

Training session for Emilia-Romagna Municipalities
Bologna, 27th October 2010

**Designing and setting up
loading and unloading areas**

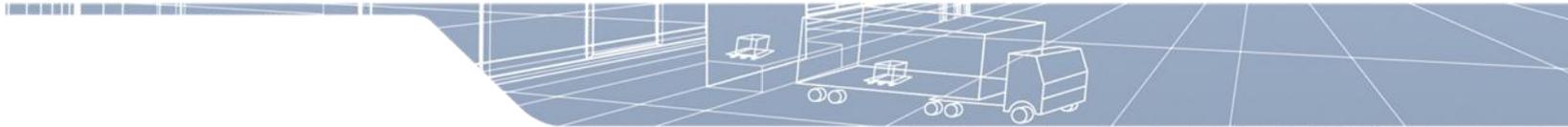


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Agenda

- Deliveries in urban areas
 - What are we talking about ?
- Designing a delivery space
 - How should a delivery space look like ?
- Quantifying the needs
 - How many delivery spaces should I create ?

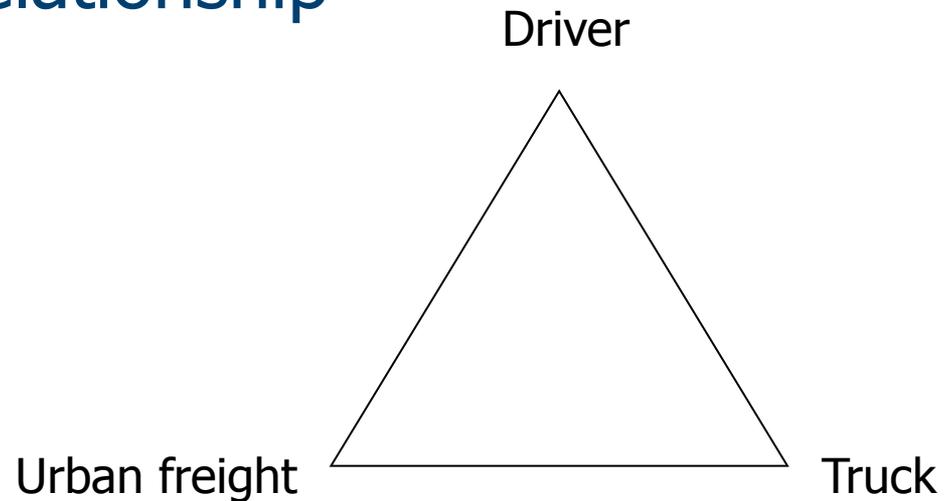


Deliveries in urban areas

What are we talking about ?

Deliveries in urban areas

- A triangle relationship



- Each item has its own constraints
- The urban context as a common one

The driver

- A 10h-per-day job, including :
 - Logistic operations on platforms
 - Driving
 - An amount of up to 150 deliveries, with individual demands on time or handling of freight
- Narrow streets, bus or bicycle lanes, users in a hurry ... make driving and delivering a real challenge
- **Time, a major key in the planning of a day**

The driver

- Driving, parking, handling must be as fast as possible !
- A good delivery space will be :
 - Easy to use
 - Quick to use
 - Well located (near delivery point, but also on the driver's route)
 - ... and free

Urban freight

- Various sizes and weights
- Several types of packaging, associated with several handling equipments
- The more heavy and bulky the freight is, the more ergonomic the place to park and the path to the delivery point should be

Urban freight

- Pallets



Handling equipment :
pallet-truck

Urban freight

- Rolls



Use of the lift gate

Urban freight

- Drums



Use of the lift gate

Urban freight

- Parcels



Handling equipment :
cart

Urban freight

- Parcels



Handling equipment :
2-wheeled trolley

Urban freight

- Parcels



Handling equipment :
nothing but hands !

