

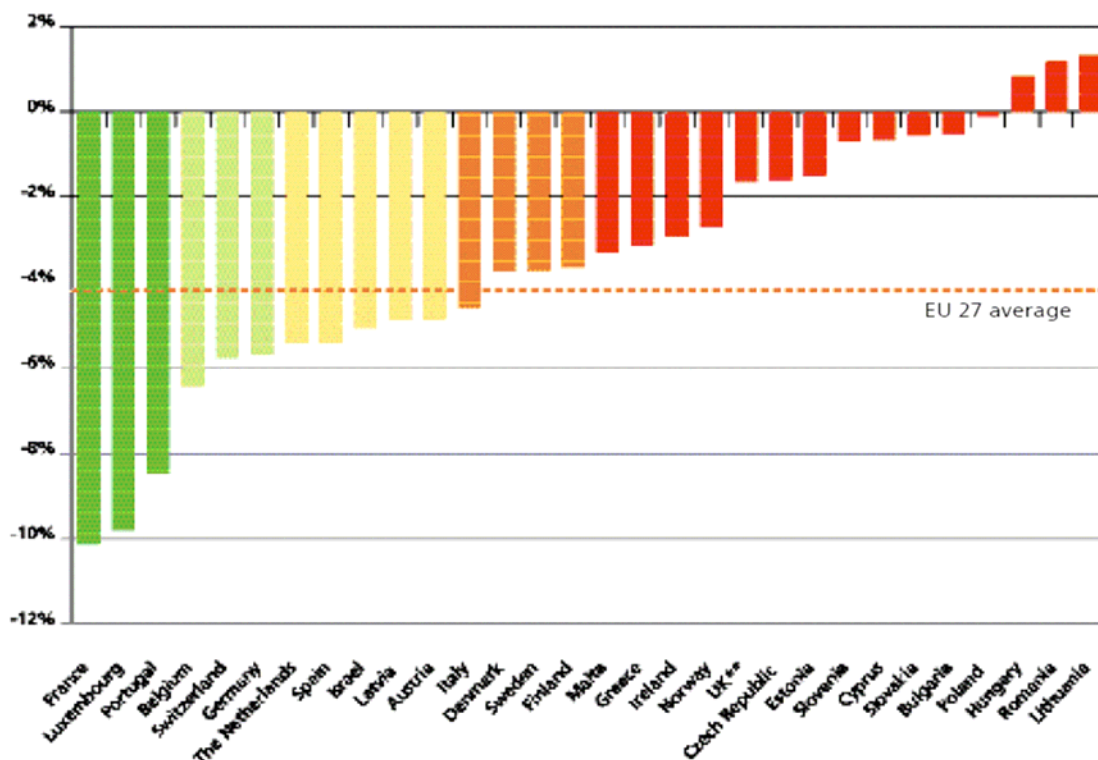
ROAD SAFETY AUDIT IN THE CZECH REPUBLIC

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21st ICTCT workshop in Riga, 30/31.10.2008

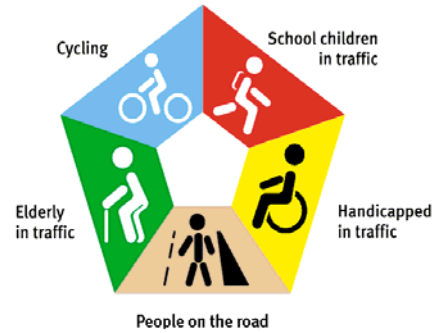
Estimated average annual percentage change in road deaths
over the period 2001-2007 (ETSC, 2008)



Definition of RSA

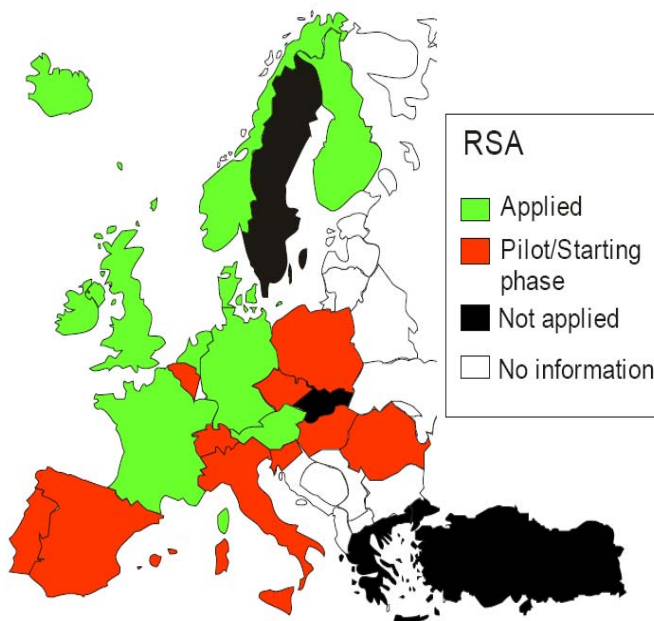
Several different definitions of RSA exist throughout the world...

