Open Arctic MaaS

Digital mobility services for rural areas

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Vihreät matkaketjut,
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Open Arctic MaaS (#ArcticMaaS)

- **Enabling rural MaaS** and sustainable growth of tourism in Lapland
  - Area of ~100 000 km2
- **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
- Continuation for VAMOS! (Value Added Mobility Services!)
  - Proof of concept in Ylläs

Starting point

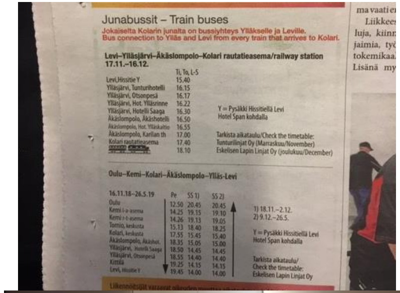
Rural tourism facing mobility challenges

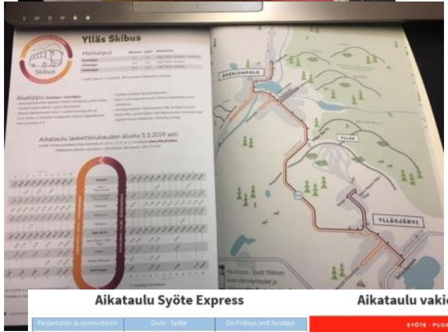
- Tourist **destinations** and attractions are **distributed sparsely in large areas**
- **Reaching destinations** sometimes **challenging**
- Supply and **demand vary strongly** depending on seasons and local destination popularity
- Local transport **services** mainly **available** on **high seasons** between **main destinations**
- **Taxis rarely** available or economic **alternative**
- Tourists come with **varying needs and interests**
- Services by **small businesses**
- **Information** about mobility service offering **difficult to find**

LAPLAND IS DRIVER FOR GROWTH IN TOURISM.

Source: Lapin materiaalipankki

Information on mobility service offering



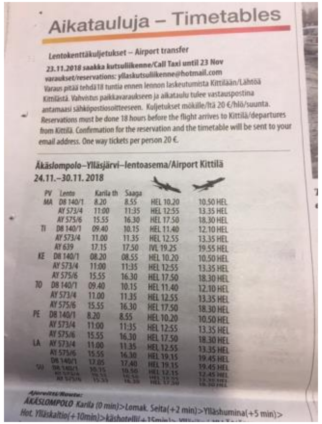


Information on mobility service offering scattered to numerous places and formats in newspapers, leaflets, web pages etc.

DIGITALIZED MOBILITY SERVICES

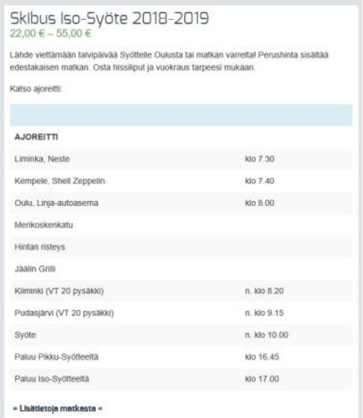
like trip planners in rural areas

virtually absent!



Linja 1		Line 1
Hotelli Iso-Syöte	9:45	Hotel Iso-Syöte
Eturinne Iso-Syöte, Tunturi Market	9:55	Iso-Syöte base, Tunturi Market
Pärjänkievari/Luontokeskus	10:00	Pärjänkievari/NP Visitor Centre
Hotelli Pikku-Syöte	10:10	Hotel Pikku-Syöte
Eturinne Pikku-Syöte	10:15	Pikku-Syöte base
Pärjänkievari/Luontokeskus	10:20	Pärjänkievari/NP Visitor Centre
Eturinne Iso-Syöte, Tunturi Market	10:25	Iso-Syöte base, Tunturi Market
Linja 2		**Line 2**
Pärjänkievari/Luontokeskus	12:30	Pärjänkievari/NP Visitor Centre
Eturinne Iso-Syöte, Tunturi Market	12:35	Iso-Syöte base, Tunturi Market
Hotelli Iso-Syöte	12:45	Hotel Iso-Syöte
Eturinne Iso-Syöte, Tunturi Market	12:55	Iso-Syöte base, Tunturi Market
Pärjänkievari/Luontokeskus	13:00	Pärjänkievari/NP Visitor Centre
Pikku-Syöte	13:05	Pikku-Syöte
Linja 3		**Line 3**
Eturinne Pikku-Syöte	14:25	Pikku-Syöte base
Hotelli Pikku-Syöte	14:30	Hotel Pikku-Syöte
Pärjänkievari/Luontokeskus	14:40	Pärjänkievari/NP Visitor Centre
Eturinne Iso-Syöte, Tunturi Market	14:45	Iso-Syöte base, Tunturi Market
Hotelli Iso-Syöte	14:50	Hotel Iso-Syöte
Eturinne Iso-Syöte, Tunturi Market	14:55	Iso-Syöte base, Tunturi Market
Eturinne Pikku-Syöte	15:00	Pikku-Syöte base
Hotelli Pikku-Syöte	15:05	Hotel Pikku-Syöte
Linja 4		**Line 4**
Eturinne Iso-Syöte, Tunturi Market	17:00	Iso-Syöte base, Tunturi Market
Hotelli Iso-Syöte	17:05	Hotel Iso-Syöte
Eturinne Pikku-Syöte	17:15	Pikku-Syöte base
Hotelli Pikku-Syöte	17:20	Hotel Pikku-Syöte

8.-23.12.2018, 7.1.-16.2.2019, 11.-30.3.2019 ma-la 24.12.2018-5.1.2019, 18.2.-10.3.2019, 19.-21.4.2019 päivittäin 1.-18.4. lauantaisin



Variety of mobility services in the areas

	Ylläs	Kemijärvi	Pyhä-Luosto	Salla	Kittilä / Levi	Enontekiö	Koillismaa	Muonio
Taxi	6	12	5-9	15-25	18	15	83	10
Rental catrs	-	X	X	X	X	-	X	X
Bus transportation, normal routes	X	X	X	X	X	X	X	X
Feeder transportation	X	X	X	X	X	X	X	X
On-demand transit	X	X	X	X	X	X	X	X
Flexible routes	X	X	X	-	-	X	X	-
Mobility services by tourist service providers	X	X	X	X	X	-	X	-
Shared rides	X	-	-	-	-	X	X	-
School etc. subsidized transport	X	X	?	X	X	X	X	X
Other mobility services & means	X	-	X	X	X	X	X	-

State of the digitalization in the areas

	Yläs	Kemijärvi	Pyhä-Luosto	Salla	Kittilä / Levi	Enontekiö	Koillismaa	Muonio
GTFS-tool usage skills	X	(X)	-	-	-	-	-	-
Stops in Digiroad	X	X	X	?	X	X	X	?
Other than official stops	X	X	X	X	X	X	X	?
Digitized timetables and routes	X	-	-	-	-	-	-	-

Why to digitize mobility services?

