



INTERNATIONAL UNION
OF RAILWAYS

UIC Passenger Week

Multimodal Working Group

14 April 2026

1 Welcome and introduction to UIC Multimodal Working Group



David Sarfatti

Senior Advisor
Passenger Department

UIC

Fostering close cooperation links

with all actors in the rail
transport domain

Preparing and publishing
**Reports,
Specifications,
Guidelines, IRS**

The worldwide
organisation
for the promotion
of rail transport

200
members
on all 5 continents



**Understanding
the business
needs**
of the rail community

**Developing
innovation
programmes**
to identify solutions to
those needs

UIC cross-border expertise is now applied to multimodality

Extending our expertise across the broader mobility ecosystems

Making specs open and available to anyone

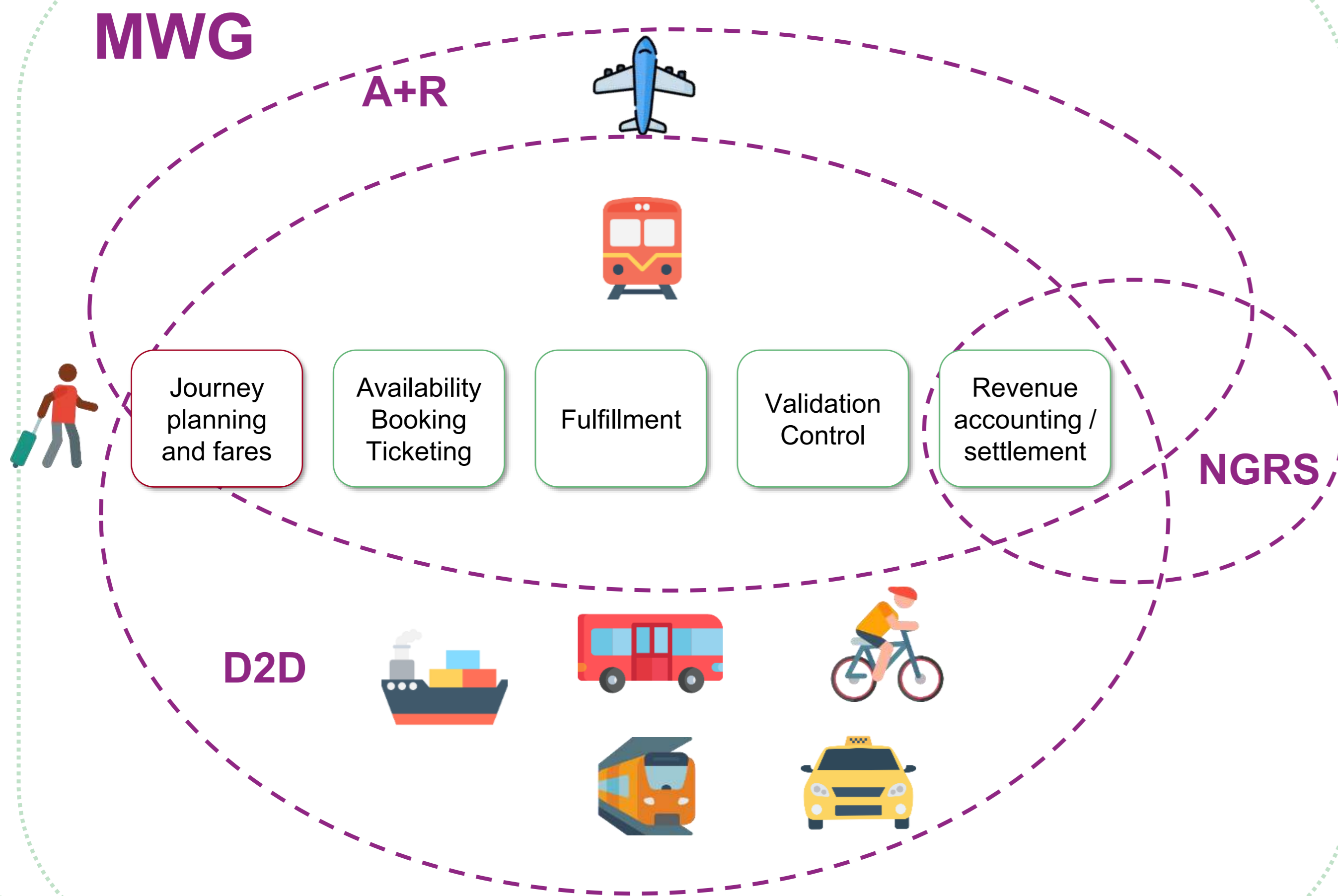


Collaborating with industry bodies and standard-setting organizations



A Glance on UIC Multimodal Initiatives

UIC Passenger Expert Groups



2019: Set the direction

Launched projects to develop a multimodal strategy and embed multimodal requirements into UIC specifications

2025: Scale the delivery

Established the Multimodal Working Group (MWG) with three workstreams:
 Door-to-door (D2D)
 Air+Rail (A+R)
 Next Generation Revenue Sharing (NGRS)

Agenda

- 1** Welcome and introduction
- 2** Ice-breaker quiz
- 3** Overview of multimodality trends
- 4** Introducing UIC Open MultiModal Toolkit
- 5** Real-world case histories
- 6** Introducing UIC and IATA collaboration on Air+Rail
- 7** Airline Perspective: Lufthansa Approach to Air+Rail
- 8** Wrap-up

2 Interactive Ice-Breaker: Multimodality Quiz



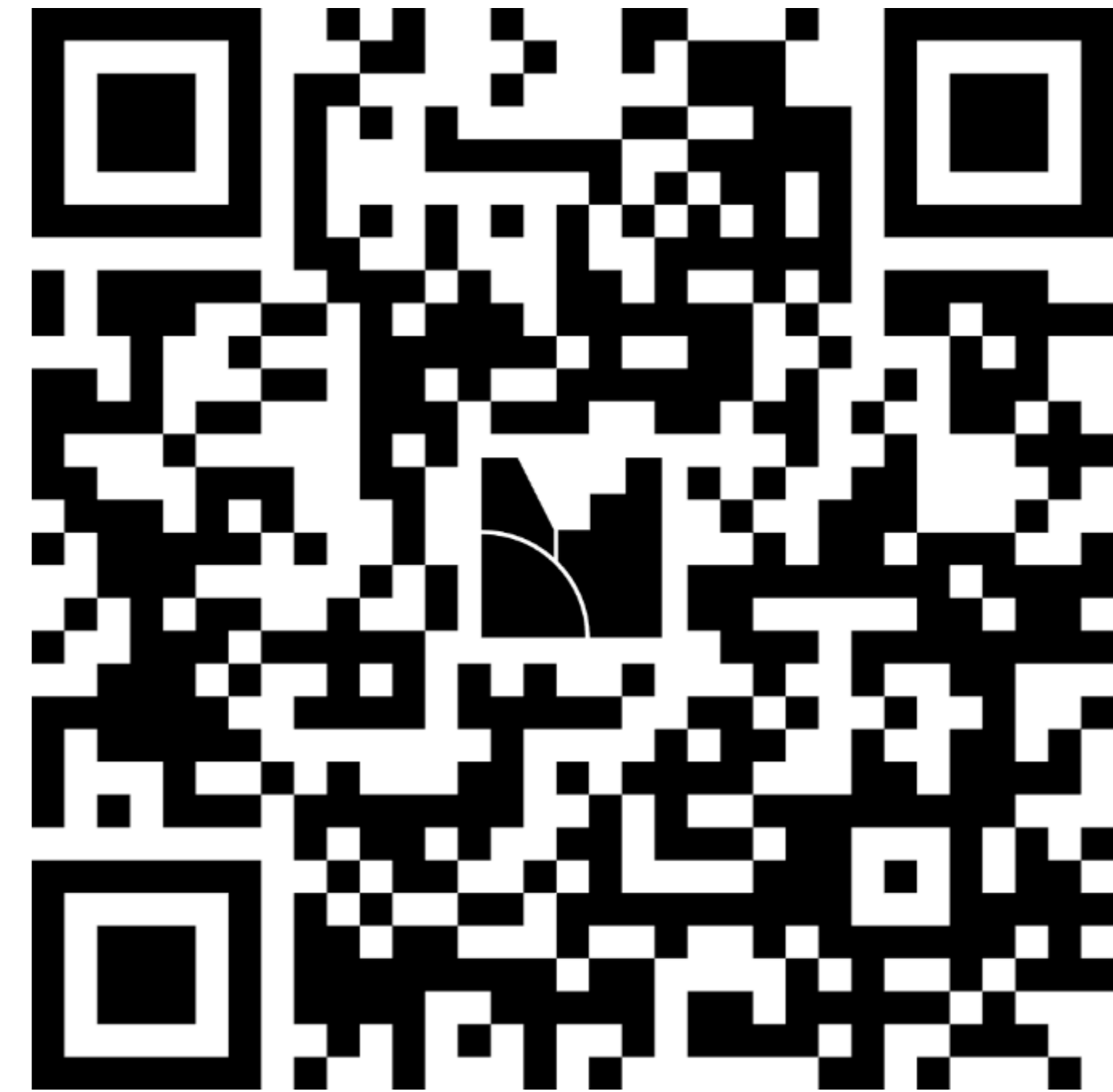
Join the quiz!

Go to

www.menti.com

Enter the code

3655 9834



Or use the QR Code

3 Multimodality Trends: What Works, What Doesn't and What's Next



Stefano Scarci

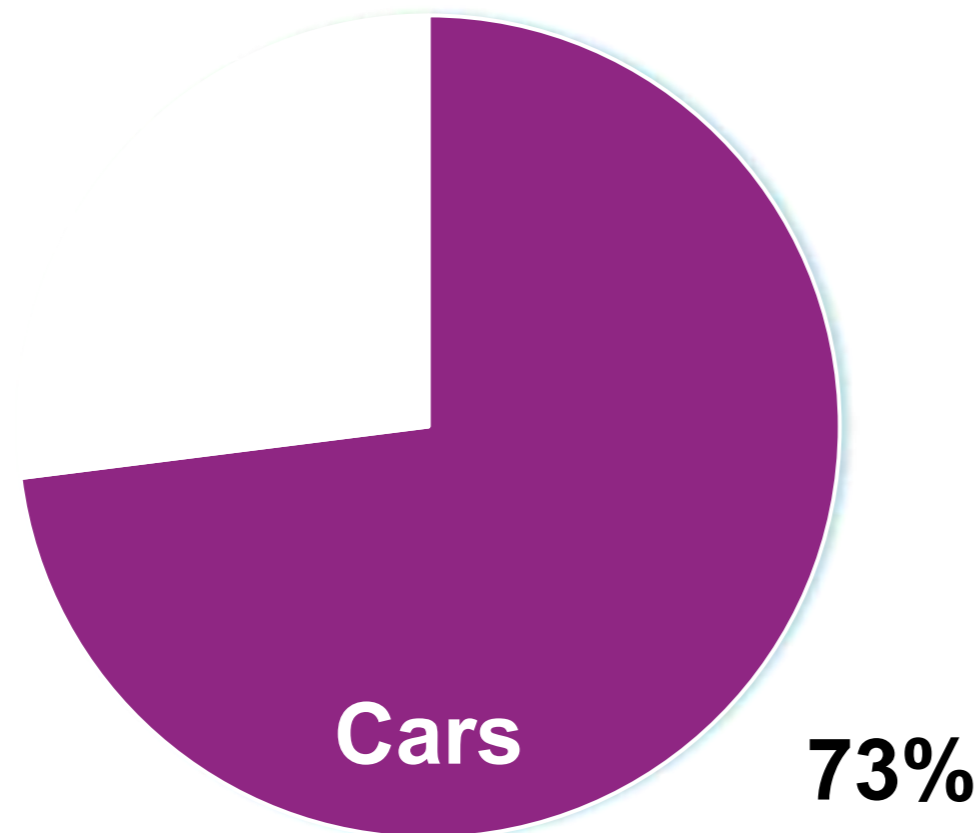
Industry Solutions
Technology & Innovation
| Advisory Services

EY Advisory S.p.A.

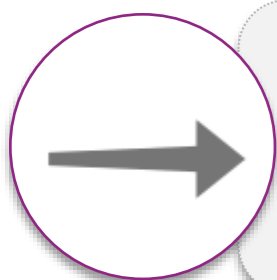
The passenger problem

Private cars are the dominant mode of passenger transport in Europe

Passenger-kms travelled in 2022



Kms driven by car **increased by 25%** from 1995 to 2022



Share of public transport modes has **remained stable**

Cars often win because of convenience and simplicity



People think about the cost, convenience and complexity of the **entire door-to-door journey**, not simply one element of it

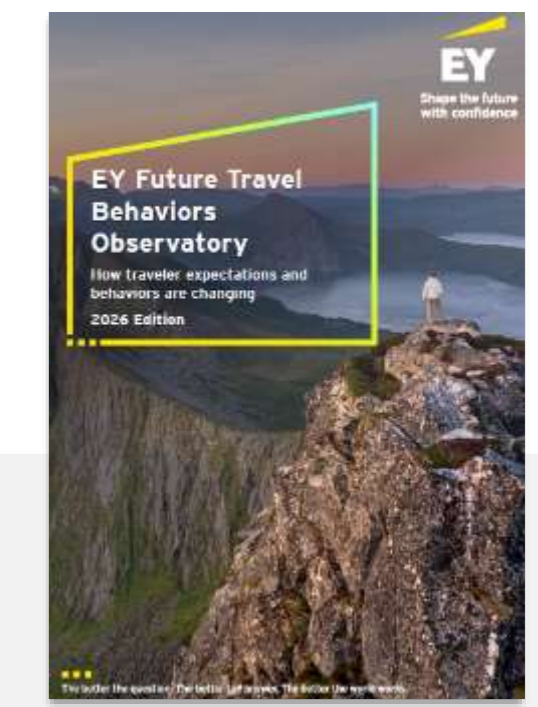


Cars feel simplest: one mode, any time, any place



To shift away from private cars, multimodal trips must be **equally fluid and easy**

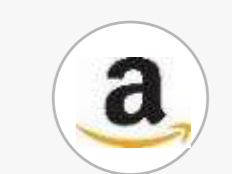
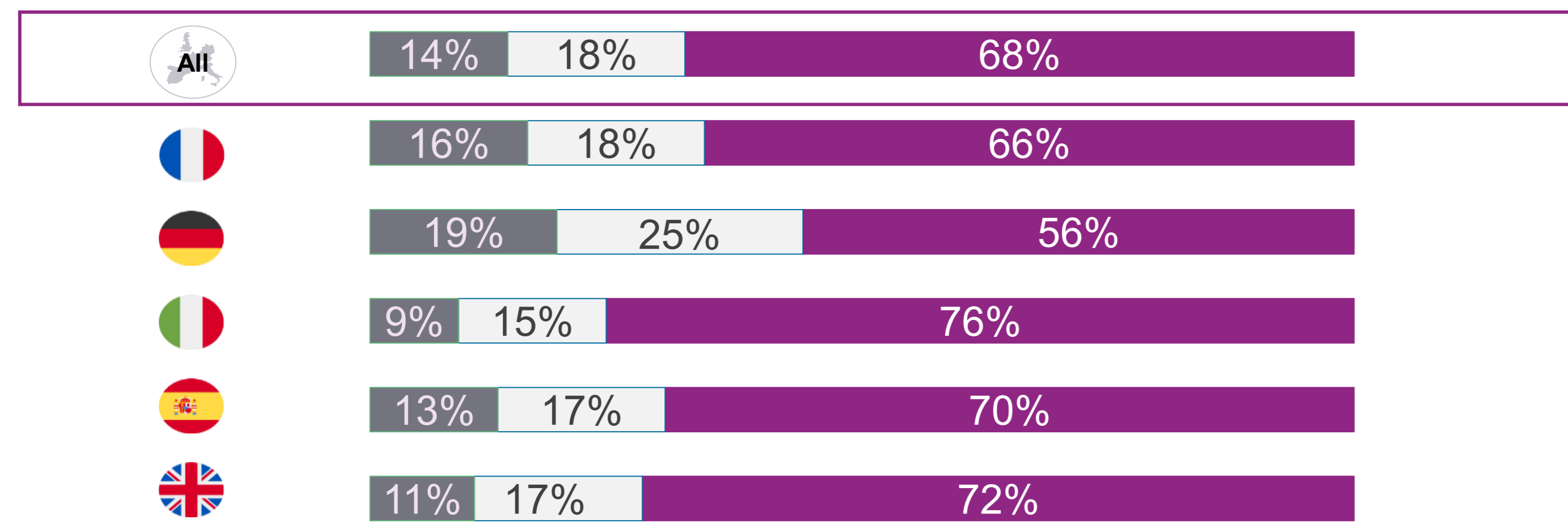
What matters for customers: Personalization



The **EY Future Travel Behaviors Observatory**, now in its **sixth edition**, analyses travel intentions and the factors influencing choices. More than **5,000 participants** from **Italy, France, Germany, the United Kingdom and Spain** contributed to the study.

How important is the personalization of the travel experience?

