How to Set up an
Alarm & CCTV Monitoring Centre

2020

The Bold Guide

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Foreword

Bold Communications has been supplying and supporting security and safety monitoring systems for the protection of people and property for over 35 years   Our users range from high volume complex ARCs to single site projects. There are many benefits to be realised from using a well-designed monitoring platform, including the increased return on investment from integrating security systems, cost savings for technical support, rationalized operator training, energy consumption, space, flexibility, continuity of supply and hardware as well as single reporting capability, standards compliance and operational efficiency.

Remote monitoring is a dynamic sector driven by new technology, automation and innovation, as well as operational requirements and, for commercial monitoring providers, competition for new business. Having worked on the monitoring technology side of the industry for many years, it is fascinating to observe how practitioners find new solutions, often in partnership with other technology providers. The safety and security monitoring sector is one area where integration and collaboration is a reality.

This Guide reviews the issues which should be considered when setting up an alarm monitoring control room, together with an overview of the technologies involved and the way the monitoring sector works in practice. It is written from the point of view of the control room, rather than those issues which concern the design and installation of security systems on site. It is assumed that a thorough risk assessment has been carried out at the site end and an appropriate level of equipment has been professionally installed and commissioned.

We will try to provide a perspective on what integrated monitoring can achieve and at minimum generate ideas you might find useful when considering how to achieve your monitoring objectives.

Brian Kelly, Managing Director
Bold Communications Ltd

Why Remote Monitoring?

There is a wider range of innovative security technology available now than there has ever been. Not only devices to detect when an event has occurred but preventative technology to stop it happening in the first place. For example, fire detection systems which can sniff atmospheric changes before ignition has occurred and video analytics calling attention to suspicious behaviour prior to a potential attack.

Ingenious though this technology undoubtedly is, the valuable information which it reports has to be communicated in order for it to be useful. Ideally, that would be to someone onsite who is suitably experienced. However, events may be infrequent and the locally designated person may have other responsibilities.

On the other hand, if those events are communicated to a 24/7 receiving centre, they will be received and handled by experienced operators whose only task is to process and respond to alarms. Alarm events will be prioritised and service levels actively monitored for the best possible return on the site security technology -

- Technology never sleeps or goes on holiday, and is never distracted by social media
- A modest control room can handle many thousands of remote sites
- An immediate and proportionate response can be provided for any incident
- The response service can be configured to match the exact needs of the user – for example, just sending a text message or calling a keyholder, or providing a full police response
- The alarm event and the operator's response actions can provide intelligence and evidence which may be useful in a subsequent incident investigation
- Remote monitoring technology is constantly evolving and adopting new innovation. For example, as mentioned, the convergence of monitoring and surveillance
- Not restricted to security - environmental, remote building management and social alarms can also be handled.
- Carry out scheduled checks and remote management for unmanned sites.
- An integrated monitoring platform also helps avoid the needs to run multiple software applications in the control room, so less need for additional resources to manage operations, training, support, space, heat, power and cost which running multiple systems would need.
- Costs only a fraction of an onsite guard or onsite monitoring control room

Cost

With cost always a factor, the higher the level of automation the more efficient the operation will be. The overhead of running a local site control room is significant whereas a well-thought out remote monitoring handling a high volume of activity from thousands of sites is a more attractive proposition.

The result has meant a significant growth in the number and diversity of both commercially operated alarm receiving centre and inhouse control rooms managing their own sites.

Any type of security system – alarms, CCTV, access control, asset tracking, lone worker monitoring or a combination of all – can be remotely monitored on an open platform, and by a variety of communications method. Within this Guide, we will look at what is required to make this happen, focusing particularly on alarms and CCTV. This is intended to provide a general overview of the key technical issues which should be considered by anyone planning to create a monitoring facility.

Bold Gemini MultiView CCTV
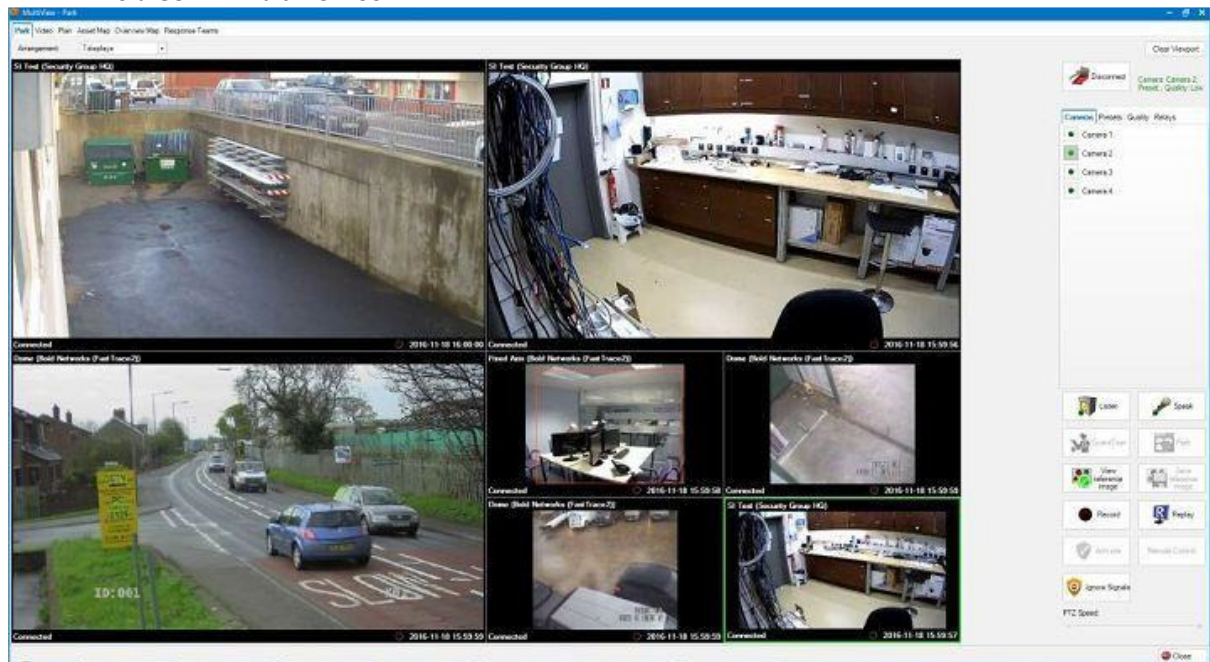
A Very Brief History

