



# Rail stations: Typology, level of service and design process

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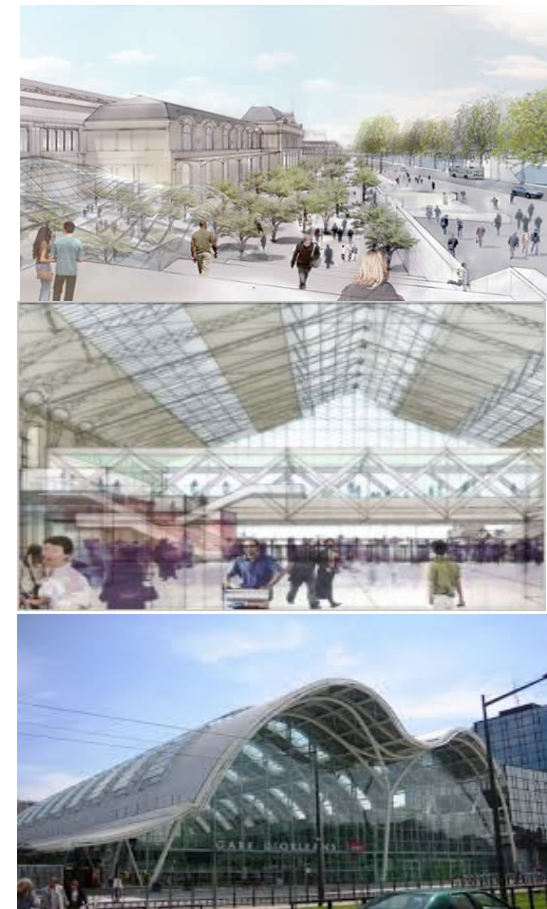


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NEW STATION - NEW CENTER - NEW URBAN LINK

# Introduction

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- Rail stations are:
  - An entry point in the City
  - A front window of the Railway world
  - A critical node for intermodality
- Rail stations crystallise the stakes of the urban and territorial development.
- A typology for Rail Stations:
  - Efficient planning and project management as complex multi-stakeholder projects
  - Link between Typology, service level and design process: Typology as a guidance.



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# Typology

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- Typology of rail stations could be based on
  - Frequentation
  - Level of service
  - Role in the transport and Urban network
- Typology based on frequentation: Passenger traffic volumes
  - Case of Rail stations in France (SNCF typology)
    - Type 1 : very large stations; > 50 000 incoming passengers/day
    - Type 2 : > 30 000 incoming passengers/day
    - Type 3 : 10 000 - 30 000 incoming passengers/day
    - Type 4 : < 10 000 incoming passengers/day



Other factors of differentiation: national, regional traffic or mixed)

# Typology

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## □ Case of Switzerland: (CFF-SBB)

4 types based on service level for the 800 stations  
Service level directly linked to the traffic volumes

- Very large stations "RAIL City" (9)
- Large stations (21),
- Medium stations (217)
- Small stations (550) – case of stops without shops and commercial activity



Geneva rail station

## □ Case of Germany (DB)

- 6 types based on traffic range: National, Regional and local with definition of clusters: (1) Very large stations, (2) long distance traffic, (3) long distance and regional traffic, (4) high regional traffic, (5) medium regional traffic and (6) small regional traffic.
- Level of service defined for each type (tailored with clusters defined by customer categories).

# Typology

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- Typology including urban/territorial criteria:
  - RFF in France introduced in his typology the links with urban and landscape patterns
    - Segmentation according to volume & nature of traffic, number & nature of shops and geographic location of stations.
    - 7 types of rail stations with this mix of criteria: 6 large Paris stations, 7 very large regional stations, 38 large regional stations, 14 HSL Stations, 135 medium regional stations, 2.600 small regional stations and 370 "franciliennes" regional stations.

- Typology used by the urban transport planners in France: case of the PDUIF

- Provide a systemic MANAGEMENT
- 3 types of stations:

Main connection hubs (43)



Rail service stations of dense urban areas (184)

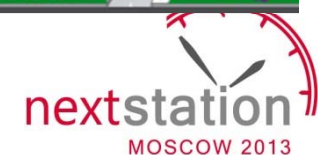


Access to the rail service from inhabited areas (218)



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# Typology

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## □ Typology for new stations, based on urban characteristics

Grand Paris Express: ~60 stations

- Central stations (city centres)
- Stations of new central areas
- Emblematic stations of the railway service
- Stations as metropolis gate (airport, HSL etc)



