Multimodal Transport Planning & Geographic Information Systems

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- **About MobiGIS & LPDA**
- Multimodality keys
- MobiAnalyst
- Transport HUB Modeling
- Conclusion

LE PONT DES ARTS

(Shanghai, Hong-Kong, Paris)

Management Consulting

- Strategic planification

-Risk prevention & crisis management

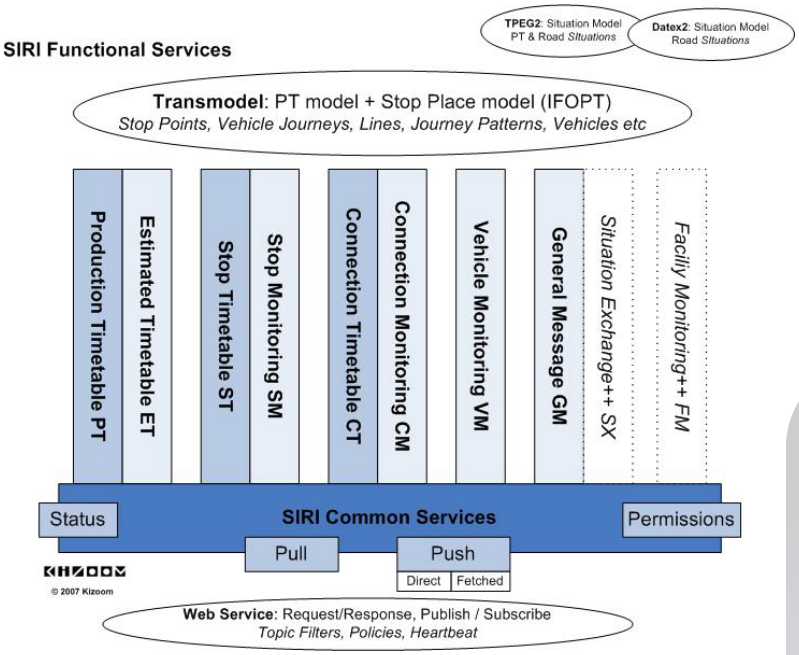
- total quality management

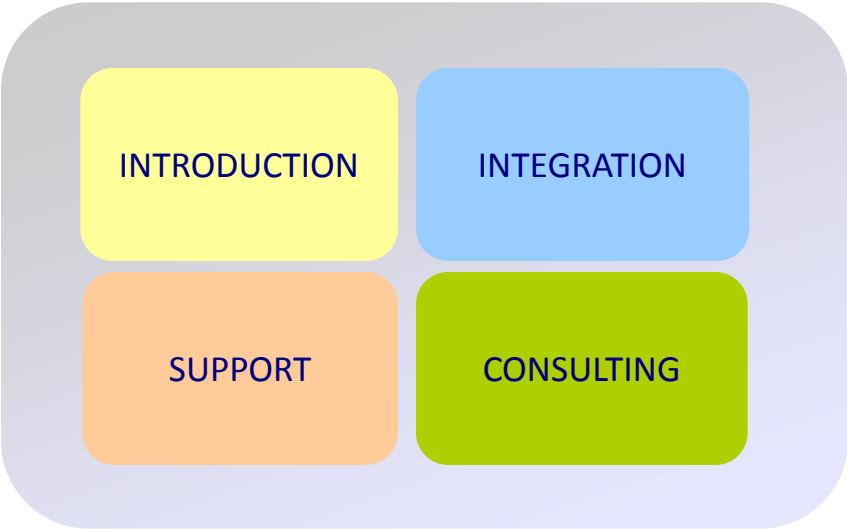
Implantation in China of innovative Companies

Infrastructures
roads
airports

Urban
transport
GIS

LPDA
Develops SIRI in China
(CEN/TS : 15531)





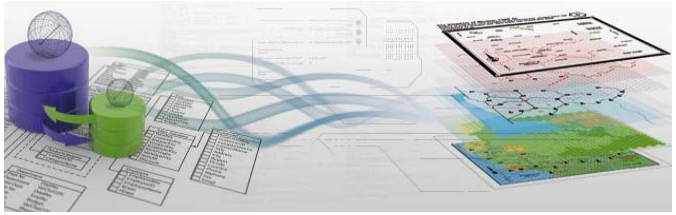
A Norm for Real-Time Communication in the field of Urban Transportation

MobiGIS: Innovative Company

- Software editor & Geographic Information Systems associated services

- Provides solutions in the field of:
  - Transport
  - Mobility
  - Risk & Crisis Management

MobiAnalyst

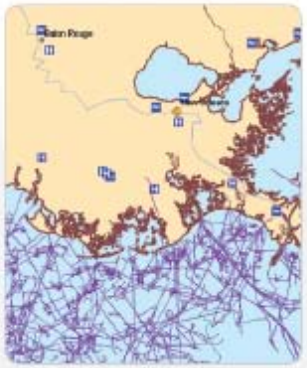


- Location: France (31 et 64) & China (Shanghai)

