



# First annual conference

October 27, Oslo and online

Powered by open mobility data – EU regulation compliant



Nordic  
Innovation



nordic+

10.00	Welcome Hanne Nettum Breivik, ITS Norway
10.10	The NEMU project – accomplishments and first learnings on cross-border travel planning and payment (NEMU project)
10:45	NEMU Strategy and NEMU Rig – What next? Jenny Simonsen, ITS Norway
11:00	Workshop: The state of play for aligning cross-border travel planning, booking and payment in Europe
12.00	Lunch and Networking
12.50	Workshop: Multimodal cross-border planning and ticketing in one go throughout the Nordics. How can regional public transport benefit?
13.50	Coffee break
14.00	Workshop: Cross-border travel using sustainable transport: how to expand geographical reach?
15.00	Closing Panel discussion: Next step towards the vision
15.45	Summary and next steps
16.00	End of NEMU conference

# AGENDA

# Welcome

Hanne Nettum Breivik, ITS Norway

# Nordic vision 2030

*“The Nordic Region will become the world’s most sustainable and integrated region by 2030.”*

*— Nordic Prime Ministers, 2019*



## Green Nordic Region

- Climate action
- Biodiversity
- Circular economy



## Competitive Nordic Region

- Innovation
- Digitalization
- Mobility



## Socially Sustainable Nordic Region

- Inclusion
- Equality
- Education
- Well-being

# NEMU contribution

## Problem:

While using a private car or air travel to cross borders in the Nordic region is easy and digital, planning and traveling using sea-based or public transport is fragmented and mostly confined to national boundaries.

## Solution:

NEMU will demonstrate the use of public transport and private transport providers to travel across the Nordic region is possible and easy too. The initiative leverages existing open mobility data to enable seamless, sustainable, and borderless travel across Nordic in one go.

By integrating the planning, booking and payment process in a one-stop and user-friendly service, NEMU addresses the pressing need for more efficient and environmentally friendly transportation in the Nordics. In fact, planning of cross border multimodal journeys will go from hours of frustration to a few minutes of easy planning – and fully compete with the booking of air travel or using a car and GPS navigation.



# The NEMU project

Accomplishments and first learnings on cross-border travel planning and payment (NEMU project)

Søren Sørensen, SFMCON

Lars Tore Carlsen, Entur

Johanna Taskinen, Matkahoultto

# Nordic Ecosystem for Mobility Unlimited

## NEMU Project Consortium



Budget 5000 TNOK (431 TEUR) 50%

Project start: June 2024

Project duration: 36 months

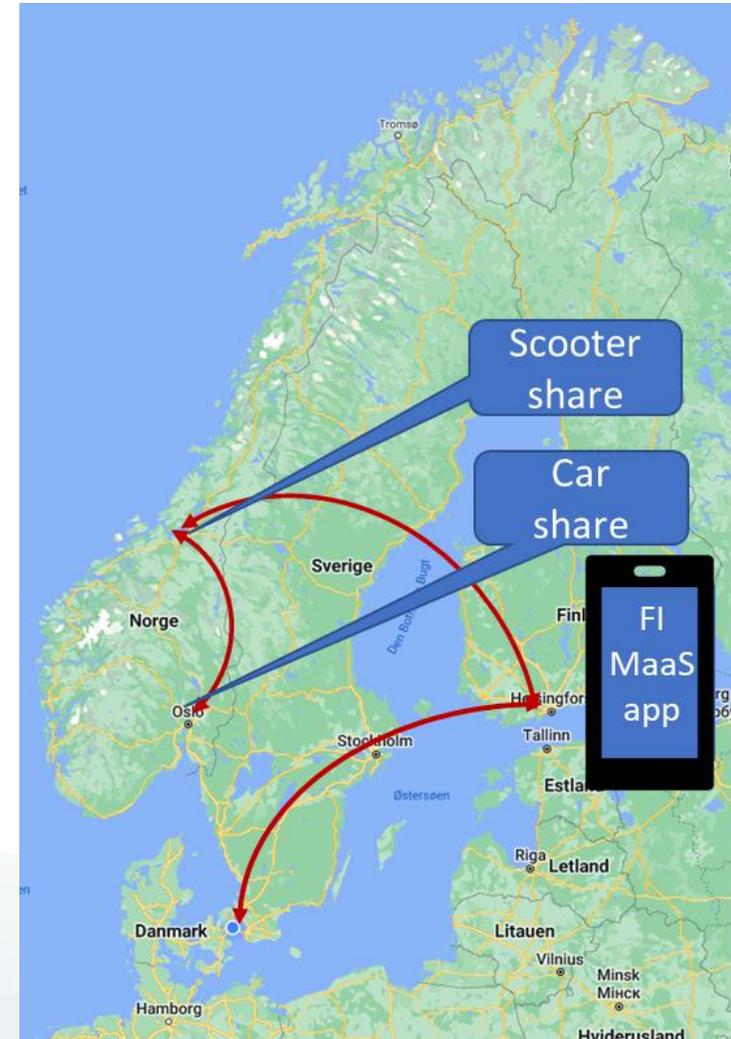


# Vision: MaaS Roaming 2030

## Roam like home for MaaS

Plan, book and pay for mobility services for any journey in and between the Nordic countries – in one go - using your “home” Mobility services app - your language – your currency

We encourage other countries and actors to join and take advantage of open mobility data as mandated



# Ground and sea mobility borderless in one go

MaaS emerging on National level in the Nordics

Next step: **Roam like home** on journeys outside direct reach of each MaaS agent.

Use your favourite app – your language – your currency anywhere in the Nordics

Scalable to European level.....



# For more

Follow the NEMU project  
here: [NEMU - ITS Nordic Plus](#)



For more on the project:

Søren Sørensen,  
NEMU project manager:  
[sos@sfmcon.com](mailto:sos@sfmcon.com)

# Entur

Our endeavour into seamless cross-border travel

# Goals for cross-border travel

Green transition



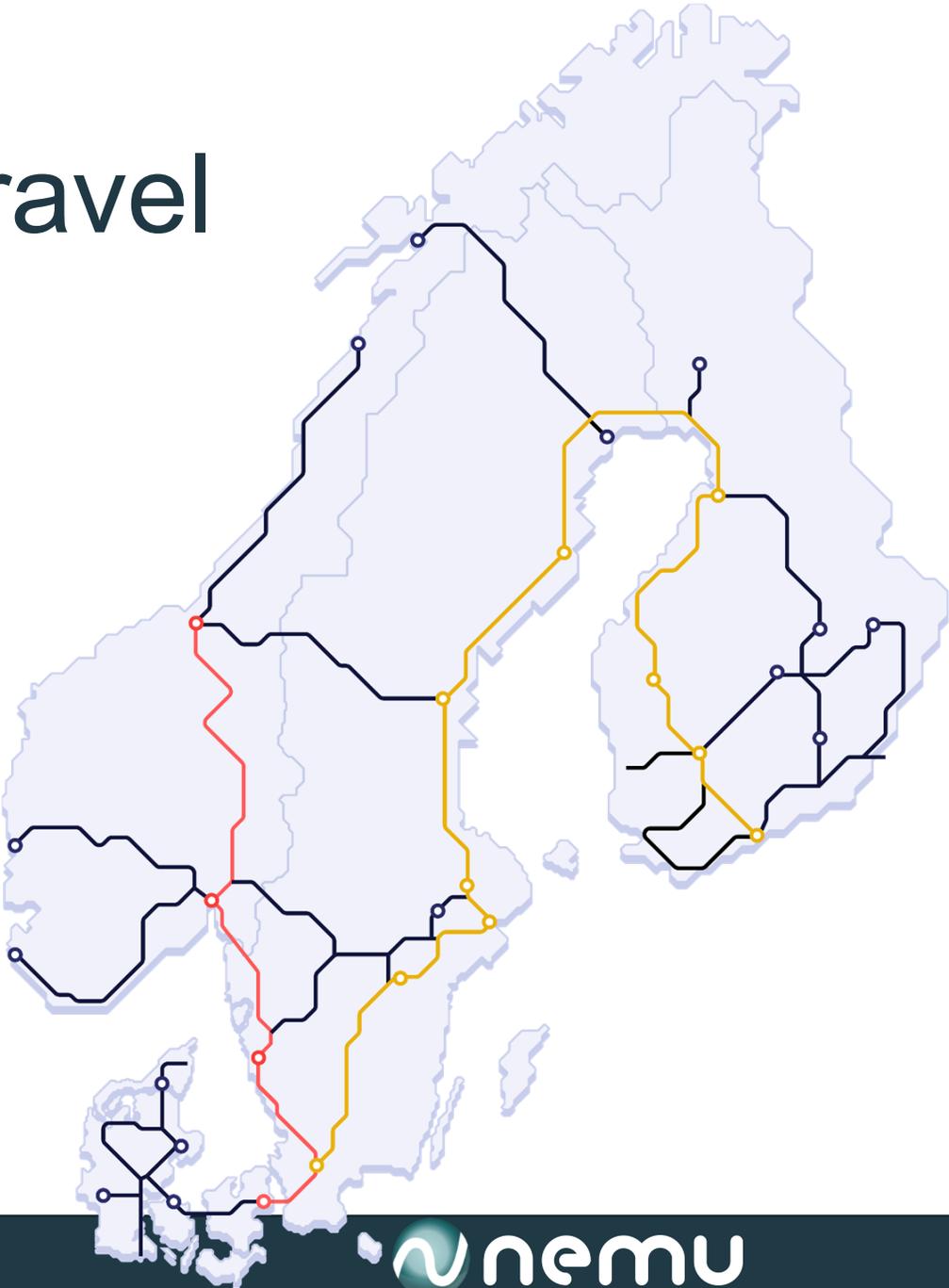
New markets



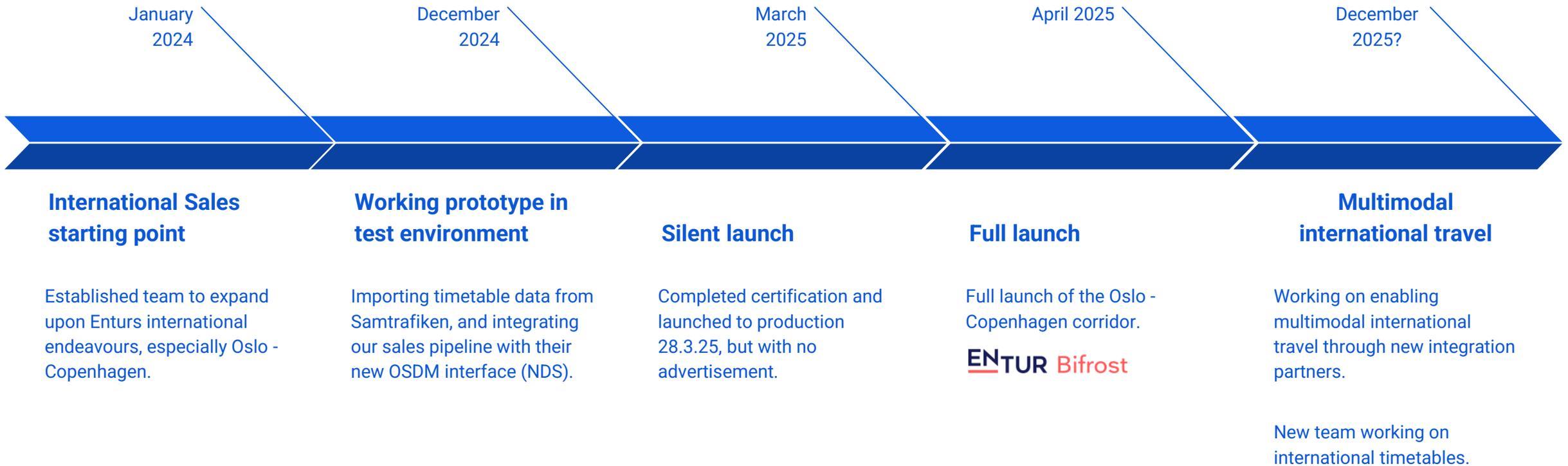
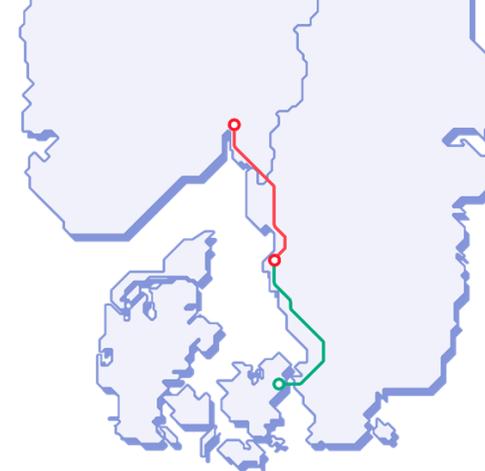
Low cost



