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BESTUFS II

Best Urban Freight Solutions II

Co-ordination Action
Priority 1.6.2 Sustainable Surface Transport

D 3.1 BESTUFS Best Practice in data collection, modelling approaches and application fields for urban commercial transport models I

Theme: Urban freight data collection - synthesis report

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Main Authors: Michael Browne and Julian Allen, University of Westminster

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1. Overview of urban freight data collection

1.1 Introduction

The EC established the Co-ordination Action (CA) on BEST Urban Freight Solutions II (BESTUFS) in 2004. It is a follow-up initiative to the Thematic Network (TN) BEST Urban Freight Solutions carried out between 2000-2003. BESTUFS II has a duration of 4 years. BESTUFS II aims to maintain and expand an open European network between urban freight experts, user groups/associations, ongoing projects, the relevant European Commission Directorates and representatives of national, regional and local transport administrations and transport operators in order to identify, describe and disseminate best practices, success criteria and bottlenecks of urban freight transport solutions. The concept of a Co-ordination Action thereby seeks to obtain the co-operation of experts and projects with existing or just emerging experiences and expertise, and the collection and analysis of existing project results from national and European projects.

This report has been produced as part of workpackage 3 (WP3): Urban Freight data collection and modelling of the BESTUFS II project. WP3 has three objectives:

- To collect, compare and describe different data collection approaches, transport models and transport modelling use cases with respect to urban commercial activities (Urban Goods Movement – UGM, including deliveries and pick-ups, household purchasing trips, moving and public works).
- To provide a platform for urban freight transport modelling experts to exchange their expertise and practical experiences.
- To contribute to a harmonisation and standardisation of data collection methods in the European countries.

WP3 comprises three tasks (3.1-3.3). Task 3.1 is concerned with urban freight data collection, task 3.2 with urban freight modelling approaches, and task 3.3 with application fields for urban freight modelling. Task 3.2 is currently taking place with modelling experts being asked to complete a questionnaire about the technical details of urban freight models they are aware of. A copy of the questionnaire being used for Task 3.2 can be found in Appendix 7. Task 3.3 will commence in 2007. Tasks 3.2 and 3.3 will be reported on in Deliverable 3.2 in August 2008.

The topic of urban freight data collection was addressed in the BESTUFS Thematic Network in 2000. A survey of freight data collection in European cities was carried out and the finding and conclusions reported (BESTUFS, 2000). WP3 in the current BESTUFS II Co-ordination Action has taken this earlier work as a starting point and is building upon it.

This report is the output from Task 3.1, and contains a synthesis of information provided by freight transport experts to the questionnaire carried out at a national level in the following European countries (national reports have also been produced for each of these eleven countries):

- Belgium
- France
- Germany
- Hungary
- Italy
- Netherlands
- Portugal
- Spain
- Sweden
- Switzerland
- United Kingdom

This report contains a summary of the findings about the following topics:

- The current state of urban freight data collection: including the extent of freight data collection, the range of organisations collecting freight data, reviews of freight data collection, changes in urban freight data collection in recent years, likely developments in urban freight collection, and gaps in freight data that have been identified (section 1).

Details of the range of urban freight data currently collected in each country including the most useful and innovative data collection exercises (section 2).

- Urban freight transport indicators used in the countries surveyed (section 3).
- Urban freight transport terminology used in the countries surveyed (section 4).

Section 5 provides conclusions and recommendations for future urban freight data collection based on the findings of the survey work. This includes consideration of important gaps in the data, and the methodologies and approaches used in collecting the data. Additional gaps in urban freight data are likely to be identified later in WP3 in relation to urban freight modelling (tasks 3.2 and 3.3).

It is important to note at the outset that the extent of urban freight data collection varies significantly between the European countries surveyed. In addition, even in countries with the greatest quantity of urban freight data, most of this is derived from the disaggregation of data collected at a greater geographical scale than the urban area.

The quantity and coverage of available urban freight data in all countries surveyed is still far less than either: i) freight data available at a national level, or ii) urban passenger transport data. Traditionally, all levels of government have focussed on passenger transport data collection rather than freight data (at national, regional and urban levels), together with the fact that much freight data (urban and elsewhere) is held by private companies and is not made generally available by them. Reasons for collecting freight data include:

- Investigating specific projects and initiatives
- Government monitoring and performance measurement
- To meet requirements of EC Directives
- To produce national estimates
- For freight transport modelling and forecasting
- Legal requirement for licensing and safety controls
- Crime investigation (e.g. speeding and loading offences)
- Commercial monitoring (i.e. company vehicle operating and marketing data)

1.2 Main organisations collecting freight data

In most countries it is the national government that is the main collector of freight transport data. This usually takes place as part of larger, national surveys which include an urban component.

Much of this freight data collected by national governments is reported at a national scale (i.e. it does not distinguish between urban and non-urban freight). It can be possible to disaggregate some urban freight data from these sources. However, extracting urban freight data from these national surveys can prove difficult. Main difficulties in extracting data include:

- It is dependent on time availability of the national government survey staff.
- Vehicle operator surveys carried out to meet the requirements of the EU Directive on Freight Statistics are often based on vehicle activity, not specific geographical location, so both urban and non-urban data is collected (and is sometimes difficult to separate).

- Sample sizes for smaller urban areas are likely to be relatively small in such vehicle activity surveys.

Many urban authorities also carry out either periodic or occasional vehicle traffic counts that include goods vehicles but do not tend to carry out surveys of goods vehicle operations.

Typically, the only data collection work in the countries surveyed that focuses solely on urban freight transport are surveys carried out in specific towns or cities. These have usually been conducted on a one-off basis as part of a review of urban freight strategy or to assist in making an urban planning decision.

1.3 National reviews of freight data collection

Reviews of freight data collection have taken place in a few of the countries surveyed, as well as in other countries outside the EU. Such reviews are typically used to establish what data is being collected, why and how it is being collected, and the extent to which the data being collected meets the data requirements in terms of factors such as supporting freight policy decision-making and freight modelling. However, where such reviews have taken place, they tend to be concerned with freight data at a national level, rather than specifically at an urban level.

In Germany, an inventory of all data collected that concerned commercial traffic was carried out between 1997–2000 by a special research team on behalf of the German Ministry of Transport. The objective was to review the available data on commercial traffic to identify possible extensions to existing data collections and also to produce recommendations to overcome possible deficits in the existing data collected.

In the UK, the Department for Transport commissioned “The Review of Freight Modelling Project” which took place between 2001 and 2003 (WSP, et. al., 2002). This project considered data requirements and data sources currently available in UK for freight modelling purposes. Much of the review was at the national and regional scales, but urban scale was considered. Work by the University of Westminster for Transport for London (TfL) has reviewed freight data sources for London (Browne, Allen and Christodoulou, 2004).

In France, a review carried out on behalf of the French Ministry of Transport in 1994 concluded that there was a major lack of urban freight data collection.

In the USA, a review was carried out by the US Transportation Research Board (TRB) into national freight data in 2003 (TRB, 2003). A scoping study was recently completed in Australia on freight data issues. Again, the consideration were focussed on national rather than urban freight data (Austroads, 2006).

A brief review of urban freight data in member countries took place as part of the OECD report on urban freight transport in 2003 (OECD, 2003). The BESTUFS project has also previously examined urban freight data in selected European countries, in terms of the availability of such data (BESTUFS, 2000 and 2003).

The methodology for road freight data that is required to be collected and submitted to Eurostat by Member States under Council Regulation 1172/98 is also reviewed at regular meetings of members of national transport ministries/departments. This road freight data is typically published at a national level but contains data about urban freight transport activity within it (Eurostat, 2006).

Further details of these reviews into freight data can be found in Appendix 5.

1.4 Changes in urban freight data collection

The availability of urban freight data has tended to remain the same or improve in the surveyed countries over the last five years.

In countries in which urban freight data availability has improved this has either been the result of new national freight surveys from which urban activity can be disaggregated (for example, the company-registered van survey by the UK Government Department for Transport and the KID survey carried out in Germany in 2002), or one-off projects and data collection efforts at an urban scale (for example survey work in the Italian cities of Rome, Milan and the Emilia Romagna region, data collection in Liege and Ghent in Belgium, urban freight transport profiling in the Dutch cities of Amsterdam, Utrecht and Rotterdam as part of the Connekt MG-11 project, and survey work in UK urban areas including Ealing and Bexleyheath in London, and Newton Abbot in Devon as part of Freight Quality Partnerships).

Some of the most innovative, large-scale urban freight transport data collection and modelling exercises in Europe took place in France approximately twelve years ago. Some one-off urban surveys have taken place in French cities since then but on a far smaller scale.

It should be noted that in some of the countries surveyed such as Hungary and Portugal there have been few efforts to collect urban freight data in the past ten years. However, this situation is expected to improve in Portugal over the next five years as a result of increasing congestion and concern about environmental problems.

In several other countries, experts expect urban freight data collection to improve over the next five years as a result of it receiving greater attention from policymakers as they attempt to improve its efficiency and reduce its negative impacts.

2. Specific urban freight data collected

2.1 Country comparison of urban freight data collected

A summary of the current status of urban freight data collection in each of the eleven countries surveyed is provided in Table 1.

Table 1: Summary of urban freight data collection by country

Country	Summary of urban freight data collection
Belgium	<p>Most freight data collections in Belgium are executed at regional or national scale. Most freight data collections are rather general and don't treat specific urban issues. The most important reasons why there is a lack of data collection efforts for urban freight data are:</p> <ul style="list-style-type: none"> • Little interest • Too expensive • Poor (limited) experience of authorities <p>Urban data can potentially be extracted from national datasets but this can be difficult depending on the type of data.</p> <p>The interest in urban freight transport is recently growing, but probably urban freight will continue to be treated as a matter of minor importance.</p> <p>Specific urban freight related data collections have taken place in Ghent, Brussels and Liege.</p>
France	<p>The various kinds of Urban Goods Movement (UGM) data collected in France are:</p> <ul style="list-style-type: none"> • Large occasional surveys specific to UGM and national surveys to the total supply chains. • Small "one shot" surveys carried out by local authorities on the occasion of local experiments, • Counts of heavy vehicles ("cordon" surveys are more and more seldom), • Continuous and period surveys carried out nationally, but not specialised in the urban area, • Private data almost in the trade field. • A periodic light vehicle (LGV) and continuous HGV surveys are carried out, but not specifically for UGM, • and census and register data (such as economic, fleet and land use data used in modelling). <p>The main work on data collection in France focussing solely on urban freight took place twelve years ago. These involved occasional specific surveys carried out by the transport ministry in three specific cities (Bordeaux, Dijon and Marseilles). These have usually been conducted on a one-off basis using a similar methodology (establishment and driver surveys) in order to improve the knowledge on this field practically unknown before the 1990's and also to feed a model. It was a significant contribution to the quantitative review of urban freight knowledge and assisted in making urban planning decision.</p> <p>It was thus possible to build a model and software used by more than twenty cities in their master plans.</p> <p>In addition, there have been a few one-off surveys of freight transport operations at an urban level as part of research projects and local developments.</p> <p>However, a lot of cities don't feel still very much involved in the urban goods movement best practices. The specific urban goods transport surveys are expensive and difficult to bring into play.</p> <p>In the last five years, only small local surveys were carried out, and, because of lack of funds, the global urban freight data collections are not yet foreseen. Several surveys are nevertheless planned for the two next years:</p> <ul style="list-style-type: none"> • on the occasion of a study on the flows generated by the craftsman activity, a survey will provide invaluable results. • A study will prepare shortly the schedule of a foreseen large specific survey (what administration mode, what scope of the survey, etc). A pilot survey will be carried out in order to test its feasibility, in order to update the results of the large UGM specific surveys. <p>Studies carried out as part of the implementation of Freight Platforms and Mobility Master Plans can also be important sources of urban freight transport. National freight data is collected but is of little use at the urban scale since only trips of more than 50 km are included.</p>

Germany	<p>The majority of freight transport and traffic data is related to and reported at a national scale. Regional transport aspects are less taken in consideration. It does not distinguish between urban and non-urban freight respectively commercial transport, because it does not recognize geographical references. However, it is possible to disaggregate some urban freight data from these sources as useful input-figures for modelling urban transport.</p> <p>Freight transport on waterways and air does not rate in planning of urban goods transport. There is insufficient availability of official data about the inbound-infrastructure of the airports, of the transportation supply and demand on inland waterways, of air goods traffic, of energy consumption, and at the transportation prices of all carriers.</p> <p>The only data collection work in Germany that focuses solely on urban freight is the responsibility of towns or regions. There is no centralised governmental co-ordination, but federal financial promotion of researching activities assisting in making an urban planning decision for goods transport and commercial traffic in towns and overcrowded agglomeration areas. These studies have usually been conducted on a one-off basis as part of a review of urban freight strategy. Most of these urban freight data collection exercises took place during the 1990s. Locations in which such collection took place include: Frankfurt am Main, München, Stuttgart, Darmstadt, Dusseldorf, Bielefeld, Köln, Dortmund, Bonn, Bremen, Braunschweig/Salzgitter and Hannover.</p> <p>Overall, the availability of urban freight data is unsatisfactory. Quantity and quality of available urban freight are not covering the data requirements of individual planning and modelling strategies. The best data (urban and elsewhere) is held by private companies and is not made generally available by them.</p> <p>There are no plans for expansion in urban freight data collection in Germany, at a national governmental level. The official statistics are seen as providing data supply which covers the most significant requirements. The existing data deficits are known and will be eliminated if this can be done without major cost implications.</p>
Hungary	<p>There has been little urban freight transport data collection in Hungary. The only freight transport survey in Hungary took place in the first half of the 1980s. This involved a sample of approximately 3500 companies/units that were surveyed about their monthly/yearly in-and outbound good flows by goods/commodity categories and transport modes. The data was used in a national freight flow model which was developed on a mainframe computer.</p> <p>There have been no specific freight transport surveys in urban areas in Hungary yet. Only goods vehicles origin-destination surveys have taken place to date. The last such O-D survey took place in Budapest in 1994.</p> <p>The national government has no responsibility for UGM data collection, and seems to have no intention to encourage urban freight data collection at present. Municipal authorities would be responsible for urban freight data collection but are not currently doing so. There is little reason to think that urban freight data collection will improve in Hungary in the next five years.</p>
Italy	<p>Studies and analyses of freight transport in urban areas in Italy are not currently very well developed.</p> <p>Only a few studies at the urban level have taken place in recent years and there is no co-ordination among the different administrations or groups involved in these studies. This is probably due to the lack of an institutional body in charge of studying, co-ordinating studies on these phenomena and summarizing data collected at local level. Cities in which urban freight studies have taken place include: Rome, Milan, and cities in the Emilia Romagna region.</p> <p>Moreover, data collected from different public or private administrations, such as ISTAT or Ministry of Infrastructure and Transport, that could be used in studies and analyses of local phenomena, are not always useful to this aim because of the very big scale used (e.g. O/D matrix at province level and not at local level) or because considering some aspects of phenomena (e.g. in ISTAT study on transport of freight no vehicles with a load under 3,5 t are surveyed), only.</p> <p>Data availability at local level is often linked to the enforcement of regulatory tools, as in case of PGTU (General Plan of Transport), and information are limited to basic data, mainly traffic counts. Unfortunately, “shedding light “on private cars sometimes meant “casting shadows” on urban freight data; indeed commercial vehicles were usually tackled as a part of the overall amount of traffic, paying no attention to the mobility patterns typical of this mode.</p> <p>However, thanks to pilot studies and recent implementations, the knowledge on such phenomena is improved in recent years and will improve in future.</p>

Netherlands	<p>The national statistical agency CBS, as well as other producers of information in this area produce a very limited amount of information about urban freight transport.</p> <p>Urban authorities have a certain interest in urban freight transport, because of a mixture of legal requirements, economic policy, infrastructure/traffic management, environmental policy and accident management. However, the data that is currently being collected may not be as complete as is needed to base such policies on.</p> <p>Most urban authorities in the Netherlands do not tend to carry out surveys of goods vehicle operations. They stick to infrastructure policies instead of developing a proper accessibility policy for both passenger and freight transport. One of the reasons for this lack of interest is that the subject is not given enough priority by politics. This is rather logical, given the fact that local government is in a process of restructuring and rethinking its tasks and obligations towards society.</p> <p>In addition, there have been a few one-off surveys of freight transport operations at an urban level as part of research projects and local developments. The most important development has been the Connekt MG-11 project started in 2002 which aims to optimize a previously developed method of collecting data about urban freight transport, leading to “delivery profiles” for specific shopping areas in Amsterdam, Rotterdam and Utrecht.</p> <p>One cannot really speak of an improvement of urban freight data collection in the Netherlands over the past few years, especially not after the closure of the Platform on City Logistics (PSD). There are no plans for expansion in urban freight data collection in the Netherlands at a national level at present.</p>
Portugal	<p>Relatively little has been done concerning data collection about urban freight in Portugal in the last decade. Although there is more statistical information available now on traffic and transport, there is still little information accessible related specifically to urban freight. The information that is currently collected is still the statistical information on general goods transport, like statistics about the amounts of goods moved by each mode of transport, etc.</p> <p>Some public institutions have been collecting freight data at the national level for some years. The collection of freight data at regional level is more recent and consequently it hasn't yet been reviewed in most of the cases. From these regional studies, it is possible to extract information at urban level.</p> <p>At the local level, the capital of Portugal (Lisbon) is collecting data in order to solve specific problems related to urban goods distribution. There are also some municipalities like Porto, Evora and Lagos that have collected freight data in order to achieve some specific solutions (occasional collection). However, But these are one-off projects and data collection exercises with information not likely to be revised in the future. Other important sources of urban freight data include the studies that support the implementation of Freight Platforms and the Master Plans of Mobility.</p>
Spain	<p>Urban freight distribution is not considered a relevant issue by the Spanish local authorities. Even though all the medium and large cities have some kind of traffic plan, traffic counts or models, goods vehicles are only included in them as part of the general traffic flow, without any insight on the kind of vehicle, the goods delivered or the routes followed. While passenger traffic models are built based on data provided by surveys, shippers and carriers are extremely reluctant to provide any information on their logistic aspects, their route plans or their delivery practices. Lacking this complex information, local authorities are only able to address urban freight issues in a “short-sighted” way, providing load zones when requested by receivers or discussing accessibility permits with carriers associations, but without having a general knowledge about freight movement in the urban area.</p> <p>The studies addressing urban freight in Spanish cities are normally incomplete and seldom updated and, with the exception of Barcelona, few cities are engaged in obtaining detailed urban freight information. Limited data collection has been carried out in Vigo (survey about double parking), Malaga (survey about deliveries to the city centre as feasibility for an urban distribution centre) and Granada (assessment of the delivery pattern in its central area to determine of loading zones was sufficient) and Seville. Coruña is working on an initiative for collecting urban freight data.</p> <p>The industry does not consider urban freight distribution as a specific sub-sector. There are no lists of the companies whose business falls directly into urban deliveries. Nationwide carriers are not able to distinguish the fraction of their overall costs which corresponds to urban deliveries.</p>

	National freight data is collected but is of little assistance at the urban scale since this data may correspond to “through” traffic. There is data available for heavy vehicles at a national level, but these are not allowed to enter cities.
Sweden	<p>The national government is responsible for collecting urban freight data in Sweden. In addition, some one-off surveys are carried out by urban authorities.</p> <p>The most important urban freight data collection exercises in the country is Nätra - a sample investigation focused on a stratified sample of the 175,000 workplaces in Stockholm County was carried out in 1998. For each workplace selected, information was obtained regarding all movements by the selected vehicle (heavy lorry, light lorry or car) during one day.</p> <p>A commodity flow survey (shipment based, not vehicle based) was carried out in 2001 This survey provided data on the movement of goods in Sweden with Swedish and foreign recipients/consignors. It provided information on type of commodities shipped, their value, weight, and mode of transportation, as well as the origin and destination of shipments.</p> <p>A new shipment based survey will be carried out in the next five years. No new vehicle-based freight data collection has been carried out since 1998.</p>
Switzerland	<p>The main organisations collecting freight data in Switzerland are:</p> <ul style="list-style-type: none"> • Federal Office for Statistics (Bundesamt für Statistik BFS) • Federal Office for Spatial Planning (Bundesamt für Raumentwicklung ARE) • Municipal Authorities for regional and urban data collection <p>Most of the relevant data is collected as part of national surveys.</p> <p>One-off urban freight data collection exercises have taken place in Basel, Berne, Lausanne and Zurich. These urban data collection exercises included surveys and traffic counts.</p> <p>In the last five years, data from traffic counts have improved in Switzerland. However, routeing data from goods vehicles operators has worsened over this time period.</p>
United Kingdom	<p>The UK Department for Transport (DfT) coordinates several on-going surveys of freight data in the UK. However, these surveys take place at a national rather than a specifically urban level. But some urban freight data can be disaggregated from these national surveys. The most relevant DfT freight data publications (such as the Continuing Survey of Road Goods Transport, and the Company Van Survey) are published on an annual basis. However, data collection takes place all year round.</p> <p>Another important source of urban freight data are road traffic counts carried out by the Statistics Traffic division in the DfT and in local authorities.</p> <p>Most urban authorities in the UK do not tend to carry out surveys of goods vehicle operations. Transport for London has been making efforts to compile data about freight transport in London. However TfL does not collect all the data itself. Some is extracted and provided from national surveys by DfT.</p> <p>In addition, there have been a few one-off surveys of freight transport operations at an urban level as part of research projects and local developments. These have taken place in Reading, Newton Abbot, Ealing and Bexleyheath high streets (both in London), Norwich, Winchester, Colchester, Birmingham and Basingstoke.</p> <p>Overall, urban freight data collection has improved in the UK over the last five years at both the national and urban level. There are no plans for expansion in urban freight data collection in the UK at a national level at present.</p>

The freight experts surveyed were asked about the availability of the following categories of urban freight data in their country:

- Commodity flow survey
- Site/Land Use/Establishment surveys
- Goods vehicle activity surveys (including driver diary surveys)
- Shipper surveys
- Receiver surveys
- Good vehicle fleet licensing data

- Traffic counts
- Distribution industry surveys
- Vehicle operating cost surveys
- Loading/unloading/parking infrastructure data for goods vehicles
- Data on road accidents involving goods vehicles
- Data on lorry/lorry load thefts
- Employment surveys in freight transport and logistics industry
- Land use databases for town/city needed for freight modelling
- Port freight traffic data inside the urban area
- Rail freight traffic data inside the urban area
- Inland waterway freight traffic data inside the urban area
- Airport freight traffic data inside the urban area
- Freight informatics data (from cameras, sensors & other automatic data capture devices)
- Vehicle safety and maintenance

The experts identified relevant urban freight data sources for each of these categories and provided feedback about the following issues concerning these sources:

- Name of data collection/ survey
- Name of organisation collecting data
- Reason for data collection
- Whether the data used for modelling
- Frequency of data collection
- Last time data was collected
- Type of data collected
- Method of data collection
- Sample size
- Units of measurement used
- Geographical area over which data collected
- Difficulty involved in extracting urban data (if dataset is greater than urban)

The responses provided by the freight experts have allowed us to distinguish the types of urban freight data collected in each of the eleven countries surveyed, and it is possible to identify several key points (details about the urban freight data collected for each of the categories in each country studied is available in Appendix 1):

- The range and quantity of urban freight data varies substantially between (and even within) countries.
- The regularity with which urban freight data is collected also varies between countries and between types of data. In some cases, data is collected on a continuous basis as part of a national government survey while, at the other extreme, data is sometimes only collected in a single one-off survey that is never repeated.
- The body responsible for organising the data collection also varies depending on the type of urban freight data in question. In many cases the data is collected by the public sector (either by a tier of government or by academics as part of a research project). However, in some cases (especially with data concerning operating costs, the structure of the freight transport and logistics industry, thefts from goods vehicles, freight activity using non-road modes, and goods vehicle data from vehicle tracking systems) private sector organisations are responsible for data collection. Such organisations can include individual companies, trade associations, chambers of commerce, insurance groups etc.

- In the case of data collected by public sector organisations, the tier of government at which the data collection takes place can vary. Some data is collected by national government (especially that data required to be collected by EU legislation – such as goods vehicle activity data), some is collected by regional government, and some is collected by urban/municipal authorities.
- It is not always the case, but urban freight data collected by national government is often collected on an on-going basis, while some of the freight data collected by urban authorities takes place on a one-off basis as part of a specific study.
- In some cases, freight data collected at an urban level is collected in all urban areas within a country (e.g. traffic count data). However, in other cases it is only collected in one or several urban areas (especially when it is collected as part of a specific study).
- Urban freight data that is collected by national governments as part of continuous or occasional national survey work needs to be disaggregated from the overall dataset in order to be useful for urban freight analysis. The level of difficulty involved in disaggregating urban data from national freight datasets varies depending on how the data has been collected and coded. In some cases, disaggregation is not possible.

