

The Road Safety Picture: A Joint Effort Among Vehicles, Infrastructure and Users

Moderator: Emanuela Stocchi, AISCAT

- **Joerg “Nu” Rosenbohm, ITS America**
- **Maurizio Rotondo, AISCAT**
- **Pascal Latimier, Abertis France**
- **Roberto Arditi, Sina S.p.A.**

Roadway Safety in US: Current infrastructure-based ITS Systems

Joerg 'Nu' Rosenbohm



Chief Technology Officer

+1 240-447-1987

Jrosenbohm@itsa.org

Roadway Safety Issues: The factors

- Geometry
 - Curves, reduced lanes, work zones, exit and entry ramps
- Speeds
 - Inappropriate / excessive speeds for roadway types and/or conditions (snow, ice, fog, rain)
- Impaired driving
 - Alcohol, drugs, medications
- Distracted driving
 - Phones, Internet, e-mails, other activities
- Loss of control

Factors contribute to occurrence of incidents and congestion

- Intelligent transportation systems (ITS) support avoidance of incidents and reduce impacts of incidents
- ITS uses computer and communications technologies at the roadside and in vehicles
- Congestion: inform people pre-trip and en-route of issues and intermodal alternatives
- Incidents: Detection, Confirmation, Response
 - Early detection reduces response times
 - Quick confirmation optimizes resources
 - Decision support systems (DSS) provide structured and common notifications and response activities

How does ITS support these activities?

- Pre-trip notifications via Internet, e-mail, TV, radio
- En-route notifications via navigation systems, radio, integration of electronic means into on-board systems
- Early detection via closely spaced detectors and algorithms to detect slow downs
 - 911 centers are receiving incident information faster
- Quick confirmation via CCTV cameras to visually confirm incidents and congestion
- DSS integrated in transportation management systems; automated response plans predefine:
 - Response activities for different types of congestions or incidents
 - Allows to standardize the notifications structures

- Automated response plan definitions could include:
 - Algorithms to determine activities based on locations, incident types and severities, lane closures
 - Activation of messages on dynamic message signs,
 - Activation of highway advisory radio messages,
 - Sending messages to webpages.
 - Notifications to internal staff, tow trucks, snow plows,
 - Notification of police, EMS, and fire responders
- Updates to incidents may lead to activation of other response plans (trigger-based)
- Most US state and many local DOTs have ITS management systems – many support DSS

- Effects of congestion and incidents are often regional and affect several jurisdictions
 - Integration of or information exchange between management systems
- Examples include Maryland's CHART system (main TOC with satellite TOCs), Tennessee (several TMCs), California (several TMCs), city traffic signal systems operated by different jurisdictions (signal timing plan coordination)

- Future vehicular and infrastructure-based ITS Systems enhancements reduce time to detect, confirm, and respond
 - Incident avoidance systems under development and early deployment
 - Vehicular-based notification and detection systems such as Connected Vehicles / Cooperative Systems technologies
 - Connected Vehicle Safety Pilot Project in Michigan involving 3000+ vehicles, trucks, and transit vehicles
 - Test beds in Michigan, California, Virginia
 - Maricopa County, AZ improves safety at intersections using DSRC for emergency vehicles

- Integration of management systems (among ITS systems, transit systems, and with tolling systems)
 - Systems overlapping in physical coverage and coordination of responses (congestion, incidents, and tolling information)
 - Systems accompanying each other in functions such as incident responses where transportation operators, Fire, and Medical teams need to arrive at an incident location and coordination of activities
 - Integration needs among ITS Systems and tolling systems – shared usage of equipment (DMS) and field communications infrastructure

Where to get more information?

- US DOT's Research and Innovative Technology Administration (RITA) - www.its.dot.gov
- National Highway Traffic Safety Administration (NHTSA) - <http://www.nhtsa.gov/>
- American Association of State Highway and Transportation Officials (AASHTO) - <http://www.aashto.org>
- ITS America - www.itsa.org

- USDOT FHWA Highways for Life Program (<http://www.fhwa.dot.gov/hfl>)
- AASHTO/NHCRP Strategic Highway Safety Plan (<http://safety.transportation.org/elements.aspx>) defines goals (and strategies) for highway safety:
 - Highways - work zones, head-on crashes, lane departures, rail crossings,
 - Emergency Medical Services in metro, rural, wilderness settings
 - Management - support systems
 - Drivers, non-motorist users, vehicles

- ITS World Congress and Annual Meeting
 - October 16 – 20, 2011 in Orlando, FL
 - Special focus on Connected Vehicles/ Cooperative Systems incl. infrastructure ITS
 - Expecting the largest attendance – 10,000 delegates from more than 70 countries
 - Eight Pricing Demos – mileage-based user fees, interoperability of multi-protocol devices, pricing-based congestion management, dynamic pricing, all electronic, integrated corridor operations
 - Register now at www.itsworldcongress.org

United Nations declared the Decade of Action
for Road Safety!

QUESTIONS?

Thank you!

www.itsa.org



fundació
abertis



YOUNG PEOPLE AND THE MOTORWAY

- 14 % of the motorists killed on the Sanef network are under 25 ...yet they represent only 6 % of our clients
- Autoroute académie is primarily aimed at young people learning how to drive

YOUNG PEOPLE AND THE MOTORWAY

● Purpose :

- To help future drivers deal better with the distinctiveness of driving on motorways
- To limit high-risk behaviour
- To increase the future driver's awareness of our motorway staff on site
- To contribute to road safety on our network



● Additional training to traditional driving licence training

THE AUTOROUTE ACADEMIE PROJECT

- Promoted by the abertis foundation and the sanef group
- Receives the partnership of 1500 driving schools in France
- Drawn up in co-operation with the DSCR (Road Safety and Traffic Delegation – Home Office)



- *“It is very important for young people to have this kind of additional tool because driving on motorways requires Attention and Control”*
Michèle Merli, Interdepartmental Delegate to the Road Safety and Traffic



THE AUTOROUTE ACADEMIE PROJECT

3 Steps

- A new **education tool** aimed at young people focusing on motorway driving distinctiveness → www.autorouteacademie.com
- **Practice on site** thanks to a free access to our motorway network during the driving lessons
- **Skills checks** : young people can check their knowledge and take part in a contest where they can win 1000 km toll-free motorway use



TOPICS TREATED



Distinctiveness of driving on a motorway:

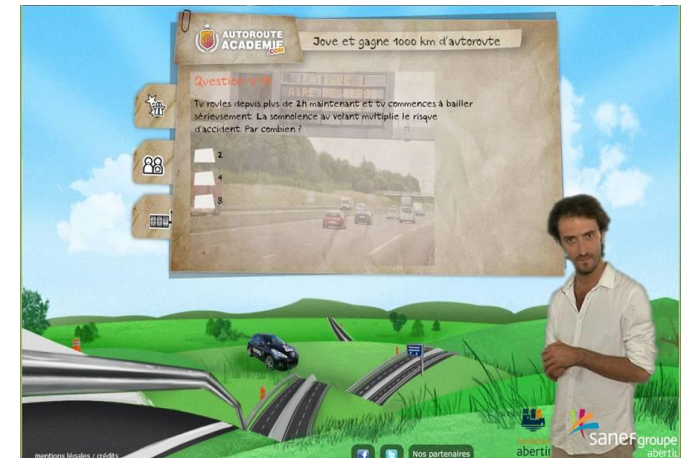
- Be aware of the motorway workers on site
- Drive in the correct lane
- How to use the hard shoulder
- How to drive into and out of the motorway, avoid taking the wrong direction,.....
- How to share the motorway (cars, lorries, motorcycles)
- Arrival at the toll station
- Good use and understanding of the ways of information on the network (matrix signs, radio, ...)
- And common sense (vehicle condition) and safety rules reminders (seat belt, speed, safety distance,...)

Recurrent topics:

- Tiredness and loss of alertness (major cause of fatal accidents)
- Drink driving (second cause of fatal accidents)

EDUCATION BACKUP

- A humorous and attractive approach, focusing on the gap between the importance of the information given and the means of communication
- A website dedicated to driving on a motorway :
 - Web is designed to reach the main target : young people
 - Dynamic contents :
 - Short videos
 - Quiz
 - Marketing based on buzz : « test a friend »



THE WEBSITE

1- The main module

- 16 subjects developed in 4 videos : driving into the motorway, arrival at the toll station, what to do in case of a breakdown, roadwork area
- A teaching part with 4 highlighted moments of each video (right and wrong behaviour)
- Movie

2- « Play and win 1000 km toll-free motorway use»

- 45 questions drawn up and grouped in 15 subjects
- A quiz of 15 questions selected at random
- Award : an electronic tolling pass allowing to cover a distance of 1000 km of motorway in France.



3- « Test a friend» in order to promote the website among young people



THE WEBSITE

1- The main module

- 16 subjects developed in 4 videos : driving into the motorway, arrival at the toll station, what to do in case of a breakdown, roadwork area
- A teaching part with 4 highlighted moments of each video (right and wrong behaviour)
- Movie

2- « Play and win 1000 km toll-free motorway use»

- 45 questions drawn up and grouped in 15 subjects
- A quiz of 15 questions selected at random
- Award : an electronic tolling pass allowing to cover a distance of 1000 km of motorway in France.



3- « Test a friend» in order to promote the website among young people

THE HOME PAGE

AUTOROUTE ACADEMIE
Autoroute académie

Autoroute Académie

Evalue vn(e) ami(e)

Gagne 1000 km d'autoroute

Anthony & Rachel

Thimothé & Yoann

Kevin

Camille

mentions légales / crédits

Nos partenaires

sanef groupe abertis

THE QUIZ

AUTOROUTE ACADEMIE .com

Joue et gagne 1000 km d'autoroute

Question 1/3

Tu roules depuis plus de 2h maintenant et tu commences à bailler sérieusement. La somnolence au volant multiplie le risque d'accident. Par combien ?

2

4

8

mentions légales / crédits

Nos partenaires

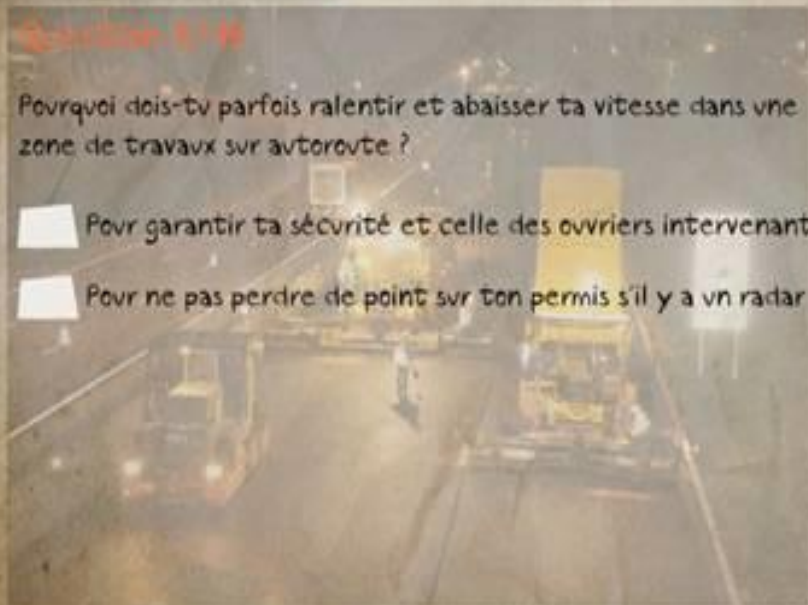
abertis

sanef groupe abertis

Question 1/4

Pourquoi dois-tu parfois ralentir et abaisser ta vitesse dans une zone de travaux sur autoroute ?

- Pour garantir ta sécurité et celle des ouvriers intervenant dans le chantier
- Pour ne pas perdre de point sur ton permis s'il y a un radar



AN AWARENESS OPERATION RELYING ON DRIVING SCHOOLS



The autoroute académie website was created in partnership with the associations **CER** (Road Education Centres), **ANPER** (National Association for Road Education Promotion) and the **CNPA** (National Board of automobile professionals).

It received the expertise of the driving instructor professionals.

The website promotion is carried out by the driving school partners.

INITIAL RESULTS

- Over the last 3 months, the website has received more than 10,000 visitors
- 1,200 young people gave the correct answers in the quiz and participated in the 1st draw to win 1,000 km of toll-free motorway use.