Why to digitize mobility services? (1)

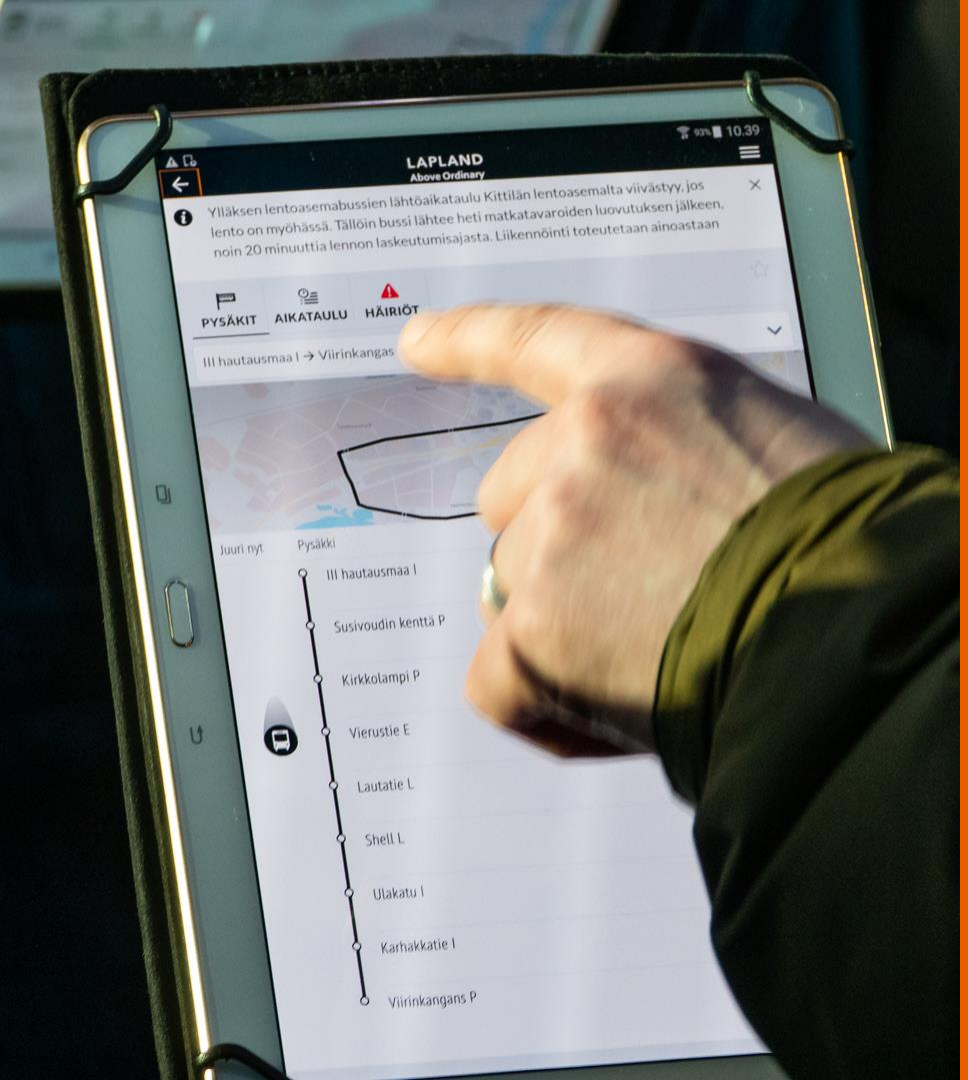
- **Better customer experience**
  - All mobility as **harmonized service offering** and available **from one preferred place**
  - Powerful **search & routing tools** for door-to-door travelling
  - Allows **online ticketing** and **MaaS solutions** combined to trip planning
  - Provides **navigation** and **on-trip guidance** including walking directions to/from stops
  - Provides **better information** on pricing, accessibility, etc.
  - **Real-time information** for optimizing travelling and informing about disruptions
  - Dynamic and flexible mobility services providing **more mobility alternatives**
  - **Combination of mobility and other services** serving needs better
  - **Better accessibility** to mobility services for those having special needs

Why to digitize mobility services? (2)

- **More business to mobility service provider**
  - Own service offering **accessible for more people**
  - **Integration to travel chains** through digital routing and MaaS solutions
  - Allows **planning tools for optimizing** mobility service offering
  - **Managing fleets and operation** (in real-time) becomes easier
  - Real-time info to passengers takes **decreases load in customer service**
  - **Interactive online services provide Information about peoples' needs**
  - Digitalization enables **new kinds of mobility services**
  - **Optimization of resource use** through online services, intelligent routing, etc.

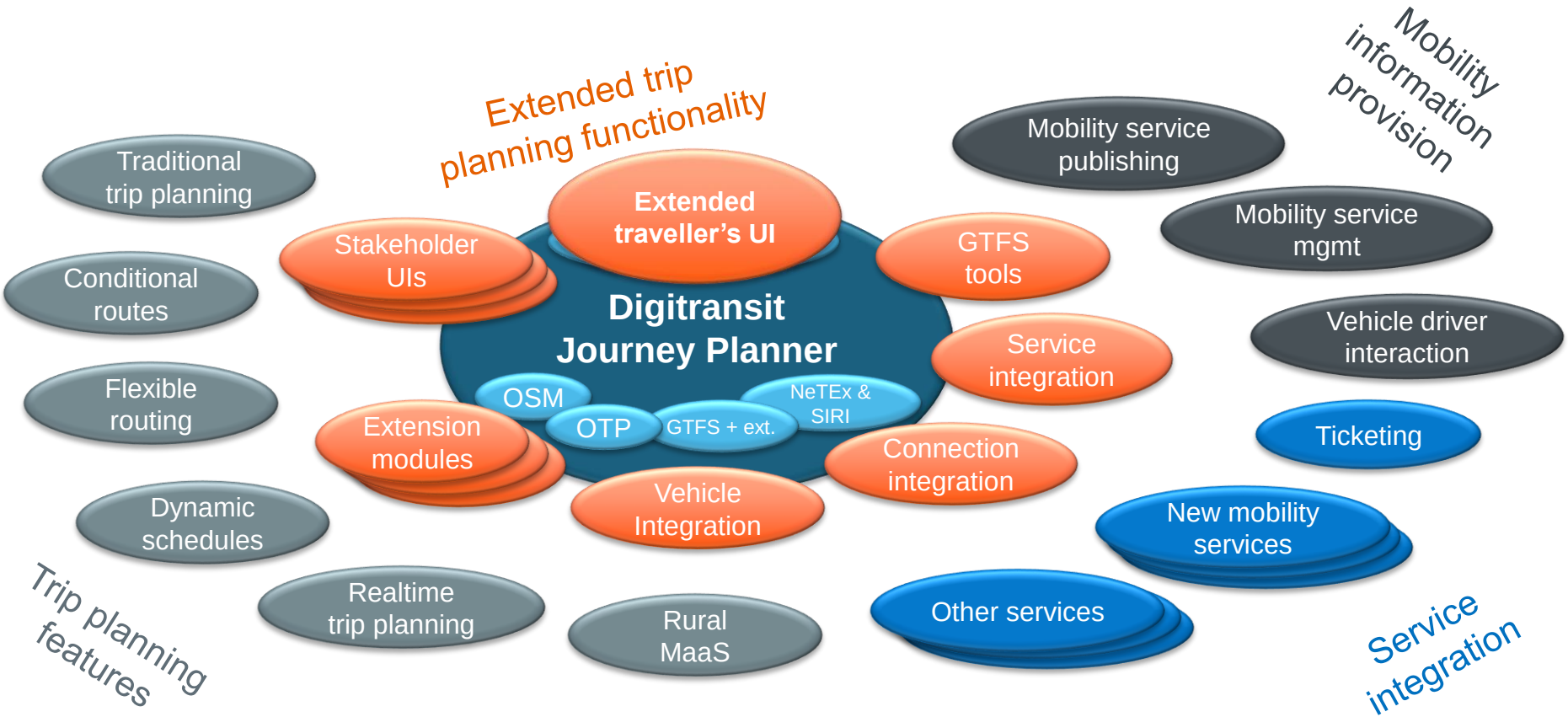
Why to digitize mobility services? (3)

