IGLAD

INITIATIVE FOR THE GLOBAL HARMONISATION OF ACCIDENT DATA

# Codebook

## Member Year 2024

## Phase V

## Date 2025-02-19

# I Table of Content

# II Preface

## Introduction

Since its start in late 2011, the IGLAD project (Initiative for the global harmonization of accident data) has come a long way. The goal of the project is to build up a database of in-depth accident data on an international level. While most of the countries worldwide provide basic national statistics about the number of road fatalities or injured persons on a high and aggregated level, in-depth data provides details about single cases, their environment, participants, collisions, injuries and safety systems. So far, no data that can be compared between different countries worldwide or even is in the same data format has existed. The IGLAD project took this momentum and strives for a uniform and international in-depth accident database, which is build up on the basis of already existing databases. This is accomplished by creating a well-defined and simple layer on top of all participating databases, which serves as a common denominator of them. A more detailed description of the technical aspects can be found in [1].

## History

IGLAD was initiated by Daimler AG, ACEA and different research institutes and announced as a working group at the FIA Mobility Group in October 2010. Supported by FIA and ACEA, the goal of the group is to define a common standardized accident dataset as an effective foundation for developing and measuring road safety policy endorsements and interventions. It shall also establish how this dataset helps to achieve the goals of the “European Road Safety Action Programme” [2] and the „Decade of Action for Road Safety“ [3].

The first IGLAD working group meeting in March 2012 comprised a more detailed discussion on the common data scheme and steps necessary for a standardized dataset. A common data scheme has been drafted and as a proof of concept, a pilot study has been conducted where each data supplier converted a small set of accidents into the common data scheme data. This should show the feasibility of the approach and give a small preview of the resulting data set that could be provided by the IGLAD project. The nine countries taking part in the pilot study were: USA, India, Germany, Sweden, France, Spain, Austria, Poland, and Italy.

By end of 2012, the basic project setup had been accomplished and first technical and organizational issues had been solved, so that the first project phase could be started. Target of phase 1 was to build an initial database with at least 100 cases per country. Phase 1 was funded by ACEA and finished in mid of 2014 resulting in a first dataset of 1550 cases from 10 different countries.

Phase 2 of the project started in 2014. From now on, the project was self-containing with an own project structure and funding model. A consortium agreement was set up that reflects the different roles of all involved parties. As there is no umbrella organization for this international project, an administrator was established who could care for the correct flow of data and financial resources (figure 1). A steering group is responsible for strategic decisions and a technical working group cares about the maintenance of the database, scheme, codebook and related questions.

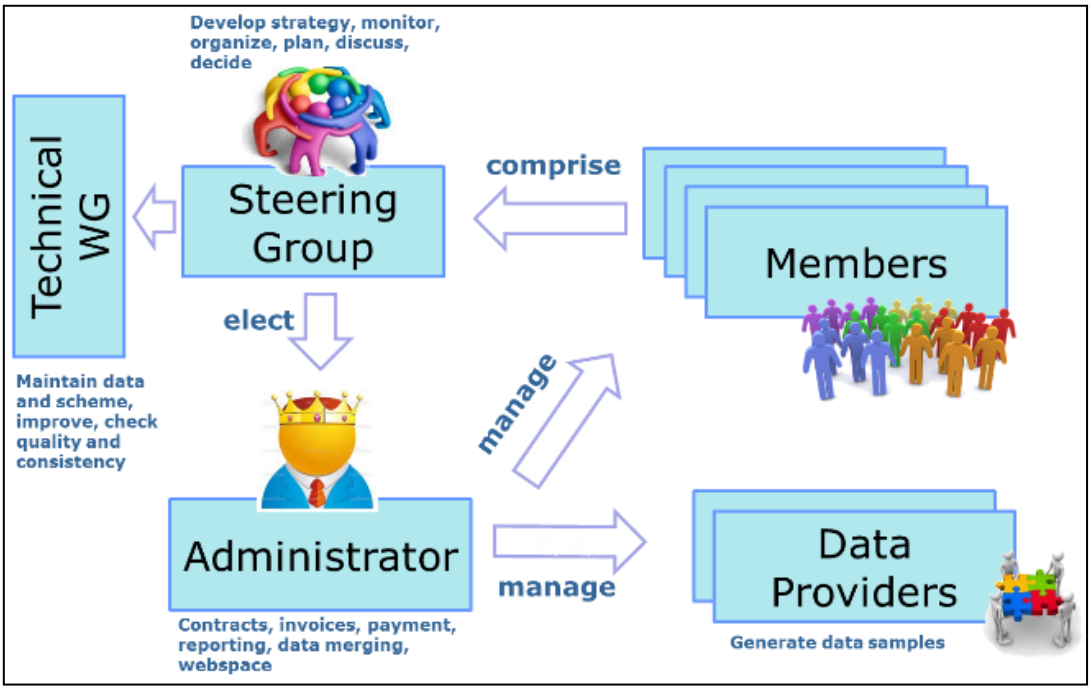


**Figure 1. Organizational structure of the project from Phase 2 on.**

The interesting part of the organisational structure is on the Member and Data Provider side. Members are parties that can purchase data and Data Providers deliver data. Of course there are parties that are both, there are Data Providers that are owners of their data repository and there are Data Providers that act in the name of another consortium or even only recode other data. This leads to different constellations in terms of financial compensation. As IGLAD is non-profit and for research purpose, special attention has to be drawn on fair balance between Data Providers and Members. The corresponding funding model is shown in figure 2.

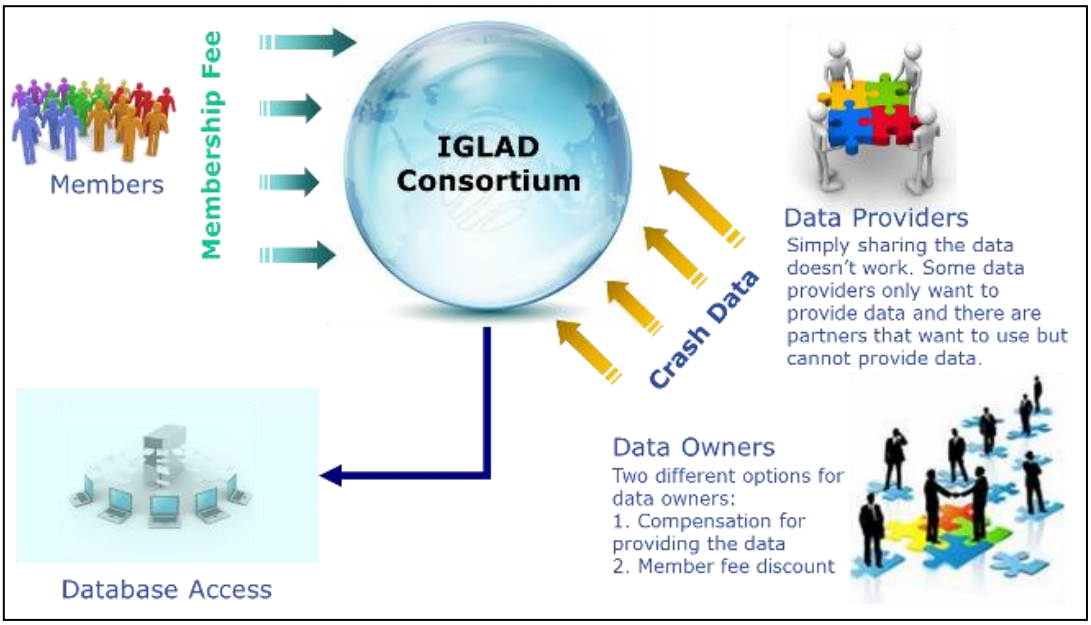


**Figure 2. The funding model balances interests in the project from Phase 2 on.**

Other improvements compared to phase 1 was a simplified and unified data processing using the software UNIDATO as a common data acquisition tool.This allowed for extended automatic quality control using an extensive list of plausibility checks and streamlined the process of merging the data. There were also improvements in the codebook, the quality of sketches and some variables were added. Datasets are released once a year. The first data of phase 2 was released in 2015 containing 800 cases from 9 countries. The second dataset of phase 2 was released in 2016 with 850 cases from 9 countries. The third and last dataset of phase 2 was released in 2017 with 900 cases from 10 countries. This marked the end of the second phase, which was finished by the end of the year 2016 covered by the first consortium agreement.

A new consortium agreement for phase 3 was signed with only minor changes, ensuring the continuation of the project for another three years until 2019. The first data of phase 3 was released in 2018 containing 850 cases from 9 countries. The second dataset of phase 3 was released in 2019 with 1050 cases from 8 countries. The third and last dataset of phase 3 was released in 2020 with 1050. Also during phase 3 a bugtracking tool was re-activated and reported data issues are cleaned up with each new data release and by that improving data quality every year.

Further data enrichment is attempted by the *"IGLAD PCM trial period"* in 2019. In this test phase every Data Provider creates 1-3 cases in the official PCM v5 format.

Phase 4 has started in 2020 and a new consortium agreement for another 3 years was signed. The first data of Phase 4 was released in 2021 containing 1150 cases from 9 countries. Although the Corona pandemic influenced business, traffic and social life in the years 2020, 2021 and 2022, the 12 different IGLAD Data Providers managed to deliver another 1150 cases in 2022 (from 9 countries). In 2023, a new Data Provider joined the IGLAD consortium. Samsong, a South Korean institute delivered their first 50 cases. So, the 2023 dataset contained 1200 cases from 10 Data Providers.

Phase 5 has started in 2024 and a new consortium agreement for another 3 years was signed. The first data of Phase 5 was released in 2024 containing 1100 cases from 9 countries.

Thus, the current dataset (effective December 2024) contains a total of **11,725 cases** (China provided additional 20 cases within their first IGLAD PCM delivery).

In 2022, there has been another significant innovation in the IGLAD project. For the first time, eight Data Providers from seven countries have transferred some of their IGLAD cases to the PCM format v5. This means that pre-crash simulation files for 200 IGLAD cases were available for analysis. In 2023 and 2024, another 200 cases from the same eight Data Providers were added to the IGLAD PCM.

The PCM format is a publicly available format for storing dynamic and static data from critical traffic situations and/or accidents [5].

Also the number of Members is steadily increasing and currently accounts for 22.

For current information and contact details see the project's webpage https://iglad.org/ [4].

| Phase | Accident years | Member year = Dataset name | Data Release |
|---|---|---|---|
| I | 2007-2012 | **2013** | 2013 |
| II | 2012-2013 | **2014** | 2015 |
| | 2013-2014 | **2015** | 2016 |
| | 2014-2015 | **2016** | 2017 |
| III | 2015-2016 | **2017** | 2018 |
| | 2016-2017 | **2018** | 2019 |
| | 2017-2018 | **2019** | 2020 |
| IV | 2018-2019 | **2020** | 2021 |
| | 2019-2020 | **2021** | 2022 |
| | 2020-2021 | **2022** | 2023 |

**Figure 3. Member Year Allocation.**

## Data Provider

| COUNTRY | ORGANISATION | ORIGINAL DATABASE | CONTACT PERSON |
|---|---|---|---|
| **Austria** | TU Graz | CEDATU – Central Database for In-Depth Accident Study | Ernst TOMASCH ernst.tomasch@tugraz.at |
| **Australia** | CASR | | Sam DOECKE sam@casr.adelaide.edu.au |
| **Brazil** | SAE Brasil | IAAT | [no current data provided anymore] |
| **China** | CNIS / DPAC | NAIS (National Automobile Accident In-Depth Investigation System) | Lingyun XIAO xiaoly@dpac.gov.cn |
| **China** | CATARC | CIDAS | Wang PENG wangpeng2015@catarc.ac.cn |
| **Czech Republic** | CDV | CzIDAS (Czech In-Depth Accident Study) | Kateřina BUCSUHÁZY katerina.bucsuhazy@cdv.cz |
| **France** | PSA-RENAULT | | Cyril CHAUVEL cyril.chauvel@mpsa.com |
| **Germany** | MHH | GIDAS (German In-Depth Accident Study) | Heiko JOHANNSEN Johannsen.Heiko@mh-hannover.de |
| **Germany** | VUFO | GIDAS (German In-Depth Accident Study) | Henrik LIERS henrik.liers@vufo.de |
| **India** | JP Research | RASSI (Road Accident Sampling System India) | Murtuza Shabbir PAINTER murtuza@jpri.in |
| **Italy** | UNIFI | | Dario VANGI dario.vangi@unifi.it |
| **Spain** | IDIADA SP | | Alejandro LONGTON alongton@idiada.com |
| **USA** | NHTSA (coded by Asymptotic AI) | NASS CDS (National Automotive Sampling System Crashworthiness Data System/ CISS (Crash Investigation Sampling System) | Chip CHIDESTER Chip.Chidester@dot.gov<br><br>Jörg BAKKER jorg.bakker@asymptotic.ai |

## Responsibilities

| | |
|---|---|
| Webpage | http://www.iglad.net |
| Administrator | Ines Heinig<br>Vehicle and Traffic Safety Centre at Chalmers (SAFER)<br>Phone: +46-(0)31-772 2826<br>Mail: Ines.Heinig@chalmers.se |
| Chairman<br>Steering Group (SG) | John-Fredrik Grönvall<br>Vehicle and Traffic Safety Centre at Chalmers (SAFER)<br>Mail: john-fredrik.gronvall@chalmers.se |
| Chairman<br>Technical Working Group (TWG) | Henrik LIERS<br>VUFO (Institute for Traffic Accident Research at TU Dresden)<br>Mail: henrik.liers@vufo.de |
| Codebook Administration | Henrik LIERS VUFO (Institute for Traffic Accident Research at TU Dresden)<br>Mail: henrik.liers@vufo.de |

## References

[1] Ockel, Bakker, Schöneburg, “An initiative towards a simplified international in-depth accident database”, ESAR Conference 2012, Hannover

[2] EU Commission, European Road Safety Action Programme, ISBN 92-894-5893-3, 2003.

[3] WHO, http://www.who.int/roadsafety/decade_of_action/en/

[4] IGLAD, https://iglad.org/

[5] Verkehrsunfallforschung an der TU Dresden GmbH; PCM v5 format specifications; https://www.vufo.de/pcm/

# 1 Accident (ACCIDENT)

The table “Accident” includes a description of the setup of the accident, its environment, circumstances and general related information. There is one entry for each accident in the table, identified by its case number.

## *1.1 Accident number (CASENR)*

**Table:** ACCIDENT

**Label:** Accident number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Unique number of accident.

The case number ensures the unequivocal allocation of a data Table within the database and is always the first variable to be indicated.

The format is required: [yy][XX][0000]

[yy] - the last 2 digits of the member year

[XX] - country of origin

[0000] - consecutive accident number

Example: 14AT0001

**Defined labels:**

-

## *1.2 Member year (MEMYEAR)*

**Table:** ACCIDENT

**Label:** Member year

**Valid date period:** 2015-01-01

**Mandatory variable:** Yes

**Range:** 2013 - 2099

**Description:**

The member year is the year in which the data was provided to IGLAD. It corresponds to the codebook of that member year. The variable is filled in by a default value and has not to be coded manually. This variable is also used in the plausibility routines to check whether the plausibility is provided for the member year or not.

2013 (Accident year 2007 - 2012)

2014 (Accident year 2012 - 2013)

2015 (Accident year 2013 - 2014)

2016 (Accident year 2014 - 2015)

2017 (Accident year 2015 - 2016)

2018 (Accident year 2016 - 2017)

2019 (Accident year 2017 - 2018)

2020 (Accident year 2018 - 2019)

2021 (Accident year 2019 - 2020)

2022 (Accident year 2020 - 2021)

**Defined labels:**

2013 - 2013

2014 - 2014

2015 - 2015

2016 - 2016

2017 - 2017

2018 - 2018

2019 - 2019

2020 - 2020

2021 - 2021

2022 - 2022

2023 - 2023

2024 - 2024

2025 - 2025

2026 - 2026

2027 - 2027

2028 - 2028

2029 - 2029

2030 - 2030

2031 - 2031

2032 - 2032

2033 - 2033

2034 - 2034

2035 - 2035

2036 - 2036

2037 - 2037

2038 - 2038

2039 - 2039

2040 - 2040

2041 - 2041

2042 - 2042

2043 - 2043

2044 - 2044

2045 - 2045

2046 - 2046

2047 - 2047

2048 - 2048

2049 - 2049

2050 - 2050

## *1.3 Year of accident (YEAR)*

**Table:** ACCIDENT

**Label:** Year of accident

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 2099

**Description:**

Year when accident happened (YYYY).

**Defined labels:**

-

## *1.4 Month of accident (MONTH)*

**Table:** ACCIDENT

**Label:** Month of accident

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 2099

**Description:**

Here, the month is coded when the accident happened. This parameter was introduced into the IGLAD codebook in Phase IV / 2021. Coded data in accidents from previous phases (Phase 1 to Phase IV / 2020) were provided by Data Providers on a voluntary basis.

**Defined labels:**

1 - January

2 - February

3 - March

4 - April

5 - May

6 - June

7 - July

8 - August

9 - September

10 - October

11 - November

12 - December

66666 - parameter not collected for this IGLAD Phase

99999 - unknown

## *1.5 Weekday (WDAY)*

**Table:** ACCIDENT

**Label:** Weekday

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 7

**Description:**

Day of week when accident happened.

**Defined labels:**

1 - Monday

2 - Tuesday

3 - Wednesday

4 - Thursday

5 - Friday

6 - Saturday

7 - Sunday

99999 - unknown

## *1.6 Time (TIME)*

**Table:** ACCIDENT

**Label:** Time

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 9999

**Description:**

Time when accident happened (HHMM).

**Defined labels:**

9999 - unknown

## *1.7 GPS latitude (GPSLAT)*

**Table:** ACCIDENT

**Label:** GPS latitude

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

GPS latitude where accident happened (WGS 84). The data should be entered in the format xx.xxxxxx as decimal values (using a point for the separation.)

**Defined labels:**

99999 - unknown

## *1.8 GPS longitude (GPSLONG)*

**Table:** ACCIDENT

**Label:** GPS longitude

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

GPS longitude where accident happened (WGS 84). The data should be entered in the format xx.xxxxxx as decimal values (using a point for the separation.)

**Defined labels:**

99999 - unknown

## *1.9 Country (COUNTRY)*

**Table:** ACCIDENT

**Label:** Country

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Country where accident happened (ISO-3166-1 country code).

AT - Austria

AU - Australia

BR - Brazil

CN - China

CZ - Czech Republic

DE - Germany

FR - France

GR - Greece

IN - India

IT - Italy

KR - Korea

SE - Sweden

SK - Slovakia

SP - Spain

US - United States

**Defined labels:**

-

## *1.10 Accident description (ACCDESC)*

**Table:** ACCIDENT

**Label:** Accident description

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Here is a comprehensive description of the accident made by the Case Administrator. Besides a general description follow items should be indicated: addition of all relevant technical and medical characteristics to accident genesis and consequences of accidents. Based on the description, the circumstances of the accident must be understandable even for an outsider.

The special characteristics are:

- Information about seat belt usage

- The influence of alcohol

- Lack of driver's license

- Ejection of occupants

- Special weather conditions

- Obstructions / restriction

- Collision opponents (in case of animals: state type of animal)

- special post-crash aspects (e.g. fire, electric/chemical danger, problems during extrication etc.)

Assumptions that are made by the investigation team (e.g. micro sleep, technical failure, distraction etc.) should be entered here.

Part of the accident description will be:

- Characteristics of participants (pedestrian, bicycle, car type)

- Drive (running) directions,

- Type of collision,

- visual obstacles,

- possible the influence of alcohol,

- particular visibility or road conditions (heavy rain, fog, etc.),

- if possible, the severity of the injury.

Note: Be aware of data privacy issues. Do not include personalized data like names, dates of birth, number plates etc.

**Defined labels:**

-

## *1.11 Collision type (COLLTYPE)*

**Table:** ACCIDENT

**Label:** Collision type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Moving direction of the involved vehicles at the point of the first collision on the roadway or the first mechanical impact on a vehicle of there was no collision between the opponents.

The following ten collision types can be distinguished:

1 - Collision with another vehicle which starts, stops or is stationary:

Starting or stopping are here to be seen in connection with a deliberate stopover which is not caused by the traffic situation. Stationary vehicles within the meaning of this kind of accident are vehicles which stop or park at the edge of a carriageway, on shoulders, on marked parking places directly at the edge of a carriageway, on footpaths or parking sites. The traffic to or from parking spaces with a separate driveway belongs to No. 5 collision type.

2 - Collision with another vehicle moving ahead or waiting:

Accidents caused by a rear-end collision with a vehicle which either was still moving or stopping due to the traffic situation. Rear-end collisions with starting or stopping vehicles belong to the No. 1 collision type.

3 - Collision with another vehicle moving laterally in the same direction:

Accidents occurring when driving side by side (sideswipe) or when changing lanes (cutting in on someone).

4. Collision with another oncoming vehicle:

Collisions with oncoming traffic, none of the colliding partners having had the intention to turn and cross over the opposite lane.

5 - Collision with another vehicle which turns into or crosses a road:

This kind of accident includes collisions with crossing vehicles and with vehicles which are about to enter or leave from/to other roads, paths or premises. A rear-end collision with vehicles waiting to turn belongs to the No. 2 collision type.

6 - Collision between vehicle and pedestrian:

Persons who work on the carriageway or still are in close connection with a vehicle, such as road workers, police officers directing the traffic, or vehicle occupants who got out of a broken down car are not considered to be pedestrians. Collisions with these persons are coded under the No. 10 collision type.

7 - Collision with an obstacle in the carriageway:

These obstacles include for instance fallen trees, stones, lost freight as well as unleashed animals or game. Collisions with leashed animals or riders belong to the No. 10 collision type.

8/9 - Leaving the carriageway to the right or left.

These kinds of accidents do not involve a collision with other road users. There may however be further parties involved in the accident, e.g. when the vehicle involved in the accident veered off the road trying to avoid another road user and did not hit him.

88888 - Collision of another type.

This category covers all accidents which cannot be allocated to one of the kinds of accidents listed under Nos. 1 to 9.

99999 - unknown

**Defined labels:**

1 - collision with another vehicle which starts, stops or is stationary

2 - collision with another vehicle moving ahead or waiting

3 - collision with another vehicle moving laterally in the same direction

4 - collision with another oncoming vehicle

5 - collision with another vehicle which turns into or crosses a road

6 - collision between vehicle and pedestrian

7 - collision with an obstacle in the carriageway

8 - leaving the carriageway to the right

9 - leaving the carriageway to the left

88888 - collision of another type

99999 - unknown

## *1.12 Accident type (ACCTYPE)*

**Table:** ACCIDENT

**Label:** Accident type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The accident type is coded according to the catalogue of the HUK from 1977 or alternatively the modified version for left hand traffic. The type of accident describes the situation or the conflict that led to the accident. The information is coded with three digits that can be obtained from the following list. Alternatively, if the specific code cannot be determined, only the first digit can be coded according to the format description.

For the definition of the accident type only the conflict situation that led to the accident is important. The fact if there was a collision or how the collision took place describes the character of the accident, but is not important for the accident type. Also the misbehavior of the drivers is not regarded and describes the accident causation. If an accident is for example initiated by the conflict of a vehicle and a pedestrian crossing the street, then it is a pedestrian crossing accident regardless if there was a collision or if the vehicle left the road while trying to evade or if a following vehicle hit the vehicle during an emergency brake. Also the fact who had the right of way or who was at fault or if there was alcohol involved has no influence.

**********

The following labels and pictures are only valid for

right-hand traffic

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For labels and pictures for left-hand traffic see Appendix D.

TYPE 1: Driving Accident

101 - LC - left turn

102 - LC - right turn

103 - LC - left turn overtaking

104 - LC - right turn overtaking

109 - LC - direction of turn unknown

111 - LC - deviated right of way to the left

112 - LC - deviated right of way to the right

113 - LC - deviated right of way to the left overtaking

114 - LC - deviated left of way to the left overtaking

119 - LC - deviated right of way, direction of turn unknown

121 - LC - while turning off or into another street to the left

122 - LC - while turning off or into another street to the right

123 - LC - deceleration lane

129 - LC - while turning off or into another street to the left or direction unknown

131 - LC - non-straight street, bending to the left

132 - LC - non-straight street, bending to the right

133 - LC - non-straight street, bending to the left overtaking

134 - LC - non-straight street, bending to the right overtaking

139 - LC - non-straight street, direction of bending unknown

141 - LC - straight road

142 - LC - straight road - overtaking

149 - LC - straight road - unknown

151 - LC - gradient and left turn

152 - LC - gradient and right turn

153 - LC - gradient, straight road

159 - LC - gradient, street course unknown

161 - LC - traffic island and left turn

162 - LC - traffic island and right turn

163 - LC - traffic island, straight road

169 - LC - traffic island, street course unknown

171 - LC - bottleneck and left turn

172 - LC - bottleneck and right turn

173 - LC - bottleneck, straight road

179 - LC - bottleneck, street course unknown

181 - LC - bumpy road and left turn

182 - LC - bumpy road and right turn

183 - LC - bumpy road, straight road

189 - LC - bumpy road, street course unknown

199 - LC - other driving accidents

TYPE 2: Turning off Accident

201 - TO - following veh. Behind left turning veh.

202 - TO - following veh. Besides left turning veh.

203 - TO - left turning cyclist from bicycle lane and following veh.

204 - TO - veh. That changes lane for turning left and following veh.

209 - TO - unspecified if 201 - 204

211 - TO - left turning veh. And oncoming traffic in lane, straight

212 - TO - left turning veh. And oncoming, right turning vehicle

213 - TO - left turning veh. And oncoming, right turning vehicle on separate lane

214 - TO - left turning veh. And oncoming, right turning vehicle on separate lane (no right of way)

215 - TO - left turning veh. And oncoming, left turning vehicle

219 - TO - left turning veh., driving direction not specified

221 - TO - left turning veh. And pedestrian in same direction

222 - TO - left turning veh. And pedestrian in opposite direction

223 - TO - left turning veh. And cyclist from bicycle lane in same direction

224 - TO - left turning veh. And cyclist from bicycle lane in opposite direction

225 - TO - left turning veh. And railway gate

229 - TO - left turning veh., unspecified if 221 - 225

231 - TO - following veh. Behind right turning veh.

232 - TO - following veh. Besides right turning veh.

233 - TO - veh. That changes lane for turning right and following veh.

239 - TO - right turning veh., unspecified if 231 - 233

241 - TO - right turning veh. And pedestrian in same direction

242 - TO - right turning veh. And pedestrian in opposite direction

243 - TO - right turning veh. And cyclist from bicycle lane in same direction

244 - TO - right turning veh. And cyclist from bicycle lane in opposite direction

245 - TO - right turning veh. And railway gate

249 - TO - right turning veh., unspecified if 241 - 245

251 - TO - two veh. Turning left

252 - TO - two veh. Turning right

259 - TO - two veh. Unknown turning direction

261 - TO - veh. Turning left and veh.waiting mandat.

262 - TO - veh. Turning right and veh.waiting mandat.

269 - TO - veh. Turning in unknown direction and veh.waiting mandat.

271 - TO - veh. From right turning priority road and other vehicle

272 - TO - veh. From right turning priority road and pedestrian

273 - TO - veh. Turning left from right turning priority road and pedestrian

274 - TO - veh. From left turning priority road and pedestrian

275 - TO - veh. Turning right from left turning priority road and pedestrian

279 - TO - unknown if 271-275

281 - TO - veh. Turning left with green arrow light and oncoming traffic ahead

282 - TO - veh. Turning left with green arrow light and pedestrian

283 - TO - veh. Turning left with green arrow light and bicycle on bicycle lane

284 - TO - veh. Turning right with green arrow light and pedestrian

285 - TO - veh. Turning right with green arrow light and bicycle on bicycle lane

286 - TO - veh. Turning right with green arrow light and veh. Turning left

289 - TO - unknown if 281-285

299 - TO - others

Type 3: Turning in / Crossing Accidents

301 - crossing despite vehicle with right of way from the left

302 - crossing - veh. With right of way from left and turning left

303 - crossing - veh. With right of way from left and turning right

304 - crossing - veh. With right of way from left and turning right with additional lane

305 - crossing - veh. With right of way from left and ending lane

306 - crossing - veh. With right of way from left and turning left

309 - crossing - veh. With right of way from left and unknown direction

311 - crossing - passing veh. With right of way from the left and driving straight

312 - crossing - passing veh. With right of way from the left and turning left

313 - crossing - passing veh. With right of way from the left and turning right

314 - crossing - passing veh. With right of way from the left and turning right with additional lane

315 - crossing - passing veh. With right of way from the left and turning right with ending lane

319 - crossing - passing veh. With right of way from the left and unknown direction

321 - crossing - veh. With right of way from right and driving straight

322 - crossing - veh. With right of way from right and turning left

323 - crossing - veh. With right of way from right and turning right

324 - crossing - veh. With right of way from right and turning right with additional lane

325 - crossing - veh. With right of way from right and ending lane

326 - crossing - veh. With right of way from right and turning left

329 - crossing - veh. With right of way from right and unknown direction

331 - crossing - passing veh. With right of way from the right and driving straight

332 - crossing - passing veh. With right of way from the right and turning left

333 - crossing - passing veh. With right of way from the right and turning right

334 - crossing - passing veh. With right of way from the right and turning right with additional lane

335 - crossing - passing veh. With right of way from the right and turning right with ending lane

339 - crossing - passing veh. With right of way from the right and unknown direction

341 - crossing - bicycle with right of way from bicycle lane left and straight

342 - crossing - bicycle with right of way from bicycle lane right and straight

343 - crossing - bicycle with right of way from oncoming bicycle lane left and straight

344 - crossing - bicycle with right of way from oncoming bicycle lane right and straight

349 - crossing - bicycle with right of way from bicycle lane street-side, unknown direction

351 - crossing - turning priority road and oncoming traffic straight ahead

352 - crossing - turning priority road and veh. From the right

353 - crossing - turning priority road and veh. From the left

354 - crossing - turning priority road and oncoming traffic turning left

355 - crossing - turning priority road, both veh. With yield to priority road

359 - crossing - unknown if 351-355

361 - crossing - unguarded railway crossing on intersection

362 - crossing - unguarded railway crossing on lane

363 - crossing - guarded railway crossing on intersection

364 - crossing - guarded railway crossing on lane

369 - crossing - railway crossing - not further specified

371 - crossing - crossing bicycle from the right side

372 - crossing - crossing bicycle from the left side

373 - crossing - crossing bicycle parallel

374 - crossing - crossing bicycle on intersection

379 - crossing - unknown if 371-374

399 - crossing - others

Type 4: Pedestrian Crossing Road Accident

401 - cross the street from left

402 - Pedestrian crossing - from the left onto roadway without obstacle - while overtaking

403 - Pedestrian crossing - from the left onto roadway without obstacle - while passing

404 - Pedestrian crossing - from the left onto roadway without obstacle - while being passed

405 - Pedestrian crossing - from the left onto roadway without obstacle - in between oncoming traffic

409 - Pedestrian crossing - unknown if 401-405

411 - Pedestrian crossing - from the left onto roadway with obstacle

412 - Pedestrian crossing - from the left onto roadway with obstacle - while overtaking

413 - Pedestrian crossing - from the left onto roadway with obstacle - while passing

414 - Pedestrian crossing - from the left onto roadway with obstacle - behind solid obstacle

419 - Pedestrian crossing - unknown if 411-414

421 - Pedestrian crossing - from the right onto roadway

422 - Pedestrian crossing - from the right onto roadway - while overtaking

423 - Pedestrian crossing - from the right onto roadway - while passing

424 - Pedestrian crossing - from the right onto roadway - behind solid obstacle

429 - cross the street, unknown if 421-424

431 - Pedestrian crossing - from the left, before intersection without obstacle

432 - Pedestrian crossing - from the left, before intersection without obstacle - while overtaking

433 - Pedestrian crossing - from the left, before intersection without obstacle - while passing

434 - Pedestrian crossing - from the left onto roadway without obstacle - while being passed

435 - Pedestrian crossing - from the left onto roadway without obstacle - between oncoming traffic

436 - Pedestrian crossing - from the left onto roadway with obstacle - on additional lane

439 - Pedestrian crossing - unknown if 431-436

441 - Pedestrian crossing - from the left, before intersection with obstacle

442 - Pedestrian crossing - from the left, before intersection with obstacle - while overtaking

443 - Pedestrian crossing - from the left, before intersection with obstacle - while passing

444 - Pedestrian crossing - from the left onto roadway with obstacle - behind solid obstacle

449 - Pedestrian crossing - unknown if 441-444

451 - Pedestrian crossing - from the right before intersection

452 - Pedestrian crossing - from the right before intersection - while overtaking

453 - Pedestrian crossing - from the right before intersection - while passing

454 - Pedestrian crossing - from the right before intersection - behind solid obstacle

455 - Pedestrian crossing - from the right before intersection - on additional lane

459 - Pedestrian crossing - unknown if 451-455

461 - Pedestrian crossing - from the left behind intersection

462 - Pedestrian crossing - from the left behind intersection - while overtaking

463 - Pedestrian crossing - from the left behind intersection - while being passed

464 - Pedestrian crossing - from the left behind intersection - between oncoming traffic

465 - Pedestrian crossing - from the left behind intersection - behind solid obstacle

469 - Pedestrian crossing - unknown if 461-465

471 - Pedestrian crossing - from the right behind intersection

472 - Pedestrian crossing - from the right behind intersection - while overtaking

473 - Pedestrian crossing - from the right behind intersection - behind solid obstacle

479 - Pedestrian crossing - unknown if 471-473

481 - Pedestrian crossing - from the left behind turning priority road to the left

482 - Pedestrian crossing - from the right behind turning priority road to the left

483 - Pedestrian crossing - from the left behind turning priority road to the right

484 - Pedestrian crossing - from the right behind turning priority road to the right

489 - Pedestrian crossing - unknown if 481-484

491 - Pedestrian crossing - diagonally on intersection from the left

492 - Pedestrian crossing - diagonally on intersection from the right

493 - Pedestrian crossing - while entering veh. On middle of the road

494 - Pedestrian crossing - while exiting veh. On middle of the road

499 - Pedestrian crossing - others

Type 5: Accident with Parking Traffic

501 - Resting Traffic - vehicle parking on the right

502 - Resting Traffic - vehicle parking on the left

509 - Resting Traffic - vehicle - side unknown

511 - Resting Traffic - evading veh. And following parking veh. On the right

512 - Resting Traffic - evading veh. And following parking veh. On the left

519 - Resting Traffic - unknown if 511 or 512

521 - Resting Traffic - evading veh. And oncoming parking veh. On the right

531 - Resting Traffic - evading veh. And pedestrian in opposite direction and parking veh. On the right

532 - Resting Traffic - evading veh. And pedestrian in opposite direction and parking veh. On the left

533 - Resting Traffic - evading veh. And pedestrian in same direction and parking veh. On the right

534 - Resting Traffic - evading veh. And pedestrian in same direction and parking veh. On the left

539 - Resting Traffic - unknown if 531-534

541 - Resting Traffic - stopping or parking same direction to the right

542 - Resting Traffic - stopping or parking same direction to the left

543 - Resting Traffic - stopping or parking opposite direction to the left

549 - Resting Traffic - unknown if 541-543

551 - Resting Traffic - starting or parking out longitudinal on the right, same direction

552 - Resting Traffic - starting or parking out longitudinal on the left, same direction

553 - Resting Traffic - starting or parking out longitudinal on the right, opposite direction

554 - Resting Traffic - starting or parking out longitudinal on the left, opposite direction

555 - Resting Traffic - starting or parking out longitudinal on the right, same direction to the right

559 - Resting Traffic - unknown if 551-554

561 - Resting Traffic - parking out forward from perpendicular position on the right

562 - Resting Traffic - parking out forward from perpendicular position on the left

569 - Resting Traffic - unknown if 561 or 562

571 - Resting Traffic - parking out backward from perpendicular position on the right

572 - Resting Traffic - parking out backward from perpendicular position on the left

579 - Resting Traffic - unknown if 571 or 572

581 - Resting Traffic - door opening while getting in or out on the right

582 - Resting Traffic - door opening while getting in or out on the left

583 - Resting Traffic - loading or unloading on the right

584 - Resting Traffic - loading or unloading on the left

589 - Resting Traffic - unknown if 581-584

591 - Resting Traffic - veh. Turning left and parking veh. On the right

592 - Resting Traffic - veh. Turning left and parking veh. On the left

593 - Resting Traffic - veh. Turning right and parking veh. On the left

594 - Resting Traffic - veh. Turning right and parking veh. On the right

599 - Resting Traffic - others

Type 6: Accident in - Longitudinal Traffic

601 - Longitudinal Traffic

602 - Longitudinal Traffic - veh. And follower 2nd lane

603 - Longitudinal Traffic - veh. And follower 3rd lane

604 - Longitudinal Traffic - veh. And follower 4th lane

609 - Longitudinal Traffic - unknown if 601-604

611 - Longitudinal Traffic - congestion and follower 1st lane

612 - Longitudinal Traffic - congestion and follower 2nd lane

613 - Longitudinal Traffic - congestion and follower 3rd lane

614 - Longitudinal Traffic - congestion and follower 4th lane

619 - Longitudinal Traffic - unknown if 611-614

621 - Longitudinal Traffic - veh. Waiting mandatory and follower

622 - Longitudinal Traffic - veh. Waiting mandatory and follower on ending lane

623 - Longitudinal Traffic - veh. Waiting mandatory and follower before intersection or traffic light

624 - Longitudinal Traffic - veh. Waiting mandatory and follower at railway crossing

629 - Longitudinal Traffic - unknown if 621-624

631 - Longitudinal Traffic - lane change to the left because of veh. Ahead and follower

632 - Longitudinal Traffic - lane change to the left because of congestion and follower

633 - Longitudinal Traffic - lane change to the left because of ending lane and follower

634 - Longitudinal Traffic - lane change to the left because of mand. Direction of travel and follower

635 - Longitudinal Traffic - lane change to the left after passing on the right and follower

639 - Longitudinal Traffic - lane change to the left (unknown reason) and follower

641 - Longitudinal Traffic - lane change to the right because of veh. Ahead and follower

642 - Longitudinal Traffic - lane change to the right because of congestion and follower

643 - Longitudinal Traffic - lane change to the right because of ending lane and follower

644 - Longitudinal Traffic - lane change to the right because of mand. Direction of travel and follower

645 - Longitudinal Traffic - lane change to the right after passing on opposite lane and follower

646 - Longitudinal Traffic - lane change to the right after passing on parallel lane and follower

649 - Longitudinal Traffic - lane change to the right (unknown reason) and follower

651 - Longitudinal Traffic - parallel driving in same direction

652 - Longitudinal Traffic - parallel driving during overtaking - in same direction

661 - Longitudinal Traffic - overtaking veh. And oncoming traffic

662 - Longitudinal Traffic - overtaking veh. And oncoming pedestrian

663 - Longitudinal Traffic - overtaking veh. And pedestrian in same direction

664 - Longitudinal Traffic - overtaking veh. And parking veh.