“**formal** systematic road safety assessment of the **road scheme** carried out by an independent, qualified auditor or team of auditors who reports on the project’s accident potential for **all kinds of road users**”



Reviews of existing roads – without any planned measures – are called **Road Safety Inspections**

RSA in Europe, 2005



RIPCORDER – ISEREST

<http://www.ripord-iserest.com/>

History of RSA

- First SA – on british railways in 19th century.
- Modern road safety audits were established by British traffic engineers in the 1980's.
- The procedures developed in the UK were adopted by many other countries around the world
- Australia and New Zealand established RSA procedures in the early 1990's.
- In the late 1990's a large number of countries began to show interest in RSA. Among others, these countries were Austria, Canada, France, Germany, Spain, USA



Reasons for carrying out RSA

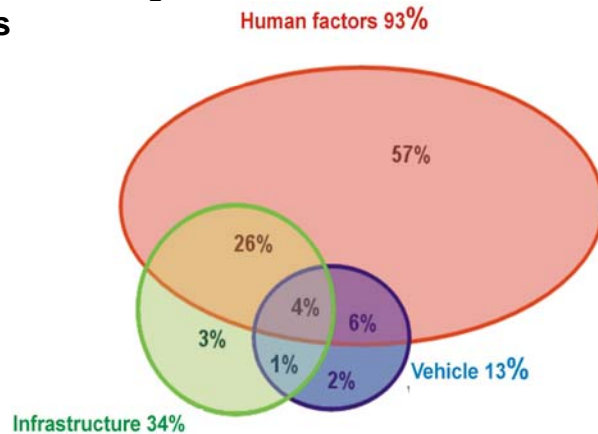
Standards and guidelines naturally consider road safety issues.
Despite this, accidents occur also on new roads...why???

- An inauspicious combination of design elements with minimum standards can lead to dangerous road layout
- Not always possible to comply with the standards
- Final content of technical standards is mainly the result of compromise
- An update of technical standards is a long-term process
- Nature of human beings...

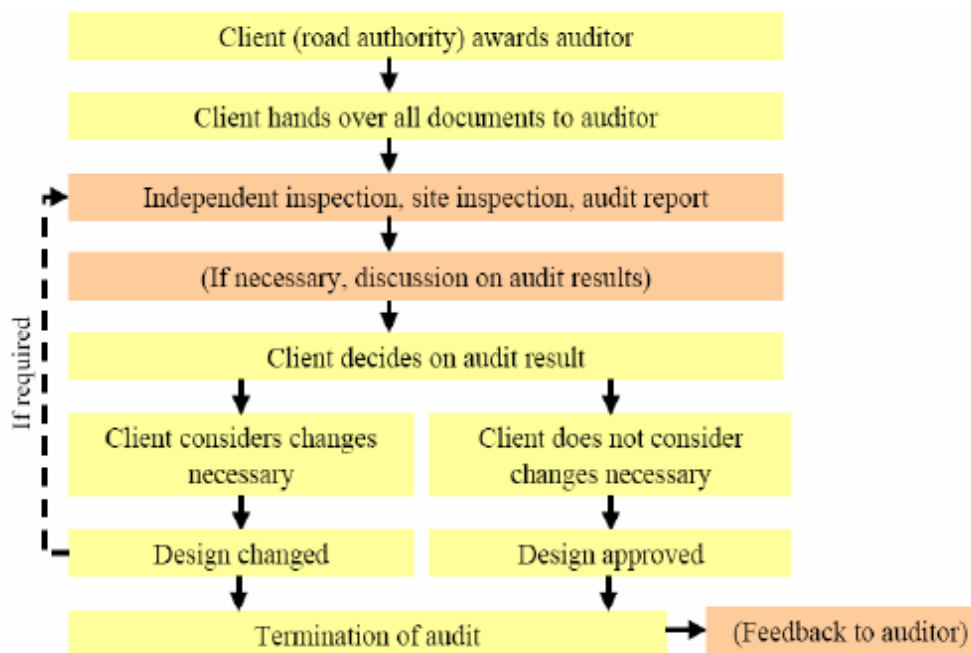
Reasons for carrying out RSA

A correct behaviour of the road users is implied by most standards but, according to road safety studies, the human factors play the most important role in more than 90% of all road accidents.

Road design does not only have to comply with standards, but it must also consider human behaviour and the latest road safety research. Road Safety Audits are being carried out by specialists, experienced in road safety and traffic behaviour research to help road designers and road owners to design roads which are as safe as possible for **all road users**



Typical steps in RSA procedure (RIPCORDER – ISEREST, 2007)



Efficiency of RSA

There are two levels on which the benefits can be assessed. On the **macroscopic** level, the overall benefits of the process can be better defined and explored. At a **microscopic** level, the benefits of individual recommendations, in terms of crash and trauma prevention, can be evaluated.

