Server-Side Events

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Server-side events are generated on the server, based on the vehicle's movement and location

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Solution **Overview**

What are Server-side events?

Each position packet received from a vehicle contains coordinates and the time the coordinates were recorded.

The user sets boundaries on the On-Road IoT map as pre-defined locations.

Logical rules can be making use of the time and position of the vehicle as well as the boundaries of the location to create Server-Side Events.

These server-generated events are visible to the On-Road IoT user in the same way as any other events in the following areas on slide 4.

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Server-Side **Events**

What happens behind the scene?

- All positions that are received from vehicles are placed in chronological order. This forms a breadcrumb trail showing the vehicle's movement on a map.

- The coordinates of the vehicle are constantly compared to the boundaries of all the user-predefined locations, i.e., checking if vehicle positions are within location boundaries.

- When a position falls within any of the user pre-defined boundaries, the data from the one preceding and all succeeding coordinates are processed through the Server-Side Rules Engine.

- The Server-Side Rules Engine compares the series of vehicle coordinates against the user-defined rules for the relevant location.

- When a rule's criteria are met, an event is generated for the vehicle at the location.

- The event is then processed through the rest of the system and presented in On-Road IoT as any other event that would have been generated from the vehicle.

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Server-Side **Events**

What are the requirements for Server-side events?

1 A mobile tracking unit that can report vehicle positions in the form of a trip.*

2 Locations (geographical boundaries) need to be set up in MiX Fleet Manager.

3 Server-side events need to be configured by a user with suitable permissions. **

4 Real-time notifications need to be set to notify someone when important events occur.

5 The frequency of the vehicle's position data need to be high enough to place at least one location point within a boundary before the vehicle moves out of the boundary area.

6 Server-side events are not part of the asset configuration because they are device-agnostic.

CalAmp Premium and Lite devices can report Trips, but not the CalAmp Tracker. Server-side events are NOT available for CalAmp Tracker devices.

** Events are configured on Organisation-level, a user with Site-level permission won't be able to configure events.*

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Server-Side **Events**

What Server-side events are available, and how are they triggered?

Location entry / exit	When the vehicle enters or departs a location
Location entry and exit	When the vehicle enters and leaves a location without stopping
Location started / stopped	When a trip started or stopped within a location
Duration at location	Returns the time spent within a location
Distance in location	Returns the distance moved within the location (point to point)
Event at location	When another event was triggered within the location
Over-speeding in location	When the vehicle moved faster than a set value, in a location
Movement alert	When position changes from a location during set timeslots

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The following Server-side events
are available on On-Road IoT

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Location **entry** / Location **exit**

Generated when a vehicle moves into or out of a set location

The user can set the hours of the day and days of the week when this event should be generated.

