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Hubs and interchanges: how to generate quality by governance?

Yo KAMINAGAi
Expert in urban mobility design, UITP Mobility Hubs platform chairperson, former RATP Head of Design
yo.kaminagai@gmail.com - @yok75

Amsterdam Central station hub

01

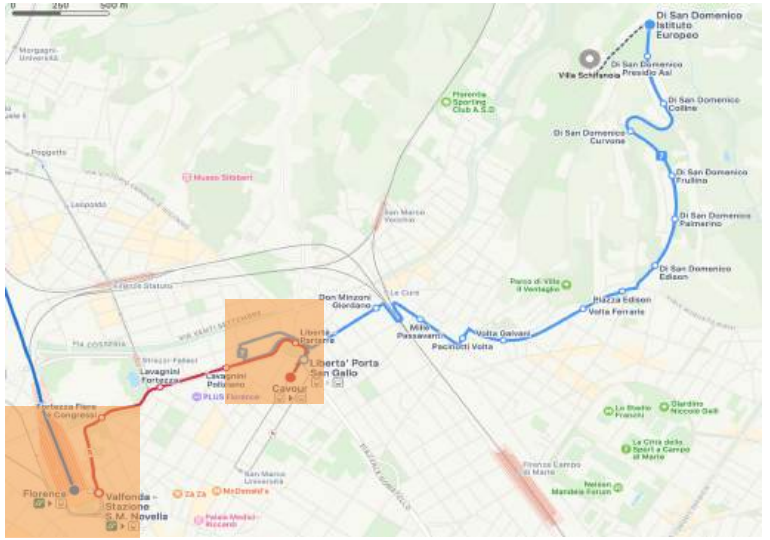
GAPS BETWEEN SERVICE PRODUCTION AND PASSENGERS' EXPECTATIONS

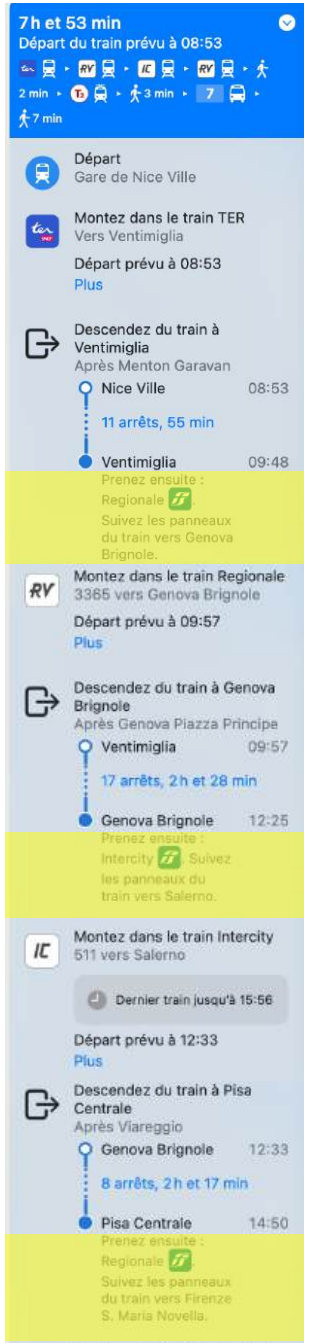
Nice → Florence by train, tram and bus

On the maps the transport lines are precise, and passengers can relax while vehicles are moving.

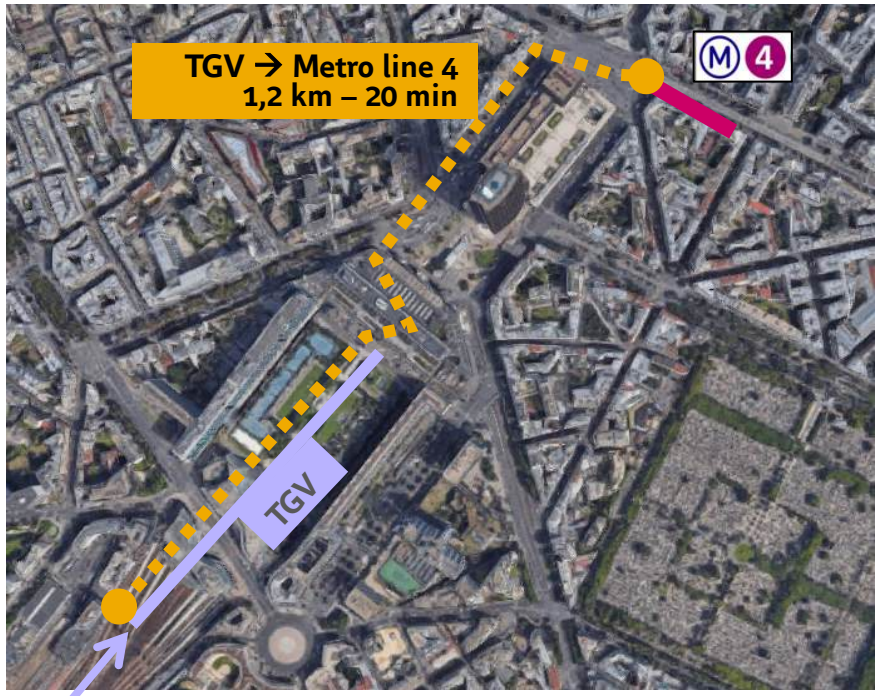
In the stations and especially in multimodal hubs, they have to deploy physical and cognitive efforts to cross the places and reach the departing vehicles.

