

NordicWay 2

Cellular C-ITS Corridor

Workshop on GDPR and the C-ITS delegated act
Arne Lindeberg Trafikverket 2019-05-23

<https://youtu.be/gTrrl4ymvyc>



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Connecting Europe Facility

Nordic WAY 2

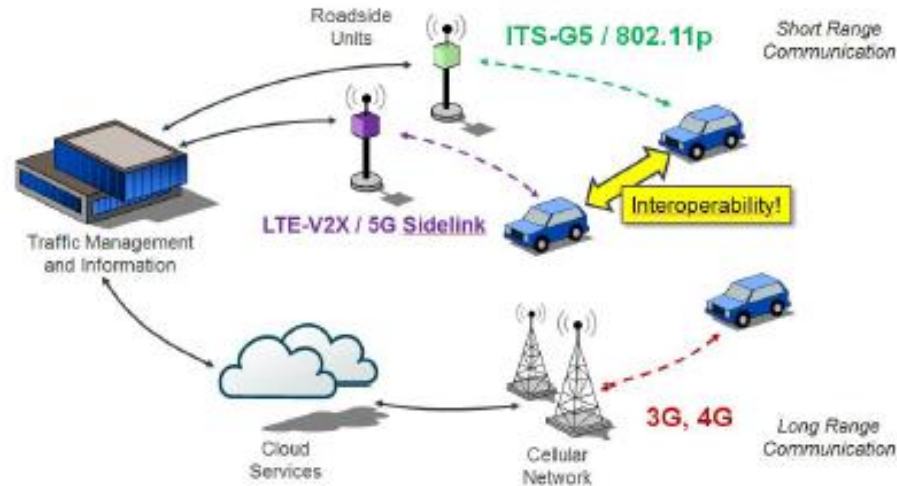


NordicWay 2 is a collaboration between public and private partners in Finland, Norway, Sweden and Denmark

Co-financed by the European Union within the Connecting Europe Facility programme 2017-2020



C-ITS long range and short range



- The connected vehicle
- The connected driver and the connected traveller

Swedish (nordic) approach

- Long range communication (cellular networks) and information exchange in cloud environment
- Short range communication as case specific exceptions. If it is necessary for technical reasons



New possibilities - already now

- The connected vehicle brings new possibilities to address individual vehicles
- The NordicWay long range C-ITS approach with cellular networks, cloud solutions for information exchange and vehicle connection by the OEM: s is one example
- Thereby we can handle specific transports. With new tools to organise traffic, we can address for example
 - Access management (geofencing)
 - Capacity allocation
- Relevant both in the urban interface and in the rural environment
- Highly cost effective, especially if there is a limited need for roadside installations



New possibilities, new challenges

- We see a new playing field. The road operator will still have focus on organizing traffic, but will not be in exclusive control of new tools
- Development and implementation will be in parallel:
 - Market driven
 - Incentive driven
- Therefore, new forms of cooperation public-private will be required
- An eco-system for peaceful co-existence of different business models will be needed



New regulation challenges

- New functionality in road transport system
 - What we can do from a technical standpoint
 - What we can do from legal standpoint



- National regulation
 - European regulation
- and
- Standardisation and harmonisation



National administration perspective

There are some emerging challenges

- There will be new tools to organise traffic for more efficient use of existing infrastructure. How will these tools affect the transport system? Will there be a more visible division into prioritised and public parts.
- Legal issues. What can be done within existing framework?
- Planning processes need to cater for
 - new sorts of projects in competition with the traditional (building and maintenance)
 - new cooperation schemes
 - necessary adaptations of existing infrastructure (for example truck parking for buffering.)
- Which data should be produced and which data should be shared? An intelligent mix between open data and bi-/multilateral exchange will be necessary



ITS directive 2010/40/EU

**EC mandat to issue delegated regulations
2012-2017 in a first phase. Thereafter prolonged**

First work program with 6 priority activities

→ 5 delegated regulations decided

Delegated regulation (Delegated act)

- EC decides
- Council or Parliament can object
- Shall be incorporated in national legislation



ITS direktivet (2010/40/EU) och dess 4 områden

- I. Optimalt utnyttjande av väg-, trafik- och reseinformation
- II. Kontinuitet i ITS-tjänster för trafikledning och hantering av godstransporter
- III. ITS-tillämpningar till stöd för trafiksäkerhet och transportskydd
- IV. Koppling av fordonet till transportinfrastrukturen