Traveller value



# Our journey thus far



← Tilbake til reisesøk

## Detaljer om reisen

📅 Onsdag 29. oktober  
🕒 Reisetid: 16 t 32 min

← Forrige reise   Neste reise →

05:55 **Trondheim S**  
Spor 4

Tog med SJ Nord  
🚆 F6 Oslo S

📍 18 stopp

⌵ Tidligere avganger

12:48 **Oslo S**  
Spor 1

⚠️ Gå 2 minutter (168 m).  
Vent 1 time og 23 minutter

🔄 Togbytte. Husk å beregne nok tid.  
[Se regler for togbytter.](#)

14:14 **Oslo S**  
Spor 18

Tog med Vy  
🚆 RE20 Göteborg C

📍 9 stopp



📍 Vis reiseruten i kart

📅 Legg i kalender

✉ Send til epost

## Billetter

👤 1 voksen   🧒 0 tillegg   ✎ Endre

**Trondheim S**  
— **København H**

Avreise ons 29. okt. 05:55-22:27

**Standard + Velg sete**   1062 kr

⌵ Vis detaljer

📄 VY GRESUNDSTAG

**Premium + Standard**   1351 kr

⌵ Vis detaljer

📄 GRESUNDSTAG VY

**Standard**   997 kr

⌵ Vis detaljer

📄 VY GRESUNDSTAG

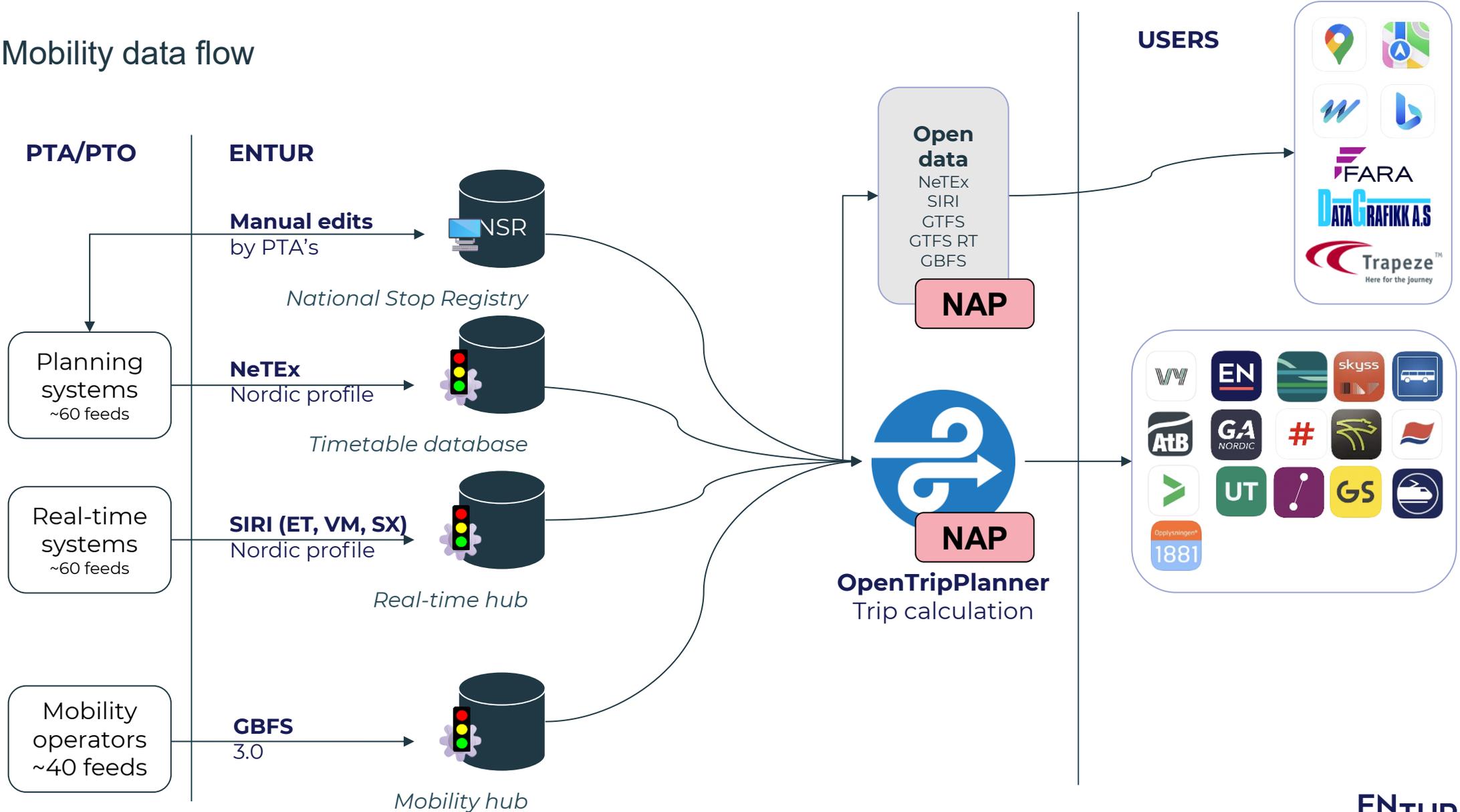
Hvilesete

+ Legg til rabattkode

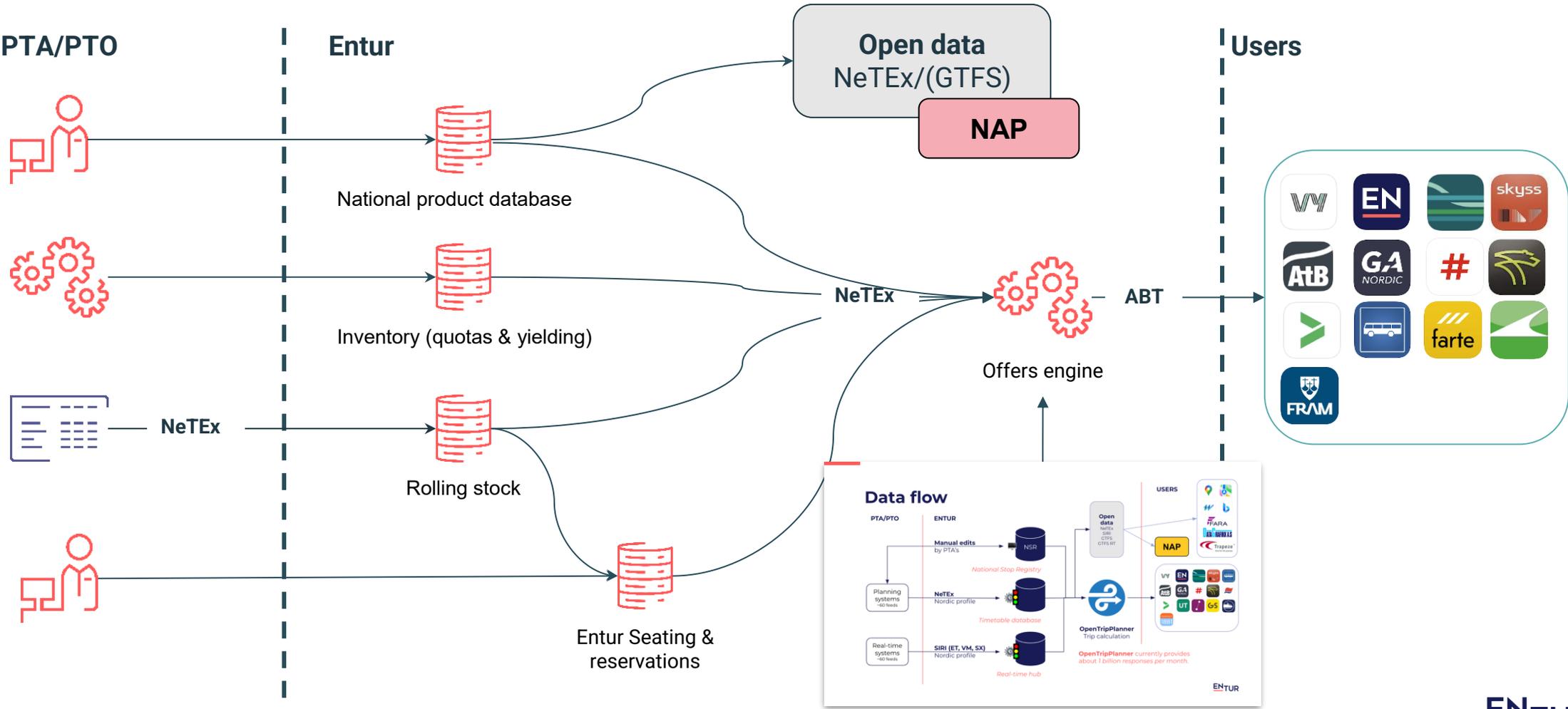
Totalt: 997 kr

Neste →

# Mobility data flow

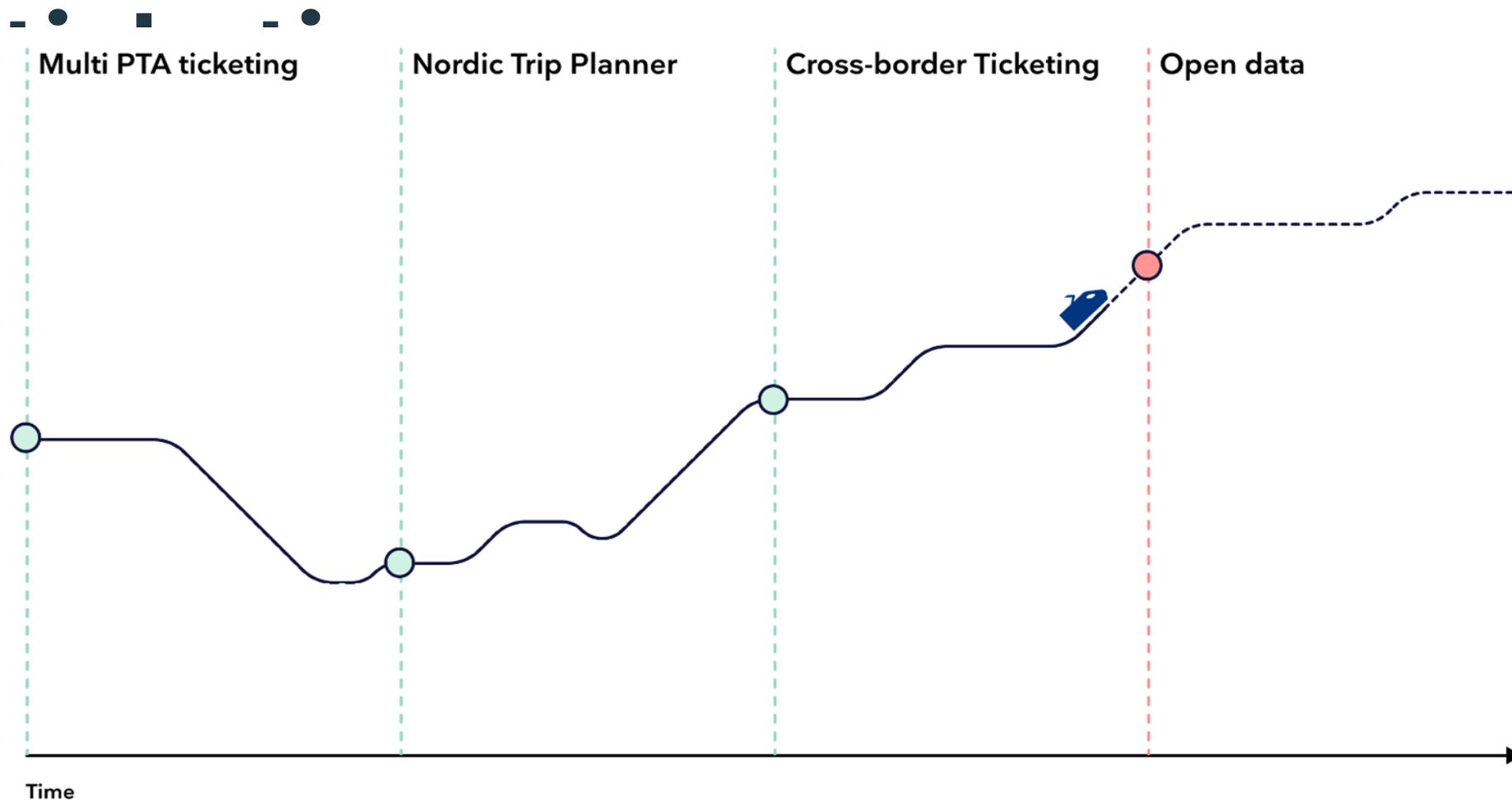


# Dataflow sales and booking





# The tracks towards Nordic



# A challenge to the community

- Work towards data that third party actors can utilize.
- Let the National Access Points be the basis of internal systems.
- Seek collaboration over competition.



**ENTUR**



# Multimodal travel planning and payment in one go from Finland including ferries

NEMU conference, October the 27th 2025

Johanna Taskinen

Matkahuolto (just call us MH)



Trips sold

**7,6** M

Active transport operators

**200**

Trips and Tickets monthly active users

**80 000**

Single web tickets sold

**1,6** M

All domestic long distance departures and local public transport in **100 cities**

Organisations purchasing their travel through Matkahuolto

