

# International Road Safety Research Lines

*Luca Persia*

CENTRO DI RICERCA  
PER IL  
TRASPORTO E LA LOGISTICA

**PIN Talk - Road Safety towards 2020**  
Rome, 20/11/2014



**SAPIENZA**  
UNIVERSITÀ DI ROMA



[www.ctl.uniroma1.it](http://www.ctl.uniroma1.it)  
[info@ctl.uniroma1.it](mailto:info@ctl.uniroma1.it)

# Summary

- International Research Networks
  - FERSI, IRTAD
- International Research Projects in Emerging Economies
  - Brazil, India, Cameroon, Belarus
- Road Safety Research at the national level
  - The Italian National Road Safety Plan 2020

# Forum of European Road Safety Research Institutes



- FERSI is a European Research Network, composed by Road Safety Research Institutions from 21 European Countries (1 Representative per Country)
- FERSI main aims are:
  - To promote or coordinate high quality research on road safety issues
  - To propose road safety topics for EU and national Research Agendas
  - To organize seminars and meetings on road safety issues (eg Young Researchers Seminar 2015, June, in Rome)

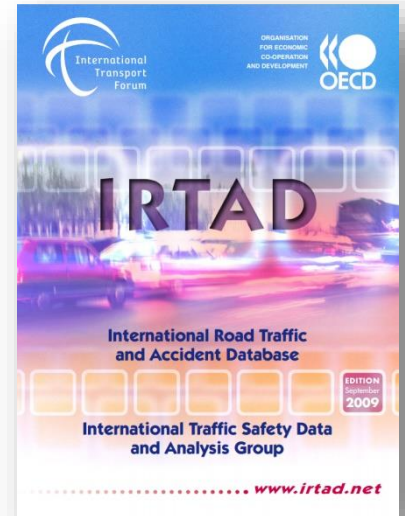
# Position Paper “Towards safer roads in Europe”

FERSI has identified **9 key challenges** and related research questions to improve road safety and reduce significantly the number of crash victims over the next decade.



# International Traffic Safety Data and Analysis Group (IRTAD)

- IRTAD Group is responsible for the development and use of the International Road Traffic and Accident Database, firstly established in 1988
- More than 50 institutes worldwide are members of the IRTAD Group
- Among the objectives:
  - Scientific approach to advance accident knowledge
  - Improving the data used for research and policy planning.



# Working Group on *Road Infrastructure Safety Management*

- After several years of major attention to Vehicle and Road User, the role of Infrastructure is a main policy and research issue (eg EU Directive 96/2008)
- Traditional «reactive» approach to road safety (e.g. black spot management) is no longer seen as appropriate in more advanced countries
- Moving towards a Safe System approach where the Road Administration has responsibility for safety of infrastructure
- Infrastructure Design vs Traffic Engineering

