Transport Department

Guideline for Application for Type Approval/ Modification of Journey Recording System (JRS) fitted in Taxi

Approved Journey Recording System (JRS)

1.0 Refer to regulation 78E of Road Traffic (Construction and Maintenance of Vehicles) Regulations (**Cap.374A**), an approved journey recording system, in relation to a taxi, means a journey recording system that –

a. has been installed on the taxi, or modified for taxi, by an Authorized Journey Recording System ("JRS") Installer;
b. has been examined to the satisfaction of the Commissioner; and
c. has been sealed by the Commissioner or a person authorized in writing by the Commissioner.

1.1 In accordance with regulation 78F of Cap.374A, subject to a date appointed by the Secretary for Transport and Logistics by notice published in the Gazette, there must be an approved JRS on a taxi.

1.2 Refer to Annex A for the statutory requirements of JRS, and Annex B for the technical guideline of JRS and the applicant's central JRS system.

Authorized JRS Installer

2.0 In accordance with regulation 78L of Cap.374A, the authorized JRS installer must, as soon as reasonably practicable after becoming aware of a reportable defect in the approved JRS of a taxi, report the defect to the Commissioner and the registered owner of the taxi.

2.1 Refer to regulation 120AA of Cap.374A for the authorized JRS installer.

2.2 Refer to the terms and conditions of Authorized JRS Installer listed in Annex G.

Application for Approved JRS and Authorized JRS Installer

3.0 The application for type approval of an approved JRS shall be submitted by the local installer who is also responsible for installing the JRS in a taxi and continuously monitoring of JRS's health status via applicant's central JRS system. Please refer to Annex C for the application workflow.

3.1 A mail containing your application in hard copy should be submitted to the address as follows:

Vehicle Safety and Standards Division
10/F, South Tower, West Kowloon Government Offices
11 Hoi Ting Road, Yau Ma Tei, Kowloon
Attn: Engineer /New Vehicle Technologies 1 (ENVT1)

3.2 A DVD or USB drive containing the soft copies of (i) all application documents, (ii) JRS video records and (iii) GNSS record shall be placed inside the mail mentioned in 3.1.

Validity of the Type Approval

4.0 The approval is only applicable to the model bearing a type approval number issued by Transport Department (**TD**). The approved JRS shall have its make and model code marked at the front of its casing of on-board unit for identification purpose.

4.1 In view of the difference in passenger compartment construction among each vehicle make and model, type approval of a JRS model is associated with specific taxi model. In case an approved JRS to be extended to a new taxi model, an application for extending the approved JRS to the subject taxi model with supporting information (e.g. installation plan and sealing plan applicable to the subject taxi model, etc.) shall be submitted in accordance with relevant requirements mentioned in stage III below.

4.2 For any variation from the approved design and specification, the approval will become invalid unless in-advance consensus from TD is obtained. The applicant shall submit the application and supporting document for TD's review (refer to Annex F for the application form).

4.3 The type approval of any JRS may become invalid if there is a change in concerned regulations, resulting in non-compliances of approved JRS under the new requirements. Resubmission of the type approval application shall be required.

Test Requirements of Applicant's JRS and their Central JRS System

5.0 Refer to Annex D for the demonstration test relating to applicant's capability in packaging and exporting data, including journey record and JRS's health status record, from applicant's JRS or/and their central JRS system. Refer to Annex E for the test items relating to the JRS fitted in taxi.

Application Flow

6.0 Refer to Annex C for the overall application workflow.

Stage I(a)- Application for Authorized JRS Installer

6.1 Applicants shall provide the following documents and information to support their application-

a. A completed and signed application form (refer to Annex G);
b. Information of company history;
c. Organization structure (e.g. qualification of local technical support team and number of installation/maintenance personnel);
d. Experience of providing similar product and service in Hong Kong (e.g. number of vehicle involved, major customers, years in operation, etc.);
e. Copy of dealership agreement between the JRS manufacturer and the Applicant;
f. Information of workshop and service centre (e.g. address, photo of venue);
g. 24-hour service hotline to be provided to the trade; and
h. Operation details (refer to Section 7 of Annex F)

Stage I(b) - Application for JRS

6.2 Applicants shall provide the following documents and certificate to support their application-

a. An application letter which contains the applicant company description, information of JRS manufacturer and model code, company chop, etc.;
b. A completed and signed application form (refer to Annex F);
c. A4 dimension drawings of each JRS device;
d. Product brochure of the JRS which contains the model code of each device;
e. Introduction of the JRS and applicant's central JRS system's architecture which is/are going to be connected to Government information system;
f. Details of the application programming interface (API) connection and upload of the journey data to Government information system;
g. User manual for (i) JRS and (ii) applicant's central JRS system;
h. Detailed technical specification of (i) JRS and (ii) applicant's central JRS system for JRS's operation monitoring;
i. Supporting documents (e.g. third party test reports relating to operation temperature, storage temperature and humidity, certificates, and relevant information from device manufacturers, etc.) substantiating the compliance with the requirements in Annex A, Annex B and Annex F;
j. A 30-minutes output records of the JRS recorded in both daytime and night time (including records made by dash cameras, in-vehicle cameras and Global Navigation Satellite System (GNSS) receiver), as well as 15 minutes record after the deactivation of drive system , in a format readable by common software;
k. Sample of installation certificate issued to taxi owner upon completion of first installation, replacement or repair;
l. Declaration letter with company chop for full compliance with the data protection principles stipulated under the Personal Data (Privacy) Ordinance (Cap.486) and relevant Guidance published by Office of the Privacy Commissioner for Personal Data, Hong Kong when dealing with personal data; and
m. A detailed installation plan and sealing method of the JRS in a specific taxi model with drawings and photos, which include but not limited to the following-

i) Applicable taxi make and model;
ii) Location of JRS (including the lateral position and longitudinal position of in-vehicle camera, front and rear dash cameras) and that of GNSS receiver, recording indicator/ signal lamp and on-board unit;
iii) Design of labels/stickers to notify the passenger about the use of in-vehicle camera which is affixed adjacent to indication lamp of the JRS (Refer to Annex H for the sample label design: (The size of the label/sticker shall not be less than 150 mm x 110 mm (width x height): The characters shall not be less than 3mm in height for English and 4mm in height for Chinese against a background in contrasting colour);
iv) Location of tell-tale of the JRS which indicates the status of JRS and a label/sticker showing how to interpret the tell-tale. Both the tell-tale and the label/sticker shall be clearly visible by all persons in the taxi compartment;
v) Installation method including the wiring and all signal inputs and outputs (e.g. ACC, power, grounding, video input, etc.);
vi) Proposed sealing locations (e.g. by sealing tapes/ties) to prevent from tampering of the JRS's setting and records stored;
vii) Photos showing the following-
    a) the identification of JRS device;
    b) image from the driver's perspective showing that the presence of JRS does not affect the driver's direct vision to the traffic in the front;
    c) clear image captured by the in-vehicle camera for all vehicle occupants in the taxi compartment;
    d) the image showing the captured front view and rear view outside the taxi during the operation period; and
    e) the timestamp format shown in the recording data is in line with the requirement mentioned Section 3.1.6 and 4.3.1 in Annex B; and
viii) Provisions for ensuring conformity of installation (such as using gauges or templates).

