



Ajuntament  
de Barcelona

# Microdistribution

## The NOVELOG Pilot of micro-platforms and cargo-bikes in Barcelona

Xavier Cruzet & Simon Hayes  
Barcelona Mobility Services

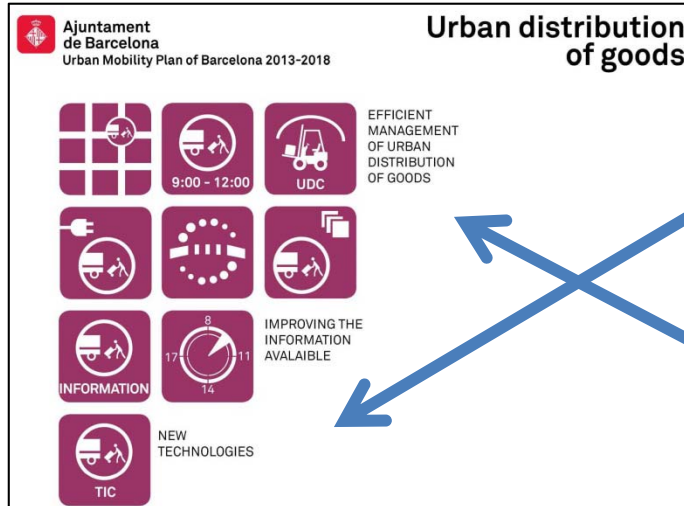
Citylab workshop, Rome  
October 20th 2017

