Nordic WAY 2

C-ROADS

Cellular cloud to cloud C-ITS pilot – results and next steps

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ITU – Towards 5G

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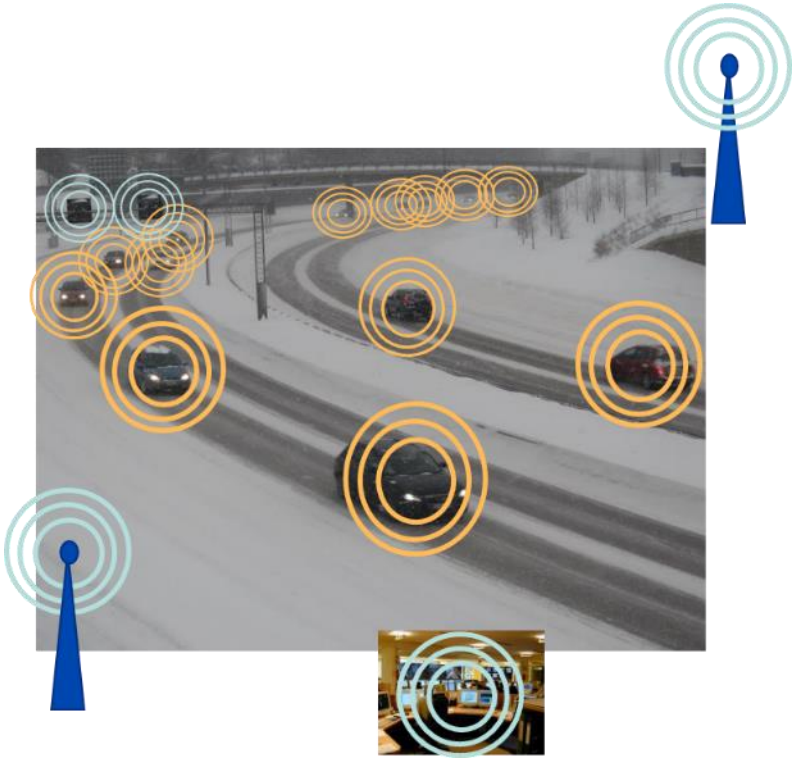
12/10/2018

Picture: Wikimedia Common, S. Solberg J.

Background – NordicWay (2015-2017) Objectives

- Pilot deployment of C-ITS (Cooperative ITS) utilising cellular networks as the basic communication infrastructure
  - technical performance of communication solution, especially latency
  - impacts, benefits, costs
  - user acceptance
- Prepare for large-scale deployment of cellular C-ITS
- Facilitate automated driving and MaaS services



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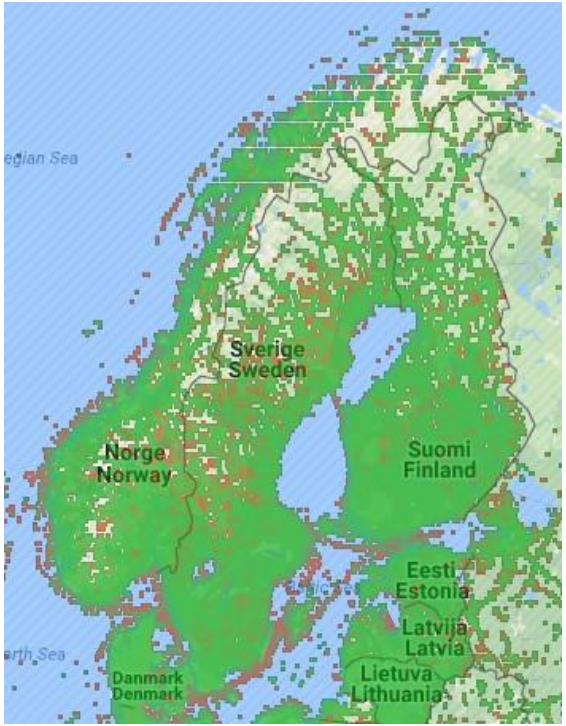
NordicWay – Partners and scope

Country	Denmark	Finland	Norway	Sweden
Beneficiary/ Implementing body	Danish Road Directorate	Ministry/ FTA Trafi	Norwegian Public Road Administration	Swedish Transport Administration
Service providers		HERE Infotripla	Volvo Cars	Ericsson Kapsch TrafficCom Scania Volvo Cars
Project Office, Evaluation	Genua	VTT	SINTEF	SWECO



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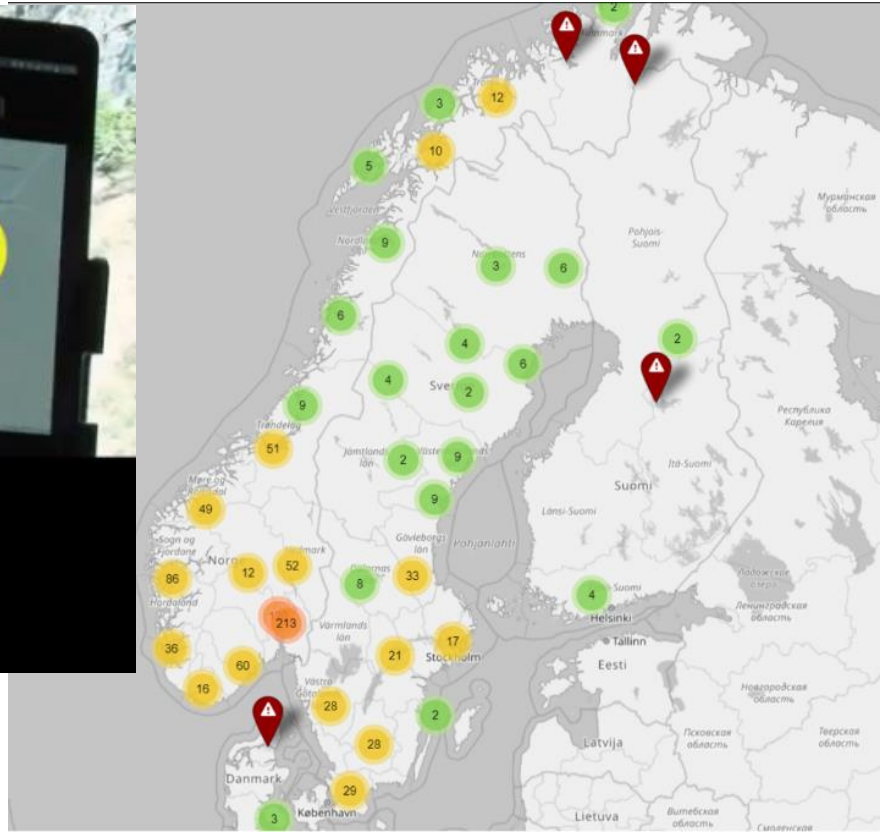
Live demonstration in 2017 (left) and Live data feed screen capture 2018 (right)



