

# Urban Freight Distribution in Barcelona

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### **Summary**

### 1. General Data

### 2. Deliveries Survey

### 3. New Policies









# General Data







## Barcelona is a very dynamic city, involved in a gradual increase in tertiary industry, leading to a growth of tourism.

<ul> <li>Population</li> </ul>		1.628.090 hab.
<ul> <li>Surface (km<sup>2</sup>)</li> </ul>		101 km <sup>2</sup>
Employees		721.000
<ul> <li>Professional and industrial</li> </ul>	activities	186.000
<ul> <li>Primary Sector</li> </ul>	0 %	
<ul> <li>Secondary Sector</li> </ul>	18 %	
<ul> <li>Tertiary Sector</li> </ul>	82 %	

VIA PÚBLICA					
	2004	2005	2006	2007	2008
Km. de carrers	1.306,06	1.317,00	1.319,61	1.281,86	1.328,59
Superficie total de BCN (Km <sup>2</sup> )	101,00	101,00	101,00	101,00	101,00
Superficie destinada al vehicle (Km <sup>2</sup> )	11,00	11,00	11,01	9,52	9,52
Superficie destinada al vianant (Km <sup>2</sup> )*	12,18	12,01	12,27	14,51	14,51

\*Sidewalks (+8.5 km2), parks&gardens (+5,5km2) and pedestrian streets (+0.69km2) are included on "Superfície destinada al vianant).





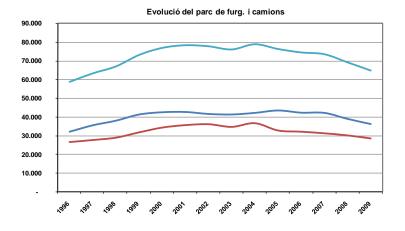


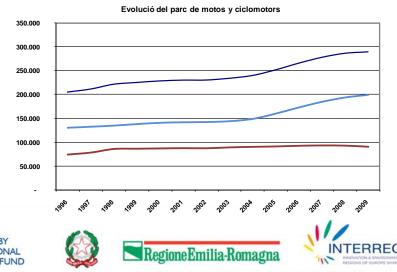




# There are 65.000 vans and commercial vehicles in Barcelona, figuring the 3.7% of the total.

- Including commercial vehicles and trucks, reaches the 6.6% of the total.
- In the last years, the number of commercial vehicles and trucks has decreased 13%; while number of cars was more or less stable.







### Commercial vehicles represent the 16% of the total of day trips in the city.



- The number of commercial vehicles in circulation in Barcelona is bigger than the registered for the importance of the regional trading distribution.
- There is a differential of number of commercial vehicles and trucks in major roads connecting the metropolitan region and urban roads in Barcelona.





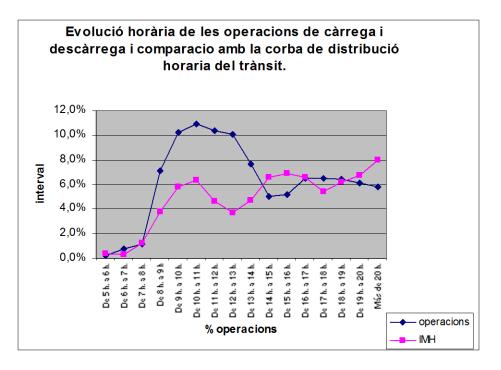






### Barcelona has 13.600 places for loading&unloading. The use features are:

- From 9 to 13 hours, the major part of operations take place.
- 96% take less than 30 minuts and 90% less than 15 minuts.





