DEPARTMENT OF JUSTICE AND EQUALITY

AN ROINN DLÍ AGUS CIRT AGUS COMHIONANNAIS

COMMUNITY BASED CCTV SCHEME

AN GARDA SÍOCHÁNA

TECHNICAL SPECIFICATION FOR
SECTION 38(3)(C) CCTV SYSTEMS

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PART 1 - CCTV SYSTEMS TO BE OPERATED BY COMMUNITY BASED GROUPS UNDER SECTION 38(3)(C) GARDA SÍOCHÁNA ACT 2005

1.1 Introduction

This document outlines the minimum technical/operational criteria, which section 38(3)(c) CCTV Systems must comply with in order to obtain authorisation from the Garda Commissioner. For the purposes of this document, references throughout the document to "Community Based Group" have the same meaning as is given to "authorised person" under section 38(3)(c) of the Garda Síochána Act 2005 and the Garda Síochána (CCTV) Order 2006.
Each section 38(3)(c) CCTV system will generally involve one or more interest groups (stakeholders) representing various sections of the community. Examples of different stakeholders might be:

- Local Authority
- Residents Association
- Chamber of Commerce
- Emergency Services

1.2 Scope of this Document

This document provides guidelines and specifications which are to be met by Community-based Groups proposing to establish and operate a CCTV system with the authorisation of the Garda Commissioner as outlined by section 38(3)(c) of the Garda Síochána Act 2005. The first part of the document provides guidance to groups on how they might prepare a statement of operational requirements and the actions required to gain the most appropriate response from the CCTV system. This statement, compiled from each stakeholders requirement, will form an Operational Requirement on which a CCTV system may be designed which best meets the requirements of the community group.

The remaining part of the document provides technical guidance and specifications of equipment and operating procedures designed to ensure that picture quality and content meet the requirements of the observers and the An Garda Síochána.

1.3 Community based Group Responsibilities

The Community based proposal will be required to demonstrate its technical suitability against the Group's Operational Requirement and the Code of Practice for CCTV Systems authorised under Section 38(3)(c), Garda Síochána Act 2005.
Health and Safety in regard to the overall system, its operators/employees and the general public are the responsibility of the Community based Group.

1.4 Addendum

The Commissioner of An Garda Síochána, the Minister for Justice and Equality and all respective servants, and employees thereof accept no liability for any losses or injuries in connection with the works or the ongoing use of the CCTV systems operated by the Community based Group.

PART 2 - GUIDANCE NOTES FOR PROSPECTIVE APPLICANTS

2.1 Guidance for Design of a Section 38(3)(c) CCTV System

As an aid to designing a CCTV system, it is recommended that a methodology is adopted in order to plan a system which best represents the requirements of the various stake-holders and provides a solution which achieves the benefits which such a system is capable of providing. The basis of any system should be an Operational Requirement, completed jointly by the Group. The Operational Requirement will form the basis for the design and operation of an effective and economic system. The methodology recommended here provides a process that identifies key factors, which impact on performance of the system and the way it will be operated.

2.2 Consultation

Consultation should be conducted within each area where such a system is envisaged. Residents in particular should be fully consulted and informed of the proposal. Care should be taken on the design of the CCTV system to ensure that it is acceptable to local residents regarding the location of equipment and equipment should be deployed so as to avoid any undue intrusion.

Before making a final application to the Garda Commissioner for authorisation, the CCTV system as proposed must have received the approval of the relevant Garda Divisional Officer and the approval of the relevant local authority for the area following consultation with the Joint Policing Committee for the area, as outlined in section 38(3)(c) of the Garda Síochána Act, 2005.

A CCTV system cannot be considered for authorisation by the Garda Commissioner unless the consultation and approval process outlined above has first taken place.

2.3 Operational Requirement

Each stake-holder of the Group should be encouraged to undertake surveys of their members' requirements and compile an Operational Requirement document. In preparing an Operational Requirement, each group or stakeholder should be provided with a plan of the area concerned and an "Operational Requirement Check List" (Appendix "A") should be compiled and completed in respect of each problem encountered. The observations of each stakeholder are prioritised and a plan or map of the area, appropriately marked by the stakeholder, is drawn up.
The completed "Check Lists" together with the plan or map completed by each stakeholder forms a comprehensive view of the problems encountered by the Group.
The combining and prioritising of all the requirements will provide the basis on which the design and operation of the system can be formulated.