Stage II – Demonstration of the applicant's capability in packaging and exporting the data, including journey records and JRS's health status record, from applicant's JRS or/and their central JRS system

6.3 After satisfactory vetting of stage I (a) and I (b), the applicant shall contact type approval section (Tel: 3961 0362 or 3961 0364) to make a booking for a demonstration test at Transport Department Vehicle Examination Complex ("**TDVEC**"). Refer to Annex D for detail.

6.4 Stage II and stage III may be proceeded on the same day.

Stage III - Examination of the JRS fitted in a specific taxi model at TDVEC

6.5 The applicant shall contact type approval section (Tel: 3961 0362 or 3961 0364) to make a booking for an examination and arrange a sample taxi of a specific make and model fitted with the JRS for the vehicle examination at TDVEC. Refer to Annex E for detail.

Stage IV – Formal Connection of ALL JRS, the applicant's central JRS system to Government Information System for Production Run

6.5 To be provided.

Transport Department

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Statutory Requirements of the JRS and Installer's Central JRS System

The JRS shall comply with the provisions under Road Traffic (Construction and Maintenance of Vehicles) Regulations (Cap. 374A) and Road Traffic (Public Service Vehicles) Regulations (Cap. 374D), relating to the JRS. In connection with the above, the JRS shall also comply with the following

1) **In-vehicle camera** shall be -

   a) capable of making video recordings with audio that show a clear view of all persons in the taxi to which the system is fitted during the period beginning on the activation of the taxi's drive system and ending 15 minutes after the deactivation of the drive system (**operation period**).

2) **Dash camera** shall be -
   a) capable of making video recordings without audio that show a clear view of the front view and rear view outside the taxi during the operation period.

3) **GNSS receiver** shall be -
   a) capable of capturing data concerning the precise location of the taxi in latitude and longitude by transmitting and receiving signals under a global navigation satellite system during the operation period.

4) **On-board unit** shall be -
   a) capable of processing the recording or data such that it shown on the recording or data –
      i) the date (including day, month and year) and time (including second, minute and hour)[1] when the recording is made or data is captured; and
      ii) the registration mark of the taxi;

   b) capable of encrypting the recording or data;
   c) for a recording made by in-vehicle camera:
      i) storing the recording for 30 days after the date on which the recording is made (**30-day period**); and
      ii) automatically deleting the recording on the expiry of the 30-day period
   d) for a recording made by dash camera and data made by GNSS receiver, storing the recording/ data for at least 30 days after the date on which the recording/ data is made.
   e) capable of being connected to the designated information system during the operation period of the taxi;
   f) transmitting the recording and data stored in the JRS to the designated information system (i.e. Government Information System); and
   g) providing both of the following telltales that are easily visible to any person in the taxi

[1] Refer to Annex B for the format

i) a coloured signal lamp that lights up during the operation period of the taxi when the JRS is in normal operation; and

ii) a coloured signal lamp that lights up during the operation period of the taxi when the JRS is defective or otherwise not in normal operation.

Installer's Central JRS system shall be capable of transmitting signals to the designated information system indicating whether the JRS is maintained in good and efficient working orders.

Technical Guidelines of JRS and Applicant's Central JRS System[2]

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[2] Extracted from TD695/2024 Technical Feasibility Study on Taxi Camera of the Transport Department – Specification of the Journey Recording System (JRS)

1 In-Vehicle Camera (Typically Driver/Taxi Compartment Facing)

This camera focuses on the interior of the vehicle, which shall clearly capture the face of taxi driver and all passengers.

1.1 Hardware Specifications

1.1.1 Sensor Type: CMOS sensor capable of supporting minimum resolution of 1280×720p at 15 FPS, with infrared capability or low-light performance suitable for cabin recording.

1.1.2 Resolution**:** Minimum 720p (1280x720p).

1.1.3 Frame Rate: Minimum 15 FPS.

1.1.4 Aperture: Low f-stop number (e.g., f/1.6 - f/2.3) for better low-light performance.

1.1.5 Support Low Light Conditions: Built-in IR LEDs (e.g., 850nm or 940nm) with automatic activation in low light conditions; minimum effective range: 3 meters. Alternatively, cameras with low-light colour performance (e.g., CMOS GC2083, ≥0.5 lux) are acceptable to support colour recording at night.

1.1.6 Audio:

- Built-in microphone suitable for cabin audio capture.
- Capability for audio recording.

1.1.7 Enclosure:

- Tamper-resistant/proof design to prevent unauthorized access to camera settings and local storage.
- Durable housing (e.g., ABS plastic or metal alloy), capable of withstanding typical vehicle operating conditions including vibration, heat, and impact.
- Discreet form factor and colour (e.g., black).
- Secure mounting mechanism (adhesive or screw mount).

1.1.8 Privacy: No visual display of the in-vehicle camera.

1.2 Environmental & Power

1.2.1 Support normal operation under a wide range of operating temperature, storage temperature and humidity conditions typical in Hong Kong.

1.2.2 Power: Powered via the connected Dash Cam or On-Board Unit (OBU) or an independent source (e.g., 5V DC or 12V DC). Low power consumption (e.g. <2W).

1.3 Certification

1.3.1 Test reports shall be presented on operating temperature, storage temperature, and humidity issued by a nationally accredited laboratory or a laboratory accredited under HOKLAS or an equivalent ISO/IEC 17025 accreditation scheme, subject to TD's approval.

2 Dash Camera (Typically Forward and Backward Facing, often includes Cabin Cam or is Dual-Lens)

This camera records a clear view of the front and rear outside the vehicle, primarily the road ahead. It may be a standalone unit with On-Board Unit (OBU) functions or connect to a separate OBU.