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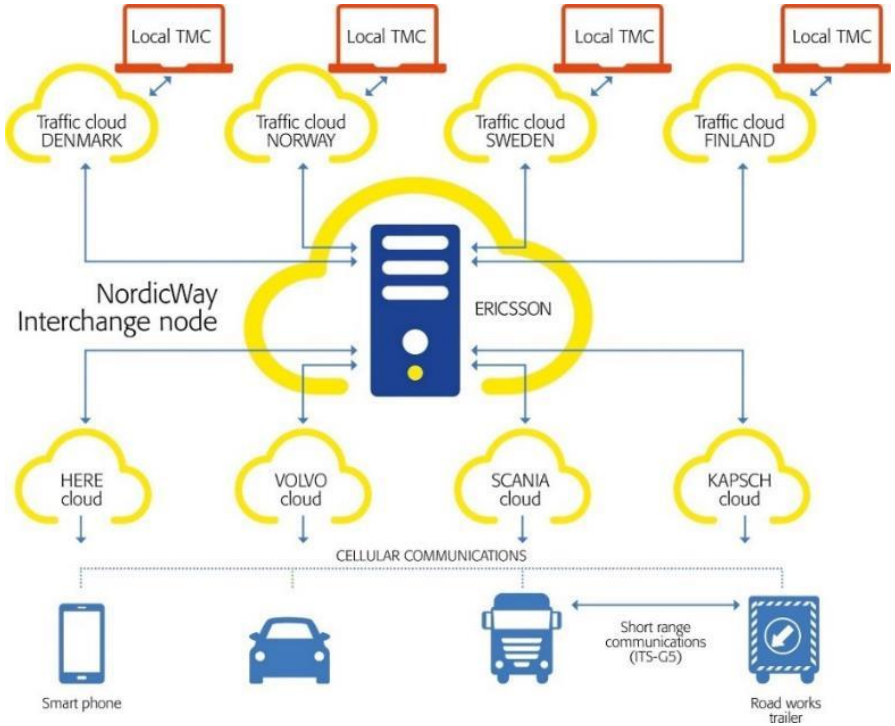
NordicWay Key results – www.nordicway.net

1. **The Architecture** – border and relation agnostic
2. **The standards** – existing standards (DATEX2, etc.)
3. **Ecosystem enabler** – different organizations, new competition and services (innovations)
4. **Maturity** – of digitalization, existing standards, technologies and users
5. **Scalability** – of the architecture, services, users, open results
6. **Demonstrations** – live demos succesfully completed
7. **Latencies** – Low latencies in the order of 0.3-2 seconds obtained
8. **FI pilot: Usefullness** – first source of information
9. **FI pilot: User uptake** – willingness to continue
10. **FI pilot: Safety impact** – Decrease in injury and non-injury accidents and in fatal accidents
11. **FI pilot: Benefit-cost ratio,** period 2019-2030, smallest impact and highest price: 2.3



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NordicWay 2 Organisation

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NordicWay 2 (2017-2020) – objectives

Nordic WAY 2

Pilot deployment of interoperable Day 1/1.5 C-ITS and support infrastructure readiness for connected and automated driving

- Contribute to harmonisation and interoperability of C-ITS in Europe
- Support deployment of new Day 1 and 1.5 C-ITS services on CEF and rural roads
- Support infrastructure readiness for connected and automated driving
- Assess socio-economic impacts of Day 1/1.5 C-ITS including mobility, behaviour, acceptance

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Day 1 services and NordicWay 2

	NORWAY	FINLAND	SWEDEN
Day 1 C-ITS services list			
Hazardous location notifications:			
Slow or stationary vehicle(s) & traffic ahead warning;	✓	✓	
Road works warning	✓	✓	✓
Weather conditions	✓	✓	
Emergency brake light	✓		✓
Emergency vehicle approaching		✓	✓
Other hazards		✓	✓
Signage applications:			
In-vehicle signage	✓	✓	✓
In-vehicle speed limits	✓	✓	
Signal violation / intersection safety	✓	✓	
Traffic signal priority request by designated vehicles		✓	✓
Green light optimal speed advisory	✓	✓	✓
Probe vehicle data	✓	✓	
Shockwave damping (falls under European Telecommunication Standards Institute (ETSI) category 'local hazard warning')			

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NordicWay 2 Interchange network

- Close link to C-Roads Platform
- Access to transport related data
- Interoperable and scalable through Europe and beyond
- Roadmap to 5G

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