2.4 Analysis

From the combined Operational Requirements submitted, the group should be in a position to analyse the submissions and prioritise the requirements. Financial analysis of the plan will need to be undertaken in order to size the plan to best meet the agreed requirements and budgets. Capital costs, running/staffing costs, maintenance and insurance should each be factored in. Applicants will need to demonstrate how running costs will be met and that the system is sustainable for at least five years from the date of the installation of the equipment. Analysis of the individual stakeholder Operational Requirements and a financial analysis will result in the overall Operational Requirement of the Group.

2.5 Application for Authorisation

The Group will make an application for authorisation in the format outlined by the Garda Commissioner.

2.6 Installation and Commissioning

Following installation of the CCTV system, a full commission and test of the system should be carried out to ensure the system meets the specification and the Operational Requirements. The tests should be carried out by the Contractor and witnessed by the customer. Both parties should certify that they have complied with the specification. The document and a copy of the test results should be forwarded to An Garda Síochána, who will inspect and confirm that the system is as specified.

PART 3 – CCTV System Technical Requirements

3.1 General

It is a requirement that each camera in the system is capable of Pan, Tilt and Zoom (including other necessary functions), by an operator located at the monitoring centre. The camera system should meet the requirements listed below and those of the Operational Requirements. The specifications describe individual component parts of a camera system, however, this does not exclude the use of integrated camera systems (telemetry, pan/tilt unit, camera, lens and enclosure), provided that quality and feature specifications are satisfied.
The following external camera types are recommended:-
Pan, tilt and zoom camera system assembled by the Contractor.
Pan, tilt & zoom camera with integrated optics and telemetry (pre-built).
Dome camera with integrated optics and telemetry.
Each type of camera listed above exhibit attributes that may offer enhanced suitability for particular operational requirements. Features and capabilities that should be taken into account are:

- Provision of high quality images both day and night
- Speed and control of operation
- Cost
- Robustness
- Low maintenance
- Aesthetic qualities and visibility of the camera

3.2 Colour Day/Night Camera

The specification defines the requirement for a colour camera for use in urban and rural areas operating under a wide range of lighting conditions, including unlit areas.
The camera will provide twenty-four hour coverage and must be capable of producing high-resolution and accurate images under a wide variety of conditions ranging from high and variable levels of daylight, to low-light, to no-light.
The camera will be mounted within an environmental housing suitable for outdoor use and provide a suitable level of robustness against abuse.
The camera will normally be mounted on a column or building at a nominal height of 7 metres above ground and located at a position providing good observation of the required area.
The camera control system will provide a means to restrict intrusive viewing of areas considered or notified as private. In areas with good street lighting the camera will be required to operate normally in colour mode. A location, which suffers poor or nonexistent street lighting, will require a camera capable of viewing the required scene and providing a suitable level of recognition. Cameras sited adjacent to unlit areas such as open spaces and rivers are recommended to be capable of operation with Infrared lighting, however in some instances it may be more appropriate to have additional lighting installed or upgraded.
The contractor may use IP Cameras or analogue cameras that meet the following specifications:-

IP Camera specification
Minimum Illumination: 1 Lux (Colour), 0.5 (B/W)
Video Compression: H264
Video Streams: The camera must be capable of providing multiple video streams
Stream Types: HTTP, RTSP, UDP
Video Resolution & Frame Rates

- 720P (1280x720) at up to 25 fps
- D1 (704x576) at up to 25 fps

Networking Network Connection: RJ45 Socket (10/100 BASE-T)
Network Protocols Supported HTTP, TCP/IP, IPv4/IPv6 ARP, IGMP, ICMP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, UPNP, NTP, Bonjour, SNMP

Browser Support: Chrome, Internet Explorer, Safari

User Authentication: User Name & Password, IP Filtering

Simultaneous Viewers: Using Unicast: the camera should support a minimum of 5 simultaneous image views

Using Multicast: Unlimited

Power Requirements: Power over Ethernet: the Camera should operate from PoE or have or external power sources.

