



Innovative Logistics for European Cities



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BACKGROUND

- Globalisation of production and trade has proliferated container movement, e.g. from ASPA +79% in 1997-2003 (2.9 to 5.2 mio TEU)
- European inland freight transport is growing near-synchronous with EU-25 GDP, +26% in 1995-2004 (1,832 to 2,318 bio ton-km)
- The building freight surge does not exempt the cities, for both receiving and shipping !
- Efficient logistics networks are key to digest the additional demand for goods movement



LOGISTICS PRINCIPLES

Professional logistics operators aim to optimise their planning, operations and equipment for a maximum utilisation of vehicles and drivers:

- saving costs
- reducing congestion
- minimising fuel consumption
- minimising local and global emissions

However, logistics providers are dependent in this on a set of framework conditions outside their immediate influence





.... that can make urban deliveries a frustrating experience !



PROBLEM ISSUES

- Lack of dedicated road(side) infrastructure for freight, in contrast to passenger transport
- Circulation and sizing of vehicles often impaired by physical and regulatory constraints
- Unproductive delays from congestion, search traffic etc recovered with additional vehicles
- No coherent automotive strategies to reduce energy consumption and pollutant emissions
- Urban logistics no issue for most municipalities and receivers, 15-50% unorganised deliveries



LOGISTICS ORGANISATION

Solutions aiming to bundle unorganised deliveries in collective networks around urban consolidation centres (UDC), in analogy to existing schemes for construction, manufacturing, or airports.

- Huge savings up to over 70% in freight traffic
- Applicable also to reverse logistics or waste
- Service models must respect competition rules
- Apportioning of extra costs to beneficiaries
- Receiver participation is essential



LAST MILE ORGANISATION

Transfer points may serve local sensitive areas with limited or no access for standard vehicles. Modern technologies can enhance the reach of such microplatforms reducing real estate costs.

- Stationary building or long-term parking
- Enforced reservation of logistics infrastructure
- Collective trunking with trucks, trams, vessels
- Extended access times for clean vehicles
- Possible combination with other services





THE *FiDEUS* APPROACH

Efficient urban logistics by bringing together:

- Adequate organisation in line with policies
- Low-emission, low-noise vehicles
- Better ergonomics and safety
- Dedicated infrastructures
- Advanced V2I communications

with participation from *all* stakeholder groups.





THE STAKEHOLDER PARTNERS

GRANDLYON
communauté urbaine



B:SM Barcelona de Serveis Municipals

IVECO



impacts



mizar



Cities

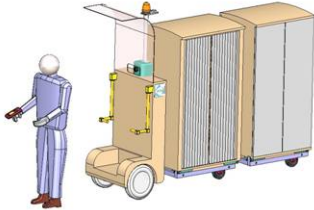







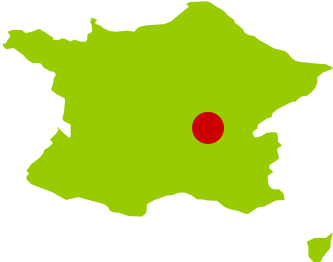

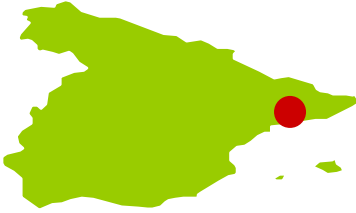

Technologies

Logistics

Academics



VEHICLES AND SITES

<p>Microcarrier (MCUV)</p>  	<p>Urban Van (UDV)</p>  	<p>Urban Truck (UDT)</p>  
<p>Hannover (DE)</p>  	<p>Lyon (FR)</p>  	<p>Barcelona (ES)</p>  

HANNOVER - Objectives

Main issues in the local project:

- Demonstration of modified logistics setup for commercial deliveries to sensitive urban areas
- Consensus building between public authorities and logistics providers about vehicle access, delivery schedules and traffic control
- Minimisation of traffic disturbances and related pollutant and noise emissions from deliveries



