IGLAD

INITIATIVE FOR THE GLOBAL
HARMONISATION OF ACCIDENT DATA

Codebook

Member Year 2023

Phase IV

Date 2024-04-17

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.

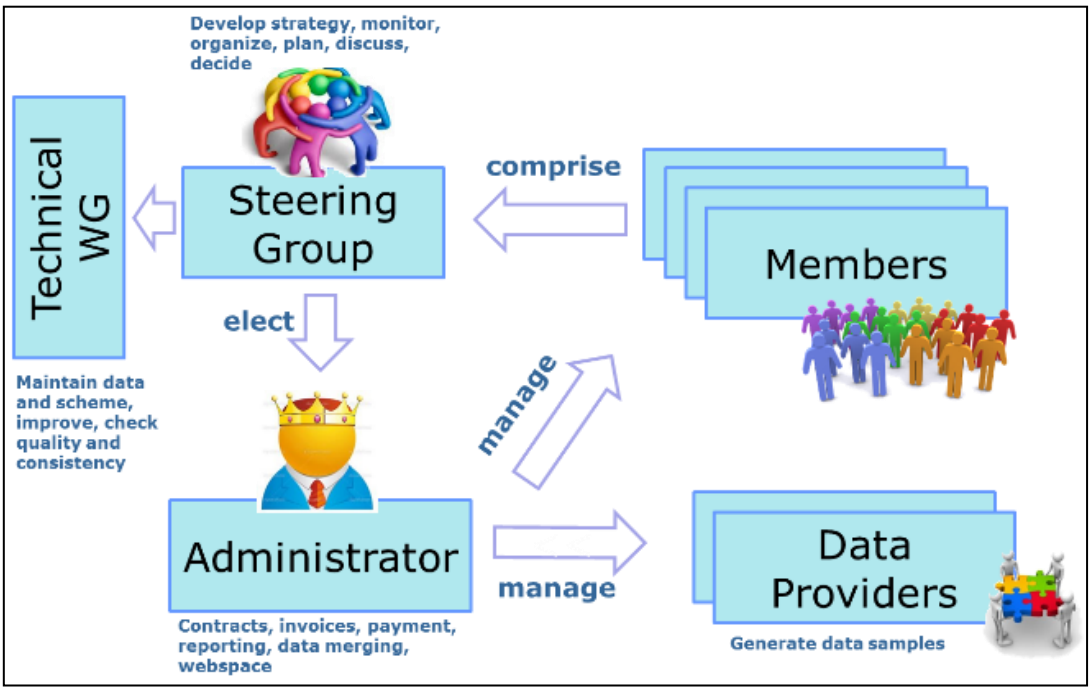


Figure 1. Organizational structure of the project from Phase 2 on.

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.

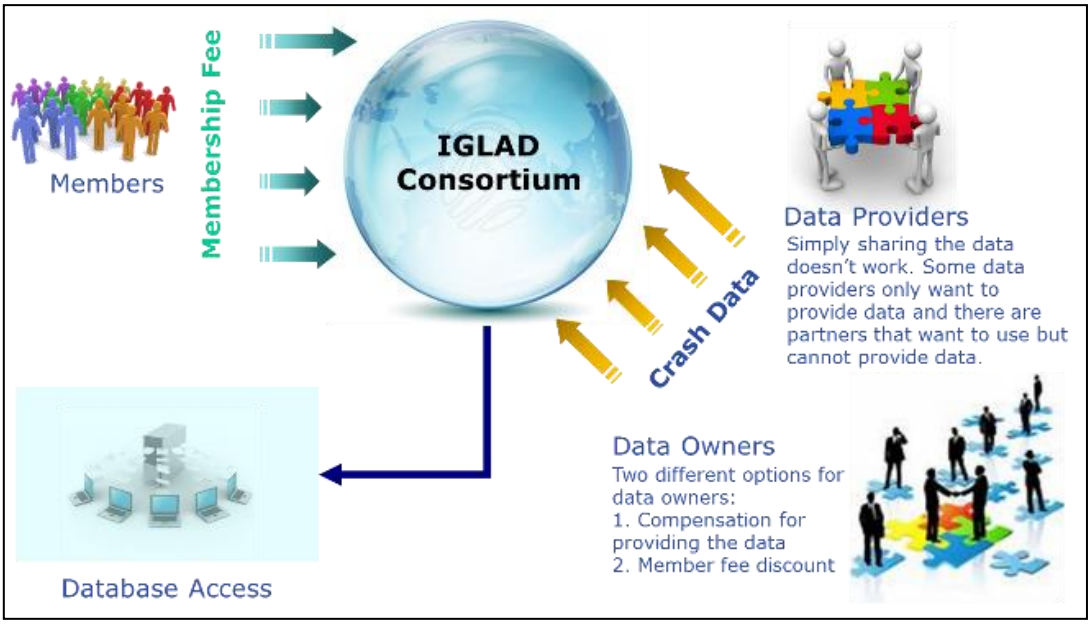


Figure 2. The funding model balances interests in the project from Phase 2 on.

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.

Thus, the current dataset (effective December 2023) contains a total of **10,625 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, 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 http://iglad.net/ [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	Oliver SCHULZE Oliver.Schulze@takata.com.br
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	BASt	GIDAS (German In-Depth Accident Study)	Sandra BREUNIG breunig@bast.de
Germany	VUFO	GIDAS (German In-Depth Accident Study)	Henrik LIERS henrik.liers@vufo.de
India	JP Research	RASSI (Road Accident Sampling System India)	Ravishankar RAYESRAMAN ravishankar@jpresearch.com
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 Jörg BAKKER jorg.bakker@asymptotic.ai