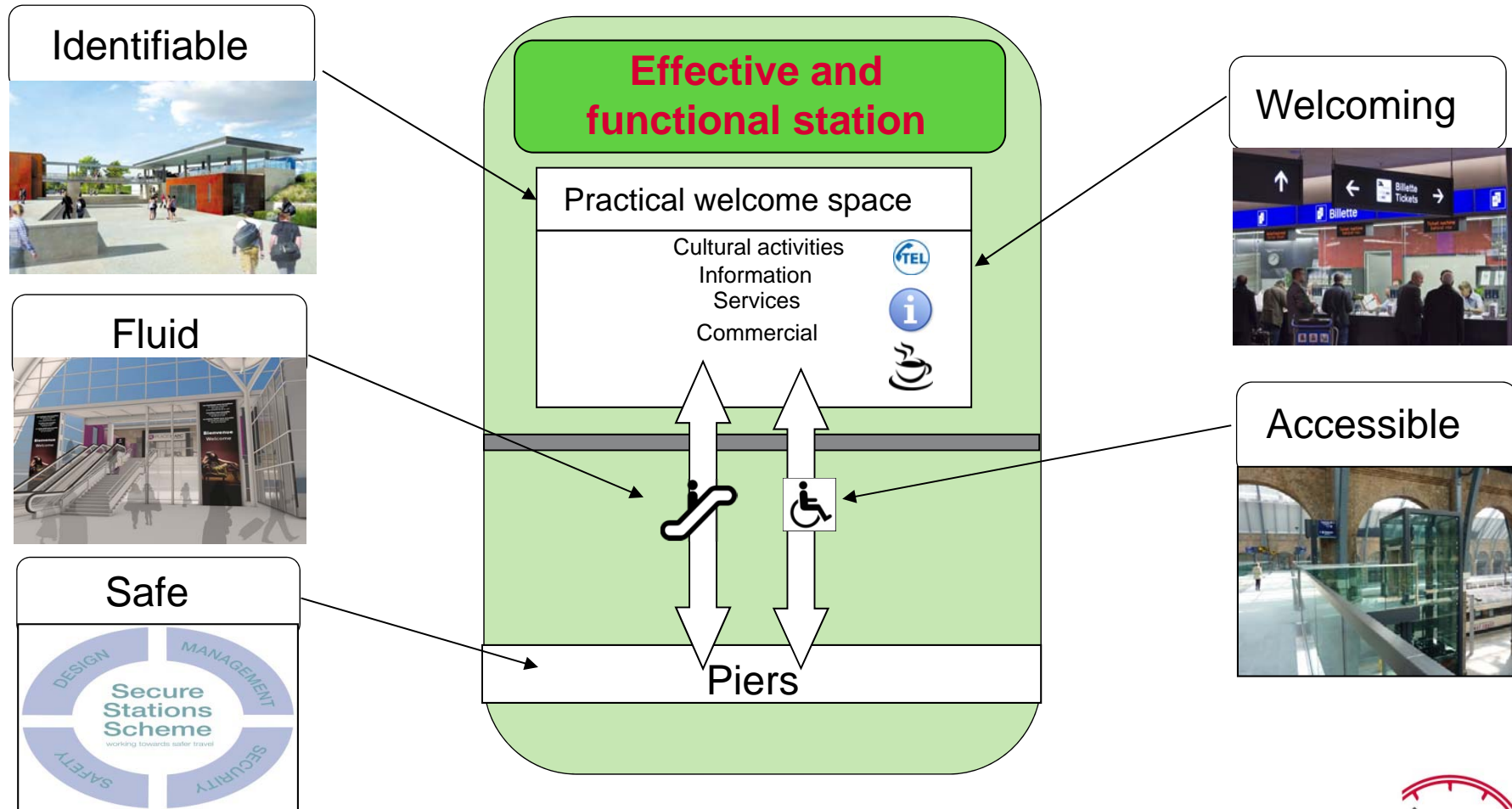
## □ Typology of stations based on services

Types proposed by urban planners for the Grand Paris Express,

- Simple rail station (1): "Effective"
- Multimodal station, connected to city or regional transport modes (2): "Connected"
- Multimodal and multi service stations; with important facilities & services inside (3): "life place"