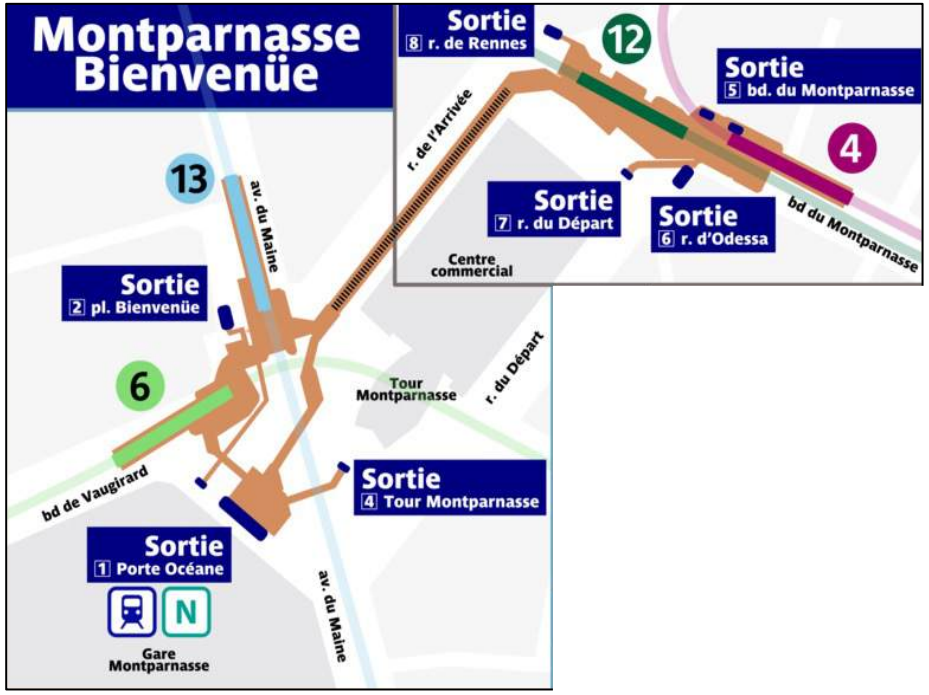
These sequences correspond to peaks of uncertainty (and therefore potential stress).





Interchanges: the "Achilles' heels" of multimodal mobility?





Distance + Height differences + Configurations + Discontinuity + …

At every scale, interchange hubs can accumulate "painpoints" for customers (in service design terminology). They may become deterrent to public transport for travelers expecting smooth door-to-door journeys.

PT is historically multimodal, with multi-operated hubs

London – Morden in 1934 Underground – Bus interchange

At the opening of the Northern Line, its southern terminus was surrounded by feeder bus lines

Sydney – Central in 1954 – Main & suburban lines; local trams and buses

Central means core, hub, heart:
from where all lines radiate, and where passengers switch from mode to mode

Hong-Kong Tsim Sha Tsui in 1950 KCR – Buses – Star Ferry

Before the creation of MTR, the southern extremity of Kowloon was the core of intermodal passages in Hong Kong

The various transport modes, articulated on hubs, enable comprehensive mobility across a territory and optimize the system's efficiency by offering transport levels tailored to different lines. However, the modes can operate in silos, hindering coherence and continuity.

