INFORMATION TECHNOLOGY
for PUBLIC TRANSPORT

NeTEx part 5 and SIRI

How to use them for Demand-Responsive Transport and any other “on-demand” mobility services

Tu-Tho Thai – NOMAD Second Conclave on MaaS – 28 February 2024

Agenda

- Let’s meet!
- Taking a step back
- Use cases for NeTEx and SIRI
- Open floor

LET'S MEET

Hello! I am Tu-Tho.

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Building communities and their inclusion, leveraging technology and collective intelligence

French, English, Vietnamese, Spanish, Japanese

ITxPT: Building interoperability

Who we are

The **non-profit association** that enables an **open architecture, data accessibility and interoperability** between IT systems. The members of ITxPT develop the IT architecture **for public transport** and other mobility services together, **based on standards and best practices**.

Membership-based

- 160+ members in 28 countries
- PTA, PTO, Industry and Associations

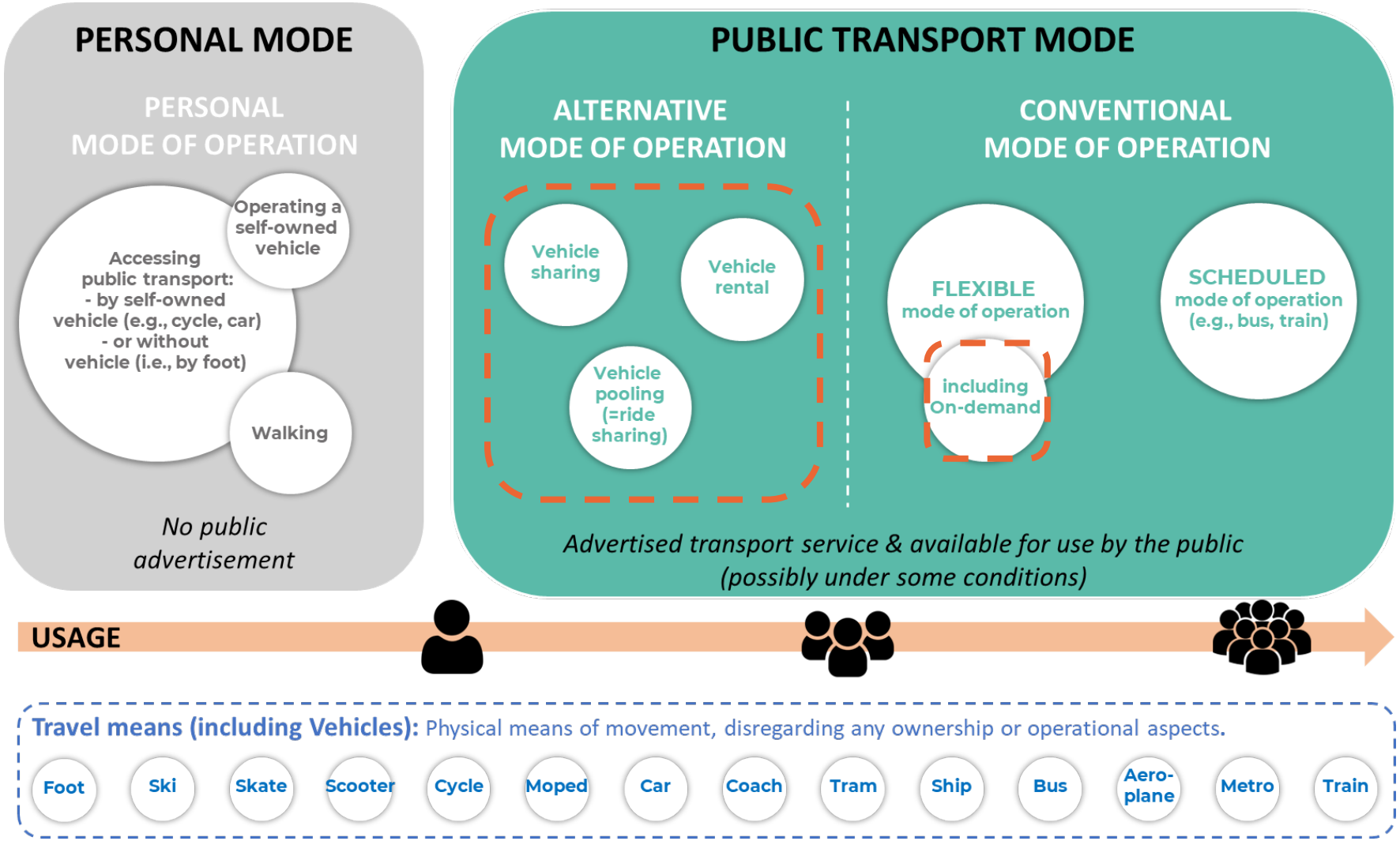
What we do

- An architecture for interoperability
- A community for innovation
- A label for compliance

