

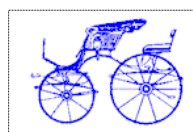
Train the trainer sessions

Paris, November 2009

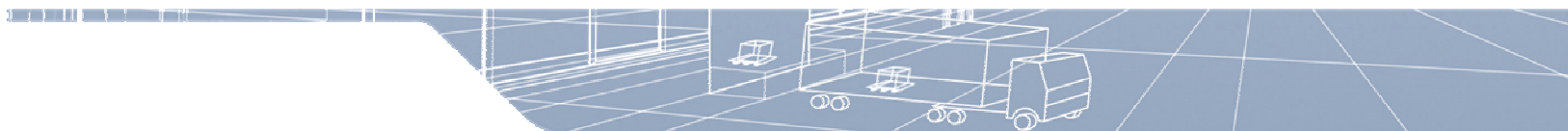
Data collection

Methods for city logistics

Jean-Louis Routhier
Laboratoire d'Economie des Transports
Université de Lyon, France



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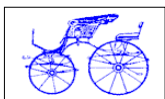
Agenda

I – The context of Urban Goods Movement (UGM) data collection methods

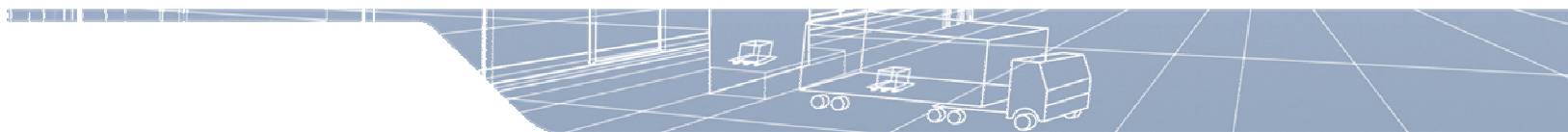
**II – Establishment and tour based surveys:
the French approach (method, indicators,
carrying out, questionnaires and results)**

III – Data collection for modelling

IV – Gaps and recommendations



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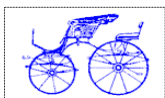
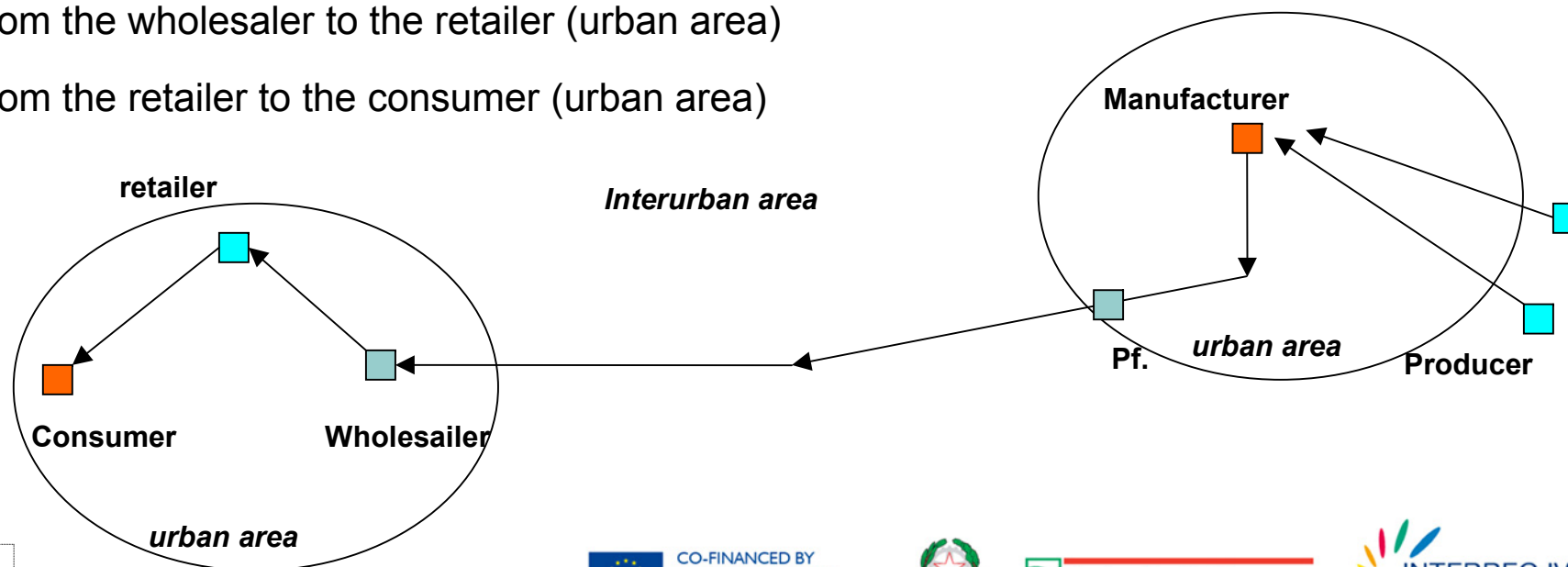


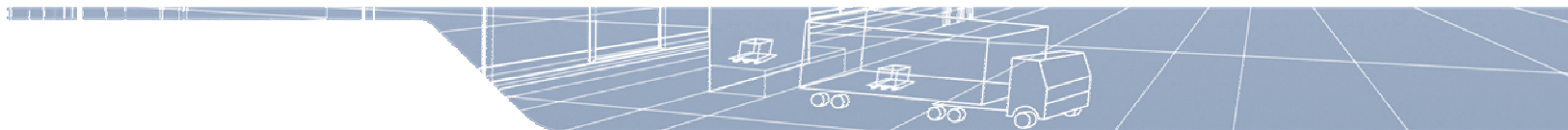
1 - Why do we need to collect data ?

Urban goods movement in the total supply chain

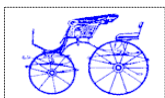
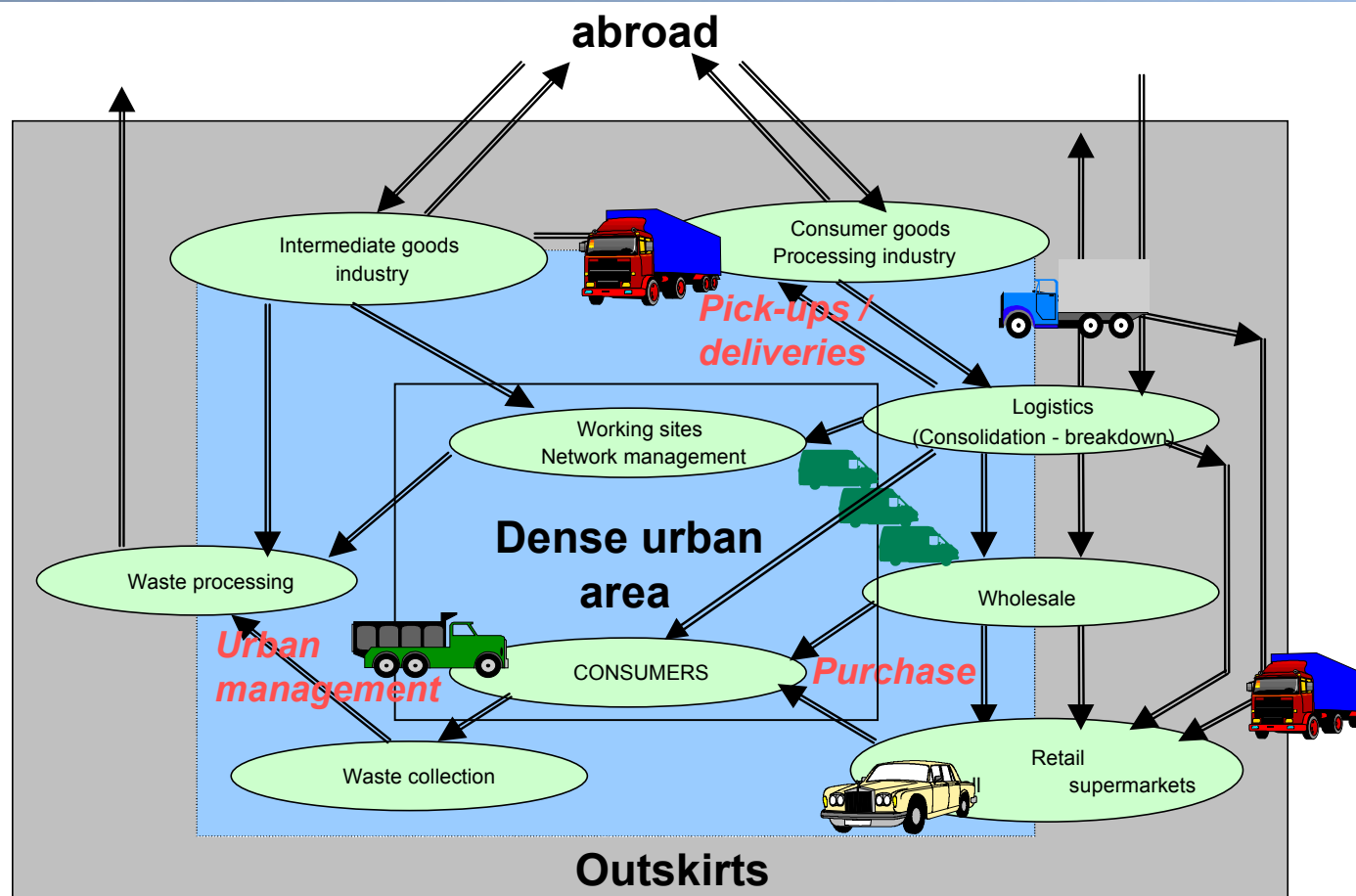
Five main segments :

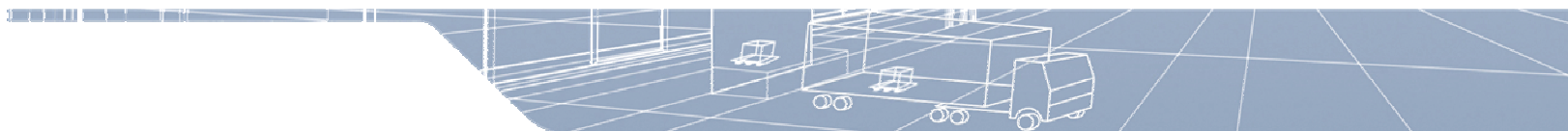
- ➡ From the producer to the manufacturer (urban or interurban platform)
- ➡ From the manufacturer to the logistician (urban and suburbs)
- ➡ From the platform to the consuming area (interurban)
- ➡ From the wholesaler to the retailer (urban area)
- ➡ From the retailer to the consumer (urban area)



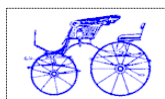
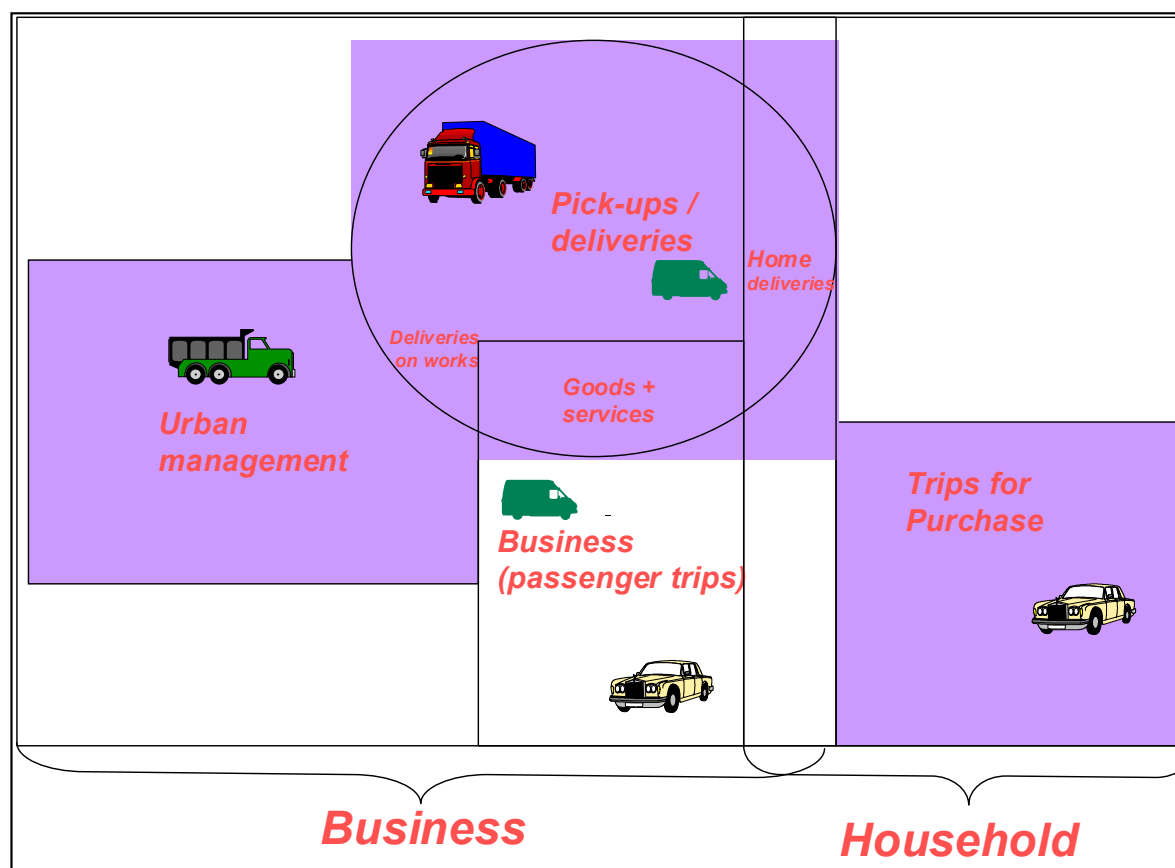


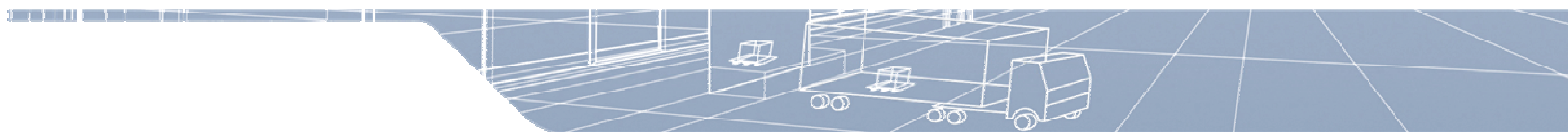
1 - Why do we need to collect data ? - Trying to solve the complexity





Urban goods movement : three main data sources





A large variety of UGM data collection approaches

range : *urban, suburban, regional ?*

field : *demography, economy, activities location, transport*

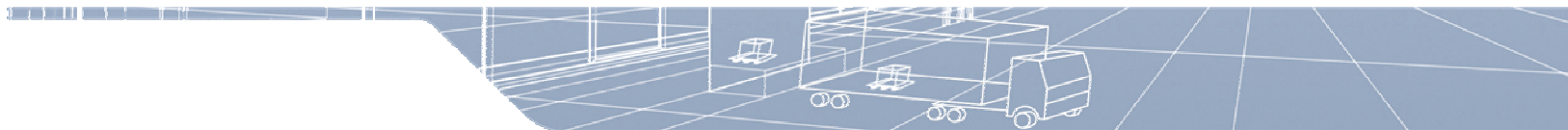
transport Mode : *train, road, sea-waterways, air*

proceeding : *sample surveys, exhaustive census, registers,...*

temporality : *periodical, casual, time series (frequency?),
cross section, panel ...*

observation level : *Economy : GDP, firms or establishments ?
Transport : goods or vehicles ? ...*

unit of measurement : *tons, ton*km, vehicles trips, veh*km,...*

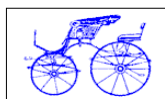


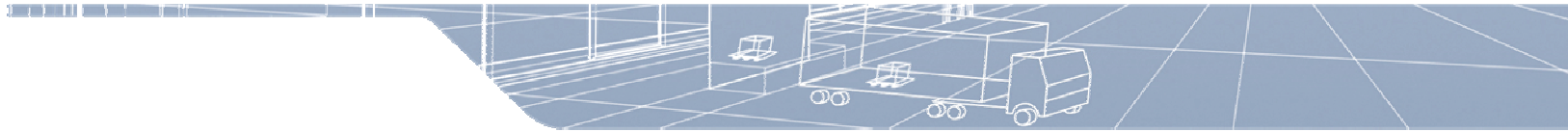
I-1 – Why do we need to collect UGM data ?