Decided delegated acts	Title
(EU)2017/1926	EU-wide Multimodal Information Services/ <i>(EU-omfattande reseinformationstjänster)</i>
(EU)2015/962	Provision of EU-wide real-time traffic information services/ <i>(Tillhandahållande av EU-omfattande realtid trafikinformationstjänster)</i>
(EU) 886/2013	Provision, where possible, of road safety related minimum traffic information free of charge to users/ <i>(kostnadsfritt tillhandahållande, när så är möjligt, minimum vägsäkerhetsrelaterad universell trafikinformation)</i>
(EU) 305/2013	Harmonized provision of an interoperable EU-wide eCall <i>(Harmoniserad tillhandahållande av interoperabelt eCall)</i>
(EU) 885/2013	Provision of information services and secure parking places for trucks and Commercial vehicles/ <i>(Tillhandahållande av informationstjänster för säkra och skyddade parkeringsplatser)</i>



ITS directive workprogram 2, (2018 - 2022)

Areas

- 1. Cooperative Intelligent Transport System, C-ITS (2018, 2019-2022)**
- 2. Revision of current specification EU-wide real-time traffic information services (2019-2020)**
- 3. Recharging/refuelling points (2018-2020)**
- 4. Access to in-vehicle data for road operation purposes (2018-2019)**
- 5. eCall –extension to other vehicle categories (2019-2021)**
- 6. Interoperable payment and ticketing (2018-2022)**
- 7. Continuity of traffic and freight management services (2019-2022)**



EC decision 2016: C-ITS services for implementation 2019 Day 1 - services

- Hazardous location notification
- Slow/stationary vehicles and 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
- Shockwave damping



Day 1,5 och day 2,0 C-ITS-services

Day 1,5-services – example

- Off street parking information
- On street parking information and management
- Park & Ride information
- Information on AFV fuelling & charging stations
- Traffic information and smart routing
- Zone access control for urban areas
- Loading zone management
- Vulnerable road user protection (pedestrians and cyclists)

- Cooperative collision risk warning
- Motorcycle approaching indication
- Wrong way driving

Day 2,0-3,0 services – example

Geofencing for increased road safety....



Delegated act (DA) C-ITS

- Explanatory memorandum (Not part of the decided act)
- Recital (31 points)
- Chapter I. General provisions
 Subject, matter and scope. Definitions
- Chapter II. Technical requirements
 Requirements for C-ITS stations and C-ITS services
 Pointers to annexes
- Chapter III. Placing C-ITS stations on the market
- Chapter IV. Putting service and operation of C-ITS stations
- Chapter V. Security (*Pointers to annexes*)
- Chapter VI. Implementation
- Chapter VII. Final provisions
 Reporting, review, entry into force...



Technical requirements in annexes

- List of C-ITS priority services
- Communication system profiles
- Service profiles
- European Union C-ITS Security Credential Management System: Certificate Policy
- European Union C-ITS Security Credential Management System: Security Policy