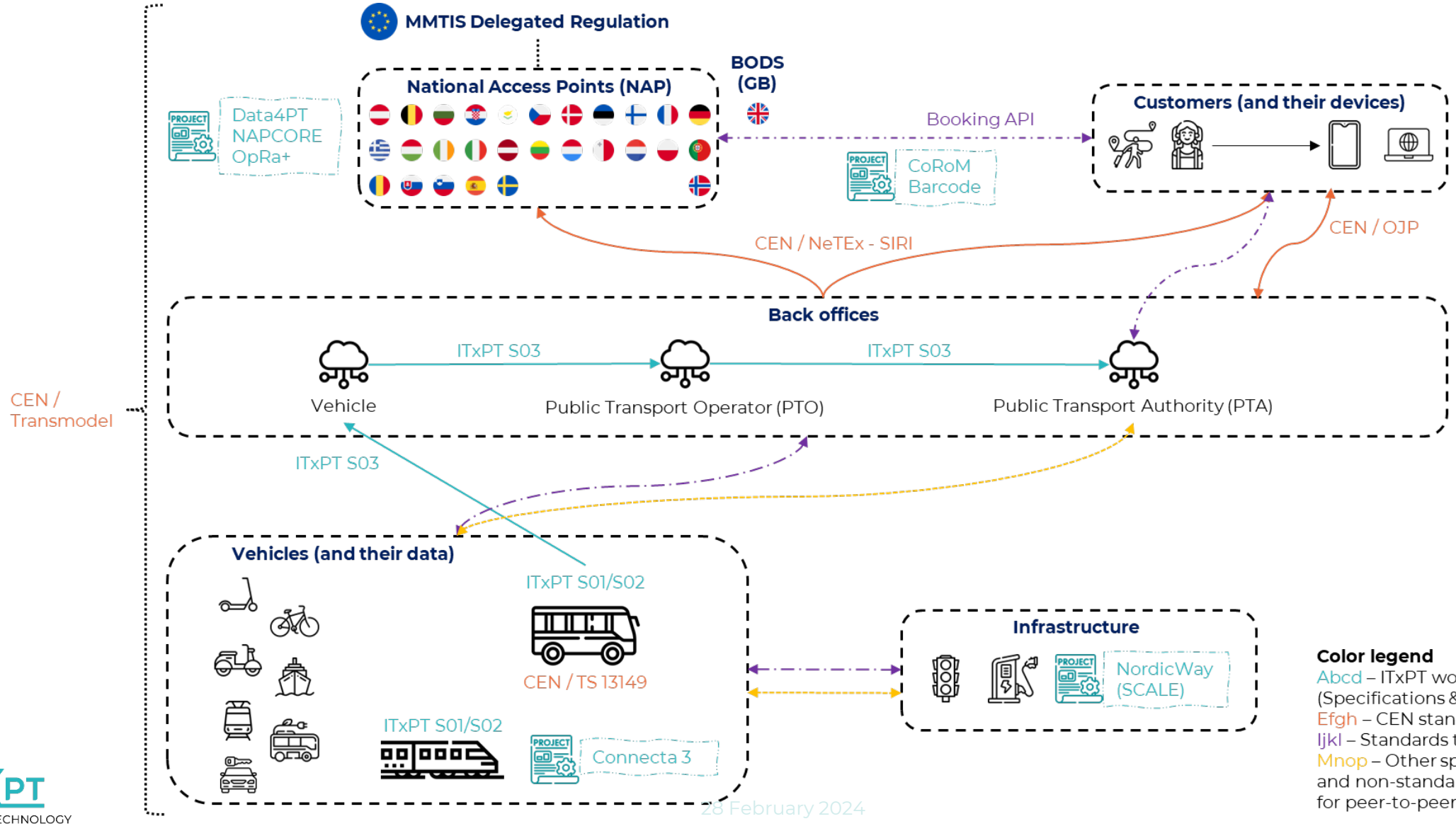
Taking a step back

Clarifying what we are talking about

Demand-Responsive Transit? On-Demand? New modes? Public Transport?