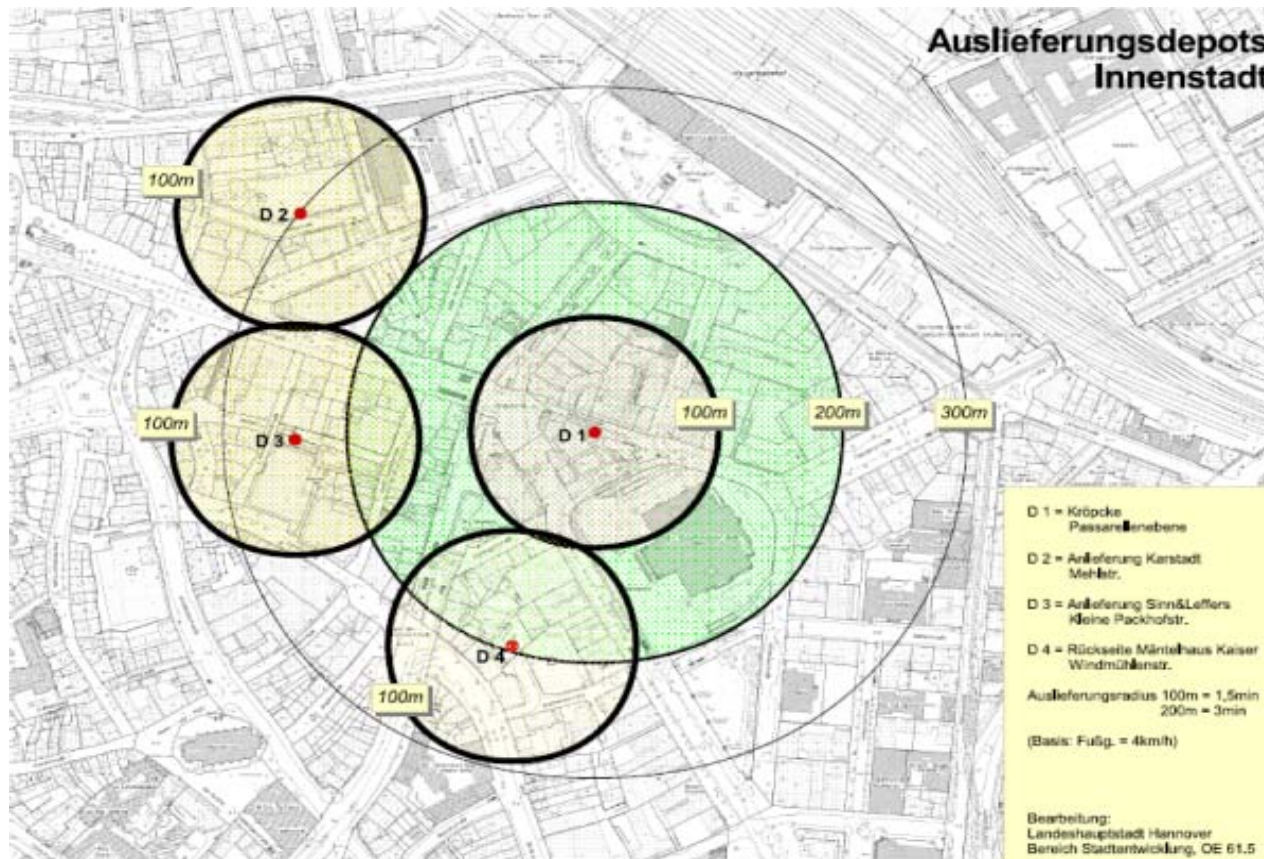
HANNOVER - Scenarios

Three test cases operated from Aug-Dec 2007:

- **Urban Life:** deliveries in calmed mixed area with microcarrier from parked feeder van acting as mobile transfer depot
- **City Hub:** deliveries to pedestrian area with microcarrier from stationary transfer depot and dedicated urban van
- **Second Lane:** avoidance of on-street delivery stops inducing tailbacks in major throughfare



HANNOVER – Placing of transfer depots



HANNOVER – Urban Life



HANNOVER – City Hub



HANNOVER – Second Lane

- Double lane throughfare partially blocked up by stopped delivery vehicles in street due to lack of designated free spaces on kerbside
- Introduction of dedicated service zones with blue ground markings and signposts
- Persistent enforcement problems during trials
- Additional distances to be covered by operator
- Citywide impact of 2nd lane parking in similar streets in Hannover calculated to add 4,350 litres fuel use and 10.8 tons CO₂ per year



HANNOVER – Provisional findings

- Microcarrier can improve access to restricted areas, reduce peak motor traffic, and optimise delivery of small volumes to upper storey offices
- CNG van offers substantial noise reductions over conventional delivery traffic (-7dbA)
- Microcarrier joint last mile service for multiple small operators offers potential for further review
- Microcarrier needs further design development and serious industrialisation effort
- Urban space management absolutely critical to ensure availability of transfer points



MICROCARRIER DESIGN VARIANTS



DHL Iberia – Malaga, 2008



LOADING ZONE ENFORCEMENT



EU project PARFUM (LIFE) – Bremen, 11/2007



LYON - Objectives

Main issues in the local project:

- Test practicability of Low Emission Mode (LEM) on medium truck in controlled urban zones
- Measure impacts of LEM on fuel consumption and CO₂ emissions
- Analyse pedestrian exposure to noise from passing delivery vehicles with/without LEM
- Test influence of second lane parking on traffic and related additional fuel use



LYON - Implementation



FLEETRUNNER - Microsoft Internet Explorer

Fichier Edition Affichage Favoris Outils ?

