FIDEUS Forum

Wednesday 9th April 2008

Grand Lyon - Communauté Urbaine Grand Lyon

PROCEEDINGS

WELCOME ADDRESS

Olivier LAURENT, Greater Lyon

Olivier LAURENT from Greater Lyon welcomed the audience and apologized for the absence of Jean-Louis TOURAINE, Greater Lyon vice president in charge of transport issues.

The Forum began with a roundtable introducing each participant.

Then, **Olivier LAURENT** introduced **Daniele PATIER** researcher from the Laboratoire d'Economie des Transports (LET) for a preliminary presentation on the Challenges on Urban Logistics.

CHALLENGES ON URBAN LOGISTICS

Mrs Danièle PATIER, Laboratoire d'Economie des Transports, Lyon

Danièle PATIER first presented the complex context of cities presenting numerous functions and insisted on the difficulty to have numerous actors with different interest and different organisations exchange and collaborate.
In order to plan the daily activities and in particular as far as urban logistics is concerned, two spheres must collaborate : the private and the public ones.

4 main challenges

The 4 main challenges are of different natures: functional, town-planning, socio-economic and environmental:

- **Functional**: the main problem is regulation because in large cities, there are several levels of regulations that are not harmonized. In order to meet these challenges, consultation and resort to public-private partnership is essential.

- **Town planning**: she focused on industrial wasteland use or new urban logistics places. Indeed, in large cities, there are many industrial or non industrial wastelands. For instance, SNCF, the French railway company, owns many wastelands which could be transformed into new urban logistics areas.

- **Socio-economic**: Among socio-economic aspects, accessibility for all which is a national requirement was highlighted. Also, large cities through their Chambers of Commerce help small shop to turn towards e-commerce, which contributes to the change of household behaviours. Urban Freight transport is greatly concerned by the creation of new services such as home-deliveries, 24h/24h shops, electronic lockers…

- **Environmental**: modal shift from road to rail or waterway is particularly difficult for short-distance trip in urban areas. Besides, there are many experiments carried out in European cities to improve logistics but that are not perpetuated because of lack of economic means. Therefore, public partnership consultation is needed in order to pursue these experiments on a wider scale.

The LET freight surveys

Then, she focused on how heavy goods vehicles are perceived in cities as opposed to light delivery vehicles, the latter being not well-known.

In order to improve urban logistics knowledge and within the scope of French national Urban Goods Movement programme, the LET has carried out 3 surveys in cities of various sizes : Bordeaux, Dijon and Marseille. These surveys have been very precious to identify the different links between activities and the way traffic is generated.

The results of the surveys are shown in details on the slides:
Surprisingly, individual purchases, and not the deliveries, represent the biggest part of urban goods transport.
Besides, the activity plays an essential role in UGM, with 50% of deliveries/pickups performed by light vehicles.

The results provided useful information on:

- **Double-parking**: it increases with the density of activities : in Marseille, in the hypercentre, 85% of deliveries are made in double-parking.

- **The duration of deliveries**: more than 50 % are carried out in less than 5 minutes. City planners should take this figures into consideration to organise delivery points according to the activities.

- **Loading/unloading movements picks** according to the time of day in parallel with individual trips picks.

- **Vehicle use in urban area** according to their size, payload and speed for 7-12 Tons vehicles in urban area

- **Pollutant emissions**: the results show that individual cars accounts for the largest part in congestion, energy consumption and CO2 emissions.

- **Noise pollution**: UGM generates more noise than individual traffic.

Daniele PATIER eventually insisted on the different measures that can be implemented in order to improve UGM as far as road management policies are concerned and on experiments that have to be encouraged and pursued.

She concluded by presenting a methodological guide to implement different Urban Logistics Areas according to the concerned urban zone.

ANSWER OF FIDEUS
Mr Gianfranco BURZIO, Project co-ordinator, CRF

Gianfranco BURZIO, Centro Ricerche FIAT, is coordinator of the FIDEUS project within the scope of FP6 Priority 6.2 Sustainable Surface Transport; he began his presentation by introducing the different partners in the project:

- OEMs (CRF, IVECO, Renault Trucks, ECA)
- Cities (IMPACTS, Lyon, Hanover, Barcelona)
- Delivery Operators (DHL, TNT)
- Research and technology providers (ALTRAN, Mizar, Fraunhofer, Univ of Westminster)

He reminded that it is a 3 year duration project, ending at the end of April 2008 so the Forum is really the last official FIDEUS event. FIDEUS will also be present at the TRA conference which will take place on 21 &22 April 2008 in Ljubljana.

Providing the context for the project, which **Danièle PATIER** had already developed, he reminded that:
- 80% of deliveries are made in urban areas (as source or/and destination), which explains the impacts on traffic in the cities.
- Local authorities lead a policy mainly based on restrictions, or access control, which provide extra cost and less efficiency in goods distribution

Aims of FIDEUS

The project aimed mainly at developing an innovative approach in the organisation of urban freight transport, both in line with the mobility policies and the needs of logistics operators.

So, FIDEUS intended to design innovative non polluting means of transport to achieve a more effective organisation of urban transport through:
- New logistics solution
- New type of vehicles (very light, medium)
- Efficient loading/unloading operation
- Noise reduction

The idea of FIDEUS methodology was to, first, start with the needed specifications, then to define the required innovations and then to implement these innovations in the three types of vehicles that were considered: the micro-CUV (city centre), the Urban Delivery Van (UDV, 3.5 tons) and the Urban Delivery Truck (UDT, 12 tons) that were illustrated through pictures.

During FIDEUS first Forum in Barcelona that took place at the beginning of the project in 2005 were defined the requirements of all the stakeholders involved in the city logistics.

