

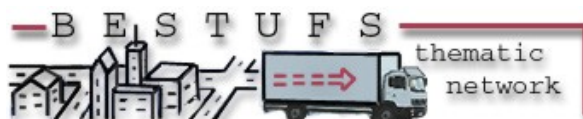
DELIVERABLE D1.4

Recommendations for further activities (IV)

Public

CONTRACT N° : 1999-TN.10003

ACRONYM :



TITLE : BEST Urban Freight Solutions

PROJECT CO-ORDINATOR: PTV Planung Transport Verkehr AG (DE)

PROJECT PARTNERS :

- Advanced Railway Research Centre (UK)**
- NEA Transport Research and Training (NL)**
- RAPP AG Ingenieure und Planer (CH)**
- TRANSMAN (HU)**
- CDV (CR)**

MAIN AUTHOR: Marcel Huschebeck (PTV)

PROJECT START DATE : Jan 2000

DURATION : 48 months

DATE OF ISSUE OF THIS REPORT : February 2004



**Project funded by the European Community
under the 'Competitive and Sustainable
Growth' Programme (1998-2002)**

CONTENT

1	INTRODUCTION	3
2	STAKEHOLDERS REQUIREMENTS IN URBAN GOODS TRANSPORT	4
3	SPECIFIC RECOMMENDATIONS GIVEN ON PRIORITY THEMES	8
3.1	Statistic Data on Goods Transport	8
3.2	Access regulations	9
3.3	Optimised vehicles for city distribution	11
3.4	Changing urban transport due to e-commerce and e-logistics	13
3.5	Rail based urban freight transport	14
3.6	Urban goods transport pricing	16
3.7	Urban distribution centres	19
3.8	Public Private Partnership	20
3.9	Night delivery	22
3.10	Intelligent transport systems	23
3.11	Urban freight strategies	25
4	CONCLUSION	26

1 Introduction

The EC established the Thematic Network (TN) on BEST Urban Freight Solutions (BESTUFS) in January 2000 with a duration of 4 years. BESTUFS aims to identify and to disseminate best practices with respect to urban freight transport. The concept of a Thematic Network thereby seeks to obtain the co-operation of experts and projects with already existing or just emerging experiences and expertise, and the collection and raw analysis of existing project results from national and European projects - rather than starting new research activities.

BESTUFS is establishing and maintaining an open European network between urban freight transport experts, user groups/associations, ongoing projects, interested cities, the relevant European Commission Directorates and representatives of national, regional and local transport administrations in order to identify, describe and disseminate best practices, success criteria and bottlenecks with respect to the movement of goods in urban areas.

To reach the above objective, on the one side the results of national, European and international projects or investigations in relation to the transportation of urban goods are to be considered on the other side the expertise and knowledge of the different stakeholders in the transportation of urban goods. The main sources for this deliverable are focussing on the expertise and knowledge of TN participants by collecting and working up the views and contributions of the different individuals or groups in the BESTUFS workshops, the BESTUFS city inquiries as well as the results from the material collections in work package 2. For each year of the BESTUFS Thematic Network life time a deliverable on BESTUFS recommendations was produced regarding the elaborated results in workshops, conferences and cluster meetings, as well as the best practice solutions coming from the material collection. The final deliverable D 1.4 on recommendations for further activities now aims at bringing together and up date conclusions from all four years. More information on the BESTUFS project and events are available on the BESTUFS web page www.bestufs.net.

Thematic focus

BESTUFS is concentrating on particular themes which were addressed in workshops and were the basis for the material collection for the Best practice handbook. As a result of the first BESTUFS workshop on 16/17 May 2000 in Brussels a catalogue of themes was determined for consideration with priority within the BESTUFS project. Within the life time of BESTUFS 12 workshops took place and 7 material collections on best practice solutions were carried out each treating one priority theme. In more detail, the following priority themes were treated within BESTUFS in the period 1 January 2000 to 31 December 2003.

- Statistical data, data acquisition and data analysis regarding urban freight transport
- City access, parking regulations and access time restrictions and enforcement support
- Optimised city distribution vehicles as demanded by transport operators

- Changing urban transport due to E-commerce and E-logistics
- Urban rail freight transport
- Road pricing and urban freight transport
- Urban freight platforms
- Public Private Partnership (PPP) enhancing urban goods transport
- Night delivery
- ITS in urban goods transport
- Urban freight strategies: Laissez-faire or following a comprehensive strategy?

2 Stakeholders requirements in urban goods transport

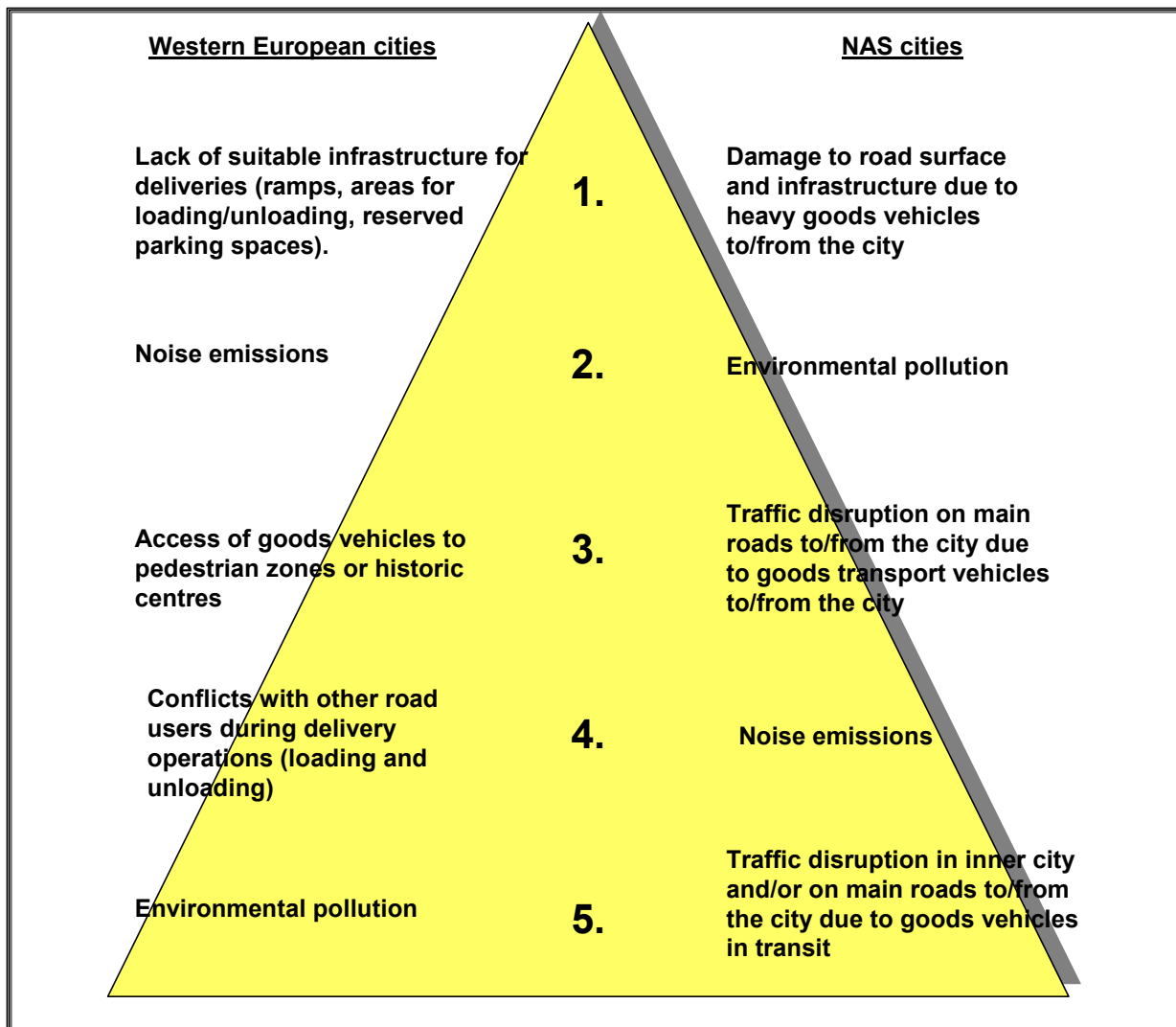
One fundamental prerequisite of the BESTUFS Thematic Network is to bring the different main actors like the city authorities, shippers, forwarders, transport operators or vehicle manufacturers together in order to highlight their specific view point and requirements on urban freight transport. Therefore, the first BESTUFS workshop mainly followed the aim of making the different positions and expectations of these actors transparent in urban goods transport.