**150**

Departures maintained

**1,5** M



Turnover

**14 M€**



Experts

**25**

# Matkahuolto Digital Transport Services

## Transport operators

## Passengers

## Public transport authorities

Mastering transport data: stops, routes, schedules



Tickets system, clearing and reports



Sales and information channels



Driver application and services



API for ticket validation in driver applications:

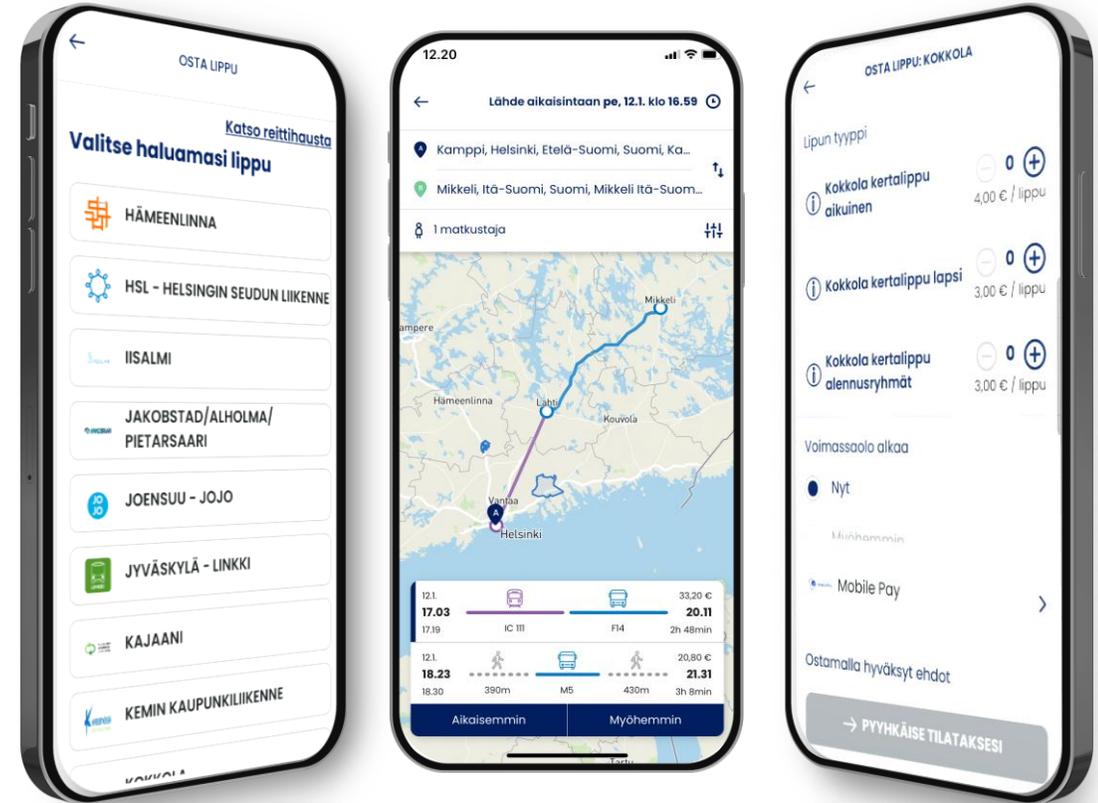
- Matkahuolto Matkassa
- Pusatec
- Octanova

Ticket integrations:

- Matkahuolto
- VR
- Onnibus
- HSL
- Waltti
- Turku, Föli (coming!)
- Vinka-kutsuliikenne

# Trips and Tickets app – all public transport in Finland

- Over 500 000 users – 80 000 active monthly
- Routing from address to address using OTP
- Single tickets to nearly all public transport in Finland
- Integrated single ticket systems:
  - Matkahuolto, Onnibus, VR, Helsinki HSL, Tampere Nysse, Waltti (15 city regions), Vinka DRT platform
- Matkahuolto's ticket system:
  - Single, season and serial tickets for regional services
  - Single tickets for long distance bus services
  - Subsidised tickets for students and pupils
  - Nationwide serial tickets for buses
- Several payment methods (incl. employee benefit)
- Billing service for organisations



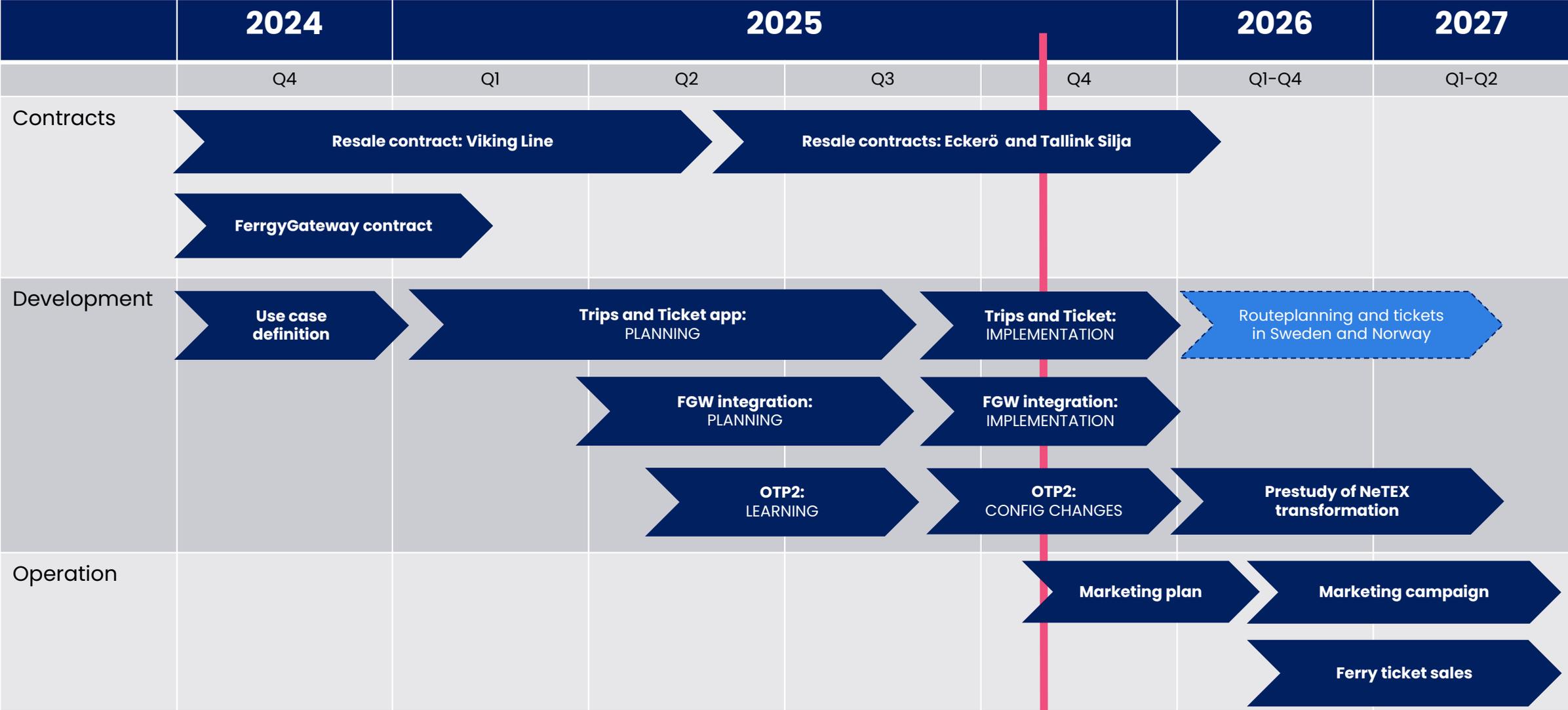
# In the NEMU project Matkahuolto adds ferry services to Trips and Tickets app

- For people living in Finland travelling to Sweden, Åland, Tallinn and back.
- Contracts:
  - FerryGateway, the API provider (signed)
  - Viking Line (signed)
  - Eckerö and Tallink (in negotiation!)
- During the NEMU project Matkahuolto tries to find out whether facilitating Nordic cross border ground based travel chains can be a business.
  - Who is willing to pay for the tavel chaining?
  - Enough to get return on invesment?