IBTTA 79th Annual Meeting & Exhibition

ENVIRONMENT/SOCIAL RESPONSIBILITY

**The Road Safety Picture: A Joint Effort Among
Vehicles, Infrastructure and Users**

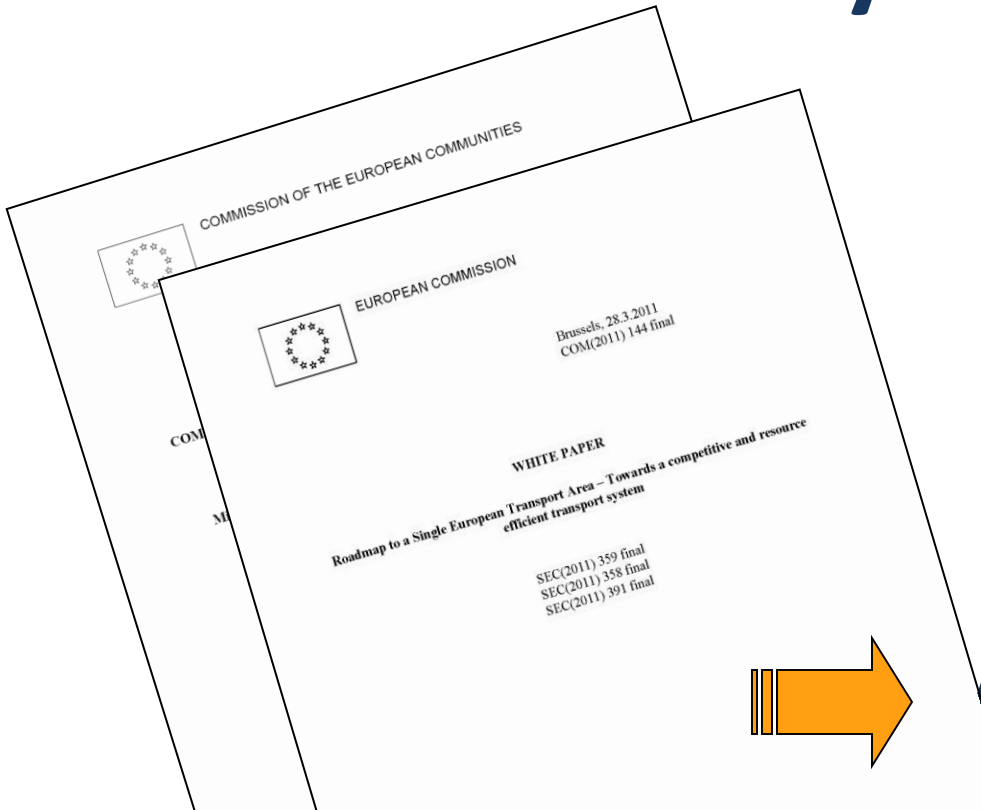
Berlin, September 11-14, 2011

Roberto Arditi - SINA S.p.A.

Goal

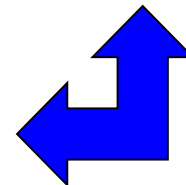
Representing the road concessionaires and showing how motorway operators are called to improve the performance, effectiveness and safety of the infrastructure they operate through careful and intelligent use of ITS systems

EU Policy on Transport



... using transport and infrastructure more efficiently through use of improved traffic management and information systems (e.g. ITS, ...), advanced logistic

A VISION FOR A COMPETITIVE AND SUSTAINABLE TRANSPORT SYSTEM



ANOTHER REASON

ROAD OPERATOR

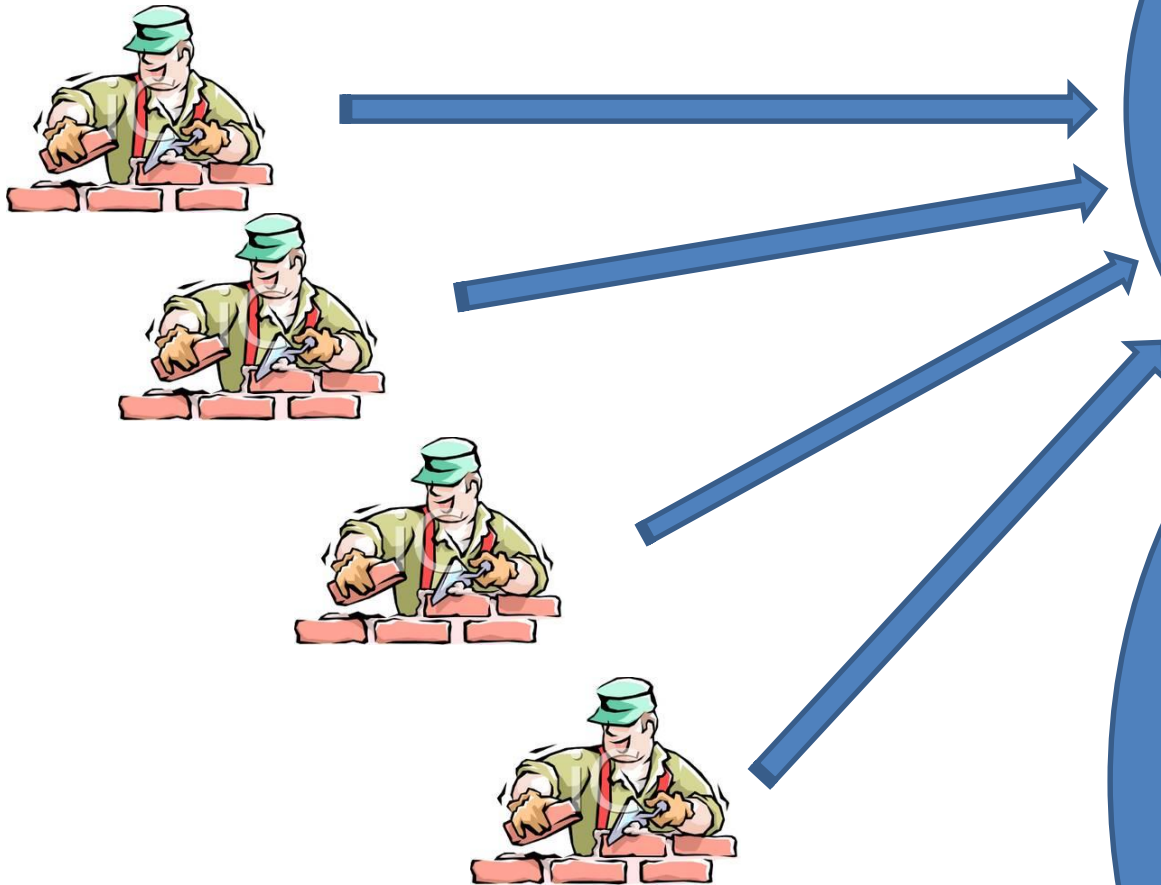


**Organizations operating on
a large scale**

Knowledge:

- Road itself
 - Crossed land
 - Traffic
- Neighboring**
- Built-in areas
 - Infrastructures





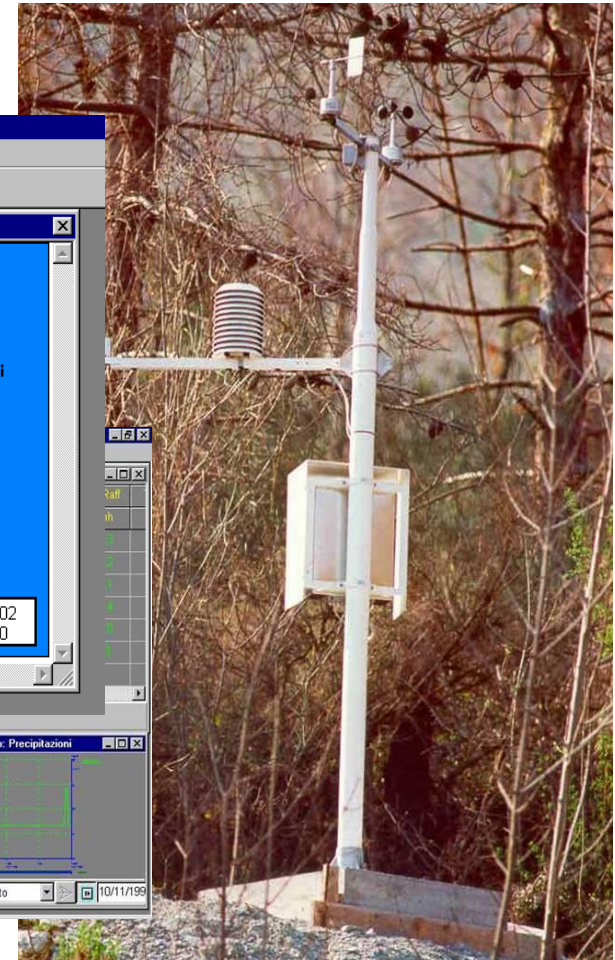
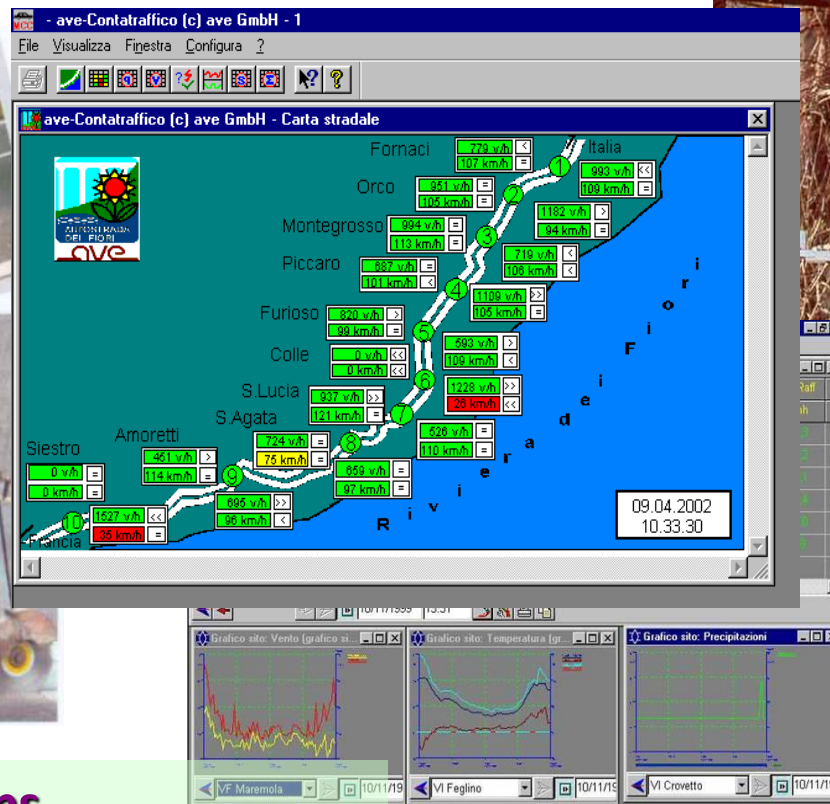
SERVICES

