Facilitators, the DATA4PT experts

Christophe Duquesne

Kasia Bourée

Nick Knowles

DATA4PT short overview

Anastasia Founta, ITxPT

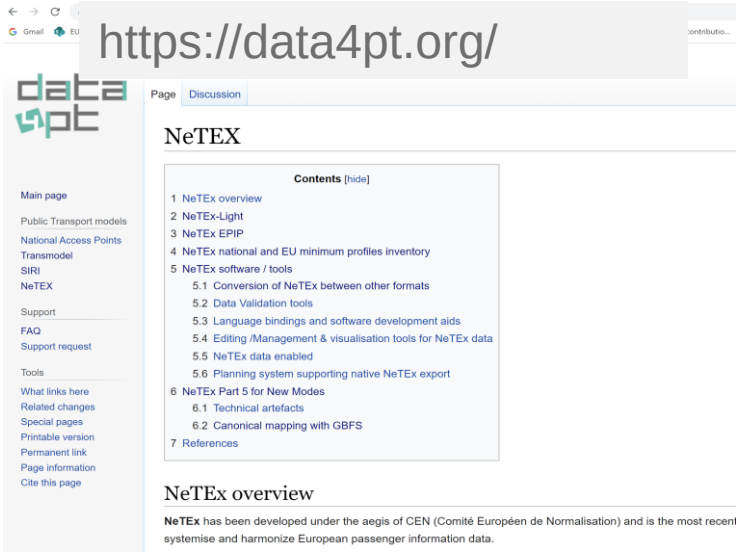
Data4PT has received funding from the European Union's DG for Mobility and Transport under grant agreement No MOVE/B4/SUB/2019-104/CEF/PSA/SI2.821136

AGENDA

Time	Topic	Facilitator
09:30 – 09:35	Short introduction (DATA4PT framework)	Anastasia Founta
09:35 – 09:40	NeTEx alternative modes background (stakeholders involved, Transmodel, and MMTIS DR)	Kasia Bourée
09:40- 09:50	Functional scope of NeTEx Part 5	Christophe Duquesne Nick Knowles
09:50 – 10:20	Use cases-examples Intermodal trip plan (10') Bike sharing (10') Car- pooling (10')	Kasia Bourée Nick Knowles Christophe Duquesne
10:20 – 10:25	References – available resources	
10:25 – 10:30	Q&A	

A CEF Programme Support Action (2020-2023) to **accompany and facilitate** Member States and other relevant stakeholders **in the implementation of MMTIS Delegated Regulation**

More information on DATA4PT (training material, tools, request of support, technical info...)



Webinar: NeTEx Validation Tool

6 December 2022, 15.30 CET, online

On 6 December, the DATA4PT Team is happy to invite you to a webinar on its NeTEx Validation Tool. This event aims to make participants familiar with the use of the validator and support them in the process of validation.

The draft agenda is as follows :

- Introduction: explain why the tool is important for the community
- Demonstration of the tool
- Explain the validation rules and show examples from datasets checked so far
- Show how to customise the tool for your own needs

The full agenda is coming soon, so stay tuned!

You can register for this event here.

Transmodel & NeTEx for Alternative modes - background

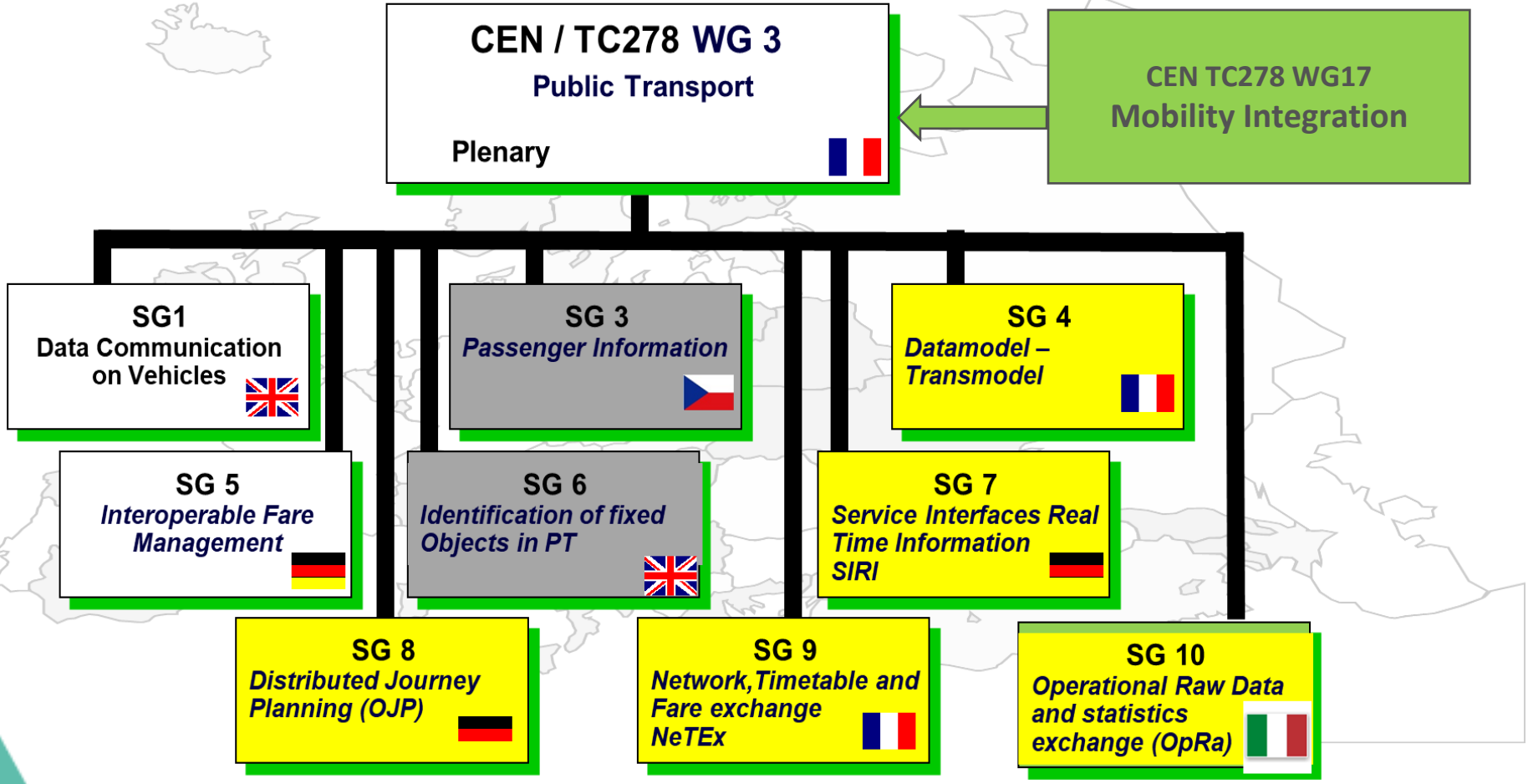
Facilitating interoperability and integration of demand responsive transport
regulatory context: MMTIS Reg. 2017/1926