What stakes ?

What policy ?

What regulation ?





I-1 – Why do we need to collect UGM data ?

- 1 – LGV and HGV Traffic flow appraisal for national and local estimates (for national accounting, network dimensioning, ...)
- 2 – Road traffic real time monitoring
- 3 – Traffic valuation for weighting and calibration of traffic assignment models
- 4 – To explain the traffic flow generation : who is responsible of the impacts of UGM ? (for local and global policy decision making)
- 5 – Modelling for decision making aid : to improve its efficiency and reduce its negative impacts),
- 6 – Evaluation of impact and performance measurement of the experiments and specific initiatives
- 7 – Helping the regulation setting up.

Source: *Bestufs II WP3 (Browne, Allen et al. 2007)*



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I-2 Current UGM data collection until now ?

I – on street (automatic) traffic counting

Pneumatic counters
Magnetic loops
Radar & camera detection
WIM counters
Manual counting...

Congestion measurement

Traffic counting on street

- Traffic models calibration
- Road infrastructures lay out

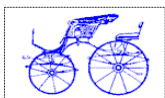


Advantages :

- counting all the traffic
- inexpensive

Disadvantages :

- difficult to distinguish heavy vehicles
- No description whether the vehicles carry or do not carry goods



I-2 – Current UGM data collection until now

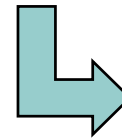


II – Road side (cordon) surveys

*Vehicles are stopped by police
A short questionnaire is filled
by the driver.*



O/D traffic measurement



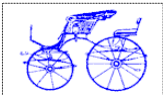
*- Traffic models calibration
- Road infrastructures
lay out*

Advantages :

- can be carried out
at the same time as
private vehicles cordon survey*
- good description of the vehicle*

Disadvantages :

- difficult to carry out (acceptability)
only on a short time*
- No description of the complex rounds
inside the urban area*
- No description of the shipper
(consignor or consignee)*

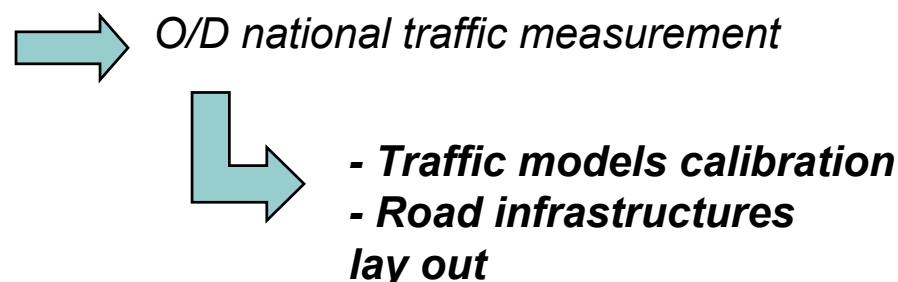


I-2-III a - Freight road transport vehicles surveys



☞ French Annual surveys towards firms registered as working in road transport (>3.5T) : the Transport Routier de Marchandises (TRM) survey

Description of the sending, the vehicle, the activity supplied from the shipper to the next destination.
For hire or in own account.
Number of Origin/destination trips per transport mode between French regions together or foreign countries. distance covered.
Trips length higher than 50 km.

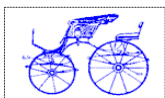


Advantages :

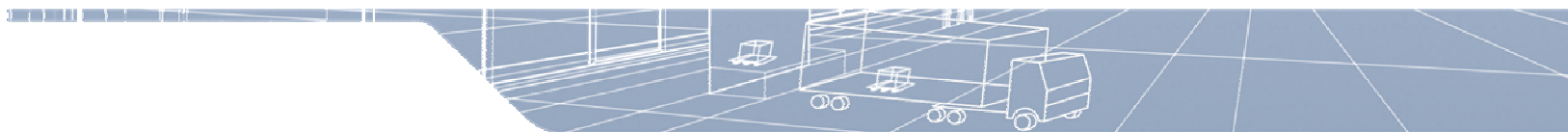
- continuously carried out
- large scale survey

Disadvantages :

- doesn't concern the local urban traffic



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I-2-III b - Periodic surveys on light goods vehicles

Such surveys measures the traffic performance of light goods vehicles, to evaluate periodically the tons and types of goods sent by the trucks from a region to another. Few countries carry out periodic surveys on “light commercial vehicles”: LGV.

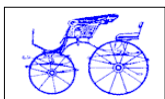
In France, survey carried out every 5 years at national scale on the use of the LGV (<3.5 tons). A representative sample of 20,000 vehicles is picked on the national light commercial vehicles register. Each owner receives a postal questionnaire and gives informations on the average yearly use of the vehicle

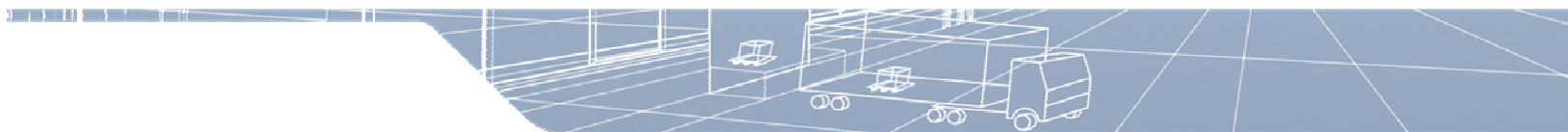
Advantages :

- ***periodic***
- ***large scale survey***

Disadvantages :

- ***doesn't allow local urban use measurement***

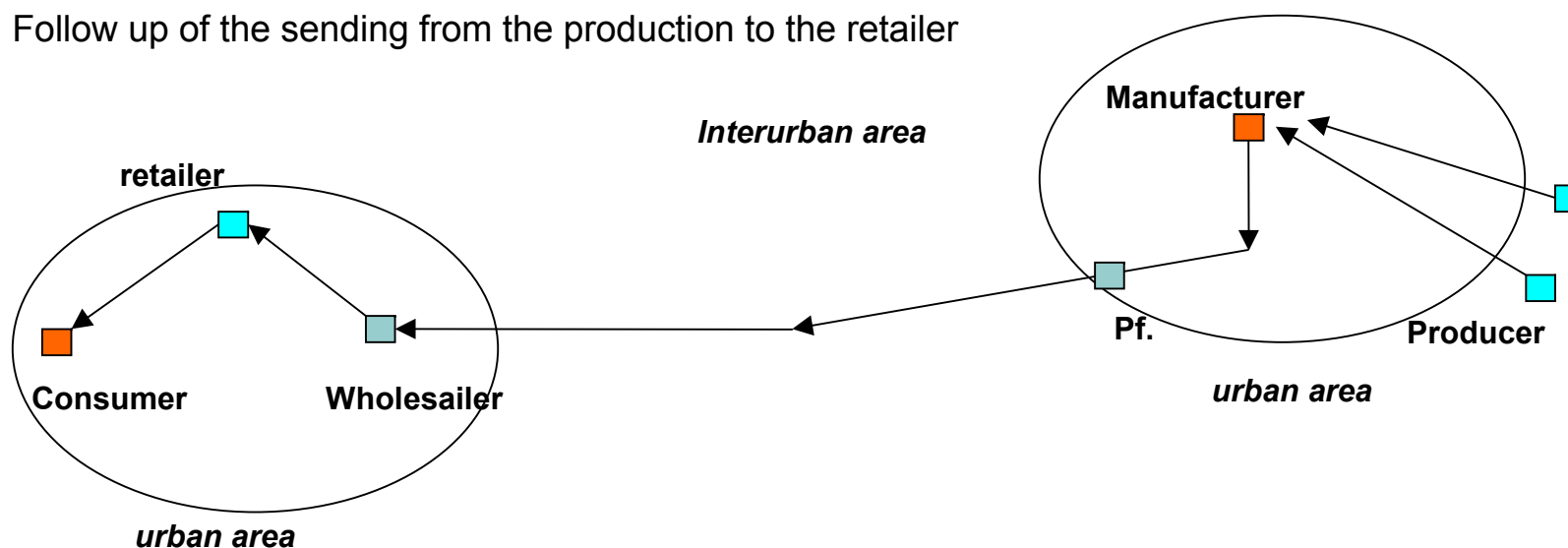




I 2 - IV – Current UGM data collection until now : shipper survey

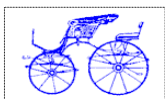
1988 / 2002 : two **shipper surveys** on the total Supply chain (INRETS, France)

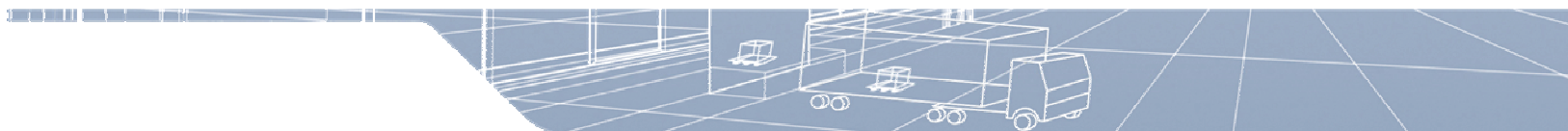
☞ Follow up of the sending from the production to the retailer



☞ Face to face interview of more than 3000 shippers (among 78,000) for 39 types of activity (production, manufacturing, wholesalers)

☞ Follow up of about 10,000 sendings





I 2 - IV – Current UGM data collection until now : shipper survey (2)

observation level : Transport : goods and vehicles

field : activities, logistics and transport

transport Modes : train, road, sea-waterways, air, ...

Unit of measurement : tons, ton*km, vehicles trips, veh*km,...

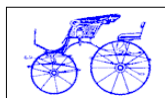
- ☞ The survey was designed to explain and evaluate at a national scale :
- the goods flows
 - energy consumption
 - costs all along the chain

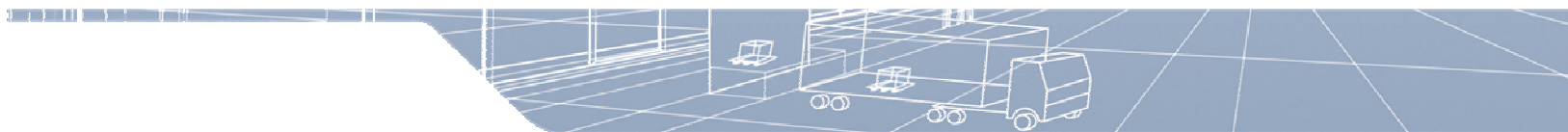
Advantages :

- ***large scale survey***
- ***description of the whole supply chain***

Disadvantages :

is not designed for urban traffic





I -2 -V Current UGM data collection until now : One-shot surveys

District surveys

Aim: a fine local observation of the deliveries and pick-ups near shop-keepers to help authorities for local measures (parking regulation, accessibility...)

Reserved parking places counting in Paris

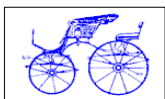
Aim: a diagnostic of the space assigned to the loading and unloading (see tomorrow)

Bus embarked survey in Paris

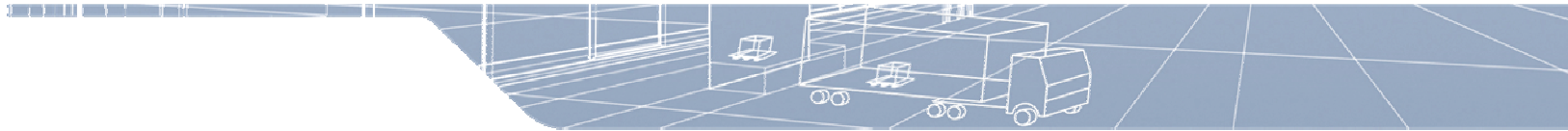
Aim: public transport congestion and bottle necks generated by urban goods movements

Local Qualitative surveys

Aim: to have a better understanding of the practices (role of actors,...)



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I -2 -VI Current UGM data collection until now : **Purchasing surveys**

“Cash desk survey” : nb of trips for purchase (car or other)

Survey nearby the purchasers

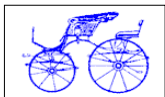
Different stores (large distribution, franchise agreements, small shops)

Sampling: from 100 to 500 purchaser each store

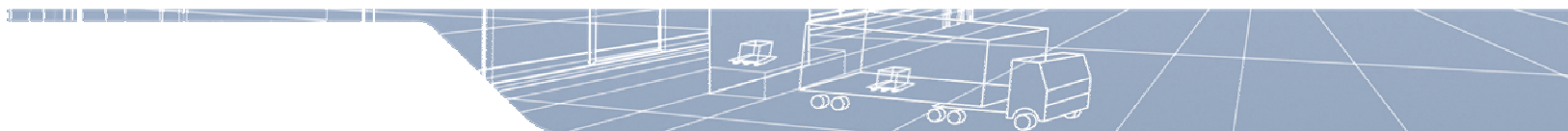
Main Results : modal shift and length of trips for purchase

“E-commerce” and home deliveries surveys

Main Results : new emerging behaviour of consuming
 new logistic organisations



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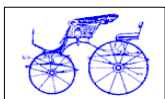


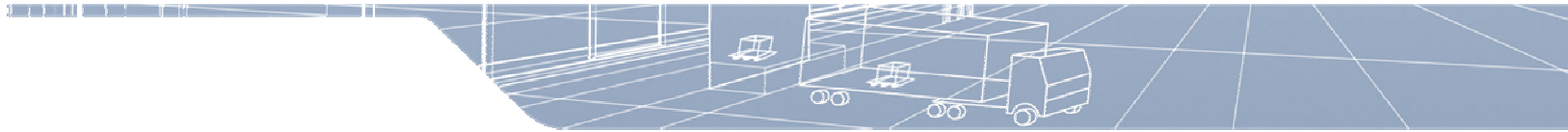
I -2 -VII How to know the behaviour of the actors?

☞ **Qualitative data collection** : stated preference surveys on the current changing factors : congestion charging, e-commerce, new technologies, new vehicles, incentive regulation, cooperative organisation, ...

☞ **Data collection from experimentations**

- ☞ feasibility
- ☞ acceptability by the actors concerned and by environment
- ☞ assesment of efficiency of each one on external effects decreasing
- ☞ steps to follow, time to spend to reach the economic equilibrium
- ☞ Data collection from experimentations

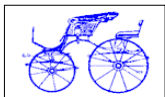


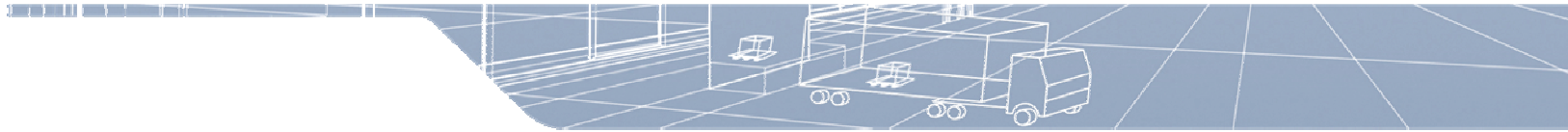


I-3 A large variety of data collection approaches

- Traffic counts (manual and automatic);
- Data collection using new technology (GPS), roadside camera, data of weigh-in-motion (WIM) technology ;
- Interviews with freight transport company managers;
- Interviews with establishment manager (receivers/shippers);
- On consolidation platforms or roadside interviews with drivers;
- Questionnaires sent to freight transport company managers;
- « « to drivers, to receivers, to shippers;
- Accompanied trips with goods vehicle drivers;
- Group discussions (including discussions with drivers, representatives from a single supply chain, representatives from different supply chains);
- Parking and loading activity surveys (i.e. observation surveys);
- Parking and loading infrastructure/inventory surveys.