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# Deliveries Survey



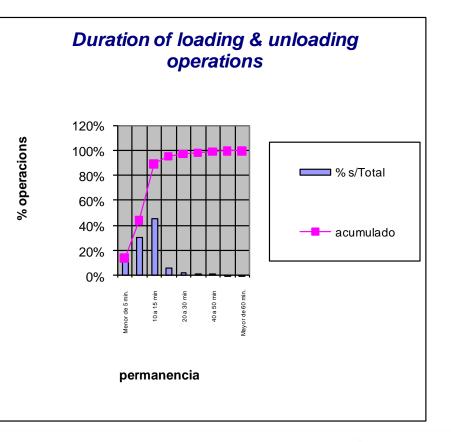
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#### Time spent in operations

 96% of operations have a duration less than 30 minutes and 90% less than 15 minutes.





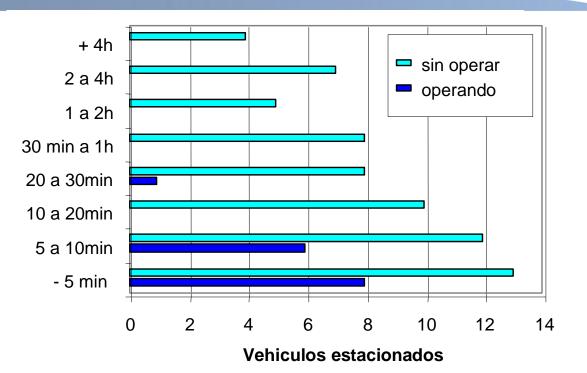
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# Kerbside delivery - automated enforcement is the commonly perceived need



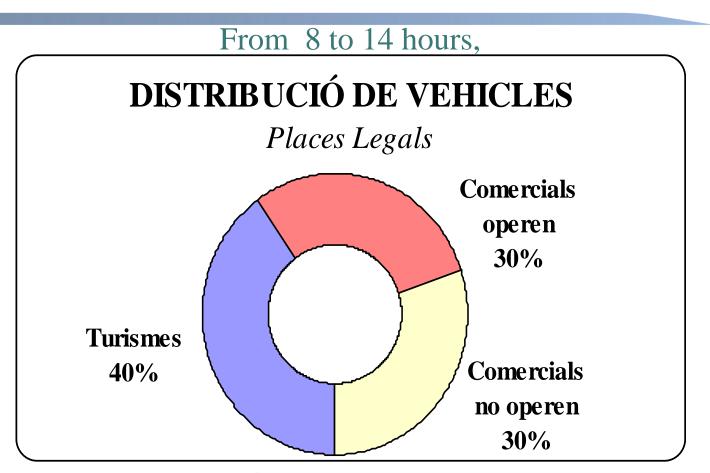
- The roadside surveys conducted by the Municipality indicate that un/loading actions are almost always realised within 30 minutes ....
- ..but that, often, the vehicle parked in the reserved space does not make a delivery.







### CORNER USE IN THE CITY CENTRE



Working Group: LA DISTRIBUCIÓ DE L'ESPAI AL CARRER

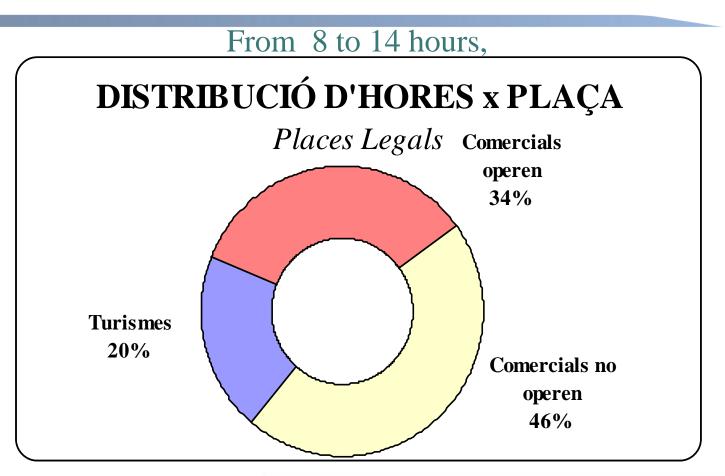








### CORNER USE IN THE CITY CENTRE



Working Group: LA DISTRIBUCIÓ DE L'ESPAI AL CARRER







### NEW POLICIES

- Surveillance with sticker
- Multiuse lane
- Microplataforms
- Combination with Z.A.C. zones
- Operators information