The main innovative aspect of FIDEUS is not only to consider the light commercial vehicles but also micro vehicles and medium trucks and to include the input of cities' authorities in logistics operations: so, the project developed a complementary set of vehicles and equipment, especially conceived for undertaking urban deliveries and collection while providing tools and information to give practical support to city authorities in planning and management of strategies.

Technological aspects

The three types of vehicles contain innovative technical functions and solutions, tested in real delivery operations related to:
- **Safety**, during urban manoeuvres and loading/unloading operations
- **New telematics solutions** (based on RFID) to improve efficiency of transhipment operation and avoid mistakes
- New, specific, **ADAS functions**, like reverse manoeuvres assistance
- **Noise reduction** during (un)loading operations

The main deliverables were the vehicles themselves, the Logistic management linked with City Traffic Control, a standard container for city delivery and a New, efficient policy, for city authorities;

He announced that everything was ready for the final validation that would take place at the end of April.

He, then, presented the three types of vehicles developed within the project:

The Light Commercial Vehicle

This vehicle was developed by Iveco. The functionalities required were the following: a low emission engine, silent vendor doors, automatic silent gearbox, pneumatic suspension, soundproof engine…

Gianfranco BURZIO showed figures about the low-emission engine, which illustrated that the new F1C CNG engine meets the EEV (Environmentally-friendly Enhanced Vehicle) emission thresholds in urban context (restricted operation areas) defined by the European Commission.

Devices such as cameras or warning lights provide **loading area monitoring,** which prevents injuries with motorcycles or bicycles for instance.

Another safety issue is the **automatic park-braking** to facilitate the stop and start operation: it automatically engages the parking brake when the driver stops and disengage it when he moves the vehicle.

The **Reverse Driving Assistance** is another functionality, a kind of “rewind” function that enables to record some short part of the initial manoeuvre so that, when it is impossible to turn the vehicle because of the narrowness of the road, the steering is controlled by the system while the driver controls the accelerator and brakes. But it requires attention from the driver especially if there are some new obstacles or pedestrians. Cameras help the driver control the operation.

Telematics functionalities were ensured by Mizar Automazione.
There is a link through standard interfaces to the service centre, which acts as a link with authorities. For instance, if data about low noise emission areas are available, they can be transmitted to the vehicle that will automatically know when it is entering this area and take the necessary step to reduce its noise (lowering speed…). Cities authorities can also introduce during the day new limitations in case of congestions, for instance, that will be taken into consideration by the vehicle in real time.

The Micro-carrier for city deliveries

Gianfranco Burzio gave the floor to **Laurent WALLE** who explained that the micro-carrier can operate with one or two containers. The total payload is 300 kg and the operating speed is 5km/hour. This is equivalent to the speed of the operator walking. So the operator can either walk beside the micro-carrier or sit on the tractor.

The micro-carrier is composed of three different parts : the tractor, the platform and the containers. This means you can only deliver the containers and then have both the tractor and the chassis in the delivery point. In fact, this was intended to serve for delivery points such as in Bordeaux.

It is an electric vehicle so there is no noise pollution; there is a remote control; the container has curtains that can be located on both sides and on the front or the back of the containers; these curtains can be electrically locked, which provides additional safety.

The Medium Truck

Vincent SARTRE, Renault Trucks, explained that the Medium Truck was a medium Euro 4 12 tons vehicle with two use cases : one for parcel delivery in Lyon and the second use case for night deliveries in Barcelona.
One 12 ton demonstrator was used for the different purposes : for a 2 ton payload in Lyon and more than 5 tons in Barcelona.

The truck features **noise reduction** functionalities for day trip of course but mainly for night deliveries in Barcelona: presence of **Acoustic shields** (engine, gear box, refresh group, cab) to reduce the basic noise of the vehicle and provision of a **low-noise mode (LNM)** for night deliveries (engine noise reduction) especially intended for residential zones where very low noise level must be reached.

For day trip, in order to reduce the driver's workload, **electronic automatic park brake** is provided. There are also different functionalities to **improve the safety** (access to the vehicle without dislocking).
Telematics are used to access environmental zones to obtain information from the city and consequently provide the adequate mode (low noise zone..).

Regarding **noise reduction**, a reduction of up to 6 dB(A) 1 when operating in towns is reached thanks to a reduction of the vehicle mobility through a driver assistance system and other device (soundproof engine…)…

Cameras, sensors, **panoramic rearview mirrors**…enable to have a better view around the vehicle and increase safety.

He reminded that there were two use cases:

- In Barcelona, night deliveries to test noise reduction
- In Lyon, reduction of driver's workload mainly focused on environmental performance and pollutant and fuel reduction.

Gianfranco BURZIO explained that the validation and deployment of the tests ' result will be developed in the next intervention; The validations have been made in the three cities by independent partners: the University of Westminster and Fraunhofer Institute.

In terms of dissemination, FIDEUS took part in major events: TRA 2006 in Göteborg, IAA 2006 in Hannover, Post-Expo in Amsterdam, Well-Tech 2007 in Milano, Truck&Bus 2007 in Lyon and TRA 2008 in Ljubljana.

FIDEUS project was also covered by the media in different countries.

Questions

***Jean-Louis ROUTHIER, LET**, explained that, according to the survey carried out in Bordeaux, the difference regarding global city noise level between a situation with urban freight deliveries and without, amounted to 4 dB(A). He asked Vincent SARTRE if the global noise level of the prototype could now be compared to that of car noise level.*

Vincent SARTRE replied that there were two aspects to be taken into consideration for noise level: the first concerns the future regulation for day delivery and the second, night deliveries for which there is no regulation. The aim of the Barcelona test was to check if the target was the right one. It is quite different to reduce the average noise of a vehicle and to reach a target for night delivery.