**B**

**C**

**N**

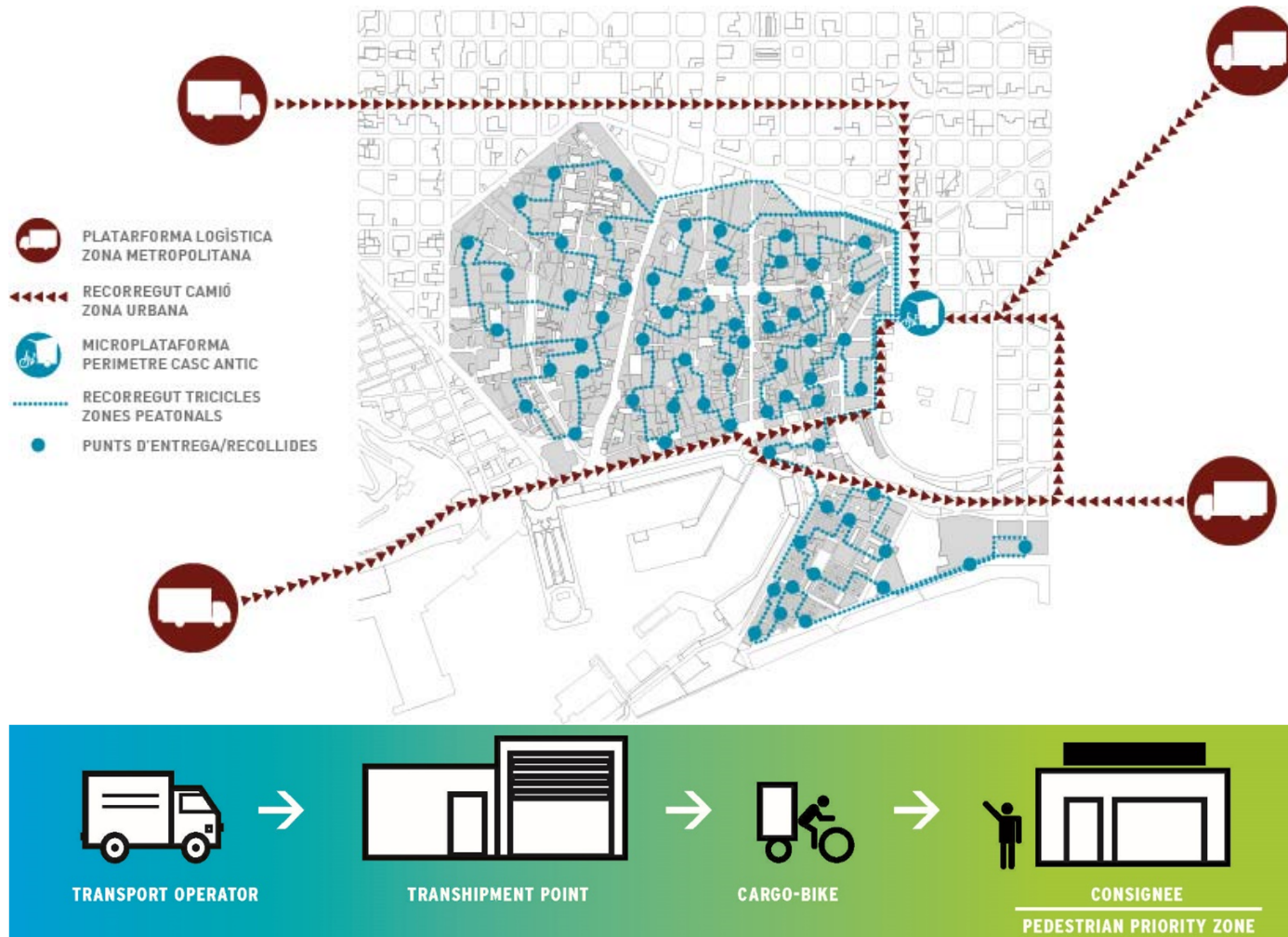
# PMU (SUMP): 2013-2018



**Case Study.** MANAGEMENT OF ON-STREET DELIVERY SPACES

**Pilot.** MICRO-PLATFORMS

# Micro-distribution: an off-street innovation ...



# ... developed from previous pilot actions (SMILE project)

## SMILE Subsidised service:

- Dec. 2013 - June 2014 (6 months)
- **Dynamic & flexible** transshipment point, to accommodate future demand
- **Boost private** participation, with minimum support from public authorities
- Oriented to **parcel services**, served in the same day (not a depot);
- Shippers could leave <20 packets per day at zero cost.



Ajuntament  
de Barcelona



saba<sup>o</sup>  
aparcaments



# Drawing a new model for city logistics. Micro-platform studies (2015)

## HOW SHOULD THE MODEL INFRASTRUCTURE BE?

**MICRO-PLATFORM** POSSIBLE SITES:  
CAR PARKS  
MUNICIPAL MARKETS  
TRANSPORT STATIONS  
WASTE POINTS  
DEDICATED SPACES

**VISIBLE PART / STREET LEVEL**  
**TRANS-SHIPMENT AREA**  
**(60-80m<sup>2</sup>)**  
HEIGHT MORE THAN 3,5 m.

**ADMINISTRATION AREA**  
**(30m<sup>2</sup>)**  
ADMINISTRATION + DEPOT + SERVICES



**CLOSED AREA / NOT NECESSARILY ON THE STREET LEVEL**  
**PARKING FOR THE CARGO BIKES**  
**(80 -100m<sup>2</sup>)**

PARKING AREA  
ELECTRIC RECHARGE POINT  
CARGO BIKES MAINTENANCE

# NOVELOG: Piloting space concession

- Municipality grants concession of public space (zero cost to Last Mile Operators).
- LMO must be a neutral operator, i.e. they must be open to working with all carriers.
- It's not necessary to offer a Shared Box service, BUT...
- ... LMOs must provide data (to improve our knowledge)

## ▶ *Shared cargo-bike.*

- Limited number of packages per operator/ day,
  - Parcels of different shippers share same box
- service subsidised by publicity (during pilot by city council)