- **More appealing service offering for other service providers**
  - Combining and packaging **mobility services** easily **with other services**
  - Holistic view for **destination management and development**
- **Holistic view for authorities organizing transport**
  - Find gaps in service offering and **guarantee services for all**
- **Finland as a more attractive destination**
  - Easy to **plan a visit**
  - Easy to **find and use services**



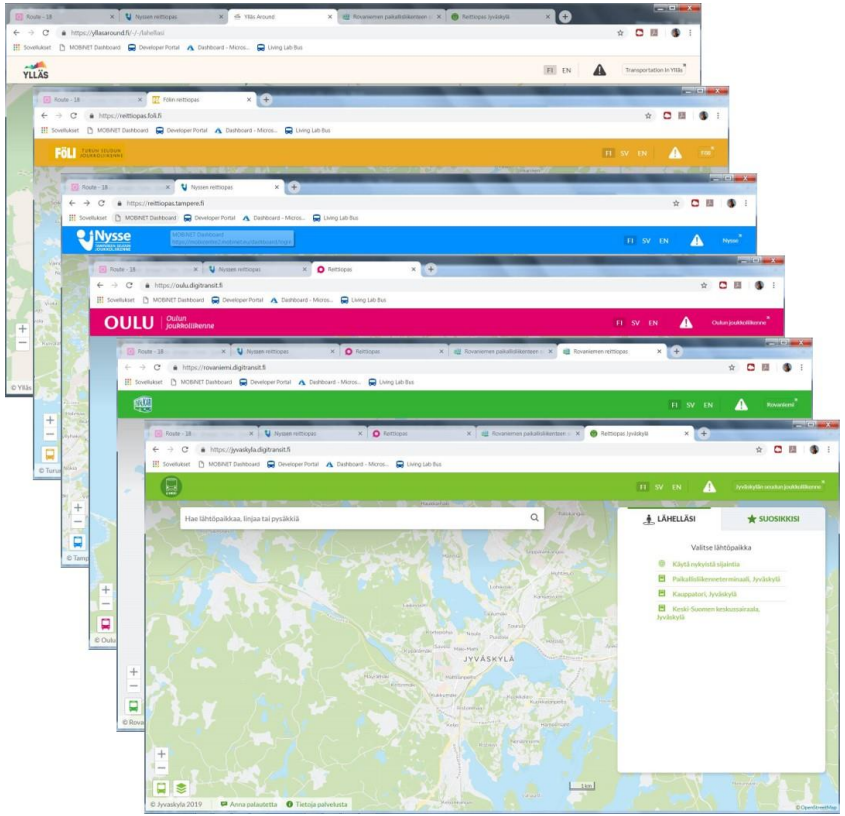
Examples of work in Open Arctic MaaS

Rural trip planning vision

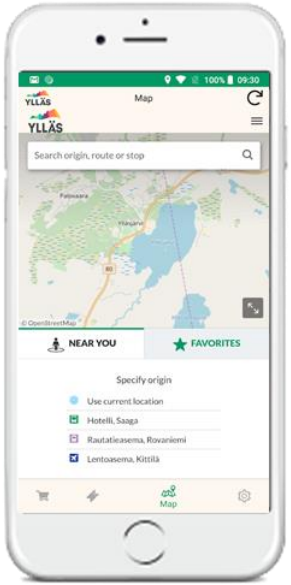


Digitransit as a basis for lapinreittiopas.fi

- *Digitransit* is a **open source** collaboration project providing a service platform for a **public transport journey planner**.
- The service is based on *OpenTripPlanner*
- Development by Helsinki Region Transport (HSL), the Finnish Transport Infrastructure Agency (Väylä) and TVV LMJ Oy (so far).
- Used in ~15 cities, towns or areas in Finland
- Norwegian national journey planner started from the same foundations
- **Our starting point for development of rural area trip planner**

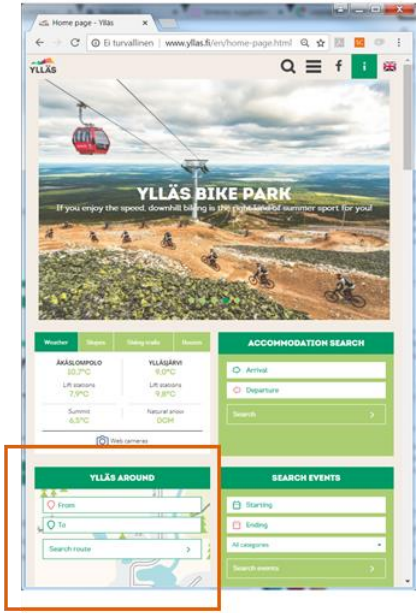


Flashback: Ylläs Around pilot (2017-2018)