Analogue Camera specification

TV Standard AHD 1280 x 720 HD Video Resolution PAL colour

Effective Picture Elements Not less then 960(H) *x* 576(V) pixels

Resolution 720P (1280 x 720) HD Video Resolution

Image Quality True colour image representation free of discoloration is required

Camera Sensitivity

Colour/monochrome camera Better than 1.0 lux for colour images (AGC on), 0.5 lux for monochrome

Integrating camera Better than 0.4 lux (AGC on) for colour images

Auto Iris Control The camera should provide iris control compatible with the proposed lens

AGC Automatic with manual override

Focus (if applicable) Automatic with manual override

3.3 Zoom Lens

The proposed lens for use at any particular location shall be suitable for providing images of the area and targets as defined in the groups Operational Requirement.

The zoom range and focal length (camera dependent), of each lens shall meet the Operational Requirement and taking into account the area plan and the defined image content.

The lens shall be a high-resolution type with high transmission efficiency suitable for external daylight and low-light conditions.

The lens shall be fully compatible with the proposed camera.

T**he specifications for a motorised zoom lens are listed below**

Minimum f-stop F1.4 or better with low ramping over zoom range

Iris Automatic and remote manual iris control

Neutral density spot filter

Maximum Aperture F1.4 ~360

Focus Motorised with pre-sets

Zoom Motorised with pre-sets.

Speed <5 seconds for lens up to10X

<10 seconds for lens up to 20X

The lens shall be of a high quality, with particular emphasis placed on the aperture of the lens for low-light operation and the quality of the electromechanical assembly in terms of operation and expected lifetime reliability.

Camera/lens combinations utilising Auto-focus should provide fast tracking of objects and manual override of Auto-focus should be possible.

3.4 Environmental Camera Housing

The housing shall be designed to IP65 protection and should provide climatic and mechanical protection of the camera, lens and ancillary equipment and cables. It should not obstruct the field of view of the camera. A wiper is required with remote operation. Washer units are not generally required.
A heater with automatic thermal switching for optimum climatic control is required.

3.5 Infrared Lighting

It is recommended that a survey be carried out at each location to identify areas that may benefit from the use of infrared lighting.
Areas that can benefit from infrared lighting are those adjacent to open spaces without public lighting and along waterways.
When Infrared lighting is considered a requirement, it is recommended a wide-angle flood lamp and a narrow beam spot lamp, selected to provide sufficient illumination over the area is provided. The power and type of the lamps employed should be suitable to meet the Operational Requirement.

3.6 Pan and Tilt Unit

Dependent on the camera selected for use at a specific location, the pan & tilt units employed shall be a heavy-duty variable speed type, with high quality bearings, motor control and pre-set potentiometers, capable of long term use.
The arc of travel of the platform should be adjustable within specified limits pre-set for each camera location.
The pan and tilt unit should be capable of fast, smooth and precise movement with minimal lag or overshoot.
The un-powered holding torque should be sufficient to hold a fully fitted camera platform, complete with dual IR lamps (if required), in any position without slippage when subjected to wind speeds of up to 96Kph.
The motor and telemetry control shall provide variable speed movement of the camera platform with a pan speed from approximately 6° to 50° per second and a tilt speed of approximately 12° per second. Units providing a wider range then these figures are acceptable provided that the unit is capable of supporting the camera assembly without undue wear and strain on the unit.

3.7 CE Compliance

The camera housing assembly, complete with associated components and wiring must bear the CE mark.
CE certification of individual component items is not sufficient.

