



INTERNATIONAL UNION
OF RAILWAYS

unity, solidarity, universality

D2D - Project Overview

October 2021

Potential benefits of door-to-door solutions

Cooperation between rail and other transportation modes can provide benefits to all parties



Rail operators

- ✓ Improve service to customers
- ✓ Transform from pure transport provider into digital mobility service player
- ✓ Drive additional passenger volumes and enable modal shift
- ✓ New revenue sources



Other transport providers

- ✓ Improve service to customers
- ✓ Access new markets and sales channels
- ✓ Leverage new efficient revenue collection
- ✓ Drive additional passenger volumes



Transport authorities

- ✓ Provide benefits to citizens
- ✓ Attract leisure and business travel
- ✓ Better planning and implementation of mobility policies driving sustainability and modal shift
- ✓ Reduce congestion



Travelers

- ✓ Seamless door-to-door travel experience
- ✓ Simplified ticketing and traveling
- ✓ Access to combined offers and promotions
- ✓ Better real-time management of journey

The objectives of the D2D Project

D2D is a 3-year project started in 2019 by UIC Passenger Services Group. It is aimed at facilitating the development of intermodality between railways and other transport service providers.

1

Facilitate **partnerships between member rail companies and other transport providers** by removing technical obstacles and providing accelerators for developing integrated offerings

2

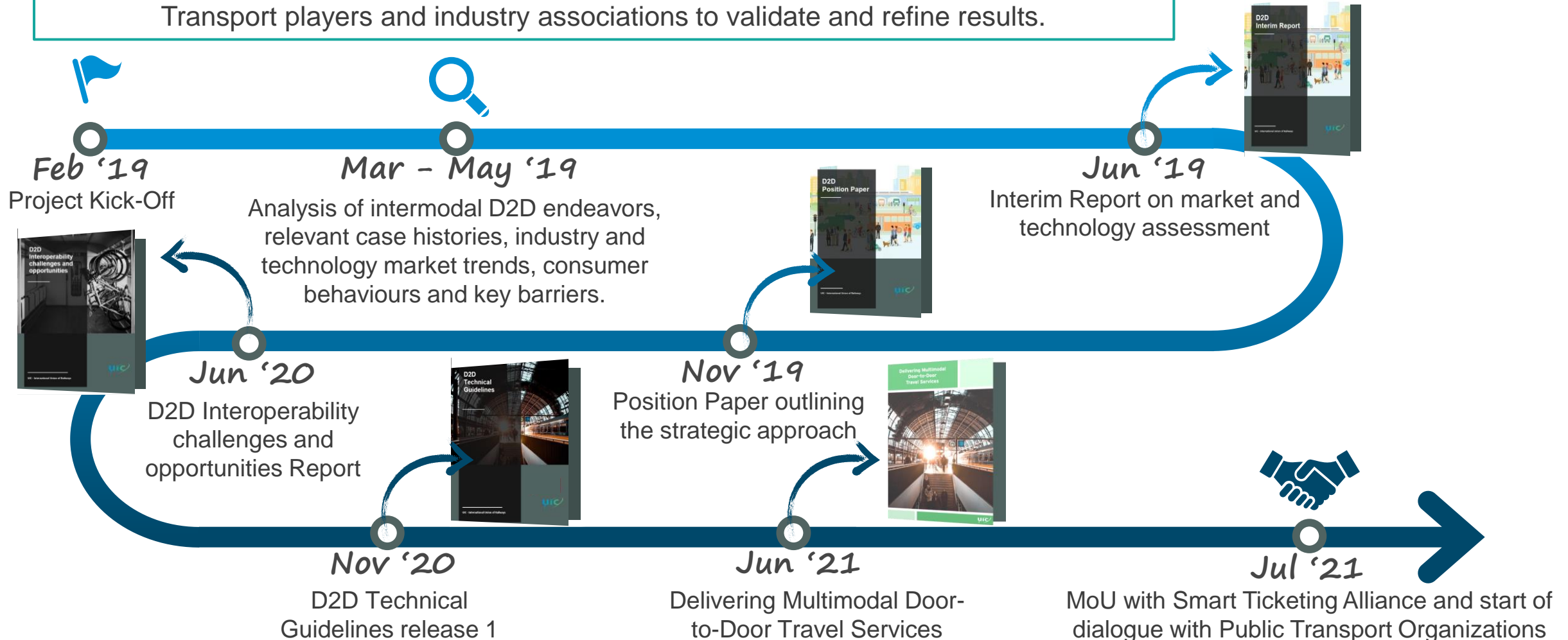
Facilitate **development of digital integrated mobility solutions** by member rail companies helping them to evolve from pure transport operators to providers of door-to-door mobility to their customer

3

Facilitate **development of an ecosystem and marketplace of digital integrated mobility services** by allowing 3rd party developers to create innovative travel applications and services bringing value to the services offered by member rail companies

D2D key milestones

Project deliverables have been developed by advisors in cooperation with experts from UIC and participating rail companies. Current activities include the involvement of Public Transport players and industry associations to validate and refine results.



