



here

Location technology for commercial vehicles

Ronak Amin

November 2022

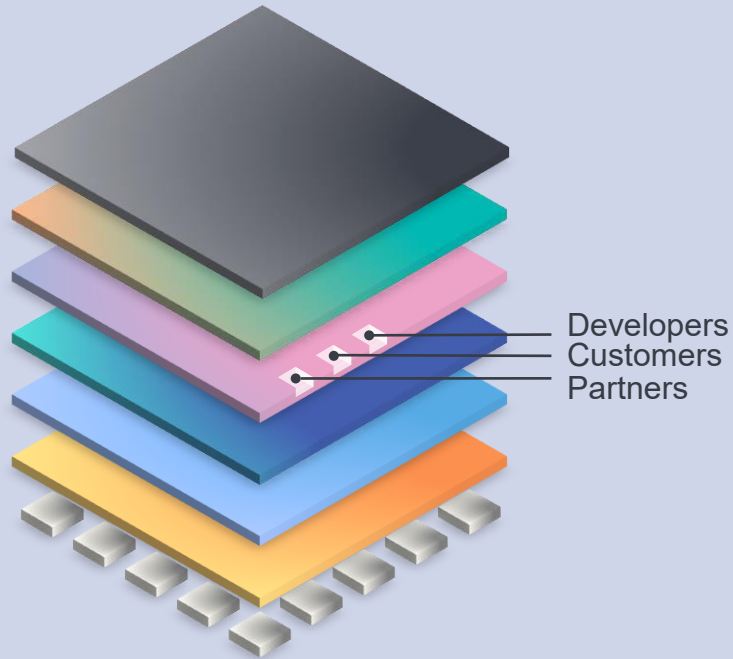


**HERE is the
world's leading
location data
and technology
platform**

here

A platform approach allows automation and abstraction of low-level functions so customers can innovate faster and at scale

Professional services
Vertical offerings/customer/partner/HERE Apps
Environments
(Development, monetization, analytics, visualization)
Platform tools
Location services
Maps and location content
Foundational services



HERE Platform is a neutral and secure solution where you can create, enrich and license location-centric data and services

HERE Technologies by the numbers...

170m+



Vehicles with
HERE Data and
software on board

34m+



Vehicles connected
to our platform

50+



OEM brands
using HERE Data
and Solutions

2m+



Direct and Indirect
developers accessing
our Platform

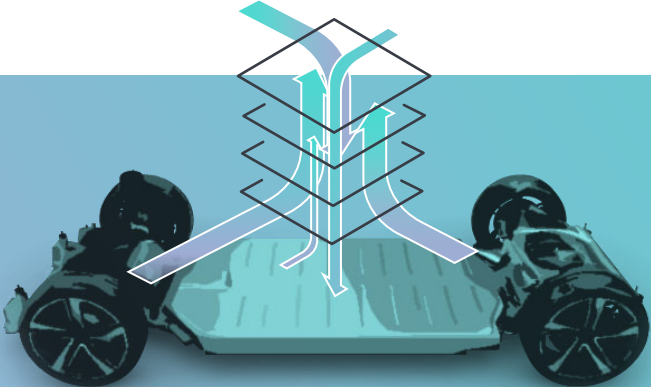
100b+



Monthly
API calls



HERE's Automotive portfolio overview



HERE Navigation

Navigation Software-as-a-Service (SaaS)

- Focus on service differentiation and integration
- Scalable white-label SaaS built on HERE SDK

HERE SDK

Build-it-yourself navigation

- Focus on brand customization or get closer to your customer by expanding brand experience
- Embedded and mobile solution

Connected services

Applications and services

- Full set of location services: Search, Routing, Traffic, Parking...