Record event
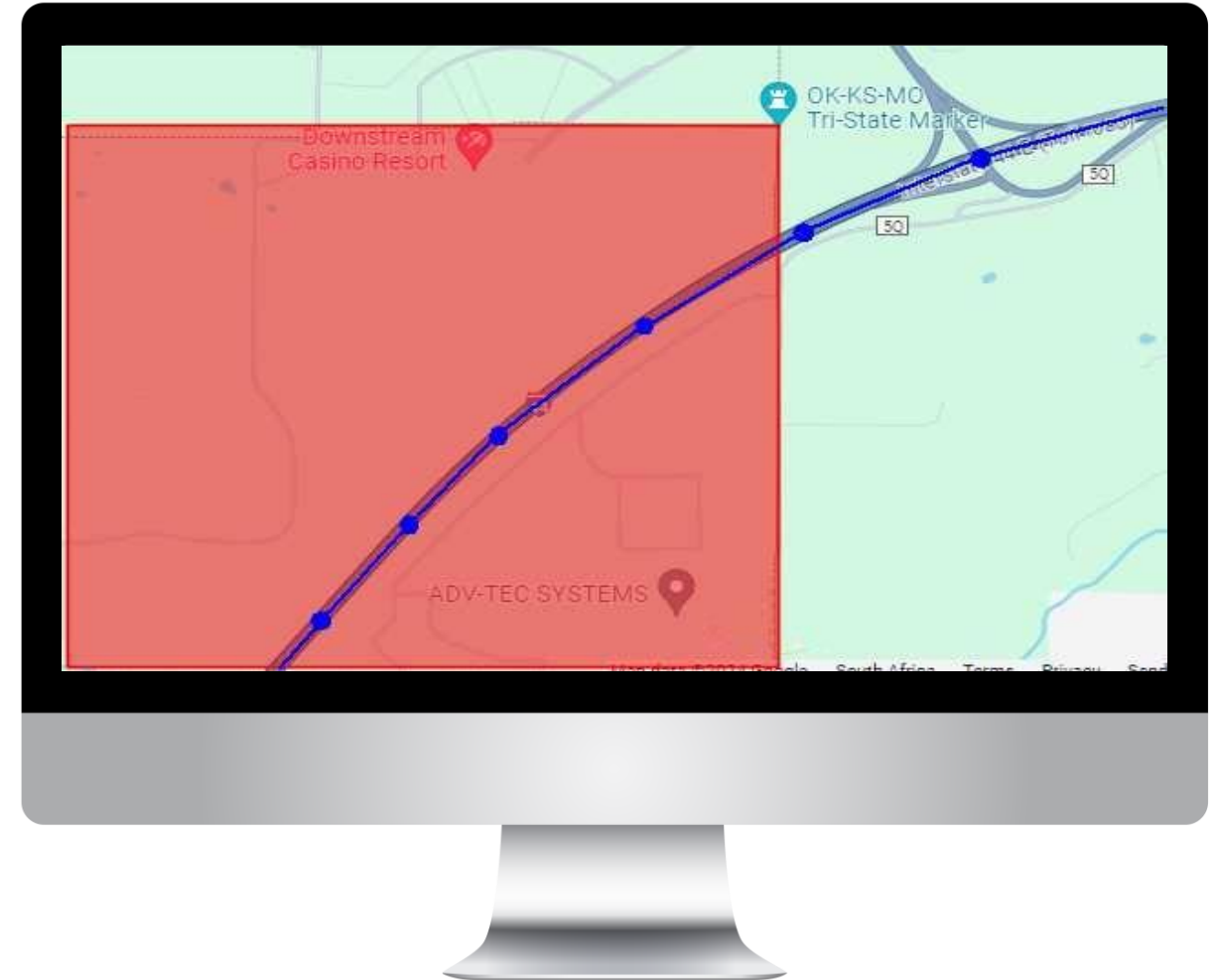
◯ Anytime

◉ Between selected times

| 18:00 | 🕐 | to | 06:00 | 🕐 | on |

☑ Mon   ☑ Tue   ☑ Wed   ☑ Thu   ☑ Fri   ☐ Sat   ☐ Sun

The event response includes the name of the location.

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Location **entry** and **exit**

Generated when a vehicle moves into a location and out again without stopping

When a vehicle is on the move and reports one or more positions inside a selected location.

The event response includes the name of the location, date and time and details about the asset.