## ▶ *Exclusive cargo-bike.*

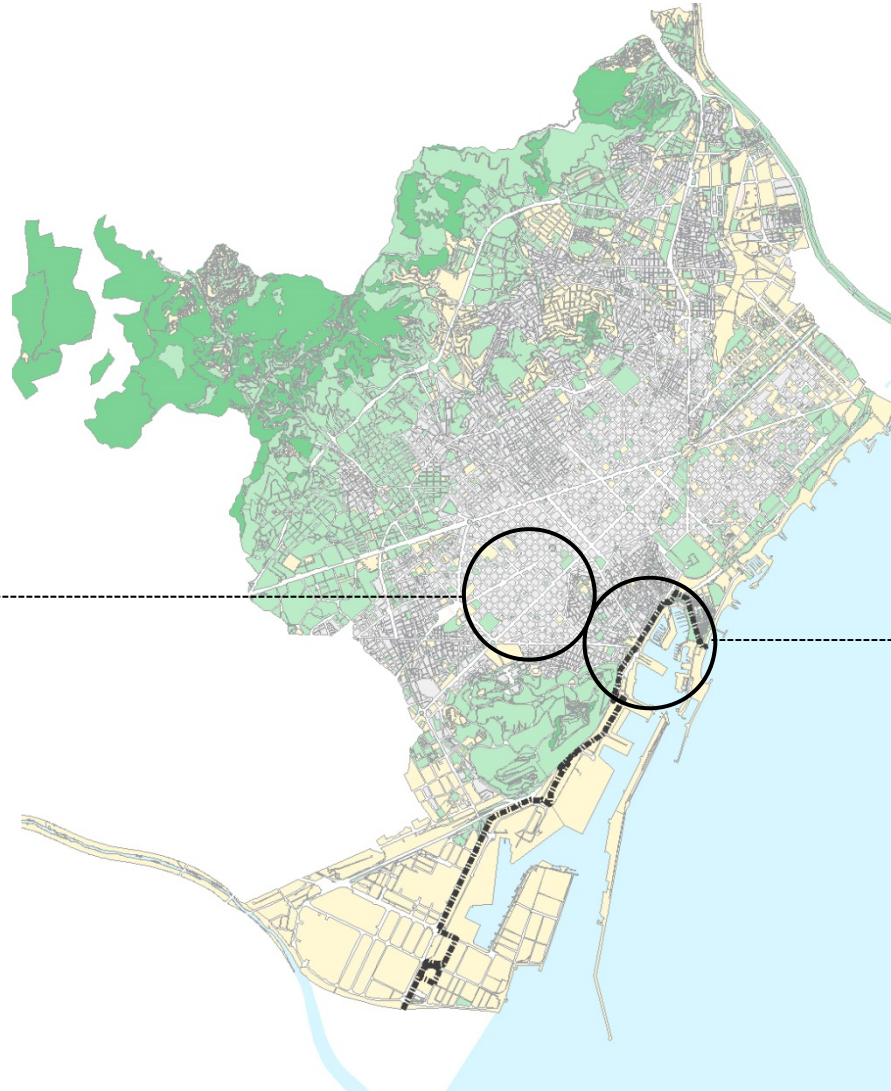
- A company subcontracts a whole tricycle
- performs only its deliveries in the area
- e-tricycles / rider are branded with original company logo
- Private contract between LMO & shipper company



# NOVELOG: two micro-platforms established during 2016

**PILOT  
EL NINOT MARKET**

**PILOT  
ESTACIÓ FRANÇA**



# El Ninot Market micro-platform



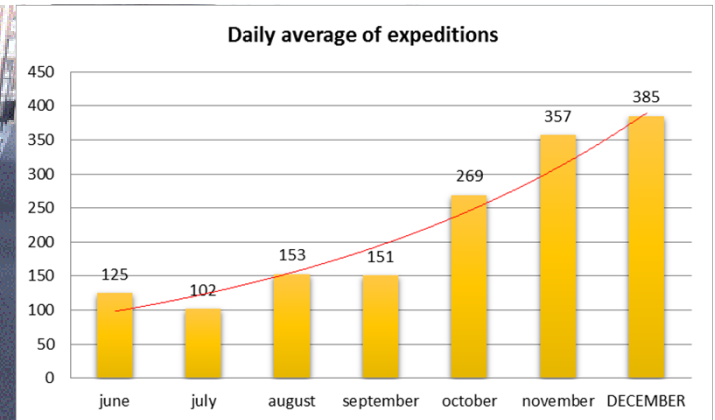


# “EI Ninot Market” Micro-platform: ECOPOL

- When eMakers pulled out, ECOPOL offered to operate the service.
- They began in June 2016 with:
  - 1 person delivering goods on foot
  - 2 bicycles
  - 1 tricycle

ECOPOL forms part of a group managing an out-of-town consolidation centre.