Although the earliest example of remote alarm monitoring can be traced back 160 years to the Fire Alarm Telegraph in Boston, commercial monitoring in the UK started becoming popular in the 1970s. Monitoring centres were then generically described as 'central stations' and a typical alarm call to the Police would be - "central station hold up alarm at the Midland Bank." This new technology service created an effective means of providing protection for commercial and domestic property, as well as a brilliant crime detection resource for the Police.

As monitoring increased, unfortunately, so did the number of false alarms which started to become a drain on Police resources. Discussions with the security industry led to the drafting of requirements and processes intended to minimise false alarms and establish the conditions under which Police were willing to attend alarm activations. At the same time, technology was developed to enable control rooms to confirm that an alarm was genuine – this is an ongoing process with new verification processes continuously being devised to manage signals from new security technology.

Over the years standards have been extended to cover the physical construction of the Alarm Receiving Centre (ARC) as well as new standards for CCTV and Lone Worker monitoring, amongst others. These standards provide useful guidance, however, accreditation is voluntary and many providers do not seek full accreditation.

What Exactly is a Monitoring System?

Over a period of time, a monitoring centre may handle a very diverse product mix as new technologies come into play. Furthermore, general infrastructure changes can influence trends and render once popular technologies obsolete. An obvious example is how the world has become increasingly network connected as analogue telecoms networks are being phased out.

The monitoring centre needs therefore to be agile, recognising that it is operating in a continuing state of change. This means being prepared to embrace new technology as it becomes available at the same time as continuing to support legacy systems. 'Future proofing' a service or product can only be achieved by continuous redevelopment and reinvention; changing a monitoring platform carries significant risk and costs – getting it right the first time is, of course, the better option.
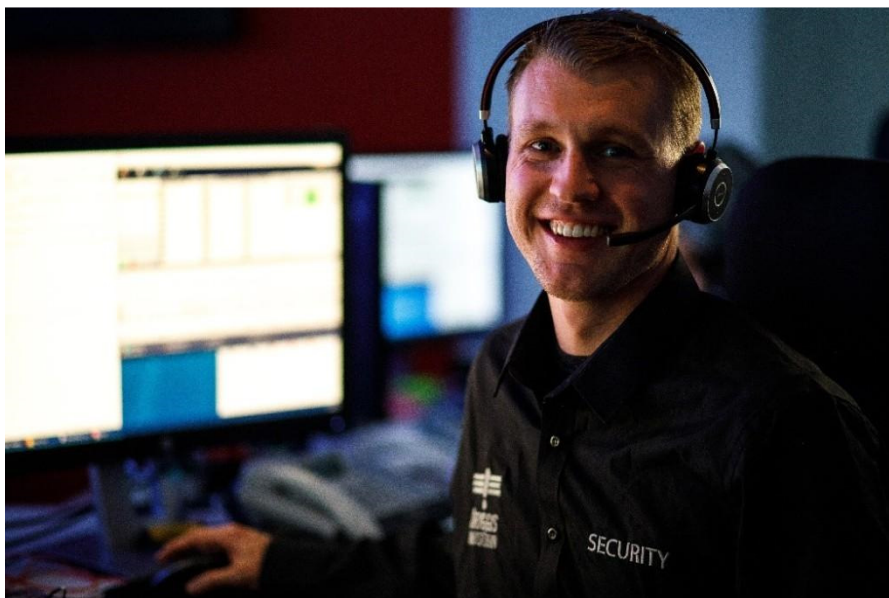
The term 'monitoring system' is shorthand for many different types of systems. In the security world, it can include video management (VMS), a physical security information management (PSIM), building management (BMS), guard management or access control. The type of system used in an alarm receiving centre is often referred to as a monitoring platform as it provides a means of receiving signals from different devices but uses a common process to handle them. The essential distinction is that ARC platform software is designed specifically for alarm monitoring whereas this function is minimal, and incidental, with non-ARC software.