PART 4 – TRANSMISSION

4.1 Transmission Methods

The system proposed for transmission of video signals and telemetry should be based preferably on fibre optic transmission system installed in underground ducting or routed via premises where way-leaves have been obtained. Copper or coaxial transmission of base-band video is to be avoided due to risk of eavesdropping and the inherent loss of image quality associated with these systems.
Microwave radio transmission may be utilised dependent on regulatory permission, if it is found that a cabled system is not feasible. The Contractor will be responsible for acquiring any licence necessary on behalf of the Community-based Group. Licence fees may be applicable.
Digital transmission over secure broadband systems capable of providing image quality levels meeting the objectives of the Operational Requirement are acceptable provided that real-time monitoring of an activity can be undertaken.
Ongoing costs for the provision of cable or duct services attributable to maintenance, licensing and rental charges should be identified and detailed by the Contractor.
The system of transmission, especially microwave links should provide a certain level of security against unauthorised monitoring and interference of signals.
The Contractor is required to set out and describe the transmission system plan.
Guarantees are required that the monitoring centre will be provided with images displaying a high level of signal quality in terms of signal level, interference, noise, bandwidth or image quality and that a high level of link resilience shall be provided.
The transmission system should be resilient to all weather conditions frequently experienced in the locality.
Radio links should be operated within their specified licensing conditions and distances.
Telemetry signalling should be integrated into the video transmission equipment and transmitted over the same medium at a rate not less then 9600bps and provide terminated connections for control via a standard data interface (e.g. RS232, RS422, RS485). Systems employing FSK telemetry shall have the facility to transmit the FSK signals over the transmission medium.
With reference to IP cameras the video and telemetry will be IP traffic which is carried over the various media, fibre optic, Microwave Radio, broadband, or WIFI.

4.2 Specifications for Transmission

Microwave transmission
Video Bandwidth Not less then 5.6 MHz
Video Signal Quality Less then 5% differential gain
Less then 5% differential phase
Video Signal to Noise Not less then 46dB
Video termination 75_ terminated BNC input/outputs
Telemetry services 9600bps interface (e.g. RS232, RS422,
RS485). Systems employing FSK telemetry shall have the facility to transmit the FSK signals over the transmission medium.
IP Ethernet radio point to point or point to multipoint
Frequency range licenced of unlicenced (www.comreg.ie)
Channel size recommended 40Mbps minimum 20Mbps
Data interface 10/100/1000 Base T
Capacity, Mbps 50. (Capacity will be dependent on the number of cameras being deployed)
Security The data link should be encrypted minimum level 128 AES

4.3 Radio Links

If radio links are to be employed as part of the system the Contractor must obtain a frequency allocation and licence from the Commission for Communications Regulation (ComReg), Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin1.
(Web: www.comreg.ie)
The Contractor shall be responsible for the surveying, installation and commissioning of any radio link and site.
The Contractor shall be responsible for ensuring compliance with all Licence conditions and safety regulations.

4.4 Wi-Fi

In an IP camera deployment it may be necessary to use Wifi to connect camera to the Control Centre Storage. If this is to be deployed it is recommended that the system be configured as a private network.
It is recommended that the WIFI equipment use the 5 GHz band and should meet the following minimum specification:-

- SSID hidden
- Security: WPA2
- Data Link Protocol Ethernet, Fast Ethernet, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
- Network transport Protocol DHCP, , NTP, PPPoE, PPTP, TCP/IP
- Features DHCP support, full duplex capability, IP address filtering, MAC address filtering & Quality of Service (QoS)
- IEEE 802.11b/g/n, IEEE 802.3, IEEE 802.3u
- Wireless protocol 802.11b/g/n
- Data transfer rate 56 Mbps recommended

Any deployment of WIFI in a public place must conform to Regulation (ComReg), Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin1.
(Web: www.comreg.ie)

PART 5 - CAMERA SITE - EQUIPMENT AND INSTALLATIONS

5.1 General

The following specifications cover the general requirements of items and services provided at each camera site.
Plans showing the location of cameras, equipment and proposed signal routes and types are to be supplied.

5.2 Outdoor Equipment Cabinet

Outdoor equipment cabinets must conform to IP65 for environmental protection and electrical safety. Cabinets fitted in secure locations (not easily accessible to the general public) should be fitted with a standard cabinet lock. Roadside cabinets should be secured with anti tamper fixings in addition to the standard cabinet lock.

5.3 Camera Mounting Brackets

It is recommended that cameras be placed at a height of 7 metres above ground.
A heavy-duty mounting bracket is required, specifically and individually designed or selected to support the camera assembly on each structure or premises proposed and capable of easily and safely supporting the proposed camera assembly.
High quality rust proof materials shall be used in the construction of the brackets, including fixings, bands, nuts, bolts and screws.