TESTS DESCRIPTION & RESULTS

Lyon: Mr Olivier LAURENT, Mobility Section, Grand Lyon
Hannover: Mr Werner SCHOENEWOLF, Fraunhofer
Barcelona: Mr Simon HAYES, Altrandsd

LYON TEST

Olivier LAURENT started with Lyon test which took place at the end of January and beginning of February 2008. He explained that his contribution resulted from a collaboration between local authorities and partners of the project.

Existing situation

The point was to find a situation representative of what often occurs in a city like Lyon and work on general parcel deliveries.
They worked with DHL team located in Feyzin. The 7.5 standard truck usually departs from Feyzin, takes the motorway and the ring and performs daily deliveries in Villeurbanne, a city near Lyon with quiet dense urban centre and less dense areas outside the city centre. The delivered goods were typical parcels of a few kg up to iron logs for industry ;

He remarked that, in the meantime, since the 1st October 2007, with the City of Lyon, Greater Lyon had implemented a low emission zone as an experimental small area that is supposed to get larger. The objective is to gradually remove most of the delivery vehicles responsible for polluting the area. It was accompanied by measures limiting the vehicles' surface and delivery time windows.

Objectives of the test

Coming back to the FIDEUS tests, in Lyon, the point was to operate Fideus prototype in real life conditions. That was the 1st time that Renault Trucks let a prototype be operated by a non Renault Truck driver in real delivery conditions. That was a real challenge.

Regarding environmental issues, the objective was to test the new Low Emission Mode (LEM) to reduce fuel consumption and related pollution and noise. Another point was to assess the impact of double parking due to deliveries, not for the vehicle itself but for the vehicles behind:

Test Description

Daily, different aspects were tested. There were two different persons driving the Renault Trucks and they were most of the time accompanied by Renault trucks people, either Franck Laramee from the truck design team or a person from the ergonomics team.

Olivier LAURENT showed numerous pictures to illustrate the test; the driver had to test all the technical features introduced previously by Vincent SARTRE (passive entry, parkbrake, …) in real life conditions.
Unfortunately, the low emission modes could only be operated the two last weeks. It was complemetary with Barcelona test.
Mizar developed a platform that enabled to track the truck through GPS system during the deliveries. This was the occasion to define a theoretical low emission zone in Villeurbanne to inform the driver inside the truck. Then he was supposed to switch on the low emission mode when entering the zone. Violations were registered.

Olivier LAURENT admitted that there had been problems of communication between the truck and the platform but the experiment showed the feasibility of this new type of technological control.

The double lane stops

Fraunhofer designed a prop car test in order to assess the impact of double lane parking on traffic flows. For this, the prototype was not used but a real truck as shown on the pictures : the car followed the truck during three days and was equipped with a GPS unit which provided information on location, acceleration and breaking. A database describing registered the behaviours of the vehicle behind the truck stopping in double lane. The number of vehicles behind the truck was also regularly registered.
The results have not been completely analyzed but one obvious conclusion was that during the three days, there had been very few situations when double lane parking had caused significant impact. This was probably due to the nature of the city Villeurbanne which is not the same as Lyon. But anyway the driver has an important role, stopping where it creates less traffic jam.

The evaluation process

Olivier LAURENT remarked that this process was still underway. The process consisted in creating indicators and producing data on:
- Kilometres
- Weight carried
- Time
- Position
- Local pollution : emission gain
- Long term effects : CO2 emission gain, calculate as kg CO2 per tkm, kg, CO2 per kg or kg CO2 per parcel delivered
- Acceptance aspects (from driver interviews)

For this purpose, the truck was equipped by Fraunhofer with a GPS and a FCD unit to get real time information. The driver had also in his pocket a GPS tracker to compare his position with that of the truck when he had to deliver goods outside of the truck; this was mainly used in Hannover.

Equipment was also installed to **measure noise levels**. A graph showed the difference of noise level between the situation on site where the measurement was made at a 3.5 meter distance from the truck so as to reproduce a pedestrian perception and a standard measurement that is usually made at a 7 meter distance. After one day measurement, it appeared that FIDEUS truck was under 70 dB(A) whereas standard truck reached 80 dB(A) without using the LNM.

Regarding **fuel consumption and CO_2**, combining eco-driving practices with low emission modes in the urban context enabled to show decreased fuel consumption. The results had still to be consolidated.

Test Conclusion

- In terms of **practicability :** there was a very positive cooperation between DHL & Renault Trucks and good acceptance of the technology by the driver.
- In terms of **emissions :** there were difficulties at the beginning of the test to highlight an improvement in fuel consumption due to the important impact of weight, the short duration of LEM test and the fact that different type of trucks were used before & during test.
- **In terms of low noise:** compared to other trucks, significant reductions took place. Noise was recorded in the last test days due to back door problem, which was solved in Barcelona.
- **In terms of double lane:** very few cases of traffic disturbances were recorded (10%), with very limited impacts like stops or speed reduction.

Olivier LAURENT highlighted the large number of press articles linked to Barcelona and Lyon tests: there were a little less than 100 articles and 3 TV reports. He was proud to show one TV report on a French national channel.

HANNOVER TEST

Peter SONNABEND, DHL, Bonn explained that he replaced **Werner SCHÖNEWOLF, Fraunhofer IPK, Berlin** who sent his apologies for not being there.

In Hannover, the point was not to test the medium truck, which was done in Lyon and Barcelona. The objective was to test the micro carrier and the Iveco daily van.