2.1 Hardware Specifications

2.1.1 Sensor Type: CMOS sensor capable of supporting minimum 720p resolution with good low-light performance.

2.1.2 Resolution (Forward and Backward Facing): Minimum 720p (1280x720p).

2.1.3 Frame Rate: Minimum 10 Frames Per Second (FPS).

2.1.4 Lens Type (Forward Facing): with a minimum diagonal field of view of 42°, sufficient to capture the road ahead.

2.1.5 Aperture: Low f-stop number (e.g., f/1.6 - f/2.3).

2.1.6 If a small LCD screen (e.g., 2–3 inches) is included for status indication, it shall be covered or sealed to prevent tampering. The LCD screen shall be in compliance with the requirements of the VDU as stipulated under Regulation 37 of Cap. 374A.

2.1.7 Enclosure: Durable, heat-resistant material. Secure mounting (adhesive or with locking mechanism).

2.2 Environmental & Power

2.2.1 Support normal operation under a wide range of operating temperature, storage temperature and humidity conditions typical in Hong Kong.

2.2.2 Power:

- Supplied via vehicle system or OBU. Dash camera shall operate within the voltage range and protections defined in Section 3.3.

2.3 Certification

2.3.1 Test reports shall be presented on operating temperature, storage temperature, and humidity issued by a nationally accredited laboratory or a laboratory accredited under HOKLAS or an equivalent ISO/IEC 17025 accreditation scheme, subject to TD's approval.

3 On-Board Unit (OBU) / Telematics Gateway

This is the central communication and data processing hub. It might be integrated into the dashcam and/or in-vehicle cam or be a separate black box unit.

3.1 Hardware Specifications

3.1.1 Recording Indicator / Signal Lamp:

- Coloured visual indicators / signal lamp (e.g. LED) at an easily visible location within the compartment shall be present to show both the JRS is (i) in normal operation; and (ii) defective or not in normal operation.
- A clear and visible label shall be affixed near the recording indicator to explain its status and indicate that there is on the taxi an approved JRS that makes video recordings with audio of person in the taxi and in the form specified by the TD.

3.1.2 Processor: Industrial-grade ARM Cortex-A series (or above) processor capable of handling data streams, communication protocols, and potentially edge AI processing tasks.

3.1.3 Memory: minimum RAM ≥ 256MB to support stable operation and data handling. Flash storage (e.g., eMMC or equivalent) for system operation (e.g., firmware, logs) may be included as appropriate.

3.1.4 Cellular Modem:

- Support cellular connectivity for data transmission to the JRS/TD's Information System.
- Minimum Requirement: 4G LTE Cat 4 or above.
- SIM Slot Protection: SIM slot shall be sealed to prevent tampering.

3.1.5 GNSS Receiver:

- Capable of capturing data concerning the precise location of the taxi in latitude and longitude by transmitting and receiving signals under a GNSS.
- Built-in multi-constellation GNSS receiver supporting at least BeiDou and GPS. Receiver shall be high-sensitivity and may support additional systems such as GLONASS and Galileo.
- Measurement rate: minimum 1 Hz (i.e. 1 fix per second).
- Time-to-First-Fix (TTFF): Cold start TTFF shall be ≤ 2 minutes in open-sky conditions.
- Positional Accuracy: ≤ 5 meters CEP (Circular Error Probable) under open-sky conditions.

3.1.6 Data Storage:

The OBU shall manage data storage and transmission for video and audio recordings and location data.

- Encryption: All stored data shall be encrypted using secure methods to ensure confidentiality. The encryption shall be implemented such that unauthorized access to the data does not allow its content to be read or interpreted.
- Storage Protection: All storage components shall be physically protected or sealed to prevent unauthorized access or damage.
- Retention Policy: The in-vehicle recordings shall be stored for 30 days after the date on which the recording is made and automatically deleting the recording on the expiry of the 30-day period. The dash camera recordings and location data shall be stored for at least 30 days, after the day on which the recordings are made or data is captured.
- Storage Capacity: The OBU shall include a storage solution with minimum capacity sufficient to retain all data in accordance with the above retention policy. A 2TB SSD or equivalent is recommended as a reference configuration.
- Upload Mechanism:
    - Upon instruction from TD, the OBU shall transmit the recordings and data stored in the JRS (including video, audio, location data, vehicle registration number, and timestamp) to the TD's Information System directly, or to transmit such data stored in the JRS to the Central JRS System (Section 4 in this Document) in such a way that the Central JRS System could subsequently transmit such data (including video, audio, location data, vehicle registration number, and timestamp) to the TD's Information System.
    - The OBU shall transmit signals to the TD's Information System indicating whether the JRS is maintained in good and efficient working order. Such transmission of signals could be transmitted to the TD's Information System directly, or to transmit such signals to the Central JRS System (Section 4 in this Document) in a way that the Central JRS System could subsequently transmit such signals to the TD's Information System.
- Timestamp Format & Source: All recorded data shall include a timestamp. The format shall be consistent and machine-readable, and follow the ISO 8601 standard (i.e., YYYY-MM-DDThh:mm:ss) in Hong Kong Time Zone (+08:00). The timestamp shall be derived from a synchronized source, such as GNSS time, to ensure consistency across all data records.

3.1.7 Enclosure:

The OBU shall be housed in a durable enclosure suitable for in-vehicle installation

- Material: High-strength plastic or metal casing.
- Ingress Protection: IP65 or above if the OBU is mounted externally or in areas prone to water spray or dust ingress.
- Mounting: Secure mounting provisions shall be provided to prevent displacement during vehicle operation.
- Tamper Resistance: Tamper resistance mechanisms (e.g. tamper-evident seals, detection logs, or physical barriers) shall be included.

3.1.8 Connectivity Ports:

The OBU shall include necessary ports for power, camera integration, and system configuration

- Power Port: Hardwired connection to vehicle power (e.g., 12V/24V DC).
- SIM Slot: If cellular functionality is integrated, a SIM card slot shall be provided. Sealing shall be applied to prevent tampering.
- USB Slot: Sealing shall be applied to prevent tampering.
- Port Protection: External ports shall be physically protected as part of the enclosure to prevent tampering.

3.2 Software & Firmware

3.2.1 **Video Compression**: The OBU shall support H.264 or H.265 (HEVC) encoding for efficient storage and transmission of video streams received from connected cameras.

3.2.2 Backend Communication

- Support secure communication over TCP/IP with TLS 1.2 or above.
- Data formats such as Protocol Buffers or JSON shall be supported to ensure compatibility with TD's Information System.