SAFETY
INFORMATION
MAINTENANCE



ITS IS AN ASSET
FOR
EFFICIENCY

Weather and traffic detectors



- weather stations
- traffic counting stations

VMS information system

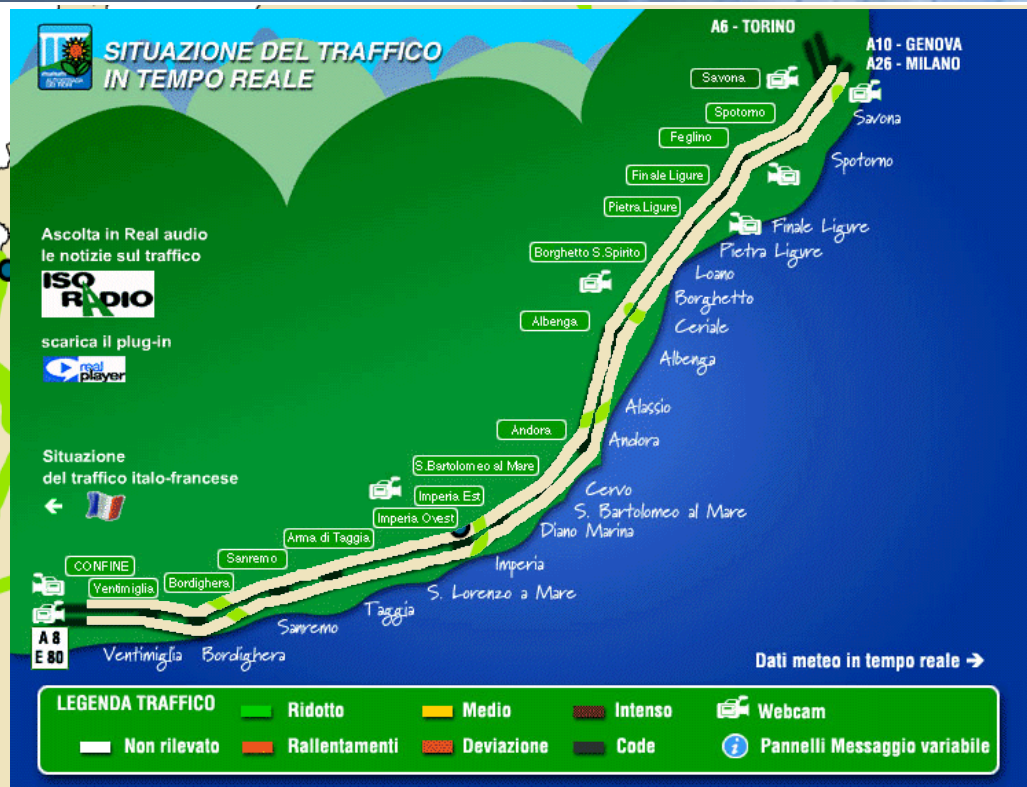
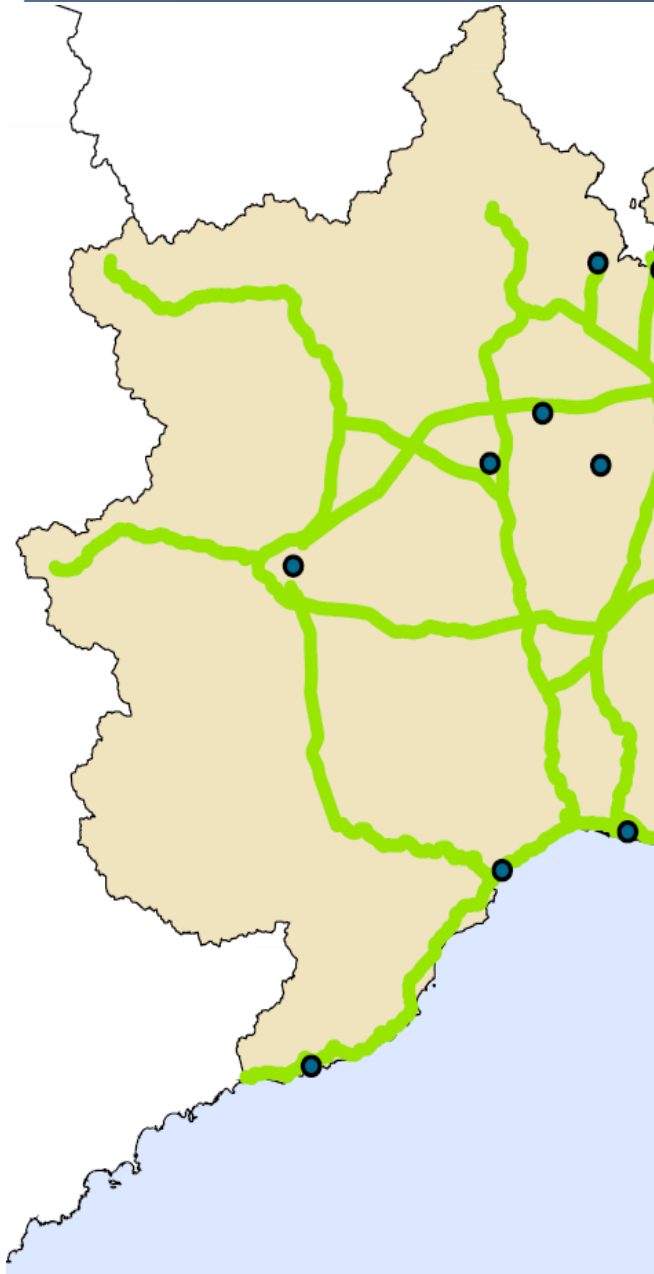




CHOICE



TRAVEL TIME SERVICE



Real time traffic condition





Emergency call system

Autostrada dei Fiori - FEP Impianto SOS Fonia

Diagnostica Simulazione ?

Stazione	Km	Direzione	Chiamata	Giorno	Ora	Stazione chiamata:

FILTRATO IL PULSANTE VIGILI DEL FUOCO DELLA COLONNINA 003

ACQUISIZIONE

SVINCOLO

INTERROGAZIONE

AUDIO ON OFF

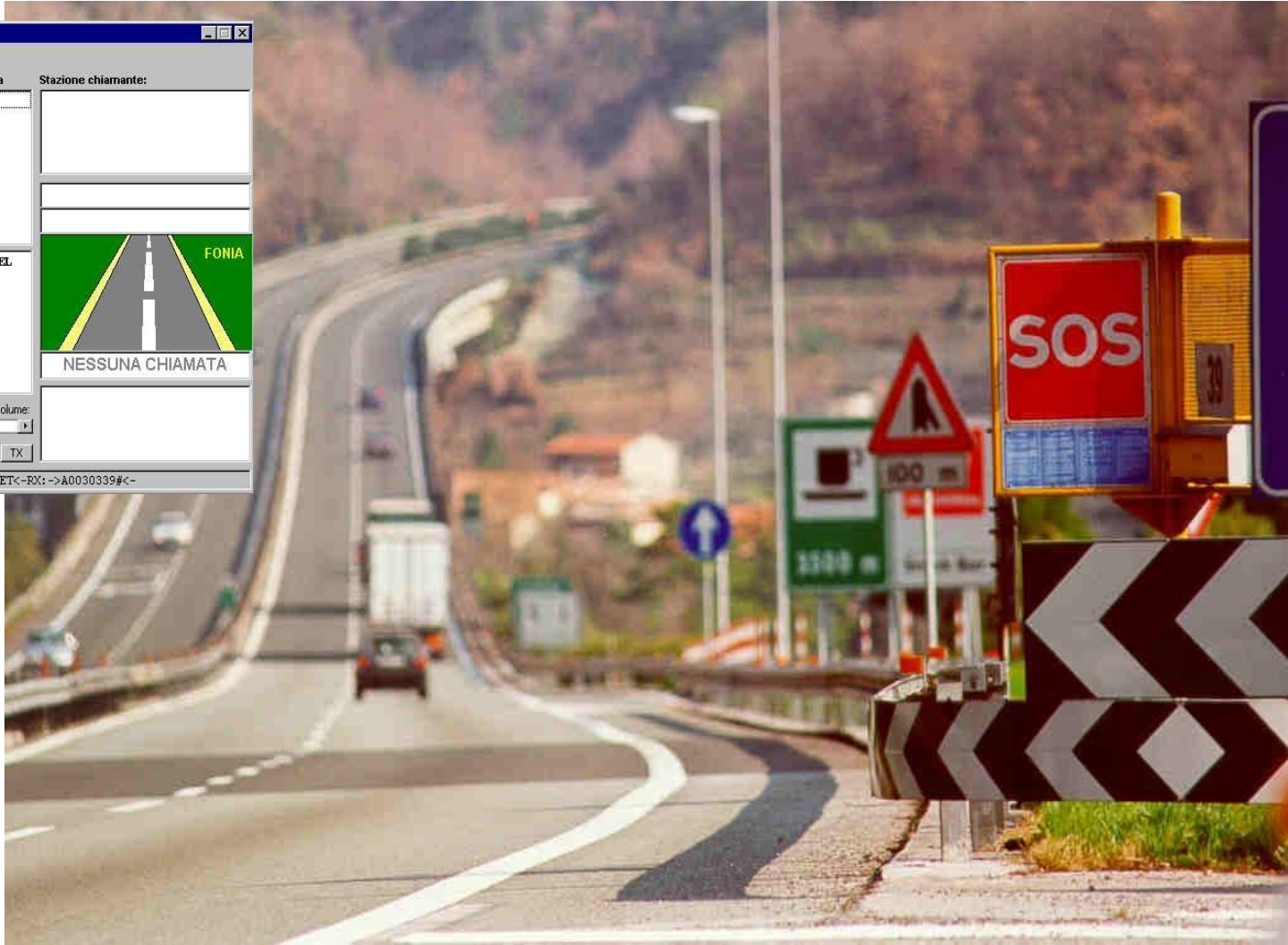
RESET TRATTA FONICA

Volume: [Progress bar]

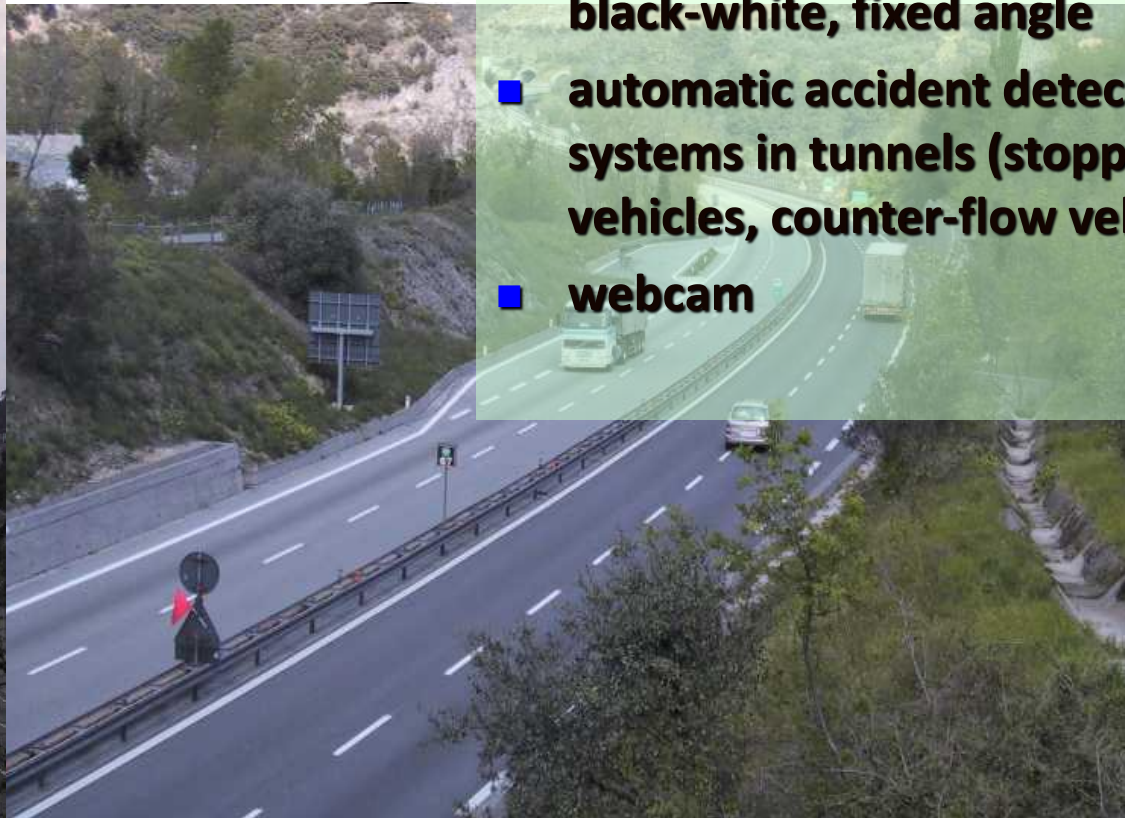
TX

NESSUNA CHIAMATA

TX: ->RESET<-RX: ->A0260334#<-RX: ->A0260435#<-TX: ->RESET<-RX: ->A0030339#<-



CCTV Traffic monitoring

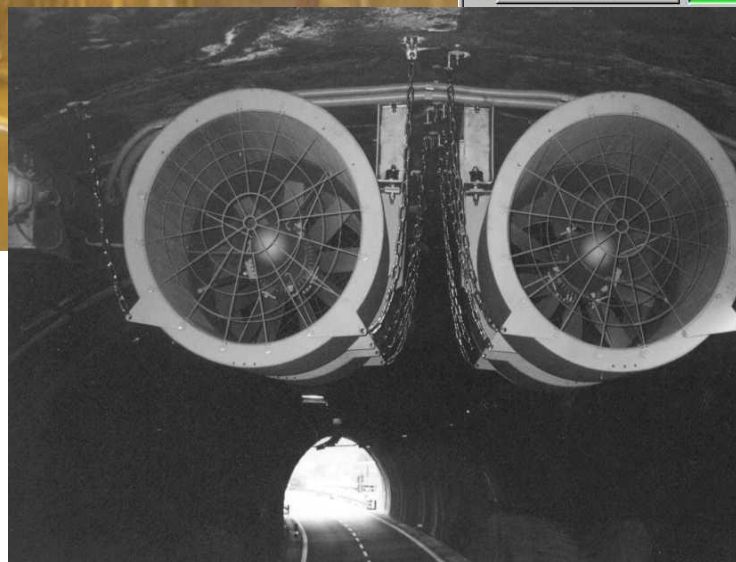


- **open field color cameras**
- **inside tunnel cameras, color and black-white, fixed angle**
- **automatic accident detection systems in tunnels (stopped vehicles, counter-flow vehicles)**
- **webcam**



New video surveillance system

Tunnel Ventilation system



VENTILAZIONE Gallerie - Adf WinMon

File Opzioni ?