ARC monitoring software core features will include -

1. Receiver interfaces for all industry standard alarm signalling protocols, for example, SIA-DC09.
2. Supporting all alarm communications modes, eg PSTN, IP/4G, GSM, DualCom, BT Redcare etc.
3. Interface to all non-standard, but commonly used signalling protocols
4. Legacy equipment support
5. Development capability to integrate new products and systems into the platform
6. Support compliance with British and European Standards for monitoring – eg. BS5979 CatII…
7. Process, prioritise and filter high volume raw signalling data into actionable operator events
8. Provide alarm handling workflows to include a combination of complex or simple, global or custom, mandatory or discretionary, manual or automatic
9. Present events in a common user interface, regardless of the device or system being monitored
10. All monitored product types should be handled within a single database
11. Able to generate activity reports designed around alarm processing and operator response
12. Be product independent and unrestricted by third party commercial or technical constraints

There may also be features which are desirable if not core –

1. Remote site management controls to remotely operate onsite devices, eg lights, barriers etc.
2. Web and keypad launchers – again, to configure and activate remote site devices
3. Optional modules, eg billing, asset tracking, scheduling, telecom integration, key tracking
4. Dashboard features – for example, operator response times, alarm analysis
5. Problem site and device monitoring detection
6. Open and close alarm monitoring scheduler
7. Custom reporting
8. Customer privacy controls

What is the difference between software provided by a Product Manufacturer and a Platform Solution?

Proprietary software is developed to support the specific features of a manufacturers' product, therefore a different application is needed to run each manufacturer's product. A start up monitoring centre will sometimes run manufacturers' product software, as it is typically free or low cost, until it becomes unmanageable.

Manufacturer's software	Integrated Platform software
✓ Will only support specific manufacturer's product	✓ Independent and will support multiple products in a common user interface
✓ Software features will be designed around one product's features	✓ Software features will be designed around multiple product features
✓ Will only be updated when product is updated	✓ Should be continuously updated
✓ Often provided free or at low cost	✓ Will be chargeable usually with software licence
✓ Manufacturer's primary interest is in product sales not software development	✓ Software development is the main priority for investment

A Platform Solution manages all monitoring services on a single, device-agnostic, application and can achieve significant efficiencies for energy, space, training and support, as well as reducing equipment costs, single points of failure and the carbon footprint. Integrated technology provides smarter ways to deliver services.

What do you Need to get Started?

ARC Technicians like to discuss FEP's, Hosts, Gateways, VPNs, Multi-protocol Receivers, Line Cards, Handshakes, Watchdogs, Signal Handlers, Dual Redundancy, Encryption, etc – terms which collectively go to make up an alarm monitoring solution. However, as this is not a technical guide, we won't get into the jargon so much but rather look at what is needed operationally.

Essentially, an Alarm Receiving Centres (ARCs) or Remote Video Receiving Centre (RVRCs) requires a means of receiving and processing alarm data, video and audio. Traditionally, this meant a hardware receiver with PSTN line cards which decoded the incoming signals and output them in a standard format to the alarm handling software.   As PSTN heads toward end of life, these hardware boxes are being replaced by software receiver applications. The specific receiver required depends on what monitoring service is to be provided.
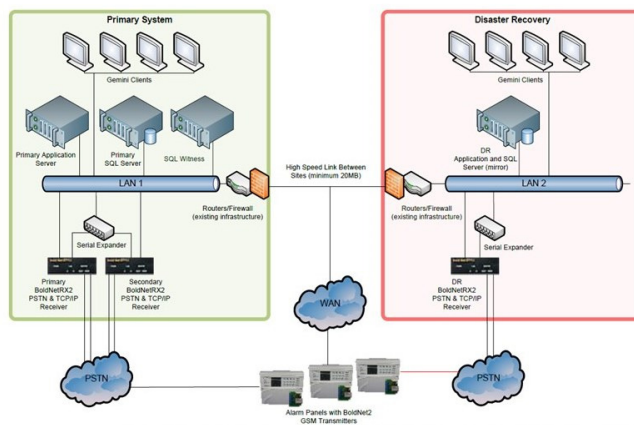
In addition to receivers, monitoring software is needed. This can be hosted on dedicated servers, virtualized or hosted on third party hosts like Microsoft Azure. The last essential item is effective 24/7 technical support. We will look at all of the parts of the puzzle in more detail later in this guide.

Short Checklist -

- What are the principal objectives for the monitoring system - in particular, what services, facilities and information is the system required to deliver

- When an alarm activation is received what kind of response will be provided

- Can any existing monitoring systems – for example, manufacturers' proprietary software – be migrated across to a platform solution

- What communications and signalling methods will be used and how will they be received

- Scalability - how many accounts and workstations are needed and what growth is expected over the next 3 to 5 years

/cont

- What level of staffing will be required, bearing in mind that the control room will need to be staffed 24/7

- Will the server hardware be dedicated, hosted or virtualized

- Will IT resources be inhouse or rely on third party service suppliers

- What will be the backup and disaster recovery plan

- What outcomes are needed for the project to be considered a success

- Will the monitoring facility be accredited to the relevant standards

- What budget is available and what are the order of priorities

Types of Alarm Systems

Alarm panels professionally supplied and installed in the UK will generally support at least one of the industry standard signalling protocols, for example, Contact ID or SIA. However, not all panels do so, particularly at the budget end of the market. It is therefore important to establish that the panel to be monitored has been designed and tested for this purpose.

As alarm signalling moves from PSTN phone lines to IP and Mobile Data networks, IP based protocols are becoming increasingly adopted, for example, SIA DC09.

The question of what is the right security system for each site is one which requires the specialist skills of the system surveyor. However, the following should be included within the range of considerations –

- What is the value of the property being protected?
- How vulnerable is it to loss or damage?
- What would be the effect of such a loss?
- How much is available to invest to provide an appropriate level of protection?