Technical Guidelines

The Technical Guidelines document provides a comprehensive overview of door-to-door and MaaS use cases with related implementation guidelines



*Delivered
November 2020*



Topics:

Summary of reference scenarios, customer journeys and identified capabilities

Technical Integration Guidelines for the following domains, including a description of the current and future environment for both Rail and Partner environment:

- Fares
- Availability / Reservation
- Ticketing
- Entitlement
- Responsibilities

Customer Journey 1

Customer Journey 1 (Rail segment(s) + Digital partners)



Main path
Variant

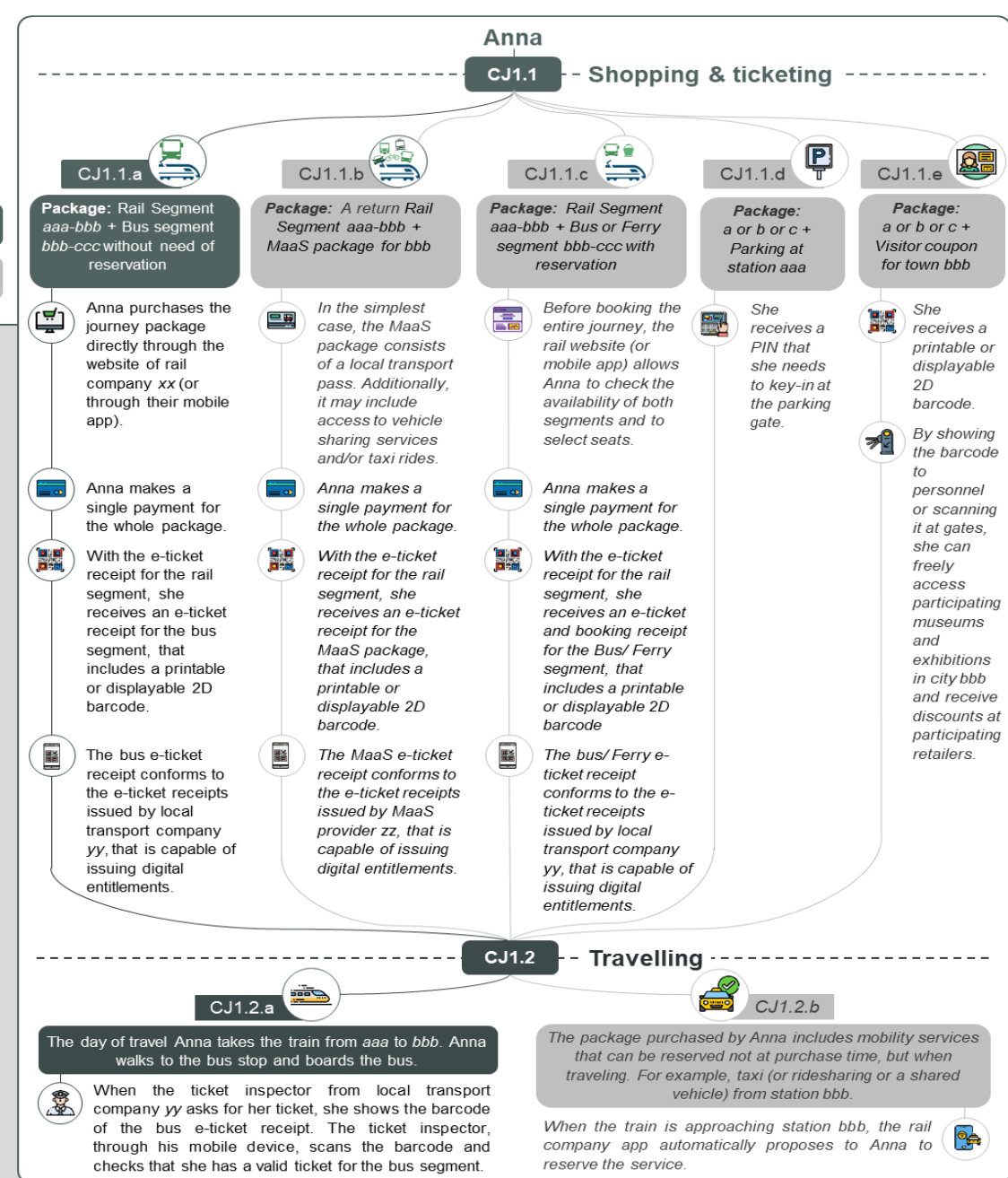
In Customer Journey 1, hypothetical customer Anna books and carries out a trip consisting of a rail segment followed by a bus segment. In Customer Journey 1 all partners are digitally evolved.