Demand-responsive modes **("Alternative Modes")**
Shuttle bus, shuttle ferry, taxi, car-sharing, car-pooling, car-hire, bike-sharing, bike-hire.

Location search (demand-responsive modes):
(i) Park & Ride stops
(ii) Bike sharing stations
(iii) Car-sharing stations
(iv) Publicly accessible refuelling stations for petrol, diesel, CNG/LNG, hydrogen powered vehicles, charging stations for electric vehicles
5. Secure bike parking (such as locked bike garages)

Information service:
Where and how to buy tickets for demand responsive modes (incl. retail channels, fulfilment methods, payment methods)

Development Context: CEN TC278

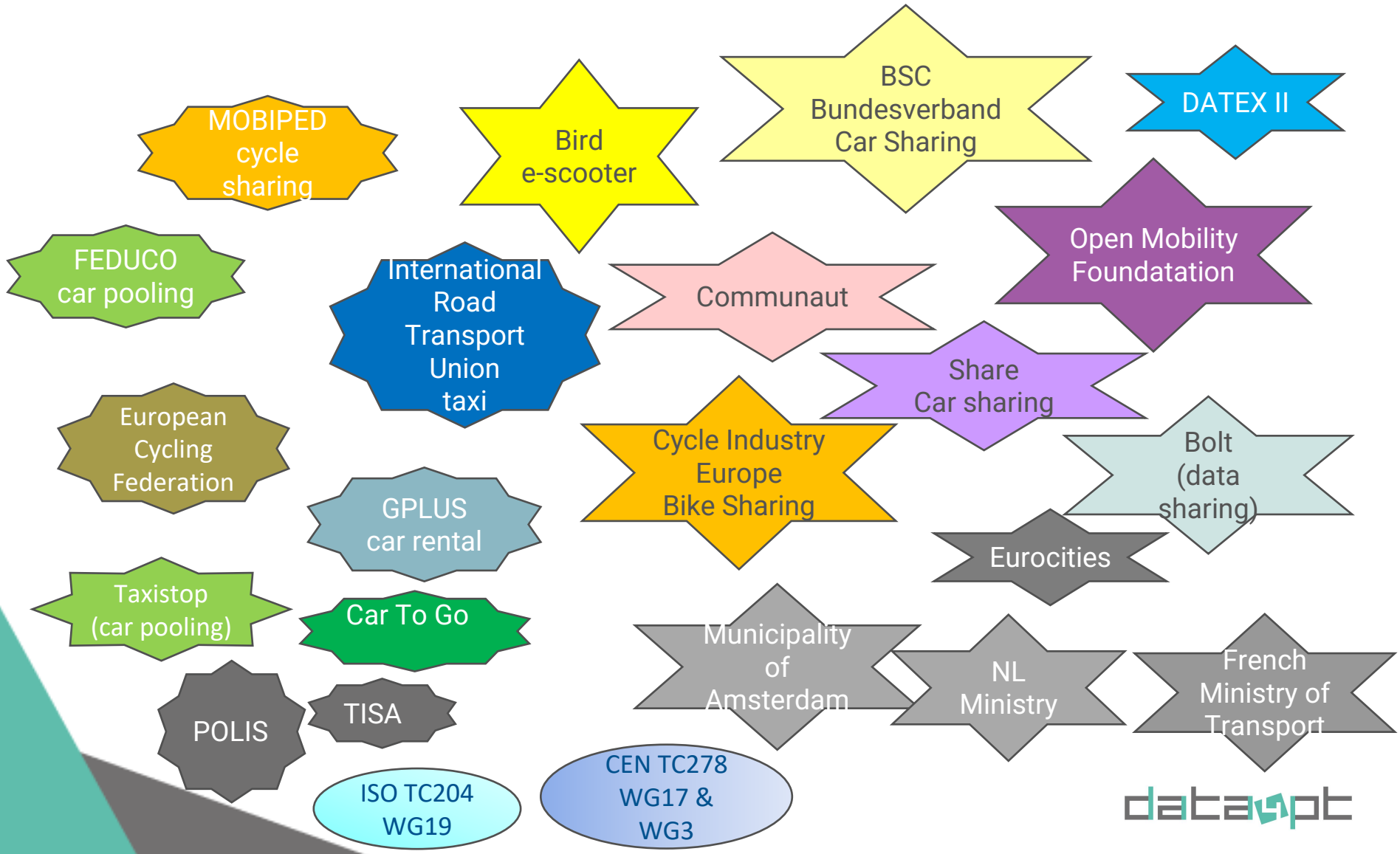


Stakeholders involved in NeTEx Part 5 and Transmodel Part 10

- **NeTEx Working Group (SG9)** and project team
  - More than 100 experts following and contributing to the online project
  - A project team of 6 experts plus several contributors from ENTUR, SBB and SG4
- **Transmodel Subgroup (SG4)** and a project team within WG17 (mobility integration) of TC 278
- A lot of liaisons