Devices which support alarm signalling as a secondary function typically include CCTV, Access Control products or specialist monitoring systems, for example, a gallery monitoring system. For each of these product types, a custom receiver interface is needed. Many monitoring platforms will already offer custom receiver interfaces for some of these products.

The Signalling Path

To monitor alarm systems we need to establish how the signal communicates with the ARC

Simple alarm signalling schematic
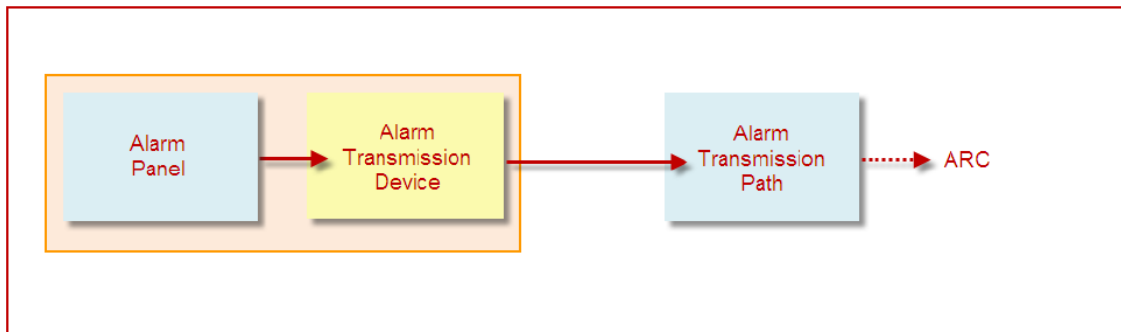
When an alarm event occurs, for example, a burglary or fire, the detection device will report to the alarm panel. The panel will then communicate over PSTN or IP networks to the ARC, all in realtime. A professionally supplied and installed alarm panel will have onboard communications, for example, a digital communicator or network communications device. If there is no 'built in' communicator or a requirement to add a different signalling method, this can be added retrospectively.

Summary of signalling options

Transmission Device	Transmission Path	Receiver Type
Digital Communicator	PSTN Phone Line	Digi alarm receiver
IP/4G Communicator	Fixed or mobile data network	Software receiver
Managed Communications Networks	Eg. DualCom, BT Redcare network	Soft receivers
Lone worker device or App	Mobile voice and data networks	SIP Trunks and soft receivers
CCTV monitoring system	Fixed or mobile data network	Software receiver
Proprietary devices	Fixed or mobile networks	Proprietary receiver

Typically, an alarm signal will include at least the following information –

- the site ID
- event identifier
- channel status
- event type

PSTN Alarm Signalling – the End of an Era

Phone lines were the core alarm signalling mechanism for many years, carrying DTMF and FSK tones, like fax machines of old, across the telecoms network. Now, the PSTN phone network is rapidly facing extinction. New lines are difficult to source and the lack of investment in the old network means it is becoming less reliable as the timings of the signal transmission is important and any corruption or delays on the telecom phone network can cause signalling failure.

Despite this, there are estimated to be 2M+ monitored sites still based on the old technology and yet to migrate to IP. Many of these sites will remain on PSTN until the last possible moment before migrating!

For the reasons mentioned above, an increasing number of alarm signals are not getting through over PSTN and this method should not be considered a good communications choice for new systems. For this reason, traditional hardware alarm receivers are still often required and many now offer both PSTN and IP receiving functionality.

Receiver Types

The alarm receiving centre must have equipment and systems which are capable of receiving the signals from the remote site. For this reason, it is important that industry standard equipment, monitored and maintained by an experienced security systems company, is used. Non-standard equipment can turn out to be a very expensive and unsatisfactory investment.

Receiver type Examples
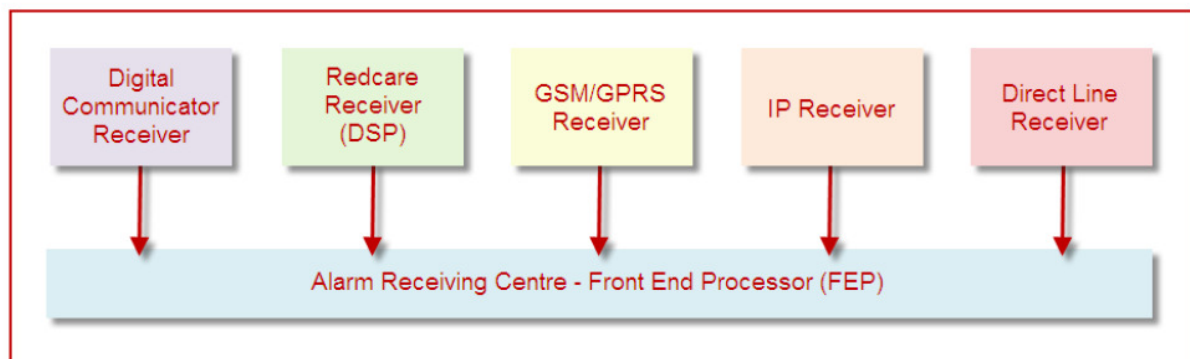
CSL DualCom, BT Redcare

DualCom and Redcare offer popular signalling alternatives to PSTN digi alarms. Their networks are hosted and supervised so that any loss of communications between site and the control room can be reported. For DualCom, the primary signalling path is over the mobile network, Redcare offer a similar service which was originally PSTN Based but has migrated to IP and mobile data.