Results from Bestufs II WP3





I-4 - Addressing gaps in urban freight data collection

- Data about light goods vehicle activity (generally vehicles below 3.5 tonnes gross vehicle weight)
- Data about the supply chain as a whole
- Data about freight and logistics infrastructure to and from which urban freight activity takes place
- Data about loading and unloading operations and infrastructure for goods vehicles
- Geographical data about goods vehicle trips in urban areas
- Data about trips carried out by consumers for the purposes of shopping
- Speed and route data for goods vehicles
- Data for non-road modes

Source: *Bestufs II WP3 (Browne, Allen et al. 2006)*

I - Aims and concerns

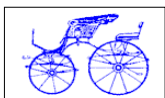


II - Establishment and tour based urban (EDU) surveys : the French approach

III – Data collection for modelling

IV – Main gaps and recommendations

- 1 - Aims and objectives
- 2 - Methodology
- 3 - Expansion and weighting
- 4 - EDU survey administration and questionnaires
- 5 - Indicators
- 6 - Data collection in three towns
- 7 - Main results



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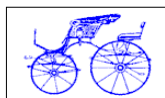


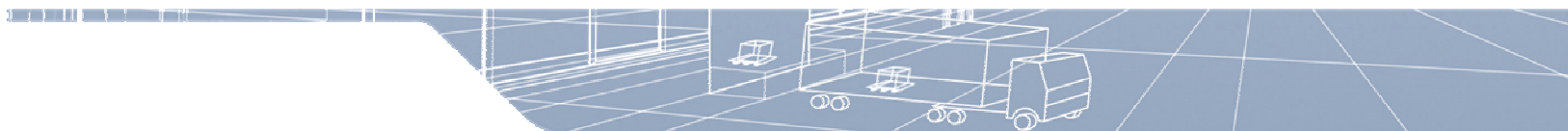
II - The Establishment-driver urban (EDU) surveys : The French approach

II -1 - Aims and objectives

An initiative of the French Transport Ministry (as from 1993)

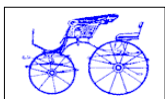
- To understand the links between firms activity and freight transport flows
- To find the rules of management and functioning of the urban freight transport (towards reproducibility and modelling)
- To help decision making:
 - Knowledge of the sector and diagnostic
 - Policy oriented decision (mobility master plans, long term effect of policy about external effects)
- To feed policy oriented models





II - 2 - EDU surveys method

- 1 - Which statistical unit ?
- 2 - Two coupled surveys: one establishment based survey
 one tour based survey (drivers)
- 3 - To catch the information on the vehicle behaviour on the delivery-pick-up place
(informations on the establishment behaviour)
- 4 - The area : the town and its suburbs
- 5 - The period : the week (establishment)
 the round (vehicle)
- 6 - The sampling : - a stratified sample of establishments
 - a sample of drivers dependent on the
 chosen establishments



II-2-1 EDU survey method : which statistical Unit ?



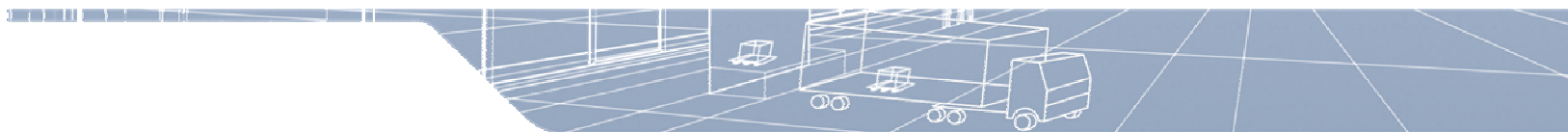
How to do the tools coherent with the objectives ?

- main question : to explain the road occupancy by the goods vehicles
- road occupancy translates congestion, accessibility, local environment
- classically, road occupancy is measured thanks to Origin-destination of goods
- It is not so in the urban areas : a ton of goods from zone i to zone j has no significance in term of transport (one heavy truck or several light vans)

What is to be observed ?

- counting the origin-destination goods?..... **No**
- monitoring a street segment?..... **No**
- surveying the routes?..... **No**
- surveying the shippers?..... **No**
- surveying the movement of vehicle..... **Yes**
(deliveries and pick-ups in each establishment)

The efficient statistical unit: the movement



II-2 2- EDU survey method : *Two coupled large surveys :*

• *One Establishment based survey*

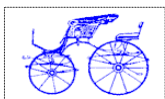
to have a good knowledge of generators

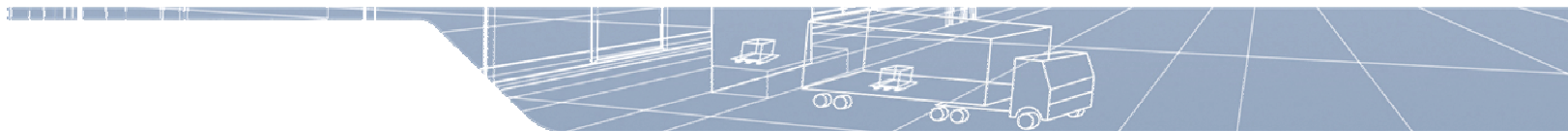
- *activity,*
- *Environment,*
- *logistic organisation (own account, third party)*
- *deliveries and pick-ups during a week*

• *One drivers (delivering the establishments) survey*

to have a thorough description of delivery/pick-ups organisation

- *type of vehicle,*
- *weight, packaging, type of products,*
- *round or direct trip?*
- *routing and scheduling*

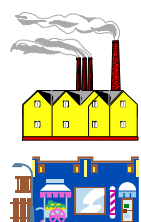




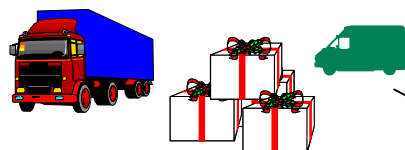
II-2 2 - EDU surveys method

☞ **Two surveys linking the logistic of the firms (variety of goods and activity of each premise) with the urban transport organisation**

Observation unit :
the « movement » : delivery/pick-up



☞ **Establishment survey**



☞ **Driver survey**

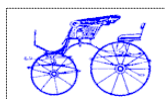


to have a good knowledge of generators

- *activity,*
- *Environment,*
- *logistic organisation*
(own account, third party)
- *deliveries and pick-ups during a week*

- *type of vehicle,*
- *weight, packaging, type of products,*
- *round or direct trip?*
- *route*
- *schedule*

**Movement, Traffic
and parking time
generation per zone**



II - 3 EDU surveys



Sampling, expansion and weighting

A stratified sample

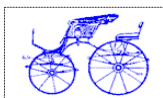


- Weighting of establishments

- Weighting of movements

- Weighting of trips

Code of stratum	NATURE OF THE ACTIVITY	Size of the establishment
1	Agriculture	
2	Craftsman building	
30	Heavy Industry	> 2 employees
3	Chemical Industry	
4	Industry of producers and intermediary	
5	Industry of consumer goods	< 3 employees
31	Industry of consumer goods	> 2 employees
6	Transport	
7	Wholesale: intermediary producer goods	
8	Wholesale: non food consumer goods	< 3 employees
32	Wholesale: non food consumer goods	>2 employees
9	Wholesale: food consumer goods	
10	Hyper market , department store	
11	Supermarket	
13	Mini market	
14	Retail trade : clothing, shoes and leather	
15	Retail trade : butcher's	
16	Retail trade : grocery, alimentation	Without employee
34	Retail trade : grocery, alimentation	With employees
17	baker's and confectioner's	
18	Café, hotel, restaurant	
19	Pharmacy	
20	Retail trade: hardware	
21	Retail trade: furniture	
22	stationer's and bookseller's	Without employee
35	stationer's and bookseller's	With employees
23	Other Retail trade	< 3 employees
36	Other Retail trade	>2 employees
29	No sedentary trade	
24	Varied Repairs	< 3 employees
37	Varied Repairs	>2 employees
25	Tertiary office	Without employee
38	Tertiary office	1 à 2 employees
39	Tertiary office	>2 employees
26	Other Tertiary (loc.-sale.)	
27	No tertiary office	



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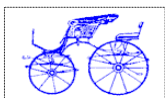
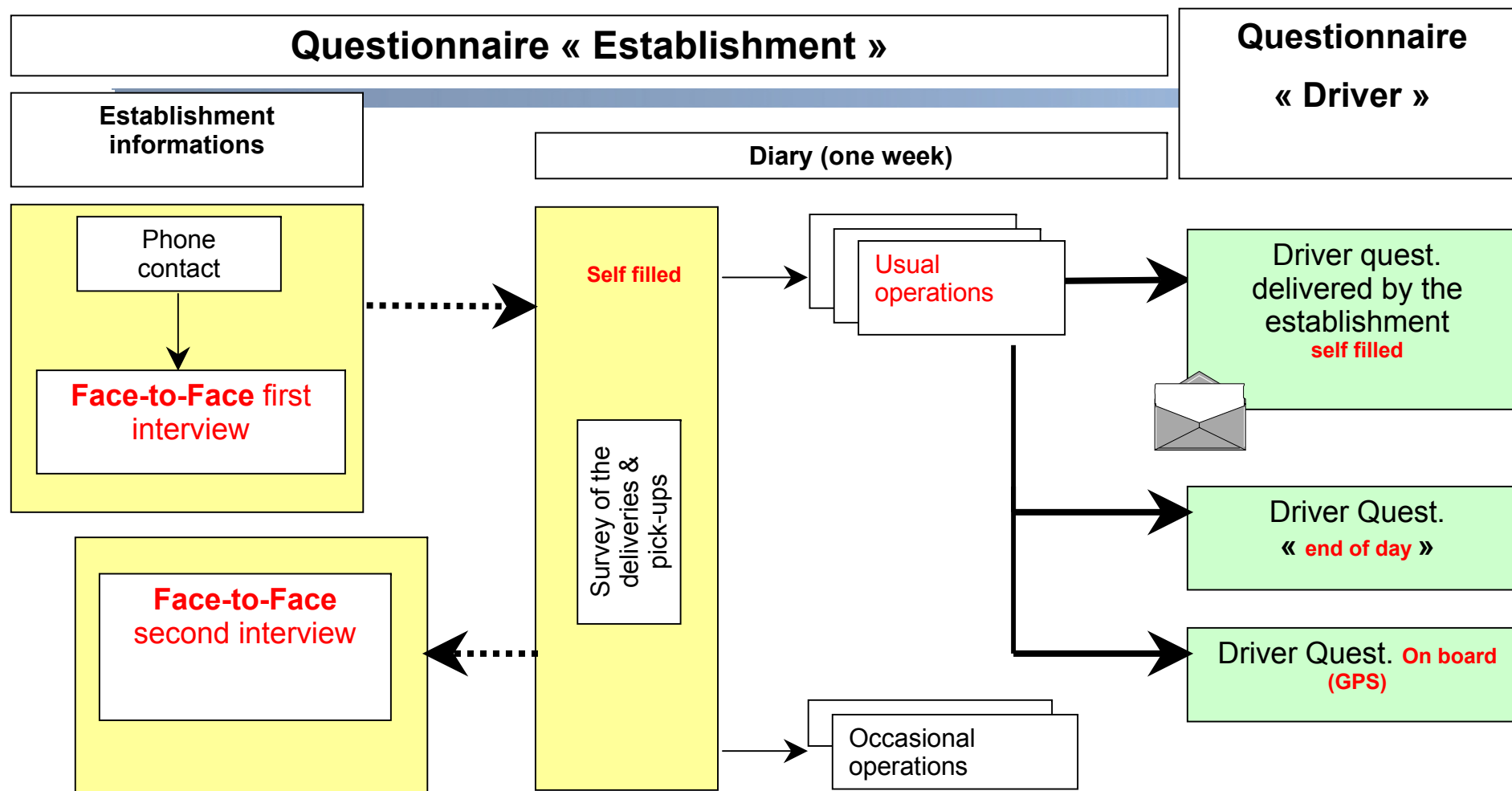


Regione Emilia-Romagna



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II - 4 - EDU interviews and questionnaires



II-4 2 - EDU On board GPS survey

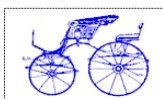


Test GPS :

time,

speed ,

stops for delivery.



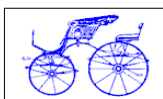
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II - 5 EDU : surveys indicators (1)



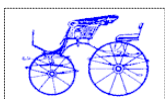
Title and description of the urban freight indicator	Units in which the indicator is measured	Purpose of the indicator
Ratio: Number of Loading/unloading	Number of deliveries and pick-ups per week per employee in each activity	Make possible a fast appraisal of the generation of deliveries and pick-ups in a town without any survey. The contribution of each industry sector is calculable.
Loading/unloading density	Number of deliveries and pick-ups per km ² in a zone	Measures the importance of the goods flows in a zone
Loading/unloading intensity per activity	Number of deliveries and pick-ups per activity in a zone	Measures the contribution of each industry sector to the goods flows
Loading/unloading time	Number of hours of on street double parking for delivery or pick-up in a zone, per vehicle, per activity	Measures the contribution of each industry sector to the road congestion by the on street double parking deliveries
Distance covered for Loading/unloading	Number of kilometres covered for one delivery or pick-up in a zone, per vehicle, per activity	Measures the contribution the running vehicles delivering each industry sector to the road congestion.
Average length of the first leg from platform to the delivery area	Kilometres	Measure the impact of the location of the platform delivering goods relating to its market radius
Average distance travelled per collection/delivery	Kilometres per collection or delivery	Measure of the contribution of one delivery/pick-up to the urban traffic (per type of involved vehicle)
Total distance travelled on roads in urban area by HGV, rigid lorries, and LGV (<3,5T) used.	Total vehicle km per week in urban areas	Measure of the contribution of the total industry activity on the traffic.



II - 5 : EDU surveys indicators (2)



Title and description of the urban freight indicator	Units in which the indicator is measured	Purpose of the indicator
Average time taken per delivery (per activity type, per vehicle, own account, for hire...)	Minutes per delivery	Measure of the time taken for delivering in a tour, on a street, for an industry activity,...
Title and description of the urban freight indicator	Units in which the indicator is measured	Purpose of the indicator
Average speed per round (including and excluding stops to make deliveries) km/hour	Km per hour	Measures the performance of the rounds for each way of organisation, type of vehicle.
Average weight per kilometre	Ton (or kg) km per tour, per activity, per type of vehicle	Measures the performance of the rounds for each way of organisation, type of vehicle...
Greenhouse gas and pollution according to the zone, the vehicle, the activity, the management	- g Pollutant per km - g CO ₂ per km - litre of fuel per km.	Measure of the impact of urban goods movement on the energy consumption, local and global nuisance and greenhouse gas.



II - 6 : Large UGM Surveys in three cities (of different size)



Towards establishments:

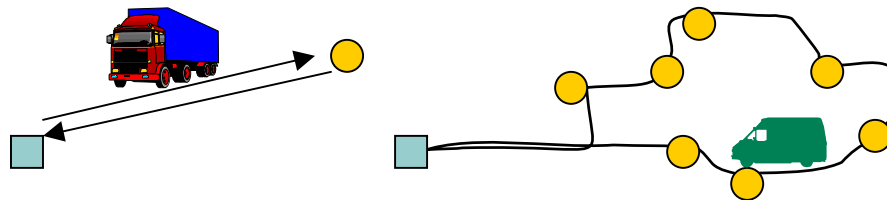
Content : description of the deliveries and pick-ups in a daily log book and of the characteristics and the environment of the premises.

- 4,500 establishments (premises)
- 11,500 types of deliveries and pick ups (a week)
- 10,000 types of parcels

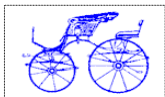
Towards drivers:

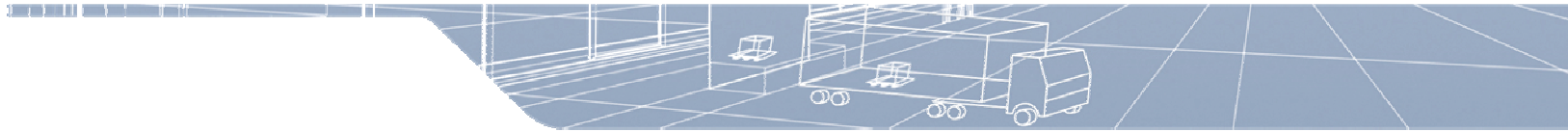
Content : description of the movement of the goods and the conditions of pick-ups and delivery of the surveyed establishments

- . 2,200 runs
- 14,000 stops



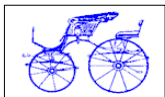
- direct trips and rounds
- for hire and in own account
- with several types of vehicles
- loaded and empty trips





II 7- Other recent UGM surveys

- 1 - Global vehicle based survey (ex. KID)
- 2 - Business and vehicle (EDU) surveys in Hamburg and Dresden (2000-03)
- 3 - Light delivery vehicle surveys in Paris (2002)
- 4 - Large establishment Survey in The Netherlands (2002)
- 5 - CityPorts (EDU) surveys in Italy (2002-05)
- 6 - The Canadian Business (EDU) survey (Calgary, Edmonton, 2001-02)



Made possible by the INTERREG IVC programme

II - 7 Results



Distribution of the deliveries and pick-ups in the three towns surveyed:

270 000 mvts per week in Bordeaux (700 000 inhab.)