669 - Longitudinal Traffic - unknown if 661-664

671 - Longitudinal Traffic - pedestrian and veh. In same direction - right lane

672 - Longitudinal Traffic - pedestrian and veh. In opposite direction - right lane

673 - Longitudinal Traffic - pedestrian and veh. In same direction - left lane

674 - Longitudinal Traffic - pedestrian and veh. In opposite direction - left lane

675 - Longitudinal Traffic - pedestrian sitting/standing, no direction

679 - Longitudinal Traffic - unknown if 671-674

681 - Longitudinal Traffic - encountering vehicles on roadway

682 - Longitudinal Traffic - encountering vehicles in curve

683 - Longitudinal Traffic - encountering vehicles at turning priority road

684 - Longitudinal Traffic - encountering vehicles on roadway

685 - Longitudinal Traffic - encountering vehicles and a gap with one travelling direction

686 - Longitudinal Traffic - encountering vehicles and a gap with two or more travelling direction

689 - Longitudinal Traffic - unknown if 681-683

699 - Longitudinal Traffic - others

Type 7: Other Accident

701 - others - parker vs. Parker on the road

702 - others - parker vs. Parker besides the road

703 - others - parker vs. Parker at car park

709 - others - unknown if 701-703

711 - Others - veh. Backing up by driving and parker behind

712 - others - veh. Backing up by rolling and parker behind

713 - others - veh. Backing up and pedestrian

714 - others - veh. Backing out and crossing traffic on the road

715 - others - veh. Backing out from the left side and crossing traffic on the road

716 - others - veh. Backing out from the right side and crossing traffic on the road

719 - others - unknown if 711-715

721 - others - veh. Turning from left to right and following traffic

722 - others - veh. Turning around and oncoming traffic

723 - others - veh. Turning around and oncoming traffic after central island

724 - others - veh. Turning around and parking veh. In opposite lane

725 - others - veh. Turning around and oncoming traffic

726 - others - veh. Turning from right to left and following traffic

729 - others - unknown if 721-724

731 - others - moving obstacle - cargo

732 - others - moving obstacle - others

741 - others - veh. Breakdown after accident

742 - others - vehicle breakdown without accident

749 - others - unknown if 741 or 742

751 - others - animal on roadway - wild game

752 - others - animal on roadway - pet without supervision

753 - others - animal on roadway - pet with supervision

759 - others - unknown if 751-753

761 - others - fatigue (physical disability)

762 - others - qualm (physical disability)

763 - others - other disability without alcohol

771 - others - sudden technical failure - tires

772 - others - sudden technical failure - windshield

773 - others - sudden technical failure - brakes

774 - others - sudden technical failure - steering control

775 - others - sudden technical failure - others

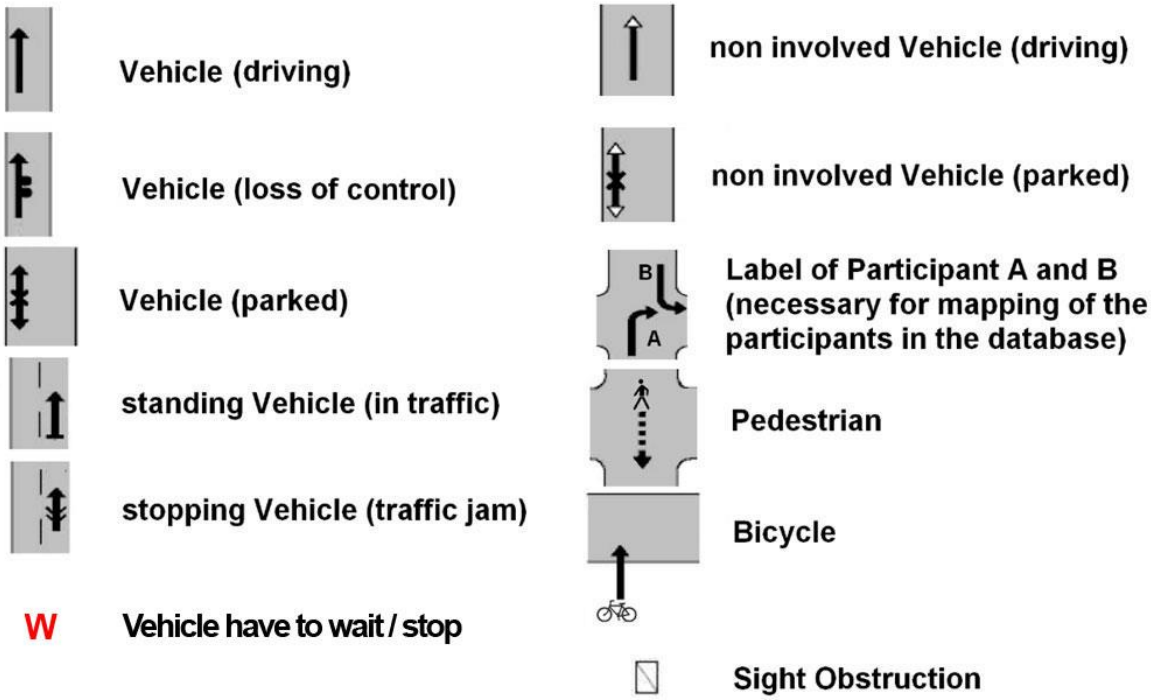
799 - others - all other accidents

99999 - unknown

**Defined labels:**

-

## Symbols


Vehicle (driving)
Vehicle (loss of control)
Vehicle (parked)
standing Vehicle (in traffic)
stopping Vehicle (traffic jam)
W
Vehicle have to wait / stop
non involved Vehicle (driving)
non involved Vehicle (parked)
B
A
Label of Participant A and B (necessary for mapping of the participants in the database)
Pedestrian
Bicycle
Sight Obstruction

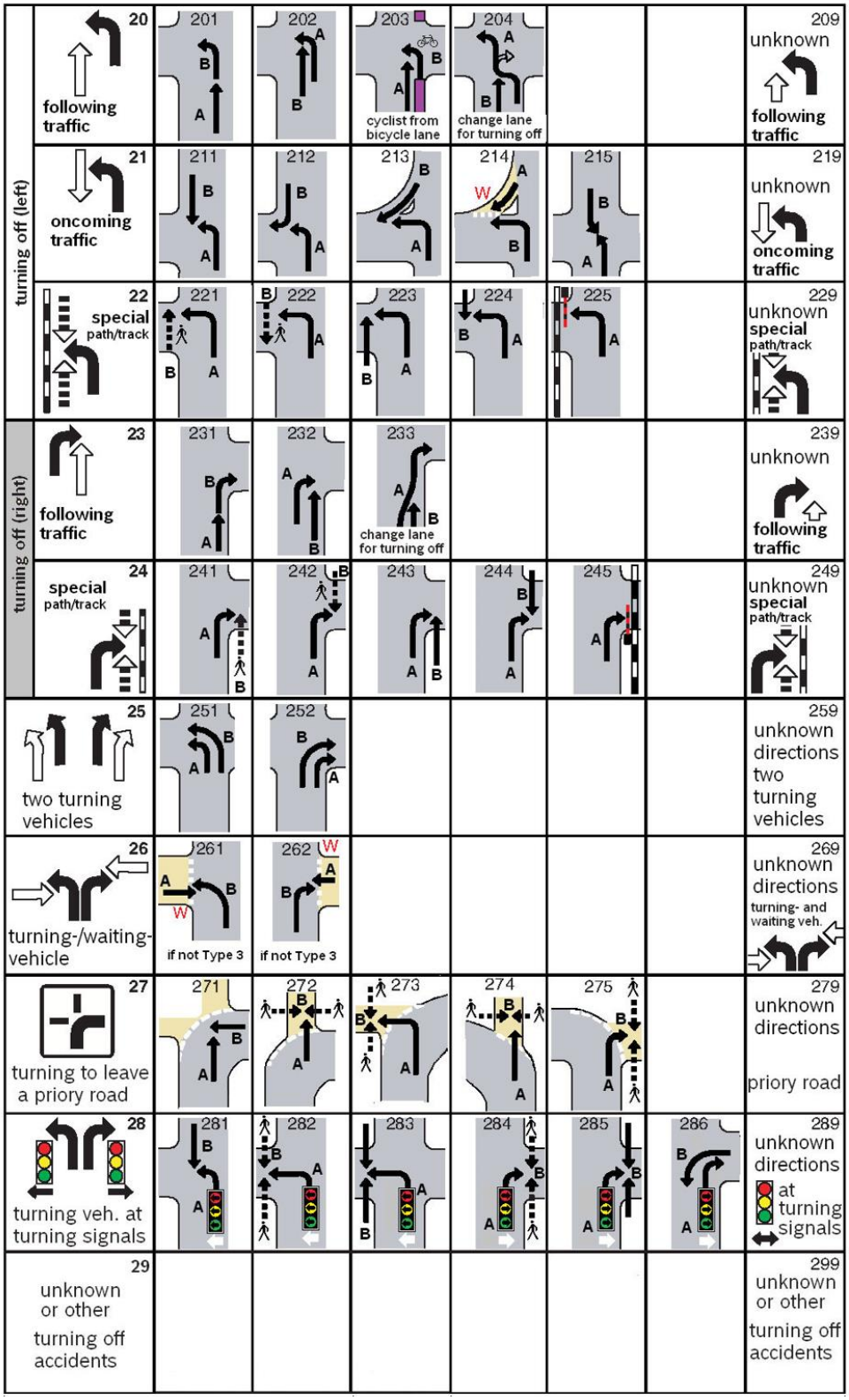
## *Right-hand traffic*

# Type 1: Loss of control accident

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| without other influence | 10 curve | 101 bend to left | 102 bend to right | 103 bend to left, overtaking | 104 bend to right, overtaking | | | 109 run of curve unknown |
| | 11 turning priority rd. | 111 | 112 | 113 overtaking | 114 overtaking | | | 119 unknown on turning priority rd. |
| | 12 when turning or entering | 121 | 122 | 123 | | | | 129 unknown direction when turning or entering |
| | 13 swaying road | 131 | 132 | 133 overtaking | 134 overtaking | | | 139 unknown direction swaying road |
| | 14 straight | 141 | 142 overtaking | | | | | 149 unknown on straight road |
| ... with influence of: | 15 incline decline | 151 | 152 | 153 | | | | 159 unknown direction incline decline |
| | 16 traffic island | 161 | 162 | 163 | | | | 169 unknown direction traffic island |
| | 17 road narrowing | 171 | 172 | 173 | | | | 179 unknown direction road narrowing |
| | 18 bumpy road | 181 | 182 | 183 | | | | 189 unknown direction bumpy road |
| | 19 other drinving accidents | | | | | | | 199 **other drinving accidents** |

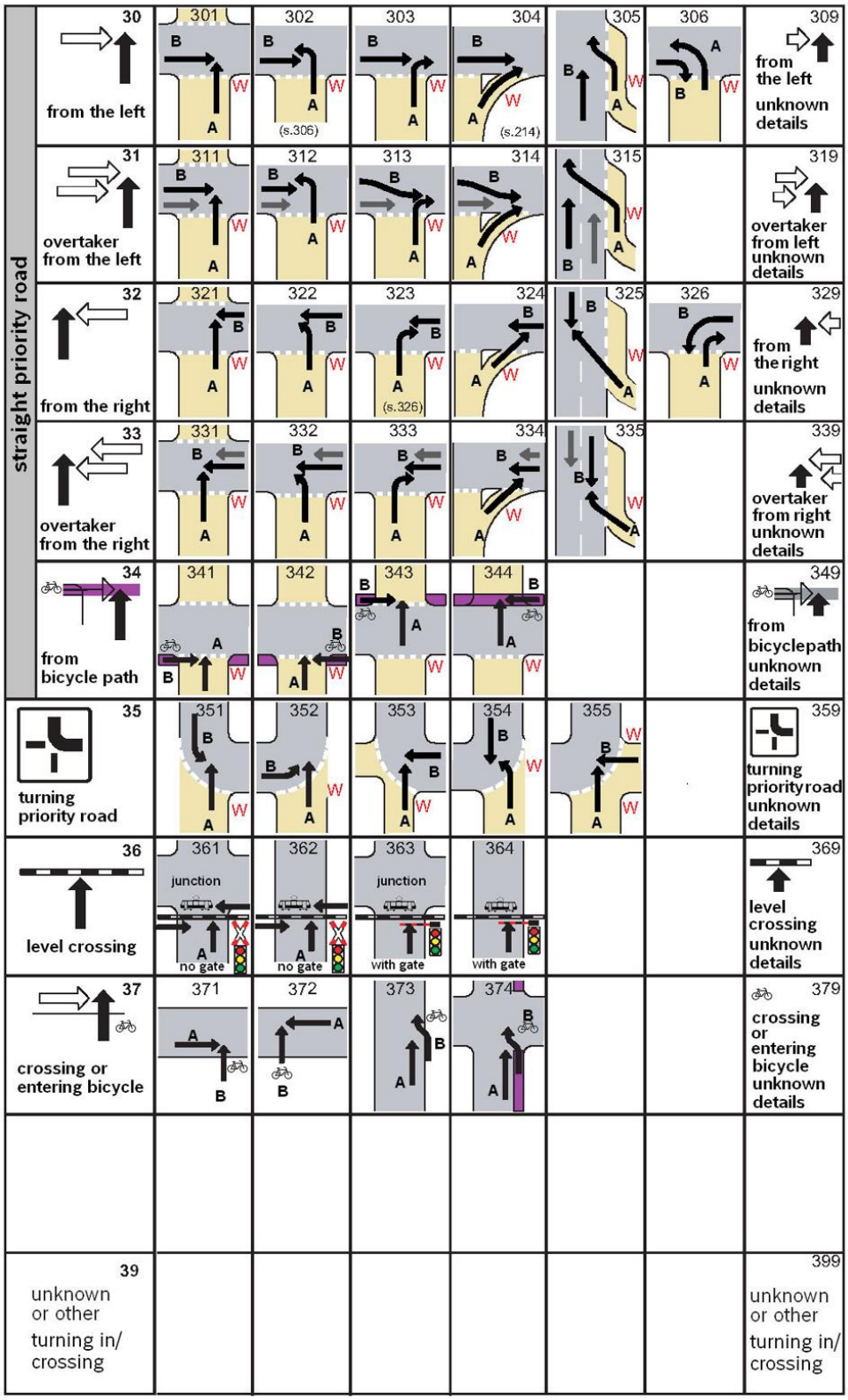
## *Right-hand traffic*

### Type 2: Turning off accident



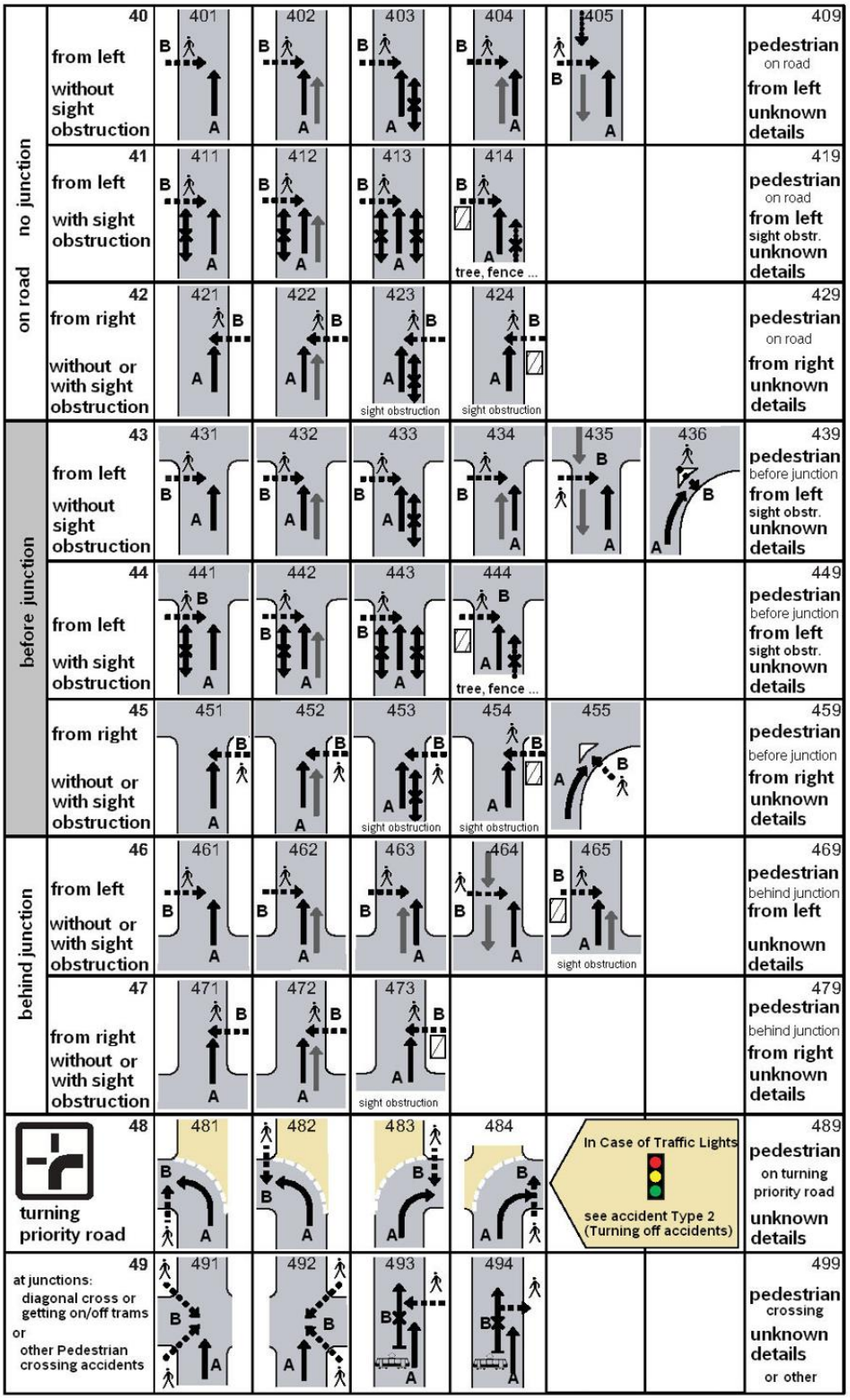
## *Right-hand traffic*

### Type 3: Turning in / crossing accident



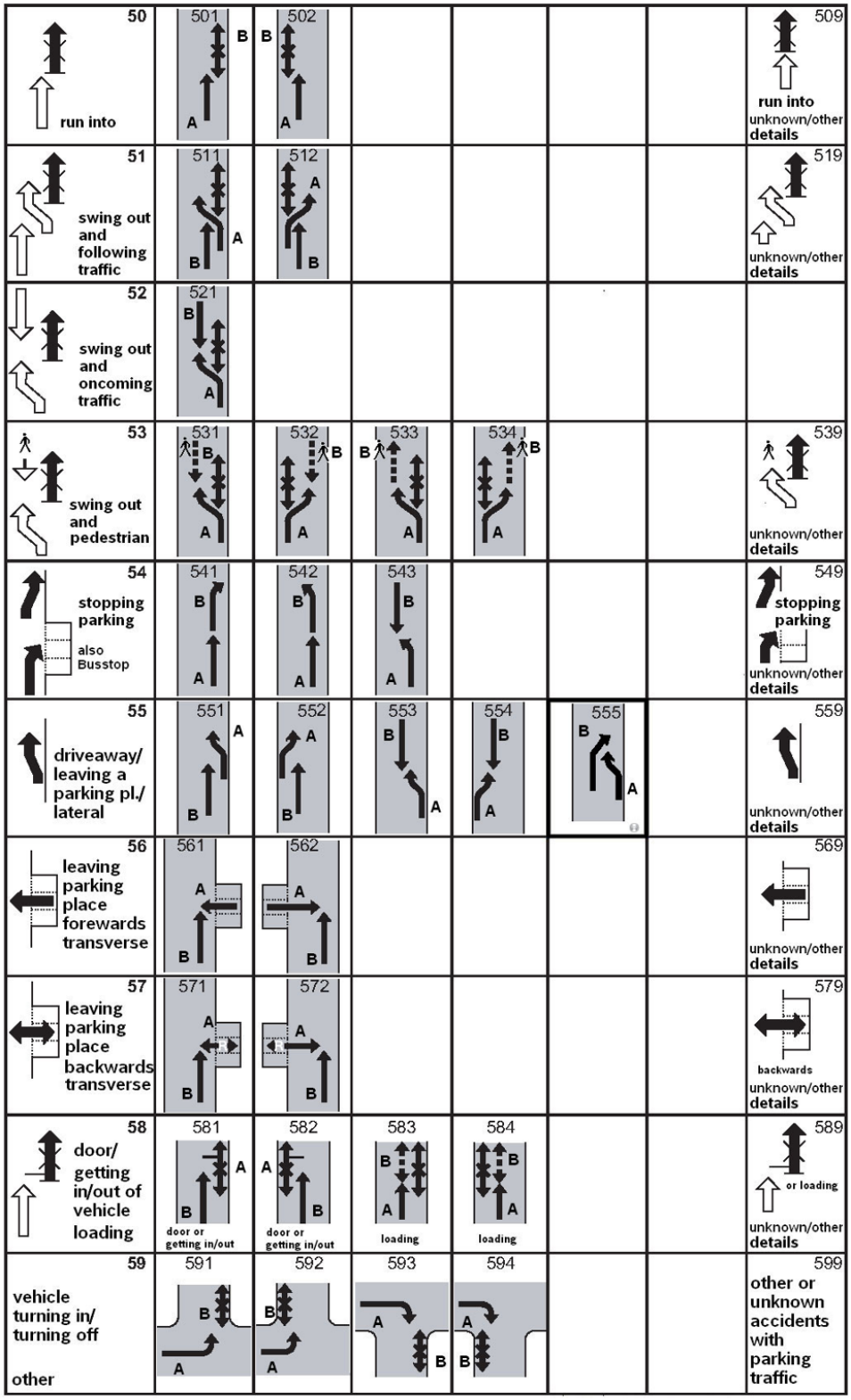
## *Right-hand traffic*

# Type 4: Pedestrian crossing road accident



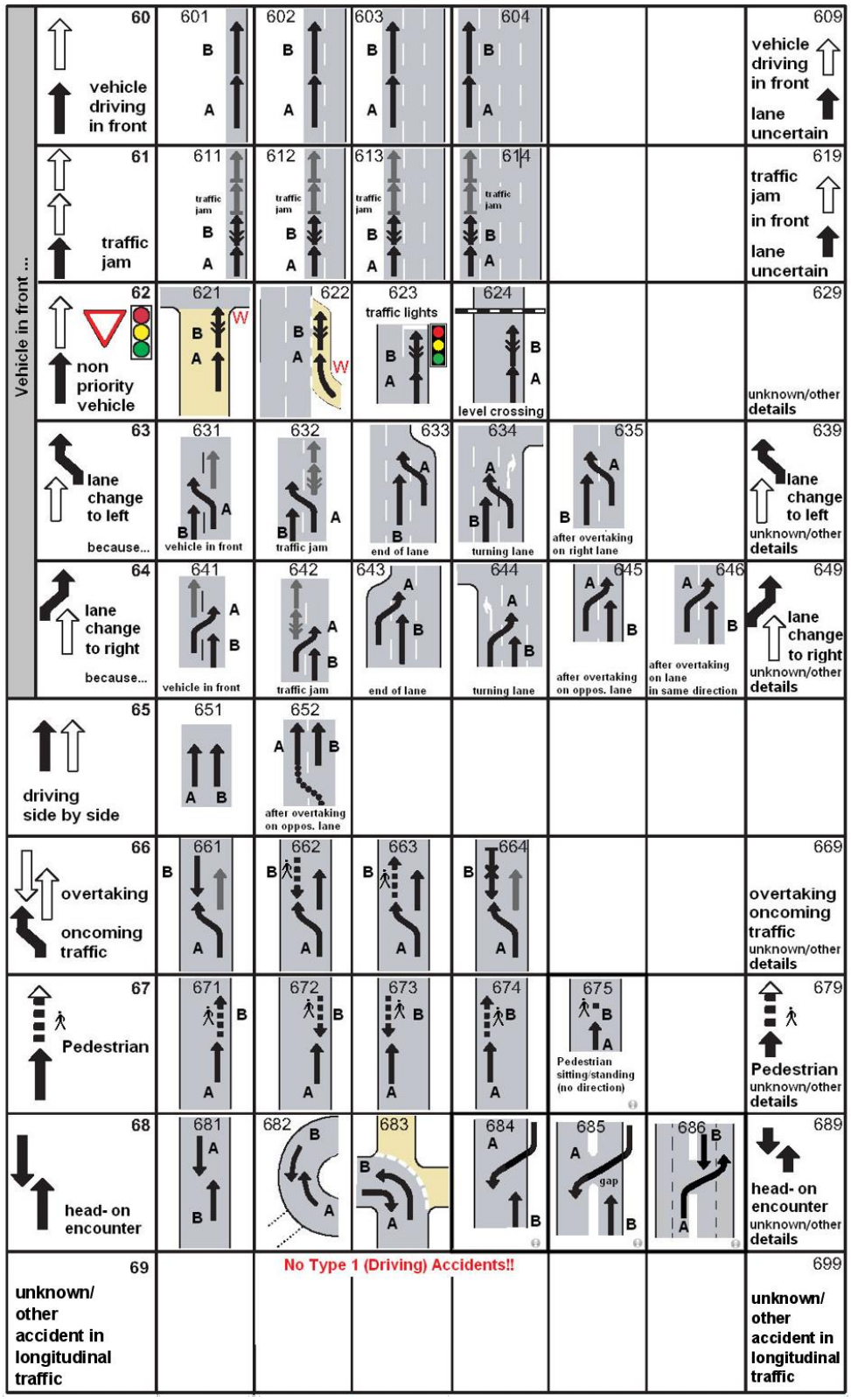
## *Right-hand traffic*

# Type 5: Stationary traffic accident



## *Right-hand traffic*

# Type 6: Longitudinal traffic accident



## *Right-hand traffic*

## Type 7: Other accident

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 parking vehicle | 701 | 702 | 703 at car park | | | | 709 parking vehicle unknown/other details |
| 71 backing up | 711 driving | 712 rolling | 713 | 714 backing out | 715 backing out | 716 rolling without driver | 719 backing up unknown/other details |
| 72 u-turn | 721 | 722 | 723 | 724 | 725 | 726 | 729 u-turn unknown/other details |
| 73 not fixed object | 731 load | 732 other | | | | | |
| 74 broken down vehicle | 741 accident | 742 break down | | | | | 749 break down unknown/other details |
| 75 animal | 751 wild animal | 752 unattended domestic anim. | 753 attended domestic anim. | | | | 759 animal unknown/other details |
| 76 sudden physical disability | 761 falling asleep | 762 dizzy spell | 763 other (no alcohol) | | | | |
| 77 sudden vehicle damage | 771 tyre | 772 windshield | 773 brakes | 774 steering | 775 other damage | | |
| 78 | | | | | | | |
| 79 all other accidents | | | | | | | 799 other accident |

## *1.13 Participant A referring accident type (ACCTYPEA)*

**Table:** ACCIDENT

**Label:** Participant A referring accident type

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** 1 - 99; 99999

**Description:**

The participant (PARTNR) of Participant A referring to the accident type (see ACCTYPE) is given.

Note: A "parked" car is a standing car without any people inside and will be coded as an object. A standing car with people inside will not be coded as "parked" but as a participant "standing/waiting". A rolling car without a driver will be coded as a participant.

**Defined labels:**

99999 - unknown

## *1.14 Participant B referring accident type (ACCTYPEB)*

**Table:** ACCIDENT

**Label:** Participant B referring accident type

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** 1 - 99; 99999

**Description:**

The participant (PARTNR) of Participant B referring to the accident type (see ACCTYPE) is given.

Note: A "parked" car is a standing car without any people inside and will be coded as an object. A standing car with people inside will not be coded as "parked" but as a participant "standing/waiting". A rolling car without a driver will be coded as a participant.

**Defined labels:**

77777 - not applicable (only one participant)

99999 - unknown

## *1.15 Main contributing factor (MAINFACT)*

**Table:** ACCIDENT

**Label:** Main contributing factor

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The contributing factor that has the main (most critically) influence in triggering the accident. ‘Alcohol’ is not necessarily a main contributing factor for the accident because it only fosters wrong behavior but drinking does not always lead to an accident. Thus, the main contributing factor must be another one.

The main contributing factor "MAINFACT" has to be coded again in one of the contributing factors "FACTOR1"/"FACTOR2"/"FACTOR3" of the main causer of the accident!

**Defined labels:**

1 - none

2 - alcohol

3 - other stimulation substances, e.g. drugs, medication

4 - drowsiness

5 - other physical [1]or psychical deficiencies

6 - use of wrong lane (also wrong direction) or wrong parts of the road

7 - violation against the rule of the road (e.g. obligation to keep to right/left side)

8 - speeding (exceeding speed limit)

9 - excessive speed for conditions (no exceeding of speed limit)

10 - lack of safety distance

11 - heavy braking of the vehicle in front without compelling reason

12 - overtaking on the wrong side (undertaking)

13 - overtaking into oncoming traffic

14 - overtaking though traffic situation is not clear

15 - overtaking without adequate visibility

16 - overtaking without consideration and adequate warning to following traffic

17 - mistake in returning to initial lane

18 - other overtaking mistakes

19 - mistake when being overtaken, e.g. swerving, accelerating

20 - disregarding the oncoming traffic's right of way when passing stationary vehicle or obstacle

21 - disregarding the following traffic's right of way when passing stationary vehicle or obstacle

22 - failure during driving in congested traffic or lane merging

23 - disregarding the traffic regulation "priority to the right"

24 - disregarding the traffic regulation signs (give way)

25 - disregarding the priority traffic when joining a motorway or dual carriageway

26 - disregarding the right of way by vehicles joining from a track way

27 - disregarding the direction of traffic regulation by traffic lights or police officers

28 - disregarding the priority of oncoming traffic when shown by sign 208

1

29 - disregarding the priority of railway traffic

30 - mistake during turning

31 - mistake during u-turn or reversing

32 - failure during joining the flowing traffic

33 - wrong behavior towards pedestrians at pedestrian crossings

34 - wrong behavior towards pedestrians at traffic calmings for pedestrians

35 - wrong behavior towards pedestrians when turning

36 - wrong behavior towards pedestrians at public transport stops

37 - wrong behavior towards pedestrians at other places

38 - forbidden stopping or parking

39 - failure of adequate warning for stopped/broken down vehicles, accident scenes, or stopped school busses

40 - traffic rule violation during vehicle loading or unloading

41 - disregarding the lighting regulations

42 - overloading

43 - not adequately secured cargo

44 - other mistakes of the driver

45 - defective lighting

46 - defective tires

47 - defective brakes

48 - defective steering

49 - defective towing device

50 - other technical deficiencies

51 - wrong behavior of the pedestrian in traffic situations regulated by traffic lights or police officers

52 - wrong behavior of the pedestrian at crossings without regulation by traffic lights or police officers

53 - wrong behavior of the pedestrian near crossings or junctions, traffic lights or pedestrian crossings during dense traffic in other places

54 - wrong behavior of the pedestrian due to sudden emergence from view restricted areas

55 - wrong behavior of the pedestrian (ignoring the road traffic)

56 - other wrong behavior of the pedestrian

57 - wrong behavior of the pedestrian due to nonusage of pedestrian path

58 - wrong behavior of the pedestrian due to usage of wrong road side

59 - wrong behavior of the pedestrian due to playing on or besides the road

60 - wrong behavior of the pedestrian due to other mistakes

61 - road soiling due to oil leakage

62 - other road soiling by road users

63 - snow, ice

64 - rain

65 - other influences (leaves, clay etc.)

66 - lane grooves in combination with rain, snow, ice

67 - other state of the road

68 - inappropriate road sign condition

69 - inadequate street lighting

70 - inadequate securing of railway crossings

71 - influence of weather / view obstruction due to fog

72 - influence of weather / view obstruction due to rain, hail, snow

73 - influence of weather / view obstruction due to sun glare

74 - influence of weather / view obstruction due to cross wind

75 - influence of weather / view obstruction due to storm

76 - inappropriate or not secured construction site on the road

77 - game animals on road

78 - other animal on road

79 - other obstacles on the road

80 - darkness

81 - another vehicle which is gone

88888 - other causes

99999 - unknown

## *1.16 Road type (ROADTYPE)*

**Table:** ACCIDENT

**Label:** Road type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The type of road at the final position of the involved vehicles. Road types are largely country specific, a general definition is given below.

**Defined labels:**

1 - principal arterial

2 - secondary arterial

3 - collector

4 - local

5 - car park

6 - private road

7 - foot path

8 - cycle, rambling path

9 - traffic calmed area (speed limit 4 -7 kph)

10 - unsealed road without pavement, earth road, gravel road

88888 - other

99999 - unknown

## *1.17 Road surface (ROADSURF)*

**Table:** ACCIDENT

**Label:** Road surface

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The type of road surface is coded here for the considered accident. For rails 88888 is coded.

The Variable was introduced in Member year 2014. Previous to this member year "66666 - not collected" is valid.

**Defined labels:**

1 - asphalt

2 - concrete

3 - paving/cobble stones

4 - sand/gravel

5 - alternating pavement

66666 - not collected

88888 - other

99999 - unknown

## *1.18 Road condition (ROADCOND)*

**Table:** ACCIDENT

**Label:** Road condition

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The state of the road surface at the time of the accident. If the road surface under the crashed vehicles is dry whilst the remainder of the road is wet, then this is a clear indication that the rain started only after the crash. Following, a more detailed definition of the different road condition:

‘dry’: no water or product of water present on the road surface. The road is completely dry.

‘wet’: water contained on the roadway surface. Remember it can be wet even if it’s not

raining.

‘glare ice/glazed frost’: Both thin and thick ice. ‘Black ice’ should also be noted here.

‘slippery’: can be heavy / light snow, snowy mud or other slippery condition, except for ice.

**Defined labels:**

1 - dry

2 - wet

3 - glare ice or glazed frost

4 - slippery

88888 - other

99999 - unknown

## *1.19 Lane separation (LANESEPAR)*

**Table:** ACCIDENT

**Label:** Lane separation

**Valid date period:** 2018-08-28

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The type of lane separation is coded here for the considered accident.

In case of multiple matches it should be prioritised from top to bottom.

The Variable was introduced in Member year 2018. Previous to this member year "66666 - not collected" is valid.

**Defined labels:**

1 - no separation / junction

10 - physical separation, not further specified

11 - guard rail: steel

12 - guard rail: concrete

13 - guard rail: wire ropes

14 - Temporary separation (e.g. construction site)

15 - other (e.g. wood)

20 - Dimensional separation (Grass, central strip, traffic island)

30 - road marking, not further specified

31 - dashed line

32 - solid line

33 - solid/dashed line

34 - double solid line

35 - keep-out area

66666 - not collected

77777 - not applicable (e.g. one-way)

88888 - other (e.g. alternating)

99999 - unknown

## *1.20 Light condition (LIGHTCON)*

**Table:** ACCIDENT

**Label:** Light condition

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Lighting conditions at the accident site at time of accident. ‘dawn / twilight’, when it is not complete daylight or darkness. ‘electric light’ at official night time but with lighting present such as street lamps that are fully switched on. If street lamps are present but not working or not turned on code as ‘darkness’. “Sudden change’ is coded if there is a change of lighting condition e.g. while exiting a tunnel into bright light (driver can be momentarily blinded).

**Defined labels:**

1 - daylight

2 - dawn / twilight

3 - darkness

4 - electric light

5 - sudden change

99999 - unknown

## *1.21 Weather 1 (WEATHER1)*

**Table:** ACCIDENT

**Label:** Weather 1

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Weather conditions at the accident site at time of accident.

Several weather conditions can be coded in the variables WEATHER1 and WEATHER2. There is no prioritization between these variables

**Defined labels:**

1 - bright / dry

2 - storm / gusty winds

3 - rain

4 - snow, hail

5 - fog, haze

6 - cloudy

88888 - other

99999 - unknown

## *1.22 Weather 2 (WEATHER2)*

**Table:** ACCIDENT

**Label:** Weather 2

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Weather conditions at the accident site at time of accident.

Several weather conditions can be coded in the variables WEATHER1 and WEATHER2. There is no prioritization between these variables

**Defined labels:**

1 - bright / dry

2 - storm / gusty winds

3 - rain

4 - snow, hail

5 - fog, haze

6 - cloudy

77777 - not applicable

88888 - other

99999 - unknown

## *1.23 Location (LOCATION)*

**Table:** ACCIDENT

**Label:** Location

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Location indicates if the collision point of the accident is inside (urban) or outside (rural) of a built-up area.

**Defined labels:**

1 - rural

2 - urban

99999 - unknown

## *1.24 Accident Severity (ACCSEV)*

**Table:** ACCIDENT

**Label:** Accident Severity

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Most severe injury of all participants in the accident based on injury severity coded by the police.

**Defined labels:**

1 - no injuries (phase 1 only)

2 - slight injuries

3 - severe injuries

4 - fatalities

99999 - unknown

## *1.25 PCM data available (PCMAVAIL)*

**Table:** ACCIDENT

**Label:** PCM data available

**Valid date period:** 2022-01-01

**Mandatory variable:** Yes

**Range:** 1 - 2

**Description:**

It is coded if PCM data was successfully created for this accident and provided within the IGLAD PCM dataset.

**Defined labels:**

1 - yes

2 - no

## *1.26 Participant count (PARTCNT)*

**Table:** ACCIDENT

**Label:** Participant count

**Valid date period:** 2025-01-01

**Mandatory variable:** Yes

**Range:** 0 - 100

**Description:**

This parameter gives the number of participants that were involved in the accident. The parameter is calculated automatically. Although the parameter was introduced in 2025, the previous data has also been recoded since 2013 and the information is therefore available for all IGLAD cases.

**Defined labels:**

-

## *1.27 Vehicle count (VEHICNT)*

**Table:** ACCIDENT

**Label:** Vehicle count

**Valid date period:** 2025-01-01

**Mandatory variable:** Yes

**Range:** 0 - 100

**Description:**

This parameter gives the number of vehicles that were involved in the accident. The parameter is calculated automatically. Although the parameter was introduced in 2025, the previous data has also been recoded since 2013 and the information is therefore available for all IGLAD cases.

**Defined labels:**

-

## *1.28 Person count (PERSCNT)*

**Table:** ACCIDENT

**Label:** Person count

**Valid date period:** 2025-01-01

**Mandatory variable:** Yes

**Range:** 0 - 100

**Description:**

This parameter gives the number of persons that were involved in the accident. The parameter is calculated automatically. Although the parameter was introduced in 2025, the previous data has also been recoded since 2013 and the information is therefore available for all IGLAD cases.

**Defined labels:**

-

## *1.29 Injured person count (INJRCNT)*

**Table:** ACCIDENT

**Label:** Injured person count

**Valid date period:** 2025-01-01

**Mandatory variable:** Yes

**Range:** 0 - 100

**Description:**

This parameter gives the number of injured persons that were involved in the accident. The parameter is calculated automatically. Although the parameter was introduced in 2025, the previous data has also been recoded since 2013 and the information is therefore available for all IGLAD cases.

**Defined labels:**

-

# 2 Participant (PARTICIPANT)

The table “Participant” contains information about the vehicles and pedestrians involved in the accident. It also includes reconstruction and deformation data for each participant. Each participant is identified by its accident and participant number.

## *2.1 Accident number (CASENR)*

**Table:** PARTICIPANT

**Label:** Accident number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Unique number of accident.

The case number ensures the unequivocal allocation of a data Table within the database and is always the first variable to be indicated.

The format is required: [yy][XX][0000]

[yy] - the last 2 digits of the member year

[XX] - country of origin

[0000] - consecutive accident number

Example: 14AT0001

**Defined labels:**

-

## *2.2 Participant number (PARTNR)*

**Table:** PARTICIPANT

**Label:** Participant number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99

**Description:**

Unique number of participant (vehicle or pedestrian) in an accident.

**Defined labels:**

-

## *2.3 Participant type (PARTTYPE)*

**Table:** PARTICIPANT

**Label:** Participant type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Each participant of the accident is either a pedestrian or a vehicle. In case of a vehicle, the type of the vehicle is coded. The following illustrates some typical examples of different vehicle types. In general the PARTTYPE of the vehicle should be decided on the structure, not on the use.

A sole trailer has to be coded as an object and must not be filled in this Table.

If car, truck, vehicle or trailer is parked and there is no occupant involved, it should be also handled as an object and not filled in this Table.

**Defined labels:**

1 – pedestrian *(w/o any mobility equipment)*

2 - (NON-POWERED) bicycle

3 - motorized two-wheeler *(incl. seated scooters)*

4 - motorized three-wheeler

5 - passenger car

6 - SUV

7 - light truck

8 - van

9 - bus

10 - truck

11 - truck with trailer

12 - tractor (without trailer)

13 - tractor with trailer (also with semitrailer only)

14 - trackbound vehicle (train, tram et al.)

15 - agricultural tractor

16 - animal driven carriages

17 - electric bicycle or tricycle

18 – POWERED standing scooter

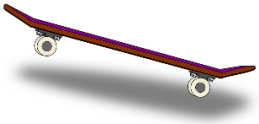
19 – POWERED self-balancing personal transporter (without steering rod)



20 – POWERED self-balancing personal transporter with steering rod (Segway)

21 – POWERED non-self-balancing board

22 – Other NON-POWERED transportation device (skateboard, skates, kick scooter etc.)



88888 - other (e.g. powered/non-powered wheelchair)

99999 - unknown

## *2.4 Vehicle make (brand) (VEHMAKE)*

**Table:** PARTICIPANT

**Label:** Vehicle make

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The vehicle manufacturer is specified here. For groups with several brands (manufacturers with several brands), the specification of the brand is decisive here. This parameter is not coded for pedestrians, powered or non-powered bicycles and tricycles, and personal transportation devices (standing scooters, skateboards etc.). Here, 77777 is applicable.

**Defined labels:**

1 - Achilles

2 - ACMA

3 - Adler

4 - AEG

5 - Agrati

6 - Agria

7 - Alfa Romeo

8 - Alfalancia

9 - Alfasud

10 - Alpine

11 - Amelung

12 - Anker

13 - Aprilia

14 - Ardie

15 - ARGE (Audi,Porsche)

16 - Aschersl.

17 - Asia Motor

18 - Audi

19 - Audi Hungary

20 - Audi NSU

21 - Austin

22 - Austin Rover

23 - Autobuzul

24 - Auto-Union

25 - Auwärter

26 - Avello

27 - AWE

28 - AZLK

30 - Acura

31 - Amc

32 - Aro

33 - Aston Martin

34 - Austin Healey

35 - Autobianchi

36 - Aixam

37 - Ashok Leyland

38 - Abarth

39 - Avon Cycles Limited

100 - Barkas

101 - Bastert

102 - Batavus

103 - Bauer

104 - Bautz

105 - Bayerische Autowerke

106 - Beckmann

107 - Beilhack

108 - Belgarda

109 - Benelli

110 - Benford

111 - Bentley

112 - Berlin

113 - Bertone

114 - Betamotor

115 - Bianchi

116 - Binz

117 - Bismarck

118 - Bitter

119 - BL Cars

120 - Bleichert

121 - BMW

122 - BMW Alpina

123 - Böhm

124 - Borgward

125 - Boschung

126 - Bova

127 - Bozzi

128 - Brüsselb.

129 - Bucher

130 - Bücher

131 - Buell

132 - Büssing

133 - BVG

134 - Bedford

135 - BMC

136 - Bugatti

137 - Buick

138 - Bajaj

139 - BEML

140 - BYD

141 - BHARAT BENZ

142 - Baojun

143 - Beijing

200 - Cagiva

201 - Carnielli

202 - Caterpillar

203 - Cemoto

204 - Champion

205 - Chiodra

206 - Chrysler

207 - Chrysler Dodge

208 - Cimatti

209 - Citroen

210 - Cixi

211 - Claeys

212 - Clark

213 - Clayson

214 - Clerck

215 - Commer

216 - Cottbus

217 - CPI

218 - Cyrus

219 - CZM

220 - Cadillac

221 - Caterham

222 - Chery

223 - Chevrolet

224 - Case

225 - Claas

226 - Changan

227 - Changhe

228 - Changcheng

300 - DA-B-LUEG

301 - Dacia

302 - Daelim

303 - Daewoo

304 - DAF

305 - Daihatsu

306 - Daimler-Benz / Daimler

307 - DaimlerChrysler

308 - DB

309 - Dechentr.

310 - Demm

311 - Dessau

312 - Deutsche P.

313 - Deutz-Fahr

314 - Diamond

315 - DKW

316 - Dodge

317 - Doll

318 - Ducati

319 - Duerkopp

320 - DWM

321 - Datsun

322 - Delorean

323 - Detomaso

324 - Diamond Reo / Reo

325 - Dongfeng

326 - Derby

327 - DS Automobiles

328 - Daimler Truck

400 - EBAWE

401 - Eicher

402 - EMW

403 - Eriba-Hym.

404 - Esslinger

405 - Evobus

407 - EWK

408 - Express

409 - Eagle

500 - Fahr

501 - Fahrzeug- und Jagdwaffenwerk Suhl

502 - FAKA

503 - Falter

504 - Fantic

505 - FAR

506 - Faun

507 - Fendt

508 - Ferrari

509 - FFG

510 - Fiat

511 - Fiat-Lancia

513 - FMR

514 - Force Motors

515 - Ford

516 - FSC

517 - FSM

518 - FSO

519 - Fuji Heavy

520 - Fuldamobil

521 - Freightlin / White

522 - FWD

526 – Furia

527 - FAW

528 - Foton

600 - Gadebusch

601 - GAS

602 - Gazelle

603 - Geier

604 - Generic Motors

605 - Giesstechnik

606 - GJLS

607 - Glas

608 - GM

609 - GM Daewoo (ROK)

610 - GMC

611 - Göbel

612 - Goldberg

613 - Goliath

614 - Göricke

615 - Gritz-Kays

616 - Gutbrod

617 - Grumman

618 - Geely

700 - Hainan Su

701 - Hanomag

702 - Harley-Davidson

703 - Havelberg

704 - Hecker

705 - Heidemann

706 - Heinkel

707 - Heisteel

708 - Heitmann

709 - Henschel

710 - Hercules

711 - Hoffmann

712 - Holder

713 - Honda

714 - Honda Thailand

715 - Horex

716 - Hummer

717 - Hyosung

718 - Hyundai

719 - Holden

720 - Hero Motors

721 - Hero Cycles

722 - HMT

723 - HERO HONDA

724 - HINDUSTAN MOTORS

725 - Humber Limited

726 – Haval

727 – Haima

728 - Howo

800 - IBC (Opel)

801 - IFA

802 - IHC

803 - Ikarus

804 - Ind.D.Mot.

805 - Innocenti

806 - Intercycle

807 - Interprin.

808 - Intr.Auto.

809 - Invacare

810 - Isuzu

811 - ITALJET

812 - Italvelo

813 - Itteco

814 - Iveco Fiat

815 - Iveco Ford

816 - Iveco-Magirus

817 - IWK

818 - Imperial

819 - Infiniti

820 - Iveco / Irisbus

900 - Jaguar

901 - Jaswa

902 - Jeep

903 - Jelcz

904 - Jenbach

905 - Jikov

906 - John Deere

907 - Jensen

908 - JAC

909 - Jiangling

1000 - Kälble

1001 - Kama

1002 - Kanuni

1003 - Karosa

1004 - Kässbohrer

1005 - Kawasaki

1006 - KHD

1007 - Kia

1008 - Kinetic

1009 - Kleinschn.

1010 - Komatsu

1011 - Krauss-Maffay

1012 - Kreidler

1013 - Krements.

1014 - Krupp

1015 - KTM

1016 - Kwang Yang

1017 - Kynast

1018 - Kenworth

1019 - Koenigsegg

1020 - Kymco

1100 - Lada

1101 - Lafaro

1102 - Lamborghini

1103 - Lancia

1104 - Land Rover

1105 - Laverda

1106 - LDV

1107 - Leipzig

1108 - Lexus

1109 - Leyland

1110 - Liaz

1111 - Lichatsch.

1112 - Liebherr

1113 - Linde

1114 - Lloyd

1115 - Lotus

1116 - Lincoln

1117 - Lindtner

1200 - Magirus-Deutz

1201 - Mahindra & Mahindra

1202 - Maico

1203 - Malaguti

1204 - MAM

1205 - MAN

1206 - Manderbach

1207 - Manurhin

1208 - Mars

1209 - Maruti

1210 - MASE

1211 - Maserati

1212 - Massey-Ferguson

1213 - Matra

1214 - Mazda

1215 - MBA

1216 - MBK

1217 - MCC Smart

1218 - Meister

1219 - Melkus

1220 - Mercedes

1221 - Mercedes-Benz

1222 - Met.Casal

1223 - MG

1224 - MIAG

1225 - Miele

1226 - Minsk

1227 - Mitsubishi

1228 - Mitsubishi Niederlande

1229 - Mitsubishi, Volvo

1230 - Montagnoli

1231 - Montesa

1232 - Morris

1233 - Mot. Iberic

1234 - Moto BM

1235 - Moto Morini

1236 - Moto Vespa

1237 - Motobecane

1238 - Moto-Guzzi

1239 - Motoporter

1240 - Motovelo

1241 - MSA

1242 - Multicar

1243 - MUZ

1244 - MZ

1245 - Mack

1246 - Maybach

1247 - McLaren

1248 - Mercury

1249 - Merkur

1250 - Mini

1251 - Morgan

1300 - Nacional

1301 - Neckarauto

1302 - Neubrand.

1303 - Nissan

1304 - Nissan Europe (F)

1305 - NSU

1306 - NWF

1307 - Nac / Nanjing

1308 - Neoplan

1309 - Norton

1310 - Navistar / Intharv

1311 - New Holland

1400 - O und K

1401 - Oberlicht.

