Supporting Services for the Establishment and Operation of the
National Centre for Road Safety
in the Kingdom of Saudi Arabia

المركز الوطني لسلامة الطرق
National Road Safety Center

Statistical Data Analysis for Road Safety

Module 9

Training Courses

Road Safety Data Collection And Storage

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Road Safety Experts

S2

Is this a road crash by definition?

A minibus crashed into a truck carrying petrol

No casualties were reported but the truck was damaged and could not be removed and petrol was leaking out. Both vehicles still stood in the crash site.

A motocycle taxi passed from the site and he alerted his fellow motorcycle taxi drivers. A piece of news was spread by mobile phones that here you can collect free pertrol. Many people went to the site keeping empty bottles or other materials in their hands and they filled them with petrol. Some people used their helmets to collect petrol.

Suddenly, the truck exploded and 39 persons died.

Crash data - General

Crash data can be extremely useful to a number of agencies and individuals, including:

- **traffic engineers** – in the identification, analysis and treatment of existing risks and the prevention of future risk problems;
- **policy-makers** – at national, regional and local levels in setting crash reduction targets, developing road safety action plans, and monitoring performance;
- **police** – in the identification of problem locations and times for law enforcement;
- **health sector** – for resource planning, injury surveillance, health promotion and injury prevention interventions;
- **research community** – in preventative studies and in testing and improving the effectiveness of road safety treatments;
- **insurance companies** – in setting insurance rates and premiums;
- **vehicle manufacturers** – in the development of safer vehicles;
- **prosecutors** – in the use of data as evidence.

Crash data - General

- Crash data is used to identify **high crash risk sites**, as well as possible identification of **risk factors** that are specific to the site.
- In the identification of **problematic crash locations**, target groups or particular risk factors, policy makers use crash data to **approximate the size** of the problem in terms of counts, severity, trends and the costs of road traffic injuries (WHO, 2010).
- It is therefore important that policy makers have access to crash characteristics, such as age group, crash type and road user group, so that they can make informed decisions about which high-risk problems get priority and what solutions can be effectively implemented.

- Police can also use crash data to target **enforcement** towards a particular issue or location. It is important that the police receive regular feedback so that they can see how their efforts in the collection of crash data, and in traffic enforcement, are having a positive impact (WHO, 2010).

Monitoring and evaluating the performance of initiatives

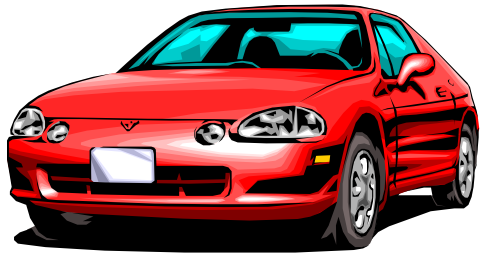
- Crash data is essential to evaluate treatments and policies that have been introduced. Evaluations provide a knowledge base about the effectiveness of a given treatment, as well as ensuring that current programs are providing the expected and desired results.

S2. Crash Data Collection, Storage, Processing

The road users

Driver licence register give data
Key is National Driver ID

The vehicles



Vehicle register gives data
Key is registration number

The road

Road data bank gives data
Key is location

The crash

The Location

Road Accident Data Collection

- Police databases
- Hospital Databases
- Insurance companies databases
- Vital Registration

Police

- Detailed disaggregate data (on the spot)
  - Accident
  - Vehicle
  - User
- National data collection form
- Definition of fatality: Common European definition
  - 30 days from the accident
- Statistics

Police (Reported Crashes)

✓

- The police always visit the site of serious crashes
- Can give exact location

✗

- The police officers have a very hectic workload at the site which hamper the data collection
- The injuries are difficult to be classified immediately at the site
- Many crashes will never be reported

Police (Reported Crashes) - Data

- Location of accident (Coordinates)
- Date and time and
- Number of fatalities and injuries
- Type of accident

- Road type
- Road and pavement condition
- Road geometry
- Signage
- Weather conditions

- Vehicles' information
- License plate number
- Safety equipment usage

- Road user data
- Casualties data
- National ID number

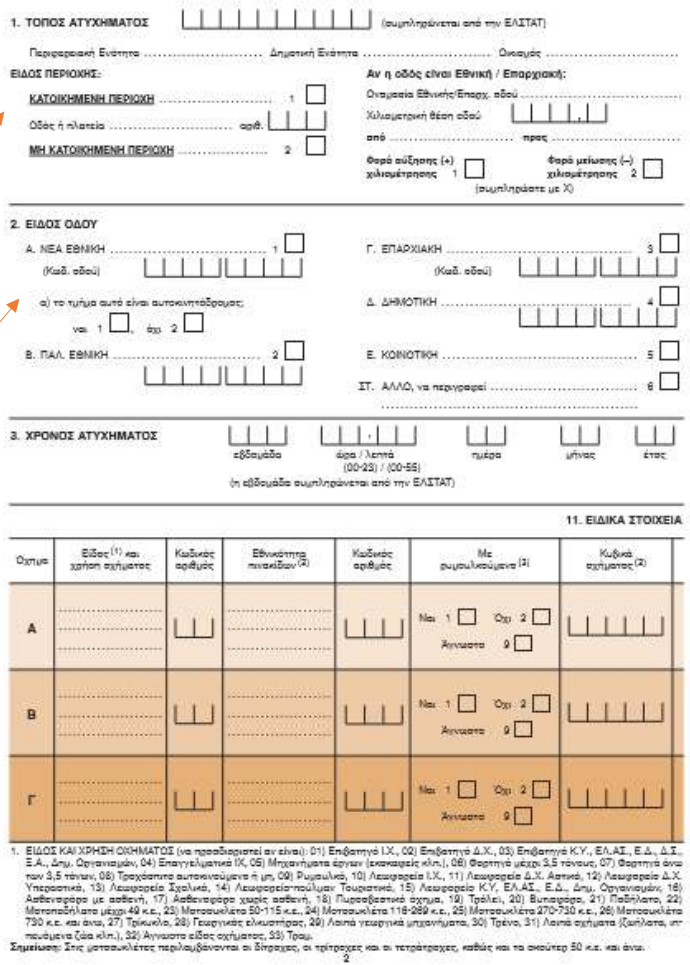
Police (Reported Crashes) - Greece

Area of accident & location (Km position)

Type of road network(national, secondary etc)

Time of accident

Detailed information about accident (type of vehicles, nationality etc.)

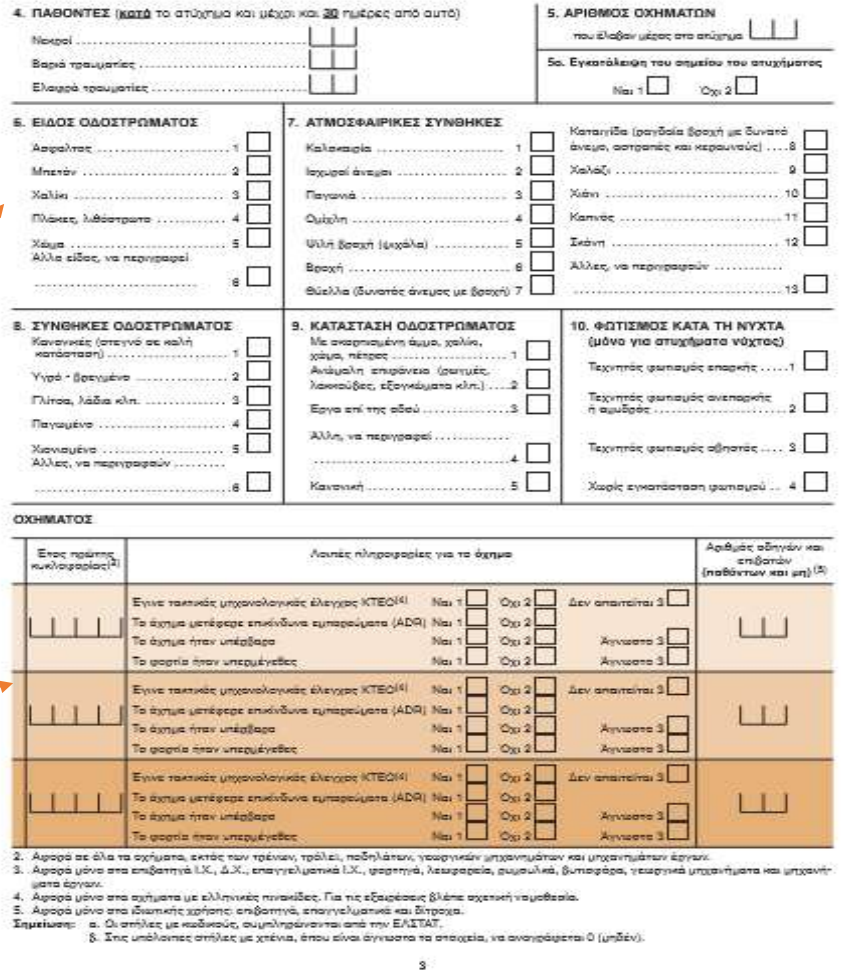


Police (Reported Crashes) - Greece

No of fatalities and injuries (slight and serious)
No of accidents involved
Abandon or not the scene of accident

Type of road surface
Weather conditions • Lighting
Road & pavement condition

Detailed information about involved vehicles (technical control, total number of passengers, either injured or not, etc)



4. ΠΑΘΟΝΤΕΣ (κατά το ατύχημα και μέχρι και 30 ημέρες από αυτό)
Νεκροί
Βαριά τραυματίες
Ελαφρά τραυματίες

5. ΑΡΙΘΜΟΣ ΟΧΗΜΑΤΩΝ που έλαβαν μέρος στο ατύχημα

5α. Εγκατάλειψη του σημείου του ατυχήματος
Ναι 1 Όχι 2

6. ΕΙΔΟΣ ΟΔΟΣΤΡΩΜΑΤΟΣ
Άσφαλτος 1
Μπετόν 2
Χαλίκι 3
Πλάκες, λιθόστρωτο 4
Χώμα 5
Άλλο είδος, να περιγραφεί
6

7. ΑΤΜΟΣΦΑΙΡΙΚΕΣ ΣΥΝΘΗΚΕΣ
Καλοκαιρία 1
Ισχυροί άνεμοι 2
Παγωνιά 3
Ομίχλη 4
Ψιλή βροχή (ψιχάλα) 5
Βροχή 6
Θύελλα (δυνατός άνεμος με βροχή) 7
Καταιγίδα (ραγδαία βροχή με δυνατό άνεμο, αστραπές και κεραυνούς) 8
Χαλάζι 9
Χιόνι 10
Καπνός 11
Σκόνη 12
Άλλες, να περιγραφούν
13

8. ΣΥΝΘΗΚΕΣ ΟΔΟΣΤΡΩΜΑΤΟΣ
Κανονικές (στεγνό σε καλή κατάσταση) 1
Υγρό - βρεγμένο 2
Γλίτσα, λάδια κλπ. 3
Παγωμένο 4
Χιονισμένο 5
Άλλες, να περιγραφούν
6

9. ΚΑΤΑΣΤΑΣΗ ΟΔΟΣΤΡΩΜΑΤΟΣ
Με ανακαινισμένη άσφ., χαλίκι, χώμα, πέτρες 1
Ανώμαλη επιφάνεια (φαγωμές, λακκούβες, εξογκώματα κλπ.) 2
Έργα επί της οδού 3
Άλλη, να περιγραφεί
4
Κανονική 5

10. ΦΩΤΙΣΜΟΣ ΚΑΤΑ ΤΗ ΝΥΧΤΑ (μόνο για ατυχήματα νύχτας)
Τεχνητός φωτισμός επαρκής 1
Τεχνητός φωτισμός ανεπαρκής ή αμυδρός 2
Τεχνητός φωτισμός αβέατος 3
Χωρίς εγκατάσταση φωτισμού 4

ΟΧΗΜΑΤΟΣ

Έτος πρώτης κυκλοφορίας[2]	Λοιπές πληροφορίες για το όχημα	Αριθμός οδηγών και επιβατών (παθόντων και μη)[3]
	Έγινε τακτικός μηχανολογικός έλεγχος ΚΤΕΟ[4] Ναι 1 Όχι 2 Δεν απαιτείται 3	
	Το όχημα μετέφερε επικίνδυνα εμπορεύματα (ADR) Ναι 1 Όχι 2	
	Το όχημα ήταν υπέρβαρο Ναι 1 Όχι 2 Άγνωστο 3	
	Το φορτίο ήταν υπερμέγεθες Ναι 1 Όχι 2 Άγνωστο 3	
	Έγινε τακτικός μηχανολογικός έλεγχος ΚΤΕΟ[4] Ναι 1 Όχι 2 Δεν απαιτείται 3	
	Το όχημα μετέφερε επικίνδυνα εμπορεύματα (ADR) Ναι 1 Όχι 2	
	Το όχημα ήταν υπέρβαρο Ναι 1 Όχι 2 Άγνωστο 3	
	Το φορτίο ήταν υπερμέγεθες Ναι 1 Όχι 2 Άγνωστο 3	
	Έγινε τακτικός μηχανολογικός έλεγχος ΚΤΕΟ[4] Ναι 1 Όχι 2 Δεν απαιτείται 3	
	Το όχημα μετέφερε επικίνδυνα εμπορεύματα (ADR) Ναι 1 Όχι 2	
	Το όχημα ήταν υπέρβαρο Ναι 1 Όχι 2 Άγνωστο 3	
	Το φορτίο ήταν υπερμέγεθες Ναι 1 Όχι 2 Άγνωστο 3	

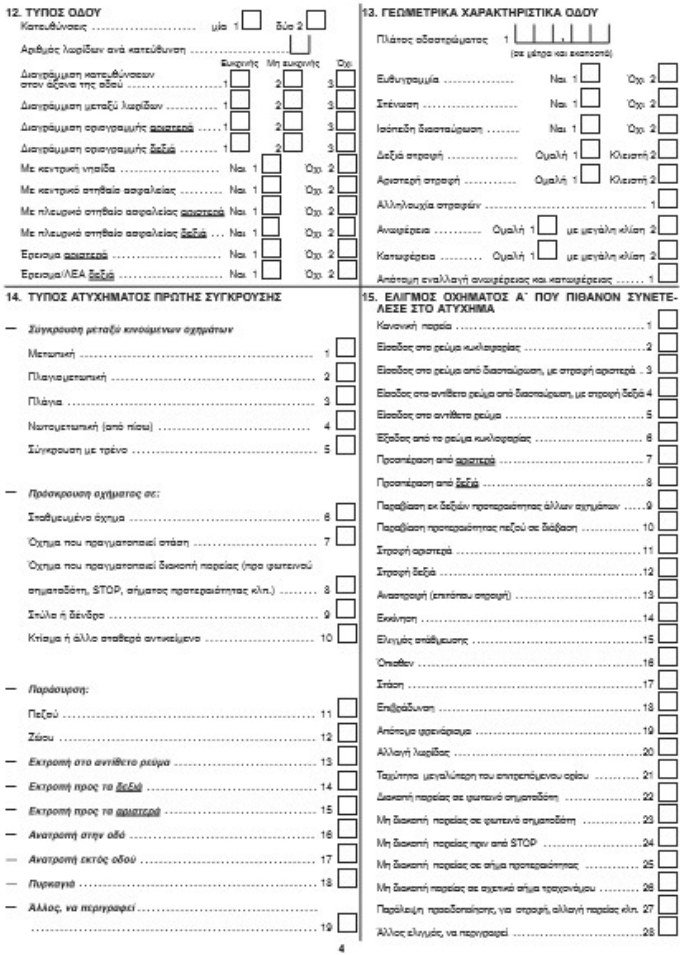
2. Αφορά σε όλα τα οχήματα, εκτός των τρένων, τρόλεϊ, ποδηλάτων, γεωργικών μηχανημάτων και μηχανημάτων έργων.
3. Αφορά μόνο στα επιβατηγά Ι.Χ., Δ.Χ., επαγγελματικά Ι.Χ., φορτηγά, λεωφορεία, συμπλοκά, δυτοφόρα, γεωργικά μηχανήματα και μηχανήματα έργων.
4. Αφορά μόνο στα οχήματα με ελληνικές πινακίδες. Για τις εξαιρέσεις βλέπε σχετική νομοθεσία.
5. Αφορά μόνο στα ιδιωτικής χρήσης επιβατηγά, επαγγελματικά και δίτροχα.
Σημείωση: α. Οι στήλες με κωδικούς, συμπληρώνονται από την ΕΛΣΤΑΤ.
β. Στις υπόλοιπες στήλες με χτένια, όπου είναι άγνωστα τα στοιχεία, να αναγράφεται 0 (μηδέν).

