OpenTransportMeetup

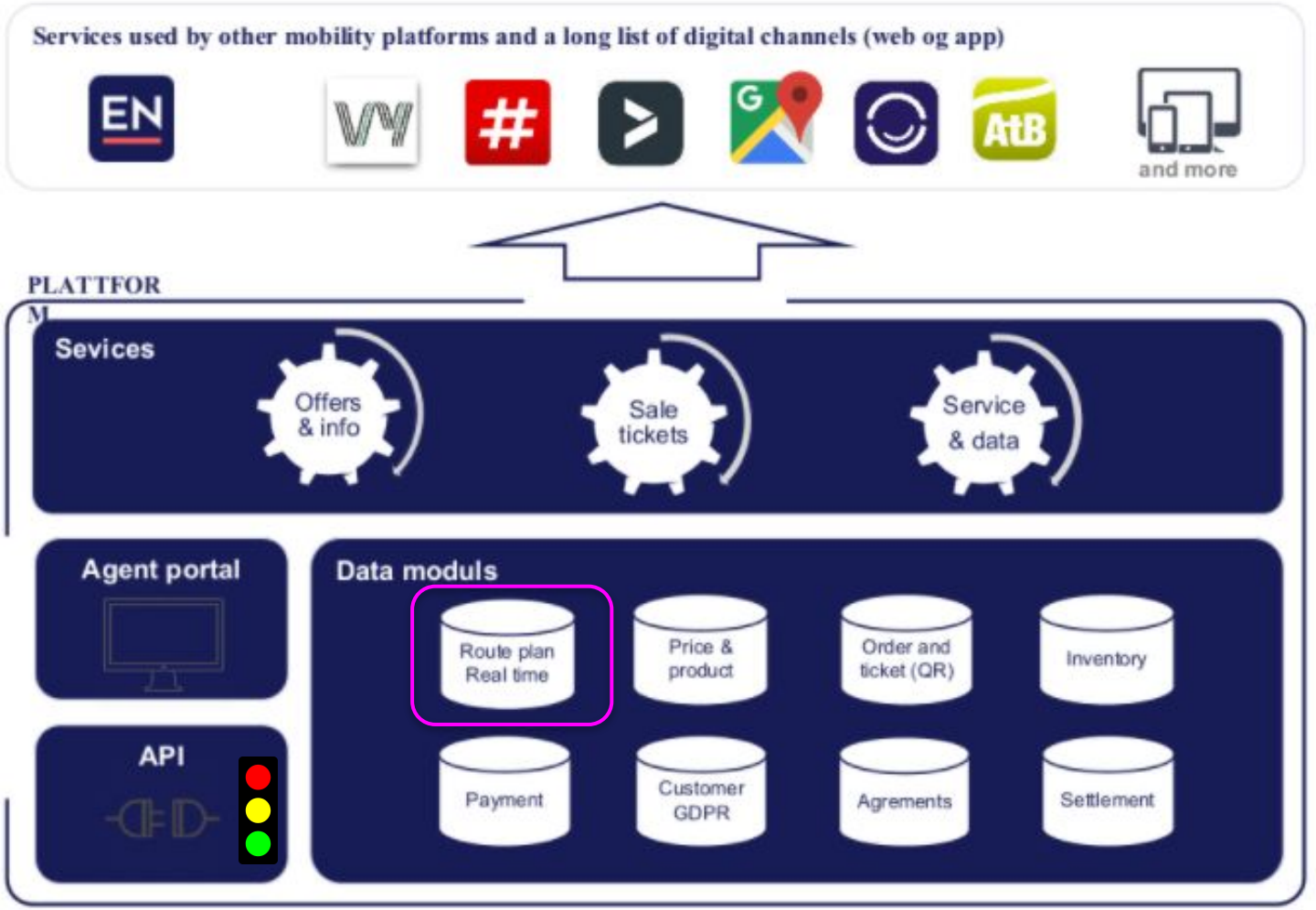
08.03.2023

Mobility hub

ENTUR

- Established 2016
- Owned by the Norwegian Ministry of Transport
- Responsible for:
  - Collection of all Public Transport data (NAP)
  - National services for Journey Planning
  - National services for ticketing for the whole PT sector
    - Mandatory for the rail sector
    - Optional for the rest of the PT sector

tide
NORLED
ØSTFOLD
FRAM
FLYTOGET
AKT
opplands TRAFIKK
nettbuss
Ruter
farte
TROMS fylkestrafikk
Oslo Bysykkel
NOR-WAY
BANE NOR
AtB
KOLUMBUS
skyss
SJ
NSB
AVINOR
Fjord1
KRINGOM


Services used by other mobility platforms and a long list of digital channels (web og app)
EN
AtB
and more
PLATTFOR
M
Sevices
Offers & info
Sale tickets
Service & data
Agent portal
API
Data moduls
Route plan Real time
Price & product
Order and ticket (QR)
Inventory
Payment
Customer GDPR
Agrements
Settlement