3.2.3 Firmware Over-The-Air (FOTA): support secure firmware updates via remote connection.

3.2.4 Security:

- Secure boot and encrypted file system.
- Secure communication (TLS 1.2+).
- Regular security patching process via FOTA.

- Any person must not retrieve, access, upload, download, copy, transmit or use an in-vehicle recording of a taxi except for Law Enforcement Agencies (LEAs), the Commissioner for Transport and persons authorised by the Commissioner (i.e. public officers (including LEAs) or employees of the Information System service contractor engaged by the TD).

3.3 Environmental & Power

3.3.1 Support normal operation under a wide range of operating temperature, storage temperature and humidity conditions typical in Hong Kong.

3.3.2 Vibration/Shock Resistance: Designed to withstand typical vehicle vibrations (e.g., in alignment with relevant international standards (e.g., ISO 16750), Guobiao standard (e.g., GB/T 28046 series) or equivalent).

3.3.3 Power:

- Wide Input Voltage Range: e.g., 9V DC to 36V DC (suitable for both 12V and 24V vehicle systems).
- Power Protections: Over-voltage, reverse polarity, and load dump protection are recommended.
- Ignition sensing (auto power on/off with vehicle). Capable to operate during the period beginning on the activation of the taxi's drive system and ending 15 minutes after the deactivation of the drive system.
- Internal power backup shall be provided, preferably via supercapacitor, to support graceful shutdown and final file saving to prevent data loss.

3.4 Certifications

3.4.1 Environment Testing: Test reports shall be presented on operating temperature, storage temperature, and humidity issued by a nationally accredited laboratory or a laboratory accredited under HOKLAS or an equivalent ISO/IEC 17025 accreditation scheme, subject to TD's approval.

3.4.2 Electronic Product Safety: the OBU and related components (e.g. cameras) shall comply with at least one of the following safety standards: CE, CCC, UL, or other equivalent international standard approved by TD.

4 Central JRS System

A central JRS system is required to support monitoring, operation and maintenance (O&M) of the JRS unit installed in taxis. This section outlines the key features of the central JRS system.

4.1 Monitoring Features

The following parameters shall be continuously monitored. Alerts in the form of signal shall be proactively transmitted to the Government's Information System upon detection of any anomalies:

- OBU status (online / offline / fault status)
- Storage status
- In-vehicle and Dash Camera (Forward and Backward Facing) status (power on / off)
- GNSS location anomalies (e.g., outside Hong Kong boundary or in restricted areas such as Cheung Chau)

4.2 Data Security

4.2.1 Security

- Encrypted file system to ensure data confidentiality and integrity.
- Secure communication (TLS 1.2 or above) shall be maintained between the Central JRS system, the JRS units, and the TD's Information System.

4.3 Inventory of Subscription

4.3.1 The central JRS system shall maintain a complete and up-to-date inventory of all taxi subscriptions. The inventory shall include, but not limited to:

- Vehicle Registration Mark (VRM)
- Service activation date and time follow the ISO 8601 standard (i.e., YYYY-MM-DDThh:mm:ss) in Hong Kong Time Zone (+08:00)
- Service deactivation date and time follow the ISO 8601 standard (i.e., YYYY-MM-DDThh:mm:ss) in Hong Kong Time Zone (+08:00)

4.4 Data Upload Features

The central JRS system shall act as an agent to provide an Application Programming Interface (API) to the TD's Information System for JRS data collection. Upon receiving machine-readable API requests from the TD's Information System, the central JRS system shall coordinate the data upload process. The requested encrypted data may be uploaded either directly by the central JRS system or by the JRS unit installed in the taxi, through a secure channel. The data shall include:

- Video and Audio Recordings captured in the In-vehicle Camera with vehicle registration number and timestamp;
- Video Recordings captured in the Dash Camera (Forward and Backward Facing) with vehicle registration number and timestamp; and
- Location Data.

4.5 General Considerations

- **Integration:** Ensure seamless integration between cameras, OBU, and backend platforms provided by third party operators. APIs should be available for custom integrations with the Government's Information System.
- **Installation:** Specify requirements for professional installation, including secure mounting, proper wiring, antenna placement, and initial configuration/calibration.
- **Scalability:** Hardware should support easy scaling as the number of taxis increases.
- **Warranty and Support:** Define warranty periods and ensure availability of technical support and firmware updates from the vendor.
- **Privacy Compliance:** Ensure all hardware and software features comply with relevant privacy regulations in Hong Kong, such as Personal Data (Privacy) Ordinance (PDPO), particularly regarding the collection, storage, and use of driver and passenger personal data.