3

Police (Reported Crashes) - Greece

Detailed information about road type
No of directions & lanes • islands • barriers
Emergency lane • Markings
Road geometry
Road width • Junctions • turns • slope

Type of accident
(Rear-end, collision, side collision etc)
Crash type
Crash with parked vehicle, collision with tree, building • pedestrian collision • maneuvers



12. ΤΥΠΟΣ ΟΔΟΥ
Κατευθύνσεις ... μία 1 ☐ δύο 2 ☐
Αριθμός λωρίδων ανά κατεύθυνση ... ☐
Διαγράμμιση κατευθύνσεων στον άξονα της οδού ... Συνεχής 1 ☐ Μη συνεχής 2 ☐ Όχι 3 ☐
Διαγράμμιση μεταξύ λωρίδων ... 1 ☐ 2 ☐ 3 ☐
Διαγράμμιση οριογραμμής αριστερά ... 1 ☐ 2 ☐ 3 ☐
Διαγράμμιση οριογραμμής δεξιά ... 1 ☐ 2 ☐ 3 ☐
Με κεντρική νησίδα ... Ναι 1 ☐ Όχι 2 ☐
Με κεντρικό στηθαίο ασφαλείας ... Ναι 1 ☐ Όχι 2 ☐
Με πλευρικό στηθαίο ασφαλείας αριστερά ... Ναι 1 ☐ Όχι 2 ☐
Με πλευρικό στηθαίο ασφαλείας δεξιά ... Ναι 1 ☐ Όχι 2 ☐
Έρεισμα αριστερά ... Ναι 1 ☐ Όχι 2 ☐
Έρεισμα/ΛΕΑ δεξιά ... Ναι 1 ☐ Όχι 2 ☐

13. ΓΕΩΜΕΤΡΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ ΟΔΟΥ
Πλάτος οδοστρώματος ... 1 ☐☐,☐☐ (σε μέτρα και εκατοστά)
Ευθυγραμμία ... Ναι 1 ☐ Όχι 2 ☐
Πτύχωση ... Ναι 1 ☐ Όχι 2 ☐
Ισοπεδη διασταύρωση ... Ναι 1 ☐ Όχι 2 ☐
Δεξιά στροφή ... Ομαλή 1 ☐ Κλειστή 2 ☐
Αριστερή στροφή ... Ομαλή 1 ☐ Κλειστή 2 ☐
Αλληλουχία στροφών ... 1 ☐
Ανωφέρεια ... Ομαλή 1 ☐ με μεγάλη κλίση 2 ☐
Κατωφέρεια ... Ομαλή 1 ☐ με μεγάλη κλίση 2 ☐
Απότομη εναλλαγή ανωφέρειας και κατωφέρειας ... 1 ☐

14. ΤΥΠΟΣ ΑΤΥΧΗΜΑΤΟΣ ΠΡΩΤΗΣ ΣΥΓΚΡΟΥΣΗΣ
— *Σύγκρουση μεταξύ κινούμενων οχημάτων*
Μετωπική ... 1 ☐
Πλαγιομετωπική ... 2 ☐
Πλάγια ... 3 ☐
Ναυτομετωπική (από πίσω) ... 4 ☐
Σύγκρουση με τρένο ... 5 ☐
— *Πρόσκρουση οχήματος σε:*
Σταθμευμένο όχημα ... 6 ☐
Όχημα που πραγματοποιεί στάση ... 7 ☐
Όχημα που πραγματοποιεί διακοπή πορείας (προ φωτεινού σηματοδότη, STOP, σήματος προτεραιότητας κλπ.) ... 8 ☐
Στύλο ή δένδρο ... 9 ☐
Κτίσμα ή άλλο σταθερό αντικείμενο ... 10 ☐
— *Παράσυρση:*
Πεζού ... 11 ☐
Ζώου ... 12 ☐
— *Εκτροπή στο αντίθετο ρεύμα* ... 13 ☐
— *Εκτροπή προς τα δεξιά* ... 14 ☐
— *Εκτροπή προς τα αριστερά* ... 15 ☐
— *Ανατροπή στην οδό* ... 16 ☐
— *Ανατροπή εκτός οδού* ... 17 ☐
— *Πυρκαγιά* ... 18 ☐
— *Άλλος, να περιγραφεί* ... 19 ☐

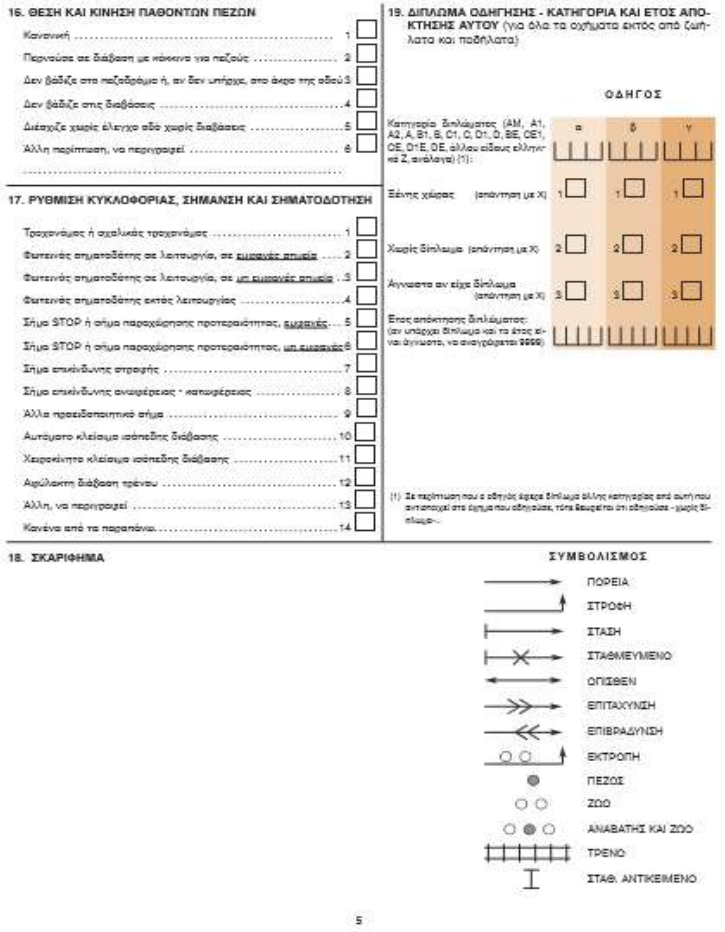
15. ΕΛΙΓΜΟΣ ΟΧΗΜΑΤΟΣ Α΄ ΠΟΥ ΠΙΘΑΝΟΝ ΣΥΝΕΤΕΛΕΣΕ ΣΤΟ ΑΤΥΧΗΜΑ
Κανονική πορεία ... 1 ☐
Είσοδος στο ρεύμα κυκλοφορίας ... 2 ☐
Είσοδος στο ρεύμα από διασταύρωση, με στροφή αριστερά ... 3 ☐
Είσοδος στο αντίθετο ρεύμα από διασταύρωση, με στροφή δεξιά 4 ☐
Είσοδος στο αντίθετο ρεύμα ... 5 ☐
Έξοδος από το ρεύμα κυκλοφορίας ... 6 ☐
Προσπέραση από αριστερά ... 7 ☐
Προσπέραση από δεξιά ... 8 ☐
Παραβίαση εκ δεξιών προτεραιότητας άλλων οχημάτων ... 9 ☐
Παραβίαση προτεραιότητας πεζού σε διάβαση ... 10 ☐
Στροφή αριστερά ... 11 ☐
Στροφή δεξιά ... 12 ☐
Αναστροφή (επιτόπιαι στροφή) ... 13 ☐
Εκκίνηση ... 14 ☐
Έλεγχος σταθμεύσεως ... 15 ☐
Όπισθεν ... 16 ☐
Στάση ... 17 ☐
Επιβράδυνση ... 18 ☐
Απότομο φρενάρισμα ... 19 ☐
Αλλαγή λωρίδας ... 20 ☐
Ταχύτητα μεγαλύτερη του επιτρεπόμενου ορίου ... 21 ☐
Διακοπή πορείας σε φωτεινό σηματοδότη ... 22 ☐
Μη διακοπή πορείας σε φωτεινό σηματοδότη ... 23 ☐
Μη διακοπή πορείας πριν από STOP ... 24 ☐
Μη διακοπή πορείας σε σήμα προτεραιότητας ... 25 ☐
Μη διακοπή πορείας σε σχετικό σήμα τροχονόμου ... 26 ☐
Παράλειψη προειδοποίησης για στροφή, αλλαγή πορείας κλπ. 27 ☐
Άλλος ελεγχός, να περιγραφεί ... 28 ☐

4

Police (Reported Crashes) - Greece

Location of pedestrian – pedestrian movements
Traffic control & traffic signage (signs, lights)
Driving license (category, issuance year)

Sketch of the accident



16. ΘΕΣΗ ΚΑΙ ΚΙΝΗΣΗ ΠΑΘΟΝΤΩΝ ΠΕΖΩΝ

Κανονική 1
Παρουσία σε διάβαση με κάθετα για πεζούς 2
Δεν βάδιζε στο πεζοδρόμιο ή, αν δεν υπήρχε, στο άκρο της οδού 3
Δεν βάδιζε στις διαβάσεις 4
Διέσχιζε χωρίς έλεγχο οδό χωρίς διαβάσεις 5
Άλλη περίπτωση, να περιγραφεί 6

17. ΡΥΘΜΙΣΗ ΚΥΚΛΟΦΟΡΙΑΣ, ΣΗΜΑΝΣΗ ΚΑΙ ΣΗΜΑΤΟΔΟΤΗΣΗ

Τροχονόμος ή σχολικός τροχονόμος 1
Φωτεινός σηματοδότης σε λειτουργία, σε κυρίως σημεία 2
Φωτεινός σηματοδότης σε λειτουργία, σε μη κυρίως σημεία 3
Φωτεινός σηματοδότης εκτός λειτουργίας 4
Σήμα STOP ή σήμα παραχώρησης προτεραιότητας, κυρίως 5
Σήμα STOP ή σήμα παραχώρησης προτεραιότητας, μη κυρίως 6
Σήμα επικίνδυνης στροφής 7
Σήμα επικίνδυνης ανωμαλίας - κατωμέρειας 8
Άλλα προειδοποιητικά σήματα 9
Αυτόματο κλείσιμο ισόπεδης διάβασης 10
Χειροκίνητο κλείσιμο ισόπεδης διάβασης 11
Αμαξωκτή διάβαση τρένου 12
Άλλη, να περιγραφεί 13
Κανένα από τα παραπάνω 14

19. ΔΙΠΛΩΜΑ ΟΔΗΓΗΣΗΣ - ΚΑΤΗΓΟΡΙΑ ΚΑΙ ΕΤΟΣ ΑΠΟΚΤΗΣΗΣ ΑΥΤΟΥ (για όλα τα οχήματα εκτός από ζωήλατα και ποδήλατα)

ΟΔΗΓΟΣ

Κατηγορία δίπλώματος (ΑΜ, Α1, Α2, Α, Β1, Β, C1, C, D1, D, BE, C1E, CE, D1E, DE, άλλου είδους ελληνικό Σ, ανάλογα) (1):	α	β	γ
Έδινε χέρια (απάντηση με Χ)	1	1	1
Χωρίς δίπλωμα (απάντηση με Χ)	2	2	2
Άγνωστο αν είχε δίπλωμα (απάντηση με Χ)	3	3	3
Έτος απόκτησης δίπλώματος: (αν υπάρχει δίπλωμα και το έτος είναι άγνωστο, να καταγράφεται 9999)			

(1) Σε περίπτωση που ο οδηγός άρχιζε δίπλωμα άλλης κατηγορίας από αυτή που αντιστοιχεί στο όχημα που οδηγούσε, τότε δεωρείται ότι οδηγούσε - χωρίς δίπλωμα -.

18. ΣΚΑΡΙΦΗΜΑ

ΣΥΜΒΟΛΙΣΜΟΣ

ΠΟΡΕΙΑ
ΣΤΡΟΦΗ
ΣΤΑΣΗ
ΣΤΑΘΜΕΥΜΕΝΟ
ΟΠΙΣΘΕΝ
ΕΠΙΤΑΧΥΝΣΗ
ΕΠΙΒΡΑΔΥΝΣΗ
ΕΚΤΡΟΠΗ
ΠΕΖΟΣ
ΖΩΟ
ΑΝΑΒΑΤΗΣ ΚΑΙ ΖΩΟ
ΤΡΕΝΟ
ΣΤΑΘ. ΑΝΤΙΚΕΙΜΕΝΟ

5

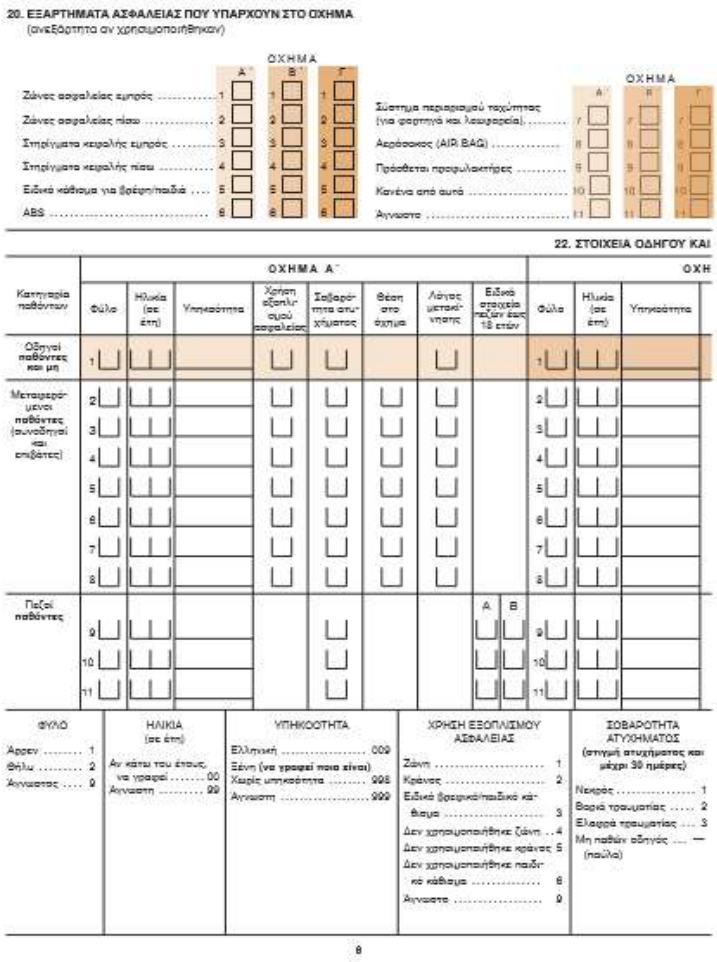
Police (Reported Crashes) - Greece

Vehicle's safety equipment that was used in the crash

Detailed general and demographic data for drivers and injured people (passengers and pedestrians)

Demographic & general data

Gender • Age • Nationality • Vehicles' Safety equipment usage • Accident's severity (fatal, injured (serious or slight) • no injuries

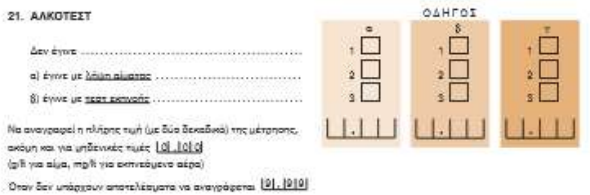


Police (Reported Crashes) - Greece

Alcohol breath testing

Detailed general and demographic data for drivers and injured people (passengers and pedestrians)

Demographic & general data
Location in the vehicle (assistant driver etc)
Purpose of the trip
Detailed information for pedestrians


21. ΑΛΚΟΤΕΣΤ

ΟΔΗΓΟΣ

Δεν έγινε .....