5.4 Camera Column (pole)

The camera and associated equipment at each location will determine the choice of camera column or pole required.
It is recommended that the standard column provide a camera platform height of 7 metres, however, under certain circumstances, a greater or lesser height may be more appropriate. Situations affecting the height of the column are radio “line of sight” issues, camera security considerations or obstacles preventing the camera from viewing a particular scene.
The camera poles shall be constructed of galvanised tubular steel in one single column designed to provide a rigid and stable platform for the camera and any additional items such as microwave radio links or equipment. Lattice or tilt-over types are not acceptable.
The column shall safely house any transmission/telemetry equipment, electrical mains power supplies and any other items required to be placed within it. An access hatch suitable for installation and service requirements shall be provided. A secure and lockable cover shall be provided.
Planning requirements may influence the type of column or pole to be utilised at any location, it is therefore recommended that any specific requirements are established at an early stage with the planning authority.

5.5 Camera/Equipment location

The location of cameras and ancillary equipment and cabling in any area and on buildings or structures shall comply with planning requirements and way-leave agreements obtained by the Group.

5.6 CCTV Signs

Signs of an appropriate size should be placed so that the public is made aware they are entering an area where CCTV cameras are in operation. The signs should clearly

show that CCTV cameras are in operation and identify the organisation legally responsible for the system. Signs must comply with the current Irish Language regulations http://www.coimisineir.ie (Sign must be in Irish & English).

5.7 Electrical Mains Supply

The Contractor shall co-ordinate the provision of electrical mains supplies.
The ESB publication https://www.esbnetworks.ie/tns/publications provides access to the documentation. This document also covers the electrical supply requirements for CCTV camera installations.
Power supplies for cameras and links will be obtained from the electricity supply provider. This will normally be a single-phase 23OV 50Hz AC mains supply.
The ESB will require applications for electrical supply from the Community-based Group and will also require completion certificates issued by the electrical contractor prior to supply being provided at each site. The ESB will normally issue specific requirements following inspection of each of the camera sites.
The installation of the electrical works at each camera site and the consumer unit must meet all ESB and ETCI specifications.
The installation of the electrical supply from an agreed supply point and the fitting of consumer units and earth rods will be the responsibility of the Contractor.

PART 6 - MONITORING CONTROL CENTRE

6.1 Control Centre

The design of the system will provide control of the CCTV system in premises provided by the Community-based Groups.

6.2 Monitoring Facilities

As monitoring facilities will vary due to the size and nature of any system the following common requirements shall be taken into account in the provision of facilities.

The area selected to view the monitors and operate the equipment will be suitable for limiting access only to those responsible for its operation and management and others with legitimate or sufficient reasons for entry. The area should be capable of being secured against unauthorised entry. Viewing of video monitors should not be possible from positions outside this area. Window blinds shall be used to prevent viewing of monitors from outside the building. Procedures and facilities should be put in place to ensure protection against unauthorised access to the area.

All monitoring equipment shall meet relevant safety requirements for electrical equipment and installations and be operated within these requirements.

The monitoring of the CCTV images shall be carried out having due regard to viewing ergonomics, health and safety and comfort of the CCTV operators. Issues such as viewing angles and distance, lighting / environmental conditions and staff facilities should be satisfactorily met.

Suitable ventilation shall be provided to remove heat generated by the CCTV equipment and to maintain good environmental conditions for the operators and equipment. The main areas of heat generation will be from video and computer monitors, video recorders and fibre-optic termination equipment. The capacity of the ventilation system should take into account the quantity and power consumption of the equipment to be installed.

Lighting should be provided which aids the viewing of video monitors and which also provides effective light for report writing. The control desk should provide adequate space for CCTV control equipment, radio or telephone equipment, writing space and storage area for log books etc.

The video monitors should be positioned so as to prevent light from windows causing reflections on the screens and from shining directly into the operators' eyes.

The size, positioning and number of monitors in a control room will have an effect on the performance of the CCTV operator. Consideration of viewing and operator requirements should be a priority in the design of the control room.

The size of the monitor will depend on the level of picture detail and text displayed, the distance of the monitor from the operator and the nature of visual tasks.

LCD/LED video monitors should display a minimum of 1280 x 1024 and provide a wide viewing angle in the horizontal and vertical directions.

The monitors may form part of a bank of monitors and should be designed to take into account heat dissipation and electrical/electromagnetic isolation.

Power supplies for the CCTV control installation shall meet electrical wiring standards and shall be adequate for all equipment proposed.