HERE Map

Map content

- Maps for navigation, ADAS and AD



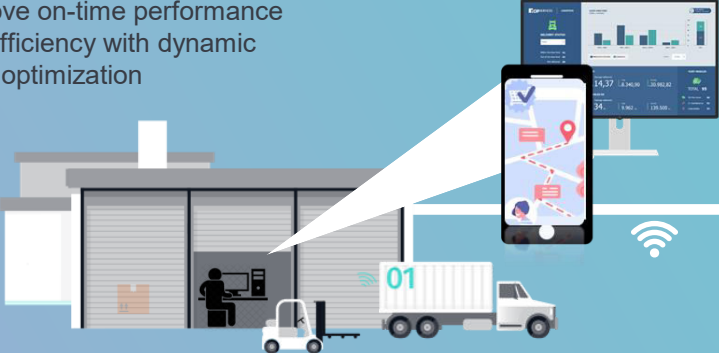
Location use-cases in commercial vehicles

Location use-cases in commercial vehicles

Location is key to addressing major challenges

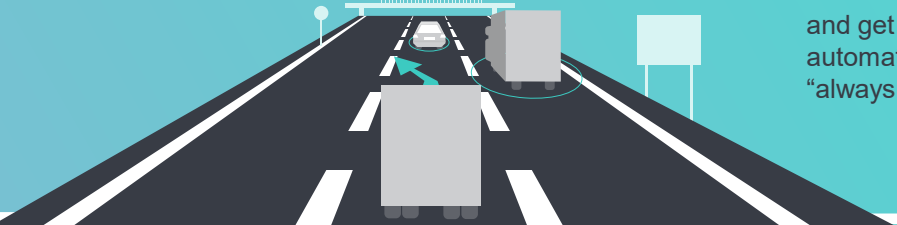
Plan for an efficient journey

Improve on-time performance and efficiency with dynamic route optimization



Make journeys safer

and get ahead of the curve on ADAS and automated driving with high-definition, "always fresh" reliable maps



Unlock data service revenues

and derive insights with predictive data analytics for future business improvement



Empower tomorrow

and ease the transition to zero emissions with IVI systems that help increase range, find and plan for charging



 Data collection in real-time



Three key solution areas

Commercial vehicles



Connected navigation

Deploy a SaaS navigation experience as an embedded solution or via tablet with HERE Navigation, or build it in-house with HERE SDK



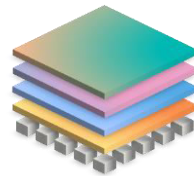
Connected vehicle services

Incorporate connected services such as real-time traffic, fuel prices, safety cameras and destination weather either to the navigation experience or into a mobile or web-based companion app



Fleet management

Improve driver operations, behavior, track assets in real-time and ensure timely deliveries with HERE's portfolio of software and APIs for fleet management



Enabled by a location platform

Connected navigation

Deploy a SaaS navigation experience as an embedded solution or via tablet with HERE Navigation, or build it in-house with HERE SDK

Challenges

Achieving safe and productive driving that considers all the external factors impacting commercial vehicles is a difficult undertaking

Key products

- HERE Navigation
- HERE SDK

Benefits to you

Deploy a turnkey SaaS application



Build-it-yourself with an SDK



Leverage an ecosystem of partners, apps and services



Truck routing

Uses vehicle parameters, restrictions and route preferences (online & offline)



Legal restrictions

Considers segments and maneuvers prohibited for trucks



Hazardous materials restrictions

Applies to the nature of goods that are being transported by the vehicle



Tunnel categories

Considers the tunnel category for potential hazardous materials



Time-dependent restrictions

Considers any of the above restrictions but time-bounds them



Difficult turns

Considers U-turns or other sharp angles maneuvers that may be difficult for trucks



Connected Vehicle Services

Incorporate connected services such as real-time traffic, fuel prices, safety cameras and destination weather either to the navigation experience or into a mobile or web-based companion app

Challenges

While core navigation is foundational to the driving experience, connected services can enhance the experience for a complete end-to-end journey, including detailed planning