The number of parcels delivered increased 3-fold over the 2nd half of 2016



# Estació França micro-platform



# Estació de Franca micro-platform: vanAPEDAL

- vanAPEDAL, the Last-Mile Operator, re-located from the (temporary!) module to the new platform in Dec. 2016
- A visit to the platform formed part of the 3<sup>rd</sup> NOVELOG workshop held in Barcelona in January of 2017



# Results of formal 5-month pilot (Jan – May 2017)

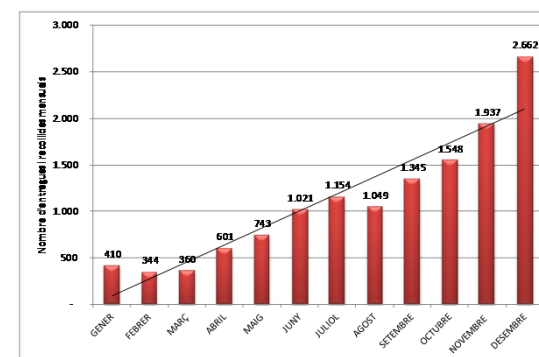
Barcelona Microplatform Network									
month (2017)	days of operation / platform	cargo trike tours made	cargo bike tours made	tours made on foot	average daily "fleet" operation	total parcels delivered	total kms travelled	delivered parcels / tour (all modes)	total shippers served
jan	21	214	42	16	12.95	13042	2479	47.95	5
feb	20	220	40	0	13.00	14210	2709	54.65	5
mar	23	306	33	0	14.74	19129	5325	56.43	5
apr	18	233	36	0	14.94	16245	4344	60.39	6
may	22	266	43	0	14.05	18880	4960	61.10	6
accumulated total	104	1239	194	16	na	81506	19817	281	na
monthly average	20.8	247.8	38.8	3.2	13.94	16301	3963	56	5.4

14 delivery tours are being made daily – primarily by cargo-trikes – each tour delivering a daily average of 56 parcels.

Up to 6 shippers served.

Monthly average of delivered parcels: 16,301

>10x best month of SMILE (RH graphic)





## More KPIs of the NOVELOG 5-month pilot

Air pollutant emissions savings (kg)	Estació de França	Mercat El Ninot	Both Platforms
CO <sub>2</sub>	6172	3301	9472
NO <sub>x</sub>	72	5	77
PM	39	3	41

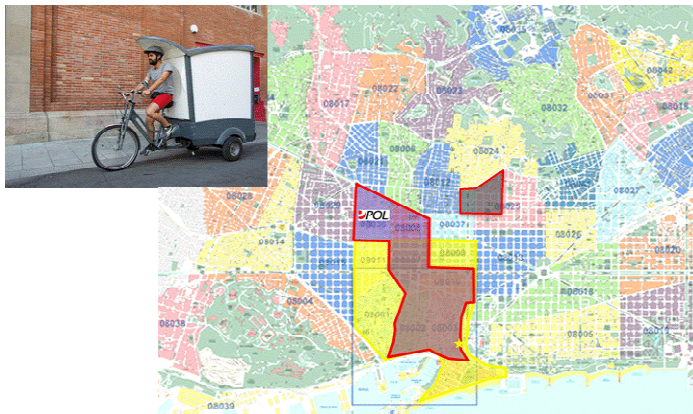
- Operational issues:
  - 3 attempted bike thefts
  - 1 accident (vehicle damage, no personal injury)

# Evolution of service extension

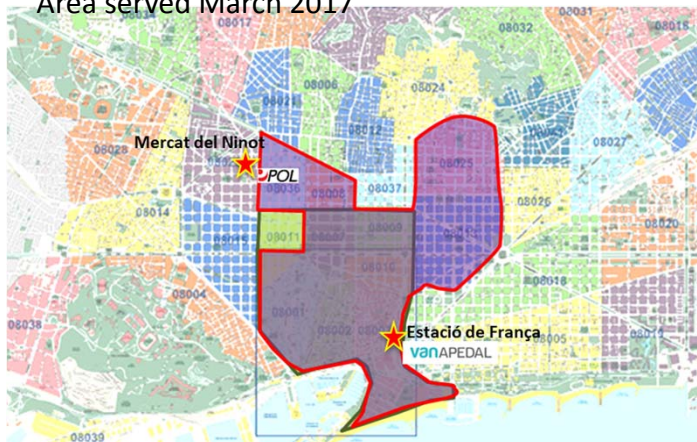
The extension of delivery services from the two micro-platforms has appreciably increased since the pilot started.