Table 2 contains a summary and comparison of this information for all eleven countries¹. There are two columns in the table for each country. The first column indicates whether or not such urban freight data is collected. The second column indicates the level at which this data is collected (national, regional or urban government, or collected by commercial organisation).

¹ Note about Table 2: In the rows showing information about rail, port, inland waterway and air freight traffic data inside the urban area, this refers to the existence of a rail terminal, sea port, river wharf or airport in the urban area rather than necessarily reflecting the use of these modes for freight transport destined for locations within the urban area.

Table 2: Urban freight data collected in the countries surveyed

Type of data collection exercise/survey	Belgium		France		Germany		Hungary		Italy		Netherlands		Portugal		Spain		Sweden		Switzerland		United Kingdom	
Commodity flow survey	✓	NS	✗		✗		✗		✗		✗		✗		✗		✓	NS	✓	NS	✗	
Site/Land Use/Establishment surveys	✓	NS	✓	SUS	✓	NS	✗		✗		✓	RS	✗		✓	OUS	✗		✓		✓	SUS
Goods vehicle activity surveys (including driver diary surveys)	✓	NS	✓	NS	✓	NS	✓	SUS	✓	NS	✓	SUS	✓	NS	✓	NS	✓	NS	✓	NS	✓	NS
Shipper surveys	✓	OUS	✓	NS	✓	SUS	✗		✓	CD	✗		✗		✓	SUS	✗		✓	NS	✗	
Receiver surveys	✓	SUS	✓	SUS	✓	SUS	✗		✓	SUS	✓	SUS	✗		✓	SUS	✗		✓	NS	✓	SUS
Good vehicle fleet licensing data	✓	NS	✓	NS	✓	NS	✓	SUS	✓	NS	✓	NS	✓	NS	✓	RS	✓	NS	✓	NS	✓	NS
Traffic counts	✓	AUS	✓	AUS	✓	NS	✓	SUS	✓	SUS	✓	SUS	✓	NS	✓	SUS	✓	NS	✓	SUS	✓	AUS
Distribution industry surveys	✗		?		✓	CD	✗		✓	CD	✓	NS/CD	✗		✗		✗		✓		✓	CD
Vehicle operating cost surveys	✓	NS	✓	NS	✓	CD	✗		✓	NS	✓	CD	✗		✓	RS	✗		✓	CD	✓	CD
Loading/unloading/parking infrastructure data for goods vehicles	✓	OUS	✓	SUS	✗		✓	OUS	✗		✓	AUS	✓	SUS	✓	SUS	✗		✗		✗	
Data on road accidents involving goods vehicles	✓	NS	✓	NS	✓	NS	✓	OUS	✓	NS	✓	NS	✓	NS	✓	AUS	✓	NS	✓	NS	✓	NS
Data on lorry/lorry load thefts	✓	NS	✓	NS	✓	CD	✗		?		✓	NS	✗		?		?		✓	CD	✓	NS
Employment surveys in freight transport and logistics industry	✓	NS	✓	NS	✓	NS	✗		✓	NS	✓	NS	✓	NS	✓	NS	?		?		✓	NS
Land use databases for town/city needed for freight modeling	✗		✓		✓	NS	✗		✓	OUS	✗		✓	SUS	?		?		?		✓	NS
Port freight traffic data in the urban area	✓	OUS	✓	CD	✓	CD	✗		✗		✓	NS	✗		?		?		?		✓	NS
Rail freight traffic data in the urban area	✓		?		✓	CD	✗		✗		✓	OUS	✗		?		?		?		✓	NS
Inland waterway freight traffic data in the urban area	✗		✓	CD	✓	CD	✗		✗		✓	NS	✗		?		?		?		✓	NS
Airport freight traffic data in the urban area	✓		✓	CD	✓	CD	✗		✗		✓	NS	✗		?		?		?		✓	NS
Freight informatics data (from cameras, sensors & other automatic data capture devices)	✗		✗		✗		✗		✗		✓	CD	✗		?		?		?		✓	CD
Vehicle safety and maintenance	✗		✗		?		✗		✗		✓	NS	✗		?		?		?		✓	NS

Key to Table 2: ✓ - freight data is collected ✗ - freight data is not collected ? - uncertainty exists about whether freight data is collected
 NS = national survey/data collection SUS = survey in some urban areas
 RS = regional survey/data collection OUS = survey in one urban area
 AUS = survey in all urban areas CD = data collected by companies, trade associations or other commercial organizations

2.2 The most important urban freight data collection exercises

Table 3 lists what are considered by respondents to be the most important data collection exercises in each country from the perspective of providing urban freight transport data. These important data collection exercises comprise continuous, occasional and one-off surveys. These data collection exercises have been carried out by national governments, city governments, and academic researchers.

In some cases the urban freight data collected by these data collection exercises is available for immediate use, in other cases the urban freight data needs to be disaggregated from a larger dataset (especially in the case of national and regional surveys).

Table 3: The most important data collection exercises in terms of providing urban freight transport data

Country	Description of data collection exercise	Status
Belgium	<p>Analysis of the goods distribution in the inner city of Ghent. The city of Ghent (owner of the data) wanted to know if a distribution centre would be desirable in Ghent. Therefore different workshops were held with involved partners including merchants and hauliers and a survey was executed by two consultancy bureaus (IRIS consulting and DHV) to know more about the logistic activities in the inner city of Ghent (pure urban freight data). About 215 merchants were interviewed (using pre-defined questionnaires) about their activities.</p>	On-off survey in 2004
	<p>Diagnosis of freight transport in the inner city of Liège. The city of Liège wanted to know more about freight transport in the inner city. Therefore the local authorities have given the task to 2 consultancy bureaus (BRRC and ISIS) to execute some freight surveys in Liège. Three surveys were executed for this project:</p> <ul style="list-style-type: none"> • A shipper receiver survey composed of two parts: <ul style="list-style-type: none"> - A short (fast) survey with suppliers of goods in the predefined zone (300 suppliers) - A larger (more detailed) survey with the shopkeepers (120 merchants) • A (parking) infrastructure survey. <p>In addition, 10 interviews were held with main political and economical actors.</p>	One-off survey in 2004
	<p>Urban freight transport strategy in Brussels. The Brussels freight plan is part of the European Commission DGVII 4th Framework Research Programme (REFORM project) and was co-funded by the Brussels-Capital Region. This study (by STRATEC) was carried out in order to make a diagnosis of the present impacts of freight transport on the environment in Brussels, to identify the trends and to elaborate a global strategy to cope with the results of the diagnosis. A freight model was developed to evaluate freight traffic impacts on the general traffic conditions for the Region of Brussels Capital. New traffic counts were required in order to build origin-destination matrices for cars (including bikes and vans), light trucks and heavy trucks.</p>	1996-1998

France	<p>The "Urban Goods Movement (UGM) surveys". These are the most important surveys carried out in France in the last 15 years. The objectives of these specific urban goods movement (UGM) surveys were:</p> <ul style="list-style-type: none"> • to survey all the freight generators in the urban area in order to measure all the input, output and inner goods traffic in the town, • to describe the logistic organisation of the town, in order to produce a diagnosis of the urban goods movement in a town, • to build a model in order to simulate the urban goods flows in a town and to help the planners for decision making. <p>The survey method and freight model were simultaneously developed. Three towns of various size were surveyed: Bordeaux (750,000 inh., 1994), Dijon (240,000 inh., 1997), Marseilles (1,050,000 inh., 1997). Two distinct surveys were managed in each town: an establishment survey (4,500 quest.) and a driver survey (2,200 quest.). The work was carried out the Laboratoire d'Economie des Transports (LET) for the French Ministry of Transport (DRAST) and ADEME. A pilot survey is planned to prepare a renewal in 2008.</p>	Occasional surveys: 1994-1997.
	<p>The periodic survey: "Véhicules Utilitaires Légers" (VUL). Carried out by the Transport Ministry: Service économie, statistiques et prospective (SES) - Division Transports de marchandises. The purpose of the survey is to gain an understanding of the activity of the vans (less than 3 tons of payload until 2001 and then less than 3,5t of maximum authorised load): professional versus personal use, the traffic, the consuming, the fuel consumption, according to the main characteristics of the vehicles and the activity of the users. It is a national survey containing urban and non-urban data.</p>	Every 5 years since 1981.
Germany	<p>Goods transport by road (Güterkraftverkehrs-Statistik (GüKStat)). This survey is carried out monthly for the German government. Operators provide data per each half-week (Sunday-evening to Wednesday and Thursday to Sunday evening) for 365 questionnaire-days per year. Data is collected about the activities of goods transports by road and heavy vehicles (over 3,5t gross weight). The data is collected for several reasons including: to meet European legislation, for monitoring of the road freight sector, modelling of regional and urban transport demand, to make environmental policy decisions (pollution in regional and urban areas, energy consumption of heavy trucks), to plan infrastructure. All freight models use the GüKStat data. It is carried out by postal questionnaire.</p>	Monthly since 1994
	<p>Motorised traffic in Germany (Kraftfahrzeugverkehr in Deutschland (KID)). This was a one-off data collection by governmental order. The purpose was to eliminate statistical deficits in commercial transport data by road with representative recording of commercial transport by vehicles under 3,5 tons gross weight, and the use of private cars for commercial purposes. The data is used to model commercial transport by light goods vehicles and cars in different housing-estates. It is also used to compare individual data of transport planning bureaux, and for environmental ad-hoc-analysis (of pollution and energy use in regional and urban areas) It was carried out by postal questionnaire using random sampling. It captured data about vehicle activities on five target-days per week.</p>	One-off survey: 2001-2002
	<p>Census of movements and trip – kilometres of motorised vehicles (Fahrleistungserhebung: FLE 2002) This postal questionnaire was used to capture data about the state of tachometers and driven kilometres in a certain period of time and a certain space-unit. Respondents provide a total summary of trip-kilometres of goods vehicles. The data is used for infrastructure planning, transport policy, spatial development policies and to produce estimates of vehicle-movements and vehicle trip-kilometres. It is also used for the modelling of commercial transport in different housing-estates, and environmental ad-hoc-analysis.</p>	One-off survey in 2002

Italy	<p>“Studio per la mobilità delle merci nel centro storico di Roma” (Study of transport of freight in Rome historical centre) Rome Municipality asked STA to carry out a study on the state of the art of the goods distribution in the city historical centre. Concerns about air quality and cultural heritage preservation were the main causes which prompted the study. The aim of the study was twofold: on the one hand, to have a better knowledge of the “distribution of goods” phenomena, on the other to collect useful information to develop directions to solve the most recurring problems. The study made use of large survey work on freight distribution demand and supply. Critical issues were analysed and strategies were created in the study. The survey work included:</p> <ul style="list-style-type: none"> • traffic counts • roadside interviews (to find out about origins and destinations, loading arrangement and timings, goods carried etc.) • interviews with retailers to find out about their delivery arrangements, frequency and quantity of deliveries, type of vehicles used, timings etc.) • focus group sessions with transport operators from companies carrying different products 	One-off study in 1999
	<p>Survey on Goods Movement in the Milan Area This freight study in Milan has virtually the same aims of the Rome study. It aims to investigate the distribution of freight in the metropolitan area. Such a very large area of investigation (the municipality of Milan, plus 38 municipalities around the city) required a very skilled methodological approach to manage the whole study program; this explains why the study was run in two steps: a first one for the surveys (divided into two sets of surveys, in 2000 and in 2002) and a second one for the creation of a dedicated model. Four types of survey work have been carried out:</p> <ul style="list-style-type: none"> • traffic counts • roadside survey of goods vehicles drivers (to build OD matrices) • survey of retailers • survey of shippers and hauliers (about logistics organisation and activity) 	One-off study: started in 2000
	<p>Urban freight studies in The Emilia Romagna region The Emilia Romagna region is an extremely economically strong and densely inhabited region in Italy. Concerns about environmental problems in the region have been expressed by local administrators and citizens over a long period of time. This is being addressed through the implementation of sustainability-based strategies and policies along with eco-friendly local measures. The environmental problems prompted regional administrators to monitor commercial traffic also in light of the fact that about 45% of goods produced in the region are for inner (regional) markets and that only 11% of the surveyed commercial flows are due to regional through-traffic. Regular surveys take place at the regional level and published freight data includes:</p> <ul style="list-style-type: none"> • Average transportation distance • Transported tons of goods (per type of transport) • Number of vehicles per transportation company <p>Most of these data are collected to support planning activities and are especially targeted to support issues in the Regional Logistics Plan.</p>	On-going
Netherlands	<p>Connekt MG-11 project – Delivery profiles. The study has two aims:</p> <ul style="list-style-type: none"> • to optimize a previously developed method of collecting data about urban freight transport. Then, to apply the method for data about shopping centres in the inner cities of Amsterdam, Rotterdam and Utrecht. This led to so-called delivery profiles for specific shopping areas in these cities. • to develop a model for explaining relations between key variables in urban freight transport in these cities. <p>Data were collected during the surveys, even in areas known to be difficult, such as deliveries per branch of industry and commodity, vehicles, O-D pairs</p>	Started in 2002

	and route choice. A so-called delivery profile was developed. The profile can be compared with profiles of other urban shopping areas of comparable size and spatial and economic structure.	
Spain	<p>“Situación de la carga y descarga de mercancías en el centro de Barcelona” (State of art of loading and unloading freight operations at the CBD of Barcelona)</p> <p>Carried out for Barcelona Council by Doymo. The purpose of the study was to characterise the supply and demand of loading-unloading places in CBD of Barcelona.</p> <p>The study included a commercial census, a census of load zones, a receiver survey, a carrier survey and an analysis of the rotation of freight vehicles in selected load zones.</p> <p>Transport operator surveys included 35 interviews and 100 postal surveys. Shipper and receiver surveys included 226 interviews (10% of the total amount of companies in the area of study).</p>	One-off study in 1991
	<p>“Estudio metodológico y desarrollo de proyectos sobre propuestas de mejora de la distribución urbana y de las operaciones de carga y descarga para la distribución de mercancías en Barcelona” (Methodological study and project development of improving initiatives about urban freight transport at Barcelona City)</p> <p>Carried out for Barcelona Council by Asdoconsult. The aim of this study was to obtain sufficient understanding of freight operations in Barcelona in order to develop test-bed initiatives.</p> <p>This study included an extended receiver and carrier survey compared with the 1991 study. 52 postal surveys were completed by transport operators, and 1,350 interviews took place with shipper and receiver (2.9 % of the total amount in Barcelona).</p>	One-off study in 1997
	<p>Carrier and retailer survey in the centre of Seville.</p> <p>The objective of this data collection process was to gain insight into city logistics practices in the centre of Seville. As it was, the local authorities were aware of certain specific issues regarding city logistics, like the need for load zones or the double-parking problem, but did not have any references on the overall freight movement. In particular, aspects like delivery frequencies, routes, type of vehicles used, load factors, etc, were totally unknown to them.</p> <p>Retailer surveys, carrier surveys and traffic counts were carried out.</p> <p>The data collected was used to describe general practices, and to confirm general impressions regarding delivery practices. It was also used to build microscopic and macroscopic simulation models and develop analytical tools for the estimation and assessment of city logistics.</p> <p>The whole process was designed and managed by the Industrial Organisation group of the University of Seville.</p>	One-off study in 2003
Sweden	<p>Nättra</p> <p>A sample investigation focused on a stratified sample of the 175,000 workplaces in Stockholm County was carried out in 1998. For each workplace selected, information was obtained regarding all movements by the selected vehicle (heavy lorry, light lorry or car) during one day.</p>	One-off survey in 1998
	<p>Commodity flow survey</p> <p>A commodity flow survey (shipment based, not vehicle based) was carried out in 2001 This survey provided data on the movement of goods in Sweden with Swedish and foreign recipients/consignors. It provided information on type of commodities shipped, their value, weight, and mode of transportation, as well as the origin and destination of shipments.</p>	Occasional survey in 2001. Next survey planned for 2006.

Switzerland	<p>Gütertransportstatistik (GTS). This survey of road goods transport in Switzerland is carried out by the Federal Office for Statistics to obtain information about road freight transport for development of political frameworks, for reaction to new circumstances, and for data for calibration of the models being used for traffic statistics in Switzerland. Data is collected by a questionnaire sent to vehicle owners which they complete with details of their vehicle operations. It includes operators in the whole of Switzerland.</p>	Every five years: last carried out in 2003
	<p>Alpenquerender Güterverkehr (AQQV). This is a survey of Alpine Crossing road freight transport that is carried out by the Federal Office for Spatial Development. It provides information about alpine crossing goods transport (road and rail and combined transport). The data collection has also been carried out also in Austria and France. The data of each participating country is exchanged. The data provides support in the planning of political measures. It involves:</p> <ul style="list-style-type: none"> • surveys of road hauliers at 4 alpine crossing passes: San Bernadino, Gotthard, Grosser St. Bernhard, Simplon (in total 21208 interviews). • manual traffic counts • automatic traffic counts 	Every five years since 1980: last carried out in 2004
	<p>Qualitätsmerkmale im Güterverkehr (QMGV) (Quality Characteristics of Goods Transport) This was carried out by the Federal Office for Roads (Astra). The purpose was to gain information about decision processes of shippers, modal shift behaviour and importance of quality factors in goods transports. The results are benefit values and money values for time savings, more punctuality and reliability. The results are to be used in Cost-Benefit-Analysis of new traffic planning measures. In involved a survey of 40 shippers (interviews) in Switzerland. The survey has been made by a stated preference survey on basis of SAWTOOTH-software.</p>	One-off survey in 2004
United Kingdom	<p>Continuing Survey of Road Goods Transport (CSRGT). This survey is carried out by the UK Department for Transport and involves continuous data collection all year round. The survey is carried out to gain an understanding of national road haulage activity, for policy briefing on freight and vehicle taxation, and for work on vehicle regulations and traffic forecasts. This is a statutory survey of UK-registered HGVs over 3.5 tonnes gross vehicle weight. The CSRGT samples goods vehicles and collects data about one week's activity from each vehicle in the sample. The data collected includes urban trips and trips outside urban areas. It is carried out by postal questionnaire.</p>	Continuous since 1980
	<p>Company Van Survey. The UK Department for Transport started a survey of company owned vans in 2003 (i.e. goods vehicles up to 3.5 tonnes gross vehicle weight). It is carried out through a statutory enquiry, similar to the existing domestic road freight survey (CSRGT). The survey collects data about three days activity from each vehicle in the sample. It is carried out by postal questionnaire. The data collected includes urban trips and trips outside urban areas.</p>	Continuous since 2003

	<p>“A framework for considering policies to encourage sustainable urban freight traffic and goods/service flows”.</p> <p>An exploratory study of urban freight transport carried out by the Transport Studies Group at the University of Westminster. The aim of the research was to develop and apply a framework for understanding urban freight transport and logistics in its broadest sense, reflecting the breadth of freight and service-related transport activity in urban areas. The research took place in Norwich and London.</p> <p>A range of data collection techniques were used including face-to-face interviews, consultation meetings, discussion groups, vehicle activity logs and vehicle manifest surveys.</p>	1998-2000
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2.3 Gaps in urban freight data

The responses provided by freight transport data experts in ten European countries carried out as part of this project have identified a range of urban freight data gaps. These gaps have implications both for understanding urban freight transport activity patterns and also for developing urban freight models. These gaps are summarised by country in Table 4.

Issues that have been identified by the experts in considering urban freight data gaps include:

- In some countries relatively little urban freight data is collected. In these countries, data gaps are substantial. This lack of data is often based on a lack of appreciation of the need for urban freight data by national, regional and urban governments.
- Even when urban freight data is being collected, it is common for different data collection exercises (either in the same country or in another country) to use different data collection methodologies. This results in data gaps when comparisons between datasets are attempted. In addition, reporting of freight data and analysis of data varies between studies carried out.
- The experts have identified a wide range of specific urban freight data gaps. Common data gaps mentioned by several experts include: (i) data about light goods vehicle activity (i.e. up to 3.5 tonnes gross weight), (ii) data about the supply chain as a whole (i.e. the links between urban freight activity and the freight activity upstream in the supply chain), (iii) data about freight and logistics infrastructure to and from which urban freight activity takes place, (iii) sectoral data about urban freight activity (i.e. much urban freight data does not distinguish the type of supply chain involved and goods carried), (iv) data about loading and unloading operations and infrastructure for goods vehicles, (v) insufficient geographical detail about goods vehicle trips in urban areas, (vi) data collection concerning the trips carried out by consumers for the purposes of shopping (which is a form of urban freight transport but which is often not defined as such for the purposes of urban freight data collection exercises), (vii) insufficient freight data for non-road modes, and (viii) often relatively little information is available about how data was collected and processed, and about the reliability of the data.
- In thinking about data gaps it is necessary to consider the different uses of urban freight data. It can be used in its own right by policymakers and researchers to understand existing patterns of freight flow and vehicle activity, to monitor freight performance and responses to policy measures. Freight data can also be used as an input to modelling exercises.

Table 4: Gaps in urban freight data by country

Country	Gaps in urban freight data identified by experts
Belgium	<p>The most important missing data includes:</p> <ul style="list-style-type: none"> • Data about light goods vehicles • Data about the type of delivery system used (i.e. single or multi-drop, and the number of drops involved) <p>Other urban freight data problems include:</p> <ul style="list-style-type: none"> • There are few urban freight studies • No common methodologies are used so the results are not comparable • There are no recurrent studies or surveys, so any analysis over time is difficult
France	<p>The most important gaps in urban freight data collection in France are as follows:</p> <ul style="list-style-type: none"> • The part of the peripheral platforms in the urban logistics is not well known because of the lack of knowledge of the traffic flows the latter generate. The connection between the global and local logistics is therefore not well analysed • The cost analysis of urban logistics is not possible, for the operators don't deliver easily (may be they don't know them) the real costs of the transport sector. • To day, the urban goods transport data look dated (ten years ago). The model are thus calibrated by old ratios and parameters. • Their are numerous local surveys but the results are not sufficiently developed and matched up. • The follow-up of the different experiments (towards best practices) are not matched, so it is difficult to compare their efficiency (at economic, social and environmental levels). • There is a lack of knowledge of the public work traffic, waste collection and reverse logistics, network management, and generally of the flows generated by the urban public management. • The share between occupational and individual trips in the use of LGV <p>The most important gaps in urban freight data collection for freight modelling purposes in France are:</p> <ul style="list-style-type: none"> • The underestimation of the flows coming from the peripheral platforms, • The data used for the calibration of the model must be readjusted, • The cost aspects are not taken into account. So, it is not possible to simulate economic scenarios through the current model. • The modelling of the urban public management is currently very rough.
Germany	<p>General gaps in urban freight data in Germany include the following:</p> <ul style="list-style-type: none"> • Infrastructure data – provisions and data of information about the road-network, bridges, parking facilities, railway lines and sidings, and port storage facilities • Enterprises and performance - structure of railway companies as well operating performances of goods transport by railway • Demand - Relational statistics of goods transport / transport flows / vehicle movement (origin-destination relations) on the spatial basis of the 3rd NUTS level as well as according to the “mode of appearance” of goods / load units <p>Important gaps in urban data collection for modelling freight and commercial traffic include:</p> <ul style="list-style-type: none"> • Actual and reliable statistics considering the loading and unloading facilities on roads infrastructure and parking facilities in urban areas • Data of local alteration of loading / unloading sites in urban districts especially building sites • Actual data concerning the localities of industries tangled with road network in urban areas • Actual data considering the regional transport flows / regional traffic flows of utility vehicles from urban or rural areas to urban or rural areas • Regional structure of traffic-staying-time of all utility vehicles • Use of vehicles which are licensed for goods and person transportation • Mixed trip-purposes of goods and person transportation • Vehicle which are working places

Hungary	<p>There has been little urban freight transport data collection in Hungary. The only freight transport survey in Hungary took place in the first half of the 1980s. There have been no specific freight transport surveys in urban areas in Hungary yet.</p>
Italy	<ul style="list-style-type: none"> • Difficulties in the current systems to collect data in Italy are due to a lack of coordination between national and local authorities. • National bodies collect data in a very wide-ranging way, mainly just to “feed” national statistics. Hence, being the target very broad, results are very general, too. For instance, ISTAT collects data on road transport of goods at national level, on a three-monthly basis. Limits of these surveys rely on two factors: <ul style="list-style-type: none"> - The bottom – up collecting process does not start from the local level; interviewees have to specify provinces of departure and of arrival but not the municipal areas; such information are processed on a regional basis. - Light goods vehicles (less than 3,5t) are not taken into account. It is worth noting, however, that currently there are about 2,000,000 commercial vehicles circulating in Italy, but out of them there are just 300,000 vehicles with a gross weight over 3,5t. <p>There is little data on the infrastructural supply dedicated to goods deliveries. Usually, no indicators linking numbers of operators to retail activities, to land use or even to loading/unloading areas (just to mention two very simple ones) are available.</p> <ul style="list-style-type: none"> • Traffic data is divorced not only from information on road supply, but also from another relevant component: the participation of end-users. For example, no real comparison between operators’ requirements and space supply have ever been run. • Another key gap in the collection of data is the total absence of quantitative/qualitative information of transportation operators.
Netherlands	<p>The most important gaps in urban freight data collection in the Netherlands are as follows:</p> <ul style="list-style-type: none"> • Urban freight is not very well represented in existing statistics. • National vehicle trip origin and destination survey data is limited when disaggregated for particular urban areas. • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Rail and barge play no role in city distribution in the Netherlands.
Portugal	<p>The gaps that contribute to the general lack of urban freight collection in Portugal include:</p> <ul style="list-style-type: none"> • Portuguese institutions are not sufficiently aware of the importance of urban freight issues and how useful it would be to improve urban freight data collection. • Most of the cities adopt solutions that were already implemented in other cities usually without a study to support them and thus, don’t collect data. <p>Of the freight data that does exist, most is collected at a greater geographical area than urban areas, so efforts are needed to extract the relevant data. This has financial implications and it can take some weeks or even months to receive the required data.</p>
Spain	<p>The most important gap of data collection is the lack of a standardised and regular freight transport survey applied in the main Spanish cities.</p> <p>There is a need to define an appropriate protocol and also to determine responsibilities for its execution.</p> <p>There is also a lack of supply chain insight in the survey work that is carried out. This makes it difficult to model how specific city logistics initiatives may affect the scenario, since the number of vehicles and deliveries is often deemed constant.</p>
Switzerland	<p>Gaps in urban freight data collection in Switzerland include the following:</p> <ul style="list-style-type: none"> • The focus is on passenger transport and individual traffic not freight transport • The interest in urban freight transport does exist (especially in Zurich), but to a much lesser extent than for passenger transport • There is still a lack of continuous monitoring of freight transport in agglomerations • There is no clear methodology for the collection of urban freight data. “Ad hoc” surveys are mainly carried out for the reasons of given planning intentions or political measures.

