

# WARRINGTON BOROUGH COUNCIL HACKNEY CARRIAGE AND PRIVATE HIRE VEHICLES

## CCTV SYSTEM TECHNICAL SPECIFICATION REQUIREMENTS

**March 2023**

[1] SYSTEM OPERATION & COMPONENTS		
REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
1.1	DVR Unit	<p>100% solid state design or a proven vibration and shock resistant DVR system</p> <p>The system will not have any fan and the recording will be anti-vibration and anti-shock proof with a self-recovery and self-check file writing system.</p> <p>No SD card systems will be accepted only hard drive storage.</p> <p>The system should protect against corruption of the hard drive through regular over-writing, consistent with the specified retention time over the life time of the system (a minimum of 3 years)</p>
1.2	Voltage	The system should be operation between 8 and 15 volts DC
1.3	Reverse Polarity	The system will be protected against reverse voltage.
1.4	Short Circuit Prevention	The system will be protected against short circuits
1.5	Voltage Protection	The system will be protected against high voltage transients likely to be encountered in the vehicle electrical System.
1.6	System Standards & Regulations	<p>All systems will comply with current, relevant legislation and standards. Suppliers must demonstrate that their products or product purchase from a manufacturer to be installed in to vehicles in this manner are compliant with EMC Regs and any required under RTA C&amp;U Regs.</p> <p>All equipment must be suitable for use in motor vehicles as and where required by the regulations.</p>
1.7	System Activation (On/Off)	<p>System activation (on/off) switch to be located in a position where it is not accessible from inside the vehicle (i.e. in the boot/engine compartment).</p> <p>The System will be active at all times that the vehicle is being used in its licensed capacity. The default position should be for the system to record data, unless the system is manually overridden. The system shall operate in a way that minimises the risk of the system not recording data when the vehicle is being used in a licensed capacity.</p> <p>The system shall be capable of being configured to record images after the engine is switched off for a period of time to be specified by Warrington Borough Council, not exceeding 15 minutes. The specified period must not be changed without the express permission of Warrington Borough Council</p>
1.8	System Private Mode	<p>The System should have the capability of being temporarily deactivated during times when the vehicle is being used in a non-licensed capacity (Private Mode).</p> <p>The System will only be capable of being manually deactivated from outside of the cabin space. The System will be capable of logging or evidencing any period of deactivation and display when Private Mode is activated by the system user.</p> <p>The System will be capable of visibly warning the driver and the passenger(s) from inside the cabin of vehicle as to whether Private mode is active or not.</p>
1.9	Recording Cycle: First-in/first-out buffer recording principle	The system must automatically over write to create a constant cycle of recording.

		The system should protect against corruption of the memory device through regular over-writing, consistent with the specified retention time over the life time of the system (a minimum of 3 years)
<b>1.10</b>	Date & Time Recording on System	The system shall accurately record the date & time of all recorded footage The time date stamp must be calibrated upon installation and checked during any maintenance of the system. The system must automatically update to account for GMT and BST hours.
<b>1.11</b>	Image Export	Images will be exported in commercially and freely available formats. The supplied software must be able to decrypt the audio and video files, allow a time based selection to be made, and either write the output directly to a DVD recorder or create files suitable for burning to a DVD. The created DVD or files must be in standard DVD Video format, suitable for playing on a PAL format region 2 player
<b>1.12</b>	Image Protection	Images will be preserved in the event of loss of power. Battery back-up of the system will not be permitted. The System will store images in a manner, which prevents them being removed, downloaded or viewed by the driver or any other person travelling in the vehicle.
<b>1.13</b>	Analogue & Digital Ports	Analogue and digital ports must be deactivated to prevent access by the driver or any person travelling in the vehicle.
<b>1.14</b>	Image Download Access	Installers and Inspectors of systems shall only be able to access live data only during installation maintenance and checks.
<b>1.15</b>	Software & Encryption	The System will provide images that are digitally encrypted. De-encryption software required to view the recorded images will be supplied to the Council free of charge prior to before the system being installed in any vehicle. The encryption method must be specified and must not record to a non-standard format in lieu of encryption. The supplied software must be able to decrypt the audio and video files, allow a time based selection to be made, and either write the output directly to a DVD recorder or create files suitable for burning to a DVD. The created DVD or files must be in standard DVD Video format, suitable for playing on a PAL format region 2 player.
<b>1.16</b>	Hard Drive Access	The hard drive should not be easily accessible by the driver or any other person other than the data controller or person authorised to act on their behalf
<b>1.17</b>	Data Unit and Camera Location(s)	The data unit will be stored separately from the camera(s) and out of view of persons travelling in the vehicle. Images and audio data shall be recorded and stored in a unit separate from the camera head
<b>1.18</b>	Audio Recording	The System shall not record audio except when audio recording is activated by means of a trigger/panic button(s) as approved by Warrington Borough Council. The audio trigger/panic button(s) must be capable of being activated by all the passenger(s) and the driver. Upon activation it must begin to record audio data a minimum of three minutes to a maximum of 5 minutes. The trigger must be able to be continually reactivated if any incident is ongoing by the driver and or passenger(s) The system must return to normal non-audio default following the incident. The audio button shall have a visual aid to indicate that the button has been activated that can be seen by all passengers and the driver.
<b>1.19</b>	Audio Capture Rates, Sampling & Resolution	Audio will be available at all supported image capture rates. The audio playback, when triggered, shall be in 'real time' and synchronised with the images that are captured Digital sampling of the audio signal must exceed 8KHz. Digital resolution of the audio samples must exceed 10 bits
<b>1.20</b>	Audio Microphone	The audio microphone shall be integrated within the camera head(s)
<b>1.21</b>	Ancillary Equipment/Component Testing	All ancillary equipment and components must have been tested as a single product.