**Launch for  
summer 2026!**

# Matkahuolto NEMU schedule



# Things that have been considered



Club membership prices

Transfer time at the terminal

Agegroup selection

Cabin reservation

Meal reservations -> Travel Service  
Combination?

Contact and personal details

Cancellation

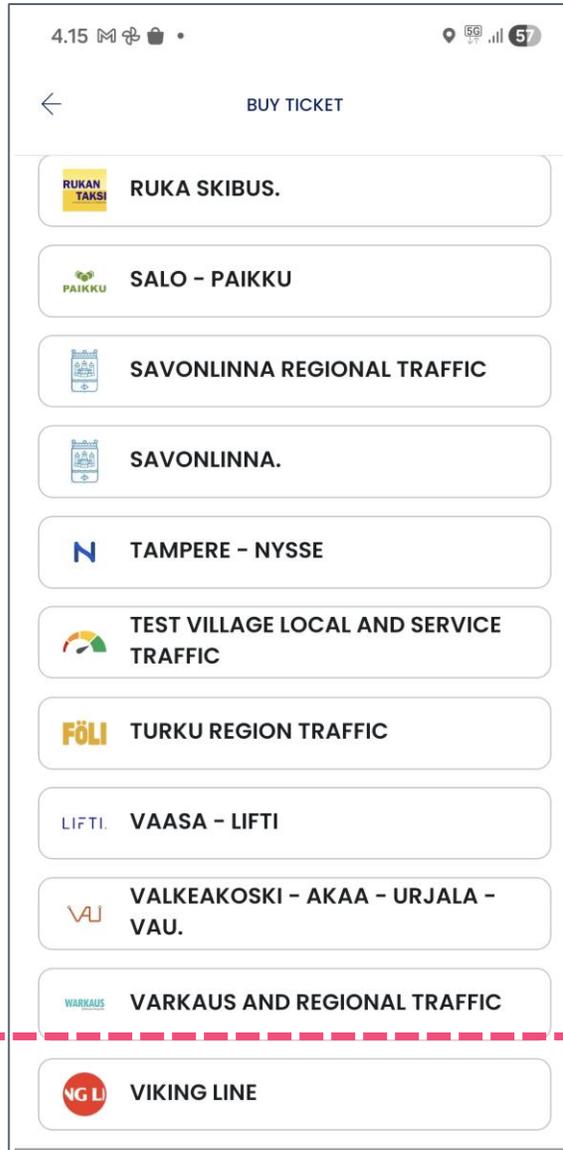
Time zone handling

VAT handling

Changes and disruptions?

Terms in case of missing the ferry trip  
due to delay in bus or train service?

# Flow 1: one ferry service only



Flow 1

4.14 [icons] 58

## Where are you going?

Buy a single ticket through the Journey Planner

Look for a trip

## Buy a ticket

Choose the ticket you want

SINGLE TICKET

SEASON OR SERIAL TICKET

## New

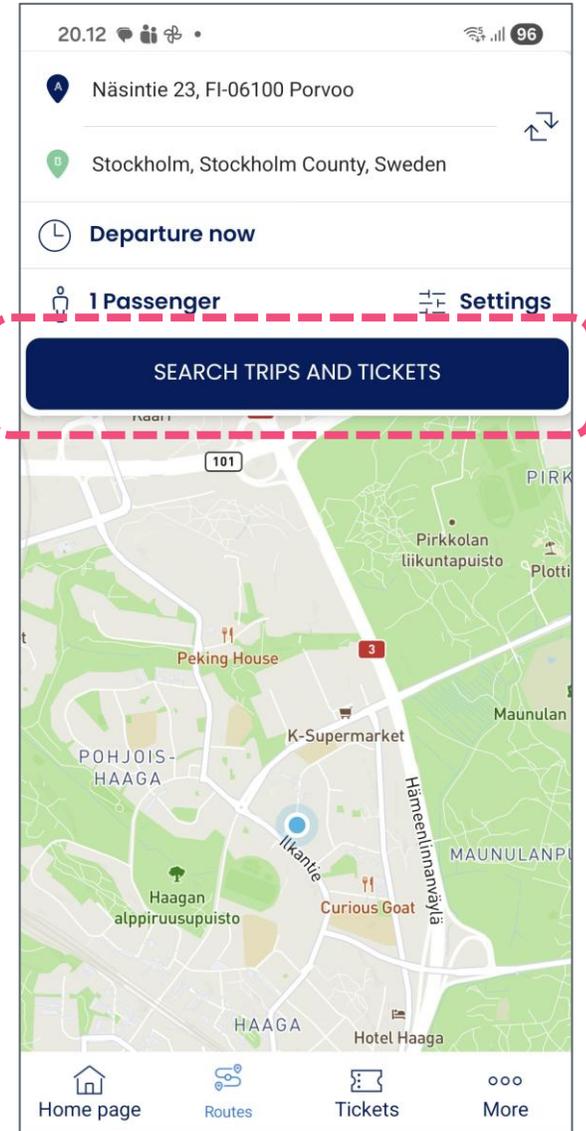


Ferry trips to Tallinn, Stockholm and Åland

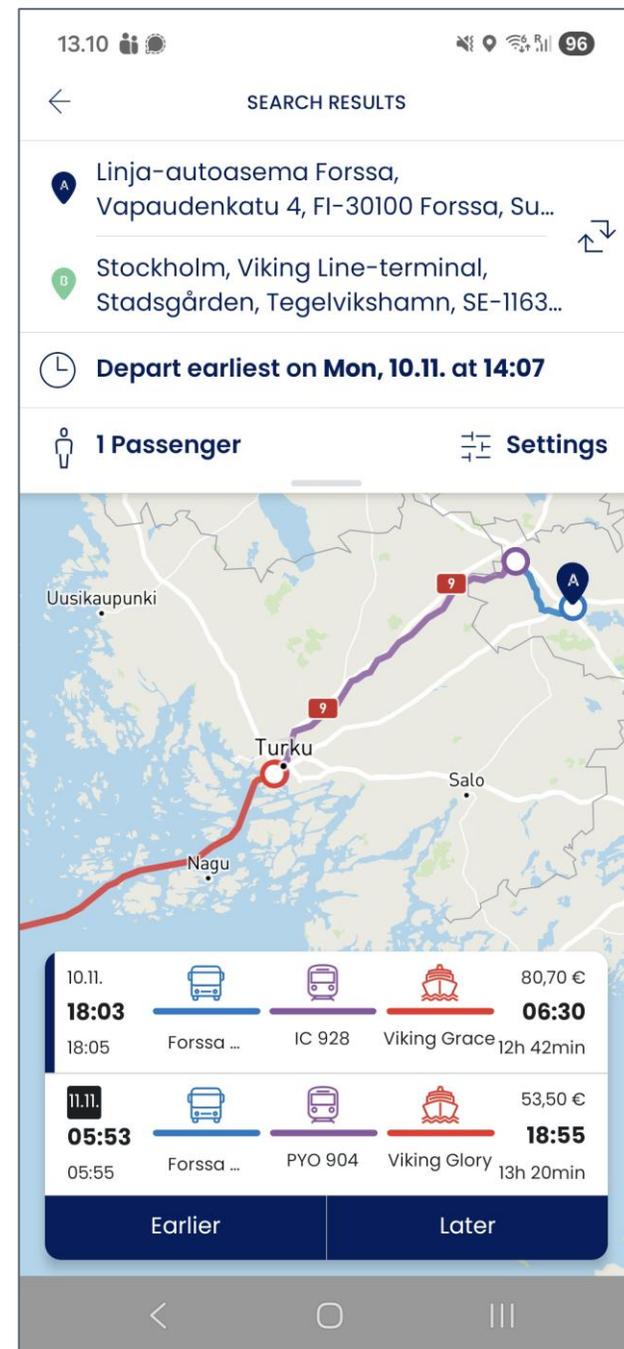
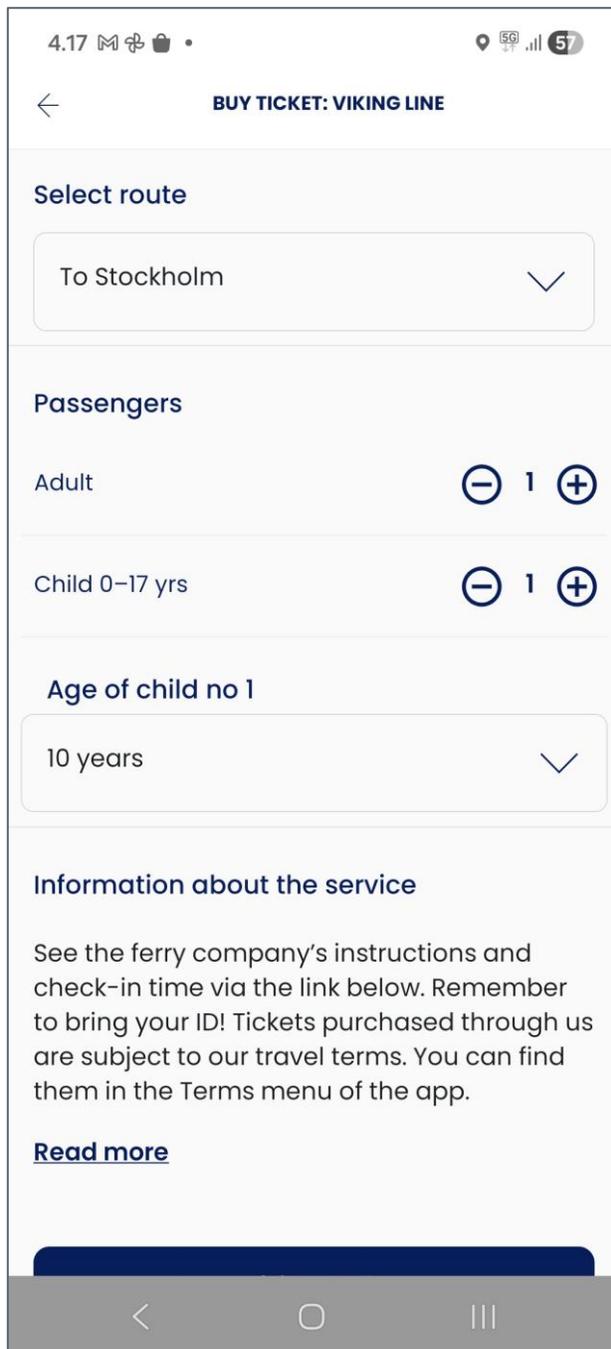
Home page Routes Tickets 29 More

Flow 2

# Flow 2: all ferry services



# Flow 1



# Flow 1 & 2

## Other services:

Tickets for adults and children need to be defined here.

## Ferry:

you have enough time for your connection.