Many alarm panels can be purchased with the DualCom or Redcare module already fitted so that no further equipment is required. It is also possible to add one of these modules as retrofit, for example, if migrating from PSTN.

IP and Mobile Data Signalling Solutions

Communications modules which do not depend upon a hosted network are also available. These signal over the IP Network with failover to 4G and/or GSM, and are most suitable for retrofitting to an existing panel. Like DualCom and Redcare, the devices support polling and encryption so the control room can immediately become aware if there is a loss of connection.

GSM Communications

A GSM Communicator operates in a similar way to a digital communicator in terms of the connection to the panel. The signal is transmitted by the voice or data channel of the mobile phone network, either to a modem or a PSTN central station receiver. The connection is not supervised and is dependent on the availability of the GSM network and sufficient signal strength. GSM is sometimes used as a back up for PSTN or IP signalling. GSM offers the advantage that it is less vulnerable to network risks than IP or mobile data.

Alarm Management Software

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┌─────────────────────────────────────────────────────────────┐
│   Alarm Receiving Centre - Front End Processor (FEP)          │
│                          │                                     │
│                          ▼                                     │
│                   Signal Handler                               │
│                          │                                     │
│                          ▼                                     │
│        Alarm Management System (AMS) Database                  │
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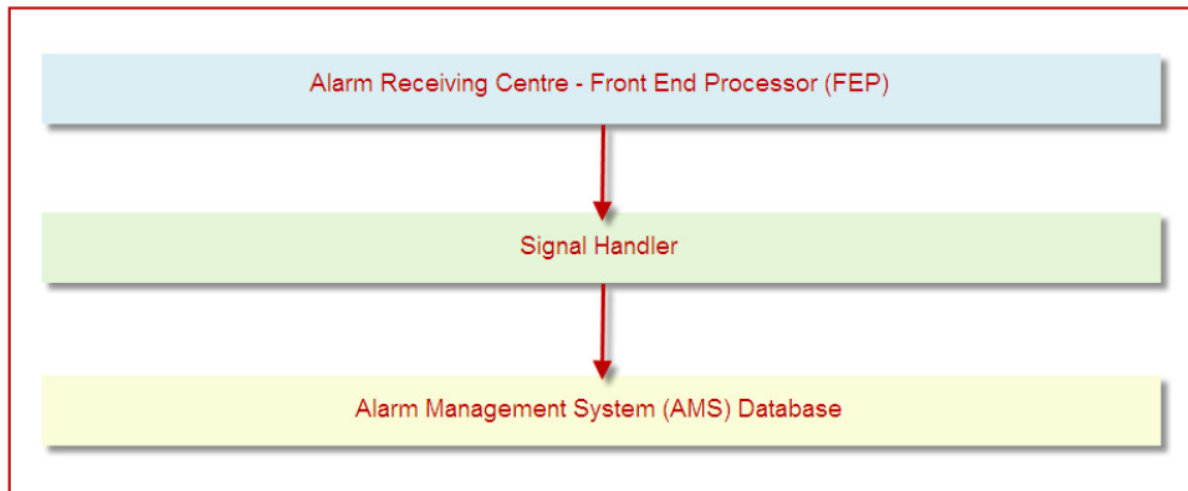
The ARC software is an essential part of the system to protect people and property from physical attack, theft, damage and other threats. It also protects an organisation's reputation for providing a safe environment for its staff and clients.

The software application processes signals from the alarm receiver or interface software, providing handling instructions to the operator. Rules are applied to the incoming signals to determine what next action step should be taken. The software will filter non-actionable alarms, for example, polling signals, duplicates and tests which will only be logged in the database. Alarms which require operator intervention are prioritised according to type, with life safety events such as fire alarms given top priority.

Unlike typical office applications, like accounting or logistics software, an AMS needs to operate continuously 24/7. Redundancy should be designed as an essential component so, if any single part fails, the system can continue to function.

What is it and what does it do?

A scalable monitoring system comprises a number of applications which together can simultaneously process many different types of events from multiple, remote sites. The most visible parts will be the server hardware and the user interface at the client workstation. The software should be able to receive data from the different receiver types, both physical and soft. A connection, either serial or IP, is made from the receiver to the Gateway which communicates the alarm data to AMS.

After a signal is processed by the AMS, it is then presented in the alarm queue screen waiting to be handled by the next available operator. An audible alert sounds to attract the operator's attention.   When the alarm handling screen is opened from the queue, all the information needed to understand what has happened and what actions need to be taken are presented. The operator then carries out those actions and, when completed, closes down the alarm with a short report to include whether it was genuine or false. All this occurs as quickly as possible in order that actions in response to the alarm can be completed with the minimum of delay, so the software must be able to perform its processing tasks at very high speed.

The Operator Workstation

The client application is the program that you will see working and being used on a daily basis in an Alarm Receiving Centre running on each operator's workstation and used for alarm handling and system administration. If the ARC monitors many thousands of remote sites, there may be many workstations and numerous operators. Each operator is assigned a user profile which is configured according to the permissions granted by the system administrator, and which is loaded when they log on to the system.

