



Från att äga data – till att öppna upp

Gjermund Jakobsen
Kartdagarna 2017

HERE in numbers

200
Countries mapped



7,000+

Employees in 56 countries focused on delivering the world's best map and location services

Millions of changes made to the map **every day**

Today, HERE provides services to nearly all global OEM brands as well as many market leading brands such as Microsoft, Amazon, Facebook etc.

30+

Years of experience transforming mapping technology

4 of 5

In-car navigation systems in Europe and N America use HERE maps



Our world in numbers

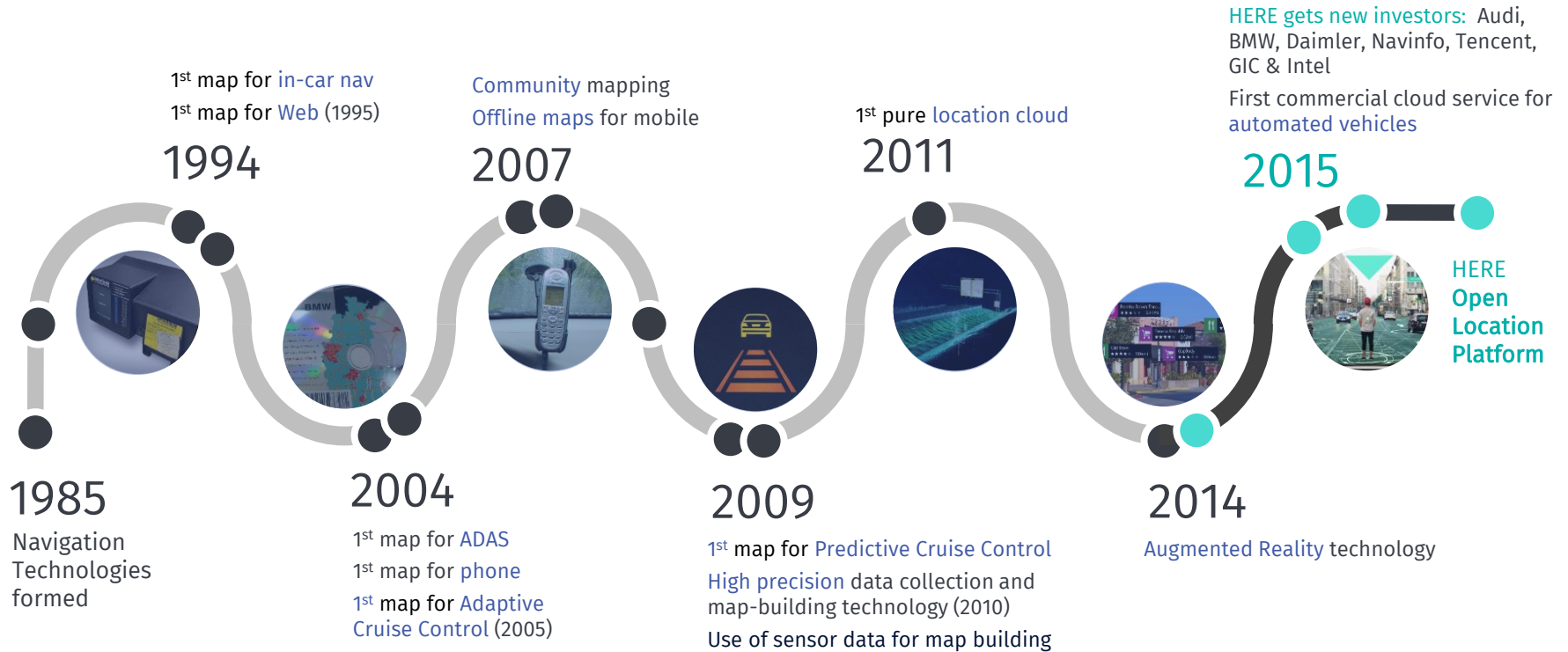
300% Increase CO2 emission from traffic congestion
2011-2021