# Infrastructure life-cycle

«Pro-active»  
approach to  
road safety

Planning and Design



Pre-operation



Normal operation



Maintenance &  
renewal



Error correction,  
hazard elimination

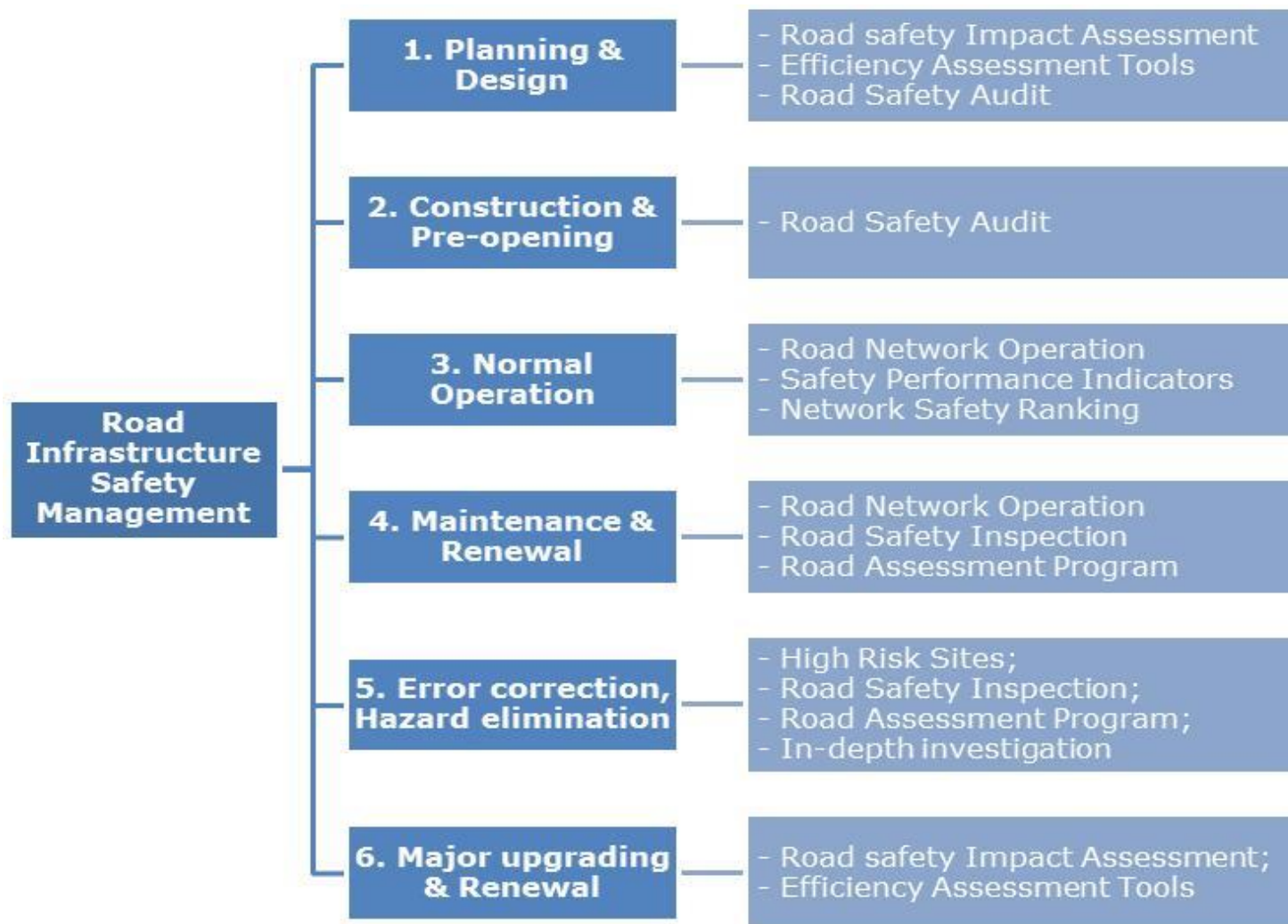


Major upgrading &  
renewal

«Reactive»  
approach to  
road safety

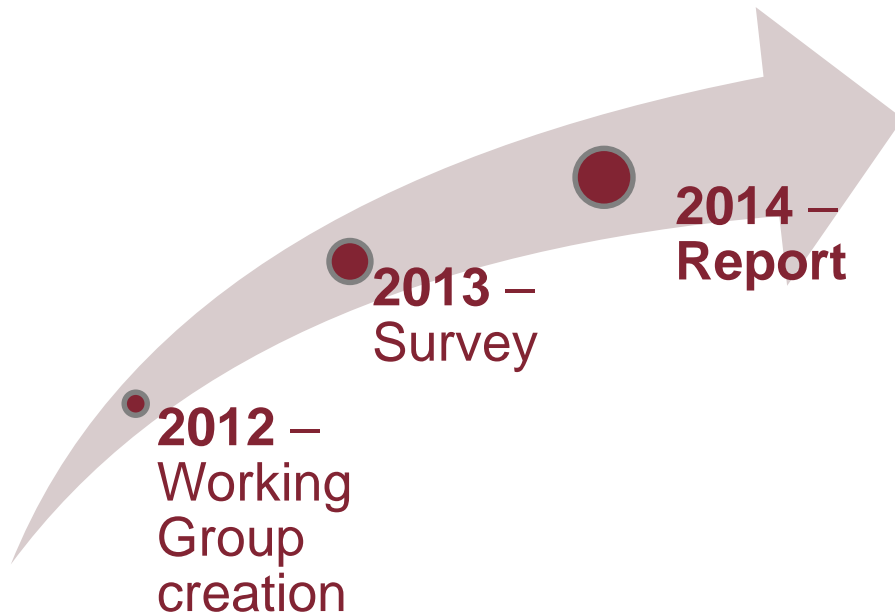
Adapted from:  
Elvik, 2011

# Life-cycle and RISM





# Management of Road Infrastructure Safety



Working Group participants:  
Argentina, Austria, France,  
Germany, Greece, **Italy**, Korea,  
South Africa

## ***Aims:***


1. *To describe the most consolidated RISM procedures.*
2. *To analyse the use of RISM procedures worldwide and to identify possible barriers to their implementation.*
3. *To provide example of good practices.*
4. *To provide recommendations for the implementation of RISM procedures*

# SaferBrain

- *Specific International Cooperation Action* co-funded by EC (DG RTD - 7<sup>th</sup> FP)
- Focused on safety of vulnerable road users in India and Brazil
- Mainly oriented to road safety management
- Started in October 2009 – Duration: 30 months
- Coordinated by CTL
- Very positive results: need for follow-up (lack of resources)

# SaferBrain : Example of results

- Selection of effective/efficient countermeasures based on traffic accident data analysis

 Cyclists - Aggregate Elements

Selected element: element

Type of accident (Crash Type) recorded on the selected element

CT Code (Crash Type)	No injuries - Area	Injured - Area	Fatal - Area	% Area
2770	0	10	0	17.24