She books the journey **directly on the website of the rail company** and makes a single payment for the whole package.

With the e-ticket receipt for the rail segment, **she also receives an e-ticket receipt for the bus segment which includes a 2D barcode that can be printed or displayed on her mobile.**

On the day of travel, **Anna takes the train and then hops on the bus.** When the ticket inspector comes on the bus she shows the barcode of the bus e-ticket receipt which the **ticket inspector checks through his mobile device.**

A total of 5 variants were created for Customer Journey 1: four for the “Shopping & ticketing” stage; and one for the “Traveling” stage. Please refer to the diagram on the right for further information.



Customer Journey 2

Customer Journey 2 (Rail segment(s) + Analog partners)



Main path

Variants

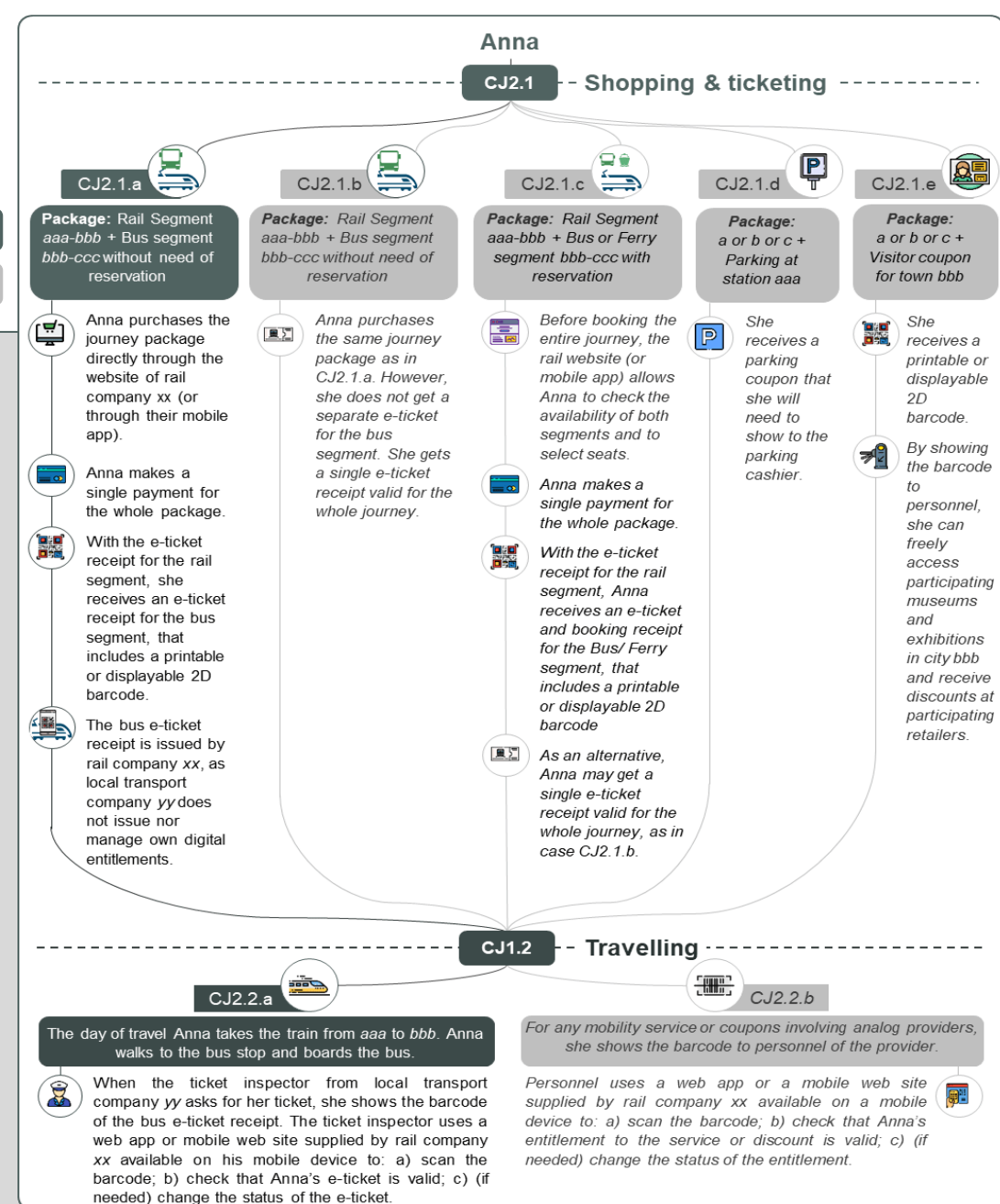
In Customer Journey 2, Anna books and carries out the same trip consisting of a rail segment followed by a bus segment. Although in Customer Journey 2 not all partners are digitally evolved.