Urban freight

- When handling freight, the behaviour and specific needs of a driver are close to those of disabled persons
- Conception of delivery spaces, but also pavements, sidewalks etc... should take that point into account

The vehicle

- Various types and sizes, depending on the types and sizes of freight
- Some specific logistic with adapted means



The vehicle

- Light trucks



The vehicle

- Middle-size trucks

12 t truck



7.5 t truck



The vehicle

- Heavy trucks

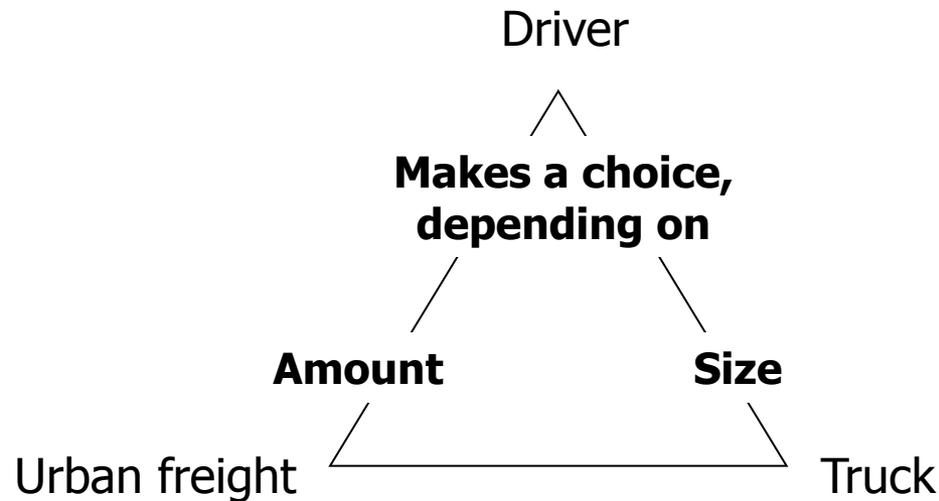


The vehicle

- The usual size of a urban freight vehicle is around 12 m long
- Sizing of delivery spaces should be based on that length

