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Testing of automated vehicles in Finland

• Testing of all automated vehicles (SAE levels 0–5) is possible on public roads in Finland using a test plate certificate
• Vehicle under testing must have a driver either inside or outside the vehicle
• Focus on responsible behaviour of the testing organisation
• For testing in road traffic, Trafi will issue test plates
Ecosystems of testing and trials in Finland

- Arctic Aviation and Research Centre, Sodankylä
- Ouluzone (Oulu)
- Urban Auto Test (Tampere)
- NordicWay Coop
- Kymiring (Kouvola)
- Helsinki region SOHJOA automated busses, Living Lab Bus

Locations:
- Aurora (Muonio, Ylläs)
- Campus test bed
- UAS Centre (Mikkeli, Kars:ula)
Aurora – The Arctic Intelligent Transport Test Ecosystem

1. Aurora facilitates testing of automated driving, ITS and intelligent infrastructure asset management solutions.

2. Automated vehicle trials are allowed in road traffic in Finland.

3. Test ecosystem enables testing on public roads and on closed tracks.
Arctic Challenge 2017-2019

- On-going tendering process
- Based on the Road Transport Automation Road Map and Action Plan 2016–2020
  [Link](http://www2.liikennevirasto.fi/julkaisut/pdf8/lts_2016-19eng_road_transport_web.pdf)
- Project examining opportunities in road transport automation and intelligent infrastructure and their performance in snowy and icy conditions
- FTA and Trafi research funding of 1–2 milj. euros
  FTA infrastructure funding of 2 milj. euros.
Arctic Challenge - research questions

• What **landmarks**, such as delineators and reflective posts, or snow poles and plot access marks, support automated driving? Where should these be located? What should they be like?

• How could the **C-ITS Day 1 hybrid services** improving traffic flow and safety be implemented?

• How does the **remote control and monitoring of vehicles** work in 4G and in the first stage of the 5G network in good/poor weather and road conditions?

• In what way and how accurately could a **vehicle be positioned** to fulfil the needs of automated driving at northern latitudes where no edge markings or roads can be recognised?
Urban test site for connected and automated driving in Tampere

• Vision: support Finnish industry authorities for developing and testing connected and automated driving applications
• National project, sponsored by Finnish industry and Tekes
• Schedule: Jan 2016 – Dec 2017
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Vehicles upgraded for connected and automated driving by VTT

Focus on adverse weather conditions

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AUTOnated driving Progressed by the Internet Of Things

• H2020 project, coordinated by Ertico

• Major challenge: demonstrate added value of IoT for Automated Driving

• 6 pilot sites, including Tampere
  • Intersection support: use of traffic cameras to detect VRUs in conflict with turning pedestrians
  • Automated Valet Parking: assistance and control of unmanned vehicle during parking

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Automated electric busses

• CityMobil2 at housing fair 2015
• SOHJOA.fi at 3 cities in 2016
• ROBUSTA.fi
  • Real-time remote control 4G/5G
• My SMART Life @Helsinki
  • Long term pilot 2016-2021

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Driverless bus line coming to Helsinki this fall

With the RoboBusLine, autonomous transit will go from experiment to regular scheduled service

BY PATRICK SISSON | JUN 15, 2017, 1:32PM EDT
Hybrid C-ITS corridor

✅ Day 1 Safety Related Traffic Information with support of Day 1.5 and beyond services
✅ Interoperability demonstrated in 2017
✅ Ecosystem for the data value chain and stakeholders

Co-financed by the European Union
Connecting Europe Facility
Hybrid C-ITS corridor

Architecture available at www.nordicway.net

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http://www.trafi.fi/en/road/automated_vehicle_trials