1402 - Oldsmobil

1403 - Oltcit

1404 - OM

1405 - Opel

1406 - OSI

1407 - Ostner

1408 - ÖAF

1500 - Pamag

1501 - Panther

1502 - Patria

1503 - Peripoli

1504 - Peugeot

1505 - Pfau

1506 - PGH

1507 - Phaenomen

1508 - P-H-Bleich

1509 - Piaggio

1510 - Piazza

1511 - Pininfarina

1512 - Pluvier

1513 - Poettinger

1514 - Poppe

1515 - Porsche

1516 - Potsdam

1517 - Povazske

1518 - Progress

1519 - Proton

1520 - Peterbilt

1521 - Plymouth

1522 - Pontiac

1523 - Puch

1600 - Quattro (AUDI)

1700 - Rabeneick

1701 - RAF

1702 - Reform

1703 - Renault

1704 - Rewaco

1705 - Rex

1706 - Riedel

1707 - Rixe

1708 - Rizzato

1709 - RMW

1710 - Robur

1711 - Röhr

1712 - Rover

1713 - Rover (GB)

1714 - Ruthemeyer

1715 - Rybinsk

1716 - Rolls-Royce

1717 - Rieju

1718 – Royal Enfield

1719 - Roewe

1800 - Saab

1801 - Sachs

1802 - Sachsenr.

1803 - San Yang

1804 - Santana

1805 - SAS

1806 - Saviem

1807 - Scania

1808 - Schlüter

1809 - Schoenebeck Traktorenwerke

1810 - Schörling

1811 - SE

1812 - Seat

1813 - Semi

1814 - Siatra

1815 - Simca

1816 - Simson

1817 - Sinfac

1818 - Skoda

1819 - Smart

1820 - Solaris (PL)

1821 - Solo

1822 - Sparta

1823 - Spatz

1824 - Spliess

1825 - Ssangyong

1826 - Staiger

1827 - Standard M

1828 - Standex

1829 - Stasis

1830 - Steyr

1831 - Steyr-Puch

1832 - Still

1833 - Stolberger

1834 - Stutenbeau

1835 - Südwerke

1836 - Subaru

1837 - Suhl

1838 - Superia

1839 - Suzuki

1840 - Saic

1841 - Saturn

1842 - Setra

1843 - Sterling

1844 - Swaraj Mazda

1845 - Scion

1846 - Scooters India Limited

1900 - Tai.Golden

1901 - Talbot

1902 - Tata Motors

1903 - Tatra

1904 - Testi

1905 - Thurmann

1906 - Thurner

1907 - Tokaido

1908 - Tomos

1909 - Tornax

1910 - Torpedo

1911 - Toyo Kogyo

1912 - Toyota

1913 - Triumph

1914 - Think

1915 - Trabant

1916 - TVR

1917 - TVS

1918 - Tesla

2000 - UAZ

2001 - Ural

2002 - UT

2003 - Uzina

2100 - Vaterland

2101 - Vauxhall

2102 - VAZ

2103 - Venus

2104 - Vespa

2105 - Victoria

2106 - Vidal

2107 - Vitkovice

2108 - Volk

2109 - Volvo

2110 - VW

2111 - VW-MAN

2200 - Waltersh.

2201 - Wartburg

2202 - Westfield

2203 - Wiener2

2204 - Willys

2205 - Wuling

2400 - Yamaha

2401 - Yugo

2500 - Zaklady

2501 - Zanetti

2502 - Zastava

2503 - Zetor

2504 - Zettelmeyer

2505 - ZIL

2506 - Zündapp

2507 - ZVL

2508 - Zweirad-Union

2509 - ZZR

2510 - Zotye

77777 - not applicable

88888 - other

99999 - unknown

## *2.5 Vehicle model (MODEL)*

**Table:** PARTICIPANT

**Label:** Vehicle model

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

The model of the vehicle. Should be the official label given by the manufacturer.

77777 - not applicable

99999 - unknown

**Defined labels:**

-

## *2.6 Registration year (REGYEAR)*

**Table:** PARTICIPANT

**Label:** Registration year

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1900 - 2099

**Description:**

Year of first registration. If the exact date is unknown, the earliest date of the vehicle model or at least the model year should be investigated (YYYY). This parameter is not coded for pedestrians, powered or non-powered bicycles and tricycles, and personal mobility devices (standing scooters, skateboards etc.). Here, 77777 is applicable.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.7 Vehicle mass (VEHMASS)*

**Table:** PARTICIPANT

**Label:** Vehicle mass

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Vehicle mass is the curb weight (coded in kilogram). The curb weight of passenger vehicles and motorized two-wheelers include the content of the fuel tank. In case of trucks the curb weight includes 75kg for the driver. A trailer, if attached to the vehicle, is not taken into account in the curb weight. The mass should be coded only for vehicles. The mass of a pedestrian has to be coded in OCCUPANT table and here as code 77777-not applicable.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.8 Gross vehicle weight (GVWEIGHT)*

**Table:** PARTICIPANT

**Label:** Gross vehicle weight

**Valid date period:** 2022-01-01

**Mandatory variable:** Yes

**Range:** 1 - 999999

**Description:**

The Gross Vehicle Weight (GVW, coded in kilograms) is stated according to the registration paper of the vehicle.

A trailer, if attached to the vehicle, is not taken into account.

The variable has to be coded for all vehicles that are officially registered and that have a number plate (e.g. car, SUV, light truck, van, truck, bus, motorcycle with more than 10 KW).

For cases before 2021, which cannot be recoded by the Data Provider, the code 666666 is applicable.

If the exact GVW is not known, a code with the applicable mass group should be entered.

For pedestrians, bicycles, trackbound vehicle, animal driven carriages, electric bicycle or tricycle, personal mobility devices, the code 777777 is used.

**Defined labels:**

1 – up to 3.500kg

2 – more than 3.500kg and up to 5.000kg

3 – more than 5.000kg and up to 12.000kg

4 – more than 12.000kg

66666 - parameter not collected for this IGLAD Phase (Phase I to IV/2020)

77777 – not applicable

99999 – unknown

## *2.9 Vehicle engine type (ENGINE)*

**Table:** PARTICIPANT

**Label:** Vehicle engine type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The type of propulsion technology / fuel used for the engine.

**Defined labels:**

1 - gasoline

2 - diesel

3 - flexible fuel engine

4 - electric engine

5 - liquid gas

6 - gasoline / liquid gas

7 - gasoline/ CNG

8 - hybrid gasoline/electricity

9 - CNG

10 - hybrid diesel/electricity

11 - hydrogen

12 - hybrid nitrogen/electricity

13 - nitrogen/gasoline

14 - nitrogen/gasoline/electricity

15 - fuel cell/nitrogen

16 - fuel cell/gasoline

17 - fuel cell/methanol

18 - fuel cell/ethanol

19 - hybrid flexible fuel/electricity

20 - methane

21 - gasoline/methane

22 - hybrid CNG/electricity

23 - gasoline / ethanol

77777 - not applicable

88888 - other

99999 - unknown

## *2.10 Vehicle engine power (POWER)*

**Table:** PARTICIPANT

**Label:** Vehicle engine power

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 1000; 99999

**Description:**

The power of the vehicle's engine (coded in kilo-Watt, kW) is stated according to the registration paper. In case of older vehicles this information may still be shown in horse power (HP). Convert HP to kW, where kW = HP/1.36). This parameter is not coded for pedestrians, powered or non-powered bicycles and tricycles, and personal mobility devices (standing scooters, skateboards etc.). Here, 77777 is applicable.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.11 Number of seats (SEATS)*

**Table:** PARTICIPANT

**Label:** Number of seats

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 – 200; 99999

**Description:**

If participant is a vehicle, this is the total number of seats in the vehicle (also not occupied seats). Otherwise, ‘not applicable’ is coded. For trams and trains the total number is necessary.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.12 Existence and damage of trailer (TRAILER)*

**Table:** PARTICIPANT

**Label:** Existence and damage of trailer

**Valid date period:** 2021-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

This variable indicates whether a trailer was attached to the vehicle during the accident. This includes usual trailers as well as semi-trailers. In addition to the information about the existence of a trailer, its damage status is also coded.

This variable was only introduced in Phase IV / Member Year 2020 and is not available for the previous IGLAD cases. Previous to this member year "66666 - parameter not collected for this IGLAD Phase (Phase I to III)" is valid.

**Defined labels:**

1 - trailer / semi-trailer attached, n.f.s.

2 - no trailer / semi-trailer

3 - trailer / semi-trailer attached, not damaged

4 - trailer / semi-trailer attached, damaged

66666 - parameter not collected for this IGLAD Phase (Phase I to III)

77777 - not applicable (pedestrian, bicycle, or electric micro vehicle)

99999 - unknown

## *2.13 Speed limit (VLIM)*

**Table:** PARTICIPANT

**Label:** Speed limit

**Valid date period:** 2015-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

The speed limit is defined as the maximum permitted speed in km/h at the road of the accident. General speed restrictions should also be entered here.

If there are no restrictions 77777 should be coded.

If the speed limit is unknown 99999 should be coded.

The variable was introduced in Member year 2015. Previous to this member year "66666 - not collected" is valid.

**Defined labels:**

66666 - not collected

77777 - no speed limit

99999 - unknown

## *2.14 Primary collision - opponent (OPPON1)*

**Table:** PARTICIPANT

**Label:** Primary collision - opponent

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The opponent of the primary collision. If the opponent is a vehicle or pedestrian, the corresponding participant number of the opponent is coded. Otherwise, if opponent is an object or animal, one of the codes 100 and above are used (see the format section). For simplification, only the primary and secondary collisions are coded. If there are more than two collisions, the two most severe collisions are coded. Parked trailers without Truck or Tractor has to be coded as an object.

Note: A "parked" car is a standing car without any people inside and will be coded as an object. A standing car with people inside will not be coded as "parked" but as a participant "standing/waiting". A rolling car without a driver will be coded as a participant.

**Defined labels:**

1 - Participant 1

2 - Participant 2

3 - Participant 3

4 - Participant 4

5 - Participant 5

6 - Participant 6

7 - Participant 7

8 - Participant 8

9 - Participant 9

10 - Participant 10

100 - animal

101 - object on road

102 - road surface

103 - sidewalk/bicycle lane

104 - other paved road

105 - roadside

106 - ejected occupant

107 - guardrail

108 - traffic sign

109 - traffic light

110 - pole

111 - tree

112 - rails

113 - wall

114 - water

77777 - not applicable

88888 - other

99999 - unknown

## *2.15 Primary collision - opponent collision (NROPPON1)*

**Table:** PARTICIPANT

**Label:** Primary collision - opponent collision

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

This is the number of the collision of the opponent (primary or secondary) and can be used to match collisions between two collided participants. The opponent itself is coded in the previous variable “Primary collision – opponent”. If the collision of the opponent is neither his primary nor secondary collision but the third (or more) collision, 3 is coded.

**Defined labels:**

0 - no collision (at all)

1 - primary collision

2 - secondary collision

3 - third or more (not documented) collision

77777 - not applicable

99999 - unknown

## *2.16 Primary collision - CDC/TDC Force Direction (CDC1DIRE)*

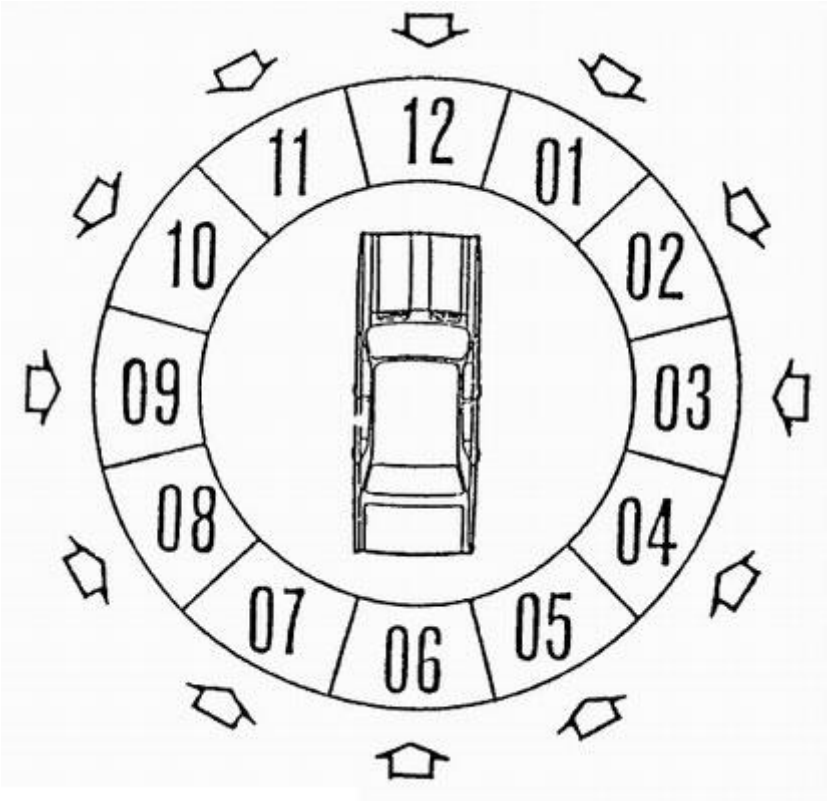
**Table:** PARTICIPANT

**Label:** Primary collision - CDC/TDC Force Direction

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The principal direction of force is coded that caused the damage on the vehicle according to CDC 1 & 2. This direction is equal to the direction of the change of momentum of the impact analysis. The coding is conducted according the o'clock direction in 30 deg steps whereas the 12 o'clock direction represents a force direction front to rear parallel to the longitudinal axis of the vehicle.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

CDC1DIRE and CDC1AREA should also be coded for pedestrians, two-wheelers and electric micro vehicles, all further CDC values should be coded than as "not applicable".

The entry of "00" indicates that the impact is not horizontal, as in a rollover or undercarriage type impact.

00 - impact is not horizontal

01 - 01 (+30°)

02 - 02 (+60°)

03 - 03 (+90°)

04 - 04 (+120°)

05 - 05 (+150°)

06 - 06 (+180°)

07 - 07 (-150°)

08 - 08 (-120°)

09 - 09 (-90°)

10 - 10 (-60°)

11 - 11 (-30°)

12 - 12 (0°)

13 - Intra-unit force (TDC only)

77 - not applicable

99 - unknown

**Defined labels:**

-

## *2.17 Primary collision - CDC/TDC Area of Deformation (CDC1AREA)*

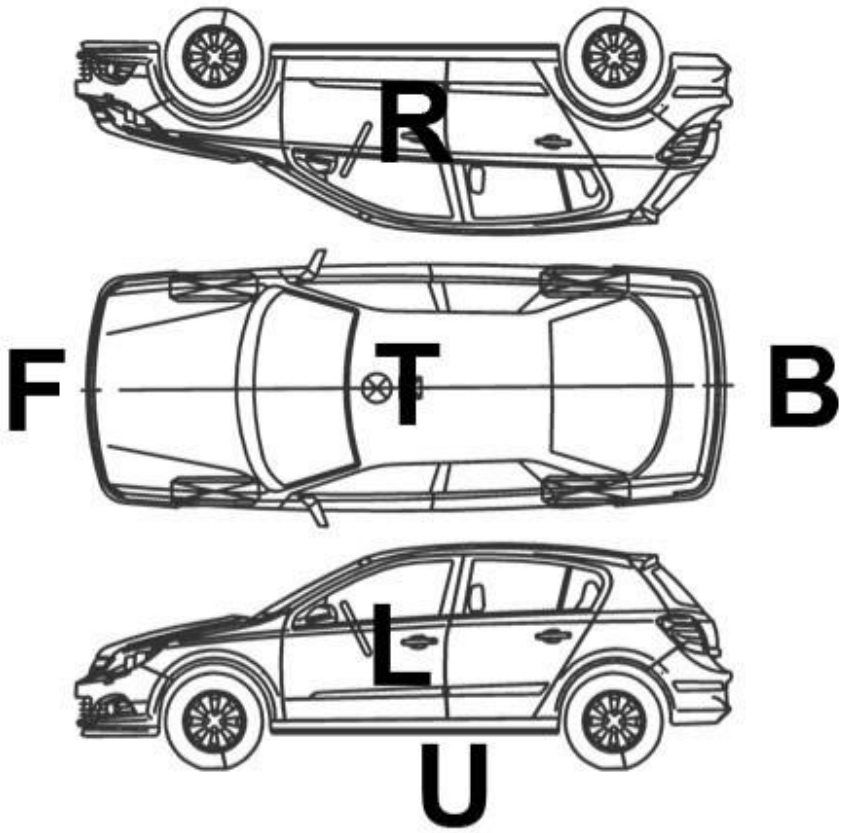
**Table:** PARTICIPANT

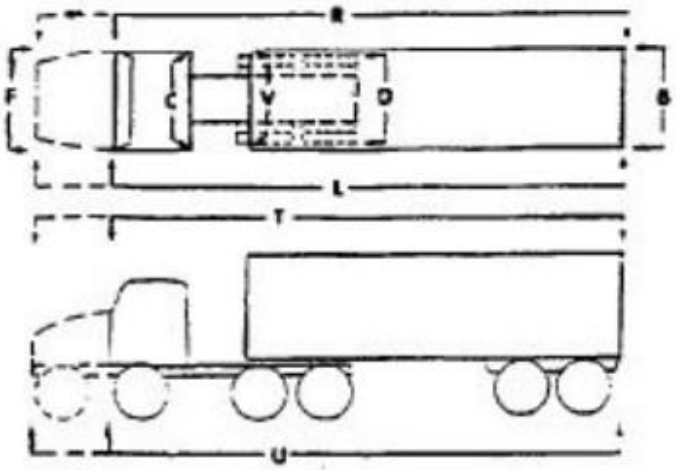
**Label:** Primary collision - CDC/TDC Area of Deformation

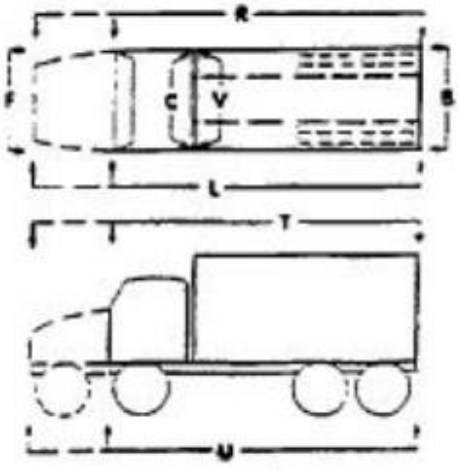
**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.


R
F
T
B
L
U


R
F
C
V
D
B
L
T
U


R
F
C
V
B
L
T
U

**Description:**

The CDC1AREA codes the main deformed vehicle area according to CDC 3.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

CDC1DIRE and CDC1AREA should also be coded for pedestrians, two-wheelers and electric micro vehicles, all further CDC values should be coded than as "not applicable".

F - Front

R - Right Side

B - Back (rear or rear of trailer or straight truck)

L - Left Side

D - Back (rear of tractor) (TDC only)

C - Rear of cab (TDC only)

V - Front of Cargo Area (TDC only)

T - Top

U - Undercarriage

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.18 Primary collision - CDC/TDC Specific longitudinal or lateral area (CDC1LONG)*

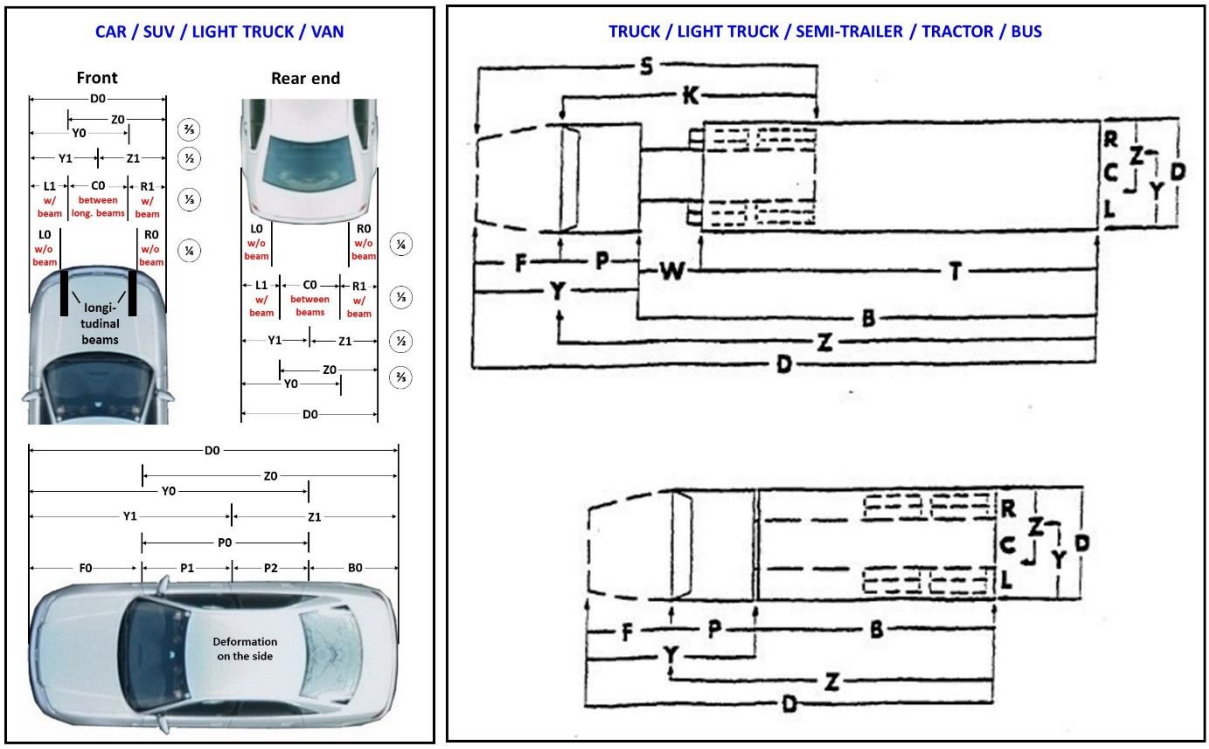
**Table:** PARTICIPANT

**Label:** Primary collision - CDC/TDC Specific longitudinal or lateral area

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The CDC1LONG codes the specific horizontal location of the damage.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

CDC:

D0 - Distributed – side or end

L0 - Left – front or rear - w/o beam

L1 - Left – front or rear - w/ beam

C0 - Centre – front or rear - betw. long. beams

R0 - Right – front or rear - w/o beam

R1 - Right – front or rear - w/ beam

F0 - Side Front – left or right

P0 - Side Centre Section – left or right

P1 - Side Centre Section – left or right - betw. A-B pillar

P2 - Side Centre Section – left or right - betw. B-C pillar

B0 - Side Rear – left or right

Y0 - Side or End – F+P or L+C

Y1 - Side or End – F+P or L+C - first 2/3

Z0 - Side or End – B+P or R+C

Z1 - Side or End – B+P or R+C - first 2/3

77 - not applicable

99 - unknown

TDC:

L - Left

C - Center

R - Right

F - Front (Left or right, Top or Bottom)

P - Cab

W - Rear of cab in front of semitrailer

K - Tractor ( P + W)

S - Tractor (F + P + W)

B - Rear of cab to rear of trailer or cargo area

T - Trailer

Y - F + P or L + C

Z - B + P or R + C

D - Distributed (F+P+B or L+C+R)

77 - not applicable

99 - unknown

**Defined labels:**

-

## *2.19 Primary collision - CDC/TDC Specific vertical area (CDC1VERT)*

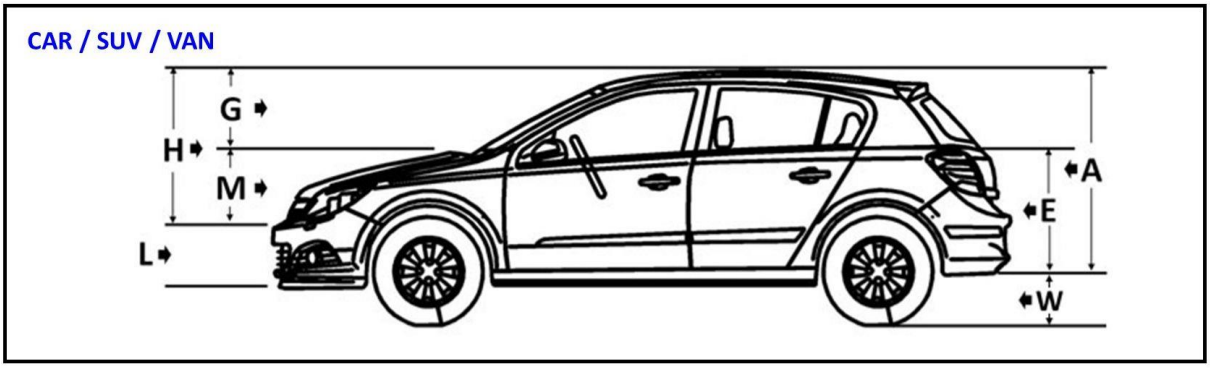
**Table:** PARTICIPANT

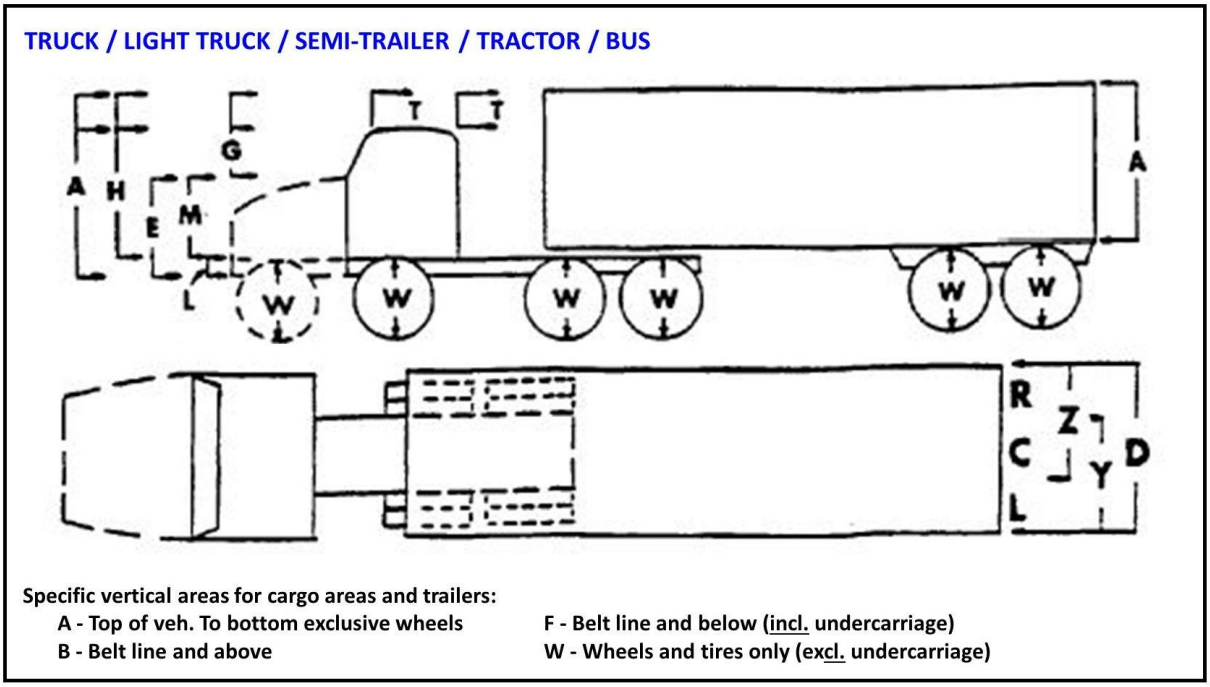
**Label:** Primary collision - CDC/TDC Specific vertical area

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The CDC1VERT codes the specific Vertical or Lateral Location of Deformation and Classification Code.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

Vertical location

A - All

H - Top of Frame to top of Vehicle

E - Everything below Belt Line

G - Belt Line and Above

M - Middle—top of frame to belt line

L - Bottom/top of frame (incl. undercarriage)

W - Below undercarriage level (wheels and tyres only)

Lateral location

D - Distributed

L - Left

C - Center

R - Right

Y - L and C

Z - R and C

TDC only

T - Everything above cab (TDC only)

B - Belt line and above (cargo areas and trailers) (TDC only)

F - Belt line and below (incl. undercarriage) (cargo areas and trailers) (TDC only)

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.20 Primary collision - CDC/TDC Type of damage distribution (CDC1TYPE)*

**Table:** PARTICIPANT

**Label:** Primary collision - CDC/TDC Type of damage distribution

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.

| Type | Classification |
|---|---|
| Wide impact Area | W |
| Narrow Impact Area | N |
| Sidewipe | S |
| Rollover (includes rolling onto side) | O |
| Corner (extends from corner to = < 16in (410mm) | E |
| Conversion in impact type Requires multiple CDC | K |
| No residual Deformation | U |

**Description:**

The CDC1TYPE defines the type of impact.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrian and 2wheeler.

W - Wide impact Area

N - Narrow Impact Area

S - Sideswipe

O - Rollover (includes rolling onto side)

A - Overhanging structures (inverted step)

E - Corner (extends from corner to = 16 in [410mm])

K - Conversion in impact type (requires multiple CDC)

U - No residual Deformation

R - Override (TDC only)

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.21 Primary collision - CDC/TDC Maximum extent of penetration (CDC1EXTT)*

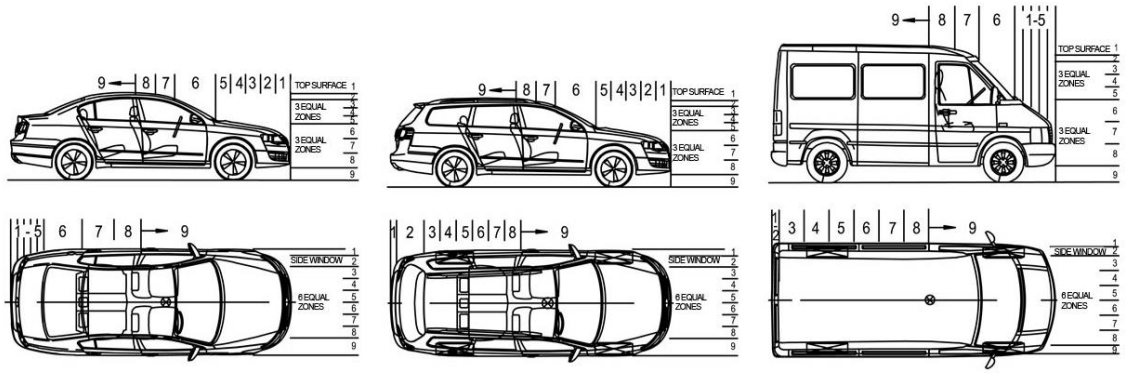
**Table:** PARTICIPANT

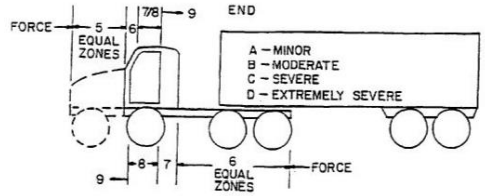
**Label:** Primary collision - CDC/TDC Maximum extent of penetration

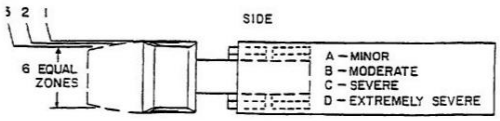
**Valid date period:** 2014-01-01

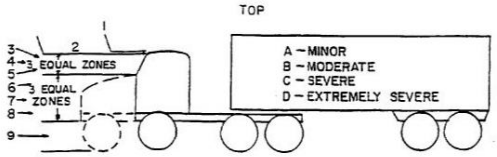
**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The degree of deformation is determined for different vehicle types with the use of the following figures. The degree of deformation is the differential between the zone in which the main intrusion ends and the zone in which it starts (max. value = 9). Always 1 is added to the result. Example: Damage starts in zone 1 and ends in zone 8. The difference is 7 and the degree of deformation is 8.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

77 - not applicable

99 - unknown

TDC only:

A - Crushing or shifting of structural members or rear axle assembly up to the limit of 410 mm (16 in). Puncturing side walls or top up to 410 mm (16 in) in diameter.

B - Crushing or shifting of structural members, or the rear axle assembly, greater than 410 mm (16 in), and not exceeding 810 mm (32 in).

Puncturing of the sidewalls or top greater than 410 mm (16 in) and not exceeding 810 mm (32 in) in diameter. Also included are sidewall seam (joint) failures, that no more than two seams are involved.

Trailer or a cargo area bowing is limited to a maximum of 200 mm (8 in).

C - Any damage above the limit of B providing that no more than 25 % of the sidewall/top areas are punctured or torn open. Trailer or cargo area bowing is limited to a maximum of 410 mm (16 in).

D - All damage above the limits of C to total distraction of the trailer/cargo area.

X - May only be used when all is preceding characters are nines as described in 3.1 (SAE J1301)

**Defined labels:**

-

## *2.22 Primary collision - CDC/TDC Maximum extent of penetration (%) (CDC1PERC)*

**Table:** PARTICIPANT

**Label:** Primary collision - CDC/TDC Maximum extent of penetration in percent

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** 0 - 999

**Description:**

The deformation percentage is coded in relation to the vehicle length, width or height, depending on the direction of collision. In this connection it should be noted that the total width or height of the vehicle is always 100%, whereas the total vehicle length equals 200%. The 100% base for intrusions from the front or rear is thus half the vehicle length. Where deformations exceed 99% a 99 is coded.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

777 - not applicable

999 - unknown

**Defined labels:**

-

## *2.23 Primary collision - driving speed (INISPEED1)*

**Table:** PARTICIPANT

**Label:** Primary collision - driving speed

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

The driving speed is defined as the speed in km/h before a critical situation was recognised. In case of the primary collision it is identical with the so-called initial braking speed or the speed at which reaction occurred; in subsequent collisions it is identical with the coasting speed of the preceding collision.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

99999 - unknown

## *2.24 Primary collision - mean deceleration (DECEL1)*

**Table:** PARTICIPANT

**Label:** Primary collision - mean deceleration

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** -999 – 200; 99999

**Description:**

The mean braking deceleration DECEL1 is coded in m/s2 * 10 before the crash. If the vehicle was accelerated before the collision, DECEL1 is negative.

Example: The entry for a deceleration of 8.3 m/s2 is 83 and the entry for an acceleration of 1.0 m/s2 is -10

Mainly the start point should be the speed at the point of the critical situation. If vehicle is decelerating before braking and if no braking the same like the collision speed.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (only for pedestrians)

99999 - unknown

## *2.25 Primary collision - deceleration distance (DECDIST1)*

**Table:** PARTICIPANT

**Label:** Primary collision - deceleration distance

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 5000; 99999

**Description:**

The deceleration distance used for reconstruction is coded from the initial braking position to the collision point. The deceleration distance is shown in m * 10.

Example: The entry for a deceleration distance of 8.3 m is 83.

Response time and steering time are not considered.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (only for pedestrians)

99999 - unknown

## *2.26 Primary collision - delta angle (DEFANG1)*

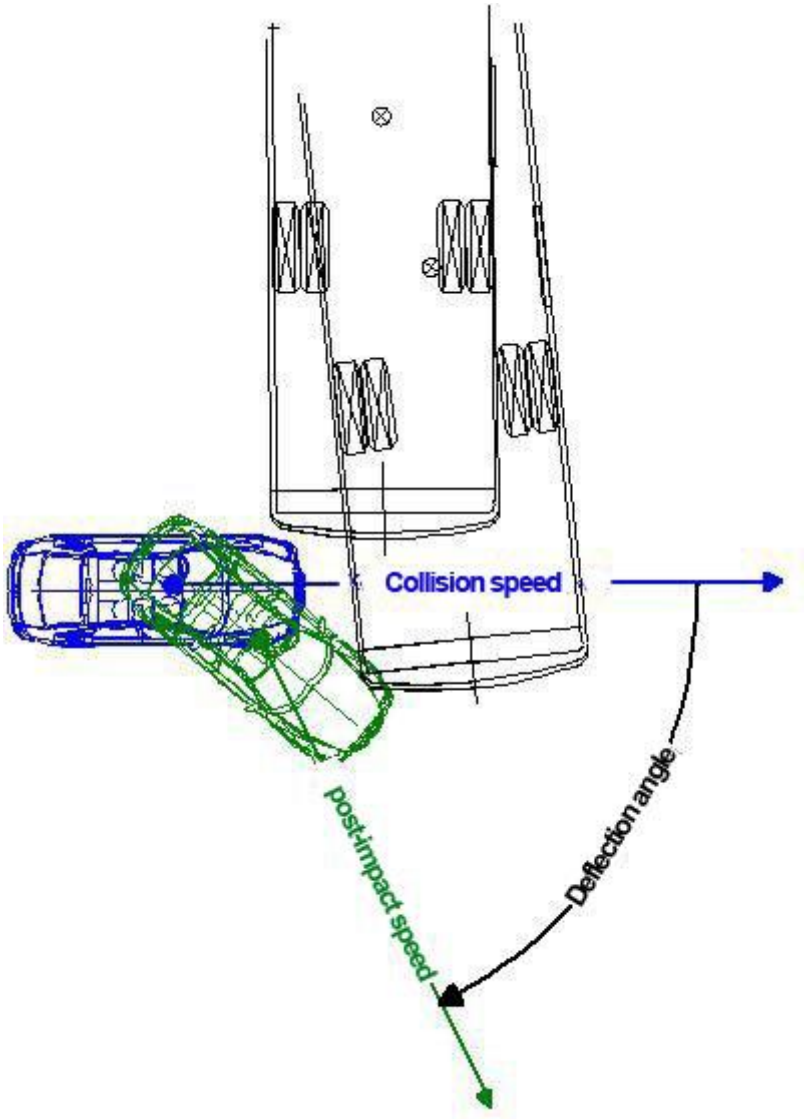
**Table:** PARTICIPANT

**Label:** Primary collision - delta angle

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** -360 - 99999




**Description:**

Delta angle is the change of the angle (deflection angle) during the collision, or the difference in degrees between the vehicle collision run-in and run-out angles. Anti-clockwise changes in angle are coded as positive (+) values, those in the clockwise direction as negative (-) values.

For pedestrians the delta angle is also between the direction of collision speed and the direction of the post-impact speed of the pedestrian, but both projected on the road surface (x and y plane).

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (for pedestrians and participants w/o collision)

99999 - unknown

## *2.27 Primary collision - collision speed (COLSPEED1)*

**Table:** PARTICIPANT

**Label:** Primary collision - collision speed

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Speed of the vehicle in km/h at the time of collision.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (only for participants w/o collision)

99999 - unknown

## *2.28 Primary collision - delta-v (DELTAV1)*

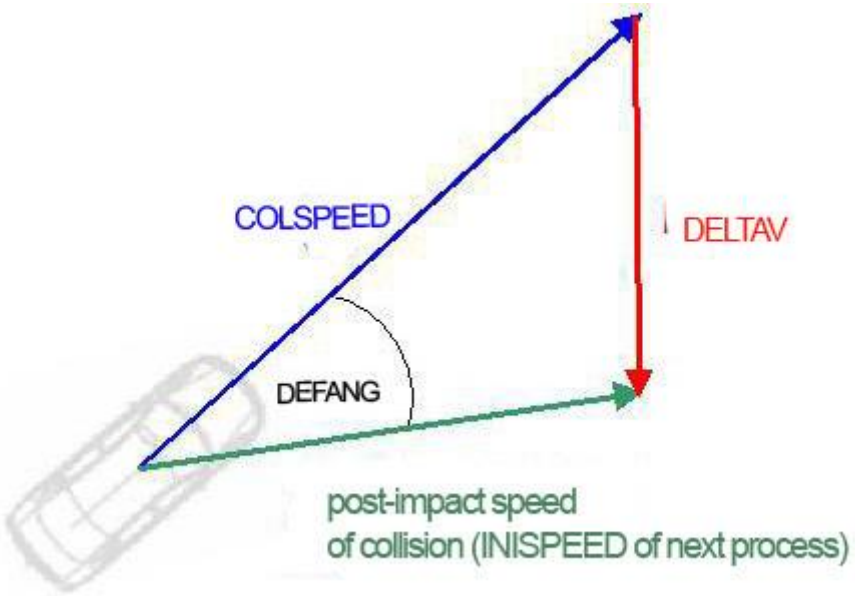
**Table:** PARTICIPANT

**Label:** Primary collision - delta-v

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999




**Description:**

The Delta-v is the vector difference between immediate post-crash and pre-crash velocity. It is coded in km/h.

When a rider ejects from a motorcycle, delta-v is coded for the motorcycle only.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (for pedestrians and participants w/o collision)

99999 - unknown

## *2.29 Primary collision - EES (EES1)*

**Table:** PARTICIPANT

**Label:** Primary collision - EES

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

The energy equivalent speed (EES) is calculated from the energy balance and is coded in km/h. When a rider ejects from a motorcycle, EES is coded for the motorcycle only.

For pedestrians or bicycles '77777 - not applicable' must be coded.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.30 Secondary collision - opponent (OPPON2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - opponent

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

The opponent of the primary collision. If the opponent is a vehicle or pedestrian, the corresponding participant number of the opponent is coded. Otherwise, if opponent is an object or animal, one of the codes 100 and above are used (see the format section). For simplification, only the primary and secondary collisions are coded. If there are more than two collisions, the two most severe collisions are coded. Parked trailers without Truck or Tractor has to be coded as an object.

Note: A "parked" car is a standing car without any people inside and will be coded as an object. A standing car with people inside will not be coded as "parked" but as a participant "standing/waiting". A rolling car without a driver will be coded as a participant.

**Defined labels:**

1 - Participant 1

2 - Participant 2

3 - Participant 3

4 - Participant 4

5 - Participant 5

6 - Participant 6

7 - Participant 7

8 - Participant 8

9 - Participant 9

10 - Participant 10

100 - animal

101 - object on road

102 - road surface

103 - sidewalk/bicycle lane

104 - other paved road

105 - roadside

106 - ejected occupant

107 - guardrail

108 - traffic sign

109 - traffic light

110 - pole

111 - tree

112 - rails

113 - wall

114 - water

77777 - not applicable

88888 - other

99999 - unknown

## *2.31 Secondary collision - opponent collision (NROPPON2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - opponent collision

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

This is the number of the collision of the opponent (primary or secondary) and can be used to match collisions between two collided participants. The opponent itself is coded in the previous variable “Primary collision – opponent”. If the collision of the opponent is neither his primary nor secondary collision but the third (or more) collision, 3 is coded.

**Defined labels:**

0 - no collision (at all)

1 - primary collision

2 - secondary collision

3 - third or more (not documented) collision

77777 - not applicable

99999 - unknown

## *2.32 Secondary collision - CDC/TDC Force Direction (CDC2DIRE)*

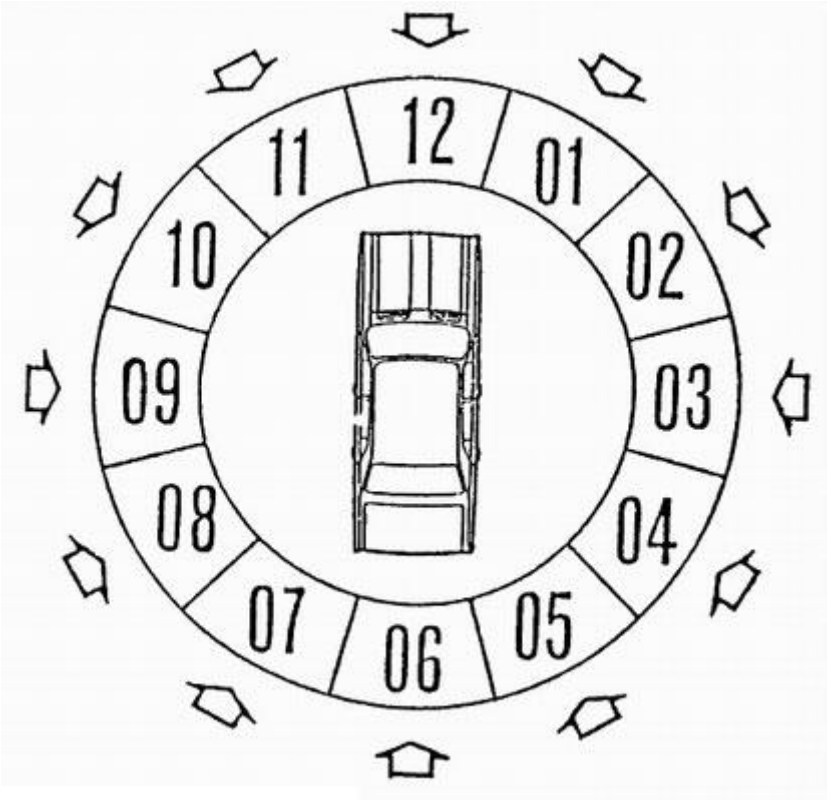
**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Force Direction

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The principal direction of force is coded that caused the damage on the vehicle according to CDC 1 & 2. This direction is equal to the direction of the change of momentum of the impact analysis. The coding is conducted according the o'clock direction in 30 deg steps whereas the 12 o'clock direction represents a force direction front to rear parallel to the longitudinal axis of the vehicle.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

CDC2DIRE and CDC2AREA should also be coded for pedestrians, two-wheelers and electric micro vehicles, all further CDC values should be coded than as "not applicable".