Responsibilities

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

[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 year of data release

[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

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

****

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 - standing traffic

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

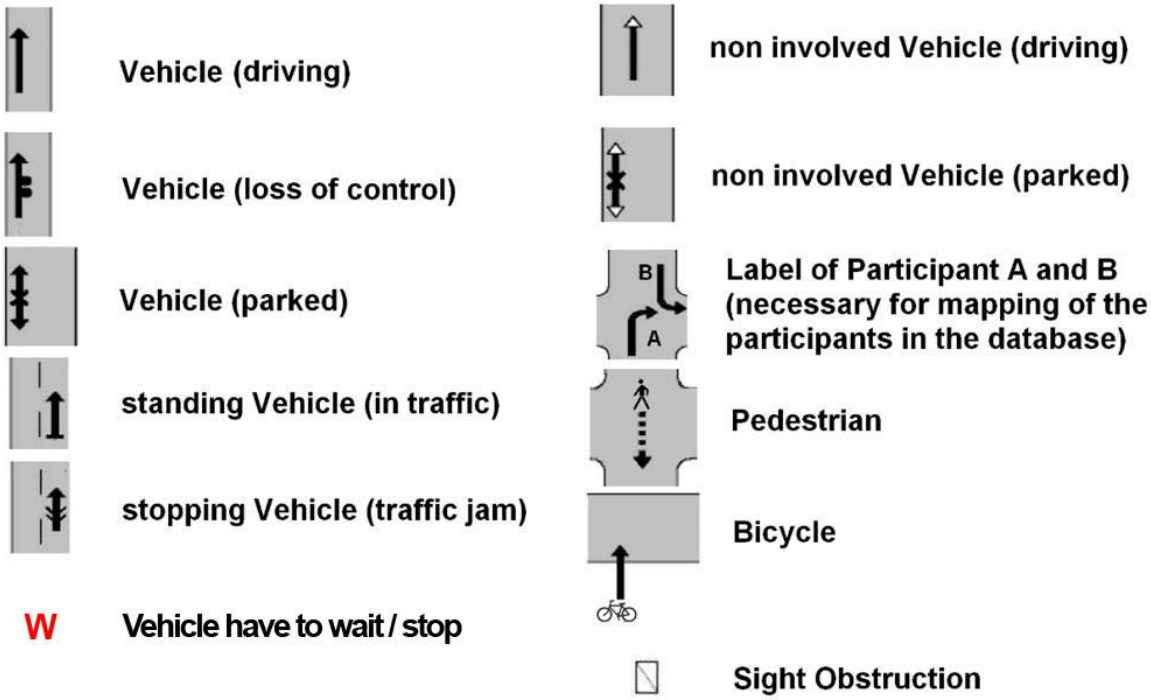
799 - others - all other accidents

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