Objectives

The objective was to structure urban deliveries together with the local authorities in Hannover. He reminded that Hannover is a city with roughly half million inhabitants in the North of Germany, the regional capital of Lower Saxony and the surrounding region authority which holds a number of legislative responsibilities together with local authorities and with the state of Lower Saxony.

It took 1 year to plan the experimentation and get the topic across both to DHL internal staff but especially to the city staff. Indeed, cities are not very good at understanding logistics because it is not their role. But they have a responsibility towards the residents and the trade and commerce and in terms of public space management.
Freight movement has therefore been long neglected at the benefit of passenger traffic and he acknowledged that besides, the logistics industry has not been successful in selling the topic to the cities.

Test cases

There were 3 test cases in Hannover:

- *City hub* with the micro carrier in the pedestrian area
- *Urban Life* with the micro carrier in an area with lots of shops and commerce along the road
- *Second lane* with the IVECO daily

All of three tests were performed in a totally commercial environment.
The tests were performed from August 2007 til December 2007.

City Hub

It represented a common situation in pedestrian areas with a crush of different vans, small and medium trucks, coming in during morning hours. The problem is the time of deliveries because early in the morning when it would be more convenient to deliver, there is nobody to receive the shipments because of the late opening hours. And by 11 am, commercial traffic is not wanted. So

the time window is small and causes lots of delivery vehicles to operate at the same time of the day and therefore creates congestion.

The aim was to have a non-motorized vehicle able to move safely, quietly and efficiently inside the controlled access space inside the curfew hours for motorized vehicles: the micro carrier.

Legal, organisational and logistics aspects had to be taken into consideration:

The vehicle first had to be fed to bring in shipments from the logistics terminal to the outskirts of the city and then cross load on the micro-carrier.

Peter SONNABEND explained that there were different alternatives on where to place the depots, which is not a new issue – UPS is doing it in Cologne- Distribution is generally made from parked vehicles by walkers or by bikes, with no capacity to leave the vehicle very far away. The micro-carrier was thought up to offer extra capacity and additional range to move from the stationary vehicle. So only one or two depots were needed.
Usually, 8 to 10 vans fully loaded are ran with 250 parcels each.
He showed a picture of the underground garage with a reserved space organised by the city.

Then a picture showed the delivery area with a conventional vehicle : a Euro4 diesel vehicle with particle filter which does the delivery of the big boxes which go to the shops on the ground floor. The micro carrier comes out of the underground garage and performs deliveries to the mall and offices which are located at the first and second floors which receive small documents or small batches of medicines…
The micro-carrier offered very high mobility. On the test, the tractor was not the original ; it is an airport luggage trolley scooter converted to outdoor use.

Results

They obtained an opening of the servicing time for the restricted areas so they were able to access the zone after the curfew hours or to do the collection of goods in the afternoon without violating access restrictions.
The result was a **reduction of effective delivery time** even though the micro-carrier spent much more time in the pedestrian zone than a normal van. Indeed, the driver was often approached by residents and customers enquiring about the experiment.

On the whole, the operation was very efficient, with a high quality with a different logistics set up.

Urban life

This scenario is very similar to the first in the way the vehicles were used. The difference is that Limmerstrasse is a major thoroughfare completely pedestrianized with a tram operating in the middle of lots of shops with, in between, very little space to park a van. There's also a crossing traffic so the cars are not allowed to move up the streets but vehicles are allowed to cross from the side streets. So they established a mobile base in one of the side streets and then doing the deliveries with micro carrier from there.
There were some constraints about the availability of public space so they had to bring everything on the truck. Originally they would have the micro-carrier on the spot.

A picture described the low-floor feeder vehicle with the micro-carrier leaving with two containers preloaded from the depot and ready to make deliveries in this very congested area .

Peter SONNABEND focused on preliminary results concerning a few selected parameters. There were originally 15 to 20 parameters;
Looking at the reduction of traffic done by big motorized vehicles (big vans or trucks), 4 scenario were analysed: the standard situation, a situation with the use of the micro-carrier serving

LImmerstraBe from a small depot with two round trips, two extrapolations with several micro-carriers serving the whole area with two different feeder van, a 3.5 t and a 12 t truck. These last two scenario which ruled out nearly all truck traffic for the whole area.

Second Lane

This test took place in an major thoroughfare on the outskirts of Hannover, which leads from citycentre up north where there is some heavy traffic during rush hours. Lots of deliveries are performed there which causes double lane parking because there is no parking available.

When parking was possible, the solution was to create loading zones reserved for delivery vehicles (time window only), with blue marks on ground and signposts for enforcement. But the enforcement was very difficult.

He cited another project DHL runs in the Life program in the city of Bremen with the creation of loading zones which are kept free for environmentally performant vehicles.

In Hannover, this test did not completely succeed but it enabled to appreciate what a second lane stops means for the overall traffic.

Fraunhofer estimated the impacts of double lane parking:
By Extrapolating the Vahrenwalder Str. pilot site to Hannover City (i.e. the 3 main thoroughfare), double lane parking would mean 4,357 liters of additional fuel use per year consumed by cars around the stationary vehicles which is the equivalent of 10.8 tons of CO2 (50/50 gasoline/diesel, 200 days) but also equals 90,000 km travel distance (assuming 120 g CO2/veh-km).

Peter SONNABEND was enthusiast at underlining the excellent perception they received from the public, from the residents, from the retailers, from the local authorities and from the press, which was a big bonus!

As a conclusion, he underlined a similar project taking place in Malaga, Spain.

BARCELONA TEST

Simon HAYES, AltranDSD, explained that they had been running in the additional time in March because they had to wait for the Renault truck to arrive from the Lyon test.

He reminded that the first Forum in Barcelona, in 2005 had enabled to bring the FIDEUS concept into the municipality which has been very active in the project.