PUBLIC TRANSPORT LAYERS & DATA FLOWS



Color legend
Abcd – ITxPT work (Specifications & Projects)
Efgh – CEN standards
Ijkl – Standards to be defined
Mnop – Other specifications and non-standardised formats for peer-to-peer data exchange

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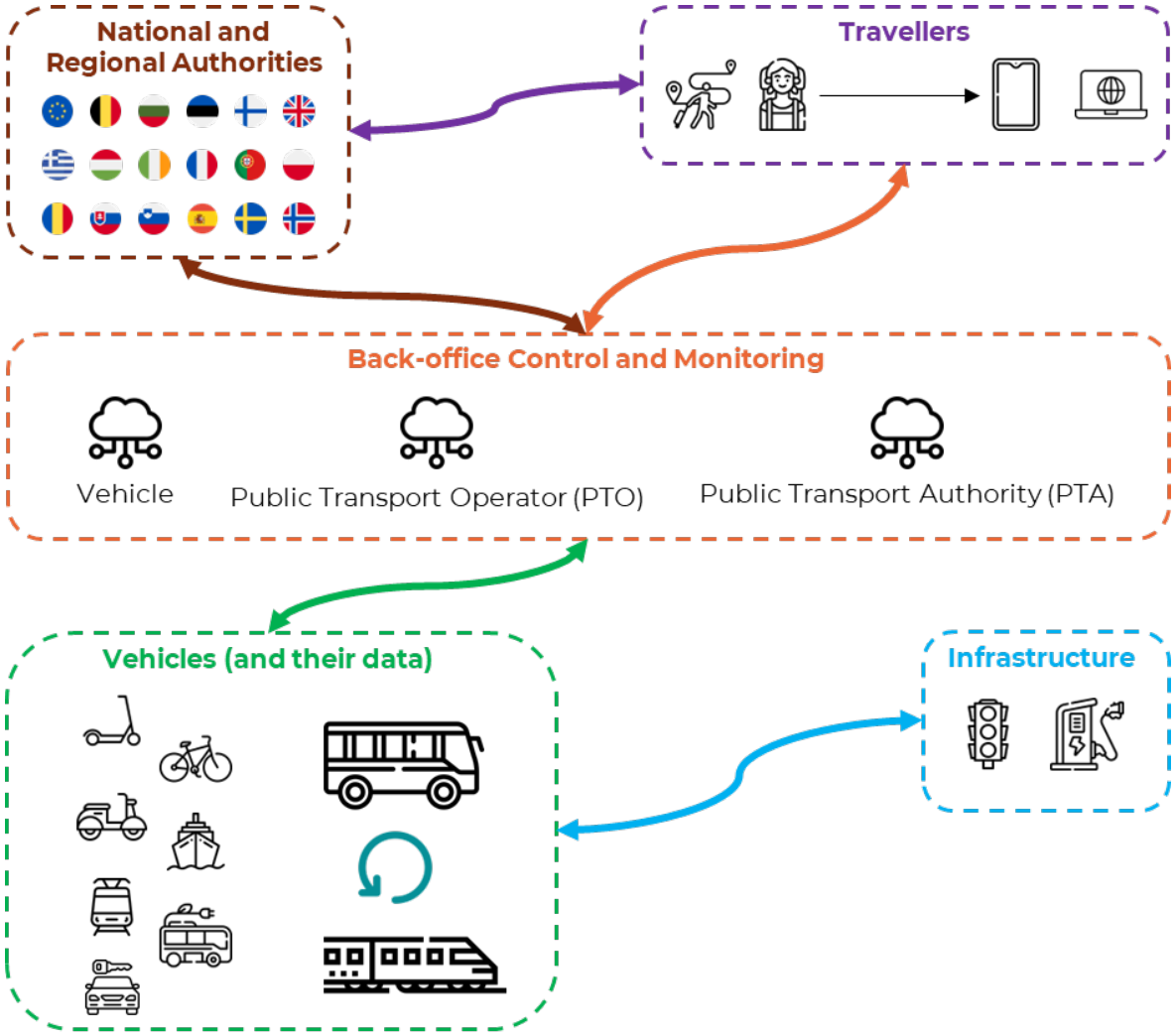
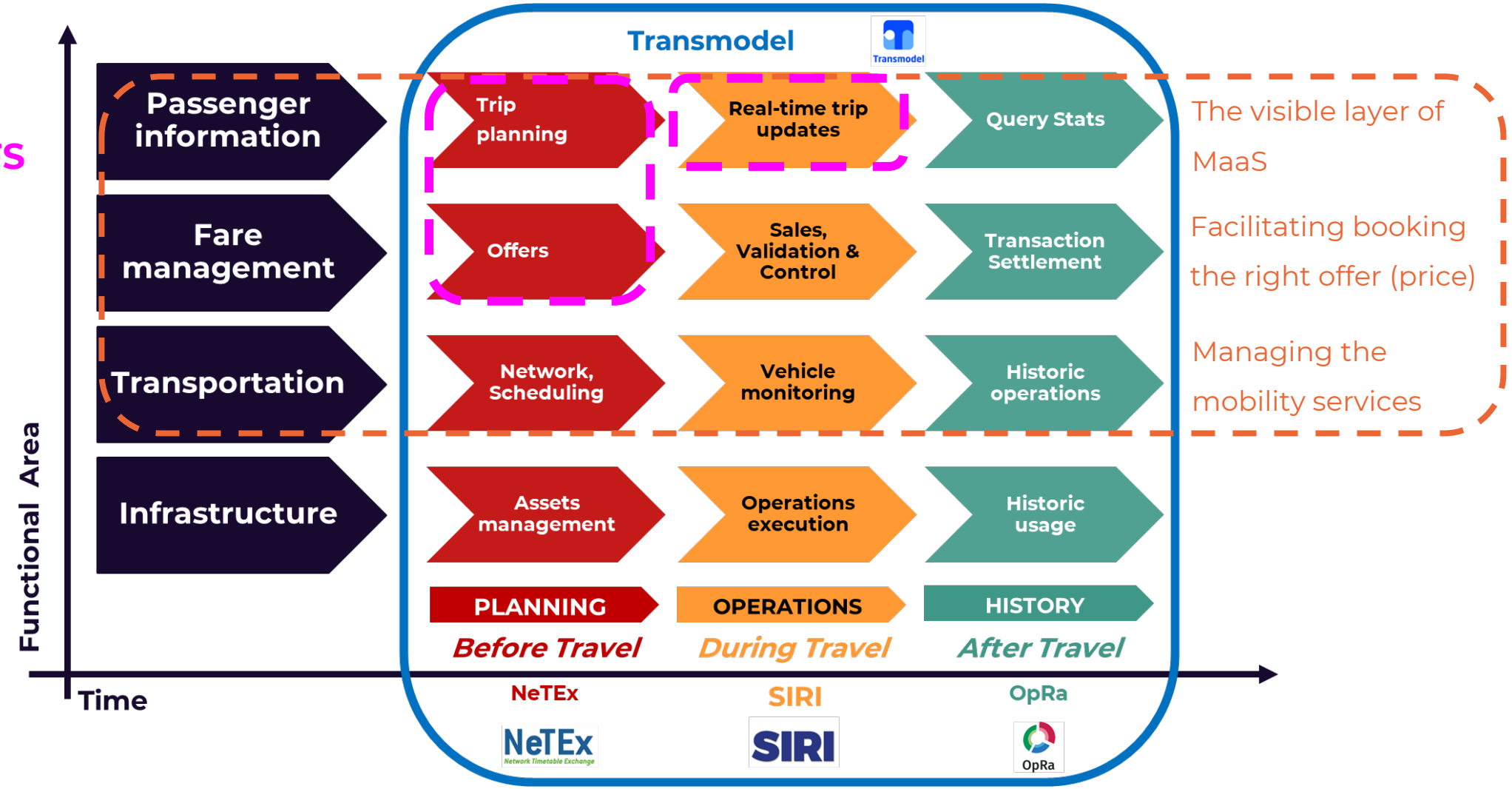
INFORMATION TECHNOLOGY for PUBLIC TRANSPORT

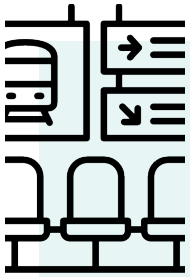
SIMPLIFIED VIEW OF THE DATA FLOWS



STANDARDS SUPPORTING DATA FLOWS & MULTIPLE LAYERS OF PUBLIC TRANSPORT

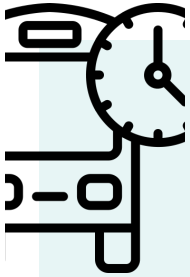


NeTEx: Different parts, Different roles



Part 1: Public Transport network topology

- Organisations
- Places & Points of Interest
- Line, Routes, etc.