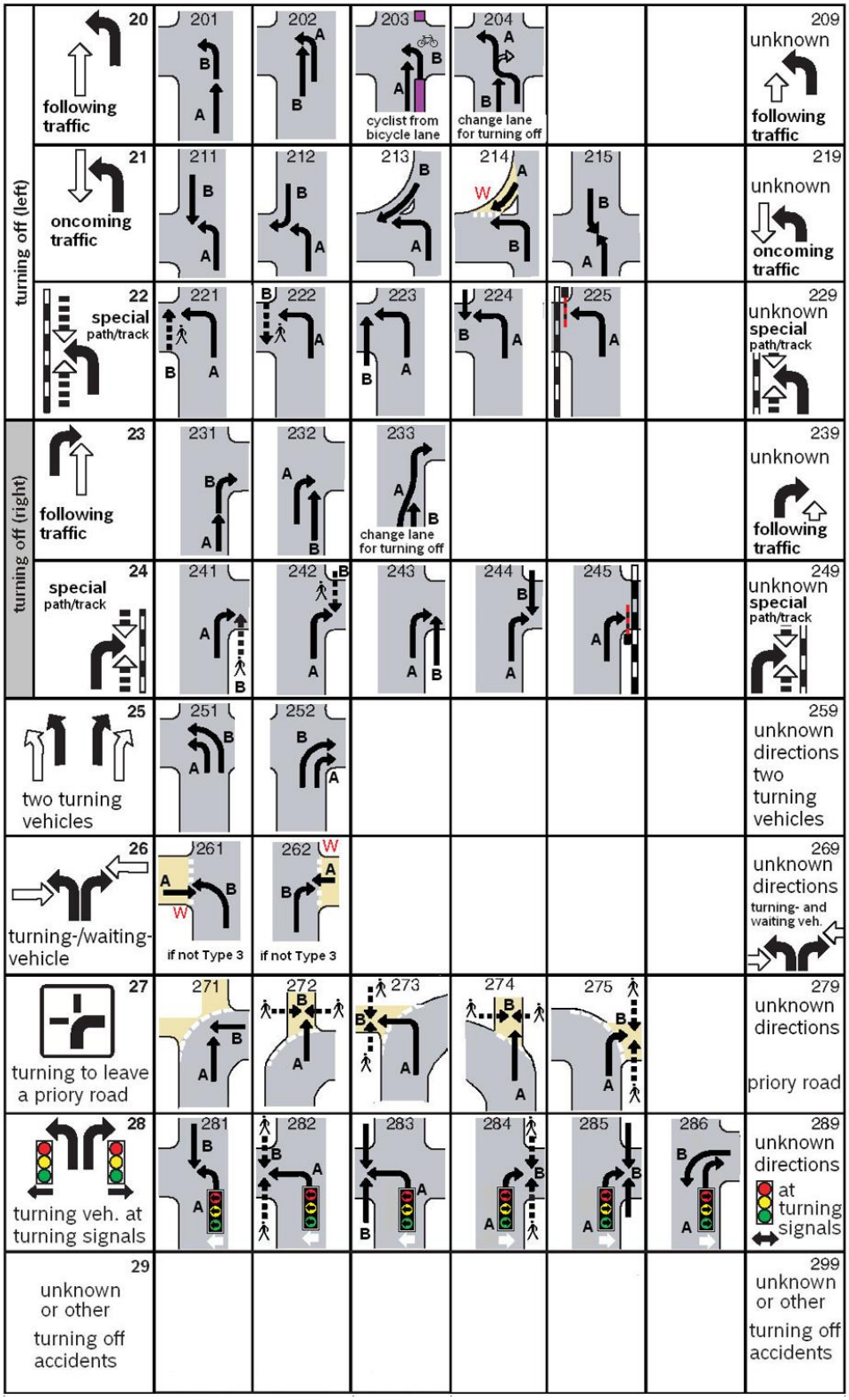
Right-hand traffic

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**

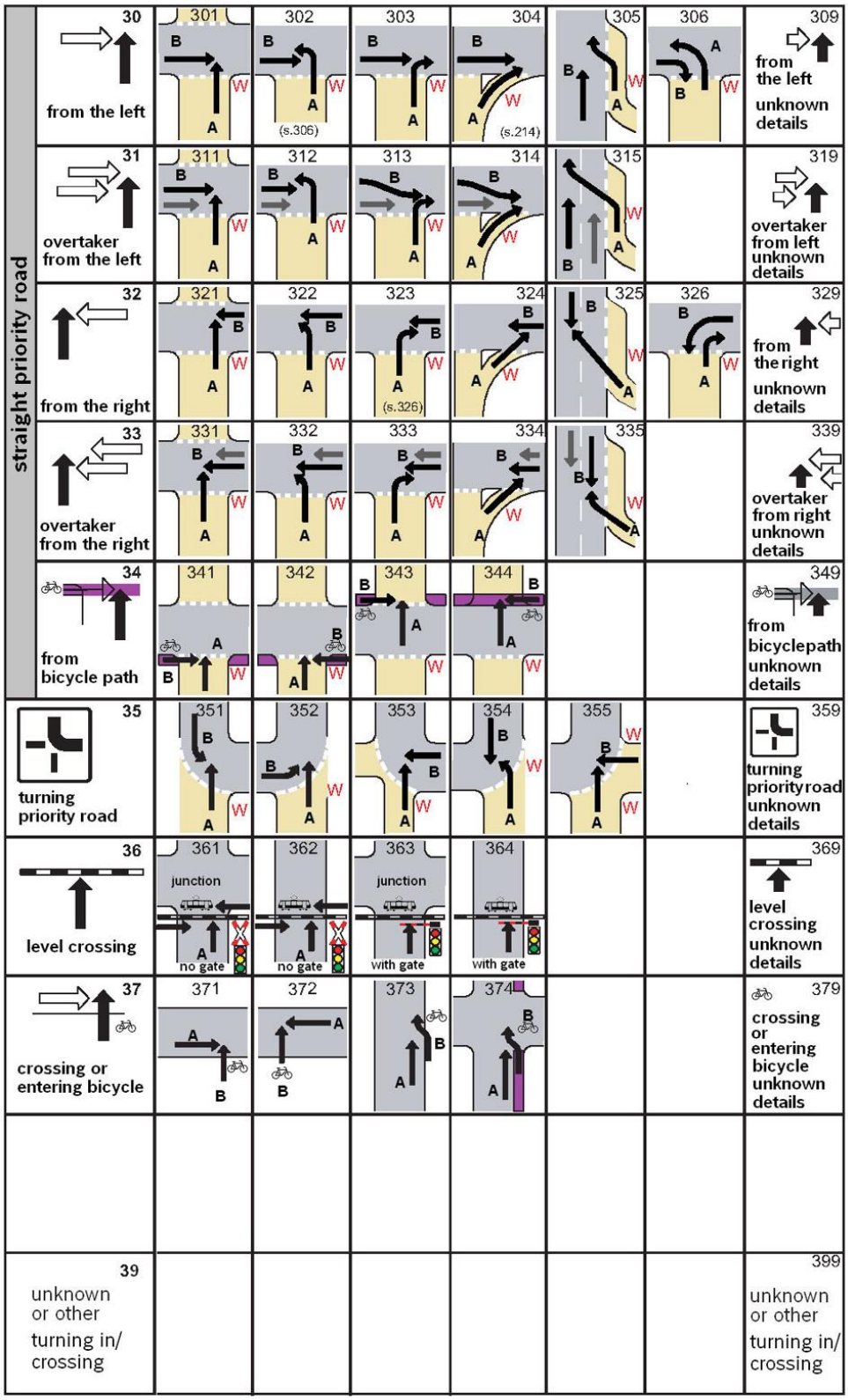
Right-hand traffic

Type 2: Turning off accident



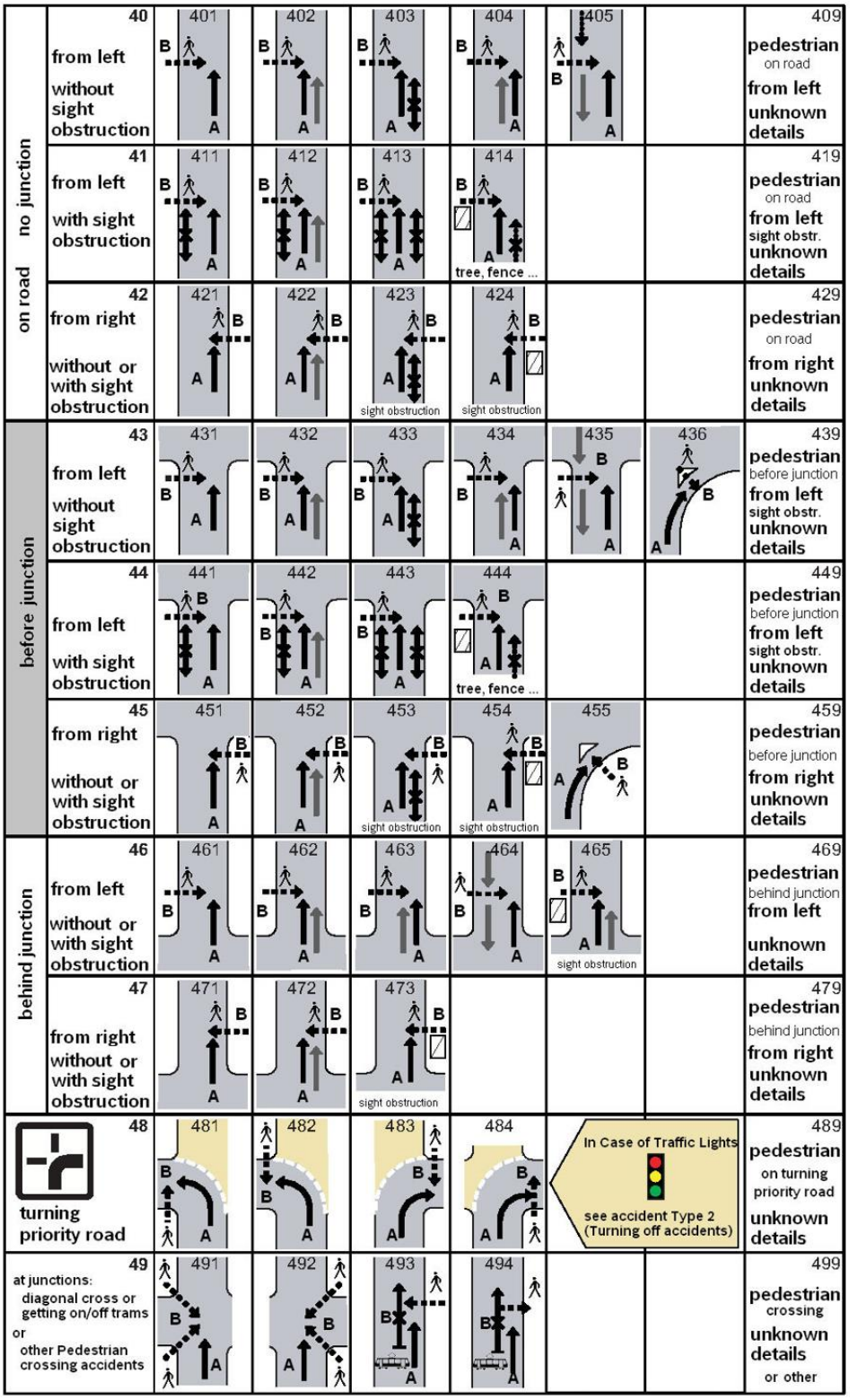
Right-hand traffic

Type 3: Turning in / crossing accident



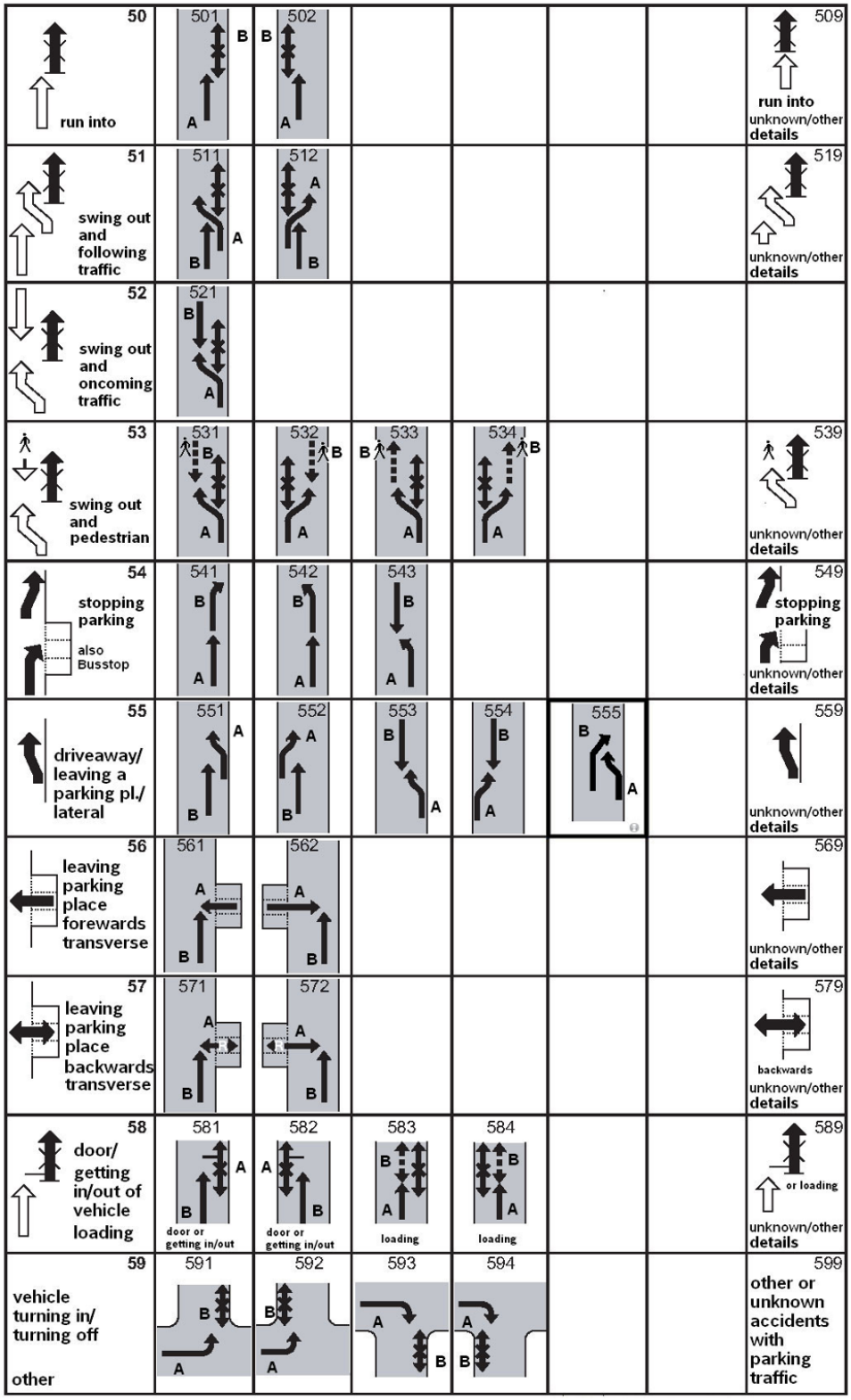
Right-hand traffic

Type 4: Pedestrian crossing road accident



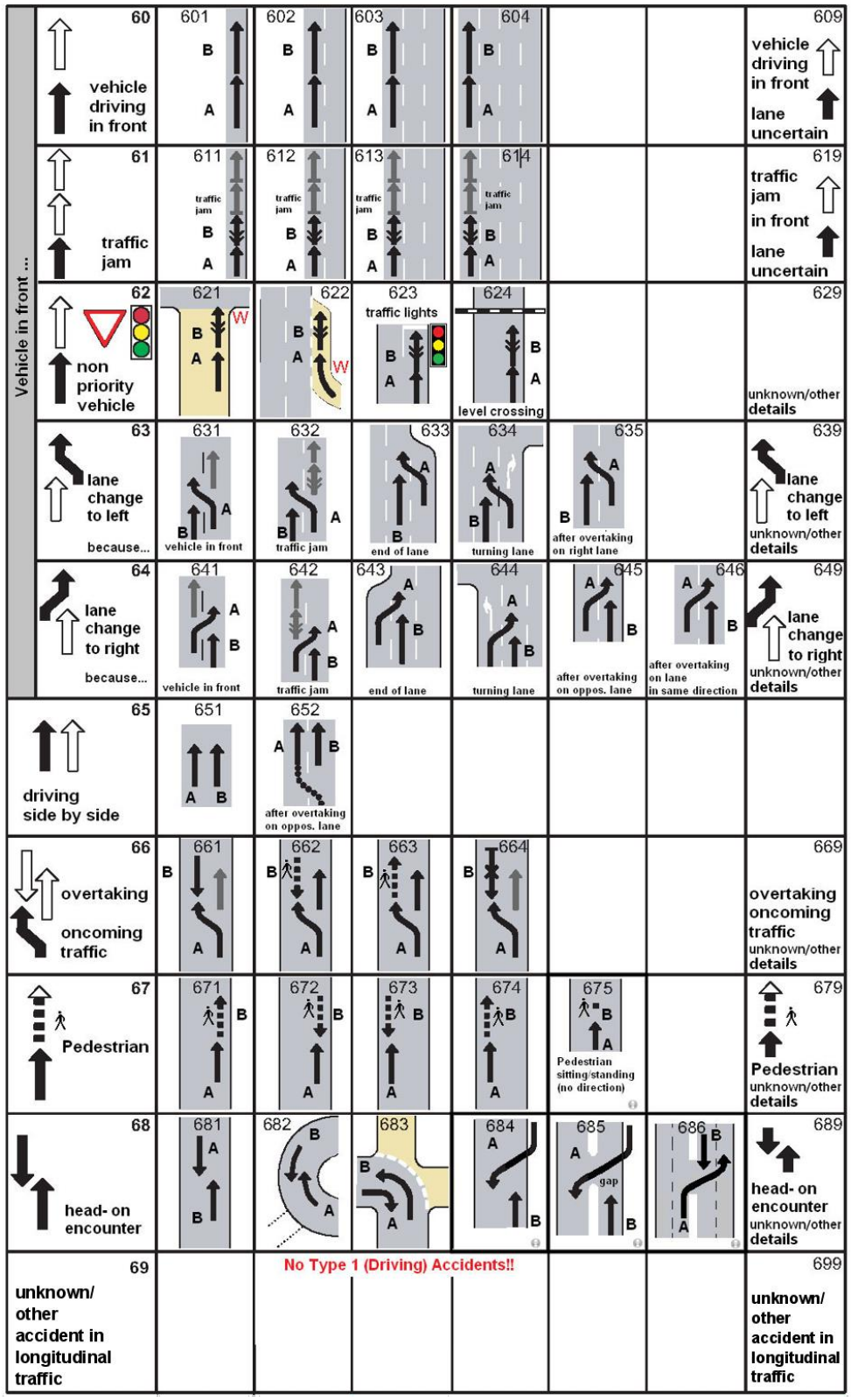
Right-hand traffic

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 Emergency arrival (EMARRIV)

