

**WARRINGTON BOROUGH COUNCIL HACKNEY CARRIAGE AND PRIVATE HIRE VEHICLES
CCTV SYSTEM AND TECHNICAL SPECIFICATION REQUIREMENTS**

1.0 Operational Technical Specifications

Reference	Requirement	Further Details
1.1	100% solid state design or a proven vibration and shock resistant System	<p>The System will not have any fan and the recording will be vibration and shock proof with self-checking file writing system.</p> <p>The type of memory device shall be clearly stated, including any use of SD cards and if used the standard/quality of SD card to be supplied.</p> <p>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), see 1.8.</p> <p>Any ongoing maintenance or replacement costs should be clearly stated.</p>
1.2	Reverse polarity protected	The System will be protected against reverse voltage.
1.3	Short circuit prevention	The System will be protected against short circuits
1.4	Over voltage protection	System will be protected against high voltage transients likely to be encountered in the vehicle electrical System.
1.5	Comply with legal requirements on data protection and human rights.	
1.6	Automotive Electromagnetic Compatibility Requirements	Any System will comply with all current, relevant legislation and standards. The equipment will display either the CE mark or the E-mark for Type Approval Products should be labelled in accordance with the legislation.

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		Please see guidance note.
1.7	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>The System will be active at all times that the vehicle is being used as a licensed vehicle. 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 will have the capability of being temporarily deactivated during times when the vehicle is being used in a non-licensed capacity.</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.</p> <p>The System will be capable of visibly warning the driver and the passenger from inside the cabin of vehicle as to whether it is active or not.</p>
1.8	First-in/first-out buffer recording principle	<p>The system must automatically over write to create a constant cycle recording.</p> <p>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)</p>
1.9	Security, duration and auto-clearing of log files	
1.10	Accurately record the date & time of all recorded footage.	The time date stamp must be calibrated upon installation and checked during maintenance.
1.11	Image export formats and media	<p>Images will be exported in commercially and freely available formats.</p> <p>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.</p>

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1.12	Image protection during power disruption	Images will be preserved in the event of loss of power. Battery back-up will not be permitted.
1.13	Activation	<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.</p> <p>The specified period must not be changed without the express permission of Warrington Borough Council.</p>
1.14	Image and audio data shall be recorded and stored in a unit separate from the camera head.	
1.15	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.	Analogue and digital ports must be deactivated to prevent access by the driver or any person travelling in the vehicle.
1.16	The System will ensure that images will only be downloaded by authorised officers of the Council.	Installers shall only be able to access live data only during installation and maintenance.
1.17	<p>The System will provide images that are digitally encrypted.</p> <p>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 vehicle.</p>	<p>The encryption method must be specified and must not record to a non-standard format in lieu of encryption.</p> <p>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.</p>
1.18	The hard disk or data card will not be accessible by the driver or any other person	

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	other than the data controller or person authorised to act on their behalf.	
1.19	The data unit will be stored separately from the camera(s) and out of view of persons travelling in the vehicle.	
1.20	The System shall not record audio except when audio recording is activated by means of a trigger as approved by Warrington Borough Council.	<p>The audio trigger must be capable of being activated by either the passenger or the driver.</p> <p>It must begin to record audio data upon first activation of the trigger.</p> <p>The system must return to normal non-audio default following the incident.</p>
1.21	Audio will be available at all supported image capture rates.	
1.22	The audio playback, when triggered, shall be in 'real time' and synchronised with the images that are captured.	
1.23	Digital sampling of the audio signal must exceed 8KHz	
1.24	Digital resolution of the audio samples must exceed 10 bits.	
1.25	The audio microphone shall be integrated within the camera head.	All ancillary equipment must have been tested as a single product, see 1.6.
1.26	Audio data and image data will be stored together, not in separate files, and must be protected against unauthorised access or tampering.	
1.27	The System will support testing of the audio function for installation set-up and inspection purposes.	

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1.28	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.
1.29	Additional components	The provider shall not connect any other component to the vehicles as part of the Service, other than as specified in this Technical Specification.
1.30	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.