In the following section the areas of concerns, requirements and expectations from the different views of the main actors in urban freight transport, the municipal planners and the transport operators taking part in the BESTUFS Thematic Network are summarised.

Cities targets and fields of concern

For the identification of the importance of urban freight transport for public authorities two city inquiries ("European survey on transport and delivery of goods in urban areas") were carried out by the project partners first for Western European cities, to a later stage also for cities in NAS countries. The city inquiries provided more insight into the problems and opportunities in European cities regarding urban freight transport, and also supported the process of extracting best practices and deriving recommendations on urban freight solutions.

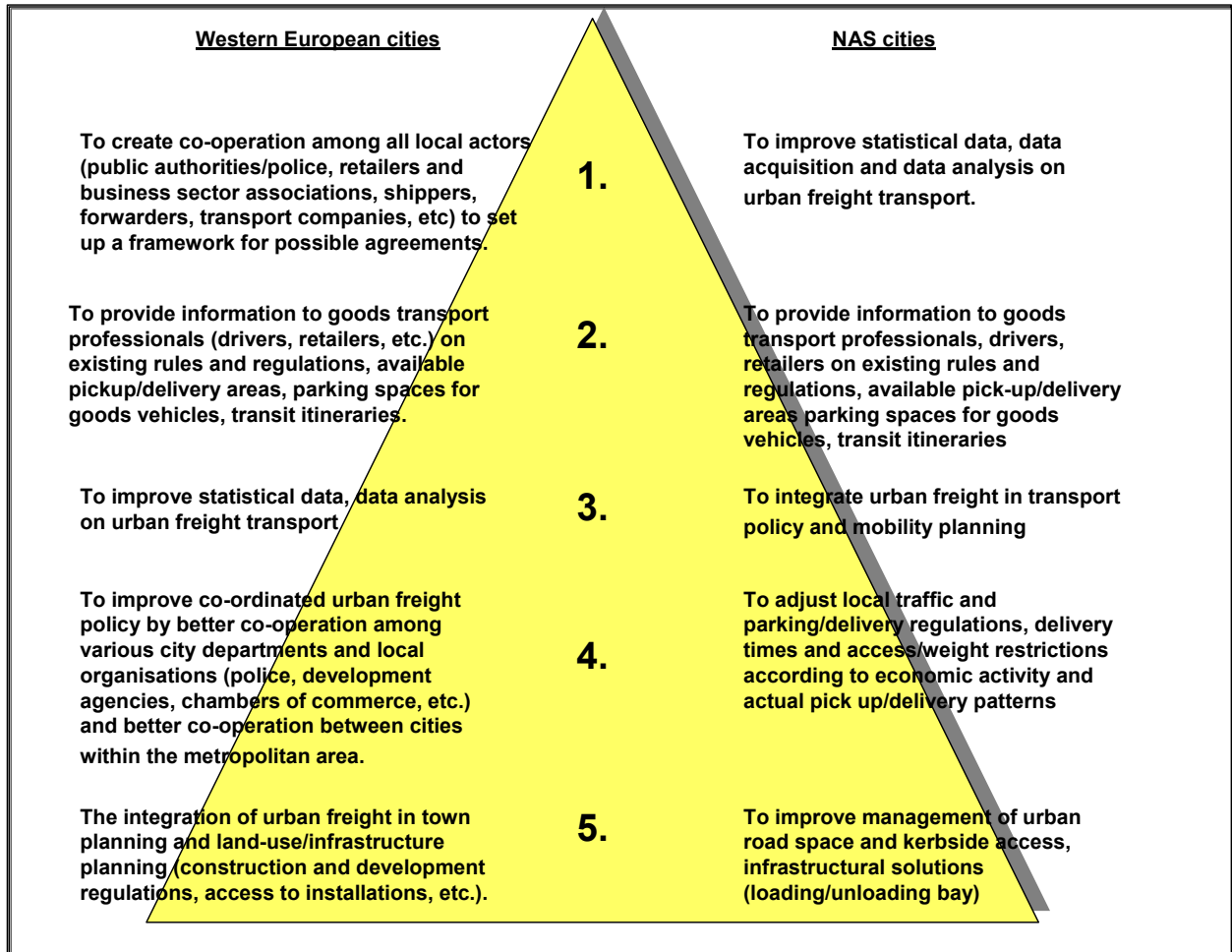
Generally, it can be stated that cities, both in West and NAS countries lack on staff working on urban freight issues within the cities. In Western Cities 66% percent have none or only part time staff linked to urban freight tasks. This ratio is even worse in NAS countries where it increases to 77% among the cities asked. Following the city inquiries results, European cities consider especially the following five problems in urban freight policy (ranked by its importance for municipal planners within the questionnaires):



In conclusion from this comparison between the problems and fields of concern of urban freight policies in West and NAS cities it can be stated that the situation in NAS countries is characterised especially by the lack of sufficient (road) surface and on the improvement of the environmental situation in NAS cities. In Western European cities main concerns are related to the improvement of logistical processes and to the environmental situation. A different picture on urban freight transport is given between Western and NAS cities regarding the approach to be followed by city planners. While cities in NAS countries see priorities in the setting of an appropriate and effective regulation measure and planning basis Western cities see it advantageous:

- to follow a co-operative approach together with the transport industry,
- to improve the information and data basis of the local transport situation as well as,
- to improve the co-ordination of infrastructure and economic planning on a wider geographical scale.

This is also confirmed by the city inquiries e.g. looking at the answers to the question on the most important areas for activities on urban freight transport in European cities. In particular the following activities are prioritised by municipal planners:



At practical level various activities to regulate the use of infrastructure and to reduce the emissions in urban areas are already ongoing in Western and NAS cities. In the following the regulations and measures of European cities to influence urban freight transport are summarised:

- Co-ordinated land use and infrastructure planning (e.g. road design)
- Combined use of (priority lanes) for public transport and urban freight transport
- Enhanced use of telematic systems to manage and influence urban freight transport
- Installation of loading and unloading zones in the inner city
- Regulation on city access (a broad range of measures exists from the total ban to privileged access), speed limitations and pricing measures
- Integration of intermodal transport in urban freight transport

- Improved signing and enforcement support by electronic devices
- Enhancing logistical approaches (e.g. city transshipment centres or delivery slot booking) in planning and managing urban freight transport

Briefly, this provides an overview of the most important fields in which municipal urban freight transport planners are active.

Transport industries' view

A different view of urban freight transport comes from the (operating) industry. Dealing with the traffic situation in European cities, including the regulations and restrictions implemented (and proposed) on urban freight transport the industry refers mainly to:

- A free accessible network to their loading and unloading points and
- To ensure cost efficiency for operations.
- More transparency in access-restrictions and more harmonisation of restrictions across cities in the EU.
- Balancing the local environmental impact of access restrictions with the environmental impact on regional, national and EU-level (preventing sub-optimal solutions).