6.3 Secure Media Storage Cabinet

A secure lockable cabinet to facilitate the storage of media-containing images removed for evidential purposes to be secured on the premises is required. This cabinet should be designed in such a way that those responsible for storing and removing the media can easily identify each designated location. Some additional

space should be allocated for the storing of spare media units to replace those removed for evidential purposes.

6.4 System Management Functions

Depending on the nature of each CCTV system, combinations of equipment offering a range of functions will be proposed by vendors. In order to clearly define the properties and functions required of any system as a whole, the following requirements are to be stipulated.
The system shall provide management facilities in the form of restricted user access.
The following basic management facilities shall be provided by the system.
Manufacturers may well refer to a facility or feature by different names, however, the basic requirements are as listed below.

User level set-up
Supervisor options and operator options set-up

Camera home positions
A facility to program each camera a home position

Privacy zones
A facility to program privacy zones per camera
The system is required to allow the programming of specific areas viewed by the camera as a privacy zone. This area when defined, will be viewable under wide angle viewing of the scene, however if an operator attempts to zoom in on the specific area, the image is required to distort, blackout or auto-pan away from the area.

Camera set-up
Camera on-screen displays and remote camera set-up and maintenance should be provided.

System functions

- Privacy zones
- Home position, Timed patrolling
- Alarm recording
- Operator management and passwords

Operator Functions

- Camera selection with switched viewing on spot monitor
- Camera Pan & Tilt
- Lens Zoom, Focus, Iris Auto and Manual
- Lighting On/Off/Auto
- Washer/Wiper
- Pre-set positioning and patrols

The camera control system either in the form of a keyboard/joystick or graphical user interface will provide the operator with control of the camera functions and functions of the multiplexer/matrix system including any proprietary functions offered to enhance system performance.
Each operator's camera controller will interface to the video multiplexer/matrix or digital recording system, enabling a selected camera to be viewed on a spot monitor and recorded on an event recorder as required.

IP Cameras
With regard to IP Cameras the system should be supplied with Control room software to meet the above requirements.

6.5 Recording /Playback

Digital based recording systems
The recording rate for each camera shall not be less than fifteen (15) frames per second. Digital recording and playback of the operators spot monitor at full resolution and at 25 frames per second. The system is required to provide a playback facility to

allow reviewing of recordings. It is recommended that the playback area is located away from the monitoring area to facilitate in-private viewing of recordings.
The system should provide a suitable connection point to provide evidential copying of images to external Media (USB drive or external HDD) or the connection of a printer for evidential purposes. Alternatively, a copy facility should be provided such as DVD or file transfer via standard system interfaces, USB or Ethernet. Playback and interface software, whether of a proprietary nature or not, should be provided as part of the system.

6.6 On-screen Text Display

A character generator providing burnt-in on-screen camera identification and time/date information shall form part of the system. The following information shall be imposed on each camera image and recorded: -
Camera identification number or title
Time and Date
Optional: Location (scene viewed, street or area name)
A feature to have the named location change according to the general direction the camera is currently viewing is optional.

6.7 Video Matrix Switching

The switch shall provide sufficient capacity to facilitate all video-switching requirements proposed. The system should allow for an additional percentage of capacity initially and should be supplied in a configuration that allows economical expansion of the system, should this arise.

6.8 Video Monitors

Native Resolution: 1280 X1024
Video Inputs 1 Vp-p 75W BNC with loop-through and 75W
termination switch
Controls Chroma, Brightness, Contrast
Display LED/LCD

6.9 Digital Recording

IP Camera Storage

- Network Video Recorder is typically used to store CCTV images. These devices are optimised for 365 day 24 hour CCTV storage and access.
- It is recommended that the NVR is supplied with RAID 5 Controller. Smaller systems with less then 8 cameras can operate with a 2 drive RAID 1 deployment
- The storage must support the number of cameras being supplied and allow for expansion of 20%
- The images must be stored at a minimum of 720P at 15fps
- The system should have dual power supplies

Digital Video Recorder

- Compatible with AHD, 960H & Standard Analogue CCTV Cameras
- Video Compression: H.264
- Video System: PAL
- Display Resolution: PAL: 960x576 / 1280x720 @ 25fps
- Display Feature: Single, Quad, S.E.Q
- Recording Resolution: PAL: 1280x720 (HD 720P)
- Recording Speed: PAL: 720P Mode: 15fps
- Recording Modes: Continuous / Manual / Motion Detection
- Playback Speed: PAL: 720P Mode: 15fps