2.0 Storage Capacity Technical Specification

Reference	Requirement	Further Details
2.1	Record and store images for a period up to and not exceeding fourteen days	The camera System will be capable of recording and storing a minimum of fourteen consecutive days of images of HD1 (720/288) size or better.
2.2	Images must be clear in all lighting conditions	The system should be capable of identifying individuals within the cabin of the vehicle for the purposes of investigating crime.

3.0 Camera Head Technical Specification

Reference	Requirement	Further Details
3.1	Camera installation will be safe and non-obstructive	<p>It is contrary to the Motor Vehicle (Construction and Use) Regulations, 1986, for equipment to obscure the view of the road through the windscreen.</p> <p>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.</p> <p>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.</p>
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	Special tools for adjustment/removal	To prevent inappropriate interference only tools supplied to authorised fitters should be capable of carrying out adjustments or removal.
3.4	Field of view to capture all passengers in the vehicle	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 will be clear	Capture images, in all light conditions, of sufficient quality to enable the identification of any person travelling in the vehicle and be of such quality that they can be used for prosecution purposes.
3.6	Compatible for use in vehicles with a 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

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		<p>coverage in larger vehicles and/or certain purpose built vehicles.</p> <p>All ancillary equipment must have been tested as a single product, see 1.6.</p>
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4.0 Storage Device (Recorder) Technical Specification

Reference	Requirement	Further Details
4.1	Impact and 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	Controller in concealed location	The storage unit shall be concealed from view and effectively inaccessible except by authorised personnel.
4.3	Download port provision	The recorder shall be equipped with a communication port for downloading by authorised personnel.
4.4	Download port cable length (1 foot minimum)	Download port shall be at least one foot in length for ease of download.
4.5	Download port shall be located in an easily accessible location.	The recorder download port shall be located in a location that does not require the removal of panels and is accessible.
4.6	Recorder to be securely affixed to the vehicle	
4.7	Time/date stamp	<p>All stored images will be time and date stamped.</p> <p>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.</p>
4.8	Vehicle ID number stamp	All stored images will have at least two fields for vehicle identification (Licence Number, Vehicle Registration or VIN).
4.9	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.

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4.10	Controller (Storage Recorder)	The provider will supply the Council with a supply of specialised tools to allow for removal of the controller and download of data as required
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5.0 Specifications for video and audio recording rate

Reference	Requirement	Further Details
5.1	Video image recording on System activation.	<p>The System shall record images of a sufficient clarity to enable individuals to be recognised for the purposes of detecting crime,</p> <p>The system shall record images at a minimum rate of twenty five (25) images per second.</p>
5.2	Video image recording when audio is activated.	If the System is provided with audio recording, the System shall record images at the rate of twenty five images per second only during periods when audio recording is activated. It must not continually record audio and it must have an appropriate means of being activated and deactivated.
5.3	When activated, audio recording must be in real time and synchronised with the video recording.	

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<p>5.4</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.</p> <p>The System shall not record audio except when audio recording is activated by means of a trigger as approved by Warrington Borough Council.</p> <p>The audio trigger must be capable of being activated by either the passenger or the driver.</p> <p>It must begin to record audio data upon first activation of the trigger.</p> <p>The system must return to normal non-audio default following the incident.</p>	
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6.0 Specification for System Installation

Reference	Requirement	Further Details
6.1	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.	
6.2	All equipment will be installed in such a manner so as not to increase the risk of injury and/or discomfort to the driver and/or passengers.	
6.3	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.
6.4	All equipment must be installed as prescribed by the equipment and/or vehicle manufacturer installation instructions.	
6.5	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.	
6.6	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.
6.7	CCTV System will be fitted by an auto electrician	The experience and qualifications of the auto-electrician must be clearly state. Systems should be fitted by an auto electrician possessing a minimum of a Level 3 Diploma in Auto Electrical and Mobile Principles, or an equivalent qualification, or experience. The Council must be notified of any change to the installer and must be given appropriate evidence as to their suitability.
6.8	CCTV Certificate	Installer will issue a CCTV installation certificate to the Council Licensing Team to confirm installation of the product in accordance the manufacturer's specification.