The conflicting position from industry and cities on urban freight transport can be described by the following aspects:

- The impact of co-operative delivery services (e.g. city logistics) on the traffic situation in urban areas is limited. Internal logistic planning of each logistic service provider in terms of use of capacity and time windows is seen as already optimised to a large extent.
- The introduction of city transfer points requires accompanying measures from the city planning side. In particular, additional loading and unloading zones will be required as well as efficient loading zone management.
- The use of “alternative” fuels in distribution vehicles currently causes additional costs which can not be passed on to customers.
- City access regulations can have contrary effects on the traffic situation as well as on the cost situation. For example, time windows for inner city distribution can result in employment of additional vehicles. A European city logistic project, for example, delivers 800 parcels on average per day. This will require the employment of 3 vehicles for unrestricted city access. Considering a time window from, e.g. 6.00 to 10.30 hours 8 vehicles will be needed to deliver the same amount of parcels. From the view point of a transport planner this restriction leads to inefficiencies.
- Logistic will gain more importance in the planning and management of urban freight transport. For example, E-Commerce will result in a 24 hours delivery possibility for

citizens. In the future a logistical supply chain approach will be necessary looking explicitly also to the solutions in urban freight transport.

3 Specific recommendations on priority themes

Considering the different stakeholders interests as described above and on the basis of the results coming from the BESTUFS workshops, and from the material collection for BESTUFS Best Practice Handbooks, the following specific recommendations on priority themes were derived:

3.1 *Statistic Data on Urban Goods Transport*

The availability of statistic data about urban goods movements in European cities is generally rather poor. This assessment is especially true when the availability of statistics is compared to the situation in general traffic and in passenger transport (both public and private), where the data basis is much better than in the freight domain. Looking in more detail into the frequency of the acquisition of data it can be seen that most of the data are collected just once within special single inquiries in order to obtain information about special situations, or to find answers to questions in relation to the preparation of new measures. The acquisition of permanent statistical data and the performance of periodical inquiries are not common practice. Especially for the assessment of the success or failure of a finally implemented measure there were often no data or not enough data collected, and a robust evaluation is therefore not possible. Also, it is presently not common practice to disseminate overall evaluation results on such measures. This seems to be reasonable as the advantages of such final evaluations are therefore often not for the implementing cities but for the observing cities and carrying out such evaluation work causes extra costs for the implementing city. Having such evaluation results available might be a large quality step for the planning, implementation and assessment of measures in urban goods transport and perhaps the evaluation costs can be shared among all interested cities. This is a working field for city networks, such as POLIS or ACCESS in Europe. The role of the EC could be to act as a moderator and to actively initiate such common practices.

Cities need statistical data on urban goods flows and transport means related to the urban infrastructure in order to decide about local measures and policies, for future planning as well as for the monitoring of urban transport developments. This basic statistical data basis is currently rather weak regarding the European metropolitan areas. Member states like France carried out extensive surveys to develop a common data collection methodology while other member states e.g. Spain show minor activities to do so. Furthermore, the data sources generated on a local city level are hardly to be compared with each other due to different methodologies and approaches used. This makes it also rather difficult to compare and analyse urban freight transport patterns on a European level. **BESTUFS therefore recommends, that statistical data basis on urban freight transport should be established for large European cities, and that both the statistics information contents as well as the methodologies on how to collect the data, are harmonised on a national as well as on a European level.** BESTUFS II will especially address methodological issues on urban freight related data and models.

3.2 Access regulations

Access restrictions for urban freight transport is the most important and most dominant instrument for city authorities to influence urban goods transport. Transport operators optimise their transport flows on the basis of given access constraints, and changes in these conditions by the administration side leads to changes in the transport processes at the operators side and therefore also to changing transport costs.

Access regulations are widespread in Europe and it is expected that more and more cities introduce new access regulations. Information and communication technologies, together with mechanical access gates, are becoming less expensive and are offering a variety of complex new access schemes tailored to individual infrastructures of single districts. Currently applied regulations can be grouped as follows: (1) regulations related to the type of transport means especially to vehicle emissions, weights and sizes; (2) regulations related to the access time to determined areas; (3) regulations related to preferred truck routes; (4) regulations related to loading and unloading zones; (5) regulations based on licences. A forthcoming regulation addresses access slots, and this also leads to the issues of access control and enforcement support.

NAS and Western European cities show a similar development in the implementation of city access schemes.

- In Prague in 1980 an access restriction to the inner city area was introduced for vehicles heavier than 6 tonnes. This restriction was defined tighter in 1999 by introducing a “no entry” zone for vehicles heavier than 3.5 tonnes. The future trend is to further extent this zone to other city districts.
- In Budapest a similar approach is implemented, characterised by different zones to which vehicles with 3.5, 6 and 12 tonnes maximum weight are allowed to enter.
- In Maribor the access to the inner city is also regulated over vehicle weight parameters and in addition an access fee in combination with a licence scheme was introduced. Access to the inner cities is enabled and enforced by ITS based applications.

In Western European cities typical examples for access schemes are:

- Paris, where a new scheme was introduced in 1999 following the aim to simplify the access regulation. Access is now mainly regulated over the vehicle size (16m² and 24m²). This scheme in particular promotes night delivery with large trucks (vehicles over 24 m² have only access from 19:30 to 7:30). In addition to this scheme the number of loading zones was largely increased (today, more than 9800 in the whole city) .
- In Copenhagen an access scheme is introduced focussing on the use of capacity of the vehicles entering the city centre. Vehicles up to 18 tonnes are allowed to enter the city centre. Special access licences are given to transport operators regulating the

city access. Vehicles with licences are allowed to use special loading and unloading zones.

- In Stockholm a specific scheme on “environmental zones” is implemented. Access is regulated by a mix of weight, environmental impact and size of the vehicles entering these zones.

Many more examples on access schemes can be added. However, this also shows that access schemes follow on the one side the specific requirements of cities to protect and maintain the liveliness of inner cities. On the other side it also shows the diversity in terms of layout and access parameters creating the basis for city access schemes.

As future trends are to foresee that:

- City areas with restrictions for urban freight vehicles will be further extended. Environmental criteria (vehicle or motor age, Euro classification etc.) may become more important than weight and size criteria.
- Low emission vehicles (electric and CNG propelled) are presently demonstrated in various European cities (Genoa, Stockholm, Paris, Monaco etc.) and will become more important for inner city access in the future.
- User individual access to the city will be provided. In Barcelona an access scheme is planned to allow individual access and reserve loading spaces for inner city distribution
- An enhanced enforcement by ITS based applications will take place. Also in Barcelona a video camera controlled enforcement, e.g. on the correct usage of loading zones is planned.

BESTUFS recommends to consider the European dimension of actors operating in urban freight transport when setting regulations. City access restrictions might be felt as barrier for market parties to plan and operate transport processes, with negative effects on logistical efficiency. Therefore, a major step will be to harmonise the different regulation measures existing in the different European countries by increasing transparency over the different existing regulations on city access in EU member states. **BESTUFS recommends supporting the exchange and provision of information and knowledge regarding European city access regulation measures. In the longer term, more harmonising EC regulations (or at least recommendations) defining a framework for urban freight transport should be initiated taking into account the local frame work conditions.**

To improve the delivery situation by the provision of suitable infrastructure for deliveries (ramps, loading zones, reserved parking spaces) are of top priority especially for Western European cities. However, experiences show that the enforcement on the correct usage of this infrastructure is often not taking place. An example on an effective enforcement is given by Copenhagen where a special project team is taking care of the enforcement. Barcelona has dedicated 40 agents on loading zone controls, and distributed simple parking “disks” to transport companies in order to better enforce the 30 minute time limit on delivery bays, Given a good enforcement also an evaluation on the effectiveness of the measure can take

place – especially when a combination of several parameters define the access scheme. BESTUFS assesses that an enforcement (e.g. of blocked loading bays by parking cars) and a (ex post) monitoring of urban freight access scheme is not widely applied in European cities. Therefore, **BESTUFS recommends to enhance the enforcement and monitoring activities in cities to support urban freight transport. Specialising enforcement agents on loading bay control (such as in Barcelona) seem to be a very efficient measure.**

3.3 Optimised vehicles for city distribution

There is an ongoing trend towards increased size capacity in medium- sized delivery vehicles up to 3.5t . Most of the light commercial vehicles (LCV), which circulate in the city areas distributing goods have a gross vehicle weight (GVW) of 3.5t. The trend shows a strong impact of the “new” driving license legislation replacing vehicles with 3.51-6.5 GVW by vehicles with 3.5t. In general, in whole Europe the concentration process on the 3.5t segment will continue. In average 75 to 85% of the vehicles used for city distribution are vans (<3.5t) and about 15 to 25% are trucks (> 3.5t). Also cars are used for freight transport. Their share of the volume is small but the number of trips and km driven are relevant.