56% mvts in own account

52% mvts with light delivery vehicles (<3.5 tons)

75% mvts in rounds (more than two stops for deliveries or pick-ups)

Average amount of deliveries and pick-ups per round :

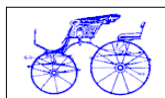
13 mvts in a round

19 mvts in a round by third party

11 mvts in a round by own account (consignor)

Average amount per employee :

1 deliveries/pick-ups



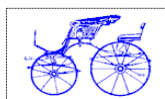
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II - 7 Results : Number of deliveries and pick-ups

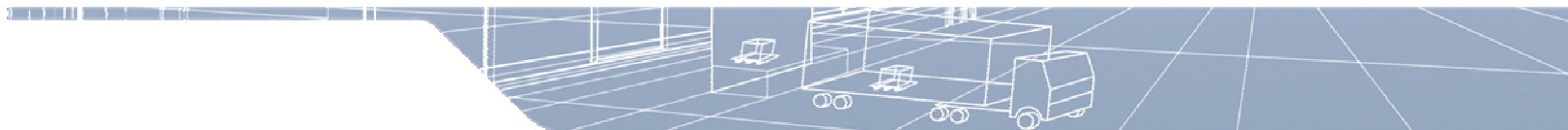


Activities	Number of pick-ups/deliveries per week 1982	Number of pick-ups/deliveries per week 1999	Evolution (%) 82-99	Number of deliveries / job (%)
Agriculture	1,018	2,696	165%	19%
Craftsmanship / services	67,036	101,945	52%	-20%
Wholesale trade	100,408	147,478	47%	-11%
Warehouses	83,641	83,103	-1%	-5%
Supermarkets	4,739	9,259	95%	6%
Industries	142,303	124,059	-13%	16%
Retail trade	143,901	125,554	-13%	-16%
Tertiary (office)	38,215	42,916	12%	-5%
Total	581,261	637,010	10%	-2%

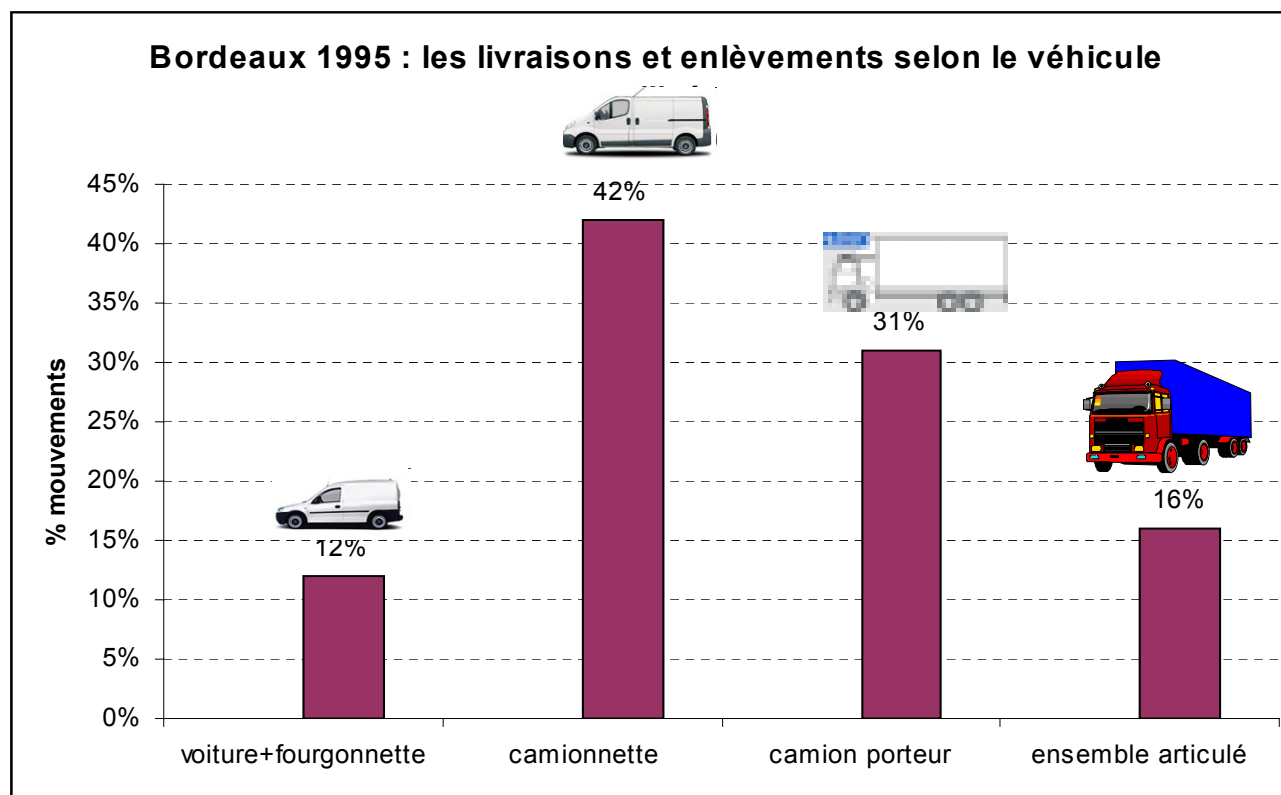
Number of deliveries and pick-ups in two periods in Lyon according to the activity



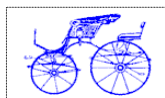
Made possible by the INTERREG IVC programme

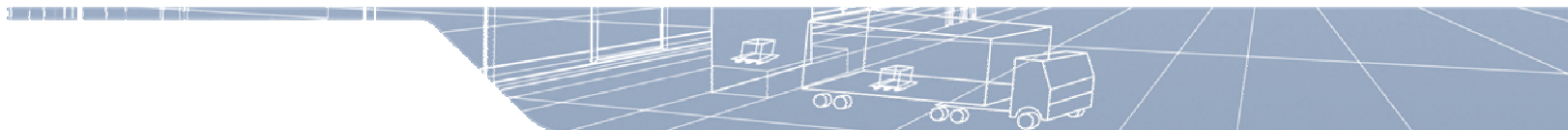


II - 7 Results

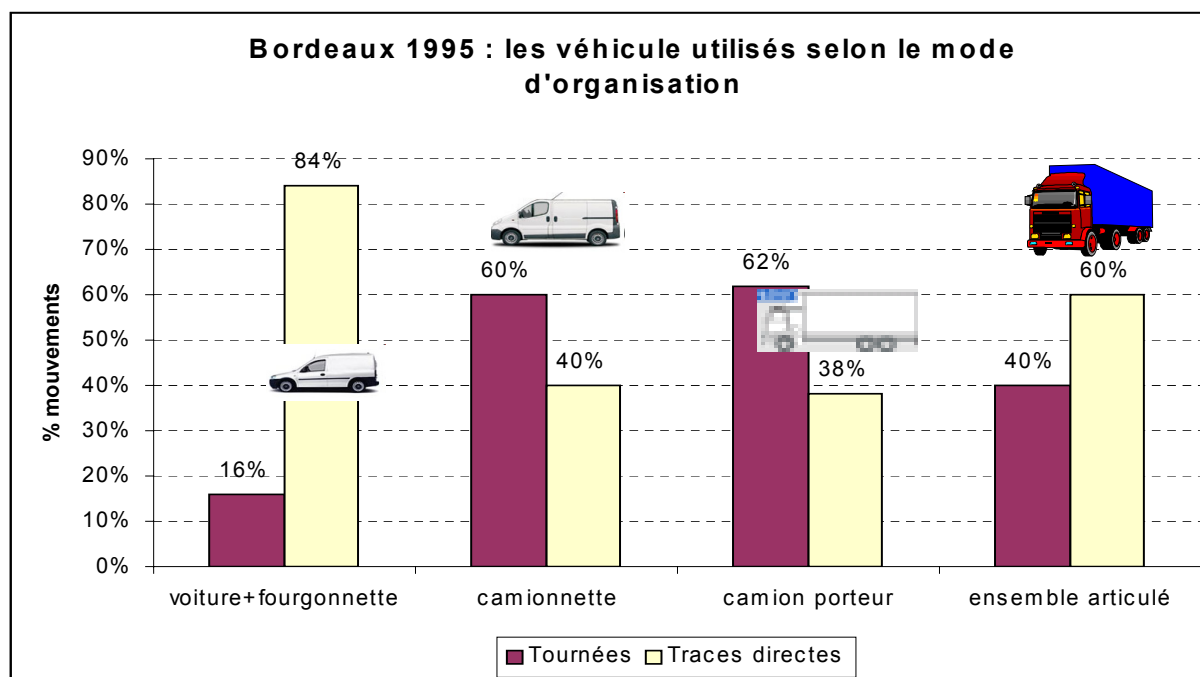


Percentage of movements for each type of vehicle

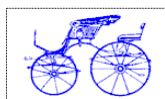




II - 7 Results



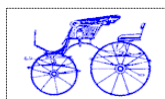
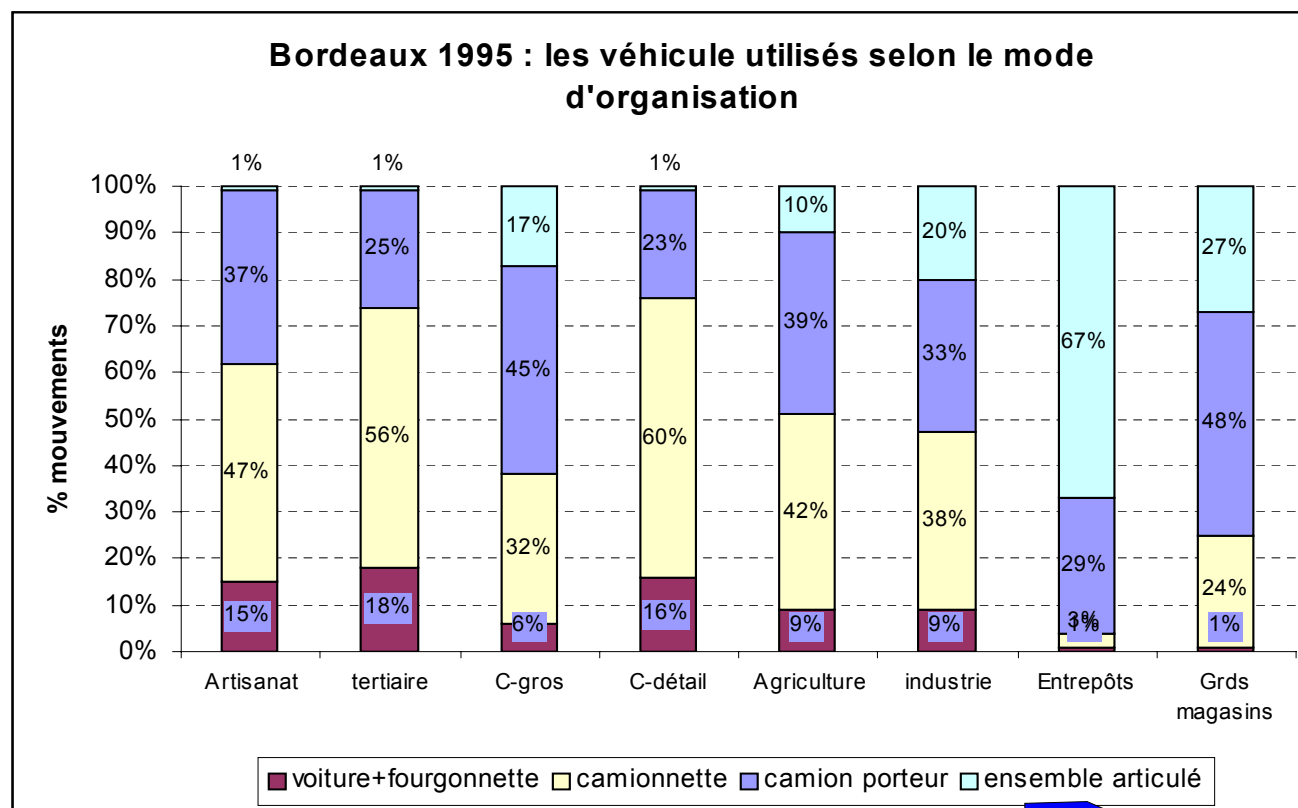
Percentage of vehicles for rounds and direct trips



II - 7 Results



Type of vehicle according to the activity

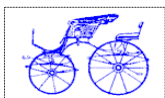
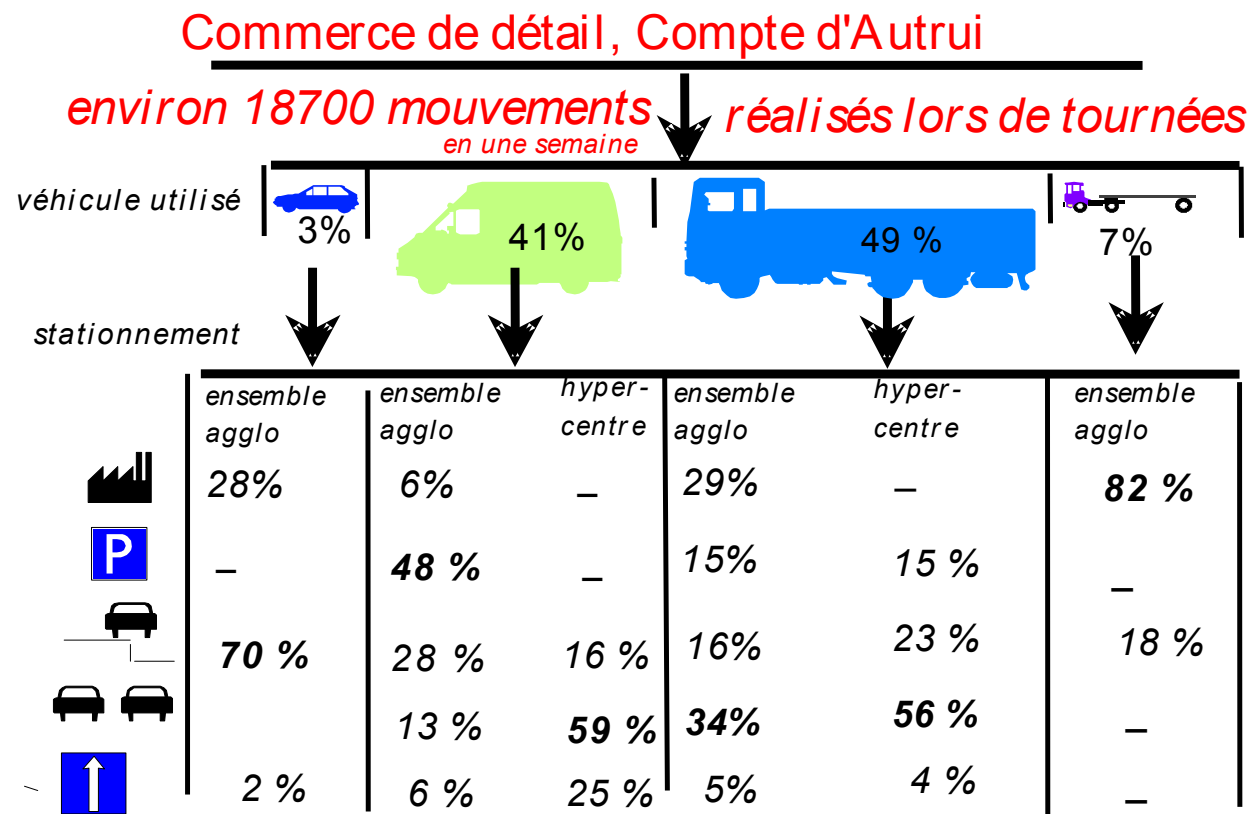