MobiGIS: Services & Solutions

Decision-making software

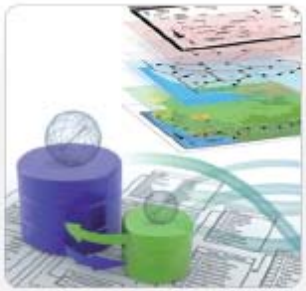
- Multimodal planning
- Urban mobility
- Fleet optimization



ArcGIS and Open Source frameworks

GIS services

- Software Engineering Consulting
- Training
- Desktop
- Server



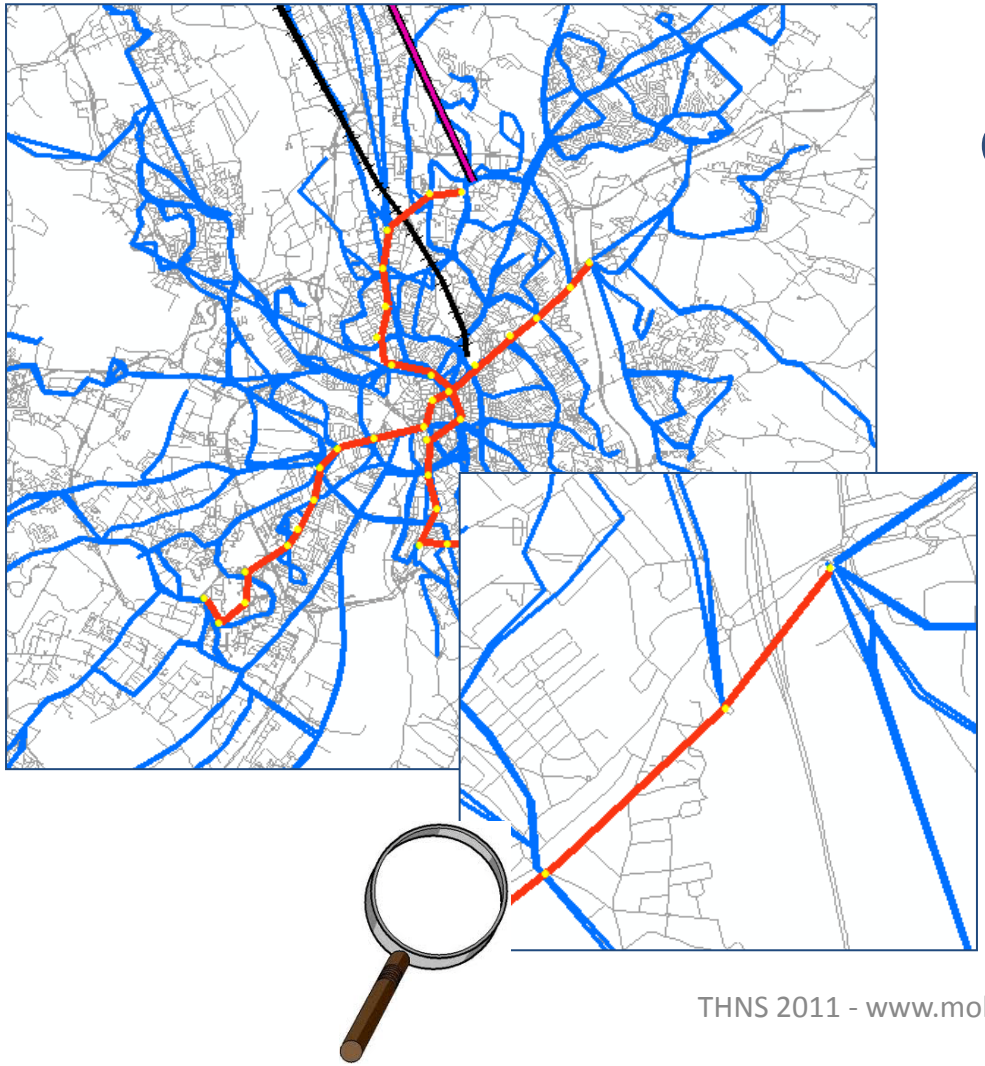
Development of web and mobile applications

R&D

- 2D/3D modeling in GIS
- Standards and data models (OGC, Inspire, Netex...)
- Multimodal route planning and indoor guidance software

- About MobiGIS & LPDA
- **Multimodality keys**
- MobiAnalyst
- Transport HUB Modeling
- Conclusion