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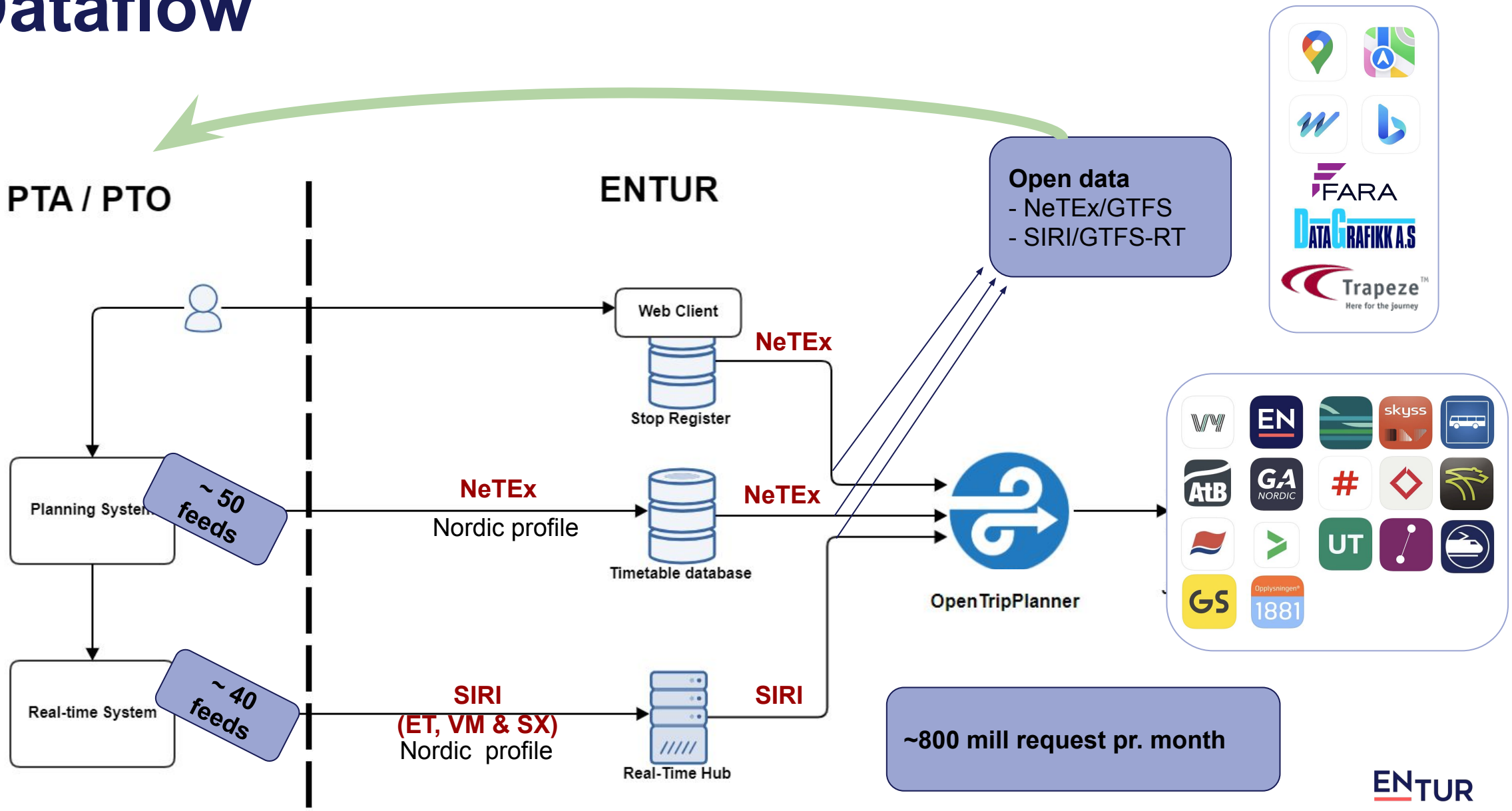
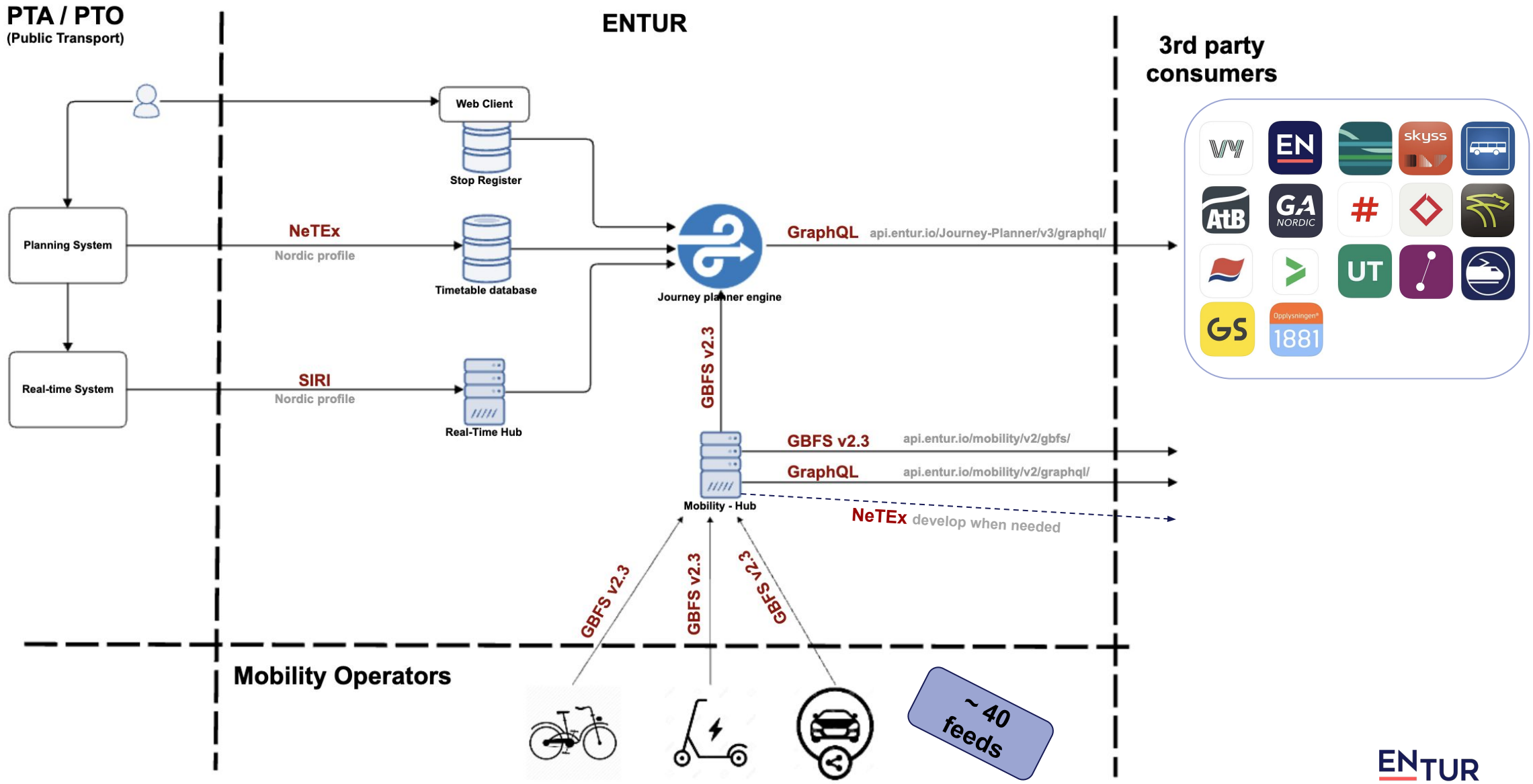
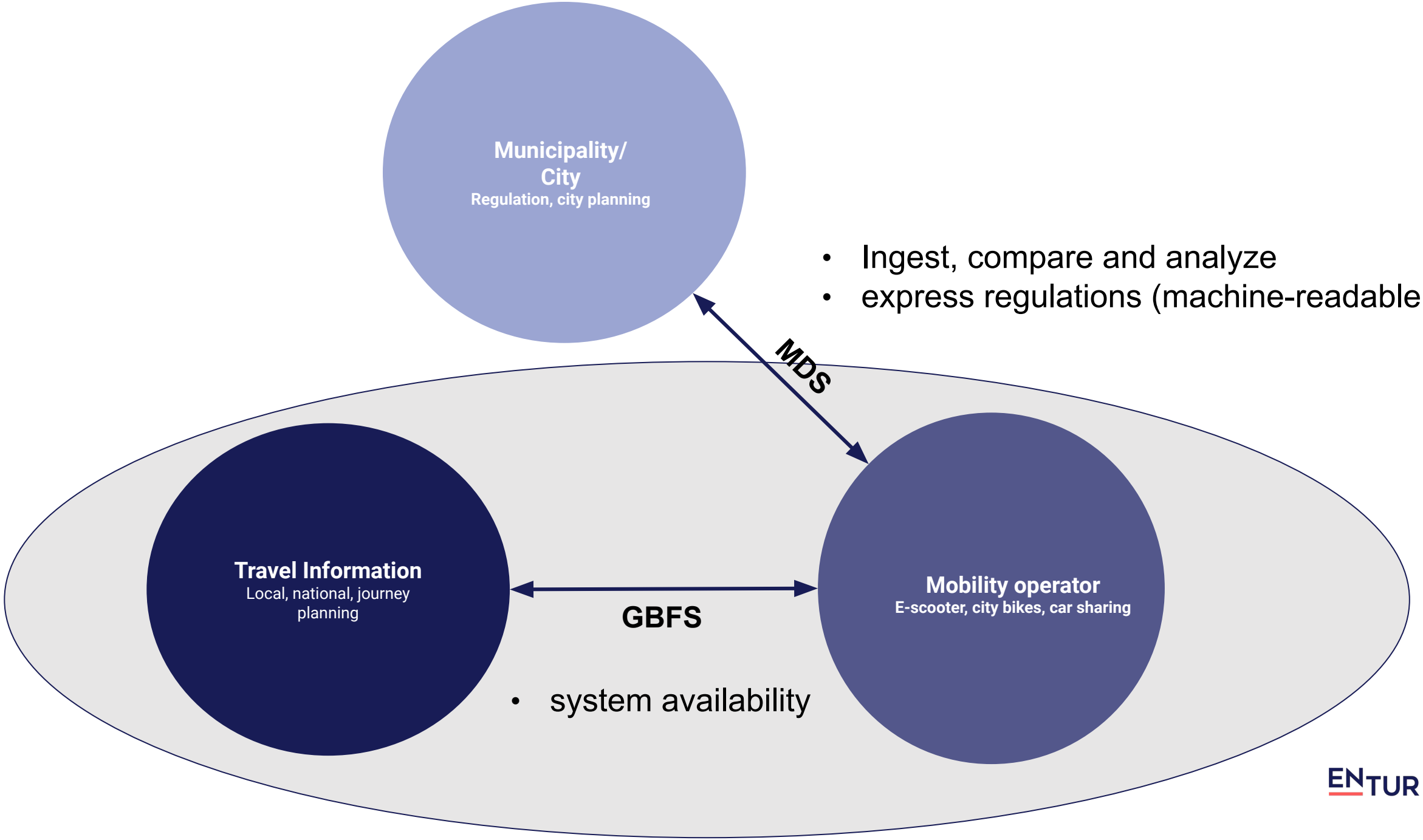
Dataflow


PTA / PTO
ENTUR
Open data
- NeTEx/GTFS
- SIRI/GTFS-RT
Web Client
Stop Register
NeTEx
Planning System
~ 50 feeds
NeTEx
Nordic profile
Timetable database
NeTEx
OpenTripPlanner
Real-time System
~ 40 feeds
SIRI
(ET, VM & SX)
Nordic profile
Real-Time Hub
SIRI
~800 mill request pr. month
FARA
DataGrafikk A.S
Trapeze
Here for the journey