Naturally multimodal travelers vs. mode-based production

The street in the city

How the streets are planned and managed

How the streets are perceived par people

© Jan Gehl & Philippe Gasser

Multimodal hubs

Travelers

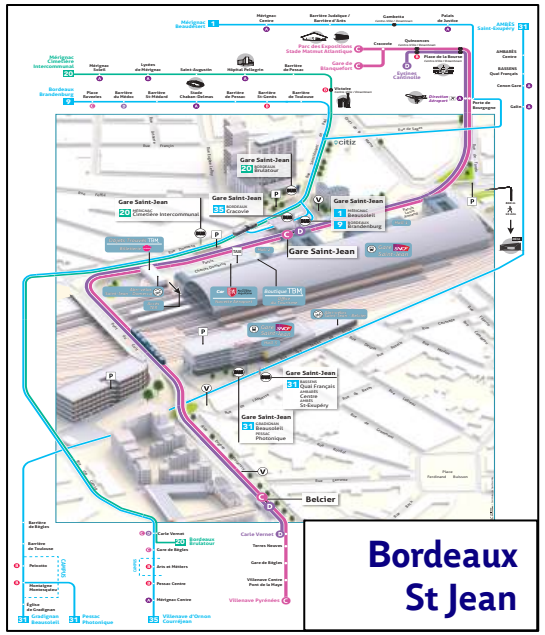
- Travelers are multimodal by definition, in long-distance as in local or regional trips
- Transfers are often unpopular
- Passengers therefore expect a high-quality intermodality

Transport

- A system organised by modes et by actors (operators or authorities)
- Infrastructure: spaces are added side by side, the domains are juxtaposed
- Operation & maintenance: each operator manages its own domain
- Competition between operators can increase service fragmentation

4 areas needed to deliver good intermodality

1. Hubs and interchanges



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Facilitate intermodal transfers in places with high urban value

2. Networks

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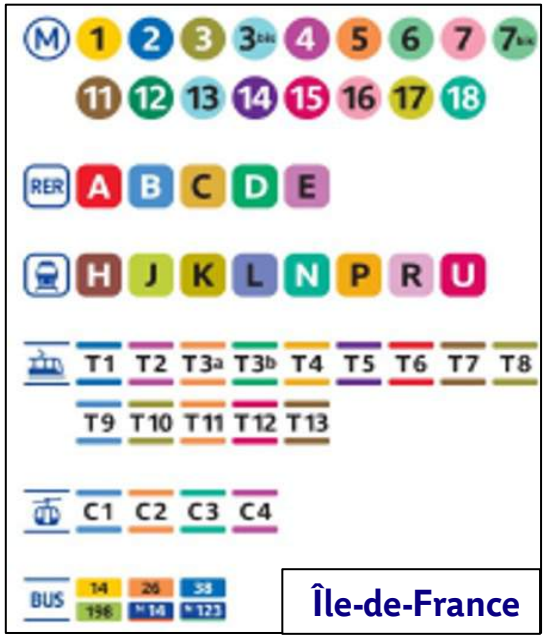
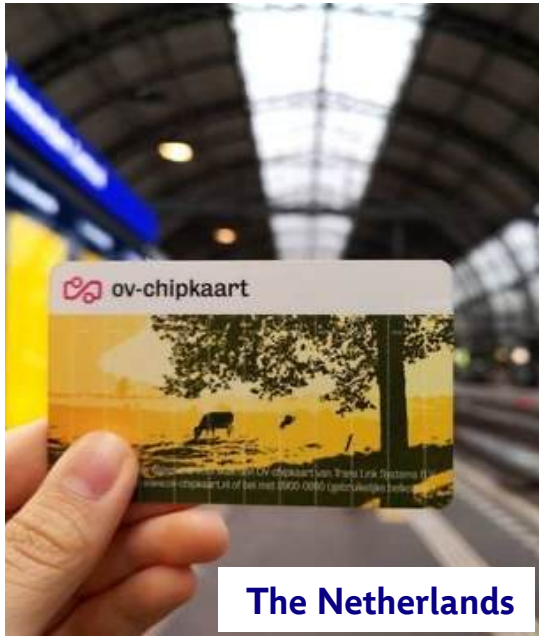
Select appropriate modes (including active modes) to create a coherent overall network

3. Travel information



Design and implement unified signage systems across all media.