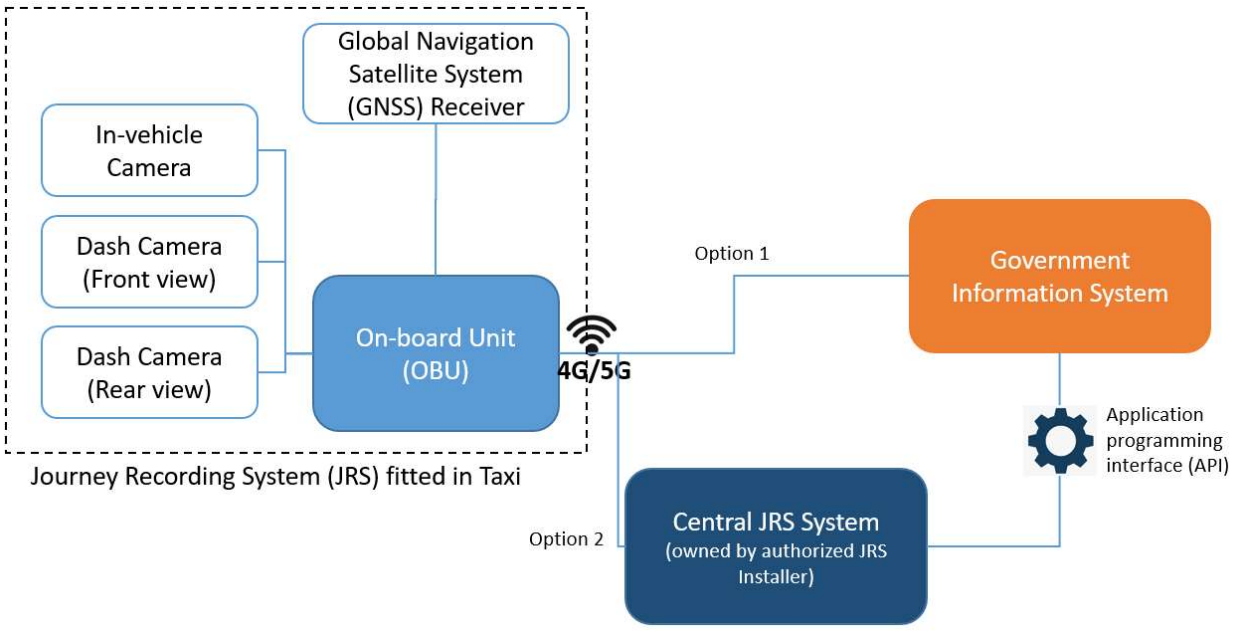
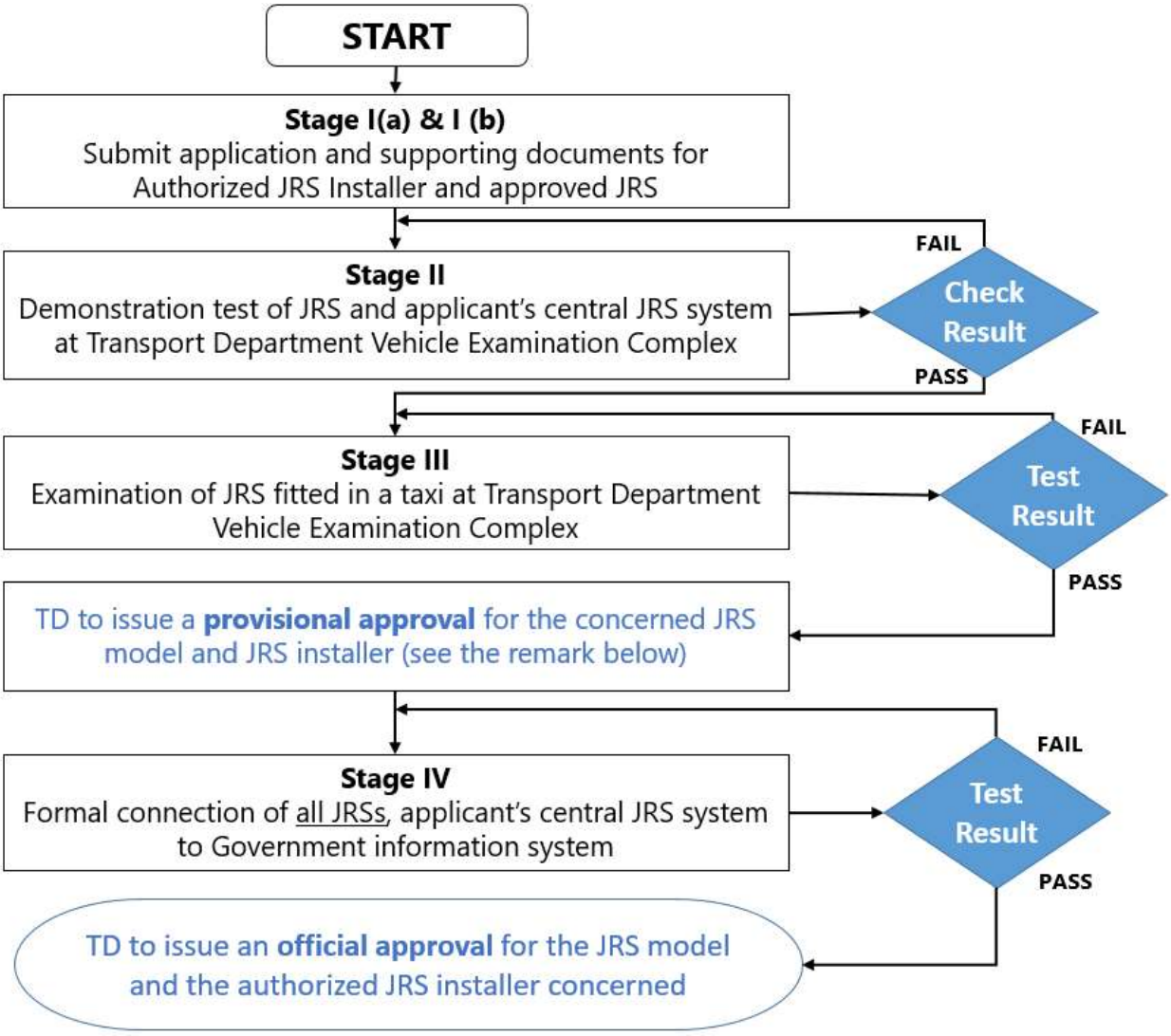


Figure 1- Schematics of typical connection between journey recording system (JRS), authorized JRS installer's central JRS system and Government Information System

Application Workflow



Remark of the provisional approval:

1) Provisional approval granted upon completion of stage II and stage III shall not be construed as full acceptance of the JRS, nor as confirmation of functional compliance or operational capability. TD shall bear no responsibility for any issues, failures, or defects identified during subsequent testing phases or operational use.

2) The Provisional Approval is subject to the following mandatory conditions:
   a) Compliance with Stage IV Testing: The JRS installer shall comply fully with the detailed tests to be conducted with the Government Information System during Stage IV of the approval process.

b) Privacy and Security Compliance: The JRS installer shall comply with all current and future updates to relevant privacy and information security policies, guidelines, and requirements as issued by the Government.
c) Software Version Obligation: The JRS installer shall provide the latest stable version of all software necessary for packaging and exporting Journey Data to the Government Information System, ensuring compatibility and reliability.
d) Ongoing Cooperation: The JRS installer shall promptly implement any required updates or modifications necessary to maintain compliance with interface specifications and security requirements.
e) The JRS installer must be adhere to the data protection principles stipulated under the Personal Data (Privacy) Ordinance (Cap.486) and relevant Guidance published by Office of the Privacy Commissioner for Personal Data, Hong Kong when dealing with personal data.

3) Upon obtaining the provisional approval for the concerned JRS model (which is applicable to a specific taxi make and model) and JRS installer, the applicant may start to install JRS to the specific taxi make and model.

Annex D

Demonstration Test

Purpose

1.0 It is solely for the purpose of validating applicants' capabilities in packaging and exporting data, including both journey record (i.e. video footage captured by the in-vehicle camera, video footages captured by the forward facing and backward facing dash cameras, and GNSS data) and JRS's health status record, from applicant's JRS or/and their central JRS system. These activities do not constitute certification, warranty, or guarantee of full system performance or operational readiness.