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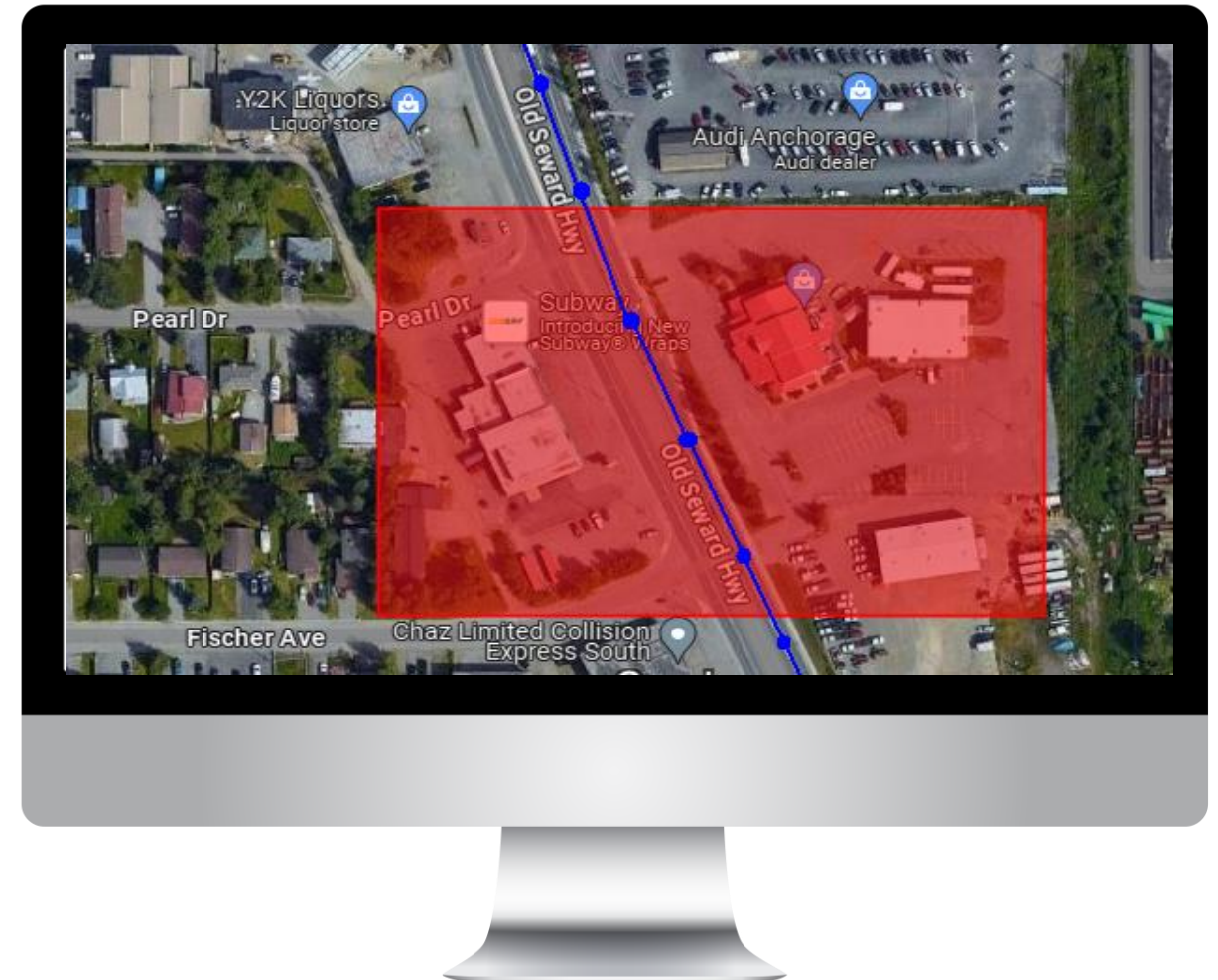People Powered AIoT

Location **stared / stopped**

Generated when a vehicle starts or ends a trip inside or outside a location

When a vehicle starts or ends trips within or outside an area at certain times.

