FIDEUS

Preliminary Results of
Hannover Field Tests

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Main issues addressed in Hannover

- Consensus development of concerned public authorities and service providers concerning vehicle access, delivery schedules and respective traffic control implementation and enforcement;
- Minimisation of delivery caused traffic disturbances and related emissions

3 test cases in Hannover :

City Hub

Urban Life

Second Lane

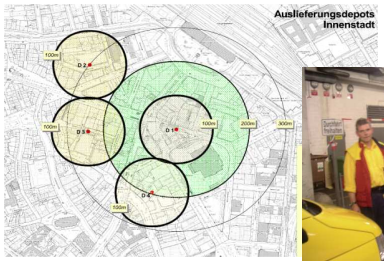
1. City hub: situation before project

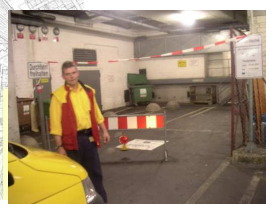
Hannover Pilots

1. City hub: approach

- Time-extension for distribution (reduces number of vehicles) by placing a feeder-vehicle close to the pedestrian area, which feeds walker, biker, microcarrier.
- Legal aspects: extension of access times for pedestrian zone, permission microcarrier, reservation of feeder-space and enforcement

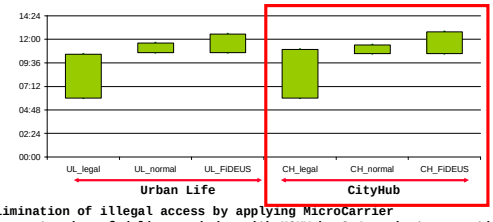
1. City hub: placing of depot(s)





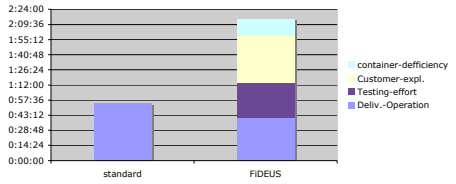
1. City hub: implementation

1. City hub: results (access violations)



- Elimination of illegal access by applying MicroCarrier
- Time extension of delivery window with MCUV by 2.4 against conventional van

1. City hub: results (delivery window)



- **Actual delivery operation reduced by approx. 20%**
- **Only delivery process considered - no hub-operation included (sortin**

2. Urban life: situation before project

2. Urban life: approach

- Limmerstr: mix of shopping, small business, recreation, public living space
- Tram only, bike-lane available, delivery trucks have to park on pedestrian area (very annoying to the public, illegal and risky)
- Solution: mid-size truck is parked at reserved place, uC travels on bike-lane along entire Limmerstr.
- Problems:
  - uC must come with truck: no place to leave!
  - Handling cost: uC-Containers preloaded at distribution centre
  - Kinematic required to put uC-Container on road
  - Safety issue with very close pedestrians

2. Urban life: implementation

2. Urban life: traffic reduction analysis

0) standard-case: basis, any DHL 3.5t truck to serve Limmer & Surndg
1) Any DHL 3.5t to serve surroundings ONLY, T5/MCUV to serve Limmerstr.
2) Any DHL 3.5t to Hub (near Limmerstr.) to serve complete area with MCUV
3) Any DHL 12t truck to Hub (near Limmerstr.) to serve entire area with MCUV

2. Urban life: results (truck traffic)

- **Savings in distance (km) only if MCUV serves entire surrounding**
- **Increase of capacity of feeder (3) and MCUV employment delivers best**

3. Second lane: situation before project

3. Second lane: approach

- Characteristics: main road (Magistrale), 2 lanes each direction, traffic impact from parked vehicles (congestion, safety, legal)
- Parking lane in some segments available
- Solution: loading zones reserved for delivery vehicles (time window only), with blue marks on ground and signposts for enforcement
- Problems:
  - Only few places available
  - Longer ways from vehicle to delivery, compared to 2nd-lane-parking
  - Loading zones may require mechanised support to cover longer distances

3. Second lane: results (impact of 2nd lane parking)

- Extrapolation of Vahrenwalder Str. pilot site to Hannover City
- 4,357 liters of additional fuel use per year
- 10.8 tons of CO_2 (50/50 gasoline/diesel, 200 days)
- equals << 1,000 Euro costs if neutralised through emission trading
- but also equals 90,000 km travel distance (assuming 120 g CO_2/veh-km)

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A final plus: excellent public perception

- by residents
- by retailers
- by press
- by politicians

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Today's reality: DHL deliveries in Malaga (ES)

Thank you for your kind attention !

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