Nordic
WAY 2

Erik Olsen

NordicWay 2 Coordinator

Norwegian Public Roads Administration

Stockholm, 31. May 2018

C-ROADS

Co-financed by the European Union
Connecting Europe Facility

Picture: Wikimedia Common, S. Solberg J.

NordicWay 2 – objectives

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

Day 1 & Day 1,5 Services

#	Day 1 Services			Bundle
1	Emergency electronic brake light	V2V	Safety	1
2	Emergency vehicle approaching	V2V	Safety	1
3	Slow or stationary vehicle(s)	V2V	Safety	1
4	Traffic jam ahead warning	V2V	Safety	1
5	Hazardous location notification	V2I	Motorway	2
6	Road works warning	V2I	Motorway	2
7	Weather conditions	V2I	Motorway	2
8	In-vehicle signage	V2I	Motorway	2
9	In-vehicle speed limits	V2I	Motorway	2
10	Probe vehicle data	V2I	Motorway	2
11	Shockwave damping	V2I	Motorway	2
12	GLOSA / Time To Green (TTG)	V2I	Urban	3
13	Signal violation/Intersection safety	V2I	Urban	3
14	Traffic signal priority request by designated vehicles	V2I	Urban	3

#	Day 1.5 Services			Bundle
1	Off street parking information	V2I	Parking	4
2	On street parking information and management	V2I	Parking	4
3	Park & Ride information	V2I	Parking	4
4	Information on AFV fuelling & charging stations	V2I	Smart Routing	5
5	Traffic information and smart routing	V2I	Smart Routing	5
6	Zone access control for urban areas	V2I	Smart Routing	5
7	Loading zone management	V2I	Freight	6
8	Vulnerable road user protection (pedestrians and cyclists)	V2X	VRU	7
9	Cooperative collision risk warning	V2V	Collision	8
10	Motorcycle approaching indication	V2V	Collision	8
11	Wrong way driving	V2I	Wrong Way	9

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')			

NordicWay2 CCAM pilots 2018-2020

- Finland
  - C-ITS pilot to test and evaluate relevant Day-1 and Day-1,5 services in rural areas
  - The Arctic Challenge: Automated and connected Driving pilots in snowy and icy arctic conditions

- Norway
  - C-ITS pilot to test and evaluate relevant Day-1 and Day-1,5 services in rural areas.
  - Map and assess the infrastructure readiness for connected and automated driving on major freight routes

- Sweden
 - C-ITS pilot to test and evaluate relevant Day-1 and Day-1,5 services in urban and interurban areas

Hazardous location notifications

Bundle	Services	NPRA approach
Hazardous location notifications	Slow or stationary vehicle(s) & Traffic ahead warning	Provide position of maintenance vehicles, often operating at speeds of about 40 km/h
	Road works warning	Detection of roads works signs by passing vehicles Provide data on road closures
	Weather and road conditions	Combining data sources (weather sensors, weather forecasts, data from winter maintenance vehicles, data from vehicles and from mobile road condition monitors) for more reliable information on weather and road conditions
	Emergency brake light	Identify locations of hard braking in the road network can be an indication of the need for infrastructure improvements
	Other hazardous location notifications	Demonstrate communication between maintenance vehicles or other slow moving vehicles, and the vehicles queueing behind them.

NordicWay 2 - Cooperative ITS Information Exchange

- NordicWay 2 Interchange network

- Concept very similar to that of "Neutral Server" from ACEA
- Open Solution; Open protocols, Open data
- Distributed service network.