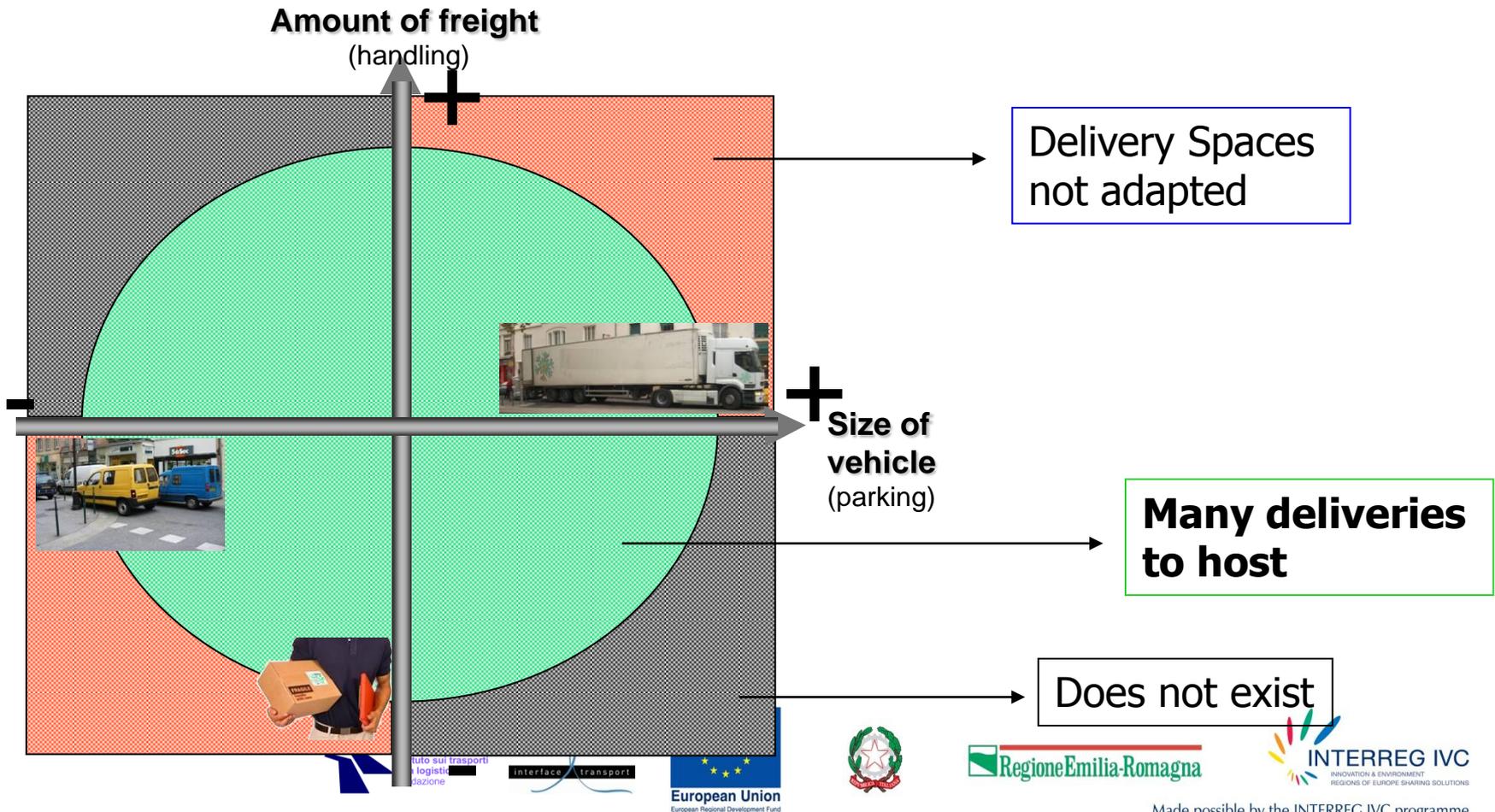
Delivery spaces

- The triangle defines a way of stopping to deliver goods



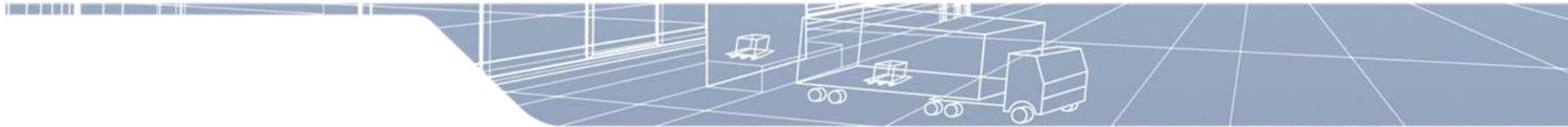
Delivery spaces

- Delivery spaces are not a universal tool !



Regulation

- The efficiency and the correct use of delivery spaces depends highly on local regulations
 - Can they be dedicated to fleet operators ?
 - Is double lane forbidden ?
 - How strong is enforcement ?
 - ...
- Rules must be adapted to local context
- Local regulations may change !



Designing a delivery space

How should a delivery space look like ?

A crucial question



- An inadequate design will make the delivery space useless
- (so will an inappropriate enforcement !)

Length

- The delivery space should be long enough to host a middle-size truck, its lift gate, a pallet truck ... and the driver handling freight !
- **Advocated length : 15 meters**

Width

- Most urban trucks are wider than private cars
- Delivery spaces should thus be wider than parking spaces
- **Advocated width : 2,50 m**