BSC
Bird
Bolt
Communaut
Cycle Industry Europe
DATA4PT / PSA II
DATEX II Italy
DG MOVE EU
Municipality of Amsterdam
NL Ministry
Eurocities
French Ministry of Transport
Open Mobility Foundatation
Share (Car Sharing)
POLIS
TC278 WG3 ITS for Public Transport
TC278 WG8 / DATEXII
PSA
TC278 WG17 Urban ITS

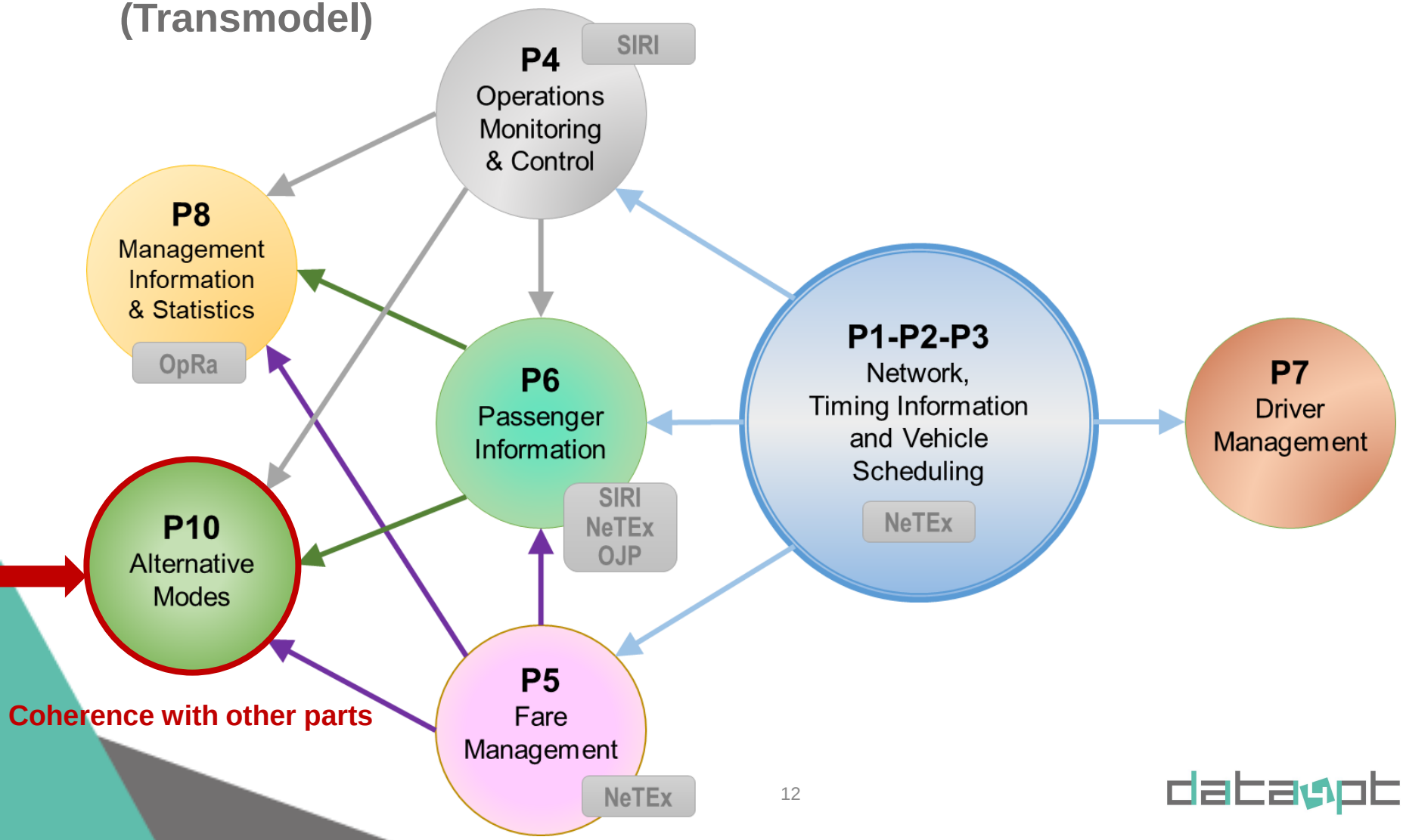
Stakeholders involved/contacted during the development of Transmodel-10 and NeTEx-5 2016-2021



Transmodel

Facilitating interoperability and integration of demand responsive transport

HOW: extension of the existing data model EN12896 (Transmodel)

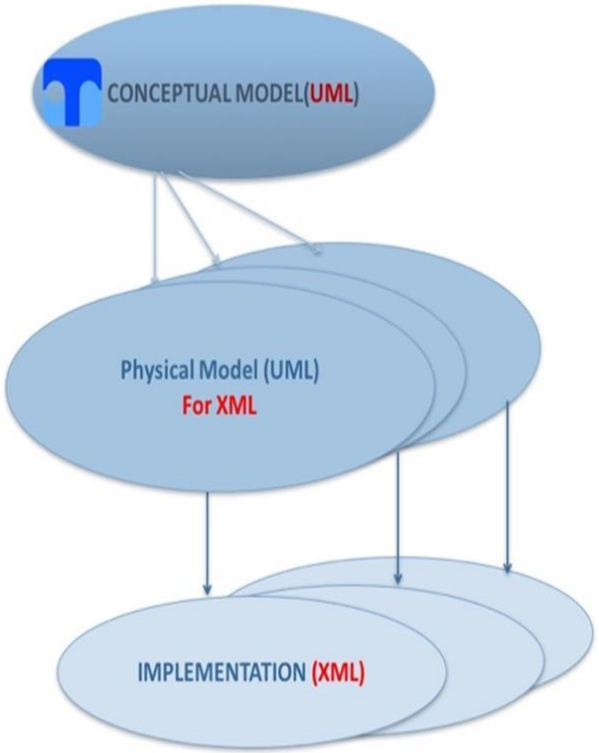


Facilitating interoperability and integration of alternative modes of transport
HOW: **extension of the existing parts of NeTEx**

- Conceptual model is implementation independent (Transmodel)

- Multiple physical models for different target implementations may be derived from one conceptual model
  - Example : NeTEx XML Physical design

- Implementation is derived from physical model
  - Example: NeTEx XML Schema



Transmodel-10
data model (structures) for vehicle sharing, pooling, rental, taxi

NeTEx-5
Data exchange format for the information modelled by Transmodel-10

And

SIRI
Facility Monitoring, Estimated Timetable, etc.