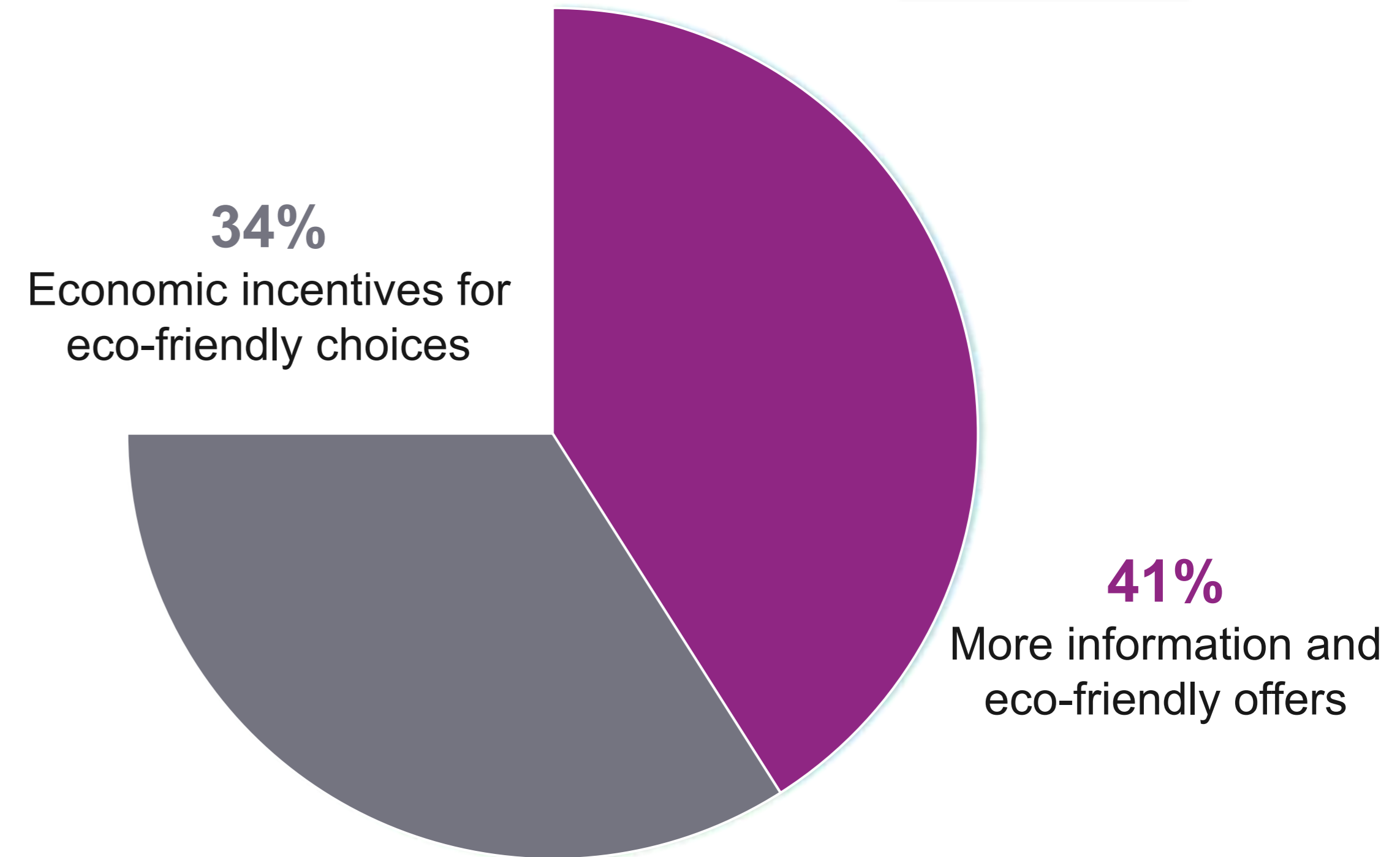
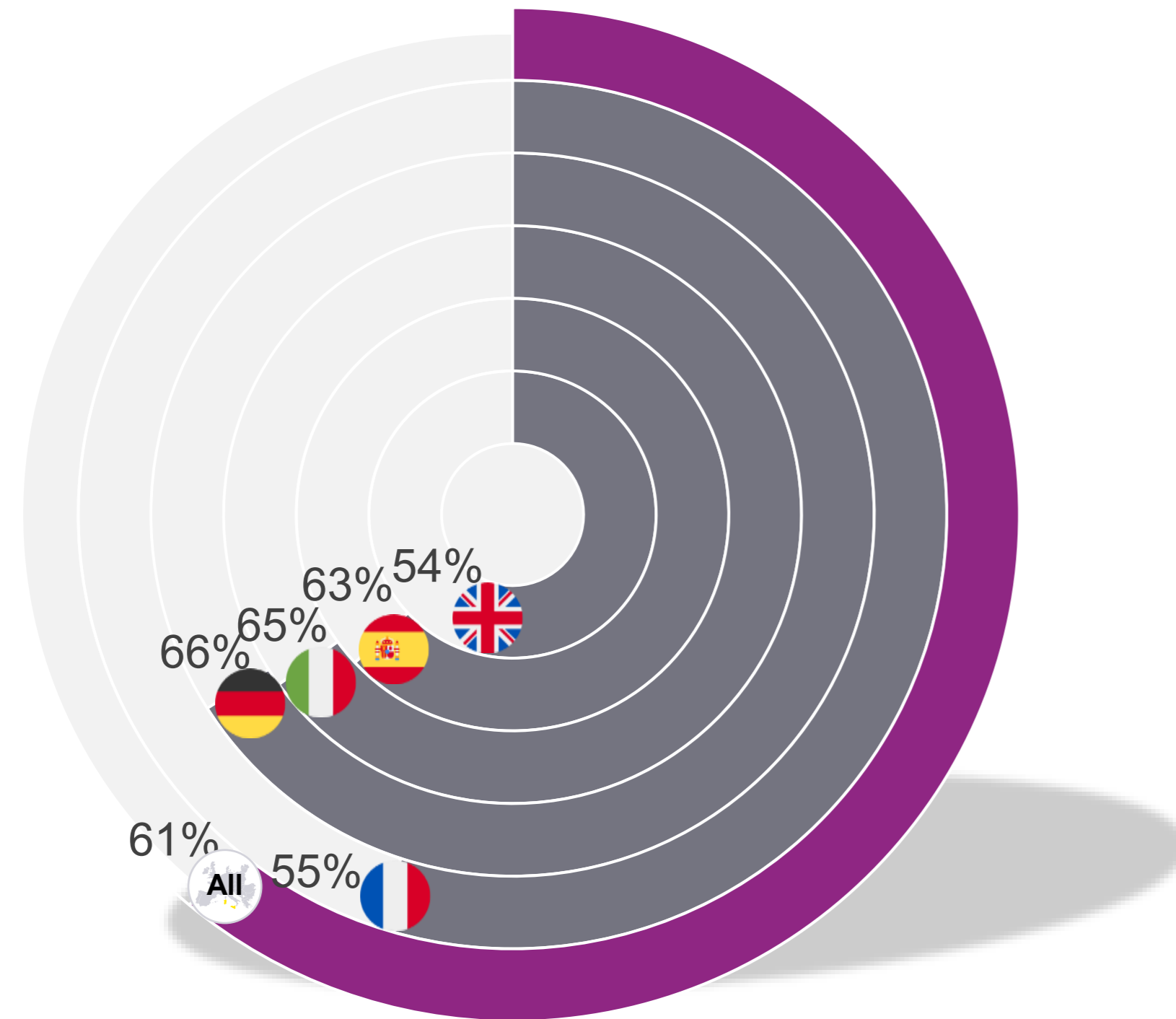
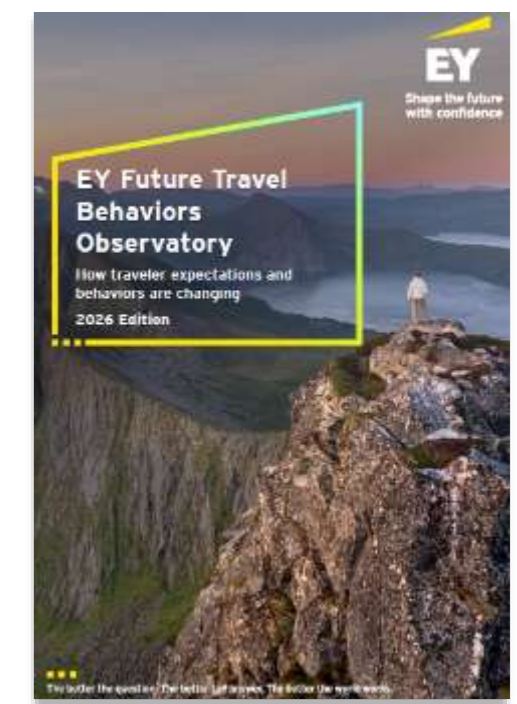
■ Not important or less important ■ Neutral ■ Important or very important



The **bar of customer expectations** has been raised in the last years. Customers increasingly expect **seamless personalized experiences**, as those enabled by the digital leaders



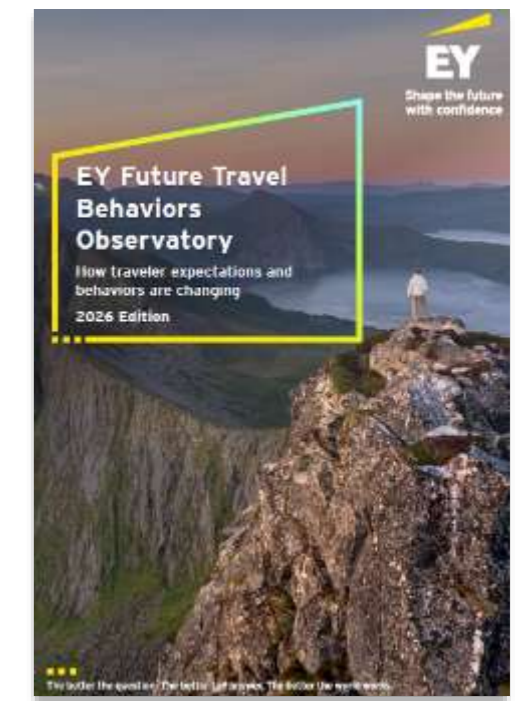
What matters for customers: Sustainability



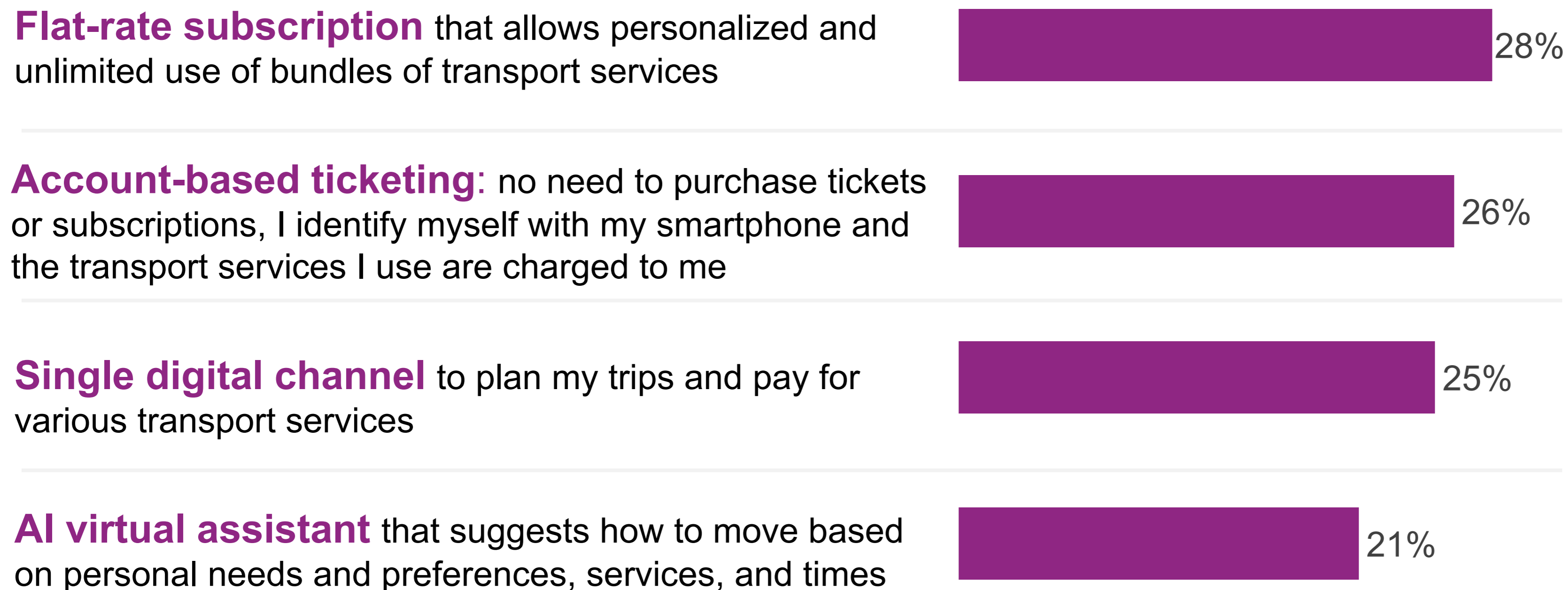
Neuroscientific tests indicate that **61%** of travelers have an implicit affinity with environmental themes

75% point to more information and eco-friendly offers or economic incentives, when asked “*What should the travel industry do to help you make more sustainable and eco-friendly travel choices?*”

What matters for customers: Useful Digital Services



For your short daily commutes, to what extent the following digital services would increase your propensity to use public transport and micromobility?



Multimodal digital mobility services **influence positively** the propensity to use public transport and micromobility

■ quite a lot / very much

The barriers to scaling sustainable multimodal offers

Offers scale only when incentives align and systems interoperate

Main Challenges

The need to **align the objectives** of various stakeholders and establish **business models** that are economically viable

The presence of **disjointed and incompatible processes and technological systems**

The Policy Response

EU Regulation

- ✓ Multimodal Travel Information Services (MMTIS)
- ⌚ Multimodal Digital Mobility Services (MDMS)
- ⌚ Single Digital Booking and Ticketing (SDBTR)
- ⌚ Passenger Rights in the Context of Multimodal Journeys

European Standards

- ✓  Transmodel
- ⌚ **EUDIT**
- ✓  **NeTEx**
Network Timetable Exchange
- ⌚ **BT4PT**
- ✓ **SIRI**

Reality Check

MaaS is an idea in search of a business model



2015



2024



2026

Public Transport must take a leading role

Mindset Shift

"Seamless multimodal experience" and "Integrated ticketing" are not synonyms

One Ticket

Pre-purchased integrated ticket across providers and modes

One Purchase

Separate tickets pre-purchased in a single transaction

One Media

Mobility providers issue separate tickets with a shared media standard

One Hub

New concepts of physical or digital hubs facilitating exchanges between different modes

One Account

Account-based model that does without pre-purchased tickets and supports digital check-in/check-out or be-in/be-out

Flexible approaches overcome fragmentation and deliver user experiences

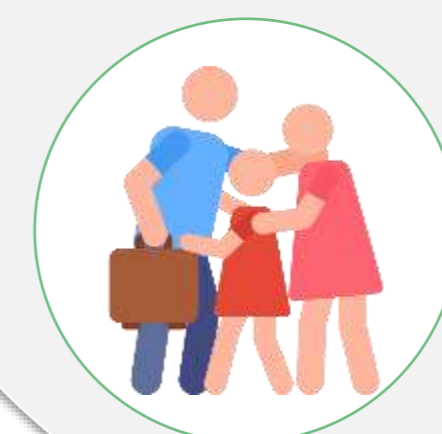
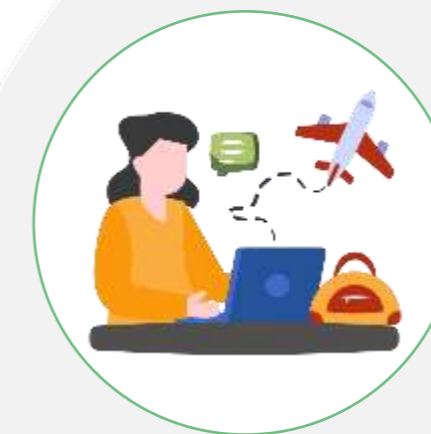
Design Tension

“One size” rarely fits all travelers

Typical target:
local residents



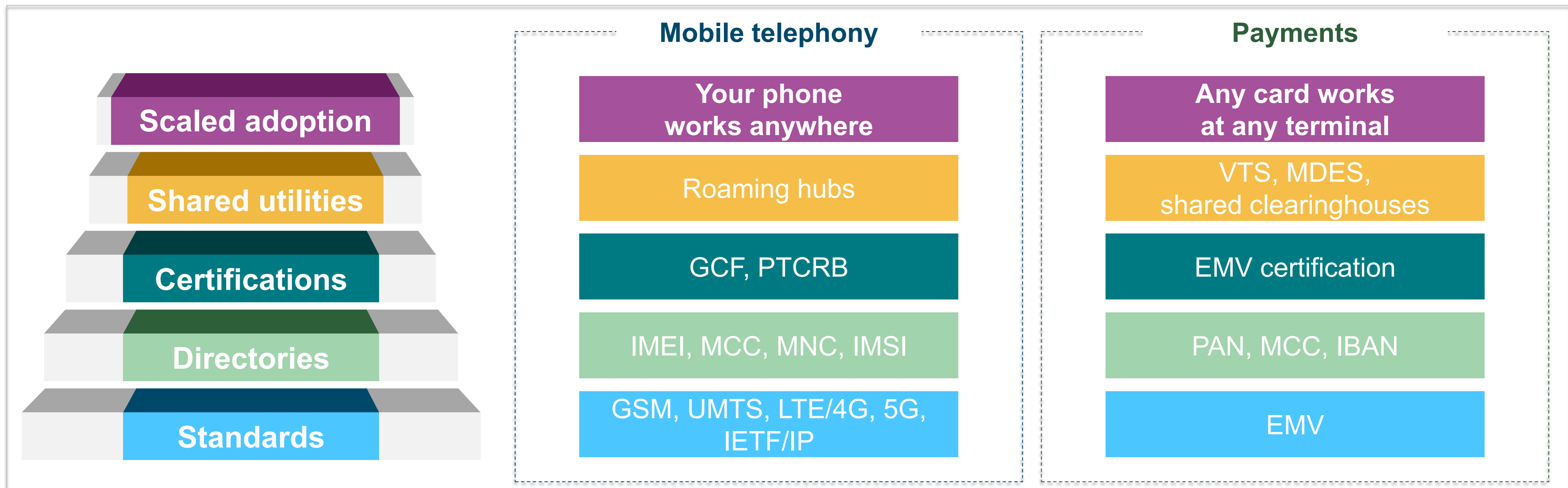
Neglected segments:
long-distance, cross-border, tourists, visitors