She books the journey **directly on the website of the rail company** and makes a single payment for the whole package.

With the e-ticket receipt for the rail segment, she also receives an e-ticket receipt for the bus segment which includes a 2D barcode that can be printed or displayed on her mobile. **In this case the bus e-ticket receipt is issued by the rail company as the partner is not digitally evolved.**

On the day of travel, **Anna takes the train and then hops on the bus.** When the ticket inspector comes on the bus she shows the barcode of the bus e-ticket receipt. **The ticket inspector then uses a web app or mobile web site** supplied by the rail company to check the ticket and change the status of the ticket if needed.

A total of 5 variants were created for Customer Journey 1: four for the “Shopping & ticketing” stage; and one for the “Traveling” stage. Please refer to the diagram on the right for further information.



D2D Executive Summary

“Delivering Multimodal Door-to-Door Travel Services” is an 8-page executive summary of strategic trends, challenges and opportunities, with an outline of UIC resources that can help rail operators in their multimodal efforts

Delivering Multimodal
Door-to-Door
Travel Services



Topics:

1. Multimodal D2D mobility
2. Why digital changes everything
3. Mobility-as-a-Service
4. Demand Responsive Transport (DRT)
5. The current context
6. Opportunities for Rail Operators
7. Challenges for delivering door-to-door services
8. How UIC can help



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How UIC can help

The D2D team includes experts that are leading the design of UIC services and specifications that aim at transforming the passenger experience.

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OSDM

OSDM (Open Sales and Distribution Model) includes specifications for the **offline exchange of fares** as well for **online API interfaces** supporting distribution of transport products. OSDM supports **a wide range of fares**. The online APIs are suitable to **manage different types of mobility services**.

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eTCD

eTCD is a **platform and digital service** allowing carriers to **validate and inspect electronic entitlements issued by other carriers**. Passengers just need to **show a digital token on their smartphone** to be recognised. Ticket information is shared almost in real time. It greatly **simplifies interoperability among carriers**.

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FCB


Flexible Content Barcode is a UIC specification that allows to **represent digital travel rights with a 2D-barcode in a secure and seamless way**. It supports **multiple use cases**, including offline and online control, opening of station gates, refunds and after sales processes, annotations. Besides rail products, it is suitable for local transport, intercity bus, ferries, shared vehicles, and on demand transport.

Current cooperation with Public Transport Industry

A MoU establishing a cooperation between UIC and Smart Ticketing Alliance was signed in July 2021. A dialogue involving STA, Aachener Verkehrsverbund and the German PT industry association VdV has started in relation with the easyConnect project.