4. Tariffs and ticketing

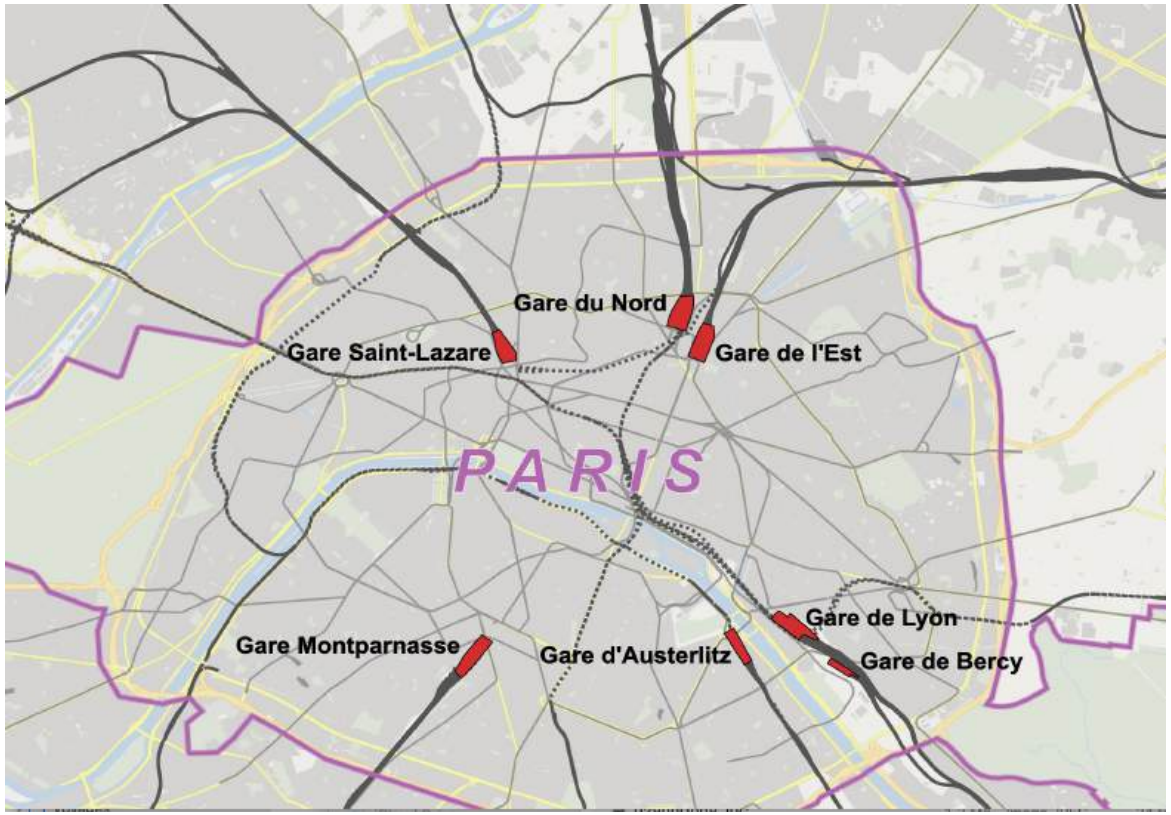


Allow passengers to pay with minimal obstacles between modes

Common objective:
Minimize physical and cognitive effort for travelers at multimodal interfaces by ensuring continuity, coherence, and quality

Multimodal hubs and long distance transport

The Paris example: the only EU capital city not crossable by train



Design

- Local transport infrastructures under the long-distance pressure (in sizing, safety, comfort, vertical transportation, …)
- Bus stations often taken as adjustment variable in the public spaces

Governance

- Local and regional transport and long distance transport refer to different authorities
- Difficult to anticipate local projects financing without clear official policies about high-speed rail prospects
- Local authorities not fully integrated in the mobility governance (they often manage the gaps)

02

FIVE AXIS TO CREATE GOOD HUBS AND SUSTAIN LONG-LASTING QUALITY

Axis #1: declare the issue strategic

A urban hubs strategy, as a fundamental policy making the TEN-T concept viable

Intermodality in hubs: to consider as an explicit service, based on specific skills

Madrid Transport Authority Law

1985

Motivations of the law:

Each mode's rationality leads to an unsatisfactory overall offer

Connections between modes must become a priority


BOE

LEGISLACIÓN CONSOLIDADA

Ley 5/1985, de 16 de mayo, de creación del Consorcio Regional de Transportes Públicos Regulares de Madrid.

Comunidad de Madrid
«BOCM» núm. 124, de 27 de mayo de 1985
«BOE» núm. 250, de 18 de octubre de 1985
Referencia: BOE-A-1985-21589

Emmenbrücke declaration

2021

Official declaration involving all institutional levels (Confederation, Cantons, Cities, Municipalities)

Commitment to improve multimodal interfaces across the country

https://youtu.be/yM4iE5f18bA?si=31hh4Lsz7olovG9X

National Mobility Plan 2035

2025

Recent interview of the Minister of Mobility (in a country where PT is already free of charge):

"Let's change the paradigm! Plan the movement of people rather than vehicles.
One piece of the puzzle is missing: improving interchange hubs."


AU LUXEMBOURG

«Planifier le déplacement des gens avant celui des véhicules»

L' essentiel

Pour les autorités, la mobilité est aussi une question d'anticipation. Tel est le propos du Plan National Mobilité 2035, qui instaure un changement de paradigme.