Today many multi-drop distributors prefer vans to work in the city centres, because of their manoeuvrability and robustness. Also vans are sometime the only possible goods transport vehicle to operate in inner cities due to limitations in urban infrastructure (narrow roads) or due to city access restrictions. As a conclusion from a IVECO survey the following trends can be summarised:

- chassis cab vehicles might gain more importance in urban distribution in the future because of their customised bodies, bigger cargo volumes and more deliveries in the periphery. It is therefore expected that future van buyers will require bigger vehicles.
- The delivery frequency and the number of deliveries per tour will increase strongly, whereas the dimension of the consignments will grow only slowly. Overall the consignment weight will decrease, as well as the tour length.

The increasing individualisation of the consignments, lower weights but higher value of the specific consignment, higher goods specific requirements (fragile, temperature sensible etc.) and the increasing number of drops per tour are aspects favouring a new design of urban goods transport vehicles.

For BESTUFS optimised vehicles for urban distribution comprise high voluminous vans with low deck height, a large driving range and considering ergonomic driver aspects all at a competitive cost basis. Furthermore telematics applications and services within urban distribution processes gain more and more importance. BESTUFS recommends to support this development actively by promoting best practices on telematics devices and software for urban distribution. Especially the interoperability of the systems providing data and the application systems of the actors in urban distribution should be improved. Therefore, **BESTUFS recommends to support the integration of information systems more into the urban supply chain. In this field more research effort is needed.**

In the field of alternative vehicle propulsions BESTUFS sees a slow but increasingly growth in demand for alternative propulsion technologies. A lot of cities favour the employment of alternative propulsion technologies for inner city distribution. Especially, environmental and

noise advantages of CNG and electric propelled vehicles are dominant there. Although CNG is regarded as more environmentally friendly as diesel a large European breakthrough of CNG technology did not take place yet. Main reason mentioned is the lack of a dense fuel infrastructure in Europe. Although electric and hybrid propelled vehicles show significant disadvantages in the commercial performance more and more cities are favouring these propulsions due to (locally) no pollution and close to zero noise emissions.

BESTUFS recommends for city authorities to continue promoting “cleaner” engines operating in cities. An integrated approach should be used considering the factors reliability and practicability on the one side and the efforts made on emission reduction at conventional combustion engines (Euro standards). This can be supported by EC activities in terms of providing information on the technological progress on “cleaner” propulsions. These activities should also consider new developments in the fuel cell, especially to assess their (present) capability for urban goods transport. Consideration should also be paid to the revised Zero Emission Vehicle Program Regulation of California which is now including also hybrid vehicles and from which further impact on the development of engines for heavier vehicles in the USA but also in Europe can be expected. **Therefore, BESTUFS recommends that the information basis on the state of the art on the development of alternative engines and fuels regarding their application in urban goods transport should be improved. The collection of data, trends and developments in Europe but also in USA and other countries should be part of such an initiative and should also provide clarity on the cost and benefits of alternative concepts on the environmental situation in urban areas.**

As technically CNG is regarded as the most practical alternative to diesel engines their exploitation should be promoted. The main bottleneck presently is the lack of a dense CNG supply infrastructure. The example on the CNG agreement in Italy between the Ministry of Environment and Territory, Fiat and Unione Petrolifera to enhance the conditions of the diffusion of CNG in Italy is one approach to transfer to other countries. Such initiatives have in common that a “political willingness” is required which should be promoted and supported by the EC. **BESTUFS recommends to actively follow the policy target to increase the share of alternative fuels on 20% and to actively support the development of environmentally friendly vehicles for urban transport within the following Framework programmes. This includes especially to improve and enhance the co-operation among governments, local administrations, municipalities, transport operators and vehicle manufacturers but also to define incentives and compensation measures granted to those transport operators who decide to employ alternative propulsion.**

BESTUFS sees the market maturity of the fuel cell technology as difficult to predict and uncertain. BESTUFS considers the fuel cell technology as long term opportunity for urban delivery vehicles. Further research and development activities are needed. In order to increase the transparency on this fast developing and dynamic field of research on the fuel cell cities and transport operators should be informed frequently about the progress and the possibilities for applications.

At the end of the BESTUFS project we can observe that more and more urban bus fleets or public transport means in general are changing to environmentally friendly transport means and that also examples for freight transport exist. **BESTUFS therefore recommends to actively support demonstration activities in the urban freight domain – including service operators. Relieved access restrictions to the inner city for low emission vehicles could be a valuable solution to support the use of innovative vehicle technologies. Another approach could be to demonstrate new vehicle technologies in authority owned and operated fleets.**

3.4 Changing urban transport due to e-commerce and e-logistics

Nowadays the information society is changing the lifestyle of European citizens and in some cases the fundamental mechanisms of the European economy. But the information society does not necessarily mean that goods and passenger movements will decrease. They will however change as a result of developments in e-commerce practices. These changes will also influence the structure of goods deliveries and passenger transports in the cities. New problems might arise requiring innovative solutions and different framework conditions. That makes it also a high priority issue for logistics service providers, forwarders and shippers.

In all European countries e-commerce is considered as highly innovative issue and a big variety of national studies, initiatives and activities were identified within BESTUFS. However, most of them focus rather on consumer behaviour, companies' strategies, market potential, electronic payment issues, etc. than on transport. Examples on studies addressing transport related effects of e-commerce are:

- In Germany, a national project "Traffic management in Transport and Logistics" is to demonstrate how e-commerce related delivery processes can be supported by ITS applications. In the frame of this survey a thesis was carried out investigating possible mileage savings due to a pick-point delivery. In totals, savings could be realised between 10 to 15% of the kilometres driven.
- The EC funded project eDRUL demonstrates in different European cities different urban freight distribution schemes considering e-Commerce aspects. On the basis of the positive results coming from the demonstration (e.g. in the demonstration city Eindhoven (Kenniswijk)) the exploitation of commercial services is presently under discussion.
- In The Netherlands NEA studied in 2003 the state-of-the-art with respect to pick-up point concepts. In this study success and fail factors regarding the setting up of a network of pick-up points were identified. Research was done on their possible market share and effects for the society (kilometre reduction and external effects) funded by GOVERA. The study showed that there are clear positive effects of pick-up point systems that replace parcel deliveries at the doorstep. The potential savings are estimated to be 32 million kilometres, which is 0.11% of the total mileage on urban roads in the Netherlands.