Deaths every day in road accidents **3.5K**

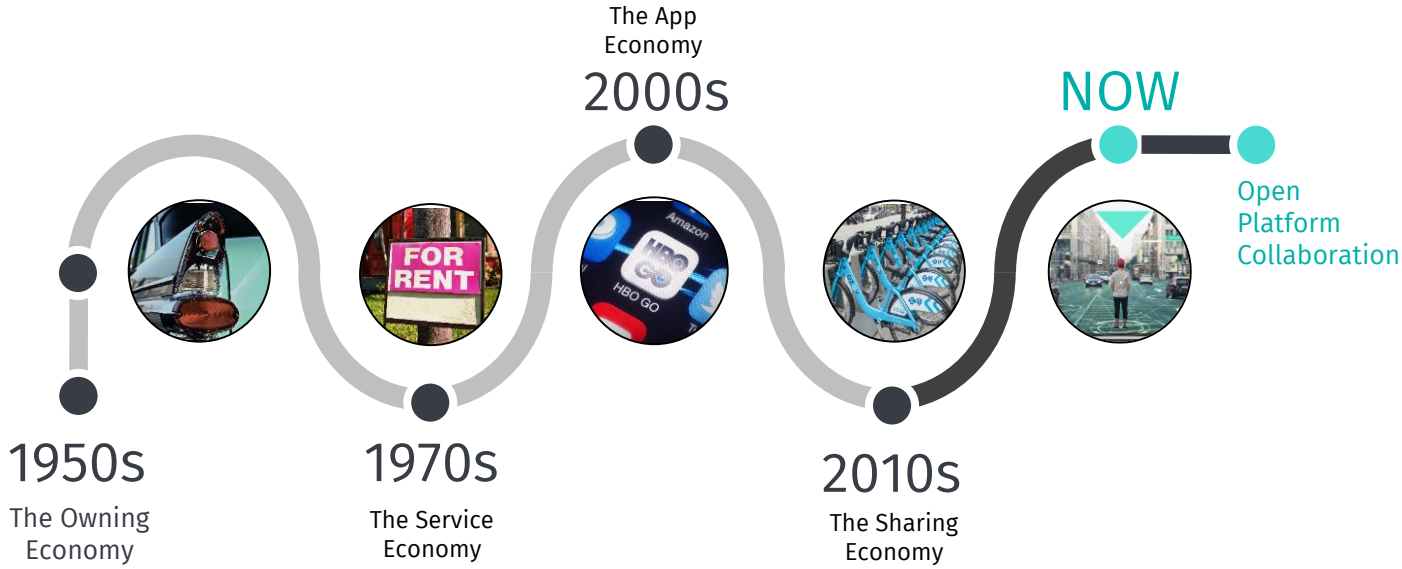
<0.5% of all data today is ever analyzed and used

50B # of smart connected devices in the world, all developed to collect, analyze and share data by 2020

A history of transforming potential into meaningful products



From Owning to Opening



A sharing economy creates the foundation for an open ecosystem that improves for all when being used by all

It also demands a high degree of responsibility toward data and privacy



Our current focus

Automotive



Expanded, modular, **developer toolkit** for automotive companies to create personalized and intelligent infotainment experiences



Automotive Services
Next-gen vehicle services bringing the power of the platform into In-Vehicle Infotainment (IVI) systems



Highly accurate and continuously updated lane-level mapping asset to support **Automated Driving** solutions

Internet of Things



Mobility
Assisting the movement of vehicles, things and people: fleet management, on-demand, urban mobility



Tracking
Positioning and tracking services, both indoor and outdoor, in the IoT space



Cities
Public sector smart transportation and infrastructure management for cities

Open Location Platform

Analytics, services, data exchange, data enrichment, multi-cloud, cloud-to-cloud, developer tools, privacy and security, customer-specified sandboxes

Reality Index

Map data Traffic lights Public transit Vehicle sensors + probes Weather Logistics fleets Smart devices + wearables City + gov't Points of Interest

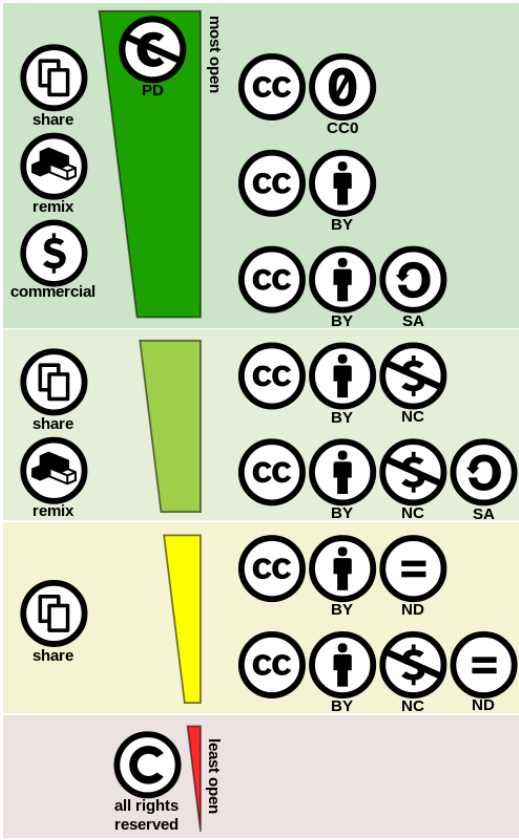
Why Open Data?