	<ul style="list-style-type: none"> • In national surveys the situation looks different: a lot of effort is spent to collect data about road freight transport. A clear methodology is described in guidelines and directives. The collection takes place in a fixed time interval. • There is little data about delivery patterns including frequencies, stops, locations etc.
United Kingdom	<p>The most important gaps in urban freight data collection in the UK are as follows:</p> <ul style="list-style-type: none"> • Existing statistics on traffic congestion are limited. • National vehicle trip origin and destination survey data is limited when disaggregated for particular urban areas. • Lack of information about multi-drop vehicle rounds with more than 5 stops (only summary data collected). • Information on the overall structure and profitability of the UK road haulage industry (including urban operators) is limited. • There is relatively little data on fuel consumption per km by goods vehicles (but data on fuel consumption is published as part of the DfT's Continuing Survey of Road Goods Transport). • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Rail freight data is limited at the urban scale. <p>The most important gaps in urban freight data collection for freight modelling purposes in the UK are:</p> <ul style="list-style-type: none"> • Sample size for vehicle trip origin and destination surveys very limited when disaggregated for particular urban areas. • Lack of information about multi-drop vehicle rounds with more than 5 stops (only summary data collected). • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Lack of single source of data about location, size and types of business in urban areas that is comprehensive and detailed enough for freight modelling.

2.4 Methodologies and approaches in freight data collection

The information provided by freight data experts has indicated the breadth of different techniques that are currently being used to collect urban freight data. These techniques include:

- Interviews with freight transport company manager
- Interviews with receivers
- Interviews with shippers
- Roadside interviews with drivers
- Group discussions (including discussions with drivers, representatives from a single supply chain, representatives from different supply chains)
- Questionnaires sent to freight transport company managers/drivers
- Questionnaires sent to receivers
- Questionnaires sent to shippers
- Accompanied trips with goods vehicle drivers
- Parking and loading activity surveys (i.e. observation surveys)
- Parking and loading infrastructure/inventory surveys
- Traffic counts (manual and automatic)
- Data collection using new technology including:
 - Use of satellite tracking data containing goods vehicle activity
 - Use of roadside camera data (including automated number plate recognition (ANPR) data)
 - Use of weigh-in-motion (WIM) technology to measure axle weight of a moving vehicle

Obviously the technique used to collect data will be influenced by the type of data that is being collected and the use to which it is being put (for instance data used to provide a quick snap-shot of an exiting situation is likely to be collected using a different methodology and sampling approach to data used as an input to a freight model).

Both face-to-face, postal and electronic questionnaires have been carried out. Interviews have been conducted face-to-face and by telephone. In the case of detailed interviews, these are often carried out face-to-face because the topics and questions can be both lengthy and complicated.

Large-scale national freight surveys in the European countries surveyed tend to make use of postal questionnaires. These surveys usually have high response rates due to the fact that they are often statutory surveys. In addition, these surveys usually have a well developed and refined methodology and sampling approach – this is a reflection of the time over which the survey has been taking place and the resources available to carry it out.

Interviews and group discussion techniques tend to be more widely used in one-off or occasional data collection exercises that take place in a specific urban area. This is due to the cost of these approaches in a national survey. Data collection exercises in a specific urban area tend to also make use of all the other techniques listed above.

As a result of budgetary and time constraints, sample sizes for one-off data collection exercises in specific towns and cities are often small and not statistically representative. This makes the comparison of data over time and between different urban areas very difficult.

New technology offers the possibility to collect significant quantities of urban freight data at relatively low cost (compared with previous techniques). However consideration of such techniques to collect urban freight data raises many questions about: (i) its legality (for instance the use of roadside cameras to record vehicle details is not currently allowed in Germany), (ii) the need to supplement this data with other data as these new technologies do not necessarily provide all the data that would have been collected in a traditional survey, and (iii) the co-operation and agreement needed between the public and private sector to share this data.

3. Urban freight transport indicators

Respondents were asked to provide details of indicators used by governments or researchers to measure the performance of urban freight transport in their countries. They were also asked to include details of any urban freight transport indicators that they thought would be useful even if they were not aware of the indicator being used currently.

The responses suggest that there are few indicators that are currently in use by national, regional or local governments in the surveyed countries to monitor the performance of urban freight transport. The most commonly used indicators are related to road freight and include: goods vehicle trips, and goods vehicle kilometres (usually based on traffic count data). However, even these indicators are not available in many European urban areas.

Other indicators that are commonly used by governments to measure and monitor freight transport at a national level include: tonnes lifted (by road and other modes), and tonnes moved (i.e. tonne-kilometres by road and other modes). However these indicators are often not available at an urban scale.

Other national freight transport indicators used by governments in one or more European countries include:

- Freight Intensity (of heavy goods vehicles - tonne-kilometres / GDP)
- Lorry traffic intensity (of heavy goods vehicles - vehicle kilometres / GDP)
- Energy intensity (Fuel consumed per tonne-kilometre)
- Average length of haul
- Lading factor
- Empty running

None of the indicators listed above has been calculated for urban freight transport (with the exception of average length of haul, lading factor and empty running in London, produced from data disaggregated from the national survey). This is due to the data requirements of doing so, and a lack of consideration of freight indicators at the urban scale by all tiers of government.

A few research projects have produced other indicators of urban freight transport. A selection of these from projects carried out in France and the UK are shown in Table 5. These indicators have been calculated from one-off data collection exercises that have not been repeated. In the case of France, all of the indicators shown in Table 5 can be calculated using the FRETURB model developed by Laboratoire d'Economie des Transports (LET) at the University of Lyon.

It is important to note that the questionnaire responses have highlighted that there is little common understanding or agreement about what constitutes an urban freight transport indicator (see the full list of indicators provided by respondents in Appendix 3). Also, it is not always clear from respondents' answers whether an indicator that they have identified is currently in use or is being suggested as a potentially useful indicator.

Table 5: Urban freight transport indicators used in research projects in France and the UK

Title and description of the urban freight indicator	Units in which the indicator is measured
Ratio: Number of Loading/unloading	Number of deliveries and pick-ups per week per employee in an activity
Loading/unloading density	Number of deliveries and pick-ups per km ² in a zone
Loading/unloading intensity per activity	Number of deliveries and pick-ups per activity in a zone
Loading/unloading time	Number of hours of on street double parking for delivery or pick-up in a zone, per vehicle, per activity
Length covered for Loading/unloading	Number of kilometres for one delivery or pick-up in a zone, per vehicle, per activity
Average length of the first trip from platform to the delivery area (“marche d’approche”)	Km
Average distance travelled per collection/delivery	Kilometres per collection or delivery
Total distance travelled on roads in urban area transporting goods by HGV, rigid lorries, and LGV (<3,5T) used	Total vehicle km per week in urban areas
Average time taken per delivery	Minutes per delivery
Average speed per round (including and excluding stops to make deliveries) km/hour	Km per hour
Greenhouse gas and pollution	- g Pollutant per km - g CO ₂ per km per km - litre of fuel per km according to the zone, the vehicle, the activity.

4. Urban freight transport terminology

Urban freight transport data collection involves the use of many technical terms to describe the types of vehicle, the pattern of delivery and collection operations, and the companies carrying out this freight work. In discussing urban freight data collection in European countries it is important to: (i) determine the national terms used to refer to the vehicle, vehicle activities and companies, (ii) determine whether the precise meaning of these terms is the same or different between countries.

This is a major task in itself and is beyond the scope of this current report. However, the freight experts were asked to provide important national terms used to describe freight transport vehicles and operations, as well as definitions of these terms. Information provided by some or all experts included the following terms:

- Light goods vehicle
- Heavy goods vehicle
- Single drop
- Multi drop
- Vehicle round/tour/route
- Vehicle trip
- Delivery
- Stop
- Consignment
- Hire or reward transport
- Own account transport
- Town/City/Urban area

This exercise has demonstrated that in different countries, and hence in different urban freight datasets, there can be subtle but important differences in the terms used and the meaning of these terms. It is important to investigate these differences in more detail so that those carrying out comparisons between urban freight data from different countries can be sure that they are comparing like with like.

Road freight transport statistics collected by national government for Eurostat as part of Council Regulation 1172/98 use a harmonized methodology. This data is used to provide a national picture of the tonnage of goods carried by road freight transport and their place of loading and unloading, the tonne-kilometres performed, and the kilometres travelled loaded by vehicles. The handbook produced by Eurostat to help member states meet these national freight data requirement recognises that, “In statistics, definitions and classifications are indispensable. Without well-defined and grouped variables it is impossible to get a comprehensible and comparable description of a certain phenomenon” (Eurostat, 2006). The Eurostat document provides descriptions and definitions of vehicle-, journey- and goods-related variables that need to be collected as part of this survey work (including for example, “road goods vehicle”, “loaded”, “journey”, “vehicle kilometres”, “tonne-kilometres”, “place of loading/unloading” and “type of goods”). This Eurostat document is useful as a starting point by which to harmonise the terms and meanings used in urban freight data collection. However, there are additional terms that are necessary in urban freight data collection that do not appear in this national freight data collection guide.

5. Conclusions and recommendations

5.1 Addressing gaps in urban freight data collection

A wide range of urban freight data gaps have been identified by the freight experts participating in this study. The most commonly mentioned data gaps include:

- data about light goods vehicle activity
- 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

It should be noted that some of these data gaps exist at the national and regional as well as the urban scale. In some countries efforts are being made to fill some of these gaps through national freight data collection (e.g. the KID survey in Germany and the Company Van survey in the UK to collect data about light goods vehicle operations). Depending on the sample sizes involved, it may be possible to disaggregate these national surveys in order to obtain some urban data. In other cases, specific urban surveys can help to address some of these gaps (such as the surveys carried out by LET in France during the 1990s).

It would appear that in general there is little resource or desire among local, regional and national government officials in several of the countries surveyed to extend urban freight data collection at present. However, this is not the situation in all countries and cities. In London for example, Transport for London has recognised the importance of freight transport in the city and is now making greater resources available for freight transport initiatives and data collection. The Transport for London example suggests that senior personnel in government need to be persuaded of the importance of urban freight transport and, linked to this, the need for urban freight data collection.

At present, there is a lack of co-ordination between different tiers of government in thinking about the collection of urban freight data. By working more closely together it would be possible for these governmental organisations to achieve more with their existing resource.

The survey work carried out as part of this report has identified that some urban freight data publications and reports contain relatively little information about how the data was collected and processed, and about the reliability of the data. This can be overcome through ensuring that freight data collection exercises are well documented. Improved information would assist others in using the data to make comparisons with data collected in other urban areas (both nationally and internationally).

Given the gaps in urban freight data collection, there would be benefits to sharing more urban freight data between researchers in different countries. This could prove especially useful in urban freight modelling work. However, this would require investigation into the extent that certain types of urban freight data are likely to vary between urban areas and countries due to: the nature of the freight transport market, the industries that it serves, legislation governing freight transport, existing traffic conditions, and the economic structure and layout of the city. This investigation would identify which data are likely to be similar and which to vary between urban areas and countries, and thereby which data need to be collected locally.

There have been several one-off urban freight data collection exercises in the last twenty years. Further consideration should be given as to whether such exercises should be repeated on a periodic basis so that some understanding of urban freight operations can be retained over time.

It is important to recognise that urban freight data is required for different purposes. It can be required: (i) to provide an understanding freight operations and to monitor the effects of policy measures, and (ii) for forecasting with the help of urban freight models. The use for which the data is required can affect the data collection methodology, and the quantity of data required. In some urban areas sufficient urban freight data has been collected in order to have some understanding of freight operations, in other urban areas too little data has been collected to achieve even a basic understanding. Even in those urban areas in which much urban freight data has been collected in past surveys, the lack of repeat surveys in subsequent years can result in a deterioration in this understanding.

Urban freight models typically require many data inputs. At present, there is insufficient urban freight and related data collection in most urban areas in order to develop and carry out detailed urban freight modelling exercises. Even when the required data are available, they are often not usable because urban goods movement modelling approaches use data relating to land use, economy and transport which need to be compatible in space and time. Except in the French case (i.e. simultaneous surveys of establishments, drivers and hauliers were carried out in order to feed a model) the various UGM surveys are not co-ordinated in time and space.

5.2 Methodologies and approaches

A wide range of different techniques are currently being used to collect freight data in urban areas in Europe. These range from postal questionnaires and interviews to observation surveys and electronic data capture using satellite tracking and roadside cameras.

All of the techniques currently in use are likely to remain useful in future. However, new technology (such as satellite tracking, roadside camera and weigh-in-motion data) has major potential to provide significant quantities of urban freight data at relatively low cost (compared with other traditional techniques). However much thought is required in order to determine how these new data sources and collection techniques should be used, how they should be supplemented with other data and how best to manage this data and integrate it with other existing data. Although potentially very helpful, some of these new technologies do not necessarily provide all the data that would have been collected in a traditional survey (for example satellite tracking data does not provide the same amount of information about trip purpose and type and quantity of goods carried as a trip diary completed by a vehicle operator). In addition, some of these new technologies are not currently allowed in some countries. For example, in Germany the use of roadside cameras to record vehicle details is not currently legal.

The potential use of urban freight data collected by new technologies also raises issues about the extent of co-operation and agreement needed between the public and private sector to share this data. At present, satellite tracking data is the property of private companies. Public organisations need to work closely with these private companies to overcome issues concerned with funding and confidentiality in order to obtain access to it.

Large-scale national freight surveys in European countries are likely to continue to be of assistance in providing some insight into urban freight operations. These surveys usually have a well developed and refined methodology and sampling approach. However, the level of insight they provide is determined by the ease with which urban freight data can be disaggregated from the total data. Therefore efforts to ease the disaggregation process should be encouraged. This is likely to include reconsideration of the level of geographical detail provided in the data collected and also in terms of the ways in which the data is coded.

However, there is little indication that the level of large-scale national freight surveys in many of the European countries studied is likely to increase in the coming years. Therefore urban freight data collection initiatives will be required to be carried out at an urban level and this is likely to require support and resources from urban/municipal authorities. There are signs that this may begin to happen to a greater extent as urban/municipal authorities recognise the importance of freight transport to their towns and cities both in terms of economic importance and the social and environmental impacts it imposes.

One-off freight data collection exercises that have been carried at an urban level in European towns and cities over the last decade have not been very widespread. Some of those data collection exercises that have taken place exhibit several weaknesses. These can include: (i) a lack of documentation about the methodology and sampling approach used, (ii) the use of various data collection methodologies in different studies which makes comparison difficult or impossible, (iii) due to the limited resources available for the work, the use of sample sizes that are too small to provide statistical significance, (iii) variations in the reporting of the freight data collected and data analysis carried out in different studies, (iv) lack of availability of the raw freight data collected by other researchers and organisations.

There is a need for greater harmonisation in data collection methods and in analysis and reporting of this data. There is a need for joint efforts between those working with urban freight data in different European countries to work jointly in establishing suitable urban freight transport methodologies and analyses (including indicators) so that data are more comparable. Also mechanisms should be established to encourage the sharing of data collection methodologies and actual freight data between projects, cities and countries.

Issues concerning the availability and reliability of the data required for urban freight modelling (together with the lack of resources available to develop such models in the first place) mean that, with a few exceptions, relatively little has taken place in urban freight modelling to date. This situation may improve as national, regional and urban authorities realise the importance of urban freight. However, major increases in resources to collect urban freight data are likely to be necessary in order to meet the data requirements of urban freight modelling exercises.

5.3 Concluding remarks

Urban freight data serves a wide range of uses and is extremely important in helping public and private sector decision-makers to ensure that urban freight transport takes place in as efficient and sustainable a manner as possible. Without such freight data it is extremely difficult for national, regional and urban authorities to make decisions about issues including road space allocation and congestion, freight transport's role in energy consumption and air quality, safety and security issues associated with freight transport, modal shift, and land use planning.

The extent of urban freight data collection varies significantly between the European countries surveyed. In addition, even in countries with the greatest quantity of urban freight data, most of this is derived from the disaggregation of data collections that take place at a greater geographical scale than the urban area. Freight data is currently collected by a large number of different organisations including: national, regional and urban governments, other public sector bodies and agencies on behalf of these governments, as part of one-off studies and projects, and by private sector organisations including industrial, retail, service and transport companies, trade associations and market research companies. These urban freight data collection efforts are not currently co-ordinated, and this results in many different data sources and data sets that vary widely in quality and methodology, making comparisons and combinations of them difficult or impossible. Even in the countries in which the greatest quantity of urban freight data is collected, when all of this urban freight data is brought together, it still does not provide a comprehensive picture of the urban freight transport system. Instead the picture provided is patchy and unreliable.

The quantity and coverage of available urban freight data in all countries surveyed is still far less than either: i) freight data available at a national level, or ii) urban passenger transport data. This is due to the fact that all levels of government have traditionally focussed on passenger transport data collection rather than freight data (at national, regional and urban levels), together with the fact that much freight data (urban and elsewhere) is held by private organisations and is not made generally available by them. In addition, urban authorities tend to have far fewer resources available for continuous or periodic freight data collection than national governments.

The description provided in this report is a first step towards a better understanding of the state of urban freight data collection in Europe. Some aspects need to be examined in more detail, such as the ways in which the following can be solved at lower cost:

- the co-ordination of data collected from different sources, in order to build knowledge about the mutual influence of land use and economy on urban goods transport,
- the links between data collected in various space and time scales, which is a key problem in modelling,
- simultaneous collection of data about activity types, activity location, logistics and transport management.

It is important to focus on how to make best use of existing national and urban freight data collection resources in order to maximise the usefulness of the urban freight data collected. As new resources for urban freight data collection are made available, it is important that steps have been taken to ensure that it is directed towards collecting the most important data (based on a prioritisation of urban freight data gaps and needs), and that suitable methodologies, data analysis approaches, and reporting standards have been put in place.

Those involved in urban freight data collection across Europe should continue to work together to help put in place these data priorities, methodologies, analytical approaches and reporting standards. Such joint working will also help to work towards standardisation in urban freight terminology. This will help to overcome the issues that currently arise from differences in terminology and definitions between countries.

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All of the national reports on freight data collection listed above that were produced as part of the BESTUFS project are available on the BESTUFS website at: <http://www.bestufs.net>

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Wanda Debauche, Belgian Road Research Centre - Belgium

Davy Decock, Belgian Road Research Centre - Belgium

Bart Jourquin, FUCaM - Belgium

Louis Alligier, LET, France

Christian Ambrosini, LET, France

Jean-Marie Beauvais, consultant - France

Alain Bonnafous, LET, France

Daniel Boudoin, CRET-Log - France

Yves Crozet, LET France

Laetitia Dablanc, l'INRETS-ENPC - France

Fabrice Haziak, CETE "Nord-Picardie" - France

Christian Morel, CRET-Log - France

Danièle Patier, LET - France

Julie Raffailac, DREIF - France

Denise Ravet, LET, France

Christophe Ripert, Ville de Paris - France

Jean-Louis Routhier, LET - France

Jean Thevenon, CERTU - France

Florence Toilier, LET, France

Horst-Hermann Binnenbruck, PUTV Gappenach Maifeld - Germany

Claudia Eichhorn, PTV - Germany

Hartmut Kuhfeld, DIW Berlin - Germany

Gernot Liedtke, University of Karlsruhe - Germany

Bert Leerkamp, Fachhochschule Bochum - Germany

Bertram Meimbresse, TFH Wildau - Germany

Herbert Sonntag, TFH Wildau - Germany

Dieter Wild, PTV, Germany

Janos Monigl, TRANSMAN Ltd - Hungary

Paolo Guglielminetti, Price Waterhouse & Coopers - Italy

Antonio Musso, University of Rome "La Sapienza" - Italy

Carlo Putignano, ISTAT - Italy

Mr Ankruit, CBS Heerlen - The Netherlands

Jeroen H.K. Boerkamps, WEOM B.V. - The Netherlands

Mark Degenkamp, City of Utrecht - The Netherlands

Hans Quak, Erasmus University - The Netherlands

Jaap Vleugel, TU Delft - The Netherlands

Alvaro Costa, University of Porto - Portugal

Sandra Melo, University of Porto - Portugal

Jesús Muñuzuri, University of Seville - Spain

Emilio Larrodé, University of Zaragoza- Spain

Esteban López Figueroa, University of Vigo - Spain

José Magín Campos Cacheda, University of Catalonia - Spain

Jan Eriksson, VTI - Sweden

Heiko Abel, Rapp Trans - Switzerland

Willi Dietrich, City of Zurich - Switzerland

Julian Allen, University of Westminster - UK

Michael Browne, University of Westminster - UK

Sean Newton, MDS Transmodal - UK

Chris Overson, Department for Transport - UK

Appendix 1: Summary of urban freight data collected in each country as identified by the experts surveyed

The following pages contain a summary of the urban freight data collected for several European countries, namely:

- Belgium
- France
- Germany
- Italy
- Netherlands
- Portugal
- Spain
- Switzerland
- United Kingdom

For each country, details are provided about the urban freight data currently collected under the following data categories:

- Commodity flow survey
- Site/Land Use/Establishment surveys
- Goods vehicle activity surveys (including driver diary surveys)
- Shipper surveys
- Receiver surveys
- Good vehicle fleet licensing data
- Traffic counts
- Distribution industry surveys
- Vehicle operating cost surveys
- Loading/unloading/parking infrastructure data for goods vehicles
- Data on road accidents involving goods vehicles
- Data on lorry/lorry load thefts
- Employment surveys in freight transport and logistics industry
- Land use databases for town/city needed for freight modelling
- Port freight traffic data inside the urban area
- Rail freight traffic data inside the urban area
- Inland waterway freight traffic data inside the urban area
- Airport freight traffic data inside the urban area
- Freight informatics data (from cameras, sensors & other automatic data capture devices)
- Vehicle safety and maintenance

The experts responding to the questionnaire identified relevant urban freight data sources for each of these categories and provided feedback about the following issues concerning these sources:

- Name of data collection/ survey
 - Name of organisation collecting data
 - Reason for data collection
 - Whether the data used for modelling
 - Frequency of data collection
 - Last time data was collected
 - Method of data collection
 - Sample size
 - Units of measurement used
 - Geographical area over which data collected
 - Difficulty involved in extracting urban data (if dataset is greater than urban)
- Type of data collected

The regularity with which urban freight data is collected varies between countries and between types of data. In some cases, data is collected on a continuous basis as part of a national government survey while, at the other extreme, data is sometimes only collected in a single one-off survey that is never repeated. In each of the country summaries on the following pages it states in the title whether the summary includes all sources of urban freight data or only continuous sources.