		The provider shall not connect any other component to the vehicles as part of the Service, other than as specified in this Technical Specification
1.22	Audio & Image Storage	Audio data and image data will be stored together, not in separate files, and must be protected against unauthorised access or tampering
1.23	Audio Function Testing	The System will support testing of the audio function for installation set-up and inspection purposes.
1.24	Battery Drain	The system will be configured in a manner which minimises the drain on the vehicle's battery and allows for immediate re-activation of the System.
1.25	GPS Date/Time Stamp Capability	The system should have the capability of automatically updating the date/time stamp. This must not record the location of the vehicle.

## [2] STORAGE CAPACITY

REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
2.1	Recording Capacity	The system must be capable of recording and storing for a minimum of 14 days of continuous recording

## [3] CAMERA HEAD

REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
3.1	Camera Installation	Camera installation will be safe and non-obstructive. It is contrary to the Motor Vehicle (Construction and Use) Regulations, 1986, for equipment to obscure the view of the road through the windscreen. The camera and all System components shall be installed in a manner that does not interfere with the driver's vision or view of mirrors or otherwise normal operation of the vehicle. The cameras shall be fitted in locations that do not affect the safety of any person travelling in the vehicle, and located as securely and discreetly as possible to avoid passengers travelling in the vehicle from tampering with them.
3.2	Protected Camera Disconnect	The camera head shall be designed to disconnect for ease of removal and replacement by maintenance personnel only.
3.3	Tools Adjustment/Removal	Where possible to prevent inappropriate interference only tools supplied to authorised fitters should be capable of carrying out adjustments or removal.
3.4	Camera View & Lens	The lens of the camera will be of a type that captures the driver and all passengers of the vehicle on the recorded image. The lens will be of a style not to create a "fishbowl" effect.
3.5	Images Clarity	The system should be capable of identifying individuals within the cabin of the vehicle for the purposes of investigating crime. It must provide clear images in bright sunshine, shade, dark and total darkness.
3.6	Vehicle Partition Shield	The camera System will be adaptable to provide clear images when a vehicle is equipped with a shield. This may be accomplished with the use of multiple camera heads.
3.7	Multiple Cameras	The System, shall be capable of supporting up to four (4) cameras. Four cameras may be required to provide adequate coverage in larger vehicles and/or certain purpose built vehicles.

**[4] STORAGE DEVICE (RECORDER) & ANCILLIARY EQUIPMENT**

REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
4.1	Impact & Shock Resistance	The recorder shall be impact resistant, sufficient to withstand a typical car accident, or striking with a large, heavy object such as a suitcase.
4.2	Storage Device Location	The storage unit shall be concealed from view where possible and inaccessible except by authorised personnel. The recorder should be securely affixed within the vehicle.
4.3	Removable Drive Location	A removable drive must be provided that only allows access by approved persons, installers, council staff and others authorised to carry out downloads. It should be located in the vehicle so that does not require the removal of panels and it easily accessible.
4.4	Download Cable Length	Download port cable shall be at least 1m in length for ease of download.
4.5	Download Port Location	The recorder download port shall be located in a location that does not require the removal of panels and is accessible.
4.6	Time/Date Stamp	All stored images will be time and date stamped. The time and date stamp must be calibrated during installation and checked during maintenance. The time and date stamp must be exported with the data during download.
4.7	Vehicle ID Number Stamp	All stored images will have at least two fields for vehicle identification (License Number, Vehicle Registration Number, and/or Vehicle Identification Number).
4.8	Controller non-modifiable ID code stamp	Each recorded image shall be automatically stamped with a unique and non-modifiable code that identifies the controller that was used to record the image.
4.9	Tools for Recorder Removal	The provider will supply the Council with all the tools to allow for removal of the recorder and download of data as required