Record event when the asset or driver selected has stopped

○ in the selected locations

◉ not in the selected locations

If the vehicle passes through without stopping or starting no event will be generated.
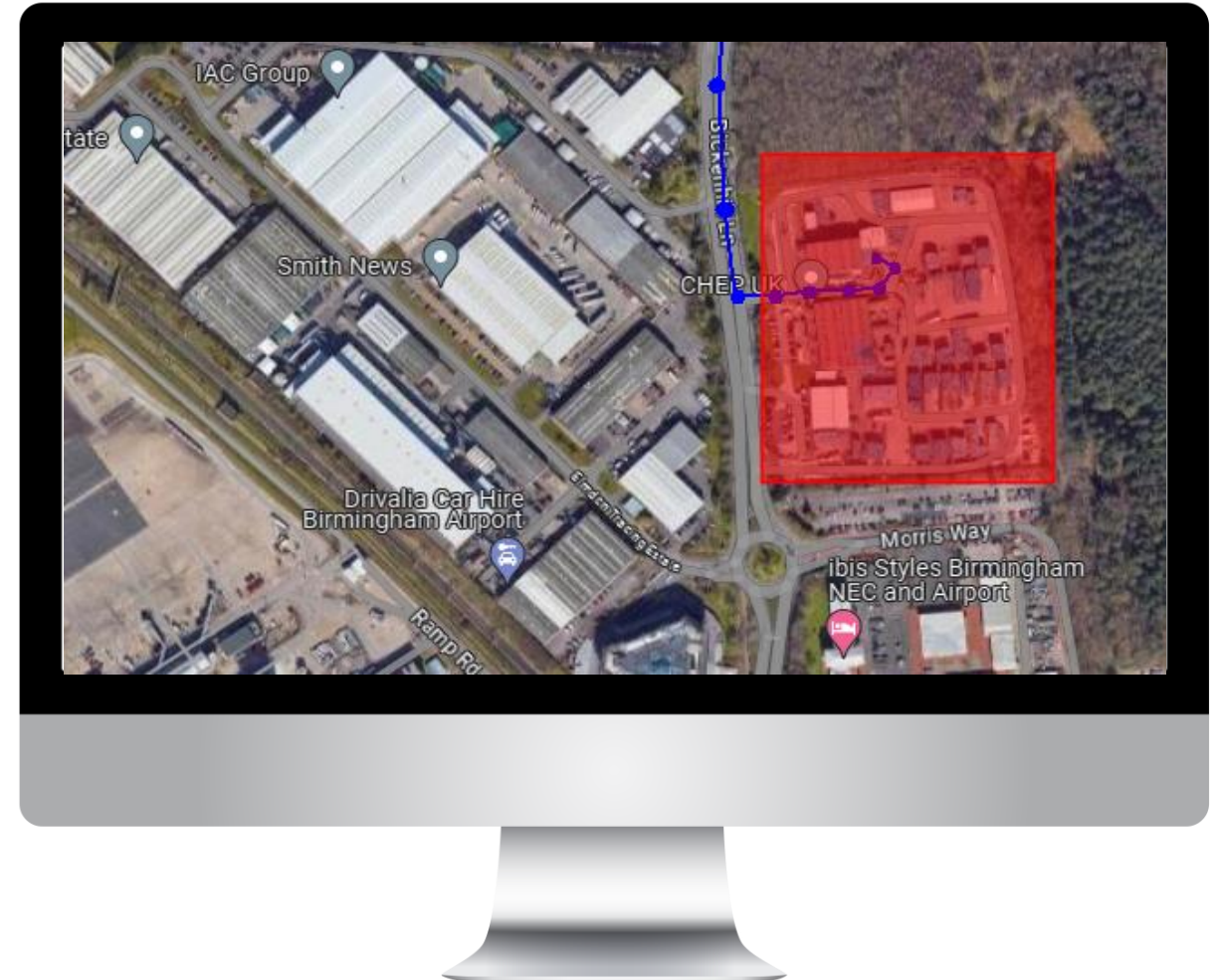
Duration at location

Generated when a vehicle starts or ends a trip inside or outside a location

When a vehicle reports its position within a location after the time limit has been reached.

The time limit is user configurable, and the timer starts from when the first position inside the location is received.

For longer than

| 10 | minutes |

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Duration in location

Reports the distance driven within a location when the vehicle exits the location

When a vehicle leaves a location, the distance travelled within the location, is reported.

The event can be day and time bound.

Record event

○ Anytime

⦿ Between selected times

| 08:00 | 🕐 | to | 17:00 | 🕐 | on |

☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☐ Sat ☐ Sun

Note that the distance is calculated as straight-line movements from one position to the next. Accuracy is therefore dependent on the positional update frequency.