Preparation

1.1 The applicant shall bring a laptop which (i) is connected to both the JRS fitted in the sample taxi to be examined at stage III (hereafter "*the sample taxi*") or/ and their central JRS system, and (ii) is capable of retrieving both the journey record of the sample taxi and its JRS's health status record upon TD's enquiry (e.g. start date and time, end date and time, etc.)

1.2 TD will request the applicant to make use of the laptop captioned in para.1.1 to retrieve the journey record of the sample taxi of its JRS's health status record of any time intervals between the examination date and at least 3 days before the examination date.

1.3 The applicant shall ensure the JRS fitted in the sample taxi remains connected during the examination.

Record of the Demonstration Test

Test items	Pass	Fail	Remark
(1) 1st retrieved record# from _____ (yy/mm/dd/ hh:mm:ss) to_____ (yy/mm/dd/ hh:mm:ss), which was recorded in daytime.			
(2) 2nd retrieved record# from _____ (yy/mm/dd/ hh:mm:ss) to _____ (yy/mm/dd/ hh:mm:ss), which was recorded in night-time.			
(3) 3rd retrieved record# from _____ (yy/mm/dd/ hh:mm:ss) to _____ (yy/mm/dd/ hh:mm:ss) which includes (i) the moment of deactivation of the drive system and (ii) the moment of automatic deactivation of JRS.			
(4) 4th retrieved record# from _____ (yy/mm/dd/ hh:mm:ss) to _____ (yy/mm/dd/ hh:mm:ss), which was recorded during the examination at TDVEC.			
(5) Demonstration of the mean to deactivate the microphone of the in-vehicle camera fitted in the taxi			
(6) Health status record of JRS			

The record includes record taken by (i) front dash camera, (ii) rear dash camera, (iii) in-vehicle camera with microphone and (iv) GNSS receiver, which is wirelessly extracted by a laptop. The record shall include -

(a) the date (including year, month and day) and time (including hour, minute and second) when the recording is made or data is captured; and

(b) the registration mark of the taxi;

Annex E

Test Record of JRS in a sample taxi

Specification	Pass	Fail	Actual Reading/Remark
(1) The JRS is fitted to the taxi in accordance with the installation plan			
(2) Proper identification of JRS device			
(3) No sharp edge on any JRS device is protruded			
(4) Proper function of coloured tell-tale lamps (i.e. recording indicator/ signal lamp) of JRS at a clearly visible location in the taxi compartment to indicate its operation and malfunction status			
(5) A clear and visible label affixed adjacent to the tell-tale lamps to explain the operation and malfunction status of JRS. If the label is not clearly visible by all persons in the taxi compartment, additional label(s) will be required.			
(6) Information sticker/sign (e.g. Annex H) placed in the taxi compartment to inform all passengers about the operation of in-vehicle camera. If the label is not clearly visible by all persons in the taxi compartment, additional label(s) will be required.			
(7) All devices and their wirings of JRS are securely fitted to the taxi			
(8) The presence of JRS does not affect driver's direct vision to the traffic to the front			
(9) The sealing can be applied in accordance with the installation plan			
(10) Automatic activation of JRS when the propulsion system is activated			
(11) Automatic deactivation of JRS at 15 minutes after the drive system is deactivated			
(12) Proper recording of JRS# (by downloading record from the local storage device of JRS) (a) Video and audio record captured by in-vehicle camera, which contain clear image of all vehicle occupants in the taxi compartment;			
(b) Clear video record captured by front view dash camera and rear view dash camera;			

(c) Proper record of Global Navigation Satellite System (GNSS)			
(d) the timestamp format shown in the recording and data is consistent and machine-readable such as ISO 8601 (YYYY-MM-DD hh:mm:ss)			
(13) Demonstration of the capability of 30-day storage of all records# (If 30-day record is not available in the local storage device, it may be checked based on the file size of existing record for a whole day and estimate the required storage space for 30-day storage of all records.			
(14) Demonstration of the capability of automatically deleting the in-vehicle video recording on the expiry of the 30-day period.			

The record includes record taken by (i) front dash camera, (ii) rear dash camera, (iii) in-vehicle camera with microphone and (iv) GNSS receiver. The record shall include -

(a) the date (including year, month and day) and time (including hour, minute and second) when the recording is made or data is captured; and

(b) the registration mark of the taxi;

Annex F

APPLICATION FORM FOR NEW/ MODIFIED JOURNEY RECORDING SYSTEM (JRS)

General

Item	Description	*(this column to be completed by the Applicant)*
0.1	Application	☐ Initial application/ ☐ modification of approved JRS
0.2	For modification, Transport Department (**TD**)'s approval number of approved JRS model	

1) In-vehicle camera with audio recording function

Item	Description	*(this column to be completed by the Applicant)*
1.1	Camera Brand	
1.2	Camera Model code	
1.3	Is CMOS Image sensor type? (Y/N)	
1.4a	List out all available Resolution options for CMOS image sensor (e.g. 720p, 1080p, 2K, etc.)	
1.4b	Resolution to be set in JRS (minimum 1280x720p)	
1.5	Frame per second setting (minimum 15 fps)	
1.6	Aperture: f-stop number (e.g. f/1.6-f/2.3, etc.)	
1.7^	List out the document to substantiate the camera can support low light condition with automatic activation in low light condition and with effective infrared illumination distance (minimum 3 metres); or alternatively with low-light colour performance (e.g., CMOS GC2083, ≥0.5 lux) are acceptable to support colour recording at night.	
1.8a	Built-in microphone? (Y/N)	
1.8b	with remotely configurable ON/OFF function? (Y/N)	
1.8c	Audio noise reduction/ cancellation capability (Y/N)	
1.8d	No visual display or the visual display is deactivated (Y/N)	
1.9	Video compression standard (e.g. H.264 or H.265)	

1.10	With Wide Dynamic Range (WDR) / High Dynamic Range (HDR)? (Y/N) (remark: optional)	
1.11^	Operating temperature range	
1.12^	Storage temperature range	
1.13^	Humidity range	
1.14^	Vibration/ chock resistance standard (e.g. ISO16750)	
1.15a	Power source and voltage (e.g. 5V DC or 12V DC) (either from dash camera, OBU or a dedicated cable from vehicle's DC supply)	
1.15b	Power Consumption (W)	
1.16^	Electronic Product Safety standard met: (e.g. CE, CCC, UL, etc.)	