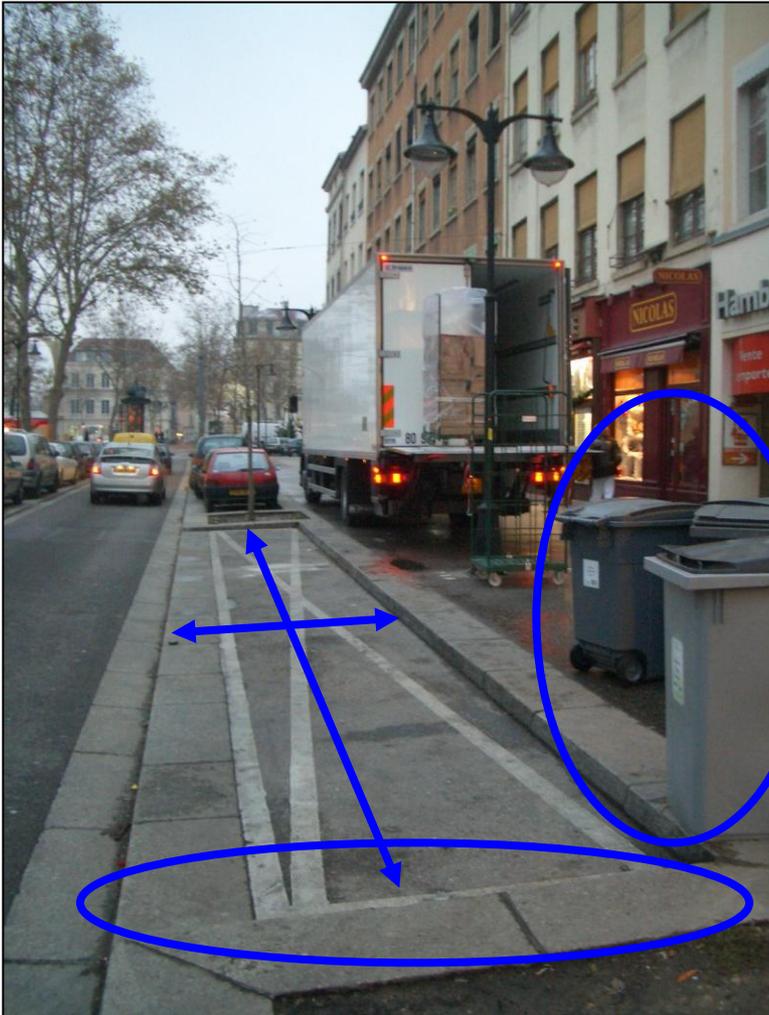
Kerbs

- The easy use of handling equipments will make the delivery space more functional
- **Advocated configuration : close to a lowered kerb**
- It can be found next to pedestrian crossings, private accesses ...

Sidewalks

- The driver has to stride sidewalks with bulky handling equipment
- **Advocated configuration : allowing an 1,40-m-wide path to all activities to be served**

A crucial question !



- Not wide enough
- Not long enough
- No possible climbing of the kerb
- Obstacles on the sidewalk