### Surveillance with Sticker

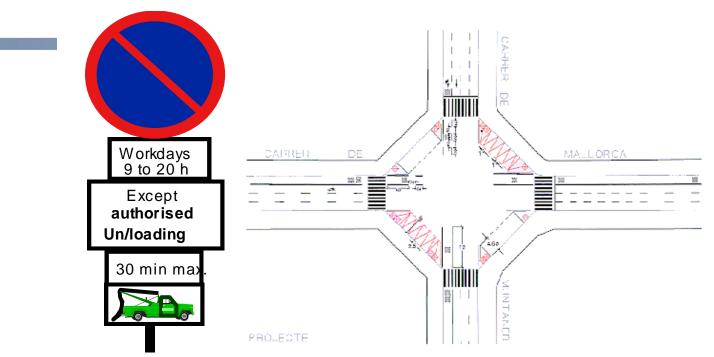


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### Traffic regulations at Junctions, Eixample



- Zones reserved for loading/unloading only from 08.00 until 14.00 (or 20.00),
- Maximum stay period is 30 minutes.
- 700 reserved zones have been signed in this manner throughout the Eixample District

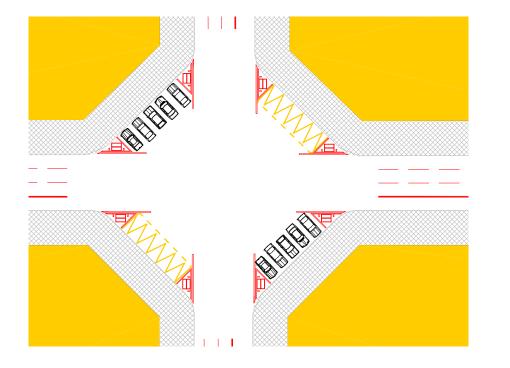
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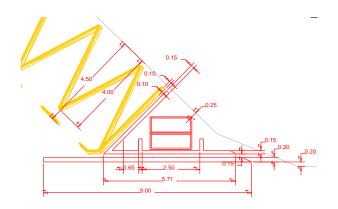
• Over 2,500 vehicles towed-away in two years.





## The system will be complemented by an increase of vigilance, signposting and regulation of load&unload areas.





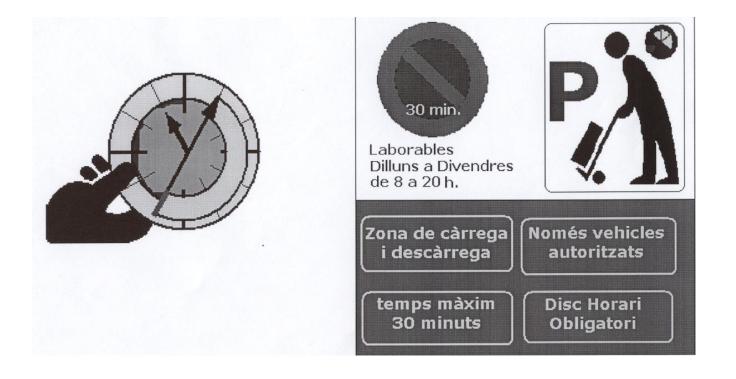


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# Electronic devices will help operators and located visible in the vehicles will allow the stays control.