Key products

- HERE SDK

Benefits to you

More digital touchpoints with drivers



Reach drivers through a direct channel



Increase brand or fleet value



Geocoding and search

Ability to search a large database of truck POIs



Real-time traffic

Live traffic data to help drivers navigate road congestion and find faster and safer routes



Destination weather

Forecasts and reports on current weather conditions at your destination, including severe weather alerts



Fuel prices

Dynamic data on fuel prices, available fuel types, and location



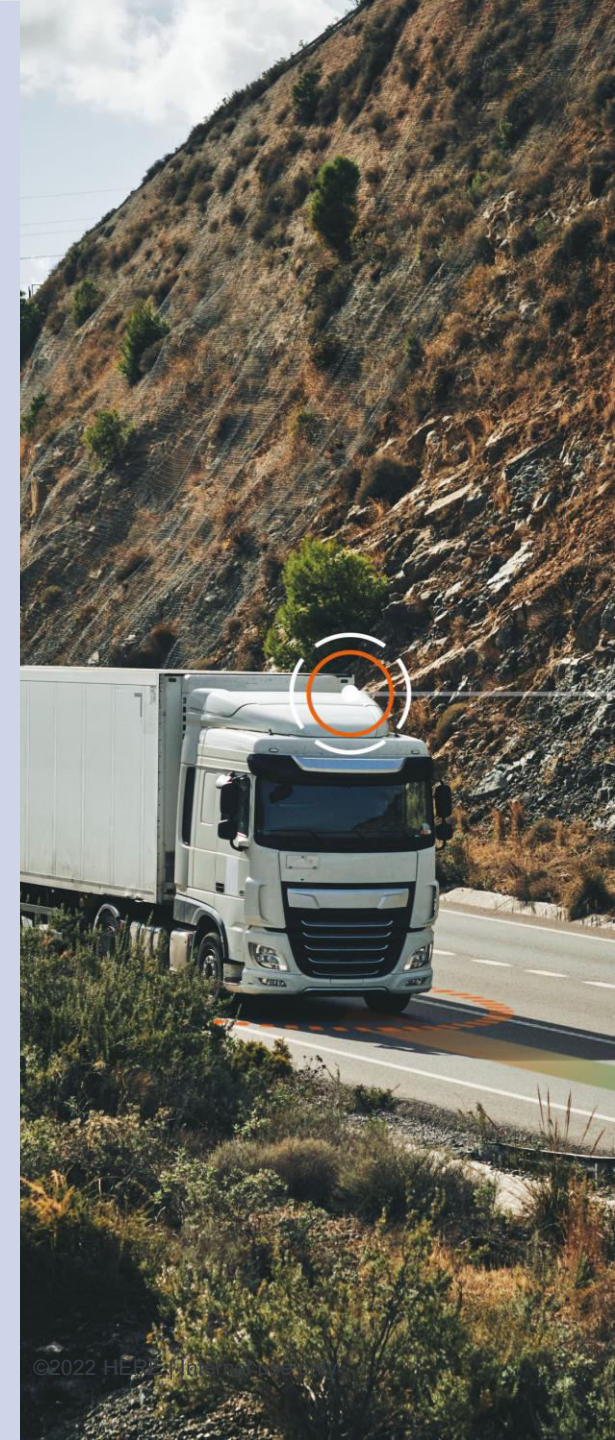
Safety cameras

Visibility into the location of speed cameras to support compliance and avoid penalties



EV routing for trucks

Routing designed specifically for electric trucks



Fleet management

Improve driver operations, behavior, track assets in real-time and ensure timely deliveries with HERE's portfolio of software and APIs for fleet management

Challenges

Fleets face day-to-day challenges when it comes to consistently delivering goods in a safe, efficient and compliant manner

Key products

- HERE Tour Planning, HERE Routing • HERE GNSS Positioning,
- HERE SDK, HERE LiveSense SDK • HERE Studio, HERE Workspace