Axis #2: create cross-sector governance

A global specific organisation for a project made of sub-projects


Renens: hub and Rayon vert footbridge

- Railway station reconstruction, bus station, tram and metro station, public spaces and pedestrian bridge
- 15 years to prepare, 5 years to build
- Stable financing agreement for 20 years, coordination by one project leader attached to the footbridge project, in interface with all the other sub-projects

2 construction sites for every place: the station and its precinct


La Courneuve-Six Routes: the station and its surroundings

- The SGP (Société des Grands Projets), project owner of the project, has published guidelines (“Places du Grand Paris“)
- The local authority (Plaine Commune) manages the precinct project
- Both projects (station and precinct) should be delivered simultaneously

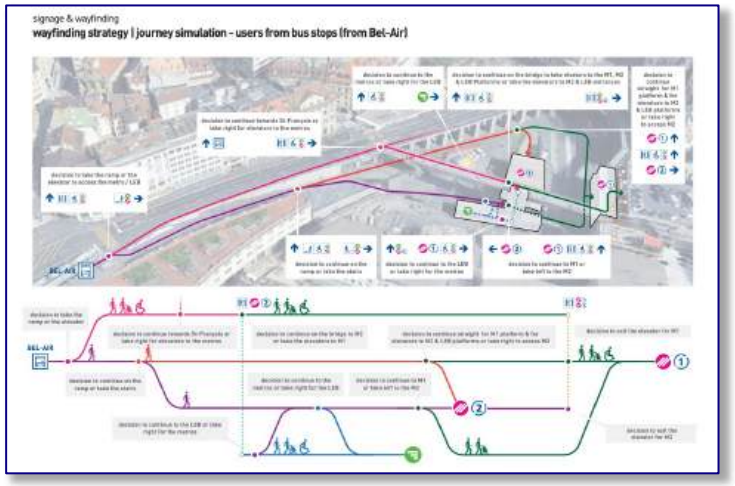
Condition for funding a project: having created a specific governance structure


Utrecht Centraal transformation

- Government funding required creation of a specific cross-stakeholder governance structure including the Infrastructure manager, the Railway operator, the Urban transit authority and operator, the city authorities
- A global vision is designed, allowing the different parts to be realized successively

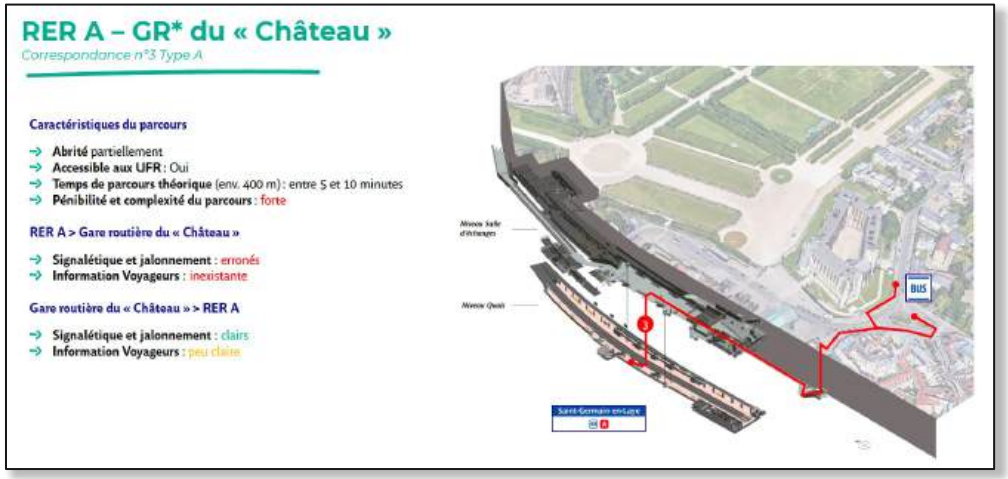
Axis #3: address the node function through wayfinding

Lausanne-Flon hub



© Jug Cerovic pour Transports de Lausanne

St Germain-en-Laye (Ile-de-France) hub



© RATP

Choose the right perimeter for each hub

Include transport, urban issues and services, …

…

Apply the right analytical frameworks

Use passengers studies, learn from past projects, …

Conduct collective exploratory trips

To collect all the points of view

To build team cohesion

Produce a Customer Experience Map

To integrate all perspectives and prioritize actions

1. Implement quick low-cost emergency improvements

Signage, lighting, rationalization of street furniture and commercial signage, …

2. Specify medium/long term redesign projects

Public space redesign, accessibility program, new accesses buildings, …

3. Define the long-term vision

Learn from the existing situation for future projects

Axis #4: address the place function through placemaking

The American definition for placemaking can be inspiring: https://www.pps.org/article/grplacefeat

© Projects for public spaces

Sydney-Chatswood (Australia): a multimodal hub integrated to a shopping mall

- The interchange between the first Metro line, the train (a regional mass transit rail system) and the buses is in the center of the Chatswood district
- Passengers cross the shopping complex built in complete continuity with the transport areas.