The entry of "00" indicates that the impact is not horizontal, as in a rollover or undercarriage type impact.

00 - impact is not horizontal

01 - 01 (+30°)

02 - 02 (+60°)

03 - 03 (+90°)

04 - 04 (+120°)

05 - 05 (+150°)

06 - 06 (+180°)

07 - 07 (-150°)

08 - 08 (-120°)

09 - 09 (-90°)

10 - 10 (-60°)

11 - 11 (-30°)

12 - 12 (0°)

13 - Intra-unit force (only TDC)

77 - not applicable

99 - unknown

**Defined labels:**

-

## *2.33 Secondary collision - CDC/TDC Area of Deformation (CDC2AREA)*

**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Area of Deformation

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

The CDC2AREA codes the main deformed vehicle area according to CDC 3.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

CDC2DIRE and CDC2AREA should also be coded for pedestrians, two-wheelers and electric micro vehicles, all further CDC values should be coded than as "not applicable".

F - Front

R - Right Side

B - Back (rear or rear of trailer or straight truck)

L - Left Side

D - Back (rear of tractor) (only TDC)

C - Rear of cab (only TDC)

V - Front of Cargo Area (only TDC)

T - Top

U - Undercarriage

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.34 Secondary collision - CDC/TDC Specific longitudinal or lateral area (CDC2LONG)*

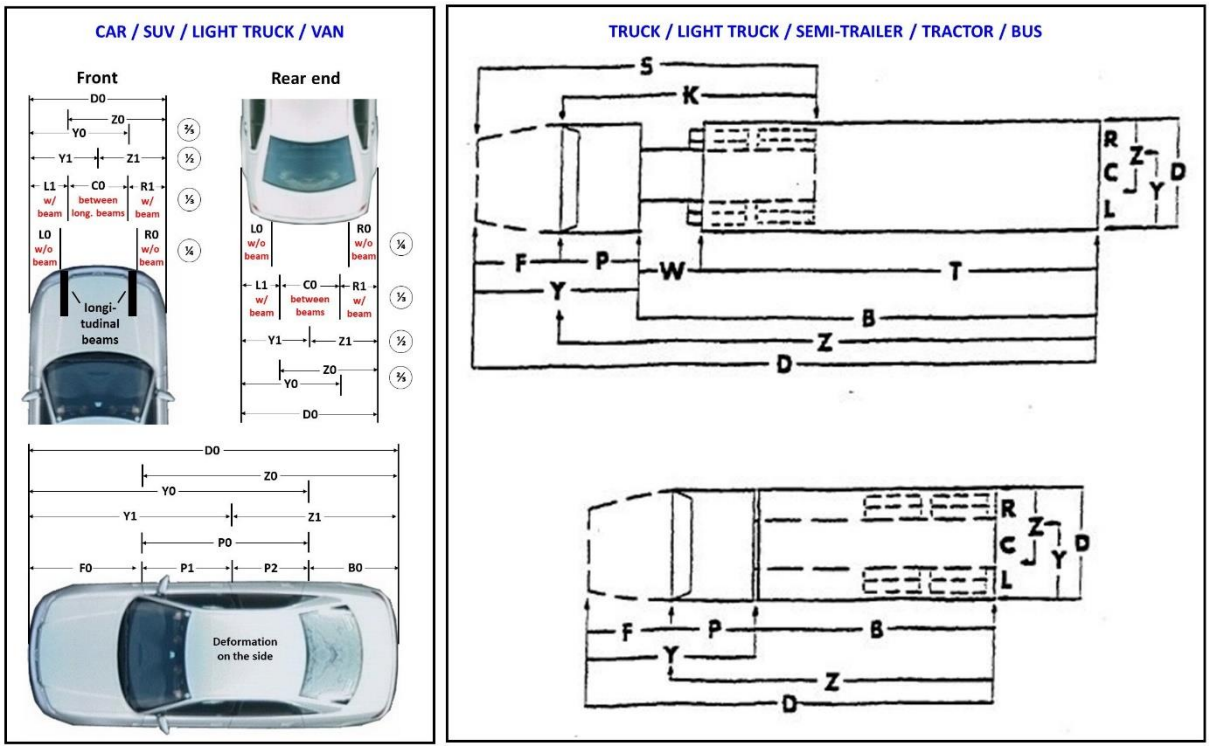
**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Specific longitudinal or lateral area

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The CDC2LONG codes the specific horizontal location of the damage.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

CDC:

D0 - Distributed – side or end

L0 - Left – front or rear - w/o beam

L1 - Left – front or rear - w/ beam

C0 - Centre – front or rear - betw. long. beams

R0 - Right – front or rear - w/o beam

R1 - Right – front or rear - w/ beam

F0 - Side Front – left or right

P0 - Side Centre Section – left or right

P1 - Side Centre Section – left or right - betw. A-B pillar

P2 - Side Centre Section – left or right - betw. B-C pillar

B0 - Side Rear – left or right

Y0 - Side or End – F+P or L+C

Y1 - Side or End – F+P or L+C - first 2/3

Z0 - Side or End – B+P or R+C

Z1 - Side or End – B+P or R+C - first 2/3

77 - not applicable

99 - unknown

TDC:

L - Left

C - Center

R - Right

F - Front (Left or right, Top or Bottom)

P - Cab

W - Rear of cab in front of semitrailer

K - Tractor ( P + W)

S - Tractor (F + P + W)

B - Rear of cab to rear of trailer or cargo area

T - Trailer

Y - F + P or L + C

Z - B + P or R + C

D - Distributed (F+P+B or L+C+R)

77 - not applicable

99 - unknown

**Defined labels:**

-

## *2.35 Secondary collision - CDC/TDC Specific vertical area (CDC2VERT)*

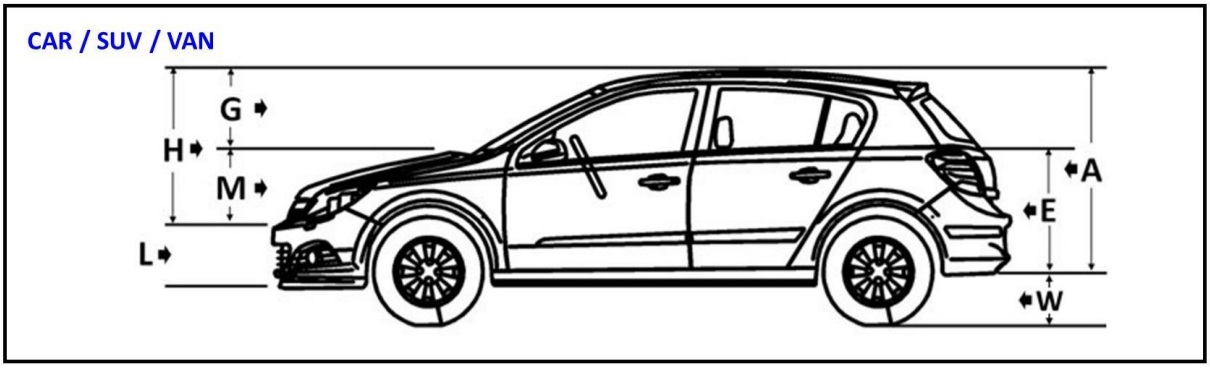
**Table:** PARTICIPANT

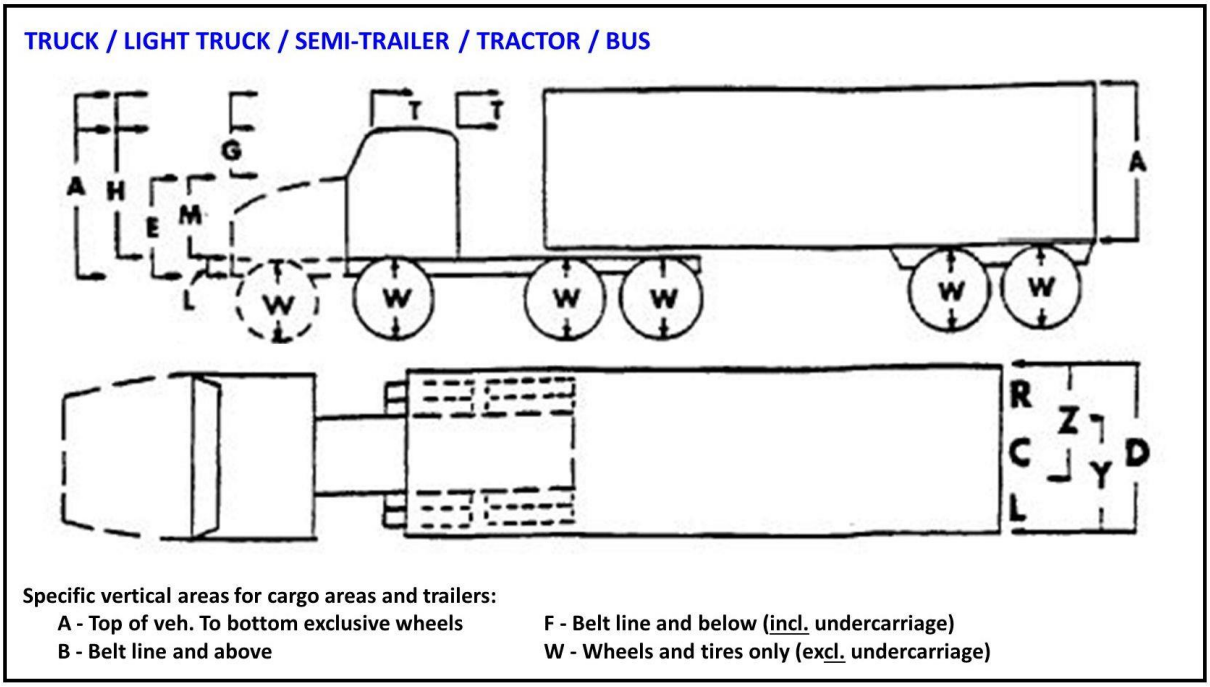
**Label:** Secondary collision - CDC/TDC Specific vertical area

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.




**Description:**

The CDC2VERT codes the specific Vertical or Lateral Location of Deformation and Classification Code.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

Vertical location

A - All

H - Top of Frame to top of Vehicle

E - Everything below Belt Line

G - Belt Line and Above

M - Middle—top of frame to belt line

L - Bottom/top of frame (incl. undercarriage)

W - Below undercarriage level (wheels and tyres only)

Lateral location

D - Distributed

L - Left

C - Center

R - Right

Y - L and C

Z - R and C

TDC only

T - Everything above cab (TDC only)

B - Belt line and above (cargo areas and trailers) (TDC only)

F - Belt line and below (incl. undercarriage) (cargo areas and trailers) (TDC only)

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.36 Secondary collision - CDC/TDC Type of damage distribution (CDC2TYPE)*

**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Type of damage distribution

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.

| Type | Classification |
|---|---|
| Wide impact Area | W |
| Narrow Impact Area | N |
| Sidewipe | S |
| Rollover (includes rolling onto side) | O |
| Corner (extends from corner to = < 16in (410mm) | E |
| Conversion in impact type Requires multiple CDC | K |
| No residual Deformation | U |

**Description:**

The CDC2TYPE defines the type of impact.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrian and 2wheeler.

W - Wide impact Area

N - Narrow Impact Area

S - Sideswipe

O - Rollover (includes rolling onto side)

A - Overhanging structures (inverted step)

E - Corner (extends from corner to = 16 in [410mm])

K - Conversion in impact type (requires multiple CDC)

U - No residual Deformation

R - Override (TDC only)

7 - not applicable

9 - unknown

**Defined labels:**

-

## *2.37 Secondary collision - CDC/TDC Maximum extent of penetration (CDC2EXTT)*

**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Maximum extent of penetration

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

The degree of deformation is determined for different vehicle types with the use of the following figures. The degree of deformation is the differential between the zone in which the main intrusion ends and the zone in which it starts (max. value = 9). Always 1 is added to the result. Example: Damage starts in zone 1 and ends in zone 8. The difference is 7 and the degree of deformation is 8.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

77 - not applicable

99 - unknown

TDC only:

A - Crushing or shifting of structural members or rear axle assembly up to the limit of 410 mm (16 in). Puncturing side walls or top up to 410 mm (16 in) in diameter.

B - Crushing or shifting of structural members, or the rear axle assembly, greater than 410 mm (16 in), and not exceeding 810 mm (32 in).

Puncturing of the sidewalls or top greater than 410 mm (16 in) and not exceeding 810 mm (32 in) in diameter. Also included are sidewall seam (joint) failures, that no more than two seams are involved.

Trailer or a cargo area bowing is limited to a maximum of 200 mm (8 in).

C - Any damage above the limit of B providing that no more than 25 % of the sidewall/top areas are punctured or torn open. Trailer or cargo area bowing is limited to a maximum of 410 mm (16 in).

D - All damage above the limits of C to total distraction of the trailer/cargo area.

X - May only be used when all is preceding characters are nines as described in 3.1 (SAE J1301).

**Defined labels:**

-

## *2.38 Secondary collision - CDC/TDC Maximum extent of penetration (%) (CDC2PERC)*

**Table:** PARTICIPANT

**Label:** Secondary collision - CDC/TDC Maximum extent of penetration in percent

**Valid date period:** 2014-01-01

**Mandatory variable:** Yes

**Range:** 0 - 999

**Description:**

The deformation percentage is coded in relation to the vehicle length, width or height, depending on the direction of collision. In this connection it should be noted that the total width or height of the vehicle is always 100%, whereas the total vehicle length equals 200%. The 100% base for intrusions from the front or rear is thus half the vehicle length. Where deformations exceed 99% a 99 is coded.

For trucks the TDC (SAE J1301) should be used instead, but also coded within the CDC variables.

It must not be coded for pedestrians and 2wheeler.

777 - not applicable

999 - unknown

**Defined labels:**

-

## *2.39 Secondary collision - driving speed (INISPEED2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - driving speed

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

The driving speed is defined as the speed in km/h before a critical situation was recognised. In case of the primary collision it is identical with the so-called initial braking speed or the speed at which reaction occurred; in subsequent collisions it is identical with the coasting speed of the preceding collision.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.40 Secondary collision - mean deceleration (DECEL2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - mean deceleration

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** -999 - 200; 99999

**Description:**

The mean braking deceleration DECEL2 is coded in m/s2 * 10 before the crash. If the vehicle was accelerated before the collision, DECEL2 is negative.

Example: The entry for a deceleration of 8.3 m/s2 is 83 and the entry for an acceleration of 1.0 m/s2 is -10

Mainly the start point should be the speed at the point of the critical situation. If vehicle is decelerating before braking and if no braking the same like the collision speed.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.41 Secondary collision - deceleration distance (DECDIST2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - deceleration distance

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 5000; 99999

**Description:**

The deceleration distance used for reconstruction is coded from the initial braking position to the collision point. The deceleration distance is shown in m * 10.

Example: The entry for a deceleration distance of 8.3 m is 83.

Response time and steering time are not considered.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.42 Secondary collision - delta angle (DEFANG2)*

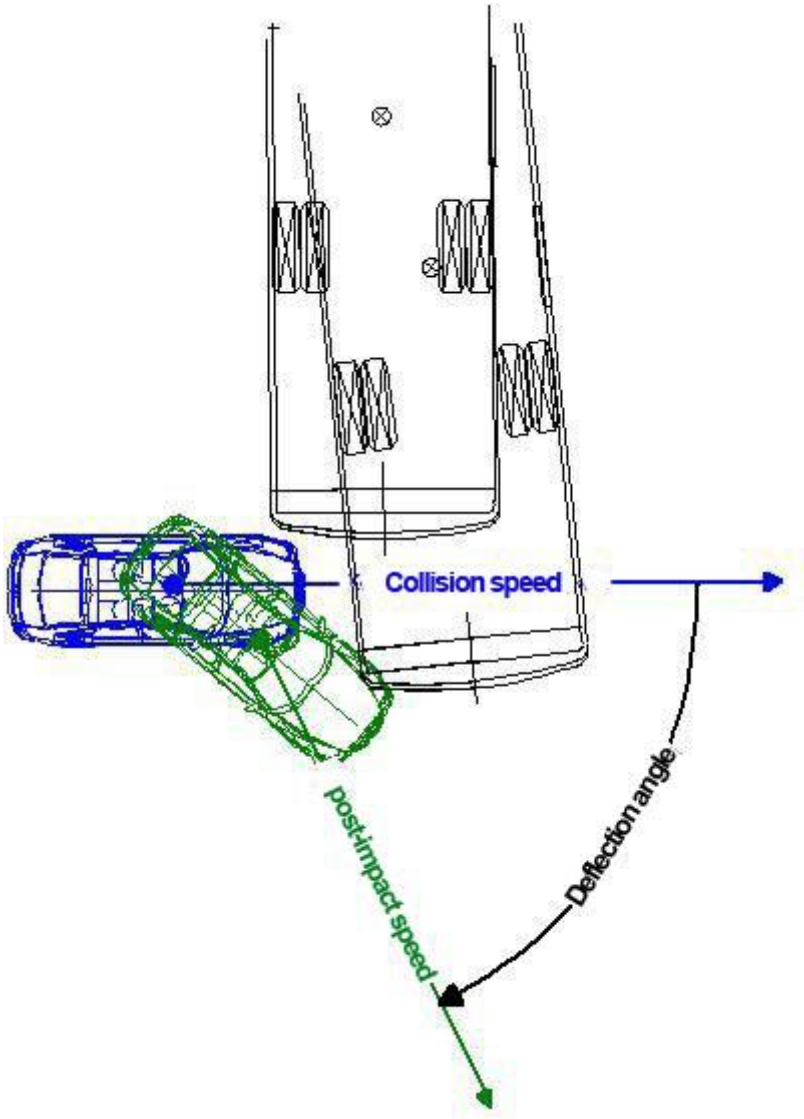
**Table:** PARTICIPANT

**Label:** Secondary collision - delta angle

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** -360 - 99999




**Description:**

Delta angle is the change of the angle (deflection angle) during the collision, or the difference in degrees between the vehicle collision run-in and run-out angles. Anti-clockwise changes in angle are coded as positive (+) values, those in the clockwise direction as negative (-) values.

For pedestrians the delta angle is also between the direction of collision speed and the direction of the post-impact speed of the pedestrian, but both projected on the road surface (x and y plane).

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (for pedestrians and participants w/o second collision)

99999 - unknown

## *2.43 Secondary collision - collision speed (COLSPEED2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - collision speed

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Speed of the vehicle in km/h at the time of collision.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (only for participants w/o collision)

99999 - unknown

## *2.44 Secondary collision - delta-v (DELTAV2)*

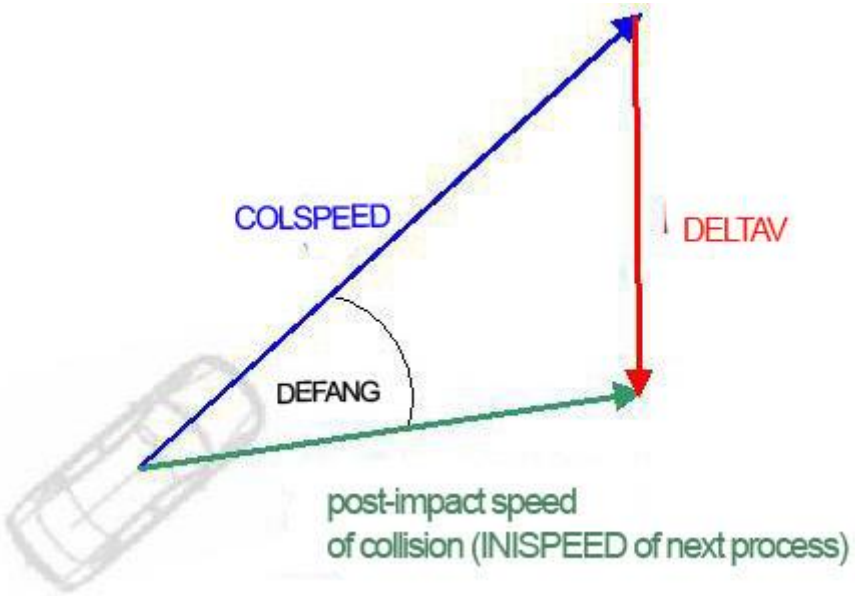
**Table:** PARTICIPANT

**Label:** Secondary collision - delta-v

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999




**Description:**

The Delta-v is the vector difference between immediate post-crash and pre-crash velocity. It is coded in km/h.

When a rider ejects from a motorcycle, delta-v is coded for the motorcycle only.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable (for pedestrians and participants w/o second collision)

99999 - unknown

## *2.45 Secondary collision - EES (EES2)*

**Table:** PARTICIPANT

**Label:** Secondary collision - EES

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

The energy equivalent speed (EES) is calculated from the energy balance and is coded in km/h. When a rider ejects from a motorcycle, EES is coded for the motorcycle only.

For pedestrians or bicycles '77777 - not applicable' must be coded.

Variables from reconstruction are based on calculations. The accuracy of each variable should be the best estimation.

**Defined labels:**

77777 - not applicable

99999 - unknown

## *2.46 Contributing factor 1 - without ranking (FACTOR1)*

**Table:** PARTICIPANT

**Label:** Contributing factor 1 - without ranking

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Contributing factor from the view of the participant. In most cases there are several contributing factors associated with one participant from which at most three can be coded in the variables “Contributing factor 1 – 3”.

The Main contributing factor "MAINFACT" has to be coded again in one of the contributing factors "FACTOR1"/"FACTOR2"/"FACTOR3" of the main causer of the accident!

The coding scheme is the same as for the main contributing factor on case level (see table “Accident”, variable “Main contributing factor”).

If there is no or no further contributing factor use “1 - none”.

**Defined labels:**

1 - none

2 - alcohol

3 - other stimulation substances, e.g. drugs, medication

4 - drowsiness

5 - other physical or psychical deficiencies

6 - use of wrong lane or illegal road usage

7 - violation against lane discipline (e.g. driving on outside lane)

8 - speeding (exceeding speed limit)

9 - excessive speed for conditions (no exceeding of speed limit)

10 - lack of safety distance

11 - heavy braking without obvious reason

12 - overtaking on the wrong side (undertaking)

13 - overtaking into oncoming traffic

14 - overtaking into unclear traffic situation

15 - overtaking without adequate visibility

16 - overtaking without consideration and adequate warning to following traffic

17 - mistake in returning to initial lane

18 - other overtaking mistakes

19 - mistake when being overtaken, e.g. swerving, accelerating

20 - disregarding the oncoming traffic's right of way when passing stationary vehicle or obstacle

21 - disregarding the following traffic's right of way when passing stationary vehicle or obstacle

22 - failure during driving in congested traffic or lane merging

23 - disregarding the traffic regulation "priority to the right"

24 - disregarding the traffic regulation signs (give way)

25 - disregarding the priority traffic when joining a motorway or dual carriageway

26 - disregarding the right of way by vehicles joining from a track way

27 - disregarding the direction of traffic regulation by traffic lights or police officers

28 - disregarding the priority of oncoming traffic when shown by sign 208

29 - disregarding the priority of railway traffic

30 - mistake during turning

31 - mistake during u-turn or reversing

32 - failure during joining the flowing traffic

33 - wrong behavior towards pedestrians at pedestrian crossings

34 - wrong behavior towards pedestrians at traffic calmings for pedestrians

35 - wrong behavior towards pedestrians when turning

36 - wrong behavior towards pedestrians at public transport stops

37 - wrong behavior towards pedestrians at other places

38 - forbidden stopping or parking

39 - failure of adequate warning for stopped/broken down vehicles, accident scenes, or stopped school busses

40 - traffic rule violation during vehicle loading or unloading

41 - disregarding the lighting regulations

42 - overloading

43 - not adequately secured cargo

44 - other mistakes of the driver

45 - defective lighting

46 - defective tires

47 - defective brakes

48 - defective steering

49 - defective towing device

50 - other technical deficiencies

51 - wrong behavior of the pedestrian in traffic situations regulated by traffic lights or police officers

52 - wrong behavior of the pedestrian at crossings without regulation by traffic lights or police officers

53 - wrong behavior of the pedestrian near crossings or junctions, traffic lights or pedestrian crossings during dense traffic in other places

54 - wrong behavior of the pedestrian due to sudden emergence from view restricted areas

55 - wrong behavior of the pedestrian (ignoring the road traffic)

56 - other wrong behavior of the pedestrian

57 - wrong behavior of the pedestrian due to nonusage of pedestrian path

58 - wrong behavior of the pedestrian due to usage of wrong road side

59 - wrong behavior of the pedestrian due to playing on or besides the road

60 - wrong behavior of the pedestrian due to other mistakes

61 - road soiling due to oil leakage

62 - other road soiling by road users

63 - snow, ice

64 - rain

65 - other influences (leaves, clay etc.)

66 - lane grooves in combination with rain, snow, ice

67 - other state of the road

68 - inappropriate road sign condition

69 - inadequate street lighting

70 - inadequate securing of railway crossings

71 - influence of weather / view obstruction due to fog

72 - influence of weather / view obstruction due to rain, hail, snow

73 - influence of weather / view obstruction due to sun glare

74 - influence of weather / view obstruction due to cross wind

75 - influence of weather / view obstruction due to storm

76 - inappropriate or not secured construction site on the road

77 - game animals on road

78 - other animal on road

79 - other obstacles on the road

80 - darkness

81 - another vehicle which is gone

88888 - other causes

99999 - unknown

## *2.47 Contributing factor 2 - without ranking (FACTOR2)*

**Table:** PARTICIPANT

**Label:** Contributing factor 2 - without ranking

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Contributing factor from the view of the participant. In most cases there are several contributing factors associated with one participant from which at most three can be coded in the variables “Contributing factor 1 – 3”.

The Main contributing factor "MAINFACT" has to be coded again in one of the contributing factors "FACTOR1"/"FACTOR2"/"FACTOR3" of the main causer of the accident!

The coding scheme is the same as for the main contributing factor on case level (see table “Accident”, variable “Main contributing factor”).

If there is no or no further contributing factor use “1 - none”.

**Defined labels:**

1 - none

2 - alcohol

3 - other stimulation substances, e.g. drugs, medication

4 - drowsiness

5 - other physical or psychical deficiencies

6 - use of wrong lane or illegal road usage

7 - violation against lane discipline (e.g. driving on outside lane)

8 - speeding (exceeding speed limit)

9 - excessive speed for conditions (no exceeding of speed limit)

10 - lack of safety distance

11 - heavy braking without obvious reason

12 - overtaking on the wrong side (undertaking)

13 - overtaking into oncoming traffic

14 - overtaking into unclear traffic situation

15 - overtaking without adequate visibility

16 - overtaking without consideration and adequate warning to following traffic

17 - mistake in returning to initial lane

18 - other overtaking mistakes

19 - mistake when being overtaken, e.g. swerving, accelerating

20 - disregarding the oncoming traffic's right of way when passing stationary vehicle or obstacle

21 - disregarding the following traffic's right of way when passing stationary vehicle or obstacle

22 - failure during driving in congested traffic or lane merging

23 - disregarding the traffic regulation "priority to the right"

24 - disregarding the traffic regulation signs (give way)

25 - disregarding the priority traffic when joining a motorway or dual carriageway

26 - disregarding the right of way by vehicles joining from a track way

27 - disregarding the direction of traffic regulation by traffic lights or police officers

28 - disregarding the priority of oncoming traffic when shown by sign 208

29 - disregarding the priority of railway traffic

30 - mistake during turning

31 - mistake during u-turn or reversing

32 - failure during joining the flowing traffic

33 - wrong behavior towards pedestrians at pedestrian crossings

34 - wrong behavior towards pedestrians at traffic calmings for pedestrians

35 - wrong behavior towards pedestrians when turning

36 - wrong behavior towards pedestrians at public transport stops

37 - wrong behavior towards pedestrians at other places

38 - forbidden stopping or parking

39 - failure of adequate warning for stopped/broken down vehicles, accident scenes, or stopped school busses

40 - traffic rule violation during vehicle loading or unloading

41 - disregarding the lighting regulations

42 - overloading

43 - not adequately secured cargo

44 - other mistakes of the driver

45 - defective lighting

46 - defective tires

47 - defective brakes

48 - defective steering

49 - defective towing device

50 - other technical deficiencies

51 - wrong behavior of the pedestrian in traffic situations regulated by traffic lights or police officers

52 - wrong behavior of the pedestrian at crossings without regulation by traffic lights or police officers

53 - wrong behavior of the pedestrian near crossings or junctions, traffic lights or pedestrian crossings during dense traffic in other places

54 - wrong behavior of the pedestrian due to sudden emergence from view restricted areas

55 - wrong behavior of the pedestrian (ignoring the road traffic)

56 - other wrong behavior of the pedestrian

57 - wrong behavior of the pedestrian due to nonusage of pedestrian path

58 - wrong behavior of the pedestrian due to usage of wrong road side

59 - wrong behavior of the pedestrian due to playing on or besides the road

60 - wrong behavior of the pedestrian due to other mistakes

61 - road soiling due to oil leakage

62 - other road soiling by road users

63 - snow, ice

64 - rain

65 - other influences (leaves, clay etc.)

66 - lane grooves in combination with rain, snow, ice

67 - other state of the road

68 - inappropriate road sign condition

69 - inadequate street lighting

70 - inadequate securing of railway crossings

71 - influence of weather / view obstruction due to fog

72 - influence of weather / view obstruction due to rain, hail, snow

73 - influence of weather / view obstruction due to sun glare

74 - influence of weather / view obstruction due to cross wind

75 - influence of weather / view obstruction due to storm

76 - inappropriate or not secured construction site on the road

77 - game animals on road

78 - other animal on road

79 - other obstacles on the road

80 - darkness

81 - another vehicle which is gone

88888 - other causes

99999 - unknown

## *2.48 Contributing factor 3 - without ranking (FACTOR3)*

**Table:** PARTICIPANT

**Label:** Contributing factor 3 - without ranking

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Contributing factor from the view of the participant. In most cases there are several contributing factors associated with one participant from which at most three can be coded in the variables “Contributing factor 1 – 3”.

The Main contributing factor "MAINFACT" has to be coded again in one of the contributing factors "FACTOR1"/"FACTOR2"/"FACTOR3" of the main causer of the accident!

The coding scheme is the same as for the main contributing factor on case level (see table “Accident”, variable “Main contributing factor”).

If there is no or no further contributing factor use “1 - none”.

**Defined labels:**

1 - none

2 - alcohol

3 - other stimulation substances, e.g. drugs, medication

4 - drowsiness

5 - other physical or psychical deficiencies

6 - use of wrong lane or illegal road usage

7 - violation against lane discipline (e.g. driving on outside lane)

8 - speeding (exceeding speed limit)

9 - excessive speed for conditions (no exceeding of speed limit)

10 - lack of safety distance

11 - heavy braking without obvious reason

12 - overtaking on the wrong side (undertaking)

13 - overtaking into oncoming traffic

14 - overtaking into unclear traffic situation

15 - overtaking without adequate visibility

16 - overtaking without consideration and adequate warning to following traffic

17 - mistake in returning to initial lane

18 - other overtaking mistakes

19 - mistake when being overtaken, e.g. swerving, accelerating

20 - disregarding the oncoming traffic's right of way when passing stationary vehicle or obstacle

21 - disregarding the following traffic's right of way when passing stationary vehicle or obstacle

22 - failure during driving in congested traffic or lane merging

23 - disregarding the traffic regulation "priority to the right"

24 - disregarding the traffic regulation signs (give way)

25 - disregarding the priority traffic when joining a motorway or dual carriageway

26 - disregarding the right of way by vehicles joining from a track way

27 - disregarding the direction of traffic regulation by traffic lights or police officers

28 - disregarding the priority of oncoming traffic when shown by sign 208

29 - disregarding the priority of railway traffic

30 - mistake during turning

31 - mistake during U-turn or reversing

32 - failure during joining the flowing traffic

33 - wrong behavior towards pedestrians at pedestrian crossings

34 - wrong behavior towards pedestrians at traffic calmings for pedestrians

35 - wrong behavior towards pedestrians when turning

36 - wrong behavior towards pedestrians at public transport stops

37 - wrong behavior towards pedestrians at other places

38 - forbidden stopping or parking

39 - failure of adequate warning for stopped/broken down vehicles, accident scenes, or stopped school busses

40 - traffic rule violation during vehicle loading or unloading

41 - disregarding the lighting regulations

42 - overloading

43 - not adequately secured cargo

44 - other mistakes of the driver

45 - defective lighting

46 - defective tires

47 - defective brakes

48 - defective steering

49 - defective towing device

50 - other technical deficiencies

51 - wrong behavior of the pedestrian in traffic situations regulated by traffic lights or police officers

52 - wrong behavior of the pedestrian at crossings without regulation by traffic lights or police officers

53 - wrong behavior of the pedestrian near crossings or junctions, traffic lights or pedestrian crossings during dense traffic in other places

54 - wrong behavior of the pedestrian due to sudden emergence from view restricted areas

55 - wrong behavior of the pedestrian (ignoring the road traffic)

56 - other wrong behavior of the pedestrian

57 - wrong behavior of the pedestrian due to nonusage of pedestrian path

58 - wrong behavior of the pedestrian due to usage of wrong road side

59 - wrong behavior of the pedestrian due to playing on or besides the road

60 - wrong behavior of the pedestrian due to other mistakes

61 - road soiling due to oil leakage

62 - other road soiling by road users

63 - snow, ice

64 - rain

65 - other influences (leaves, clay etc.)

66 - lane grooves in combination with rain, snow, ice

67 - other state of the road

68 - inappropriate road sign condition

69 - inadequate street lighting

70 - inadequate securing of railway crossings

71 - influence of weather / view obstruction due to fog

72 - influence of weather / view obstruction due to rain, hail, snow

73 - influence of weather / view obstruction due to sun glare

74 - influence of weather / view obstruction due to cross wind

75 - influence of weather / view obstruction due to storm

76 - inappropriate or not secured construction site on the road

77 - game animals on road

78 - other animal on road

79 - other obstacles on the road

80 - darkness

81 - another vehicle which is gone

88888 - other causes

99999 - unknown

## *2.49 Pre-Crash Scenario (SCENARIOTYPE)*

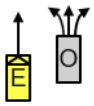
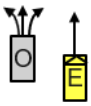
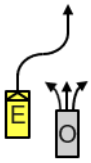
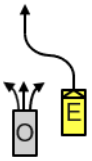
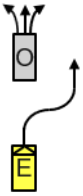
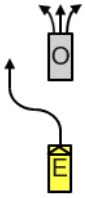
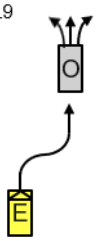
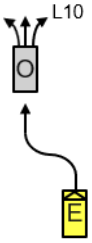
**Table:** PARTICIPANT

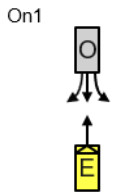
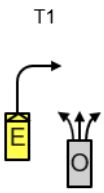
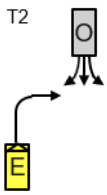
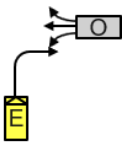
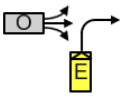
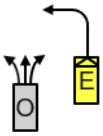
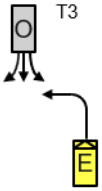
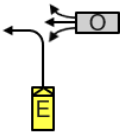
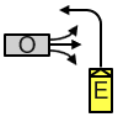
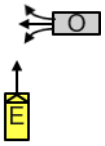
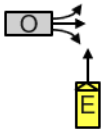
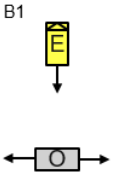
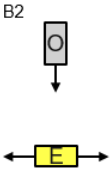
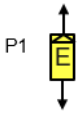
**Label:** Pre-Crash Scenario

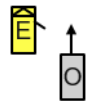
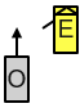
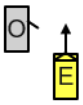
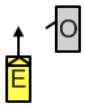
**Valid date period:** 2021-01-01

**Mandatory variable:** Yes

**Range:** 0 - 9999

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Driving, lane changing (no dynamic object) | D1  | D2  | D3  | D4  | D5  | | D Other driving |
| Following front, running up Same lane/ adjacent lane | L1  | | | | | | L Other long. |
| Object behind, rear ending Same lane/ adjacent lane | L4  | | | | | | |
| Ego passing | L2  | L3  | | | | | |
| Lane changing | L5  | L6  | L7  | L8  | L9  | L10  | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oncoming<br>Same lane/ adjacent lane | On1  | | | On2  | | | On<br>Other oncom-ing |
| Turning nearside | T1  | T2  | T14  | T10  | | | T<br>Other turning |
| Turning far-side | T5  | T3  | T9  | T4  | | | |
| Crossing | C1  | C2  | | | | | C<br>Other crossing |
| Other acci-dents | O1  Inability | O2  Obstacle | O3  Breakdown | O4  Animal | | | O<br>Other accident |
| Backing up | B1  | B2  | | | | | |
| Parking | P1  | P2  Parked vehicle | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dooring | S1   | S2   | S3   | S4   | | | |

**Description:**

Accident scenario according to participation ACCTYPEA or ACCTYPEB. Each accident can be referred to using two scenarios depending on the perspectives of the participants ACCTYPEA and ACCTYPEB. All other participants will not be assigned to a scenario. For single-vehicle accidents, only ACCTYPEA will be assigned to a scenario.

This variable can be recoded from the variables ACCTYPE, ACCTYPEA, and ACCTYPEB.

Further information regarding the scenarios can be found here: "Harmonized Pre-Crash scenarios for reaching global Vision Zero". Lara, Skvarce, Feifel, Wagner, Tengeiji. 26th ESV Conference. Paper 19-0110.

**Defined labels:**

10 - D - Other driving accident

11 - D1 - Driving accident in nearside bend

12 - D2 - Driving accident in farside bend

13 - D2 - Driving accident on straight road

20 - L - Other longitudinal accident

21 - L1 - Running up

22 - L2 - Object cutting in from nearside and running up

23 - L3 - Object cutting in from farside and running up

24 - L4 - Running-up from behind

25 - L5 - Lane changing nearside and object from behind

26 - L6 - Lane changing farside and object from behind

27 - L7 - Evasion to the right

28 - L8 - Evasion to the left

29 - L9 - Lane changing nearside and running up

30 - L10 - Lane changing farside and running-up

31 - On - Other oncoming accident

32 - On1 - Oncoming on same lane

33 - On2 - Lane changing to offside and oncoming

40 - T - Other turning accident

41 - T1 - Turning nearside and object from behind

42 - T2 - Turning nearside and object oncoming

43 - T3 - Turning farside and object oncoming

44 - T4 - Turning farside and object from farside

45 - T5 - Turning farside and object from behind

46 - T9 - Turning farside and object from nearside

47 - T10 - Turning nearside and object from farside

48 - T14 - Turning nearside and object from nearside

50 - C - Other crossing accident

51 - C1 - Crossing from nearside

52 - C2 - Crossing from farside

60 - O - Other accident

61 - O1 - Inability

62 - O2 - Obstacle

63 - O3 - Technical defect

64 - O4 - Animal

70 - B - Other backing up accident

71 - B1 - Backing up and crossing object in the rear

72 - B2 - Object backing up from nearside

81 - P1 - Parking accident

82 - P2 - Parked vehicle

91 - S1 - Dooring nearside

92 - S2 - Dooring farside

99998 - n/e - Neither ACCTYPEA nor ACCTYPEB

99999 - n/c - No scenario applicable / unknown

## *2.50 Check of reconstruction data 1 (CHECK_RECO1)*

**Table:** PARTICIPANT

**Label:** Check of reconstruction data 1

**Valid date period:** 2018-08-28

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Reconstruction data check 1: Conservation of Momentum

For details see:

Dario Vangi, Carlo Cialdai, Michelangelo-Santo Gulino, Kjell Gunnar Robbersmyr. 2018. Vehicle Accident Databases: Correctness Checks for Accident Kinematic Data. designs. 2018.

**Defined labels:**

0 - not plausible

1 - plausible

66666 - not defined

## *2.51 Check of reconstruction data 2 (CHECK_RECO2)*

**Table:** PARTICIPANT

**Label:** Check of reconstruction data 2

**Valid date period:** 2018-08-28

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Reconstruction data check 2: Velocity Triangles

For details see:

Dario Vangi, Carlo Cialdai, Michelangelo-Santo Gulino, Kjell Gunnar Robbersmyr. 2018. Vehicle Accident Databases: Correctness Checks for Accident Kinematic Data. designs. 2018.

**Defined labels:**

0 - not plausible

1 - plausible

66666 - not defined

## *2.52 Check of reconstruction data 3 (CHECK_RECO3)*

**Table:** PARTICIPANT

**Label:** Check of reconstruction data 3

**Valid date period:** 2018-08-28

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Reconstruction data check 3: Energy Loss

For details see:

Dario Vangi, Carlo Cialdai, Michelangelo-Santo Gulino, Kjell Gunnar Robbersmyr. 2018. Vehicle Accident Databases: Correctness Checks for Accident Kinematic Data. designs. 2018.

**Defined labels:**

0 - not plausible

1 - plausible

66666 - not defined

# 3 Occupant (OCCUPANT)

The table “Occupant” contains information about each person involved in the accident, either as an driver/occupant of an involved vehicle or as a pedestrian. All injury related data is included in this table. Each occupant is identified by its accident, participant and occupant number.

## *3.1 Accident number (CASENR)*

**Table:** OCCUPANT

**Label:** Accident number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Unique number of accident.

The case number ensures the unequivocal allocation of a data Table within the database and is always the first variable to be indicated.

The format is required: [yy][XX][0000]

[yy] - the last 2 digits of the member year

[XX] - country of origin

[0000] - consecutive accident number

Example: 14AT0001

**Defined labels:**

-

## *3.2 Participant number (PARTNR)*

**Table:** OCCUPANT

**Label:** Participant number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99

**Description:**

All participants (vehicles, pedestrians) of each particular case must be numbered consecutively. The participant number ensures the unequivocal allocation of a data Table within the database and must always be indicated together with the case number. All Tables of the participant (vehicle) must have the same case number.

**Defined labels:**

-

## *3.3 Occupant number (OCCNR)*

**Table:** OCCUPANT

**Label:** Occupant number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99

**Description:**

All occupants of a vehicle and all pedestrians are given their own personal reference number so that they can be unequivocally defined in the database. The personal reference number, together with the case number and the vehicle number, must always be quoted first. All Tables of a person must have the same personal reference number.

**Defined labels:**

-

## *3.4 Occupant type (OCCTYPE)*

**Table:** OCCUPANT

**Label:** Occupant type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Seating position of the occupant in the vehicle. In case of a pedestrian or cyclist, “driver / pedestrian” is coded.

**Defined labels:**

1 - driver / pedestrian

2 - front passenger

3 - front middle passenger

4 - second row left passenger

5 - second row middle passenger

6 - second row right passenger

7 - third row left passenger

8 - third row middle passenger

9 - third row right passenger

88888 - other passenger

99999 - unknown

## *3.5 Age (AGE)*

**Table:** OCCUPANT

**Label:** Age

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Age of the person on the day of the accident in years.

**Defined labels:**

99999 - unknown

## *3.6 Gender (GENDER)*

**Table:** OCCUPANT

**Label:** Gender

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Gender of the person.

**Defined labels:**

1 - male

2 - female

3 - diverse

99999 - unknown

## *3.7 Weight (WEIGHT)*

**Table:** OCCUPANT

**Label:** Weight

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Weight of the person in kilograms.

**Defined labels:**

99999 - unknown

## *3.8 Height (HEIGHT)*

**Table:** OCCUPANT

**Label:** Height

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Height of the person in cm.

**Defined labels:**

99999 - unknown

## *3.9 Police injury severity (INJSEVER)*

**Table:** OCCUPANT

**Label:** Police injury severity

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Injury severity of the person. The severity level should correspond to the officially police coded injury severity.