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Event in location

Generated a server event when another events occurs within a location

When a selected event happens, generate "Event at location". The Server-side event has location and time parameters which the standard event does not have.
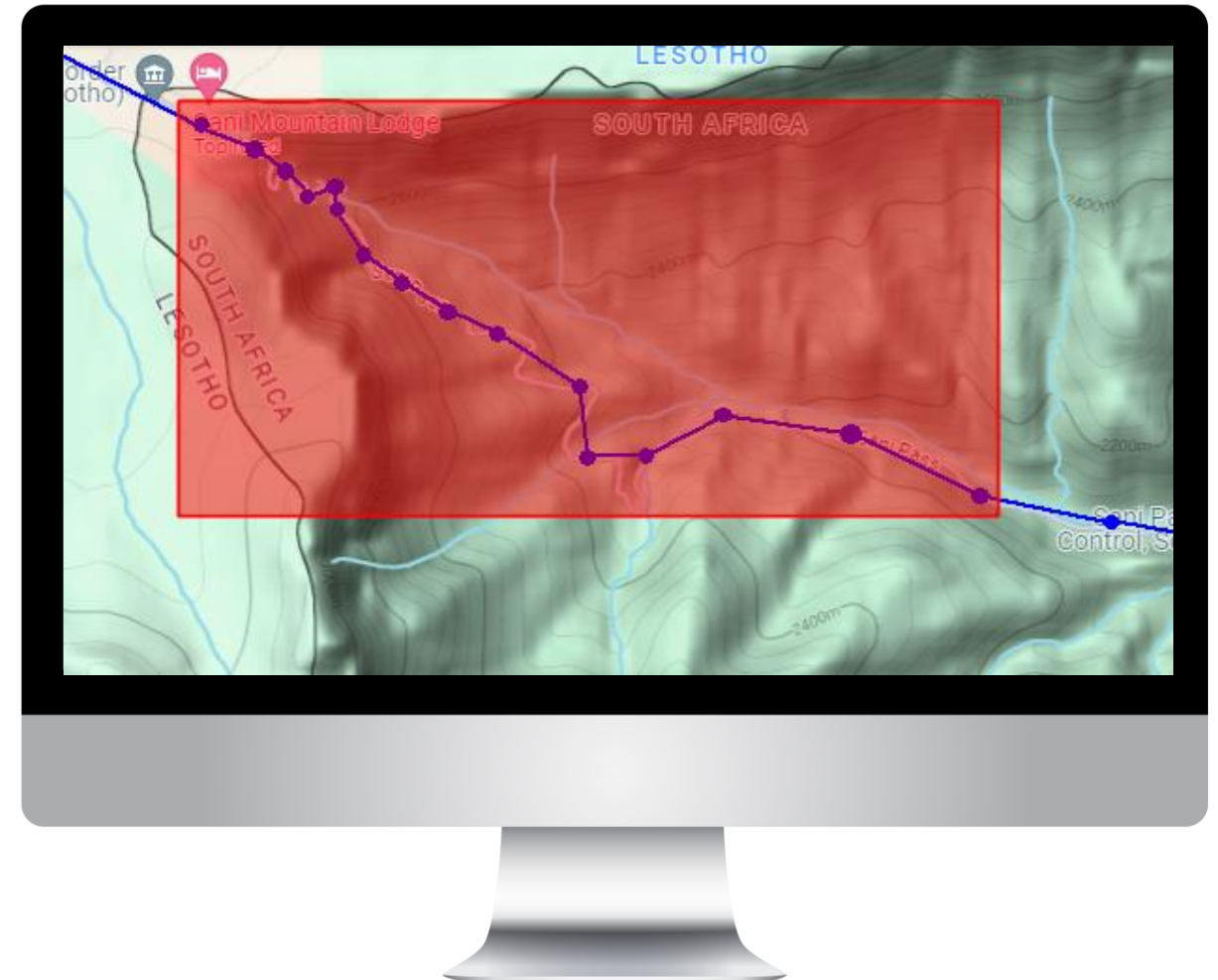
Select event

Driver seatbelt not engaged	▼

Record event when the asset or driver selected event occur

🔘 in the selected locations

⚪ not in the selected locations

The generated event mentions the primary event.