^ supporting documents shall be submitted

2) Dash camera (front view)

Item	**Description**	*(this column to be completed by the Applicant)*
2.1	Camera Brand	
2.2	Camera Model code	
2.3	Is CMOS Image sensor type? (Y/N)	
2.4a	List out all available Resolution options (e.g. 720p, 1080p, 2K, etc.)	
2.4b	Resolution to be set (minimum 1280x720p)	
2.5	Frame per second setting (minimum 10 fps)	
2.6	Aperture: f-stop number (e.g. f/1.6-f/2.3, etc.)	
2.7	Diagonal field of view (minimum 42°)	
2.8	Video compression standard (e.g. H.264 or H.265)	
2.9	With Wide Dynamic Range (WDR) / High Dynamic Range (HDR)? (Y/N) (remark: optional)	

2.10	Configurable pre-event and post-event recording buffer (e.g., 10-30 seconds before and after trigger)? (Y/N) (remark: optional)	
2.11^	Operating temperature range	
2.12^	Storage temperature range	
2.13^	Humidity range	
2.14	Power source and voltage (either from OBU or a dedicated cable from vehicle's DC supply)	
2.15^	Electronic Product Safety standard met: (e.g. CE, CCC, UL, etc.)	

^ supporting documents shall be submitted

3) Dash camera (rear view)

Item	**Description**	*(this column to be completed by the Applicant)*
3.1	Camera Brand	
3.2	Camera Model code	
3.3	Is CMOS Image sensor type? (Y/N)	
3.4a	List out all available Resolution options (e.g. 720p, 1080p, 2K, etc.)	
3.4b	Resolution to be set (minimum 1280x720p)	
3.5	Frame per second setting (minimum 10 fps)	
3.6	Aperture: f-stop number (e.g. f/1.6, f/2.0, etc.)	
3.7	Video compression standard (e.g. H.264 or H.265)	
3.8	With Wide Dynamic Range (WDR) / High Dynamic Range (HDR)? (Y/N) (remark: optional)	
3.9	Configurable pre-event and post-event recording buffer (e.g., 10-30 seconds before and after trigger)? (Y/N) (remark: optional)	
3.10^	Operating temperature range	

3.11^	Storage temperature range	
3.12^	Humidity range	
3.13	Power source and voltage (either from OBU or a dedicated cable from vehicle's DC supply)	
3.14^	Electronic Product Safety standard met: (e.g. CE, CCC, UL, etc.)	

^ supporting documents shall be submitted

4) Global Navigation Satellite System (GNSS) Receiver

Item	**Description**	*(this column to be completed by the Applicant)*
4.1	Brand	
4.2	Model code	
4.3	Type of GNSS supported (e.g. BeiDou, GPS, GLONASS or Galileo)	
4.4	Measure rate (minimum 1 per second)	
4.5^	Time-to-First-Fix (TTFF) at cold start in open-sky conditions (minimum: ≤ 2 minutes)	
4.6^	Positional Accuracy: Circular error probable (CEP) under open-sky condition (minimum: ≤ 5 meters)	

^ supporting documents shall be submitted

5) On board Unit (OBU)

Item	**Description**	*(this column to be completed by the Applicant)*
5.1	Processor Brand	
5.2	Processor Model Code (minimum: Industrial-grade ARM Cortex-A series)	

5.3a	The colour of recording indicator/ signal lamp when JRS is in normal operation	
5.3b	The colour of recording indicator/ signal lamp when the JRS is defective/ malfunctioned	
5.4	RAM size (minimum: 256MB).	
5.5	Flash Storage Space (e.g., eMMC or equivalent)	
5.6	Storage Capacity (2TB SDD or equivalent is recommended as a reference configuration)	
5.7	Cellular modem standard (minimum: 4G LTE Cat 4 or above)	
5.8	Capability of auto deletion of in-vehicle footage and audio record on the expiry of the 30-day period)	
5.9	Retention period setting of GNSS data and video collected by dash cameras (e.g. 30 days, 60 days, etc.)	
5.10	Is the timestamp of all video and GNSS data be derived from a synchronized source (e.g. GNSS time)? (Y/N) If yes, please quote the source	
5.11	Is the timestamp format consistent and machine-readable and follow ISO 8601 (i.e. YYYY-MM-DD hh:mm:ss) in Hong Kong Zone (+08:00)? (Y/N)	
5.12^	Ingress Protection (IP) standard (minimum: IP65 for JRS not located inside taxi compartment)	
5.13	Encryption standard supported (e.g. AES-128, AES256, in-house standard etc.) at local storage	
5.14^	Ability to transfer encrypted data (including footage captured by in-vehicle camera, dash camera, GNSS data and JRS's status with timestamp and vehicle	

	registration number via application programming interface to Government information system? (Y/N)	
5.15	Video Compression standard adopted (either H.264 or H.265 (HEVC))	
5.16^	The standard adopt to support secure communication over TCP/IP (minimum: TLS 1.2)	
5.17^	Support secure firmware updates via remote connection? (Y/N)	
5.18^	Operation temperature range	
5.19^	Storage Temperature	
5.20^	Humidity Range	
5.21^	Vibration/ shock resistance standard	
5.22	Input voltage range	
5.23^	With over-voltage, reverse polarity, and load dump protection? (Y/N)	
5.24	Description of ignition sensing which ensure the JRS remain in operation for 15 minutes after the vehicle is turned off.	
5.25^	Electronic Product Safety standard met: (e.g. CE, CCC, UL, etc.)	

^ supporting documents shall be submitted

6) Applicant's Central JRS System which is connected to the Government Information System

Item	**Description**	*(this column to be completed by the Applicant)*
6.1^	List of JRS's status monitored (minimum requirement: OBU status (online / offline / fault status) • Storage status	

	• In-vehicle and Dash Camera (Forward and Backward Facing) status (power on / off) • GNSS location anomalies)	
6.2^	Encrypted file standard (e.g. AES 128/ AES 256)	
6.3^	Secure communication between applicant's central JRS system and Government information system (minimum: TLS 1.2)	
6.4^	Server location of applicant's Central JRS System (e.g. hosted at a specific cloud service provider)	
6.5^	Ability to transfer encrypted data (including footage captured by in-vehicle camera, dash camera, GNSS data and JRS's status with timestamp and vehicle registration number via application programming interface (API) to Government information system? (Y/N)	
6.6^	Capable of maintaining a complete and up-to-date inventory of all taxi subscriptions. (minimum requirements: • Vehicle Registration Mark (VRM) • Service activation date and time follow the ISO 8601 standard (i.e., YYYY-MM-DD hh:mm:ss) in Hong Kong Time Zone (+08:00) • Service deactivation date and time follow the ISO 8601 standard (i.e., YYYY-MM-DD hh:mm:ss) in Hong Kong Time Zone (+08:00)	