Aspect

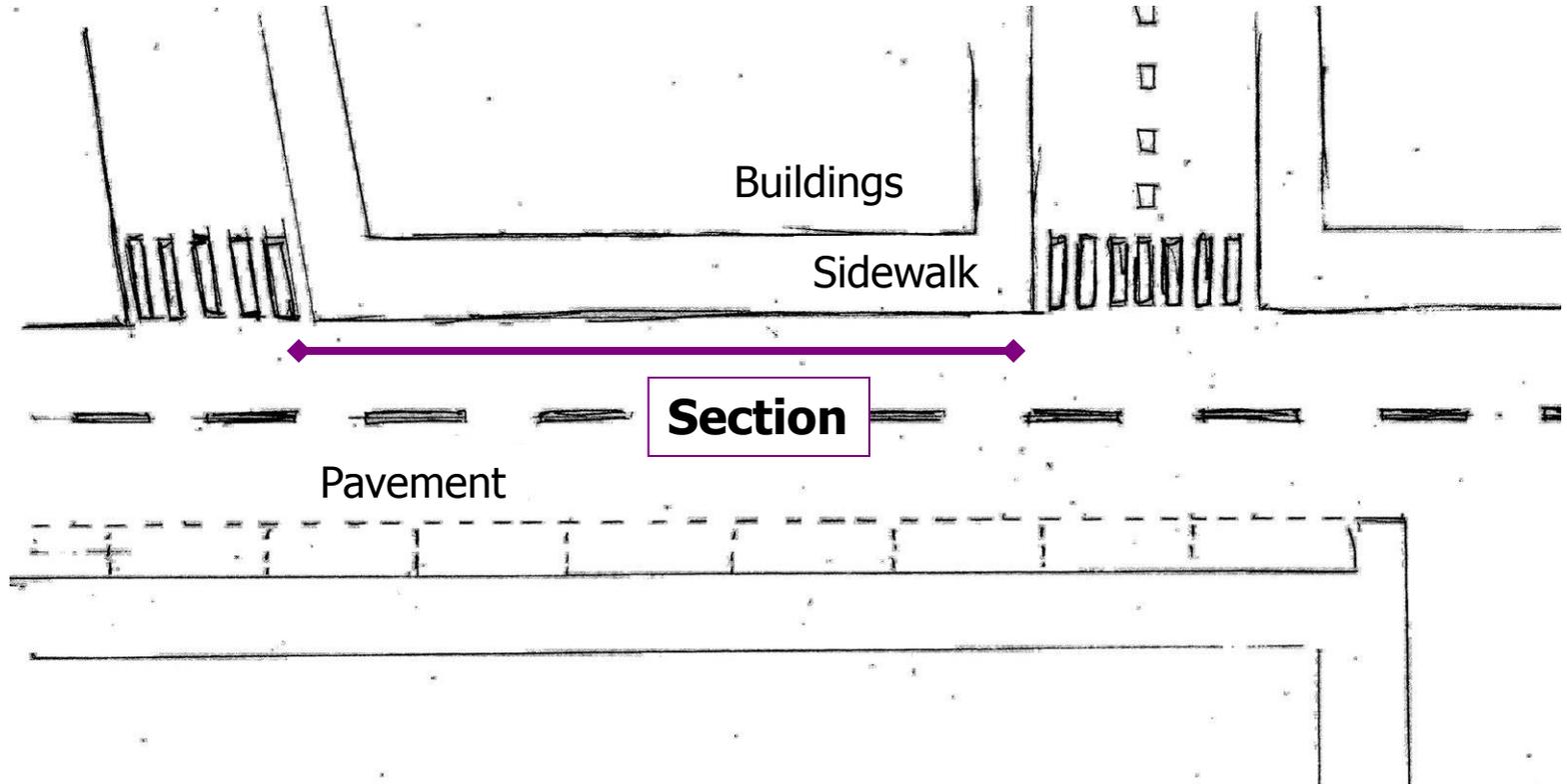
- Depends mainly on national / local regulations !
- French delivery spaces are meant to be yellow, with « LIVRAISON » written along them, and possibly a vertical sign



Quantifying the needs

How many delivery spaces should I create ?

A matter of area



- A calculation should be made for each section

A matter of activity

- The number of delivery spaces needed depends highly on the nature of activities to be delivered
- Unless a very precise and on-date file exists, the best way to determine how many spaces are needed in a place is ... to go there



A matter of activities

- Every shop, store, urban industry receives a number of deliveries which is directly linked to its nature
- Once the different activities are identified, a simple calculation allows to quantify a number of delivery spaces
- A method based on **14 categories** covering all types of activities

A matter of activity

	Type of activities	Remarks
1	Cafés, hotels, restaurants	
2	Bakeries, pâtisseries	
3	Butcher's shops, delicatessen	
4	General grocery store	category 10 if SA > 400 m ²
5	Clothes retail shops	category 10 if SA > 400 m ²
6	Bookshops, stationer's shop	category 10 if SA > 400 m ²
7	Pharmacies	should not be included in the calculation
8	Other retail businesses	category 10 if SA > 400 m ²
9	Furniture stores	not related to their size
10	Large stores (superficy > 400 m ²)	special case
11	Wholesalers	
12	Bank branches	should not be included in the calculation
13	Tertiary sector, mobile tradesmen and craftsmen	
14	Small-scale manufacturers and small businesses	