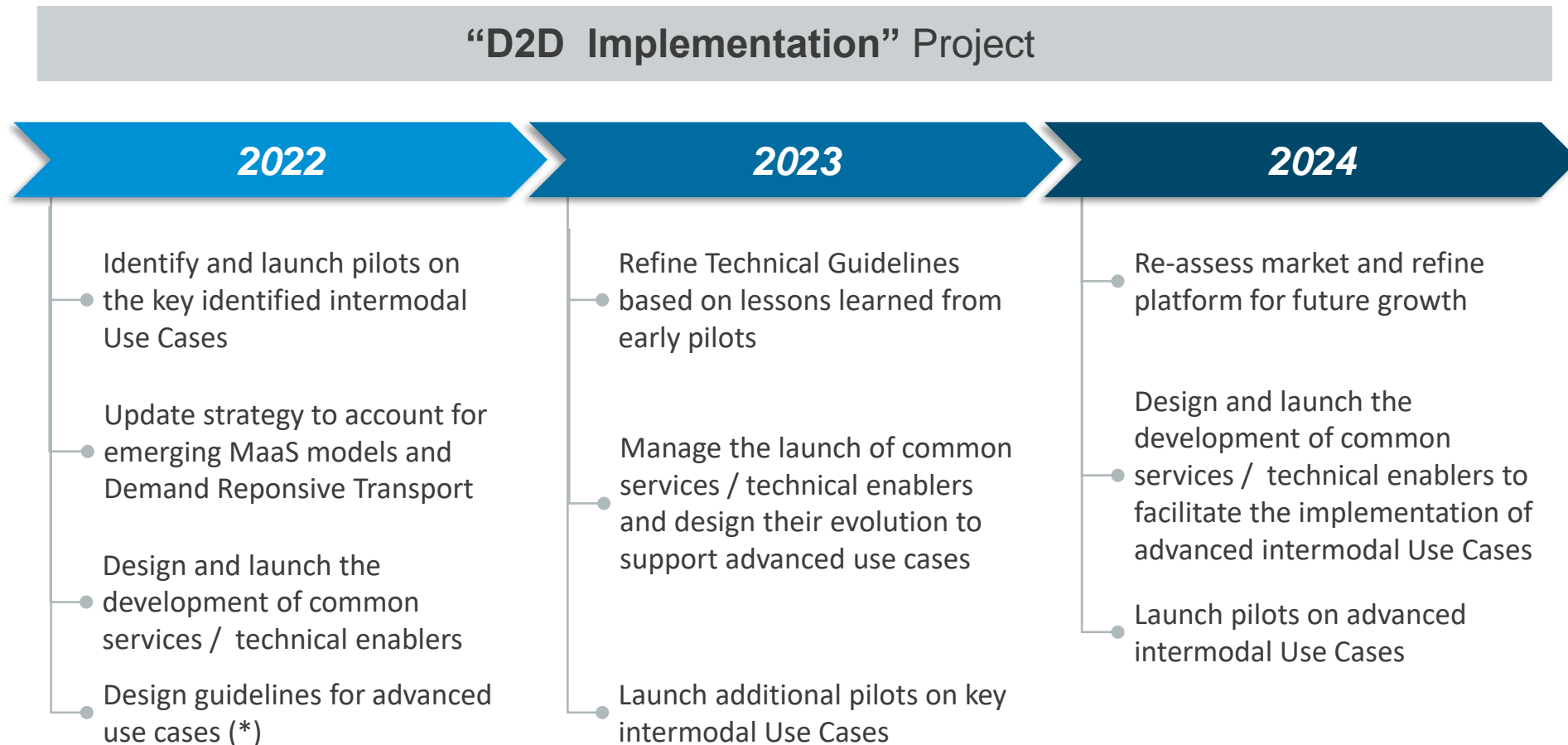
- The **Smart Ticketing Alliance** is an association that promotes and facilitates cooperation between national and regional Smart Ticketing schemes to establish interoperable Smart Ticketing in Europe and elsewhere.
- **Aachener Verkehrsverbund (AVV)**, in charge of planning public transport services in the Aachen area, is developing the **easyConnect project**, aimed at implementing a cross-border ID-based check-in/be-out system

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- The project envisages the usage of an interoperable ID-barcode to be issued on mobile phones
 - The system will first be tested on the cross-border train corridor between Aachen and Maastricht in 2021 and in a second step on the corridor between Cologne and Maastricht in 2022
 - The easyConnect project is a follow-on to the EU-funded European Travellers Club project, which interconnected the AFC systems between Aachen and Maastricht
 - Lessons learned were that users want to use their smartphone and access a wide range of tariffs
 - easyConnect has fully embraced the account-based ticketing vision and is fully aligned with the D2D vision



D2D Implementation – Proposed project for 2022-2024

The “D2D Implementation” project aims at continuing the work of D2D and at collecting benefits through the implementation of pilots and of common technical services



(*) Advanced Use Cases include Day of travel and customer care, Revenue apportionment and settlement, Support of emerging MaaS models and Demand Responsive Transport service, PRMs, Groups

Thank you for your kind attention

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