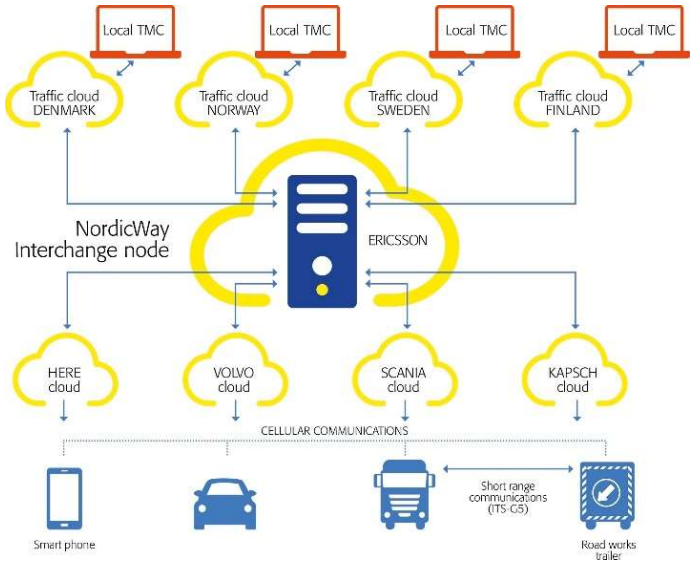
NordicWay
Cellular C-ITS Corridor
C-ITS Service highlights
Hazardous location warnings



Ilkka Kotilainen, Project Manager, Finnish Transport Agency
Mika Rytkönen, Director Solutions EMEA, HERE Technologies

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Nordic challenges and opportunities

EU:
25,500
fatalities
(2016)

FIN:
192 fatalities,
2,473 injuries

Accidents and extreme weather

Approx. 200,000 km of national roads in NordicWay countries (roughly 20 % of all roads)

Average car age in NordicWay countries 10 years

Excellent communications network

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User and TMC generated Safety Related Traffic Information Messages

Commission Delegated Regulation (EU) No 886/2013, Safety Related Traffic Information (SRTI) message	User receives SRTI messages (downlink)	User can send SRTI messages (uplink)
Temporary slippery road	X	–
Animal, people, obstacles, debris on the road	**X**	**X**
Unprotected accident area	**X**	**X**
Short-term road works	X	–
Reduced visibility	**X**	**X**
Wrong-way driver	–	–
Unmanaged blockage of a road	–	–
Exceptional weather conditions	X	–

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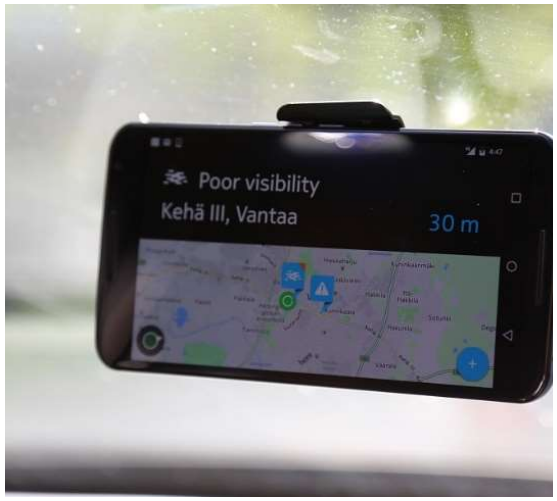
Looking for solutions – procurement, Proof of Concept and pilot

- **National tendering** — **2015 Spring**
- **Phase 1:** Service technical testing — **2015 Summer**
- **Phase 2**: Pilot technical preparation — **2015-2016 Winter**
- **Phase 3:** pilot in operation — **2016May–2017May**
- **Phase 4:** evaluation and reporting — **2017 Summer-Autumn**



Finnish Transport Agency

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NordicWay Pilot

Closing the loop between vehicles, infrastructure and people

Fundamentals

- C-ITS solutions underpinned by standard cellular networks and location platform
- Deployed quickly at low cost and at scale
- Connects road users with traffic management center
- Safety and efficiency gains

SRTI safety related traffic information

- Temporary slippery road, exceptional weather conditions
- Animal, people, obstacle, debris on road
- Unprotected accident area
- Reduced visibility

Users

1 000 users existing fleet

Cloud and cellular

Research

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Ilkka Kotilainen (FTA) and Mika Rytkönen(HERE Technologies)

Proven Success in the NordicWay

3G/LTE network is capable of transferring C-ITS messages

No one can do this alone

Beneficial PPP (public-private partnership) model

Smartphone based solutions are essential for connecting existing vehicles - within all regulation guidelines, in EUROPE the European Statement of Principle (ESoP)

Servers do not solve interoperability - It must be by designed

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The future of road safety

Holistic solution to reduce fatalities and injuries

- Connecting existing road users via Smartphone apps. Not only cars, also pedestrians and cyclists.
- Connected Vehicle Services (Hazard warnings)
- Standardized use cases: C-ROADS compatibility
- Secure service level IOP between EU member states
- Ecosystem thinking

Pre-requisite: Single digital market for Europe

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HERE is teaming up with Slovenia to create safer roads through apps