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II - 7 Results



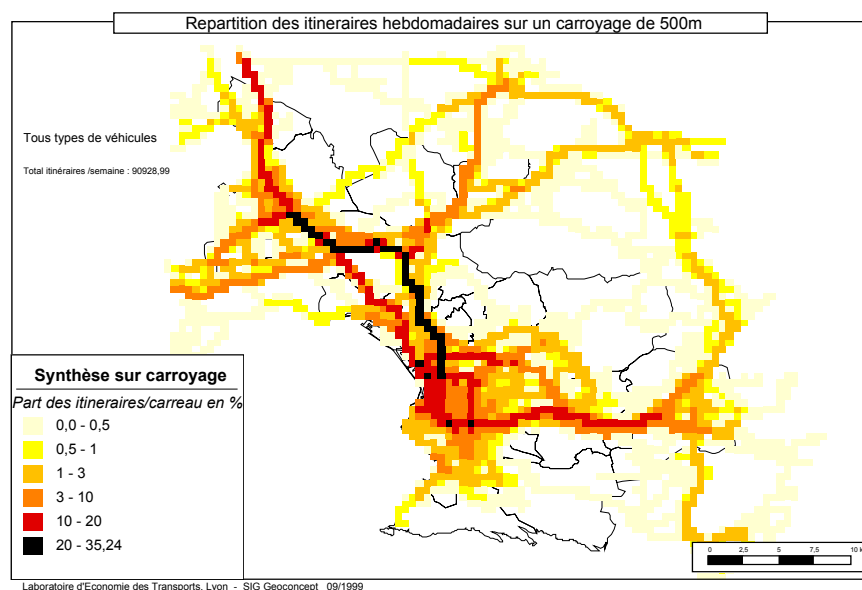
The main urban logistic chains : the case of retail (for hire)



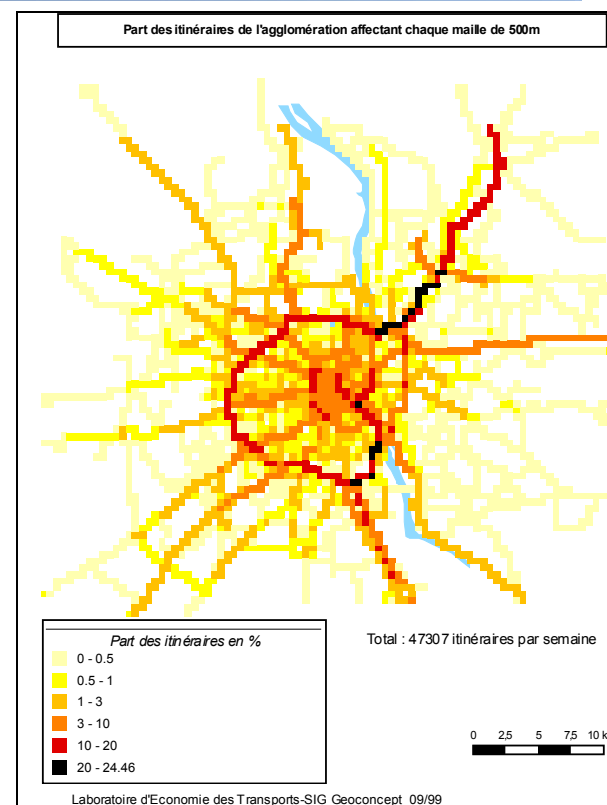
II - 7 Results :

The road occupancy by goods vehicles

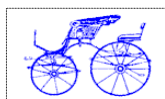
The assignment on the network



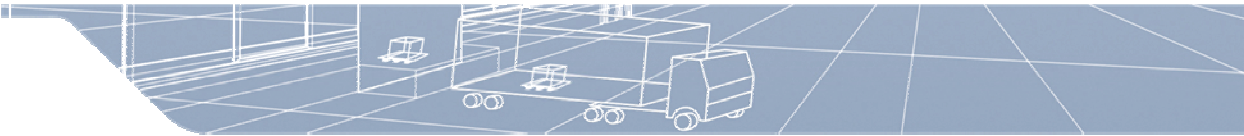
Marseille



Bordeaux

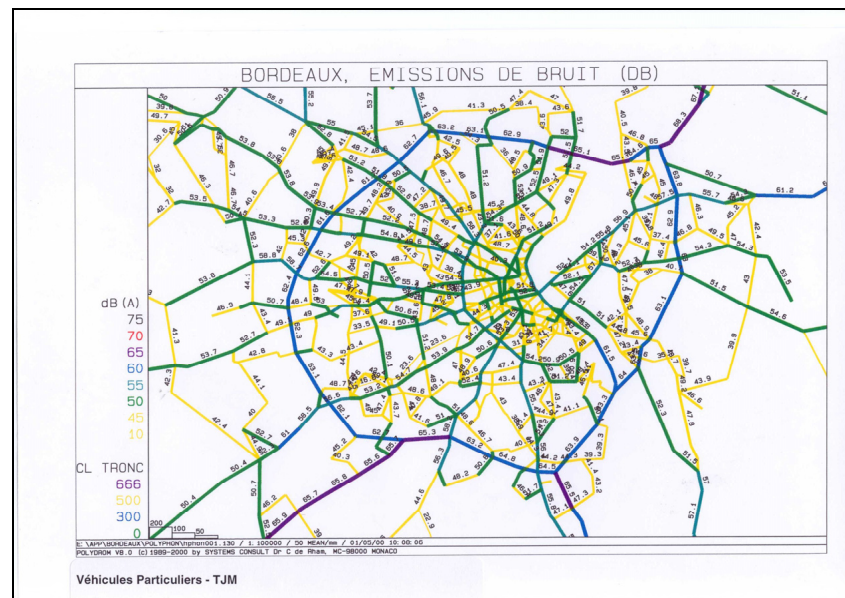


II - 7 Results :

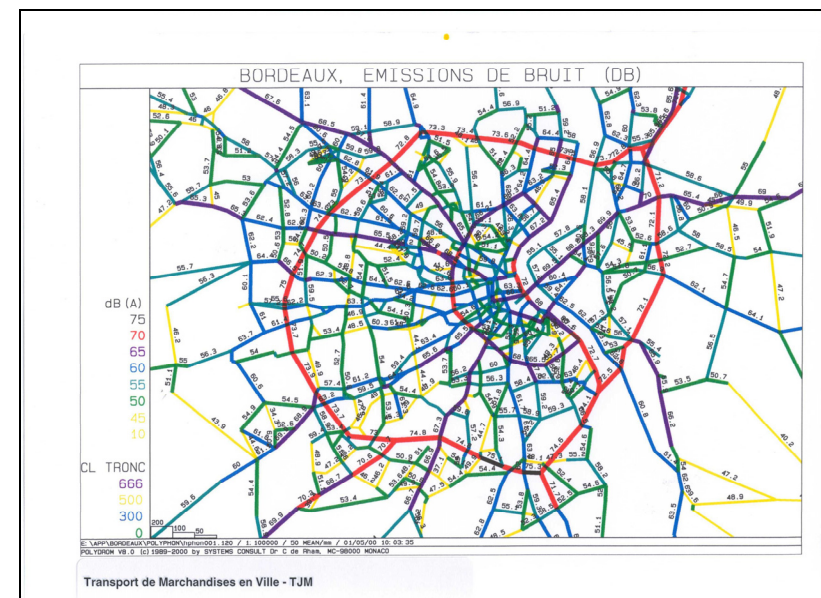


Noise of Urban goods movement on the road network

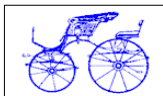
Only light vehicles traffic



Only UGM traffic



Sources: LET, Aria Technologie, Systems consult, 2000

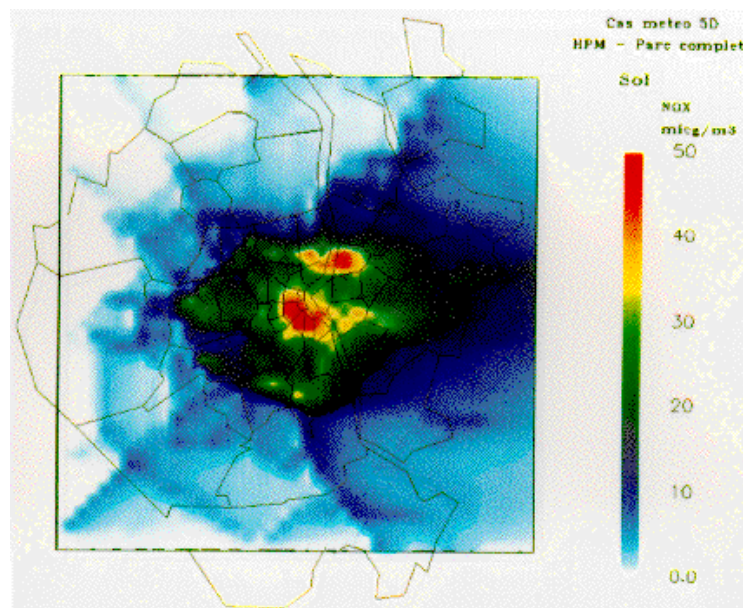


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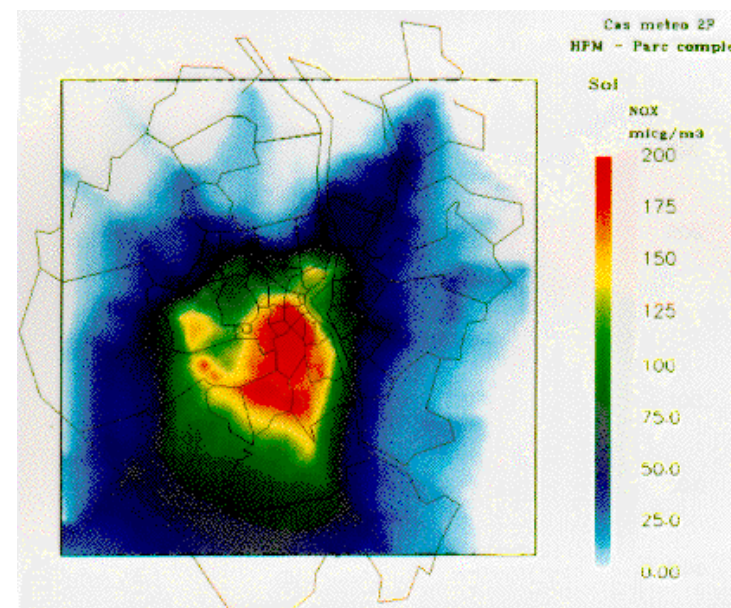
II - 7 Results :



Pollutants gattering



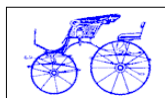
Situation météorologique “ fréquente ”



Situation météorologique “ pénalisante ”

**NO_x scattering, at the peak hour
of UGM transport (10-11h), traffic total**

Sources: LET, Aria Technologie, Systems consult, 2000

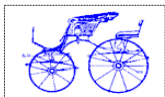
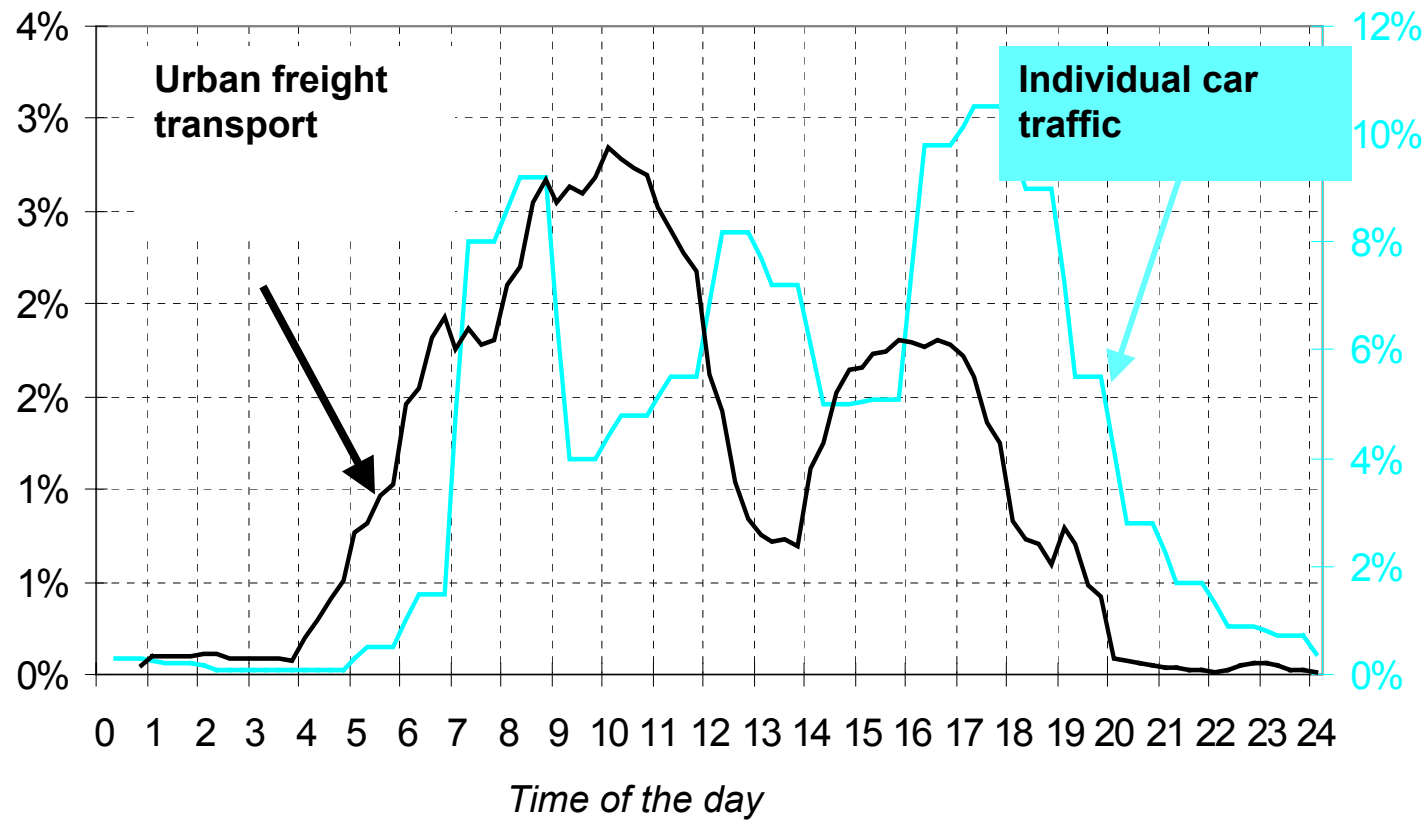


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II - 7 Results : daily *rhythm* of UGM



Survey in the city of Bordeaux, 1995

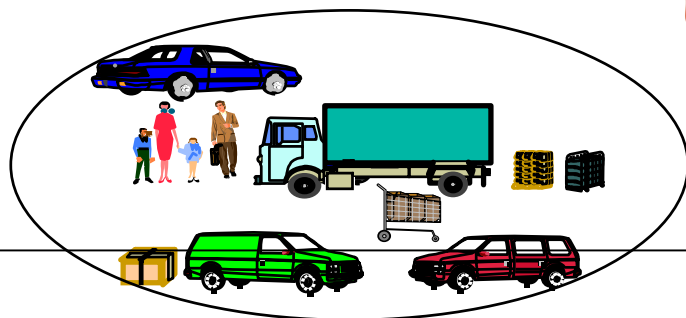


II - 7 Results



Global results of quantitative surveys:

Urban Transport Environnemental balance

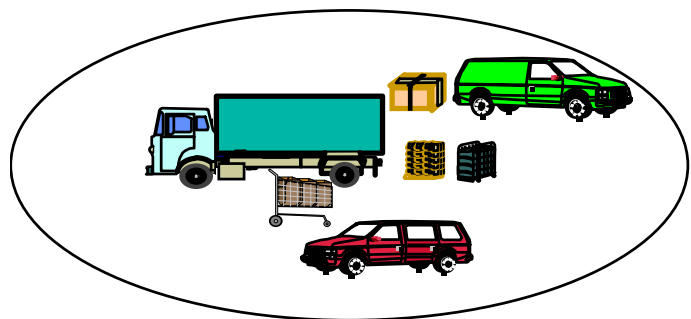


Energy Consumption of Urban transport:

from 1 to 1.4 Kgoe/inhabitant/day

Greenhouse effects : CO₂ emission

from 3.1 to 4.4 Kg/inhabitant/day



Energy Consumption of Urban goods

transport: about 20% of the motorized traffic

Share of goods transport in Marseille :

deliveries/pick-ups

and urban management : 16 %

trips for purchasing : 13 %

Share of goods in pollutant emissions :

CO	NOx	HC	SO ₂	particules	CO ₂
13 %	37%	16 %	33%	48%	27%

Source : LET-Aria Technologie, Marseilles, 2000



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DEVELOPMENT FUND



Regione Emilia-Romagna



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II - 7 Results



Global results of quantitative surveys: a better knowledge of Urban Goods Movement

The components of the UGM (number vehicles*km)

Deliveries and Pick-ups (total premises):



24%(vk)

40% (vk car unit)

Purchasing trips (by car):



69% (vk)

50% (vk car unit)

Urban management (building sites, networks maintenance, waste collection, removals...)



