



## EPCA Programme: the evaluation of pedestrian crossing safety

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Automobile Club d'Italia



# Outline

- European Pedestrian Crossing Assessment Programme
- The “walk safe” awareness campaign
- Technical Guidelines for Pedestrian Crossings
- Conclusions

# Why a project on pedestrians in Europe?

- Pedestrians are the most vulnerable road users.
- Every year, about 8.000 pedestrians are killed on European roads (almost 22 every day in EU-27)
- Pedestrians account for 15% of all road accidents
- In some countries, pedestrian fatalities figures show opposite trends, in spite of a general reduction of road victims
- In 30% of accidents involving a pedestrian and a car travelling at 40 km/h, the pedestrian will be killed; at 50 km/h this probability increases at 75%.



## Why a project on pedestrian crossings?



- 1 in 4 of pedestrian fatalities occurs on or close to a pedestrian crossing (ACI's estimate)
- It's a matter of behaviours, but safer crossings help better behaviours

# What is EPCA?

- EPCA (European Pedestrian Crossings Assessment) is an independent assessment process aimed at highlighting better crossing solutions and at improving user behaviours
- Conceived and developed by ACI, the Project has been carried out within the EuroTest Initiatives, in cooperation with 18 Automobile Clubs, members of FIA (Fédération Internationale de l'Automobile), from 17 European Countries

**EuroTEST** is a pan European independent testing programme, conducted by a consortium of European automobile clubs, under the aegis of the FIA, to check the quality and safety of Europe's mobility, for the protection of consumers/road users. Improvements have been achieved for the consumers, thanks to widespread publication of the test results in national media Europe wide.

The FIA EuroTEST applies to mobility infrastructures the same approach adopted for the EuroNCAP programme, who organizes crash-tests and provides motoring consumers with an independent assessment of the safety performance of some of the most popular cars sold in Europe.

Testing  
Informing  
Improving



# What is NOT EPCA?

- It's not an International Championship among European cities
- It's not a survey aimed at giving an aggregated rating to each city, although the common criteria selected for the test areas in each city, enable some comparison

# EPCA Programme: activities carried out

- **2007:**

- Statistical analysis
- Comparison of national rules and crossings design standards

- **2008:**

- Observatory on Pedestrian fatalities
- Test of Pedestrian Crossings in 17 European cities
- Survey on pedestrian traffic lights in Europe
- “Walk safe” Awareness Campaign– Leaflet

- **2009:**

- Test of Pedestrian Crossings in 30 cities
- “Walk safe” Awareness Campaign – Educational Video

