SUOMI
FINLAND

Intelligent Vehicle Solutions from Finland

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SIP-adus
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Finland – great innovation environment

- **Europe's most competitive country***

  *World Economic Forum's The Europe 2020 Competitiveness Index

- **Strong impact on global innovation**
  - Nr 1 in Countries' Impact on Global Innovation (2016)
  - Introduced countless technologies and digital services to the world
 - World's only commercially available open 5G test network

- **Best country for startups**
  - *Wired-Magazine* listed Finland among the best countries in the world for startups

Finland – Intelligent solutions for tomorrows Vehicles

- With everything in a car becoming digitalized and connected, new innovative solutions and technologies are needed for tomorrow's vehicles.

- And this is where Finnish companies and know-how come to play with solid track record in developing innovative software solutions and expertise in delivering global software projects.
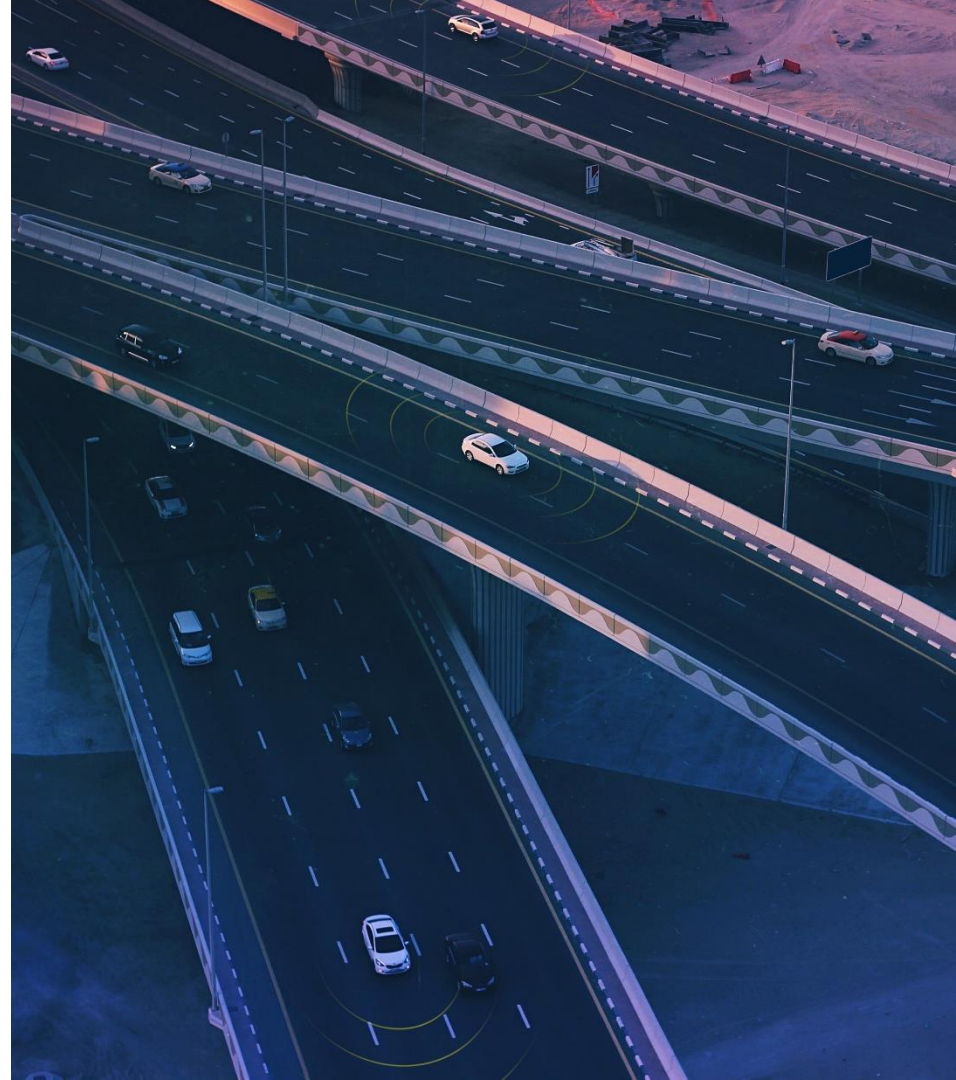
Cutting-edge innovations driving the way

- Finnish experts deliver secure solutions for optimized data usage and customer retention
- Ability to leverage application development for delivering in-car smartphone experience
- Customized, user-centric infotainment solutions with strong HMI, UI design
- Powerful data aggregation and analysis solutions, bespoke for automotive industry