If the workstation is used for CCTV alarm monitoring, very often there will be a second display screen to present video images while the first screen displays the alarm handling information.
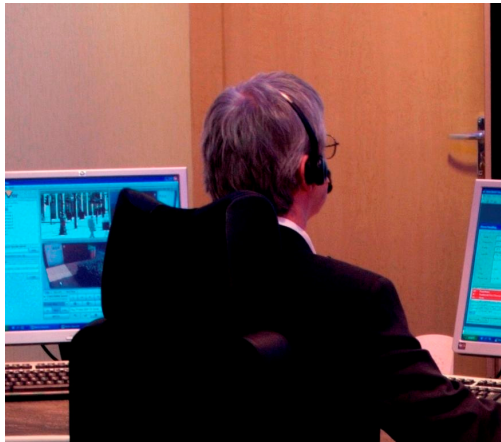
The Response

It is important to consider what response is required when an alarm signal has been received? The answer could be any one or a combination of the following:

- Auto alarm handling – generating a SMS and/or email to the subscriber
- Viewing local CCTV footage or sequential signal verification to confirm the alarm
- Handling a false alarm notification from the subscriber
- Notifying a neighbour or other person within response proximity
- Policing an alarm or calling fire services, or care provider
- Calling a contractor – for example, locksmith or glazer
- Contacting the security installer to report a fault

The response should be in accordance with the service level agreed with the subscriber. The likelihood and consequences of harm should be considered. Where there is a high risk of harm and/or the consequences are severe, consideration should be given to using a higher grade of equipment with a polled connection and multiple signalling paths.

Telecom based Operator Tasks

The majority of operator tasks will require talking to people. This might include contacting the site to verify an alarm or calling the emergency services with a request to provide a response. So, the operator will be using either a desk top phone handset or integrated workstation headset. It is important these calls are logged and voice recorded to avoid any disputes that may subsequently arise. Many ARC software programs incorporate telecom integration so that calls can be made from the workstation screen as part of the handling process. This helps prevent mis-dialing and provides a full audit trail of the alarm event.
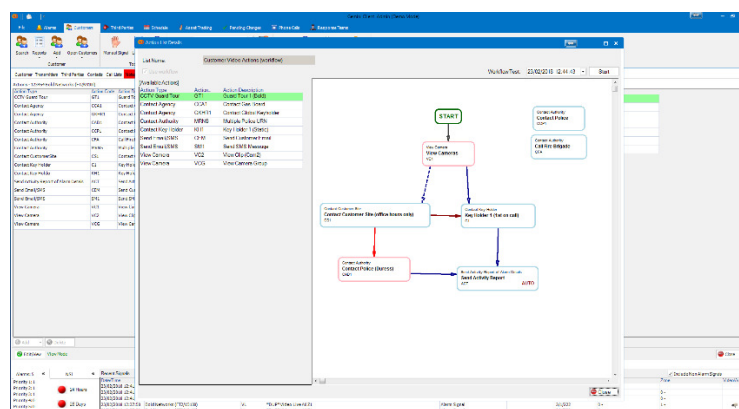
Remote Site Management

The trend toward automation has seen an increase in remote site management. As handling alarm events, many ARCs also provide services such as providing remote access and control of systems, and equipment (eg. lighting) onsite. Periodic remote CCTV guard tours is a popular ARC service. This opens up opportunities to save time and resources and increase control, with all actions configured and logged in the software.

Reporting

Everyone wants to know what is happening. The operator wants to be able to go back to an event to extract useful information, the manager needs to know there are sufficient resources in the control room, the system 'owner' wants to be sure there is a good return on the investment, the IT technician needs visibility of data and networks and, last but not least, the customer is concerned about what is happening on his site.

To satisfy all these needs, the system must be able to generate customizable reports automatically and manually as required, on a scheduled or ad hoc basis. The reporting 'engine' helps keep everyone in the picture and is an essential part of the system.

For more details, visit - https://www.boldcommunications.co.uk/products/gemini-alarm-monitoring-software/

CCTV Monitoring – An Introduction

Closed Circuit Television (CCTV) monitoring and CCTV surveillance are similar but different activities. Surveillance is generally understood as live images continuously viewed by an operator. However, the operator will only view monitored images when an event has occurred which has been deemed worthy of further investigation. In this instance, an alarm signal is dispatched from site, processed in the Remote Video Receiving Centre (RVRC) software and associated live video is displayed alongside the alarm event video at the workstation.

Remote CCTV monitoring became popular later than alarms as video transmission equipment was expensive, slow and poor quality in the early days. The main transmission options were analogue PSTN phone lines or ISDN – both expensive, narrowband, metered connections. The widespread adoption of IT Networks and, more recently low cost Mobile Data, has supported interest in this service with speed and quality dramatically improved, making it an attractive alternative to onsite security guards.

Why the Interest in CCTV Monitoring?

CCTV has made a huge contribution to crime detection and prevention over the years - helping people feel safe, and alerting authorities as soon as an incident has occurred. It has proved especially valuable for our police and criminal justice services saving time and resources, and providing essential evidence with those caught on camera far less likely to contest charges.

As CCTV equipment costs have decreased and network bandwidth costs fallen, remote event activated video surveillance has grown in popularity. Remote CCTV monitoring enables many hundreds of sites and thousands of cameras to be monitored in a central location with massive cost savings and effectiveness. One of the major advantages is that continuous operator monitoring is not required - the image only needs be viewed when an event or alarm has occurred, so a single operator can handle many hundreds of sites. And, CCTV monitoring software is available with the capability to manage different manufacturers' CCTV products in a single unified user interface.

Visual information about the cause of the activation as well as live site images not only verifies the alarm but also provides identification details. Unlike a security guard, the system never sleeps or goes sick, and it is also useful for remote site management.