He showed a press article concerning the micro-carrier but explained the test dissemination has not been done yet because the results came late.

The existing situation

He provided a review of the freight situation in Barcelona:

All deliveries are made from the streets at reception points. The municipality made a special effort to provide in a practical way a reasonable number of on-street spaces intended for deliveries: some 10,000 on-street spaces are reserved for un/loading between the hours of 08.00 and 20.00, handling a high % of the 100,000 roadside deliveries made daily in the city.

But there was a pending problem with supermarkets operators having a special interest in supplying fresh foodstuffs ready for when the stores open and the noise regulation covered by the local bylaw.

To allow this, the Municipality introduced experimental exemption (6 months) to the noise regulations.

Condis, which participated in the first FIDEUS Forum had explained how things worked to vehicle manufacturer participants. Now, a dozen sites are involved in the Quiet Night Deliveries project and half of the districts - the districts worked on the relations with the residents.
He underlined Condis' enthusiasm for this type of solution.

Condis Supermercats used Renault Truck's prototype Midlum 12T truck for Quiet Night Delivery & Direct daytime delivery (2 outlets, plus measurements around depot). Whereas the Quiet Night Deliveries program involved the operators, the FIDEUS project involved for the first time a manufacturer.
Condis explained to the manufacturer the way they operated so that Renault Trucks could take that into account as far as they could, given the fact they had already a prototype.
It was also a first experience with telematic tools with special focus on noise abatement. He expressed his being convinced that, in the future, city authorities and shippers will work together through this kind of platform.

The aim of this trial, both for the Municipality and Condis, was to consolidate the night delivery experience, and to examine how the low-pollution mode can work as part of a scheme for serving controlled access areas.

They met some tracking difficulties and had not much time to sort them out:
- Kaputt power & UMTS re-boot
- Entry / exists not always registered at Platform
- Renault registrations (1 day)
- Handy as "Kaputt" alternative

The Scenarios

They focused on dry heavy goods because they could not sort out the refrigeration aspects.

The **first scenario** consisted in a journey from Condis logistic platform, 15 km outside Barcelona, to one of the outlets authorised to make night deliveries: carrer Bruc. where a small, zone is defined to operate under Low Noise Mode (LNM).

The itinerary is realised in 60-75 min at night, compared to 90-120 min during the day.

For the **second daytime scenario** the vehicle ran in Low Pollution Mode for the whole itinerary from Condis depot to the supermarket and the way back. The route included sections with 3 different speed limits: 80 Km/h on the motorway from Condis depot to Barcelona, 50 Km/h from the entrance to the city until arriving Sant Andreu district and 30 Km/h for the trip inside this area.
COndis could only use a 3.5t truck.

Simon HAYES wanted to stress the collaboration of the University of Westminster who helped them a great deal carrying additional test results near the depot.

He showed a slide illustrating the way the platform registered clusters of entries and exits (Av. Diagonal) with the LNM being active or not. This enables the municipality to deal with residents' complaints checking if the truck was on right mode at the given time.

Evaluation

He pinpointed that the results of the evaluations were not fully available but that they would soon be disclosed.

The evaluations concerned

- Noise:
    *Carrer Bruc: delivery noise profile measured by both Barcelona Municipality & Uni. Westminster.
    * Pass-by noise measurements around depot (Uni.Westminster)
- Delivery performance
    *Logs of fuel consumption, journey times, emissions (Renault / Condis)
- Operator acceptance:
    *Drivers' views of driving / unloading performance & dual-mode interface (Renault / Condis)

Simon HAYES showed some conclusions about the noise evaluations which are very positive:

- the high noise recorded in last test days in Lyon due to the backdoor was solved in Barcelona; multiple site test design + quick reaction of vehicle manufacturer (classical trial and error produces measurable improvements at the next stage).

-the activated Low Noise Mode reduces truck noise particularly at the lowest speed when accessing the delivery point

- Fideus truck was less noisy than other trucks of the same category

- Lower speed reduces vehicle noise and have positive side-effects (emissions, security, traffic)

- Low noise can be reached only when the vehicle, the equipment, the drivers and the receptionists' behaviours are considered in an integrated way. Refrigeration is another point that had not been looked at in FIDEUS and that should be handled.

-Thanks to telematics equipment, it is possible to register that dual-mode vehicles are operating using the correct mode. This point is particularly important to enable more authorities to make more exemptions for quiet night deliveries.

Simon HAYES thanked the work ***team***.

Questions

Ulf PALMQUIST, Director of EUCAR asked if the micro-carrier has got enough running autonomy to operate a whole day through and whether it worked on batteries.,

Laurent WALLE stated that the micro-carrier worked on electric batteries with a 2 hour autonomy. He added that changing batteries took only 2 minutes thanks to a dedicated trunk for the spare batteries.

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Jean-Baptiste THEBAUD from Interface Transport asked Peter SONNABEND if the 11 tons of CO_2 caused by double line parking is the figure for 1 single truck on a full year or is it for the full fleet?

Peter SONNABEND answered that they used a traffic management system including the cameras of Hannover looking at the effects of second line parking on one site. And then, the facts were extrapolated to comparable locations through the whole city considering there are 12 major thoroughfares connecting the city centre with the suburbs. It's an extrapolated effect for the loading vehicles. The point was to give an insight of the magnitude of the impact which carries with it a certain penalty in terms of external costs, which is comparatively negligible but has a very huge impact in terms of extra mileage added to the load of the traffic infrastructure of the city.

ROUND TABLE/PANEL "WHAT COULD BE IMPLEMENTED FROM FIDEUS?"

