

SIV SUMMER SCHOOL SIIV 2012 - ROAD SAFETY MANAGEMENT
Theoretical principles and practical application in the framework of the European Directive 2008/96/CE
Catania 24-28 September 2012

 *Polytechnic University of Bari
DICATECh
prof. Pasquale Colonna*

SUMMER SCHOOL SIIV 2012
Road Safety Management

Road Safety Impact Assessment for Infrastructures Project

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Italian Legislative Decree n. 35 of 15th March 2011

Implementation of European Directive 2008/96/EC on the safety management infrastructure

This decree **introduces and standard procedures** for:

- the **Road Safety Impact Assessment** for Infrastructure Projects
- the **controls** for the Road Safety (Safety Audit)
- the Network **Safety Management**
- the **Safety Inspection**

This decree applies only to Italian roads that are part of the transeuropean road network, but from 2016 also to roads belonging to the network of national interest

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Working Hypothesis of the Directive
These working hypotheses are correct?

In particular:

upgrading of road infrastructure project:

- significantly increases the level of road safety?
- represents the priority actions to be implemented for road safety?

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Critical Considerations

Margins of decision of different transport systems			Mode	Accident Rate
Design of the Route	Control Systems	User Behavior		
xxxxxxx	xx	xx	Railroad	xxx
xxxxxxxxxxx	xx	xx	Airway	x
xxxxxxxxxxx	xxxxxxxxxxx	xxxxxxxxxxx	Road	xxxxxxxxxxxxxxxxxxx

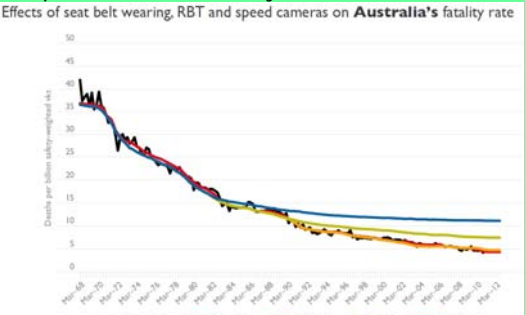
- In this thriller we must seek the guilty, the murderer. Where the clues lead us? towards the control systems and user behavior
- But in the case of the roads to reduce accident rates where we focus? On the Design of the Route! >>> Is it reasonable?

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Critical Considerations
• Importance of Control Systems

Effects of seat belt wearing, RBT and speed cameras on **Australia's** fatality rate



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Critical Considerations

- User Behavior

The increased risk of road system is due to the different behavior (degrees of freedom) of the different users.

The possible degrees of freedom are the speed and the position in the cross section

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Critical Considerations

- User Behavior

Narrow and Sudden Curve Road		
	Non-Habitual User	Habitual User
Surprise	y	n
Possibility of Forecasting	n	y
Intensity of Consequences	h	l
Need to Control	y	n
Effectiveness of Control	y/n	y
Needs of Countermeasures	y	n
Effectiveness of Countermeasures	y	n
Possible Behavior Compensation	n	y

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Critical Considerations

- User Behavior

Dog suddenly crosses the road		
	Non-Habitual User	Habitual User
Surprise	y	y
Possibility of Forecasting	n	n
Intensity of Consequences	h	h
Need to Control	n	n
Effectiveness of Control	n	n
Needs of Countermeasures	y	y
Effectiveness of Countermeasures	y	y
Possible Behavior Compensation	n	n

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Critical Considerations

- User Behavior

Curve Road Narrow and Sudden		
	Non-Habitual User	Habitual User
Surprise	y	n
Possibility of Forecasting	n	y
Intensity of Consequences	h	l
Need to Control	y	n
Effectiveness of Control	y/n	y
Needs of Countermeasures	y	n
Effectiveness of Countermeasures	y	n
Possible Behavior Compensation	n	y

Dog suddenly crosses the road		
	Non-Habitual User	Habitual User
Surprise	y	y
Possibility of Forecasting	n	n
Intensity of Consequences	h	h
Need to Control	n	n
Effectiveness of Control	n	n
Needs of Countermeasures	y	y
Effectiveness of Countermeasures	y	y
Possible Behavior Compensation	n	n

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Critical Considerations

- User Behavior

The Behavior of Non-Habitual User can be very different from that of Habitual User

The behavior characteristics of Non-Habitual User are quite independent of the type of risk

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Critical Considerations

- User Behavior

External risk: risk not known or not foreseeable in the specific circumstances of time and place

The Behavior is different if the User encounters an External or Internal Risk

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Critical Considerations

- User Behavior

the countermeasure is effective if

- it does not internalize the risk

or

- it internalizes the risk without inducing compensation at the level of speed and trajectory

Further clues (round table on Friday)

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Program of the Lessons of this Session

- 09:15 - 10:45 section B1 – Safety Impact Assessment at the Program and System Levels (J. Kononov)
- 10:45 – 11:15 Break
- 11:15 – 12:45 section B2 – A systematic approach to road safety impact assessment (R. Elvik)
- 12:45 – 14:00 Lunch
- 14:00 – 15:00 section B3: case studies and practical examples (Kononov, Elvik)
- 1500 – 15:30 Discussion

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JAKE KONONOV, Ph.D., P.E. is the president of Road Safety Consultancy DiExSys LLC based in Denver, Colorado, USA.

He has 30 years of experience in all aspects of highway and traffic engineering. He spent most of his career working for the Colorado Department of Transportation. Jake chairs Transportation Research Board (TRB) Committee on Safety Management and is a member of the TRB Committee on Highway Safety Manual (Safety Performance).

Jake Kononov is an author of numerous research papers on road safety published by the TRB, Swedish National Road and Transport Institute (VTI), German Road Research Institute (BAST), Italian Society of Highway Infrastructure (SIV) and Public Works Magazine.


He is an Associate Professor adjunct at the Graduate School of Civil Engineering at the University of Colorado in Boulder where he teaches undergraduate and graduate courses in transportation engineering and PE preparatory seminars.

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RUNE ELVIK is a political scientist from the University of Oslo. He attained the degree of doctor of political science in 1993 and the degree of doctor of philosophy in 1999. In 2007, he attained the ph D degree at Aalborg University in Denmark.

His main areas of research include evaluation of the effects of road safety measures, research synthesis by means of meta-analysis, and cost-benefit analysis.

Rune Elvik has taken part in several international research projects organised by the European Commission, the OECD, the European Transport Safety Council and the US Transportation Research Board. During the years 1997-2004 he was associate editor of Accident Analysis and Prevention. From 2005, he has been one of the editors-in-chief of the journal. From 1999, Elvik has been a member of the committee for Safety data, analysis and evaluation of the TRB. Elvik is professor of road safety studies at Aalborg university in Denmark. From 2009, he is professor of road safety studies at Lund university in Sweden. He has authored or co-authored a substantial number of peer-reviewed papers.

Rune Elvik
 Chief Research Officer
 Professor of road safety studies at Lund university, Sweden

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