Design by segment, not average

Adoption Enablers

Standards on paper do not deliver user experiences at scale

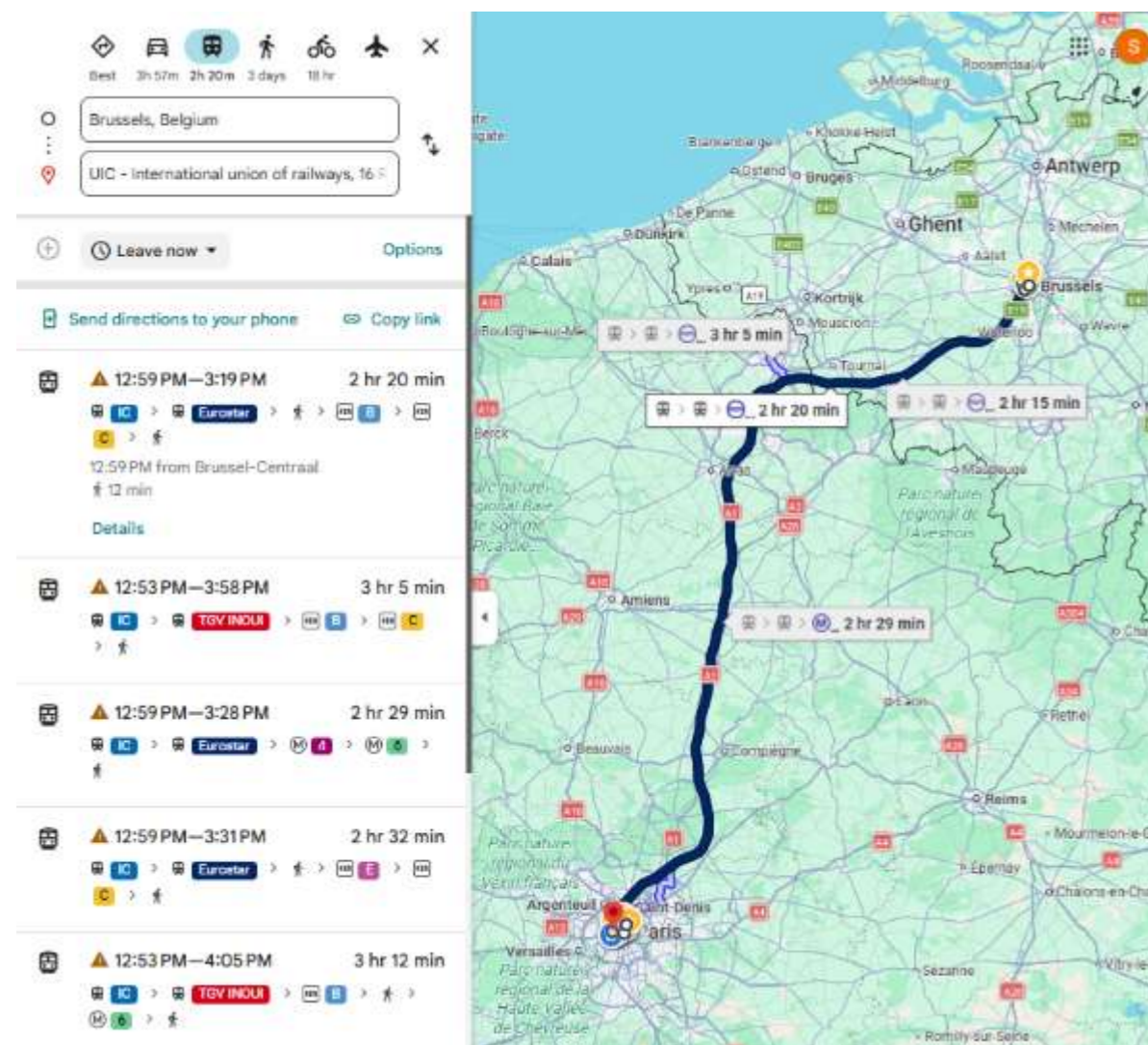


Standards matter; industry-driven directories, certifications, shared utilities make them real

Strategic Shift

Digital platforms are transforming, and increasingly owning, the user experience

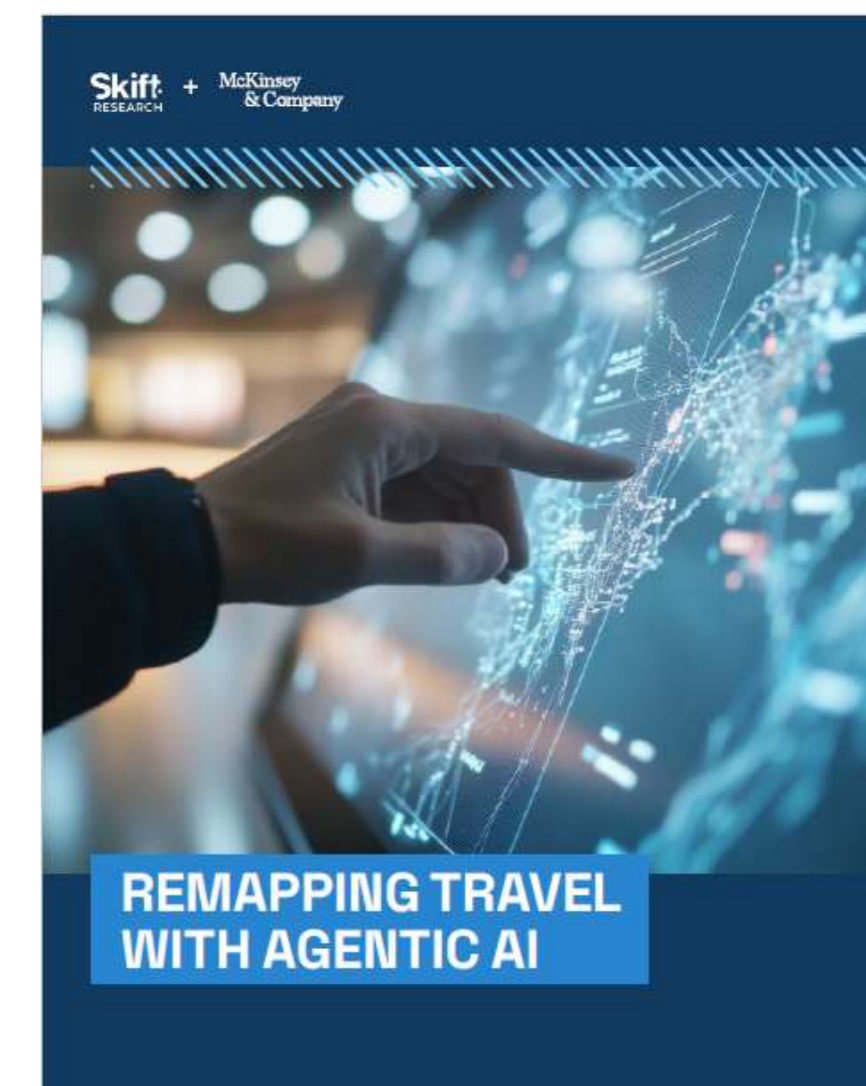
Google Maps



EMV Open-loop



AI Agents



Partner with platforms; own the journey

How the Mobility Market is Evolving: Real-World Examples

Integrated ticketing going digital

Netherlands OV pay



Common distribution

Sweden National Distribution System

National Distribution System - based on OSDM-Online

Samtrafikens National Distribution System, was launched on March 5 2024. It is the first system in Europe to embrace the open and international standard OSDM-Online. With this competition-neutral standard, all producers have the opportunity to connect and the system will be connected to several booking platforms.

ABT adoption

SBB easyRide



Country-wide passes

Deutschlandticket

Hungary Pass



Spain Abono Único



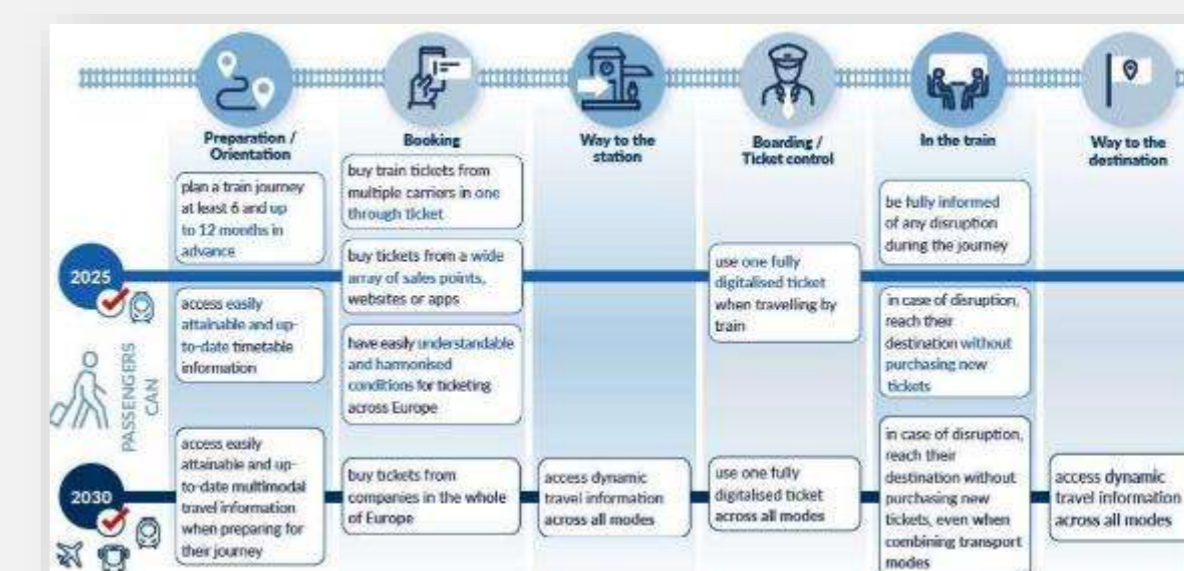
Shared media acceptance

France Région Grand Est



Multimodality a priority of the rail sector

CER Ticketing Roadmap

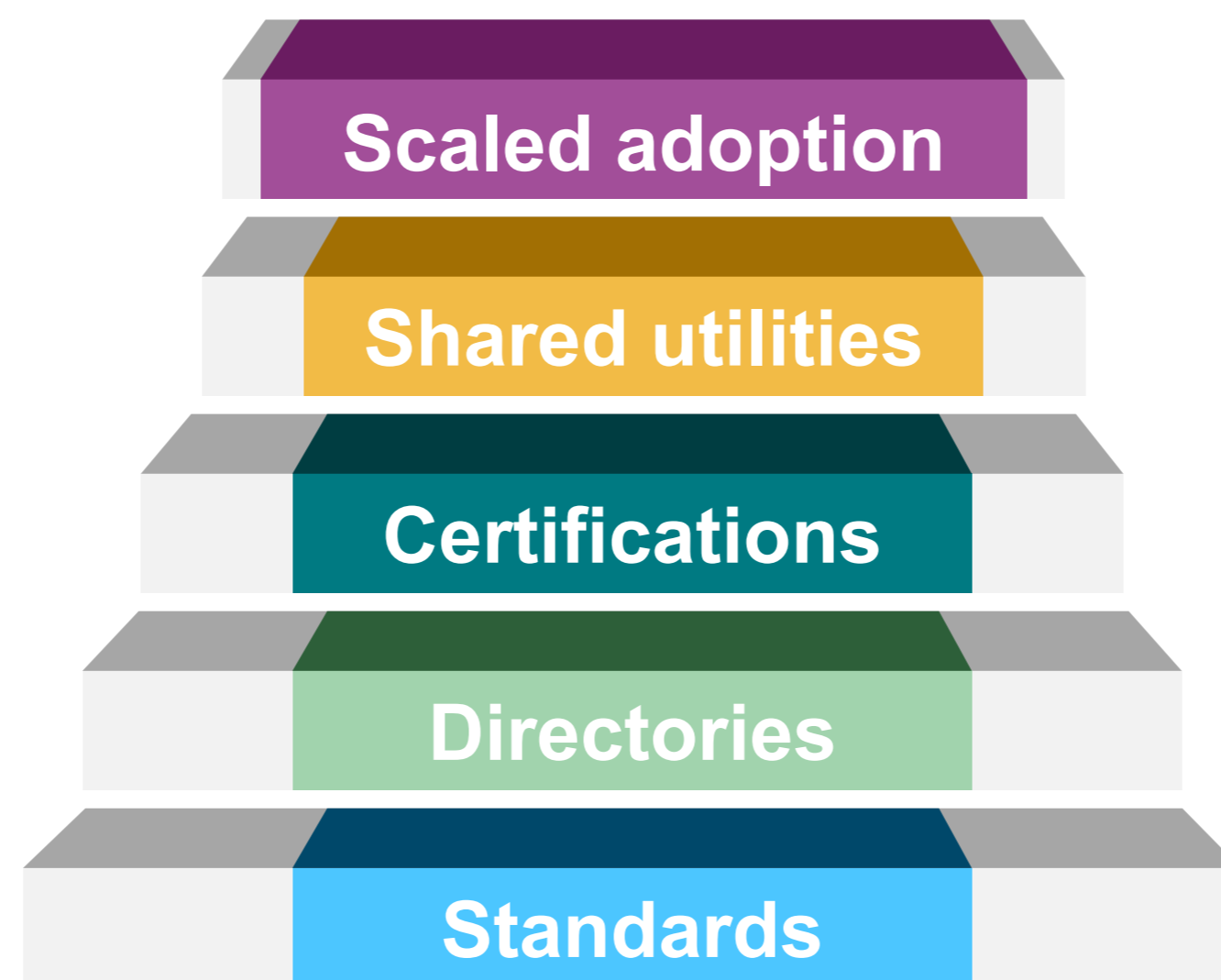


The way forward

Open specifications
co-created by stakeholders



Industry shared
digital enablers



Cross-industry
collaboration



eu travel tech

4 Introducing UIC Open MultiModal Toolkit



David Sarfatti

Senior Advisor
Passenger Department

UIC

Recap: Challenges in developing door-to-door mobility



Introducing OMMT, UIC Open MultiModal Toolkit



<https://uic.org/passenger/passenger-services-group/ommt>



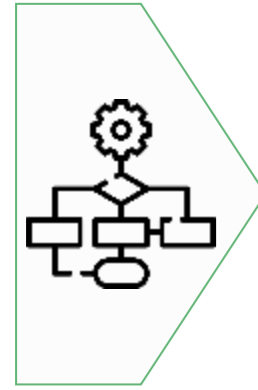
Technology-agnostic and adoptable in pieces

Open specs, open-source code, reference implementations, sandboxes and shared digital utilities where common services make sense

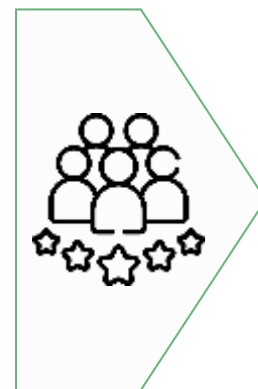
Leverages proven, scalable and secure UIC solutions: OMMT bricks have been in production for 3 years supporting international travel

Addressed to rail and non-rail transport stakeholders (PTAs, PTOs, Airline, Bus, Ferry, Parking, Vehicle Sharing, Ride-hailing)

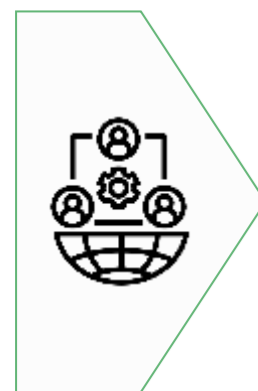
OMMT main features



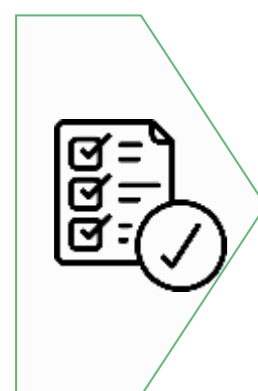
- ✓ OMMT is designed to **minimize the need to modify existing IT systems**. It does not necessarily call for new IT infrastructure investments. The model is adaptable and flexible, **supporting a variety of business models**.



- ✓ OMMT **enhances the user experience** by offering various options such as booking in advance, purchasing digital tickets (either integrated or separate), as well as pay-as-you-go and account-based travel options.

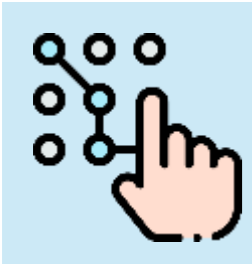


- ✓ OMMT also facilitates **international collaborations and cross-border travel**. Its open nature is aligned with the EU MMTIS Directive. OMMT can help realizing the EU vision of cross-Europe multimodal mobility.



- ✓ OMMT bridges and **can work together with key mobility standards**, including Transmodel, OJP, NetEx, SIRI, GTFS and GBFS.

How OMMT can help



Seamless digital provider-to-provider interactions



Faster implementation of core functions: planning, booking, validation/inspection, data sharing and revenue apportionment/settlement



International reach: expose local services and make them consumable globally



Lower integration cost and time-to-market, increasing customer adoption and partner participation



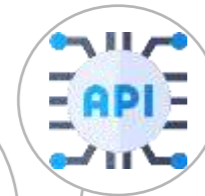
Adoption facilitated by open specifications, simple implementation guidelines, shared utilities

Five pillars, leveraging proven UIC solutions



OMMT.Plan

Provides multi-modal location data and supports the exchange of timetables and fares.



OMMT.Book

This component streamlines the process of creating and managing offers and orders that span across various service providers.



OMMT.Move

It grants customers a secure, digital representation of their travel rights, enabling them to utilize various mobility services while allowing providers to confirm and inspect service entitlements.



OMMT.Sync

This component ensures the real-time exchange of updated information regarding order status, customer journey and service status among service providers.