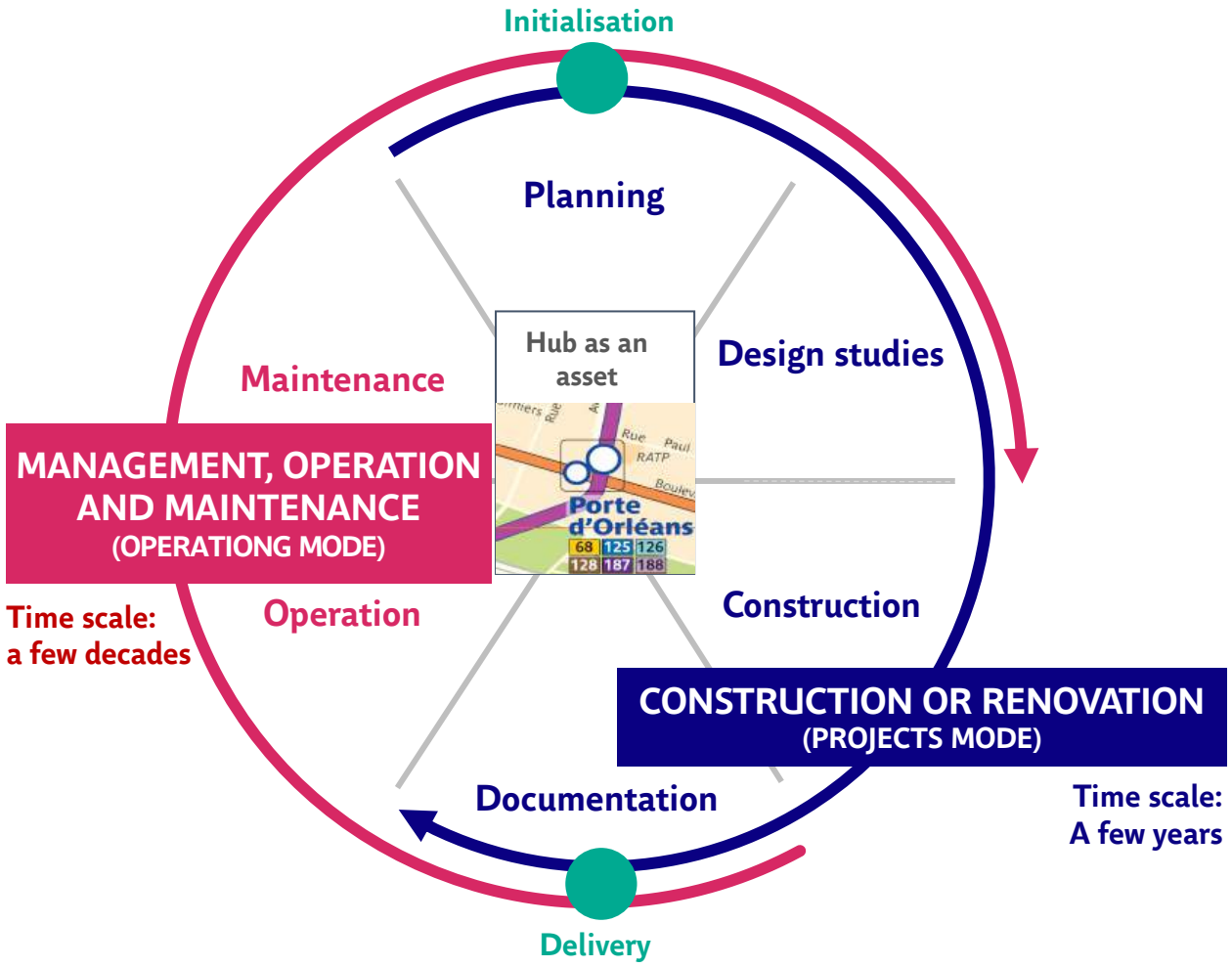
Rueil-Malmaison (Ile-de-France) : A new green terminal in the city

- he bus station serving the RER A line has been completely rebuilt by the city for the RATP and IdFM lines
- A carefully designed landscape has transformed the hub into a space with shops, food outlets, and a large bicycle garage, for improved everyday use

Dresde-Klotsche (Germany) : a local services hub

- An old, disused suburban train station is bought by a mobility consultant who transforms it into a multifunctional hub for trains, buses, and bicycles
- The public finds an organic restaurant, an organic supermarket, a bicycle repair center, and meeting spaces

Axis #5: maintain quality after project delivery



Transversal governance for projects

- Projects multi-funding principle generates transversal steering committes
- Before each sub-project owner on its domain, a global collective vision is compulsory.

