Integrated rural mobility - case Finland

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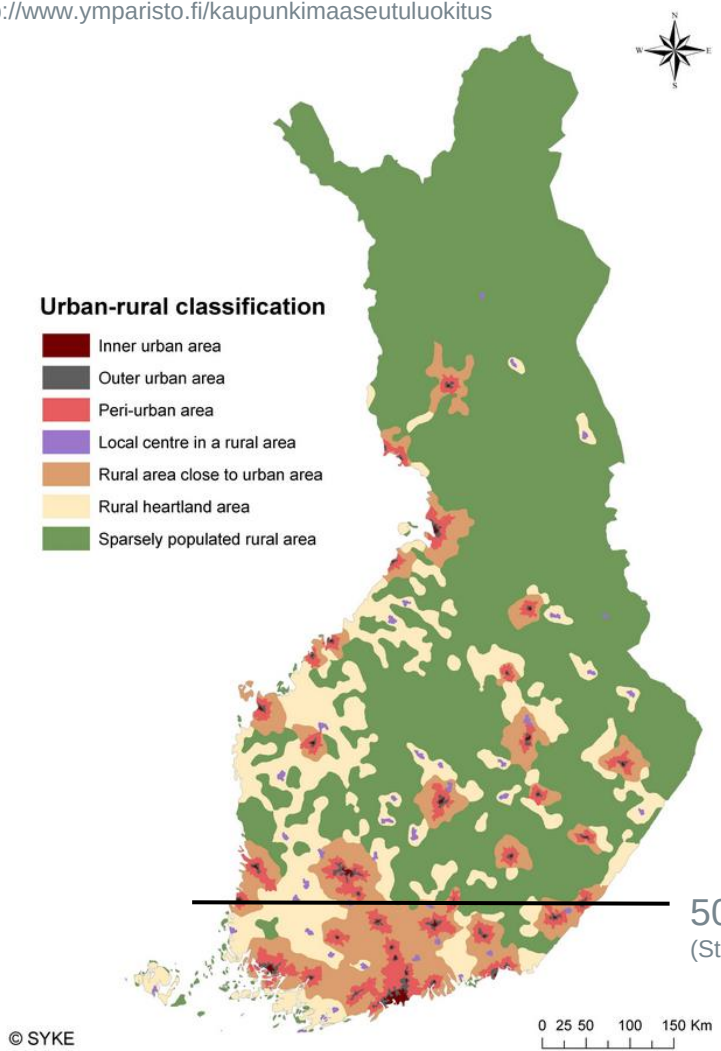
http://www.ymparisto.fi/kaupunkimaaseutuluokitus



Finland

- Population: 5,5 million
- Density: 18 inhab./ km2 (Lapland: 2 inhab./km2)
- Around 188 000 lakes
- Long winter

Photo: Jenni Eckhardt

50% of Finns live below the line
(Statistical yearbook of Finland 2018, Statistics Finland)

MaaS in different geographical areas

Cities

Objectives:

- Reduce the use private of cars (congestions, parking)
- Reduce emissions

Based on:

- Existing public transport
- Extended with rental and shared cars and bikes…

Suburban areas

Objectives:

- No need for a 2nd car
- First-/last-mile accessibility

Based on:

- Park & ride -services, on-demand transport and other services connecting suburban to city transport services

Rural areas

Objectives:

- Increase efficiency and utilization rate
- Maintain sufficient service level
- Improve accessibility

Based on:

- DRT, taxis, busses and connections to long-haul transport, and car pooling
- Additional services: parcel deliveries, library services, and food and medicine distribution…

National and international levels

Objective:

- Offer easy all-in-one packages

Based on:

- Long-haul transport including air traffic
- Additional services: accommodation, event tickets, activities…

MAASiFiE project: Eckhardt & Aapaoja 2016

SWOT: Rural MaaS

Strengths

- **Decision-makers** are development oriented
- **ICT**: extensive infrastructure, digitalization
- **Local** stakeholders and knowledge
- **Stable** situation (population and services)
- **Trust** (sharing and peer-to-peer services)
- **Subsidized transportation** (backbone)

Weaknesses

- **Silo effect** of stakeholders
- **Procurement**
- **Expensive** current system
- Lack of **IT systems and information**
- **Concentration** to population centres
- **Inefficiency** (flows, distances, occupancy rates)
- Limited **infrastructure**
- Lack of **travel chains** and interoperability of modes

Opportunities

- **Collaboration** of public stakeholders
- **Reform and changes in legislation**
- Needed **technology exists, open data**
- **Combine** rides and create **travel chains**
- Improved **accessibility**
- **Bringing services** to customers

Modified from: Eckhardt, J., Nykänen, L., Aapaoja, A. & Niemi, P. (2018). MaaS in rural areas - case Finland. Research in Transportation Business & Management. Published online 9th of October 2018, Elsevier.