OMMT.Share

It enables the fair distribution of revenues among service providers, with adjustments based on the actual service usage.



MERITS
DRTF
TSGA location API

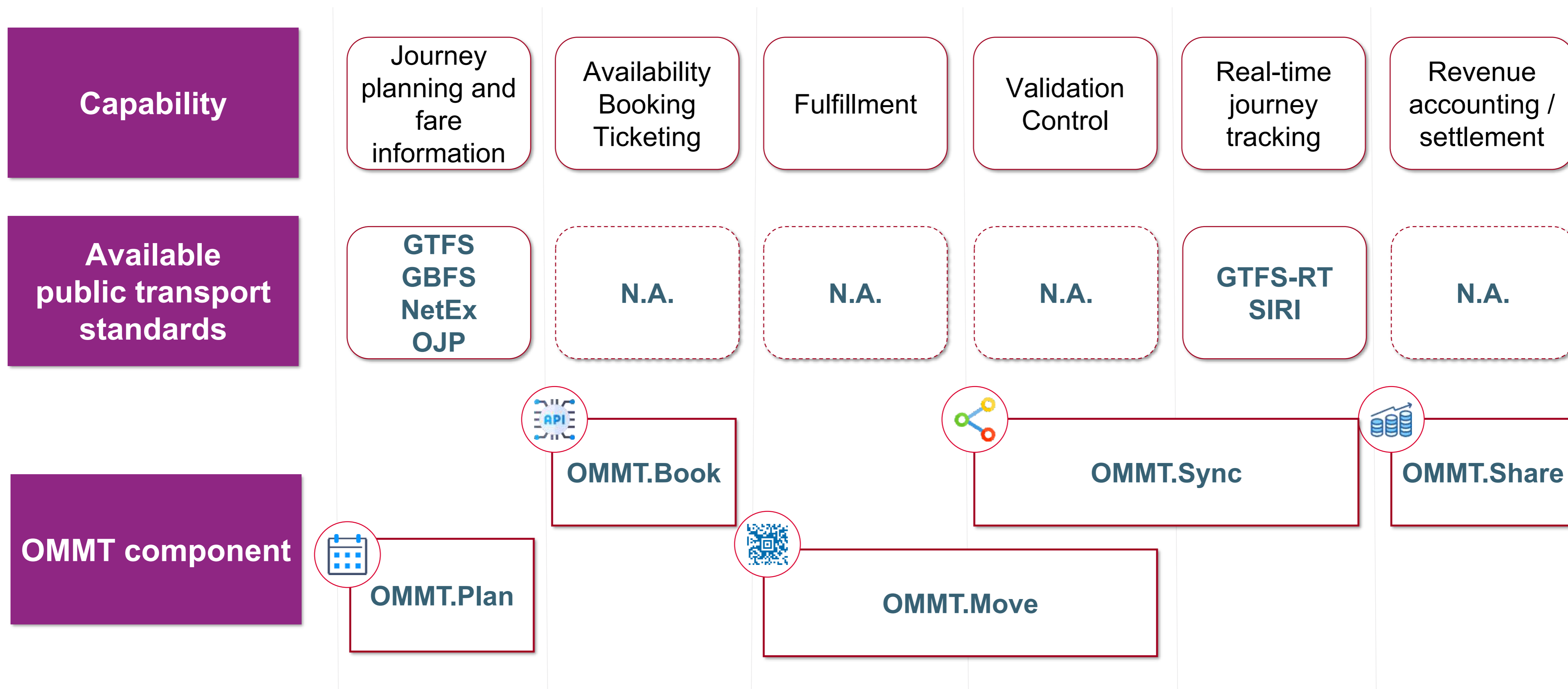
OSDM

FCB
URT
PKMW

eTCD
RTMDE

NGRS

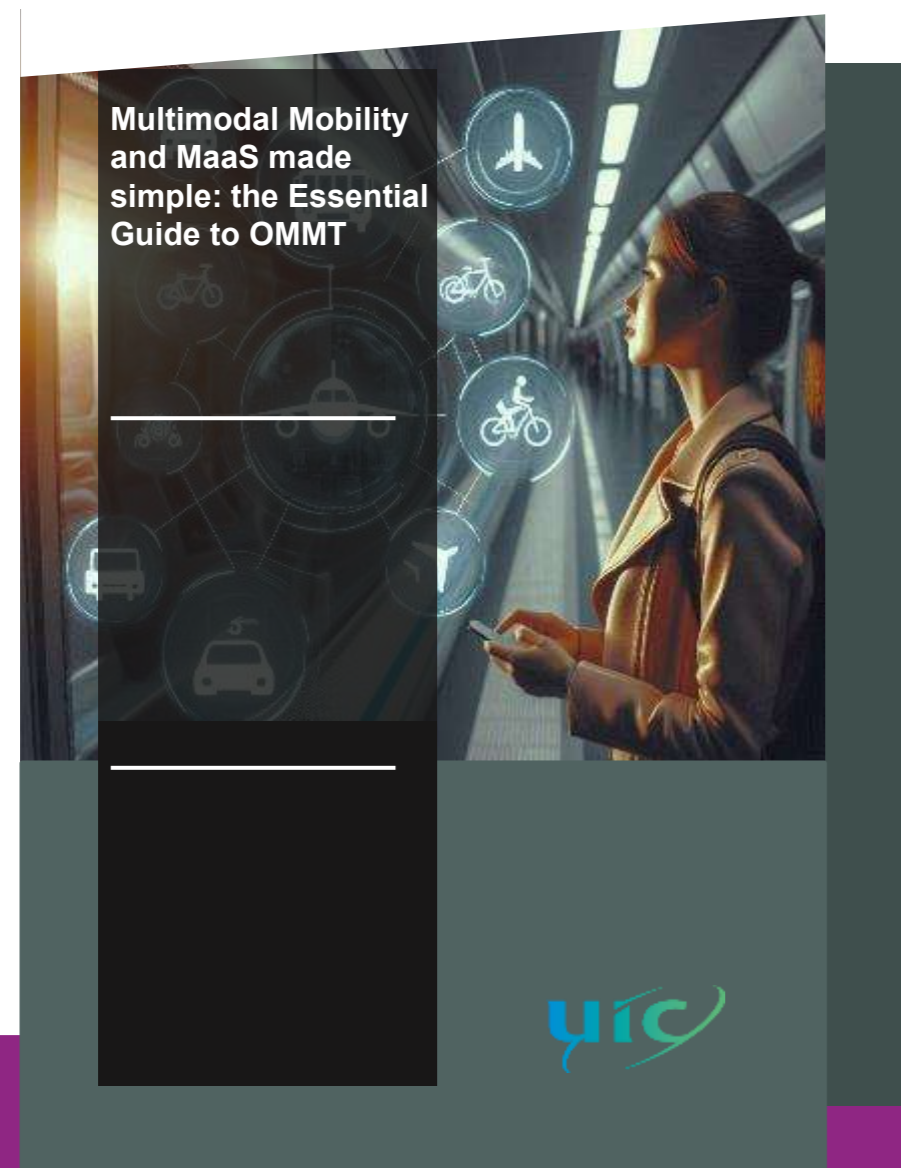
End-to-end capabilities, interoperable with public transport standards



Technical Guidelines and Specifications

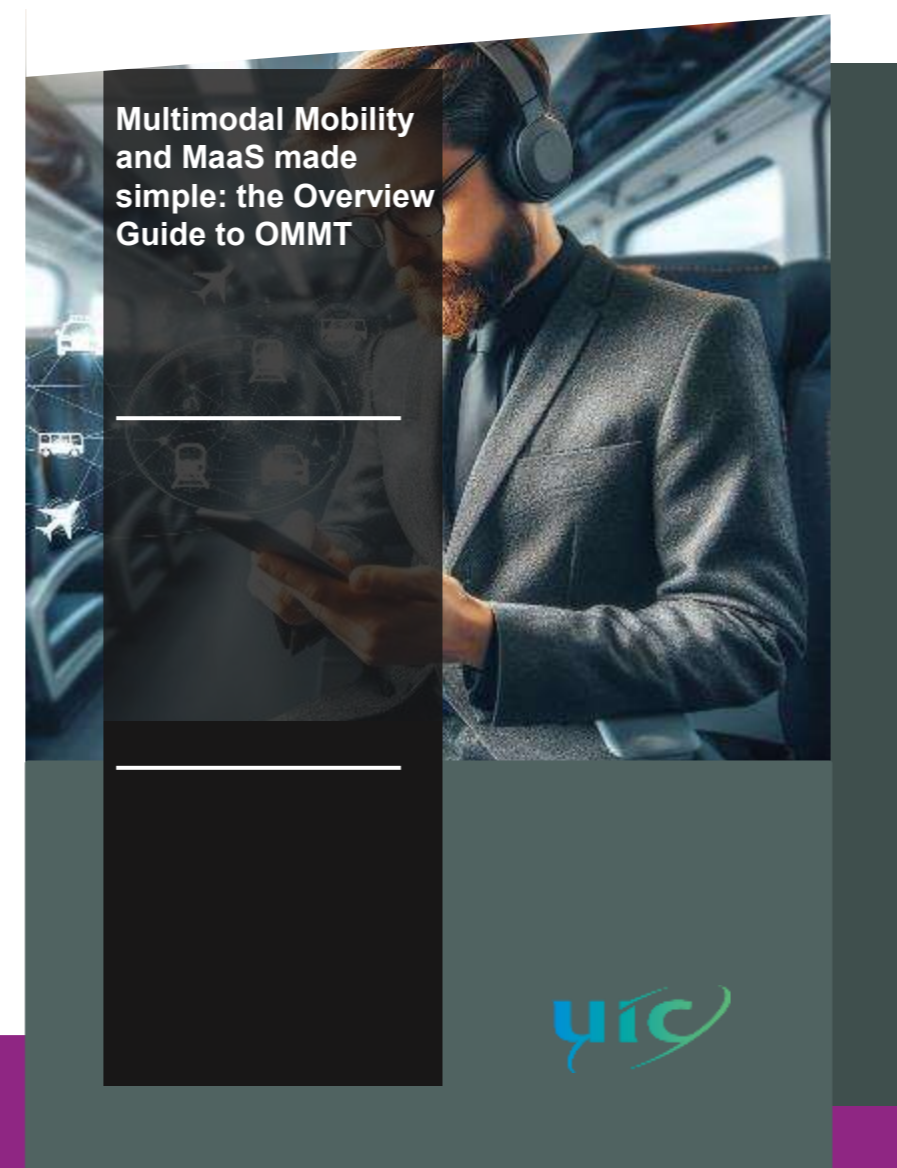
Downloadable from UIC OMMT Website

OMMT Essential Guide



- **Concise, high-level introductory document** that allows to quickly understand what is OMMT and how it can help

OMMT Overview Guide



- **Use cases** with examples of customer journeys
- **Overview guides**, tailored for each type of Service Provider*

OMMT Technical Guidelines



- **Technical description** of OMMT components
- **Technical guidelines**, tailored for each type of Service Provider*

*Rail, Public Transport, Bus, Ferry, Bike / Scooter / Car Sharing, Taxi / Ride-hailing, Parking

5 Real-World Case Histories

Moderator



Luca Mariorenzi

Chair of Passenger
Experts Subgroup

UIC

5.1 Sweden: Building a National Distribution System



Johan Hammar

Head of Standards
Strategy & Services

Samtrafiken

Three standards, One journey



How Sweden Combines **NeTEx**, **OSDM** and **BoB** for National Ticketing

Johan Hammar

Head of Strategic Solutions and Partnerships

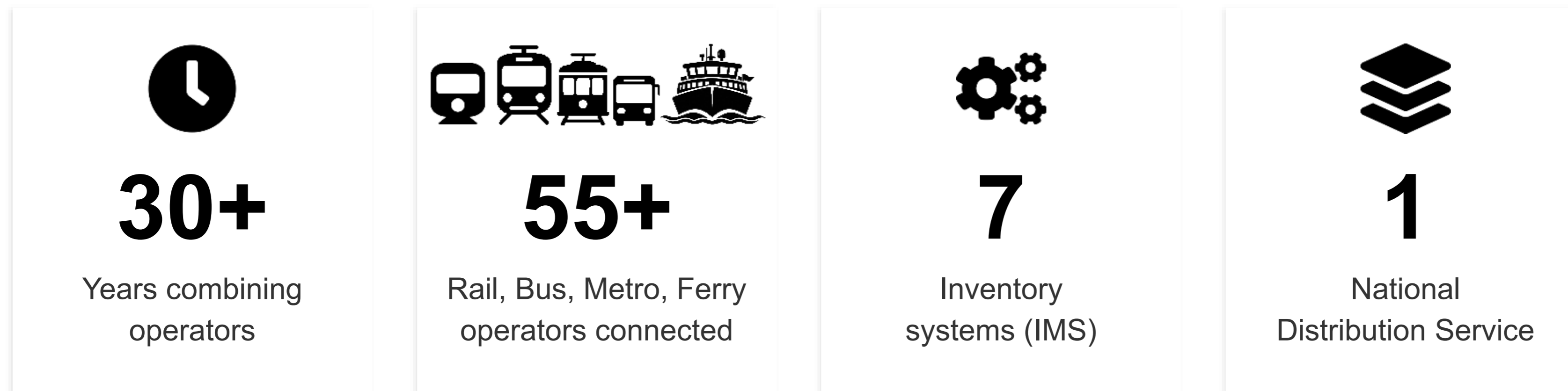
UIC Passenger Week 2026 | Paris



Samtrafiken

The Swedish Challenge

A deregulated rail market with multiple operators, one national ticket and 30 years of experience.



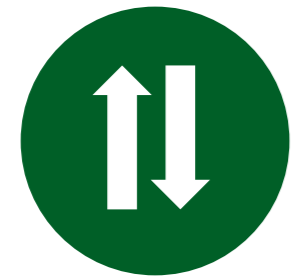
Interoperability doesn't require choosing one standard – it requires making them work together strategically.

Three Standards, Three Layers



NeTEx **Timetable & traffic data**

Collects, harmonises and distributes traffic data from all operators with optimised transfer times between operators and modes



OSDM **Distribution & booking**

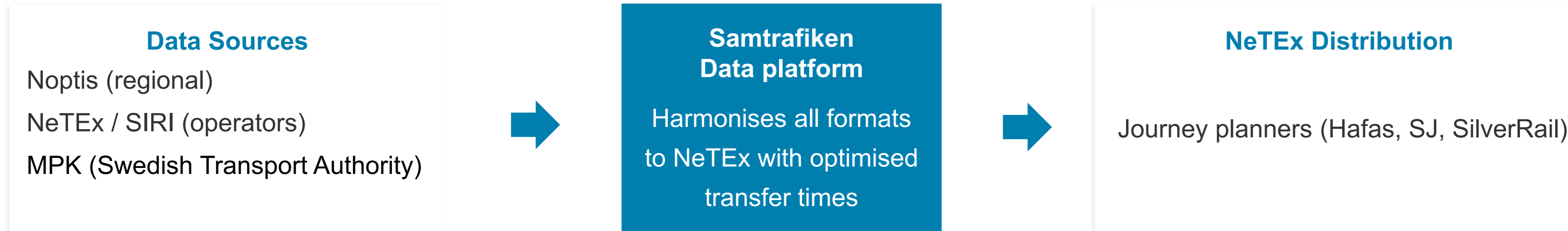
National hub for offers, bookings, ticketing and settlement across all operators via the Distribution Service



BoB **Regional ticketing**

Connects regional public transport authorities' ticket systems into the national ecosystem via BoB Connect

Layer 1: Timetable Data – The Foundation

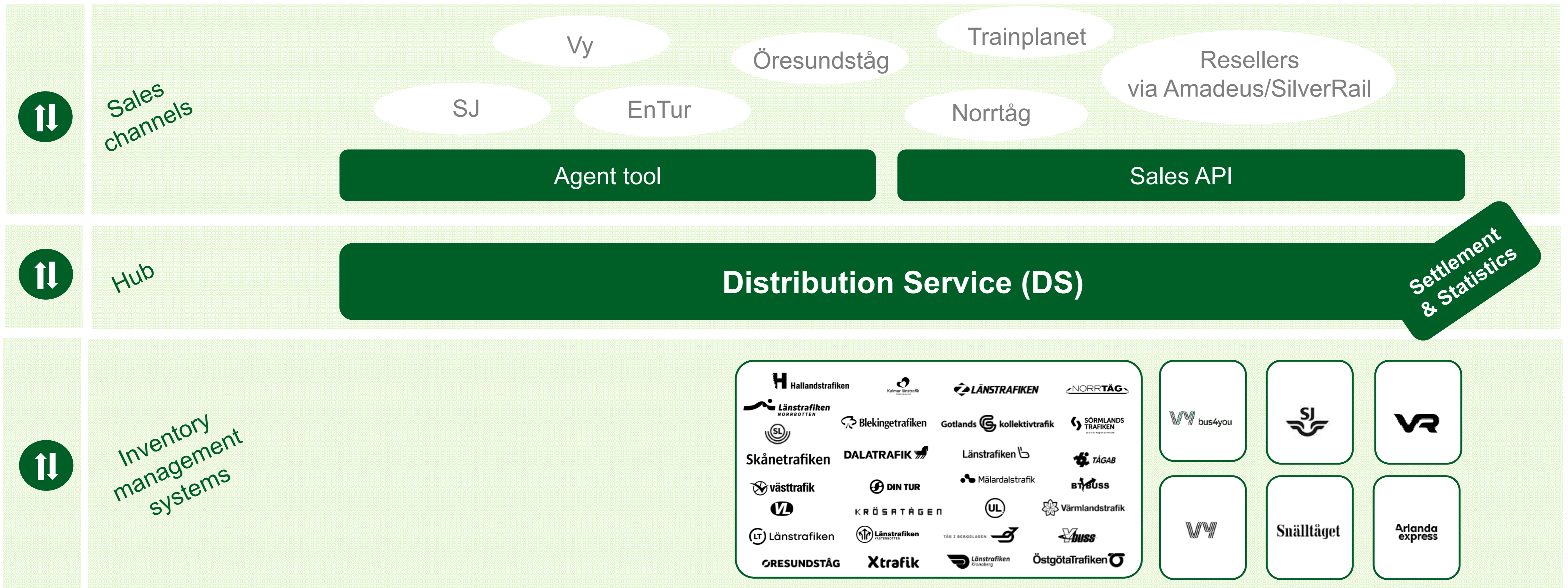


Optimised transfer times – a key differentiator

Samtrafiken enriches the NeTEx data with carefully calibrated transfer times between operators and transport modes at each interchange point. This means external journey planners using our data automatically suggest realistic connections, not just timetable adjacency, but actual achievable transfers considering walking distances, platform changes, and operator coordination. This is critical for Resplus combination journeys.