7% (vk)

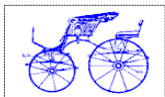
10% (vk car unit)

The share of Urban Freight Traffic in the total traffic

From 9% to 15% of vehicles trips

From 13% to 20 % of véhicules*km

From 15% to 25 % of véhicules*km (car unit according to the vehicle size). **but more than 50% in the city centre.**



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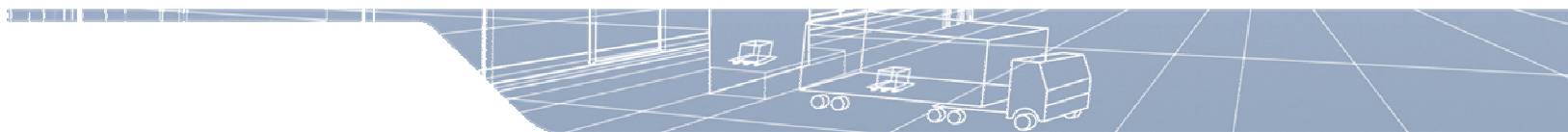


Regione Emilia-Romagna

Laboratoire d'Economie des Transports, Lyon



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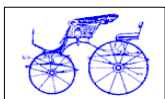


I - The context of UGM

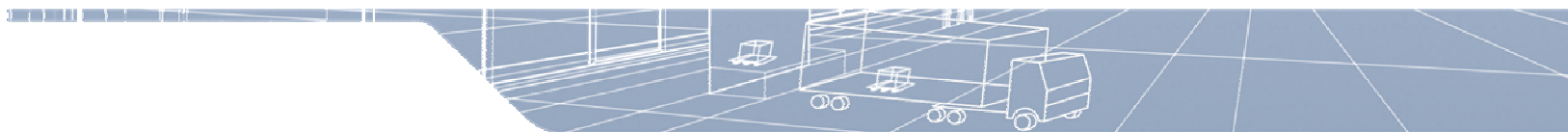
II - Establishment and tour based surveys: the French approach

III – Data collection for modelling

IV – Main gaps and recommendations

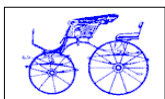


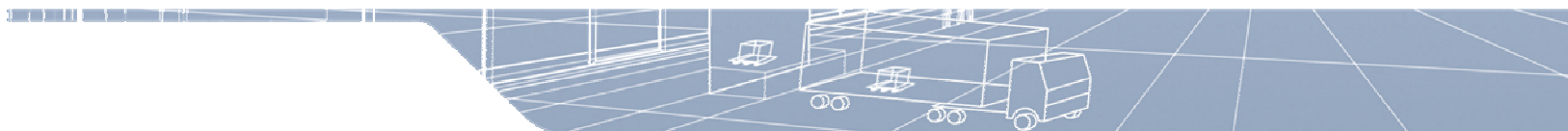
Made possible by the INTERREG IVC programme



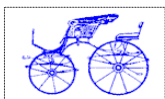
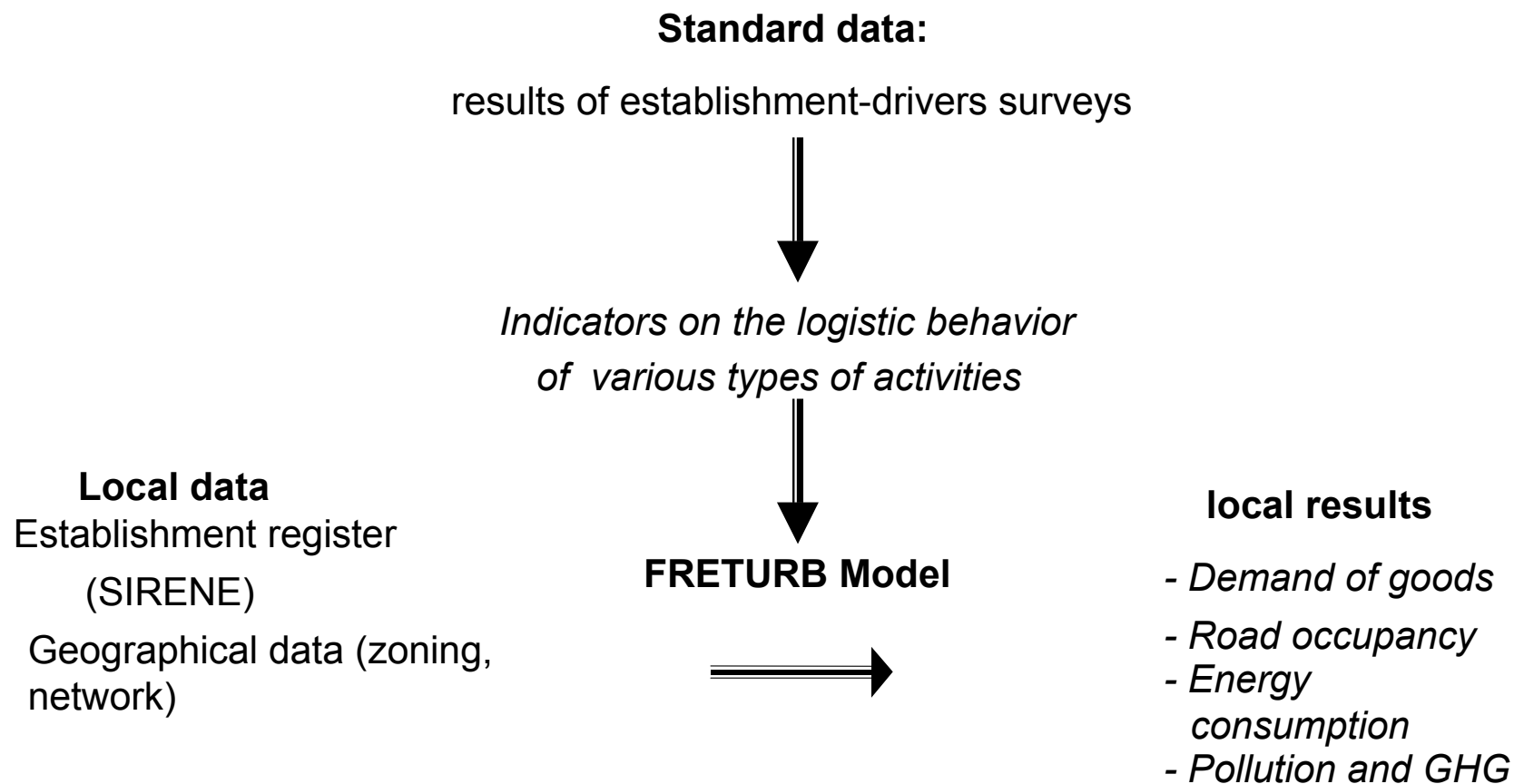
III - Data collection for Policy oriented modelling

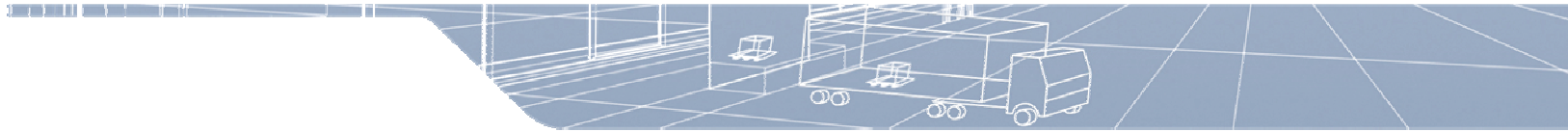
- to have a good knowledge of the UGM
- to understand trade and transportation policy
- to measure the indirect costs of UGM
- to feed a global traffic assignment model





FRETURB : a model built on empirical data

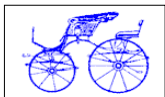




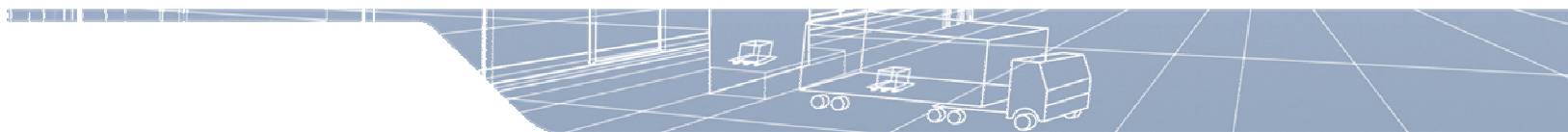
Freturb: a software for modelling UGM :

The different steps

- 1 - Generation of the deliveries and pick-ups
- 2 - Road occupancy calculation:
 - parking time
 - traffic
- 3 - peak hours breakdown
- 4 - Trips distribution zone to zone
- 5 - Environmental effects
- 6 - Simulation of policy

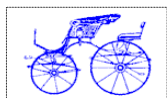
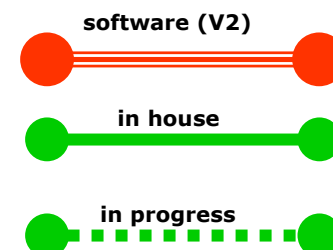


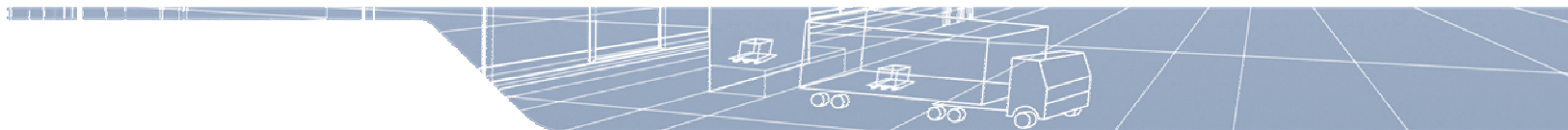
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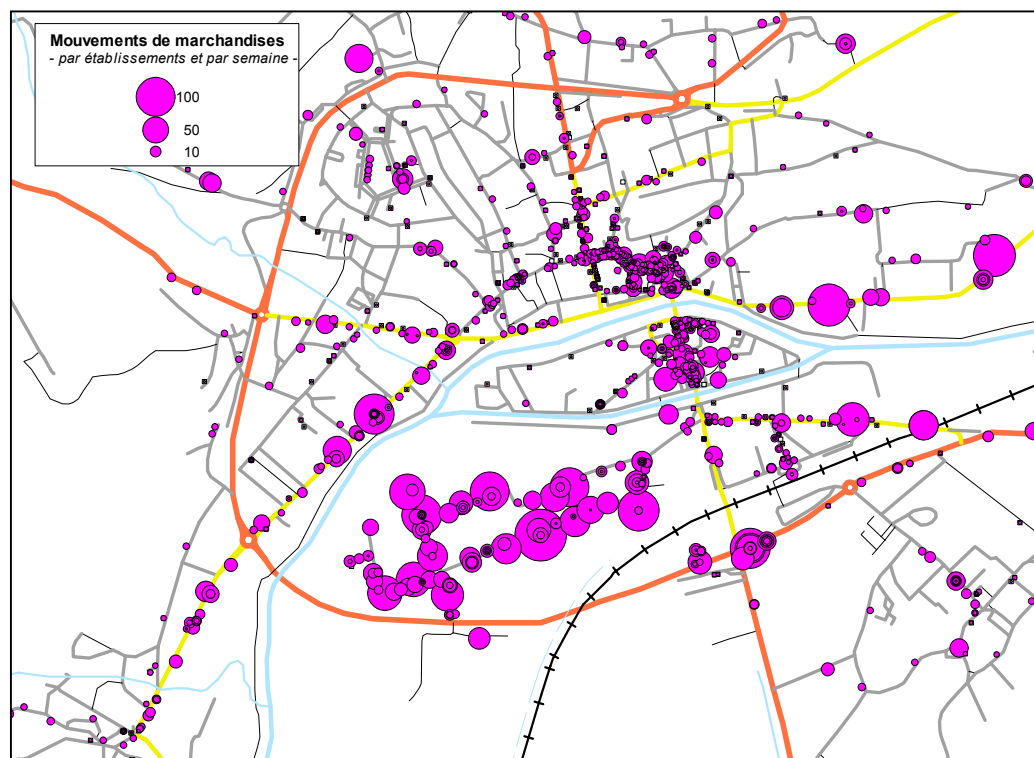
Summary of the results of the model FRETURB

- ↪ description of the demand (with an explanation by the logistics behaviour),
- ↪ occupancy of the roads by running and parking vehicles,
- ↪ hourly profile of the traffic (peak hours)
- ↪ distribution O/D of the traffic
- ↪ energy consumption
- ↪ environmental balance (CO₂, NO_x, SO₂, PP)
- ↪ simulation of sustainable policy:
 - to limit urban spread
 - to bring services and trade closer to the consumer
 - to relocate the warehouses (UDC,...)

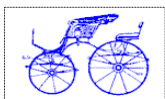


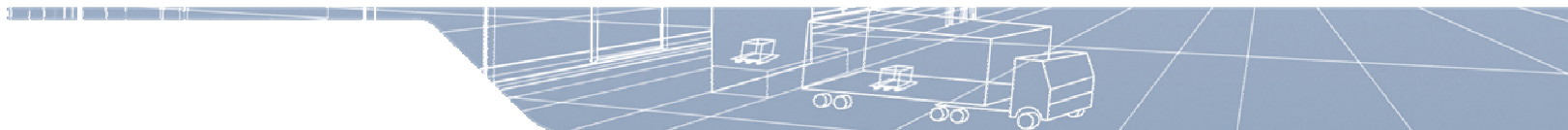


FRETURB Module 1 : GENERATION of movements



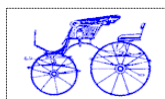
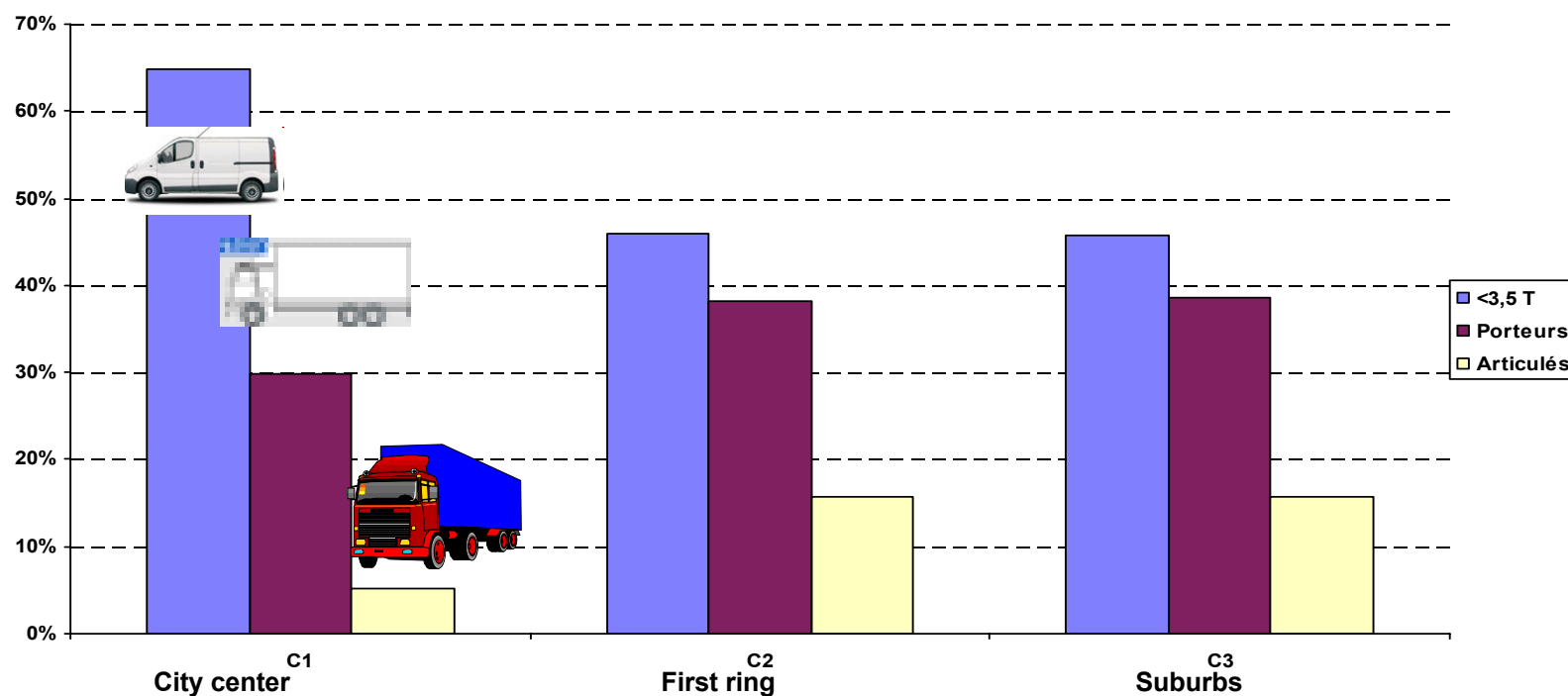
Map of the movements (deliveries and pick-ups) in the city of
Château Thierry (source CETE Nord-Picardie, France)