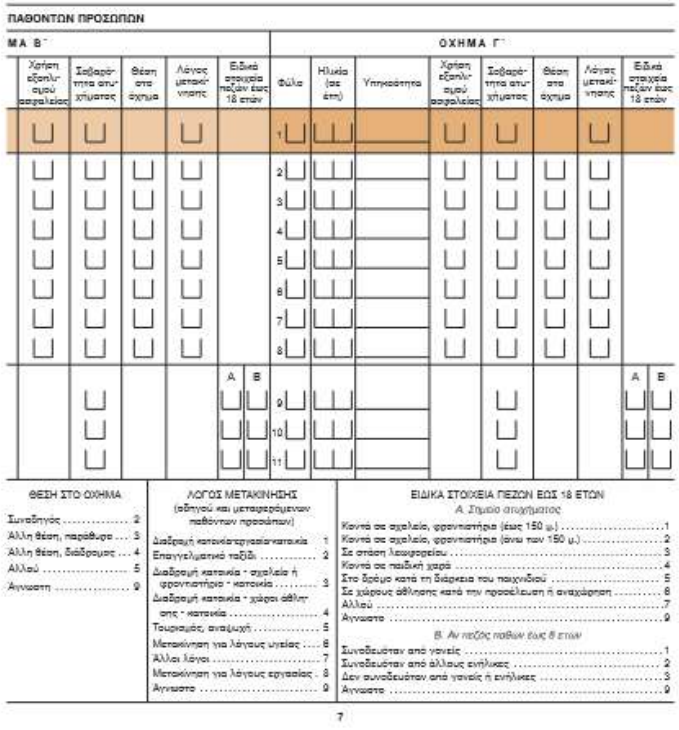
α) έγινε με λήψη αίματος .....

β) έγινε με τεστ εκπνοής .....

Να αναγραφεί η ηλίθρια τιμή (με δύο δεκαδικά) της μέτρησης, ακόμη και για μηδενικές τιμές [0,10]0

(g/lt για αίμα, mg/lt για εκπνεόμενο αέρα)

Όταν δεν υπάρχουν αποτελέσματα να αναγράφεται [0,]0[0]


ΠΑΘΟΝΤΩΝ ΠΡΟΣΩΠΩΝ

ΜΑ Β΄

ΟΧΗΜΑ Γ΄

Χρήση εξοπλισμού ασφαλείας | Σοβαρότητα ατυχήματος | Θέση στο όχημα | Λόγος μετακίνησης | Ειδικά στοιχεία παιδιών έως 18 ετών | Φύλο | Ηλικία (σε έτη) | Υπηκοότητα | Χρήση εξοπλισμού ασφαλείας | Σοβαρότητα ατυχήματος | Θέση στο όχημα | Λόγος μετακίνησης | Ειδικά στοιχεία παιδιών έως 18 ετών

1 2 3 4 5 6 7 8 9 10 11

A B

ΘΕΣΗ ΣΤΟ ΟΧΗΜΑ

Συνοδηγός 2
Άλλη θέση, παρέμβυρα 3
Άλλη θέση, διάδρομος 4
Άλλού 5
Άγνωστη 9

ΛΟΓΟΣ ΜΕΤΑΚΙΝΗΣΗΣ
(οδηγού και μεταφερόμενων παθόντων προσώπων)

Διαδρομή κατοικίας-εργασίας-κατοικία 1
Επαγγελματικό ταξίδι 2
Διαδρομή κατοικία - σχολείο ή φροντιστήριο - κατοικία 3
Διαδρομή κατοικία - χώρος άθλησης - κατοικία 4
Τουρισμός, αναψυχή 5
Μετακίνηση για λόγους υγείας 6
Άλλοι λόγοι 7
Μετακίνηση για λόγους εργασίας 8
Άγνωστο 9

ΕΙΔΙΚΑ ΣΤΟΙΧΕΙΑ ΠΕΖΩΝ ΕΩΣ 18 ΕΤΩΝ

Α. Σημείο ατυχήματος

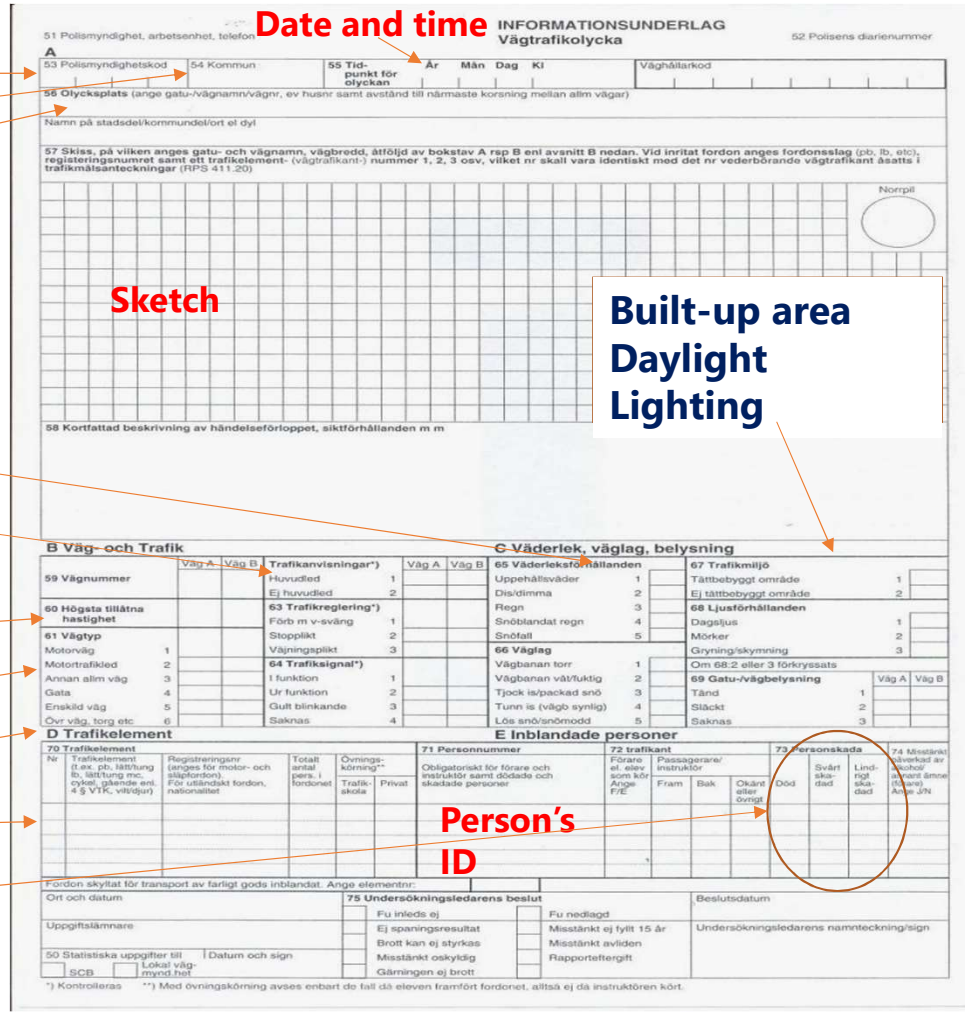
Κοντά σε σχολείο, φροντιστήριο (έως 150 μ.) 1
Κοντά σε σχολείο, φροντιστήριο (άνω των 150 μ.) 2
Σε στάση λεωφορείου 3
Κοντά σε παιδική χαρά 4
Στο δρόμο κατά τη διάρκεια του παιχνιδιού 5
Σε χώρους άθλησης κατά την προσέλευση ή αναχώρηση 6
Άλλού 7
Άγνωστο 9

Β. Αν παιζόε παθών έως 8 ετών

Συνοδεύοταν από γονείς 1
Συνοδεύοταν από άλλους ενήλικες 2
Δεν συνοδεύοταν από γονείς ή ενήλικες 3
Άγνωστο 9

7

Police (Reported Crashes) - Sweden



Police (Reported Crashes) – Dubai (UAE)

GOVERNMENT OF DUBAI

سلطة دبي للتطوير
Dubai Development Authority

SITE ACCIDENT REPORT FORM

Owner's Name					
Contractor			Consultant		
Plot No.		Date of Accident		Time of Accident	

Documents required	
1. Photos of accident site	2. Copies of training records of injured persons
3. Passport copies of injured person(s) with valid visa page	4. Copy of building permit
5. Copy of method statements & risk assessment related to particular activity	6. HSE passport of project manager and HSE officer

SR.	DESCRIPTION		
1.	Running serial number of accident at project site:		
2.	Describe clearly how the accident occurred :		
3.	Exact place in the project site, where the accident occurred:		
4.	Particulars of the persons injured: (no. Of persons injured .....)		
	Name		
	Address		
	Age		
	Occupation		
	Nationality		
	Passport no.		
	*If the above areas is not enough please attach the details		
5.	Particulars of the persons died: (no. Of persons died .....)		
	Name		
	Address		
	Age		
	Occupation		
	Nationality		
	Passport no.		
	*If the above areas is not enough please attach the details		

6.	If the accident was caused by any electrical or mechanical machinery	
	(A) give the name & part of the machine cause the accident:	
	(B) state whether the machinery was moved by mechanical power at the time of accident:	
7.	Detail the nature/ extent of injury received:	
	Location:	
	What the person(s) injured/died was/were doing at the time of accident?	
	Hours at which the person(s) injured/died has started work on the day of accident:	
	Date and time of mobilization of the injured/died person(s) to hospital:	
	Name & address of the doctor or hospital from whom or in which the person(s) injured received or is receiving treatment:	
	If the person(s) injured has died, give: **(A)** The date & hour of his death: **(B)** The date & hour of post mortem : **(C)** The name & address of the doctor who conducted the examination:	
8.	Give names & addresses of witnesses to the accident:	
9.	Give details of damages to the property and environment (if any):	
10.	What safety precautions/procedures were being implemented to prevent this accident?	
11.	What action has been taken to prevent recurrence of same accident in future?	
12.	What were the causes behind the accident?	

https://dda.gov.ae/DDA-PnD-Website-Forms/Additonal-Services/36-Site-Accident-Report-Form.pdf

Police (Reported Crashes) – Dubai (UAE)

13.	What was the root cause behind the accident?
14.	Any other relevant information:

Note: the contractor will be charged for the above violations in accordance with Dubai Development Authority's health, safety & environment enforcement action regulations, under clause 24(a)(4)(i) and incase of major accident all the activities at site shall be ceased until further notice by the zoning division of Dubai Development Authority.

MASTER DEVELOPER MAIN CONTRACTOR CONSULTANT DETAILS			
NAME		SIGNATURE	
TEL			
FAX		DATE	
MOBILE		STAMP	
EMAIL			

FOR DUBAI DEVELOPMENT AUTHORITY USE					
COMMENT(S):					
REVIEWED BY: HSE OPERATIONS:					
NAME		SIGNATURE		DATE	

https://dda.gov.ae/DDA-PnD-Website-Forms/Additonal-Services/36-Site-Accident-Report-Form.pdf

Hospitals

- **Hospital records:**
  - Hospital admissions per cause of admission.
  - Road accident casualties are recorded.
  - Have the lowest degree of casualty ***under-reporting***.
  - Usually no central datafile, often not in digital form

Hospitals & Emergency Services

Hospitals

✓

- Very accurate data on injuries' severities
- Gives a more integrated picture of the number of injuries

✗

- Can not provide exact location
- Problem to be matched with police reported crashes
- Extra personnel are necessary in the hospital

Emergency Services

✓

- Emergency services take care of all serious injuries
- The place and the time is mostly very correct
- Good knowledge of initial severities

✗

- It is an extra, probably not prioritized workload to report on a form

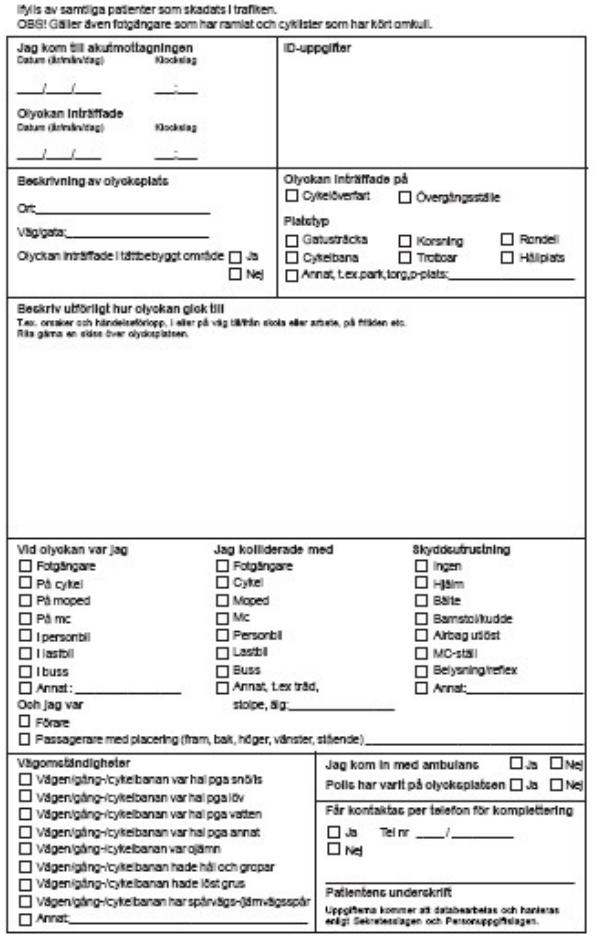
Hospital reported injuries – STRADA (Sweden)

Accidents' reports from hospitals

A form for injury registration is used by the hospitals when registering in STRADA.