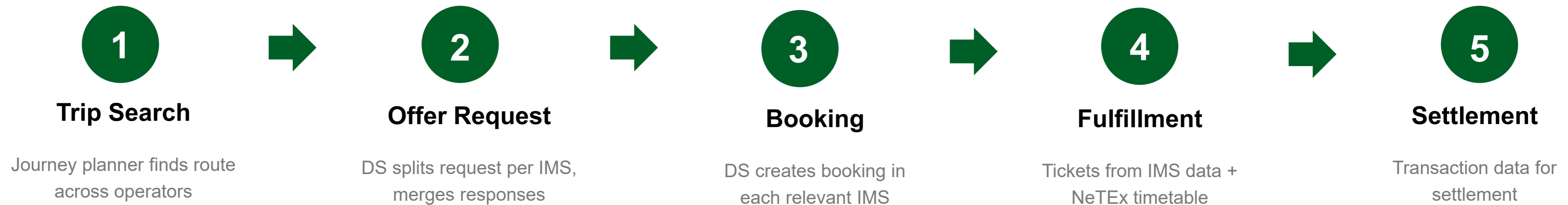
30+ years of combining journeys across operators and transport modes – we know what good transfer data looks like.

Layer 2: The Distribution Service (DS)

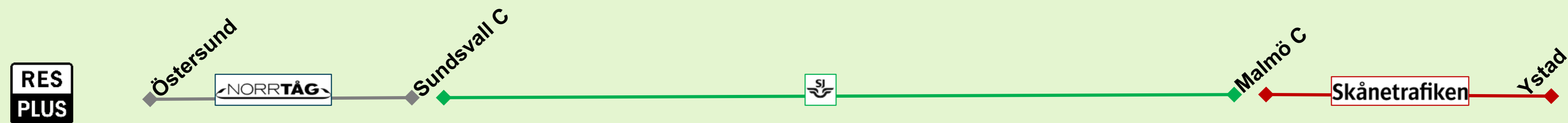


Design principle: DS is a simple hub – all business logic stays in the IMS or client. DS splits, routes and merges OSDM messages.

↑↓ The Booking Flow



Example: Östersund - Ystad



1. The journey planner finds route using NeTEx data: Norrtåg (Östersund - Sundsvall) + SJ (Sundsvall – Malmö) + Skånetrafiken (Malmö - Ystad)
2. DS sends offer request to Samtrafiken IMS (Norrtåg leg) and SJ IMS (SJ leg) and Samtrafiken IMS (Skånetrafiken leg)
3. DS merges prices into a combined Resplus offer for the customer
4. Booking creates reservations in the IMS systems, single tickets assembled by DS from each IMS's ticket data

Current Capabilities & Scale

Offer & Booking

Real-time pricing from each operator's IMS, combined Resplus offers

Seat Maps

Interactive seat selection with coach layouts delivered via OSDM

Ticketing

PDF tickets assembled by DS from each IMS's ticket data including Aztec validation codes

Settlement

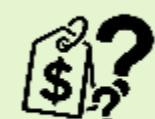
Transaction data for monthly operator settlement

Disruption Handling

Refund flows and replacement ticket processes across operators


14 664 250

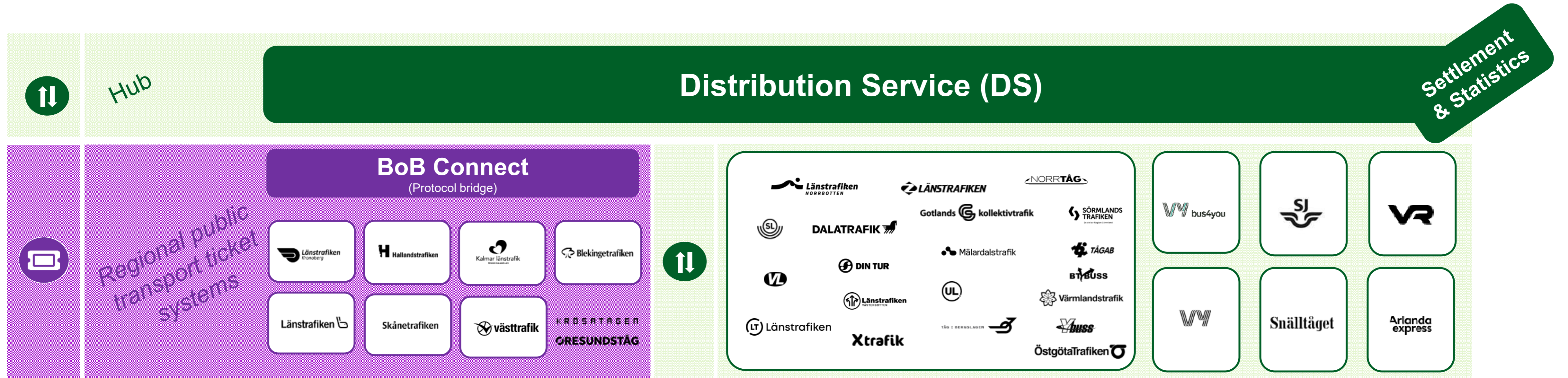
Sold tickets 2025


200+

Peak offer requests
per second

Layer 3: Connecting Regional Ticketing

BoB (Standard for ticket distribution and ticket validation) – the Swedish standard for regional public transport ticket systems



What this enables – the RMVB project

- Regional operators sell tickets through the national distribution ecosystem
- Resplus journeys combine long-distance rail with regional bus/tram in one booking
- BoB Connect translates between OSDM (DS) and BoB (PTA systems)
- Passengers get a single ticket covering the entire door-to-door journey

Putting It All Together

End-to-end data flow through all three standards



Traffic Data Collection

Operators → Data → Harmonised NeTEx files with optimised transfers



Journey Planning

Journey planners use NeTEx to find multi-operator routes



Offer & Pricing

DS splits offer requests to each IMS via OSDM, merges responses



Booking & Ticketing

Reservations in each IMS, ticket information from NeTEx + OSDM data

Settlement

Transaction data flows to settlement system for financial reconciliation

Multimodal yes or no?

Samtrafiken currently has a mandate to connect the following modes of transport to the Resplus collaboration:



Rail

Long-distance, regional and night trains



Coach

Long-distance and express coaches



Regional Public Transport

Bus, rail, tram, metro, boat, ferries and more — all 21 regions connected

Samtrafiken operates on behalf of its owners and under some assignments from the state. At present, managing all multimodal transport is outside the scope of these assignments, as neither the state nor the owners have defined such a role for Samtrafiken — but we are open to it.

Air, taxi and other mobility services would likely require standards beyond NeTEx, OSDM and BoB — something worth considering carefully.

Lessons Learned



Keep the hub simple

DS has no business logic, it routes OSDM messages.
Each operator evolves independently while remaining part of the ecosystem.



Standards complement, not compete

NeTEx excels at timetable data, OSDM at distribution, BoB at regional ticketing.
Forcing one standard to do everything would have failed.



Transfer data is the invisible glue

30 years of calibrating transfer times between operators and modes is what makes multi-operator journeys actually work for passengers.



Governance matters as much as technology

Weekly architecture syncs, investigation processes, and formal prioritisation forums keep 7+ operators aligned without top-down control. And the entire ecosystem is funded by the industry itself, through transaction fees paid by both public and commercial operators and resellers, without direct government funding.

What's Next

Traffic data automation

Consolidating internal data flows to enable fully automated timetable processing, reducing manual handling and ensuring faster, more reliable NeTEx distribution across the ecosystem

OSDM version migration

Planned upgrade from 3.0.5 toward 3.8+ for better European compatibility, skeleton upgrade first, new functionality later

Exchange functionality

Ticket rebooking across operators, guidelines documented, DS and client integration implementation

Regional integration via BoB

Connecting all 21 regional PTA ticket systems to DS, enabling true door-to-door Resplus ticketing across Sweden with validatable tickets from each PTA, so the entire journey is covered by real, machine-readable tickets

Thanks

*The future of ticketing is not about choosing the right standard.
It's about making the right standards work together.*



Johan Hammar

Head of Strategic Solutions and Partnerships
johan.hammar@samtrafiken.se

Questions?



Break time



5.2 France Région Grand Est: Interoperable 2D-Barcode for Regional Ticketing



Aurélien Geiss

MaaS Project Manager

Région Grand Est

RÉGION GRAND EST

PARIS EST SNCF

fluo Grand Est

INTEROPERABLE 2D-
BARCODE PLATFORM

ALSACE
CHAMPAGNE-ARDENNE
LORRAINE



1st Passenger Week

14th April 2026



La Région
Grand Est

Aurélien GEISS

Mobility-as-a-Service Project Manager

Région Grand Est - Site de Strasbourg



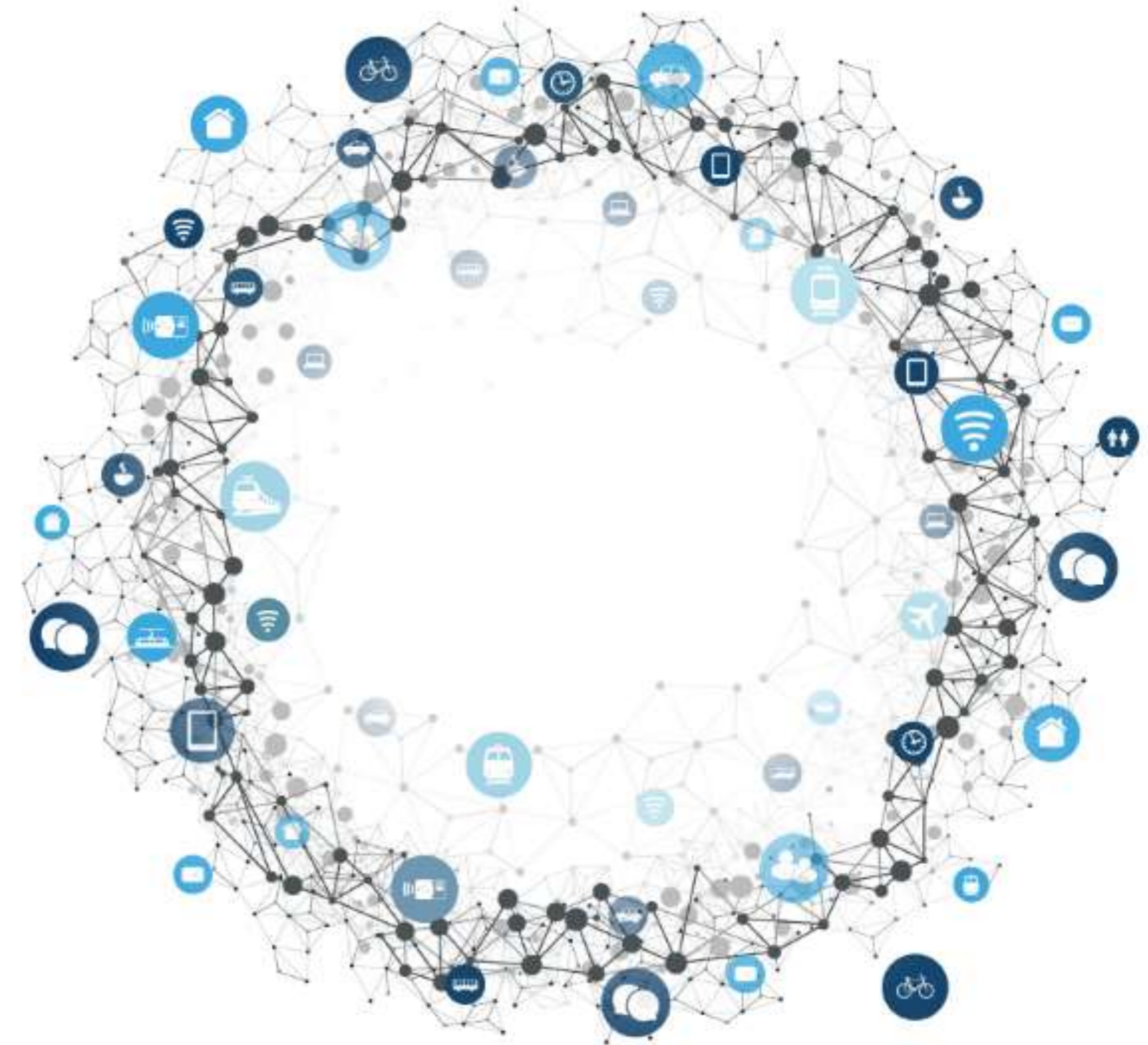
ALSACE
CHAMPAGNE-ARDENNE
LORRAINE

INTEROPERABLE 2D-BARCODE PLATFORM IN RÉGION GRAND EST

I. The regional administration

II. Project overview

III. Next steps



RÉGION GRAND EST

**LOCAL ADMINISTRATION AND
AUTHORITY**



Région Grand Est

La Région
Grand Est

- 57 450 km²
- Population : 5,5 millions
- 5 115 municipalités
- 149 EPCI

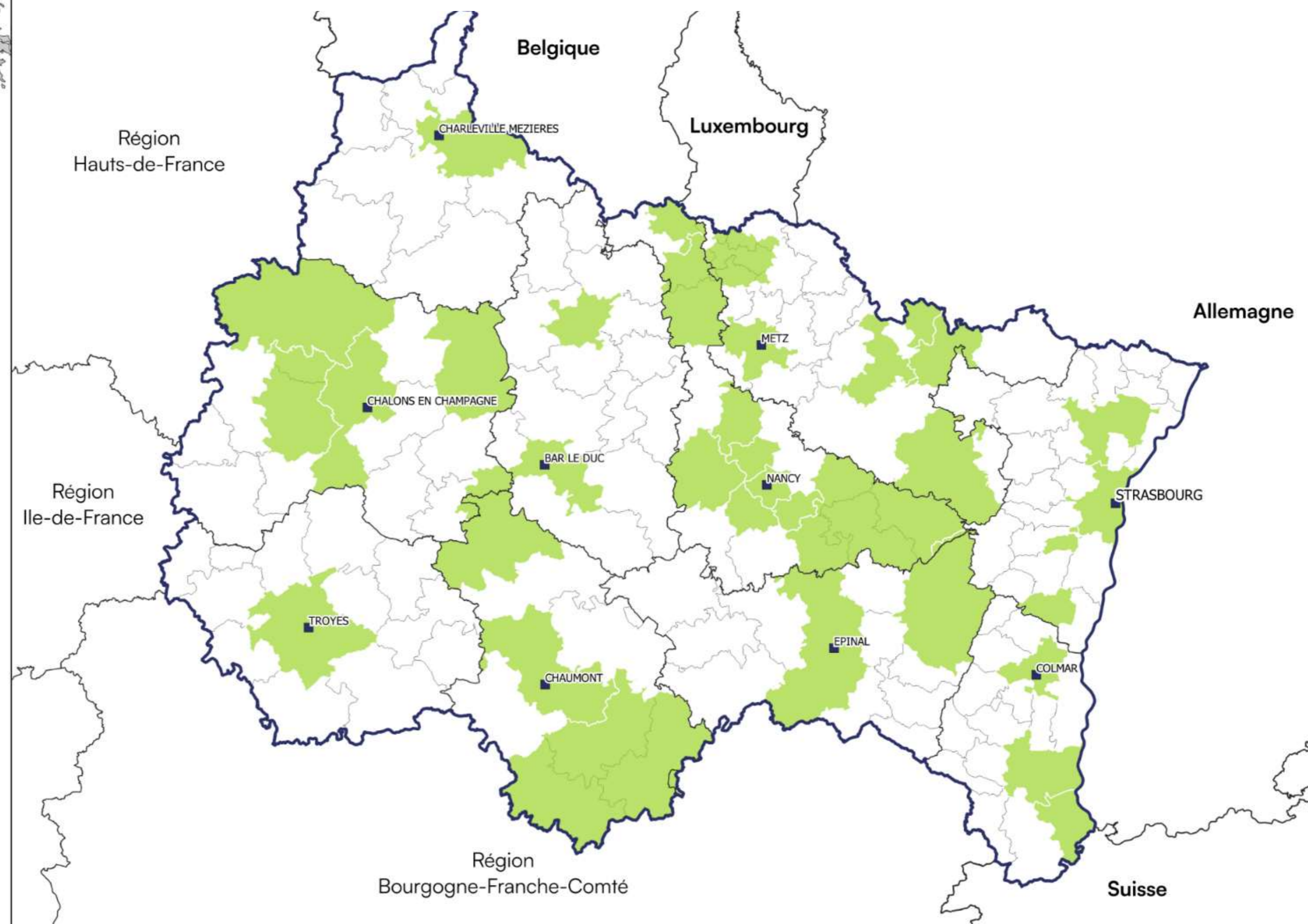
4 pays frontaliers

- Allemagne
- Belgique
- Luxembourg
- Suisse

3 régions limitrophes

- Bourgogne-Franche-Comté
- Hauts-de-France
- Ile-de-France

 **36 réseaux de transport locaux**



- Leadership role to facilitate everyday mobility and intermodality
- Public Transport Authority for regional railways and interurban coaches