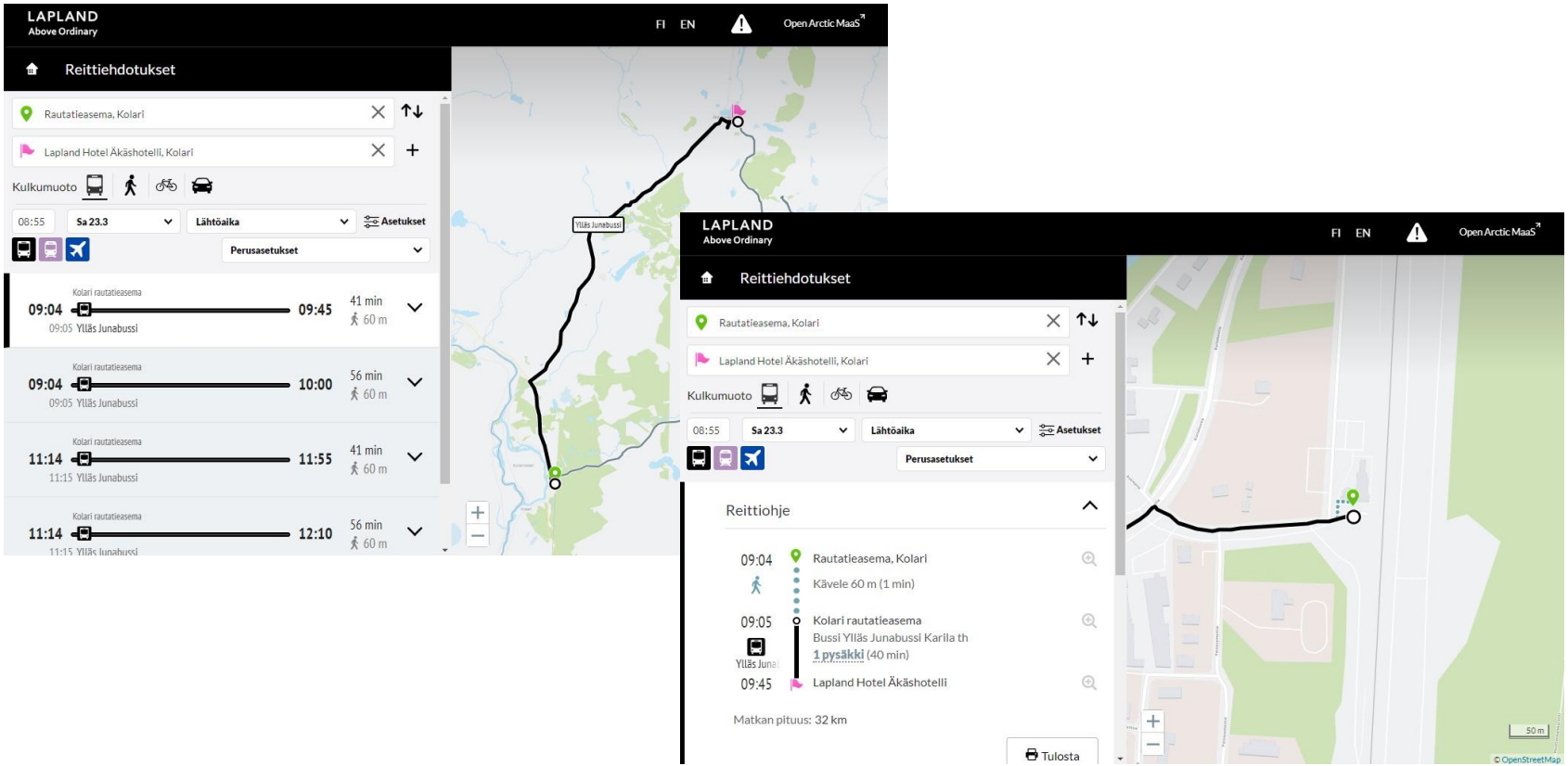
Ylläs Around
Journey Planner

Ylläs Tiketti
Integration to ticketing & payment application

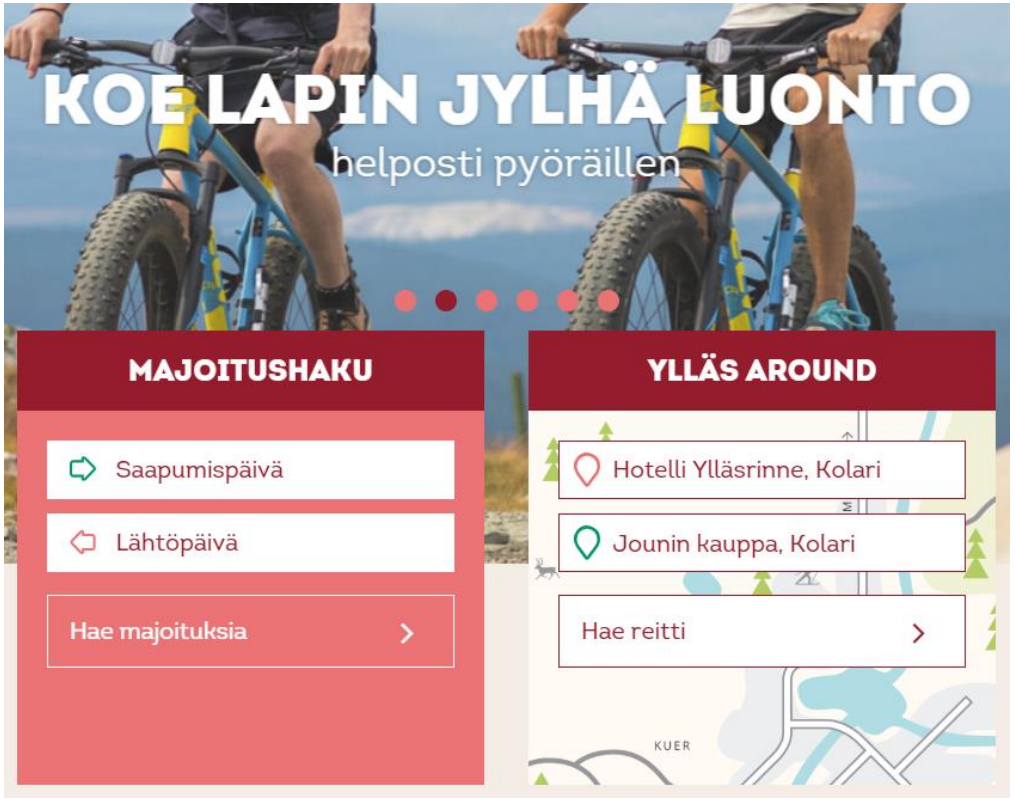


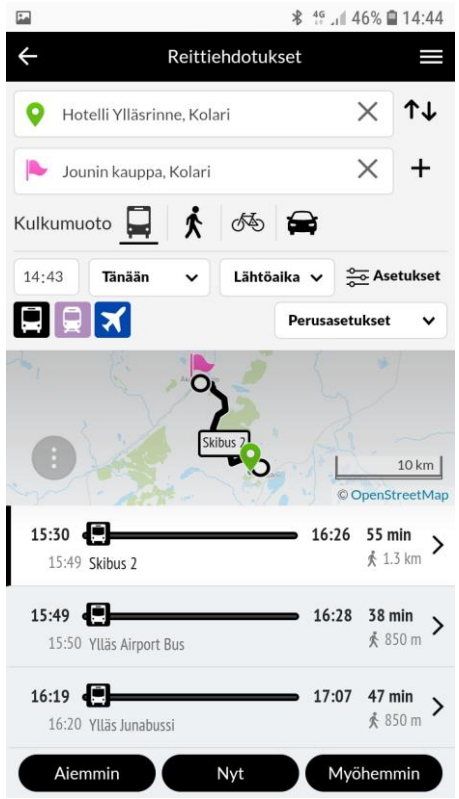
Ylläs web portal integration

Lapland trip planner – lapinreittiopas.fi (2018-)