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Over-speeding in location

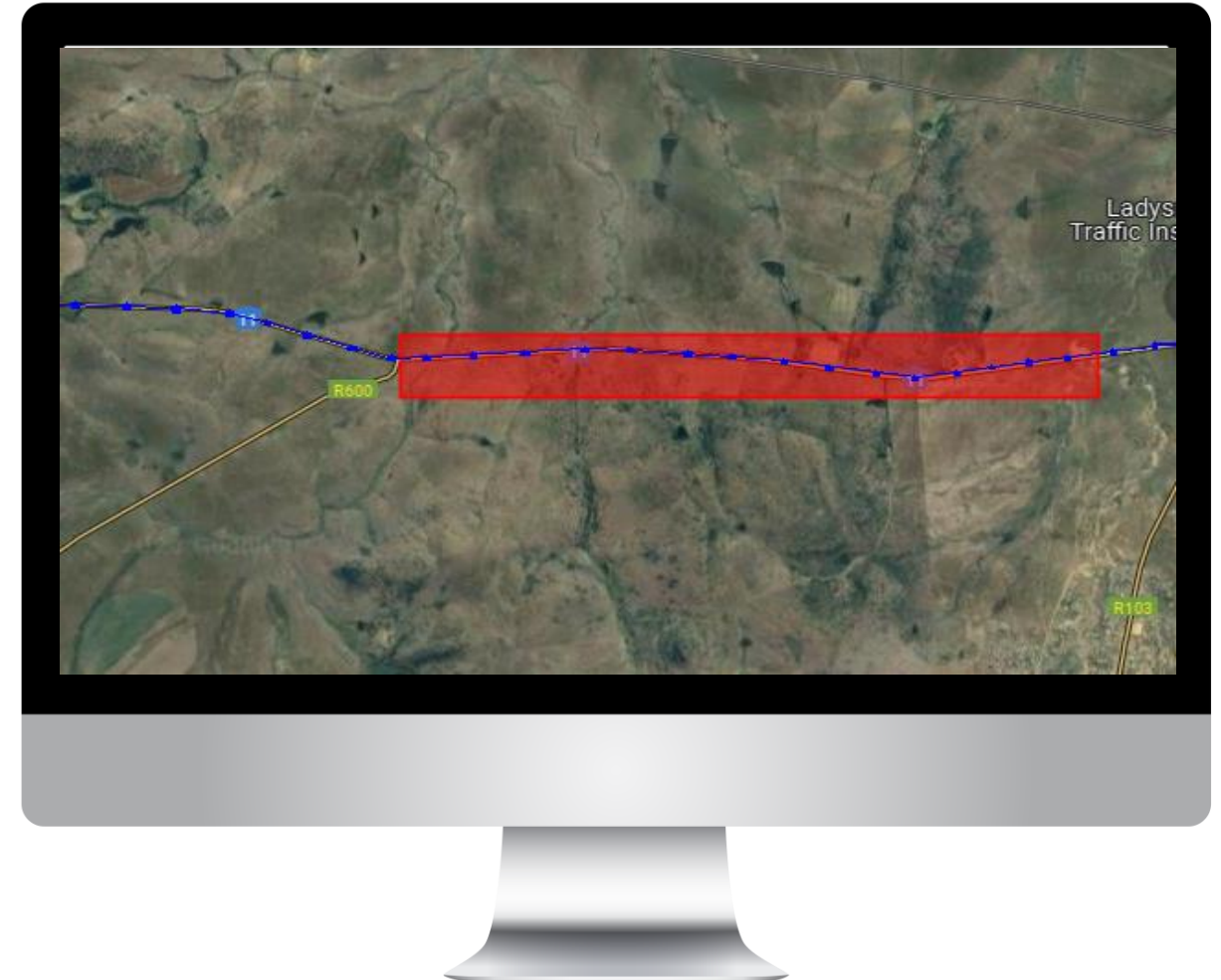Generated when a vehicle exceeds a set speed within a location

When a vehicle travels above the threshold speed for more than the allowed time within a location.

Record event when the asset or driver selected is moving faster than

| 60 | km/h for a duration of |
| 5 | seconds in the selected locations |

The speed and time limits are user configurable.

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Movement alert

Generated when a vehicle moves during certain times

When a vehicle moves during certain times.
The times are configurable.