Three methods

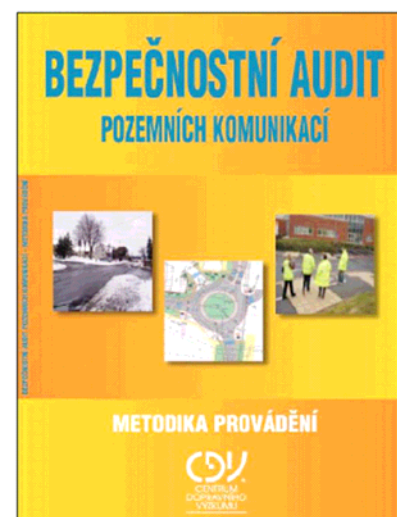
- The investigation of safety audits both as to compliance with procedures and thoroughness
- “The Corben Method” in which theoretical crash savings are ascribed to safety audit findings
- The “Surrey Method” in which crash data from a group of safety audited sites are compared to data from a similar group of unaudited sites.
-
- Meta analysis – R. Elvik

RSA in the Czech republic

1996 – 2000: Project Safestar - Methodology for conducting RSA was produced, the suggestion for Road Safety Audit Act was written and proposals were prepared for legislative changes in the relevant regulations

2000 – 2005: Even the RSA had no official support, the methodology was tested and pilot audits were carried out by CDV

2006 – 2008: RSA Methodology has been upgraded and published in spring 2006 and RSA has become just a voluntary used and recommended road safety tool. „Bottom – up“ implementation. RIPCORDER-ISEREST project. Educational courses for potential auditors and for local and regional authorities.



RSA in the Czech republic – educational courses

6 hours course for local and regional authorities

600 participants were trained on principles of safe road infrastructure tools and on details of road safety audit. Aim – to raise awareness. Sponsored by Ministry

The training courses for road safety auditors

The course contains from 2 parts. 3-day course regarding the general issues of road safety and subsequently 5-days detailed course regarding conducting RSA, site visits, home works etc.

67 road safety auditors finished the courses (no more courses are planned)



Evaluation of RSA process in the Czech republic

It is evident that even without official support of Ministry of Transport it has been possible to implement the principles of RSA into design process.

The whole implementation process can be described as “bottom-up” one.

The initiative has started from research institute and had no official support from decision-makers.

As a result, RSA is a voluntary tool, which usage is based on the willingness of clients to order the conducting of audit or on the knowledge of local authorities, which are aware of usefulness of RSA and put the condition that RSA should be carried out on particular project into relevant project contracts.

The voluntariness of carrying RSA limits its usage. CDV supports the mandatory application of RSA.

The usage of checklist when carrying out RSA is not very popular between auditors, because they mostly rely on their own experience.

The audit’s recommendations are usually low-cost and in case of their acceptance by client the budget of whole project increases just minimal.

The condition of written client’s reaction on RSA finding should be pointed out in contract, because the feedback is minimal in the current state

Short email questionnaire...results:

67 emails, 27 answers (just in 2 days)

11 auditors have not carried out any RSA so far

40 RSA were carried out in last two years by 16 auditors
+ cca 40 RSA by CDV (plus cca 40-50 RSA by the rest of auditors)
In total 100 – 120 RSA

Mostly projects in urban areas, mainly roundabouts, connection to existing road network are audited.

Many projects are not in good quality – they are influenced by politicians and not-professionals from local governments

RSI is much more understandable for investors than RSA

Local authorities often require RSA as a defence against „arrogant“ investors



The most common safety deficiencies identified during pilot audits of roundabouts were:

- Approach lanes too wide
- Departure lanes too wide
- Excessive width of the circulating lane
- Absence of splitter islands on the approaches
- Pedestrian crossing situated too far from the roundabout
- Apron missing or too narrow
- Too much visibility through the central island

Practice example





A screenshot of a Microsoft Word document titled "Audit_Velka_Bites.doc". The document content is as follows:

Řešení
Zvážit zúžení šířky jízdního pruhu na 3,50m.

Větev 2 – ulice Kostelní

Problém
Vzdálenost přechodu od hranice okružní křižovatky je téměř 20 m. Taková vzdálenost znamená zhoršení bezpečnosti chodců, neboť vozidla opouštějící křižovatku mají dostatečnou vzdálenost na to, aby zrychlila ještě před přechodem. Přechod dále není vybaven ostrůvkem na přecházení. Značné odsazení přechodu také způsobuje závlak chodců ve směru chůze ul. Na Valech – Vlkovská a zpět.

Návrh řešení
Umístit přechod do vzdálenosti cca 5 m od hrany okružního pásu a vybavit jej ostrůvkem na přecházení.

Větev 3 – ulice Na Valech

Problém
Chybějící ostrůvek pro ochranu chodců na přechodu pro chodce zásadním způsobem snižuje bezpečnost chodců.

Řešení
Navrhnout ostrůvek na ochranu chodců

Větev 4 – ulice Tišnovská

The screenshot also shows the Microsoft Word interface, including the menu bar, toolbars, and the status bar at the bottom which displays "Stránka 5 odd 1 5/6 na 24,2 cm F. 32 sl. 1" and the system tray with the time "11:39".



References

Road Safety Audit, PIARC 2001

Practical Road Safety Auditing, TMS Consultancy, 2001

Project Safestar, deliverable 8, 1998

Project RIPCORDER – ISEREST, 2008

Methods for determining the benefits of safety audit, Transfund NZ, 1997

ETSC PIN report, 2008



THANK YOU
FOR
YOUR ATTENTION

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