Booking and purchase are not Covered by NeTEx and SIRI
(see TOMP, etc. …)

APIs versus Bulk exchanges

Journey planners require two types of data exchange

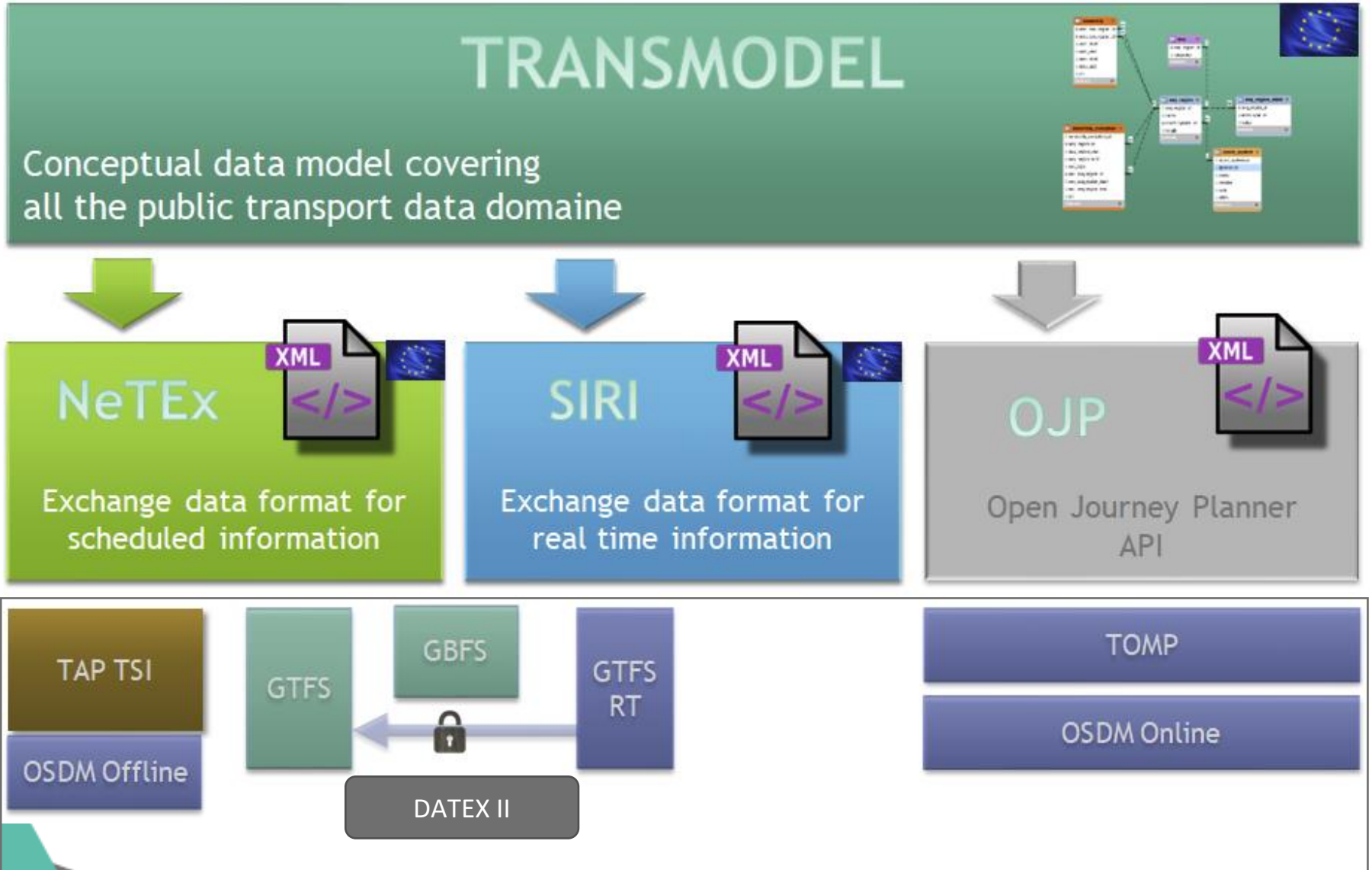
To make user queries

- Dynamic queries at runtime (API way)
  - OJP (stops, trips), SIRI (departures, etc)

To Provision journey planners them so they have the correct data

- Static exchange before: of Network, Services. schedules, Sales offers way
- NeTEx, GTFS

