



EUROPEAN CITIES AND REGIONS NETWORKING
FOR INNOVATIVE TRANSPORT SOLUTIONS



TRAFFIC CONTROL IN THE CITY OF SABADELL (BARCELONA)

Attempt to standardization of communication protocols and unified
management system



Ajuntament
de Sabadell

Oriol LLEVOT

Smart City Programme officer



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More efficient and cost-effective traffic management through systems integration

Session 2A

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The city of Sabadell: *Medium-sized city in the Barcelona metropolitan surroundings*

- Medium-sized city (207.649 inh.)
- Co-centre of an area with 900.000 inh.
- 25 million journeys in public transport (2013), 14% share
- Motorization index: 604 veh./1.000 inh., 10% motorcycles





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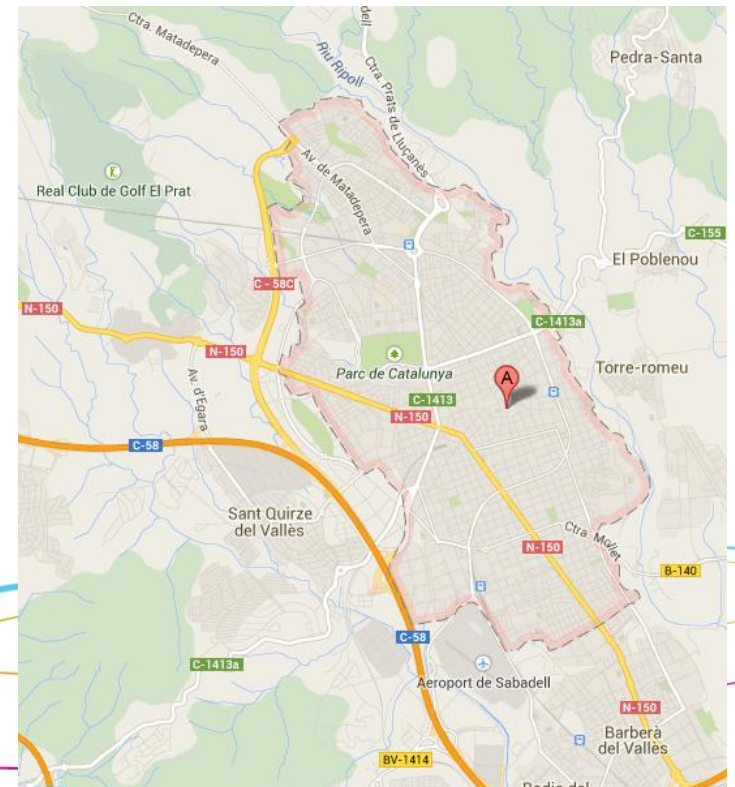


The city of Sabadell: *Complex mobility in the city centre with predominance of interurban traffic*

- 5 urban train stations (+3 foreseen for 2016)
- 14 urban bus lines
- Orbital ring not completed (only west sector)
- Higher density (x2) in the city centre, resulting into complex mobility
- Need to reduce NO₂/NO_x emissions: 46