Mobility hub

National MobilityHub - collection of mobility data





- Ingest, compare and analyze
- express regulations (machine-readable)

- system availability

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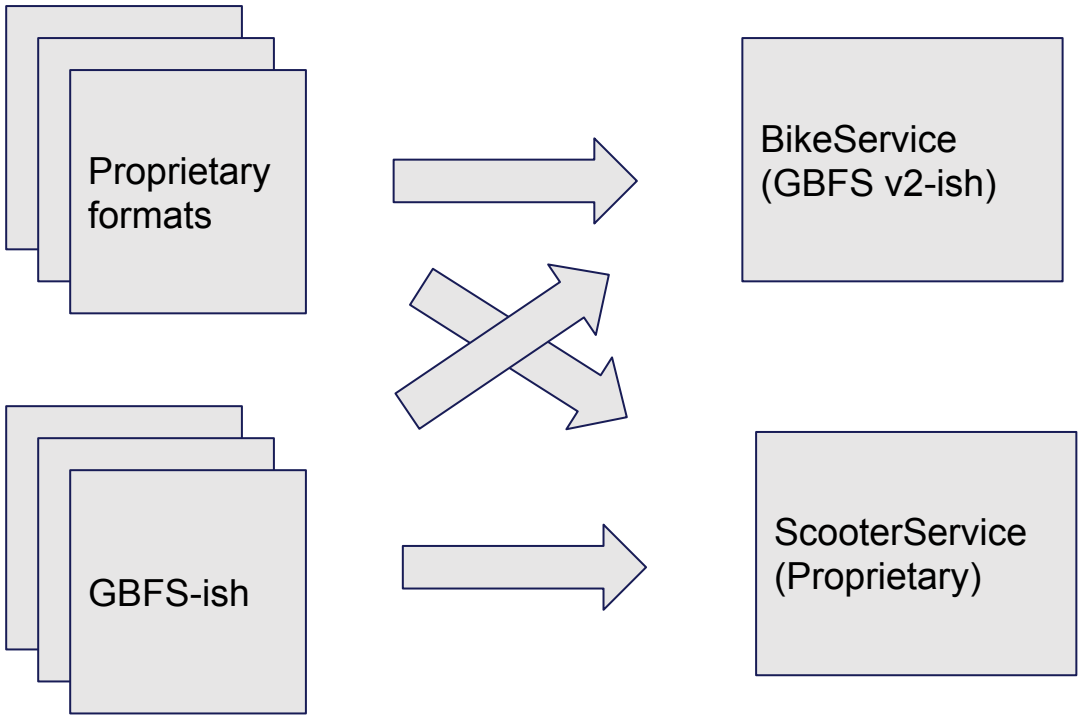
mobility/v1



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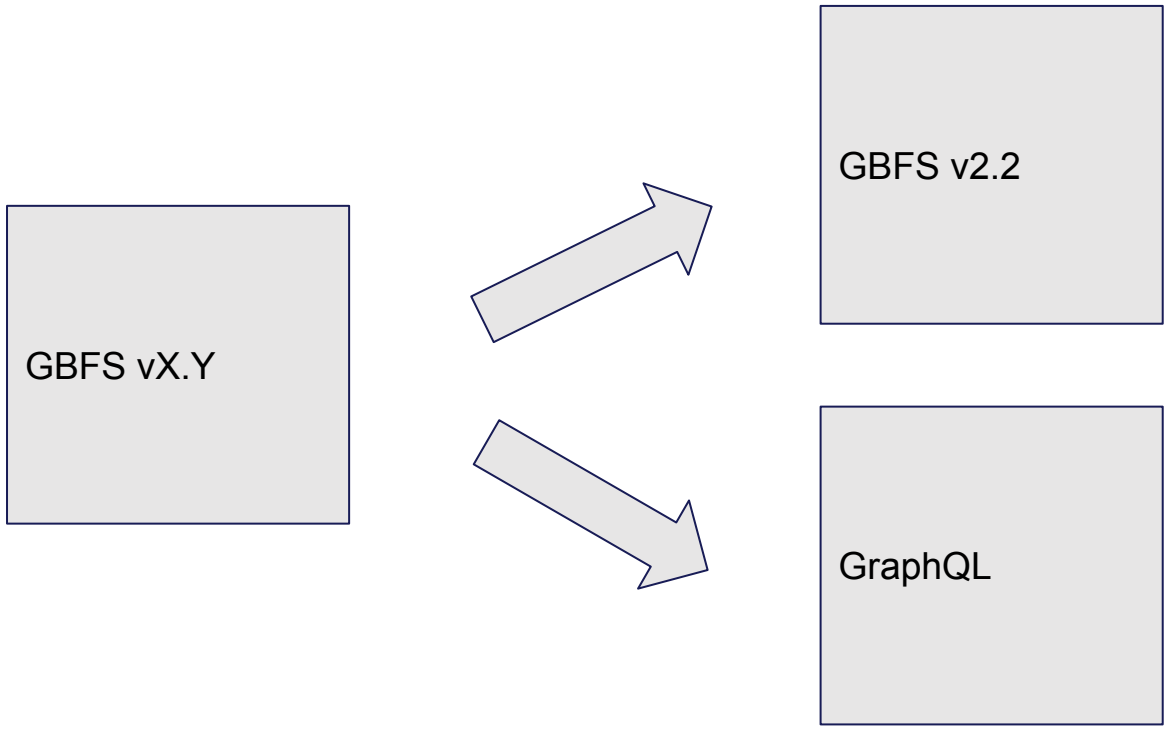
mobility/v2



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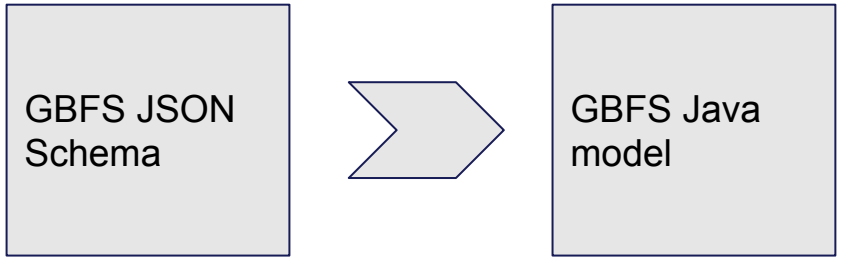
Requirement #1: A solid model



- Uses MobilityData official JSON schema
- A generic solution
- Generates model for all GBFS versions
- Contribute improvements to upstream schema
- Let others benefit from the effort:
  - OpenTripPlanner uses this model

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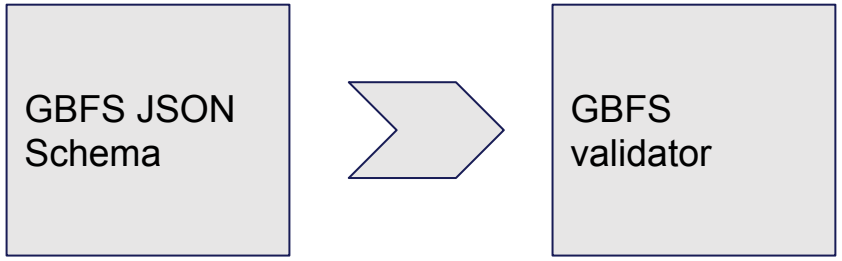
Requirement #2: Easy validation



- A java library alternative to MobilityData's official validator
- Uses everit-org/json-schema to validate
- Fast and embeddable
- Frontend to consume results