What advantages does Finland offer…

Proven UI design

- Integrated design tools
- User research
- Service design methodologies

Leader in ICT Security solutions

- Secure system architecture and communication
- Security testing methodologies
- SW security technologies

First-in-class wireless networks

- Extensive 2G, 3G, 4G networks
- 5G testing and standardization

Shorter end product development cycles

- Efficient state-of-the-art development tools
- Quality processes
- Test automation

Finnish innovations enrich auto industry

Finnish innovations enrich auto industry

By David J. Cord, March 2014

Photo: UPM

Audi R8 (2016) – First Supercar with Rightware Kanzi

Audi recently debuted the second generation of the Audi R8 supercar at the 2015 Geneva Motor Show. In the new Audi R8, the instrument panel is now fully digital and sports a new version of Audi's award winning Virtual Cockpit, previously found on the 2015 Audi TT and the 2015 Audi Q7. Manufactured at Audi's new Böllinger Höfe site in Heilbronn, Germany, the new R8 will be available with a V10 engine (540 / 610 bhp) or as a full electric "e-Tron". The new Audi R8 goes on sale this summer.

Audi Virtual Cockpit is created with and powered by Rightware's Kanzi UI Solution, the leading Human-Machine Interface solution for the automotive industry.

"Our project team consists of specialists in vehicles, ICT and traffic," Enkiila says. "VTT has quite a wide range of technical research, which helps us to combine the needed knowledge easily – even if research areas are not that closely related."

Finland - World leading self-driving car technology lab

Finland is preparing environment for autonomo...
framework for autonomous vehicle testing and r...

Link Motion and Redbend to collaborat...
car infotainment platform

By Telematics News   Published: 31 March 2015
Posted in: Uncategorized

LINKMOTION

Link Motion and Redbend have started strategic cooperation on Link Motion ...
software and hardware vehicle computer, which helps automotive OEMs ...
vehicle infotainment (IVI) systems. Redbend offers an over-the-air (OTA) ...
solution for Link Motion to ensure that the IVI platform is always relevant a...
maintain.

LINKMOTION

Oct 30, 2015

Foreca launches premium connected car weather services in over 40 countries

Foreca provides the BMW Group highly accurate digital weather forecast data, which is delivered to the drivers via BMW's ConnectedDrive Infotainment system.

Ilkka Jauhiainen   30.10.2015 12:45   päivitetty 30.10.2015 12:45

Facebook Suosittele 18   Facebook Jaa   Twitter Twiittaa 13   G+1 0   LinkedIn Share 0

BMW Online
- News
- Weather
- Online search
- Office
- Applications
- Recently used
- Tools

21.10.2015 Munich   FORECA

4 / 10 °C
Thu   Fri   Sat
4 / 10 °C   4 / 12 °C   2 / 14 °C

Foreca / BMW

"Autot ovat meille kiinnostava kasvualue", sanoo Forecan myyntijohtaja Petri Marjava.

BMW

BMW OSEK- and AUTOSAR-compliant Standard Core

Products: EB tresos

The Company

Headquartered in Munich, Germany, BMW AG is a major manufacturer of performance and luxury cars. It owns and produces the MINI brand and is the parent company of Rolls-Royce Motor Cars. BMW produces more than one million cars per year.

The Challenge

BMW started using standard s...

Virtual Cockpit coming to Audi A3, demand for digital dash exceeds expectations

In interviews with Motoring.com.au and Car and Driver, Audi's head of cockpit electronics Ricky Hudi has shared that the award-winning Virtual Cockpit digital dashboard will be making its way into the next-generation Audi A3. This marks yet another new segment for the Virtual Cockpit, previously available in the Audi TT, R8, Q7 and the newly updated A4.

Hudi notes that the adoption rate for the Virtual Cockpit has exceeded their expectations and that the digital dashboard has already become an essential part of their iconic brand.
"The prognosis for the installation rate for the Virtual Cockpit in the Q7 was lower from us, and now it's gone through the roof. "
"...the Virtual Cockpit is an Audi signature now."

Virtual Cockpit is Audi's all-digital instrument cluster which can be customized for each driver. Audi uses Rightware Kanzi for the design and implementation of the Virtual Cockpit and the Audi MIB infotainment platform.

Telecommunications and automotive players form global cross-industry 5G Automotive Association

27 September, 2016

- AUDI AG, BMW Group, Daimler AG, Ericsson, Huawei, Intel, Nokia and Qualcomm Incorporated team up to evolve, test and promote communications solutions for connected mobility.
- Next generation mobile networks will help to address society's mobility and road safety needs with applications like connected infotainment features and connected automated driving.
- The association is open to further partners.