**[5] VIDEO & AUDIO RECORDING RATE**

REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
5.1	Video Image Recording Rate	The system shall record images at a minimum rate of twenty five (25) images per second.
5.2	Video Image Recording Rate in Audio Record Mode	The System shall continue to record images at the rate of twenty five images per second during periods when audio recording has been activated. It must not continually record audio and it must have an appropriate means of being activated and deactivated. When activated, audio recording must be in real time and synchronised with the video recording.

**[6] SYSTEM INSTALLATION**

REF	ITEM REQUIREMENT	FURTHER DETAILS OF REQUIREMENTS
6.1	Safe Installation	The equipment will be installed in such a way as to present no danger to passengers or driver, including impact with the equipment in the event of a collision or danger from the electrical integrity being breached through vandalism, misuse, or wear and tear.

<b>6.2</b>	Vehicles Standard Equipment Interference	The System and all equipment will not obscure or interfere with the operation of any of the vehicle's standard and/or mandatory equipment i.e. not mounted on or adjacent to air bags/air curtains or within proximity of other supplementary safety Systems which may cause degradation in performance or functionality of such safety Systems.
<b>6.3</b>	Manufacturer Instructions & Installation	All equipment must be installed as prescribed by the equipment and/or vehicle manufacturer installation instructions. The installed CCTV System must not weaken the structure or any component part of the vehicle or interfere with the integrity of the manufacturer's original equipment, including any Safety, Control, Navigation or Radio System.
<b>6.4</b>	Vehicle Wiring	All wiring must be fused as set out in the manufacture's technical specification and be appropriately routed. The Council will not accept liability for any damage to a vehicle incurred during the installation or resulting from the installation.
<b>6.5</b>	Qualified Electrician Fitting	The experience and any relevant qualifications of the fitters must be clearly stated. Installers should have proven experience working with 12v/24v and EV vehicles. The Council must be notified of any change to the installer and must be given appropriate evidence as to their suitability.
<b>6.6</b>	CCTV Certificate(s)	Installer will issue a CCTV installation certificate to the Council Licensing Team to confirm installation of the product in accordance the manufacturer's specification. This Installation certificate will be approved by the Licensing Team.

<b>[7] DOWNLOADING DATA</b>		
<b>REF</b>	<b>ITEM REQUIREMENT</b>	<b>FURTHER DETAILS OF REQUIREMENTS</b>
<b>7.1</b>	Download Equipment	Supplier will provide necessary software, cables and security keys to Warrington Borough Council Licensing Team. The Supplier will provide replacement equipment free of charge to the Council if it becomes faulty.
<b>7.2</b>	System Software	The software must be Windows 10 compatible
<b>7.3</b>	Volatile Media	Downloaded images should be stored in non-volatile media
<b>7.4</b>	Downloaded Image Security & Stamp	All downloaded images should be stored in a secure format and be tamperproof. Each image shall be stamped with controller ID and vehicle ID. The download software should allow for two formats of download including a direct download that is encrypted and cannot be tampered with and a second format that allows for image editing with the option to pixilate images where necessary.
<b>7.5</b>	Technical Support	The Service Provider should include the provision of technical support to Warrington Borough Council Licensing/Enforcement teams when necessary. To assist in accessing systems within 1 hour during normal working hours and within 24 hours (excluding bank holiday) otherwise.
<b>7.6</b>	Wireless Download Prohibited	Unit must not allow for wireless downloads. All wireless hardware is to be disabled.
<b>7.7</b>	Specified Data Download Capability	The Software should be filtered for the specific images for events and times for the approximate time of the incident in question. The System must be capable of downloading a specified data and time range. The software and system capability in terms of the download period must be clearly stated. The date and time stamp must be exported with the data.
<b>7.8</b>	Memory Reformatting	Any reformatting must not compromise data retention. The Council must be notified in advance of any reformatting in order to prevent the deliberate loss of evidence.