Summary of urban freight data collected in Belgium

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Commodity flow survey	Road freight transport by Belgian freight vehicles +1 t (permanent transport survey of hauliers)	National institute of statistics (NIS)	Evolution of freight traffic by road in Belgium	Yes	yearly	2004	transported quantities, average transport distance, transported quantities for different distance categories, transported goods (quantities) by other modes (rail, inland navigation, etc.), transported quantities by nature of transport (own/other), quantity of transported goods from and to Belgium (international transport), type of transported goods, origin and destination of trips, danger code of goods	Questionnaires are sent to hauliers. During 1 week the hauliers have to fill in this questionnaire. The questionnaire is a kind of logbook: the trips during 1 week are followed. It's obligated by law to fill in these questionnaires.	about 125 000 questionnaires are sent (not all are coming back due to e.g. the stop of transport activities)	Tkms tons Kms categories	Belgium	Very difficult
Site/Land Use/Establishment surveys		National institute of statistics (NIS) Also at regional level	To get useful data that could be used for modelling	yes	yearly	2004	number of employees, number of students, number of habitants, etc.				Belgium	Easy
Transport operator surveys (including driver diary surveys)	Permanent survey of transport hauliers Surveys done by professional organisation FEBETRA (Union of Belgian transport hauliers)	National institute of statistics	To get an idea of freight transport in Belgium Internal use of data	No	yearly	2004	number of kilometres (length of trajects), type and weight of goods, danger code of transported goods, used packing, organization of transport (in house delivery or transport by third party), characteristics of freight vehicle (number of axles, loading capacity, date of entry, tax number of owner, etc.), load factor, the countries that the freight vehicle passes, the origin and destination of the vehicle	Questionnaires are sent to hauliers. During 1 week the hauliers have to fill in this questionnaire. The questionnaire is a kind of logbook: the trips during 1 week are followed. It's obligated by law to fill in these questionnaires.	about 125 000 questionnaires are sent (not all are coming back due to e.g. the stop of transport activities)	numbers, categories (danger code, packing options, etc.)	Belgium. Distinction has been made between national and international transport	Difficult
Shipper surveys	Shipper survey Liège	consultancy bureau (BRRC, ISIS)	To get a better insight in the freight operations in the inner city of Liège (delivering and collecting operations)	No	One-off data collection	2004	the type of vehicle used for the freight operations (categories of vehicles), the used delivery zone and the different parking possibilities, the time and the duration of delivery operations (hours & minutes), the experienced difficulties and the desired improvements for deliveries/pick-up of goods, the conditions for delivering the goods	interviews were hold with suppliers when they were delivering in the inner city of Liège (with pre-defined questionnaire)	suppliers (300)		Inner city of Liège	easy

Belgium (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Receiver surveys	Receiver survey Liège Receiver survey Ghent	Liège: consultancy bureau (BRRC, ISIS); Ghent: consultancy bureaus (IRIS consulting and DHV)	Liège: To get a better insight in the freight operations in the inner city of Liège (delivering and collecting operations) / Ghent: To test the desirability of a distribution centre in Ghent	No	One-off data collection	2004 (Liège) 2004 (Ghent)	Liège: the type of vehicle used for the freight operations (categories of vehicles), the used delivery zone and the different parking possibilities, the time and the duration of delivery operations (hours & minutes), the experienced difficulties and the desired improvements for deliveries/pick-up of goods, the conditions for delivering the goods / Ghent: Characteristics of the firm (active field, organizational form, sales area (surface), store area (surface), the available hours (time intervals) for deliveries and pick ups, Characteristics of the goods flows to and from the shop : the origin and the destination of the goods vehicles (postal code and place if possible), the frequency of deliveries, the number of suppliers, the typology of transported goods (categories), the lead time between the delivery and the order (the number of hours), the time (time intervals) and day of delivering goods to the shop, the experienced problems, the used delivery zone, the time needed to deliver, the vehicle used for deliveries .	Liège: Interviews were hold with the shopkeepers in the inner city (similar questionnaire as for suppliers but more (detailed) questions were asked to the shopkeepers in comparison with the suppliers) / Ghent: interviews with merchants (pre-defined questionnaire)	Liège: merchants (120) / Ghent: merchants (215)		Inner city of Liège and Ghent	easy
Good vehicle fleet licensing data		Federal Public Office of Mobility and Transport, section DIV	Inscription of vehicles	No	monthly	05/2005	number of inscriptions, type of vehicles, type of fuel, number of firsthand/secondhand of cars, owner (private person or company)	Information from inscriptions			Belgium	Difficult

Belgium (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Traffic counts		Regional and national administrations (Wallonia: MET, Flanders: LIN (AWV), Brussels: AED, National: Federal Public Office Mobility and Transport): those traffic counts are counts on motorways, ringways and on the principal regional roads	To get information about the traffic situation (statistic book)	yes	Yearly + one-off (specific projects)	2004	the traffic intensities, the speed and the type of vehicles (light and heavy vehicles) per traffic lane and per time unit. Not all these parameters are measured on all roads. On regional roads in Flanders e.g. only traffic intensities per traffic lane and per hour are measured while the measure posts on motorways collect all type of data. For specific projects, the type of collected information depends on the desired information.	Loops on the roads (or imaginary loops when detection happens with cameras) give automatically information about the passing vehicles		Number of vehicles, speed of vehicles, vehicle categories on measure points	Belgium	Difficult/easy
Vehicle operating cost surveys	Economic analysis of the freight sector Operating cost surveys by FEBETRA	IWT/ITR Institute for Road transport	It's the aim to have a global idea of average transport costs and the evolution of these costs Internal use of data	yes	monthly	05/2005	Transport cost (global cost and the cost of it's different components), Indices (to see the evolution of transport costs over a certain time	Cost prices are based on catalogue prices, published prices and information of suppliers/ and hauliers		€, Indices, Percentage of different components in total transport cost (like assurance, wage driver, etc.)	Belgium	Difficult (difference made between national and international transport)

Belgium (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Loading/unloading/parking infrastructure data for goods vehicles	Infrastructure survey of Liège	Consultancy bureau (BRRC/ISIS)	To get an idea about freight transport in Liège	No	a one-off data collection	2004	For indicated delivery zones and street sections with deliveries (double parking) following parameters were measured: the length of the delivery zone, the total number of movements with and without deliveries (during the survey) the duration of each movement. With this information following indicators were calculated: the average duration of a movement, the occupied time of the delivery zone by vehicles without deliveries, the time that the delivery zone is used for deliveries, the time there is no activity on the delivery zone.	On the survey dates those different values were measured for delivery zones and deliveries on road in the inner city of Liege.	16 delivery zones and 8 street sections	Meters, Hours and minutes, numbers	Inner city Liège	Easy
Data on road accidents involving goods vehicles	Annual report Traffic safety. This report is more general and treats especially passenger transport. More data concerning urban freight transport accidents is available after demand.	BIVV/ISBR (Belgian Institute for traffic safety)	To get accident statistics	no	Every year	2004	The number of accidents, the number of deaths, the number of deaths within 30 days, the number of serious injuries, the number of light injuries, the number of accidents with freight vehicles according to other type of road user involved with the accident, the number of accidents according to type of road (motorway, highway, provincial or local way), etc.	Analysis of police reports	The number of reported accidents	numbers	Belgium	Easy. This report is more general and treats especially passenger transport. More data concerning urban freight transport accidents is available after demand.
Data on lorry/lorry load thefts		Federal police	Evolution of crime	no	yearly	2004	The number of thefts of goods (lorry loads) and goods vehicles per district, the typology of stolen goods (lorry loads) per district, the number of criminal activities (concerning transport vehicles) on motorways, the value of stolen goods	analysis of police reports (these reports don't include all crime facts because they are not all reported to the police)		Numbers, €	Belgium	Difficult Not all crime facts are reported to the police.

Belgium (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Employment surveys in freight transport and logistics industry	Employment survey of The National Institute for statistics/ Data of the National office of social security (NOSS) and the National institute for the social security of the self-employee (NISSE)/ Employment data for the freight and logistics sector (IWT/ITR). This report collects employment data of the National office of social security	NIS (National Institute for statistics/NOSS (National Office of social security)/National institute for the social security of the self-employee (NISSE)/ IWT(ITR):Institute for freight transport	NIS & IWT(ITR): Aim to get useful employment data (general or specific for the freight sector)/NOSS & NISSE: obligated data for companies and self-employees that also could be used for employment statistics	yes	Yearly	2004	NIS: working hours, temporary labour, the eventual search to another job (type of job, reason, etc.), education level, the geographical mobility of the employee, reasons why people are looking for another job, not doing a temporary job, etc. / ONSS: information about companies' activities and companies' employees like number, address, gender, etc./ NISSE: information about self-employees like number, address, gender, nationality, age, type activity, etc	NIS: survey of private households (face to face interview with pre-defined questionnaires/ objective and subjective questions) The households are selected following a given procedure (in order to have representative information)	NIS: about 45000 households / NOSS: companies in Belgium / NISSE: almost all self-employees in Belgium	numbers	Belgium	easy
Port freight traffic data in the urban area	Socio-economic analysis of the companies in the harbour area of Brussels Also specific statistics exist (incoming and outgoing flows in the ports)	consultancy bureau by order of the Port of Brussels	Knowledge of companies in harbour zone and using the port of Brussels	no	First time a survey was held in 1997. A repetition of the questionnaire has been made 2001 (second time).	2001	identification of the company (characteristics of the company); activities of the company; dependency of the company on the canal, sales turnover of the latest year and its evolution, the wage of the sales turnover that has been realised in Brussels; the role and localization of commercial partners (also their evolution); realized investments and the eventual projects to realize; criteria used for implantation and appreciation of the zone; removing projects; volumes transported and the used transport modes; direct employment.	Questionnaires sent to companies in harbour area	326 companies were addressed: depending on the question 108-260 answers were found	Number Euro Tons Categories (classes)	Harbour zone Brussels	easy, but only valid for that zone

Belgium (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Rail freight traffic data in the urban area	Statistics by NMBS/SNCIB											
Airport freight traffic data in the urban area	Also specific statistics exist (incoming and outgoing flows in the airports)	airports										
Other sources of urban freight data	mobility plans for all companies in Region of Brussels Capital (RBC) with more than 200 persons working there (obligated by law, but only in RBC)	The company itself. But the information is collected by regional authorities (BUV and BIM)	Having insight in the passenger and freight flows to and from the company in order to apply some measures to improve the mobility to and from the company	no	Every three years	2005 (also first time)	Freight data: number of deliveries and collections at company, number of freight vehicles (vans/lorries) at dispose of the company, taken measures by companies in order to improve mobility. Actually most attention is given to passenger transport (transport of employees with their work as destination or origin)	A pre-made questionnaire that must be filled in by the company		numbers	Company level	difficult

Summary of urban freight data collected in France

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Commodity flow survey												
Establishment surveys	UGM survey "Establishments"	LET - MV2 - SOFRES	Produce urban estimates of flows (deliveries and vehicles)	Yes	Occasional	1997	Activity, deliveries/pick-ups, vehicles	Questionnaire Two visits with diary or CATI+postal	4,500 establishments	Several	Bordeaux Marseilles Dijon	Easy because specific UGM surveys
Transport operator surveys (including driver diary surveys)	UGM survey "Drivers"	LET - MV2 - SOFRES	Produce estimates of urban goods traffic	Yes	Occasional	1997	Urban goods vehicle trip data	Postal questionnaire or visit	2,200 drivers	Several	Bordeaux Marseilles Dijon	Easy because specific UGM surveys
Transport operator survey	UGM survey "Hauliers"	LET - MV2	Describe haulier behavior	No	Occasional	1995	Urban goods traffic data, logistic chains	Face to face questionnaire	80 hauliers	Several	Bordeaux	Easy because specific UGM surveys
Transport operator survey	LGV survey (enquête VUL)	SES - Transport Ministry	Produce national estimates on LGV traffic	No	Each 5 year	2001	LGV trips data	Postal questionnaire	12,500 vehicles	Several	All trips in France	Easier since 2001
Transport operator survey	TRM - SITRAM	SES - Transport Ministry	Produce national estimates on HGV traffic	No	Continuous Yearly published	2005	Interregional O/D, type of goods carried, HGV km tons	Postal questionnaire	80,000 vehicles per year	Tons * km Veh * km	All trips in France (> 50 km)	Difficult (no short trips, not representative at the local scale)
Transport operator survey	-	CNR	Ratios aimed at hauliers	No	Annual	2006	Includes: transport cost components, fuel consumption, cost of employee, average loading rate per type of vehicles	Face-to-face and postal surveys	National representative sample	Lading factor, vehicle km, consumption of fuel in litres, costs in euros	France	Difficult
Transport operator survey	Train	SNCF	Produce goods national flows estimates	Yes	Continuous	2005	Origin/destination, type of goods carried	Register	Wagonload, exhaustive	Tons * km	France	Difficult (long distance)
Transport operator survey	EAE	SES - Transport Ministry	National estimate of economic sector	No	Continuous	2005	Economic activity No. of vehicles	Postal questionnaire	15,000	Several	France	Difficult
Shipper surveys	Enquêtes "Chargeurs" and "ECHO"	INRETS	Follow-up of the sendings	Yes ?	Occasional	1988 2003	Follow-up of the sendings and vehicles	Face to face questionnaires	3,000 establishments, 10,000 sendings	Several	France	Difficult (nothing about the last mile)
Good vehicle fleet licensing data	Vehicle Licensing Statistics annual vehicle licensing data	Ministry of the Interior	Legal requirement for licensing	No	All the time - published annually	2005	Vehicle type and weight, registered address of owner	Postal licensing form	All vehicles	No. of vehicles	France	Easy, but nothing on the use of the vehicle

FRANCE (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Transport operators licensing data : HGV, LGV since 2000	Registre des transporteurs	DRE (region authority)	Legal requirement for licensing	No	Continuous	2005	Licences in issue to goods vehicle operators inc. address, number and type of vehicles	Postal licensing form	All goods vehicle operators	No. of vehicles	All of France	Easily extractable
Traffic counts	Large number of automatic counts in urban areas	DDE (department authority)	Produce national estimates	Yes	All the time	2005	Traffic flows	Automatic counts		Vehicles/vehicle kilometres	France	Easy
Traffic counts	Manual and automatic counts in many towns and cities	Urban authorities	Traffic monitoring	No	All the time	2005	Traffic flows	Manual and automatic counts		Vehicles/vehicle kilometres	Many urban areas	Easy
Loading/unloading/parking infrastructure data for goods vehicles	-	Paris authority	Parking infrastructure census	No		2005	Address of the infrastructure	On site survey	Exhaustive (9,500)	Number of places, Length (km)	Paris and other cities	Easy
Data on road accidents involving goods vehicles	BAAC	Police force	Legal requirement & Accident analysis	No	All the time	2005	Day, date, time, location, vehicles involved, casualty	Police reports	Not applicable	No. of injured No. of dead	France	Difficult to measure the involvement of goods vehicles
Land use databases for town/city needed for freight modeling	SIRENE	INSEE	Legal requirement Produce national estimates	Yes	Continuous	2005	No. of employee No. of establishments	Postal requirement	Exhaustive (Register)			Easy

NB. This list is not exhaustive

Summary of continuous urban freight data collected in Germany

Type of data collection exercise / survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Commodity flow survey	Güterkraftverkehrs: Goods transport by road (regional interlocking of transport flows)	Kraftfahrt-Bundesamt (KBA) and Bundesamt für Güterverkehr (BAG)	National and European legislation	Yes	Monthly, aggregate per quarter, half-year and year	2005	Postal query	Random sampling	Nearly 210.000 vehicles per year	All German trucks and lorries over 3,5 to loading capacity (in hire and reward as in own account)	All routes in total Germany,	Only flows between urban areas, disaggregation is necessary
	Motor vehicle traffic in Germany	Bundesministerium für Verkehr, Bau- und Wohnungsw. (BMVBW), published by Deutsche Luft Raumfahrt (DLR)	National interest, order by Federal Ministry of Transport	Yes	One-off basis	2002	Postal questionnaire	Random sampling	100.7292 vehicles (without samples of Länder)	German vehicles below 3,5 to loading capacity, number of daily trips, trip purposes, traffic-staying-time, structure of vehicle-holders, a. o. m.	Total Germany, national routes based on types of land use / housing-estates o. a. m	Extracting is possible (approachable by interpreting)
Site / Land Use/ Establishment surveys	Data of spatial structure, data of spatial evolution	Bundesamt für Bauwesen und Raumordnung (BBR)	National and European legislation	Yes	Yearly	2004	Registration	Listing	Land use and housing estates in total	Km2, typical forms of establishments, traffic corridors	All areas of Germany	Urban areas are extractable
Transport operator surveys (including driver diary surveys)	Structure of road transport enterprises	Bundesamt für Güterverkehr (BAG)	National legislation	Yes	Yearly	2004	Postal questionnaire	Random sampling	18.000 per year	Enterprisers of long and short distance haulage, forwarder, a. o. m.	Total Germany	Not possible
Shipper surveys	There is no general data collecting which separates the transport clients in such of shippers and non-shippers. For tackling shippers, ad-hoc-data-collecting is necessary on sites. Examples of such ad-hoc-data-collecting are mentioned below in 1.2.3.											
Receiver surveys	There is no general data collecting which separates the transport clients in such of receivers and non-receivers. For tackling receivers ad-hoc-data-collecting is necessary on sites. Examples of such ad-hoc-data-collecting are mentioned below in 1.2.3.											

GERMANY (continued)

Type of data collection exercise / survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Good vehicle fleet licensing data	List of kinds of vehicles and vessels	Verkehrsmittelamt (KBA)	National and European legislation	Yes	Monthly, yearly aggregation	2005	Official register (notifying)	Registration by licensing offices	All registered vehicles	All vehicles	Register is based on local notification	Not difficult
	Fleet of cars and utility vehicles	Verkehrsmittelamt (KBA)	National and European legislation	Yes	Monthly, yearbook	2005	Official register (notifying)	Registration by licensing offices	All registered vehicles	All vehicles	Register is based on local notification	Not difficult
Traffic counts	Traffic counts	Bundesanstalt für Straßenwesen (BAST)	National legislation	No	Permanently	2005	Direct Counting	Electronic Measure at 132 counting places	Traffic on national highway network	Number of vehicle-axles	Total highway-network	Not possible
	Vehicle movements and vehicle-kilometers	Bundesanstalt für das Straßenwesen (BAST)	National legislation	Yes	Permanently	2005	Postal questionnaire, interviews	Random sampling	127.000 vehicles (all kind)	Number and kind of vehicles and trip-kilometers	Total Germany	Inside and outside of cities
Distribution industry surveys	No general data collecting, only by special questionnaire	Fraunhofer Association (FHG), Federation of logistics affairs	Special research items	Yes	triennial	2003	Field research	Interview, statistical interpretation	Dependent on research program	Top 100, number, size and kind of enterprises, a.o.m.	No geographical, but segmental dividing	Urban data are directly collected on research site
Vehicle operating cost surveys	No general data collecting, only by special analysis	Some private consultancies as PUTV,SVG, Charter-Way, a.o.	Special research projects	Yes	Standardised figures every year, professional journal	2004	Field research	Interview, analysis on standardised figures	Dependent on items, research focus	Km-costs per size, kind and performance of vehicle	No	Analysis at urban problems are possible
	Indicative figures of cost factors	German Institute of Economic Research (DIW)	Publication	Yes	Yearly	2004	Field research	Secondary statistics, interpreting is necessary	derived from GüKStat	Size, kind and performance of vehicle-operations	Geographical attachment of vehicle movements is possible	Cost situation of urban freight is possible

GERMANY (continued)

Type of data collection exercise / survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Data of loading / unloading / parking space for goods transport	There exists no panel or sampling of data collecting considering loading / unloading / parking facilities for utility vehicles, either at the highway-network nor inside urban areas. That is very missing. An initiative to collect parking data for utility vehicles at highways and nearby found not acceptance at governmental responsibility.											
Data on road accidents involving goods vehicles	Report of accidents	Bundesanstalt für das Straßenwesen- (BAST)	National legislation	In part	Yearly	2004	Recording in minutes	Standardised reporting by police	All notified - accidents	Harmed persons, participated vehicles	Total Germany	Not difficult, but urban characteristics are too small
Data on lorry / lorry road thefts	Report of vehicle thefts	Association of insurers ("Arbeitsgemeinschaft", Institute of insurers)	Commercial interests	In part	Yearly	2005	Recording in minutes	Standardised reporting by insurers	All notified thefts	Number, size and kind of vehicle, volume and kind of loads, country	Germany and other European countries	Not difficult
Employment surveys in freight transport and logistics industry	Statistics of population, (counting of population)	Statistische Bundesamt (StaBu) , Registration of offices of on communal level	National and European legislation	Yes	Monthly	2005	Micro-census	Random sampling	unknown	Persons, age, gender, family, profession, housing,, a. o. m.	Total Germany	Actual urban data in contacting local / regional offices
Land use data-bases for town / city needed for freight modelling	Data of land use for town / city , rural areas, a. o. m., of trends of sustainable spatial development, of guiding principles and orientation of spatial strategies of the European continent, of EUREK, CEMAT or IRKA are collected by the " Bundesamt für Bauwesen und Raumordnung (BBR) " in Bonn. These data collections are the main base / the frame of general orientation considering strategies of transport- and infrastructure-policy, regional spatial planning, and also considering strategies / modelling of urban freight transport. In the past, BBR has moderate and publish remarkable statements to important, generally noticed trials and models of urban freight transport. It is a good advice to respect the collected data of BBR , because it is not possible for a single freight transport project to collect the necessary data of spatial development by itself.										Each town / area has the opportunity of own data collecting	Interpretation and analysis of spatial data is necessary for urban transport policy

GERMANY (continued)

Type of data collection exercise / survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographic area over which data collected	How difficult to extract urban data
Port freight traffic data in the urban area	Special data reports of Port Towns/ port societies	Port-Companies or Port- Administration	Commercial interests on own economical and spatial development	Yes	Permanently, special recording as necessary	For most some Port-Towns in 2004	Secondary statistics, exploiting of technical and commercial data	All kind of methods (reports, analysis, questionnaire by random sampling)	As required	Number, size, kind and purposes of urban trips, goods, o. a. m.	Urbanised areas, geographical links of port ("Hunter-land"), o. a. m.	It is difficult Inward urban circulation is depended from outbound transport
Rail freight traffic data in the urban area	List of private railway companies, list of railway sidings	Eisenbahnamt (EBA), Chamber of Commerce	Administrative, planning interests	Yes	permanently	2004	Registration	Listing	All registered railway-equipments	Locality, length in km, kind of equipment	Urbanized regions	Not difficult because specified data
Inland waterway freight traffic data in the urban area	Special data reports of Port Towns / inland port societies,	Port- and City-Administration, Chamber of Commerce	Commercial interests	Yes	Permanently	2004, i. e. Duisburg, Ludwigshafen, Karlsruhe, Nürnberg	Special analysis	Exploiting of reports, interview, questionnaire by random sampling	As required	Number, size and kind of trips from and to port areas, loads and goods,,	Urbanised areas, geographical links of port ("Hinterland"), o. a. m.	It is difficult inward circulation is depended from in-/outbound -transport
Airport freight traffic data in the urban area	No specific name, airport freight on urban roads is collected by special analysis	Air Freight - Companies, Airport-Companies, Chamber of Commerce	Commercial interests		Permanently	2004	Special analysis. exploiting of internal data in connection with official data collecting	Exploiting reports, interview, questionnaire by random sampling	As required	Number, size, kind and purposes of urban trips, airfreight on road in tons/ number of shipments	Road-/Railway-connection of airports	

GERMANY (continued)

Type of data collection exercise / survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Freight informatics data (cameras, sensors & other automatic data capture devices)	It is in Germany not officially allowed respectively not legal to collect freight transport data by automatic or otherwise data capture. Recently, a working group of examiners is verifying the legal and technical possibilities to use the electronic elevation of "maut"- data of heavy truck trips for statistical purposes. (New system of traffic monitoring and data capture by satellite-navigation). The automatic counting of vehicles on motorways by inductive sensors is not able to separate the movements of utility vehicles from other vehicle movement. It can only count the number and the weight of axles. Therefore, the satellite-navigation system is important, because it can separate the different sizes and kinds of vehicles during their movements on roads and inside freight terminals, ports, urban districts and other places.											
Other sources of urban freight data	There are different associations and institutes (for example: association of express and courier server, institute of insurers who collect data regarding the traffic participation of utility vehicles in urban areas, analyse their movements and finish their traffic problems. Those data are useful and can compare and complete official data collecting.											