Threats

- **The Transport Code** will benefit large companies
- **Uncertain future** → development stops
- **Lack of collaboration** and separate visions
- Support and **subvention** is decreasing
- Condition of the **road network**
- **Urbanization**, aging population in the countryside
- No new **market-based services**
- **Inclusive** transport system?

Rural MaaS vision

“Ensure for everyone adequate mobility services and accessibility relative to well-being, cost-efficiently with an appropriate service level”

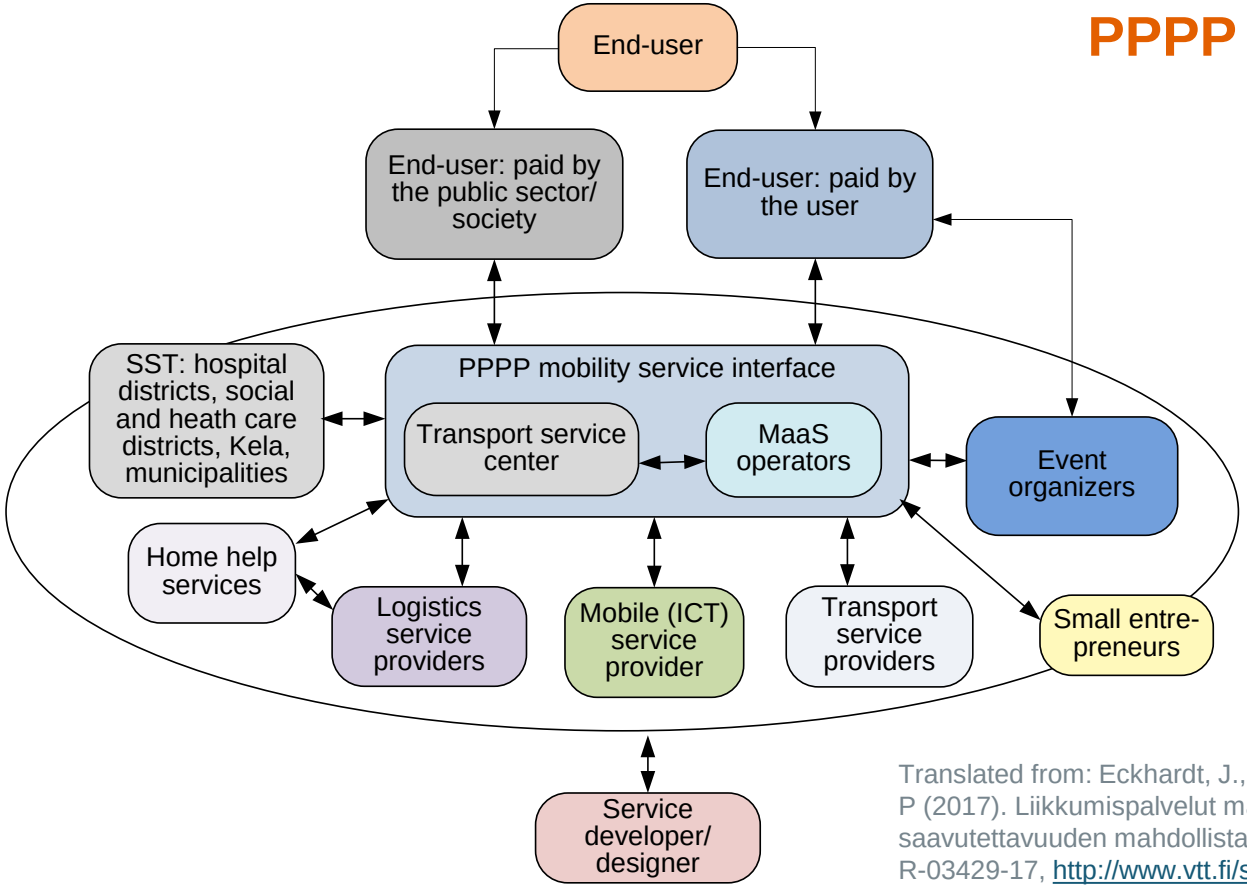
Eckhardt, J., Nykänen, L., Aapaoja, A. & Niemi, P. (2018). MaaS in rural areas - case Finland. Research in Transportation Business & Management. Published online 9th of October 2018, Elsevier.