In general it can be stated that e-commerce does not follow any automatism in terms of increasing urban freight traffic and pollution but depends on variables which may be influenced by the political and economic context. **BESTUFS recommends that the cities and regions should monitor closely the development of e-commerce activities and play a more active role in ongoing and planned research activities on national and international level in order to identify chances and risks for urban areas due to e-commerce and to elaborate appropriate measures and framework conditions.**

A possible approach for cities to follow might be to promote new collaboration ventures especially among the e-logistics operators as postal services on the "last mile" activities. An example for such activities is that deliveries for particular streets or areas – showing a low use of capacity - could be consolidated. Thereby vehicle load factors, increasing drop

densities and reducing the number of vehicles can be improved. This would benefit the company (higher efficiency), the customer (lower delivery costs) as well as the other residents (less traffic). Furthermore, co-operative delivery systems for consolidation among various companies would also solve the inconvenience to the consumer when disturbed by several deliveries a day. However, experiences with City Logistic concepts and other co-operation approaches suggest that such a collaboration is tricky and might cause problems of logistics, cost accounting and fair load distribution among the partners. As such approaches are so far not sufficiently researched BESTUFS recommends to evaluate the possibilities for collaboration of the physical distribution of e-commerce related processes in urban areas. One focus of such an initiative should be the set up of a reasonable business environment for such collaborations. It should also consider that e-commerce provide new possibilities of new distribution forms (e.g. delivery to convenience stores etc.) which opens the door for new forms of collaboration among the transport and logistic operators in urban distribution. Research activities in this field should also assess the related regulation framework on urban freight transport and provide recommendations for supportive measures or to develop and define new access rules for urban distributions.

E-commerce is heavily relying on the usage of information and communication technology and telematics systems. The interoperability of the systems providing data and the application systems of the actors in urban distribution should be improved following a supply chain approach. In this field large research effort is needed. Besides the possibility to set restrictive measures on transport companies operating in the city especially supporting measures for transport operators should be researched. Such supporting measures can be that information and communication technology can be developed and provided to transport operators operating in the city. Such applications should:

- promote the bundling of consignments in the urban area. Trip planning, the assignment of consignments to vehicles as well as tracking and tracing functionalities are possible functionalities which should be included in such applications.
- Improve the planning basis by providing up-dated information on the traffic conditions in the cities.

In such a scenario the ASP (application service providing) technology can play a key role. An information server for urban goods transport operated by the city can be used to provide small and medium sized companies advanced planning tools to improve their planning but also the quality of the transport services provided within the city.

3.5 Rail based urban freight transport

Looking back in history it can be seen that frequently tram based freight transport solutions appeared in different cities under given circumstances. For example, in the beginning of the 19th century as well as in the seventies (due to the energy crisis) in Dresden and also in former Eastern German cities special trams were developed and introduced, e.g. for moving construction goods. Having demonstrated being a successful urban transport means for some years, these examples showed that such solutions were not very persistent and finally disappeared. It seems that road offered and still offers much more attractive solutions. Nevertheless, there are new developments which raise the question about the potential current and future market niches for urban rail based freight movements. Especially since

cities become less accessible by road and where railway or tramway systems offer capacity (e.g. in Amsterdam during nights when there is hardly any passenger transport by rail/subway).

A further crucial aspect in urban planning is the usage of land dedicated to the rail sector. There are many cities in Europe with rail infrastructures located in valuable locations close to inner urban areas, be it rail tracks, shunting yards, transshipment points or rail freight centres including warehouses. From the city development point of view one has to consider that if the land use is changed for this area and it is not dedicated for transport anymore, then an option to integrate this area in a local sustainable transport solution is gone for the future. On the opposite side it must be clearly admitted, that trucks together with streets offer flexible, cheap and easy adaptable urban solutions for freight logistics. BESTUFS can not provide a general recommendation how to cope with this issue. Moreover, one has to decide case by case and city by city if part of the local freight volumes can be moved on rail within a city agreed sustainable transport plan.

The transport processes including rail transport are often very complex and difficult to understand for city planners as well as for logistics providers and shippers. The following recommendations can be given from BESTUFS in order to support public and private decision takers in relation to urban rail based freight transports.

- Due to the high investment and asset costs for transport operators (but also for logistic operators and shippers) a strategic long term decision is needed to use the rail mode in urban areas. This requires long and stable volume flows to ensure the use of available capacity. Presently, the planning horizon of transport operators is basically too short to consider rail in their decisions.
- It is important to emphasise that the Cargo Tram concept (of Dresden) requires large flows of consignments between a single origin and destination (as in the Volkswagen example) and is far less suited to urban goods flows that involve numerous origins and/or destinations.
- The width of the rail tracks and the general usability of trains on both tram and railway tracks has to be taken into account. E.g. in Dresden the track size of the Cargo Tram is 1450 mm and therefore not compatible to the "standard" of 1435 mm, while in Karlsruhe special trams were developed (for passenger transport only) allowing to operate on the urban tram but also on the regional rail network.
- If there is a mixed usage envisaged on the rail tracks for both passenger and freight traffic then the competing capacity requirements must be considered. Hereby it is also needed to take the local and regional transport plans into account. Due to the high investments – as described above - there must be enough capacity ensured for a longer horizon.
- Land use planning should consider more rail freight requirements (e.g. location of industrial and logistics zones, access regulations). The possibilities of rail should also be taken in account creating regional and urban transport plans. The necessary railway infrastructure (networks, goods stations) has to be identified and secured in regional transport plans taking into account innovative technologies and operation forms.

- The installation of small low cost terminals close to the city would minimise the requirement for long truck hauls to/from the shipper/receiver with obvious environmental benefits. Connected with innovate intermodal technologies (ACTS, Cargo Domino, etc.) it could be a valuable transport option. Delivery and collection of unitised cargo using some form of tram system looks unlikely in terms of operational practicality or commercial viability.
- Intermodal transports were most successful in relation to the containerisation. The use of small containers has some attractions but in reality this solution has been tried before and found not widespread acceptance when compared to mainly road based alternatives. Nevertheless, the use of this approach using existing metro or light rail systems will need careful and detailed consideration to fully validate any potential.

It should be noted that the integration of rail in urban processes might need for fundamental changes in the rail sector (path allocation, transit hours etc.) which makes this issue even more complex. In many countries, rail security standards are too high, and the current quality of service is too low, to develop good urban freight service using rail. In addition legislation's on European, national and local level need to be considered. To cope with this complexity is an entrance barrier for commercial partners and makes decisions difficult. Especially, when there is the expectation from the commercial partners that the (overall) benefits of integrating rail into their logistic processes has to exceed the cost. In this field transaction costs play a crucial role. In order to visualise the possibilities of the employment of rail in urban transport processes **BESTUFS recommends a quality partnership between all stakeholders (rail transport, logistics and city) as a short term approach. BESTUFS identified a lack of knowledge on urban rail related processes and possibilities to use this mode of transport. Therefore, the demonstration of innovative urban rail freight transport operations is heavily recommended by BESTUFS.** Such demonstrations should aim at the improvement and enhancement of know how for all stakeholders involved in urban rail freight transport.

After all, designing urban rail freight transport is a complex and difficult task driven by different expectations and planning prerequisites of the parties involved. **As an immediate approach BESTUFS recommends Public Private Partnerships to harmonise the different views of the players involved in urban goods transport and to find a way for a common strategy including rail freight. Urban planners in municipal administrations should also remember to integrate freight and logistic issues when assessing the future of former rail infrastructures.**

Now EU rail freight strategic activities addressing the "Implementation of change in the European railway system" have started focussing mainly on an integrated and interoperable European rail freight network. **BESTUFS recommends to launch in parallel demonstration activities to relate and interface rail long haul transport with pre and end haul segments in urban areas.**

3.6 Urban goods transport pricing

Efficient freight transport services are installed in European cities and they are based on locally grown structures adapted to given different infrastructures and regulations. Looking at the presently installed systems on road pricing in European cities it is to recognise that:

- Almost all urban road pricing schemes are applied to both passenger transport and freight transport
- Practical schemes have been driven by political reality (negotiations) rather than economic theory (cost calculations)
- Presently, most implemented schemes are designed for financing infrastructure, while demand management is difficult to be realised. Practical examples for external cost charging are not existing.
- Most road pricing schemes follow an incremental approach: from simple to complex. Differentiated charging according to distance or even duration of the trip is scarce. Most schemes charge a flat rate during a certain time window.