The information is collected from the patient and his diagnosis is also added in the form.

Traffic Injury Report Trafikskadejournal


Ifyll is av samtliga patienter som skadats i trafiken.
OBS! Gäller även fotgängare som har ramlat och cyklister som har kört omkull.

Jag kom till akutmottagningen
Datum (årtal/mån/dag) Klockslag
___/___/___ ___:___

Olyckan inträffade
Datum (årtal/mån/dag) Klockslag
___/___/___ ___:___

ID-uppgifter

Beskrivning av olycksplats
Ort:_____
Väg/gata:_____
Olyckan inträffade i tättbebyggt område ☐ Ja ☐ Nej

Olyckan inträffade på
☐ Cykelöverfart ☐ Övergångsställe
Platstyp
☐ Gatusträcka ☐ Korsning ☐ Rondell
☐ Cykelbana ☐ Trottoar ☐ Hållplats
☐ Annat, t.ex park,torg,p-plats:_____

Beskriv utförligt hur olyckan gick till
T.ex. omständer och händelseförlopp, i eller på väg tillfälle olycka eller anhetsle, på fritiden etc.
Rita gärna en skiss över olycksplatsen.

Vid olyckan var jag
☐ Fotgängare
☐ På cykel
☐ På moped
☐ På mc
☐ I personbil
☐ I lastbil
☐ I buss
☐ Annat:_____
Och jag var
☐ Förare
☐ Passagerare med placering (fram, bak, höger, vänster, stående)_____

Jag kolliderade med
☐ Fotgängare
☐ Cykel
☐ Moped
☐ Mc
☐ Personbil
☐ Lastbil
☐ Buss
☐ Annat, t.ex träd, stolpe, älg:_____

Skyddsutrustning
☐ Ingen
☐ Hjälm
☐ Bälte
☐ Barnstol/kudde
☐ Airbag utlöst
☐ MC-ställ
☐ Belysning/reflex
☐ Annat:_____

Vägomständigheter
☐ Vägen/gång-/cykelbanan var hal pga snö/is
☐ Vägen/gång-/cykelbanan var hal pga löv
☐ Vägen/gång-/cykelbanan var hal pga vatten
☐ Vägen/gång-/cykelbanan var hal pga annat
☐ Vägen/gång-/cykelbanan var ojämn
☐ Vägen/gång-/cykelbanan hade hål och gropar
☐ Vägen/gång-/cykelbanan hade löst grus
☐ Vägen/gång-/cykelbanan har spårvägs-/järnvägsspår
☐ Annat:_____

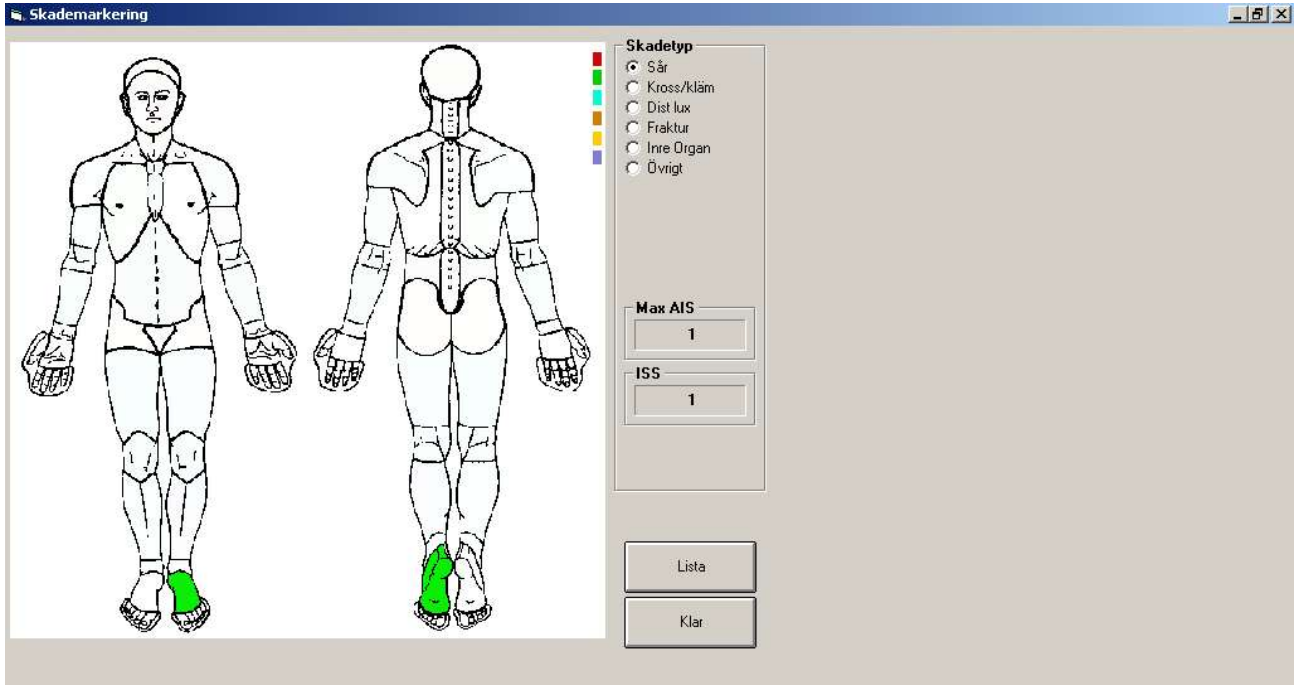
Jag kom in med ambulans ☐ Ja ☐ Nej
Polis har varit på olycksplatsen ☐ Ja ☐ Nej

Får kontaktas per telefon för komplettering
☐ Ja Tel nr ___/_____
☐ Nej

_____
Patientens underskrift
Uppgifterna kommer att databearbetas och hanteras enligt Sekretesslagen och Personuppgiftslagen.

Road user type
Collision with
Safety equipment used
Road status
Police at site

Hospital reported injuries – STRADA (Sweden)

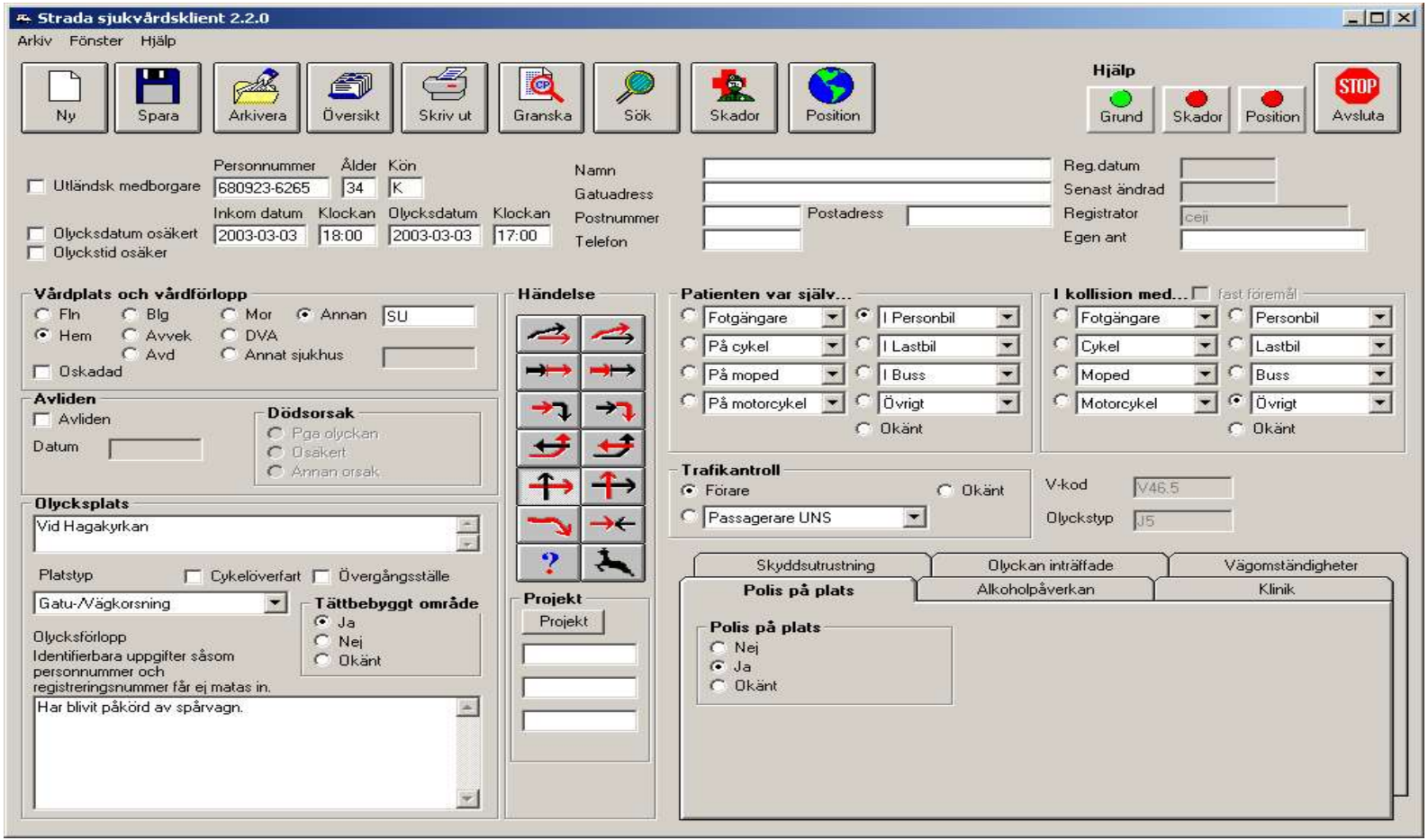


By marking the injuries on a figure, the classification according to ICD10 is obtained, as well as the correct AIS/ISS codes.

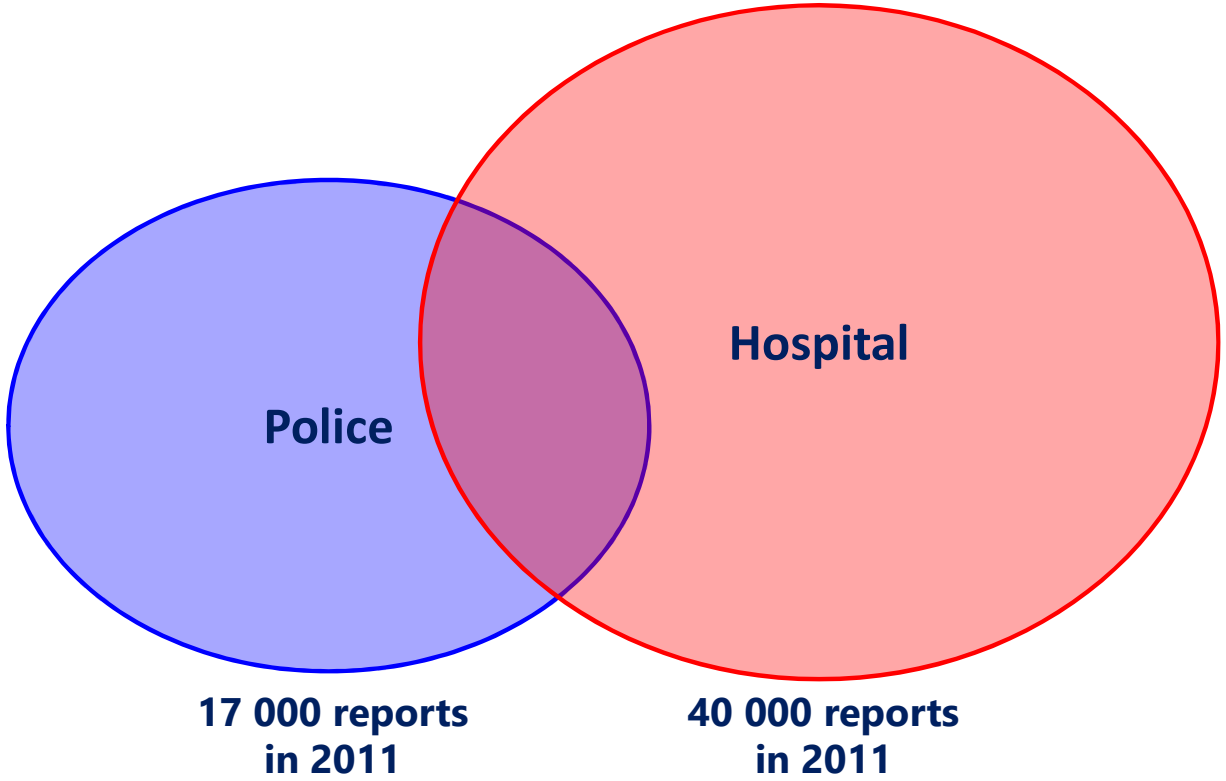
Hospital reported injuries – STRADA (Sweden)

From report to registration.

The medical care personnel are able to note facts about the injured and the circumstances of the accident



Proportion of police & medical reports in Sweden



Insurance Companies

- **Detailed data for accidents with casualties or material damage only:**
  - Accident
  - Driver
  - Damage
- **Only source for material damage only accidents**
- **Include only accidents that are reported**

KSA

✓

- KSA have a favoural position since Najm has a very good reporting and storage system

✗

- It covers only damage only crashes

Collection from Vital Registration

✓

- All persons that die in the country is registered

✗

- Separation of road fatalities from other fatalities could not easily take place
- Can be reported for large areas, such as the whole KSA or regions
- The crash site cannot be located

Comparing Fatality Data from Different Sources

	Source			Reduction Coefficient		
	GSA	GR Traffic Police	Hospitals	Police - GSA	Hospital/GSA	Average
1990	1,737	1,981	2,247	244	1.29	
1991	1,790	2,012	2,246	222	1.25	
1992	1,829	1,995	2,252	166	1.23	
1993	1,830	2,008	1,986	178	1.09	1.20
1994	1,909	2,076	2,221	167	1.16	
1995	2,043	2,149	2,435	106	1.19	
1996	2,157	2,175	2,540	18	1.18	
1997	2,105	2,141	2,333	36	1.11	
1998	2,182	2,229	2,324	47	1.07	
1999	2,116	2,181	2,226	65	1.05	
2000	2,037	2,103	2,288	66	1.12	
2001	1,880	1,910	2,035	30	1.08	
2002	1,634	1,655	1,865	21	1.14	
2003	1,605	1,613	1,794	8	1.12	1.12
2004	1,670	1,547	1,984	-123	1.19	
2005	1,658	1,470	1,971	-188	1.19	
2006	1,657	1,493	1,851	-164	1.12	
2007	1,612	1,449	1,793	-163	1.11	
2008	1,553	1,550	1,722	-3	1.11	
2009	1,456	1,463	1,647	7	1.13	
2010	1,258	1,281	1,430	23	1.14	

Until 1995 Fatalities: deaths only in crash site,
Since 1996: fatalities: deaths in a 30-day period from the time of the crash

GSA: Greek Statistics Authority

Exposure and SPI Data Collection Methods

- Roadside surveys
- Questionnaire surveys
- Registers

- Sampling methods
- Sample size and errors

Roadside Surveys – Traffic Counts (1/3)

- In most European countries traffic counts systems are in place. Those can be divided into **"human" and machine versions**.
- Counting procedures based on human observations have some advantages due to the fact that humans are able to intelligently categorize vehicles and conditions, however, human involvement is expensive and only performs properly while traffic intensity is moderate.
- In the ultimate case in which all road sections are equipped with a counting system, the total vehicle-kilometres driven during a given unit of time can be computed.