Transmodel covers full data life cycle



NeTEx Part 5 Functional scope

NeTEx : Scope

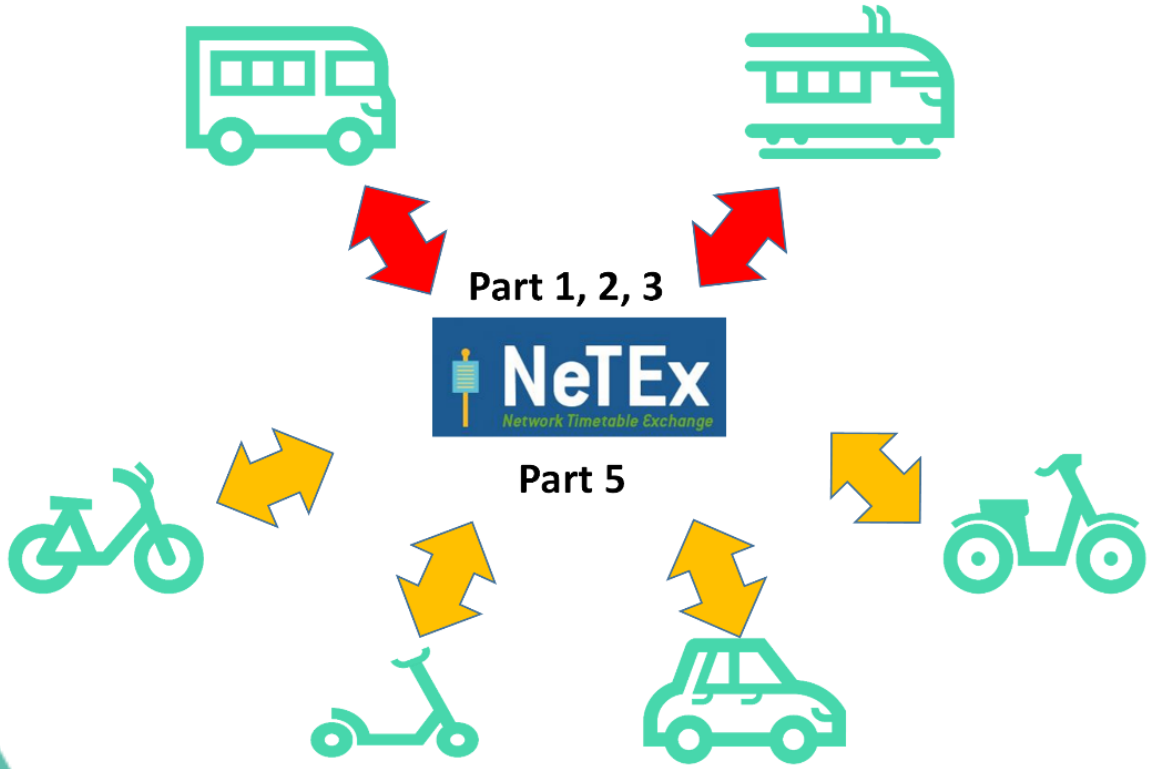
Planned data

(any information known in advance)

VERSUS “real time” data

(and not Dynamic data)

NeTEx: covers all public transport modes (collective and individual)



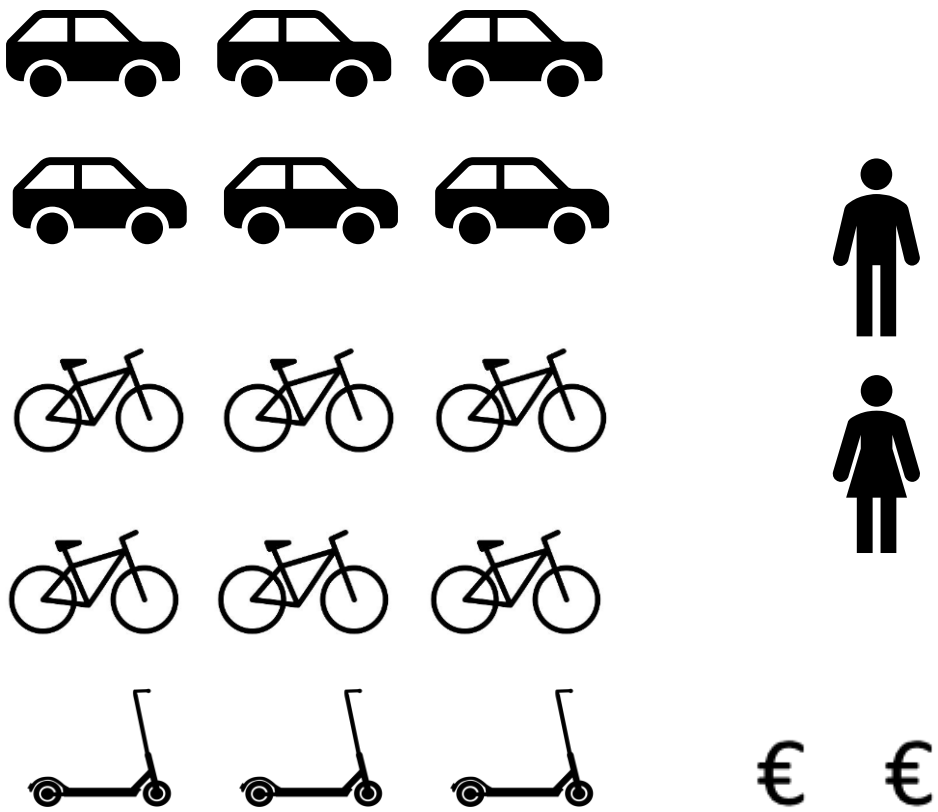
Legacy Public Transport

Flexible and on-demand transport

Vehicle sharing
Vehicle pooling
Vehicle rental
Transport Network companies
Taxi

NeTEx Part 5: Vehicle sharing

- Vehicles
- Fleets
- Detailed Stations (and connection/integration with other modes)
- Vehicle access devices
- Online services and apps
- Vehicle sharing operator
- Geofencing
- Booking information
- Fare offer
- User account



NeTEx Part 5 : Taxi and Transport Network companies

- Vehicles
- Taxi stand and pick-up/drop off place
- Taxi and TNC companies (chauffeured cars, Uber, etc. ...)
- Online services and apps
- Booking information
- Fare offer
- User account

NeTEx Part 5 : Vehicle rental

- Vehicles.
- Parking (possible areas in a parking).
- Rental companies.
- Online services and apps.
- Booking information.
- Fare offer.
- User account.

NeTEx Part 5 : Vehicle pooling

- Vehicles.
- Driver and traveler profiles.
- Vehicle pooling offers.
- Carpooling areas (and connection/ integration with other modes).
- Pick-up/drop off place.
- Vehicle pooling places.
- Online services and apps and associate organisation.
- Booking information.
- Fare offer.
- User account.