Transparency

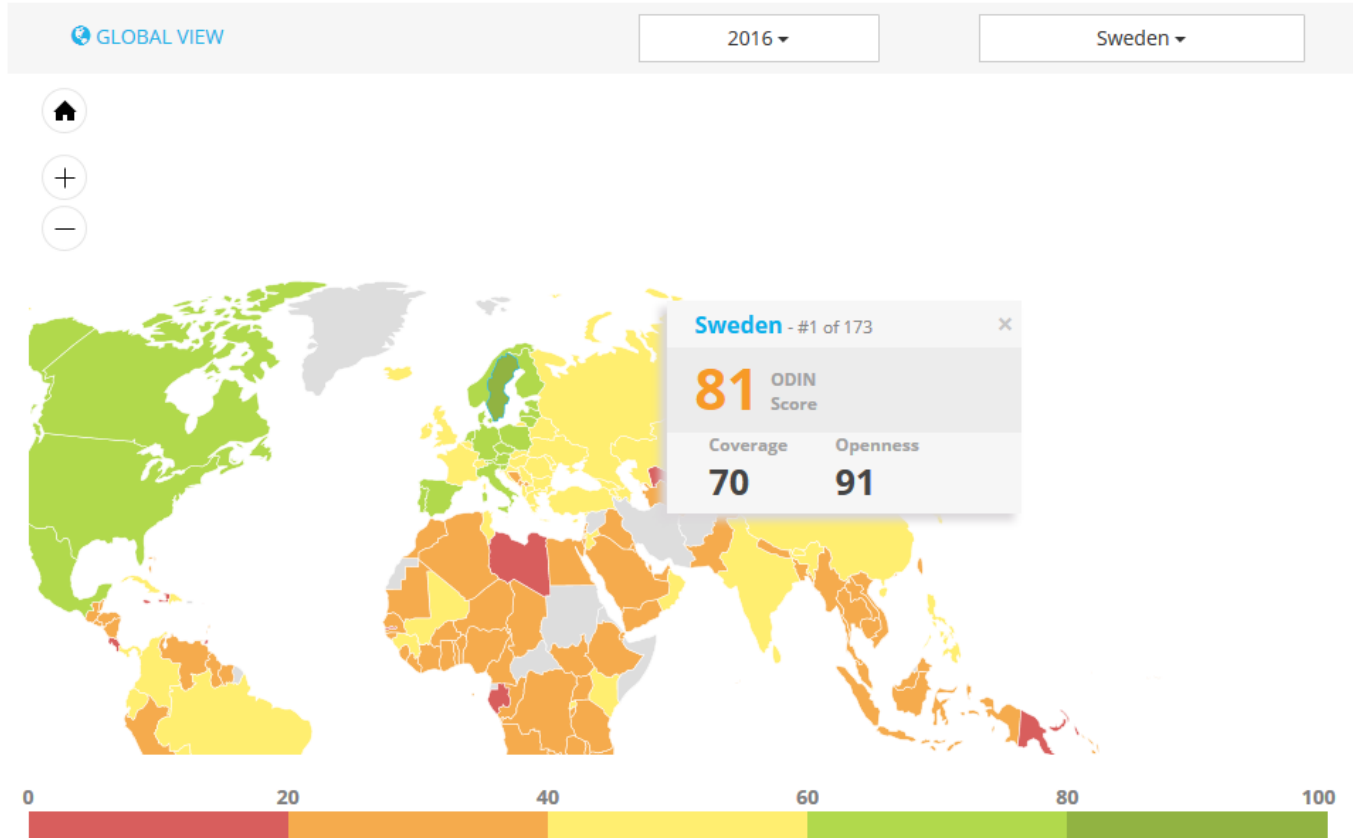
Releasing social and
commercial value

Participation and
engagement












Is it really open?