240 000 voyageurs par jour

Près de **1 900** trains par jour

385 gares desservies



186 000 élèves par jour

48 000 voyageurs par jour

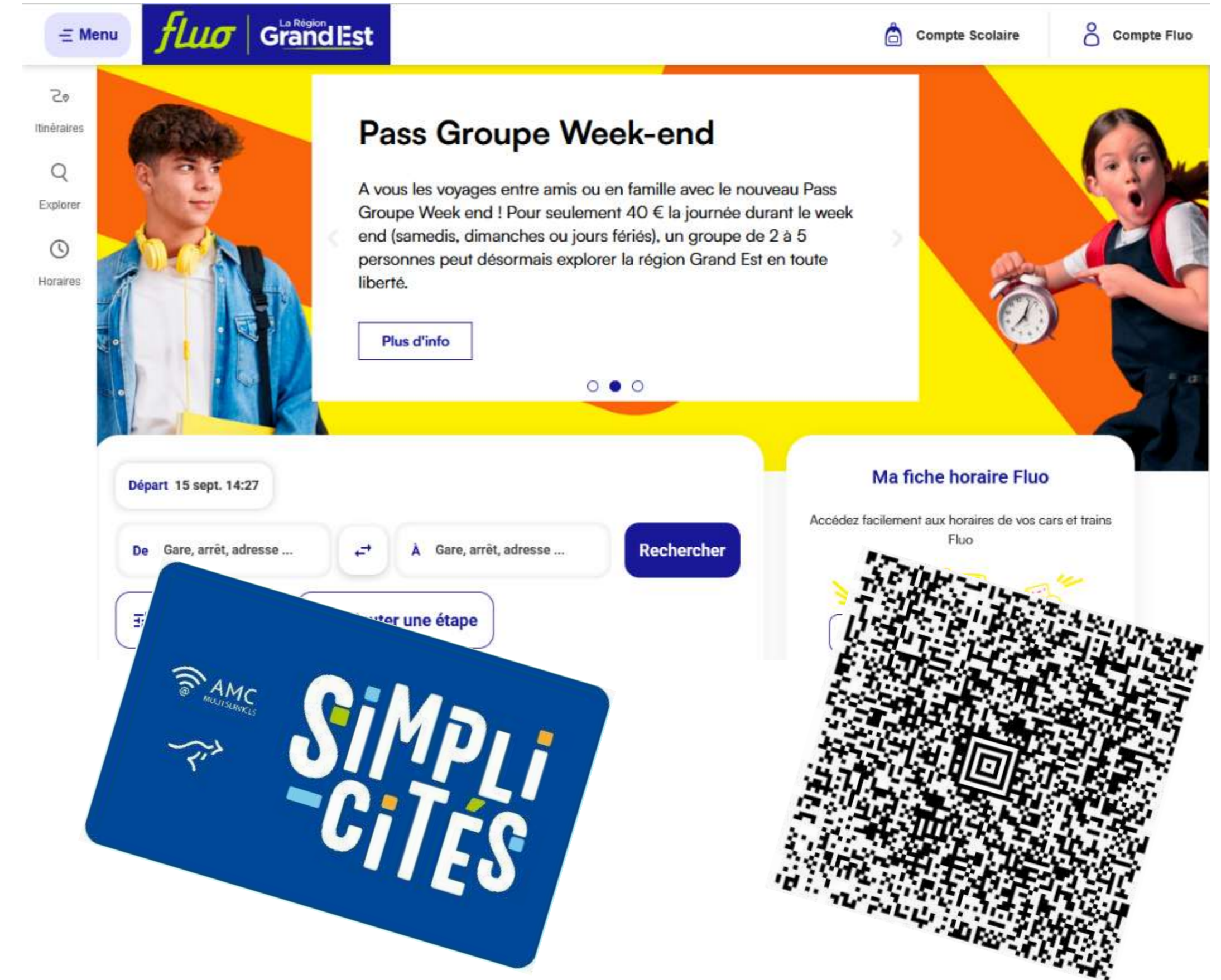
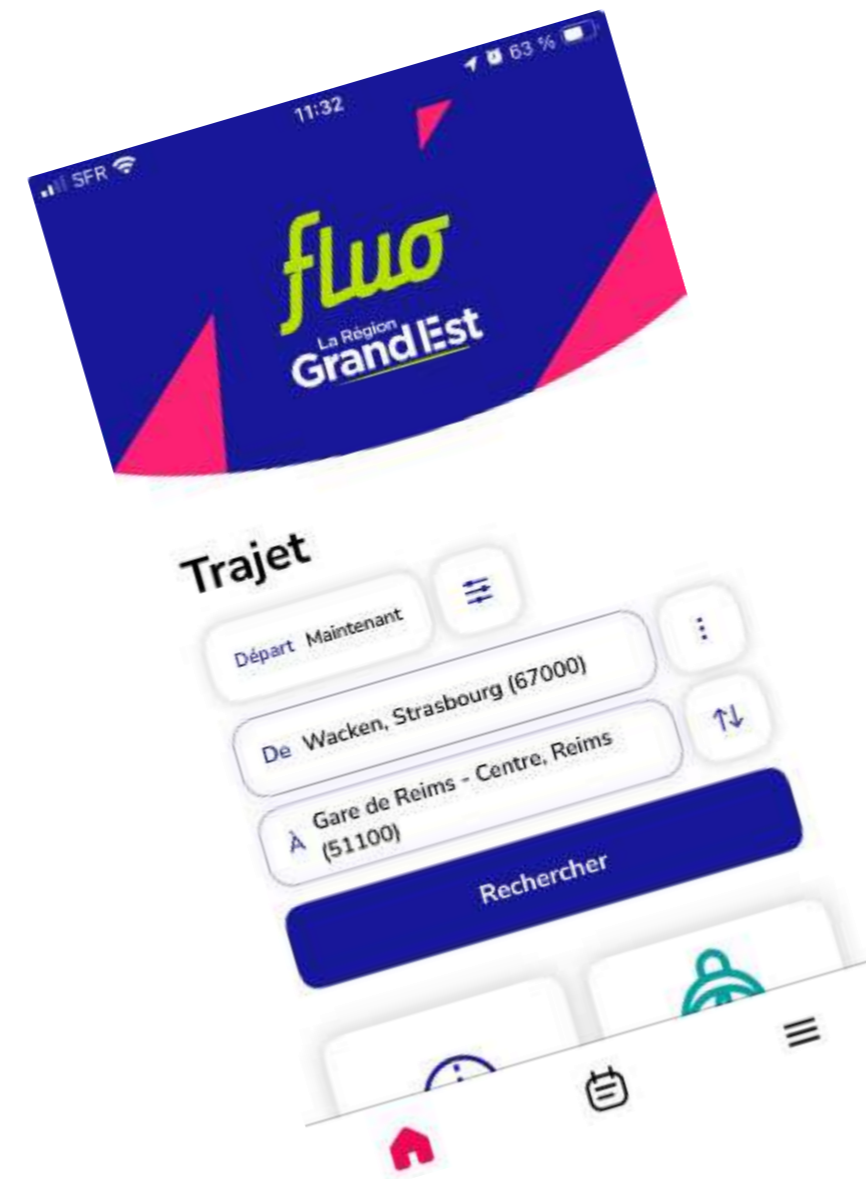
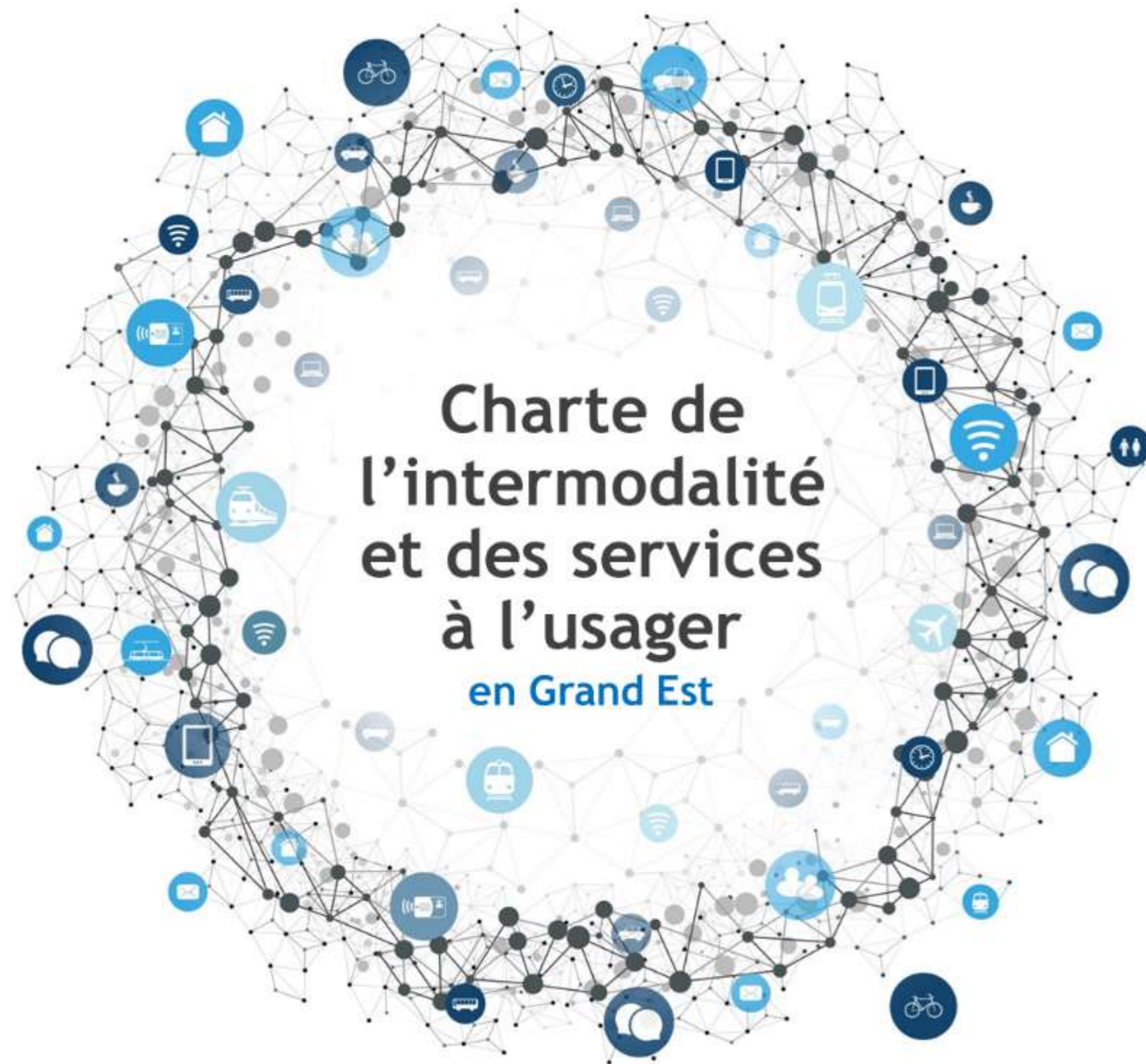
3 200 cars par jour



500 vélos Fluo

52 gares

INTERMODALITY & MAAS – REGIONAL GOVERNANCE



FOSTER THE USE OF PUBLIC TRANSPORT

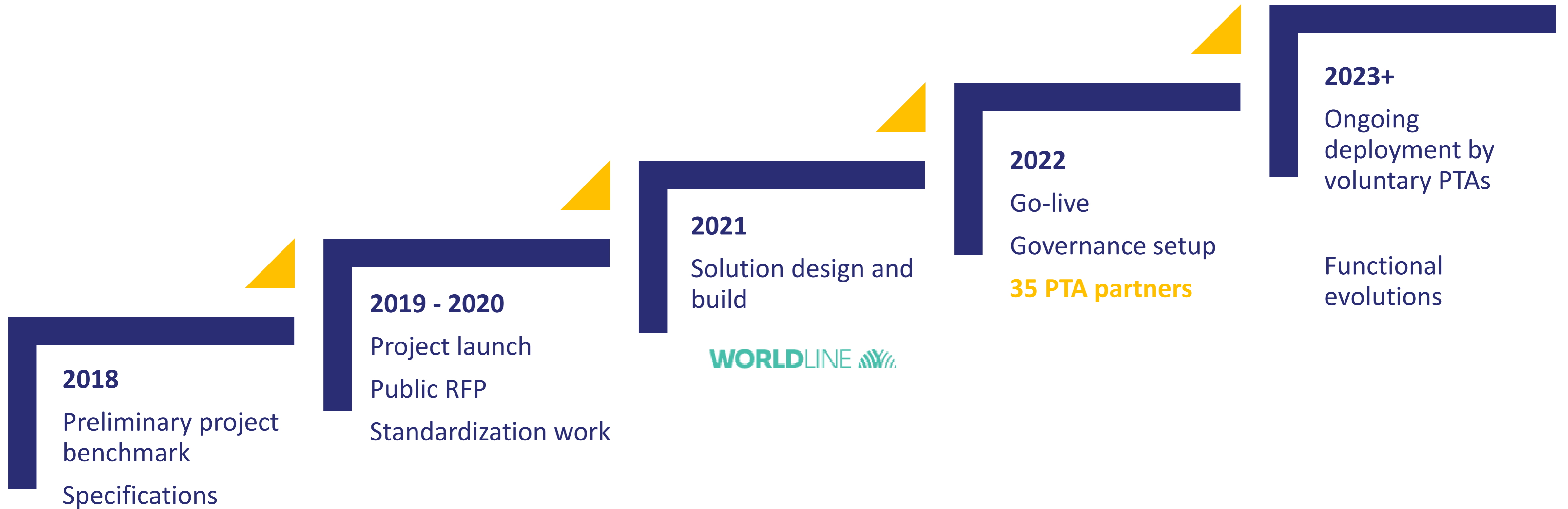
SIMPLIFY TRAVELERS EXPERIENCE, DOOR TO DOOR

DEVELOP SHARED MOBILITY SERVICES AND INNOVATIONS

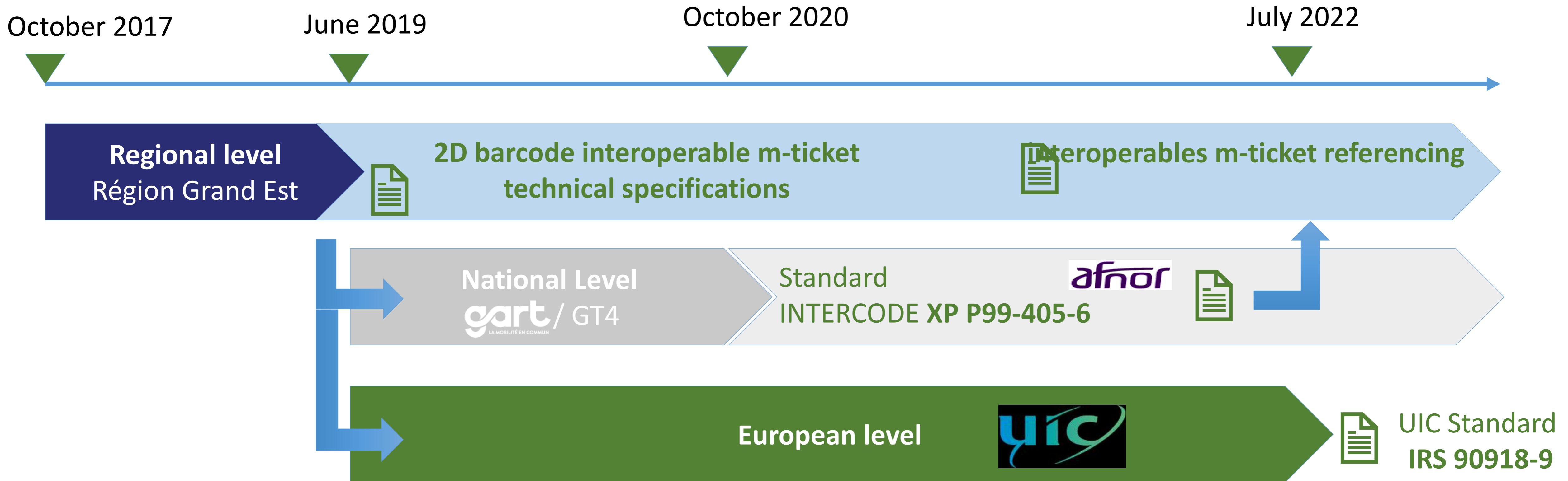
INTEROPERABLE 2D-BARCODE PLATFORM

PROJECT OVERVIEW

INTEROPERABLE 2D-BARCODE - TIMELINE



STANDARDIZATION WORK APPROACH



INTEROPERABLE 2D-BARCODE IN RÉGION GRAND EST



Each PTA remains free to select :

- Any e-ticketing mobile app to any supplier
- Any ticketing system to any supplier

Région Grand Est delivers the 2D-barcode service

YTC PKMW service - hosts public keys as a 3rd-party security trusted partner

A QR CODE...



Multi-network

Standardized

Secure

Interoperable



Static / Dynamic

E-ticketing friendly

Traveler friendly !