NeTEx Part 5 : Vehicle Refueling/ Recharging

- Location.
- Charging station characteristics.
- Battery and vehicle characteristics.
- For all modes (car, bike, scooter, bus, etc.).
- Online services and apps.
- Booking information.
- Fare offer.
- User account.

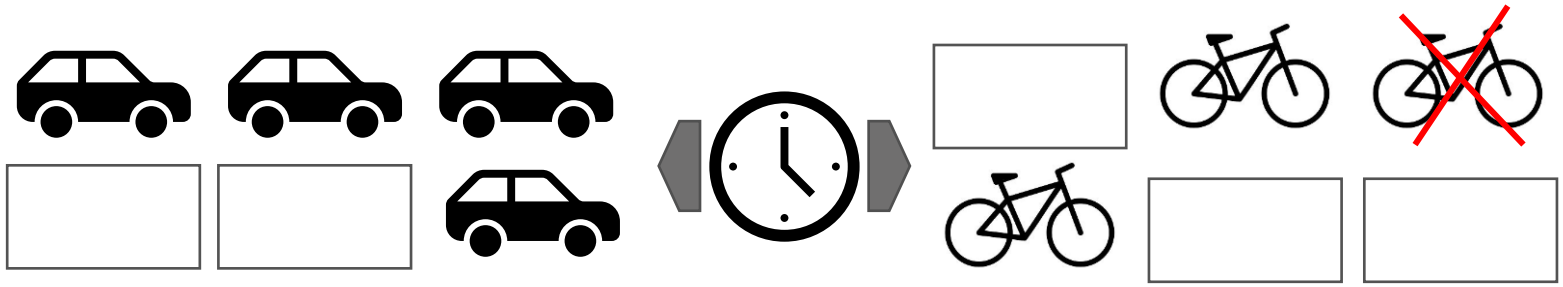
SIRI for Real time data

Availability of vehicles
Realtime information on all available vehicles and where (rental station) they are.

Availability of parking places
Realtime information on all available spaces to park the vehicles and where they are.

Vehicle Position
Location of vehicles (especially for free floating).

Vehicle and place status
Whether a vehicle or a docking place is properly working or has limitations



Some additional available key concepts

Mode of transport and modes of operation

Transport Modes are enhanced to be able to describe travel by Alternative Modes (bicycle, scooters, etc.). A new concept of Mode of Operation is introduced that allows to distinguish between operation as an alternative mode (Vehicle Pooling, Vehicle Sharing, Rental, etc.) and operation as a classical mode (e.g. Scheduled service) .

Alternative Mode services and associated online/mobile access

Mobility Services are added to cover Vehicle Sharing Services, Pooling Services (including chauffeured car and taxi) and Rental Services. Access and Contact details for support can be described.

Intermodal trip example

First leg of the trip with car sharing, connection with train

NeTEx provides the data format for / information for

- **Access Leg** (at start and end of trip to reach transport)
- **Alternative Mode Leg:** Car sharing trip part
- PT Ride Leg: Train trip part
- Vehicle Sharing Parking Area: (Car sharing Station) and its Availability within a given zone
- Connection: (Walking distance) between Vehicle Sharing Parking Area & (Train/bus) Stop Place.
- **Location:** Address of the Car sharing Stations.
- **Vehicle Access Code:** Access credentials of the vehicle
- Booking Arrangements (how to book) a car (at C) the Train, or the whole trip
- **(Estimated) price** of the trip (e.g. combined fare car sharing + train)
- **Where / How to pay**
- Departure Times at station S

SIRI provides dynamic APIs for

- The real time availability of vehicles
- The real time availability and parking slots

Booking arrangements

NeTEx is dedicated to data exchange and does NOT provide any API for the booking process.

BUT: NeTEx provides **information on the specific parameters of the booking rules** for different types of mobility services:
for conventional modes of operation, in particular flexible transport
for alternative modes of operation:

- Vehicle rental, Vehicle sharing, Vehicle pooling, Taxi

According to a Booking Policy, **Booking Arrangements** provide information on:

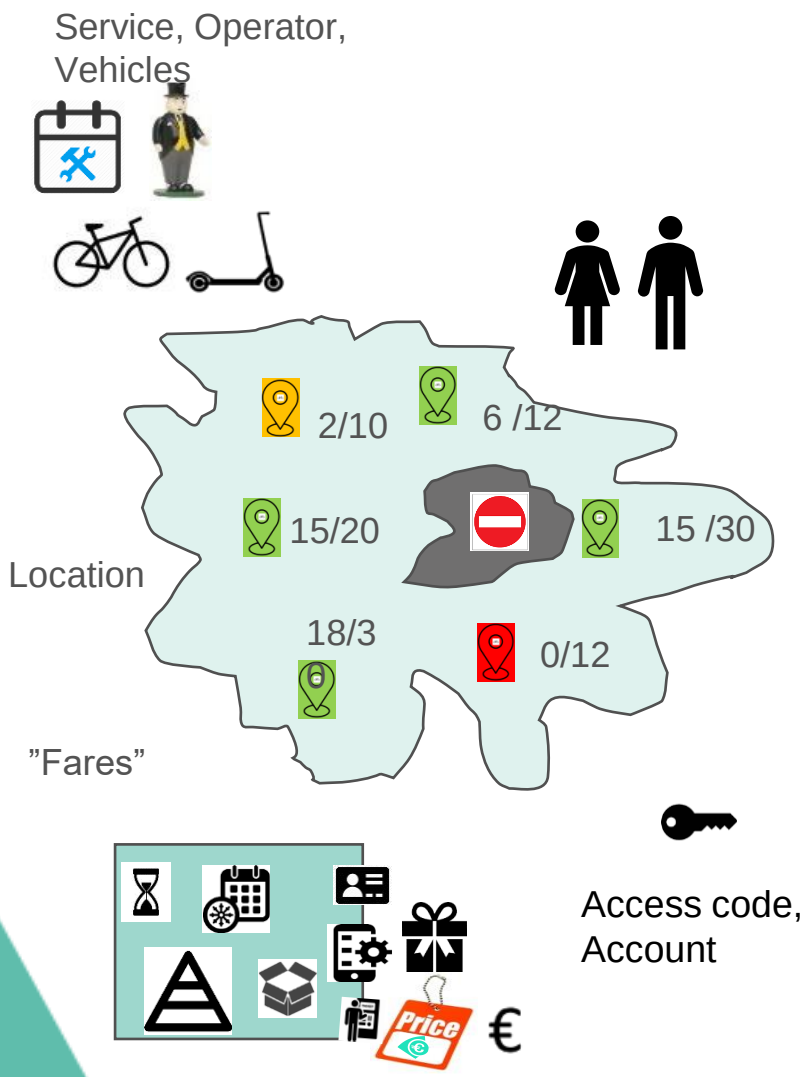
- **How** make a booking: e.g. by phone calling a driver, online, ... & Url of the website for the online booking.
- **Who** can make the booking: anyone, staff, specific members, .?
- Whether **cancellation** is possible
- Whether the **deposit** is required as a guarantee
- **When** make a booking: e.g. day of travel only