Potential solutions for rural areas

- Combine:
  - Mobility of people and goods
  - Publicly subsidized and market-based transport services
- Create:
  - Travel chains
  - On-demand transport services
- Share, prosume:
  - Ridesharing for people and goods
  - Sharing services (cars, taxi rides…)
  - Peer-to-peer rental services
  - Ridesourcing
  - Organized hitchhiking

Photo: Jenni Eckhardt

PPPP network



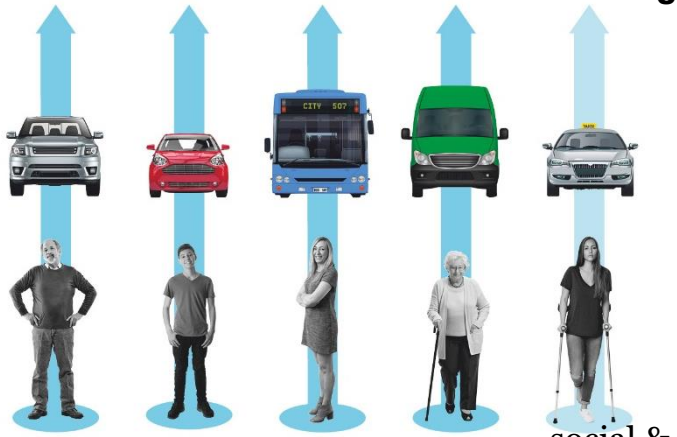
Translated from: Eckhardt, J., Nykänen, L., Aapaoja, A. & Niemi, P (2017). Liikkumispalvelut maaseudun elinvoimaisuuden ja saavutettavuuden mahdollistajana. VTT Research Report VTT-R-03429-17, http://www.vtt.fi/sites/maaseutumaas

Smart Solutions for Integrated Regional Mobility Services (’ALPIO’)

- The Finnish Innovation Fund Sitra funding call for regional mobility
- Duration: 05/2018 – 10/2019
- Regional pilots:
  - Combine statutory health and social service transportation, service routes and self-paying customers using a mobile app
  - Demand-responsive-transport services
- Companies work on creating a digital platform
- VTT performs impact assessment

https://www.sitra.fi/en/projects/public-private-mobility-services-offered-side-side/#what-is-it-about

TODAY



car user | young | public transport user | service route user | social & health service client

REGIONAL ACCESSIBILITY

VEHICLE OCCUPANCY RATE

SERVICE LEVEL IN SPARSELY POPULATED AREAS

MOBILITY COSTS

GREENHOUSE GAS EMISSIONS

FUTURE

Figure: Sitra, VTT and other project partners 2019

private client

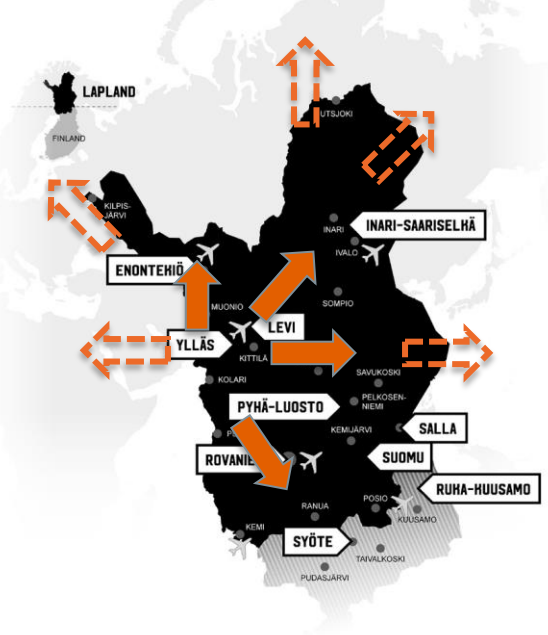
subsidized client

SITRA

LAPLAND
Above Ordinary

Open Arctic MaaS
#ArcticMaaS

- **Enabling rural MaaS and sustainable growth of tourism in Lapland**
  - Area of ~100 000 km^2
- **Joint effort to make mobility as easy as possible**
  - 11 remote travel destinations joining their resources to improve internal accessibility and digital transport service level
- **Up-scale deployment towards open and shared mobility platform**
  - by utilizing and further developing common open source public transport information systems