Specific cases

- Every time it is unclear what the shop is, the investigator should ask, or figure out which category best fits
- Some exceptions to be noted
 - Delivery spaces will never meet the needs of pharmacies (very short and numerous)
 - Banks should be considered as service sectors – cash deliveries not included
 - Any shop with a private space dedicated to deliveries will not be taken into account

Specific cases – big stores

- As soon as the sales floor exceeds 400 m², it is considered a big store
- The biggest stores must be ranked cat. 10, whatever their nature
- For such stores, public authorities should discuss the possibility of creating a private space, instead of affording a delivery space dedicated to them

The number of delivery spaces

- A theoretical approach, based on the activities surveyed
- A calculation based on a number of deliveries per week for each type

The number of delivery spaces

Type of activity	Coeff.
1 Cafés, hotels, restaurants	6,25
2 Bakeries, pâtisseries	8,07
3 Butcher's shops, delicatessen	10,50
4 General grocery store	9,53
5 Clothes retail shops	3,23
6 Bookshops, stationer's shop	13,80
8 Other retail businesses	7,53
9 Furniture stores	7,50
10 Large stores (SA > 400 m ²)	83,94
11 Wholesalers	21,67
13 Tertiary sector, mobile tradesmen and craftsmen	2,43
14 Small-scale manufacturers and small businesses	7,81

4, 5, 6, 8 Must be converted in cat. 10 if sales floor over 400 m²
 10 Any store with a sales floor over 400 m²

The calculation rule

1. All deliveries for a given section should be mounted up
2. The overall should be divided by 90
3. The result is the theoretical number of delivery spaces

Rounding off the results

- The theoretical number is a real number (\neq integer)
- The final number of delivery spaces will depend on :
 - Surrounding urban constraints
 - How easy it is to create a space
 - What is feasible on next and previous sections

Locating the spaces

- Two main parameters should help determining the precise location of the delivery spaces :
 - Make the driving and handling of freight as easy as possible
 - The more deliveries a shop receives, the closer the space should be

Locating the spaces

- The driving and handling are easier when :
 - At the beginning of a section (no driving back)
 - Close to any spot where a pallet truck can access the sidewalk (lowered kerbs ...)

- A balance to find between :
 - Where most deliveries occur
 - Where the use of the space is the easiest
 - What is technically feasible !

Thank you



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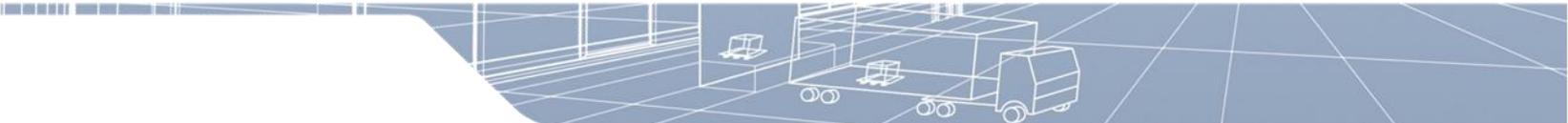
PRACTICE



istituto sui trasporti
e la logistica
fondazione

Are these del. sp. correctly designed ?

- Length
- Width
- Kerbs
- Sidewalks























11



12



13



Activity grid

	Type of activity	Coeff.
1	Cafés, hotels, restaurants	6,25
2	Bakeries, pastry shops	8,07
3	Butcher shops	10,50
4	Groceries	9,53
5	Retail stores (clothing)	3,23
6	Book stores, paper houses	13,80
8	Retail stores (others)	7,53
9	Furniture stores	7,50
10	Chain stores (superficy > 400 m ²)	83,94
11	Wholesale dealers	21,67
13	Service sectors, administrations	2,43
14	Craft industry	7,81

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