<b>[8] SYSTEM INFORMATION</b>		
<b>REF</b>	<b>ITEM REQUIREMENT</b>	<b>FURTHER DETAILS OF REQUIREMENTS</b>
8.1	Service Log Sheet	Provision of service log sheet with each unit shipped. The unit manufacturer shall have a service log shipped with the unit. The manufacturer shall also enclose detailed instructions for the drivers with each unit shipped. An installation manual shall also be furnished to installers and fleet operators.
8.2	Service Log Serial Number	The unit will be marked with a serial number and be correctly labelled in accordance with relevant legislation.
8.3	Service Log Installation Date	The provision for the installer to indicate the installation date
8.4	Driver Instruction Card	Provision of driver instruction card with each unit shipped
8.5	Passenger Information Card	Provision of passenger / user friendly instruction card with each unit shipped
8.6	Installation Manual	Provision of installation manual to installers and fleet operators.
8.7	Operating Instructions	The System shall be provided with clear and concise operation instructions which are written with due consideration to varying levels of literacy.
8.8	Installation by authorised agents	The unit shall be installed by manufacturer's authorised agents
8.9	Authorised Agents	The Service Provider shall provide a list of all authorised agents to Warrington Borough Council Licensing Team.
8.10	Documentation	The Service Provider must provide clear and concise operating instructions which are written in layman's terms. (Details on how the System records the images)
8.11	Image Protection	All captured images must be protected using encryption software that meets or exceeds the current FIPS 140-2 (level 2) standard or equivalent.

<b>[9] SYSTEM REQUIREMENTS IN RELATION TO VEHICLE INSPECTION FACILITY – INSPECTIONS</b>		
<b>REF</b>	<b>ITEM REQUIREMENT</b>	<b>FURTHER DETAILS OF REQUIREMENTS</b>
9.1	System Status Indicators	The Systems should have indicators showing 1. When the System is operational; 2. When there is a Malfunction/Fault; 3. When Audio Mode is activated; and 4. When vehicle is in Private Mode. These indicators shall use different colours to avoid any possible confusion on the part of the driver and passengers.
9.2	System Status Location	The indicators shall be mounted/installed for the driver and passenger(s) to clearly see at all times and not interfere with other equipment.
9.3	System Testing by WBC	The System shall be designed and installed such that the System may be easily tested by Warrington Borough Licensing/Enforcement Team (or persons acting on behalf of the council – such as vehicle inspectors) staff to ensure that all features are operating and that images are being recorded as prescribed.
9.4	System Live Monitors	A minimum of two monitors should be provided to the Council and its Personnel so that live footage only can be viewed once connected to the DVR. This should show all camera positions within the vehicle and their coverage and clarity.
9.5	Inspection Checklist & Training	The Service Provider should provide the Council with a system checklist for monitoring purposes and system health checks. Training should be provided to Council personnel where necessary
9.6	Licensing Inspections	CCTV Systems installed in Hackney and Private Hire vehicles will be inspected as part of the annual licensing inspection to ensure they do not pose a risk to the safety of the passengers or the driver and are fitted securely.

**[10] GENERAL SYSTEM REQUIREMENTS**

<b>REF</b>	<b>ITEM REQUIREMENT</b>	<b>FURTHER DETAILS OF REQUIREMENTS</b>
<b>10.1</b>	Data Protection & Human Rights	The system should comply with legal requirements on Data Protection and Human Rights
<b>10.2</b>	Vandal & Tamper Resistant	Recordable media must be sealed into the unit to prevent tampering.
<b>10.3</b>	Statement of Compliance	The supplier will provide details of Declaration of Conformity and Technical file of the CCTV System MDVR to be approved by the Council's Trading Standards Section
<b>10.4</b>	System Reliability	The System shall provide reliable and full functionality in all operational and environmental conditions encountered in the operation of taxis.
<b>10.5</b>	Programmability of Timing Parameters	It shall be possible to change timing and parameters without the requirement to change components.
<b>10.6</b>	Training, Technical Support & Equipment	Manufacturer must provide Warrington Borough Council Licensing Team with a Training and Technical Manual. Supply a working unit to Warrington Borough Council Licensing for testing purposes.
<b>10.7</b>	Software & Hardware	Service Provider to supply Warrington Borough Council Licensing Team with a supply of cables and software to be installed under the supervision of the council's authorised staff. Upgrades necessary to download data will be provided free of charge. A specified number of spare DVR's should be provided to the Council for instances of hard drive removal and temporary storage for incidents where immediate download is not possible. These spare DVRs will be temporarily in use so the driver can remain complaint having an operational CCTV system.
<b>10.8</b>	Software Agreement	Agreement to allow Warrington Borough Council access to the relevant software from the manufacturer so that in the event the manufacturer goes out of business, council will be able to support the System.