Congestion is an increasing problem since years in European cities and it can be seen as the main reason why first cities have started to think about urban pricing schemes. Congestion leads to additional costs for the operators, makes travel times less predictable and reduces the attractiveness of a city both for visitors and citizens. Freight transport must be seen more as a victim and less as a source of congestion. With regard to urban pricing three main objectives are followed:

1. To cover construction and maintenance cost for infrastructure
2. To influence the transport demand for inner city transport processes
3. To charge external costs from transport processes.

The best known examples on infrastructure charging schemes are charges for single tunnels or bridges, e.g. for the new Öresund bridge. A very successful example for an urban pricing scheme motivated only by new infrastructure plans is the Norwegian City of Trondheim. The financing of an urban ring-road was based on a city access fee where the freight transport user groups were accepting this measure because of their expected advantage out of the new infrastructure. However, the principles to cover infrastructure costs are presently different in each member state. It can be stated that improved road surfaces, new urban ITS installations or a new link reducing the travel times are appreciated especially by those who are commercially active, because these measures reduce their equipment or operation cost or improve the drivers working conditions. However, the charging of infrastructure (financing, operation and maintenance) in urban area should follow the same principles as for interurban infrastructure. **Therefore, BESTUFS recommends to follow the present practice to levy charges only for particular urban infrastructure providing additional benefit for users. Moreover urban charging schemes should be embedded into a European harmonised approach of charging principles.**

Demand management by urban pricing schemes should first of all address individual passenger transport. Wherever an alternative for individual transport is given by public transport supply it is a common political will to shift passengers from the private to the public mode. For freight transport there is not really a substitution possibility neither in the mode nor in the volume – the goods have to be moved to their destinations and can hardly be reduced with optimisations in the relevant parts of the logistics chains. Furthermore, it is not possible

with reasonable effort to reach a considerable shift of urban goods transports to other non-road modes, as e.g. via tubes or rail-based approaches. However, it can be assumed that commercial actors would profit from less congestion and therefore from congestion charges e.g. as the one currently implemented in London. In many other European cities the municipality is charging city access fees demonstrating that this approach is a suitable instrument to regulate inner city traffic flows. Main transport operators concern is that city administrations use demand management charging to increase budgetary funds, like for example for the charging of parking fees in many cities. **BESTUFS recommends that demand management schemes based on pricing measures should give particular consideration to fairness (all users), efficiency (net benefits) and transparency (use of revenues) aspects.**

Large criticism is directed to the currently in Europe discussed schemes on charging external costs. Mainly the transport business and the urban business sector point out that not enough transparency is given about the motivations and the use of the revenue. BESTUFS recommends to consider a set of crucial issues:

- Firstly, insight on the impact of different measures is needed. Hence before introducing a pricing scheme there has to be clarity about the aims to be achieved and the approach to follow. A pricing scheme should not be considered as the one and only solution to solve urban freight transport problems. Moreover, the finding process should be open to all kind of measures, e.g. quality standards, new delivery concepts or low emission vehicles.
- The leading role has to be taken over by the cities. Taxation and pricing measures can only be initiated by the municipality.
- Then there should be clarity about the technology to be applied and on the costs for running the approach.
- Potential barriers and hindrances should also be considered, in terms of technical, political and especially acceptance problems
- A final but one of the most important issues is the usage of the revenues. As the acceptance on the scheme will mainly be assessed by the usage on the revenues.

In conclusion, transparency on the objectives and on the use of revenues are core principles for setting up urban charging schemes. **BESTUFS recommends, when discussing urban pricing schemes not to focus on freight transport by exempting private transport. Furthermore, also other measures on city access regulations should be considered that might achieve similar effects or that can be combined with charging schemes. Overall, a comprehensive approach on urban freight policy should be followed.** BESTUFS encourages urban freight actors to actively participate in finding solutions for urban goods transport with the aim to come to a balanced solution of financial and other measures.

The EC should provide support for cities by justifying the objectives of potential new pricing schemes especially for the freight transport, harmonising the freight transport taxation and pricing in Europe and making the overall public freight transport taxes and cost (sources as

well as expenditures) transparent are important steps towards a fair and efficient transport pricing.

BESTUFS recommends a general assessment on the suitability of urban pricing schemes with regard to its targets infrastructure financing, transport demand management and coverage of external costs. This can be achieved by accompanying the first pricing schemes by freight related studies. These studies shall analyse the observable effects and changes in the freight flows and shall determine the corresponding effects for the cities and citizens but also for the operators and retailers. Furthermore, dedicated pricing sensitivity analysis studies shall be initiated looking at transport structures at different transport segments and at both the urban pricing as well as the relations to inter urban pricing schemes. The results of these studies shall be efficiently disseminated.

3.7 Urban distribution centres

In order to classify urban distribution centre approaches different views are existing. Within a tighter definition of urban distribution centres the focus lies on a transshipment within inner city borders using “green” vehicles for delivery. In these cases mostly the cities take over the leading part. Other cities do not see their core activities in carrying out (or subcontracting) transport operations (acting as a transport operator) but more in the provision of framework conditions (Berlin). In a third class there are approaches where regulations and restrictions are favouring urban distribution centres like in Stockholm or in Switzerland. In Switzerland pre and end haulage in a radius less than 40 km from an intermodal transshipment point are de facto exempted from the LSV (Leistungsabhängige Schwerverkehrsabgabe = heavy vehicle fee). In this case intermodal transport via a freight village can be made attractive for city distribution. In Stockholm a PPP was founded to set up and operate a distribution centre for a public housing project. All actors involved in this housing project participate in the distribution centre.

The impact of urban distribution centres and the potential for cost savings in transport and logistics processes over the entire transport chain are depending on the structure of the city. From the transport operators view there are doubts – considering the strong competition in this market – that significant volumes can be generated for making an urban distribution centre economically viable on a large regional scale. Since years large transport operators are following the approach of tour and consignment consolidation over the entire transport chain by setting up large European transport networks. Therefore, the potential on volumes for urban distribution centres must be seen from this background and is high enough for some cities but rather limited and most probably not sufficient for others. High costs for municipalities which implement an UDC should also be considered. **Since urban distribution centres based on enforced co-operation from above have rarely worked, BESTUFS recommends that cities act as 'enablers', providing and protecting shared use land and allowing the free market to provide the most efficient urban distribution.**

To set up and implement an urban distribution centre BESTUFS recommends to favour a PPP approach. At least an informal partnership bringing together all stakeholders at one table is the first step and a key factor for a successful and sustainable solution. BESTUFS recommends to work out an action plan how PPP can best be used to set up and maintain UDC (urban distribution centres) and to support this by EC activities. Examples for such

activities are to provide funding support, but also (harmonised) guidelines for setting up and implementing PPP for cities.

From the operators view one of the most promising approaches seems to be the direct delivery from a primary distribution centre to the urban distribution centre avoiding an additional transshipment at the outer city limits. This approach requires high IT capabilities from the actors involved. BESTUFS recommends to increase the IT capability mainly of SME transport retailers and logistics operators in order to better compete in the market. Especially, knowledge in trip and consignment consolidation should be supported with learning and training measures with priority. Active support on these aspects should be given by the EC and/or national authorities.

The know-how of the local conditions, transport network, obstacles (construction sites), delivery conditions (ramps etc.) and excellent local contacts can be an important success factor for cities and local transport operators to create sustainable and efficient urban logistics. **BESTUFS recommends that cities should strengthen this know how, e.g. by establishing city freight managers within their administrations.** These managers should actively promote co-operations in urban logistics, identify suitable sites for urban distribution centres and protect them for logistics purposes. The EC should support establishing city freight managers e.g. by providing generally valid task descriptions and action plans for them to carry out.