Munich, September 27, 2016 - Today AUDI AG, BMW Group, Daimler AG, Ericsson, Huawei, Intel, Nokia and Qualcomm Incorporated, announce the formation of the "5G Automotive Association". The association will develop, test and promote communications solutions, support standardization and accelerate commercial availability and global market penetration. The goal is to address society's connected mobility and road safety needs with applications such as connected automated driving, ubiquitous access to services and integration into smart cities and intelligent transportation.

Nokia a Founding Member of 5G Automotive Association: Automotive and Telecom Companies Join Forces to Address Society's Connected Mobility Needs

Automotive Association

Mission

Develop, test and promote communications solutions, initiate their standardization and accelerate their commercial availability and global market penetration

Use Cases

Road Safety

Infotainment

Automated Driving

Smart City Transportation

Teamwork

Car Manufacturers

Telecom Operators

Telecom Suppliers

Chipset and Device Vendors

Automotive Suppliers

End-to-End Solutions

Use cases and requirements
System architecture
Standards, spectrum and policy
Testbeds and pilots
Business models and go-to-market

Global Membership

BMW, Audi, intel, DAIMLER, vodafone, NOKIA, HUAWEI, QUALCOMM, ERICSSON, Valeo, SK telecom, Deutsche Telekom

Example companies

TUXERA

Tuxera is the market leader in storage software and connectivity for smart cars. Tuxera works with all top Tier-1 providers, such as Panasonic, Harman, Denso and Delphi, to deliver the most reliable storage software for the cars of the future. Tuxera is a major contributor of the Linux Community and works together with partners like Microsoft, Apple and Micron to develop the future of storage and connectivity for smart cars. Tuxera's patented solutions increase the life-time of the car's embedded storage (both eMMC and UFS) by up to 3 times, while increasing the reliability and write performance to the telematics box.

Microsoft · HARMAN · Panasonic · DENSO · DELPHI
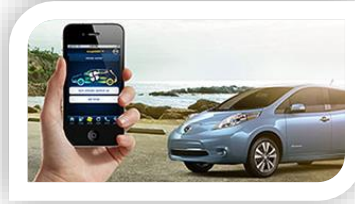
SYMBIO

Symbio is a global software engineering and R&D services company combining technology excellence with a deep understanding of your business. We help our clients build innovative software products and transformative digital services that connect, engage, and amaze their customers. Our customers include ABB, Google, HSBC, Intel, Microsoft, Sandvik, Suunto, TBWA and Volvo

Microsoft · intel · VOLVO · Google · SUUNTO · ABB · SANDVIK · HSBC · TBWA

Qt The Qt Company

The Qt Company develops and delivers the Qt development framework under commercial and open source licenses. Owned by the Qt Group, the company operates in China, Finland, Germany, Japan, Korea, Norway, Russia and USA. With more than 200 employees worldwide, the company's net sales in 2015 was 27 MEUR.

References:

Volvo, Magnetti Marelli, Mitsubishi Electric, Skype, ABB, Google + non public ones in more than 70 different industries

Google · VOLVO · MAGNETI MARELLI · ABB · skype · MITSUBISHI ELECTRIC

Intelligent Mobility Solutions

Intelligent Mobility from Finland

- New emerging mobility services for cars and surrounding infrastructure are becoming more connected which trigger the need to look for new innovative solutions and technologies to shape the mobility sector.

- Finnish companies deliver innovative and secure solutions in connectivity, user experience and service design providing the needed edge for tomorrow's mobility.

Fernando Volken Togni

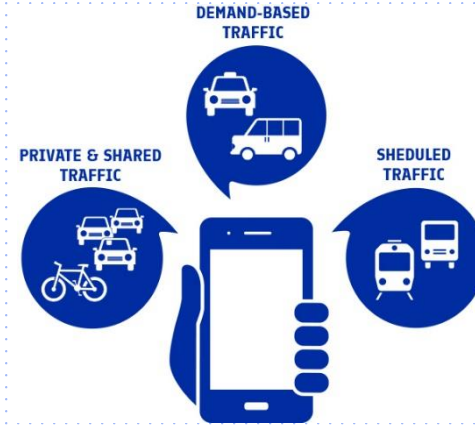# Finland - Reshaping mobility

Finns are early adopters in various intelligent mobility solutions

1st

World's first mobility operator MaaS Global

World's first MaaS ecosystem for traffic

DEMAND-BASED TRAFFIC

PRIVATE & SHARED TRAFFIC

SHEDULED TRAFFIC

Mobility as a Service (MaaS) introduces a pay-as-you-go approach to networked transportation by deploying the latest advances in cloud computing and mobile application development.