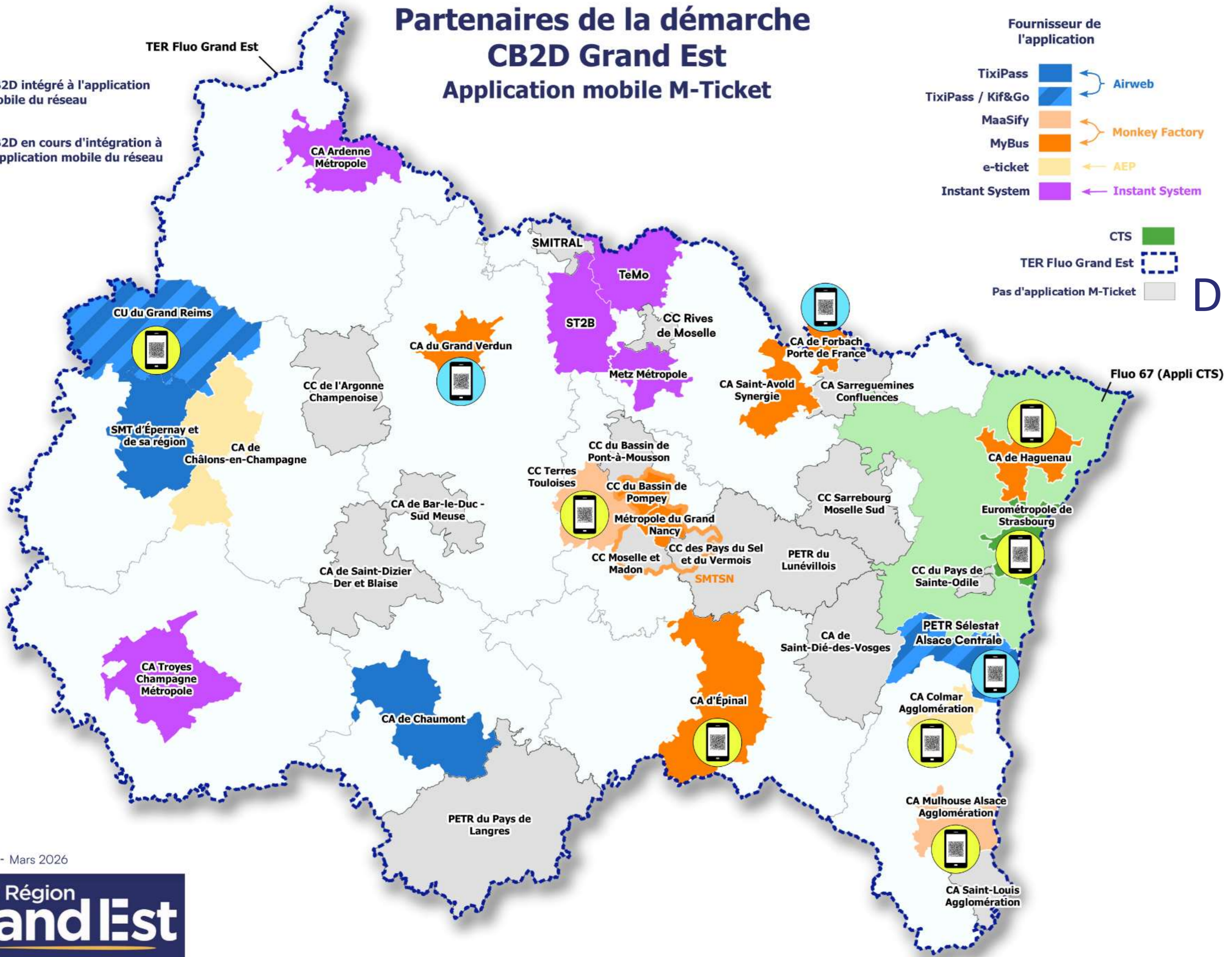
Partenaires de la démarche CB2D Grand Est Application mobile M-Ticket

- CB2D intégré à l'application mobile du réseau
- CB2D en cours d'intégration à l'application mobile du réseau

Fournisseur de l'application

TixiPass		Airweb
TixiPass / Kif&Go		Airweb
MaaSify		Monkey Factory
MyBus		Monkey Factory
e-ticket		AEP
Instant System		Instant System

- CTS
- TER Fluo Grand Est
- Pas d'application M-Ticket



DEPLOYMENT

WHERE ARE WE?

7 URBAN NETWORKS LIVE

3 UNDER DEPLOYMENT

INTEROPERABLE 2D-BARCODE | WHERE ARE WE ?

ACHIEVEMENTS -> 2025

- **3** e-ticketing / MaaS + ticketing **industry leaders now « 2D-Barcode ready »**
 - 2 more underway
- read+decode **integrable SDK** for control/validation devices
- **SNCF control devices** now « 2D-Barcode ready »
- Urban tickets valid in trains – urban fare zones « **city+train** » - live on **3 urban networks**
- « *hybrid mode* » - **dynamic / static** 2D barcode
 - Event ticketing

NUMBERS

- Used by **7 urban networks**
- **3 more** underway
- Average generation time **< 0,05 s**
- Reliability – **62 minutes downtime** last 15 months
- **~520 000** unique users enrolled
- **~4 M** barcodes issued in 2025
- **+1 M** barcodes issued in 2026 (and counting)
- **~16 000 / day**
 - Peak day **+20 000**

INTEROPERABLE 2D-BARCODE PLATFORM

NEXT STEPS

INTEROPERABLE 2D-BARCODE | NEXT STEPS

Région Grand Est

- More urban fare zones combining city+train
- Expand to other multimodal fares
- Key component of the regional MaaS (under construction)
 - Digital distribution of own rail and interurban networks
 - E-ticketing in own mobility app and website

Partners

- Deployment to more urban transport networks
- Cross-network ticket distribution
- Harmonization on national level and with other regions
 - National interoperability platform project led by Ministère des Transports

TO CONCLUDE ...

- First implementation of the UIC 2D-barcode standard in France
- Reliable service end-to-end
- Now trusted, massively used, and growing
- DEPLOYMENT CONTINUES...



THANK YOU !

QUESTIONS ?

La Région
Grand Est

Aurélien GEISS

Mobility-as-a-Service Project Manager

Région Grand Est - Site de Strasbourg
1 place Adrien Zeller | BP 91006
67070 STRASBOURG

Siège du Conseil régional

1 place Adrien Zeller
BP 91006
67070 Strasbourg Cedex
+33 (0)3 88 15 68 67

Hôtel de Région

5 rue de Jéricho
CS70441
51037 Châlons-en-Champagne Cedex
+33 (0)3 26 70 31 31

Hôtel de Région

place Gabriel Hocquard
CS 81004
57036 Metz Cedex 01
+33 (0)3 87 33 60 00

Retrouvez-nous sur



www.grandest.fr

5.3 Belgium: The Belgian Mobility Company Path to Interoperability



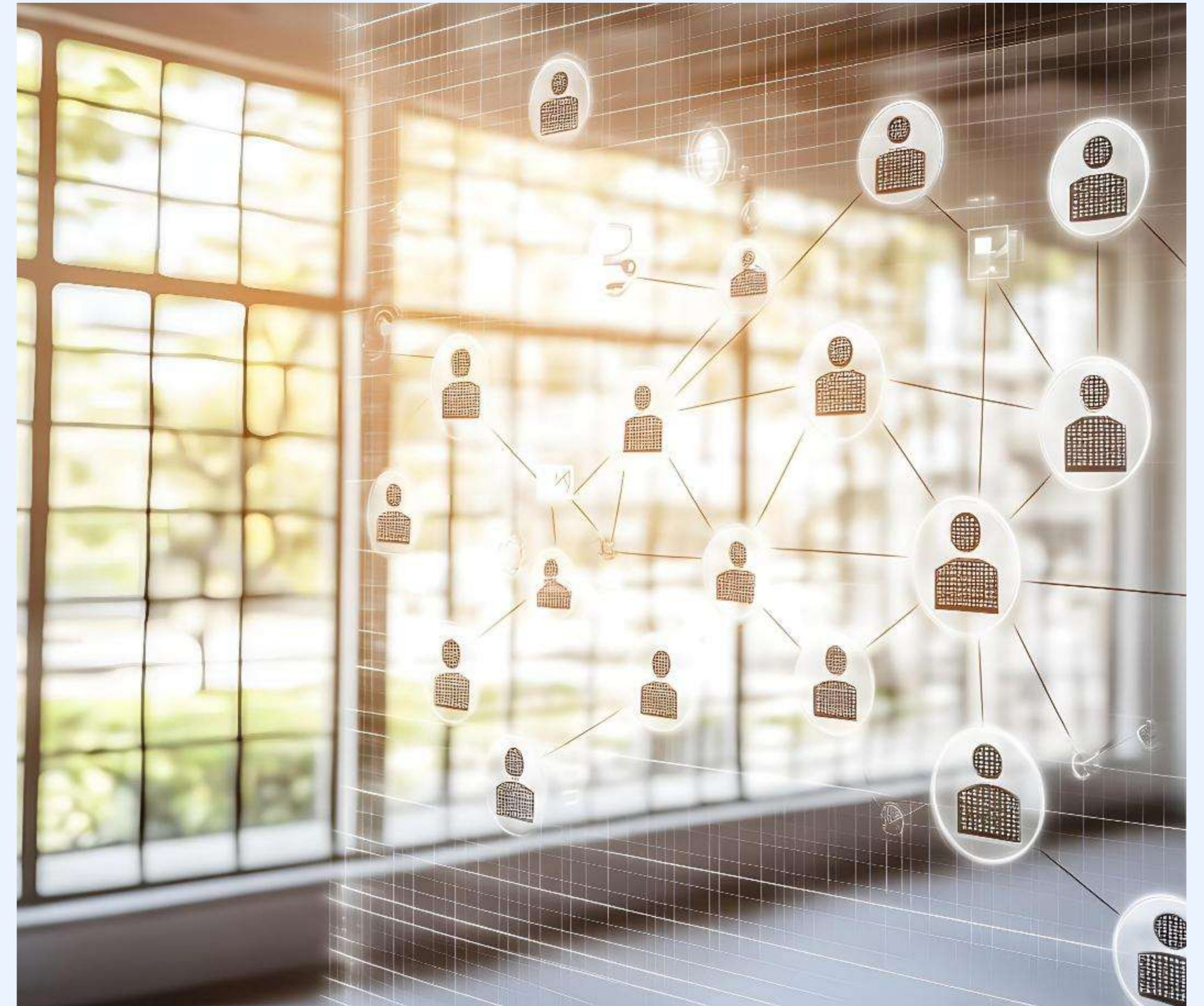
Guy De Lathouwer

Head of Projects

Belgian Mobility
Company

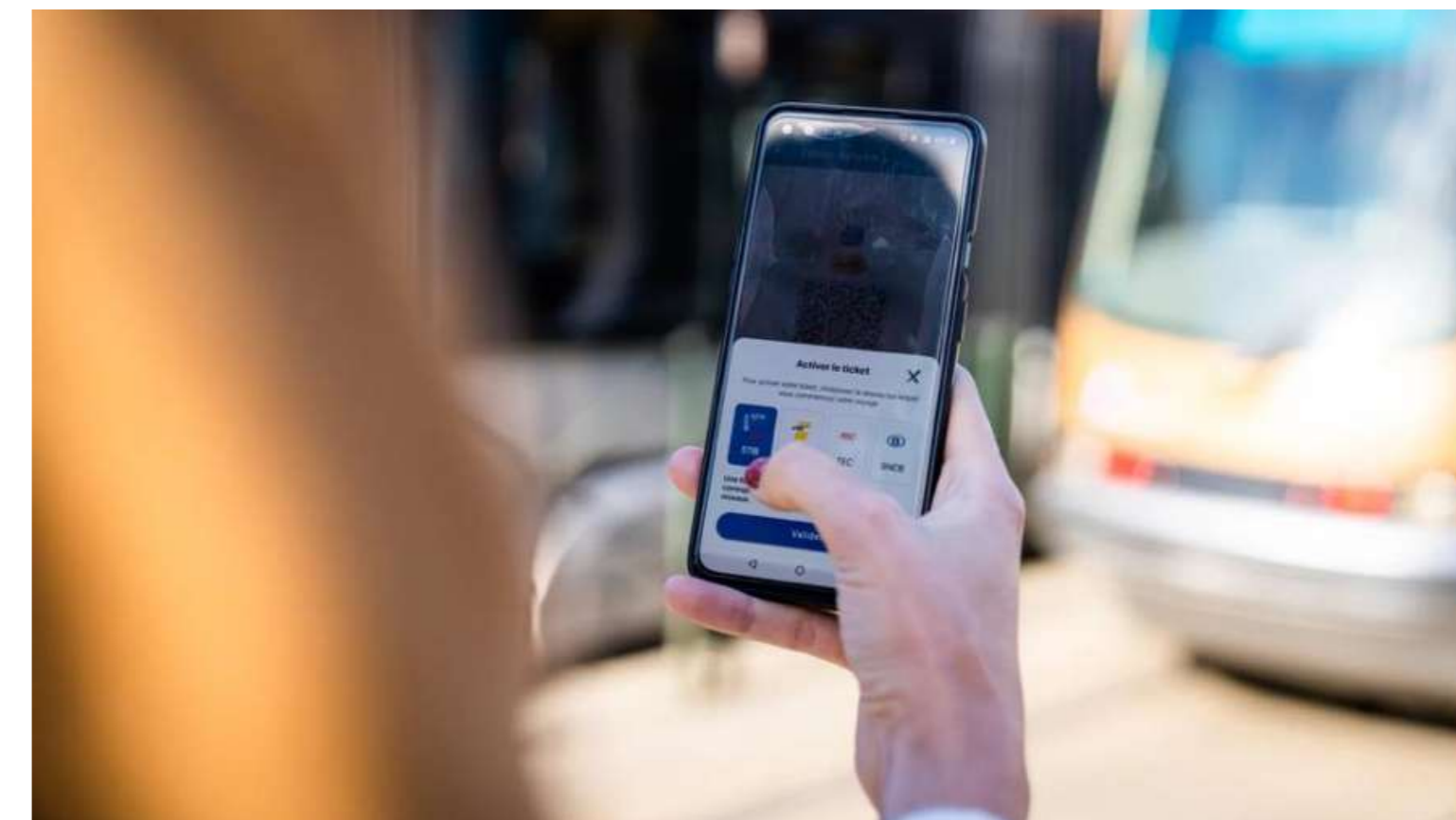
UIC 14th April 2026, Paris
FCB standard in Belgium

Interoperability - Intermodality



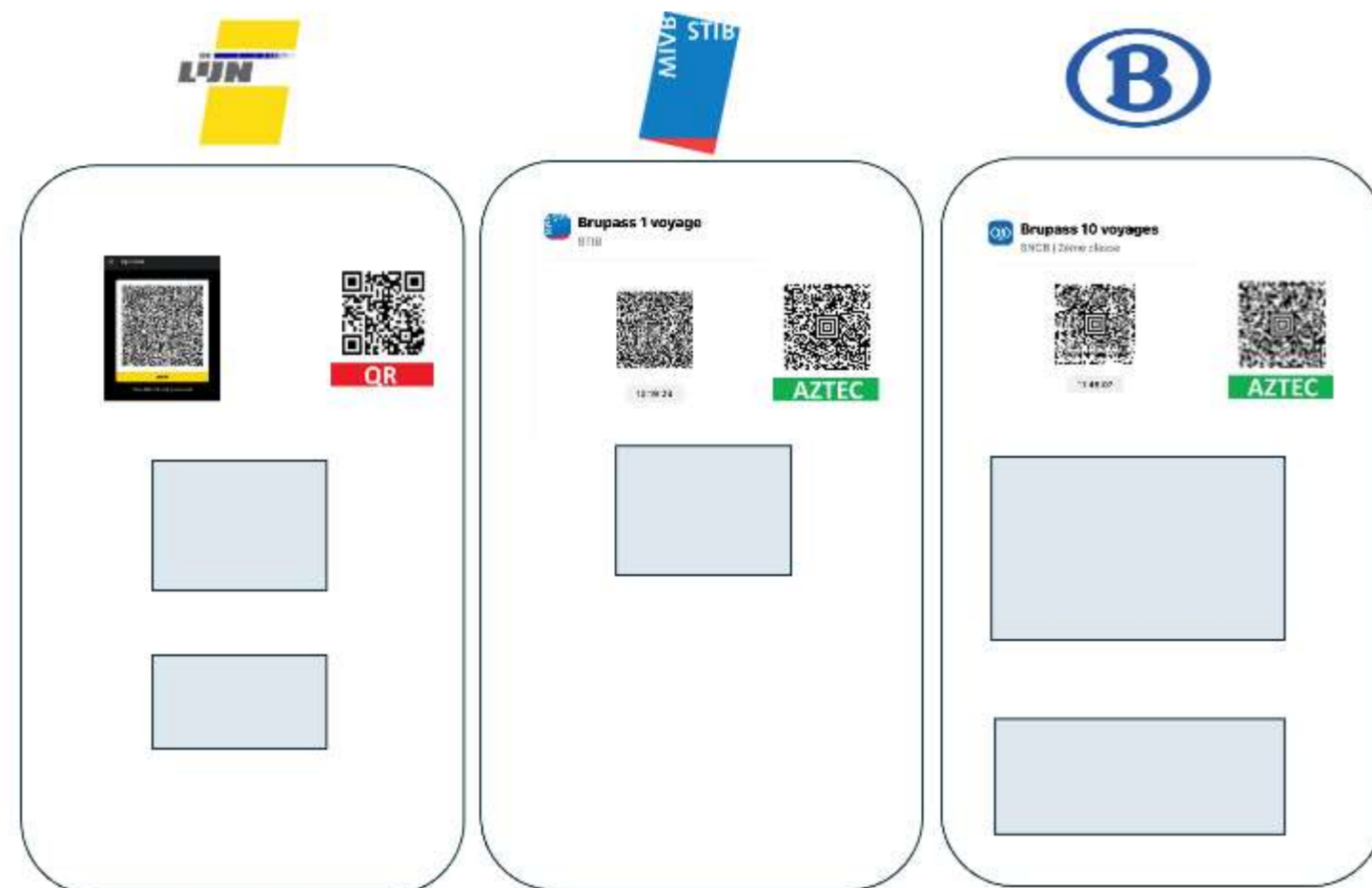
A Complex but Mature Ecosystem with strong foundations

- 4 Public Transport Operators
- National interoperability already achieved
- Coordinated at national level (Belgian federalism)
- Interoperable but not seamless
- MoBIB (Calypso, card-centric)
- Secure and offline-capable
- CBT designed for a different era
- First digital step: Digital Brupass



Reality Check with AS IS barcodes

- Each new product = 4 implementations
- Fragmented UX/UI across operators :
Inspection & validation
- High integration and maintenance cost
- Limited scalability and openness



The TO-BE Challenge

- Next Gen architecture endeavour
- Some TO-BE decisions not taken yet
- Need to support multiple future and transition scenarios
- Ensure interoperability across options
- Maintain strong security foundations (anti-fraud)



Why FCB

- Standardized barcode structure
- Flexible and extensible content
- Interoperable by design
- A common language for ticketing for rail and international
- Testimonials of close live implementation and projects

FCB + Dosipass

- High security : signed envelope and payload
- Offline inspection capability
- Supports media-based and hybrid models
- More than a barcode: a transport token

Strategic position

- Part of the digital strategy (smartphone)
- Integrated in 2027-2030 roadmap for Inspection
- Calypso complimentary
- Supports multiple models
ABT, media-based, hybrid
- Enables choices while ensuring interoperability & security

Versatile

Secure

Standard

Interoperable

Questions ?