#### THE NEW SIGN

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Zona de càrrega i descàrrega
Laborables de dilluns a divendres de 8 a 20 h.
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### THE STICKER CLOCK











### Multiuse Lane







### VMS EXTENSION FOR L&U OPERATIONS

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INTERREG IVC



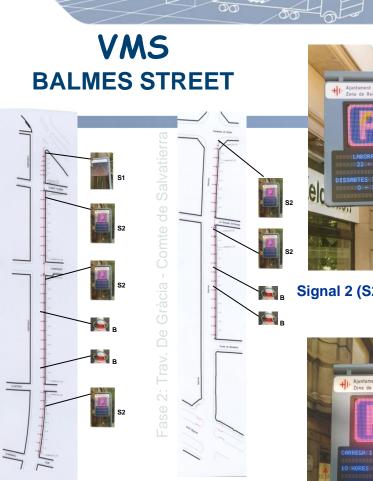


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Signal 1 (S1)



Signal 2 (S2) message 1





**Detalle baliza (B)** 



Signal 2 (S2) message 2



Signal 2 (S2) message 3







Location



General overview



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RegioneEmilia-Romagna



#### Combined-use Lanes: Balmes street







• VMS messages clarify use (residents, clear-way, deliveries) according to time of day.

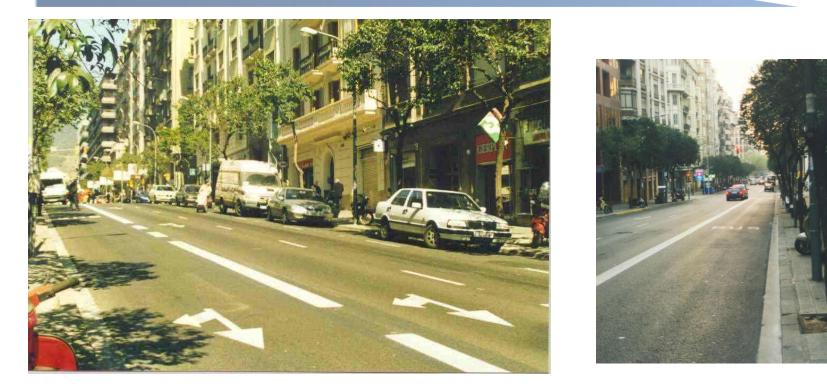








#### Combined-use Lanes: Muntaner street



• VMS messages clarify use (residents, clear-way, deliveries) according to time of day.