PIONEER IN SMART, DIGITIZED TRANSPORTATION

Agile companies and a truly cooperative ecosystem (government & private sector)

New transport services through real-time positioning of vehicles and transport fleets

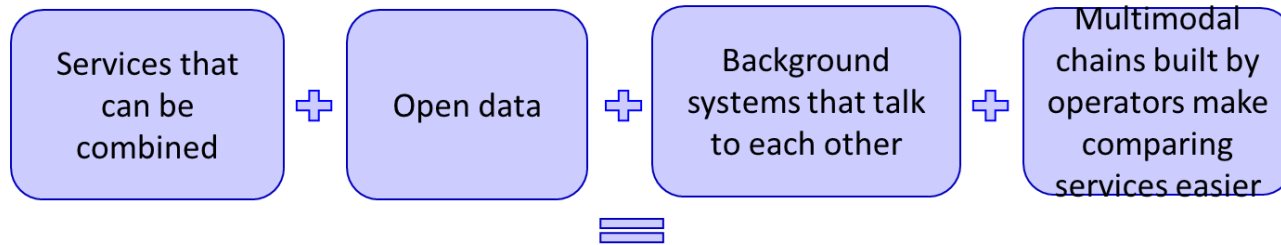Open data framework for effective transport service ecosystem

Leading connectivity with commercial 5G test network

FINPRO

State as a enabler

The Transport Code will enable MaaS

Services that can be combined	➕	Open data	➕	Background systems that talk to each other	➕	Multimodal chains built by operators make comparing services easier

=

MaaS (mobility as a service)

- The Transport Code meets the first two requirements:
  - Flexible combination of different transport modes and their development into a safe, inexpensive and easy system that serves the citizens
  - Opens the doors for developing transport services of a new type Attracts investments that will create new jobs to Finland
  - Boundaries between modes of transport will disappear, smoother multimodal travel chains
  - Door-to-door transport as an all-inclusive service

Winter Testing

# Finland –arctic testing conditions and services

Environment for autonomous vehicle testing is a reality in Finland thanks to the legal framework.

We have established an internationally unique information-based testing area and have unique conditions especially for winter testing.

In fact, multiple car manufacturers use Finland currently for their tests in extreme conditions.

Examples of test sites and projects in Finland
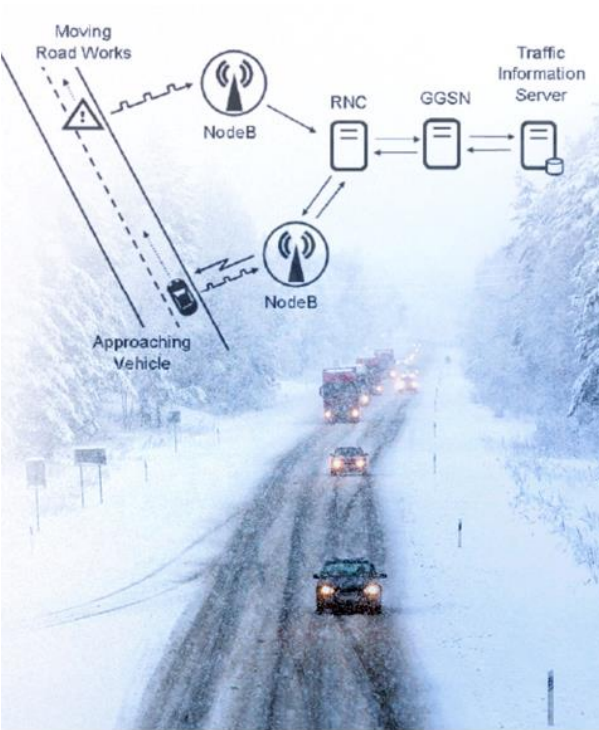
AURORA
THE ARCTIC INTELLIGENT TRANSPORT TEST ECOSYSTEM IN FINLAND

LPG
LAPLAND PROVING GROUND

TEST WORLD
A MILLBROOK GROUP COMPANY

LAPLAND DRIVING

ADC
ARCTIC DRIVING CENTER

ats
ARCTIC TESTING SERVICES OY

Arctic circle

OuluZone and 5G

Tampere Auto Urban Tests

KymiRing
FINLAND

SOHJOA

AURORA

1. Arctic testing for intelligent transport automation

Technology test sites in real winter conditions with broad selection of services

2. Digital transport infrastructure and connected cars

Accurate mapping of road infrastructure and signage enabling connected driving and analytics for traffic management

3. Intelligent infrastructure asset management

Data collection and refined traffic management and maintenance processes in the era of automation

4. Mobility as a Service

Flexible and affordable mobility services for tourists and locals without car dependency

Video

https://www.youtube.com/watch?v=ekFhkIKA6Lk

Kiitos!
Arigatō!
Thank You!

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