Complementary transport networks



Optimal distribution on the urban area…

…and also at district level

Efficient Transport HUBs

- Railway stations
- Airports
- Subway stations

Transport HUBs are the core of Multimodality

Normalization of Transport Data

Potimart

La plateforme SIG transport open source

CHOUETTE

CAMERA

PUBLIC TRANSPORT STOPS EDTITING TOOLS

AFIMB

TRANSMODEL | IFOPT | NEPTUNE | SIRI | GTFS

NORMS

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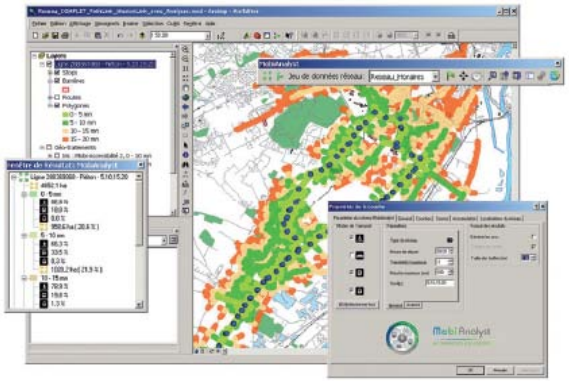
MobiAnalyst is a software for Intelligent Transport Planning

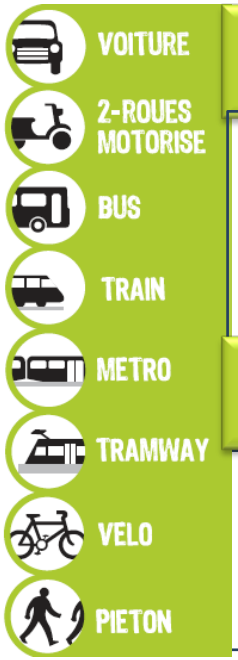


MobiAnalyst

CO2-SMART TRANSPORT

Functions:

- **Plan** and **analyse** transport offers
- **Create** scenarios and **compare** results
- **Minimize** transport costs and CO2 emissions



Normalized Roads Data:

- NAVTEQ
- TéléAtlas
- OSM
- BD Roads IGN
- BD Addresses IGN

Normalized Transport Data:

- GTFS
- Trident-CHOUETTE
- HUB

Complementary Geographic Data

- POI (hospitals, schools...)
- Socio-économic (INSEE)
- Study results (commuting households ...)
- Ticketing

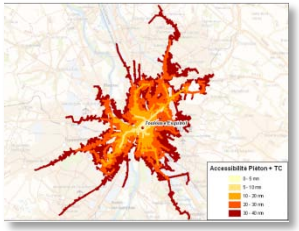
Data Wizard

- Select Roads Data
- Select PT Data
- Multimodal Network settings
- Multimodal network Generation

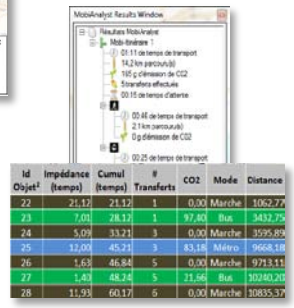
GIS integrated Man Machine Interface

Network Visualization

Analyses



Exploitation



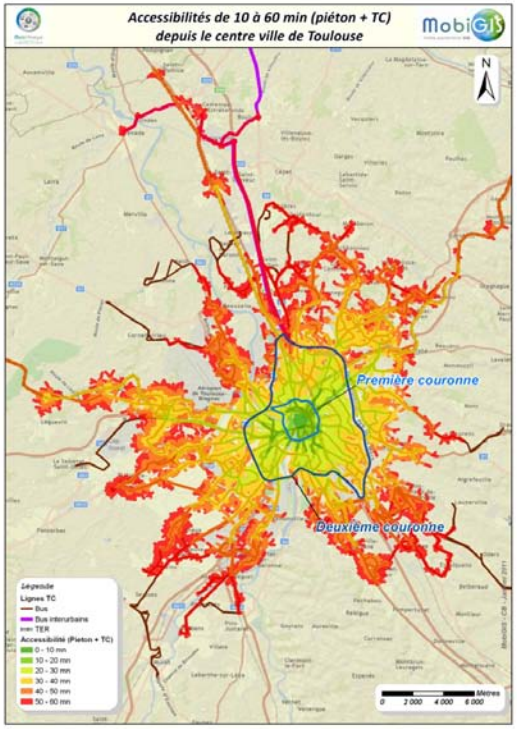
Analyse Territorial Accessibility

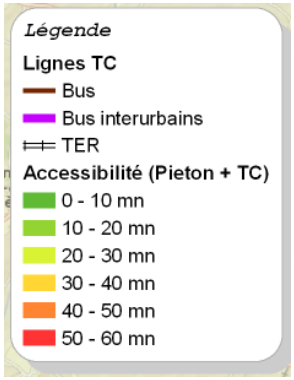
What is the coverage area of the transport network, depending of the modes, the time of the day ?

Which areas are not covered by the transport network ?

What are the strength and lack of transport offer?

What are the accessible services?