17:41 Pasila Platform 8

**Helsinki - Turku satama 39,80 €**  
IC 963  
VR  
2 h 8 min

Choose tickets for this part of your journey.

Direction: Turku satama  
Operated by: VR

Show on Map

Adult 2 19,90 € / ticket

Child 0 12,00 € / ticket

Show Less

19:49 Turku satama Platform 2

Walk 1,38km 21 min

20:09 Turku  
Connection time 46min

Make sure to complete your check-in on time

20:55 Turku

**Turku-Stockholm 86,00 €**  
Viking Line  
10 h 35 min

Viking Grace  
Operated by: Viking Line

Inside Four  
You can change your cabin on the next page

Show on Map

2 passengers 1 adult, 1 child

Show Less

October 28

Times are shown in local time

06:30 Stockholm

Continue to additional services

Service Charge 1,00 €

**Your Price 126,80 €**

CONTINUE

8.33 SELECT ADDITIONAL SERVICES

### Cabins



**Inside Four 81,00 €**

Compact and comfortable cabin without a window for 1-4 people. There is a TV, internal phone, hair dryer, air conditioning, toilet and shower (towels and shower gel/shampoo included).

In addition, 1 child aged 0-11 years can be accommodated without a separate berth. A baby cot for a child weighing up to 10 kg fits into the cabin.

- Decks: 5, 6, 7, 8
- Size: 9.4-9.7 m²

CHANGE CABIN

ADD CABIN

### Meals



**Selected meals**

- 1x The Buffet - Adult (20:55) 43,00 €
- 1x The Buffet - Child 6-11 yrs (20:55) 14,00 €
- 1x Breakfast Buffet - Adult (05:30) 18,00 €
- 1x Breakfast Buffet - Child 6-11 yrs (05:30) 6,00 €

ADD MEALS

10.42 TÄYTÄ MATKUSTAJATIEDOT

### Yhteystiedot

**Etunimi\***  
Johanna

**Sukunimi\***  
Taskinen

**Postinumbero\***

**Postitoimipaikka\***

**Maa\***  
Finland (Suomi)

**Puhelinnumero\***  
+358 40 75732843

**Sähköpostiosoite\***  
johanna.taskinen@matkahuolto.fi

### Matkustaja 1

**Etunimi\***  
Johanna

**Sukunimi\***  
Taskinen

**Kansalaisuus\***  
Finland (Suomi)

**Syntymäaika\***  
Valitse

Mies  Nainen

**Toimintarajoite**  
Ei rajoitetta

### Matkustaja 2

**Etunimi\***

**Sukunimi\***

**Kansalaisuus\***

3 matkustajaa 1 aikuinen, 2 lasta

23. lokakuuta 2025

Parkano MH - Rautatieasema Parkano	16,10
Parkano - Tampere	17,09
Tampere - Turku satama	18,10
Turku - Stockholm	20,55

**Matkahuolto: Parkano MH-Rautatieasema Parkano 9,90 €**

- 1x Aikuinen
- 2x Lapsi

**VR: Parkano-Turku Satama 69,00 €**

- 1x Aikuinen
- 2x Lapsi

**Viking Line: Turku-Tukholma**

- 1x Aikuinen
- 2x Lapsi
- 1x Inside Four 72,00 €
- 1x Polttoaine- ja EU ilmastomaksu (pakollinen) 5,00 €

Palvelumaksu 1,00 €

**Hintasi 156,90 €**

JATKA

# Flow 1 & 2:

9:41

**Lahti Matkahuolto Terminal -  
Terminalen Stadsgården**

**Start** 21st of July 2025, klo 15.37  
**Arrival** 22nd of July 2025, klo 17.25

[Show route](#) [Show tickets](#)

**Where are you going?**

Buy a single ticket through the journey planner

Look for a trip

**Buy a ticket**

Choose your ticket

**SINGLE TICKET**

**SEASON OR SERIAL TICKET**

Home Routes Tickets More

20:17

**YOUR ROUTE PLAN**

Uppsala Stockholm Helsinki

**October 29**

- 15:53 Kotasuontie 20  
FI-00680 Helsinki, Suomi

**Kävely 490m**  
8 min

- 16:01 Etupellonpuisto  
Yhdyskunnantie

**Rautatietori-Oulunkylä-Itä-Pakila 64**  
64  
33 min

Direction: Rautatietori  
Operated by: Helsingin seudun liikenne

[Show on Map](#) [Show Ticket](#)

- 16:34 Kaisaniemenpuisto  
Kaisaniemenkatu

**Kävely 1,75km**  
28 min

- 17:01 Helsinki

Connection time 14min  
Your journey includes a transfer - please make sure you have enough time for your connection.

Huolehdi, että teet lähtöselvityksen ajoissa

- 17:15 Helsinki

**Helsinki-Stockholm**  
17 h 45 min

Gabriella  
Operated by: Viking Line

SUM Junior Suite, balcony

[Show on Map](#) [Show Ticket](#)

**October 30**

Times are shown in local time

- 10:00 Stockholm

Receipt Add to calendar Customer support

15.15

LIPPUSI

HSL - HELSINGIN SEUDUN LIIKENNE 3 VIKING LINE



**Viking Line Gabriella**

HELSINKI - TURKOLMA 29.10.2025 17:15

Tilausnumero  
**5002638**

1 x SUM Junior Suite, balcony

Katso laivayhtiön ohjeet ja lähtöselvitysaika alla olevasta linkistä. Muista henkilölisäysohjeet! Meidän kautta ostetuissa lipuissa sovellamme meidän matkakohtoja. Löydät ne sovelluksen Ehdot-valikosta. [Lue lisää](#)

[Näytä matkustajatiedot](#)

# Thank you!



Johanna Taskinen

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Digital Transport Services  
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Tuomo Kinnunen

Team leader - Growth and Development  
Digital Transport Services  
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nordic+

# NEMU Strategy and NEMU Rig - What next?

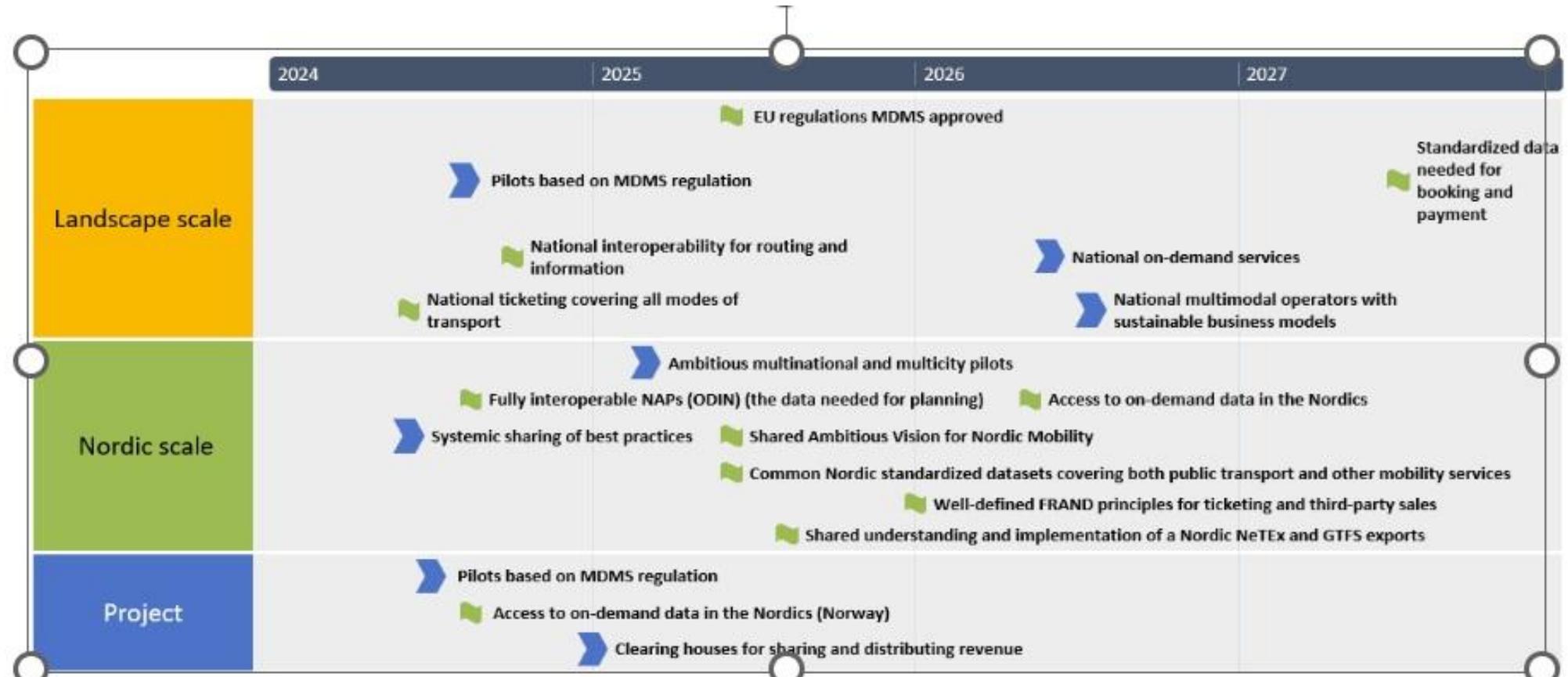
Jenny Simonsen

2025-10-27



Nordic  
Innovation

# What has been done so far? (NOMAD + NEMU)



NEMU has established two target corridors

**North – South corridor:** Oslo Copenhagen (train & bus as minimum) by Entur

**East – West corridor:** Helsinki – Oslo (train, bus and ferry) by Matkahoultto



# Identified Gaps from NOMAD – What NEMU and beyond should address

- No compensation model for third-party MaaS sales agents
- No Nordic clearinghouses for revenue-sharing
- No obligation for transport operators to open third-party booking APIs
- No common validation methods for multimodal e-tickets
- No joint Nordic implementation of NeTEx/GTFS (open data standards for timetable and route data)
- No agreed mechanisms for standardised seat reservation across modes

Strategy should be based on real gaps

# Proposal for the NEMU Strategy. This is not the final strategy, but a proposal to be developed and discussed.

Fill the specific gaps identified in NOMAD and NEMU

Develop a Nordic-level MaaS architecture aligned with MDMS

Define simple, shared rules for booking, validation, and seat reservations

Coordinate with ODIN and NeTEx/GTFS efforts

Pilot business models for 3rd-party MaaS sales

Continue building use cases around the two target corridors.

# The NEMU RIG – Mission

- The NEMU RIG is a long-term collaboration platform organised as an innovation ecosystem to support the scaling of smart connectivity solutions in the Nordic region.

# The NEMU RIG

Identify pilot needs and initiate new Nordic+ projects

Ensure scalability and commercialisation

Coordinate with EU and national agencies'

Extend the life and impact of NEMU beyond 2027

# What next?

- From NOMAD → NEMU → Strategy  
→ Pilots → Next project (s)? → MaaS  
Roaming 2030?

Thank you!

# The state of play for aligning cross-border travel planning, booking and payment in Europe

Workshop facilitators:

Isabelle de Robert, Mobilitydata

Tu-Tho Thai, Co-chair of the NeTEx subgroup, CEN (TC278 WG3 SG9)

Jaako Rintamäki, Fintraffic

Brede Dammen, Entur



Link to [Mural](#)

# Lunch + Networking

Return 12.50



# How can regional public transport benefit?

Workshop: Multimodal cross-border planning and ticketing in one go throughout the Nordics

Facilitator: Søren Sørensen.