Also more detailed temporal parameters may be provided, such as

- the latest time in day that booking can be made
- minimum/maximum interval in advance of departure day or time that service may be ordered
- Minimum/maximum in advance of departure day or time that service may be ordered.

Bike sharing example

Booking a bike from a bike sharing platform…



NeTEx provides the data format for / information for

- **Nature and Scope of service:**
  - Operator info including contact details for support, operating hours, etc.
  - **Location:** Where are the cycle stations?
  - What are the available / permitted zones of use **(Mobility constraint zone)**
  - **Cycles and Cycle features** (Vehicle, type, model etc**)**
- **How to use:**
  - How to find, book, pay (at station, online, app, smartcard , etc)
  - Eligibility (minimum age, etc)
  - Membership requirements (walk up use, or preregister)
- **Products and Prices:**
  - **Tariff (timed, 24H pass, season pass, etc, etc)**
  - **Sales offer** (e.g. stand alone, as part of bundle), media, etc, Prices
- **Sales Transactions**
  - **Vehicle Access Code:** (access credentials of the vehicle)
  - Customer Account, Trip purchases - electronic representation,

SIRI provides APIs for

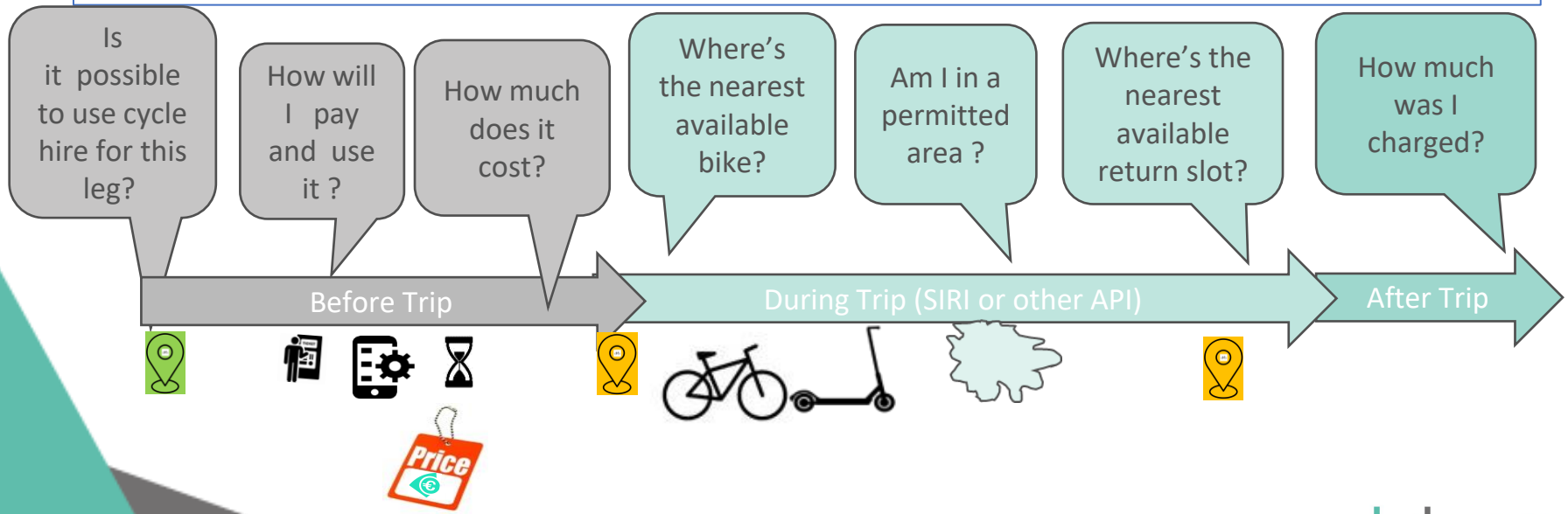
- The real time availability of vehicles
- The real time availability of parking slots

Does not cover booking / payment

Key Use Cases …

- **Facilitating the integration of alternative modes in multimodal journey planning**
  - Making Cycle sharing service visible to journey planners to enable mixed mode trips.
    - Locations, geographical scope, operating times, etc.
  - Providing fares that can be bundled with other transport offers.