Summary of urban freight data collected in Italy

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
Commodity flow survey	N.A.										
Site/Land Use/Establishment surveys	N.A.										
Transport operator surveys	NTA	Ministry of Infrastructure and Transportation	Report on national surveys/data	no	All the time – published annually	2003	Number of vehicles	Questionnaire - census	All vehicles	Vehicles per category	All Italy
	NTA	Ministry of Infrastructure and Transportation	Report on national surveys/data	no	All the time – published annually	2003	Own/operated transport	Questionnaire - census	All vehicles	Tonnes and tones kilometres	All Italy
	Annual report on transportation statistic	ISTAT	Report on national surveys/data	no	All the time – published annually	2005	Number of companies	Questionnaire - census	All vehicles	Several	All Italy
	Annual report on transportation statistic	ISTAT	Report on national surveys/data	no	All the time – published annually	2005	Type of transported goods	Questionnaire - census	All vehicles	Tonnes and tones kilometres	All Italy
Shipper surveys	N.A.										
Receiver surveys	N.A.										
Good vehicle fleet licensing data	Publico Registro Automobilistico (Vehicle ownership registry)	PRA	Vehicle ownership registry	no	Real time (registration of changes in vehicle ownership are compulsory)	2005	Vehicle characteristics and ownership	Declaration by owners	All vehicles	-	All Italy

ITALY (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
Traffic counts	Rome case study	STA	Freight Traffic monitoring	yes	One - off	1999	Vehicles count	Count of vehicles Questionnaire Focus group	195.000 private cars 25.500 commercial vehicles	Vehicles/day according to 5 vehicles types	Rome centre zone on 33 road sections
	Milan case study	University of Milan	Freight Traffic monitoring	yes	One - off	2000/2002	One - off t	Count of vehicles Questionnaire Focus group	541.000 Vehicles/day	Vehicles/day	Milan municipality and surrounding areas
	Emilia-Romagna regional surveys	Emilia-Romagna Region	Freight Traffic monitoring	N.A.	One - off	2005	One - off	N.A.		Several	Emilia-Romagna Region
Distribution industry surveys	N.A.										
Vehicle operating cost surveys	NTA	Ministry of Infrastructure and transportation	Report on national surveys/data	no	All the time – published annually	2003	Cost per vehicles category	Questionnaire - census	Several	Euro	All Italy
Loading/unloading/parking Infrastructure data for goods vehicles	N.A.										
Data on road accidents involving goods vehicles	Annual report on transportation statistic	ISTAT	Report on national surveys/data	no	All the time – published annually	2005	Number of accidents	Questionnaire - census	All vehicles	Several	All Italy
	Insurance companies database	Insurance companies associations	Statistics	no	published annually	N.A.	Number of accidents	Questionnaire - census	All vehicles	Several	All Italy
	Many cities gather statistics on urban accidents	Cities authorities – Statistical dept.	Statistics, policy making	no	Depending on the cities	Depending on the cities	Depending on the cities	Depending on the cities	Depending on the cities	Depending on the cities	Depending on the cities
Data on lorry/lorry load thefts	Insurance companies database	Insurance companies associations	Statistics	no	Regularly, not for publishing	N.A.	Number of lorry	Questionnaire - census	All vehicles	N.A.	All Italy

ITALY (continued)

Type of data collection exercise/ survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
Employment surveys in freight transport and logistics industry	Annual report on transportation statistic	ISTAT	Report on national surveys/data	no	All the time – published annually	2005	Number of employees	Questionnaire - census	All vehicles	Several	All Italy
Land use databases for town/city needed for freight modelling	Milan case study	University of Milan	Freight Traffic monitoring	yes	once	2000	Social-economic data and land use				Milan municipality and hinterland
	cadastre office	Municipality authorities	For collecting tax	It depends on cities	-	-	-	-	All municipal areas	-	Municipal area
Port freight traffic data in the urban area	Only national data with no relevance to urban phenomena										
Rail freight traffic data in the urban area											
Inland waterway freight traffic data in the urban area											
Airport freight traffic data in the urban area											
Freight informatics data	N.A.										
Other sources of urban freight data Environment	Annual report on environmental indicators	APAT	Report on national surveys/data	no	published annually	2005	Environmental data	Elaboration of traffic data	N.A.	Several	All Italy
Vehicle safety and maintenance	N.A.										

Summary of urban freight data collected in the Netherlands

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
<i>Commodity flow survey</i>	None										
<i>Site/Land Use/Establishment surveys</i>	?	CBS, HBD etc.	Legal obligations, commercial services, lobbying	Probably	Regularly	2005	Employees, houses, premises etc.	Surveys	Large	Number of..	NL, regional
<i>Transport operator surveys (including driver surveys)</i>	MG-10	Connekt	Standardized method to collect data (Delivery profiles)	Yes	Once	2001	Routing, vehicles, load units, type of goods, etc.	Postal questionnaire	A few hundred	Several	Regional/urban in NL
<i>Shipper surveys</i>	None										
<i>Receiver surveys</i>	MG-11	Connekt	Standardized method to collect data (Delivery profiles)	Yes	Once	2003	Routing, vehicles, load units, type of goods, etc.	Postal questionnaire	A few hundred	Several	Regional/urban in NL
<i>Good vehicle fleet licensing data</i>	[Internal name]	Office for National Statistics (CBS)	Legal requirement for licensing	No	All the time - published annually	2005	Vehicle type and weight, registered address of owner	Postal licensing form	All vehicles		All of NL
<i>Traffic counts</i>	Manual and automatic counts in NL	Various	Traffic management, infrastructure provision, etc.		Regularly	2005	Traffic flows	Manual and automatic counts	Not applicable	Vehicles	Road sections anywhere in NL
<i>Distribution industry surveys</i>	Various studies into logistics issues	Various institutes and agencies	Commercial, scientific	Usually not	Variable	-	Depends on the case studies	Postal or personal questionnaire	Various branches of industry	Several	All of NL
<i>Vehicle operating cost surveys</i>	Vehicle operating costs / Distribution Cost surveys	NEA	Commercial	Yes	Published regularly	2005	Wages, warehouse costs, vehicle costs, haulage rates	Postal questionnaire	?	Several	All of NL
<i>Loading/unloading/parking infrastructure data for goods vehicles</i>	?	Local governments	Infrastructure-, parking policies	No	?	?	Number of (dedicated) parking lots, rate of availability	On site assessment	Not applicable	Number of lots, size, other parameters	Urban areas

The Netherlands (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
<i>Data on road accidents involving goods vehicles</i>	?	SWOV, Ministry of Transport and Public Works	Legal requirement & accident analysis	Probably	Regularly	2005	Day, date, time, location, vehicles involved, casualty information for each accident	Police reports	Not applicable		All of NL
<i>Data on lorry/lorry load thefts</i>	?	(National) Police	Crime investigation	No	All the time	2005	Location, time, date of incident, type of vehicle, type of load	Reported by Police Forces, hauliers, insurance companies, goods in transit claims handlers, loss adjusters and private investigators	Not applicable		All of NL
<i>Employment surveys in freight transport and logistics industry</i>	Various employment statistics	Office for National Statistics (CBS), NEA, TLN, EVO	Employment in NL	Probably	Published annually, quarterly and monthly	2005	Number of employees by sector	Postal questionnaire	Business firms	Number of employees	All of NL
<i>Land use databases for town/city needed for freight modeling</i>	None										
<i>Port freight traffic data in the urban area</i>	?	Office for National Statistics (CBS)	Legal requirements, incl. customs	Yes	Regularly	2005	Freight handled by commodity, type of ship, port	Returns by port operators	All port operators	Various	Main harbours (Rotterdam, Amsterdam, Vlissingen, Delfzijl)
<i>Rail freight traffic data in the urban area</i>	?	Port of Rotterdam	Legal requirements, incl. customs	Yes	Regularly	2005	Number of trains, volume transported			Number of trains, destinations, load units	
<i>Inland waterway freight traffic data in the urban area</i>	?	Local governments	Taxation	No	Published Annually	2005	Number of ships, volume transported	Barge and ship operators and ports	All ports	Tonnes and tonne kilometers	All of NL

The Netherlands (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected
<i>Airport freight traffic data in the urban area</i>	7	Ministry of Transport and Public Works	Produce national estimates		Published monthly	2005	Freight lifted by airport, by scheduled or chartered flight, and by passenger and cargo aircraft	Returns by airports	All airports	Tonnes, airplanes	All NL airports
<i>Freight informatics data (from cameras, sensors & other automatic data capture devices)</i>	GPS	Fleet owners	Used by operators to monitor vehicle fleet	Used by operators for trip planning and scheduling	All the time	2005	Vehicle ID, location and time data	Satellite tracking			
<i>Other sources of urban freight data</i>	None										
<i>Vehicle safety and maintenance</i>	?	Ministry of Transport and Public Works	Part of vehicle road safety and environmental standards within NL	No	All the time	2005	Vehicle test fail rates, road worthiness spot check test, exhaust emission tests	Vehicle testing	Varies depending on test - for some tests all vehicles are included	Several	All of NL
<i>Other sources of urban freight data</i>	None										

Notes (the Netherlands):

- We have made this overview according to our best knowledge. It is important to consider that not all mentioned sources contain dedicated information about urban areas, as in practice the transport, storage etc. facilities may have a much wider geographical span than just the urban areas. This holds in particular for rail, barge and air transport.
- In various cases, the source of information will be an annual report by a port, airport etc., not containing a specific reference to the name of the inquiry, the database etc.

Summary of urban freight data collected in Portugal

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Commodity flow survey	-	-	-	-	-	-	-	-	-	-	-	-
Site/Land Use/Establishment surveys	There are several studies carried out on the area of land use, but focused on an architectural/urbanity point of view.											
Transport operator surveys (including driver diary surveys)	LOGNORTE	INEGI – Instituto de Engenharia Mecânica e Gestão Industrial	Identify strategic logistic options for enterprises located on the North Region of Portugal	No.	Occasional (only once)	2002	costs of logistic in the enterprise total costs, lead-time of deliveries, supply chain model of each enterprise, location of main suppliers, location of main sells, average value of the stock, utilization of different modes of transport, quality of service, etc.	Inquire to transport operators and enterprises	51 enterprises belonging to 12 activity sectors	Depends of the indicators	Region North of Portugal.	Very difficult.
Shipper surveys	-	-	-	-	-	-	-	-	-	-	-	-
Receiver surveys	-	-	-	-	-	-	-	-	-	-	-	-

Portugal (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Good vehicle fleet licensing data	Estatísticas dos Transportes Rodoviários de Passageiros e Mercadorias 1998	INE – Instituto Nacional de Estatística	No specific reason	No	Occasional	1996	Number and type of vehicles, weight, load, age of vehicles, ownership, axes and some cross-indicators	It was based on the plate registration	National and regional level	Depends of the indicators : Tons, years.	National and regional data.	Easy (but not for free)
Traffic counts (goods)	Estatísticas dos Transportes Rodoviários de Passageiros e Mercadorias 1998	INE – Instituto Nacional de Estatística	No specific reason	No	Occasional	1996	Distance travelled, ownership, type of vehicle, weight	Plate registration and inquire.	National and regional level	Depends of the indicators : thousands of km, Tons.	National and regional data.	Difficult (and not for free).
Distribution industry surveys	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle operating cost surveys	-	-	-	-	-	-	-	-	-	-	-	-
Loading/unloading/parking infrastructure data for goods vehicles	Master Plans of Mobility (Lisbon and Portugal)	Municipality of Lisbon and Municipality of Porto	To support the respective Master Plans of Mobility	No	Occasional	2001	Identifies the number, location, capacity and time-windows of these infrastructures	Local observation and counting	City level	Depends of the indicators .	City level.	It can be difficult - bureaucracy (free data).

Portugal (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Data on road accidents involving goods vehicles	Estatísticas dos Transportes 2003	INE – Instituto Nacional de Estatística	To support some strategic safety measures	No	Yearly	2003	Number of victims, type of vehicle, age of victims, driver's information relating to alcohol exams and type of vehicle.	Based on local counting by the police and hospitals.	National population	Depends of the indicators	National level	Easy (but not for free)
Data on lorry/lorry load thefts	-	-	-	-	-	-	-	-	-	-	-	-
Employment surveys in freight transport and logistics industry	Anuários Estatísticos de Portugal 2003 – Transportes, Armazenagem e Comunicações	INE – Instituto Nacional de Estatística	No specific reason	No	Yearly	2003 (published)	For each region, economic activity and mode of transport: number of enterprises, employed persons, turnover.	Inquire and counting.	Country and North Region.	Number, thousands of euros	Country and North Region.	Easy (but not for free)
Land use databases for town/city needed for freight modelling	Municipalities own the updated databases. It is possible to buy it or buy specific parts or areas.											
Port freight traffic data in the urban area	-	-	-	-	-	-	-	-	-	-	-	-

Portugal (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Rail freight traffic data in the urban area	-	-	-	-	-	-	-	-	-	-	-	-
Inland waterway freight traffic data in the urban area	-	-	-	-	-	-	-	-	-	-	-	-
Airport freight traffic data in the urban area	-	-	-	-	-	-	-	-	-	-	-	-
Freight informatics data (from cameras, sensors & other automatic data capture devices)	-	-	-	-	-	-	-	-	-	-	-	-

Summary of urban freight data collected in Spain

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
<i>Commodity flow survey</i>	Encuesta Permanente de Transporte de Mercancías por Carretera	Ministerio de Fomento	Transport Planning	No	Annual	Data have been collected uninterruptedly since 1993.	Number of transport operations, Tones carried, Ton-km	Postal survey	800 vehicles per week (41,600 vehicles per year)	Transport operation (trip)	Spain	Very difficult
<i>Site/Land Use/Establishment surveys</i>	Retail and wholesaler survey	Chamber of Commerce	Local taxes	Yes	Yearly	2005	No of premises per postcode	License statistics	Global	No of premises	Province of Seville	Easy
	Freight attractors	University of Zaragoza	Modelling	Yes	Occasional	2005	Size and location of premises	Official statistics	Global	N.A.	Zaragoza metropolitan area	Difficult
<i>Transport operator surveys (including driver diary surveys)</i>	On-street carrier survey	University of Seville	Modelling	Yes	Occasional	2003	Parking practices	Interviews	Small	Qualitative data	Commercial areas of Seville	Easy
	Encuesta Permanente de Transporte de Mercancías por Carretera	Ministerio de Fomento	Transport Planning	No	Annual	Data have been collected uninterruptedly since 1993.	Number of transport operations, Tones carried, Ton-km	Postal survey	800 vehicles per week (41,600 vehicles per year)	Transport operation (trip)	Spain	Very difficult
<i>Shipper surveys</i>												
<i>Receiver surveys</i>	Retail survey	University of Seville	Modelling	Yes	Occasional	2003	Type of carrier and time and frequency of deliveries	Interviews	Small	Deliveries per day	Commercial areas of Seville	Easy

Spain (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
<i>Good vehicle fleet licensing data</i>	No of licensed vehicles	Regional Federations of Transport	Payment of fees	Yes	Yearly	2005	No of licensed vehicles	Owners signing up for licenses	Global	No of vehicles	Regional	Difficult
	Local council statistics	Local authorities	City planning	No	Annual	2004	number of freight vehicles growth	Data derived from local licences and local planning	All of them	Licences	Local	Easy
<i>Traffic counts</i>	Freight vehicle flows	University of Seville	Modelling	Yes	Occasional	2005	Vehicle flows	CCTV cameras	Medium, in relevant streets	No of freight vehicles per hour	Seville	Difficult
	Freight vehicle counts	University of Zaragoza	Modelling	Yes	Occasional	2005	Vehicle flows in selected links	CCTV cameras	All the main accesses to the city, and several main urban streets	No of vehicles per hour	Zaragoza	Easy
	Local council traffic data	Local authorities	City planning	No	Annual	2004	Trips	Detectors	--	Vehicles	Local	Easy
<i>Distribution industry surveys</i>												
<i>Vehicle operating cost surveys</i>	Observatorio del Transporte	Catalonia Government (Regional authority)	Regional planning	No	Quarterly	June 2005	Vehicle operational cost	Assess of transport related variables	--	(€/veh-km;€/veh)	Regional	Easy

Spain (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
<i>Loading/unloading/parking infrastructure data for goods vehicles</i>	Load zone locations	Local authorities	Local planning	No	Occasional	?	Location of load zones on a map	?	Global	Qualitative data	Local	Easy
	Local council statistics	Local authorities	City planning	No	Annual	2004	Load-unload places growth,	Data derived from local licences and local planning	All of them	Load-unload places	Local	Easy
<i>Data on road accidents involving goods vehicles</i>	Local council statistics	Local authorities	City planning	No	Annual	2004	Typologies of accident	Data derived from city police.	All of them	Accidents, injured, fatalities	Local	Easy
<i>Data on lorry/lorry load thefts</i>												
<i>Employment surveys in freight transport and logistics industry</i>	Observatorio Social del Transporte por Carretera	Ministerio de Fomento	National planning	No	Annual	2005	Employments	Survey and national statistics	--	Employees	National	Difficult
<i>Land use databases for town/city needed for freight modelling</i>												
<i>Port freight traffic data in the urban area</i>												
<i>Rail freight traffic data in the urban area</i>												

Spain (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
<i>Inland waterway freight traffic data in the urban area</i>												
<i>Airport freight traffic data in the urban area</i>												
<i>Freight informatics data (from cameras, sensors & other automatic data capture devices)</i>												
<i>Other sources of urban freight data</i>	Urban freight regulations	Local authorities	Traffic regulations	No	Occasional	2005	Transport ordinances	Web access, official request	Most large cities in the country	N.A.	Local	Difficult to match regulations and actual practices

Summary of continuous urban freight data collected in Sweden

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measure used	Geographical coverage	How difficult to extract urban data
Commodity flow survey	Varuflödesundersökningen	Statistics Sweden	to collect data for freight models	Yes	Every third year	2001, data collected again in June 2004 –2005	outgoing consignments and incoming consignments from abroad.	postal questionnaires and extraction of data from administrative systems	12 000 local units	Tonnes, SEK,	Local units in Sweden	Very difficult
Site/Land Use/Establishment surveys	None											
Transport operator surveys (including driver diary surveys)	Inrikes och utrikes trafik med svenska lastbilar	Statistics Sweden	EU-regulation	Yes	Continuous	Last publication covers first quarter 2005	Tonnes, configuration, geographical data	Postal questionnaire	12 000 per year			Very difficult
Shipper surveys	No											
Receiver surveys	Yes, see commodity flow survey above											
Good vehicle fleet licensing data	Vehicle statistics	Statistics Sweden	Official statistics		Monthly		Number, type of vehicle, configuration	Administrative register	Not based on sample		Sweden	
Traffic counts	Trafikbarometern	National road administration	General information		Monthly		Vehicle kilometres	automatic traffic counts	80 fixed count points	Number of vehicle passing	State-owned roads	Very difficult

Sweden (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measure used	Geographical coverage	How difficult to extract urban data
Distribution industry surveys	Yes, see commodity flow survey above											
Vehicle operating cost surveys	None											
Loading/unloading/parking infrastructure data for goods vehicles	None											
Data on road accidents involving goods vehicles	Vägtrafikskador	National road administration		No			Killed, injured, vehicles involved	Police reports	Not based on sample		Sweden	Easy

Summary of continuous urban freight data collected in Switzerland

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Geographic area over which data collected
Commodity flow survey	Güterstatistik	Schweizerische Zolldirektion		No						
Site/Land Use/Establishment surveys	Nutzflächen- und Geschossdatei	are Bundesamt für Raumentwicklung		No						
Transport operator surveys (including driver diary surveys)	GTE	Bundesamt für Statistik	Knowledge of roads goods transports on national and regional level (goods and vehicle flows and structure of these flows)	Yes	Every five years	2003	Goods vehicle trips, ave. distance, weight, capacity, vehicle km, goods carried	Survey of vehicle owners		National
	GQGV	Bundesamt für Statistik	Knowledge about border crossing goods transport (road).	N/K	Every five years	2003	Origin-destination, type of goods, weight, vehicle type, custom point and pass used	Survey at 70 custom points	30,000 respondents	National
	AQGV	Bundesamt für Statistik	Knowledge about alpine crossing goods transport (road and rail and combined transport). Data collection also in Austria and France.	N/K	Every five years	2004	Origin-destination, type of goods, weight, vehicle type, custom point and pass used	Survey at 4 Alpine passes and traffic counts	8,500 respondents	4 Alpine passes
Shipper surveys	QMGV	Federal Office for Roads (Astra)	Decision processes of shippers, modal shift behaviour and importance of quality factors in goods transports.	Yes	One-off	2004	Origin-destination, type of goods, weight, vehicle type, transport price	Stated preference interviews	40 interviews	National
	div.	ASTAG, SGL								

Switzerland (continued)

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling ?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Geographic area over which data collected
Receiver surveys	QMGV			Yes	One-off	2004				
Good vehicle fleet licensing data	Motorfahrzeug Statistik	Bundesamt für Statistik								
Traffic counts	Several in different cities									
Distribution industry surveys	Betriebszählung	Bundesamt für Statistik		Yes						
Vehicle operating cost surveys	Carried out by association	ASTAG		No						
Loading/unloading/parking infrastructure data for goods vehicles										
Data on road accidents involving goods vehicles	Unfallstatistik	Bundesstelle für Unfallverhütung BfU		No						
Data on lorry/lorry load thefts	Data not published	Insurance companies		No						

Switzerland (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Geographic area over which data collected
Employment surveys in freight transport and logistics industry	Schweizerischer Arbeitskräfte Survey	Bundesamt für Statistik								
Land use databases for town/city needed for freight modelling	EAG data	Amt für Stadtebau, Hochbaudepartement Zürich		No						
Port freight traffic data in the urban area	Basel Gütertransportstatistik	Hafen Basel								
Rail freight traffic data in the urban area	Wagenladungsverkehr	SBB Cargo								
Inland waterway freight traffic data in the urban area										
Airport freight traffic data in the urban area										
Freight informatics data (from cameras, sensors & other automatic data capture devices)	Schweizerische Strassenverkehrs-zählung	ASTRA Bundesamt für Strassen								

Summary of continuous urban freight data collected in the United Kingdom

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data?
Commodity flow survey	NONE											
Site/Land Use/Establishment surveys	TRICS (Trip Rate Information Computer System) database	TRICS	To estimate traffic flows for variety of sites	Yes	New counts added all the time	2005	Vehicle counts at different types of site	Site surveys	N/A	Vehicles per hours by vehicle type	Sites throughout UK	Easy but need to pay subscription
Transport operator surveys (including driver diary surveys)	Continuing Survey of Road Goods Transport (CSRGT)	Department for Transport	Produce national estimates	Yes	All the time - published annually	2005	Goods vehicle trip data over 1 week	Postal questionnaire	14,000 vehicles per year in 2004	Several	All trips in UK by UK reg HGVs	Needs special analysis by DfT, and many urban trips difficult to identify.
	Company Van survey	Department for Transport	Produce national estimates	No	All the time - published annually	2005	Goods vehicle trip data over 3 days	Postal questionnaire	4,800 vehicles per year	Several	All trips in UK	Needs special analysis by DfT, and many urban trips difficult to identify.
	Survey of Foreign Vehicle Activity in Great Britain	Department for Transport	Produce national estimates	No	Occasional	2003	Goods vehicle trip data during time in UK	Face to Face questionnaire	2,109 vehicles	Several	All trips in UK	Needs special analysis by DfT, and many urban trips difficult to identify.
	Continuing International Road Haulage Survey (IRHS)	Department for Transport	Produce national estimates	No	All the time	2005	Goods vehicle trip data for international trips on specified days	Postal questionnaire	4,500 international haulage firms per year	Several	All international trips by UK vehicles	Needs special analysis by DfT, and many urban trips difficult to identify.
	Quarterly Roll-on / Roll-off Enquiry (RoRo)	Department for Transport	Produce national estimates	No	Quarterly	2005	Goods vehicles travelling on RoRo ferries/Channel Tunnel	Postal questionnaire	All Roll-on/Roll-off ferry operators known to carry road goods vehicles, and Eurotunnel	Number of goods vehicles carried	Ferry/Channel Tunnel trips to/from UK	Not relevant
	London Area Transport Survey - Roadside interviews with goods vehicle drivers	TfL	Produce London estimates and trip matrix	Yes	Every 10 years	2001	Origin/destination, trip purpose and type of goods carried	Face to face interview	150,000 light and heavy goods vehicles	Several	London and SE	Is London data
Shipper surveys	NONE											