Furthermore, in July 2017, ECOPOL started serving Ciutat Vella from another (private) platform (in C. Wellington)

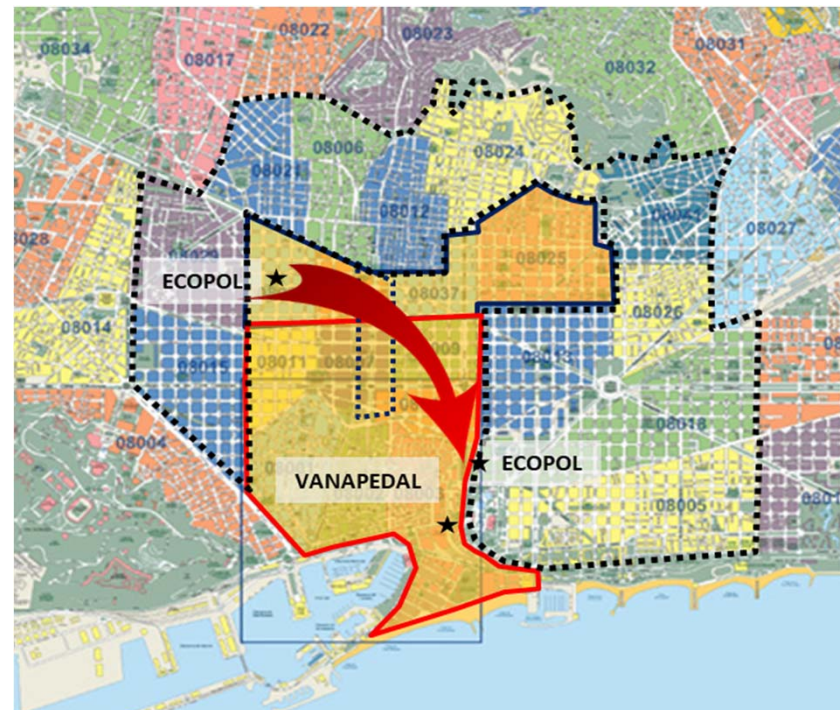
Area served December 2016



Area served March 2017