**Defined labels:**

1 - not injured

2 - slightly injured

3 - severely injured

4 - fatally injured

88888 - injured, but unknown severity

99999 - unknown

## *3.10 MAIS (MAIS)*

**Table:** OCCUPANT

**Label:** MAIS

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

This variable shows the maximum single AIS (AIS05 update 2008)

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - MAIS 0

1 - MAIS 1

2 - MAIS 2

3 - MAIS 3

4 - MAIS 4

5 - MAIS 5

6 - MAIS 6

99999 - unknown

## *3.11 AIS region 1 head w/o face (AISREGIO1)*

**Table:** OCCUPANT

**Label:** AIS region 1 head w/o face

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for brain and scull (w/o face) is coded. The localization covers AIS body region 1. (AIS05 update 2008)

If hospital doesn’t provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.12 AIS region 2 face (AISREGIO2)*

**Table:** OCCUPANT

**Label:** AIS region 2 face

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the face (w/o face) is coded. The localization covers AIS body region 2. (AIS05 update 2008)

If hospital doesn’t provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

99999 - unknown

## *3.13 AIS region 3 neck w/o spine (AISREGIO3)*

**Table:** OCCUPANT

**Label:** AIS region 3 neck w/o spine

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the neck (w/o cervical spine) is coded. The localization covers AIS body region 3. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.14 AIS region 4 thorax w/o shoulder (AISREGIO4)*

**Table:** OCCUPANT

**Label:** AIS region 4 thorax w/o shoulder

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the thorax (w/o shoulders) is coded. The localization covers AIS body region 4. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.15 AIS region 5 abdomen (AISREGIO5)*

**Table:** OCCUPANT

**Label:** AIS region 5 abdomen

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the abdomen is coded. The localization covers AIS body region 5. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.16 AIS region 6 spine (AISREGIO6)*

**Table:** OCCUPANT

**Label:** AIS region 6 spine

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the spine is coded. The localization covers AIS body region 6. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.17 AIS region 7 upper extremities (AISREGIO7)*

**Table:** OCCUPANT

**Label:** AIS region 7 upper extremities

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the upper extremities is coded. The localization covers AIS body region 7. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

99999 - unknown

## *3.18 AIS region 8 lower extremities (AISREGIO8)*

**Table:** OCCUPANT

**Label:** AIS region 8 lower extremities

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for the lower extremities is coded. The localization covers AIS body region 8. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

99999 - unknown

## *3.19 AIS region 9 not specified injuries (AISREGIO9)*

**Table:** OCCUPANT

**Label:** AIS region 9 not specified injuries

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Here the maximum injury level for not specified injuries is coded. The localization covers AIS body region 9. (AIS05 update 2008)

If hospital doesn't provide injury data but occupant reports about his injuries, then self-report of the occupant should be used for coding (TWG 04/17).

Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.

**Defined labels:**

0 - not injured

1 - AIS 1

2 - AIS 2

3 - AIS 3

4 - AIS 4

5 - AIS 5

6 - AIS 6

99999 - unknown

## *3.20 Seat belt (BELT)*

**Table:** OCCUPANT

**Label:** Seat belt

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Seat belt presence at the occupants seat.

The Seat belt characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Be aware that variable codes 2 and 3 do not necessarily imply the absence of a limiter but rather the absence OR the lack of information.

**Defined labels:**

0 - not present

1 - present (not specified)

2 - present w/o pret. & lim.

3 - present w/ pretensioner

4 - present w/ limiter

5 - present w/ pret. & lim.

77777 - not applicable

99999 - unknown

## *3.21 Seat belt use (BELT_USE)*

**Table:** OCCUPANT

**Label:** Seat belt use

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the seat belt was used (occupant was buckled up) during the accident.

A misuse mode should be explicitly coded as “misuse”. The activation (codes 2 and 3) relates to the activation of irreversible pretensioners.

**Defined labels:**

0 - not used

1 - used (not specified)

2 - used - (irreversible pretensioner) activated

3 - used - (irreversible pretensioner) not activated

4 - misuse

77777 - not applicable

99999 - unknown

## *3.22 Airbag front (AIRBF)*

**Table:** OCCUPANT

**Label:** Airbag front

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Airbag front presence at the occupants seat.

The Airbag front characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.23 Airbag front deployment (AIRBF_DEPL)*

**Table:** OCCUPANT

**Label:** Airbag front deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Airbag front was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

2 - deactivated

77777 - not applicable

99999 - unknown

## *3.24 Airbag tubular/curtain (AIRBTC)*

**Table:** OCCUPANT

**Label:** Airbag tubular/curtain

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Airbag tubular/curtain presence at the occupants seat.

The Airbag tubular/curtain characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present (not specified)

2 - present - front + rear

3 - present - front

77777 - not applicable

99999 - unknown

## *3.25 Airbag tubular/curtain deployment (AIRBTC_DEPL)*

**Table:** OCCUPANT

**Label:** Airbag tubular/curtain deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Airbag tubular/curtain was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.26 Sidebag (SIDEB)*

**Table:** OCCUPANT

**Label:** Sidebag

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Sidebag presence at the occupant’s seat.

The sidebag characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

Sidebags are coded according to the body region they are suited to protect. This is independent of the place of the sidebag in the car where it is mounted (Seat, door or roof) and how many sidebags are needed to cover the protected body regions (e.g. we make no difference if there is one separate bag for head and on for thorax or if all is covered with one sidebag).

**Defined labels:**

0 - not present

1 - present (not further specified)

2 - present - head

3 - present - thorax

4 - present - pelvis

5 - present - head & thorax

6 - present - head & pelvis

7 - present - thorax & pelvis

8 - present - head & thorax & pelvis

77777 - not applicable

99999 - unknown

## *3.27 Sidebag deployment (SIDEB_DEPL)*

**Table:** OCCUPANT

**Label:** Sidebag deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Sidebag was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.28 Kneebag (KNEEB)*

**Table:** OCCUPANT

**Label:** Kneebag

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Kneebag presence at the occupants seat.

The Kneebag characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.29 Kneebag deployment (KNEEB_DEPL)*

**Table:** OCCUPANT

**Label:** Kneebag deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Kneebag was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.30 Seat ramp airbag (AIRBSR)*

**Table:** OCCUPANT

**Label:** Seat ramp airbag

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Seat ramp airbag presence at the occupants seat.

The Seat ramp airbag characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.31 Seat ramp airbag deployment (AIRBSR_DEPL)*

**Table:** OCCUPANT

**Label:** Seat ramp airbag deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Seat ramp airbag was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.32 Rear airbag (AIRBR)*

**Table:** OCCUPANT

**Label:** Rear airbag

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Rear airbag presence at the occupants seat.

The Rear airbag characteristics relate exclusively to vehicle occupants and considers only rear passengers.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.33 Rear airbag deployment (AIRBR_DEPL)*

**Table:** OCCUPANT

**Label:** Rear airbag deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Rear airbag was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.34 Front center airbag (AIRBFC)*

**Table:** OCCUPANT

**Label:** Front center airbag

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Front center airbag presence at the occupants seat.

The Front center airbag characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.35 Front center airbag deployment (AIRBFC_DEPL)*

**Table:** OCCUPANT

**Label:** Front center airbag deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Front center airbag was deployed.

Appendix A contains examples for coding airbags.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.36 Headrest protection system (HEADREST)*

**Table:** OCCUPANT

**Label:** Headrest protection system

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Headrest protection system presence at the occupants seat.

The Headrest protection system characteristics relate exclusively to vehicle occupants.

Code '77777 - not applicable' for other persons.

**Defined labels:**

0 - not present

1 - present

77777 - not applicable

99999 - unknown

## *3.37 Headrest protection system deployment (HEADREST_DEPL)*

**Table:** OCCUPANT

**Label:** Headrest protection system deployment

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Statement whether the Headrest protection system was deployed.

**Defined labels:**

0 - not deployed

1 - deployed

77777 - not applicable

99999 - unknown

## *3.38 Child seat (CHILDSEAT)*

**Table:** OCCUPANT

**Label:** Child seat

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Child seat presence.

**Defined labels:**

0 - not present

1 - used (not further specified)

2 - used - forward facing

3 - used - rearward facing

4 - misuse

77777 - not applicable

99999 - unknown

## *3.39 Bolster table for children (BOLCHILD)*

**Table:** OCCUPANT

**Label:** Bolster table for children

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Bolster table for children presence.

**Defined labels:**

0 - not present

1 - used

2 - misuse

77777 - not applicable

99999 - unknown

## *3.40 Helmet (HELM)*

**Table:** OCCUPANT

**Label:** Helmet

**Valid date period:** 2016-01-01

**Mandatory variable:** Yes

**Range:** 0 - 99999

**Description:**

Helmet presence.

**Defined labels:**

0 - not present

1 - used

2 - misuse

77777 - not applicable

99999 - unknown

# 4 Safety System (SAFETYSYSTEM)

The table “Safety System” includes all information about systems related to safety functions of the involved vehicles. All systems that are built into the vehicle should be coded. Each system is identified by its accident, participant and system number.

## *4.1 Accident number (CASENR)*

**Table:** SAFETYSYSTEM

**Label:** Accident number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** No information.

**Description:**

Unique number of accident.

The case number ensures the unequivocal allocation of a data Table within the database and is always the first variable to be indicated.

The format is required: [yy][XX][0000]

[yy] - the last 2 digits of the member year

[XX] - country of origin

[0000] - consecutive accident number

Example: 14AT0001

**Defined labels:**

-

## *4.2 Participant number (PARTNR)*

**Table:** SAFETYSYSTEM

**Label:** Participant number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99

**Description:**

Unique number of participant in an accident.

**Defined labels:**

-

## *4.3 System number (SYSNR)*

**Table:** SAFETYSYSTEM

**Label:** System number

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 0 - 99; 99999

**Description:**

Unique number of safety system of a participant (usually a vehicle).

**Defined labels:**

-

## *4.4 Type of safety system (SYSTYPE)*

**Table:** SAFETYSYSTEM

**Label:** Type

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Type of safety system which is built into the vehicle.

Codes 1 to 49 and 81 to 100 were previously reserved for passive safety systems, active safety systems are coded from 50 upwards.

The function and technical specification of an active safety system should be assumed as being rather generic. For a more detailed description of the active safety systems see Appendix B.

**Defined labels:**

50 - antilock brake system (ABS)

51 - traction control system

52 - electronic stability control (ESC)

53 - cruise control

54 - adaptive cruise control (ACC)

55 - brake assist (BA)

56 - automatic emergency brake (AEB)

57 - lane departure warning (LDW)

58 - lane keeping assistant (LKA)

59 - blind spot monitoring (BSM)

60 - seat belt reminder

62 - bending light

63 - adaptive light distribution

64 - automatic headlights

65 - active pedestrian protection

66 - intelligent brake lights

67 - speed limiter

68 - head up display

69 - low friction detection

70 - daytime running light

71 - collision warning

72 - preventive occupant protection system

73 - alcohol lock system

74 - turn off assistant

75 - backup warning aid

76 - night vision

77 - eCall

78 - drowsy driver detection system

79 - tyre pressure monitoring and warning

80 - traffic sign recognition

101 - Engine Braking Control

102 - intelligent speed assist

103 - dooring prevention

104 - wrong-way driving prevention

105 - emergency assist (in case of medical problem)

106 - surround view (top view, 360° view, bird view)

107 - traffic jam assist / pilot

108 - advanced distraction recognition system

## *4.5 Status of the system (SYSUSE)*

**Table:** SAFETYSYSTEM

**Label:** Status of the system

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Here, the status of the safety system is coded for the moment of accident initiation. "1 – (switched) on" is coded if a system is always on (cannot be switched off by the driver) or was switched on by the driver. The code “2 – (switched) off” is used if the system was not in operation and/or switched off by the driver. Hints on misuse (e.g. using a second belt buckle to simulate a correctly used belt, adding objects to the steering wheel to trick the hands-off warning for LKA or similar systems) or cases where the system was unavailable (not correctly repaired, manipulated, etc.) should be stated in the accident description.

**Defined labels:**

1 - (switched) on

2 - (switched) off

99999 - unknown

## *4.6 System activation by the vehicle (DEPLACT)*

**Table:** SAFETYSYSTEM

**Label:** System activation by the vehicle

**Valid date period:** 2013-12-01

**Mandatory variable:** Yes

**Range:** 1 - 99999

**Description:**

Here, the activation of a safety system by the vehicle is coded. This parameter is coded only for systems that might influence the course of the accident. These may be:- intervening systems that influence the dynamics of the vehicle
- warning systems that should initiate a driver action
- systems that support the driver with actions

If a system was not switched on (SYSUSE = 2), not applicable (77777) is coded here. This is valid for e.g. cruise control (SYSTYPE = 53), bending light (SYSTYPE = 62), head up display (SYSTYPE = 68), and daytime running light (SYSTYPE = 70).

**Defined labels:**

1 - yes, activation by the vehicle

2 - no activation by the vehicle

77777 - not applicable

99999 - unknown

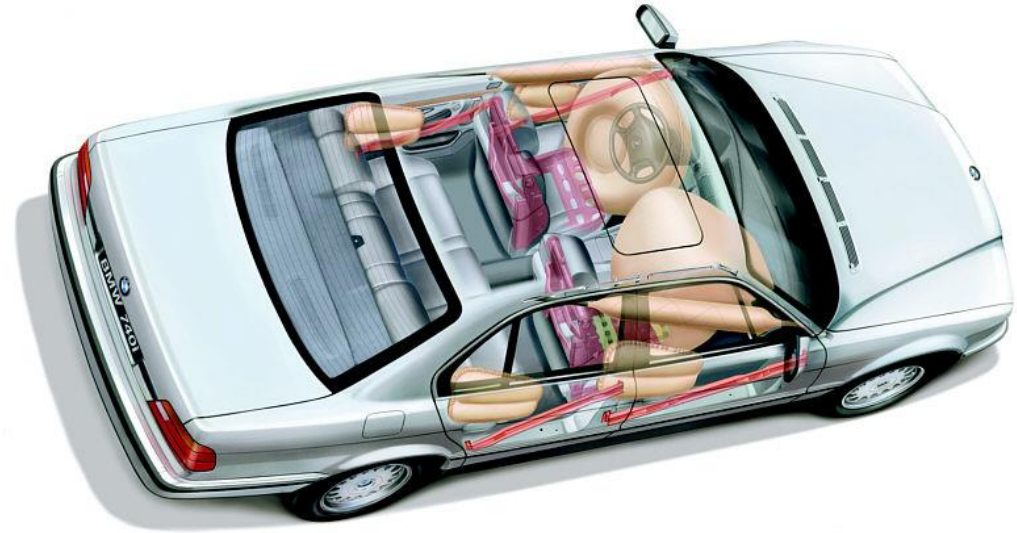
# Appendix A Airbag Coding Examples

## Example 1

- Airbag (driver + front passenger)
- Tubular/curtain airbag (front + rear)
- Sidebag thorax (driver + front passenger)


## Example 2

- Airbag (driver + front passenger)
- Tubular/curtain airbag (front)
- Sidebag thorax (driver + front passenger + second row left + right passenger)



## Example 3

- Airbag (driver + front passenger)
- Kneebag driver
- Sidebag head (driver + front passenger)
- Sidebag thorax (driver + front passenger)
- Sidebag pelvis (driver + front passenger)
- Sidebag (second row left + right passenger)

## Example 4

- Seat ramp airbag (anti-submarining airbag)

## Example 5

- Rear airbag

## Example 6

- Front center airbag

# Appendix B Description of Active Safety Systems

## 50 - Antilock Brake System (ABS)

### Objective

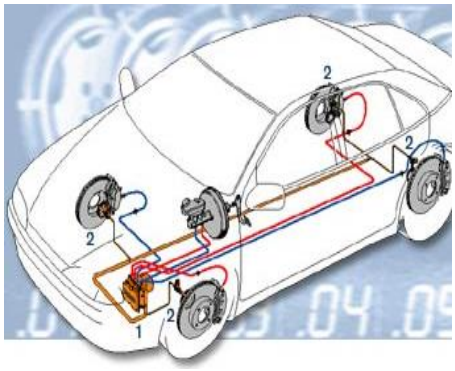
Prevents skidding by avoiding the brakes locking the wheels

Maintains some steering control by avoiding skidding

For most drivers, decrease stopping distances in dry and wet road surfaces

### Legal

Anti-lock on cars has been mandatory in the EU since 1 July 2004




### Functions

- System that avoids locking the wheels when braking
- Core technology of Brake Assist (BA), Electronic Stability Control (ESC) and Electronic Brakeforce Distribution (EBD)
- Also used to detect decreased rolling radius - indirect tyre pressure monitoring
- Can warn drivers of slippery (especially icy conditions) if ABS activation is felt by the driver at low speeds and low brake pedal force

### Technical Specs

Engine Control Unit (ECU) constantly monitors the rotational speed of each wheel; if it detects a wheel rotating significantly slower than the others, a condition indicative of impending wheel lock, it actuates the valves to reduce hydraulic pressure to the brake at the affected wheel, thus reducing the braking force on that wheel; the wheel then turns faster. Conversely, if the ECU detects a wheel turning significantly faster than the others, brake hydraulic pressure to the wheel is increased so the braking force is reapplied, slowing down the wheel. This process is repeated continuously and can be detected by the driver via brake pedal pulsation. Some anti-lock system can apply or release braking pressure 16 times per second.

When the ABS system is in operation the driver will feel a pulsing in the brake pedal; this comes from the rapid opening and closing of the valves. This pulsing also tells the driver that the ABS has been triggered.

Modern ESC systems are an evolution of the ABS concept with the addition of a steering wheel angle sensor and a gyroscopic sensor.

On loose surfaces such as gravel, sand and snow, ABS activation can extend braking distances as the rotating tyre does not dig in to the surface.

# 51 – Traction Control System

### Objective

Enhances driver control as throttle input applied is mis-matched to road surface conditions (due to varying factors) being unable to manage applied torque.

### Functions

- Reduces or suppress spark sequence to one or more cylinders
- Reduce fuel supply to one or more cylinders
- Brake force applied at one or more wheels
- Close the throttle, if the vehicle is fitted with drive by wire throttle
- In turbo-charged vehicles, a boost control solenoid can be actuated to reduce boost and therefore engine power.

### Technical Specs

Typically (but not necessarily) a secondary function of the anti-lock braking system (ABS) on production motor vehicles, designed to prevent loss of traction of driven road wheels. When the traction control computer (often incorporated into another control unit, like the anti-lock braking system module) detects one or more driven wheels spinning significantly faster than another, it invokes the ABS electronic control unit to apply brake friction to wheels spinning with lessened traction. Braking action on slipping wheel(s) will cause power transfer to wheel axle(s) with traction due to the mechanical action within a differential. All-wheel drive AWD vehicles often have an electronically controlled coupling system in the transfer case or trans-axle engaged (active part-time AWD), or locked-up tighter (in a true full-time set up driving all wheels with some power all the time) to supply non-slipping wheels with (more) torque.

# 52 - electronic stability control (ESC)

### Objective

ESC stabilises the vehicle and prevent skidding under all driving conditions and driving situation within the physical limits by active brake intervention on one or more wheels and by intelligent engine torque management.


### Legal

ESC will be mandatory in Europe in all new types of vehicles from 1 November 2011, and for all new vehicles from 1 November 2014

### Functions

- ESC helps the driver stabilise the vehicle - although the extent to which it can do so is of course limited by the physical laws governing the dynamic behaviour of the vehicle.
- Maintains stability and enhances performance during non-braking manoeuvres.
- Additional yaw (rotational) sensing over RSC system for fleets/vehicle types that need additional stability control.
- Integration is available across a variety of vehicle configurations with different engines, transmissions, suspensions, and wheelbases.

- Automatically intervening to reduce the risk of the vehicle rotating while in a curve or taking an evasive action.
- Prevents a Yesck-knife and drift out condition through select braking of the tractor and trailer brakes

### Technical Specs

ESP is always on and enabled. A microcomputer monitors the signals from the ESP sensors and checks 25 times a second, whether the driver's steering input corresponds to the actual direction in which the vehicle is moving. If the vehicle moves in a different direction ESP detects the critical situation and reacts immediately – independently of the driver. It uses the vehicle's

braking system to stabilize the vehicle. With these selective braking interventions ESP generates the desired counteracting force, so that the car reacts as the driver intends. ESP not only initiates braking intervention, but can also reduce engine torque to slow the vehicle. So, within the limits of physics, the car is kept safely on the desired path.

## 53 - cruise control

### Objective

System that automatically controls the speed of a motor vehicle. The system takes over the throttle of the car to maintain a steady speed as set by the driver.


### Functions

- Improve driver comfort in steady traffic conditions.

### Technical Specs

In modern designs, the cruise control may need to be turned on before use — in some designs it is always "on" but not always enabled (not very common), others have a separate "on/off" switch, while still others just have an "on" switch that must be pressed after the vehicle has been started. Most designs have buttons for "set", "resume", "accelerate", and "coast" functions. Some also have a "cancel" button. Alternatively, depressing the brake or clutch pedal will disable the system so the driver can change the speed without resistance from the system. The system is operated with controls easily within the driver's reach, usually with two or more buttons on the steering wheel spokes or on the edge of the hub like those on Honda vehicles, on the turn signal stalk like in many older General Motors vehicles or on a dedicated stalk like those found in some Toyota, Mercedes-Benz and Lexus vehicles. Earlier designs used a dial to set speed choice.

The driver must bring the vehicle up to speed manually and use a button to set the cruise control to the current speed. The cruise control takes its speed signal from a rotating driveshaft, speedometer cable, wheel speed sensor from the engine's RPM, or from internal speed pulses produced electronically by the vehicle. Most systems do not allow the use of the cruise control below a certain speed (normally around 40 km/h (25 mph)). The vehicle will maintain the desired speed by pulling the throttle cable with a solenoid, a vacuum driven servomechanism, or by using the electronic systems built into the vehicle (fully electronic) if it uses a 'drive-by-wire' system.

All cruise control systems must be capable of being turned off both explicitly and automatically when the driver depresses the brake, and often also the clutch. Cruise control often includes a memory feature to resume the set speed after braking, and a coast feature to reduce the set

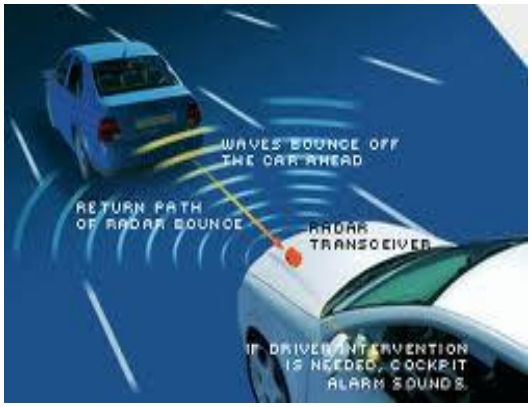
speed without braking. When the cruise control is engaged, the throttle can still be used to accelerate the car, but once the pedal is released the car will then slow down until it reaches the previously set speed.

# 54 - adaptive cruise control (ACC)

### Objective

If a leading vehicle is travelling at a lower speed than the user's vehicle, or is located within the preset time or distance headway, the ACC system intervenes via braking pressure or throttle/engine torque control so that the headway increases. The system only intervenes if the current preselected speed or headway would lead to a likely collision or the speed would reduce the set headway.

ACC may employ radar, laser or machine vision to continuously monitor the leading vehicle. Auxiliary detectors also monitor the speed, yaw and cornering rate of the vehicle to maintain tracking of the leading vehicle in the same lane when cornering.




### Functions

- Keeps a set distance to vehicle in front
- Detecting a fixed obstacle on the road
- Predicting that another user will stop or slow down
- Predicting that another user will move off or fail to stop
- Improved traffic flow

### Technical Specs

The ACC proximity control system keeps the vehicle at a previously chosen distance from the vehicle travelling in front and, if necessary brakes the vehicle to a complete standstill, depending on the traffic situation. If the distance to the preceding vehicle narrows down too rapidly, the system warns the driver and calculates the required brake pressure, which is then provided instantaneously by the Brake Assist PLUS system as soon as the brake pedal is depressed. Should the driver disregard the warning, the PRE-SAFE® Brake system performs an emergency partial braking manoeuvre, significantly reducing the severity of the impact.

# 55 - brake assist (BA)

**Objective**

A brake assist system monitors the driver's use of the brake pedal, automatically sensing an attempt to stop the car as a result of panic. It then generates very high braking power, even when the driver is only pressing lightly on the brake pedal. When this is used together with anti-lock braking systems, it results in faster and safer braking.

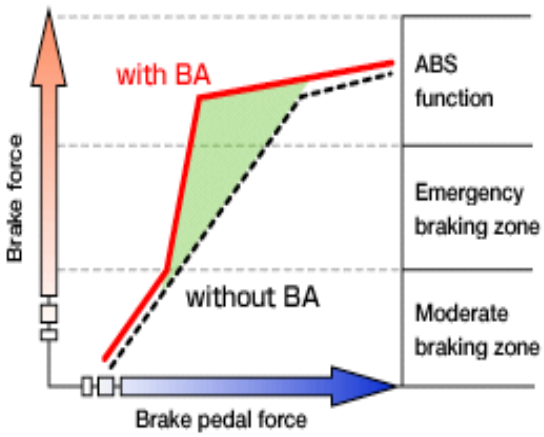
Mercedes originally invented the brake assist system in the 1990's.

"Their tests showed that although many drivers, especially women, reacted quickly in emergency situations, they did not apply enough pressure to the brake pedal to be completely effective.

Their results also showed that drivers tend to apply the brake with less force in the initial stages of a potentially dangerous situation, and then increase the pressure as they moved further into that situation. The time spent in making the decision to apply the brakes with full force, even if it was only a delay of a split-second, meant that the car was not able to stop as soon as it would have if full pressure had been applied to the brake pedal immediately.

Other studies also made engineers believe that the pulsing experienced when antilock brakes were engaged was mistakenly interpreted as a problem by inexperienced drivers, who then reduced the pressure on the brake pedal too early and inadvertently increased their risk of an accident.

Mercedes theorized that if the car could sense when a driver was applying the brakes in a panic stop situation and automatically go to full force, regardless of how hard the driver pushed the pedal, stopping distances could be greatly reduced and many accidents avoided as a result.



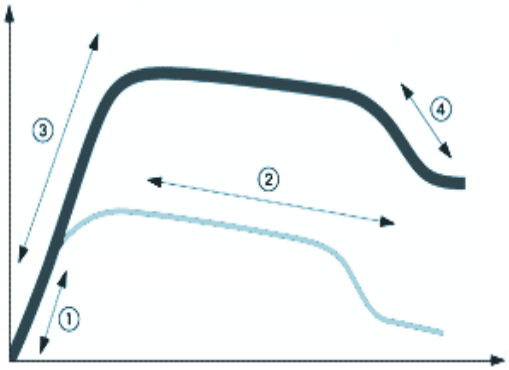

**Legal**

Brake assist systems have become mandatory for all newly launched car and light commercial vehicle types in the EU. The regulation will apply to all new vehicles from February 24, 2011 as part of a new EU regulation that aims to improve pedestrian safety.

### Functions

- Automatically gives full braking when it senses that is the intention of the driver

### Technical Specs




1: The driver does not press the brake forcefully enough in case of an emergency. Therefore, not enough braking force is generated.

2: Usually, the driver decreased his/her pressure on the brake pedal after "slamming" it initially, causing a further reduction of braking force.

3: When the driver presses the brake pedal more rapidly then normal, brake assist automatically recognizes the situation as emergency braking and increases the braking force.

4: After the emergency brake situation, when the driver releases the brake pedal, the brake assist system reduces the amount of force simultaneously.

# 56 - autonomous emergency brake (AEB)

**Objective**

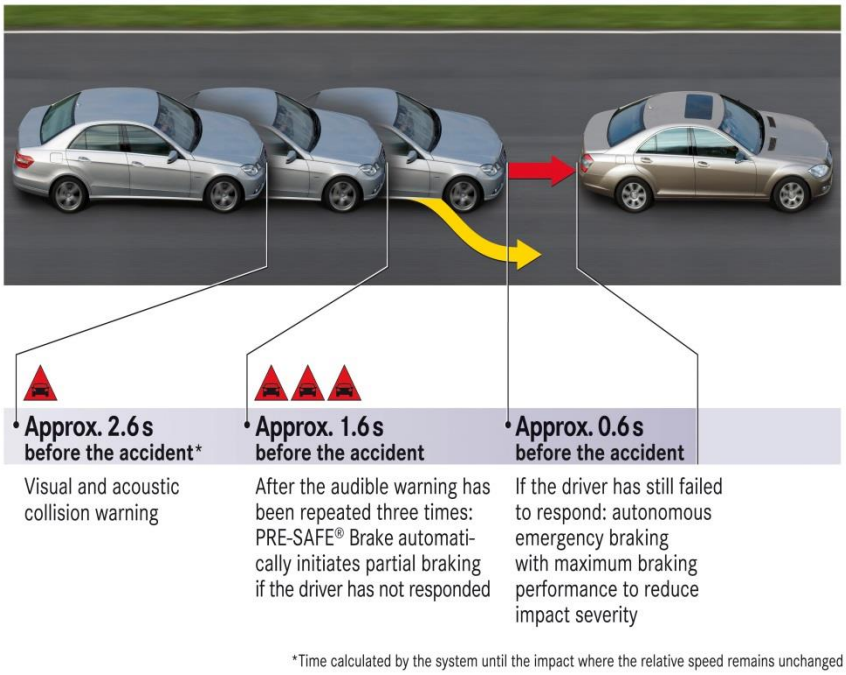
Collision warning incorporating braking. No automated steering control - only braking. With the aid of radar, LIDAR and/or camera systems, this technology actively assesses the driving environment for potential hazards. In particular current systems address rear end collisions but an oncoming vehicle will also activate the system. Specific pedestrian and cyclist aspects are covered in the VRU tab (19) The systems typically first warns of a potential collision and then provides a level of braking support:

1) enhancement of driver's braking

2) partial braking (automatic)

3) full braking (automatic)

The collision is therefore avoided or the crash severity is reduced with the possibility of reduced injury severity In the warning stages some systems pre-charge the brakes for activation. The system is useful in bad driving conditions, such as heavy rain or snow as well as at night when visibility is limited. An alarm will sound to warn the driver progressively louder signals as the vehicle closes in on the hazard.




**Functions**

- Detecting an obstacle moving slowly
- Detecting a user on an intersecting course
- Detecting an oncoming user (in movement)
- Detecting a fixed obstacle
- Predicting that another user will stop or slow down
- Estimating a collision course with another user
- Evaluating a catching up on a slower road user
- Detecting a course deviation
- Detecting a road-related difficulty
- Pre-charging of brakes
- Activation of reversible occupant protection systems

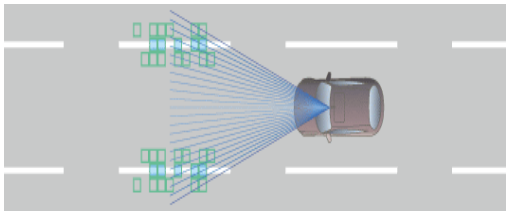
**Technical Specs**

AEB is based on radar/laser/camera which monitors the traffic situation ahead and provides automatic partial braking (40% or up to 0.4g deceleration) if the driver does not react collision warnings from the cockpit and the system detects a severe danger of an accident. The autonomous braking provides maximum braking force approximately 0.6 seconds before impact.

# 57 - lane departure warning (LDW)

### Objective

LDW is comparable to a virtual road rumble. Drivers who unintentionally cross a road lane marking or the edge of the road receive a visual, audible or haptic warning that allows them to correct the situation. Haptic feedback options include a vibrating steering wheel or seat base. If the indicator is activated the system knows that the manoeuvre is intentional and allows it.



### Functions

- Helps support the driver in keeping the vehicle in its lane of travel
- Avoidance of dangerous situations caused by inattention
- Effective warning through multileveled HMI-concept
- Avoidance of tire damage and the resulting breakdown costs
- Optional upgrading with intelligent Headlamp Control (IHC)
- Optional upgrading to Traffic Sign Recognition

### Technical Specs

The LDW module uses this information on the basis of a time to lane crossing calculation to provide a warning to the driver in case of unintentional lane departure. The warning mechanism can be tuned for sensitivity – for example, the system can be set to warn only when the vehicle is actually crossing the lane marking, or give an early warning, before lane markings are crossed. The warning can be adapted to the type of road – for example, it could provide the driver with more slack in case of narrow roads or allow the driver to “cut” curves. In Lane Keeping Support (LKaS) the LDA is fused to the steering system, which is usually electrically-powered, to provide a light haptic feedback (torque input) to the steering wheel and to warn the driver of the situation.

# 58 - lane keeping assistant (LKA)

**Objective**

Lane keeping assistance (LKA) systems actively support the driver in maintaining lane position. These systems monitor the vehicles lane position with image processing technology in the same manner as lane departure warning systems. LKA provides additional torque to the steering wheel, which increases the resistance in the steering wheel. This makes it more difficult for the vehicle to drift, therefore reducing the occurrence of minor variations in lane position. This minimises the need for the driver to make small corrections in lane position, which as Bishop (2005) notes, can be a source of fatigue in long journeys on highways. LKA systems are typically only active at high speeds and on relatively straight roads. If sharp corners are detected (i.e. through frequent steering input from the driver) the system will disengage. Additionally, the system requires continuous driver steering input to ensure the driver is remaining vigilant and attentive.


**Functions**

- Detecting a course deviation
- Vehicle control (handling)
- Diagnosing driver state (alcohol, fatigue, health, attention, etc.)
- Detecting a user outside the frontal field of vision (behind, on the sides, or in blind spot)

**Technical Specs**

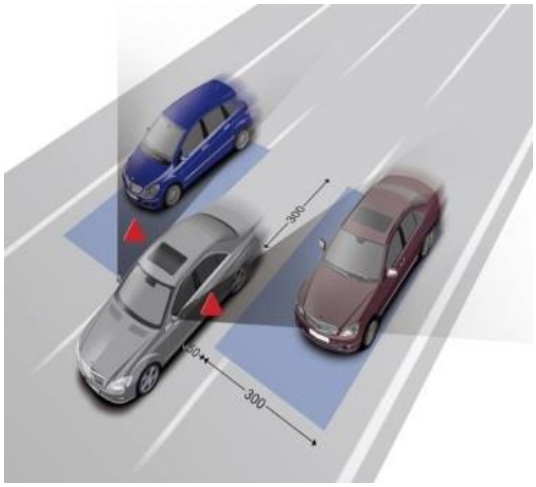
Lane Assist can be switched on and off by the driver. At the beginning of a new journey, the system restarts with the last on/off status: if the system has been switched off, it remains off at the beginning of the next journey. The system does not switch on by default at the start of a journey. Lane Assist relies on its camera to be able to distinguish road markings. In some cases, this might not be possible owing to poor contrast: driving towards a low sun, for example, or where there is little distinction between a lane marking and the side of the road. Similarly, Lane Assist may be unable to detect unusual lane markings such as in road works.

The maximum corrective steering torque is also limited to ensure that the driver can remain in control of the vehicle. If a higher torque is needed to bring the car back into lane, Lane Assist will be unable to correct the lane departure but, in such circumstances, it will warn the driver.

# 59 - blind spot monitoring (BSM)

**Objective**

The camera based monitoring system keeps watch for other vehicles travelling in the blind spot. When another vehicle enters the monitored zone a warning light is illuminated near the exterior side mirror. Both sides of the vehicle are monitored in the same way. This visual warning gives the driver a clear indication that another vehicle is alongside. The system also alerts the driver both to vehicles approaching from behind and vehicles in front being undertaken. Can also be radar based.




**Functions**

- Detecting a user outside the forward field of vision (behind, on the side or in blind spots)
- Assessing gaps when merging into or cutting across traffic
- Predicting that another user will stop or slow down
- Predicting the manoeuvre suited to the layout functioning
- Detecting a user outside the frontal field of vision

**Technical Specs**

System can be camera or radar based. If the system is radar based it should not have the same problems in poor visibility as camera systems can. Also radar based systems are able to detect fast approaching vehicles.

# 60 - seat belt reminder

### Objective

System alerting the driver by means of sound and visual indications when a seatbelt should be worn. The reminder signal should be loud and clear but not annoying. The target is to remind people, who accept the benefits of the seat belts, that they have not fastened their belt.

### Functions

- Sense belt usage
- Emit appropriate warning signals

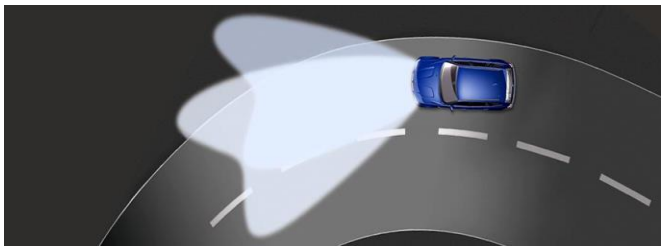
### Technical Specs

Activated by a pressure sensor under the passenger seat, some cars will intermittently flash the reminder light and sound the chime until the driver (and sometimes the front passenger, if present) fasten their seatbelts. The belt warning light may stay on for several minutes after the car is started if the driver's seat belt is not fastened.

# 62 - bending light

### Objective

Bending Light refers to cornering lights or headlights that turn relative to the vehicle to boost visibility through bends (in reaction to steering angle and sometimes yaw).



### Functions

- Improved vision in darkness and poor visibility (weather conditions) when manoeuvring through bends
- Cornering light illuminates to wider than traditional angle when turning corners (especially at junctions)
- Can be extra light or extension of AAFLS system (lamps swivel)

### Technical Specs

Mostly part of the bi-xenon headlamp system. It makes night-time driving on winding routes even safer by increasing road illumination by as much as 90% compared with conventional headlamps. Now you will be able to see pedestrians, cyclists and animals at a much earlier stage in dark conditions.

The illuminated area when driving into a bend with 190 m radius (in relation to the centre lane marking) was previously 30 metres. The active light function, which follows the turning movements of the wheels, increases the illuminated area to 55 metres. The bi-xenon headlamp system, which includes dynamic headlamp range adjustment and a headlamp cleaning system, is controlled by a microcomputer that processes data from steering angle and speed sensors.

# 63 - adaptive light distribution

**Objective**

To adjust the light pattern for different road speeds and visibility (for example narrower beam on motorways)

**Functions**

- Take over the switching of high beam lights away from the driver to improve vision and to avoid dazzling oncoming drivers

**Technical Specs**

Sample implementation:

Motorway Mode: From a road speed of 90 km/h the new motorway mode is automatically switched on in two stages: in stage one the output of the xenon lamps is increased from 35 to 38 watts, and in stage two the range of the nearside headlamp is increased when a speed of 110 km/h is reached. The result is a uniform cone of light which illuminates the entire road width to a range of up to 120 metres. At the centre of this cone the driver is able to see around 50 metres further than with conventional low beams, which allows him to recognise vehicles, even at very long distances, and adapt his driving style accordingly.

Enhanced fog light mode: If visibility becomes less than 50 metres, the vehicle speed falls below 70 km/h and the driver switches on the rear fog lamp, the left bi-xenon headlamp swivels outwards by eight degrees and, at the same time, lowers the cone of light. This illuminates the nearside of the road more efficiently, while the wider beam reduces backglare in fog. The enhanced fog lamps remain switched on up to a speed of 100 km/h.

Oncoming traffic or vehicles ahead are automatically recognized, and the headlamp range is constantly adjusted so that the headlamp cone falls in front of other road users. As a result, dipped beam range can be extended to as much as 300 meters, without any blinding effects to other vehicles. In the cases of open and empty roads, high beams are automatically switched on.

# 64 - automatic headlights

### Objective

To avoid a vehicle being unlit in darkness or in a covered area - improved visibility to other road users (front and rear of vehicle). To avoid poor visibility for a driver who has forgotten to turn the headlights on.

### Functions

- Headlights and rear lights (driving lights) are activated if driver forgets to activate them in darkness
- Headlights and rear lights (driving lights) are switched on if the vehicle enters a tunnel or other covered area (multi story car park or road lined with dense trees)

### Technical Specs

Most often a light sensor is mounted on the windscreen, often as part of the rear view mirror assembly. Often standard equipment on mid range and upwards versions of mid-range cars (for example Ford Focus). It is not possible to find any information regarding threshold levels. Some vehicles (e.g. Nissan Murano) offer different sensitivity levels as a switch.

# 65 - active pedestrian protection

### Objective

To deploy a restraint device at the front of the vehicle to address pedestrian head impact to the vehicle. Concepts have been formed around deploying airbags and bonnets that pop up Sensors in the front bumper detect contact with a pedestrian.


### Functions

- Provide restraint to a pedestrian's head

### Technical Specs

Sensor can distinguish between pedestrians and other objects by mass and rigidity.

# 66 - intelligent brake lights

### Objective

A full brake application is signaled differently than a normal brake application, so that the driver in the following vehicle is made aware of the emergency braking situation.

### Functions

- Emit a different signal (e.g. flashing brake lights, activation of warning lights) on emergency brake applied by the driver

# 67 - speed limiter

### Objective

Governor used to limit the top speed of a vehicle.

### Functions

- Provide a means to set the maximum speed
- Limit can be overridden with throttle kickdown

### Technical Specs

For some classes of vehicle and in some jurisdictions they are a statutory requirement, for some other vehicles the manufacturer provides a non-statutory system which may be fixed or programmable by the driver.

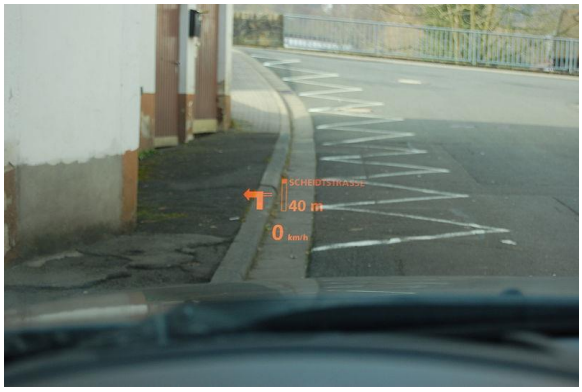
Many car and van models have driver-controlled speed limiters fitted or available as an optional accessory which can be set by the driver to any desired speed; the limiter can be overridden if required by pressing hard on the accelerator. The limiter may be considered as setting the maximum speed (with throttle kickdown to override it) easing the throttle to reduce speed, whereas cruise control sets the minimum speed (with the brake pedal to override it) pressing on the throttle to increase speed. The limiter may shift down through automatic gears to hold the maximum speed.

There are also fixed speed limiters to not allow certain high-powered cars to exceed high speeds, for example 250 km/h.

# 68 - head up display (HUD)

**Objective**

Transparent display that presents data without requiring users to look away from their usual viewpoints




**Functions**

- Display information to the driver
- Improve the driver's attentiveness on road traffic

**Technical Specs**

A typical HUD contains three primary components: a projector unit, a combiner, and a video generation computer. HUDs are split into four generations reflecting the technology used to generate the images.

First Generation: Use a CRT to generate an image on a phosphor screen, having the disadvantage of the phosphor screen coating degrading over time. The majority of HUDs in operation today are of this type.

Second Generation: Use a solid state light source, for example LED, which is modulated by an LCD screen to display an image. These systems do not fade or require the high voltages of first generation systems. These systems are on commercial aircraft.

Third Generation: Use optical waveguides to produce images directly in the combiner rather than use a projection system.

Fourth Generation: Use a scanning laser to display images and even video imagery on a clear transparent medium.

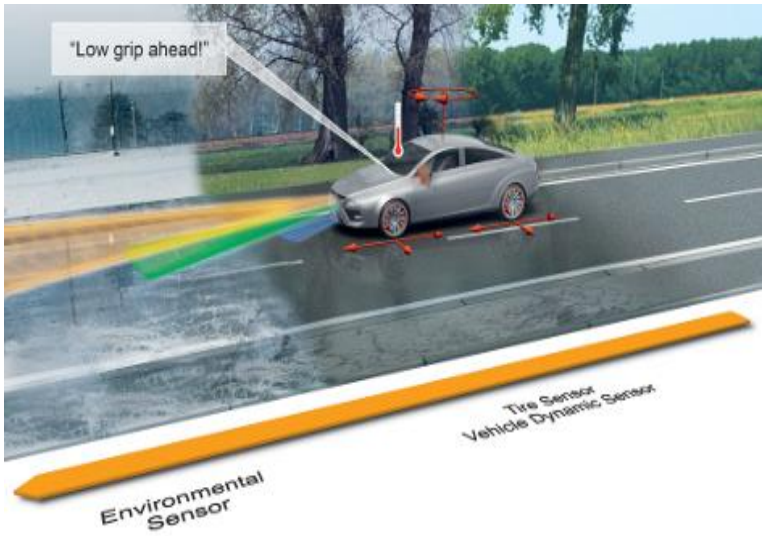
Newer micro-display imaging technologies are being introduced, including liquid crystal display (LCD), liquid crystal on silicon (LCoS), digital micro-mirrors (DMD), and organic light-emitting diode (OLED).