UK (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data?
Receiver surveys	NONE											
Good vehicle fleet licensing data	Vehicle Licensing Statistics - DfT hold DVLA annual vehicle licensing data	DfT	Legal requirement for licensing	No	All the time - published annually	2005	Vehicle type and weight, registered address of owner	Postal licensing form	All vehicles		All of UK	Needs special analysis by DfT
	Traffic Commissioners Annual Report	Traffic Commissioners	Legal requirement for licensing	No	All the time - published annually	2005	Licences in issue to goods vehicle operators inc. address, number and type of vehicles	Postal licensing form	All goods vehicle operators		All of UK	Difficult - needs special analysis by Traffic Commissioner's office - not all data in electronic
Traffic counts	Large number of manual and automatic counts in urban areas in UK	Department for Transport	Produce national estimates		All the time	2005	Traffic flows	Manual and automatic counts		Vehicles/vehicle kilometres	GB	Fairly simple, but needs special analysis by DfT.
	Manual and automatic counts in many towns and cities	Urban authorities	Traffic monitoring	No	All the time	2005	Traffic flows	Manual and automatic counts		Vehicles/vehicle kilometres	Many urban areas in GB	Collected at urban scale
Distribution industry surveys	Annual report "Retail Logistics: Benchmarking Supply Chains"	Institute of Grocery Distribution	Commercial	No	Annual	2004	Includes stock levels, lead-time by product category, no. and location of depots, distance travelled and backhauling, for grocery retailers providing data	Postal questionnaire	All major grocery retailers sent questionnaire	Several	All of UK	Data cannot be split regionally or by urban area
	Quarterly Transport Activity Survey	Freight Transport Association (FTA)	Industry support/commercial	No	Quarterly	2005	Includes business activity by region and sector as well as views on special issues	Postal questionnaire	Usually 100-150 companies	Several	All of UK	Data cannot be split by urban area
Vehicle operating cost surveys	Vehicle operating costs / Distribution Cost surveys	FTA and RHA (Road Haulage Association)	Commercial	No	Published Quarterly	2005	Wages, warehouse costs, vehicle costs, haulage rates	Postal questionnaire	80 goods vehicle operators	Several	All of UK	Data cannot be split regionally or by urban area

UK (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data?
<i>Loading/unloading/parking infrastructure data for goods vehicles</i>	NONE											
<i>Data on road accidents involving goods vehicles</i>	Local vehicle accident data collected by local authority or police is collated nationally by DfT	Department for Transport collates data	Legal requirement & Accident analysis	No	All the time	2005	Day, date, time, location, vehicles involved, casualty information for each accident	Police reports	Not applicable		All of the UK	Needs special analysis by DfT
<i>Data on lorry/lorry load thefts</i>	Truckpol/National Stolen Lorry Load Desk	Metropolitan Police	Crime investigation	No	All the time	2005	Location, time, date of incident, type of vehicle, type of load	Reported by Police Forces, hauliers, insurance companies, goods in transit claims handlers, loss adjusters and private investigators	Not applicable		All of the UK	Needs special analysis by Truckpol team
<i>Employment surveys in freight transport and logistics industry</i>	Annual Business Enquiry	Office for National Statistics	Employment in UK	No	Published annually	2005	Number of employees by sector	Postal questionnaire	All businesses with more than 250 employees and a proportion of business with up to 250 employees	Number of employees	All of the UK	Can require special analysis by ONS team depending on geographical scale required
<i>Land use databases for town/city needed for freight modeling</i>	Several possibilities											

UK (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data?
Port freight traffic data in the urban area	Maritime Statistics	DfT	Produce national estimates	Yes	Annual	2005	Freight handled by commodity, type of ship, port	Returns by port operators	All port operators	Tonnes	All of UK	Available for individual ports
Rail freight traffic data in the urban area	National Rail Trends	Strategic Rail Authority (now DfT)	Produce national estimates		Published Quarterly	2004	Freight moved by commodity (commodity groups: coal, metals, construction, oil and petroleum, international, domestic intermodal and other) and freight lifted (coal and other)	Returns by rail freight operators	All rail freight operators	Tonnes and tonne kilometres	All of UK	Needs special analysis by SRA - difficult as most rail freight flows are into and out of urban area
Inland waterway freight traffic data in the urban area	Waterborne Freight in the UK	DfT	Produce national estimates		Published Annually	2005	Goods lifted and moved by barges and seagoing vessels along inland waters; traffic carried around the UK coast; and traffic to/from offshore installations, sea dredging and dumping	Barge and ship operators and ports	All ports	Tonnes and tonne kilometres	All of UK	Available for individual waterways
Airport freight traffic data in the urban area	UK Airport Freight Data	Civil Aviation Authority (CAA)	Produce national estimates		Published Monthly	2005	Freight and mail lifted by airport, by scheduled or chartered flight, and by passenger and cargo aircraft	Returns by airports	All airports	Tonnes	All UK airports	Available for individual airports

UK (continued)

Type of data collection exercise/survey	Name of data collection/ survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data?
Freight informatics data (from cameras, sensors & other automatic data capture devices)	GPS (Global Positioning System) vehicle trip data	GPS companies such as ISOTRAK, MinorPlanets, etc.	Used by operators to monitor vehicle fleet	Used by operators for trip planning and scheduling	All the time	2005	Vehicle ID, location and time data	Satellite tracking				
Other sources of urban freight data	Origins & destinations survey of UK International Trade	DfT			Occasional	1996	Weight of international trade by inland origins and destinations, by mode of transport and by foreign country.	Postal questionnaire	15,400 shipments imported, and 18,400 imports exported	Tonnes	All of UK	Provided at regional scale
Vehicle safety and maintenance	Vehicle Inspectorate Effectiveness Report	Vehicle Inspectorate	Part of vehicle road safety and environmental standards within the UK	No	All the time	2005	Vehicle test fail rates, road worthiness spot check test, exhaust emission tests	Vehicle testing	Varies depending on test - for some tests all vehicles are included	Several	All the UK	Would require special analysis by Vehicle Inspectorate
Other sources of urban freight data	UK Trade statistics	HM Revenue & Customs	Legal requirement	Yes	All the time	2005	Quantity and value of imports and exports	Compiled from trade declarations	All trade declarations	Value and quantity (usually weight)	All goods entry points to UK	Relevant for modelling if urban area is a seaport - require special analysis by HM Revenue & Customs

Appendix 2: Gaps in freight data in each country as identified by experts surveyed

Country	Gaps in urban freight data identified by experts
Belgium	<p>The most important missing data includes:</p> <ul style="list-style-type: none"> • Data about light goods vehicles • Data about the type of delivery system used (i.e. single or multi-drop, and the number of drops involved) <p>Other urban freight data problems include:</p> <ul style="list-style-type: none"> • There are few urban freight studies • No common methodologies are used so the results are not comparable • There are no recurrent studies or surveys, so any analysis over time is difficult
France	<p>The most important gaps in urban freight data collection in France are as follows:</p> <ul style="list-style-type: none"> • The part of the peripheral platforms in the urban logistics is not well known because of the lack of knowledge of the traffic flows the latter generate. The connection between the global and local logistics is therefore not well analysed • The cost analysis of urban logistics is not possible, for the operators don't deliver easily (may be they don't know them) the real costs of the transport sector. • To day, the urban goods transport data look dated (ten years ago). The model is thus calibrated by old ratios and parameters. • There are numerous local surveys but the results are not sufficiently developed and matched up. • The follow-up of the different experiments (towards best practices) are not matched, so it is difficult to compare their efficiency (at economic, social and environmental levels). • There is a lack of knowledge of the public work traffic, waste collection and reverse logistics, network management, and generally of the flows generated by the urban public management. • The share between occupational and individual trips in the use of LGV <p>The most important gaps in urban freight data collection for freight modelling purposes in France are:</p> <ul style="list-style-type: none"> • The underestimation of the flows coming from the peripheral platforms, • The data used for the calibration of the model must be readjusted, • The cost aspects are not taken into account. So, it is not possible to simulate economic scenarios through the current model. • The modelling of the urban public management is currently very rough.
Germany	<p>General gaps in urban freight data in Germany include the following:</p> <ul style="list-style-type: none"> • Infrastructure data – provisions and data of information about the road-network, bridges, parking facilities, railway lines and sidings, and port storage facilities • Enterprises and performance - structure of railway companies as well operating performances of goods transport by railway • Demand - Relational statistics of goods transport / transport flows / vehicle movement (origin-destination relations) on the spatial basis of the 3rd NUTS level as well as according to the “mode of appearance” of goods / load units <p>Important gaps in urban data collection for modelling freight and commercial traffic include:</p> <ul style="list-style-type: none"> • Actual and reliable statistics considering the loading and unloading facilities on roads infrastructure and parking facilities in urban areas • Data of local alteration of loading / unloading sites in urban districts especially building sites • Actual data concerning the localities of industries tangled with road network in urban areas • Actual data considering the regional transport flows / regional traffic flows of utility vehicles from urban or rural areas to urban or rural areas • Regional structure of traffic-staying-time of all utility vehicles • Use of vehicles which are licensed for goods and person transportation • Mixed trip-purposes of goods and person transportation • Vehicle which are working places

Hungary	There has been little urban freight transport data collection in Hungary. The only freight transport survey in Hungary took place in the first half of the 1980s. There have been no specific freight transport surveys in urban areas in Hungary yet.
Italy	<ul style="list-style-type: none"> • Difficulties in the current systems to collect data in Italy are due to a lack of coordination between national and local authorities. • National bodies collect data in a very wide-ranging way, mainly just to “feed” national statistics. Hence, being the target very broad, results are very general, too. For instance, ISTAT collects data on road transport of goods at national level, on a three-monthly basis. Limits of these surveys rely on two factors: <ul style="list-style-type: none"> - The bottom – up collecting process does not start from the local level; interviewees have to specify provinces of departure and of arrival but not the municipal areas; such information are processed on a regional basis. - Light goods vehicles (less than 3,5t) are not taken into account. It is worth noting, however, that currently there are about 2,000,000 commercial vehicles circulating in Italy, but out of them there are just 300,000 vehicles with a gross weight over 3,5t. <p>There is little data on the infrastructural supply dedicated to goods deliveries. Usually, no indicators linking numbers of operators to retail activities, to land use or even to loading/unloading areas (just to mention two very simple ones) are available.</p> <ul style="list-style-type: none"> • Traffic data is divorced not only from information on road supply, but also from another relevant component: the participation of end-users. For example, no real comparison between operators’ requirements and space supply have ever been run. • Another key gap in the collection of data is the total absence of quantitative/qualitative information of transportation operators.
Netherlands	<p>The most important gaps in urban freight data collection in the Netherlands are as follows:</p> <ul style="list-style-type: none"> • Urban freight is not very well represented in existing statistics. • National vehicle trip origin and destination survey data is limited when disaggregated for particular urban areas. • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Rail and barge play no role in city distribution in the Netherlands.
Portugal	<p>The gaps that contribute to the general lack of urban freight collection in Portugal include:</p> <ul style="list-style-type: none"> • Portuguese institutions are not sufficiently aware of the importance of urban freight issues and how useful it would be to improve urban freight data collection. • Most of the cities adopt solutions that were already implemented in other cities usually without a study to support them and thus, don’t collect data. <p>Of the freight data that does exist, most is collected at a greater geographical area than urban areas, so efforts are needed to extract the relevant data. This has financial implications and it can take some weeks or even months to receive the required data.</p>
Spain	<p>The most important gap of data collection is the lack of a standardised and regular freight transport survey applied in the main Spanish cities.</p> <p>There is a need to define an appropriate protocol and also to determine responsibilities for its execution.</p> <p>There is also a lack of supply chain insight in the survey work that is carried out. This makes it difficult to model how specific city logistics initiatives may affect the scenario, since the number of vehicles and deliveries is often deemed constant.</p>
Switzerland	<p>Gaps in urban freight data collection in Switzerland include the following:</p> <ul style="list-style-type: none"> • The focus is on passenger transport and individual traffic not freight transport • The interest in urban freight transport does exist (especially in Zurich), but to a much lesser extent than for passenger transport • There is still a lack of continuous monitoring of freight transport in agglomerations • There is no clear methodology for the collection of urban freight data. “Ad hoc” surveys are mainly carried out for the reasons of given planning intentions or political measures. • In national surveys the situation looks different: a lot of effort is spent to collect data about road freight transport. A clear methodology is described in guidelines and directives. The

	<p>collection takes place in a fixed time interval.</p> <ul style="list-style-type: none"> • There is little data about delivery patterns including frequencies, stops, locations etc.
<p>United Kingdom</p>	<p>The most important gaps in urban freight data collection in the UK are as follows:</p> <ul style="list-style-type: none"> • Existing statistics on traffic congestion are limited. • National vehicle trip origin and destination survey data is limited when disaggregated for particular urban areas. • Lack of information about multi-drop vehicle rounds with more than 5 stops (only summary data collected). • Information on the overall structure and profitability of the UK road haulage industry (including urban operators) is limited. • There is relatively little data on fuel consumption per km by goods vehicles (but data on fuel consumption is published as part of the DfT's Continuing Survey of Road Goods Transport). • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Rail freight data is limited at the urban scale. <p>The most important gaps in urban freight data collection for freight modelling purposes in the UK are:</p> <ul style="list-style-type: none"> • Sample size for vehicle trip origin and destination surveys very limited when disaggregated for particular urban areas. • Lack of information about multi-drop vehicle rounds with more than 5 stops (only summary data collected). • There is limited data on the freight flows and goods vehicle trips generated by different types of urban businesses in terms of factors such as trip frequency, time, vehicle type. • Lack of single source of data about location, size and types of business in urban areas that is comprehensive and detailed enough for freight modelling.

Appendix 3: Freight transport indicators used in each country as identified by the experts surveyed

Respondents were asked to provide details of indicators used by governments or researchers to measure the performance of urban freight transport in their countries. They were also asked to include details of any urban freight transport indicators that they thought would be useful even if they were not aware of the indicator being used currently.

It is important to note that the questionnaire responses have highlighted that there is little common understanding or agreement about what constitutes an urban freight transport indicator. Also, it is not always clear from respondents' answers whether an indicator that they have identified is currently in use or is being suggested as a potentially useful indicator.

Freight transport indicators in Belgium

In Belgium no urban freight indicators are collected. This was under discussion in the Region of Brussels Capital, but no concrete plans about urban freight indicators were made.

Most collected freight indicators are quite general like the average transport distance of Belgian freight vehicles (+ 1 ton), the total number of accidents with freight vehicles on motorways, etc.

Freight transport indicators in France

One of the mostly interesting indicators used in French cities is the frequency of deliveries and pick-ups, expressed per week per job. It gives an indication of the variety of freight transport chains among different economic sectors. It also is an opportunity, for one sector, to compare the performance in different cities.

The Table below shows indicators that have been used in France by either the government or researchers to measure the performance of freight transport. These indicators are used on a national basis or specifically at an urban level.

Indicators used in France to measure the performance of urban freight transport

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Used primarily at level :
Ratio: Number of Loading/unloading	Number of deliveries and pick-ups per week per employee in an activity	UGM specific surveys LET	Urban
Loading/unloading density	Number of deliveries and pick-ups per km ² in a zone	UGM specific surveys LET	Urban
Car-purchasing density	Number of car trips for purchase per km ² in a zone	LET - Freturb Throw the household surveys	Urban
Loading/unloading intensity per activity	Number of deliveries and pick-ups per activity in a zone	UGM specific surveys LET	Urban
Loading/unloading time	Number of hours of on street double parking for delivery or pick-up in a zone, per vehicle, per activity	UGM specific surveys LET	Urban
Length covered for Loading/unloading	Number of kilometres for one delivery or pick-up in a zone, per vehicle, per activity	UGM specific surveys LET	Urban
<i>Average length of the first trip from platform to the delivery area ("marche d'approche")</i>	Km	UGM specific surveys LET	Urban

France (continued)

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Used primarily at level :
Average distance travelled per collection/delivery	Kilometres per collection or delivery	UGM specific surveys LET	Urban
Total distance travelled on roads in urban area transporting goods by HGV, rigid lorries, and LGV (<3,5T) used	Total vehicle km per week in French urban areas	LET – Model FRETURB from surveys on urban freight transport	Urban
Average time taken per delivery	Minutes per delivery	UGM specific surveys LET	Urban
Average driving time and stationary time	Time spent i) driving and ii) stationary while making deliveries (expressed in minutes)	UGM specific surveys LET	Urban
<i>Average speed per round (including and excluding stops to make deliveries) km/hour</i>	Km per hour	UGM specific surveys LET	Urban
<i>Greenhouse gas and pollution</i>	g Pollutant per km - g CO2 per km per km - litter of Fuel per km according to the zone, the vehicle, the activity.	ADEME With LET -Aria Technologies Software in progress FRETURB V.3	Urban
Average operating cost per collection/delivery	€ per collection or delivery	Varied sources – surveys on urban freight transport with experiments	Urban
Total distance travelled on roads in urban area transporting goods by own account or third part transport	Total vehicle km per week in French urban areas	LET – Model FRETURB from surveys on urban freight transport	Urban

France (continued)

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Used primarily at level :
Road occupancy by vehicles transporting food (distance travelled)	Total vehicles UVP* km per week in French urban areas	LET – Model FRETURB from surveys on urban freight transport	Urban
Road occupancy by vehicles transporting goods For loading and unloading	Total vehicles UVP* hours per week in French urban areas	LET – Model FRETURB from surveys on urban freight transport	Urban
Average speed according to the density of the urban area	Km/h	UGM specific surveys survey on home deliveries (food) - LET	urban
Weight average transported in a round (according to the size of the vehicle)	Kg per km / vehicle	UGM specific surveys survey on home deliveries (food) - LET	Urban
Average cost of purchase “panier moyen”	€ per trip for purchase	Beauvais consultant – surveys on purchase “sortie de caisses »	Urban
Average cost of food per home delivery	€ per home delivery	survey on home deliveries (LET and others)	Urban
Average distance covered by a trip for purchase (acc. to the type of shop)	Km	Household survey Beauvais consultant – surveys on purchase)	Urban

* UVP : rough VP unit according to the road occupancy of each vehicle type

Indicators used in France to measure the performance of national freight transport

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Used primarily at level :
Freight Intensity (heavy vehicles)	Ton kilometres / GDP	SES, Comptes de la Nation yearly – results from SITRAM-TRM survey	National
Lorry traffic intensity (heavy vehicles)	Vehicle kilometres / GDP	SES, Comptes de la Nation yearly – results from SITRAM-TRM survey	National
Goods moved	Ton kilometres / region	SES, Comptes de la Nation yearly – results from SITRAM-TRM survey	National
Goods lifted (heavy vehicles)	Tonnes	SES, yearly, SITRAM-TRM survey	National
<i>Average length of haul</i>	Vehicle kilometres	SES, yearly, SITRAM-TRM survey	National
<i>Distance travelled</i>	Vehicle kilometres	SES, yearly, SITRAM-TRM survey	National
<i>Loading factor</i>	%	SITRAM-TRM survey	National
<i>Empty running</i>	% Vehicle km run empty/total vehicle km (loaded + empty)	SITRAM-TRM survey	National
<i>Energy intensity</i>	Fuel consumed per tonne kilometre	SES on the basis of standards from ADEME (Software Impact-Ademe)	National

Freight transport indicators in Germany

The Table below shows indicators that have been used in Germany by all people engaged in urban freight planning. They are divided in such seven groups to distinguish the reference parameters. All indicators are used on a national basis and also specifically at an urban level.

Title of the urban freight indicator	Units in which the indicator is measured	Project using this indicator and reference
Indicator Group 1 (vehicle)		
Size	<ul style="list-style-type: none"> loading capacity and total weight in t number of axles year of the first registration 	All known projects
Kind	<ul style="list-style-type: none"> as registered by central licensing office, international nomenclature 	Analysis of goods transport
Kind of body / vessel	<ul style="list-style-type: none"> as registered by central licensing office, international nomenclature 	
Equipment of Communication-Technologies	<ul style="list-style-type: none"> kind of used vehicle on-board technology (categories) 	Transport modelling Dortmund, Wuppertal
Indicator Group 2 (holder)		
Branches	<ul style="list-style-type: none"> 17 groups of international nomenclature as official statistics 	All known projects, GüKStat, KID
Profession	<ul style="list-style-type: none"> as national and regional statistics 	
Size	<ul style="list-style-type: none"> number of employees 	Urban freight models
	<ul style="list-style-type: none"> number of vehicles 	All known projects, GüKStat, KID
	<ul style="list-style-type: none"> kind of vehicles (typology) 	
Location	<ul style="list-style-type: none"> type of housing-estate (typology) 	KID
	<ul style="list-style-type: none"> home-locality of vehicles (location) 	

Germany (continued)

Title of the urban freight indicator	Units in which the indicator is measured	Project using this indicator and reference
Indicator Group 3 (trip)		
Trip	<ul style="list-style-type: none"> • number of trips with load 	All known projects, GüKStat, KID
	<ul style="list-style-type: none"> • number of empty trips 	
	<ul style="list-style-type: none"> • type of trip (categories) 	
	<ul style="list-style-type: none"> • start- and close-site of trip (location) 	
	<ul style="list-style-type: none"> • start- and close-time of trip (daytime) 	Most urban freight models
Trip-chain	<ul style="list-style-type: none"> • number of trip-interruption (stops) 	
Trip-distance	<ul style="list-style-type: none"> • trip-kilometre, state of tachometer in km 	GüKStat, KID, FLE
Route	<ul style="list-style-type: none"> • route of trip (map) 	It is not known that projects have directly elevate courses of trips on roadways, but it shall be possible by collecting road fees ("Maut")
	<ul style="list-style-type: none"> • length of route in km 	
	<ul style="list-style-type: none"> • Route across foreign countries (route map) 	GüKStat
Traffic staying time, trip-duration	<ul style="list-style-type: none"> • Time-distance between starting time and closing time of trip on route in minutes, 	Some urban freight models, KID
	<ul style="list-style-type: none"> • Speed of trip in km/h 	
Group 4 (trip-purpose)		
Kind of trip	<ul style="list-style-type: none"> • Pick up and / or delivery, 	All known projects for urban freight transport or commercial traffic, GüKStat, KID
	<ul style="list-style-type: none"> • Trip at own working end 	
	<ul style="list-style-type: none"> • Trip for commercial purpose 	
	<ul style="list-style-type: none"> • Transportation of persons 	
	<ul style="list-style-type: none"> • Home-trip 	
Trip-performance	<ul style="list-style-type: none"> • Length of trips in km, trip-kilometers 	
Transportation of goods	<ul style="list-style-type: none"> • Brutto weight of load in t, 	
	<ul style="list-style-type: none"> • Kind of transport goods (categories) 	
Utilization of loading capacity	<ul style="list-style-type: none"> • Utilization of space volume in m³ and payload weight in t 	
Form of loading	<ul style="list-style-type: none"> • as official international statistics 	

Germany (continued)

Title of the urban freight indicator	Units in which the indicator is measured	Project using this indicator and reference
Indicator Group 5 (user)		
Users / transport clients	<ul style="list-style-type: none"> registered branches clients belong to 	project of Wuppertal / Remscheid, other projects , GüKStat, KID
	<ul style="list-style-type: none"> locality of transport client 	Only some projects known
	<ul style="list-style-type: none"> size of transport clients 	
Indicator Group 6 (driver)		
driver	<ul style="list-style-type: none"> species 	special report of BAG data collecting FLE
	<ul style="list-style-type: none"> age 	
Indicator Group 7 (time)		
Duration of transport	<ul style="list-style-type: none"> time between trip-start and -close in min. 	All known projects of urban freight transport data collection, KID
	<ul style="list-style-type: none"> traffic-staying-time in minutes 	
	<ul style="list-style-type: none"> driving time in minutes 	

Additional material on indicators in Germany

In following up the requirements of modelling urban freight transport, there is some demand on new indicators measuring the further characteristics:

- Time / duration of loading / unloading operations on urban roads / in city-districts (allowed activities/ allotment zones)
- Loading / unloading time dependent on different size of vehicles in urban areas (allotment zones) and on roads (not allotment zones)
- Number of places / kind of places / capacity of places for parking utility vehicles (large and small) in urban areas / different housing-estates
- Number, kind, capacity, performance and facilities of truck terminals / truck-stop-stations inside and nearby city-districts / urban areas / periphery.