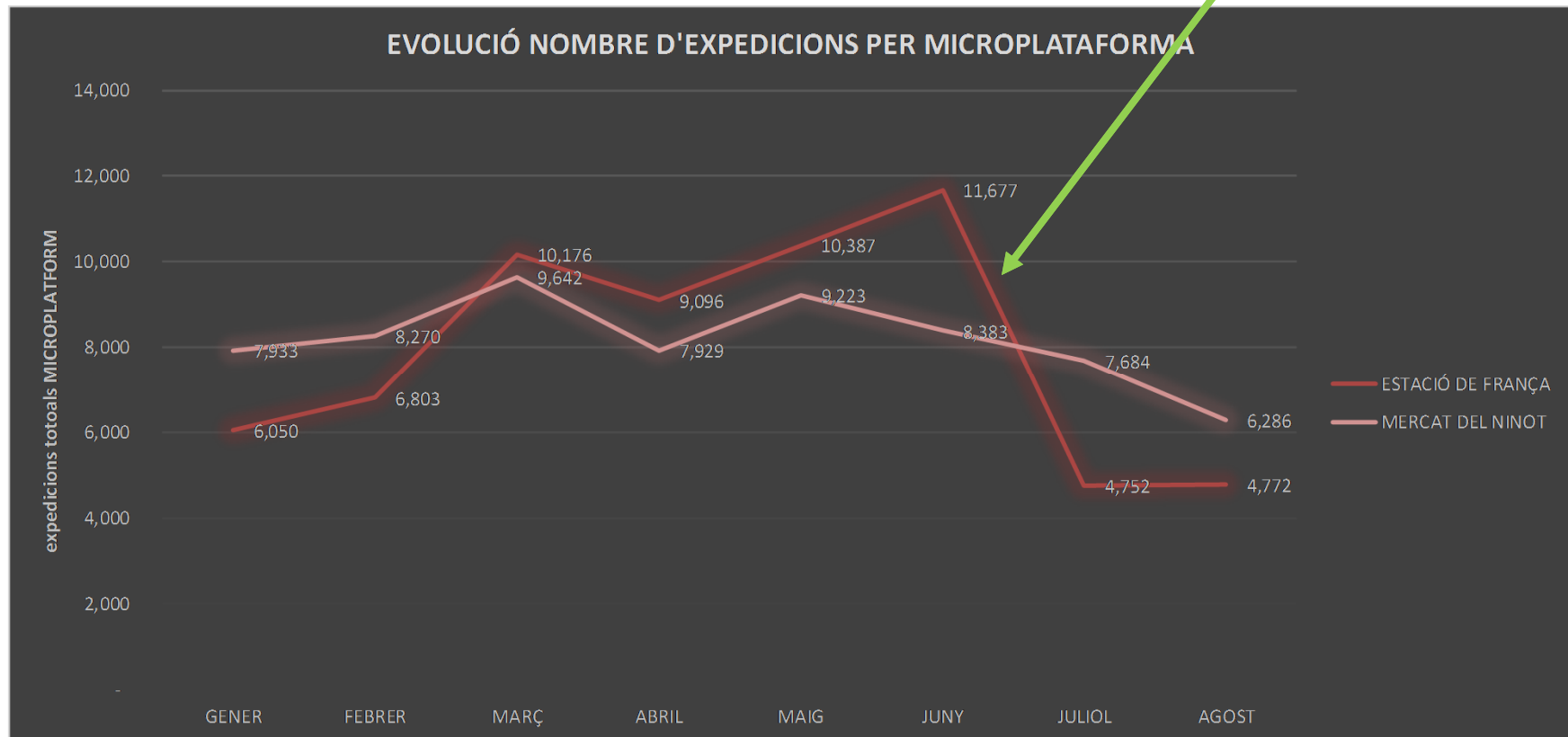


Area served September 2017



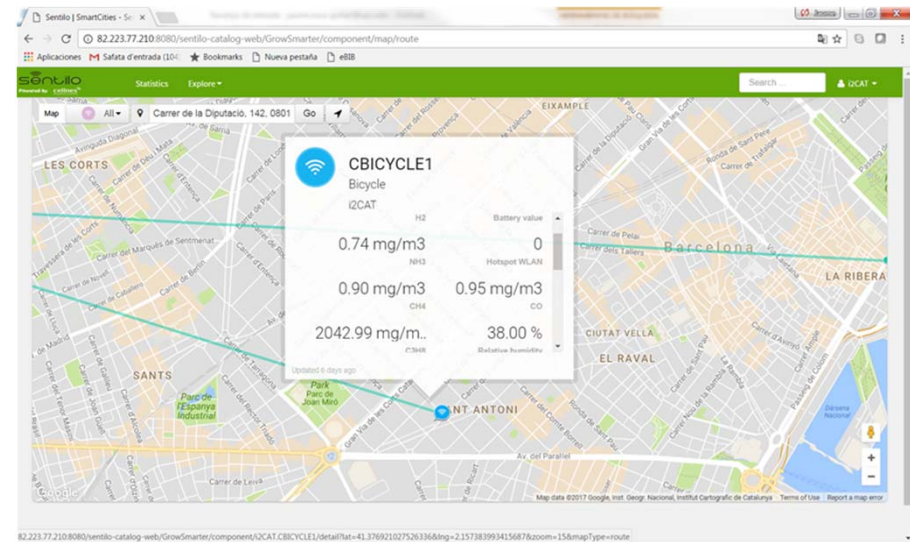
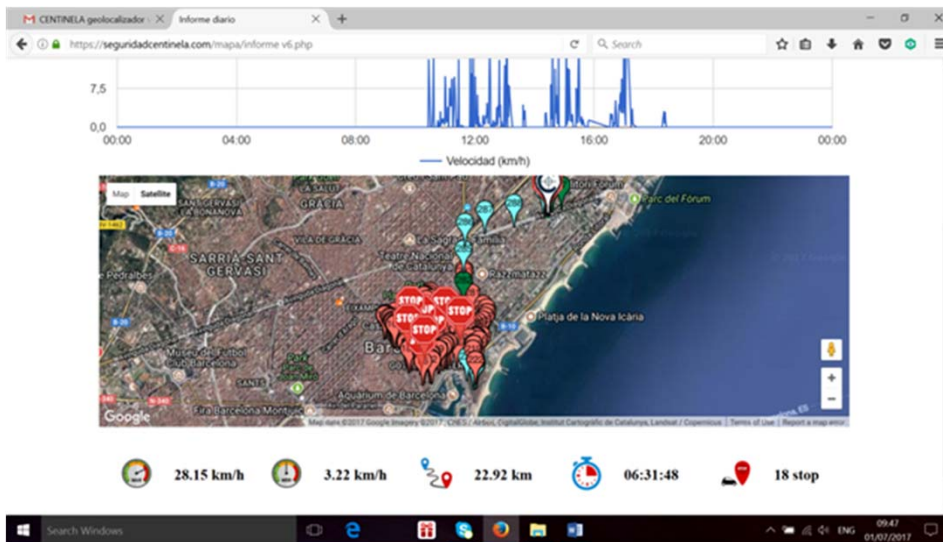
# Evolution (“monitored” deliveries)