How Does it Work

Remote CCTV monitoring allows the ARC/RVRC to receive alarm signals and view video from site. The alarm may be activated by a number of methods – including video motion detection (VMD), intelligent video analytics or an alarm input from a PIR detector. Once the alarm has been received at the ARC/RVC, it can be selected and handled by the operator with aid of the video images.

The first steps for the operator are to note the type of alarm and view the live and event video. If it is clearly an alarm which has been activated in error, it can be closed down, perhaps with a note to the site contact about false alarm prevention. If suspicious or criminal behaviour is observed, the operator has a number of options available, from giving an audible warning to calling police to the site.

Although CCTV monitoring was originally distinctly separate from alarm monitoring, efficiency considerations and new technology propelled the convergence of the two activities - integrated monitoring was born. It is now common for both to be handled in an integrated ARC/RVRC and managed on a single platform.

Managing the range of CCTV Products

Initially, Remote Video Receiving Centres (RVRCs) had to run a dedicated software application for each remote CCTV system being monitored. Some of these applications had excellent monitoring features but many were very limited and not well supported. Control room space is always limited and having several different applications running with various operating systems and a jumble of PCs is not a joyful experience.

In response to this challenge, software developers started to create monitoring systems which can monitor CCTV as well as alarms, sharing many of the same processes and functions. As there are no standards in the CCTV sector comparable with alarms, each product type has to have its own custom interface for alarm signalling video and audio. Because certain CCTV product became particularly popular for remote monitoring, these have formed the core product group which are found in RVRCs.

Viewing the Video

Particular cameras can be associated with specific areas and zones so that when an alarm is tripped, video from the associated camera start being transmitted to the RVRC. For speed, the initial alarm images may be "pre-alarm" stills or a video clip which displays what was happening in the vicinity of the zone when it went into alarm. If the cameras have been set up correctly, the cause of the alarm activation should be clear. If it is still not clear, the operator can connect to site to view the live cameras.either singly or in a group. The operator can also view areas and zones and pick up cameras on interactive site plans.

Depending on the CCTV product in use, additional useful functionality can be available. For example, it may be possible to listen in and issue an audio challenge, warning trespassers off the site. CCTV Guard Tours can also be scheduled in the control room software and carried out periodically for the client.

Remote site management offers a further opportunity for providing client services. Where staff are visiting remote unmanned sites out of hours, the control room can identify visitors, verify identities and allow or deny access. It is important that this activity – alarm signals, viewed CCTV and operator actions – are all logged in the RVRC control room software so that the details can subsequently be reviewed.

For more details, visit - https://www.boldcommunications.co.uk/products/gemini-cctv-monitoring-software/

Alarms or CCTV – or both?

Alarm handling is a somewhat different process to CCTV event handling. The alarm signal is transmitted from the detection device to the alarm panel and then to the ARC. The ARC operator is faced, typically, with a course of action that he must quickly follow in response to the alarm event. This is usually a fast moving process, based on tasks for completion and enabling the operator to rapidly move on to the next alarm in the queue.

In contrast, CCTV images, although initially generated as a result of alarm activation, are subject to human examination and decision making to determine whether actionable. If it is not clear whether there is a problem at the site, the operator must continue to monitor the live video before deciding whether it is right to call the police or deploy other resources. So the two product types represent monitoring approaches with different technologies and levels of operator engagement. How can converging these technologies together work in practice and create additional value in the process?

The Integrated Approach

An integrated monitoring solution enables the operator to handle remote CCTV activations in a similar way to conventional alarms. The operator is presented with the same user interface for CCTV as for alarms, the only on-screen addition being the pre-event video or still images (or both), which actually caused the alarm.

Integrating both alarms and CCTV into one unified platform –

- Reduces staff training as the operator has to learn only one system
- Customer only has to deal with one monitoring provider
- Cross over of event handling within physical security management
- All data in one system minimises data input
- Multi-tasking staff provides better efficiency
- The capability to generate reports from a single reporting engine
- Support complications and running costs of multiple systems avoided

Audio Monitoring

Audio monitoring is an effective method of verifying alarm events and communicating with subscribers. It is a recognised method of alarm confirmation by UK Police and with lower costs than CCTV.

However, there are many further uses for handling audio in the control room, including –

- Telecare Monitoring
- Lone Worker Protection
- Voice Recording
- Audio Alarm Verification
- Automatic Speech Diallers
- Voice Alarms
- Contact phone directory
- Auto Dialling from the Workstation
- Replace Legacy Audio Receivers & Handsets

Recording & Logging

An effective audio module can be fully integrated with the alarm monitoring platform so that events can be linked to the customer database and other security systems on site – for example, hold up alarms. All incoming and outgoing audio should be recorded and logged with detailed reporting and scheduling on audio activity available. Audio monitoring is very often used with lone worker monitoring, together with an IP receiver and SMS module.

It is also important that, when the operator has telecom conversations with contacts and keyholders, those calls are recorded and logged so that any subsequent disputes can be effectively resolved. This is a valuable management and customer service tool, and a mandatory requirement in many regions.

Lone Worker Monitoring

Personal Protection Monitoring Personal protection monitoring, especially of lone workers, has grown significantly in the UK and overseas. Dedicated devices and smartphone apps enable the monitored user to discreetly raise an alarm or simply report a check call alert.