## 69 - low friction detection

### Objective

To warn the driver of low friction levels on the road surface ahead. To prepare ADAS systems for a low friction surface. Note: Advanced dynamic driver assist functions such as ESC and traction control will detect low levels of friction (grip) 'underneath' the vehicle and act accordingly.

The definition here is that the warning of the situation ahead is given. It is very common for cars to have external temperature sensor with a display in the vehicle that will flash for low temperatures (typically at and below 2 or 3 degrees centigrade).




### Functions

- Alert to the driver of a road surface condition ahead that will lead to low friction (grip)
- Automatic preparation of ADAS systems for low friction surface

### Technical Specs

Compared to using dynamic sensors at the wheels this system uses environmental sensors to capture and calculate data ahead of the vehicle. Environmental and tire sensors. Environmental sensors provide data to the second sub-module which computes the environmental features:

An optical sensor measures changes in the amount of light that is reflected by the road surface directly in front of the front wheel (0.4 to 1.5 meters ahead).

A polarization camera detects differences in vertical and horizontal polarization caused by road surface conditions between 5 and 20 meters in front of the vehicle.

Finally, a laser scanner checks the weather conditions by detecting objects such as snow flakes or rain drops within a range of 50 to 100 meters ahead of the vehicle.

The road surface temperature is measured by a thermometer. An air thermometer measures the ambient temperature. In addition the intelligent tire sensors, which are integrated into the tires, deliver information about the current tire distortion of the rolling tire. The system warns against early stages of aquaplaning.

# 70 - daytime running light

## Objective

Lighting device on the front of a roadgoing motor vehicle, installed in pairs, automatically switched on when the vehicle is moving forward, emitting white, yellow, or amber light to increase the conspicuity of the vehicle during daylight conditions.

## Functions

- Turn on light when vehicles is driving
- Improve visibility during daytime

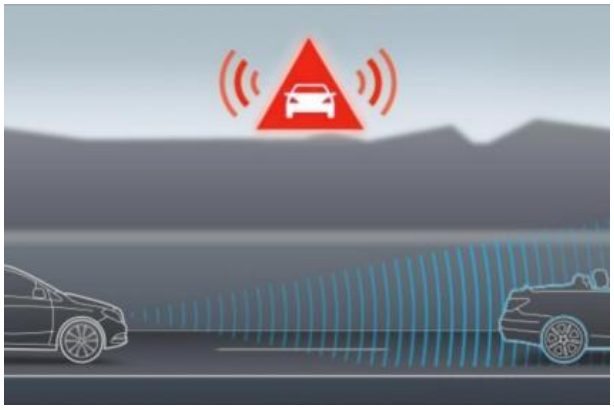
## Technical Specs

Depending on prevailing regulations and vehicle equipment, the daytime running light function may be implemented by functionally specific lamps, by operating the low-beam headlamps or fog lamps at full or reduced intensity, by operating the high-beam headlamps at reduced intensity, or by steady-burning operation of the front turn signals. Compared to any mode of headlamp operation to create the daytime running light, functionally dedicated daytime running lights maximize the potential benefits in safety performance and minimize fuel consumption, glare, motorcycle masking, and other potential drawbacks.

# 71 - collision warning

### Objective

System designed to reduce the severity of a longitudinal accident by issuing a warning to the driver.



### Functions

- Monitor the traffic situation ahead
- Detect imminent head on crash
- Warn the driver in a timely manner

### Technical Specs

Uses radar and sometimes laser and camera sensors to detect an imminent crash. Depending on the technology, different types of objects can be detected under different conditions (fixed and moving objects, vehicles, pedestrians). Collision warning is similar to AEB without automatic braking.

# 72 - preventive occupant protection system

**Objective**

Prepare secondary safety systems for impact.

**Functions**

- Takes the slack out of the seat belts using reversible tensioners
- Optimize the occupants' seating position if electrically adjustable seats are fitted
- If there is much rotation or side slip and a side impact or roll-over is considered likely, it closes the electric windows and sunroof

**Technical Specs**

At speeds above 30km/h, preventive occupant protection system monitors the dynamic state of the vehicle (speed, rotation etc.) and the driver's inputs to steering, accelerator and brake, to determine whether or not emergency action is being taken. If so, the system deems that a collision is imminent: among other measures, it takes the slack out of the seat belts using reversible tensioners; optimizes the occupants' seating position if electrically adjustable seats are fitted; and, if there is much rotation or side slip and a side impact or roll-over is considered likely, it closes the electric windows and sunroof. Preventive occupant protection system is always on; it cannot be switched off by the driver and provides protection at all speeds above 30km/h. All of the actions taken by preventive occupant protection system are reversible: if the collision is avoided, tension is removed from the seat belts and the occupants can readjust their seats.

# 73 - alcohol lock system

### Objective

Alcohol detectors typically analyze the level of alcohol intoxication of the user, and determine whether the individual is fit to operate the vehicle. Alcohol interlocks are integrated into the ignition of the vehicle, so that the vehicle is immobilized unless the user passes an alcohol detection test.

### Functions

- Diagnose driver condition in terms of breath alcohol level

### Technical Specs

More detailed description of one implementation: Alcohol Lock utilizes methanol-based fuel cells, which is similar to the law enforcement alcohol test units. Users of Alcohol Lock will blow into a wireless handheld unit, which will analyze and transmit data back to Alcohol Lock inside the vehicle. Results will determine the level of alcohol from the driver as:

- Green: 0.0 - 0.1 g/l alcohol, the car's engine starts
- Yellow: 0.1 - 0.2 g/l alcohol, the car will start, but the driver should not drive
- Red: more than 0.2 g/l alcohol, the car's engine will not start.

Different levels of preset limit of the device can be tweaked according to differing country's legislation. Alcohol Lock will preserve the test results within 30 minutes after the engine has been turned off to prevent shortstop repeat process. Calibration and battery replacement includes removal of the units if owners do not wish to have it anymore. The Alcohol Lock handheld test unit is powered by wireless connection; as such, a driver does not need to run the test inside the vehicle in a perimeter of 10 meters from the car.

Alcohol Lock can be by-passed if required in two ways:

1. Bypass is possible in unlimited number of times

2. Bypass is only possible once.

## 74 - turn off assistant

### Objective

Prevent collision of a truck or bus when turning right with a pedestrian or bicycle.

### Functions

- Warn driver when pedestrian or bicycle approaches truck or bus while turning or starting to move

### Technical Specs

Sensors at front and side of truck/bus detect approaching pedestrian or bicycle.

# 75 - backup warning aid

### Objective

Improve visibility of area at the back of the car while it is reversing.


### Functions

- Supply back view of the car while reversing.

### Technical Specs

A rear mounted camera provides a view from the back of the car which is displayed on a monitor mounted in the cockpit.

# 76 - night vision

### Objective

To allow drivers to see animals, pedestrians and cyclists further in darkness (sometimes poor weather conditions) than is possible with conventional headlights. To allow drivers to see in darkness, dark coloured animals and pedestrians and cyclists in dark clothing. With normal dipped lights, the driver's visibility is reduced to around 40 meters at night.

### Functions

- Visual identification of animals, pedestrians or cyclists earlier than possible with conventional headlights - more time to react if required
- Visual identification of animals, pedestrians or cyclists if in dark clothing - possibly not possible to see with conventional headlights.
- Prevents dazzle to oncoming traffic that can be caused by using full head lights at night.
- Pedestrian detection is available on some systems - image is analysed and moving objects (such as pedestrians) highlighted

### Technical Specs

Active system or near-IR system that illuminates the night with projected infrared light. Can see warmer living things just as clear as it can spot colder, dead animals or non-living objects.

Passive system uses far-IR or FIR technology registering images based on body heat and produces images that resemble a photo negative.

# 77 - eCall

### Objective

In case of a crash, an eCall-equipped car automatically calls the nearest emergency centre. Even if no passenger is able to speak, e.g. due to injuries, a 'Minimum Set of Data' is sent, which includes the exact location of the crash site. Shortly after the accident, emergency services therefore know that there has been an accident, and where exactly.

### Functions

- Modification of accident consequences (outcome of injury)
- Modification of route choice - likely to be small influence

### Technical Specs

eCall cuts emergency services' response time. It goes down to 50% in the countryside and 60% in built-up areas. You can also make an eCall by pushing a button inside the car. Witnessing an accident, you can thus report it and automatically give the precise location. As eCall normally 'sleeps', it does not allow vehicle localisation outside emergencies.

## 78 - drowsy driver detection system

### Objective

Detect drowsiness of the driver and issue a warning accordingly.

### Functions

- Diagnosing driver condition (fatigue)
- Detecting deviation from the path

### Technical Specs

There are several ways of detecting drowsiness:

One way is a video system that detects the eyes of the driver and measures directly the eye closure.

Another way is a neural network model used to estimate drowsiness using measures associated with lane keeping, steering wheel movements and lateral accelaration of the vehicle.

# 79 - tyre pressure monitoring and warning

## Objective

The system for tyre pressure monitoring detects small pressure fluctuations locates the affected tires and informs the driver with warnings of varying urgency. A co-rotating wheel module with an integrated valve measures type pressure and temperature and transmits these data as an HF radio signal. Other systems use the ABS sensors to detect a wheel with a reduced rolling radius.


## Functions

- Diagnosing vehicle state (mechanical)

## Technical Specs

Generally speaking, direct tire-pressure monitoring systems may offer the following features:

Measure (and may display) tire air pressure, with an accuracy able to detect under-inflation conditions of less than 25% of the recommended cold inflation pressure. Measure and display tire air temperature (optional). Locate tire involved in pressure defect (optional). React to fast and slow leaks (less than 5 s) for early warning. Do not require initialization or zero button, i.e., self-learning (optional). Can monitor spare-tire pressure. Can monitor tire pressure when stationary (direct TPMS only). Indirect detects the change in rolling radius of a wheel as the pressure decreases - compared to other tyres.

# 80 - traffic sign recognition

### Objective

The system incorporates a digital display which informs the driver of all the respectively applicable road signs along the road. In particular speed limits signs are recognised and then displayed to the driver.

### Functions

- Support if the driver is tired or misses the road sign through distraction
- When the conditions of visibility are limited
- Warning of exceeding speed limit
- Speed reduction if coupled with ACC

### Technical Specs

The traffic sign recognition system is based on colour vision. Only traffic signs that are highly important with respect to the driving context are shown to the driver, and different levels of emphasis, tied to the urgency of the warning, are applied to the signal to the driver. The speed limit sign, for example, will be displayed only if the vehicle exceeds the maximum speed allowed, or a traffic sign will be shown if the vehicle is approaching it at a potentially dangerous speed and, in both cases, there will be a different degree of importance (visual, acoustic, visual and acoustic, flashing, etc.) in line with the danger of the situation. This solution consists in a detection and classification of traffic signs based on a three-level algorithm and consisting of: colour segmentation, shape recognition and neural network.

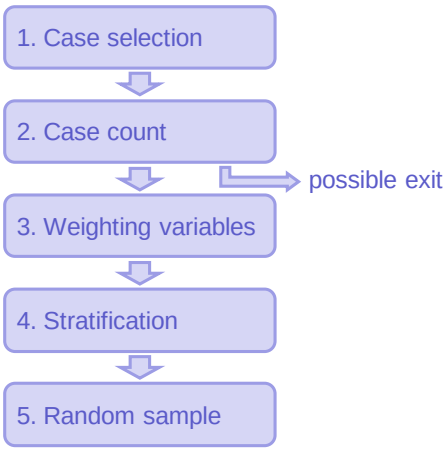
The final objective of the algorithm is to detect and classify just about all the traffic signs along the way. Colour segmentation was included for the purpose of obtaining a reply in real time, since segmentation based on colour is faster than the one based on shape. Two different methods are used to detect the shape; one is based on diagrams that overlap simple shape models while the other is based on the detection of the outline and of the geometric contour. The set of traffic signs taken into consideration was subdivided into different categories, in

accordance with their shape and colour. Finally, a neural network was built and instructed for each group of traffic signs. Special devices are used to reduce dependence on external lighting conditions: this is extremely important in terms of good performances in the early morning and late afternoon hours, when sunlight presents a considerable deviation towards the red spectrum.

# Appendix C Sampling Procedure

The sampling procedure consists of the five steps outlined below. It has to be applied to the original in-depth data sample of each years of data.

Overview of sampling procedure:




1. Case selection
   The accidents selected for IGLAD shall apply to the definition of a road accident by the police in the same country as the Data Provider. Single pedestrian and suicide cases shall be excluded.

   For **2019 data** from the two previous years, **2017 – 2018**, can be included.
   Only accidents with **at least one person coded as injured** by the police shall be considered. If police reports hospital treatment of an occupant (INJSEVER is coded "injured") and diagnosis is "not injured" (MAIS = 0), the case should be included in IGLAD.
   Cases with an **unknown rate of less than 20 %** of the CDS variables shall be considered. **100 % sketches have to be provided and 80% have to be optimal** (TWG on March, 23rd 2015, TWG on April, 17th 2017) which means:
   - CAD-files
   - Final position (if unknown, make a circle around possible area)
   - Collision position
   - Trajectories, if possible (made by the reconstructor, move of CoG)
   - Scaled
2. Case count
   If number of available cases is not significantly greater than target sample size, no sampling is applied (finish here).
3. Weighting variables
   Choose three variables that are also present with a complete crosstab in the national statistics.
   If variables are not available in national data, use 'location of accident', 'accident severity', and 'participant type'.
   If available in national statistics, these variables are also the preferred ones to choose.
4. Stratification

Sort data set according to accident year and the weighting variables chosen in step 3. Each combination of values from these variables defines one stratum.

5. Random sample
   Take an appropriate number of random cases from each stratum to generate the correct total sample size. This can be achieved for example by selecting every n-th case where n is approximately the original sample size divided by the target sample size.

# Appendix D ACCTYPE for left-hand traffic

**The following labels and pictures are only valid for left-hand traffic.**

For labels and pictures for right-hand traffic see: Codebook variable ACCTYPE.

**TYPE 1: Loss of control accident**

101 - LC - right turn

102 - LC - left turn

103 - LC - right turn overtaking

104 - LC - left turn overtaking

109 - LC - direction of turn unknown

111 - LC - deviated right of way to the right

112 - LC - deviated right of way to the left

113 - LC - deviated left of way to the left overtaking

114 - LC - deviated right of way to the left overtaking

119 - LC - deviated right of way, direction of turn unknown

121 - LC - while turning off or into another street to the right

122 - LC - while turning off or into another street to the left

123 - LC - deceleration lane

129 - LC - while turning off or into another street to the right or direction unknown

131 - LC - non-straight street, bending to the right

132 - LC - non-straight street, bending to the left

133 - LC - non-straight street, bending to the right overtaking

134 - LC - non-straight street, bending to the left overtaking

139 - LC - non-straight street, direction of bending unknown

141 - LC - straight road

142 - LC - straight road - overtaking

149 - LC - straight road - unknown

151 - LC - gradient and right turn

152 - LC - gradient and left turn

153 - LC - gradient, straight road

159 - LC - gradient, street course unknown

161 - LC - traffic island and right turn

162 - LC - traffic island and left turn

163 - LC - traffic island, straight road

169 - LC - traffic island, street course unknown

171 - LC - bottleneck and right turn

172 - LC - bottleneck and left turn

173 - LC - bottleneck, straight road

179 - LC - bottleneck, street course unknown

181 - LC - bumpy road and right turn

182 - LC - bumpy road and left turn

183 - LC - bumpy road, straight road

189 - LC - bumpy road, street course unknown

199 - LC - other driving accidents

**TYPE 2: Turning off accident**

201 - TO - following veh. behind right turning veh.

202 - TO - following veh. besides right turning veh.

203 - TO - right turning cyclist from bicycle lane and following veh.

204 - TO - veh. that changes lane for turning right and following veh.

209 - TO - unspecified if 201 - 204

211 - TO - right turning veh. and oncoming traffic in lane, straight

212 - TO - right turning veh. and oncoming, left turning vehicle

213 - TO - right turning veh. and oncoming, left turning vehicle on separate lane

214 - TO - right turning veh. and oncoming, left turning vehicle on separate lane (no right of way)

215 - TO - right turning veh. and oncoming, right turning vehicle

219 - TO - right turning veh., driving direction not specified

221 - TO - right turning veh. and pedestrian in same direction

222 - TO - right turning veh. and pedestrian in opposite direction

223 - TO - right turning veh. and cyclist from bicycle lane in same direction

224 - TO - right turning veh. and cyclist from bicycle lane in opposite direction

225 - TO - right turning veh. and railway gate

229 - TO - right turning veh., unspecified if 221 - 225

231 - TO - following veh. behind left turning veh.

232 - TO - following veh. besides left turning veh.

233 - TO - veh. that changes lane for turning left and following veh.

239 - TO - left turning veh., unspecified if 231 - 233

241 - TO - left turning veh. and pedestrian in same direction

242 - TO - left turning veh. and pedestrian in opposite direction

243 - TO - left turning veh. and cyclist from bicycle lane in same direction

244 - TO - left turning veh. and cyclist from bicycle lane in opposite direction

245 - TO - left turning veh. and railway gate

249 - TO - left turning veh., unspecified if 241 - 245

251 - TO - two veh. turning right

252 - TO - two veh. turning left

259 - TO - two veh. unknown turning direction

261 - TO - veh. turning right and veh.waiting mandat.

262 - TO - veh. turning left and veh.waiting mandat.

269 - TO - veh. turning in unknown direction and veh.waiting mandat.

271 - TO - veh. from left turning priority road and other vehicle

272 - TO - veh. from left turning priority road and pedestrian

273 - TO - veh. turning right from left turning priority road and pedestrian

274 - TO - veh. from right turning priority road and pedestrian

275 - TO - veh. turning left from right turning priority road and pedestrian

279 - TO - unknown if 271-275

281 - TO - veh. turning right with green arrow light and oncoming traffic ahead

282 - TO - veh. turning right with green arrow light and pedestrian

283 - TO - veh. turning right with green arrow light and bicycle on bicycle lane

284 - TO - veh. turning left with green arrow light and pedestrian

285 - TO - veh. turning left with green arrow light and bicycle on bicycle lane

286 - TO - veh. turning left with green arrow light and veh. turning right

289 - TO - unknown if 281-286

299 - TO - other

**Type 3: Turning in / crossing accident**

301 - TIC - despite vehicle with right of way from the right

302 - TIC - veh. with right of way from right and turning right

303 - TIC - veh. with right of way from right and turning left

304 - TIC - veh. with right of way from right and turning left with additional lane

305 - TIC - veh. with right of way from right and ending lane

306 - TIC - veh. with right of way from right and turning right

309 - TIC - veh. with right of way from left and unknown direction

311 - TIC - passing veh. with right of way from the right and driving straight

312 - TIC - passing veh. with right of way from the right and turning right

313 - TIC - passing veh. with right of way from the right and turning left

314 - TIC - passing veh. with right of way from the right and turning left with additional lane

315 - TIC - passing veh. with right of way from the right and turning left with ending lane

319 - TIC - passing veh. with right of way from the right and unknown direction

321 - TIC - veh. with right of way from left and driving straight

322 - TIC - veh. with right of way from left and turning right

323 - TIC - veh. with right of way from left and turning left

324 - TIC - veh. with right of way from left and turning left with additional lane

325 - TIC - veh. with right of way from left and ending lane

326 - TIC - veh. with right of way from left and turning right

329 - TIC - veh. with right of way from left and unknown direction

331 - TIC - passing veh. with right of way from the left and driving straight

332 - TIC - passing veh. with right of way from the left and turning right

333 - TIC - passing veh. with right of way from the left and turning left

334 - TIC - passing veh. with right of way from the left and turning left with additional lane

335 - TIC - passing veh. with right of way from the left and turning left with ending lane

339 - TIC - passing veh. with right of way from the left and unknown direction

341 - TIC - bicycle with right of way from bicycle lane right and straight

342 - TIC - bicycle with right of way from bicycle lane left and straight

343 - TIC - bicycle with right of way from oncoming bicycle lane right and straight

344 - TIC - bicycle with right of way from oncoming bicycle lane left and straight

349 - TIC - bicycle with right of way from bicycle lane street-side, unknown direction

351 - TIC - turning priority road and oncoming traffic straight ahead

352 - TIC - turning priority road and veh. from the left

353 - TIC - turning priority road and veh. from the right

354 - TIC - turning priority road and oncoming traffic turning right

355 - TIC - turning priority road, both veh. with yield to priority road

359 - TIC - unknown if 351-355

361 - TIC - unguarded railway crossing on intersection

362 - TIC - unguarded railway crossing on lane

363 - TIC - guarded railway crossing on intersection

364 - TIC - guarded railway crossing on lane

369 - TIC - railway TIC - not further specified

371 - TIC - crossing bicycle from the left side

372 - TIC - crossing bicycle from the right side

373 - TIC - crossing bicycle parallel

374 - TIC - crossing bicycle on intersection

379 - TIC - unknown if 371-374

399 - TIC - others

**Type 4: Pedestrian crossing road accident**

401 - PC - crossing street from right

402 - PC - from the right onto roadway without obstacle - while overtaking

403 - PC - from the right onto roadway without obstacle - while passing

404 - PC - from the right onto roadway without obstacle - while being passed

405 - PC - from the right onto roadway without obstacle - in between oncoming traffic

409 - PC - unknown if 401-405

411 - PC - from the right onto roadway with obstacle

412 - PC - from the right onto roadway with obstacle - while overtaking

413 - PC - from the right onto roadway with obstacle - while passing

414 - PC - from the right onto roadway with obstacle - behind solid obstacle

419 - PC - unknown if 411-414

421 - PC - from the left onto roadway

422 - PC - from the left onto roadway - while overtaking

423 - PC - from the left onto roadway - while passing

424 - PC - from the left onto roadway - behind solid obstacle

429 - PC - cross the street, unknown if 421-424

431 - PC - from the right, before intersection without obstacle

432 - PC - from the right, before intersection without obstacle - while overtaking

433 - PC - from the right, before intersection without obstacle - while passing

434 - PC - from the right onto roadway without obstacle - while being passed

435 - PC - from the right onto roadway without obstacle - between oncoming traffic

436 - PC - from the right onto roadway with obstacle - on additional lane

439 - PC - unknown if 431-436

441 - PC - from the right, before intersection with obstacle

442 - PC - from the right, before intersection with obstacle - while overtaking

443 - PC - from the right, before intersection with obstacle - while passing

444 - PC - from the right onto roadway with obstacle - behind solid obstacle

449 - PC - unknown if 441-444

451 - PC - from the left before intersection

452 - PC - from the left before intersection - while overtaking

453 - PC - from the left before intersection - while passing

454 - PC - from the left before intersection - behind solid obstacle

455 - PC - from the left before intersection - on additional lane

459 - PC - unknown if 451-455

461 - PC - from the right before intersection

462 - PC - from the right before intersection - while overtaking

463 - PC - from the right behind intersection - while being passed

464 - PC - from the right behind intersection - between oncoming traffic

465 - PC - from the right behind intersection - behind solid obstacle

469 - PC - unknown if 461-465

471 - PC - from the left behind intersection

472 - PC - from the left behind intersection - while overtaking

473 - PC - from the left behind intersection - behind solid obstacle

479 - PC - unknown if 471-473

481 - PC - from the right behind turning priority road to the right

482 - PC - from the left behind turning priority road to the right

483 - PC - from the right behind turning priority road to the left

484 - PC - from the left behind turning priority road to the left

489 - PC - unknown if 481-484

491 - PC - diagonally on intersection from the right

492 - PC - diagonally on intersection from the left

493 - PC - while entering veh. on middle of the road

494 - PC - while exiting veh. on middle of the road

499 - PC - others

**Type 5: Stationary traffic accident**

501 - ST - vehicle parking on the left

502 - ST - vehicle parking on the right

509 - ST - vehicle - side unknown

511 - ST - evading veh. and following parking veh. on the left

512 - ST - evading veh. and following parking veh. on the right

519 - ST - unknown if 511 or 512

521 - ST - evading veh. and oncoming parking veh. on the left

531 - ST - evading veh. and pedestrian in opposite direction and parking veh. on the left

532 - ST - evading veh. and pedestrian in opposite direction and parking veh. on the right

533 - ST - evading veh. and pedestrian in same direction and parking veh. on the left

534 - ST - evading veh. and pedestrian in same direction and parking veh. on the right

539 - ST - unknown if 531-534

541 - ST - stopping or parking same direction to the left

542 - ST - stopping or parking same direction to the right

543 - ST - stopping or parking opposite direction to the right

549 - ST - unknown if 541-543

551 - ST - starting or parking out longitudinal on the left, same direction

552 - ST - starting or parking out longitudinal on the right, same direction

553 - ST - starting or parking out longitudinal on the left, opposite direction

554 - ST - starting or parking out longitudinal on the right, opposite direction

555 - ST - starting or parking out longitudinal on the left, same direction to the left

559 - ST - unknown if 551-555

561 - ST - parking out forward from perpendicular position on the left

562 - ST - parking out forward from perpendicular position on the right

569 - ST - unknown if 561 or 562

571 - ST - parking out backward from perpendicular position on the left

572 - ST - parking out backward from perpendicular position on the right

579 - ST - unknown if 571 or 572

581 - ST - door opening while getting in or out on the left

582 - ST - door opening while getting in or out on the right

583 - ST - loading or unloading on the left

584 - ST - loading or unloading on the right

589 - ST - unknown if 581-584

591 - ST - veh. turning right and parking veh. on the left

592 - ST - veh. turning right and parking veh. on the right

593 - ST - veh. turning left and parking veh. on the right

594 - ST - veh. turning left and parking veh. on the left

599 - ST - others

**Type 6: Longitudinal traffic accident**

601 - LT - longitudinal traffic

602 - LT - veh. and follower 2nd lane

603 - LT - veh. and follower 3rd lane

604 - LT - veh. and follower 4th lane

609 - LT - unknown if 601-604

611 - LT - congestion and follower 1st lane

612 - LT - congestion and follower 2nd lane

613 - LT - congestion and follower 3rd lane

614 - LT - congestion and follower 4th lane

619 - LT - unknown if 611-614

621 - LT - veh. waiting mandatory and follower

622 - LT - veh. waiting mandatory and follower on ending lane

623 - LT - veh. waiting mandatory and follower before intersection or traffic light

624 - LT - veh. waiting mandatory and follower at railway crossing

629 - LT - unknown if 621-624

631 - LT - lane change to the right because of veh. ahead and follower

632 - LT - lane change to the right because of congestion and follower

633 - LT - lane change to the right because of ending lane and follower

634 - LT - lane change to the right because of mand. direction of travel and follower

635 - LT - lane change to the right after passing on the left and follower

639 - LT - lane change to the right (unknown reason) and follower

641 - LT - lane change to the left because of veh. ahead and follower

642 - LT - lane change to the left because of congestion and follower

643 - LT - lane change to the left because of ending lane and follower

644 - LT - lane change to the left because of mand. direction of travel and follower

645 - LT - lane change to the left after passing on opposite lane and follower

646 - LT - lane change to the left after passing on parallel lane and follower

649 - LT - lane change to the left (unknown reason) and follower

651 - LT - parallel driving in same direction

652 - LT - parallel driving during overtaking - in same direction

661 - LT - overtaking veh. and oncoming traffic

662 - LT - overtaking veh. and oncoming pedestrian

663 - LT - overtaking veh. and pedestrian in same direction

664 - LT - overtaking veh. and parking veh.

669 - LT - unknown if 661-664

671 - LT - pedestrian and veh. in same direction - left lane

672 - LT - pedestrian and veh. in opposite direction - left lane

673 - LT - pedestrian and veh. in same direction - right lane

674 - LT - pedestrian and veh. in opposite direction - right lane

675 - LT - pedestrian sitting/standing, no direction

679 - LT - unknown if 671-675

681 - LT - encountering vehicles on roadway

682 - LT - encountering vehicles in curve

683 - LT - encountering vehicles at turning priority road

684 - LT - encountering vehicles on roadway

685 - LT - encountering vehicles and a gap with one travelling direction

686 - LT - encountering vehicles and a gap with two or more travelling direction

689 - LT - unknown if 681-686

699 - LT - other

**Type 7: Other accident**

701 - Other - parker - parker on the road

702 - Other - parker vs. parker besides the road

703 - Other - parker vs. parker at car park

709 - Other - unknown if 701-703

711 - Other - backing up by driving and parker behind

712 - Other - backing up by rolling and parker behind

713 - Other - backing up and pedestrian

714 - Other - backing up and crossing traffic on the road

715 - Other - veh. backing out from the right side and crossing traffic on the road

716 - Other - veh. backing out from the right side and crossing traffic on the road

719 - Other - unknown if 711-716

721 - Other - u-turn and following traffic

722 - Other - u-turn and oncoming traffic

723 - Other - u-turn and oncoming traffic after traffic island

724 - Other - u-turn and parking veh. on opposite lane

725 - Other - u-turn to the left and oncoming traffic

726 - Other - u-turn to the left and following traffic

729 - Other - u-turn, other details / unknown if 721-726

731 - Other - moving obstacle - cargo

732 - Other - moving obstacle - other

741 - Other - veh. breakdown after accident

742 - Other - vehicle breakdown without accident

749 - Other - unknown if 741 or 742

751 - Other - animal on roadway - wild game

752 - Other - animal on roadway - pet without supervision

753 - Other - animal on roadway - pet with supervision

759 - Other - unknown if 751-753

761 - Other - fatigue (physical disability)

762 - Other - qualm (physical disability)

763 - Other - other disability without alcohol

771 - Other - sudden technical failure - tires

772 - Other - sudden technical failure - windshield

773 - Other - sudden technical failure - brakes

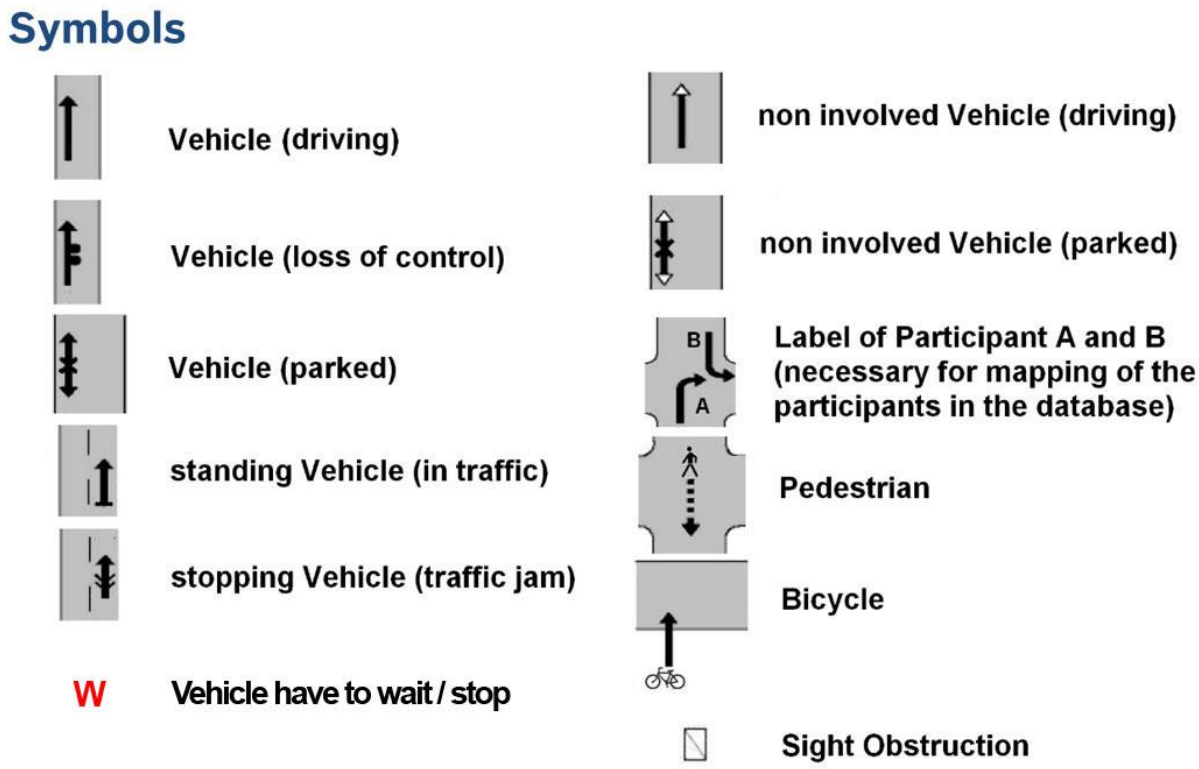
774 - Other - sudden technical failure - steering control

