

Nordic WAY 2



Finnish lessons on C-ITS ecosystems in NordicWay2 – part 1

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What problems are the Nordic ecosystems trying to solve?

- Long road network
- Low volumes of traffic
- Old vehicles (avg. of over 10 years)
- Services for Nordic conditions – “Rare events with unknown consequences”



NordicWay2 ecos

- Over 60 public and private automation pilots and



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C-ITS ecosystems in the Nordic conditions (and those in Europe who share similarities) from a Finnish public authority funding perspective



Public-Private-Partnership (PPP)

- **Start what you have**, i.e. enable the ecosystems existing services and their interoperability, and remember to leave room for new innovations. In Finland: applications and industry/private vehicle fleets
- **Market driven competition** and business models with agreements of data licenses. Service providers working with the **end users**.
- Ecosystem partners, public and private, must adapt in some cases for **a new kind of collaboration**, e.g. road authorities and industry roles in event confirmation to end users where events are rare and unknown and when events are immediate and imminent



Technology (the source of disruption)

- **Technology neutral** ecosystem to have fittest survival and maximum benefits of different kind of solutions in long term
- Ecosystem solutions need to have **potential to scale up**, fast, wide area and for many
- **“Commonly used” technologies** benefit all business ecosystems in society; traffic and transport solutions are not the single societal issue – vast amount of business opportunities and complex issues with possible common benefits



What is the role of public authorities in "Nordic conditions"?

- For the public authorities to consider: if socio-economical costs are positive with traffic safety benefits, quality of data increased or high and costs reasonable, data driven ecosystems should be supported
- On the other hand, authorities should not select ecosystem winners, risk of vendor locks and market disturbance (short term solutions).
Considerations:
 - Small (limit size) PPP trials that aim cross-border interoperability in European collaboration
 - Enable local autonomy and small ecosystems, e.g. cities have major potential
- Be open and transparent: evaluate & publish results, open source (with proprietary solutions on top)



Neutral and scalable ecosystem that uses existing



data for road safety



C-ITS deployment takes off, increasing road safety and decreasing congestion

Cooperative Intelligent Transport Systems (C-ITS) include wireless technology for connected vehicles, road infrastructure, pedestrians, bicyclists, motorcyclists, agriculture machinery and railway equipment that share and use information for coordinating their actions in public spaces. **Standardised C-ITS services are key to addressing increased road traffic congestion and to reduce road fatalities, for which the European Union has set challenging reduction targets.** More specifically, first implementers from vehicle manufacturers, road authorities and road operators are addressing these issues on a large-scale with the provision of Day-1 C-ITS services (e.g., stationary vehicle warning, emergency electronic brake light, road works warning). The implementation is based on WiFi (ITS-G5) technology to improve road safety and reduce traffic congestion for European citizens as of today.

The effectiveness of C-ITS is optimised by combining the ITS-G5 and standard cellular networks as part of a hybrid communication approach, which will reach more road users and larger portions of the European road infrastructure. **This is why European C-ITS stakeholders such as road authorities, road operators, vehicle manufacturers, ICT industry and the agriculture machinery and railway equipment sector are jointly committed to C-ITS, that is based on available and proven interoperable harmonized specifications, standards and technologies.** There is large-scale deployment of C-ITS across Europe and we will continue to deploy C-ITS using these proven wireless communication technologies, ensuring harmonization and interoperability of C-ITS services and applications. This deployment approach is the baseline for wide European roll-out and the further development of C-ITS services.

Future technical innovations in C-ITS are welcomed and should be combined with existing, proven technologies by complementing the defined hybrid communication approach. The mature ad-hoc wireless technology ITS-G5 (no network coverage or subscriptions required, particularly in the rural areas) and cellular networks (3G/4G) may therefore be supported by future 5G developments, which will provide Europe with further technology delivery options. This technology neutral approach will support the two “Cs” in Cooperative, Connected, and Automated Mobility (CCAM), which is the highest priority in Europe. CCAM will enhance mobility and more specifically improve road safety and efficiency within Europe.

Supporters of the statement are committed to placing Europe at the forefront of development and deployment of CCAM relying on a strong regulatory framework. Deployment of C-ITS and ITS-G5 is progressing and therefore the first important step towards truly connected and automated driving has been taken!



Arctic challenges solved in C-ITS ecosystems



**Arctic Challenge – automated
and cooperative driving in snowy
and icy conditions - final results
in 26 November 2019**



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C-ITS deployment ecosystem evaluation

Quality of services

- Common KPIs to be utilised at all sites
- Joint summary of results per C-ITS service type across all implementations



User acceptance

- Jointly made survey to study the user acceptance among general public
- Local translations, local data collection
- Joint summary of results across all the countries



Ecosystems

- Jointly made script for the workshops
- Local workshops
- Joint summary of results across all the countries



Socio-economic impacts

- Jointly made assessment of the socio-economic impacts for the whole region



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