- **Providing uniform passenger information** on how to use, pay etc.
- **Real time availability of cycles/parking slots (SIRI)**
- **NB. SIRI Does <u>not</u> provide reservation /booking / payment API**

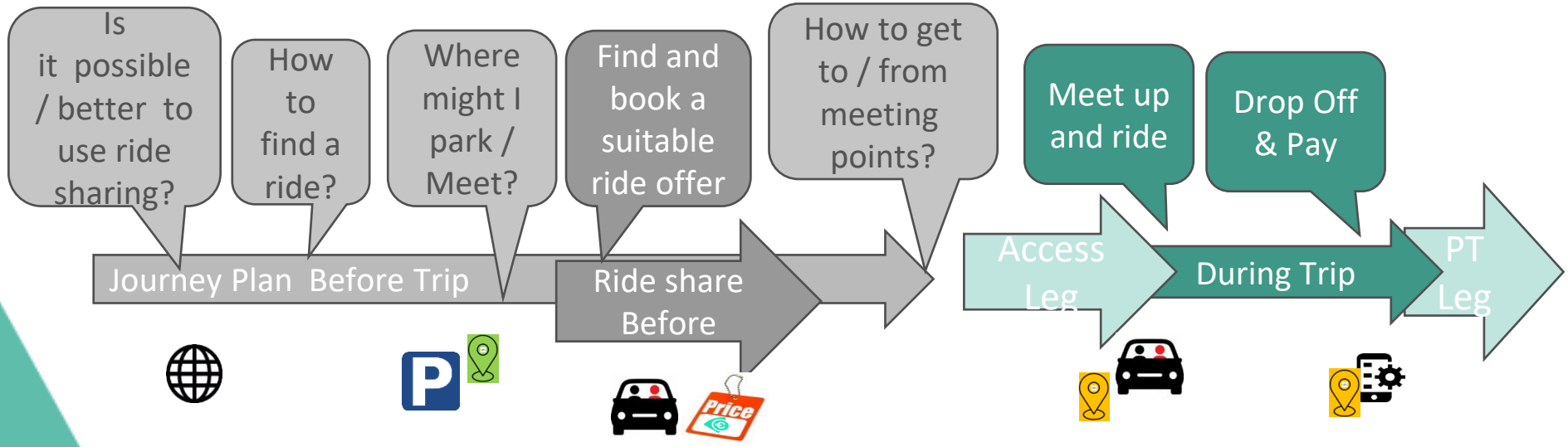


Car-pooling example

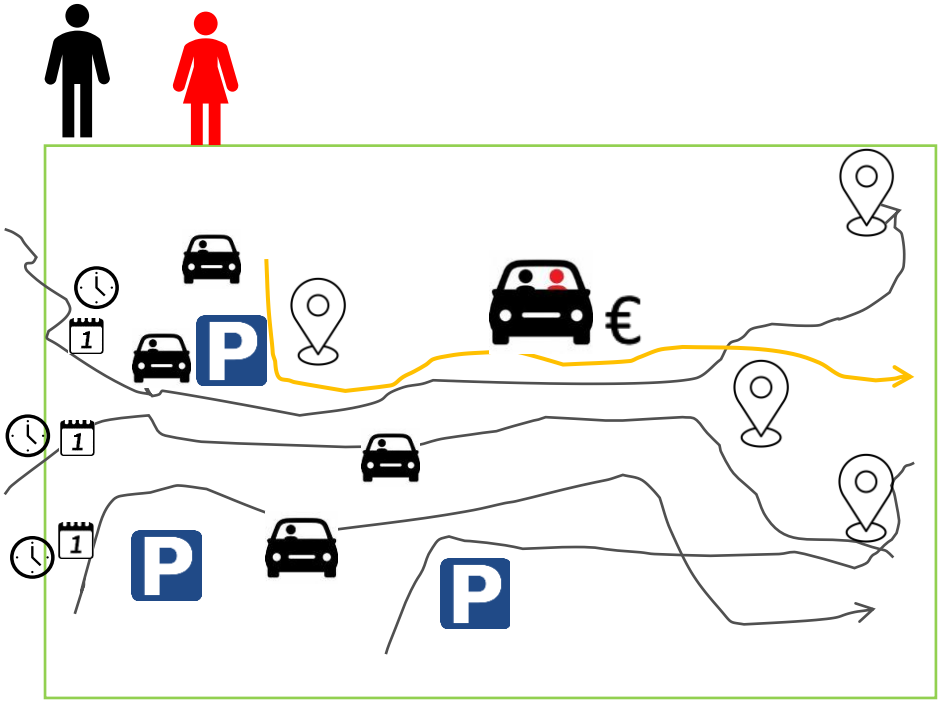
Key Use Cases …

- **Ride sharing legs as an option for multimodal journey planners**
  - Looking for rides to cover trips for places or times for which there is no or poor PT coverage
  - Building Access / PT legs either end of a ride share
    - Locations, geographical scope, operating times, etc.
    - Standardised model for users, drivers & their preferences that can be intgerated with a Customer account

- **NB. Does <u>not</u> provide car pooling API: offer/ reservation /booking / payment API – use**



Booking a ride with car pooling…



NeTEx provides the data format for / information for

- **Nature and Scope of service:**
  - Area of Coverage
  - Vehicle Pooling Parking,
  - Operator info including websites, apps, etc
  - Booking arrangements
  - Membership requirements
- **Possible Journeys:**
  - **Drivers**, **Riders**
  - Offers, Meeting Points
- **Products and Prices for intermodal Itinerary:**
  - Single Journey + Ride price
  - Customer Account
  - Customer purchase record

Various car pooling APIs

- Ride can be trip leg in intermodal itinerary
- The real time availability of parking slots

Find the supportive material you need!

Material

Check with your National standardisation Body the official documentation under the name: **CEN/TS 16614-5:2022 (E)**

GitHub for XSD and XML examples
https://github.com/NeTEx-CEN/NeTEx/tree/master/xsd/netex_part_5
https://github.com/SIRI-CEN/SIRI

NeTEx website
https://www.netex-cen.eu/wp-content/uploads/2021/03/NeTEx-extension-for-New-Modes-Detailed-Scope-v04.pdf
https://netex-cen.eu/?page_id=540

DATA4PT wiki page
https://data4pt.org/w/index.php?title=NeTEX#NeTEx_Part_5_for_New_Modes
(including mapping with GBFS)
Discussion

DATA4PT webpage : Training material

Material

Transmodel website
https://www.transmodel-cen.eu/downloads/

Thank you for your attention!

https://data4pt-project.eu/

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DATA4PT project

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