2140	1	6	0	12.07
2110	0	6	0	10.34
2761	0	0	0	0
2763	0	0	0	0

12345


CT Code (Crash Type) | Description

2770	Pedestrian was hit by a v
------	---------------------------

Region for the selection of the list of possible causes and countermeasures

India

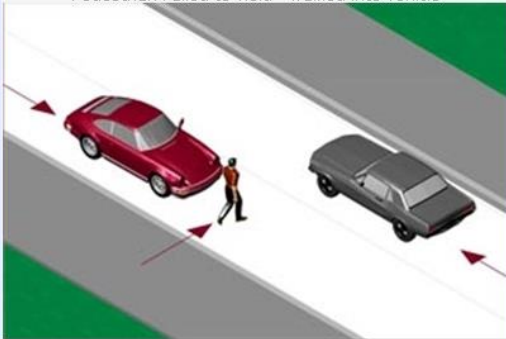
<-- Back | Crash type element | Possible countermeasures

 Pedestrians - Aggregate Elements

Selected Element: VIA EMILIO LEPIDO

CRASH TYPE DETAILS

Pedestrian Failed to Yield - walked into vehicle



2761  
Pedestrian could not yield to the oncoming vehicle while crossing and hit the vehicle

Cancel

CTCode (Crash Type)	No injuries	Injured	% Area	Priority Index
2761	0	3	10,00	10,00
2762	0	0	4,00	0,00
2763	0	0	10,00	0,00
2769	0	0	2,00	0,00
2770	0	0	14,00	0,00

1234

CTCode (Crash Type) | Description

2761	Pedestrian
------	------------

Region for the selection of the list of possible causes and countermeasures

Europe

# Improvement of Cameroon Road Safety conditions

- Design and implementation of databases and of a road safety information system in Cameroon
- Funded by World Bank
- Objectives:
  - Improving the capabilities of the Cameroon Government on road safety issues
  - Creating a methodological and practical framework for managing traffic accident data
- Coordinated by CTL (+ SWOV and IBSR)

# Cameroon : Activities

Collection and analysis of existing traffic accident data (e.g. historical data)

Design of the national data collection process

Design, implementation and test of information systems

Training of technicians, police officers, etc.

