

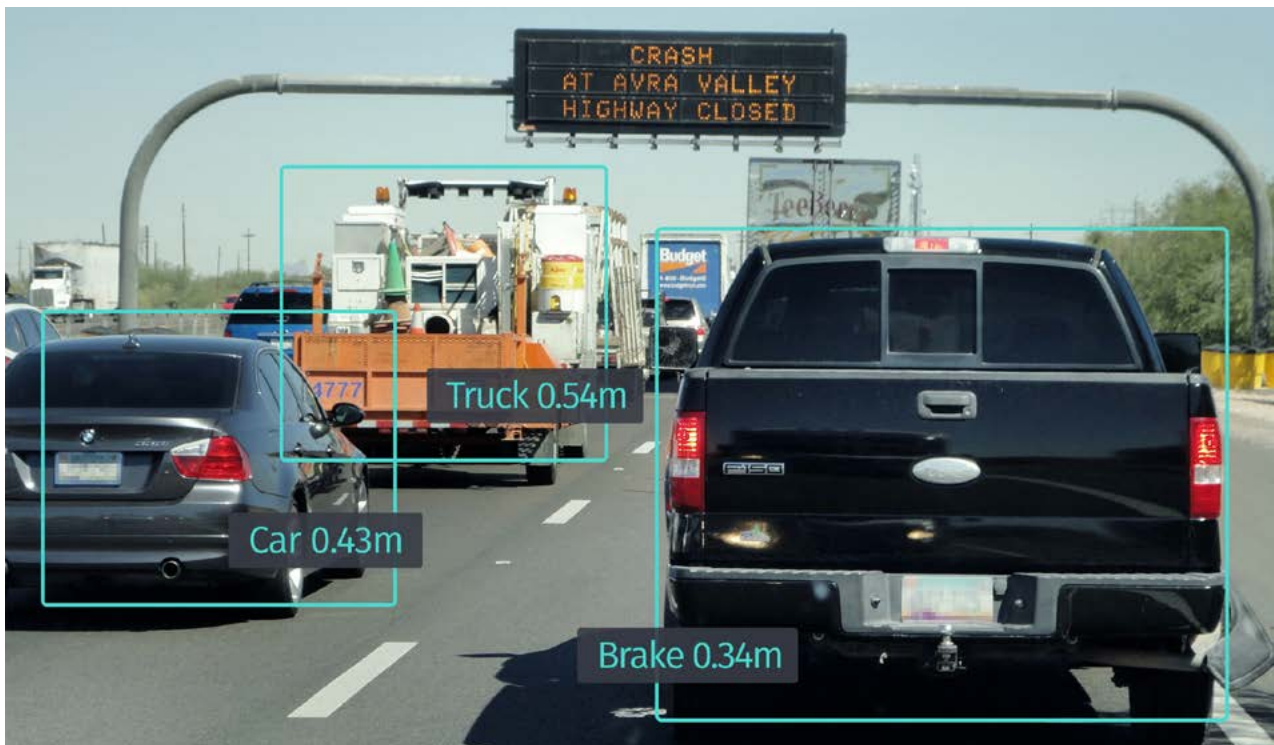
# HERE Live Sense SDK

AI-based real-time driver awareness



**HERE Live Sense SDK is a software development kit (SDK) made up of a collection of AI-based perception models that uses a forward-facing camera to detect potential hazards in the driver's environment and alerts the driver for greater real-time awareness.**

Live Sense detects different types of objects including cars, trucks, pedestrians, bicycles, potholes, road signs, traffic lights, construction zones and behaviors such as vehicles braking. Through audio and visual alerts, drivers can be notified of potential hazards.

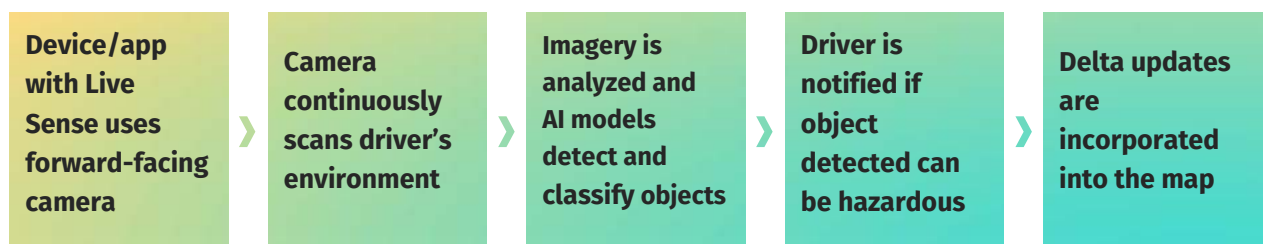


Live Sense SDK can be integrated into different types of devices with a forward-facing camera, including smartphones, dashcams, personal navigation devices (PNDs) and in-vehicle infotainment systems (IVI) and can be used in any type of vehicle regardless of technology enablers.

## Features

- Detection, classification and notification takes place on the edge device and does not require connectivity.
- Notifications of potential hazards can be delivered as visual and/or audio alerts to the driver. Developers can customize parameters for detections and alerts.
- Contains additional heuristics such as time to collision warnings and alerts for obstacles entering the vehicle's direct path.
- Supports regional models for detections, where available, for greater specificity.
- Optional set of libraries for rendering routing using augmented reality.
- Live Sense detections can be used by HERE Location Services such as Routing and Traffic to enhance the customer use case.

## How does it work?



Live Sense SDK supports four main use cases:

- **Real-time alerts:** Informs drivers with audio and/or visual alerts of potential hazards for greater awareness e.g. vehicles braking, pedestrians, bicycles, potholes.
- **Contextual route guidance:** Provides real-time contextual route guidance based on objects in the driver's view to provide reassurance e.g. turn left at the 'Starbucks'.
- **Change detection and update:** Detects changes in road/driving conditions and informs the driver of the change e.g. road closed ahead. Updates the map with the delta when device is connected, and change verified.
- **Post-trip analysis:** Contextualize driver behavior against the road environment leveraging Live Sense SDK detections to aid in driver behavior monitoring, coaching and feedback.

## Differentiators

**Flexible:** Offered as an SDK, which provides flexibility to integrate into smartphones, dashcams PNDs and IVI systems.

**Suitable for any type of vehicle:** Does not require advanced technology or connectivity. Suitable for all vehicles, including cars, trucks, buses, 2 or 3-wheelers, whether owned or rented.

**No latency:** With processing on the device, there is no latency in object detections. Supports use cases that require real-time detections in any type of environment.

**Contextual route guidance:** Uses real-time object detections in the driver's view to deliver turn-by-turn routing instructions for improved context.

**Wide range of detections:** Detects a wide range of objects such as road signs, potholes and road works with customization of detection parameters.

**Localization:** Global coverage with regional models for greater specificity of detections, since both signage and driving environments differ based on regional differences.

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### About HERE Technologies

HERE, a location data and technology platform, moves people, businesses and cities forward by harnessing the power of location. By leveraging our open platform, we empower our customers to achieve better outcomes - from helping a city manage its infrastructure or a business optimize its assets to guiding drivers to their destination safely. To learn more about HERE, please visit [here.com](https://here.com) and [360.here.com](https://360.here.com).