### Microplataforms



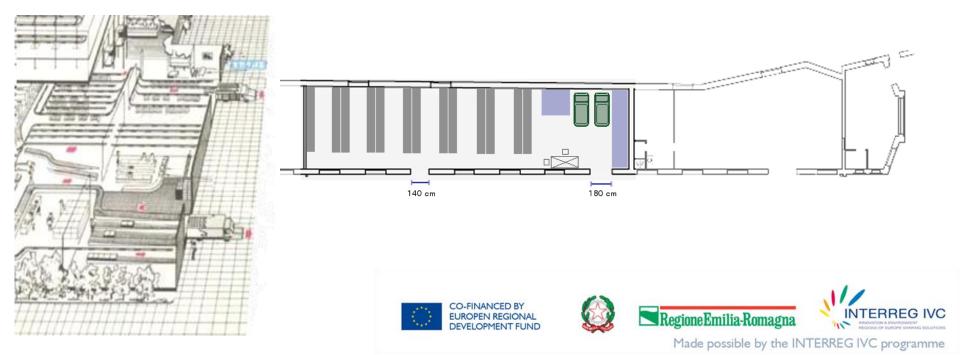




### **Delivery MicroPlatform**

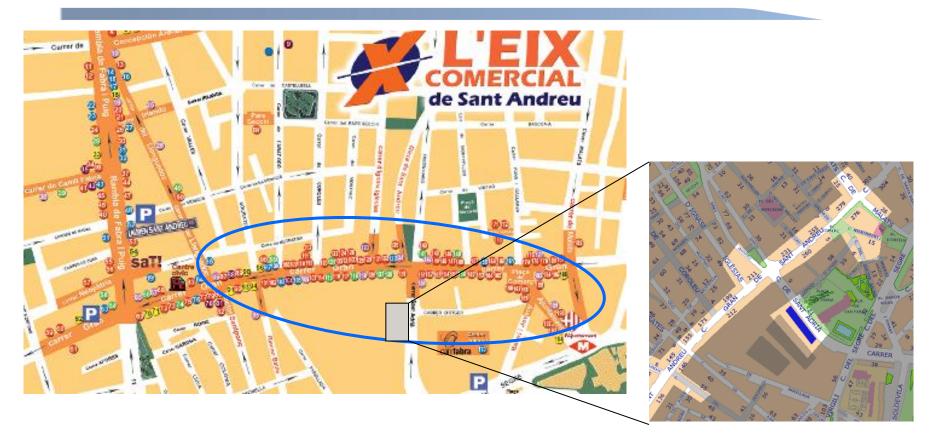
• The objective is to dwindle delivery vehicles traffic through using an urban deliverly platform which would deliver goods in a smarter way.

• The MicroPlatform was under trial at the "Eix Comercial Sant Andreu" (Commercial Axis), which embraces 190 commercial premises.





### Sant Andreu microplatform (I)



 This pilot covered a 200m2 warehouse adapted to store and forward freight for commercial outlets along the High St.









### Sant Andreu microplatform (II)

Deliveries were made using electric minivans supplied by private sector participants:

- Aixam-Mega (model 05) from Trèvol
- Aixam-Mega (model 06) from Autosconchita
- Bellier from ADTS
- ... as well as bicycles (Trèvol)











### Sant Andreu microplatform (III)

After considerable preparation, trials worked during 2 months:

- 15 commercial outlets
- Eix traders association, with Trèvol, operates microplatform
- Municipality (Mobility & Commerce depts, + District),
- Technical support: Altran/DSD









### Combination with Z.A.C.









### Zone Access Control in the Historic Centre

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- Designed to provide pedestrian priority & to make streets liveable
- 50 gates installed (city-wide), 5 zones centrally controlled, 8,000 resident cards issued
- ...delivery vehicles only allowed to enter during defined time "windows"







### ZAC system now incorporates digital video enforcement





infringements control (Restrintion access, L&U)



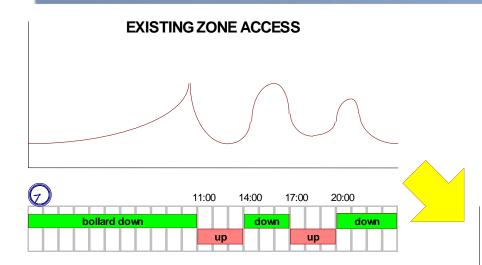
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### Plans to extend Zone Access Control will offer more flexible time-slots to clean goods vehicles





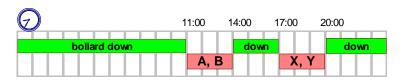


**Operators A, B** 

**Operators X,Y** 

#### TIME-SEGMENTED DELIVERY ACCESS







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### **Operators Information**

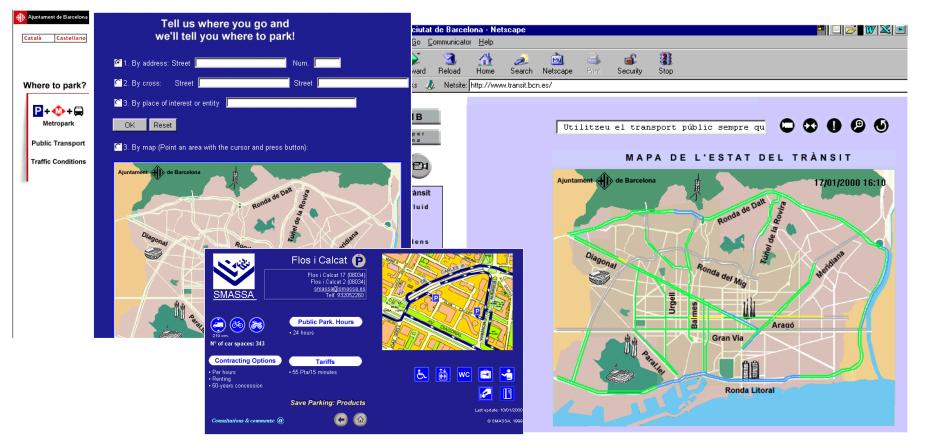








### Internet road network information services



- Finding the closest car park to one's trip destination
- Current congestion levels for primary road network links, with forecasts for next 15 mins.