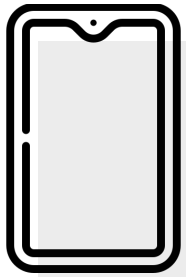


Part 2: Scheduled Timetables

- Service calendar
- Timetables
- Connection details

Part 3: Fares information

- Fare structures & products
- Actual price data
- Sales conditions



Part 4: European Passenger Information Profile (EPIP)

- Subset dedicated to passenger information applications / software
- The “closest” to GTFS schedule

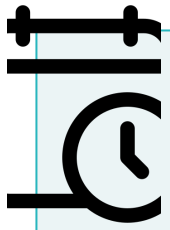
Part 5: Alternative modes

- Subset dedicated to all alternative modes
- Where the mapping with GBFS can be found for passenger information

Part 6: European Passenger Information Accessibility Profile (EPIAP)

- Subset dedicated to information on accessibility

SIRI: Concrete services for real-time information



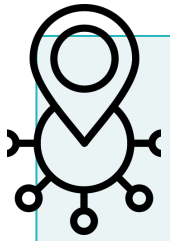
Timetable

- Production Timetable Service
- Estimated Timetable Service

Stop

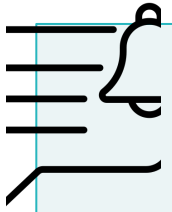
- Stop Timetable Service
- Stop Monitoring Service

Vehicle Monitoring Service



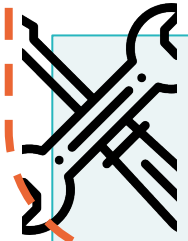
Connection

- Connection Timetable Service
- Connection Monitoring Service



General Message Service

Situation Exchange Service



Facility Monitoring service

Use cases for NeTEx & SIRI

NeTEx and SIRI to support MaaS: Going beyond simple trip planning

Managing a heterogeneous fleet

Use case description

- One mobility service provider
- Three “types” of services
  - Free floating scooters
  - Bikes with docking stations
  - Cars with docking stations
- Multi-steps fare structures
  - Flat rate + per km
  - Flat rate + per hour + accessories
  - Different rates per zones

Using NeTEx & SIRI

- NeTEx
  - Aggregation of all services in one feed
  - Representation of the multi-steps fare structures
  - Definition of the final price result based on journey
- SIRI
  - Availability of vehicles & parking places
  - Vehicle position
  - Vehicle and place status

Sharing a station with other modes

Use case description

- Five mobility service providers
  - Conventional: light-rail
  - Conventional: bus
  - Alternative: bikes at docking station
  - Alternative: free-floating scooter
  - Alternative: cars at docking stations
- One single multi-modal site
  - Different levels for boarding/vehicles pick up
  - Different accessibility details

Using NeTEx & SIRI

- NeTEx
  - One multi-modal site with several quays, stop places or access areas
  - Detailed accessibility information for each quay, stop place or access area
  - Unified format for all modes
- SIRI
  - Status of the station and its accessibility equipment
  - Availability of vehicles & parking places
  - Vehicle and place status

The case of carpooling

- In-line carpooling: the closest to conventional public transport operations *(bus line)*
  - NeTEx to describe the network, its schedule, and its pricing
  - SIRI for vehicle position (estimated timetable)
- Instant carpooling: how to reconstruct the itinerary based on real-time information?
  - The “classic” use case of SIRI adoption in Europe
- Services managed by a public transport authority: consolidation of all services using one data reference model?
  - Leveraging the strength of Transmodel for data reference
  - Unifying the stop places within a network description

Open floor!

GOING FURTHER

- All Data4PT training materials
- Dedicated to the Alternative modes (or ‘new modes’)
  - Re-watch the webinar on YouTube
  - Download the presentation
- Explore Data4PT Wiki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THANK YOU!