Roadside Surveys – Traffic Counts (2/3)

- In practice, for obvious reasons, outside tolled roads, counts are made for only a limited number of road sections or sites, on main interurban network.
- The information collected is usually available by vehicle class and road type.
- A choice may be made to "rotate" the vehicle measurement equipments, allowing for a more comprehensive coverage of road sections.

Roadside Surveys – Traffic Counts (3/3)

- The main advantage of traffic count systems (compared to travel surveys) is the potential of continuity of measurements over time.
- Only count vehicles, and there are practical problems involved in the calculation of vehicle-kilometres from traffic volumes.
- Moreover, measurement points may not be fully representative of the national / regional traffic.

Surveys for Road User Behaviour – Questionnaire Surveys (1/3)

- **Travel and mobility surveys:**
  - The population sample usually consists of actual persons or households, vehicle owners etc., intended to be representative of the entire target population with respect to their travel patterns.
  - Two ways (potential) respondents may be selected for travel surveys:

    - Respondents are drawn from a database concerning the target population (e.g. telephone directory or other demographic database) and are contacted by telephone or mail.

    - Respondents are randomly selected and contacted, on the roadside or by telephone, and then it is verified whether each respondent is a member of the target population (e.g. by verifying the respondents age, license holdership etc.).

Surveys for Road User Behaviour – Questionnaire Surveys (2/3)

- Most travel surveys in Europe use telephone communication for contacting respondents.
- Most surveys feature some sort of "call-back" system, in order to retry to contact respondents that could not be contacted in the first round.
- Usually travel surveys are designed to capture all travel by a respondent on a prescribed day, mostly the day before the contact with the respondent.
- The data reported by travel survey respondents may concern the distance travelled, the time spent in traffic and the number of trips, usually by mode of travel.
- The main advantage of travel surveys is that they have individuals as units, allowing for the exposure data to be decomposed by age, gender, driving experience, etc., and also allowing to collect data on all kinds of trips, motorised or non-motorised.

Surveys for Road User Behaviour – Questionnaire Surveys (3/3)

- **Travel and mobility surveys:**
  - Three main kinds of errors may result from the survey sampling method:
    - Sampling error: The error in the data caused by the fact that only a sample of the examined population is interviewed.
    - Non-response error: The error caused by the fact that some individuals that could or should have been interviewed are not interviewed.
    - Measurement error: The error caused by wrong or inaccurate answers provided by some interviewed individuals.
  - Not all models or age groups are examined.
  - Particular short journeys (by foot and by bicycle) are often underreported, whereas motorized trips are often overestimated, both in terms of time and distance.
  - Country differences in definitions may complicate comparisons even more.

Surveys for Road User Attitudes and (Self-reported) Behaviour (1/3)

- It is requested by the participant to rank in order of preference a series of suggested alternatives, or to give a characterization for them (rate), or groups (usually couples) scenarios are presented to him and he is asked to choose the preferable.
- If the possible scenarios are many, which occurs when there are many variables, not all of them are presented to the participant, but only some of them (fractional factorial design).
- In case that the unknowns are few, and therefore the possible scenarios are few, then they are all presented to the audience (full factorial design).

Surveys for Road User Attitudes and (Self-reported) Behaviour (1/3) – example of ranking

- **Acceptability of unsafe traffic behaviour**

Where you live, how acceptable would most other people say it is for a driver to….?

You can indicate your answer on a scale from 1 to 5, where 1 is 'unacceptable' and 5 is 'acceptable'. The numbers in between can be used to refine your response. Binary variable: unacceptable (1-3) - acceptable (4-5)

- Drive 20 Km/hr over the speed limit on a freeway / motorway
- Drive 20 Km/hr over the speed limit on a residential street
- Drive 20 Km/hr over the speed limit in an urban area
- Drive 20 Km/hr over the speed limit in a school zone
- Talk on a hand-held mobile phone while driving
- Type text messages or e-mails while driving
- Check or update social media (example: Facebook, twitter, etc.) while driving

Source: www.esranet.eu

Surveys for Road User Attitudes and (Self-reported) Behaviour (2/3)

- **Stated preferences:**
  - The methods that usually record the views of the public against some hypothetical situation, which has not been implemented ever in the past.

→There can be neither measurements nor comments, since this situation does not exist.

\+ Simple to understand and use

\+ Can be applied to deliver results in a short period of time and with relatively small cost

\- Many times, the participants do different from what they say.

Surveys for Road User Attitudes and (Self-reported) Behaviour (2/3)

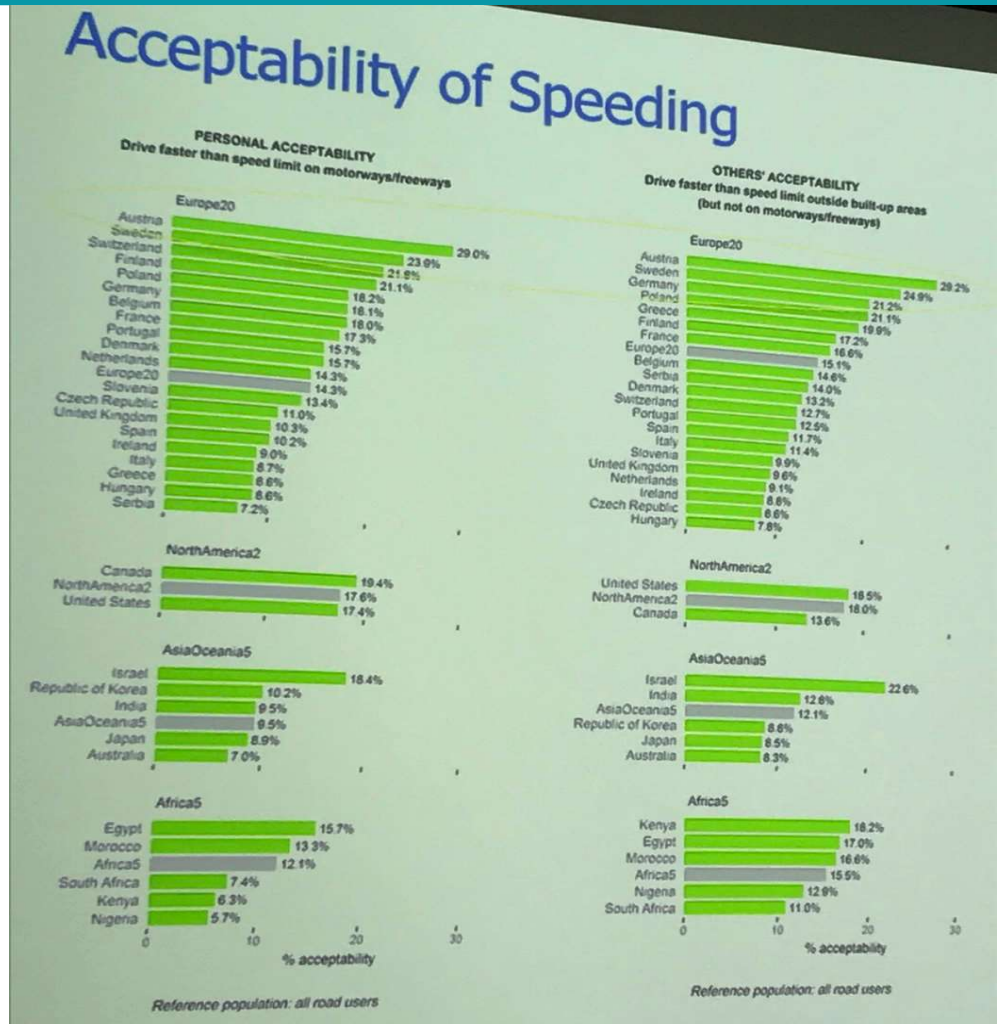
Table 1. An Example of Car-Based Alternatives and Their Attributes

Features	Drive alone in a private car	One way car rental	Carpool	Shared Taxi
Time from door to door - driving time, access time and egress time	35 min +/- 15 min	40 min +/- 15 min	50 min +/- 25 min	45 min +/- 5 min
Fuel cost	0.5 Euros	0.5 Euros	0.3 Euros	-
Congestion charge/toll - the fee you should pay for entering Lisbon from 7:00-19:00	3 Euros	3 Euros	1.5 Euros	-
Additional costs	parking fee: 3 Euros	Rental cost (including parking fee): 5 Euros	parking fee: 1.5 Euros	Fare: 6 Euros
Other				Waiting time: 5 min +/- 5 min
Preferred Alternative				

Source: https://its.mit.edu/sites/default/files/documents/wp_trsys_2009_mar_lyang_et_al%282%29.pdf

Surveys for Road User Attitudes and (Self-reported) Behaviour (3/3)

- **Revealed preferences:**
  - The methods that record the behaviour and choices of the audience, around existing alternative scenarios.
  - Lack of flexibility results to many difficulties in examining all the variables.
  - Strong correlation among variables of interest.
  - Cannot be used directly in assessment of situations under conditions that do not exist today



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Surveys for Road User Attitudes and (Self-reported) Behaviour (3/3)

existing alternative scenarios

Mode	Trip Time	Confort	Access Time
Car	15 mins	High	3 mins

Mode	Trip Time	Confort	Access Time	Fare
Bus	20 mins	Medium	5 mins	1 €

Mode	Trip Time	Confort	Access Time	Fare
Underground	12 mins	Medium	7 mins	1,5 €

Source: https://www.sciencedirect.com/topics/economics-econometrics-and-finance/revealed-preferences

National Databases, Registers and Inventories

- Vehicle fleet and driving license databases are two other important sources of exposure data (number of vehicles in use and number of drivers).
- The main problem with such registers is that only crude estimates of exposure can be derived.
- Both kinds of registers may share the problem of insufficient updating; the removal of invalid entries (e.g. scrapped vehicles or deceased drivers) is not always carried out systematically.
- Additionally, road inventories are available in most countries and can be used to extract road length information.
- The usability of the data depends on the coverage of the road network by the register (usually only main national and rural roads are included).

Road Safety Data Limitations

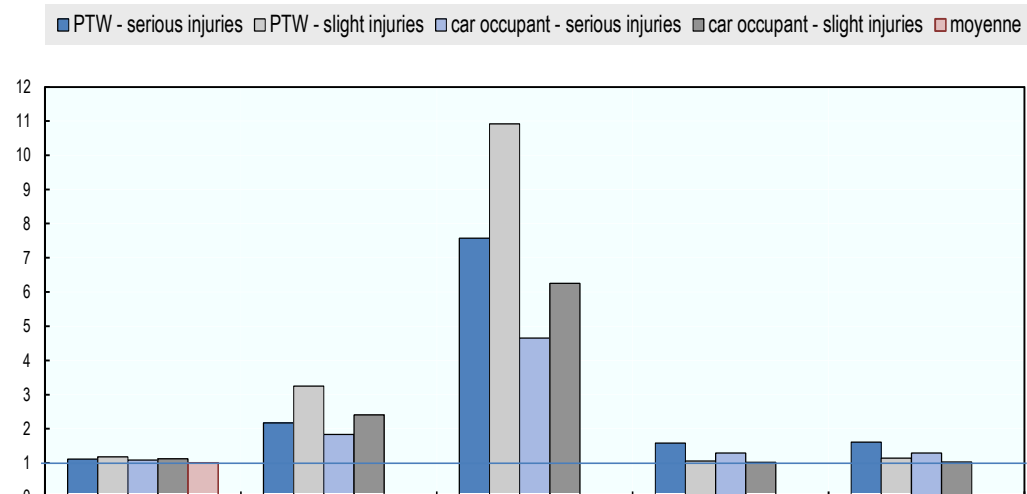
- Poor availability
- Comparability
- Accuracy
- Under-reporting

Under-reporting (1/2)

- Comparisons of police records and hospital data show that a significant proportion of injuries and accidents are not reported to the police.
- Road accident casualty data cannot be directly compared among countries as the definition of injury severity differs among countries.
- The only comparable measurement units available internationally are the numbers of fatal accidents and fatalities, for which the degree of under-reporting is significantly lower.
- Linkage of police and hospital data allows for the estimation of under-reporting coefficients:

"coefficients express the real number of casualties corresponding to each casualty recorded by the police"

Under-reporting coefficients for PTW riders and car occupants per injury severity in five European countries



International Road Safety Databases

- **CARE** (European Commission, Brussels and Luxembourg)
- **IRTAD** (Organisation for economic co-operation andDevelopment-OECD)
- **UN/ECE** (United Nations – ECE, Geneva)
- **EUROSTAT** (European Commission, Luxembourg)
- **WHO** (World Health Organization, Geneva)
- **IRF** (International Road Federation, Geneva)

..... Databases of research projects from and hoc surveys (SARTRE etc.)

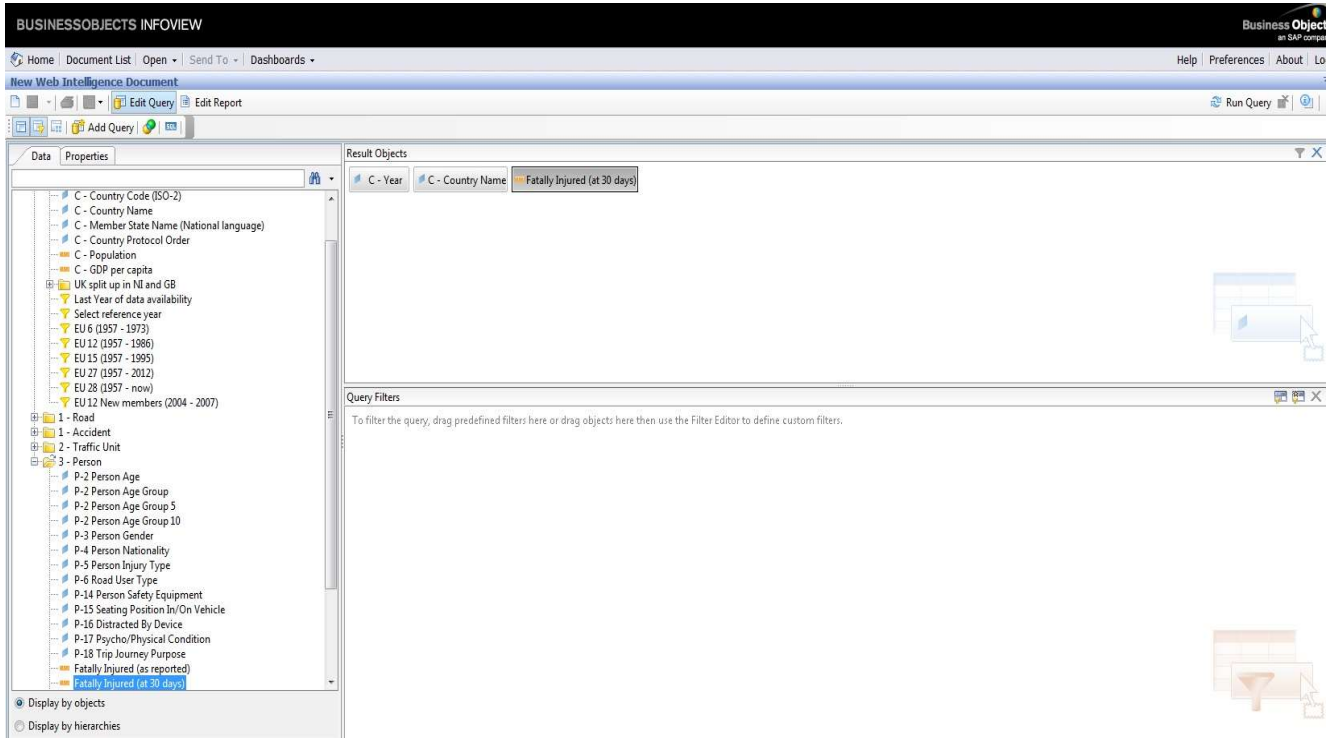
Road Accident data (CARE / CADaS)

- **An initiative of the European Commission** to create a database of road accidents on the roads of the European Union.
- **High level of personalization of the data** (the CARE database contains the details of road accidents, such as those collected by the Member States).
- **Maximum flexibility and efficiency** in the analysis of system data, providing new possibilities in road accident data analysis at European level.