Integration to the tourist resort portal



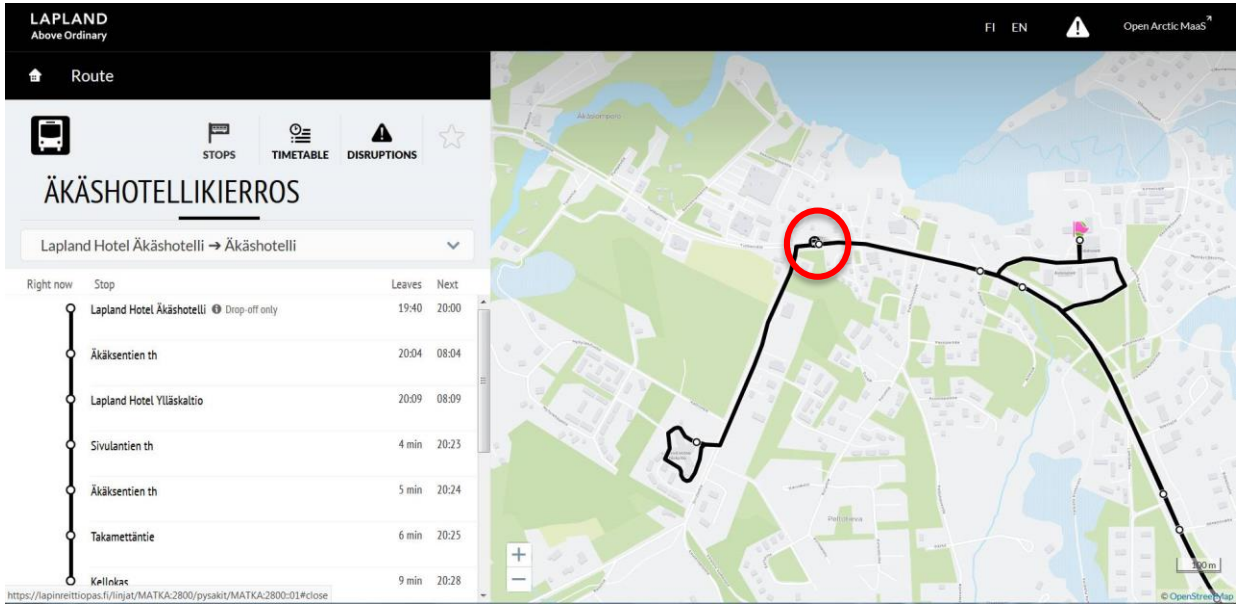


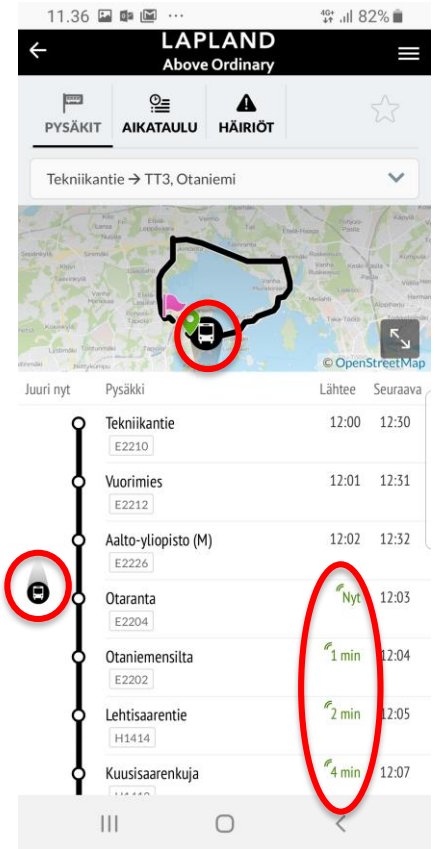
Real-time features emphasized in the tech work

- **Service alerts**
  - Inform customers with exceptions in operation
- **Trip updates**
  - Inform customers with real-time changes in timetables
- **Vehicle positions**
  - Show customer the real-time progress of the public transportation vehicles

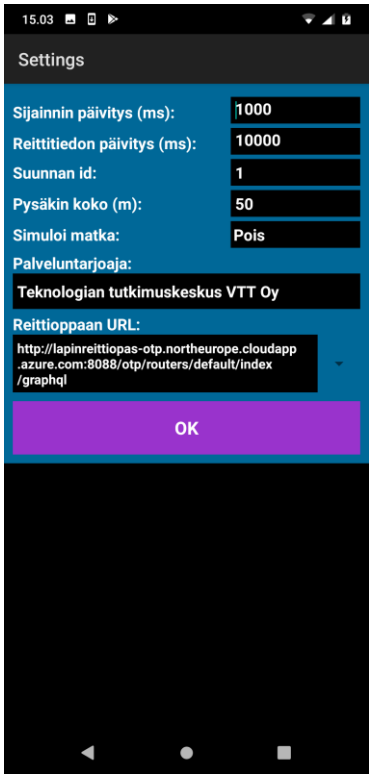
- **Why?**
  - Cancellation, disruptions, vehicle breaks down, changes on route
  - Real-time timetables dependent on weather, roadworks, other trips (e.g., feeder line from flights or trains)
  - Real-time information is important for customers, e.g. when:
    - there is -30 C outside
    - it is an imperative to catch the flight or train
    - transportation has some restrictions for passengers
    - there is a need to choose another stop because of route change
    - ….

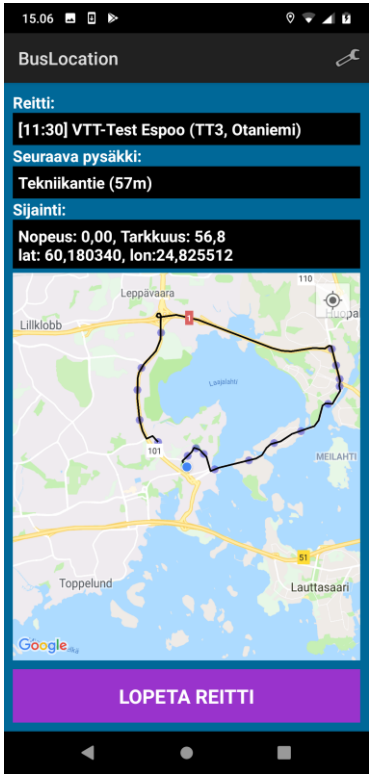
Real-time features – vehicle location

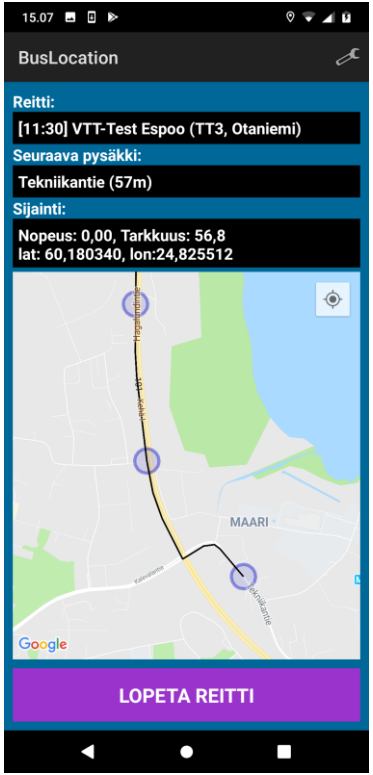




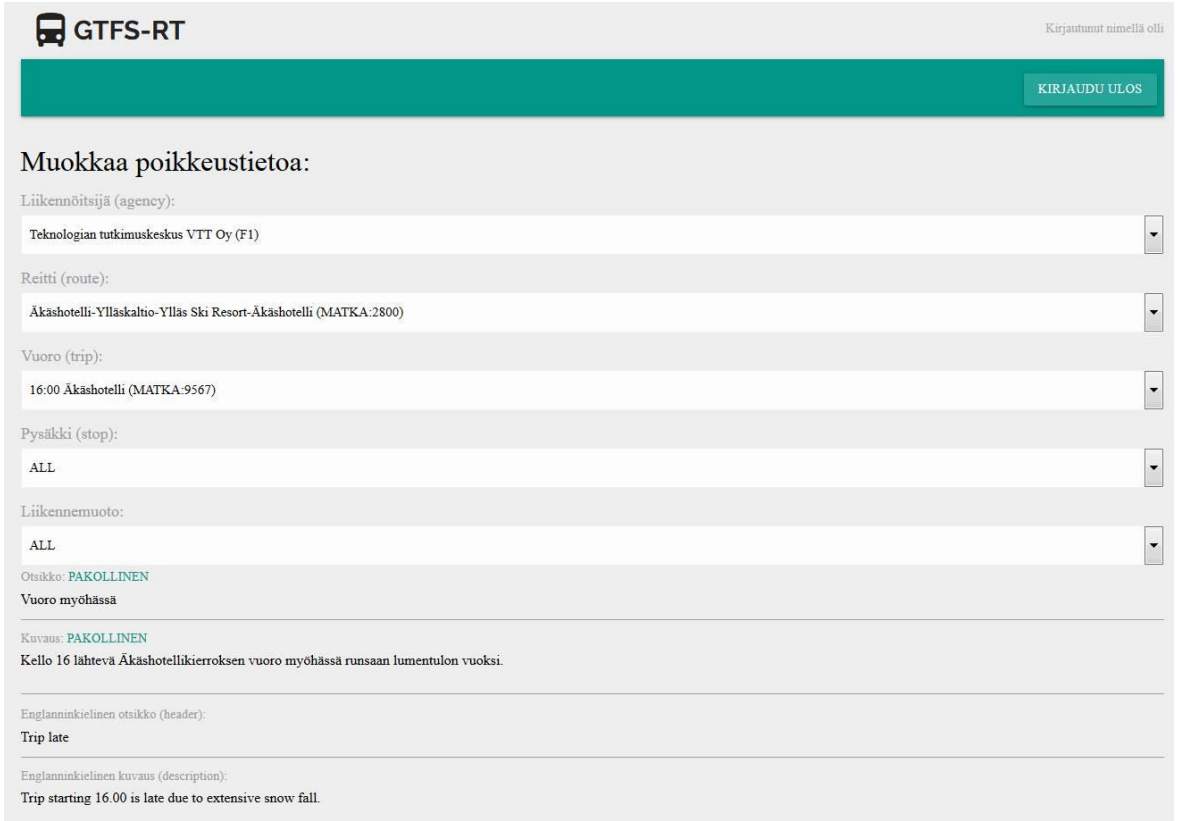
Real-time features – Driver's application