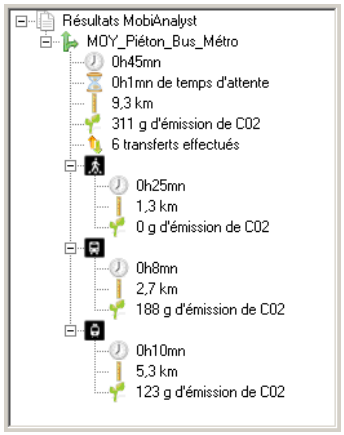


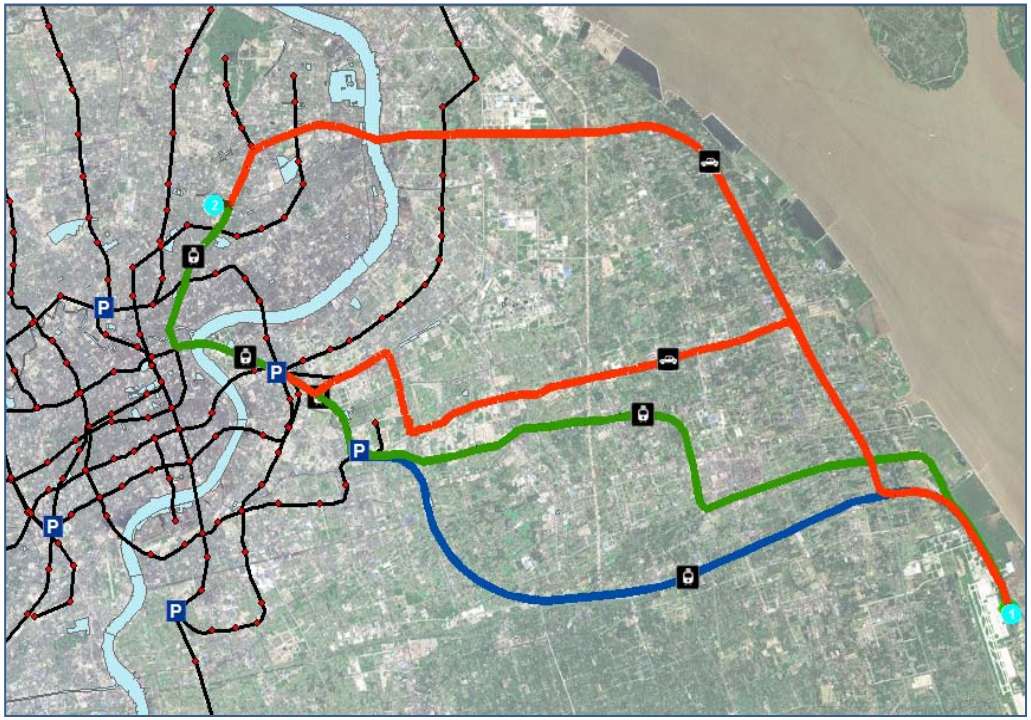
Assessment & Comparison of Routes

Itinerary Comparison

1. Maglev + Subway + Pedestrian
2. Pedestrian + Subway
3. Car
4. Car + Subway (Park & Ride) + Pedestrian

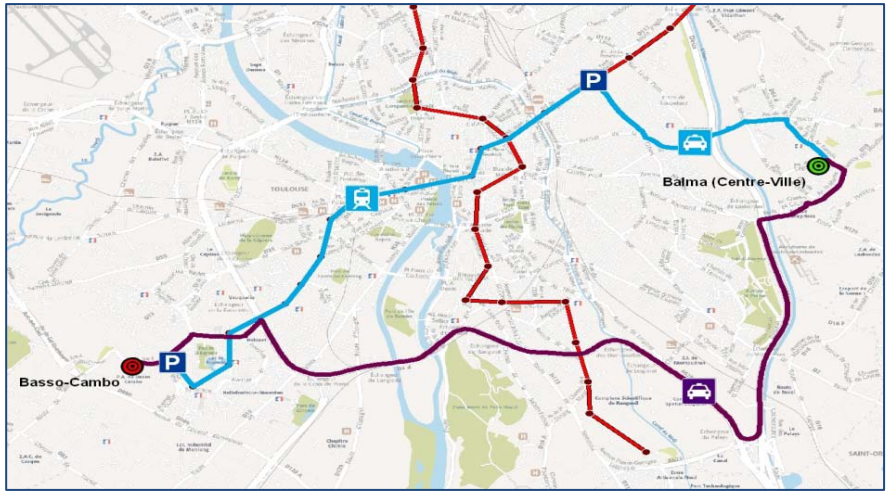
Generation of Performance Indicators



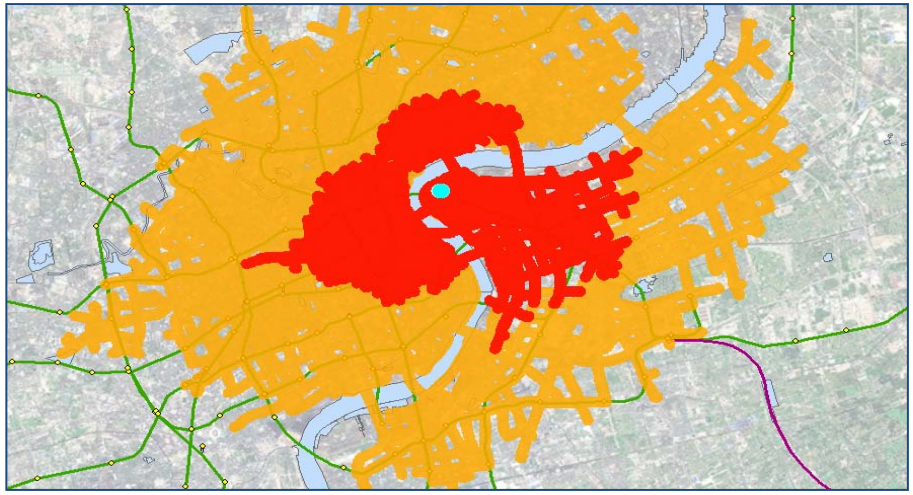