Chair : Peter SONNABEND, Deutsche Post/DHL

Considering this is soon the end of the project (end of April 2008), **Peter SONNABEND** proposed to reflect on what could be kept from FIDEUS in organisational, practical and technological terms for future activities in European cities. 2 cities that were not part of the project, London and Toulouse made two presentations to see how FIDEUS could match their needs.

Mr Ian WAINWRIGHT, Freight Co-ordinator, Transport for London, United Kingdom

Ian WAINWRIGHT, Transport for London (TfL), firstly gave an overview of London context.

TfL is part of London Greater Authority that covers the whole city and region of London. TfL has a traditional responsibility for passenger transport, managing the bus contracts and running the underground system (the metro). They are now also in charge of some overground public transport (railway lines, river services, coach stations, licensing taxis..) very little to do with freight!
TfL also manages the 580 km network of main roads and all 4,600 traffic lights. So they have to work with the local authorities to deliver a smooth flowing network.

There are about 7.5 million people living in London and every day, about 30 million passenger journeys are made in Greater London. Considering the fact that there are 33 local authorities in London, TfL covers the whole area and therefore has to work with the local boroughs who introduce local regulations in terms of local deliveries, accessibility to their local town centres.
TfL also has to work on the relationship between the main Mayor of London and the local boroughs, working with the local businesses and the individuals. Besides, with the Olympic games in 2012, TfL must bear in mind that whole development in particular in the eastern part of London where there is a new citycentre being built.

TfL freight policy aims are really addressing the issue of sustainability and with regard to current political concerns, that has to do with climate change, congestion, safety for cyclists and pedestrians, for making the city more accessible.

With regard to freight, there are two chief aims:
- to try and **reduce the amount of road freight**. The river Thames in the middle of London is used for freight but not as much as it should be.
- Over 88% by tonnage of freight in London moves on the road. To reduce this percentage, TfL should look at the **road trip efficiency** i.e. looking at loading, unloading, parking, delivery times, etc. That is where some issues from FIDEUS can be addressed within the efficiency.

In January 2008 was published the London Freight Plan, 104 pages that covers all the freight issues, identifying 4 key projects that TfL can deliver to improve the freight situation in London:

- **Freight Operator Recognition Scheme (FORS)** : which consists in working with freight operators to make sure they maximise their sustainability and that they can demonstrate it. Up until now, in cities, as it was mentioned earlier, a conflict remains between the operator and the people the operator is serving; This scheme is really meant to improve this situation;

- **Delivery & Servicing Plans:** which consists in looking at the delivery premises whether that be individual shop or supermarket or a mixed area with shops below and residence above, saying how the deliveries are made in and out of a particular location.

- **Construction Logistics Plans:** similarly, for the construction process, huge parts of London are constantly being redeveloped. The construction activity has a considerable impact: the second lane mentioned earlier.

- **Freight Information Portal;** it is a central reference point for freight providing information on the numerous activities going on in London regarding the 33 local authorities, TfL, existing control schemes, the Low Emission Zone, the Congestion Charging zone, the Lorry Control Scheme…

Where there is a delivery zone, where there is a series of shops, TfL wants to make that place as pleasant as possible for the people by:

- Balancing the movement of goods with the movement of people
- Similar to Travel Plans but focusing on freight: . TfL worked a lot on travel plans for people, identifying how people get in and out of buildings, encouraging modal shift…a similar approach could be taken with freight looking at Delivery - goods movement, mail -, Collection - refuse, returns and Servicing - maintenance, engineers.
- Relationship between time and location
- A plan for business procurement and operational practices

that favours FORS operators, encourages legal delivery facilities, encourages safe & secure deliveries, seeks to reduce delivery and servicing trips, seeks to reduce peak trips, maximises out of hours deliveries and considers the potential for modal shift and consolidation.

Tools, techniques & intervention measures

Reducing the number of road trips

Ian WAINWRIGHT explained that there is a whole series of measures to reduce the number of Road Trips:

- Defining/redefining procurement practices to take account of supply chain impacts - vehicle activity, order lead-times, etc.
- Consolidated ordering
- Reviewing use of products
- Rationalising suppliers
- 'Out-of-hours' deliveries
- Consolidation of deliveries (HGV v Van)
- Modal switch (e.g. waste on water)

TfL currently started the process for their own offices (20 different offices in London) looking at the vehicle activity, the lead-times and what products are used in these offices. For instance, the tap water is drinkable but they still order bottled water, they order paper that comes from 3 different suppliers.. so they try to rationalise their suppliers and rationalise when these deliveries occur.

Trying to reduce road trips is a fairly complex business.

Safe & Legal Loading

It consists in taking into consideration the following items:

- Site outlet assessment
- Review of delivery time v location
- Review of delivery vehicle, size, noise etc
- Managing vehicle activity in relation to capacity of legal loading facilities
- Communicating where & when legal loading can occur
- Management of the driver

Requirements

- Delivery Service Plan needs an owner
- Need to balance requirements between building users and street users.

Ian WAINWRIGHT, considering the FIDEUS project, estimated that there should be a conventional route that should be using operators. City authorities like TfL can effectively badge these freight operators like in the Freight Operator Recognition Scheme.
But he believed that what might have greater emphasis in the long term is using the Delivery and Servicing plan concept for the planning system: when new buildings are put in place or new developments, sustainability of the delivery process should be encouraged (quiet practices, good drivers'behaviours..) and linking good operators with the DSP concept would be the right way forward.

On a short time scale, it would be very interesting to have additional case studies and demonstrations in other cities like London.
There is also a potential combination of best practices. He mentioned the Dutch PEAK scheme authorising quiet pieces of delivery equipment. In the UK, a charity called Noise Abatement Society, demonstrated that using quiet pieces of equipment during delivery like in the PEAK system but linked into the consideration of the local residents enabled to reach an 8 dB(A) reduction of noise level at a local supermarket, one of the big supermarkets in London.