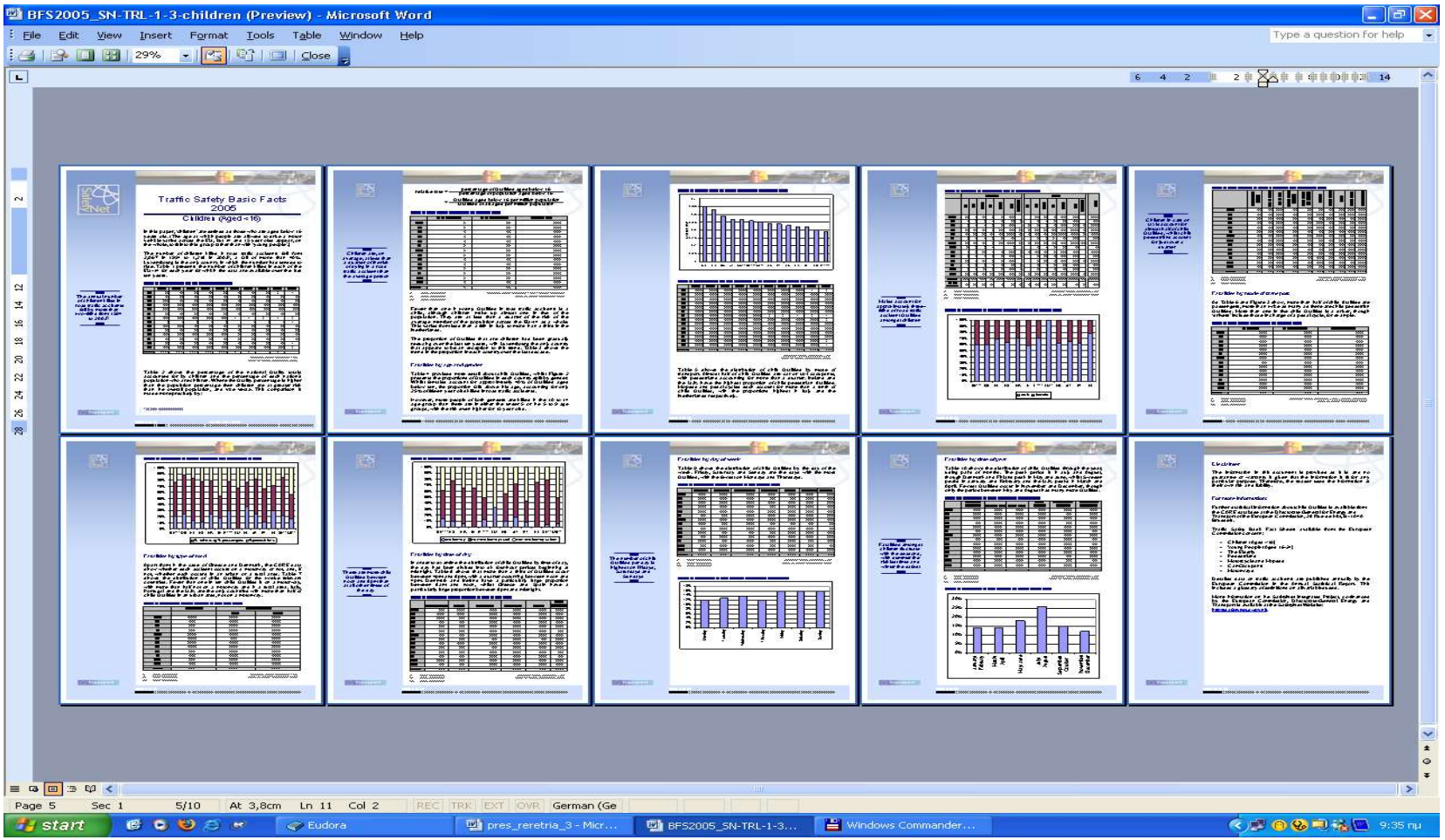
CARE DATABASE – LIST OF VARIABLES

CAREPLUS 1	CAREPLUS 2
month	registration country
hour	nationality
day of month	vefícle age
day of week	driving licence age
person class	road surface condition
injury severity (person)	region/province
sex (person)	speed limit
age (person)	alcohol test
lighting	psychophysical circumstances
natural light	alcohol level
street light	movement (pedestrian)
accident severity	carriageway type
person type	number of lanes
area type	manoeuvre (driver)
vehicle type	manoeuvre (vehicle)
motorway	junction control
collision type	security equipment
junction	road markings
junction type	hit and run
weather	

CARE DATABASE – INTERFACE



CARE DATABASE – Basic Fact Sheet



Crash Data Systems –TRL & others

TRL has developed MAAP Package targeting for

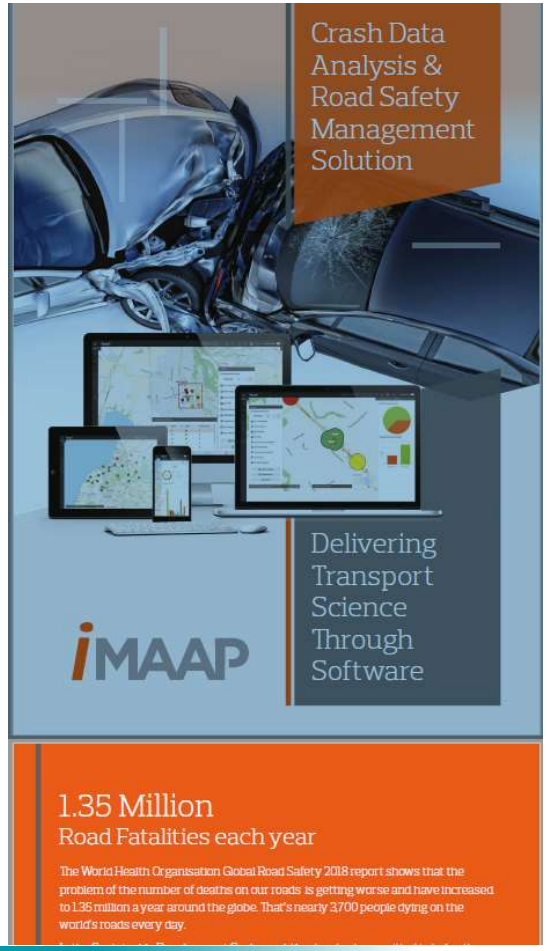
- **iMAAP** Core and iMAAP Cloud developed by TRL/UK have been in use in some of the states of India successfully
- Sri Lanka also uses **iMAAP Core** to manage its crash data
- **RADMS** developed jointly by IBS (India) and TRL (UK) are also in use in some states of India

- **Other developers**
- **Viastat** developed by Via is used in The Netherlands
- **Strada** developed by Swedish Firm is used in Sweden
- **CAS** developed by RTI is used in New Zealand
- **WebCrash** and **RoadCrash2** are used in Queensland, Australia
- **Driver** was developed in the Phillipines and also tested in Dhaka Bangladesh
- **Country-wise developed systems** for instance in Uganda and Mosambique

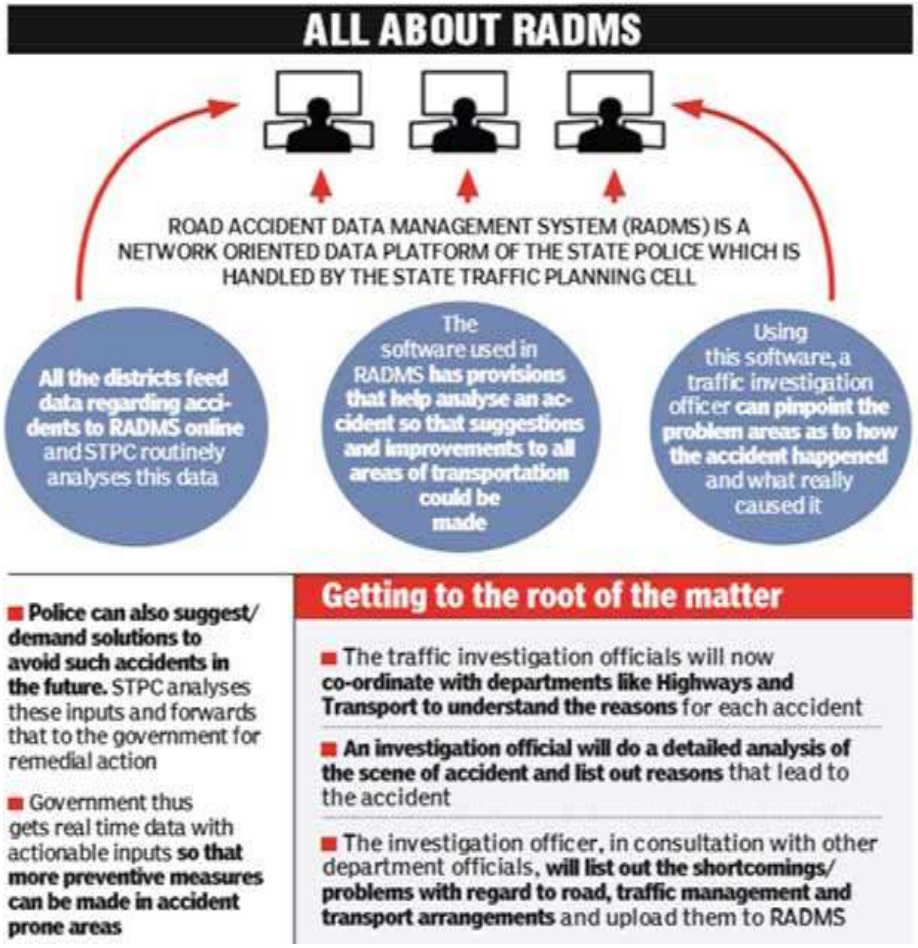
Crash Data Systems –TRL (iMAAP, RADMS)

TRL's Web-Based Accident Analysis Software System
iMAAP

Systems for crash data storage,processing and analysis
iMAAP



RADMS is used in three states in India: Kerala Tamil Nadu and Kashmir



Crash Data Systems - Viastat

Systems for crash data analysis Viastat

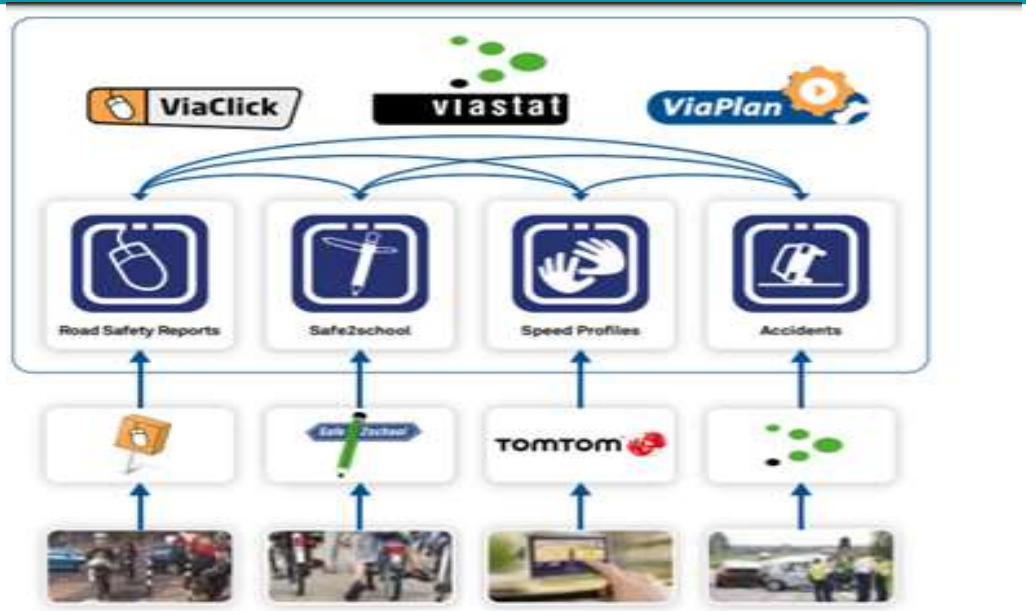


Figure 2: Safety data available within the ViaStat modules

ViaStat background

ViaStat uses a *Geographic Information System* (GIS). The road safety data is linked to a digital road network. Besides various presentation possibilities for the data on maps, it is also possible within ViaStat to perform various other (geographic) selections for more in depth analysis.