775 - Other - sudden technical failure - other

799 - Other - all other accidents

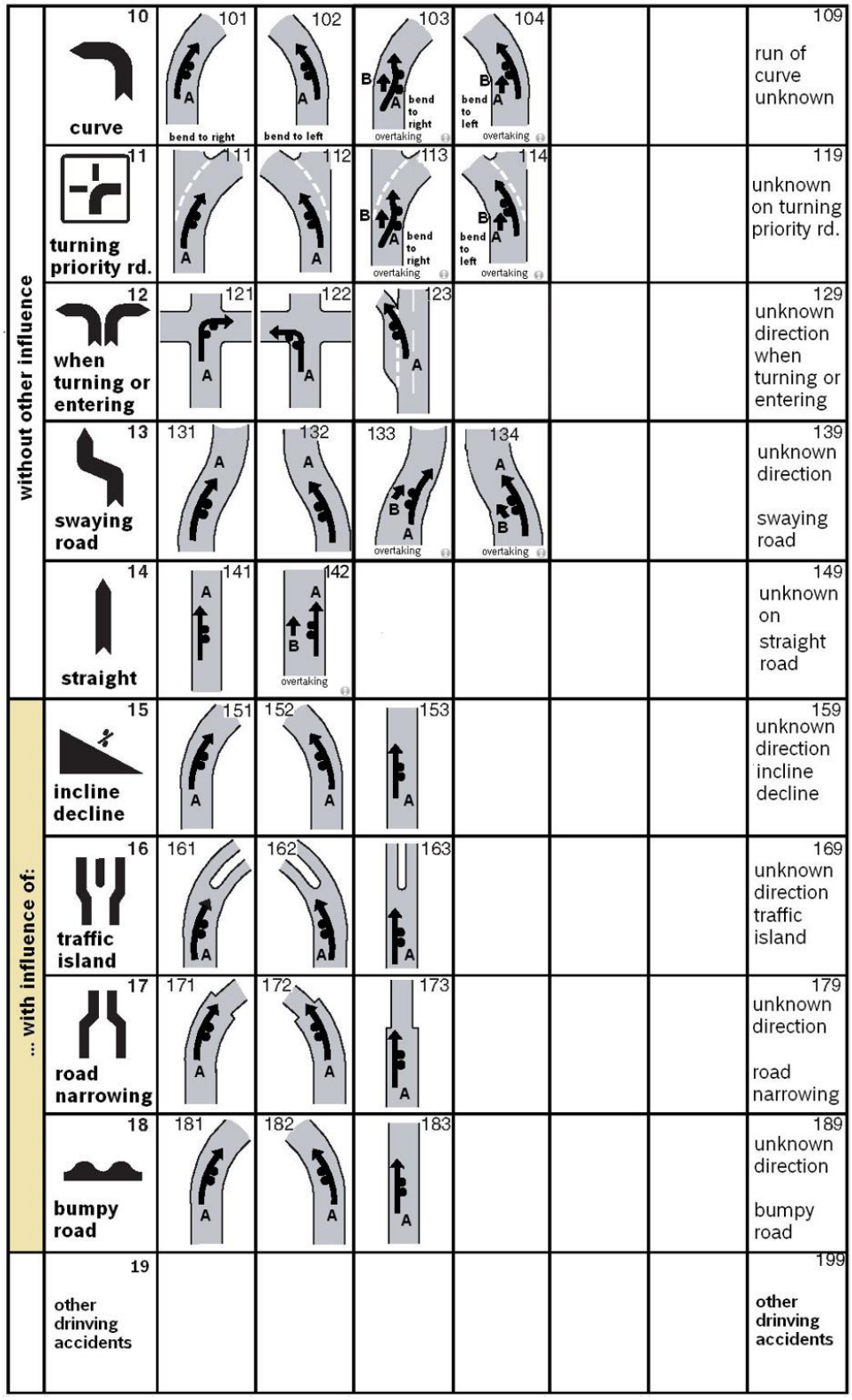
99999 - unknown

**Defined labels:**



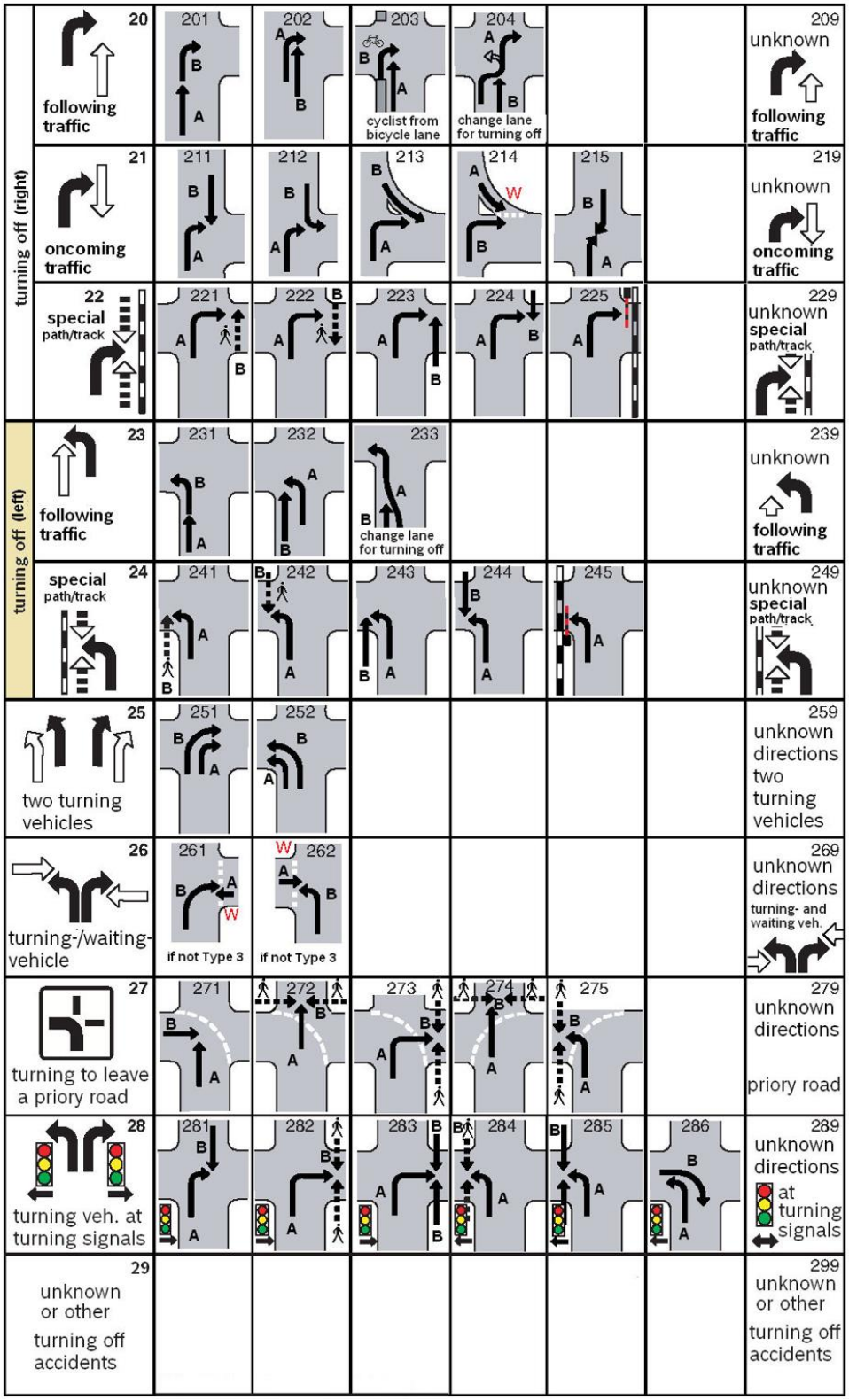
## *Left-hand traffic*

### Type 1: Loss of control accident



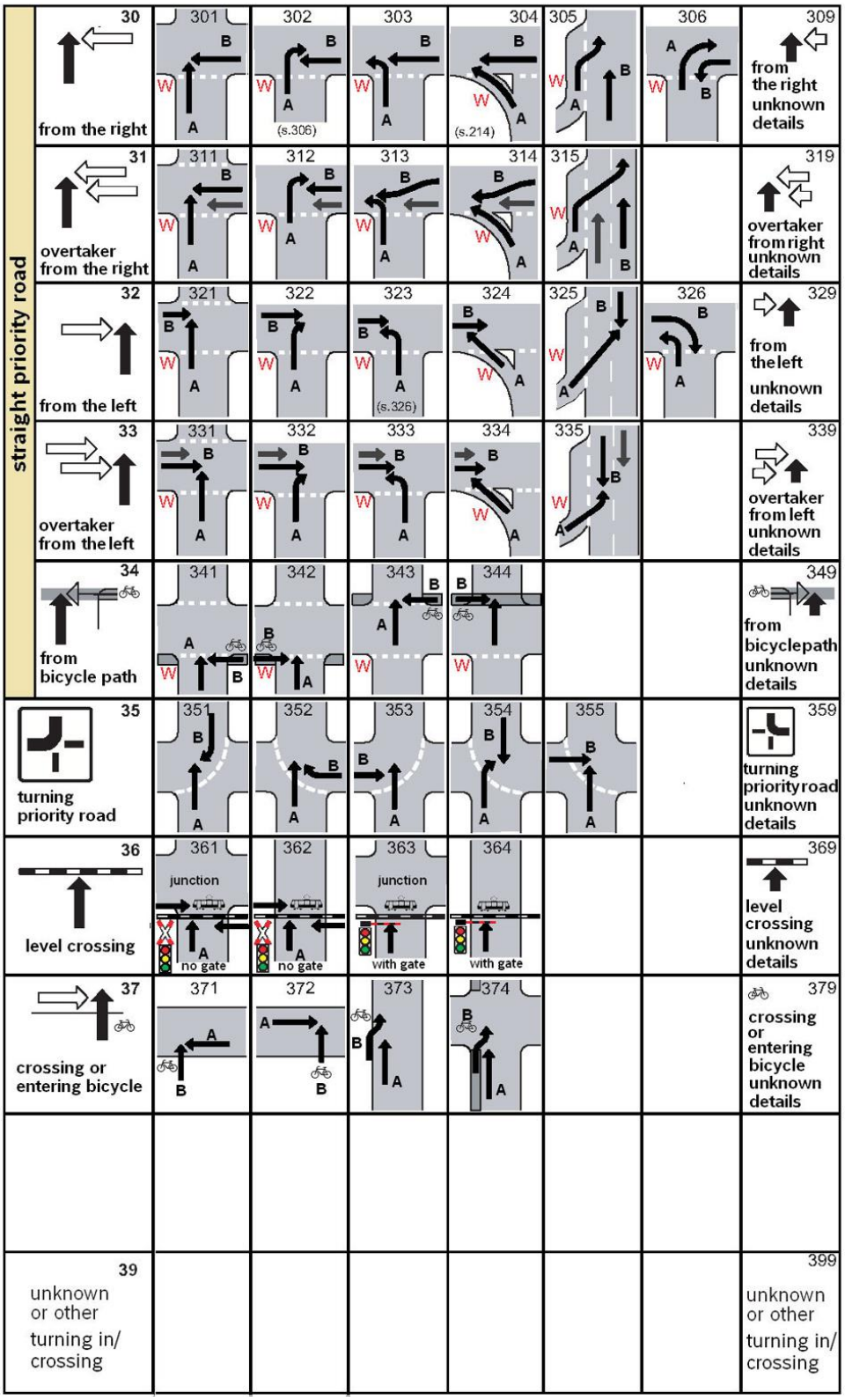

## *Left-hand traffic*

# Type 2: Turning off accident



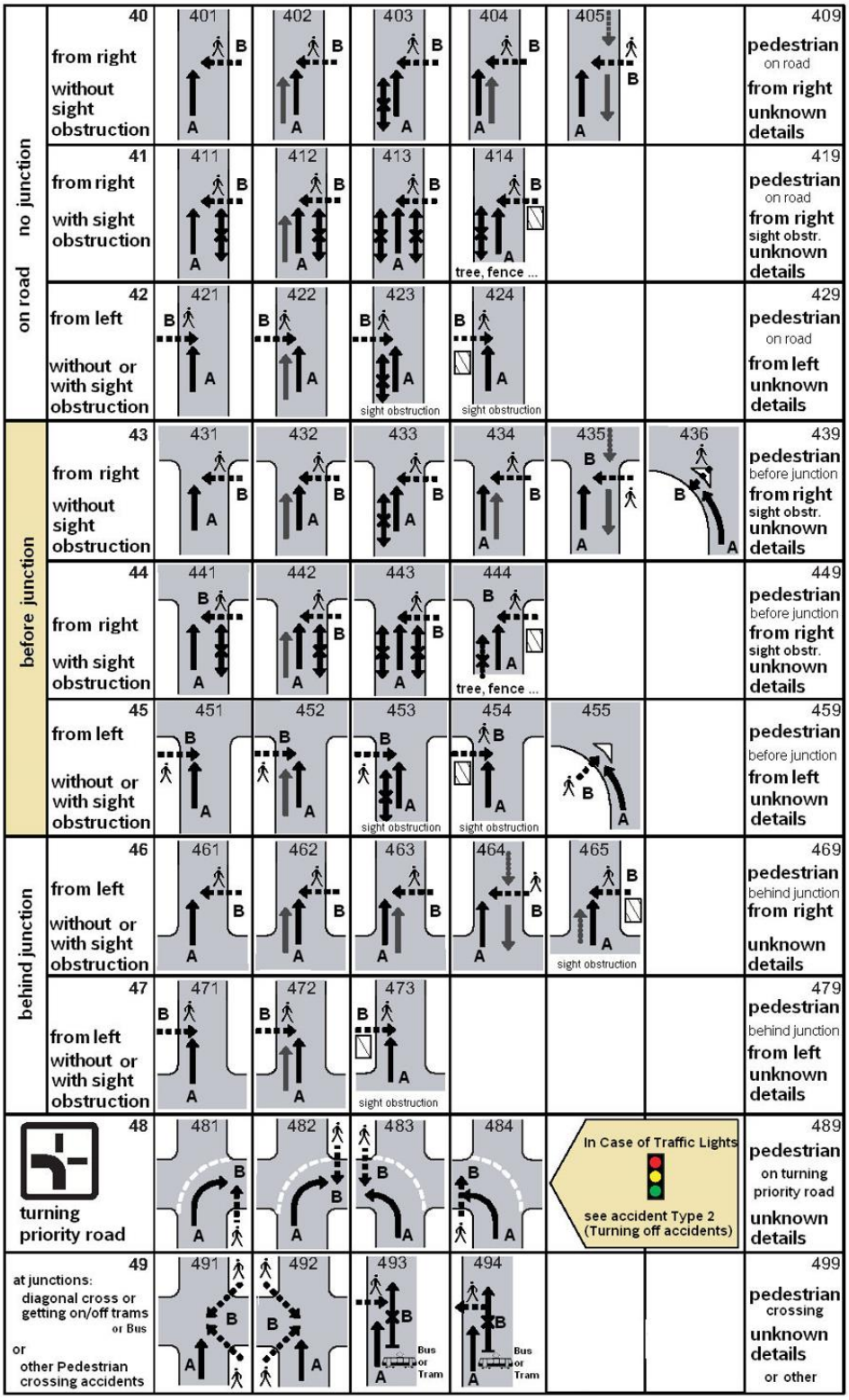

## *Left-hand traffic*

# Type 3: Turning in / crossing accident



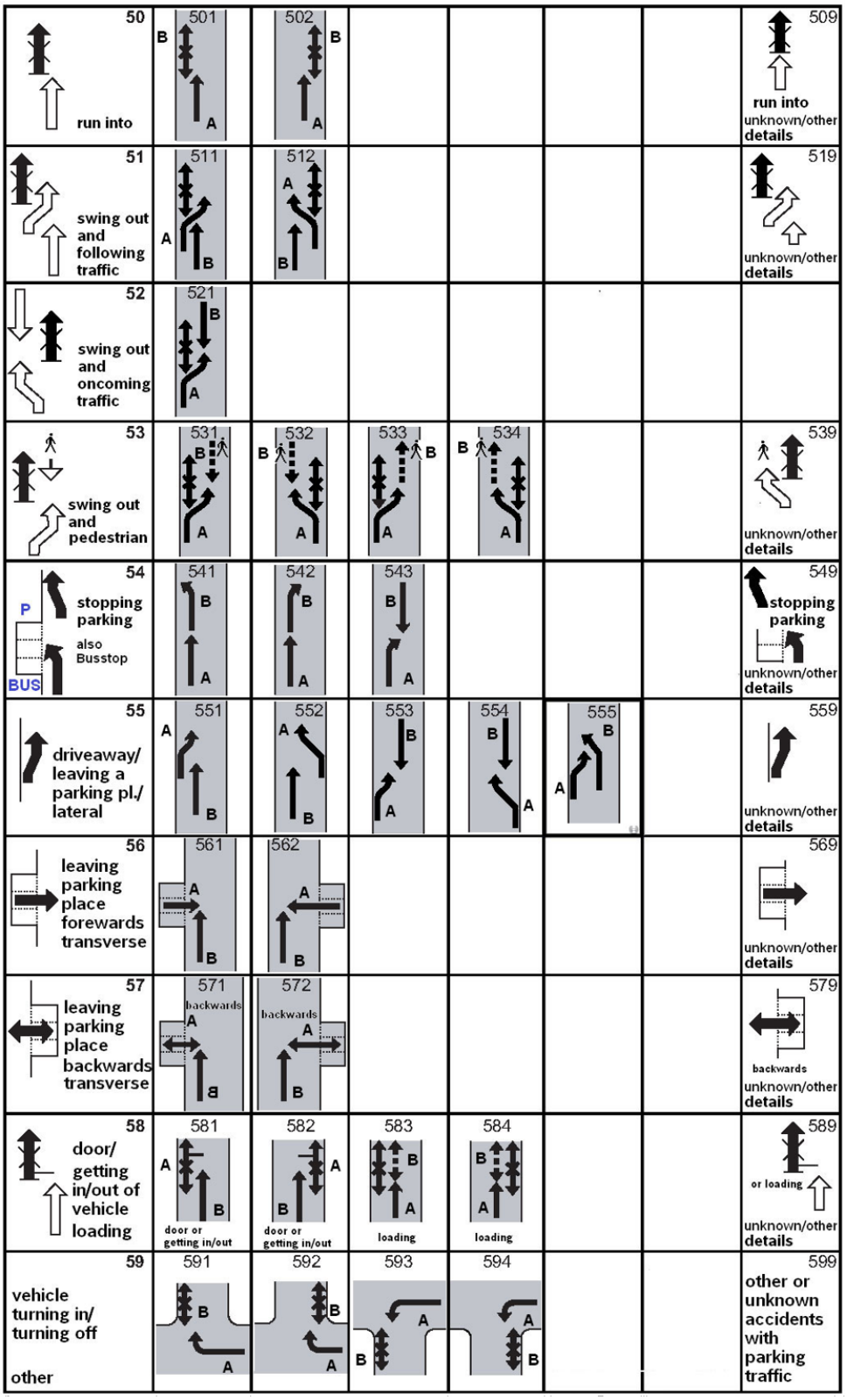

## *Left-hand traffic*

# Type 4: Pedestrian crossing road accident



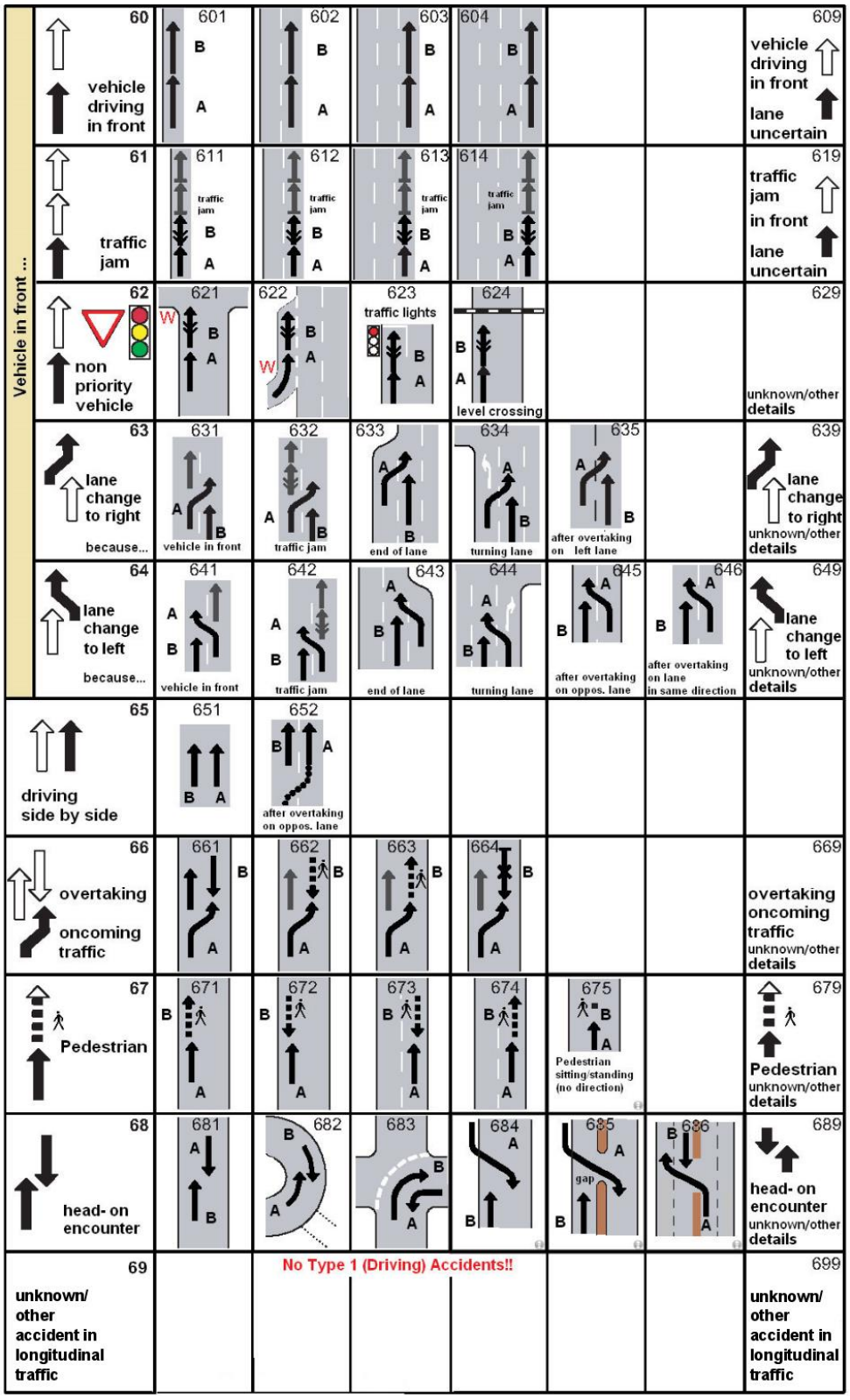

## *Left-hand traffic*

# Type 5: Stationary traffic accident



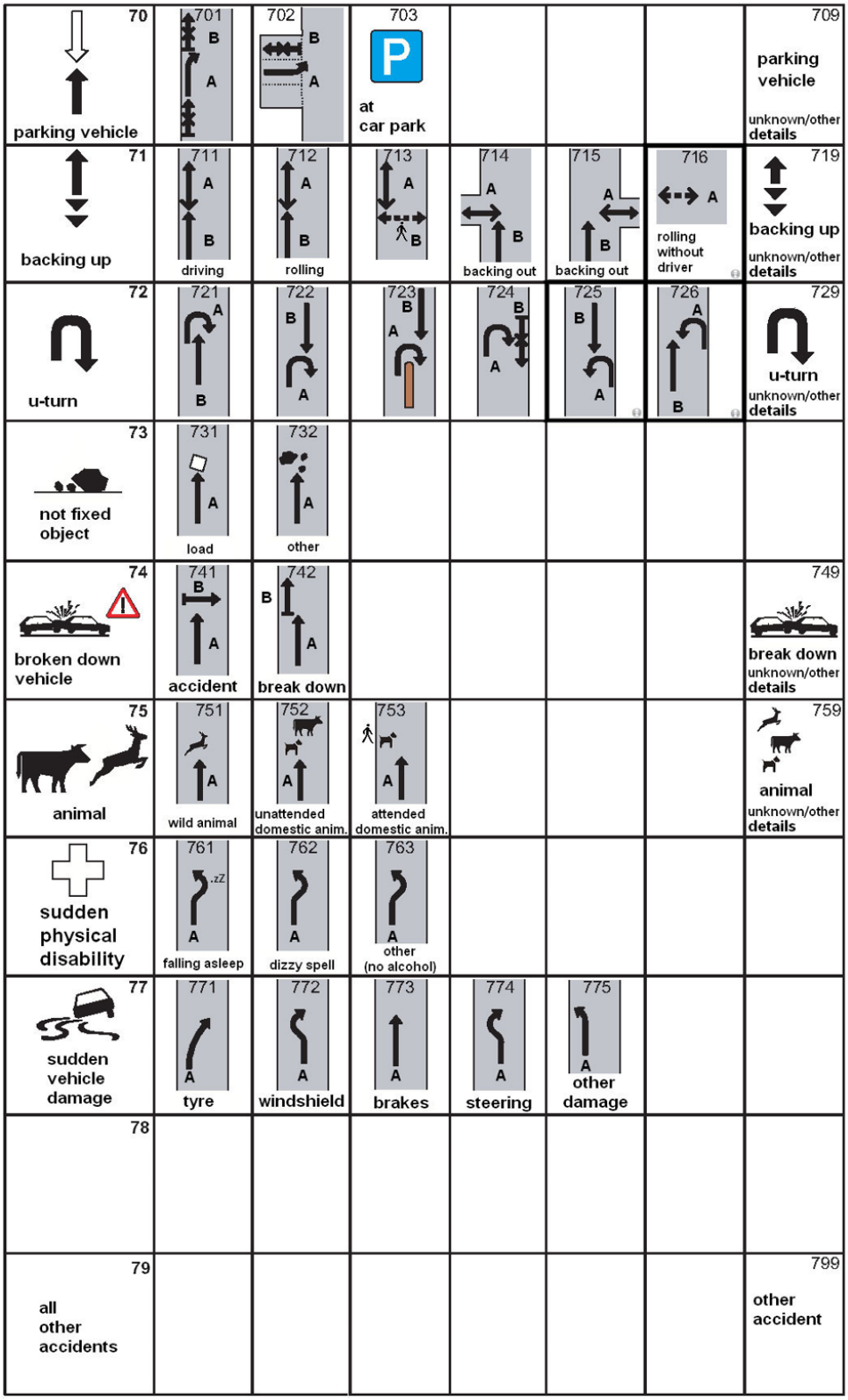

## *Left-hand traffic*

# Type 6: Longitudinal traffic accident




## *Left-hand traffic*

# Type 7: Other accident



# Appendix E Guidelines for IGLAD accident sketches

All sketches have to be scaled and have English description. 80 % of the sketches have to be optimal, which means:

- ***Vectorized CAD-files***

including:

- ***Final position*** *(If unknown, short note if assumed)*
- ***Collision point*** *(If unknown, make a circle around possible area)*
- ***Trajectories****, if possible* *(CoG for pre- crash, in- crash and post-crash)*
- ***Scale***

The accident sketch is the basis for the reconstruction of traffic accidents. Furthermore, the accident sketch gives an overview about the accident initiation. All details that are necessary for the accident reconstruction should be included in the sketch.
Accident sketches should base on the following tools and methods:

Tools

Traditional measuring instruments:

- *Measuring tape*
- *Measuring wheel (odometer, accuracy within ± 5cm)*

Electronic measuring equipment:

- *Laser distometer*
- *Laser scanner*
- *Digital water-level*

Methods

At the accident site the following methods are used:

- *Rectangle-(coordinate) measuring method*
- *Triangle measuring method*
- *Photogrammetric measuring method*
- *Measuring method for curves*
- *Laserscan*

The application of a suitable method and the selection of the measuring instrument is decided by the investigator depending on the situation on the accident site. A fixed presetting is not possible/useful due to the different accident situations (traffic density, available time, light and weather conditions etc.).

If the creation of a sketch at the accident site is not feasible (e.g. due to high traffic, missing knowledge about the actual accident site) the accident sketch will be created in reworking.

The sketch is later transferred into a CAD program. During that process the raw sketch (hand-made) is processed to the digital accident sketch. To reproduce the appearance of the road layout aerial images can be used.

The following represents the necessary contents of an accident sketch.

**1. Traffic Area**

The accident sketch represents the traffic area around the accident scene. Therefore, the following requirements should be considered:

The sketch should cover the collision point and the surrounding traffic area within (at least) the "length" of the permitted speed assimilated in meter (Example: urban area, crossing accident, permitted speed = 50 kph means that the sketch should cover the road of both involved parties up to 50 m in both directions). On motorways at least 200 m should be covered.

This length has to be seen as the minimum range. In general, the location of the critical (accident causing) situation has to be part of the accident sketch.

For example: If a vehicle collides on a straight road after driving through a curve, the passed curve is necessarily part of the accident sketch.

The sketch should include the following elements of the traffic area:

- *Road geometry*
  (limited by the edge of the carriageway, curbs)

- *All road markings*
  (in principle; i.e. a scaled illustration of the different lines is not required in almost all cases (e.g. the distance of the gaps of interrupted lines). To show the correct marking type the relevant layer should be used (see below "Layer"). By using the right marking types the carriageway will be represented (lanes, cyclepaths, etc.).
  Furthermore, additional markings (e.g. arrows with permitted driving directions)) should be part of the sketch (again in principle).

- *Traffic control devices, traffic signs, traffic lights*

- *Slope information*
  The longitudinal and lateral slope has to be stated for each involved vehicle in their direction of travelling. If there are relevant changings in the slope this should be also considered in the accident sketch (dashed line, dotted line, etc.). Usually roads have a lateral slope: Either the road has a one-sided slope or the

highest point is in the mid of the road and there is a slope towards both edges of the road. In all cases each slope has to be measured.

**2. Environment and view obstacles**

The sketch should further contain all relevant elements in the environment that are necessary for the reconstruction of the accident:

- *Collision objects*
  Every collision object has to be in the sketch. Round collision objects (poles, pillars, trees, …) require an indication of the diameter.
  If there is an impact on planar objects (e.g. guardrails), the contact area should be presented separately as collision area.
  In order to follow the driving line of the vehicles in the roadway, it may be necessary to include further objects in the direct environment of the potential trajectory of the vehicle.

- *Traffic control devices*
  All elements which guide the vehicle (e.g. guard rails, posts, railings, ...) should be included in the sketch (similar to collision objects).
  *Roadside profile*
  The roadside profile is part of the accident sketch for collisions with objects beside the road and/or all accidents where a vehicle left the road. Then, the profil is provided in cross-sections for the point of road departure and/or object collision. In case of changing profiles different sections are necessery. To ensure a better readability of the profiles they are not drawn with a scale of 1:200. However, they have to be dimensioned in the sketch.

- *View obstacles*
  View obstructions should be included in the sketch. This is often relevant for accidents involving two or more participants. Here, all (potential) view obstructions (parked or standing vehicles, walls, buildings, trees, fences, etc.) have to be specified in the sketch with their exact position. A distinction between permanent and non-permanent view obstacles is made.
  Driving/Standing vehicles (not parked vehicles) as view obstacles have to be drawn in principle with their probable position. Their exact position cannot be defined because this ic changing over time.
  View obstructions can also be relevant in single vehicle accidents (resulting from the road design or the environment). Usually they cannot be drawn directly into the sketch but should be described in an additional remark.

### 3. Accident marks and traces

All discovered marks have to be measured and provided in the accident sketch. If they cannot be measured accurately they should nevertheless be drawn described specifically (e.g. "end position, derived from police images").

- *Final positions*
  The vehicles have to be drawn in their final positions using realistic vehicle shapes. If the final position can not be identified exactly (e.g. final position of bicycles on the basis of witness statements) an area covering the probable final position should be marked in the sketch. The same applies for the final positions of persons.

- *Marks*
  If possible every mark should be allocated to the causing participant. Furthermore, the marks should be labelled as exact as possible, including the type of mark, e.g.:
  - braking mark
  - skidding mark
  - drifting mark
  - slipping mark
  - scratch mark
  - pitting marks
  - liquids
  - areas with (glass) splinters
  - abrasion mark (e.g. from pedestrian's / cyclist's clothing

  Areas in the roadside with thrown up earth should also be mentioned as collision area or mark of a participant.

- *Collision areas, collision point*
  The identified collision point/area has to be marked in the sketch in principle. In addition to the basic accident sketch the reconstruction creates an accident reconstruction sketch in which the collision positions of the involved vehicles are given.

### 4. Driving lines (trajectories)

The driving lines of the involved participants have to be drawn in dependence of the direction of the vehicle up to the first collision. The trajectory ends at the center of gravity of the vehicle in the collision position. The trajectory is first coarsely specified and drawn precisely later by the reconstruction. The correction is made in the re-construction accident sketch (ZU).

Parking (standing) Vehicles will also receive a driving line. This one is specified in the longitudinal direction of the vehicle and ends behind the outermost longitudinal extension of the vehicle.

For pedestrians an estimated running line is drawn in the form of a driving line.

**5. Descriptions**

The following descriptions have to be given at least:

- *Vehicles / persons involved in resting position*
- *Driving lines of vehicles / persons involved*
- *Nature of participation (for example: Part. 01: pedestrian, Part. 02: Mercedes Vito...)*
- *Street names (locality)*
- *Road directions at distance courses*
- *Traces*
- *Collision areas and objects*
- *Other, for the duration of the accident necessary comments (eg. "icy areas", "slope change", etc ...)*

**6. Additional tools**

To scale the sketch a measure scale must be specified. Furthermore, polar aligned the sketch of a north arrow. To give an explanation of the accident, a suitable text field with the details of the accident, the accident time and the day of sketching has to be completed.

# Appendix F Codebook change log

**V1.19 – Codebook_IGLAD_2024**

**VARIABLES:**

| | | |
|---|---|---|
| Variable COUNTRY | Edir | KR added as code |
| Variable CASENR | Edit | Description changed (4x) |
| Variable EMARRIV | Delete | |
| Variable NROPPN1/2 | Edit | Range extended to 0 - 99999 |
| Variable PARTCNT | New | |
| Variable VEHICNT | New | |
| Variable PERSCNT | New | |
| Variable INJRCNT | New | |
| Variable VEHMAKE | Edit | New code 144 - Bombardier<br>New code 1312 - NIU<br>New code 1118 - Ligier<br>New code 909 - Jiangling<br>New code 228 - Changcheng<br>New code 2510 - Zotye |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility ID121 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID122 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID123 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID124 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID125 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID126 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID127 | Deleted | Automatic checks done on ICHECK server |
| Plausibility ID137 | New | Numbering of SYSNRs |
| Plausibility ID252 | New | No OCCUPANT table w/o PARTICIPANT table |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | update | Updated with current information |
| Appendix H | update | Airbag 2024 publication added |

**V1.18 – Codebook_IGLAD_2023**

**VARIABLES:**

| | | |
|---|---|---|
| Variable STATUS | Delete | |
| Variable COUNTRY | Edit | New code “KR” for South Korea |
| Variable VEHMAKE | Edit | New code 328 – Daimler Truck |
| Variable VEHMAKE | Edit | Code deleted: 406 – Evo Bus |
| Variable ACCTYPEA | Edit | Range adapted (1 - 99; 99999) |
| Variable ACCTYPEB | Edit | Range adapted (1 - 99; 99999) |
| Variable REGYEAR | Edit | Range adapted (1900 – 2099; 99999) |
| Variable POWER | Edit | Range adapted (1 – 1000; 99999) |
| Variable SEATS | Edit | Range adapted (1 – 200; 99999) |
| Variable DECEL1/2 | Edit | Range adapted (-999 – 200; 99999) |
| Variable DECDIST/2 | Edit | Range adapted (0 – 5000; 99999) |
| Variable SYSNR | Edit | Range adapted (0 – 99; 99999)<br>Code 0 deleted |
| Variable NROPPON1 | Edit | New code added “3 - third or more (not documented) collision” |
| Variable NROPPON2 | Edit | New code added “3 - third or more (not documented) collision” |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility ID245 | New | Calculating/Checking BMI from WEIGHT & HEIGHT |
| Plausibility ID246 | New | Checking reconstruction parameters for pedestrians |
| Plausibility ID247 – 249 | New | Checking CASENR (length, format) |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | update | Updated with current information |
| Appendix G | update | for Korea |

**V1.17 – Codebook_IGLAD_2022**

**VARIABLES:**

| | | |
|---|---|---|
| Variable PCMAVAIL | New | Added to record ACCIDENT |
| Variable VEHMAKE | Edit | Description updated and new codes added<br>142 - Baojun<br>143 - Beijing<br>226 - Changan<br>227 - Changhe<br>527 - FAW<br>528 - Foton<br>618 - Geely<br>726 - Haval<br>727 - Haika<br>728 - Howo<br>908 - JAC<br>1719 - Roewe<br>2205 - Wuling |
| Variable OPPON1 | Edit | New code added “0 - no collision (at all)” |
| Variable NROPPON1 | Edit | New code added “0 - no collision (at all)” |
| Variable SYSTYPE | Edit | New codes added<br>102 - intelligent speed assist<br>103 - dooring prevention<br>104 - wrong-way driving prevention<br>105 - emergency assist (in case of medical problem)<br>106 - surround view (top view, 360° view, bird view)<br>107 - traffic jam assist / pilot<br>108 - advanced distraction recognition system |
| Variable GVWEIGHT | Edit | Codes changed<br>100000 → 1<br>200000 → 2<br>… |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility ID121-127 | edit | 21CN0201 – 21CN0220 excluded (additional PCM cases) |
| Plausibility ID64 | edit | ACCTYPE > 370 excluded |
| Plausibility IDs 200, 201, 205, 209, 213, 220, 226, 227 | edit | OPPON1 = 0 excluded |
| Plausibility IDs 59, 207, 211, 215, 222 | edit | PARTTYPE = 14 excluded |
| Plausibility ID230 | edit | 21CN0201 – 21CN0220 excluded (additional PCM cases) |
| Plausibility ID234 | edit | TRAILER codes limited |
| Plausibility ID240-241 | New | New consistency checks |
| Plausibility ID242 | New | Check if GPS position is in the corresponding country / investigation area |
| Plausibility ID243 | New | WEIGHT limits |
| Plausibility ID244 | New | ACCTYPEA vs. ACCTYPEB |

| | | |
|---|---|---|
| Plausibility ID245 | New | Check PCMAVAIL |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | update | Updated with current information |
| Appendix G | update | for Australia, China (CATARC), India, DE (MHH), DE (VUFO), |
| Appendix H | update | ESV publication added |

**V1.16 – Codebook_IGLAD_2021**

## VARIABLES

| | | |
|---|---|---|
| Variable MONTH | New | Added to record ACCIDENT |
| Variable GVWEIGHT | New | Added to record PARTICIPANT |
| Variable ADLEVEL | Deleted | |
| Variable PRTOCLO | Deleted | Old variable (used between 2016 and 2018; not in the database anymore) |
| Variable CASENR | Update | Variable description |
| Variable SYSTYPE | Update | Variable label |
| Variable SYSTYPE | Deleted label | 61 – xenon lights<br>*RECODE FOR DP*: DELETE dataset |
| Variable SYSUSE | Update | Variable label and description |
| Variable SYSUSE | Deleted label | 3 – misuse<br>77777 – not applicable<br>*RECODE FOR DP*: recode individually depending on system type |
| Variable DEPLACT | Update | Variable label and description |
| Variable ACCDESCR | Update | Variable description |
| Variable PARTTYPE | add label | 18 - Powered standing scooter<br>19 - Powered self-balancing personal transporter (without steering rod)<br>20 - Powered self-balancing personal transporter with steering rod (Segway)<br>21 - Powered non-self-balancing board<br>22 - Other non-powered transportation device (skate-board, skates, kick scooter etc.)<br>88888 - other |
| Variable GENDER | add label | 3 - diverse |
| Variable VEHMAKE | add label | 226 - Cupra |
| Variable SCENARIOTYPE | Deleted label | 73 |
| Variable BELT_USE | Update | Label 2 and 3 renamed |

## PLAUSIBILITIES

| | | |
|---|---|---|
| Plausibility ID230 | New | Member year vs. Accident year |
| Plausibility ID231 | New | No safety systems for pedestrians, bicycles |
| Plausibility ID232 | New | No safety systems (except ABS) for E-Bicycles |
| Plausibility ID233 | New | Variable POWER coded with 999 or 9999 |
| Plausibility ID234 | New | Existence of trailer for ped. or electr. micro veh. |
| Plausibility ID235 | New | GVW vs. PARTYPE (car, SUV) |
| Plausibility ID236 | New | GVW vs. PARTYPE (van, light truck) |
| Plausibility ID237 | New | GVW vs. PARTYPE (bus) |
| Plausibility ID238 | New | GVW vs. PARTYPE (trucks, tractors) |
| Plausibility ID239 | New | GVW vs. PARTYPE (others) |

## APPENDIX AND PREFACE:

| | | |
|---|---|---|
| Preface | update | World map and (old) case numbers removed |
| Appendix G | update | |

**V1.15 – Codebook_IGLAD_2020**

**VARIABLES:**

| | | |
|---|---|---|
| Variable ADLEVEL | New | Added to record PARTICPANT |
| Variable SCENARIOTYPE | New | Added to record PARTICPANT |
| Variable TRAILER | New | Added to record PARTICPANT |
| Variable COLLTYPE | Update | Variable description |
| Variable CDC1DIRE | Update | Variable description |
| Variable CDC2DIRE | Update | Variable description |
| Variable CDC1AREA | Update | Variable description |
| Variable CDC2AREA | Update | Variable description |
| Variable AISREGIO7 | Label added | 4 - AIS 4<br>5 - AIS 5 |
| Variable VEHMAKE | Label added | 39 - Avon Cycles Limited<br>725 - Humber Limited<br>1846 - Scooters India Limited |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility ID7 | Deleted | Included in ID 65 |
| Plausibility ID22 | Update | Accident type 243/244 requires PARTTYPE 2, 14, 16 or 17 as ACCTYPEB |
| Plausibility ID127 | Updated | Accident years 2018 & 2019 in Member year 2020 |
| Plausibility ID224 | New | Vehicle mass of a passenger car, SUV, Van or Light Truck must be between 500 and 3500 kg (Micro cars are excluded by explicit case number) |
| Plausibility ID225 | New | Vehicle mass of PTW must be up to 500 kg |
| Plausibility ID226 | New | CDC1DIRE and CDC1AREA should be also coded for pedestrians, bicycles, PTW and P3W |
| Plausibility ID227 | New | CDC coding can be empty if a trailer is attached and only the trailer is damaged *(starting with Member Year 2020)* |
| Plausibility ID228 | New | If PARTTYPE = 11/13 is coded, a trailer has to be coded, too. *(starting with Member Year 2020)* |
| Plausibility ID229 | New | EES > 2 is not possible with Delta-v = 0 |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | update | Updated with current information |
| Appendix G | update | for all countries except of Brazil, Spain |
| Appendix H | update | ESV publication added |

**V1.14 – Codebook_IGLAD_2019**

**VARIABLES:**

| | | |
|---|---|---|
| Variable MEMYEAR | update | Update for 2019 |
| Variable MAIS<br>Variable AISREGIO1-9 | edit | Version update to AIS05 update 2008<br>(Note: Until member year 2018 the AIS90 update AIS98 was used. There was no recode of previous data.) |
| Variable PARTTYPE | edit label | train -> trackbound vehicle (train, tram et al.) |
| Variable VEHMAKE | add label | 141 - BHARAT BENZ<br>723 - HERO HONDA<br>724 - HINDUSTAN MOTORS<br>1718 - ROYAL ENFIELD |
| Variable STATUS | add label | 9 - denied and replaced / not to be used for analyses |
| Variable CHECK_RECO1 | description | |
| Variable CHECK_RECO2 | description | |
| Variable CHECK_RECO3 | description | |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility 125 | add | For member year 2019 the year when accident happened has to be between 2017 and 2018. |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | update | Updated current information |
| Appendix H | add | IGLAD publications |

**V1.13 – Codebook_IGLAD_2018**

**VARIABLES:**

| | | |
|---|---|---|
| Variable ACCDESC | edit range | Length from 2500 to 10000 |
| Variable LANESEPAR | add | The type of lane separation is coded here for the considered accident.<br>In case of multiple matches it should be prioritised from top to bottom.<br><br>The Variable was introduced in Member year 2018. Previous to this member year "66666 - not collected" is valid.<br><br>Defined labels:<br>1 – no separation / junction<br>10 – physical separation, not further specified<br>11 – guard rail: steel<br>12 – guard rail: concrete<br>13 – guard rail: wire ropes<br>14 – Temporary separation (e.g. construction site)<br>15 – other (e.g. wood)<br>20 – Dimensional separation (Grass, central strip, traffic island)<br>30 – road marking, not further specified<br>31 – dashed line<br>32 – solid line<br>33 – solid/dashed line<br>34 – double solid line<br>35 – keep-out area<br>66666 – not collected<br>77777 – not applicable (e.g. one-way)<br>88888 – other (e.g. alternating)<br>99999 – unknown |
| Variable ACCTYPEA | description | The participant (PARTNR) of Participant A referring to the accident type (see ACCTYPE) is given. |
| Variable ACCTYPEB | description | The participant (PARTNR) of Participant B referring to the accident type (see ACCTYPE) is given. |
| Variable ACCDESC | description | Note: Be aware of data privacy issues. Do not include personalized data like names, dates of birth, plates etc. |
| Variable COUNTRY | add label | BR – Brazil<br>GR - Greece<br>SK - Slovakia |

| | | |
|---|---|---|
| Variable COLSPEED1 | add label | 77777 – not applicable (only for participants w/o collision) |
| Variable COLSPEED2 | add label | 77777 – not applicable (only for participants w/o collision) |
| Variable STATUS | add label | 0 - not yet defined<br>1 - incomplete<br>2 - completely coded, not yet checked<br>3 - completely coded, not plausible<br>4 - completely coded, plausible |
| Variable WHEATER1 | description | Several weather conditions can be coded in the variables WEATHER1 and WEATHER2. There is no prioritization between these variables |
| Variable WHEATER1 | description | Several weather conditions can be coded in the variables WEATHER1 and WEATHER2. There is no prioritization between these variables |
| Variable PROTCLO | delete | |
| Variable CHECK_RECO1 | add | Currently dummy variable |
| Variable CHECK_RECO2 | add | Currently dummy variable |
| Variable CHECK_RECO3 | add | Currently dummy variable |
| Variable MAINFACT | add label | 82 - another vehicle which is gone |
| Variable FACTOR1 | add label | 82 - another vehicle which is gone |
| Variable FACTOR2 | add label | 82 - another vehicle which is gone |
| Variable FACTOR3 | add label | 82 - another vehicle which is gone |
| Variable CDC1VERT | add label | Lateral location<br>D - Distributed<br>L - Left<br>C - Center<br>R - Right<br>Y - L and C<br>Z - R and C |
| Variable CDC2VERT | add label | Lateral location<br>D - Distributed<br>L - Left<br>C - Center<br>R - Right<br>Y - L and C<br>Z - R and C |
| Variable DECEL1 | description | replace “bv” by DECEL1 |
| Variable DECEL2 | description | replace “bv” by DECEL2 |
| Variable INJSEVER | add label | 88888 – injured, but unknown severity |
| Variable MEMYEAR | add label | 2018 |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility 17 | delete | redundant to Plausibility 11 |
| Plausibility 26 | edit | add exception for 17AT0049 |
| Plausibility 39 | edit | Adapt for INJSEVER=88888 |
| Plausibility 45 | edit | COLLTYPE = other in plausi 46 |
| Plausibility 46 | edit | extent MAINFACT for COLLTPE = other |
| Plausibility 63 | edit | add MAINFACT = 22 |
| Plausibility 63 | edit | add MAINFACT = 88888 |

| | | |
|---|---|---|
| Plausibility 89 | edit | add valid label D, L, C, R, Y, Z for CDC1VERT |
| Plausibility 91 | edit | add valid label D, L, C, R, Y, Z for CDC2VERT |
| Plausibility 125 | add | For member year 2018 the year when accident happened has to be between 2016 and 2017. |
| Plausibility 129 | edit | add additional countries |
| Plausibility 141 | edit | add exception for 17DE0031 (Quad) |
| Plausibility 216 | edit | Add valid value 0 for CDC1EXTT |
| Plausibility 218 | edit | Add valid value 0 for CDC1EXTT |

**APPENDIX AND PREFACE:**

Updated

**V1.12 – 170913_IGLAD_2017**

**VARIABLES:**

| | | |
|---|---|---|
| Variable CDC1DIRE | edit | add TDC (SAE J1301) definitions |
| Variable CDC2DIRE | edit | add TDC (SAE J1301) definitions |
| Variable CDC1AREA | edit | add TDC (SAE J1301) definitions |
| Variable CDC2AREA | edit | add TDC (SAE J1301) definitions |
| Variable CDC1LONG | edit | add TDC (SAE J1301) definitions |
| Variable CDC2LONG | edit | add TDC (SAE J1301) definitions |
| Variable CDC1VERT | edit | add TDC (SAE J1301) definitions |
| Variable CDC2VERT | edit | add TDC (SAE J1301) definitions |
| Variable CDC1TYPE | edit | add TDC (SAE J1301) definitions |
| Variable CDC2TYPE | edit | add TDC (SAE J1301) definitions |
| Variable CDC1EXTT | edit | add TDC (SAE J1301) definitions |
| Variable CDC2EXTT | edit | add TDC (SAE J1301) definitions |
| Variable CDC1PERC | edit | add TDC (SAE J1301) definitions |
| Variable CDC2PERC | edit | add TDC (SAE J1301) definitions |
| Variable STATUS | add | Status for the fulfillment of all current plausibility checks<br><br>0 - not yet defined<br>1 - incomplete<br>2 - completely coded, not yet checked<br>3 - completely coded, not plausible<br>4 - completely coded, plausibile |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility 59 | edit | regarding TDC |
| Plausibility 60 | edit | regarding TDC |
| Plausibility 61 | edit | add exception MAINFACT = 12 – 29 for ACCTYPE = 103 or 104 |
| Plausibility 61 | edit | add exception CASENR = 16DE0024 (special case) |
| Plausibility 63 | edit | add exception MAINFACT = 4, 5, 6, 9, 10 |
| Plausibility 63 | edit | exclude ACCTYPE = 399 |
| Plausibility 63 | edit | add exception ACCTYPE = 311 - 314 and MAINFACT = 12 - 19 |
| Plausibility 63 | edit | add exception MAINFACT = 4, 5, 6, 9, 10 |
| Plausibility 69 | edit | regarding TDC |
| Plausibility 70 | edit | regarding TDC |
| Plausibility 71 | edit | regarding TDC |
| Plausibility 72 | edit | regarding TDC |
| Plausibility 73 | edit | regarding TDC |
| Plausibility 74 | edit | regarding TDC |
| Plausibility 75 | edit | regarding TDC |
| Plausibility 76 | edit | regarding TDC |
| Plausibility 79 | edit | regarding TDC |
| Plausibility 80 | edit | regarding TDC |
| Plausibility 81 | edit | regarding TDC |

| | | |
|---|---|---|
| Plausibility 82 | edit | regarding TDC |
| Plausibility 83 | edit | regarding TDC |
| Plausibility 84 | edit | regarding TDC |
| Plausibility 85 | edit | regarding TDC |
| Plausibility 86 | edit | regarding TDC |
| Plausibility 87 | edit | regarding TDC |
| Plausibility 88 | edit | regarding TDC |
| Plausibility 89 | edit | regarding TDC |
| Plausibility 90 | edit | regarding TDC |
| Plausibility 91 | edit | regarding TDC |
| Plausibility 92 | edit | regarding TDC |
| Plausibility 93 | edit | regarding TDC |
| Plausibility 94 | edit | regarding TDC |
| Plausibility 95 | edit | regarding TDC |
| Plausibility 96 | edit | regarding TDC |
| Plausibility 198 | add | regarding TDC |
| Plausibility 199 | add | regarding TDC |
| Plausibility 200 | add | regarding TDC |
| Plausibility 201 | add | regarding TDC |
| Plausibility 202 | add | regarding TDC |
| Plausibility 203 | add | regarding TDC |
| Plausibility 204 | add | regarding TDC |
| Plausibility 205 | add | regarding TDC |
| Plausibility 206 | add | regarding TDC |
| Plausibility 207 | add | regarding TDC |
| Plausibility 208 | add | regarding TDC |
| Plausibility 209 | add | regarding TDC |
| Plausibility 210 | add | regarding TDC |
| Plausibility 211 | add | regarding TDC |
| Plausibility 212 | add | regarding TDC |
| Plausibility 213 | add | regarding TDC |
| Plausibility 214 | add | regarding TDC |
| Plausibility 215 | add | regarding TDC |
| Plausibility 216 | add | regarding TDC |
| Plausibility 217 | add | regarding TDC |
| Plausibility 218 | add | regarding TDC |
| Plausibility 219 | add | regarding TDC |
| Plausibility 220 | add | regarding TDC |
| Plausibility 221 | add | regarding TDC |
| Plausibility 222 | add | regarding TDC |
| Plausibility 223 | add | regarding TDC |

**APPENDIX AND PREFACE:**

| | | |
|---|---|---|
| Preface | edit | added Participant list and contact persons |
| Preface | update | update for current case numbers etc. |
| Appendix C | add sentence | “If police reports hospital treatment of an occupant (INJSEVER is coded “injured”) and diagnosis is “not injured” (MAIS = 0), the case should be included in IGLAD.” |
| Appendix C | add sentence | “100 % sketches have to be provided and 80% have to be optimal” |
| Appendix G | add | Country specific data collection |

**V1.11 – 170425_IGLAD_2017**

**VARIABLES:**

| | | |
|---|---|---|
| Variable BELT | label descr. | "2 – present w/o pret. & lim." |
| Variable BELT | description | "Be aware that variable codes 2 and 3 do not necessarily imply the absence of a limiter but rather the absence OR the lack of information." |
| Variable OCCTYPE | delete label | 77777 - not applicable |
| Variable MAIS | description | "(AIS90 update AIS98)" |
| Variable AIRBR | description | " ...and considers only rear passengers." |
| Variable PARTTYPE | description | "In general the PARTTYPE of the vehicle should be decided on the structure, not on the use." |
| Variable MODEL | description | |
| Variable WDAY | add label | 99999 - unknown |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility 13 | edit | COLLTYPE = 88888 due to speeding |
| Plausibility 28 | edit | add SEATS >= 7 for PARTTYPE = 10, 11, 12, 13 |
| Plausibility 29 | edit | lower VEHMASS threshold to 250 kg (e.g. VEHMASS(Chatenet Barooder) = 350 kg) |
| Plausibility 45 | edit | COLLTYPE = 88888 |
| Plausibility 46 | edit | COLLTYPE = 88888 |
| Plausibility 61 | edit | add exception MAINFACT = 17 |
| Plausibility 63 | edit | add exception MAINFACT = 15 |
| Plausibility 63 | edit | add exception MAINFACT 6 for ACCTYPE = 342, 343 |
| Plausibility 124 | add | For member year 2017 the year when accident happened has to be between 2015 and 2016. |
| Plausibility 132 | edit | add PARTTYPE <> 17 (for electric bicycle or tricycle) |
| Plausibility 196 | add | Variable INISPEED1 must be given. If there is a lack if information code 99999 - unknown |
| Plausibility 196 | add | Variable INISPEED2 must be given when there was a second collision (OPPON2 <> 77777) |

**APPENDIX:**

| | | |
|---|---|---|
| Appendix C | update | "For 2017 data from the two previous years, 2015 – 2016, can be included." |

**CODEBOOK APPEARANCE:**

| | | |
|---|---|---|
| Cover | update | |

| | |
|---|---|
| Preface | added a preface with an executive summary<br>added Link to IGLAD Homepage<br>added Participant list and contact persons |
| General | added uniform Layout<br>added numeration<br>added page numbers<br>updated header |