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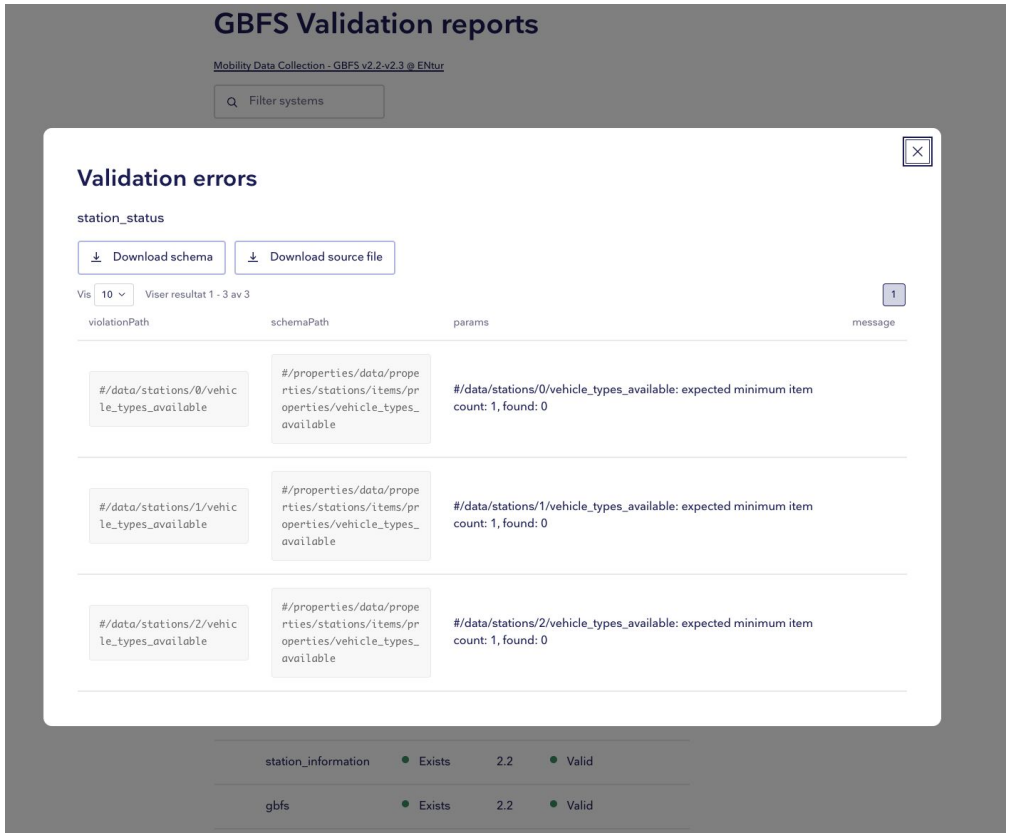
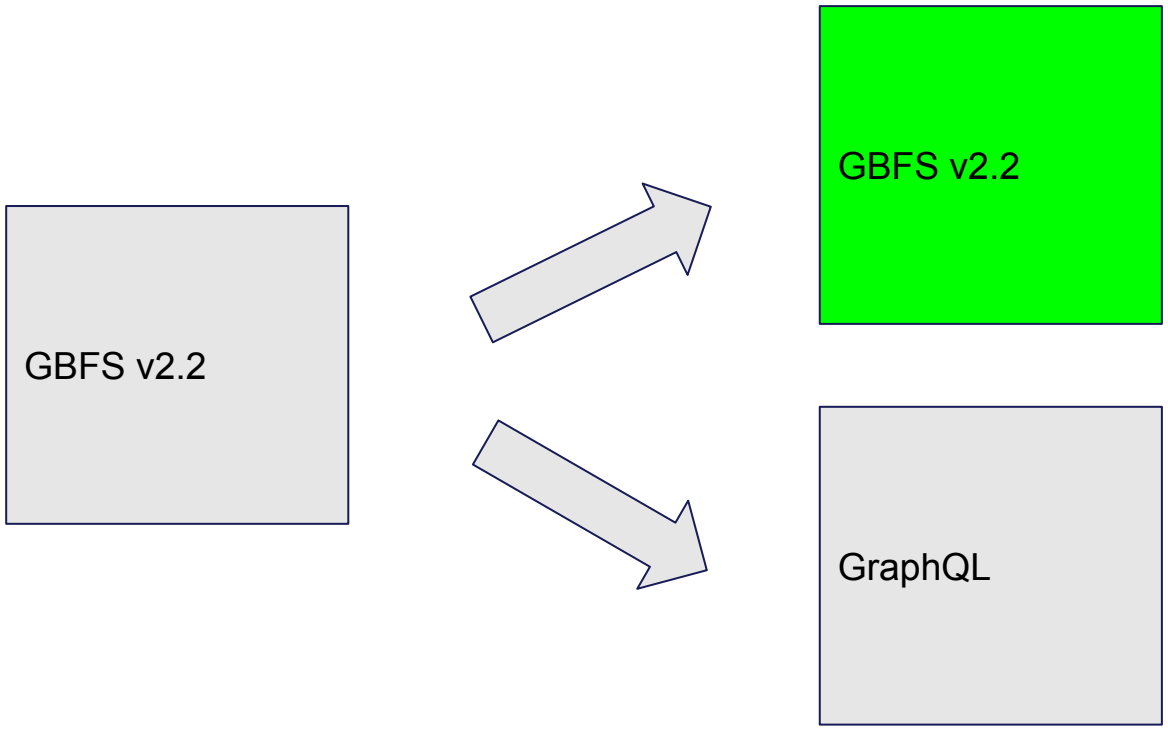
Requirement #2: Easy validation

GBFS source → GBFS validator →



Requirement #3: Share the data



- Let others consume data freely in open formats
- Encourage innovation
- Efficient aggregation point for journey planners (see manifest.json in GBFS v3.0)

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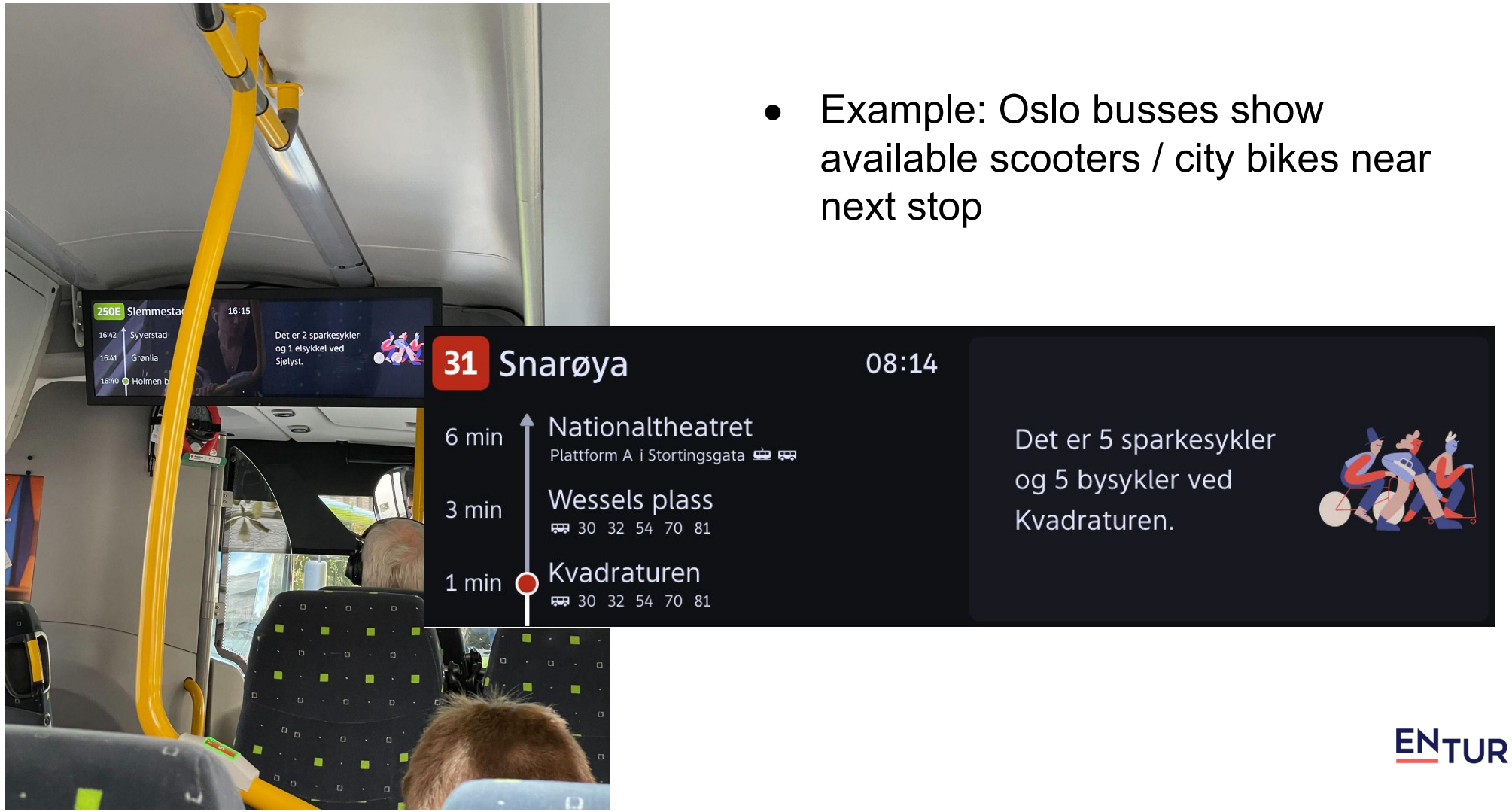
Requirement #3: Share the data