^ supporting documents shall be submitted

7) Operation Details Proposal (see <u>Remarks</u> below)

Item	Description	*(this column to be completed by the Applicant)*
7.1	Installation Schedule • Time schedule for installation on Taxis • No. of installation site and operating hours	

	• Estimate installation time for each taxi • Plan for integration with TD's Information System •	
7.2	Maintenance Plan • No. of maintenance centre and operating hours • Frequency of inspection for JRS and inspection checklist • When and how to get to know whether the JRS is in normal operation or is defective • Mechanism to report to TD in case the JRS is out of order • Estimate repair and maintenance time for each taxi • The number of services that can be provided dailyRoutine maintenance schedule for the JRS central system (including frequency and inspection checklists)	
7.3	Customer Service Plan • Support channels and availability (e.g. 12–hour manual hotline and supported by voice response system with pre-recorded audio message, email, app etc. in other hours outside hotline service hour) • Service pledge of replying enquiry and complaint (e.g. within 12 hours)	
7.4	Gearing Up Plan • Estimated No. of JRS available in the first month / second month / third month after obtaining TD's approval • Lead time including the total time from when an order is placed until the products are delivered to the installation site. This includes processing, shipping, and receiving times.	
7.5	Cancellation and Transition Arrangements • Notification procedure for the cancellation of JRS service requested by the taxi owner • Transition arrangements when a taxi owner requests the cancellation of the JRS service, including how to retain	

	the journey data in 30-day period and upload the requested data to TD's information system	

Remarks: The details provided in section 7 of Annex F are preliminary proposals only, and are subject to further discussion between the applicant and Taxi Section of TD.

Please refer to stage I(b) - Application for JRS of application workflow of the guideline for the required supporting documents.

Authority Signature :_____ Post :_____

Company :_____ Date :_____

Telephone: _____ email : _____

Company Chop

Annex G

APPLICATION FORM FOR AUTHORIZED JOURNEY RECORDING SYSTEM (JRS) INSTALLER

(Terms and Conditions of Authorization as a JRS Installer)

Company:_____

Address: _____

Office Tel: _____Fax:_____ Email: _____

DECLARATION OF APPLICANT

We hereby declare that we agreed to be bound by the following Terms and Conditions, as an Authorized Installer for the JRS.

Terms and Conditions of Authorization (as an authorized JRS installer)

1) The Authorized Installer shall observe the following duties in the course of installation, renewal or repair of the JRS –

    a. The Authorized Installer must install the approved JRS in accordance with the installation plan and arrangements endorsed and agreed with Transport Department;

    b. The Authorized installer must follow and implement the anti-tampering measure as endorsed and agreed with Transport Department;

    c. The Authorized Installer must affix information sticker/sign in the taxi compartment to inform the passenger the location of in-vehicle camera;

    d. The Authorized Installer shall provide service hotline for urgent maintenance of JRS;

    e. The Authorized Installer is obliged to inform Transport Department of any changes in the installation arrangement (including anti-tampering measures). If the Authorized Installer intends to cease their business, he/she must inform Transport Department as soon as possible;

    f. The Authorized Installer shall ensure the central JRS system or/and the JRS are connected to a designated information system designated under regulation 49E(1) of the Road Traffic (Public Service Vehicles) Regulations (Cap.374D) during the operation period of the taxi when reg.78K of Road Traffic (Construction and Maintenance of Vehicles) Regulation (Cap.374A) comes into operation on or before a day to be appointed by the Secretary for Transport and Logistics by notice published in the Gazette;

    g. Starting from the date appointed by Secretary for Transport and Logistics by notice published in the Gazette, the Authorized Installer must not retrieve, access, upload,

download, copy, transmit or use any in-vehicle recordings of taxis. These in-vehicle recordings can only be retrieved or accessed by authorised persons under specific circumstance as stipulated in regulations 49C and 49F of Cap.374D;

h. The Authorized Installer should provide channel for taxi owners to retrieve, access, upload, download, copy, transmit or use the recordings of dash camera and location data on their own. All such processing shall be conducted solely between the taxi owners and the Authorized Installer and shall not involve the TD's information system;

i. The Authorized Installer must, as soon as reasonably practicable after becoming aware of a reportable defect (i.e. a defect in or any damage to the JRS that leads to the system's failure in complying the statutory requirements under reg.78D of Cap.374A) with the approved JRS of a taxi, report the defect to Transport Department and the registered owner of the taxi;

j. The Authorized Installer shall notify Transport Department whenever a firmware update will be launched and shall not launch the updated firmware without TD's agreement;

k. The Authorized Installer must disable the audio recording function of the in-vehicle camera until a date appointed by the Secretary for Transport and Logistics by notice published in the Gazette; and

l. The Authorized Installer must be adhere to the data protection principles stipulated under the Personal Data (Privacy) Ordinance (Cap.486) and relevant Guidance[3] published by Office of the Privacy Commissioner for Personal Data, Hong Kong when dealing with personal data.

Please refer to stage I(a) Application for Authorized JRS Installer of application workflow of the guideline for the required supporting documents.

[3] The guidance includes the following:
"Guidance on the Use of CCTV Surveillance":
https://www.pcpd.org.hk/english/resources_centre/publications/files/guidance_cctv_surveillance.pdf

"Tips on the Use of CCTV Surveillance" information leaflet:
https://www.pcpd.org.hk/english/resources_centre/publications/files/tips_on_cctv_surveillance.pdf

"Guidance on the Use of Video Cameras on Drones and Vehicles":
https://www.pcpd.org.hk/english/resources_centre/publications/files/guidance_cameras_vehicles.pdf

"Responsible Use of Drones and In-Vehicle Cameras" information leaflet:
https://www.pcpd.org.hk/english/resources_centre/publications/files/responsible_vehicle_cameras.pdf

The Transport Department may, in processing an application for Authorized Installer, require the applicant to provide further information or produce other proof.

Authority Signature :_____ Post :_____

Company :_____ Date :_____

Telephone: _____ email : _____

Company Chop

Figure 2- Sample label/sticker on the notice to notify the passenger about the operation of in-vehicle cameras issued by Office of Privacy Commissioner for Personal Data (PCPD)

Reference:https://www.pcpd.org.hk/english/news_events/media_statements/press_20251027.html