Table: ACCIDENT

Label: Emergency arrival

Valid date period: 2013-12-01

Mandatory variable: Yes

Range: 0 - 9999

Description:

The time when the first EMS reached the accident site (HHMM).

Defined labels:

7777 - not applicable

9999 - unknown

1.25 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

1.26 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

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 year of data release

[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

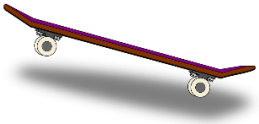
19 – POWERED self-balancing personal transporter (without steering rod)



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

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

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 - Wiener

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

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: 1 - 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)

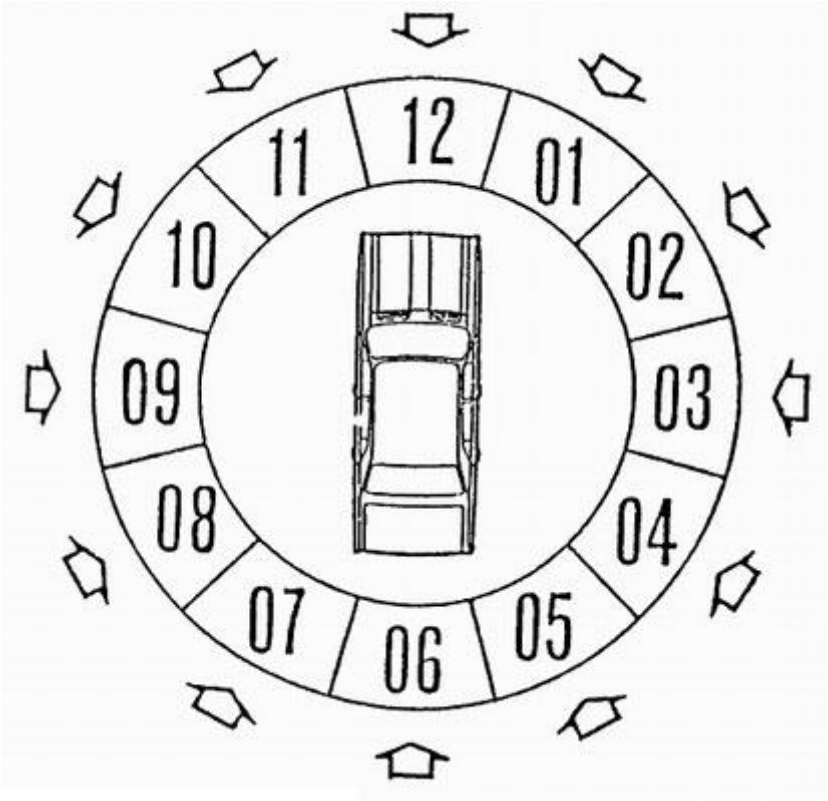
Table: PARTICIPANT

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)