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7.0 Downloading Technical Specification

Reference	Requirement	Further Details
7.1	Time to download complete memory not to exceed 30 minutes	Time to download to be accomplished in 30 minutes or less.
7.2	Supplier will provide necessary software, cables, security keys to Warrington Borough Council Licensing Team.	
7.3	Windows 10 compatible	
7.4	Downloaded images stored in non-volatile media	
7.5	Downloaded images stored in secure format	Each image shall be stamped with controller ID and vehicle ID and be tamperproof.
7.6	Provision of technical support to Warrington Borough Council Licensing team when necessary.	To assist in accessing System within 1 hour during normal working hours and within 8 hours otherwise.
7.7	Wireless Download Prohibited	Unit must not allow for wireless downloads. All wireless hardware to be disabled.
7.8	Filter 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.
7.9	Reformatting of memory	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.

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8.0 Requirements in relation to System Information

Reference	Requirement	Further Details
8.1	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	Serial number indication on service log	The unit will be marked with a serial number and be correctly labelled in accordance with legislation.
8.2	Installation date indication on service log	The provision for the installer to indicate the installation date
8.4	Provision of driver instruction card with each unit shipped	
8.5	Provision of installation manual to installers and fleet operators.	
8.6	Clarity of operating instructions	The System shall be provided with clear and concise operation instructions which are written with due consideration to varying levels of literacy.
8.7	Installation by authorised agents	The unit shall be installed by manufacturer's authorised agents in accordance with 6.1 to 6.8.
8.8	Provision of authorised agents list to Warrington Borough Council	The manufacturer shall provide a list of all authorised agents to Warrington Borough Council Licensing Team.
8.9	Documentation	The manufacturer must provide clear and concise operating instructions which are written in layman's terms. (Details on how the System records the images)
8.10	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.

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9.0 System requirements in relation to Vehicle Inspection Facility – Inspections

Reference	Requirement	Further Details
9.1	Provision of System status/health indicator	The driver shall have an indicator showing when the System is operational and when there is a malfunction.
9.2	Mounting location of System status/health indicator to be seen by driver only	The indicators shall be mounted/installed for the driver's vision only. The indication System shall incorporate the following minimum features (see 9.3, 9.4, 9.5)
9.3	Normal display/System operational –	The System should be fitted with an indicator to show that the System is on, this indicator shall be separate to those listed above or of a different colour to avoid any possible confusion on the part of the drivers using the System.
9.4	Valid image capture –	The System shall be fitted with an indicator which demonstrates to the driver and the passenger that it is operational.
9.5	System malfunction –	The System shall be fitted with an indicator to show if the system is not operational or experienced a system fault.
9.6	Additional indicator requirement	Where a System is fitted with an indicator to show that the System is on, this indicator shall be separate to those listed above or of a different colour to avoid any possible confusion on the part of the drivers using the System.
9.7	Designed / installed to be testable by Warrington Borough Council Licensing Team (or persons acting on behalf of the council – such as vehicle inspectors)	The System shall be designed and installed such that the System may be easily tested by Warrington Borough Licensing Team staff to ensure that all features are operating and that images are being recorded as prescribed.

10.0 System Maintenance

Reference	Requirement	Further Details
10.1	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.	

11.0 General System Requirements

Reference	Specification	Details
11.1	Vandal and tamper resistance	Recordable media must be sealed into the unit to prevent tampering.
11.2	Provision of 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
11.3	Reliability in operational and environmental conditions	The System shall provide reliable and full functionality in all operational and environmental conditions encountered in the operation of taxis.
11.4	Programmability of image timing parameters	It shall be possible to change timing and parameters without the requirement to change components.
11.5	Training and Technical Support and 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.
11.6	Software and Hardware	Manufacturer 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.
11.7	Agreement between the Camera Manufacturer and Warrington Borough Council	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.