Example of Route calculation from Shanghai Pu Dong airport to Tong Ji University

Compare Accessibility during times of day

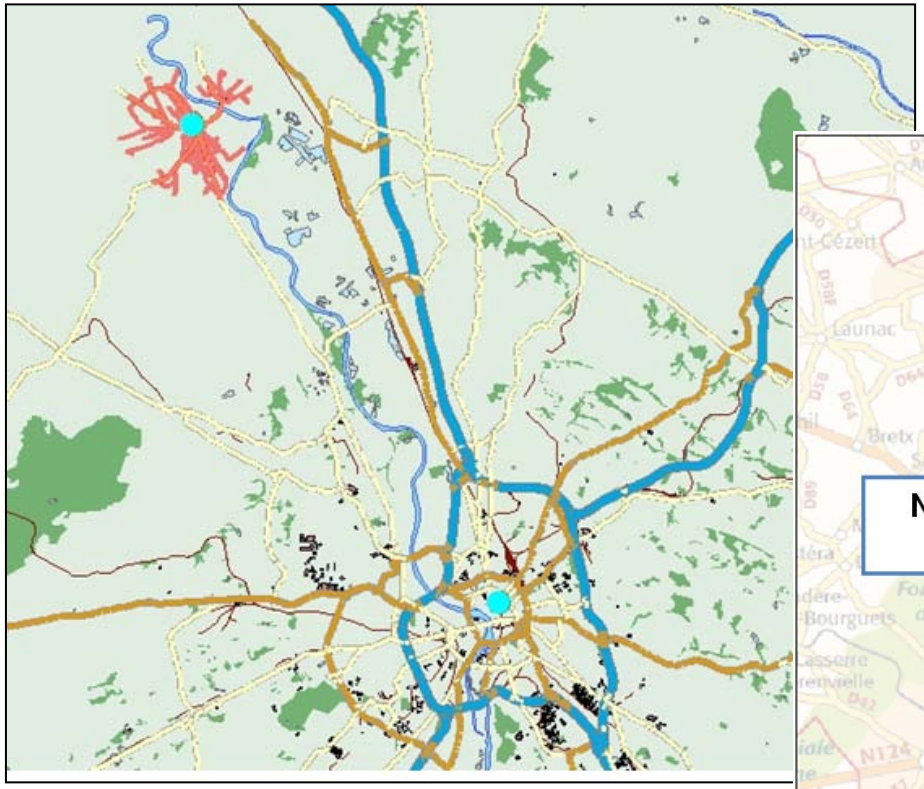


Two different routes based on traffic conditions



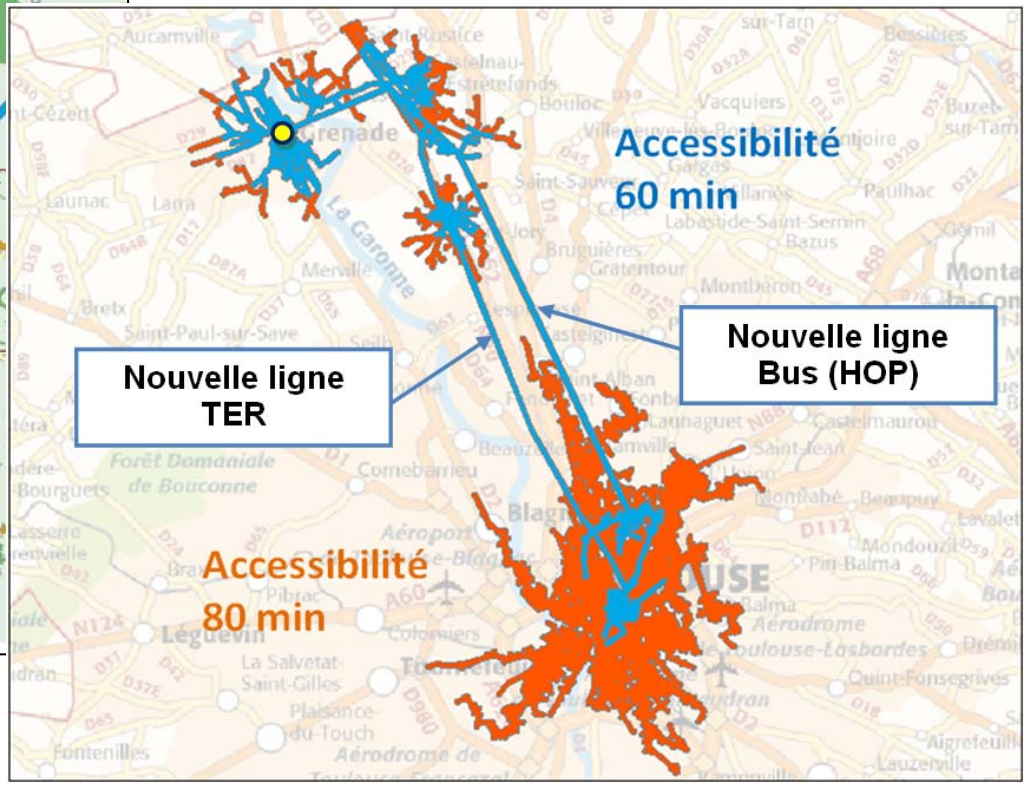
Area accessible from the Pearl Tower by car in 25 minutes during rush and off-peaks hours