- **2010:**

- Test of Pedestrian Crossings in 18 cities

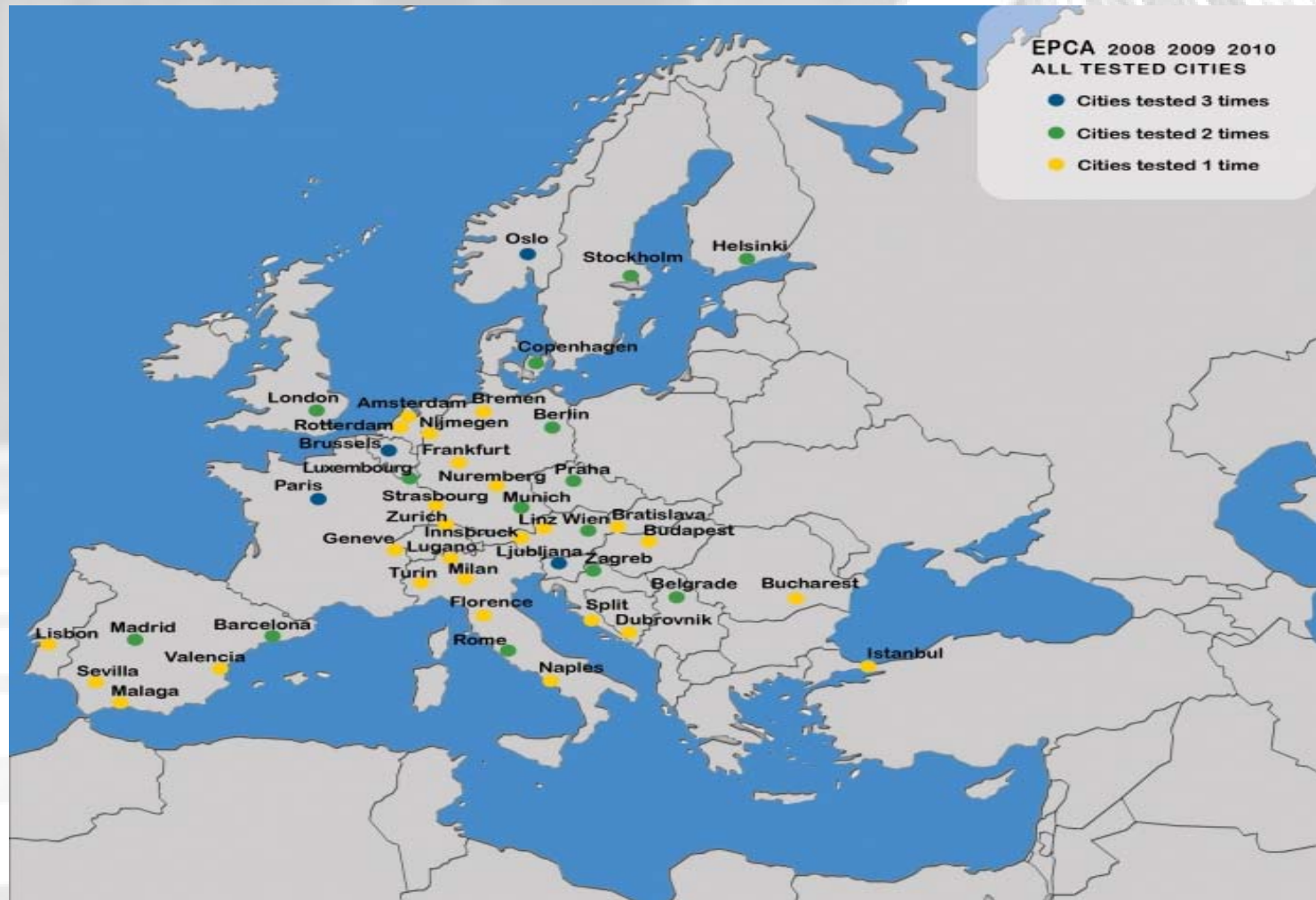
- **2011:**

- Technical Guidelines for Pedestrian-Crossing design



EPCA  
EUROPEAN PEDESTRIAN CROSSING

# EPCA: Cities tested in 2008 - 2009 - 2010



- 46 cities have been put to the test, belonging to 23 European countries:
- 66 test have been conducted (as some cities were retested 2 or 3 times)
  - about 800 pedestrian crossings (from 10 to 15 per each city)
  - about 660 km covered.

# EPCA: The methodology



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- developed by ACI in cooperation with
- aims at assessing the safety levels of single pedestrian crossings
- takes in consideration about 30 Factors, clustered in **4 Safety Categories** (with different percentage weight):

**1) Crossing system** (23%) (Crossing distance; Pedestrian-vehicles conflict points; Pedestrian refuge islands; Road surface and crossing markings and signs maintenance; Exclusive pedestrian signal phase; ....)

**2) Daylight Visibility** (26%) (Visibility of pedestrian crossing signs and of road markings for drivers; Presence of minimum distance needed for a driver to recognise the presence of a pedestrian waiting to cross; ....)

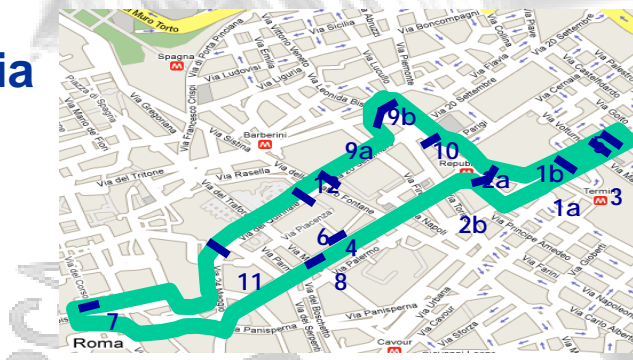
**3) Night-time Visibility** (32%) (Lighting conditions; Visibility of pedestrian crossing signs and of road markings for drivers at night time; Minimum approach sight distance in the night; ..)

**4) Accessibility** (19%) (Presence of obstacles that could be a hazard for pedestrian; Tactile paving for visually impaired people; Acoustic devices for blind, Sidewalk width; ...)



