CITY OF LOS ANGELES
CALIFORNIA

Seleta J. Reynolds
GENERAL MANAGER

DEPARTMENT OF TRANSPORTATION
100 South Main Street, 10th Floor
Los Angeles, California 90012
(213) 972-8470
FAX (213) 972-8410

ERIC GARCETTI
MAYOR

LADOT Taxi-on-MDS Notification Quality Standards

Topics:

1. Parties Subject to These Requirements
2. Where These Requirements Apply
3. Performance Requirements:
   a. Vehicle Registration
   b. Event Notifications
   c. Trip and Telemetry Data
   d. Requirement to Consume Digital Policy

Types of Companies that Subject to These Requirements

- All vehicles permitted by the LADOT and operating as taxicabs shall be registered in the LADOT MDS System prior to deployment or operations on the streets of the City of Los Angeles, including:
  - Companies that are taxi companies dispatching taxis
  - Companies that are serving as e-hail dispatchers of taxicabs
- All companies shall conform to the LADOT MDS System requirements for all Service Level Agreements (SLAs) as defined by the LADOT.

Where These Standards Apply

'Jurisdiction' is used hereafter and defined as:
- The area, inclusive of but not limited to the City of Los Angeles and County of Los Angeles, in which LADOT permitted taxi operators conduct for-hire vehicle operations.
- If a LADOT permitted taxi operator is conducting vehicle operations that traverse the boundaries of this jurisdiction, the permitted taxi operator is considered to be wholly within the jurisdiction for that trip.

- In this example: a vehicle may be outside the jurisdiction, with intention to enter it (i.e., a trip begins outside and will enter it) or inside with intent to leave (i.e. a trip begins inside and will exit it).
    - Similarly, if a vehicle begins in the jurisdiction, leaves the jurisdiction, and re-enters, the entire trip is treated as if it occurred within the jurisdiction in the context of its permitted operations.
    - In sum, any taxicab permitted by the LADOT and operating as a for-hire service is subject to LADOT rules and regulations, including MDS compliance regulations, regardless of the location of said service.

- For specific reference of the boundaries of the City of Los Angeles and the County of Los Angeles, boundaries are defined at the LADOT MDS System endpoint (/geography/geographies).

Performance Requirements

Category: Vehicle Registration

Item	Technical Compliance Item	Digital audit success criteria	Impact to downstream needs
1	Companies with vehicles permitted as taxis by the Los Angeles Department of Transportation must register all such vehicles with the LADOT MDS System registry endpoint (`/vehicles`) by **XXX** date as set forth by LADOT. ***	Count of unique vehicles from `/vehicles` matches with the count of unique vehicles in `/events`. Count of unique vehicles from `/vehicles` matches with LADOT's taxi registration information.	Impact to auditability and planning.
2	Companies who last reported taxi vehicles in the LADOT jurisdiction **shall not go more than 48 hours without sending an update** to the LADOT MDS System, unless their preceding update was to describe a transition to a maintenance, removed, or decommissioned state. For companies that have lost connectivity	The time difference between the timestamp of the company's latest vehicle event and now is less than 48 hours.	May result in mismatch from digital-physical public realm, i.e. overcounting the number of taxis in service.

	to taxi vehicles, the taxi operator is required to send LADOT a valid event transition. Companies who last reported taxi vehicles operating in the LADOT jurisdiction that do not send a signal after 48 hours will still be considered in the LADOT jurisdiction.		
3	Companies with vehicles operating as taxis must ensure these vehicles are in the <u>removed</u> state when decommissioned or under maintenance, which means these vehicles cannot operate as taxis in the City of Los Angeles public right of way.	n/a	n/a

Category: Event Notifications

4	All MDS notification events sent by permitted taxi companies must have a valid timestamp as defined in the OMF MDS Agency specification.	Event timestamp cannot be in the future (i.e. greater than at the time of the event).	Impact to auditability and planning.
5	All MDS notification events sent by permitted taxi companies must follow valid state transitions as defined in the LADOT MDS System Agency taxi state diagram.	Vehicle transition between states must follow the LADOT MDS System taxi state diagram.	Inaccurate measurement of vehicles dwell time, number of vehicles available, trips, etc.
6	Each trip needs to be well-formed. To be well-formed, each `trip_id` must have a corresponding `trip_start` and `trip_end` event. Each `trip_id` should be unique.	The sequence of event notifications for each unique `trip_id` must start with a `trip_start`, and end with `trip_end`.	Undercounting trips and possible loss in revenue.
7	Permitted taxi companies must post vehicle events and associated telemetry to the LADOT MDS System endpoints (`/vehicles/{device_id}/event`) and (`/vehicles/telemetry`) within **5 seconds** of the action occurring.	The recorded timestamp and the event timestamp is less than 5 seconds.	Delay in responding to complaints, enforcement, and measuring real-time operational compliance, i.e. to notify taxi companies of violations.

Category: Trip and Telemetry Data

8	After the taxi company completes a trip, the taxi company will send to the LADOT MDS System an event notification of additional information about the trip, trip metadata, through the `/trips` endpoint.	The number of complete trip notifications received from `/trips` should match with the number of unique `trip_ids` which have complete trip event sequences.	Inaccurate trip related metrics output and equity measurement.
9	Permitted taxi companies must post Trip information to the LADOT MDS System endpoint (`/trips`) **within 30 seconds** of the trip end.	The delta in recorded time between any `trip_end` events & `/trips` information should be <=30s	Delay in processing metrics, and data may be excluded in the metrics report.
10	Permitted taxi companies must sendTelemetry data whenever a company vehicle is in the: `on_trip`, `stopped`, `reserved`, or `available` states. Permitted taxi companies must sample telemetry **at least every 5 seconds** along the vehicle path when operating within the LADOT jurisdiction.	The difference in timestamp between each telemetry point is less than 5 seconds.	May result in inaccurate measurement of most traveled routes or busiest streets.
11	Permitted taxi companies must send Telemetry data not explicitly associated with an event to LADOT's (`/vehicles/telemetry`) **within 30 seconds** of collecting it.	The delta between the recorded timestamp and the telemetry timestamp is less than 30 seconds.	Delay in processing metrics, and data may be excluded in the metrics report.

Category: Requirement to Consume Digital Policy Information

12	Permitted taxi companies shall query the LADOT MDS System `/policy` endpoint every 24 hours between the hours of 1am - 3am (local time) to acknowledge being informed and up to date on all applicable taxi LADOT MDS policies.	n/a	May result in taxi operators missing an update and violation to policy

*** The date is to be determined by LADOT after the initial validation of the Sandbox notifications are complete.