# workshop intro

Assume that anyone visiting Norway can use their home app to plan and buy tickets for both long distance rail and busses but also for regional public transport.

No need to download a local app and learn how to use it – no need to be familiar with zonal systems etc.

What will happen when visitors from Finland, Denmark and Sweden can buy a ticket say to a tram in Oslo using the “home” app they use in Denmark? (Norway has around 5 million visitors per year)

Workshop: What impact would it have on regional public transport?

# Form for workshop

Start with a 5-minute individual brainstorm on identifying benefits and challenges to a PTA.  
POST-IT – one topic per sheet

Discuss and group the result of brainstorming

Document findings on flip-over sheet



# Presentation from groups

Presentation

Q&A

Approx 2 min per group



**Coffee break**

**+**

**Networking**

**Reconvene at 14.00**



# Cross-border travel using sustainable transport: how to expand geographical reach?

How can, e.g. the Baltic countries join? What does it take?

Workshop facilitator Søren Sørensen and Valts Murans ITS Latvia

This is a NEMU RIG activity

# ESTONIAN NATIONAL CONCEPT OF MOBILITY AS A SERVICE

Unified System for Operators and Users

Madis Sassiad

Project Manager  
Tallinn Transport Department

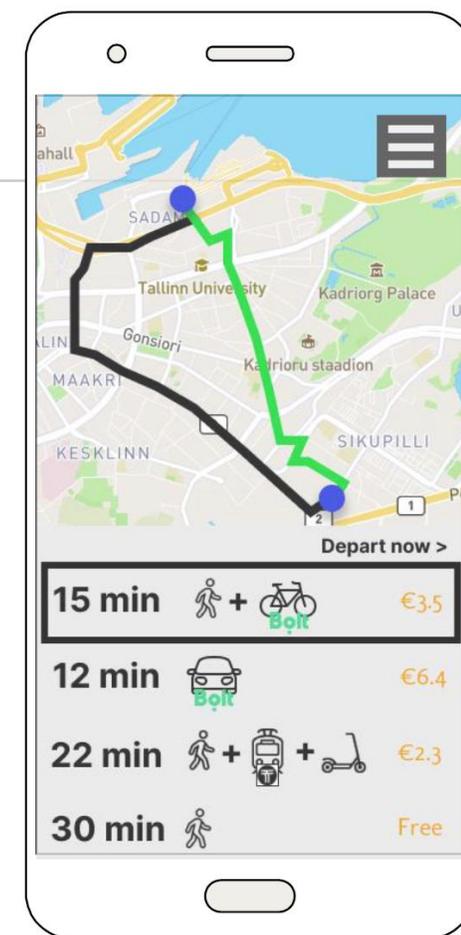
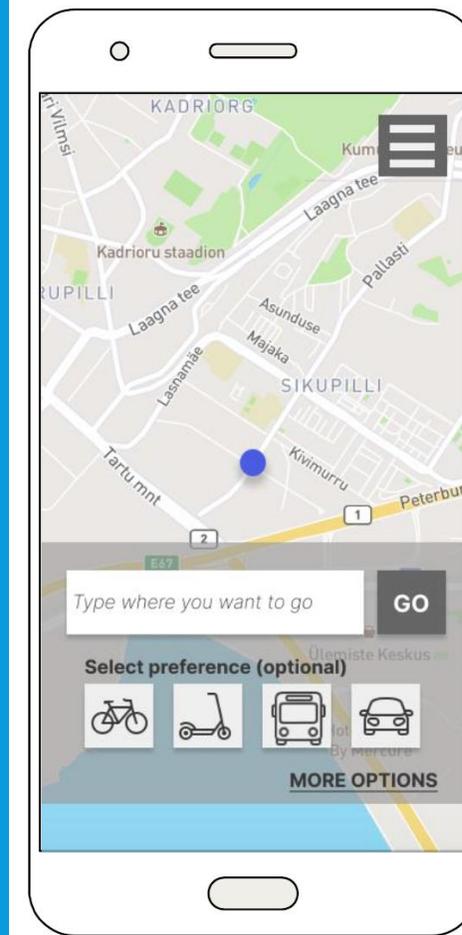
# MOBILITY AS A SERVICE TO TALLINN

Joint project of Tallinn Transport Department and the City of Tartu

- Mobility as a Service (MaaS) to combine public and private transport, together with journey planning and payment services

Main goal was to develop a mobile app, which makes possible to use combinations of different means and modes of transportation to travel "door-to-door" and also pay for the service as one payment.

MaaS aims to be an alternative to the car



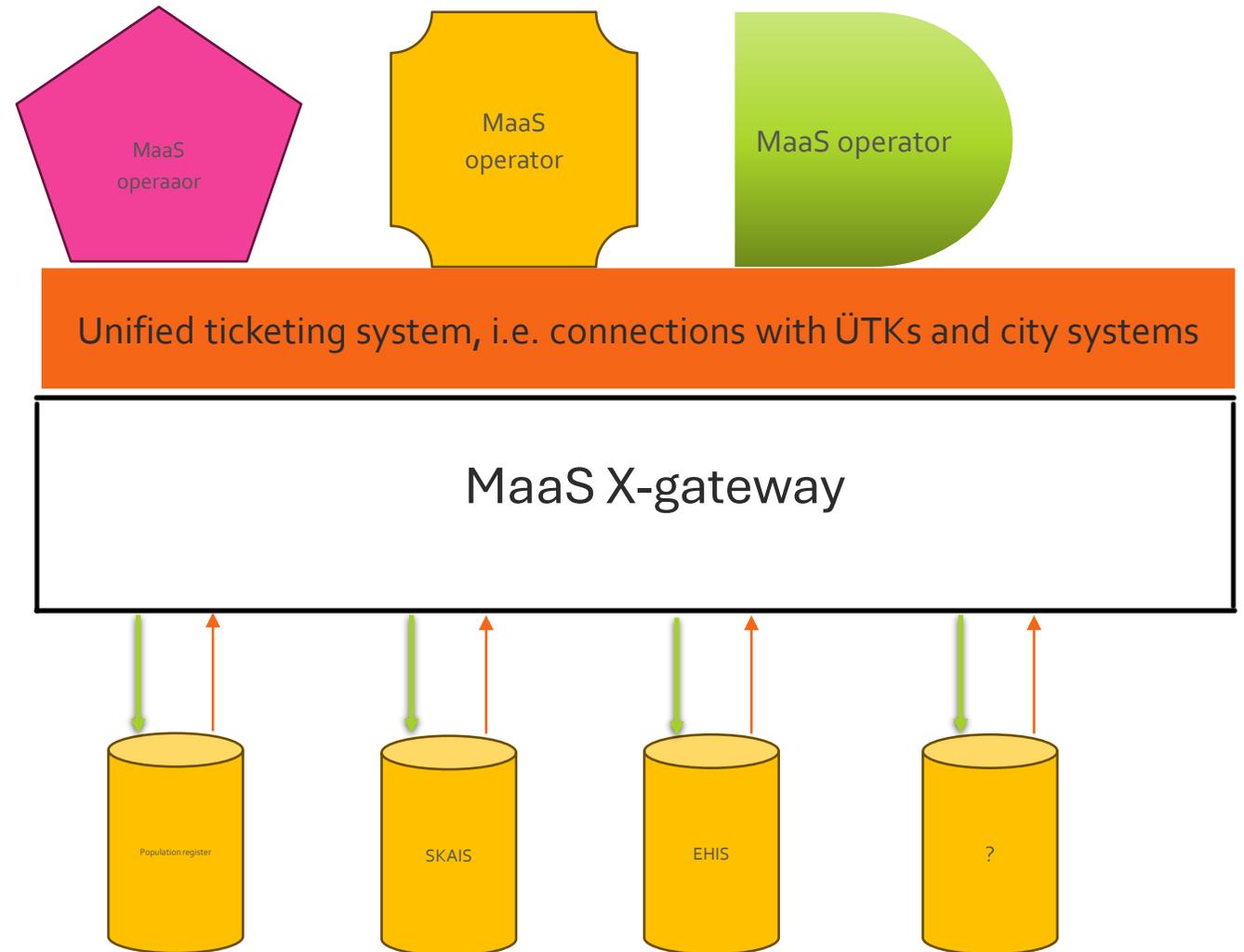
# INTERACTIVE MOBILITY INFORMATION SCREENS IN TALLINN

- **Use Case:** Specialized software solution for public interactive screens.
- These screens will display real-time public transportation departures (buses, trams, trains) alongside a live map showcasing the availability of shared mobility options nearby (e-scooters, city bikes, shared cars).
- The interactive nature of the software will also enable the creation of APIs for mobility operators.
- **Target Users:** Primarily daily commuters and individuals passing through locations like park-and drive facilities, Tallinn main railway station and Tallinn Coach Terminal.
- **Objective:** To raise awareness of diverse mobility options and encourage greater use of shared services over private car usage.



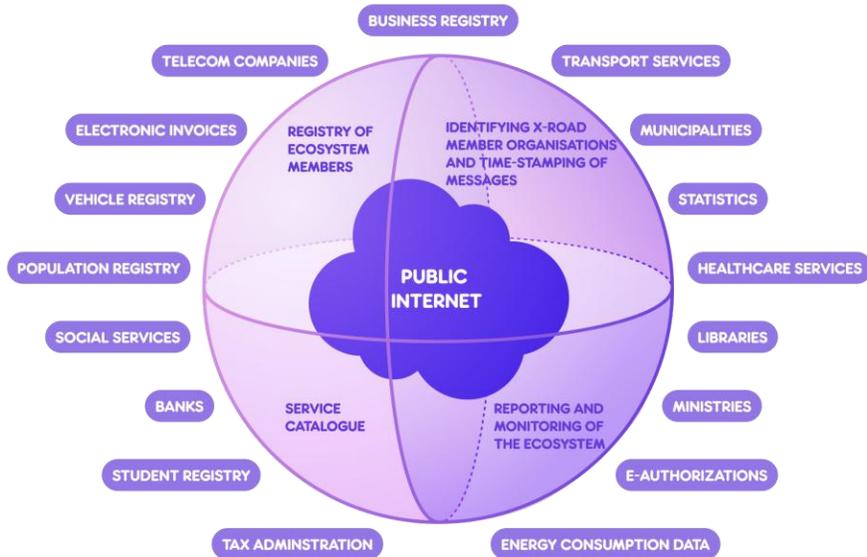
# GENERAL PRINCIPLES

- State's role: provide a uniform background system for all operators
- Integration with national registers (EHIS, SKAIS, Population Register)
- Ensure quality, correct and fast responses, and monitor, that all the stakeholders are treated equally!