Galleria	Ventilazione	Ventilazione	Allarme
1 FORNACI	SPENTA	SPENTA	NORMALE
2 ORCO		SPENTA	NORMALE
3 ROCCA	ALTA	SPENTA	NORMALE
4 MONTE GROSSO	SPENTA	SPENTA	NORMALE
5 VALLON D'ARME	SPENTA	SPENTA	NORMALE
6 COLLE DICO	SPENTA	SPENTA	NORMALE
7 SIESTRO	SPENTA	SPENTA	NORMALE
8 DEL MONTE	SPENTA	SPENTA	NORMALE
9 BUSSANA	BASSA	BASSA	NORMALE
10 POGGIO	SPENTA	SPENTA	NORMALE
11 VILLETTA	SPENTA		NORMALE

Stato del FEP : **ATTIVO**

Mobile phone field coverage

- Mobile phone field coverage in tunnels (TIM, Vodafone, Wind, H3G)
- 95% total area coverage



AdF Traffic Control Center



Components of a Traffic Management Plans

EVENTO
EVENT



SINA Informazioni agli utenti ed ai gestori

Stato di emergenza	Tipologia di emergenza	Attività da svolgere	Informazioni del gestore
<p>Procedure di emergenza</p> <p>1. Identificare l'emergenza (segnalazione, rilevamento, segnalazione di emergenza)</p> <p>2. Valutare l'entità dell'emergenza (gravità, estensione, impatto)</p> <p>3. Attivare il piano di emergenza (segnalazione, attivazione, attivazione)</p> <p>4. Gestire l'emergenza (segnalazione, attivazione, attivazione)</p> <p>5. Terminare l'emergenza (segnalazione, attivazione, attivazione)</p>			
<p>Procedure di emergenza</p> <p>1. Identificare l'emergenza (segnalazione, rilevamento, segnalazione di emergenza)</p> <p>2. Valutare l'entità dell'emergenza (gravità, estensione, impatto)</p> <p>3. Attivare il piano di emergenza (segnalazione, attivazione, attivazione)</p> <p>4. Gestire l'emergenza (segnalazione, attivazione, attivazione)</p> <p>5. Terminare l'emergenza (segnalazione, attivazione, attivazione)</p>			
<p>Procedure di emergenza</p> <p>1. Identificare l'emergenza (segnalazione, rilevamento, segnalazione di emergenza)</p> <p>2. Valutare l'entità dell'emergenza (gravità, estensione, impatto)</p> <p>3. Attivare il piano di emergenza (segnalazione, attivazione, attivazione)</p> <p>4. Gestire l'emergenza (segnalazione, attivazione, attivazione)</p> <p>5. Terminare l'emergenza (segnalazione, attivazione, attivazione)</p>			

DECISIONE
DECISION

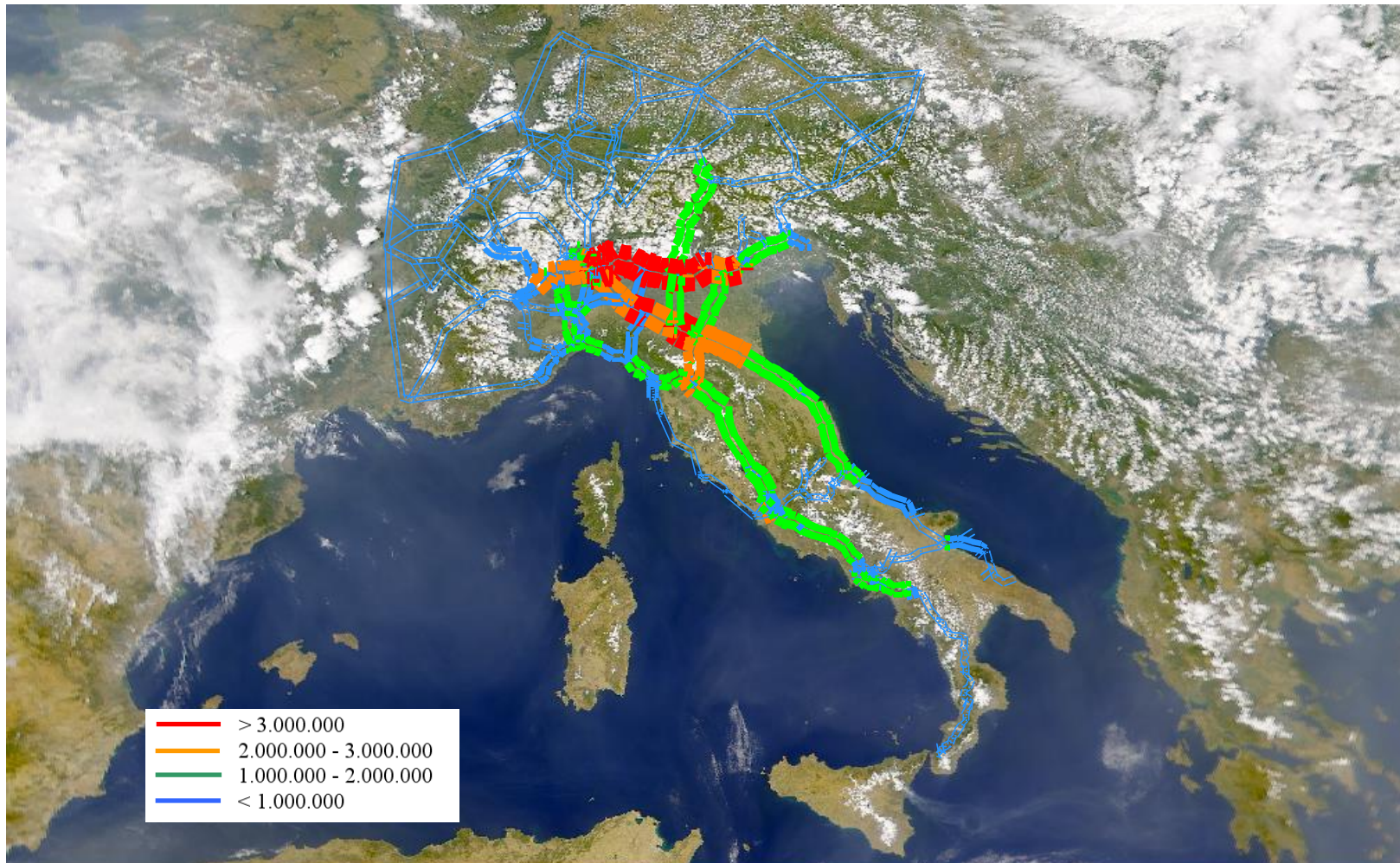


INFORMAZIONE
INFORMATION





Knowledge of traffic



TMPs for the A4 Turin–Milan and A21 Turin–Piacenza Motorways

Alternatives Itineraries



FACTOR N° 1 FOR ROAD SAFETY





CAMPAGNA REALIZZATA
IN COLLABORAZIONE CON



ROAD SAFETY CAMPAIGN

ASTM-SIAS GROUP

You fall from the third floor, you hit the ground at 50 km/h
WOULD YOU JUMP UNBELTED?