Crash Data Systems – South Korea

- **Traffic Cop Information Management System**

Managed by Korean National Police Agency

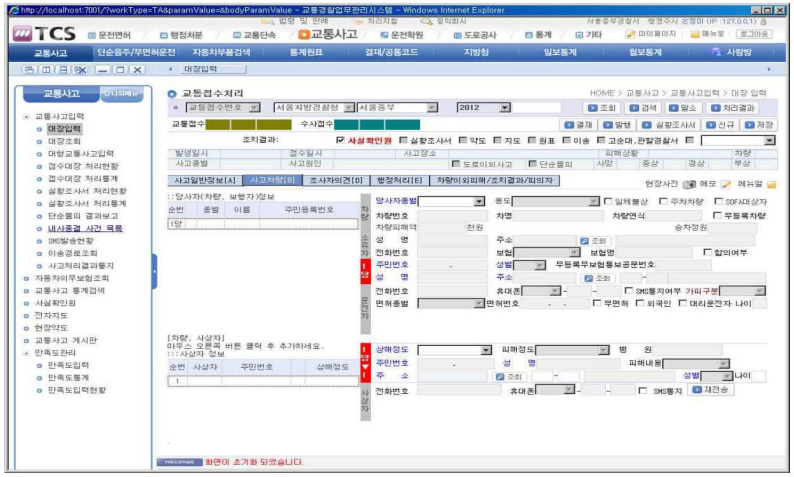
It is consisted by 8 sub-systems:

Driving license system • Driver Penalty Point System • Traffic Enforcement System • **Road Accident System** • Driving School System • Road Repairing System • Statistics System • Miscellaneous System

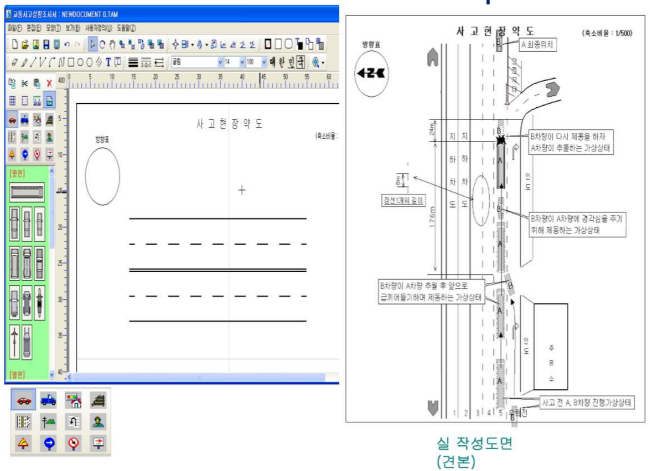
The function of road accident sub-system:

- Input of Road Accident Data • Linking and Checking with Related System • Analysis of Road accident data • statistics and documentation

Input of road accident data

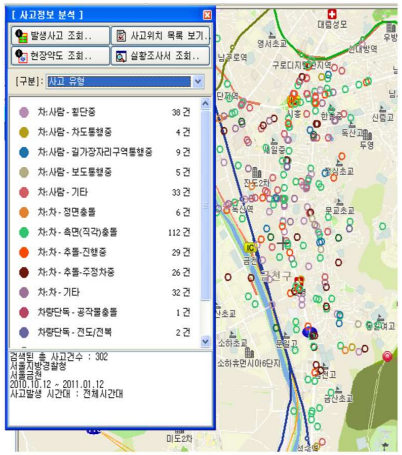


Accident site map



실 작성도면
(견본)

GIS Analysis



Crash Data Systems – South Korea

Traffic Accident Analysis System

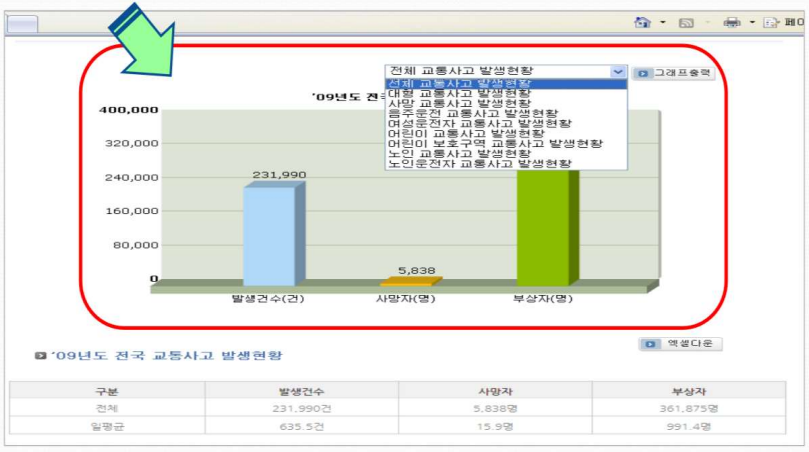
Managed by Korea Road Authority under Korean National Police Agency

- Spatial analysis of road accidents based on GIS
- Statistical search of traffic accidents based on relational online analytical processing (**ROLAP**)

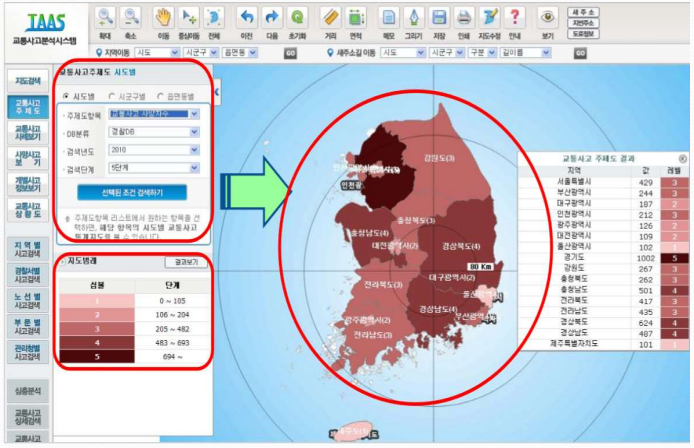
Some main contents:

- Population, vehicle, length of road, licensed drivers, traffic safety index
- Trends of traffic accident, accidents by region, serious & fatal accidents, drunk driving accidents, woman driving accidents, child's accident, accident in child safety area
- Rates by region (fatalities per 10,000 cars, per 100,000 people, per 10 km of road etc)

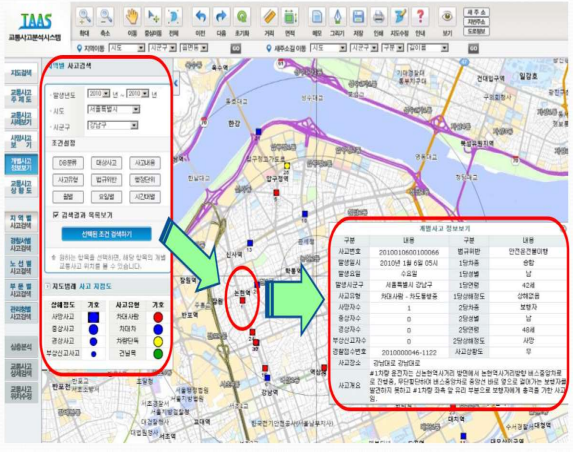
Statistics – traffic accident status



GIS Accidents Theme



Individual accident



Crash Data Systems – Sweden

System for crash data analysis STRADA
Swedish Traffic Data Acquision

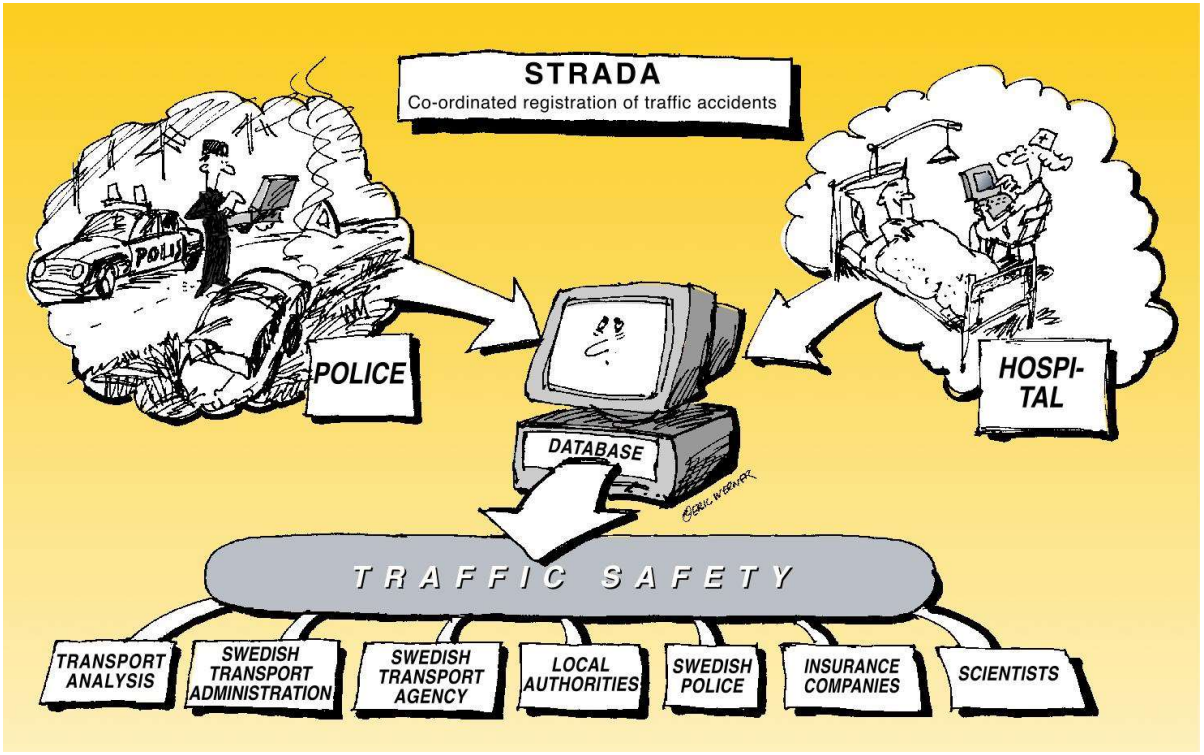
STRADA (Swedish Traffic Accident Data Acquisition) is a national information system containing data on traffic accidents and injuries occurring in the Swedish road transport system. The information comes from the police and the medical care services.

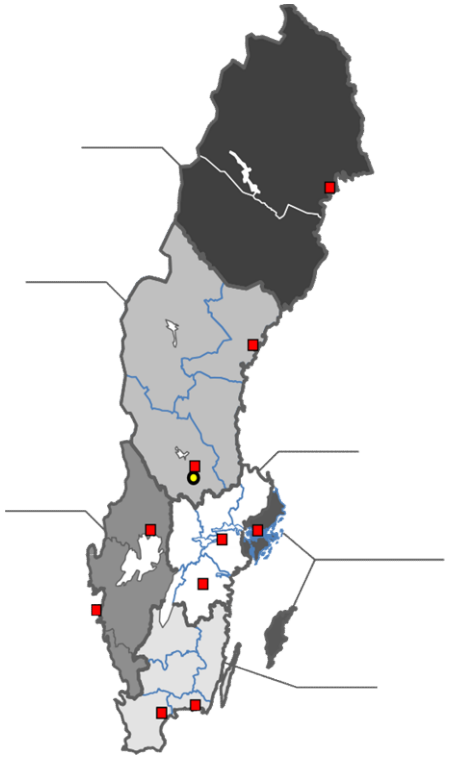
The data in STRADA is based on two separate sources: traffic accident reports provided by the police, and medical reports provided by the hospitals that are part of the STRADA system. By combining data from two sources, more detailed descriptions of traffic accidents and their consequences can be provided.

In particular, the hospitals' reporting of diagnoses broadens the knowledge of injuries sustained and their degree of seriousness. Furthermore, because the police have limited knowledge about certain types of road traffic accidents (mainly those including unprotected road user such as pedestrians, cyclists and moped drivers), including hospital data decreases the total number of unrecorded cases.

Conversely, the police reports often contain information that is not available in the hospital reports, for instance, information regarding specific traffic elements and the circumstances of an accident.

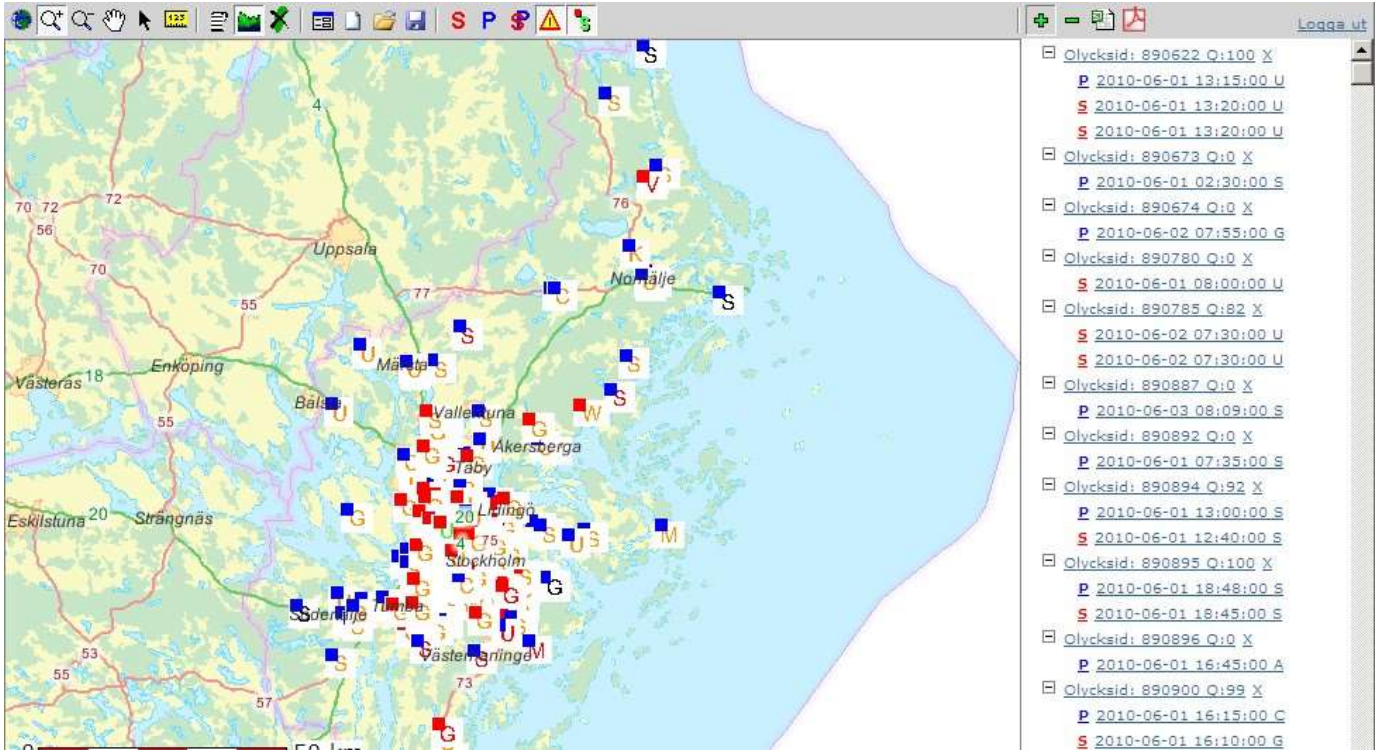
Crash Data Systems – Sweden





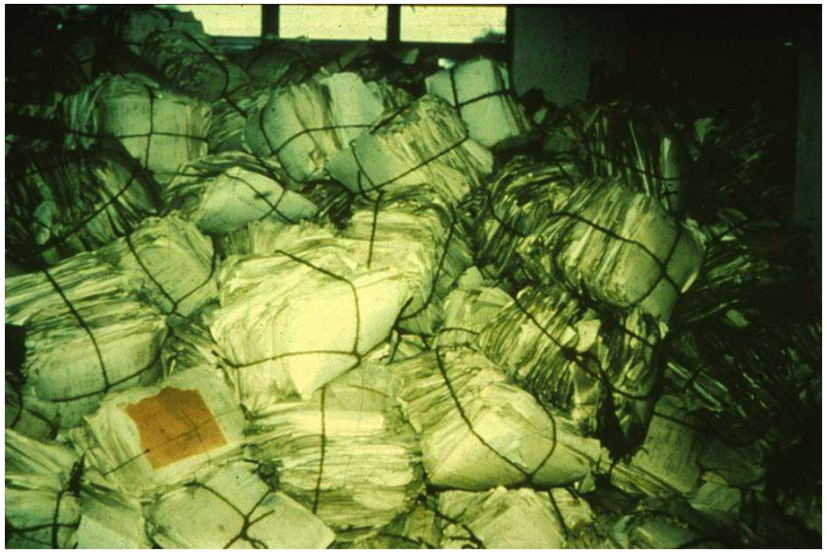
Crash Data Systems – Sweden

Extracting information from STRADA



General Crash Data Analysis

Storage of data forms before computerization



Storage of data after computerization

General Crash Data Analysis

- Analysis for deciding goals
- Analysis for strategies
- Analysis for action plans

