URBAN FREIGHT SURVEYS (UFS) IN FRENCH CITIES

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Introduction

Urban Freight Surveys aim at :
* Understanding the behaviour and the organisational aspects of freight deliveries and pickups;
* Providing a tool that does not require costly data collection for local decision-makers interested in urban freight : the Freturb model (*see poster on that topic*).

This full scale approach is supported by the French Ministry of Transport and is unique in Europe. Two survey campaigns has been carried out:
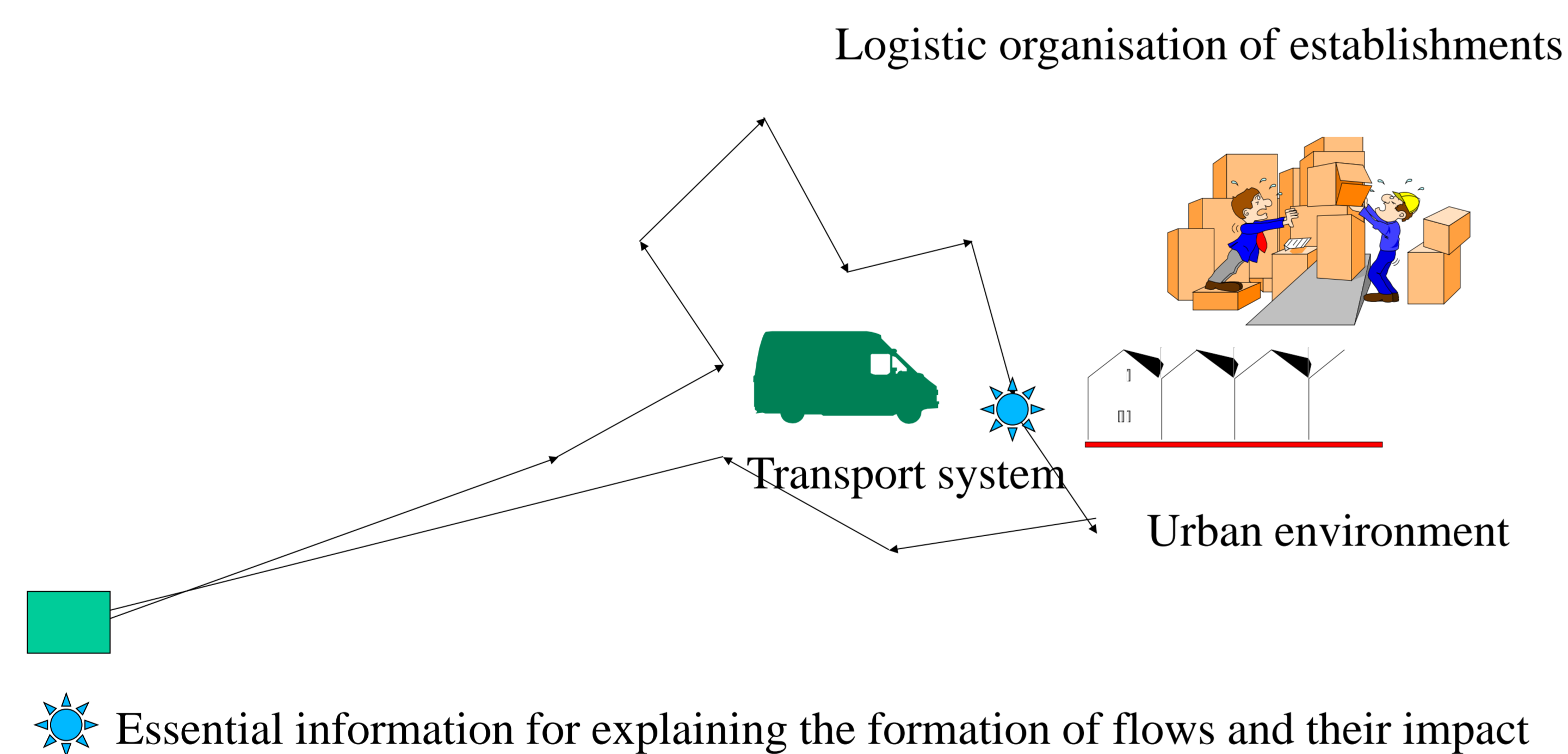* 1994-1997: Bordeaux, Marseille and Dijon,
* 2011-2014: Paris, Bordeaux, etc.