Taking into account the increasing capacity problems on the road networks of today's conurbations, rail can play an important role for efficient access to an urban freight platform. New developments for low cost transshipment equipment offer new opportunities with regards to transshipment of intermodal transport units. **BESTUFS recommends to further promote and research intermodal interfaces between urban goods transport and long haul transport chains.**

3.8 Public Private Partnership

Various examples on PPP exist since years in different branches and approaches. It is a characteristic of these business models that they are made on a basis to create mutual benefits for the public as well as for the private side. Thereby, the appearance of PPP can not only be seen to the financing, building and operation of infrastructure projects, examples also exists on the negotiation and setting of framework conditions and agreements between the public and private side. An example of such partnerships are the city logistics co-operations heavily promoted especially by the public side in the 1990ies. However, it turned out that most of these approaches "failed" over the time. Main reasons for these "failures" were that the profitability of such approaches were overestimated and the critical mass on consignments to be bundled for city distribution was never reached. Hence, most projects vanished or the activities were taken over by one private operator – being then a completely private business. The lesson learned from the city logistics experiences was that PPP which do not provide sufficient commercial benefits (for the private side) are not persistent over the time. Obviously, the initiation and maintenance of a PPP is a complex task. On the one side there are administrative duties and decision making processes on the other side there is the private business orientation and profitability considerations. Bringing both together promises

large synergy effects and efficiency gains especially for tasks which are not core duties of the public side.

With regard to urban freight transport PPP can be a stimulation to set up new approaches. These can be:

- New city access models, e.g. providing the allowance to enter the city during night hours for delivery processes as done in UK projects given that specific quality standards are fulfilled by transport operators.
- City transport operator models, e.g. as presently demonstrated in several European cities (Evora, Genoa, La Rochelle). The cities assign transport processes from an urban distribution centre to inner city distribution to one general contractor using environmentally friendly vehicles.
- Freight centre business models; e.g. in La Rochelle where the city is providing subsidies for the UDC and distribution via electric vehicles.
- Road pricing models, specific models on urban road pricing are not existing yet. However, in the future possible PPP can be formed to charge urban road users (the implementation of the German LKW-Maut model shows illustratively the possibilities, barriers and limitations of PPP).

Considering the lack of urban freight related staff in municipalities it is an important factor that freight transport related know how will be transferred to urban transport planning. So far it is assumed that urban freight belongings are not sufficiently considered within urban development strategies and plans. Informal PPP are one approach to exchange view points and experiences via a freight forum or round table involving all stakeholder of urban freight. BESTUFS recommends to support and promote informal PPP being an appropriate instrument for the exchange of specific needs that can be considered within the town planning. Following the implementation of such a platform further (contractually fixed) PPP might follow resulting from measures that were discussed and specified with such an initial urban freight stakeholders assembly. Such measures can be the set up and operation of urban freight centres or other approaches. **BESTUFS recommends to analyse the approaches on PPP in urban freight transport systematically and to provide recommendations and guidelines for cities and urban transport operators to set up and implement successful PPP.**

In general it can be stated that there is a lack of sustainability on urban freight issues in urban transport policy. PPP are one measure for a well defined project. However, more continuity on urban freight belongings is needed for most of the European cities. The example of the PDU (Plan de Deplacements Urbains or urban mobility master plan) in France has shown that consistency and persistence can be brought into urban freight issues, especially in larger cities. **BESTUFS recommends that PPP in urban freight should be linked to an integrated transport plan. The EC should support this by providing a harmonised approach on how urban transport plans are to be addressed in cities of EU member states.**

3.9 Night delivery

City road infrastructure is a bottleneck at peak hours or even at the whole day time. The bottleneck problem of urban infrastructure can hardly or not be solved by expanding it to the needs of the transport demand. One approach to bypass such bottlenecks is to shift transport process from daily operations to night time. A distribution forum held in September 2001 in Baveno, Italy addressed in particular the issue on night delivery. BESTUFS organised a workshop in Budapest on 24/25 January 2003 focusing on urban aspects of night delivery. In summary it can be concluded that night delivery requires for:

- A night (24) hour economy,
- A supply chain considering the delivery at night;
- A balance between economic, environmental and social objectives
- A co-ordination with other measures aimed at achieving sustainable mobility
- The development of silent handling equipment and vehicles

Different examples exist on night deliveries in urban areas. In UK large retailer outlet stores are delivered during the night, 24 hour deliveries in fuel distribution is common practice over Europe. Specific examples on express distribution is given from the Netherlands. TNT Innight is successfully operating night deliveries in the Netherlands by distributing e.g. optical and photographic consignment into locker boxes. In general, operators assess that there are significant commercial benefits – summing up to 20% savings in transport costs. However, these savings can not be generalised as all distribution processes are bound to specific supply chain approaches. Some supply chains specifically require for a night delivery, e.g. fuel distribution while other supply chains do presently not ask for the possibility of night delivery, e.g. general cargo or parcel distribution.

In the past, transport activities during the night hours were mainly related to main haul processes within the transport chain – carrying out the depot to depot transport. Nowadays, night time becomes also beneficial for some distribution processes. There are many sectors for which night delivery is an option and BESTUFS considers a shift of distribution processes as opportunity which should be further elaborated. A current barrier is that in most cities the commercial business (retail, shop keepers, most industry sectors) are not prepared for a 24 hour economy. Thus, to deliver cities within 24 hour needs also its counterpart a 24 hour economy providing the willingness of consignees to accept deliveries over 24 hours a day. A solution for this problem are locker boxes or smart keys to enable unattended deliveries. **BESTUFS recommends field trial demonstrators with night delivery. For the realisation a co-operative approach among retail, shop keepers, other industry sectors and the municipality is needed.**

Making urban distribution process more flexible, e.g. by the lifting of access restrictions and bans in urban distribution may provide significant benefits for the urban traffic situation but also for the transport sector. However, it is to see that cities hesitate to promote night delivery. Concerns on the actual impact of noise intrusions during night delivery processes but also uncertainties on the impact on the urban traffic situation of night deliveries are predominant. For instance, the parking and night delivery regulation introduced in 1999 in

Paris aimed in particular to encourage night deliveries. However, the shift of significant delivery processes into night hours took not place while complaints on noise intrusions increased. Cities lack in this respect on comparable experiences from other cities but also on a lack of insight into supply chain processes of night delivery. In addition BESTUFS sees in the setting of reliable and acceptable standards on noise intrusion a major prerequisite for carrying out night delivery. The standards and experiences gained in the UK (FTA quality partnerships) and the Netherlands (PEAK) are good examples in this respect. **BESTUFS recommends to support such standards on European scale considering especially urban night delivery issues. Research activity developing low level and simple noise reduction engineering of delivery vehicles should be supported and best practice guides as how-to reduce sound from a vehicle fleet should be disseminated.** Newest experiences (e.g. in Barcelona) have shown that there are win-win situation possible and BESTUFS recommends to extend such demonstrations in other cities and to promote successful examples.

3.10 Intelligent transport systems

Following a classification of the THEMIS project, ITS can be distinguished between:

- traffic management systems to which e.g. access control systems, traffic management and information systems can be clustered to and
- freight transport management systems to which e.g. fleet management systems and tracking & tracing systems can be clustered to.

There are various supporting technologies for ITS, be it vehicle telematics (on board units), GPS, smart cards, video messaging signs and more that can be linked to traffic management systems and/or to freight transport management systems. The demand for such systems is growing day by day. We use these systems to improve e.g. route and trip planning or services provided to customers (e.g. reliable estimated time of arrival). Generally it can be said that mostly initiated and operated from the public side traffic management systems are applied to improve the traffic situation within the cities, e.g. by traffic regulations or access control. Privately operated freight transport management systems are manly applied to optimise logistics and distribution processes, hence contributing to a cost optimisation of the supply chain.

