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## Smart Mobility in the City of Leuven

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**General information**  
A possible technological implementation  
Technology showcase

**Goal for the City of Leuven in this project**  
An intelligent kilometre pricing

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*Your link to integrated analyses*

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### Goal for the City of Leuven in this project

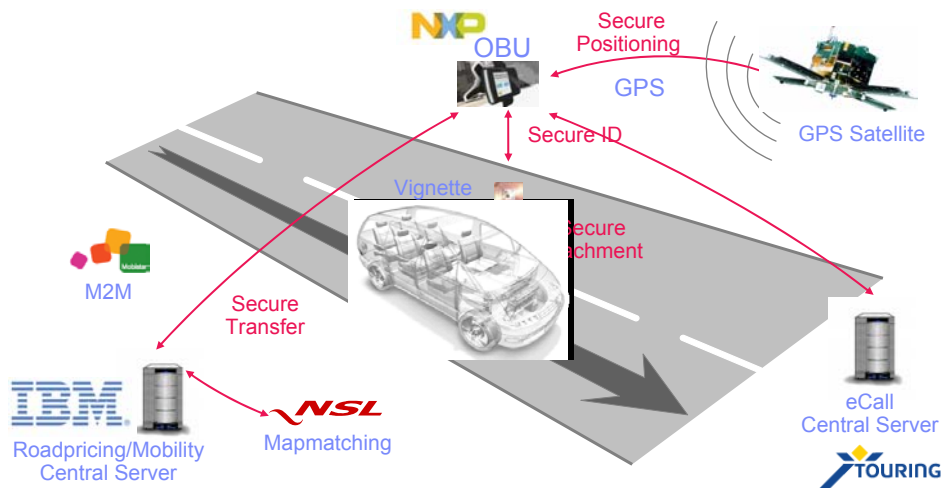
- Ease trips by reducing their total impedance:
    - More fluid.
    - Safer.
    - More accessible (for all traffic modes).
    - More liveable (environment and noise).
-  Inform the City of Leuven and support them in creating a pricing scheme as a possible means to improve mobility.

## An intelligent kilometre pricing

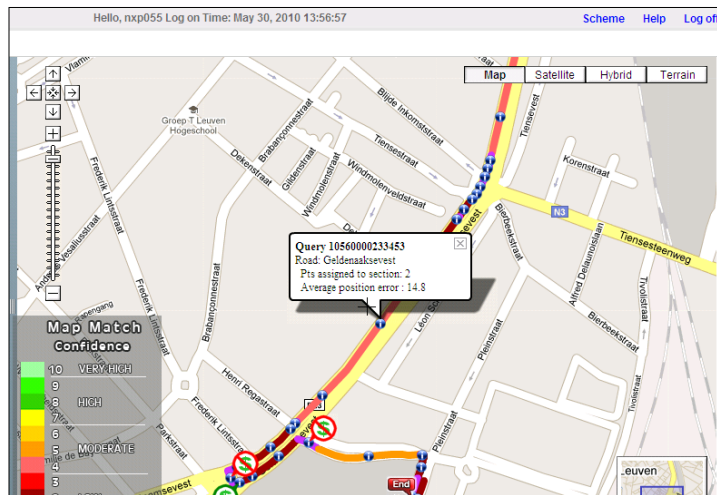
- Goal for Flemish government: make optimal use of the road network's hierarchy.
  - Use the highest level as much as possible, avoid rat runs: keep habitable areas liveable and highways flowing.
  - **Requires a differentiation in space.**
- However, capacity of the road network is limited: congestion.
  - **Requires a differentiation in time.**
- On top, different kinds of vehicles:
  - Difference in emissions, noise, harmful effects, ...
  - **Requires a differentiation to type of vehicle.**

→ *Everything is possible: cordon toll, zoning, travel time, distance, ...*

## Technology used



## Information stored in the back-end: map-matching



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## Information stored in the back-end: trip information

Home Hello, nxp055 Log on Time: May 30, 2010 13:56:57 Scheme Help Log off

Journey Detail Journey ID: 2010042100000017628

#	Road Type	Time Boundary	Distance (Km)	Amount (€)	Charge Desc.
11	Secondary Road		0.391	0.03	SUV on the Local Road
12	Secondary Road		0.016		SUV on the Local Road
13	Major A Road		2.351	0.06	SUV on the Main Road
14	Major B Road		3.671	0.10	SUV on the Main Road
15	Major A Road		0.649	0.02	SUV on the Connection Road
16	Major B Road		1.613	0.04	SUV on the Connection Road
17	Local Road		0.026		SUV on the Local Road
18	Major A Road		0.133		SUV on the Connection Road
19	Local Road		0.390	0.03	SUV on the Local Road
20					Journey end
Total:			35.348	1.63	

