NORDIC WAY

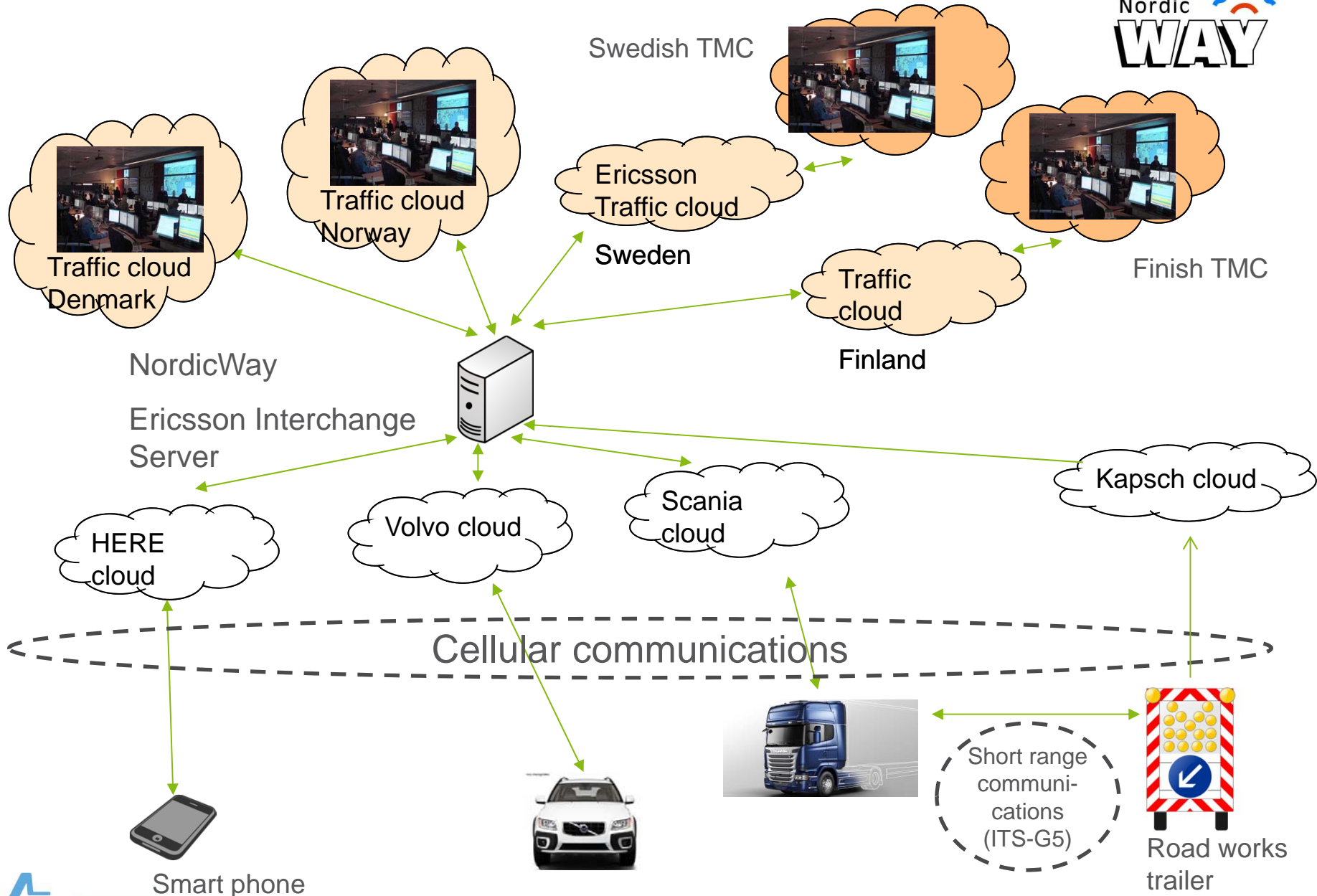"One pager"

PROJECT FACTS

› EU Connecting Europe Facility (CEF) project
  – Is the first step of deployment (on TEN-T road network)
  – Finish, Danish, Norwegian and Swedish road/traffic authority are signing partners. National sub-contracts will be written.

› Total budget 5.2 M€ (2.6 M€ EU grant)

› Start 20150101, trial in Sweden Q3 2016 and on, finish 20171231

› Project goal: Show Cooperative-ITS over cellular (for some use cases) that are interoperable in the Nordic countries.

NORDICWAY ARCHITECTURE

Nordic WAY

Swedish TMC

Ericsson
Traffic cloud

Sweden

Traffic cloud
Norway

Traffic cloud
Denmark

Traffic
cloud

Finland

Finish TMC

NordicWay

Ericsson Interchange
Server

Kapsch cloud

HERE
cloud

Volvo cloud

Scania
cloud

Cellular communications

Short range
communi-
cations
(ITS-G5)

Road works
trailer

Smart phone

21.6.2016

VTT

3

SYSTEM ARCHITECTURE

› Traffic management – pull / push DATEX II

› Traffic data provider is the national traffic cloud -
 pull / push DATEX II

› Service Provider / OEM has the geo-messenger
function in their cloud. The service provider/ OEM
send and receive DATEX II over the Interchange
Server.