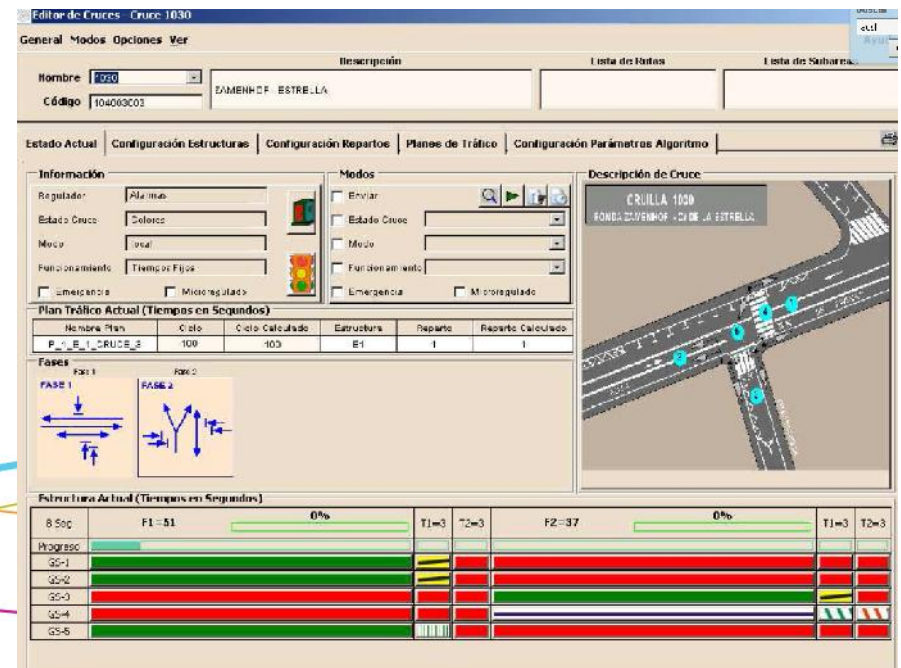
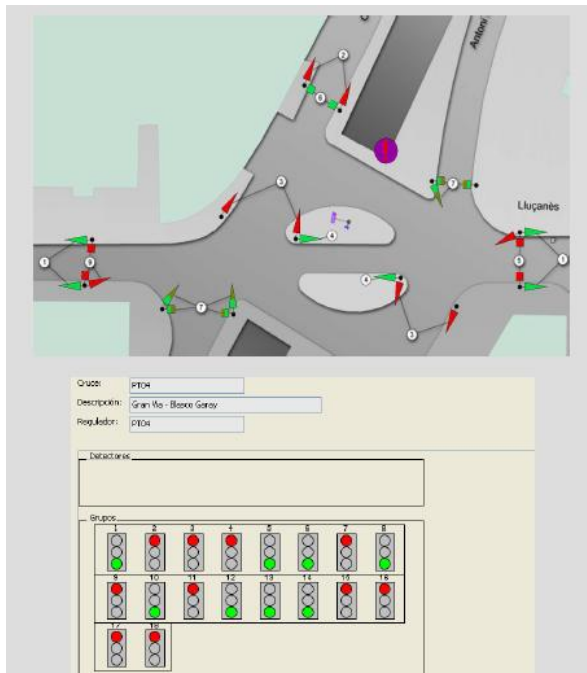
µg/m³

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Background of traffic management in Sabadell: *Large but scattered technology implementation*

Partial traffic lights synchronization





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Background of traffic management in Sabadell: *Large but scattered technology implementation*