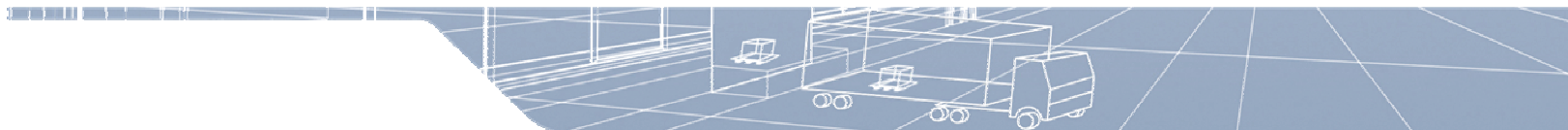




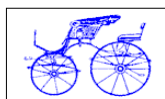
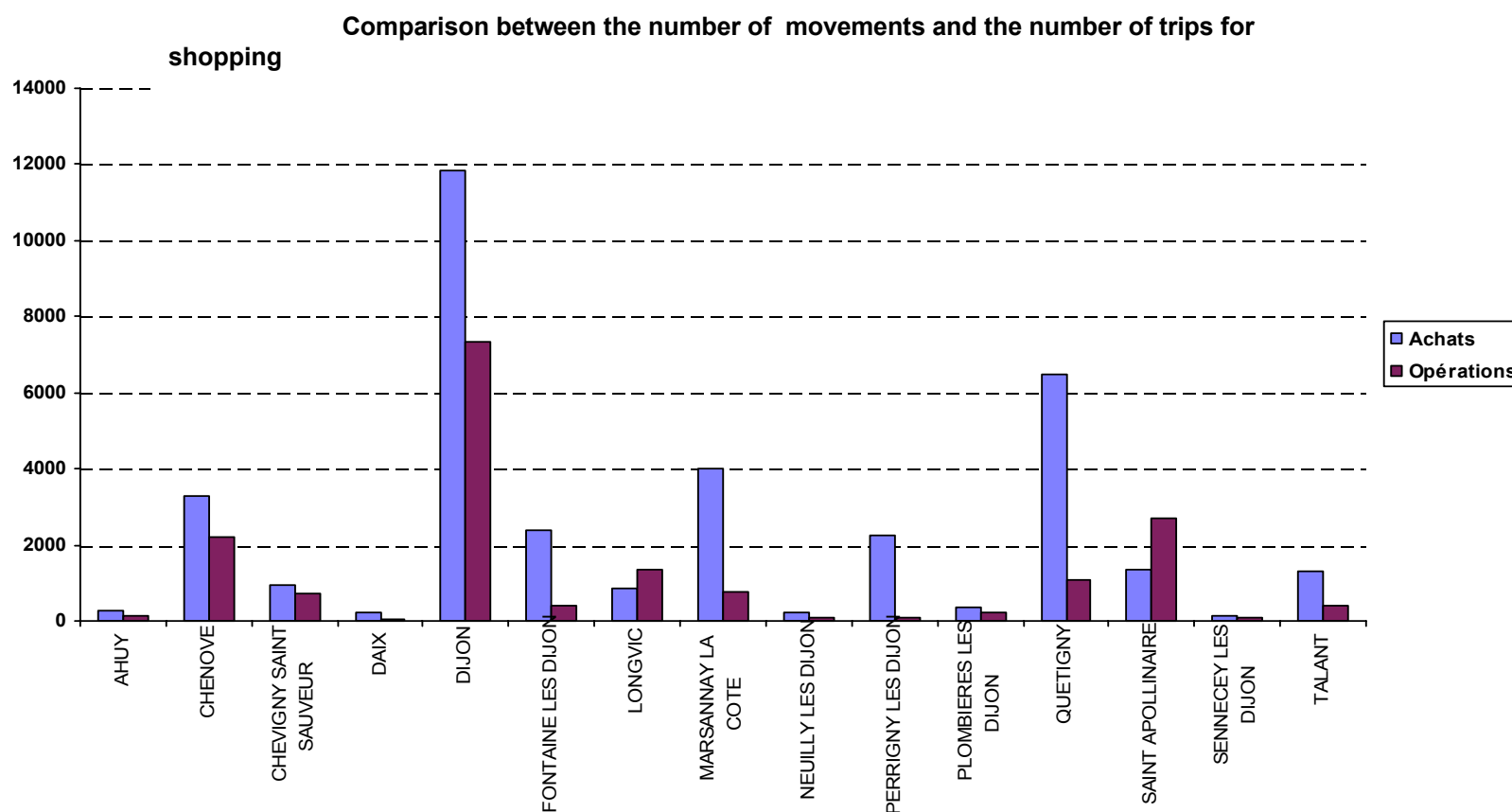
FRETURB Module 1 : generation of movements

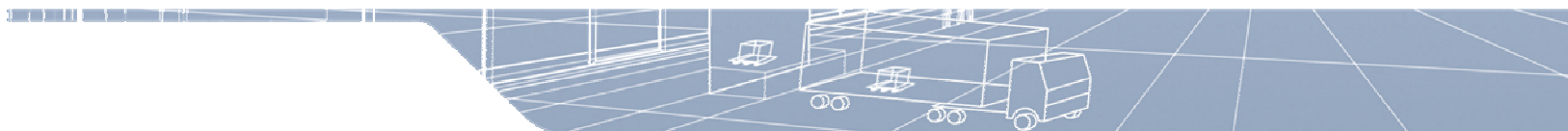
Distribution of the movements per type of vehicle in each area :



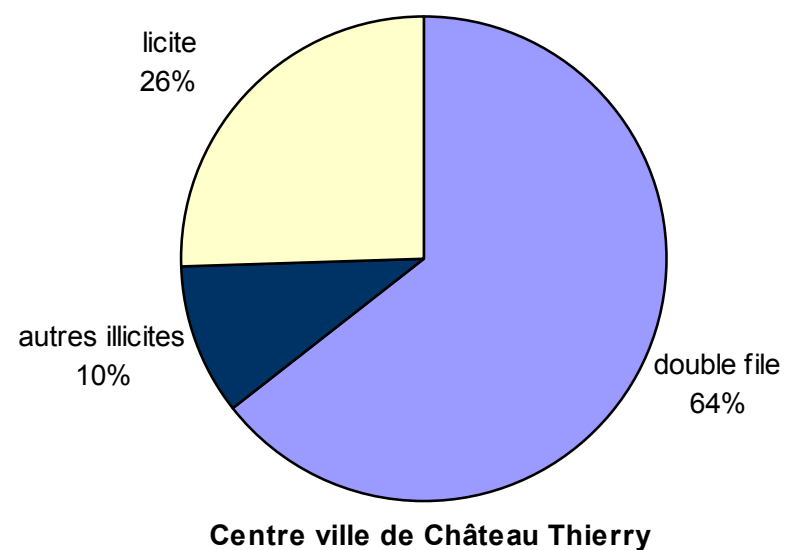
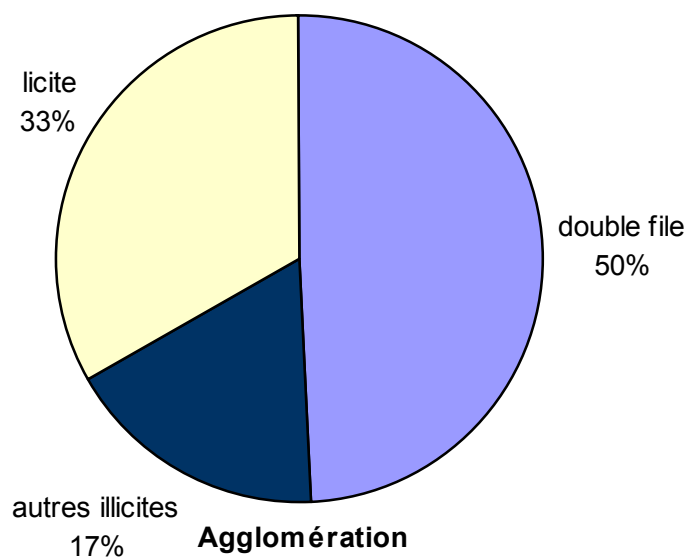


FRETURB Module 1 : generation of movements

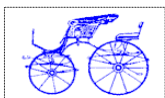


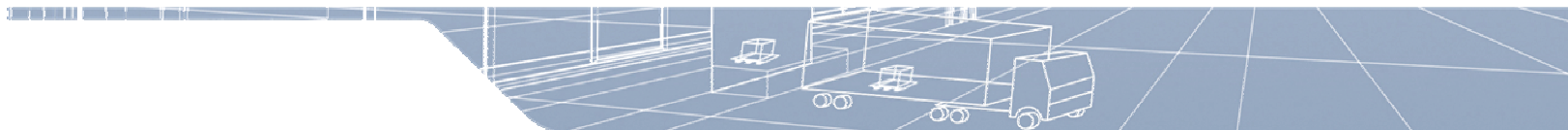


FRETURB Module 2 : parking time



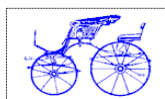
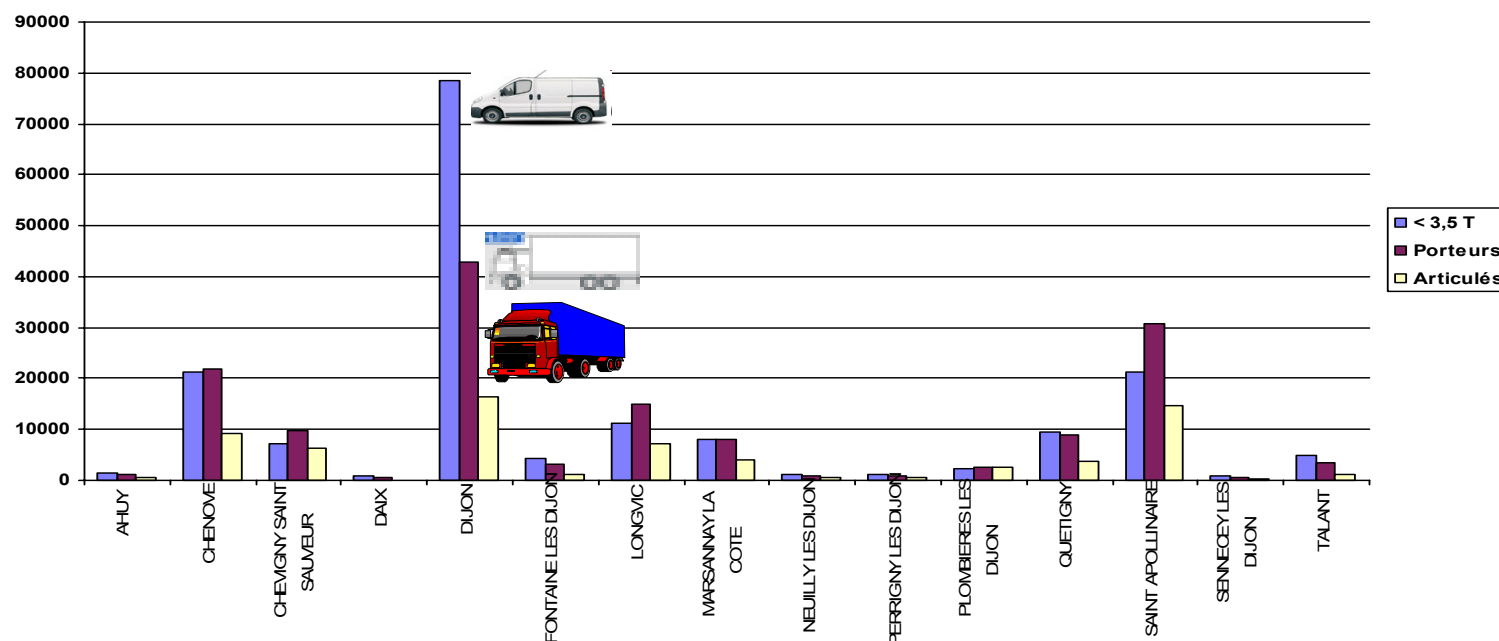
*Distribution of different types of parking for delivery
City of Château Thierry (source CETE Nord-Picardie)*

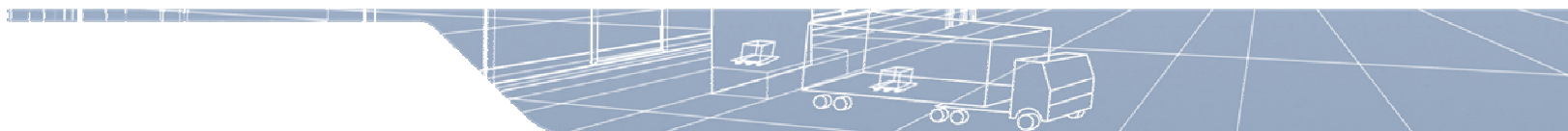




FRETURB Module 3 : generation of traffic

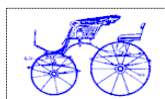
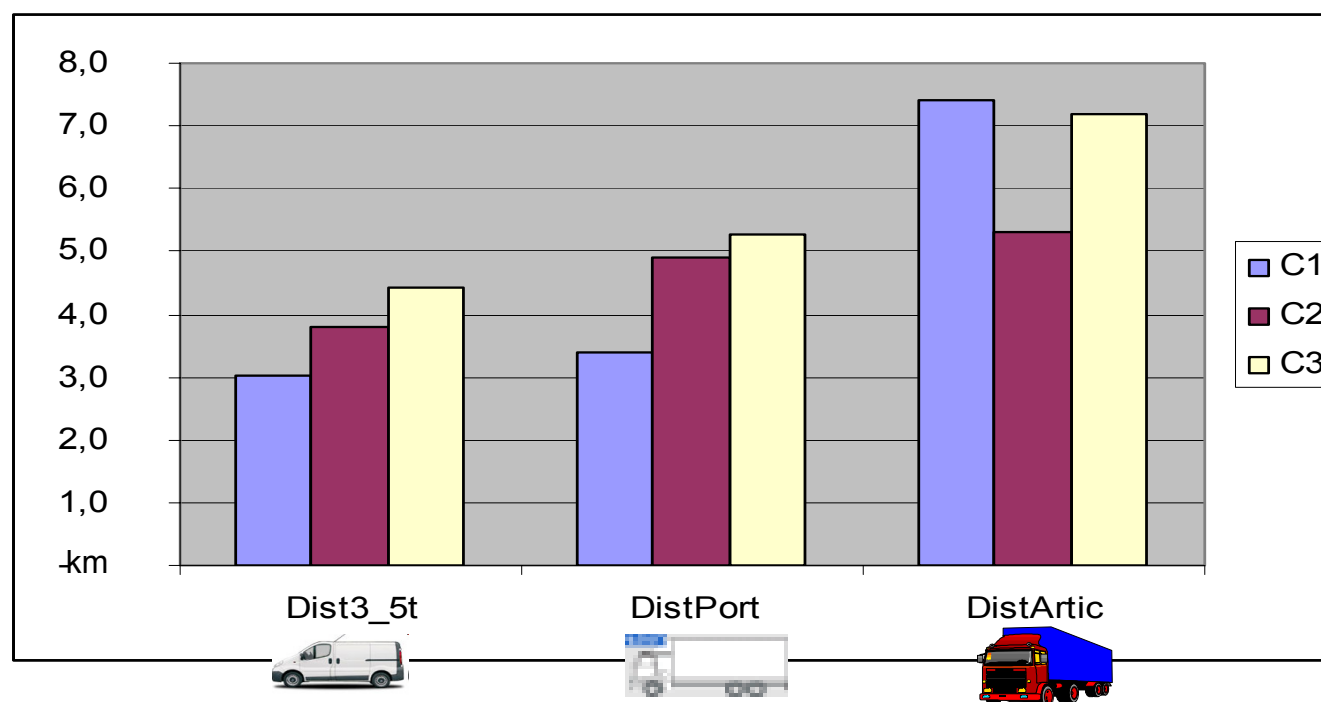
Traffic (km/sem) of different vehicles for each area of the town