Evaluate current offer - Propose new solutions

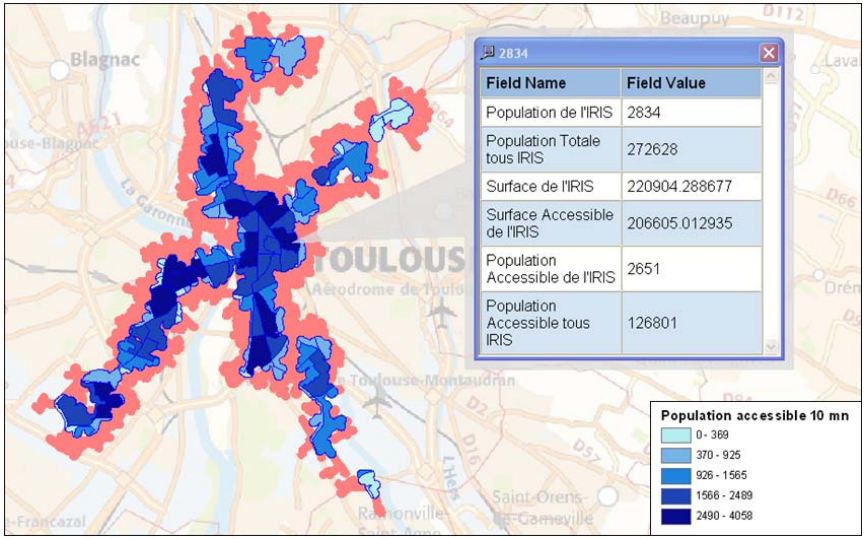


Accessibility before

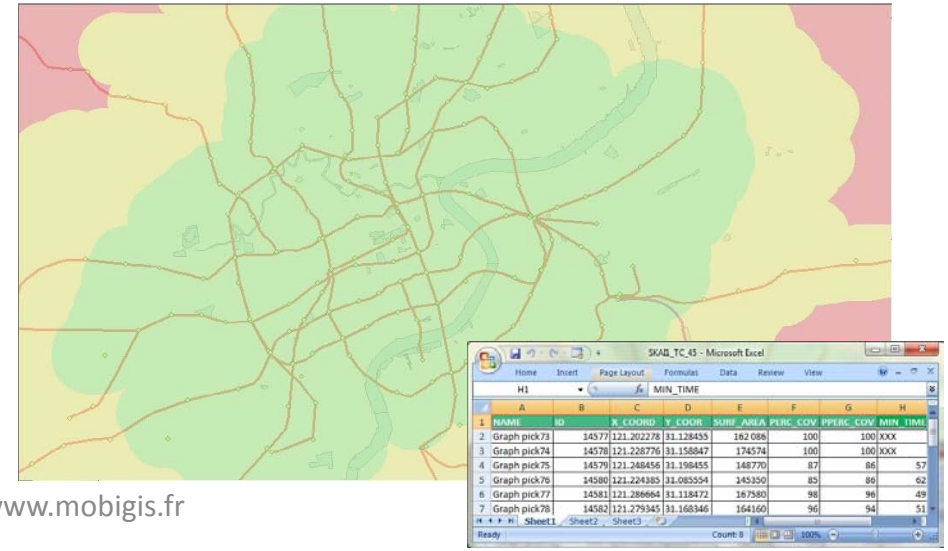
Accessibility after



Specific Indicators Computation



- **Socio demographic analyses**



- **Key Indicators for Accessibility Monitoring**
- **CO2 Emissions of the whole transport network during one day**

MobiAnalyst, a complete offer

- Documentation
- Tutorials
- Technical Support
- Maintenance

MobiAnalyst

CO2-SMART TRANSPORT

- Training
- Specific Developments
- Data Modeling

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IFOPT

Transport HUBs more and more complex, with more and more frequentation.