- Partial traffic lights synchronization



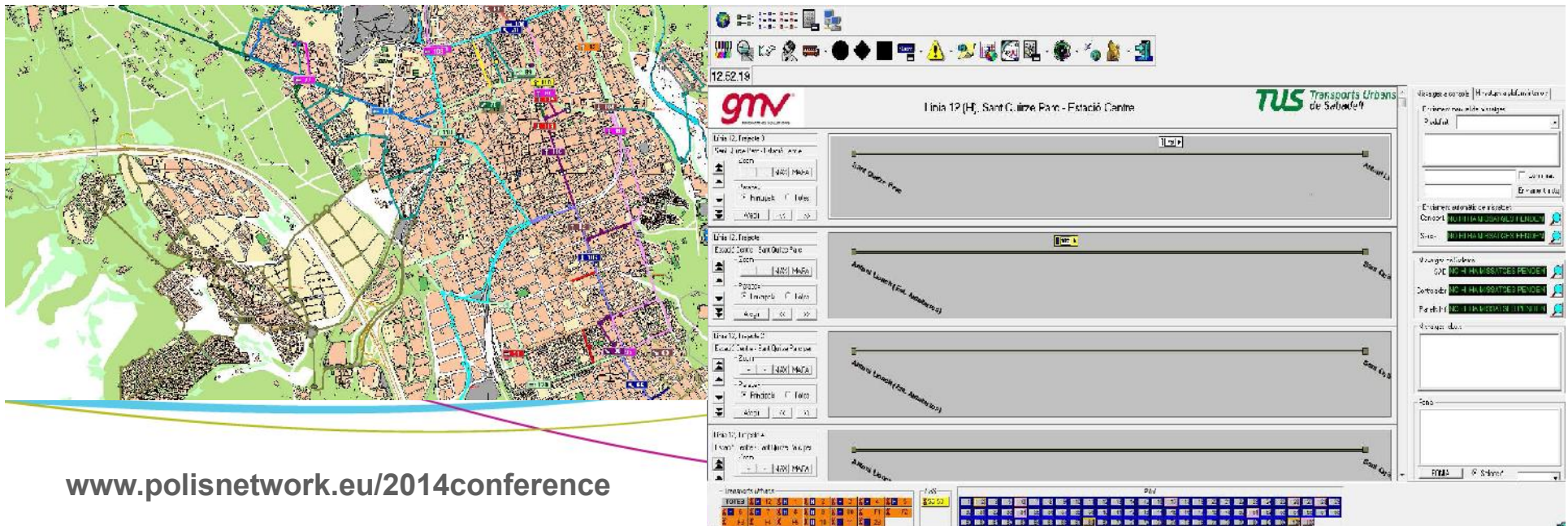


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Background of traffic management in Sabadell: *Large but scattered technology implementation*

➔ Tracking of bus vehicles through GPS



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Background of traffic management in Sabadell: *Large but scattered technology implementation*

➔ 21% of bus stops informing about real-time bus traffic conditions

C.	Número parat	Via	Hora	UBP	MBP	Lin. Ptas.	Miles Ptas.
12	Sant Feliu (20)	✓	11:57	?	?	?	?
16	Elva (45)	✓	12:58	?	?	?	?
12	Albany (20)	✓	12:03	?	?	?	?
17	Marina Pineda (80)	✓	11:59	?	?	?	?
28	Dr. Robert (48)	✓	12:01	?	?	?	?
29	Dr. Robert (48)	✓	12:02	?	?	?	?
36	Antoni Llionch (135)	✓	12:59	?	?	?	?
12	Parreres (20)	✓	12:58	?	?	?	?
16	Parreres (20)	✓	12:58	?	?	?	?





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Background of traffic management in Sabadell: *Large but scattered technology implementation*

➔ 21% of bus stops informing about real-time bus traffic conditions

LÍNIA	DESTÍ	MIN
26	MARC	12:59

C.	Nombre parada	Via	Hora	IBP	MBP	Lin. Ptas.	Migra Ptas.
12	Sant Feliu (20)	✓	11:57	?	?	?	?
16	El Pla (45)	✓	12:08	?	?	?	?
12	Albany (20)	✓	12:13	?	?	?	?
17	Marina Pineda (80)	✓	12:19	?	?	?	?
28	Dr. Robert (84)	✓	12:21	?	?	?	?
29	Dr. Robert (84)	✓	12:22	?	?	?	?
36	Antoni Llionch (135)	✓	12:27	?	?	?	?
12	Pineda (20)	✓	12:38	?	?	?	?
16	Pineda (20)	✓	12:38	?	?	?	?





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Background of traffic management in Sabadell: *Large but scattered technology implementation*

- Real-time indication of occupancy of underground parking in the city centre



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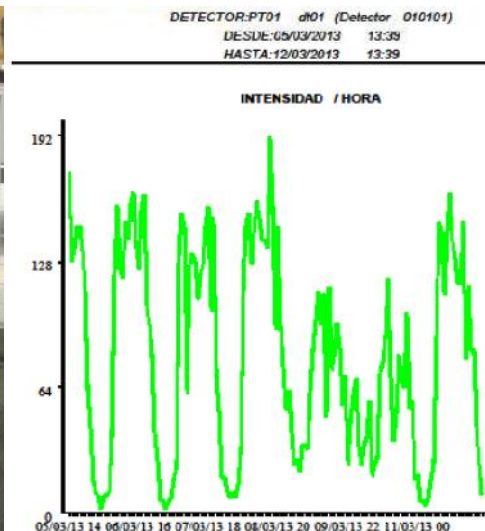