Record event when the asset or the driver selected has moved
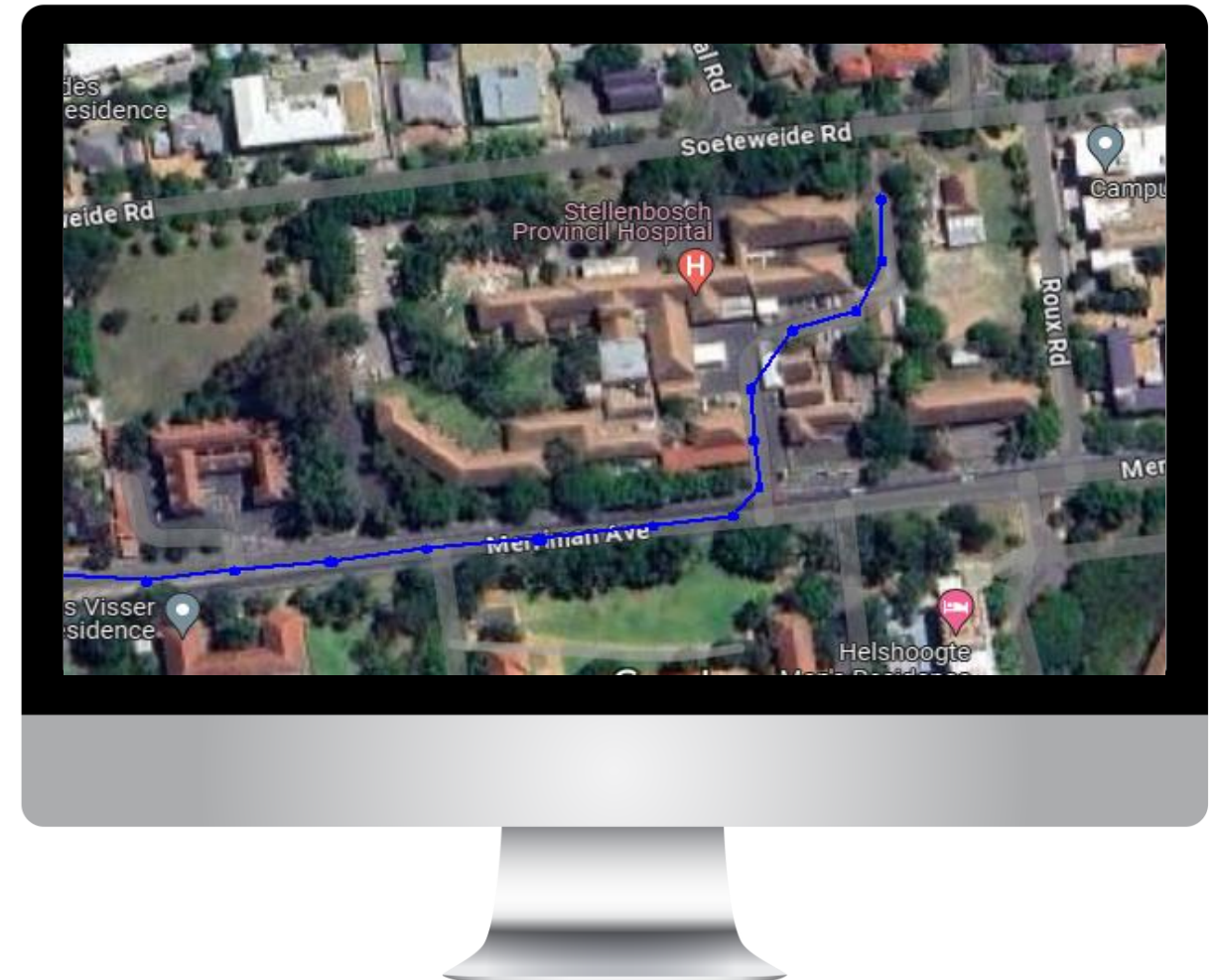
○ Anytime