Title and description of the urban freight indicator	Project/organisation using this indicator and reference if known
Trips per employee	Very commonly used, other reference values can be used (e.g. trips per ha farming land)
Single trips per round trip	Very commonly used for demand modelling

Freight transport indicators in Italy

A summary of indicators used to measure the performance of urban freight transport in Italy is provided below.

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known
<i>Number of shipments per day (and by area)</i>	<i>N. of shipments</i>	<i>Transport operators</i>
<i>Number of commercial vehicles attracted/produced per day or per zone</i>	<i>N. vehicles/zone*day</i>	
<i>Number of loading/unloading place per zone or per street or Number of loading/unloading place currently existing in a zone or in a street</i>	<i>N. of place/zone N of place/street</i>	
<i>Number of shipments produced by a type of commercial activities in a day</i>	<i>N of shipment per one commercial activity /day</i>	
<i>Occupancy coefficient</i>	<i>Goods Load transported /Load capacity=[%]</i>	
<i>Number of freight distribution vehicles circulating in the city per day</i>	<i>N. of vehicles N. of vehicles*km</i>	<i>City authorities, transport planners</i>
<i>Number of freight distribution vehicles circulating entering the city centre per day</i>	<i>N. of vehicles N. of vehicles*km</i>	<i>City authorities, transport planners</i>
<i>Number of shipments per day (and by area)</i>	<i>N. of shipments</i>	<i>Transport operators</i>

Freight transport indicators in the Netherlands

As far as is known, no urban freight transport indicators are currently used in the Netherlands. The indicators shown in the Table below are ones that should be developed/used.

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known
Share of freight vehicles in all motorized urban traffic, distinguish between through and destination traffic	Number of vehicles by unit of time and place	Local governments
Data on externalities	All relevant environmental parameters, accident counts etc.	Local governments
Accessibility of shops	Availability and use of access routes, parking lots, bays etc.	Local governments
Data on freight volumes in relation to traffic data	Load factor, vehicle fleet etc.	Local governments

Freight transport indicators in Portugal

Specific indicators are not currently used to measure the performance of urban freight transport in Portugal. Regional/national data is used but not a specific treatment of freight transport data in urban areas. An indicator that reflects the number of empty trucks (return) / number of loaded trucks (arriving) could be useful to measured.

Freight transport indicators in Spain

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known
Vehicle flow	No of freight vehicles entering (and delivering in) a given area per time unit	University of Seville
Commercial density	Qualitative indicator (from 0 to 10), representing the number of commercial premises per unit of street length.	University of Seville
Rotation of load zones	No of vehicles using the load zone per hour	Seville local authorities
Load-unload places growth	Number of load-unload places	Local authorities statistics
Number of freight vehicles growth	Number of freight vehicles	Local authorities statistics
Number of freight vehicles parking fines growth	Number of freight vehicles parking fines	Local authorities statistics

Freight transport indicators in Switzerland

Indicators used by the by Swiss government and researchers to measure the performance of freight transport.

Title and description of the urban freight indicator	Units in which the indicator is measured
Vehicles per minute, hour, day for a road section	Total number of vehicles
Direction of vehicles	
Type of vehicles: HGV, LGV, Delivery vehicles	Total number of vehicles
Number of stops in delivery and pick up	Total number of vehicles
Origin and Destination / Point of loading/unloading	Regions: municipality, NUTS region, Country level
Loading weight	In tonnes
Total weight	In tonnes
Capacity usage	In % of total allowed loading volume
Average delivery volume per vehicle type	In tonnes
Delivery volume according to goods group	In tonnes
Delivery volume according to branches	In tonnes
Type of goods transported	Classification according to NSTR-10, EUROSTAT
Number of trips and way in area of investigation	Total number
Classification according to EURO-Norm	EURO-Norm 1 – 5
Parking situation	Descriptive
Loading/Unloading situation	Descriptive
Time of parking	In minutes/hours
Time for loading/unloading	In minutes

Freight transport indicators in the United Kingdom

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Indicator used primarily at national, urban or fleet level?
Freight Intensity	Tonne kilometres/GDP	Department for Transport, Focus On Freight, 2003.	National
Lorry traffic intensity	Vehicle kilometres/GDP	Department for Transport, Focus On Freight, 2003	National
Goods moved	Tonne kilometres	Department for Transport (DfT) – results from Continuing Survey of Road Goods Transport (CSRGT)	National
Goods lifted	Tonnes	DfT results from CSRGT	National
Average length of haul	Vehicle kilometres	DfT results from CSRGT	National
Distance travelled	Vehicle kilometres	DfT results from CSRGT	National
Lading factor		DfT results from CSRGT	National
Empty running	Vehicle km run empty/total vehicle km (loaded and empty)	DfT results from CSRGT	National
HGV kilometres per tonne of oil consumed	HGV vehicle km/HGV tonnes of oil consumed	Department for Transport, Focus On Freight, 2003.	National
HGV tonne-kilometres per tonne of oil consumed	HGV tonne-km/HGV tonnes of oil consumed	Department for Transport, Focus On Freight, 2003.	National

UK (continued)

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known	Indicator used primarily at national, urban or fleet level?
Energy intensity	Fuel consumed per tonne kilometre	Key Performance Indicators (KPIs) used in DfT TransportEnergy Best Practice Programme (TEBPP) projects	Fleet
Goods vehicle time utilisation	Proportion of 24-hour period spent: <ul style="list-style-type: none"> - Running on the road - Loading/unloading - On the road – daily rest - Pre-loaded awaiting departure - Delayed/loaded and inactive - Maintenance/repair - Idle (empty and stationary) 	KPIs used in DfT TEBPP projects	Fleet
Average vehicle fill at start of round	Proportion of total vehicle weight or volume capacity used (expressed as %)	University of Westminster - Modelling policy measures and company initiatives for sustainable urban distribution	Urban
Ave driving time and stationary time as % of total round time	Proportion of total time vehicle is away from depot spent i) driving and ii) stationary while making deliveries (expressed as % of total round time)	University of Westminster - as above	Urban
Average speed per round (including and excluding stops to make deliveries) km/hour	Km per hour	University of Westminster - as above	Urban
Average time taken per delivery	Minutes per delivery	University of Westminster - as above	Urban
Average distance travelled per collection/delivery	Kilometres per collection or delivery	University of Westminster - as above	Urban
Average operating cost per collection/delivery	£ per collection or delivery	University of Westminster - as above	Urban
Total distance travelled on roads in urban area transporting food by HGV, LGV, and car used as a proxy for accidents and congestion costs	Total vehicle km per year in UK urban areas	AEA Technology Environment et al. - The Validity of Food Miles as an Indicator of Sustainable Development	Urban

Appendix 4: Freight terminology used in each country as identified by the experts surveyed

The freight experts participating in the survey work were asked to provide important national terms used to describe freight transport vehicles and operations, as well as definitions of these terms.

Freight Terminology used in Belgium

Term used (in English)	Term used (in national language)	Definition
Stop	Arrêt	A point at which the goods distribution vehicle stops either for collection or delivery - including the point of departure and arrival of the route – or for a technical stop (meal, parking of the vehicle, etc.) without delivery.
Directional traffic counts	Comptage directionnel	Traffic counts in which the volumes of traffic passing in each direction at each point are counted separately (for example, turning counts at a crossroad).
Transport for hire or reward	Compte d'autrui	Transport of goods belonging to a third party by a professional for remuneration.
Industrial carrier	Compte propre	Goods carriage by the company sending or receiving the goods, by means of his own or rented vehicles
Cordon survey	Enquête au cordon	A ring of survey points surrounding an area such that all traffic entering or leaving the area will pass a point
Consignment	Envoi	The entirety of goods composing a movement (reception, dispatch or a related operation)
Itinerary	Itinéraire	Trace of the route covered by the vehicle from his point of departure to his point of arrival
Heavy goods vehicle	Poids lourd	Commercial vehicle of more than 3,5 tons (authorised total loading weight)
Round	Tournée	Journey composed of more than one delivery and collection point
Single drop	Trace directe	Journey composed of one single goods delivery and collection point
Peak traffic flow	Trafic de point	Maximum traffic flow recorded during a given period of time (for example, hourly, daily, monthly)
Commercial vehicle	Véhicule utilitaire	Vehicle (e.g. a van or a lorry) used for goods carriage

Freight Terminology used in France

The Table below lists some selected terms used in urban freight data collection in France together with their definitions.

Selected terms used in French freight data collection

Term used (in English)	Term used (in French)	Definition	Units of measurement
Heavy goods vehicle (HGV)	Poids Lourd (PL)	Goods vehicle with a maximum permissible gross weight over 3.5 tonnes.	size, weight,
Light goods vehicle (LGV)	Véhicule Utilitaire Léger (VUL)	Goods vehicle with a maximum permissible gross weight up to and including 3.5 tonnes.	size, weight,
Town	Agglomération	An "agglomeration" is defined by the <i>Institut National de la Statistique et des Etudes Economiques</i> (INSEE) as settlement of several communities who have a continuity of building.	Surface, Population, Density of employment, Density of movement,
Journeys/Trips	Parcours/Sortie	Work carried out by goods vehicles from 'base to base' to make deliveries and/or collections (including empty journeys/trips for vehicles repositioning)	Number of stops, Driving time between different stops, Length (km)
Single leg of journey	Trajet	Section of a journey included between two stops	Length (km), speed
Stops	Arrêt pour livraison	Each time a goods vehicle stops for a delivery and/or collection during a journey/trip.	duration of stop, time of unloading / loading,
Route	Tournée	roadway, course of trip, route	Number of stops, Driving time between different stops, Length (km)
Direct trip	Trace directe	A trip with a single stop for loading/unloading	duration of trip, time of unloading / loading,

Freight Terminology used in Germany

Term used (in English)	Term used (in German)	Definition	Units of measurement
Vehicle-movement	Fahrzeugbewegung	Movement of vehicle in contrast to standstill of vehicle	Minute, hours, days, weeks, months
Trip, movement	Fahrt	From one point to another point	Number of trip
Trip with load	Lastfahrt	From a loading-point to an unloading-point	Number of loading- / unloading-points
Empty running, empty trip	Leerfahrt	a trip to a loading-point with empty vehicle, a trip from an unloading-point with empty vehicle	Number of loading- / unloading-points
Pick up-trip	Abholfahrt	Trip to pick up goods / shipments	Trip-Kilometers, number of shipments, number of pick-up-places / stops
Assembling-trip, bundling	Sammelfahrt	Trip / tour to assemble mixed cargo from different clients / places	Trip-Kilometers, number of shipments, number of pick-up-places,
Delivery	Lieferung, Zustellung, Bringen, Versand	dispatched transport service	Number of shipments, weight of shipment, number of trips with load, distance of trip, distances of routes, kind of goods, form of loading / mode of appearance
Circuit	Rundlauf	Row of trips which closes at that place where it was started	Distance of tract, trip-kilometers, number of stops / number of segments / clients
Stop	Stopp	interruption of trip with load	Number of trip-interruptions, site of interruption, staying-time at stop
Tour	Tour / Reihenfolge von Fahrtabschnitten / Fahrtenkette / Fahrt-verlauf	Course of trip / trip-chain, gang of different unloading / loading points at row, change of loading and unloading point within a course of trip	Number of interruptions, length of trip distance / course of driving time between different point / stops, time of unloading / loading, duration of stop
Route	Fahrtstrecke / Route	tract, roadway, course of trip, route	Distance of trip, trip-kilometers, length of traction

Freight Terminology used in Italy

Term used (English)	Term used (Italian)	Definition
Stop	Sosta	Each stop made by a freight distribution vehicle to delivery or collect a shipment
Route	Giro	The route of a freight collection / distribution of a vehicle, often the same every day
Direct delivery	Consegna diretta	When the delivery route have a single destination (used in urban area)
Operative vehicles	Veicolo operativo	Category of commercial vehicles used in upkeeping activities or in building activities (In urban areas these categories represent about 20% or more of total commercial vehicles)
Trip	Viaggio	Movement from origin to destination
Stop	Tappa	Stops for partial load/unload of goods between origin and destination.
Heavy goods vehicles	Veicoli pesanti	Freight vehicle with maximum weight > 3,5 t
Light goods vehicles	Veicoli leggeri / furgoni	Freight vehicle with maximum weight < 3,5 t

Freight Terminology used in the Netherlands

Term used (in English)	Term used (in national language)	Definition	Units of measurement
Trip	Trip	Movement of freight vehicle between supplier and receiver	Numerical
Round	Not used		
Stop	Stop	Stop to deliver/pick-up freight at the location of a receiver	Numerical
Tour	Tour	Movement of freight vehicle along a set of receivers in an urban area	Numerical
Delivery	Afleveren/ophalen	Description of process including driving and physical handling of freight	Numerical
Urban area	Stad en omgeving	City and small towns surrounding it	Spatial description
HGV	Truck	> 3500 kg GVW	'm3, size, weight, license code
LGV	Lichte truck, bestelwagen, personenwagen	< 3500 kg GVW	'm3, size, weight, license code

Freight Terminology used in Portugal

Term used (in English)	Term used (in national language)	Definition	Units of measurement
Trip	Viagem	Movement from an origin to a final destination with one specific purpose, not depending if it is used more than one mode of transport.	number
Urban Area	Área Urbana	Area where urbanization and building can take place. It includes urbanized areas and areas that allow urbanization.	
City	Cidade	Area with a continuous population occupancy, with more than 8000 electors and that has at least half of these equipments: hospital facilities with permanent cares, pharmacies	
Heavy goods vehicles	Veículo comercial pesado	Vehicle that has a capacity of more than 9 seats and a weight higher than 3500 kg.	number
Light goods vehicles	Veículo comercial Ligeiro	Vehicle exclusively or mainly used for goods transports and which weight is inferior to 3500 kg.	number

Freight Terminology used in Spain

Term used (in English)	Term used (in national language)	Definition	Units of measurement
Load zone rotation	Rotación	Number of vehicles using the load zone	No of vehicles using the load zone per hour
Less-than-truckload delivery	Envío de carga fraccionada	Vehicle routes with more than one origin or destination	-
Full-truckload delivery	Envío de carga completa	Vehicle routes with more one origin and one destination	-

Freight Terminology used in Switzerland

Term used (in English)	Term used (in national language)	Definition	Units of measurement
Heavy Goods Vehicle (HGV)	Lastwagen (LW)	Vehicles > 7.5 tonnes	
Light Goods Vehicle	Transporter	Vehicles > 3.5 tonnes until 7.5 tonnes	
Delivery Vehicle	Lieferwagen		
Traffic volume	Verkehrsmenge		Total number
Inner city	Innenstadt		
City	Stadt	Municipalities with at least 10000 inhabitants	
City area	Stadtgebiet	Administrative city border	
Urban area	Städtisches Gebiet	The city and its agglomeration (often more than the city in its administrative borders)	
Agglomeration / Conurbation	Agglomeration	Agglomerations are classified according to unified statistical criteria (number of inhabitants, growth of population, relation of employees and population, economic structure, relation of commuters with the city, spatial interrelationship). Agglomerations are related municipalities with at least totally 20000 inhabitants. Each agglomeration consists of its core area and related municipalities. Municipalities belong to an agglomeration if they have more than at least 2000 workplaces and at least 85 workplaces per 100 employed inhabitants.	
Capacity usage	Kapazitätsauslastung	Transported tonnes in relation to maximum capacity (tonnes)	In %
Vehicle kilometre mileage	Fahrleistung	Distance driven kilometres per vehicle	In km
Transport mileage	Verkehrsleistung	Driven kilometres x transported tonnes	In tkm
O/D-matrix	Quelle-Ziel-Matrix		
Vehicle flow	Verkehrsfluss		
Traffic	Verkehr		
Individual traffic	Individualverkehr	Car related traffic, non public transport	

Freight Terminology used in the United Kingdom

Term used	Definition
Heavy goods vehicle (HGV)	Goods vehicle with a maximum permissible gross weight over 3.5 tonnes
Light goods vehicle (LGV)	Goods vehicle with a maximum permissible gross weight up to and including 3.5 tonnes
Gross vehicle weight	The maximum permissible weight of the vehicle and its load.
Journeys/Trips	Work carried out by goods vehicles from 'base to base' to make deliveries and/or collections (including empty journeys/trips for vehicles repositioning)
Stops	Each time a goods vehicle stops for a delivery and/or collection during a journey/trip.
Hire or reward	Goods vehicle operators who carry goods for other people for 'hire or reward'. Also referred to as "public haulage".
Own account	Goods vehicle operators who only carry goods in the course of their own trade or business.
Tonne kilometres	A measure of freight moved which takes account of the weight of the load and the distance through which it is hauled. For example, a load of 26 tonnes carried 100 kilometres represents 2,600 tonne kilometres.
Urban areas	Urban areas are defined by the Office of the Deputy Prime Minister as settlements with a population of 10,000 or more residents

Appendix 5: Summary of reviews of freight transport data collection and modelling

This appendix provides an overview of relevant reports, papers and other documents that have reviewed freight data collection and the freight data required for freight modelling in Europe and elsewhere.

1. OECD (2003) Delivering the Goods: 21st Century Challenges to Urban Goods Transport, OECD.

<http://www.oecdbookshop.org/oecd/display.asp?TAG=X8OWU8XX4X7X9945977HWN&CID=&LANG=EN&SF1=DI&ST1=5LMQCR2K2N5H>

The Working Group on Urban Freight Logistics was set up to learn from such international experiences with the aim of identifying what could improve the efficiency of urban goods transport systems, while ensuring the environmental sustainability and liveability of urban areas. The members of the Working Group gathered information on urban freight policies from different OECD countries. This is the first OECD report that is fully devoted to the topic of the delivery of goods in urban areas. The report notes the lack of data and analytical tools for evaluating effectiveness of urban distribution policy measures (p.9, p.78). It suggests there is a need for standardisation of data to understand and monitor urban freight transport to improve comparability and consistency (p.71, p.79). The report includes a checklist for city distribution evaluation developed in the Netherlands, which enables expected impacts of policy measures to be identified using agreed indicators (p.78). Annex 5 (p.155) contains details of urban freight data available in member countries.

2. BESTUFS (2003) City Inquiry in NAS Countries, “Survey on Transport and Delivery of Goods in Urban Areas”, Additional Report – Final Version, September 2003.

http://www.bestufs.net/issues_bestufs.html

From the beginning of 2003 six new accession countries (Czech Republic, Estonia, Hungary, Poland, Slovenia and Slovakia) joined the BESTUFS project. A survey of cities was carried out that included questions about the freight data collected in urban areas in those countries.

3. BESTUFS (2001) City Inquiry “European Survey on Transport and Delivery of Goods in Urban Areas”, Additional Report, February 2001.

http://www.bestufs.net/issues_bestufs.html

Survey work demonstrated that there is a lack of information and data collection on urban freight transport within European countries. Results indicated that only a small proportion of medium-sized and large European cities were collecting data on urban freight transport.

4. BESTUFS (2000) Best Practice Handbook Year 1: Statistical data, data acquisition and data analysis regarding urban freight transport - City access, parking regulations and access time regulations and enforcement support, DELIVERABLE D2.1, BESTUFS.

http://www.bestufs.net/issues_bestufs.html

This material collection about urban freight data was carried out as part of the BESTUFS project by the contractors and members and an important input came from the experts who participated in the workshops. The following four aspects were considered during the material collection and assessment:

- Identifying already available data sources of statistics and surveys.
- Methods and experiences on how to acquire data and information.
- The usage of statistical data (analysis and conclusions).

- The quality of data collection and results (in particular the comparability to other data collections).

The material collection showed that, “In general it can be stated that there is a lack of information and data collection on urban freight transport within the European countries”. The Handbook contains survey results, case studies, discusses the need for co-operation at a national level, and provides some of the factors that need to be addressed in carrying out successful surveys.

5. Transportation Research Board (2003) A CONCEPT FOR A NATIONAL FREIGHT DATA PROGRAM, Committee on Freight Transportation Data: A Framework for Development, Transportation Research Board Special Report 276, Transportation Research Board, Washington, D.C.

<http://www.TRB.org/publications/sr/sr276.pdf>

In the USA, a study was carried out by the US Transportation Research Board (TRB) in 2003 into national freight data. This study recommended a framework for the development of national freight data. Again, the focus of the work was on national rather than urban freight data however the role of urban freight data in a national plan was briefly discussed (TRB, 2003). The report contains discussion of:

- The Need for Freight Transportation Data
- Current Limitations of Freight Transportation Data
- Concept for a National Freight Data Program in USA
- Freight Survey Collection Techniques

6. Data Needs in the Changing World of Logistics and Freight Transportation, Saratoga Springs, New York USA, 14-15 November, 2001

<http://www.dot.state.ny.us/ttss/conference/synthesis.pdf>

The conference report includes discussion of the following issues about freight data in the US:

- Overview of Freight Transportation: Emerging Trends and Data Needs
- Current Availability and the Future of Freight Transportation Data
- Critical Issues Facing Freight Data Collection and Analysis
- Analytical / Forecasting Capabilities and Data Requirements

7. Austroads (2006) Review of Freight Data Collection and Generation Procedures and Opportunities, Austroads.

<http://www.onlinepublications.austroads.com.au/script/Details.asp?docn=AS261571423339>

Austroads is the association of Australian and New Zealand road transport and traffic authorities whose purpose is to contribute to the achievement of improved Australian and New Zealand road transport outcomes. A scoping study has recently been completed in 2006 “to formulate an approach to improve the collection, transformation and sharing freight data between jurisdictions, agencies and companies”. The work comprised a literature review and the views of experts on freight data issues and stakeholders in road agencies. The consideration were focussed on national rather than urban freight data.

8. University of Leeds (2002) Report B1: Review of GB freight models, report produced as part of Review of Freight Modelling project with WSP, University of Westminster, Rand Europe, MDS-Transmodal, Katalysis, Oxford Systematics, Parsons Brinckerhoff and Imperial College.

http://www.dft.gov.uk/stellent/groups/dft_econappr/documents/page/dft_econappr_507984.pdf

This report was produced as part of the “Review of Freight Modelling” project for the Department of Transport in the UK. It reviews publicly available (and other) information on the methodology underlying freight demand modelling and forecasting studies undertaken in Great Britain. The report takes an illustrative range of pre-1990 sources in Part 1, and a topic-related approach to later studies in Part 2. The report is not exhaustive, due to time and space limitations, as well as lack of easy access to source material. It is, however, judged that the range of freight modelling techniques used in GB mainstream studies has been well covered. The report mentions urban freight modelling but is mostly focussed on national models.

9. WSP (2002) Report B2: Review of models in Continental Europe and elsewhere, report produced as part of Review of Freight Modelling project with University of Westminster, University of Leeds, Rand Europe, MDS-Transmodal, Katalysis, Oxford Systematics, Parsons Brinckerhoff and Imperial College.

http://www.dft.gov.uk/stellent/groups/dft_econappr/documents/page/dft_econappr_507985.pdf

This report was produced as part of the “Review of Freight Modelling” project for the Department of Transport in the UK. The aim of this report is to review current freight modelling techniques in the EU and elsewhere, and through assessing the suitability of the options potentially available, to make some recommendations on the most appropriate techniques for use in Great Britain.

Section 2 outlines the selection criteria that were used to select the freight models for review. Section 3 presents the reviews of freight models in the EU, considering separately models at international, national and regional/urban levels. Section 4 presents the reviews of freight models in North America, with separate sections for models at the urban and regional levels. Section 5 presents the review freight modelling in Australia. Finally, Section 7 presents a summary of the different modelling techniques encountered in the review, and gives some recommendations on the most appropriate techniques for use in Great Britain. The report discusses urban freight modelling but explains the relative lack of existing work at this scale. Most attention is given to national and regional models.

10. WSP and Katalysis (2002) Report B4 – Review of Data Sources, Review of Freight Modelling, report produced as part of Review of Freight Modelling project with University of Westminster, University of Leeds, Rand Europe, MDS-Transmodal, Oxford Systematics, Parsons Brinckerhoff and Imperial College.

http://www.dft.gov.uk/stellent/groups/dft_econappr/documents/page/dft_econappr_507986.pdf

This report was produced as part of the “Review of Freight Modelling” project for the Department of Transport in the UK. The report considers data that is currently available and data in current use in the UK for freight modelling. This includes a commentary on the issues associated with the data, and its strengths and weaknesses.