The applications for this type of personal protection monitoring are highly varied. However, when activated, the most common functionality is to transmit a location position from GPS co-ordinates and automatically open an audio channel. Identifying the user's location and verifying the alarm with audio enables the control room to optimise the alarm response -

- Protects people and organisations
- Instantly locates subject with online GPS location fix
- Listen in audio for evaluation and response
- Activate emergency plans and resources
- Dedicated lone worker devices or smart phone apps
- Management overview of users and events
- Use anywhere in the world with a network connection

For more details, visit - https://www.boldcommunications.co.uk/products/lone-worker-protection/

Cyber Security

Given the astonishing scale of daily attacks, every organisation operating an IT Network should now be aware of the need for Cyber Security. The destruction caused by viruses, spyware, phishing, exploit kits and other malware is time consuming, frustrating, costly and disruptive. We are all constantly subject to speculative attacks upon our IT systems, requiring layers of security measures for protection. For organisations which do not take steps to protect themselves, it is more a case of when rather than if they will fall victim.

The range of measure which should be included for consideration –

- Anti-virus software
- Approved cyber security programs, for example, Cyber Essentials
- Periodic penetration testing to identify vulnerabilities
- Strictly enforced IT policies to ensure staff do not expose systems to threat, either intentionally or inadvertently

As a supplier of technical support to companies and organisations who are, in turn, providing security services to their clients, it often comes as a surprise to find that little or no consideration is given to protection from malware. The financial and reputational cost of system failure when an attack is successful should not be under estimated.

Accreditation

As mentioned earlier, there are no specific laws or licensing scheme in the UK governing the operation of monitoring control rooms. In fact, the majority of operations do not comply with any voluntary standards because either their operations do not fit with the standard model or the costs do not justify the expenditure. Accreditation to the standards are used primarily to obtain Police recognition of the alarm system and a possible response based on the availability of resources at the time. Accreditation can also sometimes be useful to obtain insurance discounts.

Standards are now mainly formulated on an EN (European) rather than BS (British) basis, and are generally drafted and agreed by the industry trade associations within each of the participating countries consulting together. The content of the standards can reference product and system design, installation, commissioning and monitoring operations.

For a system to be recognized by Police, in addition to compliance with the relevant standard, a registration fee is required which provides a Unique Reference Number (URN). Many commercial monitoring service providers offer a keyholder and mobile patrol response rather than Police and do not therefore seek accredited. Regardless of accreditation, following alarm verification by the relevant contact, the Police can of course then be notified to respond where appropriate.

Relevant UK and EU Monitoring Standards -

- EN50136-1-1 1998 - General requirements for Alarm transmission systems

- BS EN 50136-2-1 - Requirements for systems using dedicated Alarm paths

- CLC / TS 50136-4:2004 - Annunciation equipment used in Alarm receiving centres

- BS EN 50518:2014- parts 1, 2 & 3 - Monitoring and Alarm receiving centre

- BS8418:2010 - Installation and remote monitoring of detector-activated CCTV systems

- BS 8591:2014 - Remote Centres receiving signals from Alarm systems

- BS EN 50131-1:2006+A1:2009 - Alarm systems. Intrusion and hold-up systems. System requirements

- DD CLC / TS 50131-7:2008 - Alarm systems. Intrusion and hold-up systems. Application guidelines

- BS 8484:2009 - Code of practice for the provision of lone worker device (LWD) services

- BS 8521:2009 - Specification for signalling protocol for social alarm systems

The Measure of Success

The success of monitoring services is evidenced by the fact that many hundreds of thousands of premises are protected by remote monitoring. In addition, both the insurance industry and the Police, working with the security industry, recommend alarm monitoring as part of an effective overall security strategy, making it an attractive proposition.

Consequently, this has led to an active and growing monitoring sector in the UK and overseas. There has never been a greater choice of technologies and service offerings than there is now, particularly with the growing popularity of IP based security products. The range of solutions is significant and the differences between them not always easy to identify. Here, the usual selection considerations apply including whether a supplier can demonstrate their success in this complex sector. A well thought out and operated monitoring system provides significant protection for people and assets as well as a clear return on the investment.

The Future

The Internet of things, ANPR, IO, Intelligent Video Analytics, mobile data, PSTN switch off, Cyber Security, Patch management, Backdoor attacks, automation, security level threat…… We have looked at a few important issues about setting up and running an effective control room. There are, of course, many more detailed considerations as well as many other activities that the control room can perform.

Anyone planning to set up and operate an ARC or RVRC, or both, should collect as much relevant information as possible and speak to the widest possible range of people working in this sector. The area can be complex as customers' expectations grow and new technology becomes available. This is definitely a case of 'knowledge is power'. Remote monitoring is an area which will continue to grow. Crime prevention and detection is a concern for everyone and there are few better ways of managing the problem than remote monitoring.

However, monitoring isn't just about security – fire detection monitoring, lone worker safety and environmental monitoring are just a few of the areas of new opportunities. In addition, there is demand for monitoring platforms with system intelligence to improve operational efficiency and make the operator more effective. These may include, for example, video analytics and associating different events together to generate a more automated processing task. The trend towards IP signalling, for alarms and CCTV, will continue to gather momentum, together with higher levels of automation and a wider range of integrated feature sets.

I hope you found this Guide of interest – thank you for reading it.

If you would like more information, detailed product specifications or to speak to a monitoring specialist –

please call us on 0044 1392 364777

or email: info@boldcommunications.co.uk

www.boldcommunications.co.uk