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Background of traffic management in Sabadell: *Large but scattered technology implementation*

- Automatic priority for delayed buses at 3 urban crossroads
- Vehicle counting devices



HORA	INTENSIDAD
	PT01 d01
05/03/13 14	178
05/03/13 15	128
05/03/13 16	136
05/03/13 17	146
05/03/13 18	146
05/03/13 19	133
05/03/13 20	114
05/03/13 21	83
05/03/13 22	42
05/03/13 23	16
06/03/13 00	10
06/03/13 01	8
06/03/13 02	2
06/03/13 03	8
06/03/13 04	9
06/03/13 05	8
06/03/13 06	39
06/03/13 07	124

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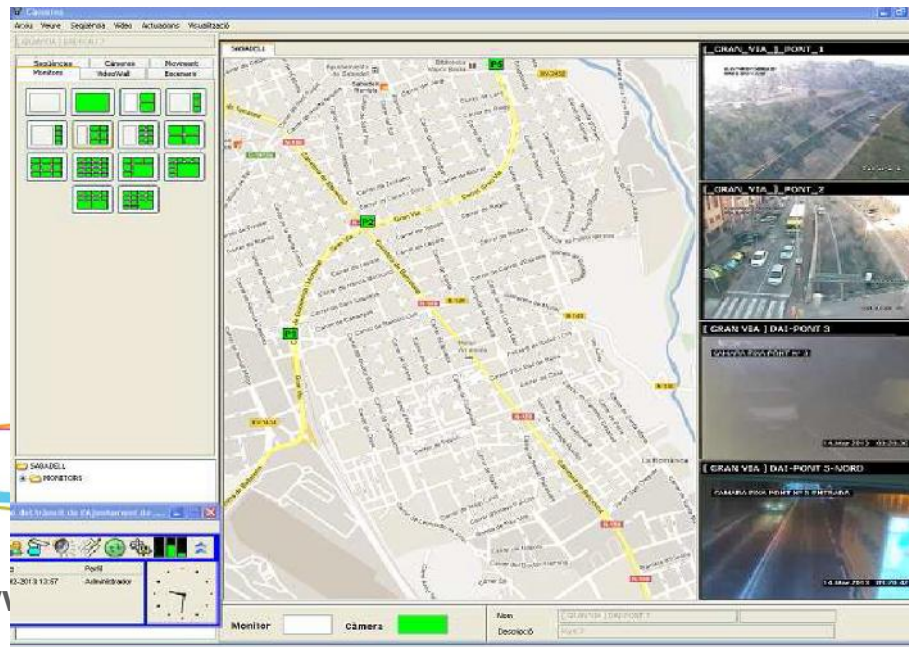


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Background of traffic management in Sabadell: *Large but scattered technology implementation*