Adresse http://www.fleetranner.net/FRSite/State/PlayBackEventiAutomezzo.asp

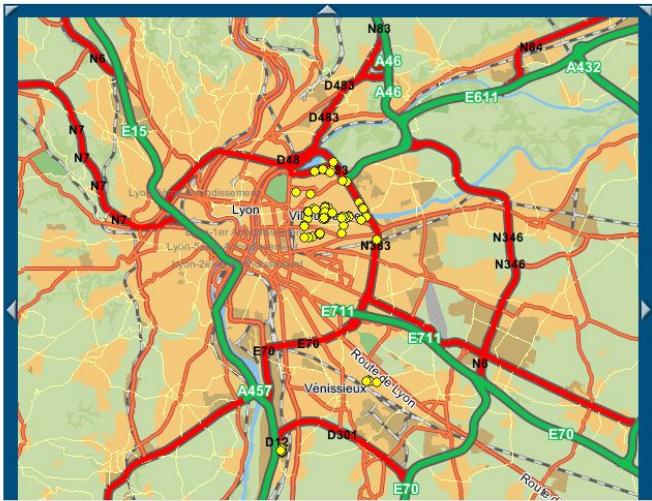
FIDEUS fleet runner telematica per le flotte

Fideus Transport Operator - User Operatore 1

FLEET STATUS REPORTS PLANNING DATA BASE MESSAGES ACCESS CONTROL HELP LOG OUT >

FLEET STATUS > View events

Summary of events Vehicle Fideus truck - From 16 January 2008 00:00 To 17 February 2008 00:00

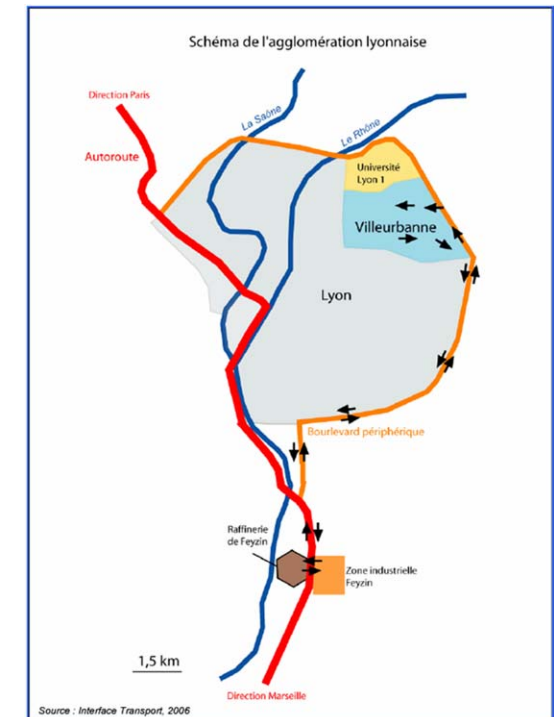


Time	Type	Km	Speed	Info
16/01/2008				
09:53	LN Active	0.0	-	gps
09:53	LN Active	0.0	-	gps
09:55	LN Not Active	0.0	-	gps
10:19	LN Active	0.0	-	gps
10:19	LN Active	0.0	-	gps
10:19	LN Not Active	0.0	-	gps
10:41	LN Active	0.0	-	gps
10:41	LN Active	0.0	-	gps
10:41	LN Not Active	0.0	-	gps
11:19	LN Active	0.0	-	gps
11:19	LN Active	0.0	-	gps
11:20	LN Not Active	0.0	-	gps
11:20	LN Not Active	0.0	-	gps

Filter event type...

List of stops

Time	Stop



LYON – Demonstrations



LYON – Demonstrations



LYON – Provisional Findings

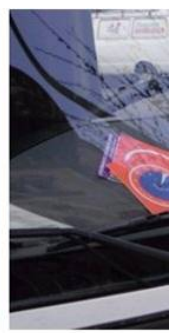
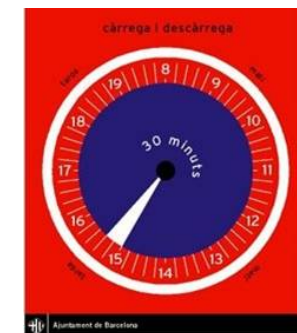
- Very positive cooperation of DHL and Renault Trucks, technology well accepted by driver.
- Significant noise reductions compared to other trucks. Higher noise recorded in last test days due to back door issue, solved in Barcelona.
- No discernable reduction of fuel consumption; important impact of weight, short test duration, and different truck than before (7.5 vs 12 ton).
- Very few cases of 2nd lane traffic disturbances were recorded (10%), with very limited impacts like stops or speed reduction.