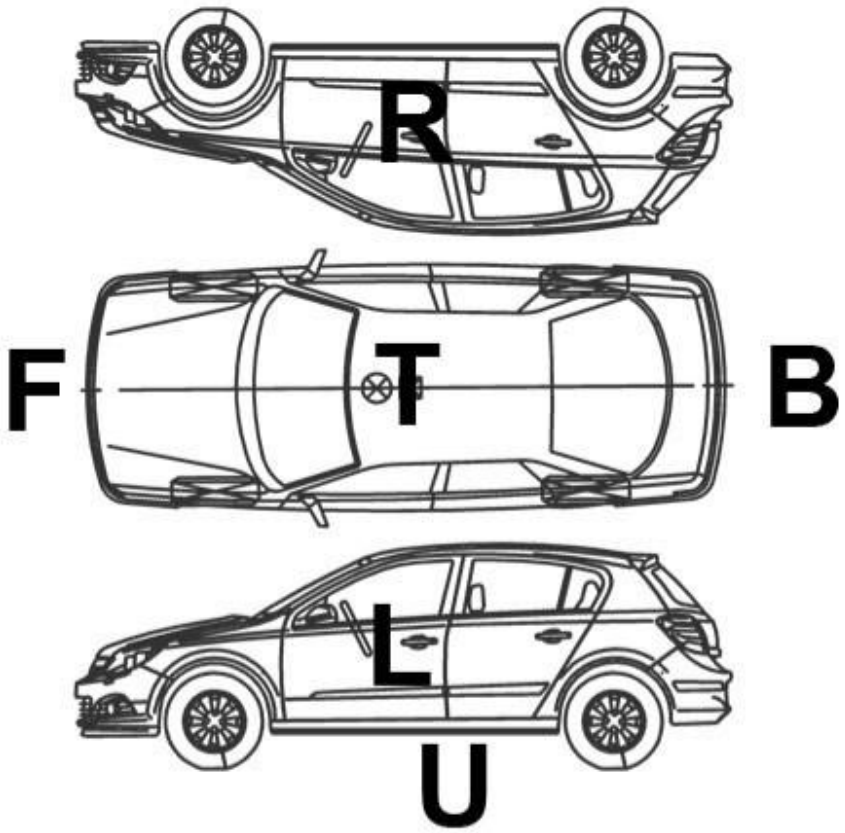
Table: PARTICIPANT

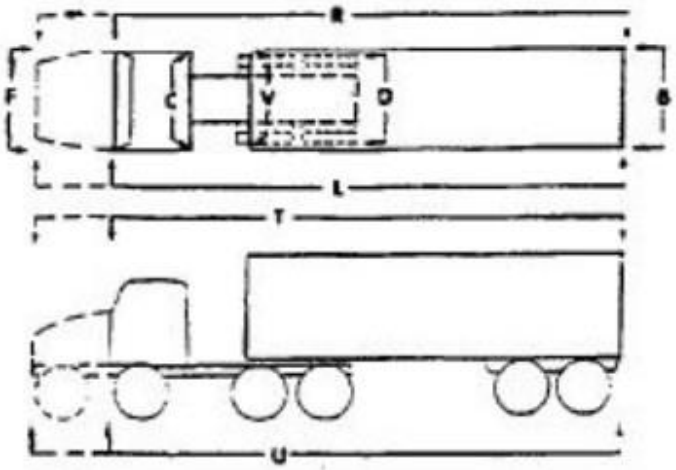
Label: Primary collision - CDC/TDC Area of Deformation

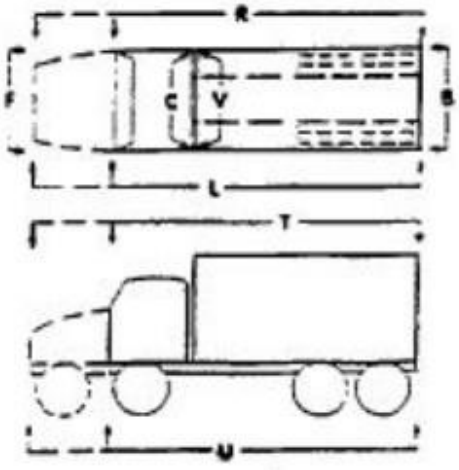
Valid date period: 2014-01-01

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)

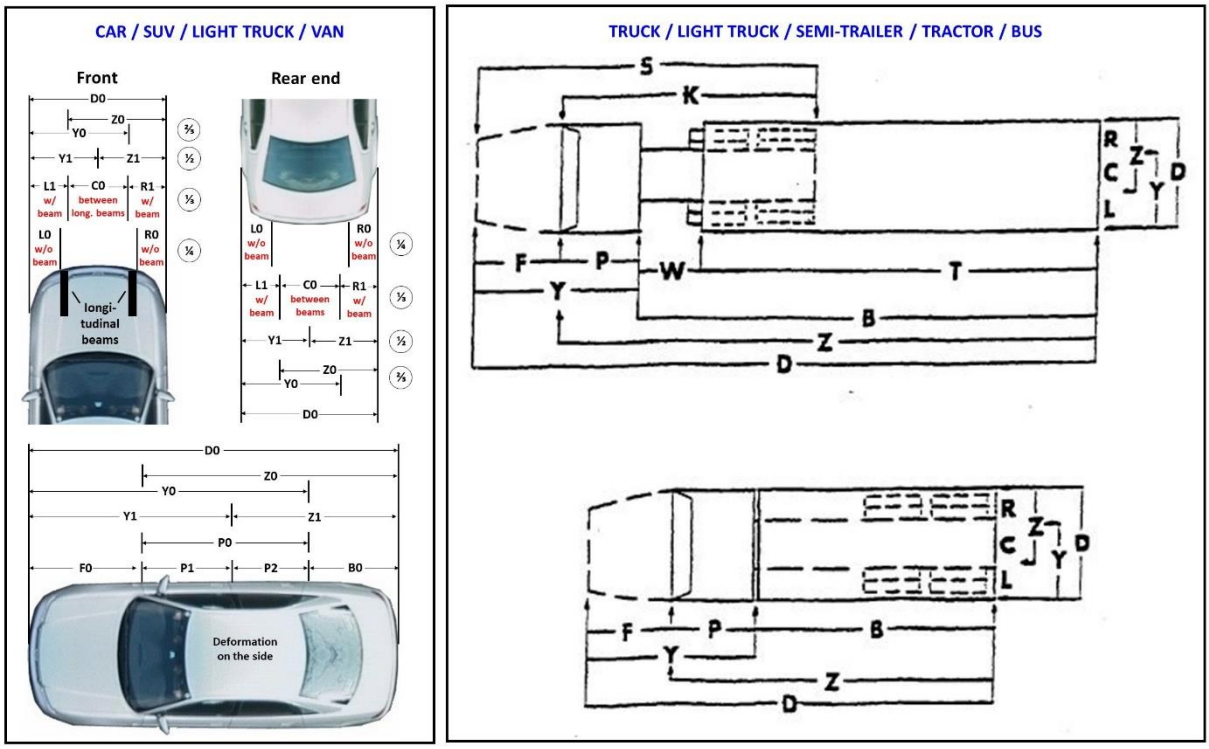
Table: PARTICIPANT

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)