Methodology
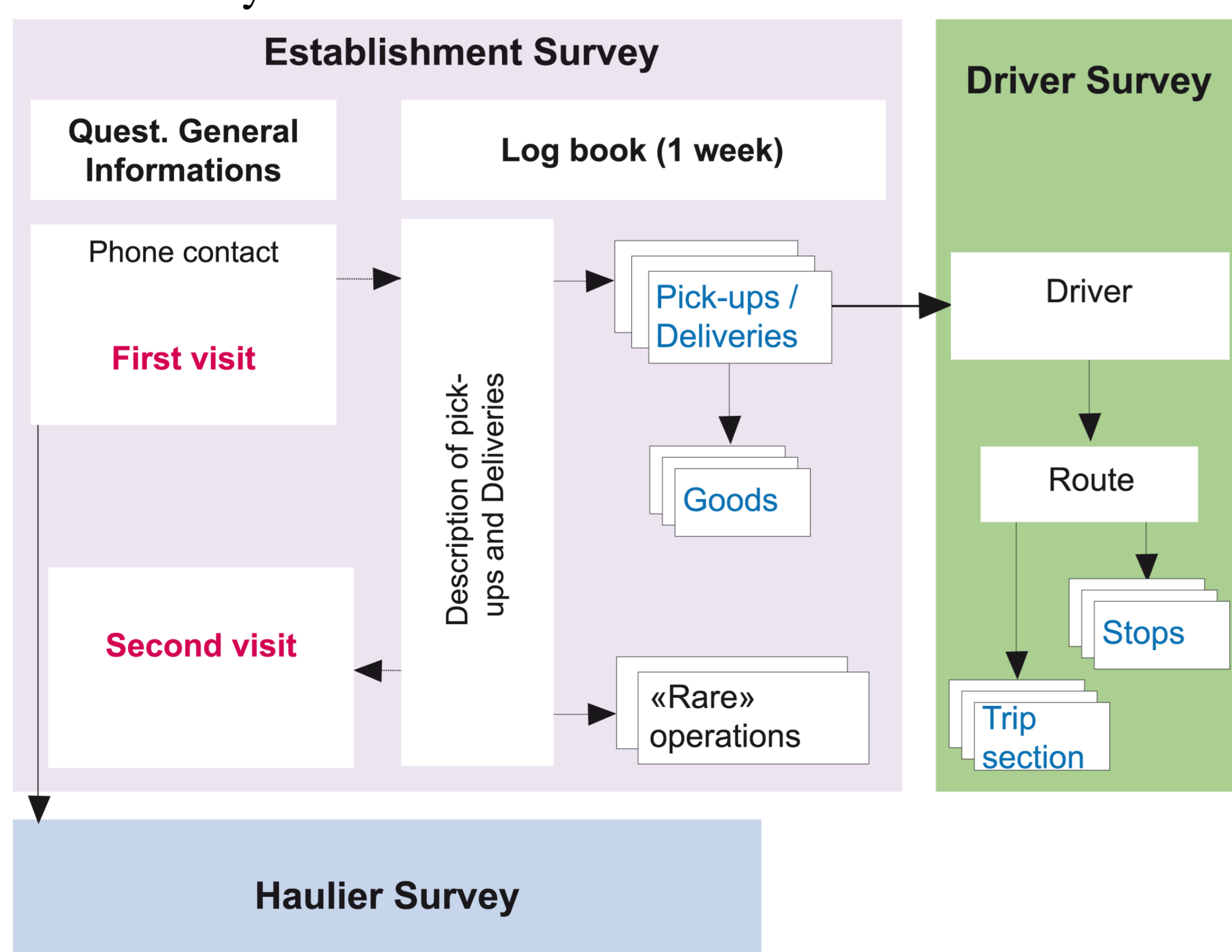
Finding a relevant unit of observation

What is the best unit of observation? Is it the commodity?, the vehicle on the road?, the transport company?

None of them! The best unit is the delivery (or pickup) operation serving an establishment, using a vehicle.

Logistic organisation of establishments

Transport system

Urban environment

✴ Essential information for explaining the formation of flows and their impact

Three nested surveys:
* A business survey
* A lorry driver survey
* A haulier survey

Sampling and expansion to the urban area

For each city, a categorised sampling is carried out on the comprehensive register of establishments.

Three criteria of stratification :
* activity of establishments (45 main groups),
* size of the establishment (no employee, 1 to 5, 6 to 9, 10 to 19 etc.),
* location of the premises (according to the zoning of the study area).

Sample size:
* 1500 establishment questionnaires / 6000 deliveries and pickups over 1 week and 8000 product types (weight, packaging, etc.);
* 1000 driver questionnaires (6000 stops),
* 100 main truck companies and large wholesalers.

Results

Efficiency and robustness of the survey

Numerous indicators are produced (in particular trip length, trip duration, on-road parking duration). Those indicators are very similar in all the surveyed cities.

Standard data for a european city

* 1 delivery / pick-up each week, per job (with high standard deviation according to type of activity);
* 50% light vehicles (vans) and 50% truck;
* 50% own account and 50% for-hire;
* 75% deliveries and pick-ups carried out by rounds;
* 80% deliveries <10 minutes, pick-ups 30 min in average,
* 13 deliveries or pick-ups per round in average (19 for hire, 11 for own account);
* Peak hours (9-11 am) different from car traffic PH (7-9 am),
* 25% energy consumption, 25% GHG, 35% NOx, 50% PM emissions (all freight flows incl. shopping trips).

Retail trade in the three cities

— Dijon
— Bordeaux
— Marseille

Stable relationships observed in all city surveys

Main references

* AMBROSINI, C., PATIER, D., ROUTHIER, J.L. (2010), Urban Freight Establishment and tour-based surveys for policy-oriented modelling, Procedia Social and Behavioral Science, vol. 2, n. 3, pp. 6013-6026.
* ALLEN, J., BROWNE, M., & CHERRETT, T. (2012). Survey techniques in urban freight transport studies. *Transport Reviews*, *32*(3), 287-311.
* PATIER D., ROUTHIER J.L. (2009). How to improve the capture of urban goods movement data? In Bonnel P., Lee-Gosselin M., Zmud J. and Madre J.L. (Eds) *Transport Survey Methods. Keeping up with a Changing World*, Emerald, Bingley, pp. 251-287.