The Open Data Inventory (ODIN)

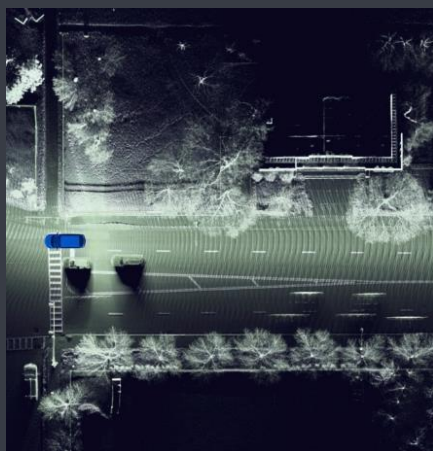


The Open Data Inventory (ODIN)

Country	Region	Overall 	Coverage	Openness
1  Sweden	Northern Europe	81	70	91
2  Czech Republic	Eastern Europe	79	74	84
3  Norway	Northern Europe	78	67	88
4  Poland	Eastern Europe	78	75	80
5  Lithuania	Northern Europe	77	81	73
6  Denmark	Northern Europe	76	62	89
7  Estonia	Northern Europe	76	73	79
8  Canada	North America	75	64	85
9  United States	North America	75	75	75
10  Finland	Northern Europe	72	67	77



Key levers for faster change detection and extraction



HERE True



Probe data



OEM sensor data



3rd party sources

Content can be processed at much faster speeds



50-350x speed for cartographic features



Building Task Specific Tools

Expanding our global production capabilities



+1200 production staff increase in India 2016; +1000 in 2017, 250+ engineers

Rapidly shifting to cloud-based, automated mapmaking technologies



Implementing near real time change delivery

TN-ITS, from road authority to end user

Daily incremental updates



Receive the updates
Decode the data
Match the data towards HERE database



Delivery



Monday

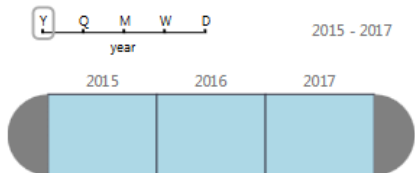
Tuesday

The **continues flow of data** from road authorities – to map provider and to the people using the data – in a standardized format and way of delivering that data – enabling a **near real time experience**