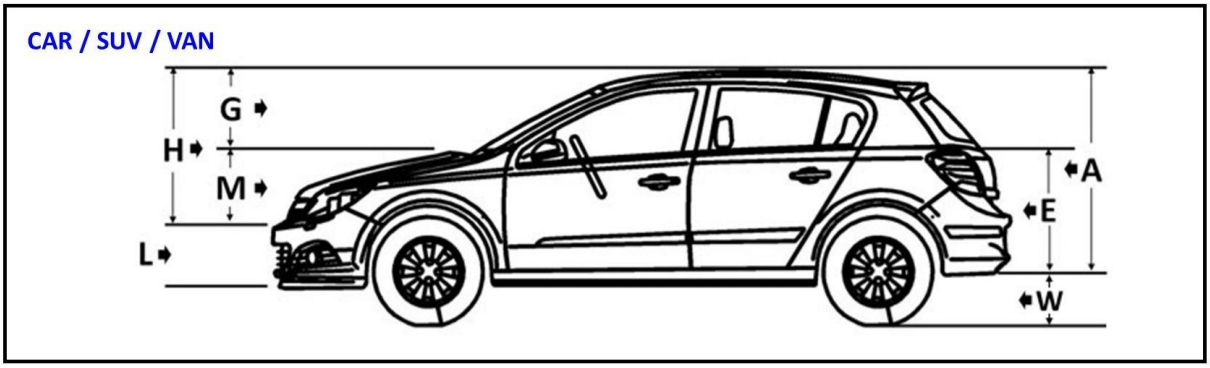
Table: PARTICIPANT

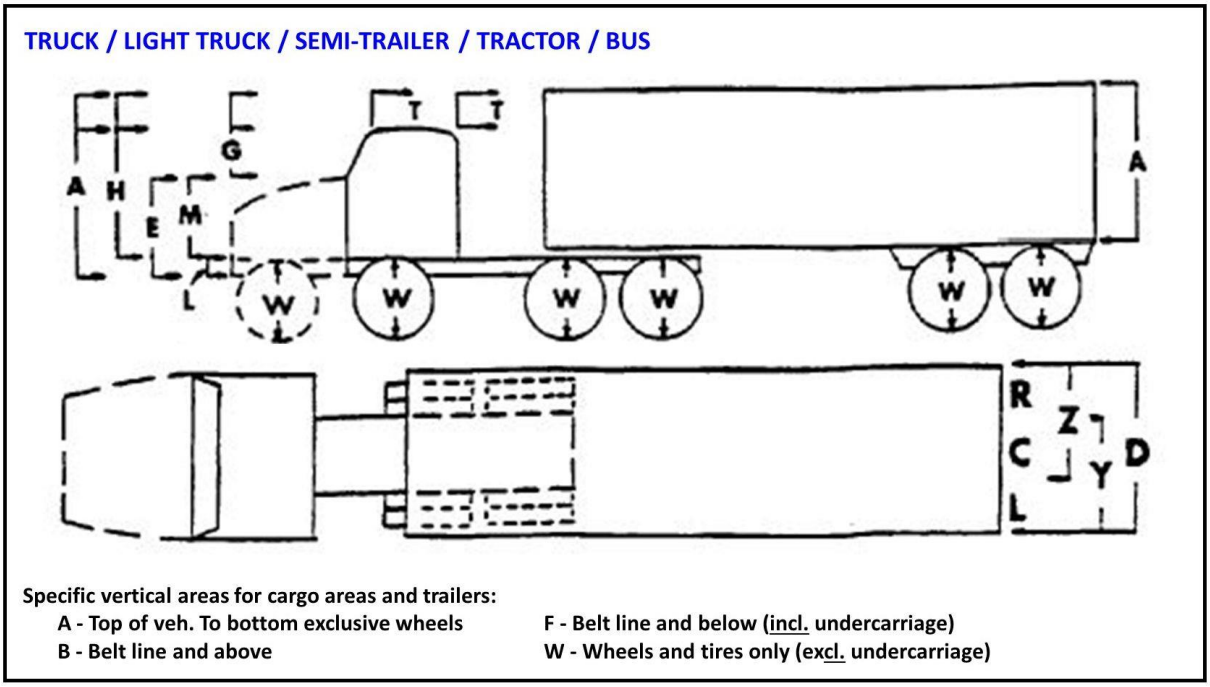
Label: Primary collision - CDC/TDC Specific vertical area

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)

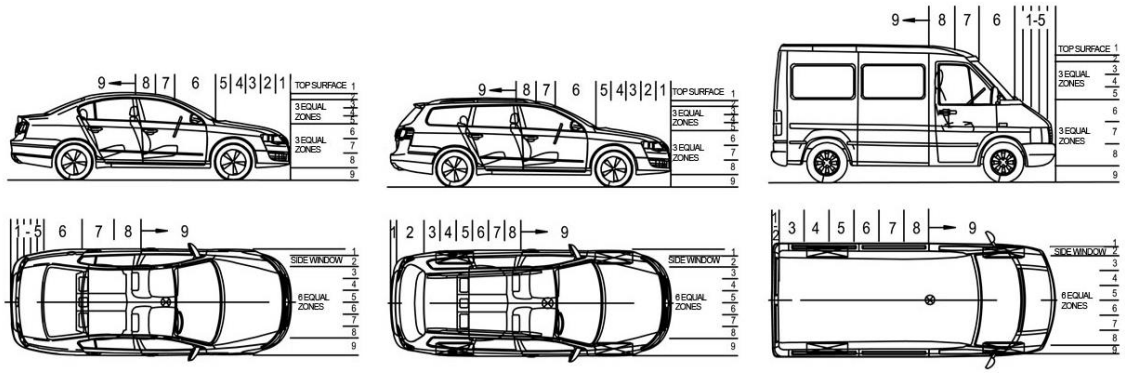
Table: PARTICIPANT

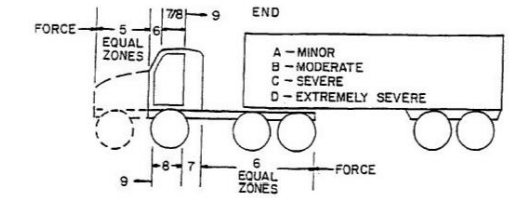
Label: Primary collision - CDC/TDC Maximum extent of penetration

