Conference
High-Quality Service in Urban Transport Systems
Transports à Haut Niveau de Service
高品质的城市交通系统

Public Transport & Geographic Information Standards

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Summary

1. Presentation of MobiGIS
2. Role of standards
3. Public transport standards
4. Geographic Information Systems
5. European experiences
6. Conclusion
MobiGIS presentation

*MobiGIS* is an IT engineering company promoting the use of Geographic Information Systems (*GIS*) technologies in public and private organisations.

World-class consultants in various industries

- Environment
- Mobility and travel
- Transportation
- Logistics
MobiGIS’s services

- Business services for GIS projects
  - Consultancy
  - Application development and deployment (desktop, mobile, server applications)

- Innovation for sustainable development on transportation issues
  - GIS Transportation solutions
    - Analysis, planning, multimodal routing
    - Standards and data models
  - Partnerships with world-class research centres
Summary

1. MobiGIS presentation
2. Role of standards
3. Public transport standards
4. Geographic Information Systems
5. European experiences
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Role of standards

• Standards are important to model the real world
  • Define the semantic and exact definitions of concepts, objects, properties, etc.
  • Describe the relationships between data, message structures, data format, etc.
Role of standards

- The world of transport gradually uses standards
  - to ensure
    - the data supply of travel information services
    - the interoperability of systems
  - to minimize investments and save time
  - to break the too strong dependences with proprietary solutions
Role of standards

- Standards are used at several levels
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Public transport standards in development in Europe

- Developed at different levels
  - ISO (International Organization for Standardization)
  - CEN (European Committee for Standardization)
  - National projects
Conceptual data models standards

- **TRANSMODEL v5.1 (EN 12896)**
  - Reference data model for public transport operations

- **IFOPT v1.0d (CEN)**
  - Model for the main fixed objects related to public access to Public Transport

- **GDF v4 (ISO/TC204)**
  - Interchange file format for geographic files
Data exchange standards

- **TRIDENT (EU Project)**
  - TRansport Intermodality Data sharing and Exchange NeTwork

- **SIRI (CEN/TS 15531)**
  - Standard Interface for Real time Information related to public transport operations

- **TI-VIP (EU Project)**
  - Traveller Information for Visually Impaired Persons
Getting more information

- **TRANSMODEL**

- **IFOPT**
  http://www.naptan.org.uk/ifopt/index.htm

- **GDF**

- **TRIDENT & CHOUETTE:**
  www.predim.org

- **SIRI:**
  http://www.kizoom.com/standards/siri/
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What is GIS?

- Enable to envision the geographic aspects of a body of data
- Store in a database a variety of data (i.e. road network, public transport network, real time data, images)
- Provide desktop, server, mobile, on-line solutions to perform GIS operations
GIS in Transport

- GIS are widely used to
  - Model networks
  - Analyze geospatial data
  - Transport system planning
  - Visualize analysis results
  - Communicate
  - Broadcast information to end users
GIS in Transport

- GIS are widely used by
  - Transport authorities
  - Planning offices/department
  - Network operators
  - Consultants
  - Research centers
  - Businesses
  - End users
GIS uses: example 1

- Multimodal route computation and visualisation
GIS uses: example 2

- Network accessibility analysis from a location

By car

Using the transportation system
GIS uses: example 3

- Drive time polygon computation downtown Los Angeles
GIS uses: example 4

- Find the nearest points of interest (i.e. stores) from a location (i.e. hotel)
GIS uses: example 5

- User guidance in transportation hubs
- Evacuation planning using 2D and 3D views
GIS data for Transport

- **Road network data**
  - High quality data for mapping, transport planning, etc.
  - Various data sources

- **Public transport data**
  - Often proprietary data

- **Others data**
  - Points of Interest (POI)
  - Population data
  - Images (raster)
  - Etc.
Open Geospatial Consortium Standards

• Examples of approved standards
  ▪ Geographic data
    ▪ Geography Markup Language (GML)
    ▪ KML (Google)
  ▪ Web services
    ▪ CSW: Catalog Services for the Web
    ▪ WPS: Web Processing Service
    ▪ WFS: Web Feature Service
    ▪ WMS: Web Mapping Service
Transport and geographic data integration

GIS software

Transport database

XML data (Trident standard)

Web Mapping Service

Base maps
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European experiences

- **France**
  - Regional
  - Urban

- **UK**
  - NAPTAN: National Public Transport Access Node database
  - Transport Direct: Free online route planner for public transport and car journeys
European experiences

- POTIMART (www.potimart.org)
  - Open Source GIS Transport Software for Multimodal Network Analysis
  - Supported by the French Ministry of Transport
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Conclusion

- Standards and GIS are key components for transport operations

- Standards and GIS
  - uses are spreading out
  - evolve to meet more user needs
Thank you & Questions?

Related training session

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