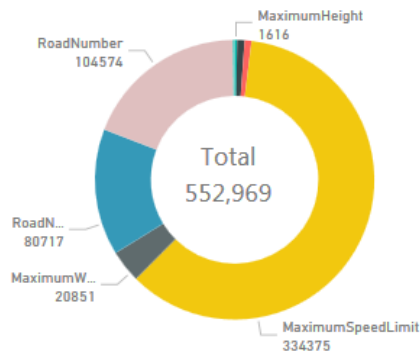
COUNTRY

- FIN
- NOR
- SWE

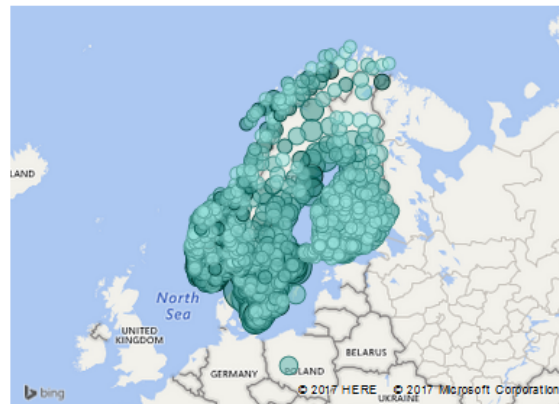
DATE



TOTAL UPDATE COUNT



UPDATE BY ADMIN

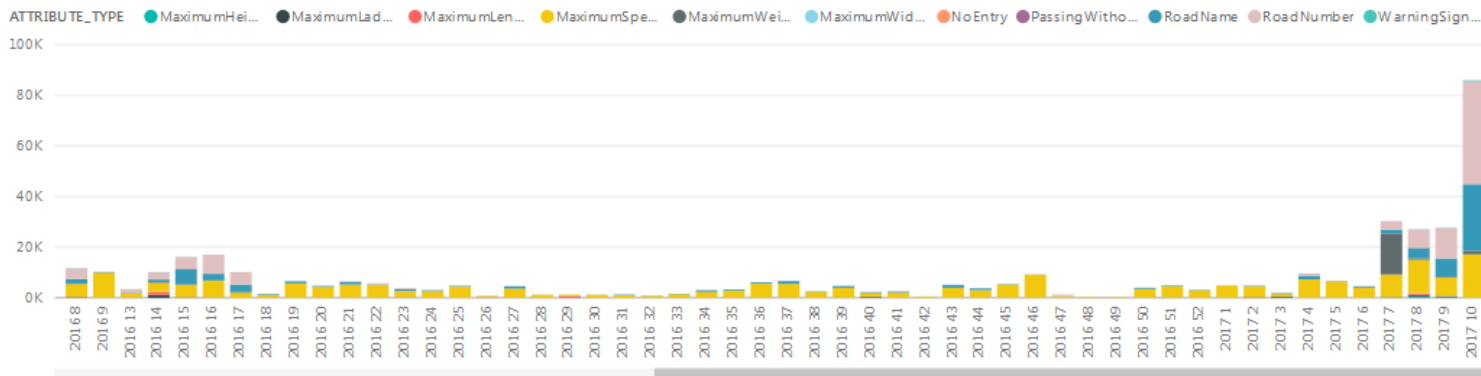


Size of the point indicates update count. Color saturation indicates frequency of updates.

ATTRIBUTE

- (Blank)
- MaximumHeight
- MaximumLadenWeight
- MaximumLength
- MaximumSpeedLimit
- MaximumWeightPerSin...
- MaximumWidth
- NoEntry
- PassingWithoutStoppin...
- RoadName
- RoadNumber
- WarningSignType

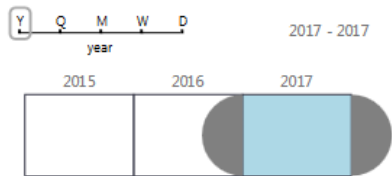
WEEKLY UPDATE COUNT



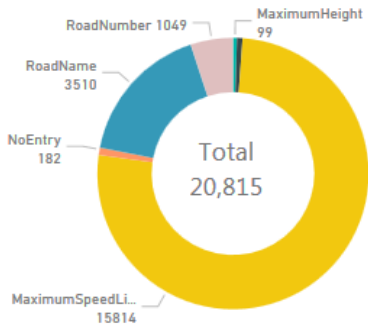
COUNTRY

- FIN
- NOR
- SWE

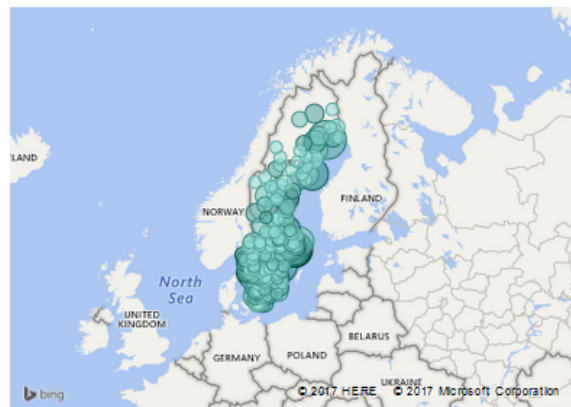
DATE



TOTAL UPDATE COUNT



UPDATE BY ADMIN

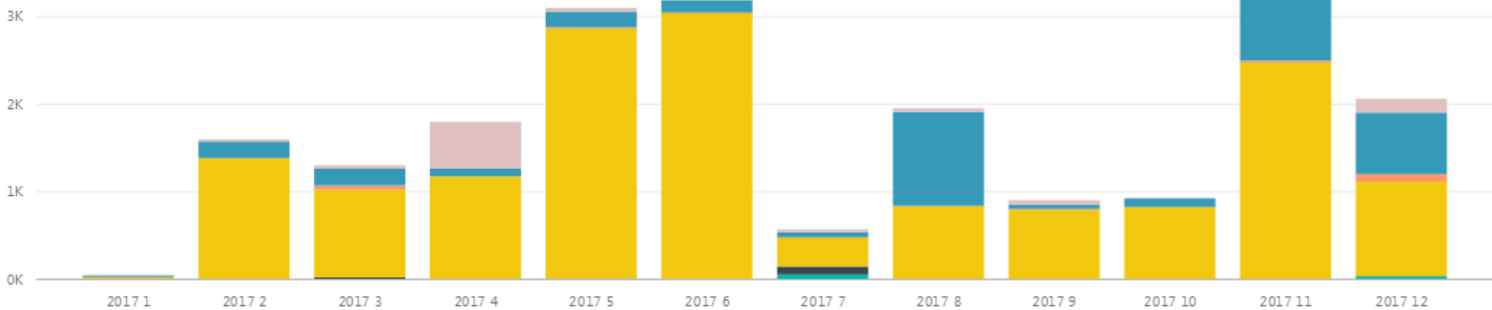


ATTRIBUTE

- (Blank)
- MaximumHeight
- MaximumLadenWeight
- MaximumSpeedLimit
- MaximumWeightPerSin...
- NoEntry
- RoadName
- RoadNumber