# EPCA: How we tested

- Test Areas were defined according to common criteria (tourist interest zone, public transport facilities, traffic critical points, dimensions, .....
- Some teams, made by 3 ACI inspectors, performed daily and night tests for each pedestrian crossing, taking measurements, pictures, videos
- The teams used 2 kinds of checklists for the inspections (intersection and non-intersection pedestrian crossings)




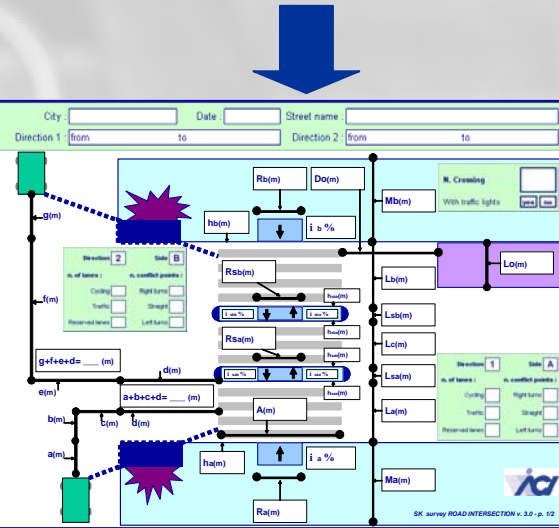
2008

2009

# The evaluation process

## Single crossing:

- From the inspections to the single results
- Qualitative evaluation for each of 4 safety categories (5 rating classes: Very good; Good; Acceptable; Poor; Very poor) 
- Qualitative overall evaluation
- Pictures supporting the single evaluation
- All the assessment issues are referred only to the tested sites
- Points of strength and weakness of each crossing
- Recommended actions to improve crossing safety



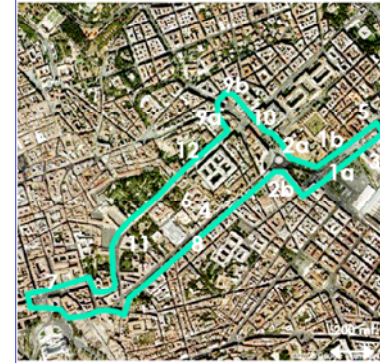
2a - Parliament street intersection Bridge street		Single Crossing Rating
		Spatial and Temporal Design
		Acceptable
		Visibility DAYTIME
		++
		Very Good
		Visibility NIGHTTIME
		+
		Good
		Accessibility
		±
		Acceptable
		COVERAGG RATING
		+
		Good

LONDON					
Pedestrian Crossing	Spatial and Temporal Design	Visibility DAYTIME	Visibility NIGHTTIME	Accessibility	OVERALL EVALUATION
1	Poor	Very Good	Good	Good	Good
2a	Acceptable	Very Good	Good	Good	Good
2b	Good	Very Good	Good	Good	Good
3a	Good	Very Good	Good	Acceptable	Good
3b	Good	Very Good	Good	Good	Good
4	Good	Very Good	Very Good	Very Good	Very Good
6	Acceptable	Very Good	Good	Good	Good
7	Acceptable	Very Good	Very Good	Good	Good
8	Acceptable	Acceptable	Poor	Acceptable	Poor
9	Acceptable	Very Good	Very Good	Acceptable	Good
10	Good	Very Good	Very Good	Good	Very Good
11	Acceptable	Very Good	Good	Poor	Good
12a	Acceptable	Very Good	Good	Good	Good
12b	Acceptable	Very Good	Good	Acceptable	Good
ALL PEDESTRIAN CROSSING	Acceptable	Very Good	Good	Good	Good

## City result:

- City ranking
- Best and worst crossing
- Main deficiencies detected

# EPCA: Results



Zona	Centro Città
Interesse turistico	Foro Romano, Quirinale
Trasporto Pubblico	Metropolitano, (Repubblica, Termini) e diverse linee autobus
Criticità per il traffico	Diversi negozi e musei, un'importante rotatoria
Perimetro area	4.500 mt.

Available on: [www.eurotestmobility.com](http://www.eurotestmobility.com)

- City dossiers
- Overall ranking of about 800 tested crossings
- Specific ranking for each of the 4 safety categories
- Full report of each tested crossing with single assessments and supporting pictures
- Recommendations for local, national and European Authorities
- Special report on traffic lights for pedestrians (exclusive phases, transition times, etc.)

Promotional videos: [www.youtube.it/AciRoadSafety](http://www.youtube.it/AciRoadSafety)

- Footage taken during the tests (Hard times for pedestrians; Visibility; Accessibility; Crossing design)



# The main deficiencies

- Poor effectiveness of traffic lights, Missing pedestrians refuge islands in very long crossings sections (Crossing system)
- Legal/illegal parking of vehicles impairing visibility, Poor maintenance of traffic signs and road markings (Daylight Visibility)
- Poor lighting conditions and road marking visibility at night (Night-time Visibility)
- Lack of ramps / tactile paving, Obstacles reducing accessibility to visually impaired and disabled users (Accessibility)
- Limited adoption of advanced technologies (countdown devices, etc.)