➤ System for automatic control of incidents (DAI) and CCTV



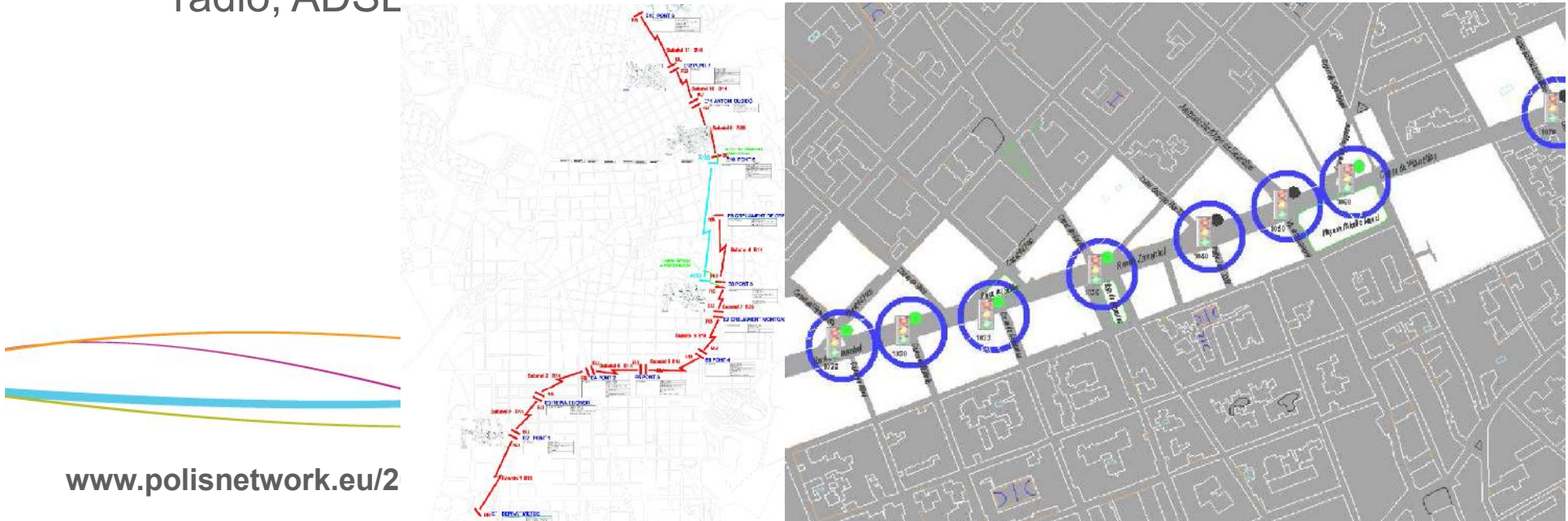


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Background of traffic management in Sabadell: *Large but scattered technology implementation*

- Mix of communication systems: Wimax, optical fiber, GPRS, radio, ADSL



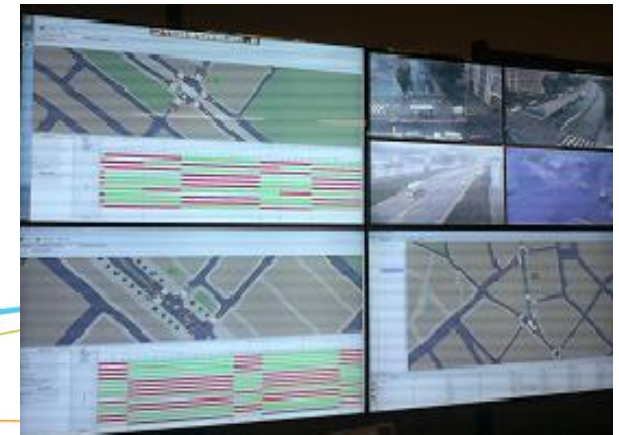


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Solutions: *Improving the control centre facilities*

- Videowall for unified and more comfortable visualization



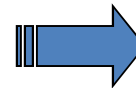


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Solutions: *Increasing centralization capabilities*

- New traffic lights regulators
- New infrared detectors
- New electromagnetic sensors



Integrated in the
centralization
system



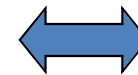


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Solutions: *Harmonising protocols and management applications*

- Standard communications protocol
- Common management tool (ARTIC)



Several existing protocols in installed technologies: B, M, V

- Establish standard protocol as requirement in future tenders for installation of new traffic technologies



Avoid proprietary “lock-in”





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For the future...

- From the traffic control centre to the **City Control centre**
- **Quick-wins**: Start by integrating Police and Civil security
- Increase reliability of **communications infrastructures**: Optical fiber?

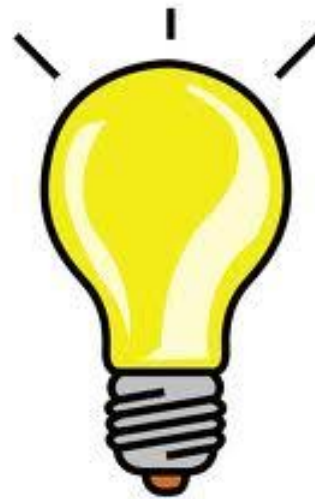




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Any other ideas?



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Thank you!



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