- Here use tablets in vehicles and CAM/DENM over cellular.
- Volvo use proprietary data format (aggregated). ODB II add on.
- Kapsch ITS G5+cellular box send "Active Road work" to the
Kapsch cloud.
- Scania use proprietary data format and tablets
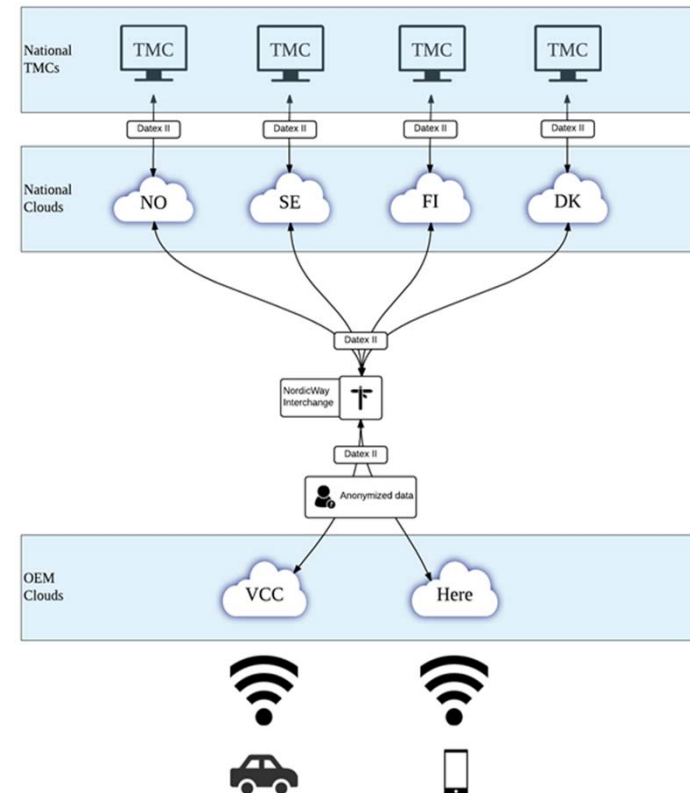
	Finland	Sweden	Norway	Denmark
Service Provider/OEM	HERE	Scania, Volvo Cars, Kapsch	Volvo Cars	-
Traffic Data Provider	Infotripla	Ericsson,	Norwegian Road Authority	Danish Road Authority
TMC/Road Authority	Finish Road Authority	Swedish Transport Administration	Norwegian Road Authority	Danish Road Authority

INTERCHANGE SERVER

Ericsson develops the Interchange Server based on Open Source code. A publish-subscribe message queue system share data between the OEM clouds and sort the messages by geographical position for the national clouds.