BARCELONA - Objectives

Main issues in the local project:

- Testing of Renault medium truck with Low Noise Mode (LNM) in support of municipal Quiet Night Delivery (QND) Programme (exempt permits)
- Consolidation of night delivery operations for supermarkets with innovative truck technology similar to LEM demonstrated in Lyon
- Examination as to how LNM/LEM can work as part of a scheme for serving controlled areas



BARCELONA - Implementation

- Night and day deliveries of caged dry goods from suburban Condis warehouse to urban outlets
- Night deliveries to Carrer Bruc (23:00-00:00) with LNM active on final leg in residential area
- Day deliveries to Sant Andreu with LNM active all the way, passing along 3 different speed limits
- Access authorisation and monitoring through onboard telematics platform
- Noise measurements in service and at depot



BARCELONA – Demonstrations



BARCELONA – Provisional Findings

- Very positive cooperation of Condis and Renault Trucks, also in solving ad hoc problems
- Activated Low Noise Mode reduces truck noise compared to other trucks of the same category
- Lower speed reduces vehicle noise with other positive side-effects (emissions, safety, traffic)
- Overall noise level determined by combination of vehicle + equipment + driver behaviour
- High efficiency in logistics and less traffic in the night leads to excellent results for energy intensity and CO₂ emissions per delivery



PUBLIC PERCEPTION

Excellent feedback in all 3 sites:

- from Residents
- from Retailers
- from Press
- from Politicians



VOLLGAS IN DER PASSERELLE: Karsten Wehrs steuert den „Micro-Carrier“. Foto: Wildt

Condis probará en Barcelona un nuevo camión para distribución urbana

La cadena de supermercados catalana contará dentro de dos semanas con camiones menos contaminantes y más silenciosos

El **Vigia** Barcelona de la cadena de supermercados Condis será pionero en España en contar los nuevos vehículos de distribución urbana de Renault que reducen su emisión de gases y ruido.

A falta de una última reunión con el Ayuntamiento de Barcelona, los responsables de logística de Condís ha anunciado que de aquí a dos semanas van a empezar las pruebas con estos nuevos vehículos que se caracterizan por la reducción a la mitad los niveles de ruido en circulación urbana. Pero la reducción de la contaminación acústica es sólo una de sus



El **vehículo ha sido** testado primero en la ciudad francesa de Lyon

tecnología más avanzada del mercado. Estos camiones cuentan además con un nuevo sistema frenado electrónico que crean al vehículo a través de varios sensores que están dispuestos por diferentes partes del camión.

programa Fideus (siglas francesas de Innovación en la Distribución de Mercancías de Bienes en los Espacios Urbanos Europeos).



Pakete kommen per Roller

HANNOVER. Zuletzt gab es sogar Knöllchen für die Paket-Lieferanten von DHL in der Bahnhofstraße. Denn die dürfen nur bis 6 Uhr mit ihren großen gelben Wagen in der Fußgängerzone halten. Damit die Geschäfte aber auch nach dieser Zeit noch beliefert werden können, testet die DHL in Hannover im Rahmen des ELI-Projekts „Fideus“ eine neue Variante.

Dann nun sind die Lieferanten in der Bahnhofstraße nämlich auf einem elektrischen „Micro-Carrier“ unterwegs. Der bis zu sechs Stundenkilometer schnelle „Scooter“ zieht zwei Anhänger mit sich und wird sonst auf Flughäfen genutzt. Auf Grund seiner Größe darf er jederzeit durch die Fußgängerzone rollen, denn anders als die gängigen Wagen behindert und gefährdet er die Passanten nicht. „Für uns Zusteller ist das wirklich eine Erleichterung“, sagt Lieferant Karsten Wehrs. „Zur Passerelle mussten wir sonst mit einer Karre die Treppe runter.“ Jetzt steht ein 3,5-Tonner in den Kröpfen-Tiefgarage, von dem aus „Fideus“ beladen wird. Bis zum 13. Oktober läuft der Feldversuch noch in Passerelle, Kammerschatzstraße und Bahnhofstraße. **mww**

Urban Logistics – local solutions for global business.



Thank you for your kind attention !