PUT YOURSELF AT THE HELM OF YOUR LIFE.
CHOOSE A RESPONSIBLE BEHAVIOUR

WE FOR YOU
ASTM-SIAS Group Motorway Operators designed high-performance safety barriers intended to redirect the vehicles towards the carriageway and mitigate the impact of heavy-duty vehicles while being flexible enough against light vehicles. However, motorways are designed to be driven through at relatively high speeds. You cannot even think you can resist a collision when unbelted. You know what? You'd rather comply with the code and wear safety belts even in town – a car falling from the third floor of a building hits the ground at 50 km/h. If you were to fall from the first floor, it'd be 30 km/h and from the ninth floor almost 85 km/h. Would you jump from the third floor, or even just from the first, with your car without wearing your belt?

1. WHEN?
When you travel by car, either as a driver or as a passenger.

2. WHAT?
Your fellow passengers and you must wear the safety belts. Before leaving, check that everybody is wearing their safety belts, both in the front and back seats. If there are any children, check that the vehicle is equipped with infant car seats suitable for their height and weight. Remember that babies must never be sitting in the front seats.

3. WHY?
In case of collision, any passenger not being firmly attached to the vehicle is bound to be projected outside it at high speed in the driving direction. Be careful! Don't think that the passengers sitting in the back run no risk. Whoever is not wearing their seat belts can be hurled out of the car with very serious consequences.

Besides, uncontrolled movements of unbelted passengers might be dangerous for the others – a person hitting other passengers deadweight might cause very serious damages to themselves and to the others.

... DEBUNKING THE STEREOTYPES ...

C.d.S. Art. 140 - 172

www.autostradafacendo.it

Campagna per la sicurezza stradale - Windows Internet Explorer

http://demo.finsa.it:8181/sina/

File Modifica Visualizza Preferiti Strumenti ?

Google Traduttore# Campagna per la sicurez...

Campagna per la Sicurezza Stradale

campagna la sicurezza stradale nel mondo la nostra squadra

Mettiti alla guida della tua vita! Scegli un comportamento responsabile

Scopri la campagna >>

Esercizio e tecnologie

Mettiti alla guida della tua vita: al via la Campagna per la Sicurezza Stradale 2011/2012

di Paolo Pierantoni - SIAS

I gestori della grande viabilità assumono, per via della normativa vigente e dei patti convenzionali, una pluralità di compiti che riguardano la corretta costruzione e gestione delle autostrade. Il concessionario, per garantire la sicurezza e la fluidità della circolazione, provvede alla costruzione a regola d'arte di infrastrutture, impianti e segnaletica. **Leggi tutto >>**

Statistiche sulla strada

Risparmio di vite umane registrato sulla rete delle concessionarie del gruppo ASTM-SIAS rispetto al 2001

2001 2010

- Vite salve: migliore rispetto al 2001
- Obiettivo Europeo
- Migliore ASTM-SIAS rispetto all'obiettivo

291 vite risparmiate
83 in più rispetto all'obiettivo

Multimedia

Guarda le immagini raccolte dal Gruppo ASTM-SIAS e le campagne disponibili in rete

UNA CAMPAGNA
fonte: GOBIERNO DE COLOMBIA
tipologia: Campagna
lingua: Spagnolo
categoria(e): Casi reali

IN QUESTO VIDEO DEI
fonte: WORLD HEALTH ORGANIZATION
tipologia: Campagna
lingua: Inglese
categoria(e): Buoni

GLI ADULTI HANNO LA
fonte: POUZIVETE DETSKE AUTOSEDAČKY
tipologia: Campagna
lingua: Repubblica Ceca
categoria(e): Città

Si scivola (anche con
fonte: SINECO

Il tempo oggi

Milano
20°C

Per lo più nuvoloso

Gio	Ven	Sab
18°C/28°C	20°C/29°C	19°C/29°C

Diventa partner della campagna

Abbiamo bisogno di te per portare avanti e diffondere la cultura della



EasyWay



4th European forum

Roads for tomorrow

Rome 9 • 10 • 11
November 2011

Save the date



European Commission
Mobility & Transport





Andorra



Austria



Belgium



Bulgaria



Cyprus



Czech Republic



Denmark



Estonia



Finland



France



Germany



Greece



Hungary



Ireland



Italy



Latvia



Lithuania



Luxembourg



Malta



Netherlands



Norway



Poland



Portugal



Romania



Slovakia



Slovenia



Spain



Sweden



Switzerland



United Kingdom

30 EasyWay countries
(3 observers)

3 Institutional
representatives

16
Concessionaries

4 Operators



EasyWay



4th European forum

**Roads for
tomorrow**

Rome 9 • 10 • 11
November 2011

Save the date



- Delegates from the 27 EU Member States
- High level decision-makers from all Europe will present the current framework of the European policy for mobility and the milestones ITS Directive and Action Plan and how these are being put into action.

EasyWay



4th European forum

**Roads for
tomorrow**

Rome 9 • 10 • 11
November 2011

Save the date



- **Presentation of over 50 technical papers**
- **A round table with delegates of the main institutional decision makers and stakeholders (EU Parliament, EC DG-MOVE, DG-ENTR, TEN-T EA, GNSS Agency, UN-ECE, ASECAP, CEDR, ERTICO, TISA)**
- **A Lectio Magistralis of the EC (DG-MOVE) organised in cooperation with the University Roma 3 of Rome, on the European Transport Policy. A debate with high-level discussants from the University and from the world of Roads shall follow the Lectio.**

Thanks for your attention

roberto.arditi@sina.co.it



SINA

www.gruppo-sina.it

The Road Safety Picture: A Joint Effort Among Vehicles, Infrastructure and Users

Moderator: Emanuela Stocchi, AISCAT

- **Joerg “Nu” Rosenbohm, ITS America**
- **Maurizio Rotondo, AISCAT**
- **Pascal Latimier, Abertis France**
- **Roberto Arditi, Sina S.p.A.**