◉ Between selected times

| 20:00 | 🕐 | to | 06:00 | 🕐 | on |

☑ Mon　☑ Tue　☑ Wed　☑ Thu　☑ Fri　☐ Sat　☐ Sun

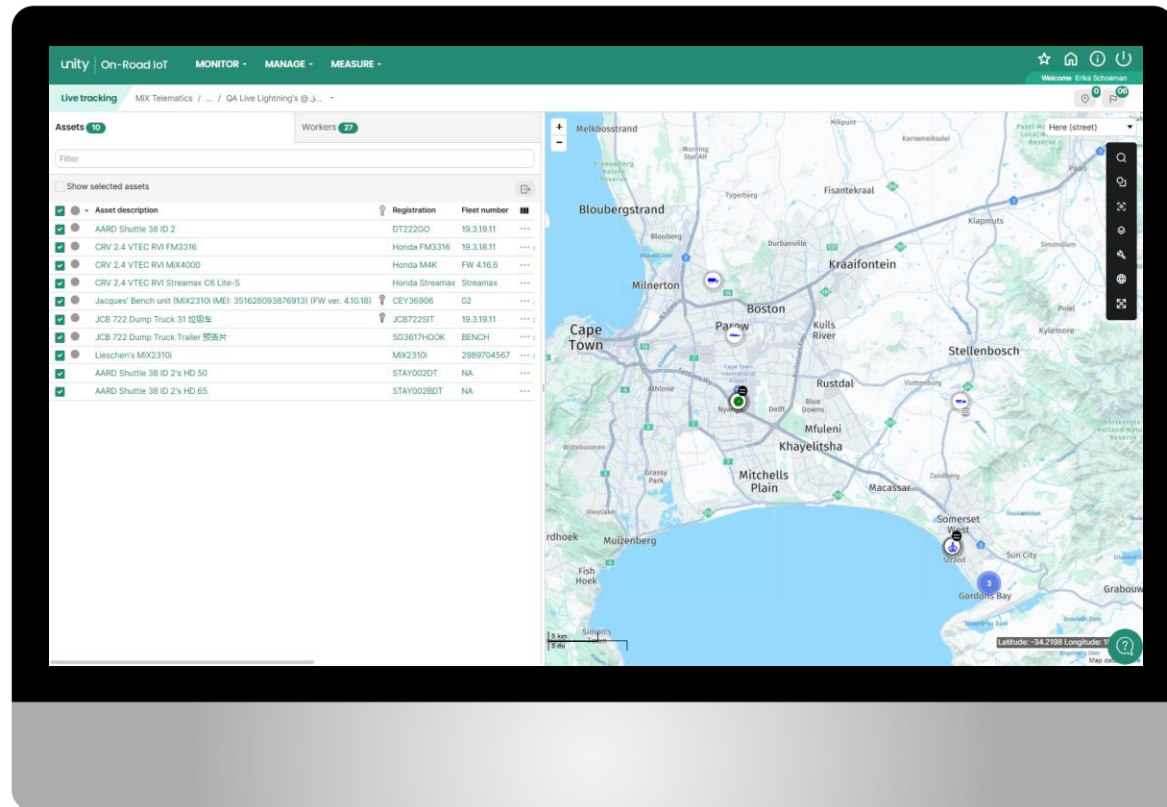Note that this Server-side event does not require a geographical location.

Server-Side **Events**

Where can the events be found?

Server generated events are visible to the On-Road IoT user in the same way as any other events would be. The detail of Server-side events can be seen here:

- Live tracking

- Historical tracking

- Info hub

- Trip timeline

- Notifications

- Driver scoring

- Driver coaching

- Reports

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Server-Side **Events**

What are the limitations on Server-side events?

A driver can not be alerted immediately if an event occurs.

Distance is calculated in a straight line between any two location points. If the frequency of the position data is too low, calculated distances could be shorter than actual distances.

The organisation can set the minimum acceptable precision for location data. Low quality positions will be filtered out and not be used for events.

The vehicle needs to be In-Trip. ***

*** Trip starts from the first recorded position when a vehicle has moved for 300m at a minimum speed of 5km/h. Trip ends at the last recorded position when speed is less than 5km/h for 5 minutes. Some tracking devices do not report trips.

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