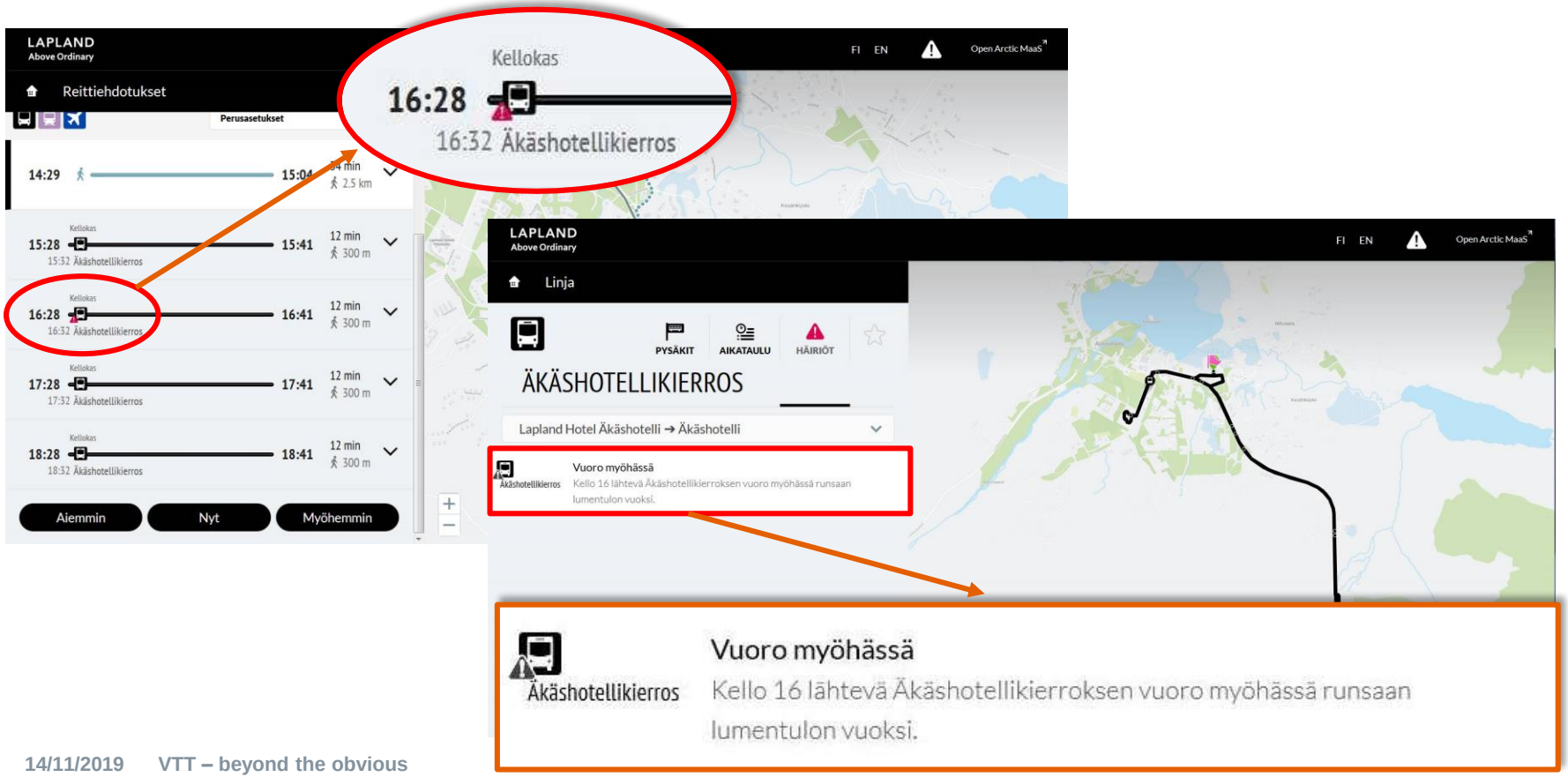




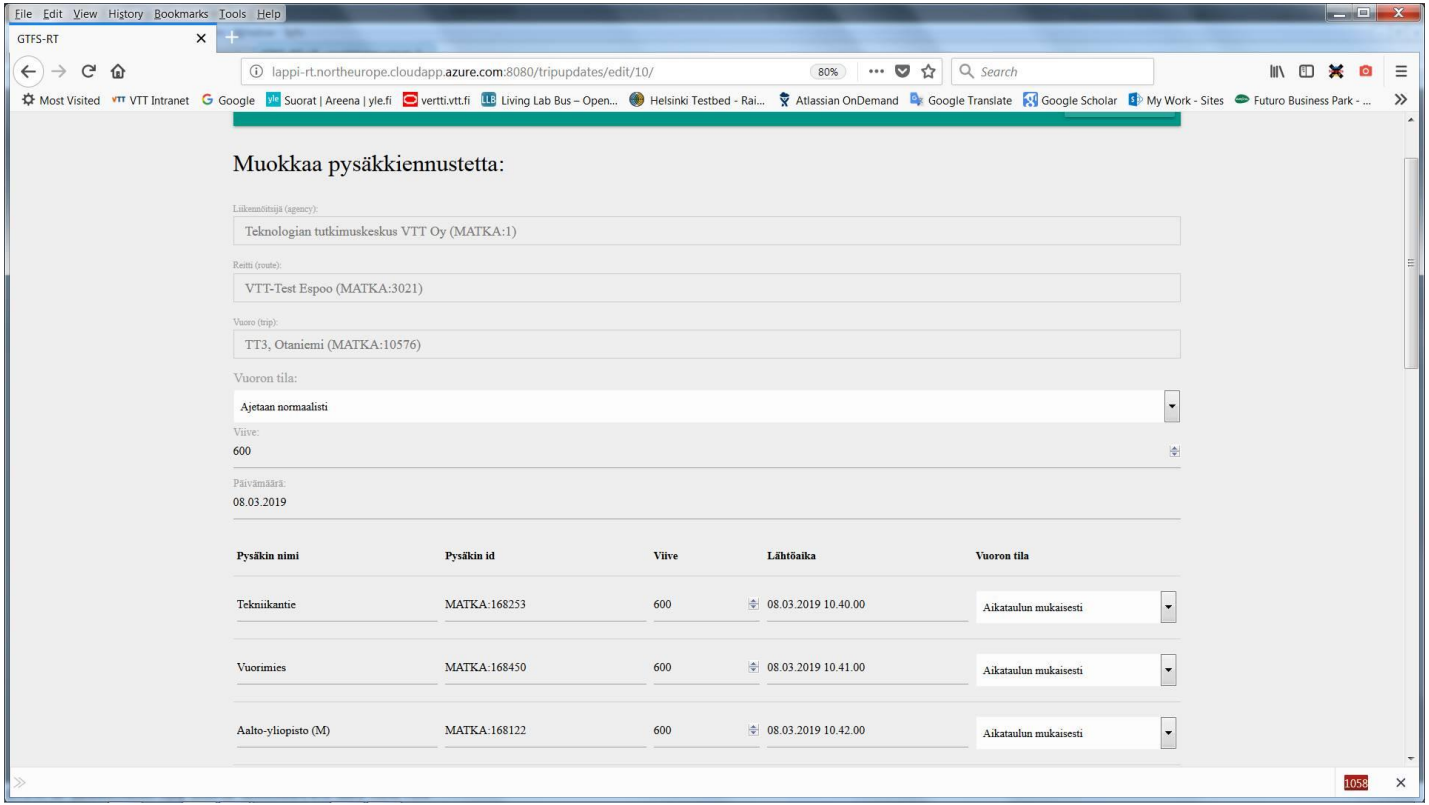
Real-time features – service alerts



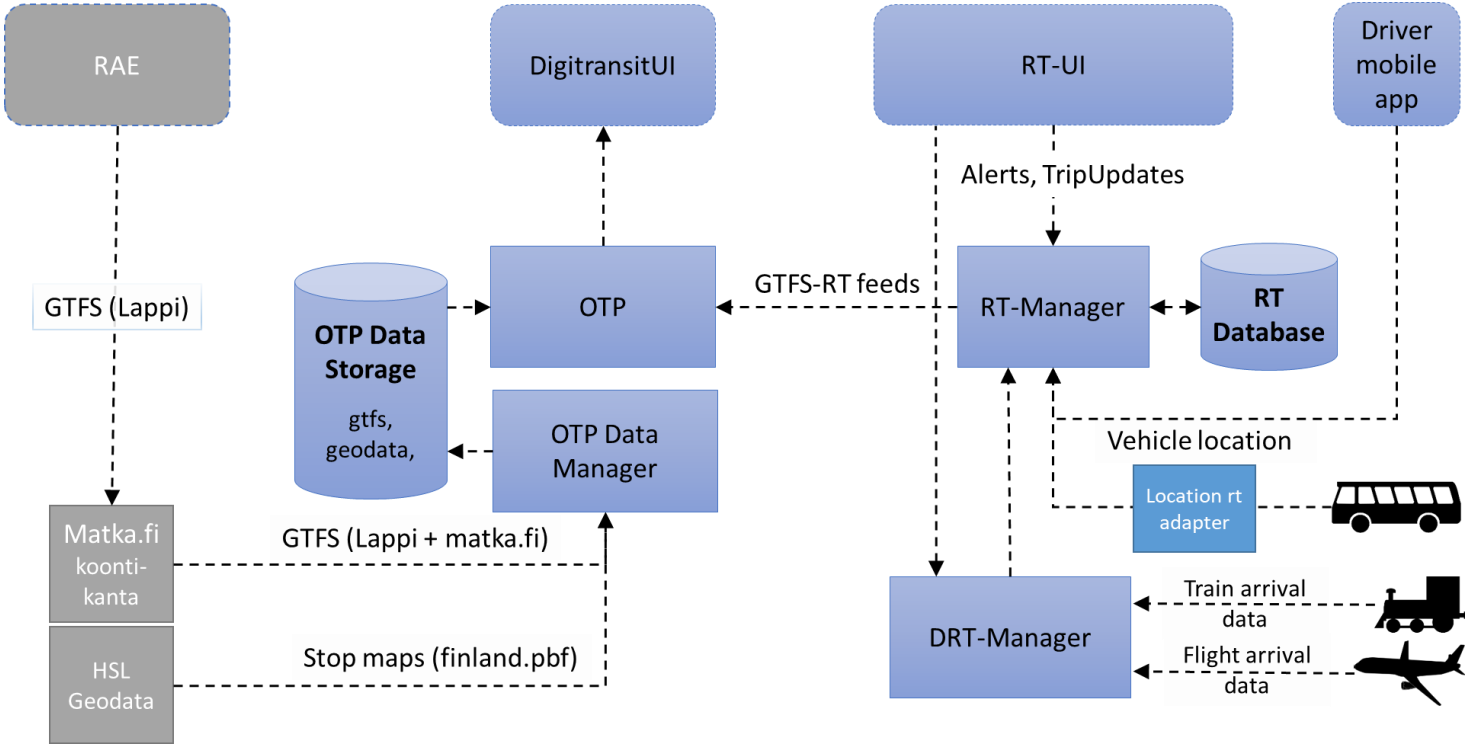
Real-time features – service alerts



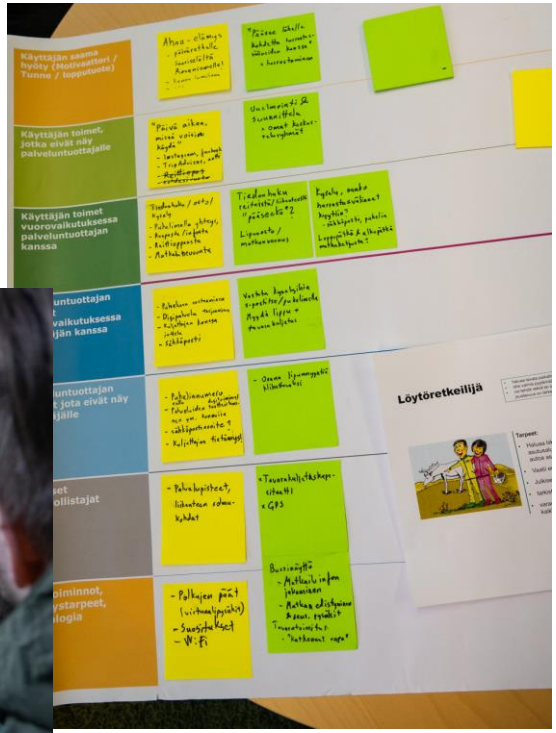
Real-time features – stop updates



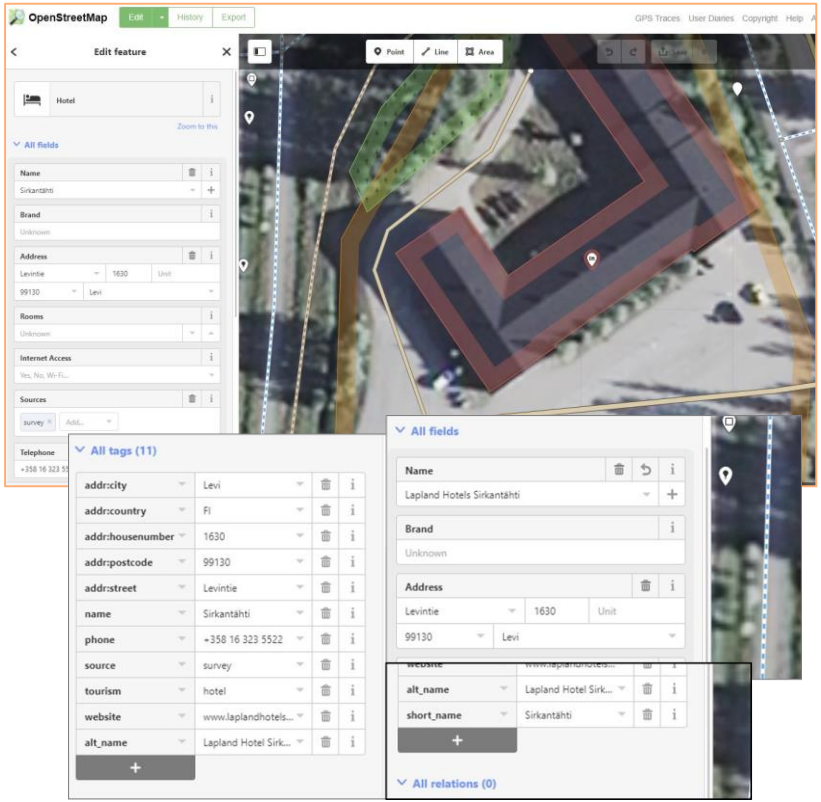
Simplified architecture of lapinreittiopas.fi

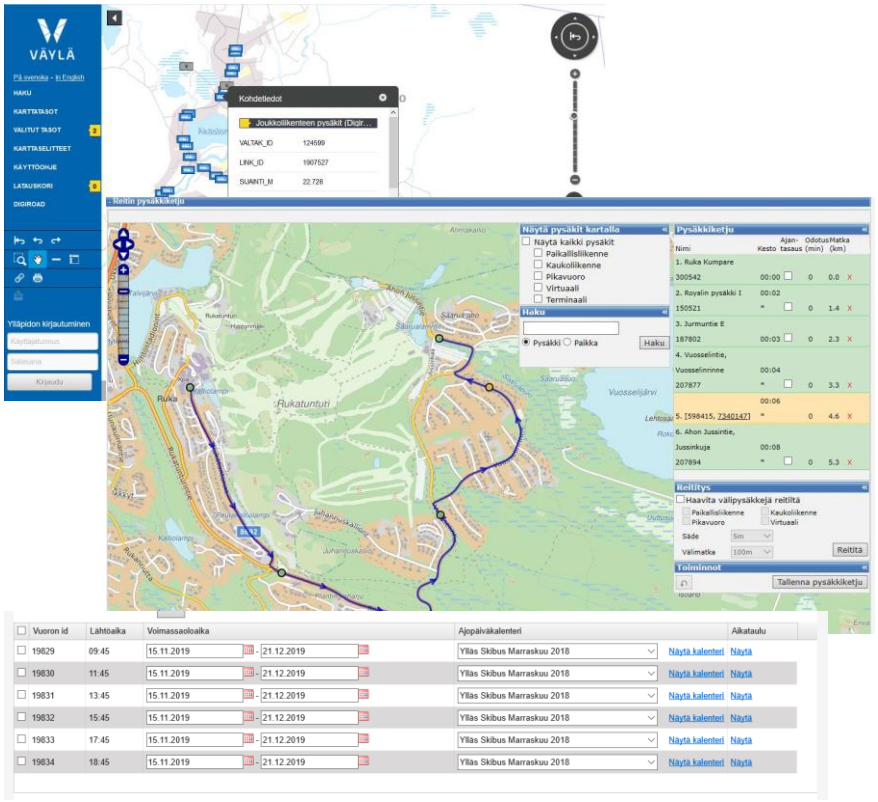


Co-creation and awareness building

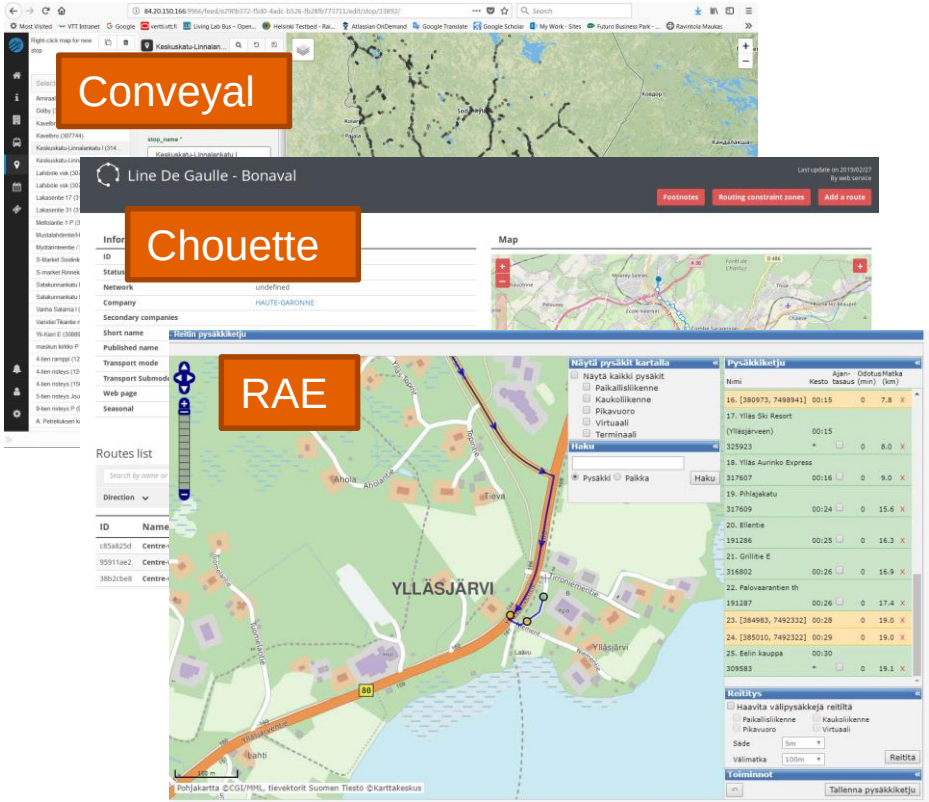


Concrete digitizing workshops





Route & timetable digitizers experimented



Conclusion on editors

- **RAE editor** (Traficom)
  - Targeted at small operators (GTFS)
  - Only freely usable editor in Finland if you do not choose to use **Google GTFS tools**
  - Old design, not very usableworks for basic GTFS
  - Not open, not further developed currently
- **Conveyal and Chouette** are open source editors requiring major work in order to apply them in them Finland
  - Entur in Norway has chosen to develop Chouette (NeTEx support)
- **No editors available supporting anything above basic routes and timetables for road traffic**

Conclusions

- **Mobility services in rural areas fragmented and poorly digitized** → traveller cannot find easily the services
- **Digital mobility services on the move** after national policy change and commercial stakeholders are taking roles where they see business – currently mainly in cities
- **Open Arctic MaaS created strategic network** for developing digital mobility services in Lapland – **operating models still to be developed and not only in Lapland**
- Piloting DigiTransit succesful – **enhanced access to mobility service offering** and **better customer experience**
- Major **deficiency in the digitizing tools** for small actors and special mobility needs
- **Work is really only beginning** – both technically and ecosystem-wise.
- **Digitalization is the key to attract and reach customers, to provide winning customer experience, to optimize service provision, and to co-operate with other players**


VTT
Thank you!
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