WEEKLY UPDATE COUNT

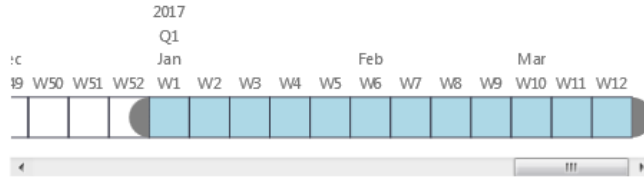
ATTRIBUTE_TYPE ● MaximumHeight ● MaximumLadenWeight ● MaximumSpeedLimit ● MaximumWeightPerSingleAxle ● NoEntry ● RoadName ● RoadNumber



COUNTRY

DATE

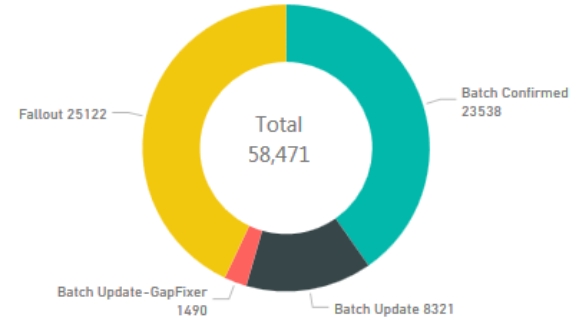
- ▶ FIN
- ▶ NOR
- ▶ SWE



TOTAL FLOW STATISTICS

LEGEND

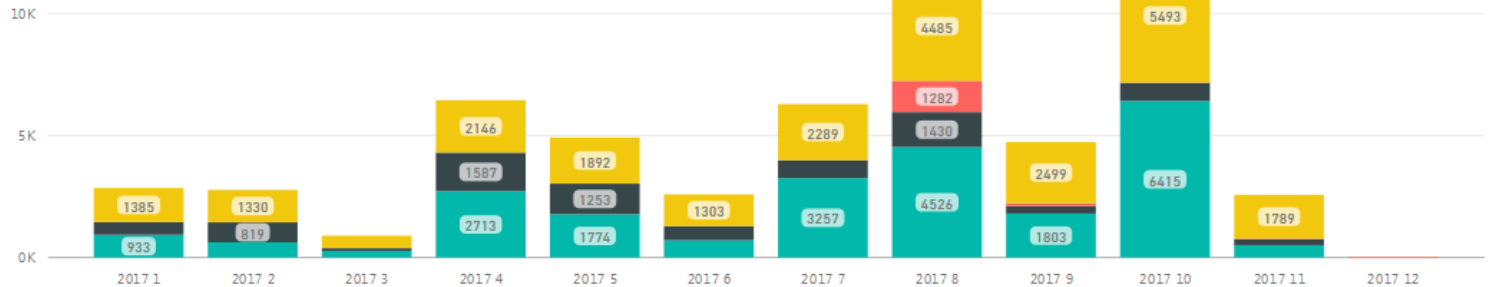
- Batch Confirmed
- Batch Update
- Batch Update-GapFixer
- Fallout



FLOW STATISTICS

ATTRIBUTE

- MaximumSpeedLimit
- RoadName
- RoadNumber



Sweden

- Major change on state roads from 90km/h to 80km/h
- All (except for a few exceptions) were implemented in HERE database via the TN-ITS process
- SAFETY & ENVIRONMENT



Ändrade hastighetsgränser 2016

🔗 Dela 🗉 Kontakta oss

Från november 2016 skyltar Trafikverket om vägsträckor i 17 län. Det är en anpassning av hastigheten till vägarnas säkerhetsstandard – och en del i de hastighetsöversyner som vi drivit sedan flera år.

Samtliga ändringar under hösten 2016 innebär en sänkning från 90 kilometer i timmen till 80.