- Example: Oslo busses show available scooters / city bikes near next stop

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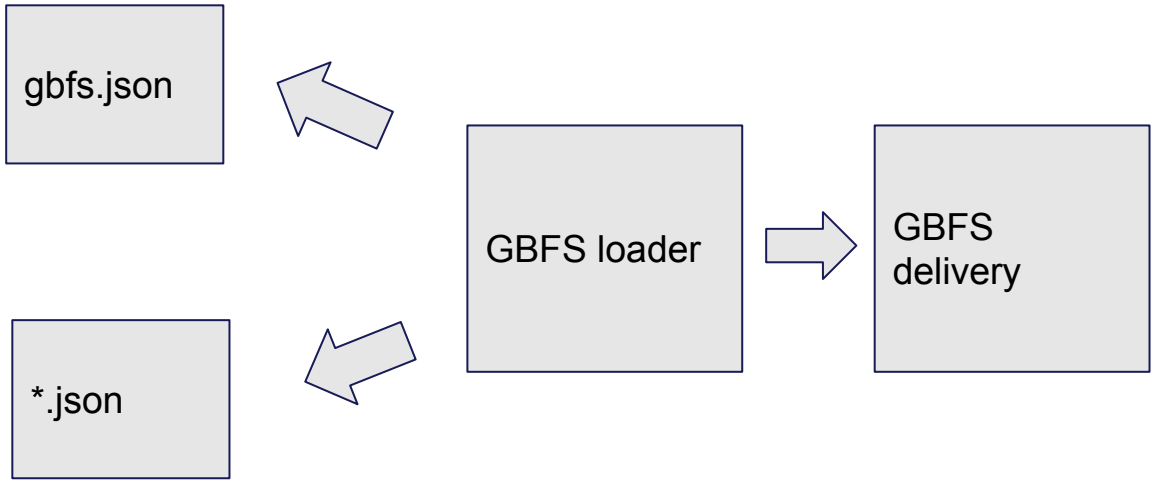
Requirement #4: Offer e2e solution



- entur/gbfs-loader-java
- Library that wraps the loading of GBFS endpoints
- Easier to consume GBFS feeds
- Respects ttl (don’t overfetch)
- Optional on-the-fly validation with gbfs-validator-java

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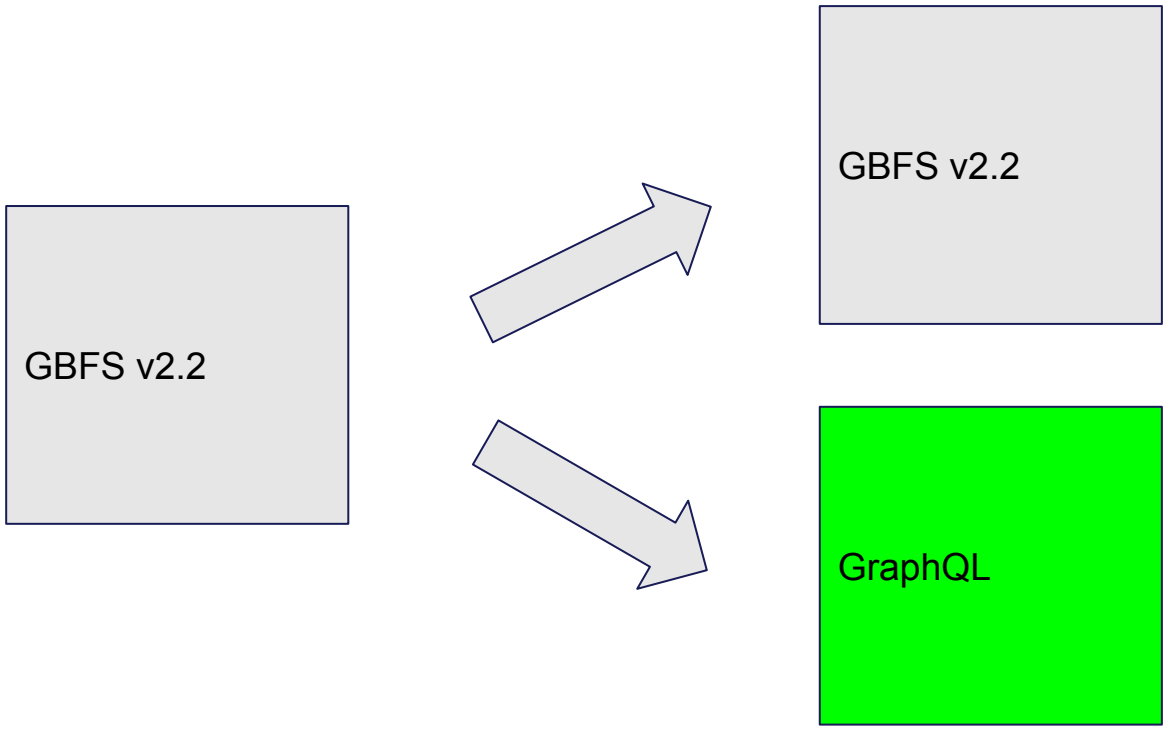
Requirement #5: Be nice to clients



- GraphQL API targeted at end-user applications
- Fast and light-weight
- Display nearby offers in a map