- Difficulties to assess their efficiency

IFOPT norm developed in order to standardize Transport HUB representation in Transport Applications

Methodology

Data

PT Data
- Bus Stops
- Entrances
- Paths
- Platforms
- Stairways
- Elevators
- Escalators

Environment Data
- Streets
- Buildings 2D/3D
- Natural areas
- Station Maps

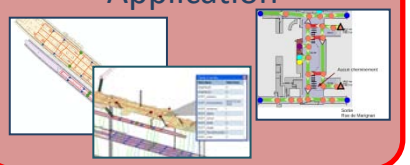
Modeling

IFOPT

IFOPT Base
- Stop Place Entrance
- Pathlinks
- Quay
- Boarding Position
- etc.

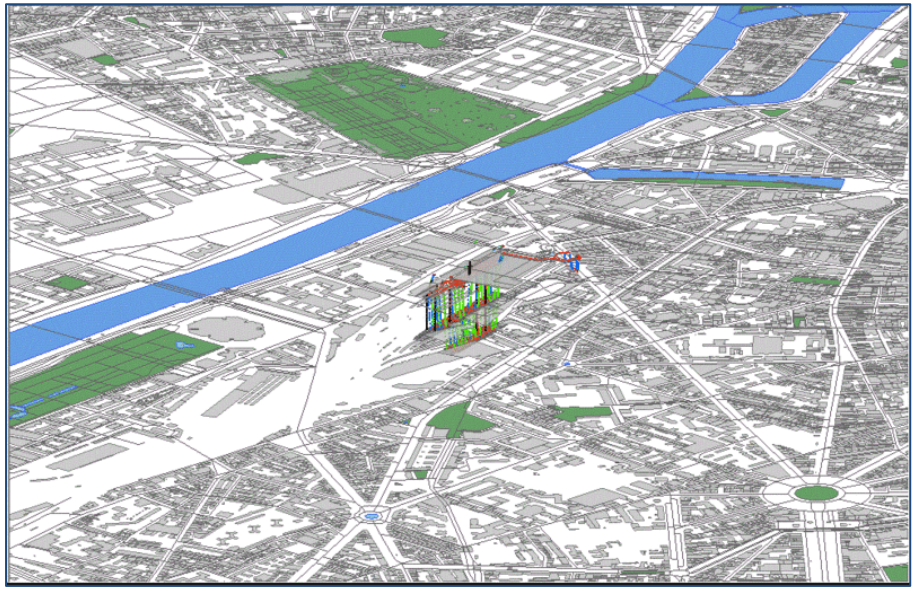
Tools (GIS, web application...)

2D, 3D GIS, WEB Application

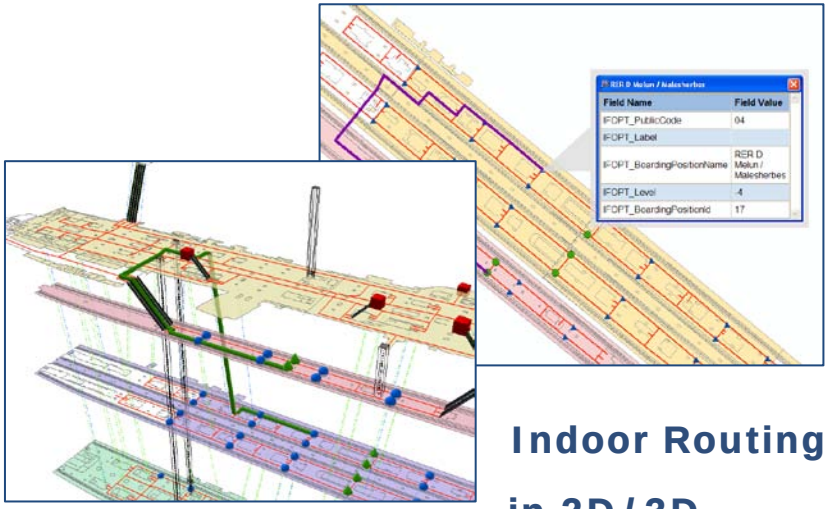


Use Cases
- HUB Representation
- Pedestrian guidance
- Accessibility for disabled people
- Elements search around POI
- Integration in a city PT model