A crucial issue in ITS is related to a standardisation of the technologies applied in urban freight related applications. With regard to standardisation issues BESTUFS gives recommendations for the following components of ITS:

- Traffic information data. These data are a crucial input factor to run urban traffic management systems. As these data come from different sources, like video camera, electronic counting systems or floating car data it is obvious that for all these data sources different content, formats and protocols are in use. For the future it is to expect that further sources will be added. For single technologies there are standardisation activities going on (RDS/TMC, floating car data etc.). However, so far no common overall standard is to see and it is to question whether a common standard for all data might be beneficial. With regard to urban freight transport it is significant that the users of such data, e.g. operators with planning applications and

drivers are familiar with the different standards. Therefore, **BESTUFS recommends to further promote the standardisation activities on traffic information data technology.** However, it should be avoided that one overall approach will be favoured. Future technologies should have the possibility to mature. On the other side different standards ask for a management of the interfaces to relevant applications. **BESTUFS recommends to promote this process, e.g. by the development of integrated urban traffic management architectures able to support also commercial transport.** The EC funded project KAREN once specified a general architecture. However, for the belongings of urban commercial transport and considering the innovations in communication and IT technologies further research work in this field is recommended.

- Data communication. There are various ways for data communication, e.g. GPRS, UMTS, radio frequencies etc. **BESTUFS recommends not to favour one communication standard, as this would take away the possibility to find for a cheaper solution in the future.**
- Traffic management applications. Presently, there are several new powerful prototypes in a demonstration phase. In Germany examples on traffic management centres exist working on a fully operational and commercial basis. From the urban freight perspective it is to state that open platforms integrating different data sources, communication links and applications are a prerequisite for success. **BESTUFS recommends to further promote open solutions and the further integration of urban freight transport functionalities.**
- Freight transport management systems. On freight transport management systems in the past research activities took place, e.g. COMETA, FLEETMAP, SURFF or INTACT. Most of the conclusions derived regarding standardisation issues are still valid. In the past there were approaches on a possible standardisation of messages between on board units and transport planning applications. However, from the view of transport experts it became clear shown that such a standardisation is practically difficult to realise. However, the development of web based technologies is a source for future solutions on this issues and should be further elaborated. In the recent past more and more low cost approaches, e.g. PDA, emerged receiving a broad acceptance by the urban freight users. **BESTUFS recommends to further promote flexible low cost technologies for urban freight transport and the initiation of appropriate demonstrators.** For transport planning systems also co-operative approaches for common urban trip planning should be considered. Here, especially standard data formats are needed.

In summary on the standardisation of ITS in urban freight BESTUFS recommends to selectively promote standardisation issues. In order to support this issue measures should be further specified and elaborated, e.g. by a specific workshop or material collection in BESTUFS II.

On a European scale it is to state that the expertise on the effects on ITS in urban freight is still low. Some cities have started demonstration projects in order to evaluate the possibilities and potentials of ITS in urban areas. Although good examples from German cities exist results and solid experiences on a European scale are still rare. Also the full potentials of ITS

in cities by integrating traffic management systems with urban freight transport systems is presently neither researched nor used. **BESTUFS considers ITS as one of the top priority issues for future research work in urban areas. BESTUFS recommends to further intensify the research within this field.**

ITS provides large potentials for the leverage of urban road pricing schemes. Considering the different technological approaches that presently emerge to introduce pricing schemes in Europe on motorways but also in cities BESTUFS appreciates the initiative of the EC to harmonise road pricing technology in Europe. Given the technical prerequisites an approach is favoured where a common charging technology is extended to urban roads. A transport operator should have the possibility to pay the road charges on long distance routes as well as to enter a city with one on board unit and billing technology. Following the recommendation made under 3.6 to embed urban road charging into a common charging directive also the technical realisation should be harmonised. **Therefore, BESTUFS recommends to consider/provide the legislative prerequisites for charging urban roads by using a common road charging technology.**

Furthermore, BESTUFS recommends the development of ITS to support or enable urban freight transport policies and measures, e.g. the management of urban delivery space, co-operation among SME and interfaces between long haul and urban distribution.

3.11 Urban freight strategies

A specific BESTUFS workshop focussed on how urban freight strategies are treated in European cities. Different pictures were shown reaching from laissez-faire to approaches following an integrated transport strategy. Examples on country level show that:

- In Germany there are low activities going on considering freight in the urban transport strategies. Focus of activities is on public passenger transport.
- In France the formal frame for considering urban freight transport issues in urban transport plans is given with the Plan de Déplacements Urbains (urban mobility master plan) designed at a metropolitan level.
- In the UK various activities have been instigated from the 'Sustainable Distribution' document, a daughter paper to the Governments 10 Year Plan for Transport. This has led to the integration of freight into most Local Transport Plans. However, a review on the actual activities shows that only a minority of councils have actually carried through with action. Those cities which a strong role in urban passenger transport and/or car demand management such as Bristol/Nottingham are only just starting to acknowledge freight as a topic to be addressed.
- In Italy strong initiatives on urban freight activities are going on.

Although, various activities in terms of research, demonstration and pilot projects are going on in European cities it has to be assessed that examples on comprehensive strategies are not yet existing on a large scale.

A clear tendency can be seen: Many approaches presently under discussion or in demonstration focus on the application of (stronger) regulative measures to organise and/or co-ordinate the goods transport flows in urban areas. Favoured approaches are:

- To implement an urban transshipment point for the inner city distribution
- To employ/favor environmentally friendly vehicles to carry out the inner city distribution (electric or CNG)
- To levy city access charges be it in form of access licenses or access charges
- To enable or strengthen distribution processes, charging schemes and enforcement by ITS

Driving sector of such initiatives are mostly the public side, be it the city itself or the region. In many cities an information exchange on experiences takes place – fostered also by BESTUFS - in order to learn from the different approaches in different regions and cities. Although this collaboration among the public side is to appreciate supply chain considerations are often not emphasised enough. In general it can be stated that many cities have developed concepts and approaches on urban freight transport, however BESTUFS sees a lack in the implementation and maintaining of these approaches. To come to a comprehensive urban freight strategy **BESTUFS recommends:**

- **As short-term measures**
 - **The regular organisation of freight related round-tables**
 - **To carry out a „strengths & weaknesses profile“ of the city and to develop appropriate measures to be followed**
- **As medium-term measures**
 - **To secure development areas for logistical nodes close to customers**
 - **To implement restrictions and incentives for transport users**
 - **To promote commercial and municipal mobility management including measures for freight transport**
 - **preparing integrated urban transport plans considering both passenger and freight transport equally.**

Usually one measure alone cannot solve the problems in urban freight. So the challenge is to create an integrated bundle or mix of different measures which lead to a more sustainable urban goods transport.

4 Conclusion

In order to create sustainable and efficient urban goods transport a variety of measures and influencing factors have to be considered. These can be regulations, e.g. for city access, the way how the actors are working together, e.g. within a PPP, the supply chain configuration, the communication culture, the availability of technical facilities and IT etc. Obviously, there will not be “the one and only” measure to achieve a sustainable and efficient urban goods transport. BESTUFS recommends to apply a policy mix of different measures according to the urban specifics to achieve this aim. As the transferability of technical research is rather limited for this purpose the distribution of (best) practical experiences are needed. The EC should support this by co-funding suitable demonstrators in different European cities but also (or even more) by qualitative research activities giving actively advises for cities and

transport operators on which urban logistics concept is the most appropriate one given any circumstances and on which mix of measures (logistics concept, including an urban distribution centre, kind of vehicles, which supporting measures etc.) should be established.