains and stand-by power supplies including charging rates
- Check the satisfactory operation of all detection devices including deliberately operated devices
- Check control unit for correct operation
- Check and test remote signalling equipment
- Check all audible warning and alarm devices for correct operation, including NVR's
- Check the system is fully operational
- Check operation of keypads and LEDs, as well as ensure that all systems are operationally functional
- Repair any minor faults

- Provide answers to any questions or queries that the customer may have.
- Replace detector battery if applicable.

All work carried out on site, together with time of arrival and departure is recorded on a record sheet. The technical team will also note any deficiencies in the system and recommend work required to maintain full, trouble free operation. This record sheet is shown to you and a copy provided for placing on file.