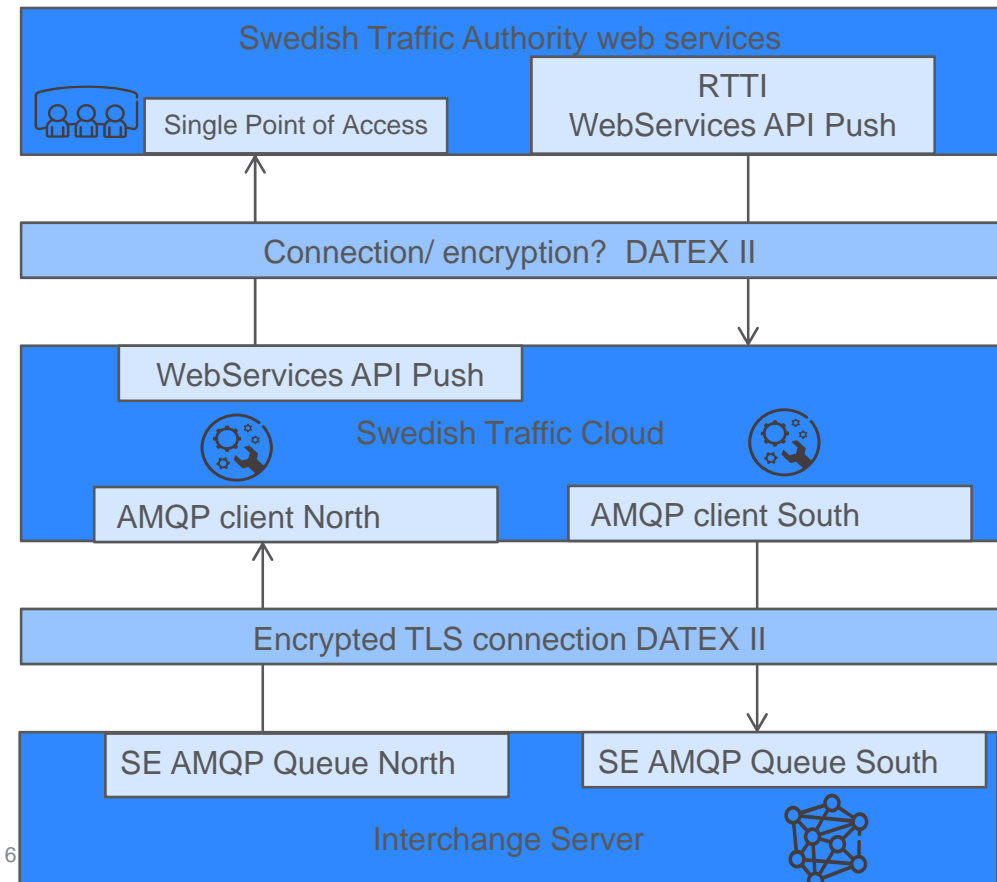Subscriptions are based on source, area and topic.
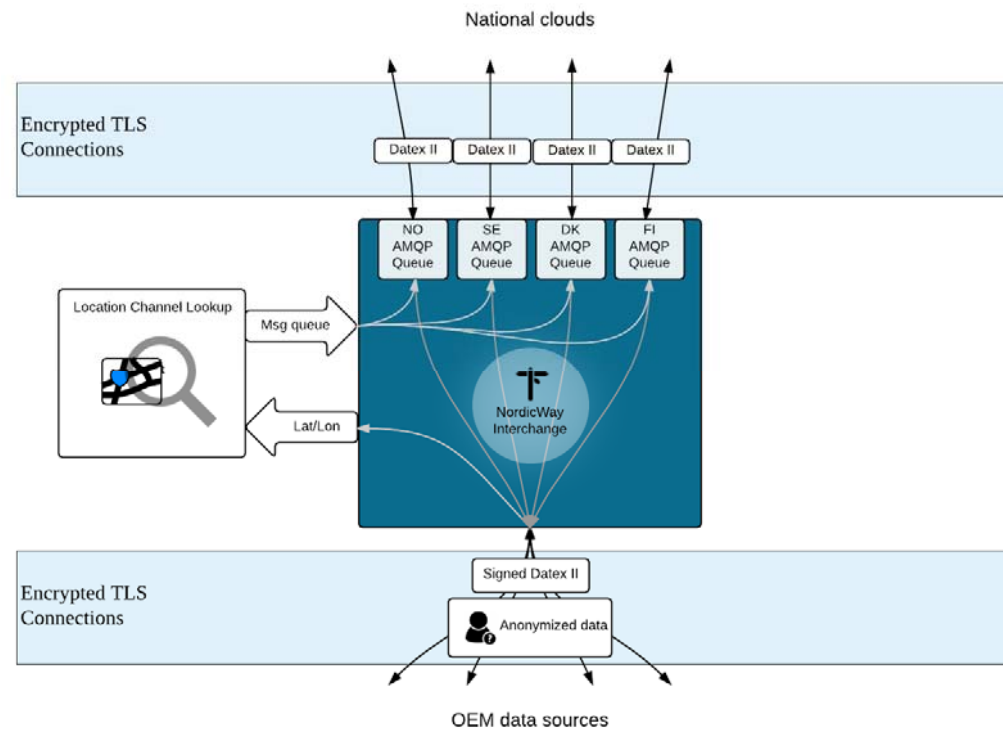
SWEDISH TRAFFIC CLOUD

› Ericsson develops the Swedish traffic cloud

- Deliver data from vehicles to the single point of access
- Take data from the Swedish Traffic Authority (and other sources), sort and mark it, deliver to the Interchange server.

› All data is in DATEX II (with AMQP meta data header)

Swedish Traffic Authority web services

Single Point of Access | RTTI WebServices API Push

Connection/ encryption? DATEX II

WebServices API Push

Swedish Traffic Cloud

AMQP client North | AMQP client South

Encrypted TLS connection DATEX II

SE AMQP Queue North | SE AMQP Queue South

Interchange Server

PAN-NORDIC USE CASES

› a. Temporary slippery road

› b. Animal, people, obstacles, debris on the road

› c. Unprotected accident area

› e. Reduced visibility

› g. Unmanaged blockage of a road

› h. Exceptional weather conditions (e.g. fog, heavy rain, heavy wind).

› *Slippery road can be detected by the Volvo test fleet (aggregated data).*

› *Volvo´s hazard blinkers activation can be used to detect a hazard (but driver privacy is an issue)*

› *All other data will be taken form other sources (traffic management)*

› *Received data in the vehicles can be logged but only a few vehicles can present warnings to the driver*

SWEDISH USE CASE

› Roadworks Warning

- Roadwork blocking trailer ("TMA-vehicles") will send ITS G5 CAM/DENM when in operation. Data over cellular will be passed from the Kapsch cloud to the Interchange Server.

- Remains to bee seen how the Swedish Transport Administration will use and enrich the data.

- Some SCANIA test vehicles will receive and present ITS G5 messages (and the same info over cellular).

VEHICLE FLEETS

› Finland

  - 1000 vehicles of different brands with tablets

› Denmark – only "visiting vehicles"

› Sweden and Norway

  - 500 Volvo "Road friction information" cars – only sending data

› Sweden

  - 30-35 Volvo cars receiving cellular and 1-2 with a HMI

  - 25 Road work blocking trucks with ITS G5 and Cellular (only sending)

  - 2-3 SCANIA test trucks with ITS G5 and cellular. Tablets in vehicle.