The missing link: daily cross-sector management

- Coordination is needed for maintenance and cleaning, safety, signage updates, information screens accuracy and exactitude, staff competencies…
- Comparable models already exist in airports, ports, property management

03

EXAMPLES OF HUBS DEVELOPMENT PROGRAMS

Switzerland: national network of multimodal interfaces actors

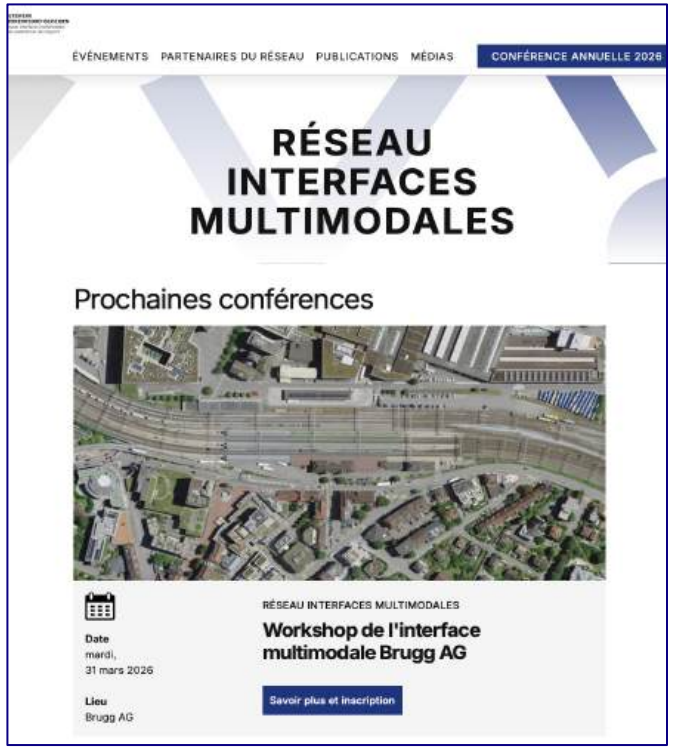
The Emmenbrücke declaration

Official declaration involving all institutional levels (Confederation, Cantons, Cities, Municipalities)

Commitment to improve multimodal interfaces across the country

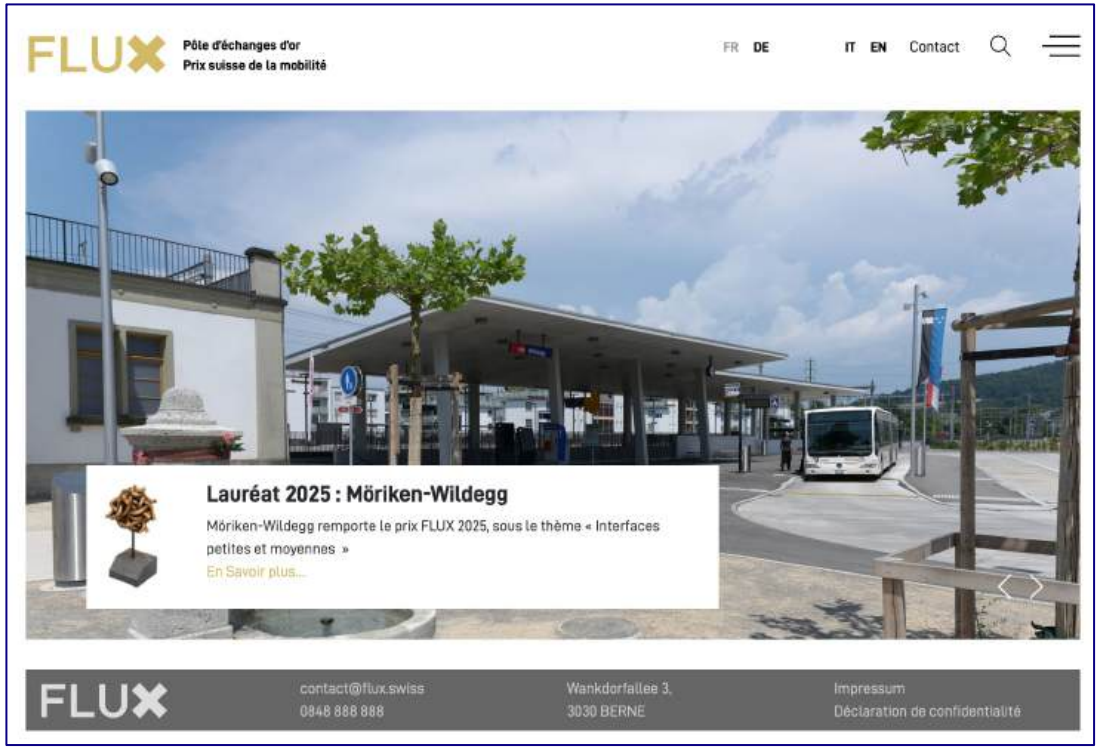
https://youtu.be/yM4iE5f18bA?si=31hh4Lsz7oIovG9X