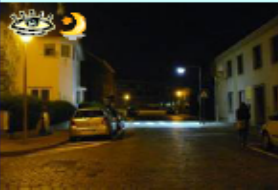



# Some examples



# The 2010 results

- 50 pedestrian crossings out of 270 (almost 1 in 5) failed the test, achieving a “Poor” rating and only in one case “Very poor”
- Almost half crossings were rated positively (122 with “Good” and 8 with “Very good”)
- The remaining 90 crossings (almost 1 in 3) obtained “Acceptable”
- The best crossing tested was found in Brussels
- Compared to 2008 and 2009 results, more crossings were rated negatively in 2010 (1 out 8 in 2008; 1 out 6 in 2009; 1 out 5 in 2010)

## The 2010 winner

12 – Rue des Pivoines intersection Chemin du Pourpier		Crossing Safety
		Crossing system ++
		Visibility DAYTIME +
		Visibility NIGHTTIME ++
		Accessibility +
		wheelchair users: 0 blind: + deaf person: --
		<b>OVERALL EVALUATION</b> <b>++</b>
<p><b>Strengths</b> Very Good nighttime lighting conditions; Raised crossings improve safety for both pedestrians and vehicles</p> <p><b>Weaknesses</b> Poor road paving maintenance conditions; Reduced road adherence due to stones pavings</p> <p><b>Suggestions</b> Maintenance should be improved</p>		




# The “walk safe” campaign



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## 1. The walk safe Leaflet (2008)

- ✓ Developed by ACI in cooperation with the 18 EuroTEST partners
- ✓ Contains: 1) Specific sections targeted to pedestrians, pedestrians crossing the road and drivers; 2) behavioural tips beyond the single national rules; 3) Information section on very important figures (Did you know?)
- ✓ Milestone for the 2009 educational video



PEDESTRIAN CROSSING

Walk safe



**EuroTest**  
QUALITY SAFETY MOBILITY

## 2. The educational video (2009)

- ✓ Contains: 7 short cartoons (30” each), explain the most important situations, 4 addressed to pedestrians and 3 to drivers, each situation is illustrated twice (wrong and safe behaviour), with limited spoken content (only in the safe scene) and nice audio effects to help the explanation of each situation. A “did you know?” Section is also available
- ✓ Produced in 4 Languages (English, Italian, German and French)



# 2011: Technical Guidelines for Pedestrian Crossings

- ✓ The 3 years test experience showed the presence of many different solutions/rules for pedestrian crossings in Europe:
  - Different behavioural rules create problems to foreign visitors
  - International comparison of national rules and crossing design standards allowed to identify the best solutions to improve accessibility and safety performance of pedestrian crossings in Europe
- ✓ In 2011, ACI in cooperation with AIIT (Italian Association for traffic and transport Engineering) realised the National technical guidelines dealing with pedestrian crossing safety assessment and safer crossing designs. At present they are available only in Italian ([http://www.aci.it/sezione-istituzionale/notizie/comunicati/notizie/article/aci-presenta-le-linee-guida-per-attraversamenti-pedonali-piu-sicuri.html?no\\_cache=1&cHash=74be682adf](http://www.aci.it/sezione-istituzionale/notizie/comunicati/notizie/article/aci-presenta-le-linee-guida-per-attraversamenti-pedonali-piu-sicuri.html?no_cache=1&cHash=74be682adf))
- ✓ Next step is the translation in other languages and the Document might become the base for European guidelines





# Conclusions

- ✓ Excellent experience of international cooperation aimed at improving pedestrian safety
- ✓ Comparison of crossing systems in Europe provide the opportunity to identify shortcomings, possibilities for improvement and solutions
- ✓ People and media generally interested in most of the countries, due to an international approach of an everyday-life problem
- ✓ Local authorities interested in wider assessment of the pedestrian crossings
- ✓ Large room for improvement of pedestrian crossings (visibility and accessibility as key issues): safer crossings save lives ...
- ✓ Behavioural aspects should be targeted with growing intensity (Walk Safe Campaign)
- ✓ Wide variety of design solutions from city to city and need for greater harmonization



# Thank you

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Internet links:

- <http://www.aci.it>
- <http://www.eurotestmobility.com/eurotests.php>
- <http://www.eurotestmobility.com/newsletter.php>

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**FIA** FIA Foundation  
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