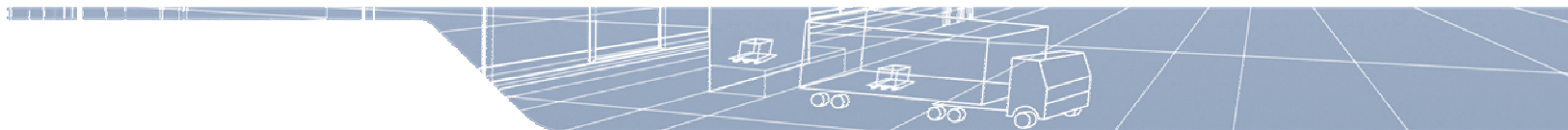




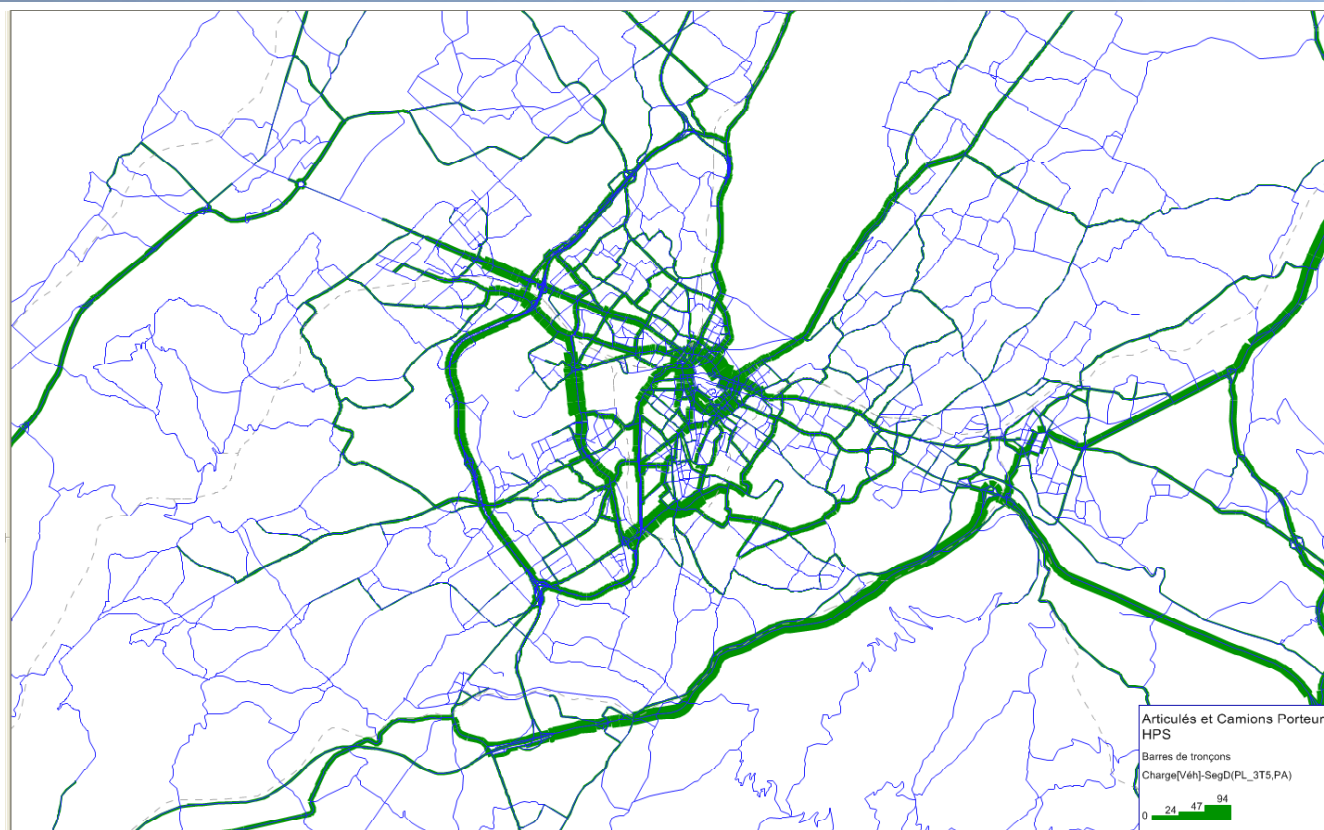
FRETURB Module 3 : generation of traffic

Distance average of a trip for each type of vehicle according to the area

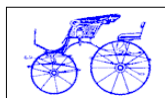


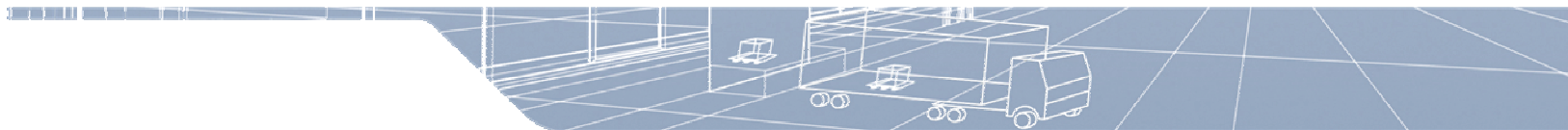


FRETURB Module 4 : distribution of traffic

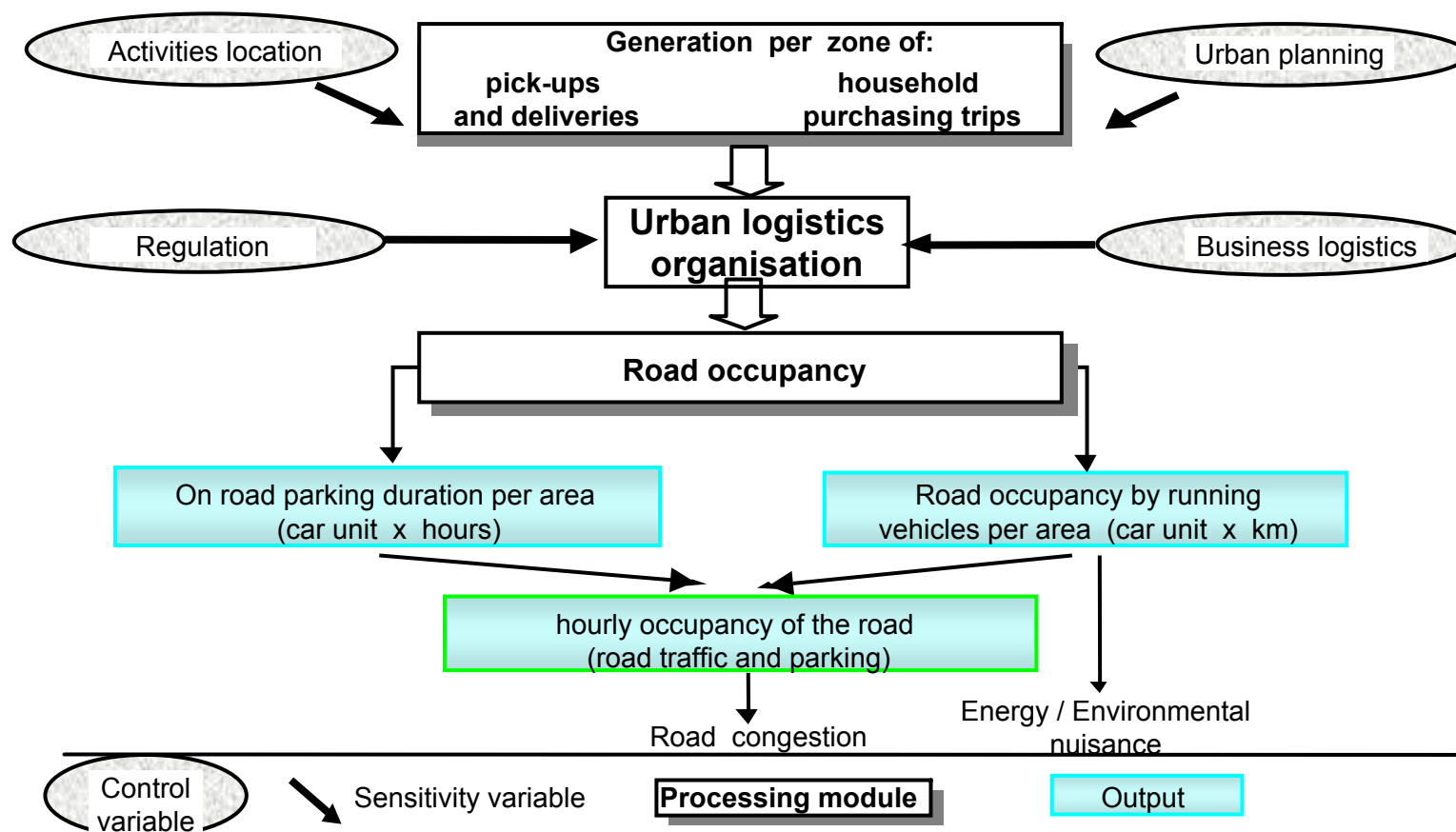


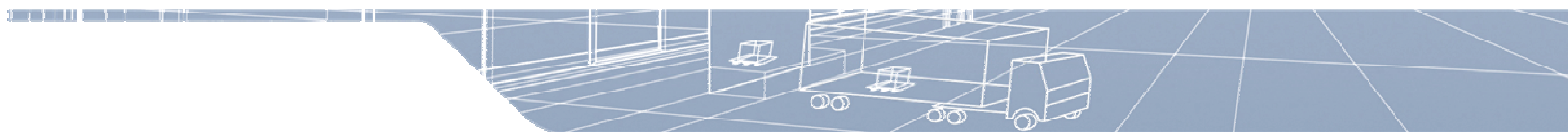
To feed a traffic assignment model





Global framework of the simulation model FRETURB





Does the Data collection answer the questions of:

I - The context of UGM

II - Establishment and tour based surveys: the French approach

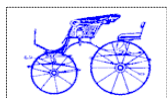
III – Data collection for modelling

IV – Main gaps and recommendations

1 - Does the Data collection answer the questions ?

2 - What is blocking the efficiency ?

3 - Best practice according to the objectives



IV – Main gaps and recommendations



Does the Data collection answer the questions of: Level improvement

- The good spatial scope of study area? +/- ? Possible?
- The scale of space and time? +/- ?
- The specification of the variables of the model? +/- ?
- An acceptable precision of the outcomes? +/- ?
- The quality of the indicators? +/- ?

Does the Data collection bring knowledge for: Level improvement

- logistic functioning (shippers, haulers)? +/- ?
- use of LGV? +/- ?
- the link between economic activity and transport sector? +/- ?
- The congestion (road occupancy (traffic and on road delivery)? +/- ?

IV – Main gaps and recommendations

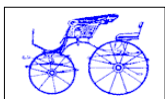


What is blocking the efficiency

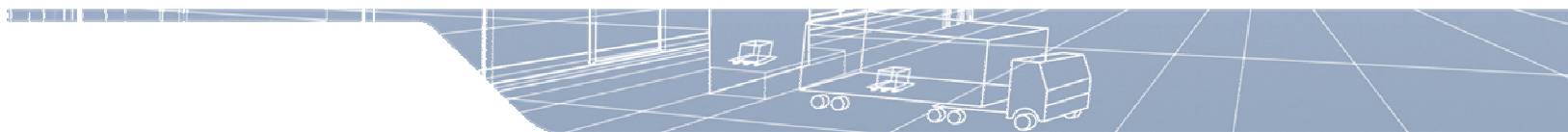
	Level improvement
-Language?	+/- ? Possible?
-Lack of knowledge, background and training?	+/- ?
-Political willingness?	+/- ?
- Involvement of the stakeholders?	+/- ?
- Cost of the data collection?	+/- ?

Modelling : what is blocking the efficiency

- Available data fit with the modelling approach?	+/- ?
- Cost of the development of the model?	+/- ?
- Cost of implementing the model?	+/- ?
- Ability of the tool for short , middle, long term decision aid?	+/- ?



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A growing interest and a lot of projects confronted with data collection

EU Cost 355 WATCH

(Changing behaviour towards a more sustainable transport system, 2004-2008)

EU project City Freight (2006-2009)

a comparative analysis of the effects of the main efforts for different cities and situations in Europe.

EU project START ("Short term Actions to Reorganise Transport of Goods, 2006-2009)

Three EU Interreg III B projects (2003-2007) :

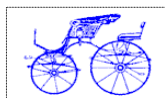
- City Ports (integrated approach of the supply chains)
- MATAARI (accessibility of the transport facilities in urban centres)
- MEROPE (Telematics for logistic management)

BESTUFS II (2004-2008)

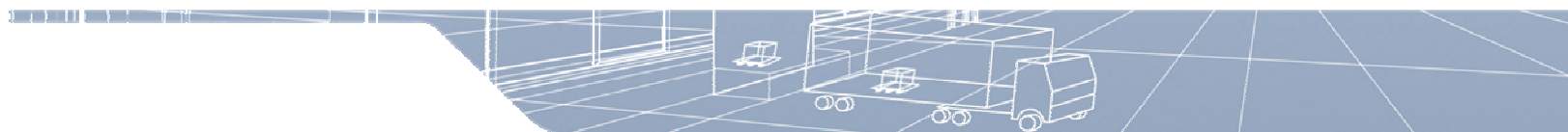
Future and in progress EU projects : SUGAR, FREILOT, CITY-MOVE, ...

Several recent reviews:

ISCTR conferences (2001, 2004, 2008), OECD report (2003), BESTUFS I and BESTUFS II (2000, 2003, 2006)



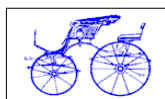
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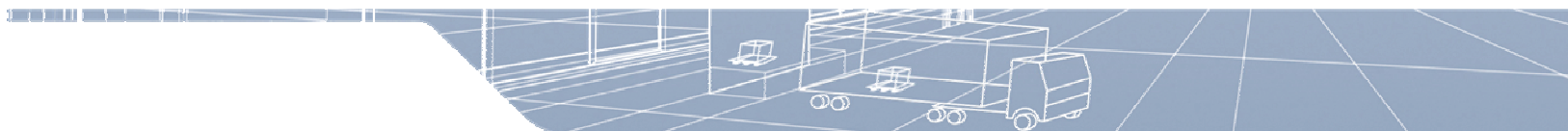


5 - Conclusion

Types of survey	Roadside	Vehicle-based	Shipper	Establishment and tour-based
Survey cost	inexpensive	medium	expensive	expensive
Accuracy of estimates	rough	good	good	very good
Explanatory power of the related models	Traffic management	Regional O/D	Commodity flow	Urban freight movement generation
Forecast	Network planning	Infrastructure planning	Supply chains evolution	Town planning Urban logistics
Simulation and decision-making aid	Traffic models calibration	Routing and scheduling	Distribution channel optimisation	Logistic behaviour ⇔ traffic flow

Best practice according to the objectives





Thank you for your attention

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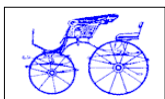
jean-louis.routhier@let.ish-lyon.cnrs.fr

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