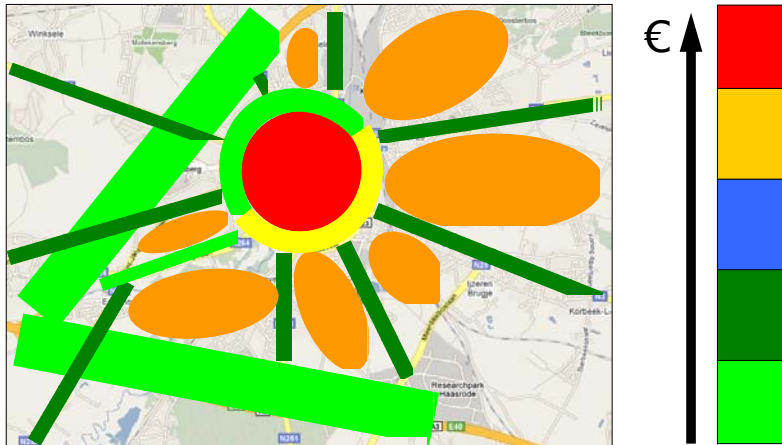
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## Pricing scheme for the region around Leuven

(in cooperation with the City of Leuven)



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## Definition of base tariffs

- **Cost neutral: users will together not pay more.**

→ Or also: the average user pays exactly his road tax during 1 year.



- Variabilising the existing road tax:
  - Is dependent on the type of vehicle.
  - Weighed by the external costs.
  - Incorporates driven distances (~15,000 km/year).
  - Politically defensible.

→ **However only limited 'control' possible!**  
(hence 'base tariffs')

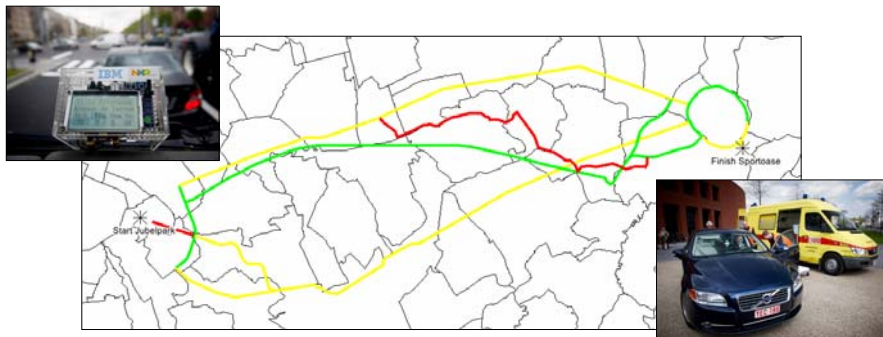
- Differentiation wrt. space.
- Differentiation wrt. type of vehicle.
  - Car (1.6 l): 242.75 euro.
  - SUV (2.4 l): 532.36 euro.
  - Bus: 69.97 (!) euro.
  - Truck (E5): 1817,18 euro.
- For now, no differentiation wrt. time.

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## Example of variabilisation: showcase 21/04/2010

- Car (1.6 litre), SUV (2.4 litre), autobus, and truck (Euro-5, 2+3 wheel axles, incl. Eurovignet).

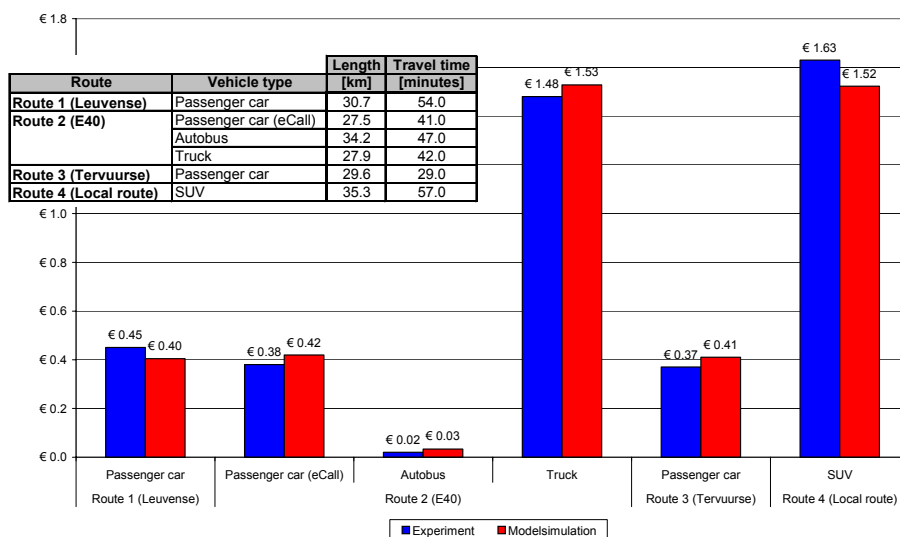


	Differentiated tariff [cent/km]			
	Car (1.6 l)	SUV (2.4 l)	Autobus	Truck (Euro-5)
Level 1 (highways, main roads)	1.2	2.7	0.1	4.6
Level 2 (secondary roads)	1.3	2.8	0.2	6.6
Level 3 (local roads)	3.0	6.6	0.2	7.3

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## Summary of total costs



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