11. NERA and Heriot-Watt University (2000) THE MEDIUM TERM STATISTICAL NEEDS IN THE ROAD HAULAGE SECTOR, A Final Report for DETR.

This project was designed to assess the medium term statistical requirements in the road haulage sector for the Department of the Environment, Transport and the Regions (DETR). The project objectives were:

- to review current statistical needs in the road haulage industry, with particular emphasis on questions that are likely to arise in the medium term; and
- to propose changes to existing surveys and / or identify the need for new surveys, to fill gaps in existing statistical knowledge of the industry.

12. Wermuth, M., Neef, C., Steinmeyer, I. (2004) Goods and Business Traffic in Germany, paper presented at the 7th International Conference on Travel Survey Methods, Costa Rica, 1-6 August 2004.

http://www.its.usyd.edu.au/isctsc/costarica_papers/resource/B1%20-%20Resource%20Wermuth.pdf

This paper discusses freight surveys in Germany including Methods Used for Business Traffic Surveys (including two tables showing advantages and disadvantages of different approaches and explanation of approach and results in Hamburg and Dresden) and the Nationwide Survey “Motor Vehicle Traffic in Germany 2002” (with detailed information about how the survey was conducted).

12. Garrido, R. (2001) Insights on Freight and Commercial Vehicle Data Needs, paper presented at the 6th International Conference on Transport Survey Quality and Innovation, 5-11 August, Kruger National Park, South Africa.

[http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20\(new\)/South_Africa_Papers/Garrido%20Freight%20Data-reviewed-2.doc](http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20(new)/South_Africa_Papers/Garrido%20Freight%20Data-reviewed-2.doc)

This paper discusses freight data collection in Australia, UK, EU and USA as well as freight models and their data requirements.

13. Page, O. (2001) Roadside Interview Survey Methodology Challenges Faced During the Development of a Freight Flow Database: A South African Experience, paper presented at the 6th International Conference on Transport Survey Quality and Innovation, 5-11 August, Kruger National Park, South Africa.

[http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20\(new\)/South_Africa_Papers/Page%20SurveyConfPaper.v6.doc](http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20(new)/South_Africa_Papers/Page%20SurveyConfPaper.v6.doc)

This paper discusses freight roadside interview surveys and their application in a project in Kroonvaal Toll Plaza, near Johannesburg.

14. Rizet, C., Guilbault, M., van Meijeren, J., Bijster, E., and Houée, M. (2001) TRACKING ALONG THE TRANSPORT CHAIN VIA THE SHIPPERS SURVEY, , paper presented at the 6th International Conference on Transport Survey Quality and Innovation, 5-11 August, Kruger National Park, South Africa.

[http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20\(new\)/South_Africa_Papers/Rizet%20ShipperSurveyITCSQI%2009%2005%2001.doc](http://www.its.usyd.edu.au/conferences/international_conference_on_transport_survey_quality_and_innovation%20(new)/South_Africa_Papers/Rizet%20ShipperSurveyITCSQI%2009%2005%2001.doc)

This paper discusses the use of shipper surveys as a freight data collection technique. This is based on a shipper survey carried out in France.

15. Hallenbeck, M., McCormack, E., Nee, J., Wright, D. and Legg, B. (2003) Freight Data From Intelligent Transportation System Devices, Research Report, Research Project T1803, Task 25, prepared for Washington State Transportation Commission Department of Transportation and U.S. Department of Transportation Federal Highway Administration.

<http://depts.washington.edu/trac/bulkdisk/pdf/566.1.pdf>

This report contains details of a research project that explored the ability of ITS devices to be used as tools for developing useful historical, and perhaps real-time, freight traffic flow information. The study found that the integration of data from the entire range of ITS devices potentially offers both a more complete and more accurate overall description of freight and truck flows.

16. Oregon Department of Transportation Research Unit (2004) Improving Freight Data Collection Methods, Research Notes RSN 05-01, Oregon Department of Transportation
http://www.oregon.gov/ODOT/TD/TP_RES/research_notes/rsn05-01.pdf

This brief research note provides a summary of a study to identify data collection methods capable of generating the information at a level of detail that would better fill ODOT's modeling and freight planning needs at the metropolitan level.

Two pilot data collection approaches were used:

- One pilot study tested the roadside interview approach for collecting data on "interregional" freight movements (freight movements into, out of, and through an urban region);
- A second pilot study tested the mail/fax survey approach for collecting data on "intraregional" freight movements (freight movements within an urban region).

17. U.S. Department of Transportation and Federal Highway Administration (2004) Federal Sources of Freight Data.

<http://www.ops.fhwa.dot.gov/freight/fpd/Docs/freightdata/freightdata.pdf>

Provides a summary of the major sources of publicly available US freight data that can provide insights to volume and value of freight movements, freight infrastructure, freight vehicles, and the economy.

18. Cambridge Systematics, Inc. with Parsons Brinckerhoff & Fitzgerald & Halliday, Inc.(2001) Vermont Statewide Freight Study: Executive Summary, prepared for Vermont Agency of Transportation

<http://www.aot.state.vt.us/planning/Documents/Vermont%20Freight%20Study%20ES%20Final.pdf>

The goals of this study included to:

- Develop a better understanding of the freight transportation system in Vermont;
- Acknowledge and address public concerns regarding specific freight movement practices;
- Provide data that can be used to preserve and improve the transportation system;
- Expand the tools available for freight planning efforts; and
- Begin to identify and prioritize future investments in the freight transportation system.

The project included the development and implementation of a comprehensive data collection strategy. This consisted of collecting and reviewing existing data and collecting new data as necessary.

19. Cambridge Systematics Inc., Comsis Corporation, University Of Wisconsin-Milwaukee (1996) Final Report: Quick Response Freight Manual, Prepared for the Federal Highway Administration.

<http://tmip.fhwa.dot.gov/clearinghouse/docs/quick/Quick.pdf>

This manual discusses issues including:

- Incorporating Commercial Vehicles Into the Travel Forecasting
- Process
- Site analysis
- Data Collection to Support More Accurate Freight Analysis
- Case Study Applications to Urban Areas

20. Ambrosini, C. and Routhier, J. L. (2004) Objectives, Methods and Results of Surveys Carried out in the Field of Urban Freight Transport: An International Comparison. Transport Reviews. 2004. vol. 24, n°1. pp. 57-77.

<http://dx.doi.org/10.1080/0144164032000122343>

This paper compares the objectives, methods and results of urban goods movement in nine industrialized countries of Europe, America and Asia. This review shows that in spite of different framework data collection methods and models, similar trends emerge at the economic and environmental levels. It highlights the need to take account of urban logistics in the broadest sense of the term, and suggests that co-operative action is both worthwhile and necessary.

Appendix 6: Questionnaire for Task 3.1

A copy of the questionnaire used in Task 3.1 to obtain information about urban freight data from experts is included on the following pages.

Dear Sir/Madam,

We are pleased to contact you as an expert on freight transport, especially on urban freight movement.

Urban freight transport has often been rather overlooked in the work carried out by urban planners and researchers. This is explained by several factors. First, freight transport considerations have usually taken place at a national or international rather than an urban scale. Second, freight transport has often been considered to be a private sector issue rather than a matter for the involvement of urban authorities. Third, the range actors involved in freight transport had the effect of limiting research in urban areas.

During the last decade many freight transport studies have been carried out with a common objective of sustainable urban development. However, these studies have used very different approaches and methods. It was therefore difficult to compare one case with another and to evaluate their respective outputs. Since 2000, the EU-funded. Co-ordination Action entitled BEST Urban Freight Solutions, (BESTUFS.net) has been devoted to gathering examples of good practice in urban freight transport from around Europe. From 2004 to 2008, BESTUFS II is especially devoted to the dissemination and the comparison of the approaches taken and the results of these urban freight practices.

In the BESTUFS II project, work package (WP3) entitled **Urban freight data harmonisation and modelling** has three objectives:

- To collect, compare and describe different data collection approaches, transport models and transport modelling use cases with respect to urban commercial activities (Urban Goods Movement - UGM).
- To provide a platform for urban freight transport modelling experts to exchange their expertise and practical experiences.
- To contribute to a harmonisation and standardisation of data collection methods in the European countries.

A questionnaire is attached on the following pages. Its objective is to collect information about the practices of freight data collection and modelling in your country. The questionnaire has been divided into three parts and we would be grateful if you could complete one or more of these parts:

- 3.1 an overview and information about the freight data collected, indicators and terms used,
- 3.2 an inventory of the Urban Goods Movement models developed and/or used,
- 3.3 information relating to the use cases, application fields of modelling and opportunities.

The aim of this information collection exercise is to build an inventory of the data and tools used in Europe for urban goods transport according to their objectives, their use and their efficiency, and to compare and assess them.

A first roundtable of experts will be organised in Lyon on 22 and 23 September 2005 in order to present the initial results of this overview and to discuss in more detail definitions, indicators, data sources and data collection methods.

Thank you for your participation.

3.1 : URBAN FREIGHT DATA

Country:
Name of the respondent:.....
e-mail of the respondent:.....
date of return (filled):.....

1. Overview of urban freight data collected in the country

Please provide an overview of all the main sources of urban freight data collected in the countries you are gathering information about. This includes urban freight data that is collected by national government, regional government and local/city/town government. You should include details of data about own account, third party, home deliveries and reverse logistics where available. It includes specific urban freight transport surveys/data collection exercises, and surveys of freight transport/data collection exercises, that take place at a larger than urban geographical area that contains urban freight data.

Topics that you should try to include in your overview are listed below (you should aim to write no more than 3 pages in total about each country). Please also complete the table with details of all the relevant urban freight data collected.

1. Extent of urban freight data collection in the country in the past, now and in the future:
 - What are the most important data collection efforts for urban freight data in the last 10 years?
 - To what extent urban freight data collection has improved or worsened in the country in the last five years
 - To what extent urban freight data collection is likely to improve or worsen in the country in the next five years
 - Have there been any projects or initiatives that have reviewed the freight data collection in the country at national, regional or urban level? If so, please provide details of these projects/initiatives
 - Information about any plans for further urban freight data collection in future in the country

- Which organisations are responsible for collecting urban freight data in the country? (e.g. national government department, regional government, city authority)

- 2. If freight data is collected for a greater geographical area than just urban areas, how difficult in general is it to extract the relevant urban data from the total data? (e.g. very easy, easy, difficult, very difficult)? What are the main difficulties?

- 3. How frequently are the most important sources of urban freight data collected (e.g. annual, monthly, occasional – date of last survey)

- 4. If you have identified important sources of urban freight data that are collected by local/city/town authorities, is this collected by:
 - All local/city/town authorities in the country
 - Some local/city/town authorities in the country
 - Few local/city/town authorities in the country

If only a few or some local/city/town authorities collect urban freight data in the country please list them.

- 5. Are there any company or professional initiatives that result in the collection of urban freight data? (For example, vehicle round descriptions by companies for their own use, or the Chambre de Commerce). Are these sources of data readily available? Is there a cost associated with obtaining them?

- 6. What do you think are the most important gaps in urban freight data collection in the country?

- 7. What are the most important gaps in urban freight data collection for freight modelling purposes in the country?

- 8. In order to carry out urban freight transport modelling other types of data are often required. Please provide details of whether the following types of data are easily available in the country

- Financial freight data (e.g. vehicle operating costs, prices charged for freight transport services)
- Aggregate Economic Statistics and Trends (e.g. value and volume of imports and exports by economic sector, value-added and overall production by sector, time series of past trends in economic variables)
- Land use data (e.g. quantities associated with land use - usually in the form of statistical values for zones or individual addresses such as retail or industrial floorspace, number of employees, number of houses, tourist numbers, etc.)
- Network data (urban transport modellers often use network showing the capacity and layout of roads, rail etc.)

Please complete the table on the next two pages that summarises information about urban freight data collected in the country. The first column lists different types of urban freight data collection exercise/survey that may be carried out in the country. If such data collection exercises/surveys are carried out, please provide brief answers to the following topics about each data collection exercise/survey in the other columns:

- Name of data collection/ survey
- Name of organisation collecting data
- Reason for data collection
- Is data used for modelling?
- Frequency of data collection
- Last time data was collected (i.e. most recent year in which data collection exercise/survey took place)
- Type of data collected
- Method of data collection
- Sample size (i.e. the size of the sample in the data collection exercise/survey)
- Units of measurement used
- Geographical area over which data collected
- How difficult is it to extract urban data (if the dataset covers a greater geographical area than just the urban area)?

Summary of urban freight data collected in the country

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Commodity flow survey												
Site/Land Use/Establishment surveys												
Transport operator surveys (including driver diary surveys)												
Shipper surveys												
Receiver surveys												
Good vehicle fleet licensing data												
Traffic counts												
Distribution industry surveys												
Vehicle operating cost surveys												
Loading/unloading/parking infrastructure data for goods vehicles												
Data on road accidents involving goods vehicles												
Data on lorry/lorry load thefts												

Type of data collection exercise/survey	Name of data collection/survey	Name of organisation collecting data	Reason for data collection	Is the data used for modelling?	Frequency of data collection	Last time data was collected	Type of data collected	Method of data collection	Sample size	Units of measurement used	Geographical area over which data collected	How difficult to extract urban data
Employment surveys in freight transport and logistics industry												
Land use databases for town/city needed for freight modelling												
Port freight traffic data inside the urban area												
Rail freight traffic data inside the urban area												
Inland waterway freight traffic data inside the urban area												
Airport freight traffic data inside the urban area												
Freight informatics data (from cameras, sensors & other automatic data capture devices)												
Other sources of urban freight data												
Other sources of urban freight data												
Other sources of urban freight data												

2. Information about specific surveys/data collection exercises

Select three surveys/data collection exercises in the countries you are studying that produce the greatest quantity of data and highest quality of data about urban freight transport and provide information about each of these surveys/data collection exercises addressing the following points. You should aim to write no more than 2 pages about each survey/data collection.

1. Frequency of data collection. Is it a:
 - Regular data collection (if so, what is the frequency)
 - Occasional data collection
 - One-off data collection (e.g. concerning a specific project)

2. If regular or occasional – how long has data collection been taking place for?

3. Organisation collecting/owning the data

4. Purpose of data collection (why it is carried out)

5. Uses of data (what the organisation collecting the data use it for e.g. for producing freight data reports, for use in modelling, for monitoring work, decision-making, for sustainable city considerations etc.)

6. If the data is used for modelling purposes, please summarise the models/modelling work for which it is used.

7. Methodology – i.e. data collection method,

8. Sampling and sample size

9. Reliability of the data collected

10. Difficulties experienced in collecting the data
11. Advantages and disadvantages (strengths and weaknesses) of the data collection methods used
12. Your evaluation of the data collection: has the data collection been a success or failure
13. Lessons learned in collecting the data
14. Cost of data collection/survey
15. Content of data collection (details of the specific topics about which data is collected)
16. Units in which the data is collected and analysed
17. Is the data freely available to people and organisations that wish to use it?
18. Is the data collected only about urban freight transport or is it broader? (e.g. non-urban freight, all motorised road traffic freight etc.)
19. If the data collected is about more than just urban freight transport, can the urban freight data be easily extracted?
20. Does the data collected and analysed help to provide insight into the total freight transport in an urban area? If so, what units is this data expressed in? (e.g. total number of deliveries, total goods vehicle kilometres, total goods vehicle trips etc.)

3. Indicators that you are aware of that are used by governments or researchers to measure the performance of urban freight transport

Please provide details in the table below of any indicators that you are aware of that are used by governments or researchers to measure the performance of urban freight transport. You should include details of the units in which the indicator is expressed and also the organisation/project that has used this indicator.

Please also provide details of any urban freight transport indicators that you think could be used even if you are not aware of them being used currently.

Title and description of the urban freight indicator	Units in which the indicator is measured	Project/organisation using this indicator and reference if known
Indicator 1		
Indicator 2		
Indicator 3		
Indicator 4		
Indicator 5		
Indicator 6		
Indicator 7		

PLEASE ADD AS MANY ROWS/INDICATORS AS YOU REQUIRE

4. Providing details of terms used and their definitions and units of measurement in urban freight data collection

Please list the terms used in urban freight data collection in the countries you are studying that you think require defining, their definition, and the units that they are measured in. Terms used could include, for example:

- Trip
- Round
- Stop
- Tour
- Delivery
- Urban area
- City
- Large city
- Medium city
- Town
- Heavy goods vehicles
- Light goods vehicles
- ...

Term used (in English)	Term used (in national language)	Definition	Units of measurement
Term 1:			
Term 2:			
Term 3:			
Term 4:			
Term 5:			
Term 6:			
Term 7:			

PLEASE ADD AS MANY ROWS/INDICATORS AS YOU REQUIRE

Please return this questionnaire to your contact e-mail:

and also to this e-mail:

Phone no., if any problem:

THANK YOU VERY MUCH FOR YOUR PARTICIPATION.

Appendix 7: Questionnaire for Task 3.2 (urban freight models)

The questionnaire used in task 3.2 is shown below. Three different versions of the questionnaire were produced (and are shown below) to reflect three different types of urban freight model: (1) Econometric models (i.e. models that compute key figures without spatial distribution, for example for a whole city/region), (2) Transport Demand models (i.e. models that compute traffic volume per zone – only rows and columns of O/D matrices), and (3) Transport Distribution Models (i.e. models that compute complete O/D matrices).

1) Questionnaire for Econometric models



Urban Goods Movement Task 3.2 Modelling (TFH -WILDAU)

Name of the country leader (recipient):	
please send this file to the e-mail of the recipient:	
and to the e-mail:	jlrouthier@let.ish-lyon.cnrs.fr
Tel (in case of problem):	
Name of the expert (respondent):	
e-mail of the respondent:	
Country:	
Date of sending from the recipient:	
Date of return (filled) to the recipient	

The 3 sheets in the questionnaire are not really 3 levels of successive transport modelling. The first sheet addresses more econometric models. Econometric models start with some rough figures (e.g. BIP, Economic power of a region, no. of employees, no. of located trucks...) and derive key figures of goods transport in a region/city. Considering this, the **first sheet** covers not approaches of pure/classical transport modelling. The **second sheet** comes up with models which are not complete O/D transport models, but calculate the sum row and line of an O/D matrix only. Such an approach is a lot of easier to handle and apply than the full O/D matrix approach mentioned in the **third sheet** (Transport distribution). Insofar is the second sheet (Transport demand) a pre-stage of the third sheet because all models dealing with complete O/D matrices generate also sum rows and lines for the specific region/city. That is the reason why an O/D matrix model should only be mentioned in the third sheet and not in the other one.

Name of the respondent: 0 sent: 00/01/00 returned: 00/01/00

Urban Goods Movement

1 / UGM Econometric Models to compute key figures without spatial distribution (e.g. for a whole city/region)
Please, add model description, if available.



No.	Item	Subcategory	Required input		
			Text	Tickmark	Number
1	Country	Name	x		
2	Name of the model	Abbreviation	x		
		Full name	x		
3	Provider	Institution	x		
		Town	x		
		Address	x		
		Is the model only in house or for sale?	x		
4	Aim of the model (Purpose of the development, planned application cases, e.g. reflection of the current situation, prognosis, modeling of certain measures, etc.)	Description	x		
5	Model concept (e.g. calculation approach, basic assumptions or estimation background, used mathematical models)	Description	x		
5a	Is the model a software-tool or a mathematical method only?	Description	x		
6	Conceptual model restraints regarding significance, discriminatory power and spatial aspects	Description	x		
7	Calculatory limitations (e.g. no. of trip purposes, no. of branches)	Description	x		
8	Technical requirements	Operation system (DOS, Win, Mac, others)	x		
		others	x		
9	Necessary input and sources of information (e.g. national statistics, regional statistics, own survey, ...)	Economic key figures (GDP, income, revenue...)	x	x	
		No. of trucks in the city/region	x	x	
		No. of inhabitants in the city/region	x	x	
		No. of employees in the city/region	x	x	
		Land use figures/commercial activities	x		
	Is the acquisition of the necessary input easy, rather difficult, exceedingly difficult? (please add per input category)	others 1	x		
		others 2	x		
		others 3	x		

2) Questionnaire for Transport Demand models

Name of the respondent:

0 sent: 00/01/00 returned: 00/01/00

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Urban Goods Movement Task 3.2 Modelling (TFH -WILDAU)
2/ UGM Transport Demand Models to compute traffic volume per zone (only lines and columns of O/D matrices)
Please, add model description, if available.

No.	Item	Subcategory	Required input			to be filled in
			Text	Tickmark	Number	
1	Country	Name	x			
2	Name of the model	Abbreviation	x			
		Full name	x			
3	Provider	Institution	x			
		Town	x			
		Address	x			
		Is the model only in house or for sale?	x			
4	Aim of the model (Purpose of the development, planned application cases, e.g. reflection of the current situation, prognosis, modeling of certain measures, etc.)	Description				
			x			
5	Model concept (e.g. calculation approach, basic assumptions, used mathematical model, definition of groups, gravitation, logit or estimation model)	Description				
			x			
5a	Is the model a software-tool or a mathematical method only?	Description				
			x			
6	Conceptual model restraints regarding significance, discriminatory power and spatial aspects	Description				
			x			
7	Calculatory limitations (e.g. no. of trip purposes, no. of branches)	Description				
			x			
8	Technical requirements	Operation system (DOS, Win, Mac, others)				
		others	x			
9	Necessary input and sources of information (e.g. national statistics, regional statistics, own survey,) Is the acquisition of the necessary input easy, rather difficult, exceedingly difficult? (please add per input category)	No. of trucks per zone		x		
		No. of inhabitants per zone		x		
		No. of employees per zone		x		
		Behaviour pattern 1		x		
		Behaviour pattern 2		x		
		Behaviour pattern 3		x		
		others 1		x		
		others 2		x		
others 3		x				
10	Output and resolution	Traffic volume per zone		x		
		Milage per zone		x		
		Transport performance per zone		x		
		others 1		x		
		others 2		x		
		others 3		x		
		others 4		x		
11	Model resolution	Macroscopic (Town, region)		x		
		Microscopic (blocks)		x		
		others		x		
12	Consideration of other transport modes	Rail		x		
		Inland waterway		x		
		others		x		
13	Considered types of urban/regional goods vehicles	Listing		x		

3) Questionnaire for Transport Distribution models

Name of the respondent:

0 sent: 00/01/00 returned: 00/01/00

Urban Goods Movement Task 3.2 - Modelling (TFH -WILDAU)



3/ UGM Transport Distribution Models to compute complete O/D matrices

Please, add model description, if available.

No.	Item	Subcategory	Required input			to be filled in
			Text	Tickmark	Number	
1	Country	Name	x			
2	Name of the model	Abbreviation	x			
		Full name	x			
3	Provider	Institution	x			
		Town	x			
		Address	x			
		Is the model only in house or for sale?	x			
4	Aim of the model (Purpose of the development, planned application cases, e.g. reflection of the current situation, prognosis, modeling of certain measures, etc.)	Description	x			
5	Model concept (e.g. calculation approach, basic assumptions, used mathematical models, definition of groups, gravitation, logit or estimation model)	Description	x			
5a	Is the model a software-tool or a mathematical method only?	Description	x			
6	Conceptual model restraints regarding significance, discriminatory power and spatial aspects	Description	x			
7	Calculatory limitations (e.g. no. of trip purposes, no. of branches)	Description	x			
8	Technical requirements	Operation system (DOS, Win, Mac, others)	x			
		others	x			
9	Necessary input and sources of information (e.g. national statistics, regional statistics, own survey,) Is the acquisition of the necessary input easy, rather difficult, exceedingly difficult? (please add per input category)	No. of trucks per zone		x		
		No. of inhabitants per zone		x		
		No. of employees per zone		x		
		Behaviour pattern 1	x			
		Behaviour pattern 2	x			
		Behaviour pattern 3	x			
		others 1	x			
		others 2	x			
		others 3	x			
10	Output	Traffic volume per zone		x		
		Milage per zone		x		
		Transport performance per zone		x		
		complete O/D matrix		x		
		others 1	x			
		others 2	x			
11	Model resolution	Macroscopic (Town, region)		x		
		Microscopic (blocks)		x		
		others	x			
12	Consideration of other transport modes	Rail		x		
		Inland waterway		x		
		others	x			
13	Considered types of urban/regional goods vehicles	Listing	x			
14	Known applications	Institution 1	x			