- Aim for permanent use enabling long lasting operations

- New vendors can supply interchange nodes with core safety related services and additional commercial services on top
- Opportunity for new business models for transport related data from different Internet Service Providers
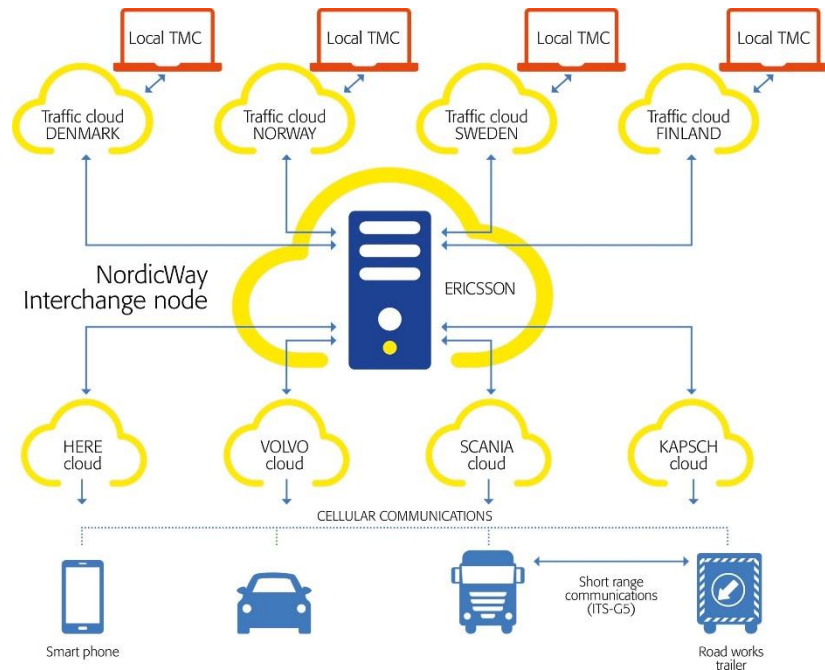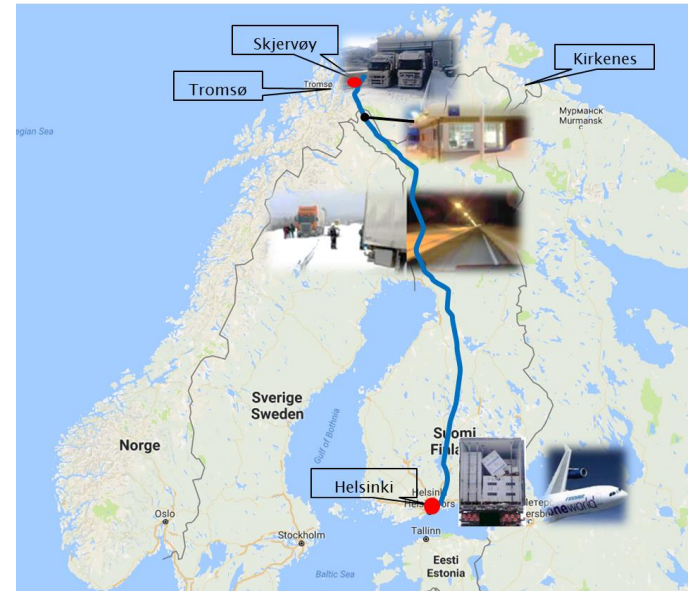
Addressing real needs

Freight transports

- 300 ton salmon every day

- Cargo value from salmon producer ~130.000 Euros per truck

- 16 trucks every day

Salmon from Skjervøy to Japan within 36 hours

31.05.2018   Trafikverket
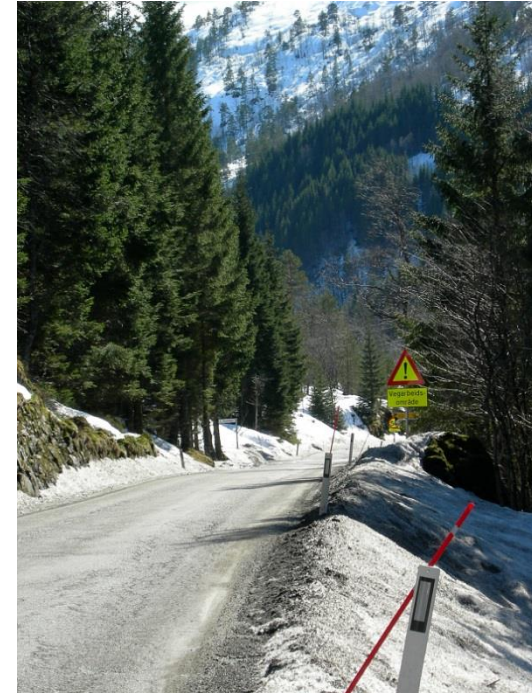
Some Nordic challenges

Norway:
15000 HGV incidents per year

Co-financed by the European Union
Connecting Europe Facility

31.05.2018   Trafikverket

For transporters

- Safety

- Predictability

- Trafficability

- Early warning of incidents

- Good prognoses and planning on salmon production and transports

Contact

NordicWay coordinator

Erik Olsen
NPRA

erik_olsen@vegvesen.no

www.nordicway.net

Denmark

ANDERS BAK SØRENSEN

ABAS@vd.dk

Finland

ILKKA KOTILAINEN

ilkka.kotilainen@fta.fi

Norway

TORGEIR VAA

torgeir.vaa@vegvesen.no

Sweden

ARNE LINDEBERG

arne.lindeberg@trafikverket.se

Co-financed by the European Union
Connecting Europe Facility