Support: official national statistics / road safety observatory / road safety council / entry into IRTAD

# Cameroon: Information Systems

- Tool for managing and analysing accident data and for communication

Home | Statistiche | Progetti | CovidSauring | Comunicazioni | Educazione

Home | Level 1 | Level 2 | Level 3

Profilo di navigazione

Scegli un profilo

- Cittadini
- Scuola
- Stampa
- Esperti

Dati Inodentabilità

La tua opinione

Sei d'accordo con la realizzazione della rotonda nell'intersezione tra via del Poggio e via delle Case?

SI NO

Continua

Home | Statistiche | Progetti | CovidSauring | Comunicazioni | Educazione

Home | Level 1 | Level 2 | Level 3

Profilo di navigazione

Rischio incidente per pedoni

Digitare il nome della strada da ricercare

Cerca strada

Ma Campus in Mare

id	Codice Tipo	Totale	Senza feriti	Con feriti	Con morti	% sen	% Morto ann	Sen	COA	RM
10	Intersezione di percorsi / ciclisti	2	0	2	0	8,89	6,06	1,00	1,43	6,99
2	Intersezione stradale asfaltata a senso unico / Intersezione stradale asfaltata a senso unico	12	8	4	0	52,17	34,36	0,33	1,52	19,94
12	Rotatoria	1	1	0	0	4,34	2,39	0		
8	Intersezione stradale asfaltata non asfaltata	6	6	0	0	26,08	28,95	0		
9	Strada con veicolo in sosta / in sosta / Intersezione asfaltata / Intersezione asfaltata	2	2	0	0	8,89	10,14	0		



# Be-Safe project



- Be–Safe (Belarusian Road Safety Network) is a research cooperation project. Its main objectives and activities are:
  - Developing and testing two 1st level University Masters (60 ECTS)
  - "Train the Trainers", supporting Local Academics in defining and delivering the Masters;
  - Providing each local University with a road safety laboratory
  - Setting up the Road Safety Belarusian Observatory

# The Consortium



- Coordinator: CTL
- EU Partners:
  - Loughborough University (UK)
  - National Technical University of Athens (Gr)
- Belarusian Partners:
  - Belarusian National Technical University;
  - Brest National Technical University;
  - Belarusian State University of Transport;
  - Belarusian Economic State University



# Research areas in National Road Safety Plan Horizon 2020 (1)

The National Road Safety Plan Horizon 2020 identifies the following research areas:

## Road User, Vehicle, Infrastructure and Governance

Management and dissemination of knowledge, Communication and education, Enforcement, Work related Accidents, Analysis of driving behaviors.



Cooperative driving systems



# Research areas in National Road Safety Plan Horizon 2020 (2)

Safety of road infrastructure, Safety of vulnerable road users, Safety of high risk road users (young, old)



Monitoring, evaluation and forecasting, In-depth investigation, Analysis of fatal accidents, Safety of freight transport, Management of road safety



# Real need for national/local research?

- Most research activities are conducted at international level: EU, OECD, WHO, World Bank
- International projects allow to exchange experiences, methodologies, results, and to collect resources
- Even if many research issues are typically cross-national (e.g. vehicle primary and secondary safety, ITS, infrastructure safety management procedures), some other need for analysis of local conditions, e.g.:
  - Accident data collection and analysis (statistical databases, in-depth databases, data on injuries)
  - Effectiveness of countermeasures (Crash Reduction Factors, Accident prediction models)
  - Human behaviour (DUI, high risk groups, cultural factors)