Vi vill ha effektiva resor och transporter. Men samtidigt kan vi inte tumma på säkerheten. Generellt sett ska en väg vara mötesfri för att Trafikverket ska ha en högre hastighet än 80 km/tim.

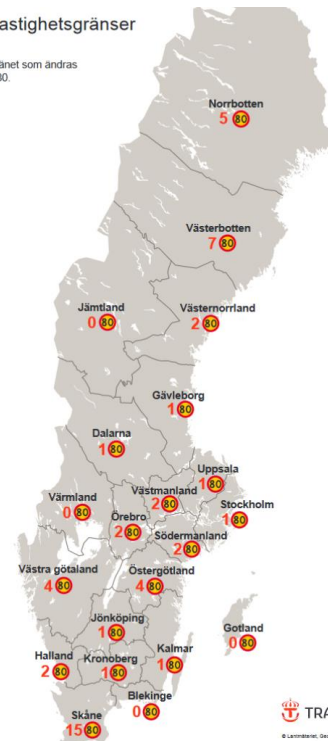
Restiden påverkas marginellt

Restiden påverkas marginellt av sänkningen från 90 till 80 – samtidigt som körningen blir säkrare. Kör du i 80 km/tim istället för 90 på en väg förlorar du högst 50 sekunder per mil.

Nedan ser du de sträckor i varje län som får nya hastighetsgränser hösten 2016. Det gäller samtliga län i Sverige förutom Blekinge, Gotland, Jämtland och Värmland.

Ändrade hastighetsgränser

Antal vägvagnsnitt i länet som ändras från 90 km/tim till 80.



TRAFIKVERKET
© Leif Johansson, Geografiska institutet



More countries are in process of creating the same TN-ITS service



Belgium (Flanders)



Ireland



France



UK



The Netherlands



Germany

A new generation of data services



HERE
On-Street
Parking

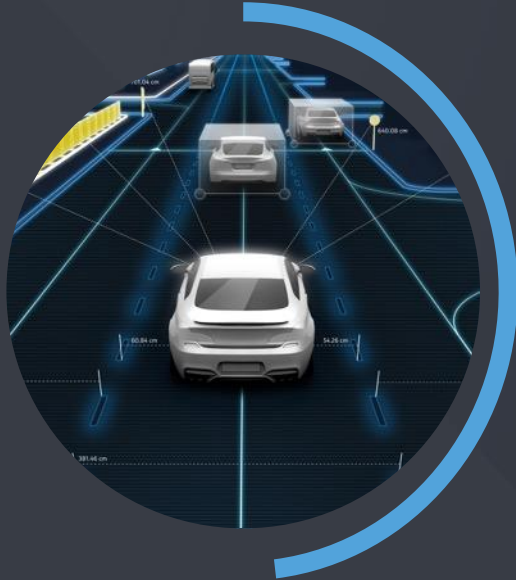
HERE
Real-Time
Traffic

HERE
Hazard
Warnings

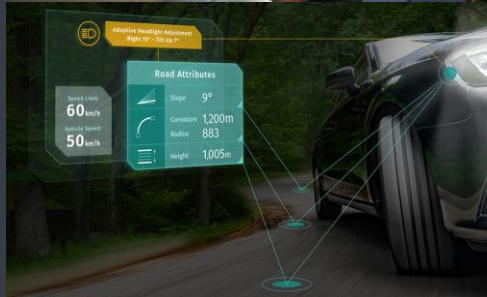
HERE
Road Signs



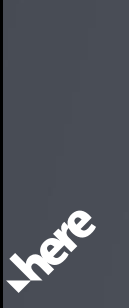
The Problems We Are Solving with HERE HD Live Map



- 1 Precise **positioning** for lateral & longitudinal control of vehicle on the road surface
- 2 Accurate planning of vehicle control maneuvers **beyond sensor visibility**
- 3 Making automated driving **comfortable** for humans



Pioneer



Download our HERE We Go app

Enjoy the detailed map of Norway and experience turn-by-turn guidance and ways of getting around, whether you take your car, ride a bike, walk or hop on public transport.

Our vision is to create maps that are richer and more dynamic than ever. Join our community of map creators and help us improve our maps through the embedded map editor.

here.com



here

here

Thank you

Contact

gjermund.jakobsen@here.com

360.here.com

here.com

This presentation is for informational purposes only and is protected by 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.