Ivan Ivanovic

Twitter Facebook LinkedIn Reddit

30 Oct 2017

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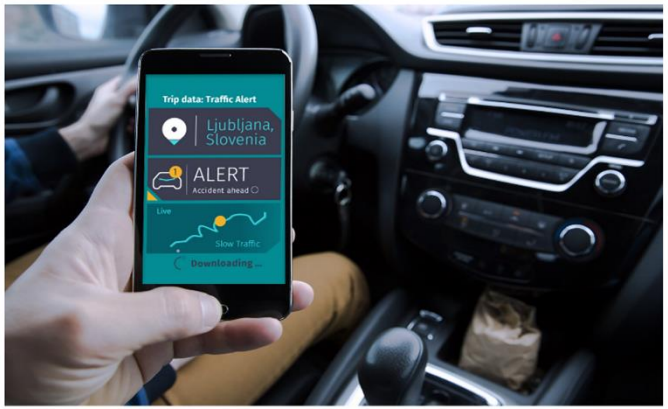
Slovenia's roadway operator DARS and HERE will usher in a new standard of safety for the highways and motorways of the region. New scalable capabilities and cloud services will provide drivers with critical alerts about hazards and conditions on the roads ahead of them.

Central to Austria, Hungary, Croatia and Italy; Slovenia has more than 800 kilometers of roads that are traveled daily by both local and international drivers. Slovenia's motorway company, DARS oversees the measures that provide drivers with traffic information, and improve road safety.

One of the key strategic advantages HERE brings to this exciting partnership is the ability to build new functionality into DARS' existing smartphone app, DARSTraffic+. Rather than changing apps and starting from scratch, tens of thousands of existing app users will receive the new services and features via a future update to the app they're already using.



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HERE teams up with Belgium to help improve road safety

Philip Barker
Kettering

Twitter Facebook LinkedIn Reddit

12 Dec 2016

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Following on from road safety partnerships around Europe, the Flemish Department of Mobility and Public Works has teamed up with HERE to deploy a co-operative intelligent transport system (C-ITS) in Belgium to help cut traffic and improve road safety.

The partnership uses HERE location platform technology to deliver targeted safety alert information to drivers on upcoming road obstacles, traffic jams, crashes and extreme weather conditions.

As with the C-ITS trial in Finland, the deployment will see HERE rolling out location services as part of a mobile app for smartphone users on a bigger scale, letting drivers share information and effectively warn other drivers of obstacles on the roads ahead.

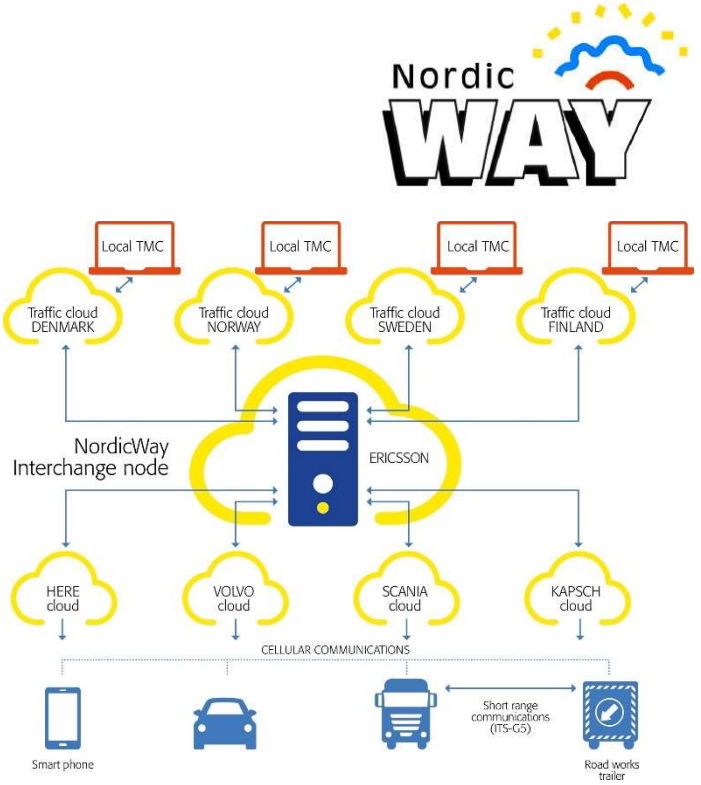
While the HERE solution will initially use smartphones to generate and distribute safety messages, the same architecture could also harness real-time information generated automatically by the on-board sensors of connected cars, sharing and accessing information without the need for smartphones.

Drivers will be warned about slow or stationary vehicles, hazardous locations, road works, severe weather and wide-moving traffic jams, with other information including speed advisories and messages with details of road conditions, unprotected accident areas and areas with reduced visibility.

Nordic WAY

Conclusions

- Hazardous location warnings and evaluation results “teaser” (more in Satu Innamaa, VTT, presentation)
  - **Acceptance**: positive feedback from the users and Traffic Management Centre
  - **Behaviour**: indicative results of safety benefits
  - **Technical:** cellular network capabilities are excellent – backbone for the C-ITS Day 1 SRTI services
  - **Socio-Economics**: benefits expected
- Human vs. Machine SRTI
  - roadmap in machine generated sensor information (vehicle, smart device) , but faster scalability possible with the existing devices/services/users
  - data fusion and analytics needed to increase information quality
- Public, Private and European collaboration



- Interoperability → hybrid communication with neutral server (Interchange Node)

→ more users → more data → HLW safety benefits and new business ecosystem

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