- Follow up of goals
- Follow up of strategies
- Follow up of action plans

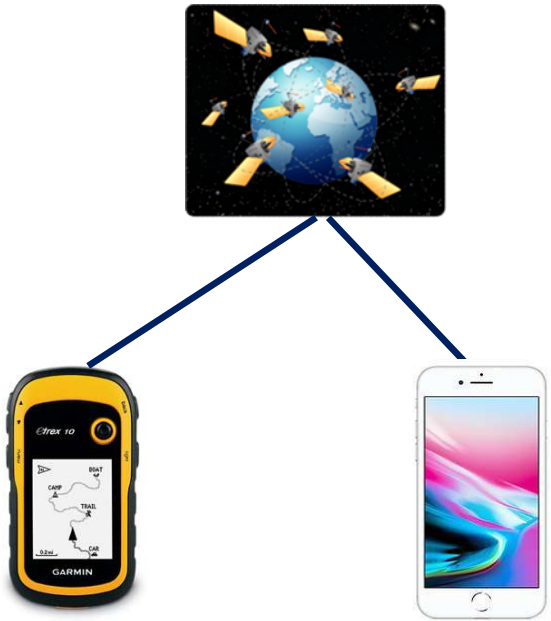
General Crash Data Analysis

- Kilometer Analysis
- Collision Diagram Analysis
- Grid Analysis
- Graphical Analysis
- Cross tab analysis
- Node Analysis
- Reports
- High accident location identification analysis

General Crash Data Analysis

- Kilometer Analysis
- Collision Diagram Analysis
- Grid Analysis
- Graphical Analysis
- Cross tab analysis
- Node Analysis
- Reports
- High accident location identification analysis

Recording Crash location



General Crash Data Analysis

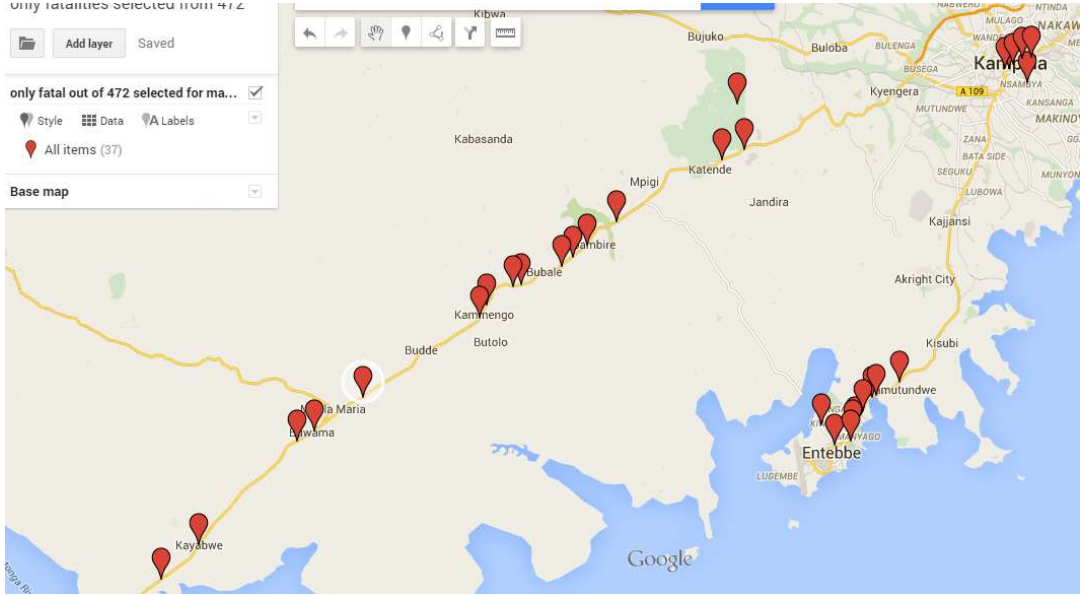
Mapping crashes

Maps with crashes are very informative

Stakeholders are amazed about these maps

A head of traffic police in one developing country told me:
”I want this map on my wall”
when he saw the map covering crashes in his country

This is the main tool for deciding deployment and enforcement of the traffic police



General Crash Data Analysis

Identification of Driver groups with high risk

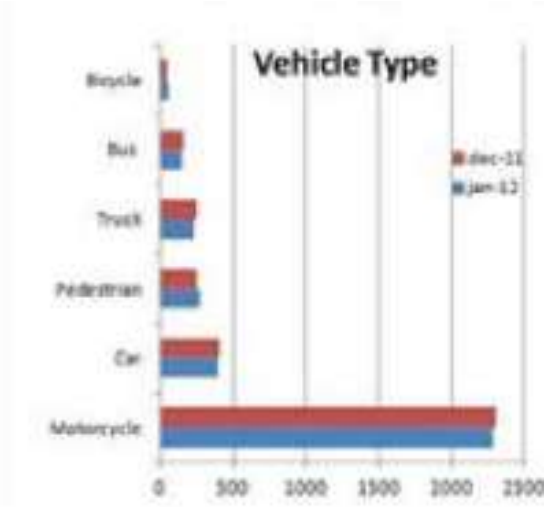
- Driver age
- Gender
- Inexperienced drivers (newly licenced)

Identification of road user groups with high risk

- Motorcyclists
- Pedestrians
- Unbelted drivers and passengers

Identification of vehicle types with high risk

- Cars
- Trucks
- Buses

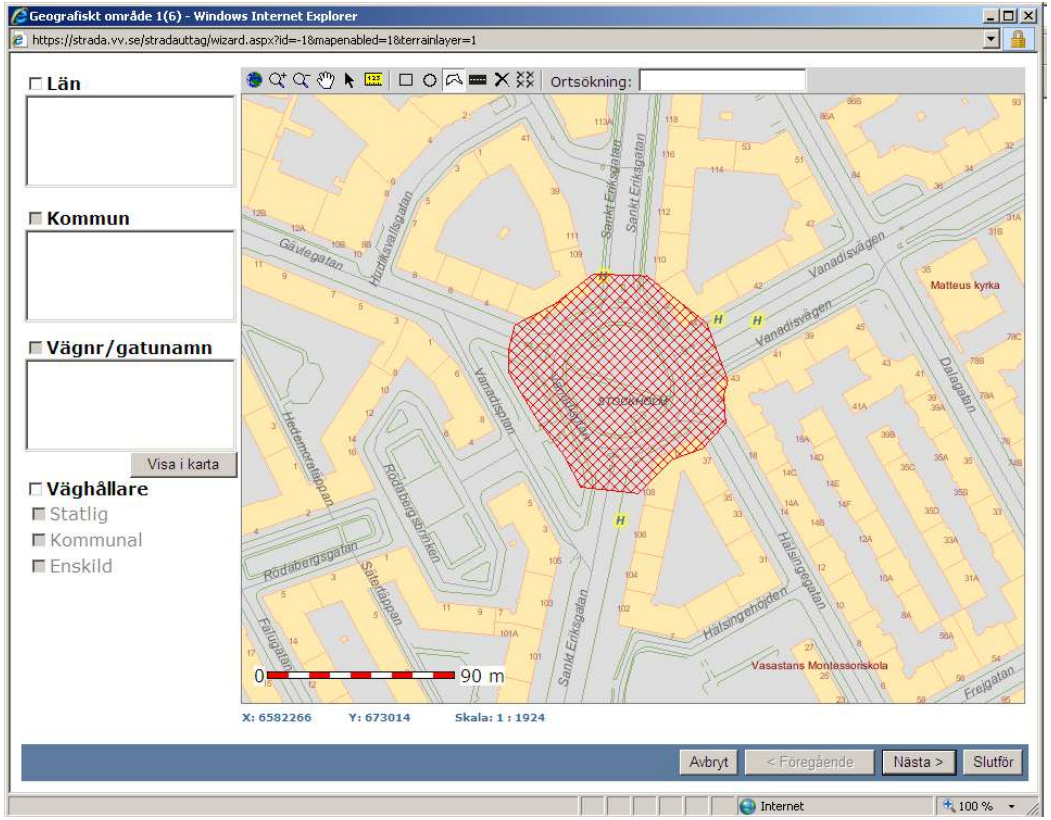


General Crash Data Analysis

The following ten “specific” pedestrian pre-crash scenarios were obtained by correlating the eight basic pre-crash scenarios with information about the crash relation to junction:

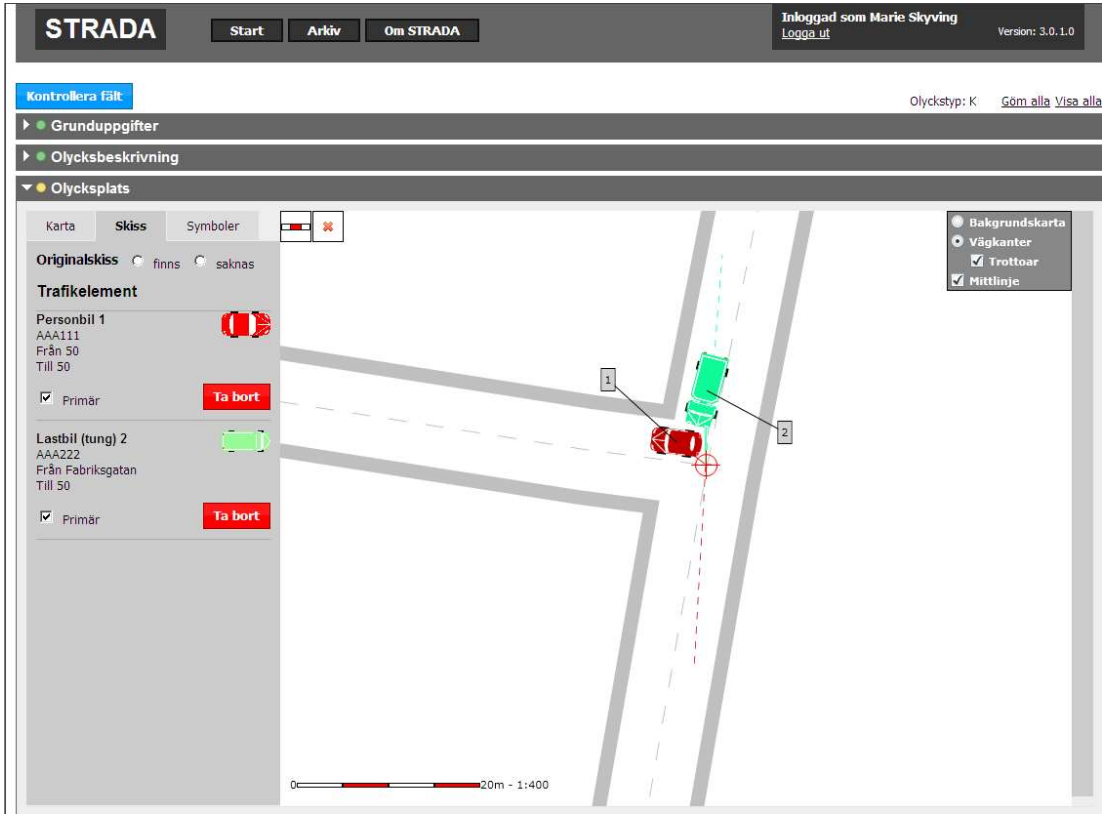
1. Vehicle is going straight and pedestrian is crossing the roadway at nonjunction (25.9%).
2. Vehicle is going straight and pedestrian is crossing the roadway at intersection (18.5%).
3. Vehicle is going straight and pedestrian is darting onto the roadway at nonjunction (16.0%).
4. Vehicle is turning left and pedestrian is crossing the roadway at intersection (8.6%).
5. Vehicle is turning right and pedestrian is crossing the roadway at intersection (6.2%).
6. Vehicle is going straight and pedestrian is walking along the roadway at nonjunction (3.7%).
7. Vehicle is going straight and pedestrian is darting onto the roadway at intersection (2.5%).
8. Vehicle is backing up (2.5%).
9. Vehicle is going straight and pedestrian is not in the roadway at non-junction (1.2%).
10. Vehicle is going straight and pedestrian is playing or working in the roadway at non-junction (1.2%).

General Crash Data Analysis



… a certain area of interest can be marked and specific accident or injury data can be extracted from the marked area.

General Crash Data Analysis



Enlarging the map makes it possible to illustrate the course of events.

In the sketch, the positions of the involved elements before and after the accident are marked, as well as their planned routes.

Accident type is automatically obtained when the sketch is made.

General Crash Data Analysis

KINGDOM OF BAHRAIN
MINISTRY OF INTERIOR
GENERAL DIRECTORATE OF TRAFFIC

مـمـلـكـــة الـبـحـريـن
وزارة الـداخـلـيـــة
الإدارة الـعـامـــة الـمـــــرور

إحصائيات مرورية – ٢٠١٧

Traffic Statistics – 2017

Designed & Produced by:
General Directorate of Traffic
Development & IT Division
Development & Statistic Section

تصميم وتنفيذ :
الإدارة العامة للمرور
شعبة التطوير و تقنية المعلومات
فرع التطوير و الإحصاء

SUMMARY

* The population in Bahrain in 2017 was 1,501,116.
* The total registered vehicles in 2017 were 686,622 of which 42,886 vehicles were newly registered.
* 75,998 new driving licences were issued in addition to 51,980 learner driving licences.
* A total of 843,697 traffic violations were reported, of which 47.37% were due to excess speed and 29.83% were due to crossing of red signals.
* There were 111,610 traffic accidents of which 1,153 were personal injuries and 110,457 were damage to properties.
* One traffic accidents was reported every 4.71 minutes
* The death rate was 0.80 deaths per 10,000 registered vehicles, 3.66 deaths per 100,000 population based on 2017 population .
* Of all injury accidents 12.66% were occured at Muharraq Governorate, 39.03% at Capital Governorate, 26.45% at Northern Governorate and 21.86% at southern Governorate.

الملخص

* بلغ عدد السكان في البحرين ١,٥٠١,١١٦ نسمة في عام ٢٠١٧ .
* بلغ مجموع المركبات المسجلة لدى الإدارة ١٨٦,٦٢٢ مركبة منها ٤٢,٨٨٦ مركبة تم تسجيلها خلال العام ٢٠١٧.
* بلغ مجموع رخص القيادة التي تم إصدارها خلال العام ٢٠١٧ ٧٥,٩٩٨ إضافة إلى ٥١,٩٨٠ رخصة تعلم .
* تم ضبط ٨٤٣,١٩٧ مخالفة مرورية منها ٤٧,٣٧٪ بسبب تجاوز السرعة المحددة و ٢٩,٨٣٪ بسبب تجاوز الإشارة الحمراء .
* بلغ المجموع العام للحوادث المرورية بكافة أنواعها ١١١,٦١٠ منها ١,١٥٣ حوادث إصابات ووفيات و ١١٠,٤٥٧ حوادث تلفيات .
* رصد كل ٤,٧١ دقيقة حادث واحد .
* بلغ معدل الوفيات ٠,٨٠ شخص لكل عشرة آلاف مركبة مسجلة و ٣,٦٦ شخص لكل مائة ألف نسمة من السكان لعام ٢٠١٧.
* ١٢,٦٦٪ من حوادث الإصابات وقعت في محافظة المحرق، ٣٩,٠٣٪ في محافظة العاصمة، و ٢٦,٤٥٪ في المحافظة الشمالية و ٢١,٨٦٪ في المحافظة الجنوبية .

THANK YOU!

شكـــــــرا

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Engineering & Management Consultants