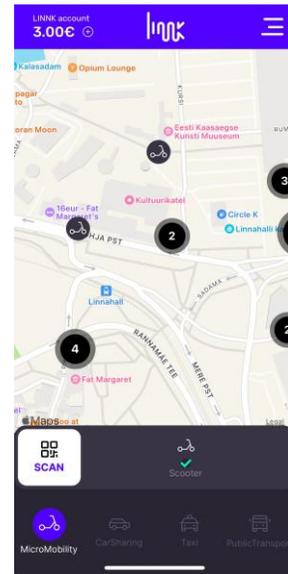
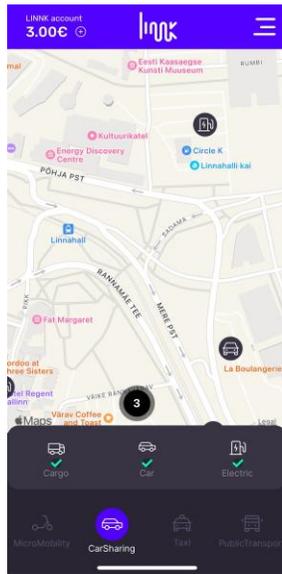


Connection with National Registries to validate the discount – like address, age, study in the school, disability

# MAAS GATEWAY (CONNECTION TO X-ROAD)

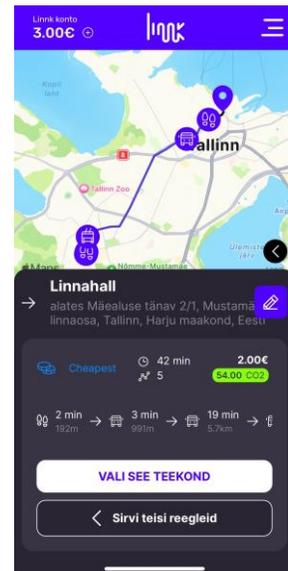
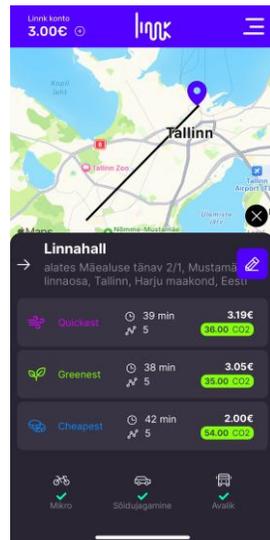


- Central MaaS-X Gateway for connecting operators
- Provides neutral, reliable information on travel rights
- Supports state-subsidized public transport ticket products



# MAAS OPERATOR FUNCTIONS

- Journey planner
- Trip booking
- Travel rights verification
- Validation/start of journey
- Payment & clearing between parties



# TECHNICAL REQUIREMENTS



Detailed API interfaces (test & live environments)

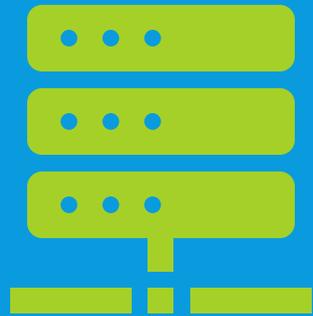


Automatic test environments for integration



Documentation and guidelines for MaaS-X Gateway integration

# CLEARING & PAYMENTS



Option 1: Centralized clearing via  
MaaS-X Gateway



Option 2: Separate agreements by  
each operator

# MOBILITY ACCOUNT FOR CITIZENS???



Nationally guaranteed  
mobility account



Employers can offer  
€??/month mobility  
benefits tax-free

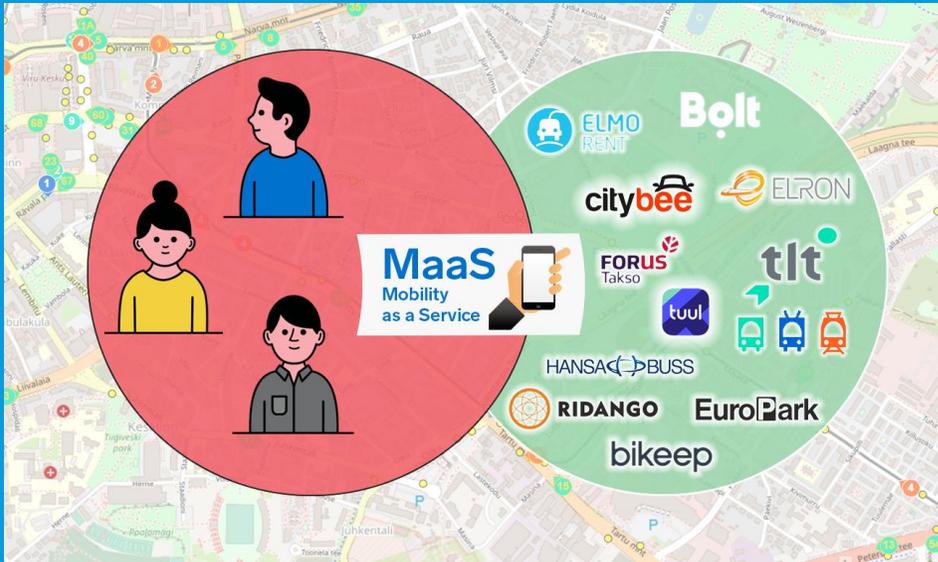


Covers public  
transport & shared  
mobility services



Payment guarantee  
service by the state

# BENEFITS



National MaaS ensures  
seamless, fair, and  
sustainable mobility for  
everyone

---

Faster MaaS adoption by  
users & employers

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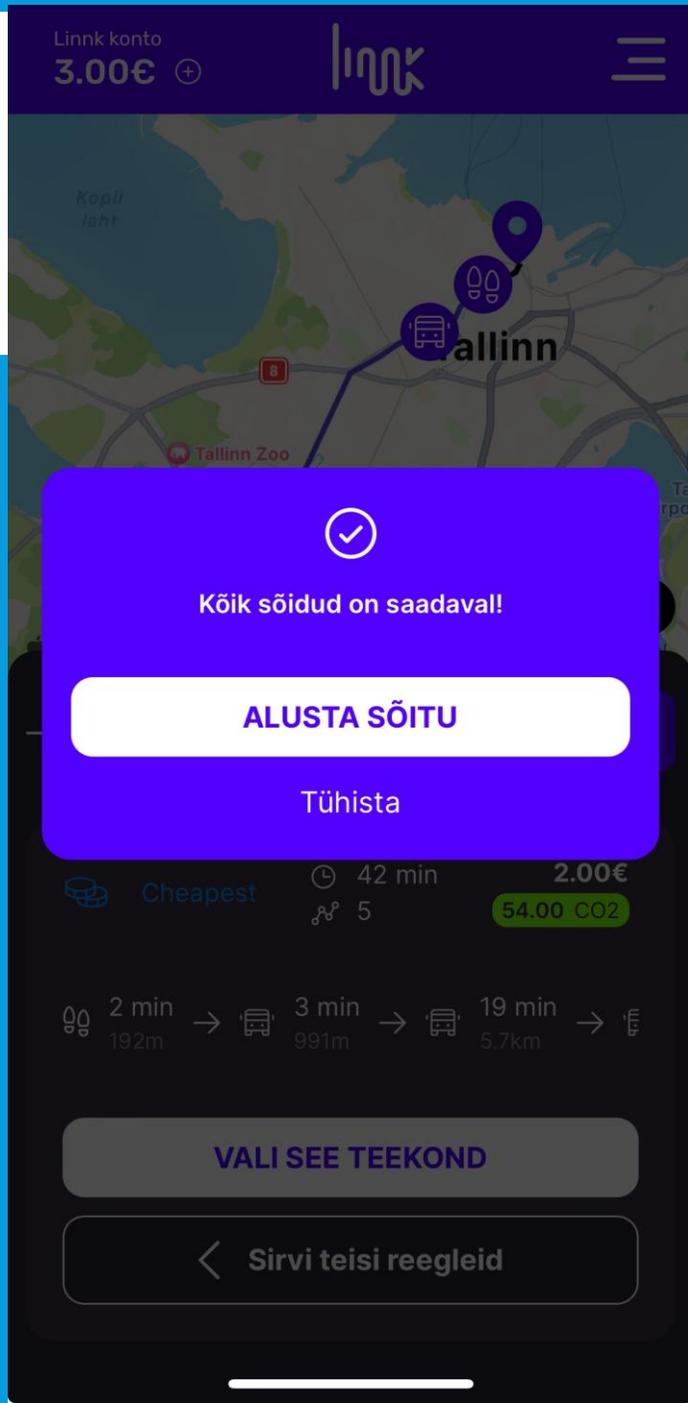
Increased trust in MaaS  
operators

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Supports CO<sub>2</sub> reduction  
targets

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Transparent, user-friendly  
mobility system



# THANK YOU VERY MUCH!

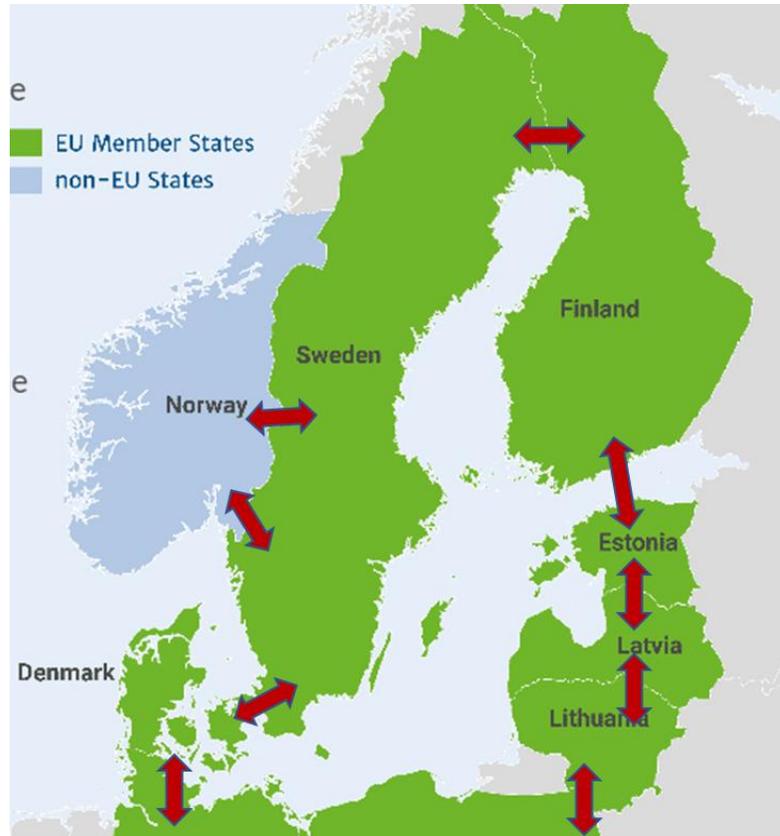
Madis Sassiad

[madis.sassiad@tallinnlv.ee](mailto:madis.sassiad@tallinnlv.ee)

+372 5088546



# Cross Border traffic in the Baltic Sea Region



Land based cross border traffic (red arrows)