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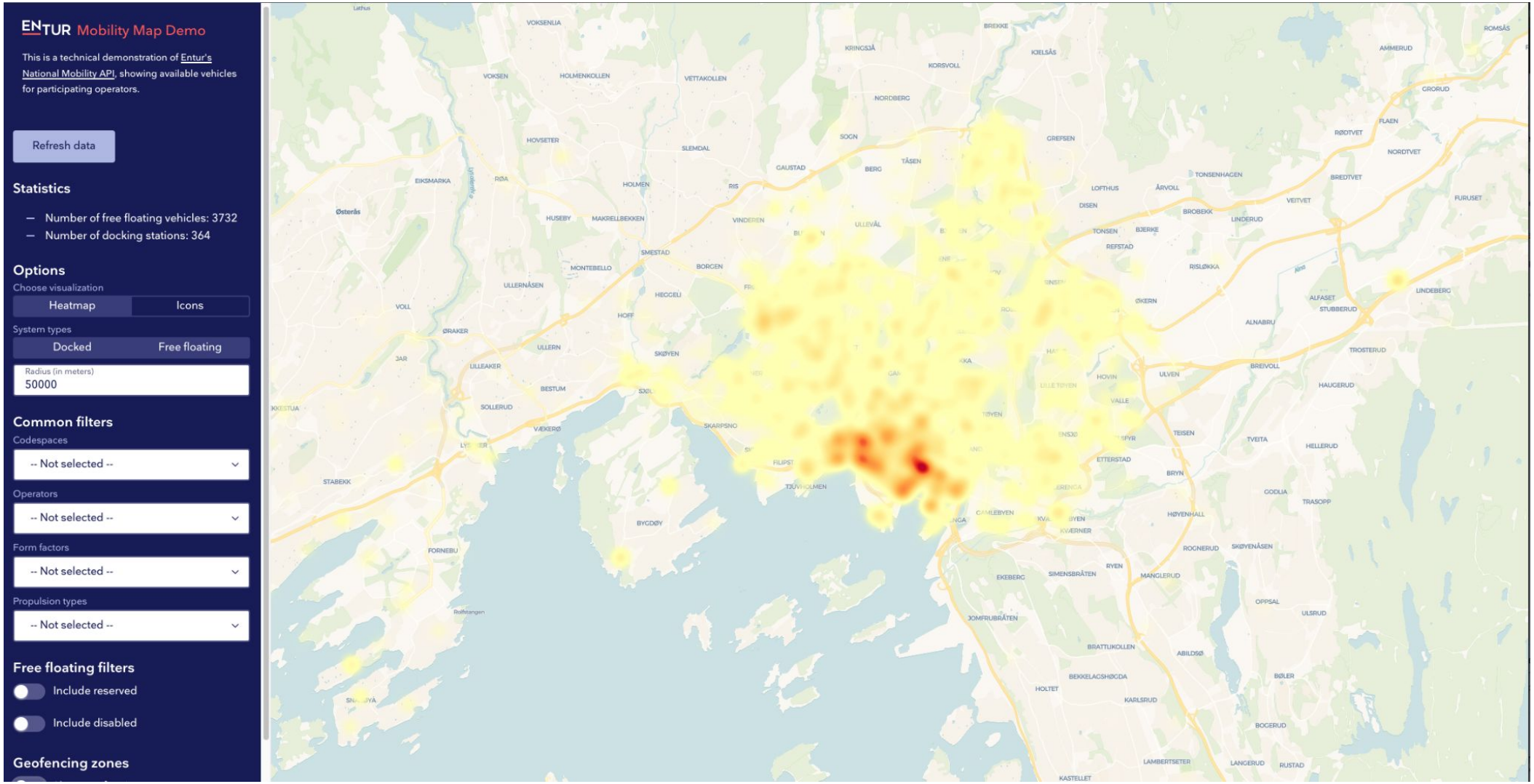
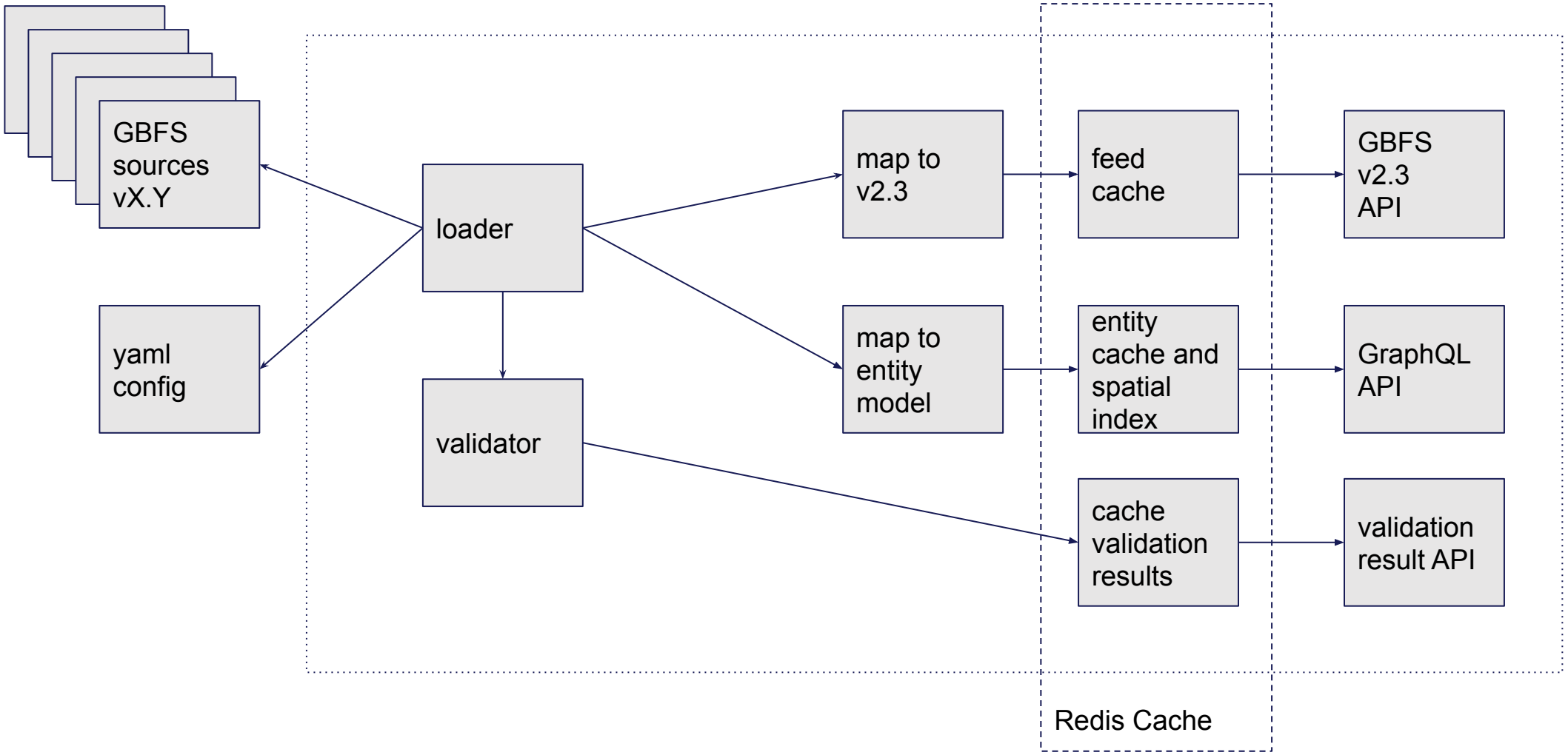
Requirement #6: Offer visibility



Mobility hub features

- Easy to configure
- Fast and scalable
- Can read any GBFS feed (with some limitations) and serve it in the API
- Open source (please use it)
- Still in development - so has many quirks :)