# Level of service – Simple station (1)

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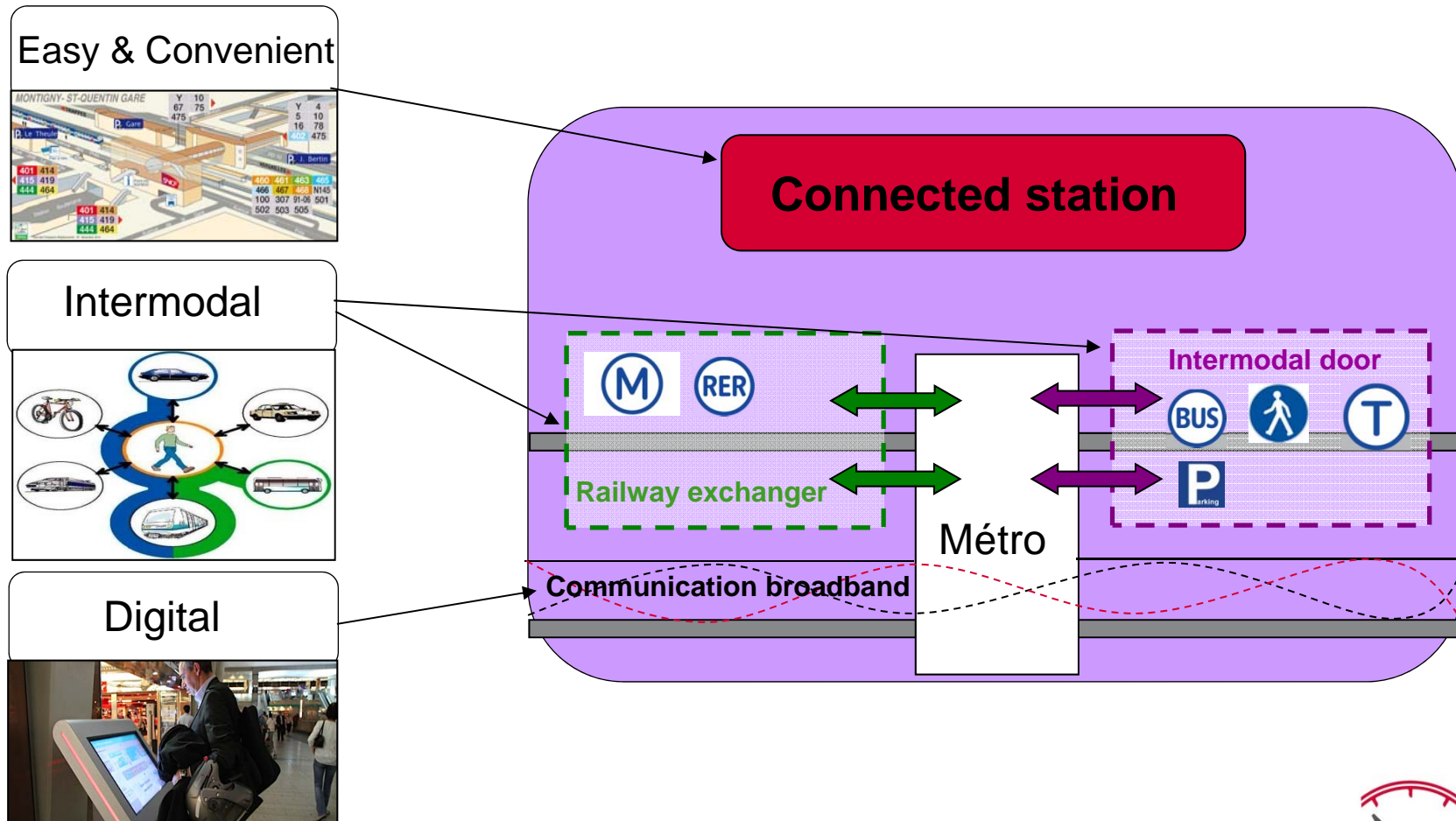
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# Level of service – Multimodal station