- Network Lan, DHCP, Dynamic IP & DDNS
- RAID 5 deployment for large systems RAID 2 deployment for systems with less then 8 cameras
- Multiplex Operation: Live Display, Record, Playback, Backup & Network
- PTZ Control: Yes
- Video Output: VGA: 1024x768, 1280x1024, 1440x900, 1920x1080 HDMI: 1080P

The storage must support the number of cameras being supplied and allow for expansion of 20%.

Digital recording systems are required to meet the following requirements:-

Recording rate Not less then 15 image per camera per second for each camera in the system Camera resolution @ 720P

Monitoring The system should provide multiple screen and single screen viewing of camera inputs. A spot monitor video output should be provided. The image quality of the spot monitor output should be high quality, live 25 frames per second video image

Media Copy Output A copy facility should be provided such as DVD or file transfer via standard system interfaces USB or Ethernet. Playback and interface software, whether of a proprietary nature or not, should be provided as part of the system

Playback/Search The recorder should allow duplex operation. The system shall be capable of search and playback of recorded images while maintaining full recording of cameras

Controls Record, Play, Fast/Slow Forward and Rewind, Pause

Search Facilities By Time/Date and camera number of both internal buffer storage and archived recordings

Archive The archival system and procedures should provide storage of all images recorded by the system for a period of 31 days, and for destruction of images older than the specified number of days unless required for crime investigation and evidential purposes by An Garda Síochána.

Media/Format The archival media, format and image capacity should be described and details provided. Authentication, Encryption and compression systems should be described and details provided. Facilities required for viewing archival media, without access to the Monitoring Site equipment and facilities, should be described.

PART 7 - SERVICES

7.1 Warranty

The warranty period should be stated and should cover a period of not less than twelve months from commissioning and acceptance of the system. A detailed general maintenance plan for the CCTV system is to be included in the proposal. During the warranty period, such works as required to maintain the system in full order are to be carried out on a regular basis as detailed in the proposal.
During the warranty period, malfunctions or defective works forming part of the installation will be the responsibility of the Contractor to repair, replace or to carry out such works as required to maintain full functionality of the system. Maintenance during the warranty period is to be carried out on a regular basis as detailed in the proposal.

7.2 Maintenance Contract

It is recommended that a maintenance contract be put in place to ensure the system is maintained in full working order. The contract should include the provision of a regular maintenance schedule and maintenance callout procedure with suitable response times.
The Contractor will be required to hold a supply of recommended spare parts for maintenance purposes.
The proposed maintenance contract and recommended spare parts list shall be submitted with the proposal.

7.3 Maintenance / Upgrading Issues

The overall Tender price shall cover any software upgrades or software-configuration changes that may be required during the warranty period following commissioning.

7.4 Operator Equipment Training

All personnel employed as operators or supervisors shall receive training in the use of the equipment. Operator training shall be provided by the Contractor and will provide the participant with a thorough working knowledge of the system.

7.5 Private Security Authority

Installations of CCTV systems must be carried out by installers who are approved from the Private Security Authority.

APPENDIX A

OPERATIONAL REQUIREMENT CHECK LIST

INTEREST GROUP _____ PLAN REF. NO._____

AREA OF INTEREST _____ REF No._____

OBSERVATION

Target to be Observed:	**What Activity by the Target is of Concern:**	**Purpose of the Observation:**	**Picture Quality/Content factors needed for success:**

RESPONSE

Result of a successful Response to the Activity:	**Who Makes the Response:**	**Time scale of the Response for it to be successful:**	**When is Observation needed:**
			Conditions under which the system needs to be effective *(Lighting/weather)***:**

OBSERVER ROLE

What will the Observer do when the activity occurs:	**How will the Observer know when and where to look:**	**How quickly does the Observer need to act:**	

CLASSIFICATION

Stake-holders: i.e. Local Authority Chamber of Commerce Residents Association Emergency Services	**What Priority is assigned to this task:**	**Likelihood of an Activity occurring and how often:**	**Benefits of doing the action over not doing it:**