5.4 Germany: Advancing Multimodal Interoperability



Manuel Beck

Technical Product
Management

DB Fernverkehr AG.



Christian Skobjin

Technical Project
Manager

Deutschlandtarifverbund-GmbH.



Germany: Advancing Interoperability

From fragmented fares to unified readability and security

DB Fernverkehr AG & Deutschlandtarifverbund-GmbH | 14.04.2026 | Paris

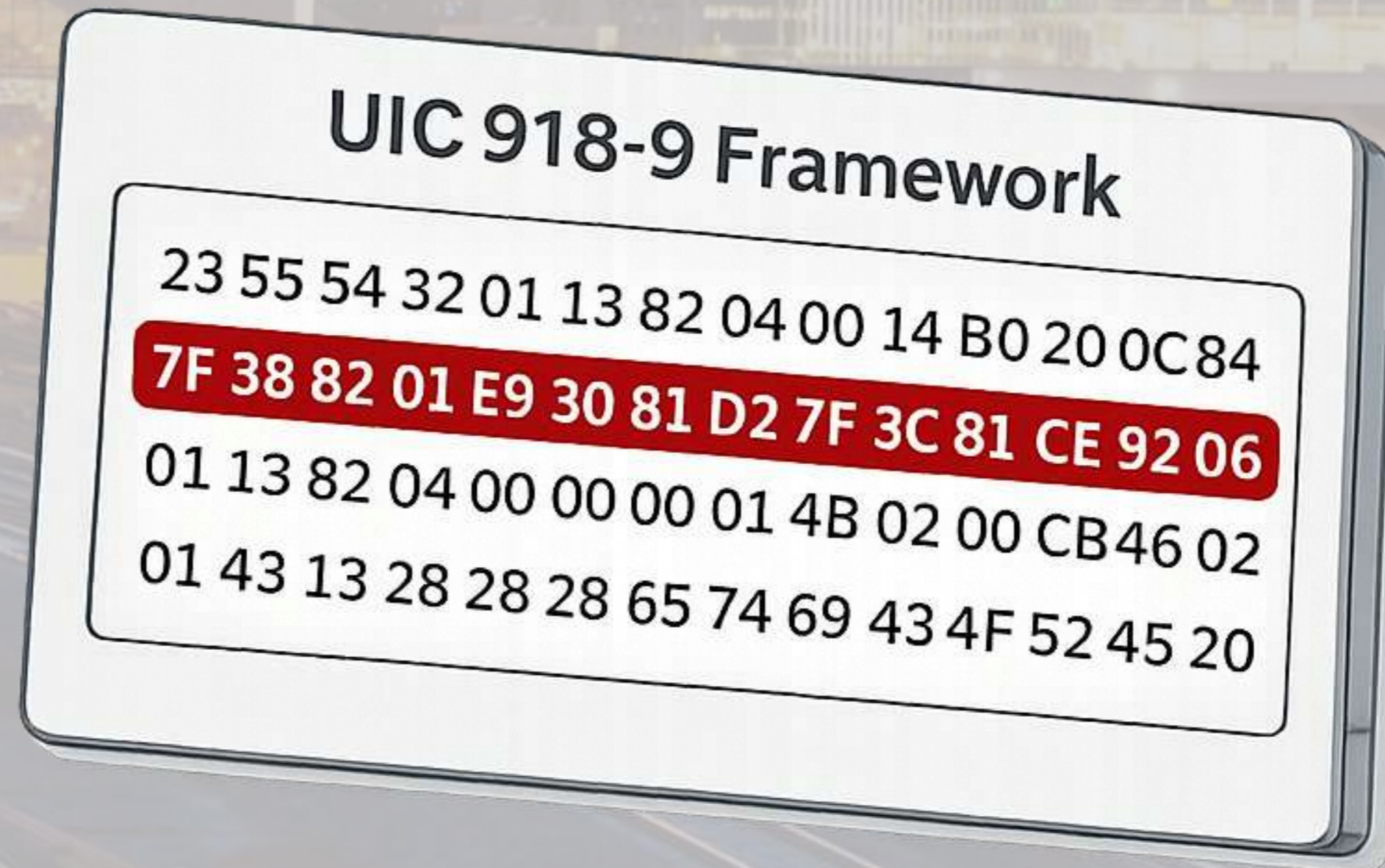
Agenda.



1. From Fare Fragmentation to Universal Readability
2. From Issuance to Assurance:
Germany's UIC-ticket security backbone

From Fare Fragmentation to Universal Readability

Unifying a fragmented fare landscape into a universally readable layer by combining UIC 918-9 with VDV-KA ticket data. One barcode that works across devices and borders, reducing inspector complexity and enabling consistent checks.





From issuance to assurance: Germany's UIC-ticket security backbone

Christian Skobjin | 14.04.2026 | Paris

There are several widely used types of fraud we need to tackle

issuance fraud



- Issuing tickets without permission
- For example, by stealing a private key of a legitimate issuer or by gaining illegal access to sales systems

payment fraud



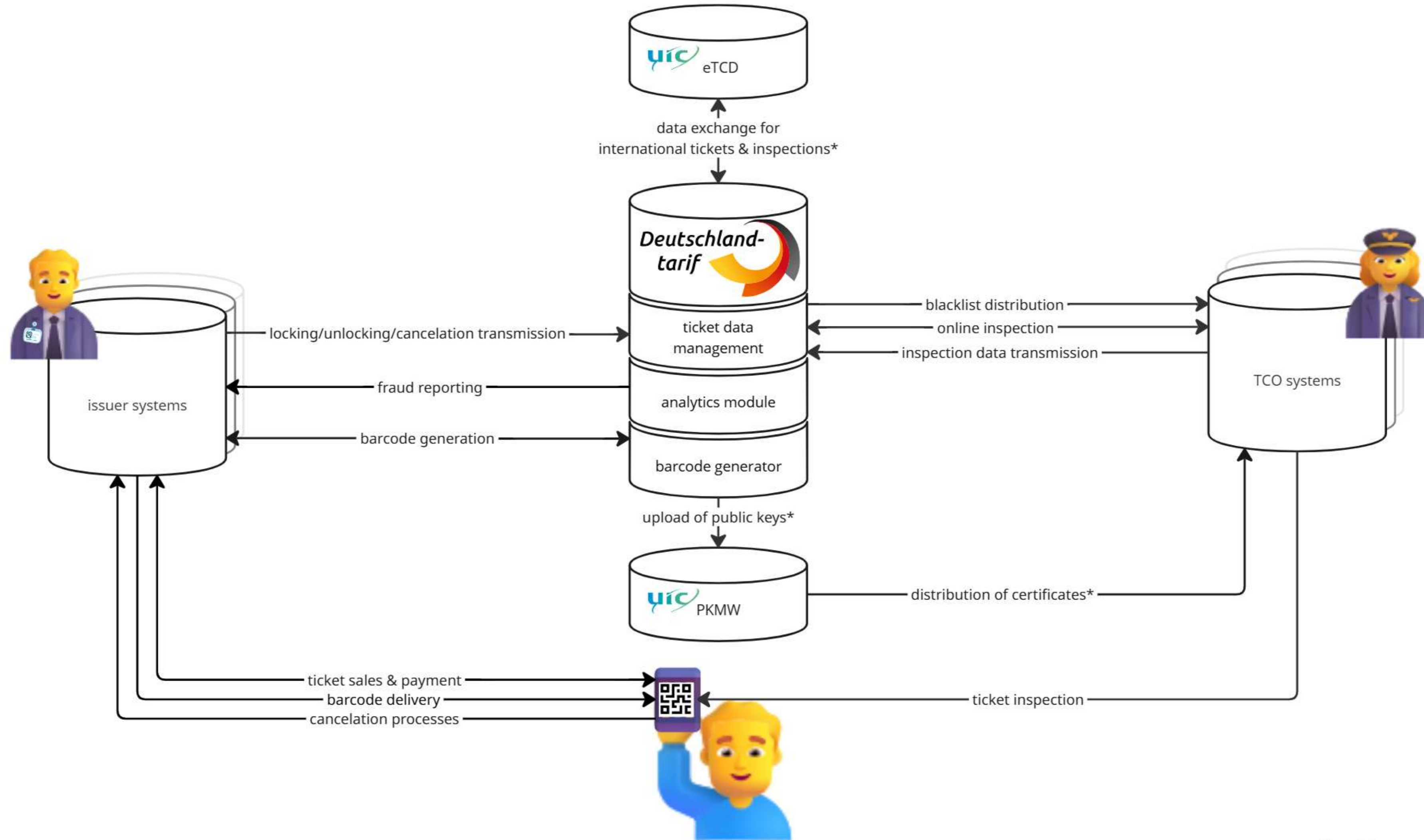
- Usage of illegally acquired payment information
- Re-rolling of payment after acquisition of a ticket
- Selling cheap tickets to unsuspecting customers by using payment data of a third party in official shops

ticket copies / multiple use



- Copying and distributing of ticket-barcode of legally obtained tickets
- Extracting the ticket-barcode from the vendors app and putting it into a new web-app-context with different traveller information

DTVGs UIC Security Portal is the central platform for issuance, inspection and fraud detection for German public transport.



* work in progress

A set of easy-to-implement API endpoints generate value

API security



- API-key access to basic functions
- OAuth2 security necessary for critical processes like barcode generation and cancelation

blacklist access



- current blacklist can be downloaded for offline inspection schemes

ticket generation & status

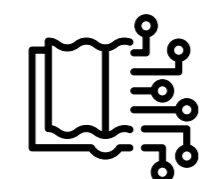


- endpoints for issuance, locking, unlocking and cancellation of tickets
- different issuance endpoints for different products (e.g. Deutschlandticket, D-TARIF, local tariffs)
- DTVG is security provider for each ticket

ticket inspection



- focus on online inspection with value added information like last inspection (time & distance)
- inspection data is connected to the ticket data in our database and analysed by our analytics module



API available at: <https://sicherheitsportal.deutschlandtarifverbund.de/scalar/v1>

DTVGs UIC Security Portal creates a closed ecosystem around the UIC-barcode

standardised 918-9-DE format

- Characteristics are defined by DTVG
- Included AddOns with VDV-KA data ensures multimodal usability

automated analytics

- Inspection data analysed for suspicious usage patterns
- Unknown ticket barcodes trigger instant alarm

safe barcode signature

- Usage of DSA2048
- Safe key management inside the portal
- Public key distribution is taken care of by DTVG

data exchange with D-TIX

- Revenue management organisation knows all issued tickets
- No side-selling possible any more



Next steps in our development pipeline further reduce the chances of success for fraudulent actors



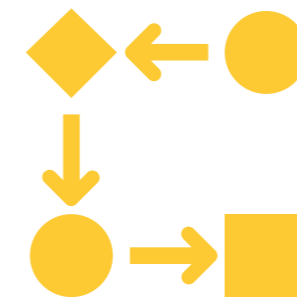
shift towards online inspection

Advertising the benefits of online inspection to enable a shift to whitelist-inspection



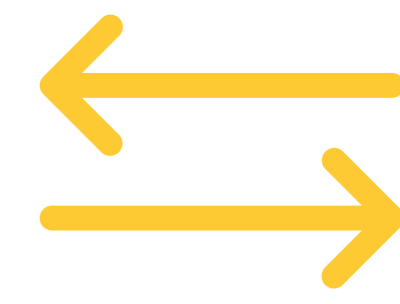
increasing of ticket security

Change to ECDSA signatures with implementation of DOSIPAS barcodes in the German market, possibly even dynamic barcodes



automation in combating fraud

Automated analytics will trigger processes like barcode-blocking or repeated issuance of new barcodes for valid tickets



international data exchange

Connection to the eTCD to exchange data for international tickets of Deutschlandtarif (e.g. Bavaria-Bohemia-Ticket, Saar-Lor-Lux-Ticket) and international tickets with validity in German public transport



Thank you for joining us today.



6 Introducing UIC and IATA collaboration on Air+Rail



Stefano Scarci

Industry Solutions
Technology & Innovation
| Advisory Services

EY Advisory S.p.A.

UIC–IATA intermodal collaboration at a glance



UIC and IATA have signed a MoU in 2020 and have established the joint Intermodal Working Group



Goal

Offer passengers enhanced convenience, more commercial options and seamless door-to-door travel experiences

Why now

Both sectors are modernizing retail standards (OSDM; NDC/Order Management), creating a historic window for true cross-mode interoperability

Progress

Task forces launched to address identified gaps
Data model mapping between OSDM and NDC

The plan

Enable next generation Air+Rail

Next generation Air+Rail: what it enables

Scale partnerships

- ✓ Direct airline–railway connectivity via APIs
- ✓ Intermediaries are optional, not mandatory

Enhanced shopping

- ✓ Extend travel solutions to the entire railway network
- ✓ Combine air and rail segments with discounts, seat maps, ancillaries, and loyalty/reduction cards

Enhanced service delivery

- ✓ Order-based, ticketless fulfillment and digital inspections
- ✓ Seamless after-sales flows (refunds/exchanges) and disruption handling

Revenue and accountability

- ✓ Simplified settlement
- ✓ Defined accountability for customer care and passenger rights
- ✓ Visibility of actual rail consumption

7 Airline Perspective: Lufthansa Approach to Air+Rail



Varvara Blokhina

Partnership Manager

Lufthansa Group

Intermodal Boarding Control with eTCD

Problem Statement & eTCD Solution

Problem Statement

No Turnstiles or Gates

- Train stations and trains in Germany have no physical boarding control. There is no mechanism e.g. turnstiles to verify whether a booked passenger has actually taken the train.



Hub Undercutting Risk

- Lufthansa offered lower fares from train-origin cities (e.g. Düsseldorf) than from FRA to attract regional demand. Some passengers booked train+flight but skipped the rail leg and boarded the plane directly at FRA.



Fare Rule Violation & Serviceability

- This mirrors the 'no-show' rule: if a passenger skips the first segment, the second should be cancelled. Without boarding data enforcement is impossible — leading to revenue leakage and pricing risk.
- Also serviceability is a factor, as delays cannot be managed without knowing whether the passenger is present on board of the train.



Pricing Had to Be Increased

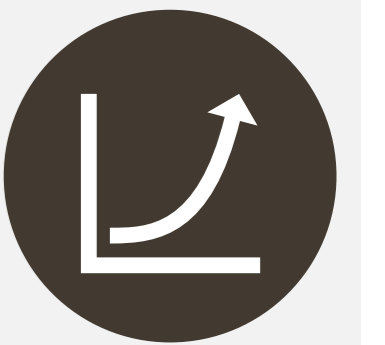
BEFORE (>1 year ago)

- Competitive lower prices than hub FRA departures to capture pax from outside of Frankfurt
- No way to detect no-shows on the train leg



CURRENT STATE (>1 year ago → now)

- Risk of hub undercutting forced conservative pricing
- Intermodal has now lower price-competitiveness vs. air-only options



eTCD Solution

eTCD - how it works

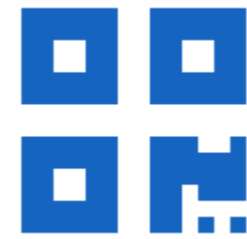
1



Booking

Passenger books intermodal ticket LH Express Rail (Train + Flight)

2



Fulfillment ID

DB issues a unique Fulfillment ID attached to the booking, which is stored in Lufthansa database

3



On-train Scan

Train attendant scans passenger's ticket during journey

4



LH Matching

LH receives Fulfillment ID **in real-time** with the scan data and matches against booking records

eTCD Coverage Gap & Path Forward



Current Limitation

~70%

scanning coverage guaranteed by DB

DB guarantees approximately 70% coverage — meaning up to 30% of passengers on any given train may not be scanned. This leaves a data gap that limits enforcement accuracy.



Path Forward

Re-enabling competitive pricing once coverage and enforcement confidence are achieved by:

1. Exploring supplementary data sources to increase coverage beyond 70%
2. Investigating alternative scan methods (e.g. app-based check-in, etc.)
3. Making use of access controls like turnstiles if available for eTCD processing (i.e. AMS)

Thank you! Questions? 😊

8 Wrap-up



David Sarfatti

Senior Advisor
Passenger Department

UIC

To sum up

1

Rail is the **backbone** of sustainable mobility

2

The rail industry is committed to advance **multimodality**

3

UIC cross-border **expertise** is now applied to multimodality

4

UIC wants to work with **all formats and standards** as trusted partner for data exchange and harmonisation

5

UIC has made available the **Open MultiModal Toolkit** to enable simpler, scalable multimodal services

Join the OMMT community:
get the specifications online,
participate in our working groups,
test in the acceptance platform,
and launch pilots with partners already in
production

Message from UIC Director



Bertrand Minary

Passenger Director, interim
Freight Safety & Operations -
Coordinator of Middle East &
Latin America Regions

UIC

Post-conference survey (14 April)





INTERNATIONAL UNION
OF RAILWAYS

Thank you for your attention



CONTACT

David Sarfatti

Senior Advisor – Passenger Department

Tel +33 6 29 12 34 16

sarfatti@uic.org

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