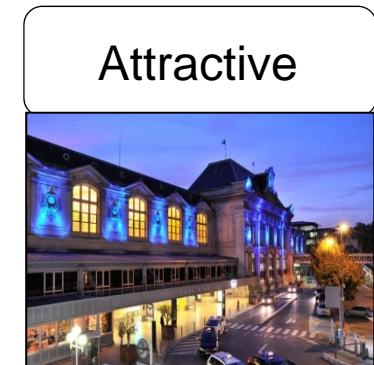
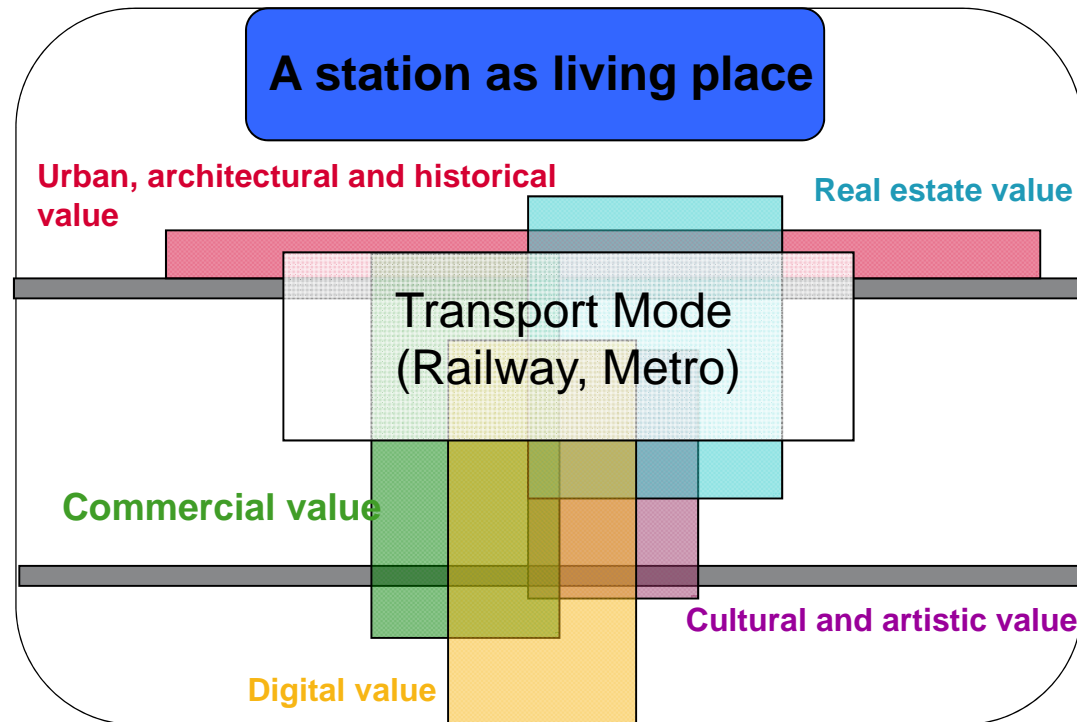
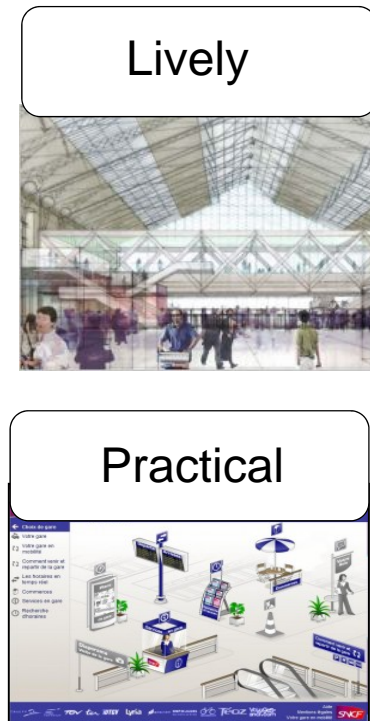
## (2)

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# Level of service – Multi-modal/-service station (3)

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# Level of service & investments

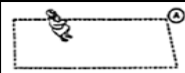
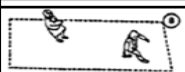

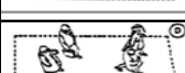
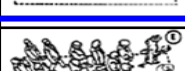

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The level of investment of Rail Stations is linked to :

- ❑ the level of service defined by the railway / station operator
- ❑ the type of station linked with the realisation methods (surface, underground etc)
- ❑ the type of functionalities and services.

Investment cost magnitude according to the level of service (in term of density in passenger/m<sup>2</sup>).

To be modulated according to the specific typologies defined.

Level of service	Density Illustration	Investment costs (index 100)
A		> 130
B		115 - 130
C		100 - 115
D		65 - 100
E		< 65
F		< 65

# Design process and project management

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- Typology and identification of functions are key for the design process and provide coherence for transport networks and urban development.
- Typology shall support a coherent vision of the stations: mixing transport, services, architectural and urban values.
- As typology is linked to the project structuration, this can help the actors to be better coordinated in the first steps of the conception (stakeholder process & financial plan according to the numerous stakes and goals).
- Rail stations are crystallizing various ambitions where typologies can support a coherent debate among the project stakeholders.

# Conclusion

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- Typology of rail stations as a tool for decision makers (infrastructure owner, operator or urban planner):
  - Helping to differentiate stations, their level of service and urban or landscape integration.
  - Providing better apprehension for project management (complexity of stakeholder involvement, political and societal issues)
  - Helping to anticipate political and financial debates through established procedures related to each type

# ...Thank you

for your kind attention

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