ECOPOL establishes private platform serving City Centre  
One of the main shippers diverts traffic to ECOPOL private platform



# Geo-referenced data: added value for actors

- Fleet / Incident management (LH graphic: vanAPEDAL)
- Environmental sensing (RH graphic: Growsmarter project)





# Conclusions

- Two LMOs have collaborated, completing a common template (xls format) datafile each month, facilitating activity monitoring
- Positive delivery performance (over 80,000 parcels over the 5-month pilot) validates the Municipal policy of space concession, has open dialogue with two Last-Mile Operators, committed to sustainable urban goods delivery.
- LMO ECOPOL, controlling one of the logistics consolidation chain, has successfully exploited a micro-platform in a zone where no access restriction policy is applied.
- Publicity regulations limit the possibility of Shared-Box activities in Barcelona (maybe not the case in other cities)
- When the LMO's use private platforms, the Municipality "loses" information / knowledge about the delivery activity.
- The city may need fewer micro-platforms than we originally envisaged; new trans-shipment trial: input to platform design / configuration
- Cargo-bikes as air pollutant sensors (Growsmarter pilot)

# Thank you for your attention!

**NOVELOG & micro-distribution**

**Xavier Cruzet**

City logistics (DUM) contact,

Barcelona City - Serveis de Mobilitat

Email [xcruzet@bcn.cat](mailto:xcruzet@bcn.cat)

# Results 5-month pilot by platform (Jan–May 2017)

Microplatform Estació de França									
month	days operating	trike tours made	bike tours made	tours made on foot	daily "fleet" operation	total parcels delivered	total kms travelled	delivered parcels / trike tour	total shippers served
jan	21	119	0	0	5.67	5559	1134	46.71	4
feb	20	120	0	0	6.00	6364	1536	53.03	4
mar	23	173	0	0	7.52	9526	3796	55.06	4
apr	18	144	0	0	8.00	8592	3248	59.67	4
may	22	168	0	0	7.64	10374	3866	61.75	4
accumulated total	82	556	0	0	na	30041	9714	214	na
monthly average	21	145	0	0	7	8083	2716	55	4
Microplatform Mercat El Ninot									
month	days operating	trike tours made	bike tours made	tours made on foot	average daily "fleet" operation	total parcels delivered	total kms travelled	delivered parcels / tour (all modes)	total shippers served
jan	21	95	42	16	7.29	7483	1345	48.91	1
feb	20	100	40	0	7.00	7846	1173	56.04	1
mar	23	133	33	0	7.22	9603	1528	57.85	1
apr	18	89	36	0	6.94	7653	1096	61.22	2
may	22	98	43	0	6.41	8506	1094	60.33	2
accumulated total	104	515	194	16	na	41091	6237	284	na
monthly average	20.80	103.00	38.80	3.20	6.97	8218	1247	57	1.40