Seamless using private cars



Baltic Sea crossings by ferry

Not connected with land transport

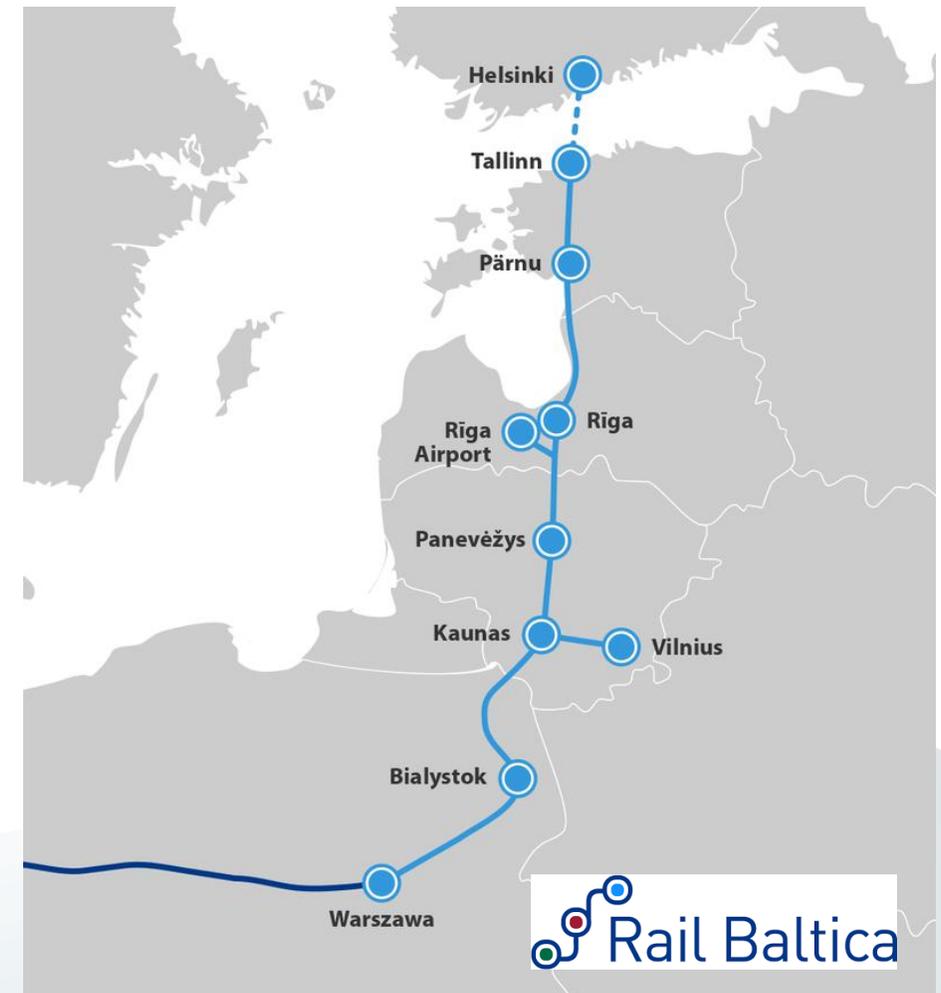
# The new Baltic Railway

Land connection to Poland, Germany and further west and down

Opens a new route from Finland to other European countries

Better interBaltic connections

**Tallinn ↔ Vilnius:** Time could drop from ~7–10 h → about 3 h 38 min.  
**For Tallinn ↔ Riga:** Time could drop from ~5 h+ → about 1 h 42 min.  
**For Riga ↔ Vilnius:** Time could drop from ~4 h+ → about 1 h 52 min.



# How the Baltics could join in 4 easy steps

1. National stop register and static and dynamic mobility data in NeTeX / SIRI on national level - Use Nordic profile

2. Use open source tools to create MaaS services (copy Entur approach)

3. Nordic (joint) OpenTripPlanner sources data from Participating NAPs

4. Make roaming agreements with participating MaaS agents



# Workshop III: How did we do it?

Brainstorming – discussion in groups

Presentation from groups

# Scenarie: MaaS Roaming 2031

In 2031 the Baltic countries joined the Nordic MaaS roaming concept creating a single crossborder planning domain for 7 Nordic and Baltic

Each country has MaaS services showing all actors who are publishing open mobility data through NAPs National Access Points

European regulation has created an open marketplace for selling mobility services and thus a sound business foundation for MaaS agency operation including MaaS roaming throughout the Northern part of Europe.

## Roam like home for MaaS

All travellers in the Nordics can plan book and pay for mobility services for any journey in and between the Nordic countries using their preferred "home" MaaS app



# Workshop 2

1. How did the national MaaS services appear in the Estonia, Lithuania and Estonia
2. How did MaaS roaming between the Baltic and Nordic MaaS actors become a reality?
3. What were the stumbling blocks and how were they resolved?
4. Did we manage to take market share from short distance air travel and use of the private car?



# Form for workshop

Start with a 5-minute individual brainstorm on identification sheet

Discuss and group the result of brainstorming

List the problems for which solutions need to be found

Document findings on flip-over sheet



# Presentation from groups

Presentation

Q&A

Approx 5 min per group







# Next step towards the vision

Closing panel discussion:

Brede Dammen, Entur,

Johanna Taskinen, Matkahoultto,

Valts Murans, ITS Latvia,

Nina Egeli, Nordic Innovation, S

Søren Sørensen ITS Danmark,

Moderator: Hanne Nettum Breivik, ITS Norway

# Summary and next steps

Hanne Nettum Breivik, ITS Norway



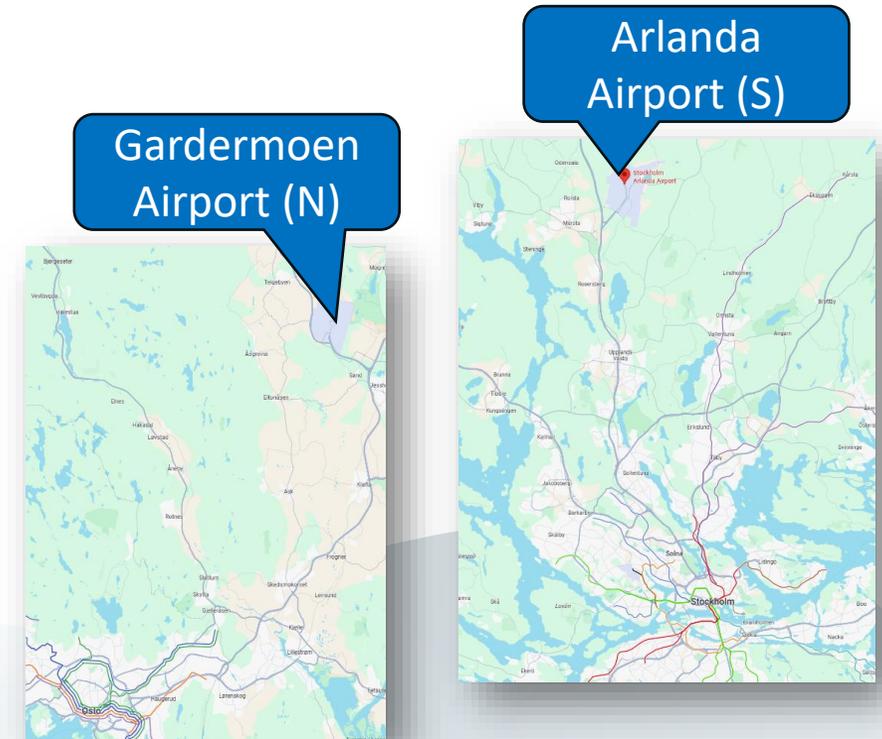
**End of conference - Safe Journey home**

# Cross border travel case: From Arlanda, (Stockholm) airport to Gardermoen (Oslo) airport

I need to attend a physical meeting at a hotel at Oslo Airport within walking distance from airport

Arrival **October 15** in the evening in time for a dinner with colleagues **19.30**

1. Air travel: Departure Arlanda, Arrival Gardermoen, cost of ticket with one carry on luggage and one personal item.
2. Car travel: Km? Duration. When to start trip?
3. Train travel: travel plan and best price incl seat reservation where possible (adult standard)



# Open Trip Planner for the Nordics

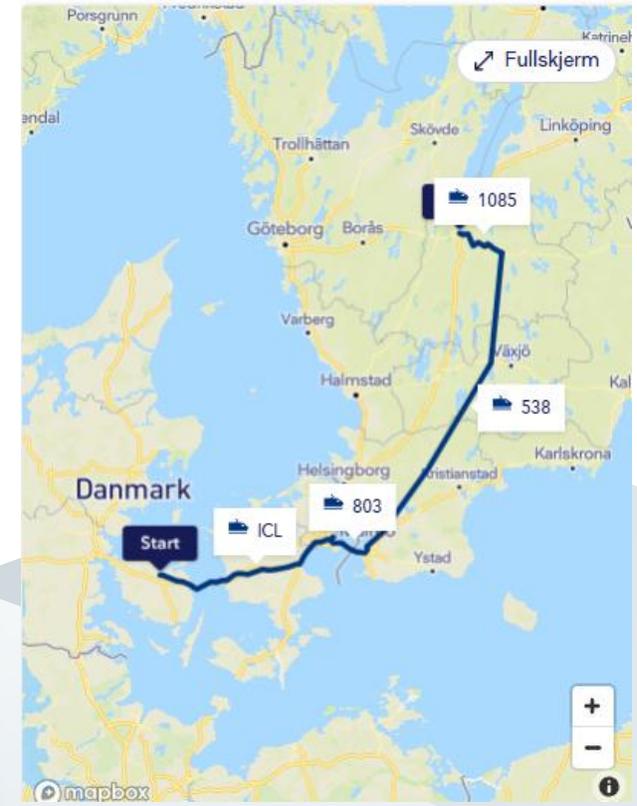
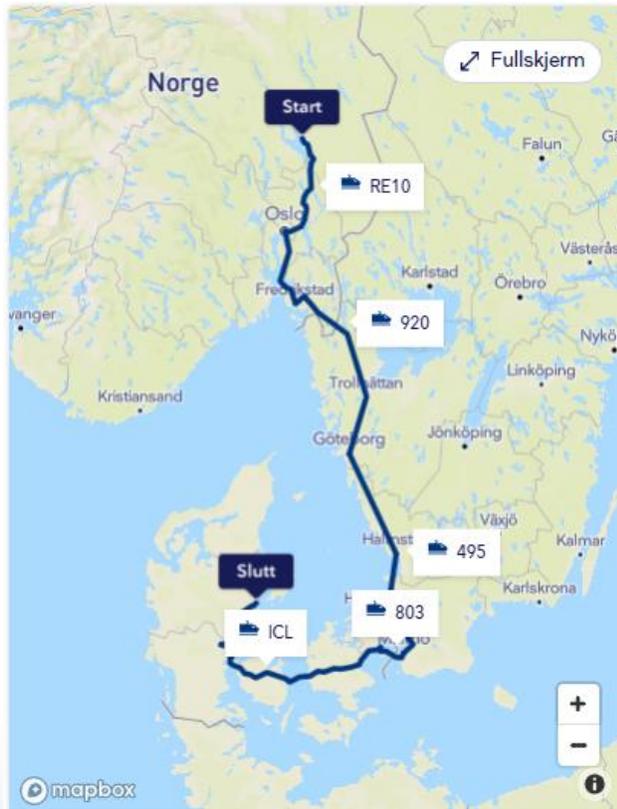
Travel plan suggestions including pricing between any two addresses in the Nordics – in one go

Consolidates NeTEx and SIRI open mobility data from National access points in Norway, Sweden, Denmark and Finland

An open source service for Mobility as a service actors in the Nordics powered by **OpenTripPlanner**



# Cross Border travel plans using open mobility data and NEMU Open Trip Planner



# MaaS roaming