Lamassu architecture



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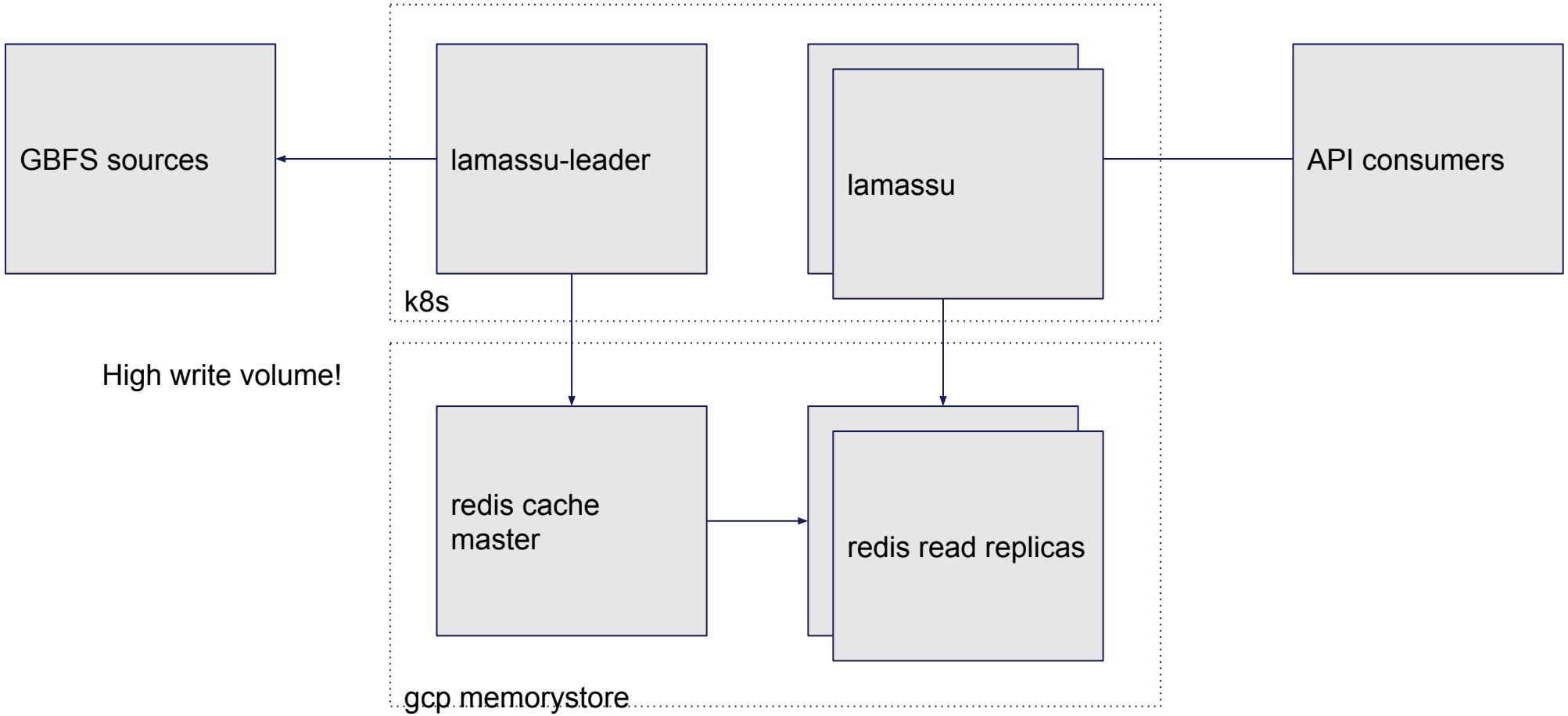
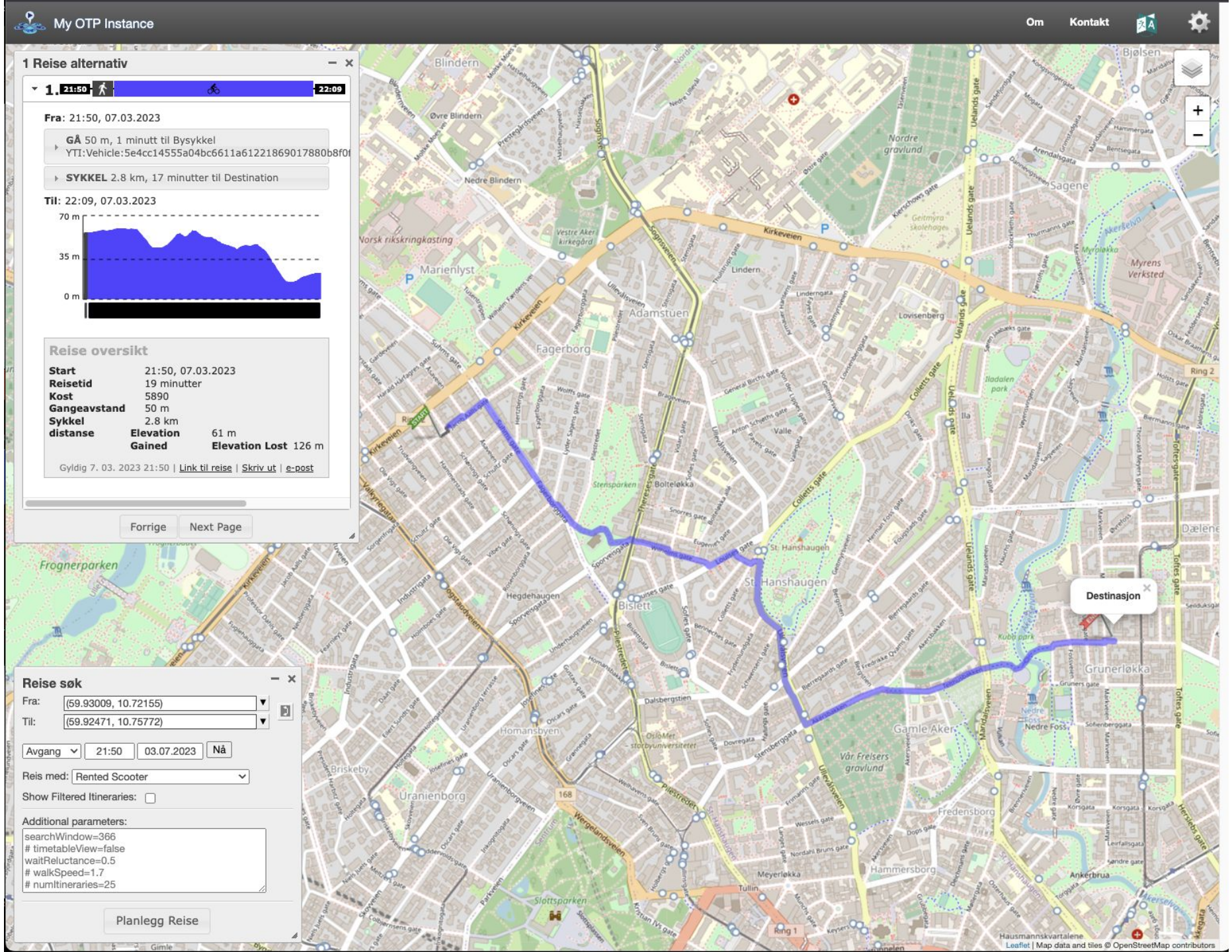
Lamassu architecture



Stats

- Serving ~10k+ free floating vehicles and ~1k stations from 30-40 systems (varies)
- 250k+ upstream fetches per day
- GBFS API serves 10k-20k requests per minute
- GraphQL API serves 2k-4k requests per minute
- Redis cache size: ~500MB
- k8s resource usage 1-2 vCPU


My OTP Instance
Om
Kontakt
1 Reise alternativ
1. 21:50 22:09
Fra: 21:50, 07.03.2023
GÅ 50 m, 1 minutt til Bysykkel
YTI:Vehicle:5e4cc14555a04bc6611a61221869017880b8f0f
SYKKEL 2.8 km, 17 minutter til Destination
Til: 22:09, 07.03.2023
70 m
35 m
0 m
Reise oversikt
Start 21:50, 07.03.2023
Reisetid 19 minutter
Kost 5890
Gangeavstand 50 m
Sykkel 2.8 km
distanse Elevation 61 m
Gained Elevation Lost 126 m
Gyldig 7. 03. 2023 21:50 | Link til reise | Skriv ut | e-post
Forrige
Next Page
Reise søk
Fra: (59.93009, 10.72155)
Til: (59.92471, 10.75772)
Avgang
21:50
03.07.2023
Nå
Reis med: Rented Scooter
Show Filtered Itineraries:
Additional parameters:
searchWindow=366
# timetableView=false
waitReluctance=0.5
# walkSpeed=1.7
# numItineraries=25
Planlegg Reise
Destinasjon
Blindern
Marienlyst
Adamstuen
Fagerborg
Bislett
St. Hanshaugen
Grunerløkka
Gamle Aker
Uranienborg
Homansbyen
Fredensborg
Hammersborg
Sagene
Bjølsen
Frognerparken
Leaflet | Map data and tiles © OpenStreetMap contributors