Open Arctic MaaS core team

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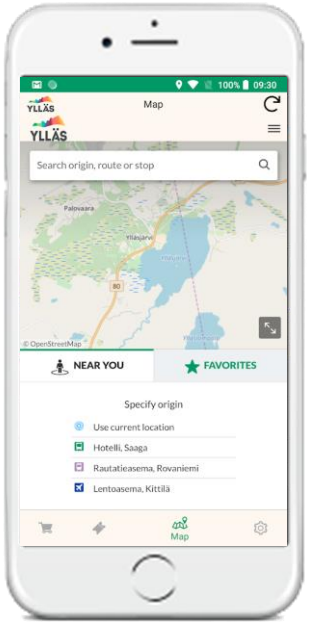
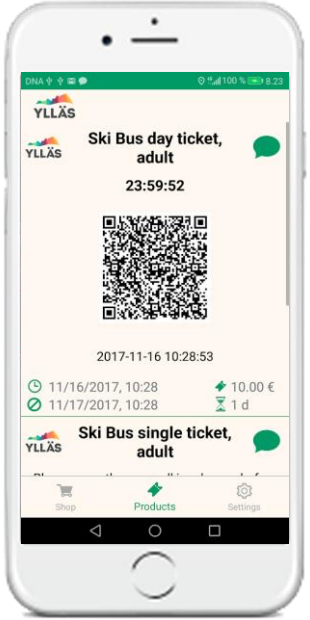
More: www.arcticmaas.fi

LAPLAND
Above Ordinary

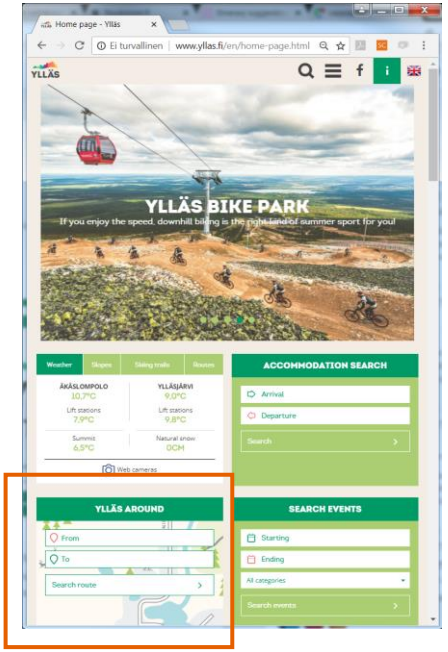
Ylläs Around pilot 2017-2018 as Proof of Concept



Ylläs Around
Journey Planner



Ylläs Tiketti
Integration to ticketing & payment application



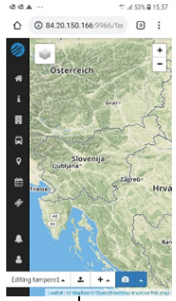
Ylläs web portal integration

LAPLAND
Above Ordinary

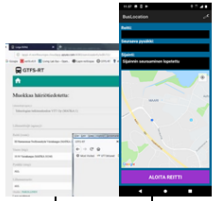
Technical vision

Open multimodal transport data (Data tools, sources & databases)

Transport data editor



Real-time data tools



Service alerts and disruption information

Vehicle locating app

GTFS-RT

Real-time public transport data

GTFS

Static public transport data

OpenStreetMap

Geodata (road network, addresses, bus stops, ...)

Open multimodal public transport information services

Multimodal trip planner with real-time services

Virtual monitors for real-time route information

OpenTripPlanner

Innovative and sustainable mobility

On-demand services

Smart ticketing

Active modes

Integrating

Flexible feeder transit services (for seamless travel chains)

GTFS
GTFS-RT

Data collection and analytics

for tourism planning, mobility planning and operative use

Testing and piloting smart mobility solutions with target user groups

An open, connected, multimodal, real-time transport environment

Conclusions

- Collaboration and interoperability
  - National and international: policy making, regulation, technical…
  - Business sector, public sector, PPPP...
  - Between modes and service providers
- Data: collection, updates, digitalization, integration, quality
- Pilots
  - Benchmarking of best practices
  - Impacts on different levels
  - Pilot duration and marketing
  - Continuation after pilots

Figure: Kyytiin! project 2017

www.vtt.fi/sites/maasifie

www.vtt.fi/sites/maaseutumaas

www.arcticmaas.fi

https://www.sitra.fi/en/projects/public-private-mobility-services-offered-side-side/#what-is-it-about

https://vamosapi.com/

www.vtt.fi/maasdigiboksi

Thank you!

Questions?

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