Benefits to you

Optimize
fleet
operations



Connect
your fleet
with real-time
information



Analyze
behavior



Deliver on-time

Create safe and efficient route plans, add new jobs on the go and predict accurate ETAs



Improve driver experience

Build or enhance your truck navigation apps; keeping drivers safe, productive and in compliance



Real-time fleet tracking

Track vehicles in real-time and respond swiftly



Analyze driver behavior

Analyze driver behavior and take timely actions to improve safety



Deliver on-time

Create safe and efficient route plans, add new jobs on the go and predict accurate ETAs

Challenges

- There is a great need for reliable and safe truck route planning
- Lack of reliable truck-specific location intelligence causes unreliable planning, which hits profitability, customer satisfaction and market share

How HERE solves them

Specialized routing for commercial vehicles

Factor in specific rules & regulations – physical, legal, hazmat restrictions, speed profiles... applicable for different types of trucks

Long haul & last mile deliveries planning

Add unlimited pickup & drop points and generate optimal tour plans for 1,000s of jobs, each with their own constraints and time windows

Dynamic replanning

Add urgent new jobs without disrupting the overall operations or cost estimates, recalculate accurate ETAs

Compliance

Consider rules around driver hours of service, national & international specific regulations and data privacy

Customization options

Add or remove custom locations or custom routes, customize map style for better user experience

Key products

HERE Tour Planning API, HERE SDK, HERE LiveSense SDK

Improve driver experience

Build or enhance your truck navigation apps;
keeping drivers safe, productive and in compliance

Challenges

- Driver fatigues, distractions and speeding are some of the most common causes of truck accidents
- Lack of digital tool with real-time notifications on road restrictions, hazard or changing conditions can leave drivers oblivious to problems ahead



How HERE solves them

Safe navigation

Avoid roads that are too narrow or bridges that are too low, navigate drivers out of congested roads, and help them keep risky driving styles under check

Productivity

Get to destinations on time and get more jobs done in a day with digital job scheduling, two-ways communication and offline map

Easy compliance

Stay in compliance with legal driver's hours-of-service easily by taking rest breaks at the right place and time

Native app development

Develop native apps for iOS/Android with full-featured software development kit

Key products

HERE SDK, HERE LiveSense SDK

Track fleets in real-time

Track vehicles in real-time and respond swiftly

Challenges

- Vehicle tracking is a feature widely available in most FMS/TMS systems, however most systems rely on GPS which is prone to errors
- Businesses need not only precise locations of their mobile assets but also additional contextual information around the locations to make meaningful decisions for their businesses



How HERE solves them

Precise real-time vehicle tracking

Identify where vehicles are in real-time. Provide positioning capabilities that cover the shortfalls of GPS-only systems and when satellite-based positioning is not possible

Quicker customer service

Respond to inbound queries from customers asking for shipment status updates

Swift response to emergency situations

Respond swiftly to emergency services for stranded vehicles

Key products

HERE HD GNSS Positioning, HERE Geocoding & Search

Analyze driver behavior

Analyze driver behavior and take timely actions to improve safety

Challenges

- It's impossible to really understand the cause of accidents and assess driver performance accurately without rich contextual data such as weather, speed limits, traffic laws, and zone restrictions

How HERE solves them

Route matching

Figure out the actual route taken by the driver

Route contextualization

Understand deeply the circumstances of the route taken – where the driver violated speed limits, what is the local speed limits, what time of the day, rules and regulations, etc.

In-cab video feed enhancement

Contextualize in-cab video feeds with location intelligence to gain meaningful insights

Key products HERE Platform

Thank you

HERE Technologies

Ronak Amin

Global Product Marketing Manager

HERE Technologies

Disclaimer

This presentation is for informational purposes only and is copyright controlled by HERE. All rights are reserved. Use of any elements or all of this presentation requires the prior written consent of HERE. This material may contain confidential information, which may not be disclosed to others without the prior written consent of HERE.