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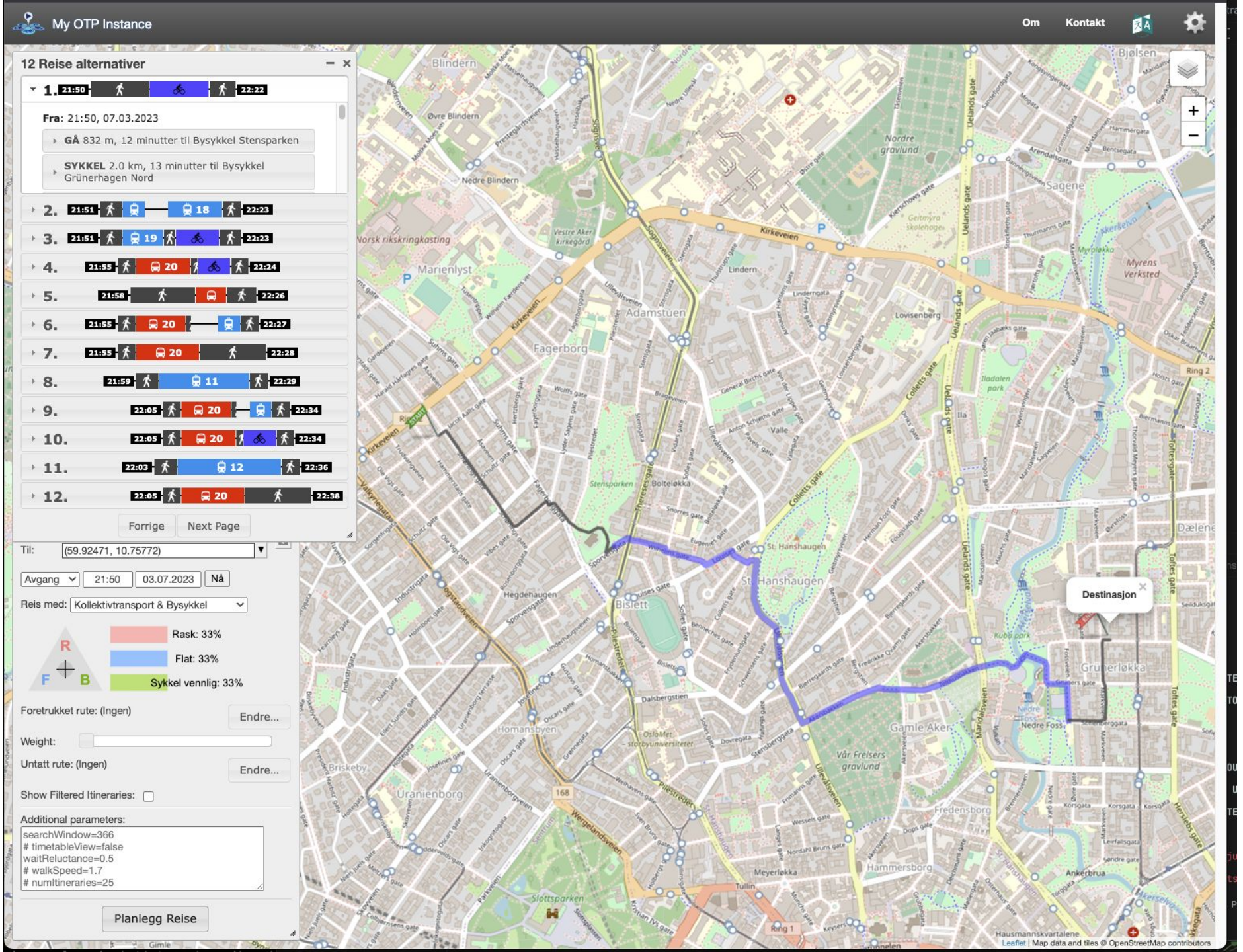
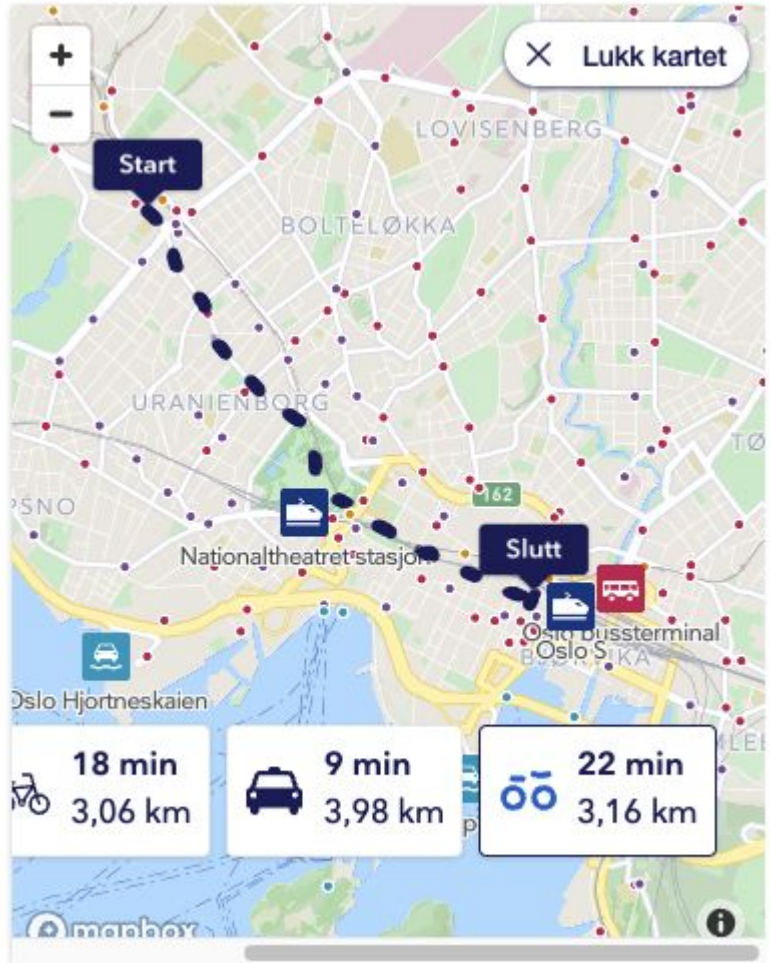

My OTP Instance
Om
Kontakt
12 Reise alternativer
1. 21:50 22:22
Fra: 21:50, 07.03.2023
GÅ 832 m, 12 minutter til Bysykkel Stensparken
SYKKEL 2.0 km, 13 minutter til Bysykkel Grünerhagen Nord
2. 21:51 18 22:23
3. 21:51 19 22:23
4. 21:55 20 22:24
5. 21:58 22:26
6. 21:55 20 22:27
7. 21:55 20 22:28
8. 21:59 11 22:29
9. 22:05 20 22:34
10. 22:05 20 22:34
11. 22:03 12 22:36
12. 22:05 20 22:38
Forrige
Next Page
Til: (59.92471, 10.75772)
Avgang 21:50 03.07.2023 Nå
Reis med: Kollektivtransport & Bysykkel
Rask: 33%
Flat: 33%
Sykkel vennlig: 33%
Foretrukket rute: (Ingen)
Endre...
Weight:
Untatt rute: (Ingen)
Endre...
Show Filtered Itineraries:
Additional parameters:
searchWindow=366
# timetableView=false
waitReluctance=0.5
# walkSpeed=1.7
# numItineraries=25
Planlegg Reise
Destinasjon
Leaflet | Map data and tiles © OpenStreetMap contributors


Lukk kartet
LOVISENBERG
Start
BOLTELØKKA
URANIENBORG
162
Nationaltheatret stasjon
Slutt
Oslo bussterminal
Oslo S
Oslo Hjortneskaien
18 min
3,06 km
9 min
3,98 km
22 min
3,16 km

Detaljer om reisen

Tirsdag 7. mars

Reisetid: 5 min

Neste reise →

21:50 **Majorstuen**

~~21:47~~ Plattform 1 (Retning sentrum)

T-bane med Ruter

T 2 Ellingsrudåsen

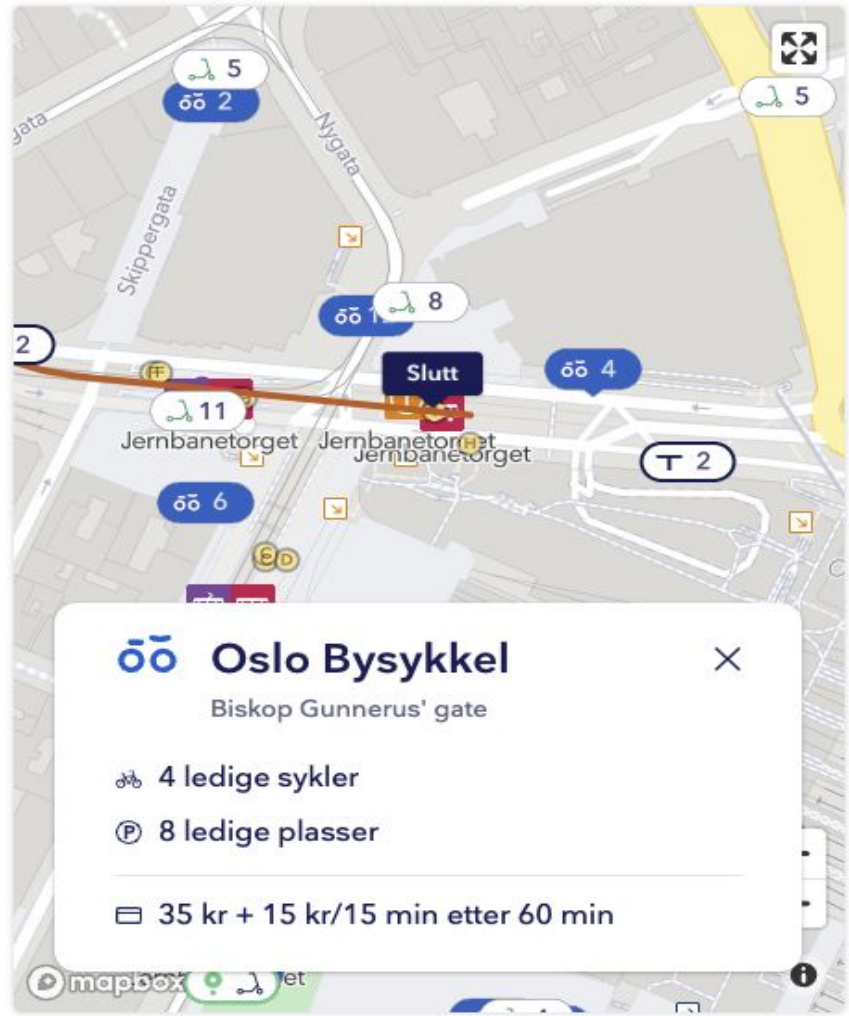
3 minutter forsinket · Kjørte fra Nationaltheatret kl. 21:52

2 mellomstopp

Andre avganger

21:56 **Jernbanetorget**

~~21:52~~ Plattform 1 (Retning øst)



ENTUR

Lenker

developer.entur.org
enturas.atlassian.net/wiki/spaces/PUBLIC/overview
github.com/entur
github.com/MobilityData

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