### Mobility Web Page

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### New application template

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### **Data Introduction**

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### Application output

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Closer adresses, with information about distances and ocupancy



Made possible by the INTERREG IVC programme

RegioneEmilia-Romagna





### **Final Result**

Descàrre Taula de	e Coi	nsulte	es			20	usuari: sa consultant
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#### Screen aspect after several consultances





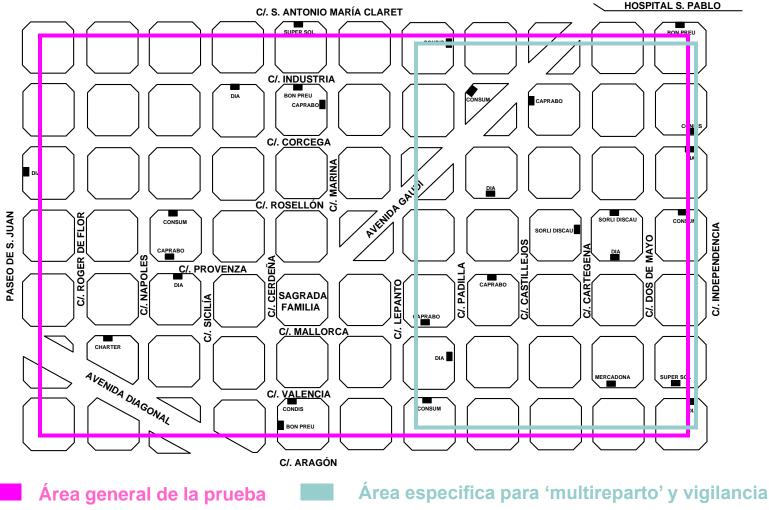




### Pilot area

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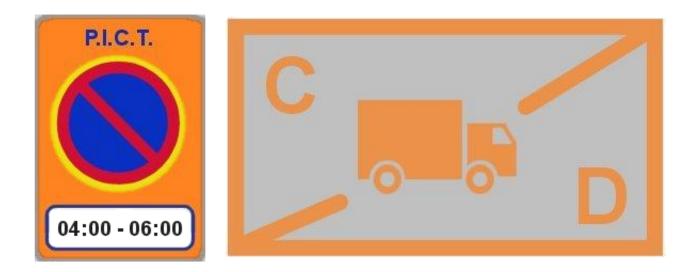
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### Temporal individual L&D (PICT)



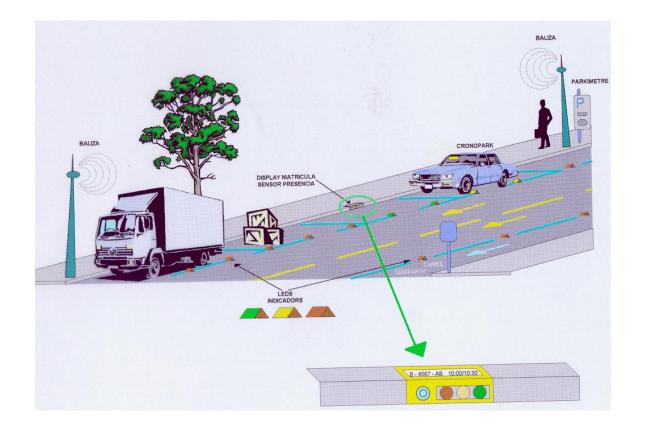
- 100% of disponibility of parking space in the time window indicated
- The vigilance is made by the owner with the support of the municipal tow away service
- Posibility of different time windows







### The widening of controlled specific L&U places is under consideration for future





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