So the demonstration of FIDEUS new concepts linked into some of best practices might be the way to reach a real improvement in freight transport.

Mr Serge MATHIEU, Transport & Traffic Directorate, City of Toulouse

Serge MATHIEU announced that his presentation will focus on how the city of Toulouse has managed to implement a new regulation through dialogue with the different freight actors. He stressed the fact that creating a dialogue between City authorities, freight professionals and users of urban areas was a real challenge that took them 2 years.

The aims of the municipality were to improve freight delivery transport in Toulouse and to optimize public space, which required the definition of 4 strategic objectives: functional, economic, urban and environmental. **Serge MATHIEU** explained that his presentation would focus only on functional objectives, which resulted in the integration of freight in global flows and the enhancement of traffic conditions.

The process was divided in 4 steps:

<u>Step 1 : Studies</u>

- Latest state of development
- Diagnosis

<u>Step 2 : Dialogues & Consultations</u>

- Dialogue with the relevant actors : carriers and tradesmen, shop holders
- Proposition for a new delivery regulation in relation with a new transport management policy

<u>Step 3 : Coordination</u>

- Adoption of a charter for delivery in Toulouse centre
- Coordination with the municipal police force

- Communication towards the residents and all the professionals (badges)

Step 4 : Implementation
- Work on delivery areas
- Installation of road signs
- Installation of delivery areas

Step 1

During the 1st step, a diagnosis was established regarding the implementation of the existing regulation in the centre area of the city. They found out that 51% of freight vehicles were in breach of the regulation, in particular during the peak hours (from 7a.m until 9 a.m). This result can be explained by the fact that the existing city regulation was so complex that none of the freight actors knew it precisely and could not, thus, respect it.

Therefore, the first objective of the dialogue was to come up with detailed information about delivery time windows, tonnage, length and delivery areas.
The whole process only concerned the old city centre with very narrow streets, which makes things difficult for freight deliveries.

They, first, looked at what type of vehicle in terms of tonnage entered the area and where exactly the entrance spots were located: 80% of the entering vehicles were light vehicles, less that 3.5 tons. Only 1% of the vehicles were over 12 tons!
The main entrances appeared to be situated in the eastern part of the city centre.
Regarding the time windows, it appeared that vehicles over 3.5 tons were entering the area between 9 and 10 a.m and heavy vehicle (> 12 tons) entered the zone earlier. The latter are mostly used to deliver alcohol and drinks to bars and restaurants.

From this diagnosis, they drew up proposals of harmonised regulation which they submitted to the city decision makers.

In order to reach a collaborative result, a technical workgroup gathering the freight actors was set up and discussions lasted 2 years!

Proposals

- **No more tonnage limit** for the access to city-centre, **but a length limit** of maximum 9 meters for the vehicles which is the equivalent of 12 ton trucks. Before, the maximal limit was 7,5 tons.

- **A better management for delivery areas** which implied the reinforcement of the delivery areas control with city police, a good distribution of delivery areas, according to the needs and a study on the ergonomics and the size of delivery areas.

- Creation of controlled logistic spaces in order to ease the use of delivery areas: with opening hours from 5 to 11.30 a.m, a permanent control by the municipal police force. After 11.30 a.m, the area is fully dedicated to pedestrians.

The propositions, which were the result of very long discussions with haulers, are summarized in the table below. The 9 am- 11.30 am window was originally a 9am-10.30am one but could not be maintained because of the shops late opening times. Indeed, most shops in this area open at 10 am.

20h-7h	7h-9h	9h-11h30	11h30-20h
< 9 m			
Authorized deliveries, with small inconvenience	Deliveries are forbidden except on authorized areas	Authorized deliveries, with small inconvenience	Deliveries are forbidden except on authorized areas

In the end, it was materialized through **a Charter of Good Practices** which was signed on January 19th 2007 by :

- The Mayor of Toulouse
- The President of the Chamber of Trade ("Chambre de commerce")
- The Midi-Pyrénées representative of the National Federation for Road Transports (FNTR)
- The President of GTP 31
- The President of Midi-Pyrénées Transports and Logistics organisation in France (TLF)

Through this Charter,

The **City of Toulouse** commits itself to:

- Implement and guarantee the respect of the regulation for the delivery system validated by all signatories.
- Enforce the defined delivery areas
- Better supply of delivery areas according to the needs
- Improve the size and working on the ergonomics of the delivery areas

This implies that regular meetings with technical committee take place every 3 months.

Haulers commit themselves to:

- Respect the new regulation
- Park on the right side in one way streets
- Use delivery areas instead of parking in the middle of the street
- Respect the driving code

Shop owners commit themselves to:

- Explain the regulation for deliveries in the city centre, when ordering goods
- Keep delivery areas clear
- Use areas only for loading and unloading: 50% of the deliveries are on own account
- Respect transport law

Serge MATHIEU showed pictures illustrating the points previously detailed. He particularly laid emphasis on access control areas: haulers can access these areas at any time of day provided they are given the authorization by municipal police. He also showed a video control centre in the police premises. He explained that within the CIVITAS European program, the aim is to implement an automatic video control system with regard to delivery areas.

He added that within the CIVITAS program, the City of Toulouse has also experimented the micro-carrier with Chronopost (small parcel express company). The City of Toulouse provided the hub for Chronopost and Chronopost was in charge of the organisational aspects : a gas vehicle departed from the airport to the city centre hub where the shipment was loaded on micro-carriers for final deliveries in the city centre when possible.

Peter SONNABEND thanked both speakers and asked the audience if they had some questions:

Questions

The City of Toulouse was asked if they studied the possibility of having a booking system for delivery areas.