**V1.10 – 160406_IGLAD_2016**

**VARIABLES:**

| | | |
|---|---|---|
| Variable SYSTYPE | delete label | 1 - 41 (passive safety systems) |
| Variable SYSTYPE | delete label | 81 - 100 (passive safety systems) |
| Variable SYSTYPE | description | |
| Variable SYSUSE | description | |
| Variable DEPLACT | description | |
| | | |
| Variable BELT | add | Seat belt |
| Variable BELT_USE | add | Seat belt use |
| Variable AIRBF | add | Airbag front |
| Variable AIRBF_DEPL | add | Airbag front deployment |
| Variable AIRBTC | add | Airbag tubular/curtain |
| Variable AIRBTC_DEPL | add | Airbag tubular/curtain deployment |
| Variable SIDEB | add | Sidebag |
| Variable SIDEB_DEPL | add | Sidebag deployment |
| Variable KNEEB | add | Kneebag |
| Variable KNEEB_DEPL | add | Kneebag deployment |
| Variable AIRBSR | add | Seat ramp airbag |
| Variable AIRBSR_DEPL | add | Seat ramp airbag deployment |
| Variable AIRBR | add | Rear airbag |
| Variable AIRBR_DEPL | add | Rear airbag deployment |
| Variable AIRBFC | add | Front center airbag |
| Variable AIRBFC_DEPL | add | Front center airbag deployment |
| Variable HEADREST | add | Headrest protection system |
| Variable HEADREST_DEPL | add | Headrest protection system deployment |
| Variable CHILDSEAT | add | Child seat |
| Variable BOLCHILD | add | Bolster table for children |
| Variable HELM | add | Helmet |
| Variable PROTCLO | add | Protective clothes |

**PLAUSIBILITIES**

| | | |
|---|---|---|
| Plausibility 140 | add | Pedestrians, bicylces and PTW don`t have a belt (BELT). Code "77777 - not applicable" instead or change PART-TYPE. |
| Plausibility 141 | add | Belt variable (BELT) code "77777 - not applicable" is only valid for pedestrians, bicylces and PTW. |
| Plausibility 142 | add | Belt use variable (BELT_USE) can't be known if belt presence (BELT) is un-known. |
| Plausibility 143 | add | Belt system activation status (BELT_USE) can only be set when pre-tensioner/limiter is present (BELT). |
| Plausibility 144 | add | Belt can only be used/not used (BELT_USE) when present (BELT). |
| Plausibility 145 | add | Belt use variable (BELT_USE) code "77777 - not applicable" is only valid if |

| | | |
|---|---|---|
| | | Belt (BELT) is not present or not applicable. |
| Plausibility 146 | add | Belt was used/misued (BELT_USE) while belt presence (BELT) is unknown. |
| Plausibility 147 | add | Pedestrians, bicylces and PTW don`t have an Airbag front (AIRBF). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 148 | add | Airbag front variable (AIRBF) code "77777 - not applicable" is not valid for driver and front passenger. |
| Plausibility 149 | add | Only driver and front passenger Airbag fronts (AIRBF). |
| Plausibility 150 | add | Airbag front can only deploy/not deploy (AIRBF_DEPL) when present (AIRBF). |
| Plausibility 151 | add | Airbag front deployment variable (AIRBF_DEPL) code "77777 - not applicable" is only valid if Airbag front (AIRBF) is not present or not applicable. |
| Plausibility 152 | add | Airbag front deployed/was deactivated (AIRBF_DEPL) while presence (AIRBF) is unknown. |
| Plausibility 153 | add | Airbag front can only be deactivated (AIRBF_DEPL) for front-seat passenger. |
| Plausibility 154 | add | Pedestrians, bicylces and PTW don`t have an Airbag tubular/curtain (AIRBTC). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 155 | add | Airbag tubular/curtain variable (AIRBTC) code "77777 - not applicable" is not valid in this case. |
| Plausibility 156 | add | Airbag tubular/curtain can only deploy/not deploy (AIRBTC_DEPL) when present (AIRBTC). |
| Plausibility 157 | add | Airbag tubular/curtain deployment variable (AIRBTC_DEPL) code "77777 - not applicable" is only valid if Airbag tubular/curtain (AIRBTC) is not present or not applicable. |
| Plausibility 158 | add | Airbag tubular/curtain deployed (AIRBTC_DEPL) while presence (AIRBTC) is unknown. |
| Plausibility 159 | add | Pedestrians, bicylces and PTW don`t have a Sidebag (SIDEB). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 160 | add | Sidebag variable (SIDEB) code "77777 - not applicable" is not valid for driver and front passenger. |
| Plausibility 161 | add | Sidebag can only deploy/not deploy (SIDEB_DEPL) when present (SIDEB). |

| | | |
|---|---|---|
| Plausibility 162 | add | Sidebag deployment variable (SIDEB_DEPL) code "77777 - not applicable" is only valid if Sidebag (SIDEB) is not present or not applicable. |
| Plausibility 163 | add | Sidebag deployed (SIDEB_DEPL) while presence (SIDEB) is unknown. |
| Plausibility 164 | add | Pedestrians, bicylces and PTW don`t have a Kneebag (KNEEB). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 165 | add | Kneebag variable (KNEEB) code "77777 - not applicable" is not valid for driver and front passenger. |
| Plausibility 166 | add | Only driver and front passenger Kneebags (KNEEB). |
| Plausibility 167 | add | Kneebag can only deploy/not deploy (KNEEB_DEPL) when present (KNEEB). |
| Plausibility 168 | add | Kneebag deployment variable (KNEEB_DEPL) code "77777 - not applicable" is only valid if Kneebag (KNEEB) is not present or not applicable. |
| Plausibility 169 | add | Kneebag deployed (KNEEB_DEPL) while presence (KNEEB) is unknown. |
| Plausibility 170 | add | Pedestrians, bicylces and PTW don`t have a Seat ramp airbag (AIRBSR). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 171 | add | Seat ramp airbag variable (AIRBSR) code "77777 - not applicable" is not valid for driver and front passenger. |
| Plausibility 172 | add | Only driver and front passenger Seat ramp airbags (AIRBSR). |
| Plausibility 173 | add | Seat ramp airbag can only deploy/not deploy (AIRBSR_DEPL) when present (AIRBSR). |
| Plausibility 174 | add | Seat ramp airbag deployment variable (AIRBSR_DEPL) code "77777 - not applicable" is only valid if Seat ramp airbag (AIRBSR) is not present or not applicable. |
| Plausibility 175 | add | Seat ramp airbag deployed (AIRBSR_DEPL) while presence (AIRBSR) is unknown. |
| Plausibility 176 | add | Pedestrians, bicylces and PTW don`t have a Rear airbag (AIRBR). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 177 | add | Rear airbag variable (AIRBR) code "77777 - not applicable" is not valid for rear passengers. |

| | | |
|---|---|---|
| Plausibility 178 | add | Rear airbag can only deploy/not deploy (AIRBR_DEPL) when present (AIRBR). |
| Plausibility 179 | add | Rear airbag deployment variable (AIRBR_DEPL) code "77777 - not applicable" is only valid if Rear airbag (AIRBR) is not present or not applicable. |
| Plausibility 180 | add | Rear airbag deployed (AIRBR_DEPL) while presence (AIRBR) is unknown. |
| Plausibility 181 | add | Pedestrians, bicylces and PTW don`t have a Front center airbag (AIRBFC). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 182 | add | Front center airbag variable (AIRBFC) code "77777 - not applicable" is not valid for driver and front passenger. |
| Plausibility 183 | add | Only driver and front passenger Front center airbags (AIRBFC). |
| Plausibility 184 | add | Front center airbag can only deploy/not deploy (AIRBFC_DEPL) when present (AIRBFC). |
| Plausibility 185 | add | Front center airbag deployment variable (AIRBFC_DEPL) code "77777 - not applicable" is only valid if Front center airbag (AIRBFC) is not present or not applicable. |
| Plausibility 186 | add | Front center airbag deployed (AIRBFC_DEPL) while presence (AIRBFC) is unknown. |
| Plausibility 187 | add | Pedestrians, bicylces and PTW don`t have a Headrest protection system (HEADREST). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 188 | add | Headrest protection system variable (HEADREST) code "77777 - not applicable" is not valid in this case. |
| Plausibility 189 | add | Headrest protection system can only deploy/not deploy (HEADREST_DEPL) when present (HEADREST). |
| Plausibility 190 | add | Headrest protection system deployment variable (HEADREST_DEPL) code "77777 - not applicable" is only valid if Headrest protection system (HEADREST) is not present or not applicable. |
| Plausibility 191 | add | Headrest protection system deployed (HEADREST_DEPL) while presence (HEADREST) is unknown. |
| Plausibility 192 | add | Pedestrians, bicylces and PTW don`t have a Child seat (CHILDSEAT). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 193 | add | Child seat variable (CHILDSEAT) code "77777 - not applicable" is not valid in this case. |

| | | |
|---|---|---|
| Plausibility 194 | add | Pedestrians, bicylces and PTW don`t have a Bolster table for children (BOL-CHILD). Code "77777 - not applicable" instead or change PARTTYPE. |
| Plausibility 195 | add | Bolster table for children variable (BOL-CHILD) code "77777 - not applicable" is not valid in this case. |

**VARIABLES:**

| | | |
|---|---|---|
| Variable ACCTYPE | label | 721: "u-turn ..." |
| Variable ACCTYPE | label | 722: "u-turn ..." |
| Variable ACCTYPE | label | 723: "u-turn ..." |
| Variable ACCTYPE | label | 724: "u-turn ..." |
| Variable ACCTYPE | label | 725: "u-turn ..." |
| Variable ACCTYPE | label | 726: "u-turn ..." |
| Variable ACCTYPE | label | 729: "u-turn ..." |
| Variable ACCTYPE | description | Type 6: "longitudinal" |
| Variable CDC1DIRE | description | add valid labels |
| Variable CDC1DIRE | add label | 00 - impact is not horizontal |
| Variable CDC1DIRE | delete label | 88 - other |
| Variable CDC1AREA | description | add valid labels |
| Variable CDC1LONG | description | add valid labels |
| Variable CDC1VERT | description | add valid labels |
| Variable CDC1VERT | add label | W - Below undercarriage level (wheels and tyres only) |
| Variable CDC1TYPE | description | add valid labels |
| Variable CDC1TYPE | add label | A - Overhanging structures (inverted step) |
| Variable CDC2DIRE | description | add valid labels |
| Variable CDC2DIRE | add label | 00 - impact is not horizontal |
| Variable CDC2DIRE | delete label | 88 - other |
| Variable CDC2AREA | description | add valid labels |
| Variable CDC2LONG | description | add valid labels |
| Variable CDC2VERT | description | add valid labels |
| Variable CDC2VERT | add label | W - Below undercarriage level (wheels and tyres only) |
| Variable CDC2TYPE | description | add valid labels |
| Variable CDC2TYPE | add label | A - Overhanging structures (inverted step) |
| Variable COLLTYPE | description | 88888 - Collision of another type |
| Variable EES1 | description | For pedestrians or bicycles '77777 - not applicable' must be coded. |
| Variable EES2 | description | For pedestrians or bicycles '77777 - not applicable' must be coded. |
| Variable GPS | delete | |
| Variable GPSLAT | add | GPS latitude where accident happened (WGS 84). |
| Variable GPSLONG | add | GPS longitude where accident happened (WGS 84). |
| Variable OPPON1 | description | trailer |
| Variable MODEL | add label | 77777 - not applicable |
| Variable MODEL | add label | 99999 - unknown |

| | | |
|---|---|---|
| Variable ROADSURF | description | ... for the considered accident. For rails 88888 is coded. |
| Variable ROADSURF | description | The Variable was introduced in Member year 2014. Previous to this member year66666 - not collected" is valid." |
| Variable ROADSURF | add label | 66666 - not collected |
| Variable SKETCH | delete | |
| Variable TIME | add label | 9999 - unknown |
| Variable VLIM | description | The Variable was introduced in Member year 2015. Previous to this member year66666 - not collected" is valid." |
| Variable VLIM | add label | 66666 - not collected |

**PLAUSIBILITIES:**

| | | |
|---|---|---|
| Plausibility 2 | delete | redundant to Plausibility 28 |
| Plausibility 2 | add | |
| Plausibility 3 | delete | redundant to Plausibility 52 |
| Plausibility 3 | add | |
| Plausibility 4 | add | |
| Plausibility 19 | edit | delete ACCTYPE 225, 245, 361, 362, 363, 363, 364, 369 |
| Plausibility 27 | delete | redundant to Plausibility 28 |
| Plausibility 27 | add | Pedestrian is a single person (OCCNR has to be 1) |
| Plausibility 120 | add | For phase I data the year when accident happened has to be between 2007 and 2012. |
| Plausibility 121 | add | For member year 2014 the year when accident happened has to be between 2012 and 2013. |
| Plausibility 122 | add | For member year 2015 the year when accident happened has to be between 2013 and 2014. |
| Plausibility 123 | add | For member year 2016 the year when accident happened has to be between 2014 and 2015. (Exception SP: 2013 - 2015) |
| Plausibility 131 | add | EES value for pedestrians or bicycles has to be coded as 77777 - not applicable. |
| Plausibility 132 | add | EES value 77777 - not applicable is just valid for pedestrians or bicycles. |
| Plausibility 133 | add | Deceleration and deceleration distance values for pedestrians have to be coded as 77777 - not applicable. |
| Plausibility 134 | add | Deceleration and deceleration distance values 77777 - not applicable are just valid for pedestrians. |
| Plausibility 135 | add | PARTNR has to start with 1 and needs to be consecutive. There needs to be at least one participant. |

| | | |
|---|---|---|
| Plausibility 136 | add | OCCNR has to start with 1 and needs to be consecutive. There needs to be at least one occupant. |
| Plausibility 138 | add | The Variable ROADSURF was introduced in Member year 2014. "66666 - not collected" is only valid for previous member years. |
| Plausibility 139 | add | The Variable VLIM was introduced in Member year 2015. "66666 - not collected" is only valid for previous member years. |

**APPENDIX:**

| | | |
|---|---|---|
| Appendix E | add | Appendix E - Guidelines for IGLAD accident sketches |
| Appendix F | add | Appendix F - Change log |

**V1.09 – 150603_IGLAD_2015**

**VARIABLES:**

| | | |
|---|---|---|
| Variable VLIM | add | variable for speed limit |
| Variable ROADSURF | move | to ACCIDENT table |
| Variable INJSEVER | rename | Police injury severity |
| Variable INJSEVER | description | police coded |
| Variable ACCSEV | description | based on injury severity coded by the police |
| Variable MEMYEAR | description | The member year is the year in which the data was provided to IGLAD. It corresponds to the codebook of that member year. The variable is filled in by a default value and has not to be coded manually. This variable is also used in the plausibilities to check weather the plausibilty is provided for the member year or not. |

**V1.08 – 150518_IGLAD_2015**

**VARIABLES:**

| | | |
|---|---|---|
| Variable ACCTYPE | description | add for right-hand traffic |
| Variable ACCTYPE | description | add for left-hand traffic |

**PLAUSIBILITIES:**

| | | |
|---|---|---|
| Plausibility 130 | add | valid ACCTYPE input |
| Plausibility 8 | edit | |
| Plausibility 99 | edit | |
| Plausibility 61 | edit | \| $33 = 30 \| $33 = 44 \| ( $33 >= 61 & $33 <= 76 ) |

**APPENDIX:**

| | | |
|---|---|---|
| Appendix D | add | Appendix D ACCTYPE for left-hand traffic |

**V1.07 – 150331_IGLAD_2014**

**VARIABLES:**

| | | |
|---|---|---|
| Variable PARTTYPE | add label | 17 - electric bicycle or tricycle |
| Variable CDC1DIRE | add label | 0 |
| Variable CDC2DIRE | add label | 0 |
| Variable AGE | edit range | 1 -> 0 |

**PLAUSIBILITIES:**

| | | |
|---|---|---|
| Plausibility 2 | edit | |
| Plausibility 21 | edit | |
| Plausibility 22 | edit | |
| Plausibility 26 | edit | |
| Plausibility 28 | edit | |
| Plausibility 59 | edit | |
| Plausibility 26 | edit | ( $20396 > 1 & $20396 <> 99999 ) & ( ( $303 >= 51 & $303 <= 60 ) \| ( $304 >= 51 & $304 <= 60 ) \| ( $305 >= 51 & $305 <= 60 ) ) |
| Plausibility 16 | edit | ( $85 <> 103 & $85 <> 104 & $85 <> 113 & $85 <> 114 & $85 <> 133 & $85 <> 134 & $85 <> 142 ) |
| Plausibility 19 | edit | \| $85 = 225 \| $85 = 245 \| $85 = 369 \| $85 = 716 \| $85 = 759 |
| Plausibility 63 | edit | \| $33 = 7 \| $33 = 30 \| $33 = 44 |
| Plausibility 63 | edit | \| $33 = 8 |
| Plausibility 69 | edit | \| $21000 = 00 \| $21000 = 88 |
| Plausibility 70 | edit | \| $21000 = 00 \| $21000 = 88 |
| Plausibility 71 | edit | \| $21000 = 00 \| $21000 = 88 |
| Plausibility 72 | edit | \| $21000 = 00 \| $21000 = 88 |
| Plausibility 73 | edit | \| $21010 = 00 \| $21010 = 88 |
| Plausibility 74 | edit | \| $21010 = 00 \| $21010 = 88 |
| Plausibility 75 | edit | \| $21010 = 00 \| $21010 = 88 |
| Plausibility 76 | edit | \| $21010 = 00 \| $21010 = 88 |
| Plausibility 100 | delete | ("not all AIS - body regions known but MAIS known - implausible") |

**V1.06 – 150305_IGLAD**

**VARIABLES:**

| | | |
|---|---|---|
| Variable CDC1DIRE | add label | 77/7 - not applicable |
| Variable CDC1AREA | add label | 77/7 - not applicable |
| Variable CDC1DIRE | add label | 88 - other |
| Variable CDC2DIRE | add label | 88 - other |

**PLAUSIBILITIES:**

| | | |
|---|---|---|
| Plausibility 19 | edit | 0 -> 77777 |
| Plausibility 47 | edit | = -> <> |
| Plausibility 66 | edit | $131 -> |
| Plausibility 105 | edit | $435 -> $437 |

**V1.05 – 150213_IGLAD**

**VARIABLES:**

| | | |
|---|---|---|
| | add label | CN |

Variable COUNTRY

**PLAUSIBILITIES:**

| | |
|---|---|
| Plausibility 59 | add |
| Plausibility 60 | add |
| Plausibility 69 | add |
| Plausibility 70 | add |
| Plausibility 71 | add |
| Plausibility 72 | add |
| Plausibility 73 | add |
| Plausibility 74 | add |
| Plausibility 75 | add |
| Plausibility 76 | add |
| Plausibility 79 | add |
| Plausibility 80 | add |
| Plausibility 81 | add |
| Plausibility 82 | add |
| Plausibility 83 | add |
| Plausibility 84 | add |
| Plausibility 85 | add |
| Plausibility 86 | add |
| Plausibility 87 | add |
| Plausibility 88 | add |
| Plausibility 89 | add |
| Plausibility 90 | add |
| Plausibility 91 | add |
| Plausibility 93 | add |
| Plausibility 94 | add |
| Plausibility 95 | add |
| Plausibility 96 | add |

**V1.04 – 150212_IGLAD**

**VARIABLES:**

| | |
|---|---|
| Variable FACTOR1 | description |
| Variable FACTOR2 | description |
| Variable FACTOR3 | description |
| Variable CDC1DIRE | add |
| Variable CDC1AREA | add |
| Variable CDC1LONG | add |
| Variable CDC1VERT | add |
| Variable CDC1TYPE | add |
| Variable CDC1EXTT | add |
| Variable CDC1PERC | add |
| Variable CDC2DIRE | add |
| Variable CDC2AREA | add |
| Variable CDC2LONG | add |
| Variable CDC2VERT | add |
| Variable CDC2TYPE | add |
| Variable CDC2EXTT | add |
| Variable CDC2PERC | add |
| Variable CDC1 | delete |
| Variable CDC2 | delete |
| Variable VEHMAKE | update |

# Appendix G Country specific data collection

| | | |
|---|---|---|
| **Data provider name** | *Name of the data set.* | CASR |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | CASR |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | Yes |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Live investigation 7:00 - 21:00 Monday to Saturday, 9:00-21:00 Sunday, Follow-up investigation of very serious/fatal cases that may have occurred at any time or day |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Within 100 km of Adelaide, South Australia |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | absolute number: approx. 55 per year, within investigation area: approx. 2.5% of all injury crashes and 8% of fatal crashes, within full national sample: 0.41% of fatal crashes |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | 50 on the spot, average of 5 follow up of very serious per year |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Alert via ambulace service for live investigations, media and police for follow-up of very serious |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | An occupant or pedestrian involved in the case must be transported to hospital via ambulance |
| **Participant selection** | *Do you collect only accidents with participants of a specific type?* | Must involve at least one vehicle with a motor. I.e. does not include single cyclist crashes. |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when selecting the accident? Are there any practical / methodological limitations?* | alternated between two weeks of only rural cases and one week of any cases: aim to get similar numbers of metro and rural cases |
| **Difference to selection**<br>**criteria of national statistics /**<br>**potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Potential points of bias include: non 24/7 on-call coverage, rural crashes deliberately oversampled, limitation to within 100 km of Adelaide, limitation to ambulance transport only, limitation of motor vehicle crashes only, greater proportion of fatal cases as they were followed up outside or normal investigation hours |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | someone was injured or killed or the property damage exceeds $3000; or<br>information with other drivers or their representatives and anyone else involved in the crash were not exchanged; or<br>a vehicle involved in the crash was either towed or carried away |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Mixture of EDR, calculation with software (HVE), or use of equations e.g. critical speed for loss of control. If there is insufficient evidence to determine a reliable speed we do not reconstruct the crash. |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | 2015 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Brazil |
| **Data provider name** | *Name of the data set.* | SAE Brazil |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | |
| **Location / area** | *Spots and size of area where accidents are recorded.* | |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when selecting the accident? Are there any practical / methodological limitations?* | |
| **Difference to selection**<br>**criteria of national statistics /**<br>**potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Austria |
| **Data provider name** | *Name of the data set.* | TU Graz, Vehicle Safety Institute |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | TU Graz, Vehicle Safety Institute |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | retrospective based on court cases, no time restrictions |
| **Location / area** | *Spots and size of area where accidents are recorded.* | urban, rural, highway |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | to be defined after the selection of data to be inserted in the IGLAD data base |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | retrospective, primary data collected by police |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Court |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | all injuries (minor, severe, fatal) |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | less focus on single vehicle accidents |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | less focus on single vehicle accidents |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | less focus on single vehicle accidents |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | at least one person injured |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | PC Crash |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2005 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | China |
| **Data provider name** | *Name of the data set.* | CATARC |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | CATARC |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | 8 hours shifts, both weekday and weekend |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Qianxi'nan,Guizhou Province, China |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | Sample size<br>absolute [number per year]:100<br>within investigation area [%]:unknown<br>within full national sample [%]:unknown |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot and retrospective. |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Traffic police informes the investigators |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | We chose to investigate the accident with human body injury reaching the level AIS1. |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | All accidents |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | The accident of moving on the spot cannot be investigated,the accident with driver escaping cannot be investigated |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | The accident we choose must have human injury |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | It must be caused by the vehicle. Vehicles include motor vehicles and non-motor vehicles;It happened on the road. Roads refer to roads, urban roads, and places where social vehicles are allowed to pass, although within the jurisdiction of the unit;There must be damages. The consequences of damage only refer to direct |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | According to EDR,video,traces, transcripts |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS2005 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | China |
| **Data provider name** | *Name of the data set.* | DPAC NAIS |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | SAMR Defective Product Administrative Center (DPAC) NAIS |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | 24 hour per day, from Monday to Sunday |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Shanghai/ Guangdong/ Hainan/ Sichuan/ Shandong/ Heilongjiang, China |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | Absolute:100<br>within investigation area [%]:5%<br>within full national sample [%]:0.05% |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot (partly, about 30% ) |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | From Police office |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | with personal injury (AIS 2+)/ fatality;<br>OR<br>with airbag deployment; |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | yes, only the accident involving at least one passenger car will be investigated; |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | If the key information of the whole accident is missing, like one of the cars were not available for detailed vehicle investigation, we will drop the case; |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | There are quite a lot of accidents didn't counted in the national statistics, due to some political reason, therefore there must be bias, however can't estimate the exact figure; |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | The national statistics involving two parts: 1. General Processing Cases(mostly involving severe injury or fatality);2. Fast Processing Cases (mostly involving slight injury or no injury) |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | by PC-CRASH, basing on the estimation by equation, by video records,or EDR when available; |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS2005 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | NO;died within 7 days, same as the standard of national records in China |

| | | |
|---|---|---|
| **Country** | *Dataset country* | China |
| **Data provider name** | *Name of the data set.* | DPAC NAIS |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | SAMR Defective Product Administrative Center (DPAC) NAIS |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | 24/7 |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Shanghai/ Guangdong/ Hainan/ Sichuan/ Shandong/ Dongbei, China |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | Absolute:100<br>within investigation area [%]:5%<br>within full national sample [%]:0.05% |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot (mostly ) |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | From Police office |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | with personal injury (AIS 2+)/ fatality;<br>OR<br>with airbag deployment; |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | yes, only the accident involving at least one passenger car will be investigated; |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | If the key information of the whole accident is missing, like one of the cars were not available for detailed vehicle investigation, we will drop the case; |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | There are quite a lot of accidents didn't counted in the national statistics, due to some political reason, therefore there must be bias, however can't estimate the exact figure; |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | The national statistics involving two parts: 1. General Processing Cases(mostly involving severe injury or fatality);2. Fast Processing Cases (mostly involving slight injury or no injury) |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | by PC-CRASH, basing on the estimation by equation, by video records,or EES from the deformation of the vehicle; |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS2005 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | NO;died within 7 days, same as the standard of national records in China |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Czech Republic |
| **Data provider name** | *Name of the data set.* | Transport Research Centre (CDV) |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Transport Research Centre (CDV) |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | yes |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Alternating shifts:<br>6:00 - 18:00, 18:00 - 6:00 |
| **Location / area** | *Spots and size of area where accidents are recorded.* | South Moravia Region (including Brno city) |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | absolute: approximately 150 cases per year<br>investigation area: approximately 2 % from all accidents (approximately 7 % from injured accidents)<br>national sample: approximately 0,2 % from all accidents (approximately 1 % from injured accidents) |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | 100% on-the spot |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Traffic Police office |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | Injury accidents |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | No preliminary selection |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | Only one unique case must not be published. Investigation is dependent on participant permission. Involved vehicles must be available for inspection. |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Today's National statistics is based on Traffic Police statistics. Basic problem is in role of Traffic Police - to define who is guilty only. It means there is not detail evaluation of all accident aspects (car + human + infrastructure) |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | According to national statistics, an accident happens on a public road or a private road open to public. |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Virtual Crash or calculation |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS2005 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | France |
| **Data provider name** | *Name of the data set.* | LAB |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation. Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | PSA (Stellantis), Renault |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | no |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | All time (SSd)<br>Weekday 6:00-15:00 or 12:00-21:00 (PSD) |
| **Location / area** | *Spots and size of area where accidents are recorded.* | 80% of cases: Essonne (South of Paris) (PSD)<br>20% of cases: all over France |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | absolute: 50 (SSD + PSD)<br>investigation area: 10%<br>national sample: 0.8% |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | retrospective (SSD)<br>on-the-spot (PSD) |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Police office (SSD)<br>Rescue team (PSD) |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | Injury accidents |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | Injury in passenger car (SSD)<br>Passenger car involved (PSD) |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Injury accidents involving at least a passenger car are the only one selected |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | According to national statistics, an accident happens on a public road or a private road open to public circulation, involves at least one person injured, at least one vehicle, is not a suicide or a wilful assault and injuries are because of the accident (for instance, the driver died because of a heart attack and has had an accident: this accident is not in the national statistics). |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | PC CRASH and kinematics calculation |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2005 since collection year 2018, AIS98 for previous years |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Germany |
| **Data provider name** | *Name of the data set.* | MHH (Medical University Hannover) |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | MHH |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | yes |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Alternating shifts:<br>daily alternating shifts (one per day)<br>week A 0:00 - 6:00 or 12:00 - 18:00<br>week B 6:00-12:00, or 18:00 - 24:00 |
| **Location / area** | *Spots and size of area where accidents are recorded.* | City of Hanover and surrounding area, radius of about 30 km. |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | absolute: About 600<br>investigation area: 12,5%<br>national sample: 0.15% |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot in all shifts |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Automatic notification from police and rescue services |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | All accidents with injuries and fatalities |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | All accidents |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | 1. Accident selection by random sample ensures representative subsample of accidents in the sample area<br>2. If other accidents occur while one accident is beeing investigated, only the last of those accidents is selected |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | 1. There may be differences with accidents that a re tagged as suicide afterwards and are deleted f rom national traffic accident<br>statistics or not tagged as suicide (though being o ne)<br>2. Slight overreporting of fatal and very severe ac cidents, but could be eliminated via weighting to national statistics |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Road traffic accidents are accidents resulting from driving traffic on public roads and places in which persons were killed or injured or material damage occured. |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Accident Reconstruction via PC Crash |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 90 updated 98 (used in iGLAD), AIS2005 updated 2008, AIS 2015 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Germany |
| **Data provider name** | *Name of the data set.* | VUFO |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | consortium: FAT<br>Audi, Autoliv, BMW, Bosch, Continental, DEKRA, Denso, Ford, Joyson Safety, Mercedes, Michelin, Opel, Porsche, Toyota, Volkswagen, Volvo, ZF |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | no |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Alternating shifts:<br>Week 1: 0:00 - 6:00, 12:00 - 18:00<br>Week 2: 6:00 - 12:00, 18:00 - 24:00 |
| **Location / area** | *Spots and size of area where accidents are recorded.* | City of Dresden and 40-45 km surrounding |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | absolute: 1,000<br>investigation area: 25 %<br>national sample: 0.38 % |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot in all shifts |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Alert via Police Command Situation Center<br>in investigation area |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | All accidents with injuries |
| **Participant selection** | *Do you collect only accidents with participants of a specific type?* | All accidents |
| **Other filters / selection criteria / limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | Discard all other accidents while one accident is s till investigated and select the last reported accid ent after the current one has finished |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | 1. There may be differences with accidents that are tagged as suicide afterwards and are deleted from national traffic accident statistics or not tagged as suicide (though being one)<br>2. Slight overreporting of fatal and very severe accidents, but could be eliminated via weighting to national statistics |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Pursuant to Art. 1 of the Law on Statistics of Road Traffic Accidents only those accidents are recorded which are due to vehicular traffic, i.e. accidents involving only pedestrians are not coverd by these statistics.<br><br>Statistics cover only those accidents which were reported to the police. Especially traffic accidents involving only material damage or slight personal injuries are to a relatively large extent not reported to the police. |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Complete reconstruction of all accident phases with the software PC Crash |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 1990 Revision 1998, **AIS2005 Update 2008 (used in iGLAD)**, AIS 2015 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | yes |

| | | |
|---|---|---|
| **Country** | *Dataset country* | India |
| **Data provider name** | *Name of the data set.* | JP Research India Pvt. Ltd. |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Consortium : RASSI (Road Accident Sampling System - INDIA)<br>JP Research INC, Bosch, Honda, Autoliv, Toyota, Renault, Nissan, Hyundai, Mercedes, Maruti Suzuki, Tata Motors, Mahindra, Continental |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | 24 / 7 (Any Day, Any Time) |
| **Location / area** | *Spots and size of area where accidents are recorded.* | - Coimbatore (Rural district with state and national highway),<br>- Pune (Mumbai Pune Expressway - 94 km road & Old mumbai pune highway)<br>- Ahmedabad (Whole city)<br>- Kolkata (Whole city)<br>- Jaipur (Whole city) |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | Absolute: 725<br>Investigation area: 12 %<br>National sample: 0.155 % |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot and retrospective. |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Police, Ambulance, Self, Towing agencies |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | Accident involving Fatalities, Serious and Minor Injuries are selected. Also accident without any injury (No Injury accidents) involving tow away are considered. |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | Yes, accidents involving at least one motorised vehicle are investigated. |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | Case completeness, Crash scene must be identifiable through scene evidence,<br>One of the 2 Involved vehicles with highest severity must be available for inspection,<br>In case of Powered Two Wheelers accidents, the collision partners must be available for inspection. |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Underreporting of serious and minor accidents in national statistics |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Road accident registered by the police under Indian Penal Code (IPC) Sections 279, 337, 338 and 304(A) |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Calculcation by software (PC Crash) and by formulae |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2005 updated 2008 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes, we follow the defination "died within 30days of the crash" |

| | | |
|---|---|---|
| **Country** | *Dataset country* | India |
| **Data provider name** | *Name of the data set.* | JP Research India Pvt. Ltd. |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Consortium : RASSI (Road Accident Sampling System - INDIA)<br>JP Research INC, Bosch, Honda, Autoliv, Mercedes, Maruti Suzuki, Tata Motors, Yamaha. |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | 24 / 7 (Any Day, Any Time) |
| **Location / area** | *Spots and size of area where accidents are recorded.* | - Coimbatore (Rural district with state and national highway),<br>- Discontinued_Pune (Mumbai Pune Expressway - 94 km road & Old mumbai pune highway)<br>- Ahmedabad (Whole city)<br>- Kolkata (Whole city)<br>- Jaipur (Whole city)<br>- Nagpur (Rural district limited to only 6 Regions) |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | Absolute: 850<br>Investigation area: 12 %<br>National sample: 0.155 % |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-the-spot and retrospective. |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Police, Ambulance, Self, Towing agencies |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | Accident involving Fatalities, Serious and Minor Injuries are selected. Also accident without any injury (No Injury accidents) involving tow away are considered. |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | Yes, accidents involving at least one motorised vehicle are investigated. |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | Case completeness, Crash scene must be identifiable through scene evidence,<br>One of the 2 Involved vehicles with highest severity must be available for inspection,<br>In case of Powered Two Wheelers accidents, the collision partners must be available for inspection. |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Underreporting of serious and minor accidents in national statistics |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Road accident registered by the police under Indian Penal Code (IPC) Sections 279, 337, 338 and 304(A) |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Calculcation by software (PC Crash) and by formulae |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2005 updated 2008 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes, we follow the defination "died within 30days of the crash" |

Korea = new Data Provider since 2023 → yellow fields will be updated soon

| | | |
|---|---|---|
| **Country** | *Dataset country* | Korea |
| **Data provider name** | *Name of the data set.* | Samsong Industries, Ltd. |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation. Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Basically, we own all of our data. In the case of minor accidents, the insurance company asks us to analyze the accidents. In this case, the original file (mostly dashcam video file) is owned by the insurance company, but the produced DB is owned by us. Fatal accidents are produced at the request of the Road Traffic Authority, the National Police Agency, and the National Forensic Research Institute, and we have the ownership of the rewritten DB. |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | not applicable (new Data Provider) |
| **Time** | *Time of data investigation: Shifts (please provide hours), daytime only, weekday, weekend.* | |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Accidents across the country are being collected. |
| **Sample size absolute [number per year]: within investigation area [%]: within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area. Same related to all police recorded accidents in the country.* | absolute:<br>investigation area:<br>national sample: |
| **Investigation method** | *How do you investigate the site of the accident? On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | In case of a minor accident, the accident analysis is carried out with dashcam videos and photos. Most of the occupants were not injured. For fatal accidents, the police collect all accident scene data on the day of the accident, and if the police need in-depth analysis, they request a higher-level analysis agency. At this time, accompany them or analyze and reproduce the accident based on the information they collect. |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | via Police or insurance companies |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation? Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | There is no such standard.<br>If necessary, we will review the classification by injury. |
| **Participant selection** | *Do you collect only accidents with participants of a specific type?* | All accidents<br>[Electric vehicles are being analyzed separately only for Tesla electric vehicles from May 2021. For Teslas (equipped with cameras) we are collecting driving data (unusual situation) and accident data. About 5,000 driving data were collected, and about 50 accidents were analyzed through request. |
| **Other filters / selection criteria / limitations** | *Is there any additional constraint or procedure that is applied when selecting the accident? Are there any practical / methodological limitations?* | Not yet |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | - |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Among the accidents we analyze, if the client is a private sector, especially an insurance company, it is not included in the statistics of the National Police Agency. |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | Complete reconstruction of all accident phases with the software PC Crash. When analyzed by EDR and DTG, use the data obtained here. |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | - |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | - |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Spain |
| **Data provider name** | *Name of the data set.* | IDIADA SP |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Policia de la Generalitat Mossos d'Esquadra |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Any day, any time |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Mainly Catalunya.<br>(other Spanish national communities don't consider the sharing of cases for investigation aims. Strong privacy restrictions) |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | on-the-spot<br>retrospective |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Retrospective investigation<br>source of notification: Policia de la Generalitat Mossos d'Esquadra |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, ...* | Dead people |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | Any vehicle participant |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when selecting the accident? Are there any practical / methodological limitations?* | Severity, national conmotion |
| **Difference to selection**<br>**criteria of national statistics /**<br>**potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Scope of criterias is common for most of the accident cases colected in Spain. |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | |

| | | |
|---|---|---|
| **Country** | *Dataset country* | Sweden |
| **Data provider name** | *Name of the data set.* | Chalmers University of Technology |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | Chalmers University of Technology |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | No |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | Altering shifts according to sampling plan, ALL days all year around<br>07-14<br>14-21 on-scene |
| **Location / area** | *Spots and size of area where accidents are recorded.* | Gothenburg + 6 municipalities |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | 100 crashes/year until 2014 |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | On-scene & retrospective (night) see "time" |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Emegency services<br>In Sweden there is only one number to call in an emergency. INTACT receive the notification automatic by e-mail in minutes after the crash. |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | When an ambulance has been called to the scene. The original data include non-injury accidents |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | All crashes involving a passenger car, truck or bus.<br>Not single vehicle crash with motorcycle, moped, bicycle, pedestrian |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | Discard all other accidents while one accident is still investigated and select the first accidents after the current one has finished if not older than 20 minutes. |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | Police only register injury crashes and the emergency hospital register all people who comes to the emergency. There are accidents in the hospital records which is not registered by the police. INTACT data have approx 30% non injury accidents which is not registered in national statistics. Approx. 5% of INTACT cases is reported by the hospitals only. |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | Police report crashes that happened on a road involving at least one vehicle and one injured road user. |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | * mainly PC-crash for determining the travelled and impact speed although we also collect data for damage based reconstructions.<br>* reconstructions on all cases were the field data is good enough (more problems in reconstructing low severity accidents)<br>* No formal validations made by DP |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2005 update 2008 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | No fatalities in delivered data. |

| | | |
|---|---|---|
| **Country** | *Dataset country* | USA |
| **Data provider name** | *Name of the data set.* | NHTSA: Recoded by Asymptotic AB, Sweden |
| **Data owner/consortium name** | *Name of the data owner, usually the one who sponsors the data investigation.*<br>*Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.* | NHTSA / U.S. Department of Transportation |
| **Original data selection criteria** | | |
| **Change since previous dataset (yes/no)** | *Whether the original data collection selection changes since previous provided dataset for IGLAD.* | Yes. Case selection criterion in NASS CISS is: All police-reported motor vehicle crashes on a traffic way, each involving a passenger vehicle and in which a passenger vehicle is towed from the scene for any reason. Before in previous NASS CDS was: … towed due to damage. Also, the sampling design changed compared to NASS CDS.<br>For details, see: "Crash Investigation Sampling System: Design Overview, Analytic Guidance, and FAQs", pp. 20, FAQ question 5. |
| **Time** | *Time of data investigation:*<br>*Shifts (please provide hours), daytime only, weekday, weekend.* | All times and days of the year. |
| **Location / area** | *Spots and size of area where accidents are recorded.* | 24 geographic sites for CISS Phase 1, called Primary Sampling Units (PSUs). These are:<br>Washington, Asotin, Whitman / Idaho, Latah, Nez Perce / California, Butte / California, Sacramento / California, Monterey / California, San Bernardino / Arizona, Maricopa / Texas, Comal / Texas, Tarrant Texas, Dallas / Oklahoma, Carter / Wisconsin, Chippewa, Eau Claire / Illinois, Henry, Rock Island / Illinois, Gallatin, Hardin, White / Ohio, Montgomery, Preble / Ohio, Hamilton / Ohio, Delaware, Morrow Pennsylvania, Cameron, Potter, Tioga / Maine, Cumberland / Massachusetts, Berkshire / Massachusetts, Bristol / Rhode Island, Newport / New York, Nassau / New Jersey, Atlantic / Virginia, chesterfield, Hopewell City / Alabama, Etowah |
| **Sample size**<br>**absolute [number per year]:**<br>**within investigation area [%]:**<br>**within full national sample [%]:** | *Approximate percentage of accidents recorded in the investigation area in relation to the police recorded accidents in that area.*<br>*Same related to all police recorded accidents in the country.* | 2000 – 3000 crashes per year<br>within investigation area, ca. 5%<br>within full national sample, ca. 0.03% |
| **Investigation method** | *How do you investigate the site of the accident?*<br>*On-the-spot means that the investigation team approaches the site along with police and emergency rescue teams very close to the time of the accident.* | Retrospectively |
| **Sources of accident notification** | *What is the origin of the notification of the accident?* | Police reports |
| **Accident severity** | *What is the level of accident severity that must be reached to be selected for investigation?*<br>*Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …* | At least one vehicle towed away |
| **Participant selection** | *Do you collect only accidenst with participants of a specific type?* | involving passenger cars, light trucks, vans, and utility vehicles |
| **Other filters /**<br>**selection criteria /**<br>**limitations** | *Is there any additional constraint or procedure that is applied when*<br>*selecting the accident? Are there any practical / methodological limitations?* | No |
| **Difference to selection criteria of national statistics / potential bias** | *Are there any differences in the selection criteria compared to police recorded accidents (national statistics), especially differences that can result in any bias.* | The differences compared to the national statistics are due to the selection criterion "… involving a passenger vehicle<br>and in which a passenger vehicle is towed from the scene for any reason", which requires the involvement of at least<br>one passenger vehicle (passenger car, light truck, van or utility) in the crash. |
| **How is a crash defined according to the national statistics.** | *What is the criteria for the police to include the crash into official statistics? E.g. public road, at least one person injured, include at least one vehicle involved.* | it must involve at least one motor vehicle traveling on a traffic way, and the result must be property damage, injury, or death |
| **Detailed description of the data** | | |
| **Collision speed/Delta V etc. origin** | *How is the collision speed/Delta V etc. retrieved (EDR/calculation by software/ which software.)* | WinSMASH and EDR |
| **AIS version** | *AIS 90, AIS 90 updated 98, AIS 2005 , AIS 2005 updated 2008?* | AIS 2015 |
| **Fatally injured due to the crash** | *Is your data coded according to the definition "died within 30 days of the crash" Yes/No* | Yes |

# Appendix H IGLAD publications

A list of IGLAD publications can be found on the webforum at:

https://secure.webforum.com/iglad/doc?dfRefID=423

**BASt, Audi, BME, Chalmers, IFSTTAR-LESCOT, IFSTTARLEOST, Applus IDIADA, BME, TNO. 2016.** *PROSPECT - Accident Analysis, Naturalistic Observations and Project.* s.l. : HORIZON 2020, 2016.

**Dario Vangi, Carlo Cialdai, Michelangelo-Santo Gulino, Kjell Gunnar Robbersmyr. 2018.** Vehicle Accident Databases: Correctness Checks for Accident Kinematic Data. *designs.* 2018.

**Dario Vangi, Michelangelo-Santo Gulino, Carlo Cialdai. 2019.** Coherence assessment of accident database kinematic data. *Accident Analysis and Prevention.* Volume 123 2019, pp. 356-364.

**Henrik Liers, Marcus Petzold, Harald Feifel, Jörg Bakker, Ernst Tomasch. 2023.** *The creation and application of haronized pre-crash scenarios from global traffic accident data.* ESV Conference 2023, Yokohama, April 2023 : s.n., 2023.

**Henrik Liers, Lena Pett. 2024.** Road Safety in a global perspective - Accidentology in Asia and Europe. AIRBAG 2024 Conference, Mannheim, November 2024.

**Jörg Bakker, Hanna Jeppsson, Lars Hannawald, Florian Spitzhüttl, Alejandro Longton, Ernst Tomasch. 2017.** IGLAD - INTERNATIONAL HARMONIZED IN-DEPTH ACCIDENT DATA. 2017.

**SWOV, Loghborough University, BASt: L.T. Aarts, J.J.F. Commandeur, R. Welsh, S. Niesen, M. Lerner, P. Thomas, N. Bos, R. J. Davidse. 2016.** *Study on Serious Road Traffic Injuries in the EU.* Brussels : EUROPEAN COMMISSION, 2016.

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