The multimodal interfaces actors' network managed by IRAP



https://www.verkehrsdrehscheiben.ch/fr/start2

The FLUX competition rewards each year the best interchanges



https://flux.swiss/fr/prix/

Luxembourg: national “Mobility Hubs“ program

The initial vision

Recent interview of the Minister of Mobility (in a country where PT is already free of charge):

“Let’s change the paradigm! Plan the movement of people rather than vehicles. One piece of the puzzle is missing: improving interchange hubs.”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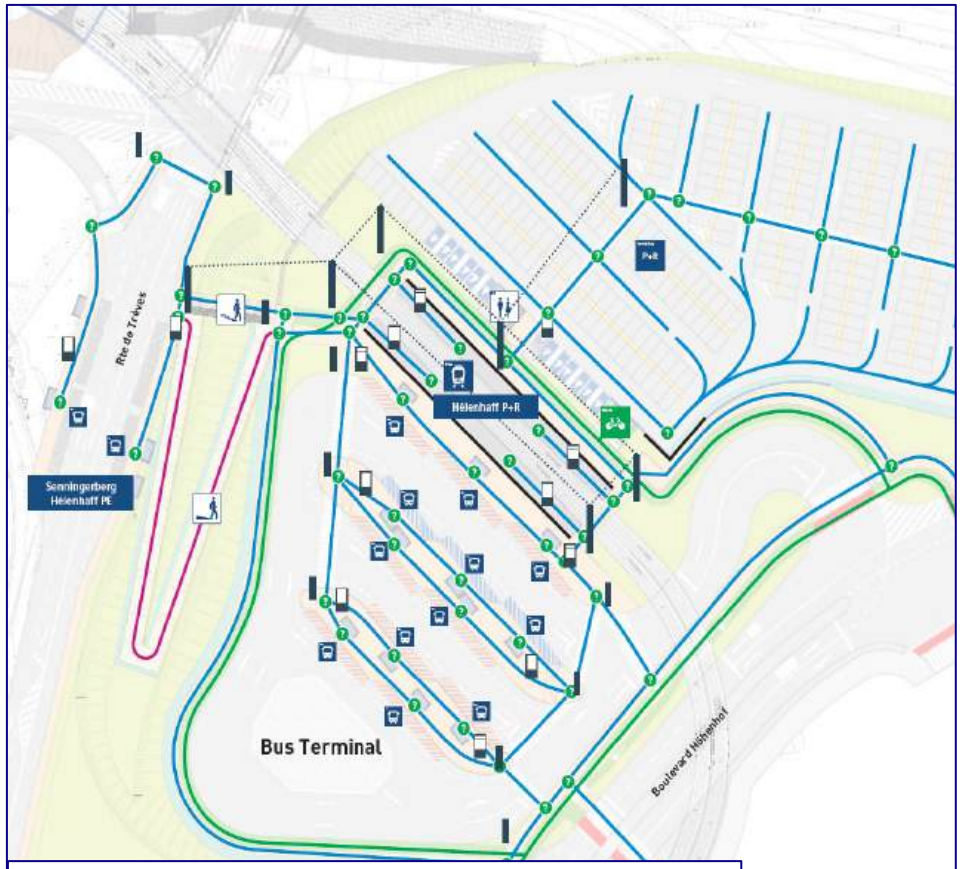
L’essentiel

Pour les autorités, la mobilité est aussi une question d’anticipation. Tel est le propos du Plan National Mobilité 2035, qui instaure un changement de paradigme.

Program and governance

- A multi-year program on existing hubs, on CFL railway stations to renovate, and on future tram stations
- A central cross-sector governance at the ministry level
- Projects governance assigned to lead projects owners, gathering all the stakeholders
- Adoption of unified national mobility signage



Global wayfinding proposal at Héienhaff

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Merci

de votre attention