Från utkast delegerad akt C-ITS ver 26-09-2018

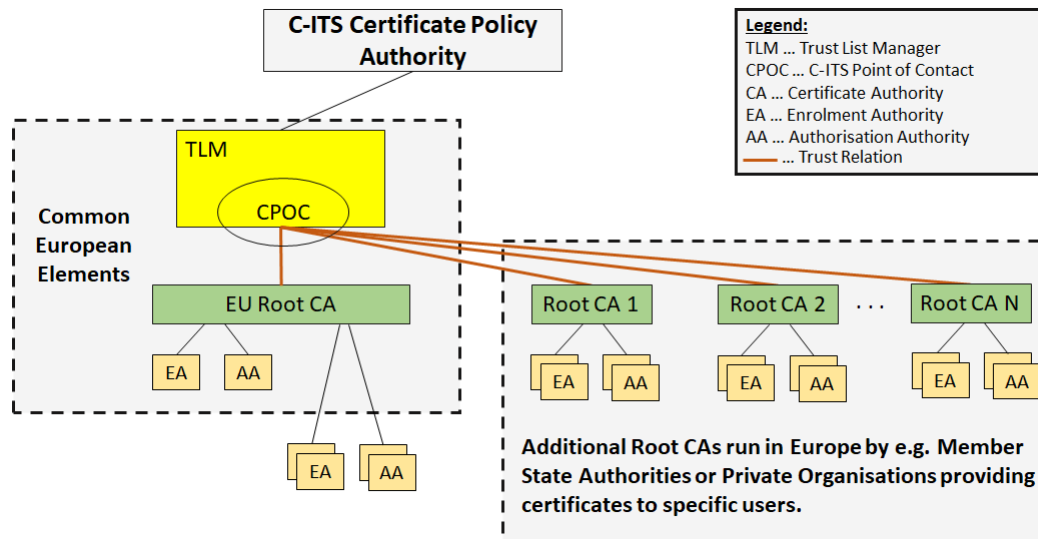


Figure 1: C-ITS Trust model architecture

Basic concept DA

- DA covers C-ITS as defined in the act. Nothing else
- Exchange of standardised messages
- Within the same trust domain
- Signed messages
- The basic component below is a prerequisite for C-ITS



Challenges delegated act C-ITS

- Framework legislation – Actual impact depending on future content
- Influence for MS and industry?
- Security designed from a short range perspective
 - Tricky to apply in cloud environment. Overlapping security arrangements
- Narrow (legal) definition of C-ITS
 - Sometimes we need to squeeze in to fit actual services
 - How far to stretch to being able to label as a "C-ITS service"
- Who is talking to the car? Who is listening and who is expected to take action?
 - DA ends upon arrival in vehicle (C-ITS station)
 - Road operator role?
 - NordicWay approach to exchange information with the OEM and thereby with the vehicle
- Basic functionality – the connected vehicle. How far is it relevant to describe more complex services as C-ITS services?

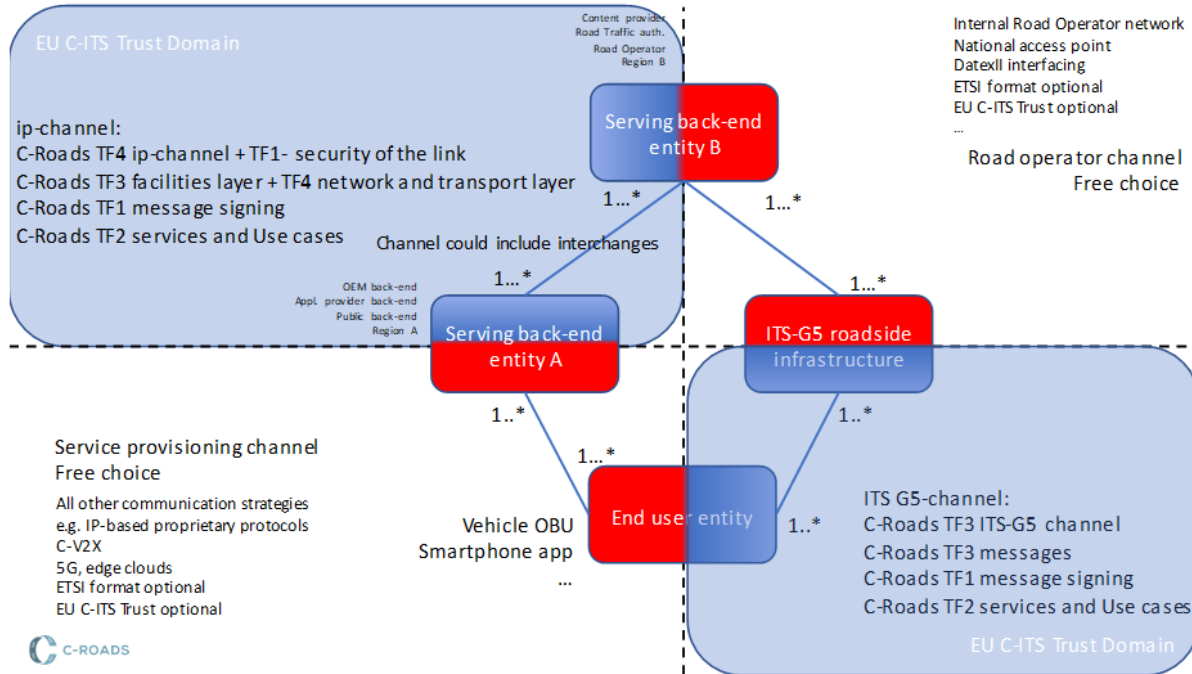


C-Roads

- European platform for C-ITS
- Provide technical content for DA C-ITS
- Contractual obligation to participate in the Grant Agreement for NordicWay 2
- Coordination and share of workload via NordicWay 2



C-Roads



Dare to think ahead

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