University of Southampton

Standard Specification for CCTV Components

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Target Audience	Any party contracted to provide a CCTV solution, or part thereof, to the University of Southampton.

Revision History

Revision	Author	Description of Change
01	Matt Hobbins	Document Creation

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1. Purpose

This document is designed to aid any party contracted to provide components for the University CCTV system, whether in part or whole, by defining the acceptable Technical Specification for all related works to be based upon.

2. Scope

The scope of the document should be considered "current" at the point of issue, assuming it is the most recent version available from the University. Any concerns regarding the content in this document should be directed to the University E&F Security Systems Team at the earliest opportunity.

3. Background

The terms outlined within this, and any other referenced documents, are intended to help streamline the process of allowing a 3rd party to supply and install part, or all, of a CCTV system on behalf of the University of Southampton.

The terms remain the same regardless of whether they are working directly for the University or contracted as part of a project.

4. Device Requirements

The information provided below is designed to assist with supplying a project quotation and should be considered as the minimum acceptable level, rather than a complete or exhaustive specification.

4.1 Camera Requirements

4.1.1 – Universal

The items below should be considered as a requirement for all cameras in addition to the individual type requirements specified in sections 4.1.2 thru 4.1.4.

- **Removable onboard storage** – All cameras should act as an alternative recording location in the event the connection to the main NVR is interrupted. The expectation is that once the NVR link is restored, recordings will be automatically copied to the NVR to fill in the blank period(s) caused by the disruption.
- **SD Card** – The following spec must be met by cards supplied in all cameras:
  - Reputable Brand offering a lifetime warranty
  - Minimum 128GB capacity, Class U3 or V30, Capable of 4K Video
  - Environmental factors: Externally rated for operation at -20˚C to 85˚C
- **IP Rating** - All cameras are required to meet IP67 rating allowing both internal and external use.
- **Secure Connections** - Once installation is completed, all cameras and connections are required to be tamper-proof without use of additional tools.

4.1.2 - Single Lens Cameras

Style: Turret

Resolution: 8MP /4K (for IP), 5MP (for Coax)

Low Light: 24/7 Colour, white light illumination to 30m

PSU: 803.3at PoE compliant (for IP), Power over Copper (for Coax)

4.1.3 – Multi-Lens Cameras

Style: Defined by use / environment

Resolution: ≥4MP per lens

Low Light: ≥10m based on use / environment

PSU: PoE, with injectors where >30W is required. Responsibility for supply of injector should be defined within quotation i.e. UoS or 3rd Party.

4.1.4 – PTZ

Resolution: ≥4MP

Low Light: 100m

Zoom: ≥25X

PSU: PoE, with injectors where >30W is required. Should be detailed in quotation along with details of sourcing responsibility ie UoS or 3rd Party.

4.2 NVR Requirements

HDD:

Rating: Enterprise Grade for “Surveillance” use, “NAS” will be considered

Quantity: ≥16 x 3.5" HDDs

Interface: SATA

Capacity: ≥10TB per drive

MTBF: ≥ 2.5M Hr

RAID: 6, multiple arrays is accepted

Warranty: ≥ 3 Years

Channel Count: Capable of processing 128ch or greater

Networking: 4 x 1Gbps connections with optional load balancing

Throughput: ≥ 1Gbps in both directions

Size: ≥3U, 19" Rack mountable

Local Management ports: HDMI / VGA & USB 2.0 or higher

Power: 2 x Hot-Swappable Redundant PSU per chassis

Redundancy: N+1 function with auto switchover is required

4.3 Video Wall Controller Requirements

Channel count: 1 / 4 / 16 channel(s)

Resolution: ≥1080P per Channel

Streams / Channel: ≥16 streams

Video Outputs: HDMI (Required), VGA (Optional)

Mounting: 1ch ~ desk or wall, >4ch ~ 19” rack mount

4.4 Video Management System (VMS) Requirements

- Central Management Portal
- Separate user client
- Perpetual License(s) for all components
- Update licence can be periodical - requires period notice
- Software / OS suitable for installation within a Virtual environment
- Manufacturer training available for admins and operators

4.5 Miscellaneous Requirements

- **Network Connections** – Unless stated otherwise, all devices are required to have ≥1 x RJ45 connection capable of auto-negotiating at ≥100Mbps to provide connectivity to the VMS.
- **ONVIF** – All devices are required to be ONVIF compatible enabling cross-platform inter-operability.
- **Support Contract** – Any aftersales support offered by the contractor should be expanded to outline what is/isn't included and for what duration. If this is a chargeable service, it must be itemised as such on any quotation to provide the option of declining the service.
- **Warranty** - It is required that the full manufacturer warranty is upheld by the installing party, as if the University were purchasing the product themselves. Warranty terms should be detailed within any quote to enable any claims, should they arise, to be settled in a timely manner.

5. Variance

If at any point it is considered that a specification from above cannot be adhered to, it is imperative that a discussion takes place with the Estates and Facilities' team members responsible for ongoing operation & maintenance of the installation, to agree the best route forward.

6. Contact Details

The following people can be contacted in the event further information is required:

Andy Jennings – Security Manager (Logistics) - a.s.jennings@soton.ac.uk
Dan O'Sullivan – Assistant Engineer (Security Systems) – dan101@soton.ac.uk
Gary Johnson – Electrical Operations Manager– gj2@soton.ac.uk
Matt Hobbins – Security Systems Engineer – mdh2n21@soton.ac.uk

7. Abbreviations

Below is a list of any abbreviations used within this specification:

- CCTV: Closed-Circuit TeleVision
- E&F: Estates & Facilities
- GB: GigaByte
- Gbps: Gigabits per second
- HDD: Hard Disk Drive
- HDMI: High Definition Multimedia Interface
- Hr: Hour(s)
- IP Rating: Ingress Protection Rating – Usually expressed as IPXY ie IP67
    - Refer to https://www.iec.ch/ip-ratings for further information
- M: Million
- M: metres
- Mbps: Megabits per second
- MP: Mega Pixel
- MTBF: Mean Time Between Failures – expressed in hours
- NVR: Network Video Recorder
- ONVIF: Open Network Video Interface Forum
- OS: Operating System
- PoE: Power over Ethernet
- PSU: Power Supply Unit
- RAID: Redundant Array of Independent Disks
    - Explains configuration arrangement of multiple storage disks
- RJ45: Common Network Connection
- SATA: Serial Advanced Technology Attachment – relates to storage connector
- SD Card: Secure Digital Card
- TB: TeraByte(s)
- USB: Universal Serial Bus
- VGA: Video Graphics Array
- VMS: Video Management System
- W: Watts
- X: Multiplication factor used relative to zoom lenses

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