

What could future air-rail multimodal mobility look like?

Insights from the Modus project

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Structure of the presentation

- 1. The Modus project**
- 2. Understanding the traveller**
- 3. Future multimodal scenarios 2040+**
- 4. Outlook and recommendations**

1. The Modus project

- The project is funded within the scope of **EU-H2020-SESAR** programme on the **role of ATM in intermodal transport**.
- The overall performance of the (future) European transport system will strongly depend on the **alignment and optimization of multimodal transport**.
- Modus contribution (<https://modus-project.eu/>):
 - Modus develops a modelling approach for the assessment of seamless door-to-door multimodality and passenger experience in Europe.
 - Modelling diverse passengers' modal choice decisions and the impact on capacities, predictability and the environment.

1. The Modus project

Objectives:

- Exploring the future landscape of air-rail multimodal travel, under a range of future scenarios and use cases.
- Assessment of seamless door-to-door multimodality and distinct passenger experience in Europe.
- Evaluate the impact of an improved, joint air-rail transport system on frequencies between various city pairs.



Call: ATM Role in Intermodal Transport (H2020-SESAR-ER4-10-2019)

Grant no. 891166

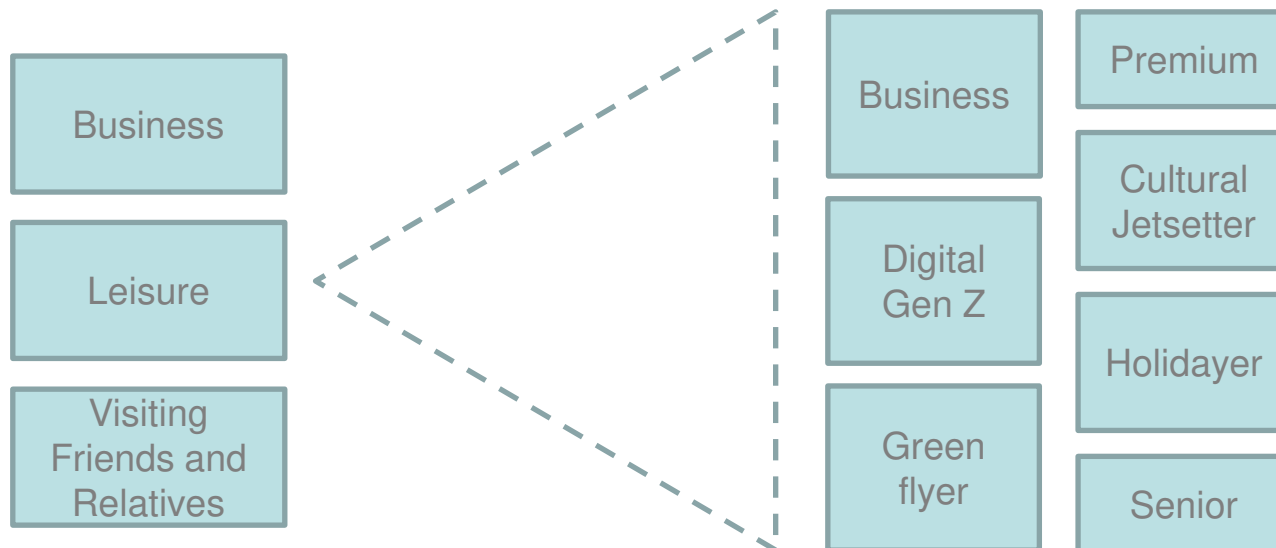
Duration: June 2020 – November 2022



2. Understanding the traveller

Diverse traveller perspective:

- A differentiated approach towards trip purpose, price elasticities, value of time or environmental awareness is required by considering **more distinct traveller** groups.



2. Understanding the passenger

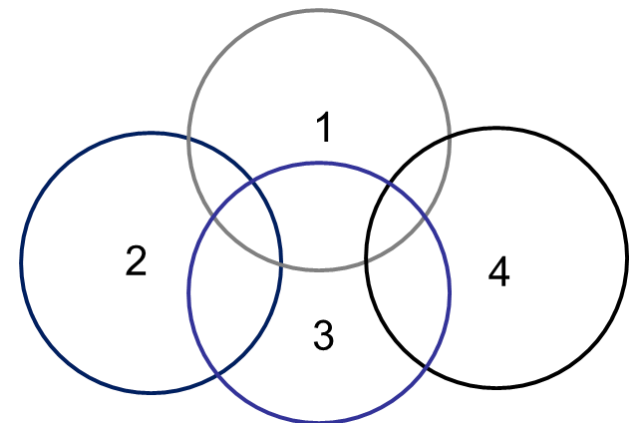
Modal choice factors influencing travellers' travel decisions:

- Travel time
- Offered frequency
- Ticket price
- Quality of service and comfort
- Environmental footprint of transport mode

→ Moving towards a seamless, hassle-free multimodal door-to-door journey

3. Future multimodal scenarios 2040+

- Derived from **European high-level mobility objectives**, including:
 - Existing scenario studies and strategic mobility agendas; expert workshops including the Modus consortium and the Modus industry board, which contain both railway and aviation experts.
 - Focus on particular aspects envisaged for the future, and that have the potential to significantly change the transport system
- **Four scenarios**, not mutually exclusive
 - Pre-pandemic recovery (baseline)
 - European short-haul shift
 - Growth with strong technological support
 - Decentralised, remote and digital



3. Future multimodal scenarios 2040+

Combination of different multimodal development pathways across Europe:



Scenario 1: Pre-pandemic recovery

- Air and rail network structures remain similar to pre-COVID-19
- Implementation of innovative technologies facilitates the reduction of emissions in air transport



Scenario 2: European short-haul shift

- High share of short-haul air traffic replaced by air-rail cooperation
- High quality of transport network with high-speed rail services on short-haul distances



Scenario 3: Growth with strong technological support

- Higher growth rates of the transport sector until 2040 than the baseline
- Uptake of technological innovations to both reduce emissions and alleviate capacity shortages in air transport



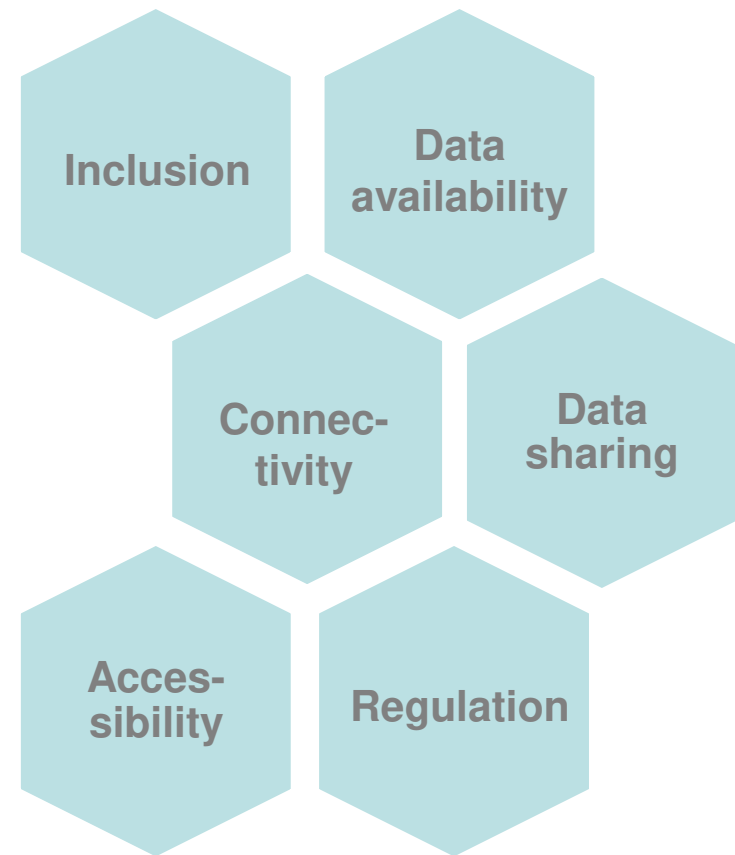
Scenario 4: Decentralised, remote and digital mobility

- Population more dispersed across rural and remote regions with increased options for remote working
- More decentralised air transport network, additional railway stations
- Technological innovations for regional aircraft

4. Outlook and recommendations

Towards future air-rail multimodal mobility:

- Enabling a **seamless passenger journey**, including multiple providers and information
- Meeting environmental goals and facilitating a **sustainable transport system**
- Ensuring **connectivity and accessibility of (remote) regions**
- Identifying and developing **new business models** for a multimodal transport system



Thank you!

If you have any questions or like to learn more about Modus, contact us via:

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- Modus Twitter: @Modus_project
- Modus LinkedIn: <https://www.linkedin.com/company/moduseuproject/>
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