Serge MATHIEU answered that they had thought about it, using an internet booking software but this is another step to be reflected on in the future.

Peter SONNABEND underlined that such a booking was implemented in Barcelona outside the FIDEUS project

Simon HAYES explained that this prebooking for an access control is not quite there in Barcelona.

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Simon HAYES *asked* ***Ian WAINWRIGHT*** *how long the Freight plan is supposed to operate as a plan and more information about the Delivery Service Plan, in particular, about the silent approach.*

Ian WAINWRIGHT provided information about the CIVIS project (Cooperative Information Vehicle System) which is about booking space on the streets in which TfL takes parts.

With regard to the Freight Plan, it has a 10 year time horizon: the aim is to try and hold the number of deliveries at a 2006 figure til 2016. The biggest growth during the last 10 or 15 years has been in small vehicle deliveries rather than big trucks (>18 tons).

The Freight Plan is referenced in the main special development plan for London so there will be an ongoing review of the plan: within the next 2 or 3 years, there will be a new transport strategy and with the next 4 or 5 years, there will be a new spatial plan. So it will be updated on a rolling basis.

With regard to the DSP, the point is to use the planning system for new developments: there is legislation enforcing the sustainable movement of people and freight. The other side is to work through their own offices, at underground stations, bus garages… so that TfL can demonstrate that the DSP produces efficiencies for the delivery operations.

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Coming back to the 12 ton length limit, there has been a misunderstanding : it is a limit which has been defined first by regulation and second, that is linked to the tire dimension. So the 9 meter length can correspond to a vehicle under or over 12 tons, which is the case of the FIDEUS truck.

Serge MATHIEU answered that length was really the problem to be taken into consideration by the Cities and not the tonnage.

Peter SONNABEND spoke about Hannover experience which introduced 5.2 tons gas vehicles and not 3.5 tons into the City. And they met great difficulties to obtain a permit from the city to access the road side which has not been laid out for such heavy vehicles. This is linked to the issue of public road and roadside management with regard to logistics.

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Peter SONNABEND *said that quite a lot of technical achievements have been demonstrated. Scenarios have been developed together with the city authorities and operators to put these technologies to good use. Now, the ball has come back to the technology providers, the OEMs to try to push it into the market to move ahead from the prototype step.*
So he asked the manufacturers what of the pilot and prototypes will be marketed.

Vincent SARTRE pinpointed two problems: when it comes to low noise or low emission solutions, the prototypes are not necessarily allowed by European regulations at the moment. The solution which consists in controlling the mobility of the vehicle through engine control is not currently allowed. So, the only way is to adapt this solution as a driver assistance system but this would not be as efficient as a fully automatic system.
The second problem is the cost of these solutions: the question to be answered is "is it profitable for the operator ?"

Laurent WALLE answered that the main problem, as Vincent SARTRE explained, is regulation. As technology providers, they have two big issues: specifications – they need to know what the customers need and therefore the cities' requirements, which is very complex because of loads of technical points to be solved. The second issue is regulations: when entering city centres, there is no regulation concerning automotive vehicles and this cannot be solved by OEMs.

Giovanni GALLARDO said that some of the technical features developed by IVECO in the FIDEUS project are ready to be put in real production. The problem is the cost, the diffusion and authorities' positions.

Ulf PALMQUIST, EUCAR director, added that this way of approaching the problem is not the most fruitful process. In EUCAR, this issue has been already submitted in a group called Commercial vehicle forum which gathers commercial vehicle manufacturers' trucks. As IVECO and RENAULT already explained, the biggest problem is legislation and lack of specifications that are coherent with legislation. Cities have to create their own harmonisation first. A better dialogue is very much need between the cities and the logistics professional like DHL. At the present time, this does not work very well and it will take a long time to be solved. For many years, he explained that they have tried to push goods mobility but they have felt rather alone. Therefore, projects like FIDEUS have to be expanded;

Jean-Louis GRAINDORGE reminded that FIDEUS was the continuation of the FREDERIC project that initiated for the first time a dialogue between the main actors of freight transport. FIDEUS has demonstrated that the requirements of the local authorities can be effectively taken into consideration by the automotive manufactures in collaboration with the logistics side.

Jacques LEONARDI expressed his enthusiasm at working in a project linking so many dimensions in a single test under real conditions. It was all the more challenging than he worked with a TV camera onboard. According to him, the most interesting was to work with the manufacturers, logisticians and carriers who were reacting, as the test went on, and improving the points that were addressed. This was the first time it ever happened and it should be repeated.
He apologized for not presenting the results because of some serious constraints. He encouraged to test other solutions, to agree on methodology, on how to measure the impacts, to fix some limits: what low noise is in a realistic way, for instance reaching 60 or 65 dB(A) is not realistic.
He thanked everybody for their collaboration in the project.

Gianfranco BURZIO, co-ordinator of the project**,** thanked the participants for their input. When starting the project, they considered that technology could solve the problem of freight delivery. So they have tried to introduce more flexibility. The different scenarios showed various problems. They tried to answer them in finding solutions that would meet the maximum requirements.

The dialogue engaged with the different stakeholders should be pursued. FIDEUS succeeded in proving that technology could bring solutions and in showing cities' requirements. But harmonisation of regulation is the sine qua non to provide market solutions because manufacturers cannot provide one different vehicle for each city!

Gianfranco BURZIO will insist towards the European Commission on the necessity to pursue the discussion in line with the issues raised by FIDEUS.

Olivier LAURENT, Grand Lyon thanked the speakers for the quality of their contribution and the audience, with a special thank aimed at those who had to travel abroad to attend the meeting.