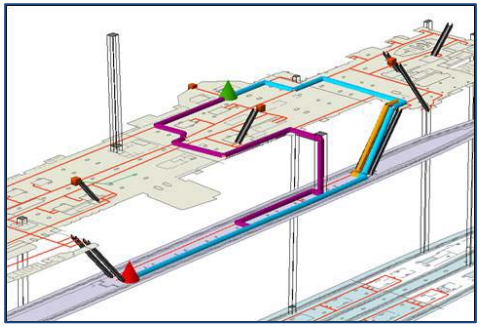
Examples of Application



Visualization of a complex Transport HUB in a GIS

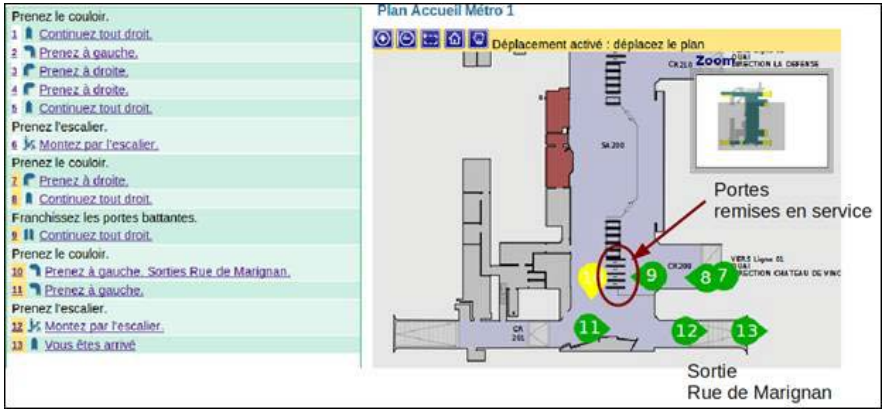


Indoor Routing in 2D / 3D environment

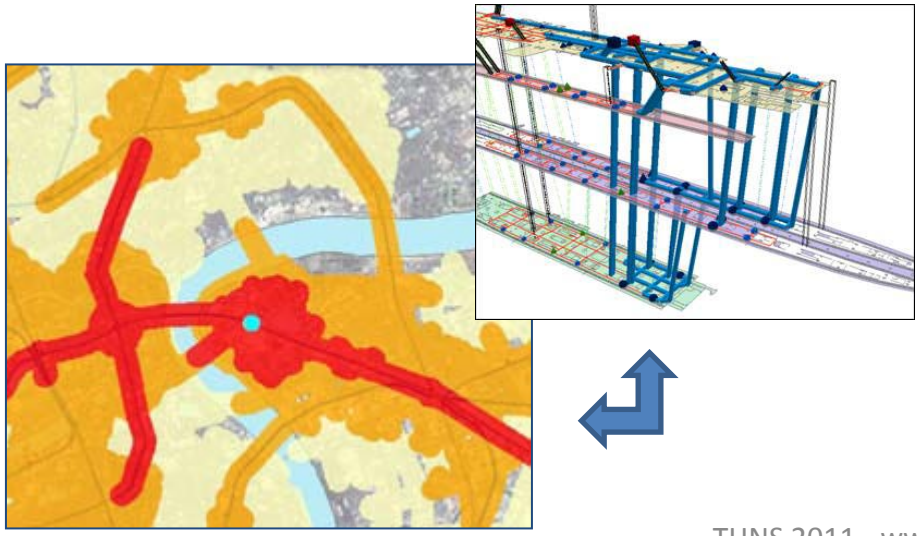


Routing for disabled people

Examples of Application



Web, mobile applications, for pedestrian guidance



Integration in a PT model for city level analyses

Are Already modeled with IFOPT

- « Gare de Lyon », in Paris, during the R&D project CAMERA, in partnership with RATP

- Two tourist railway stations of « région Pays de la Loire » in France

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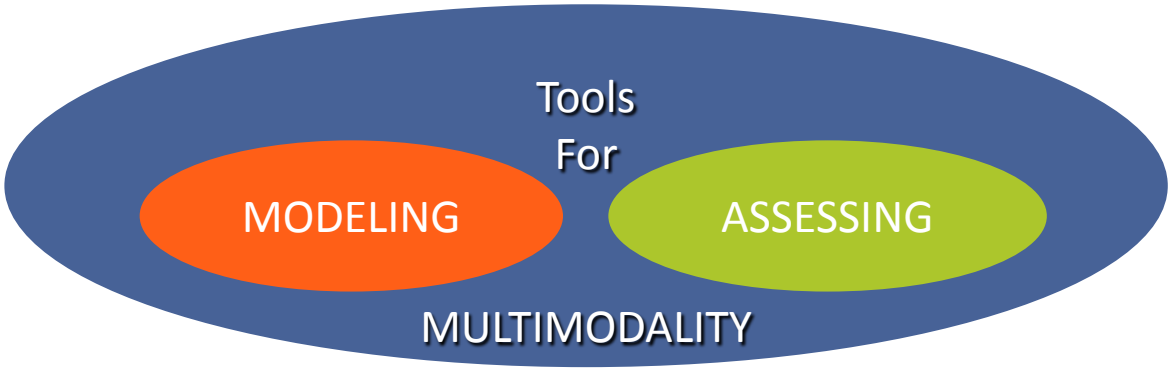
MobiGIS & LPDA in China

- Innovative Technologies
- A Multicultural Team
- Referenced Solutions

- Contributes to an effective Multimodality



Norms | GIS | HUBs | MobiAnalyst

Thanks !

谢谢

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