

HERE introduces UniMap to revolutionize how maps are created, updated and used

- The company that pioneered in-vehicle navigation in the 1990s now offers step change in spatial intelligence capabilities
- UniMap produces up-to-date, comprehensive and unified map content at scale to serve automated driving, smart logistics and enterprise applications

CES 2023, Las Vegas – Digital maps just took a huge leap forward. At CES 2023, <u>HERE Technologies</u>, the world's leading location platform, unveiled UniMap, a revolutionary, highly automated mapping technology that enables rapid creation of digital maps and location products.

HERE has been developing the technology over the last three years in close collaboration with automotive groups including BMW Group. Primed for a rollout to selected customers in 2023 ahead of coming fully online for all HERE customers by 2024, UniMap is designed to deliver unmatched levels of map freshness, quality and coverage. At the heart of the HERE platform, the technology will produce the entire HERE map as well as enable customers to rapidly create their own private maps and customized location services.

Giovanni Lanfranchi, Senior Vice President and Chief Product & Technology Officer, HERE Technologies, said: "Ever since we started out mapping California in the mid-1980s, we've been seeking to shrink the time it takes to detect a real-world change, reflect it in the map and get it into the hands of our customers. The turnaround time in our industry has typically been measured in months. With UniMap, we provide anytime access to a unified map that's refreshed in hours, minutes or seconds. This is a big leap forward for anyone building applications that use location data."

Mapmaking at the speed of business

UniMap is under-the-hood technology built on a new computing architecture that:

Automates map data processing and map creation wherever possible and logical:
 For example, UniMap uses AI models to automate the processing of 500 million kilometers of vehicle probe and sensor data every hour, to extract map features such as 2D and 3D positioning of road signs, to validate speed limits and to build missing road geometry.



- Conflates multiple types of data: UniMap transforms data from a wide variety of sources into map content. Sources range from vehicle cameras and LiDAR to overhead imagery and IoT data.
- **Produces a unified map**: UniMap aligns all standard definition (SD), high definition (HD) and Advanced Driver-Assistance System (ADAS) data into one single semantically consistent digital representation of reality; in a first for the industry, HERE is offering seamless access to a unified catalogue of the data needed for navigation, automated driving and intelligent speed assistance (ISA). Different data types are aligned thanks to Map Object Model, an extendible unified map content data model.
- Enables changes detected in the physical reality to become visible in the map within 24 hours
- Stores all data in a single environment, readily accessible for customers 24/7
- Enables customers to combine and connect data sets: With UniMap, businesses can bring in their own location data and information from other sources such as crowdsourced content to create new products in just hours.

"With UniMap, the world is moving into a new era of mapmaking," said HERE Technologies CEO Edzard Overbeek. "We look forward to extending the benefits of UniMap to all our customers in automated transportation, smart logistics, urban mobility and beyond."

A track record of mapmaking leadership

- The roots of HERE Technologies extend back to the mid-1980s, when Karlin and Collins, Inc., a California company, began creating a digital map database of the Bay Area
- In 1994, HERE, by now operating as Navigation Technologies, shipped its first map product for in-car navigation a limited map of Germany covering major cities and interconnecting highways available as a CD Rom for the BMW Group
- In 1996, HERE launched the first in-car navigation system in the U.S.
- In 2004, HERE introduced support for vehicle ADAS
- In 2007, the Nokia N95 launched the first flagship smartphone featuring integrated GPS and hybrid (online and offline) maps, provided by HERE
- In 2013, HERE began development of HD maps, machine-readable maps designed for automated vehicles rather than people; in the same year, HERE delivered a research prototype for the 'Bertha Benz' drive from Mercedes-Benz
- In 2017, HERE accelerated efforts to democratize access to industry-grade mapping and location technology by launching a location platform
- In 2019, HERE launched the industry's first SaaS solution for navigation
- In 2021, HERE began supporting Level 3 automated driving in Mercedes-Benz's DRIVE PILOT system, leveraging HERE HD Live Map



• Since 2022, BMW has been using HERE HD Live Map to power Level 2 automated driving through its hands-free function Highway Assistant and to support the upcoming Level 3 function in BMW's new 7 Series

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About HERE Technologies

HERE has been a pioneer in mapping and location technology for almost 40 years. Today, HERE's location platform is recognized as the most complete in the industry, powering location-based products, services and custom maps for organizations and enterprises across the globe. From autonomous driving and seamless logistics to new mobility experiences, HERE allows its partners and customers to innovate while retaining control over their data and safeguarding privacy. Find out how HERE is moving the world forward at here.com.