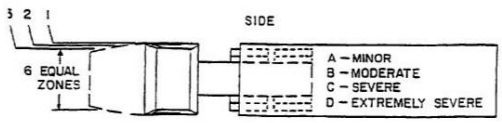
Valid date period: 2014-01-01

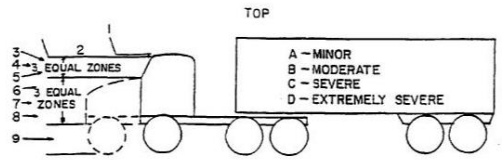
Mandatory variable: Yes

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)

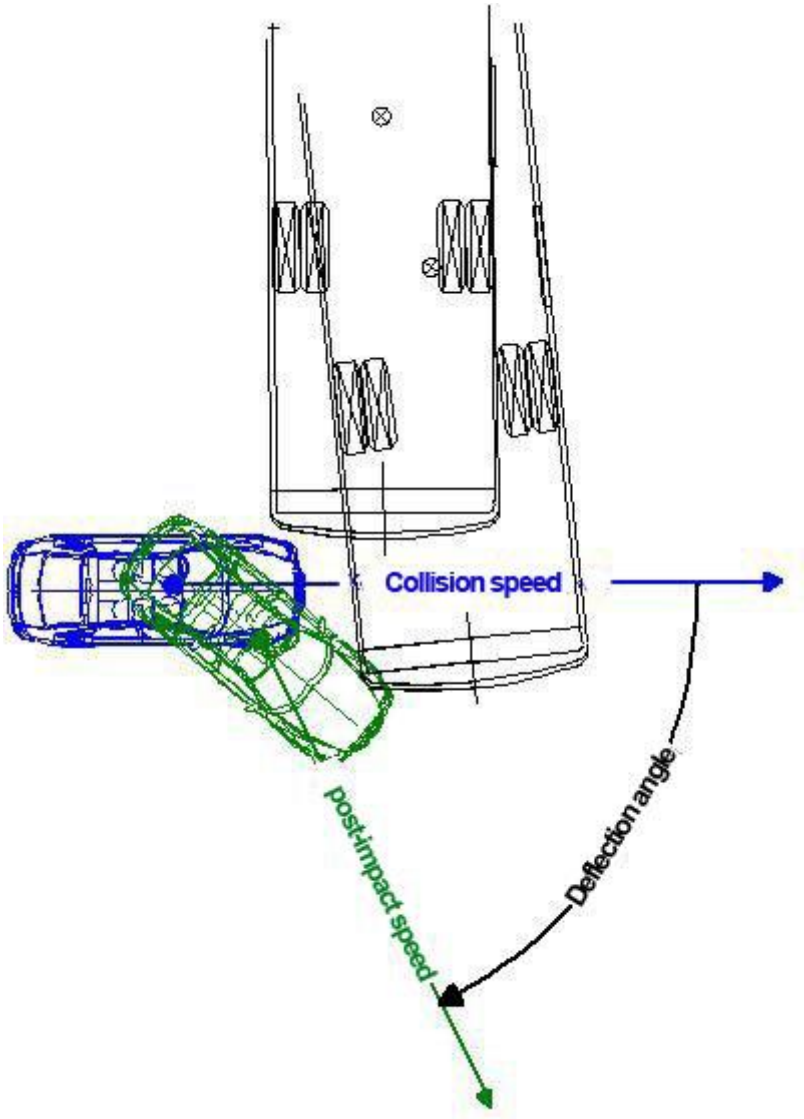
Table: PARTICIPANT

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)

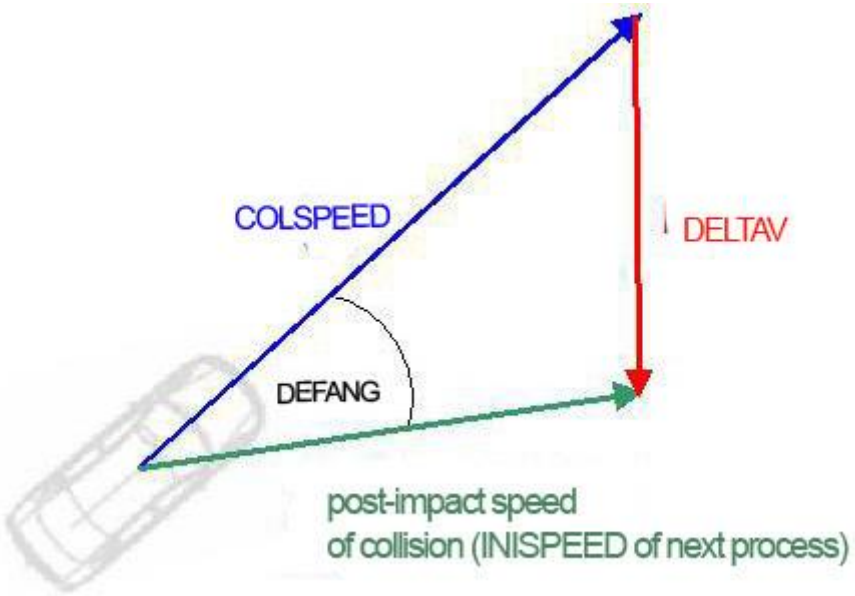
Table: PARTICIPANT

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: 1 - 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)

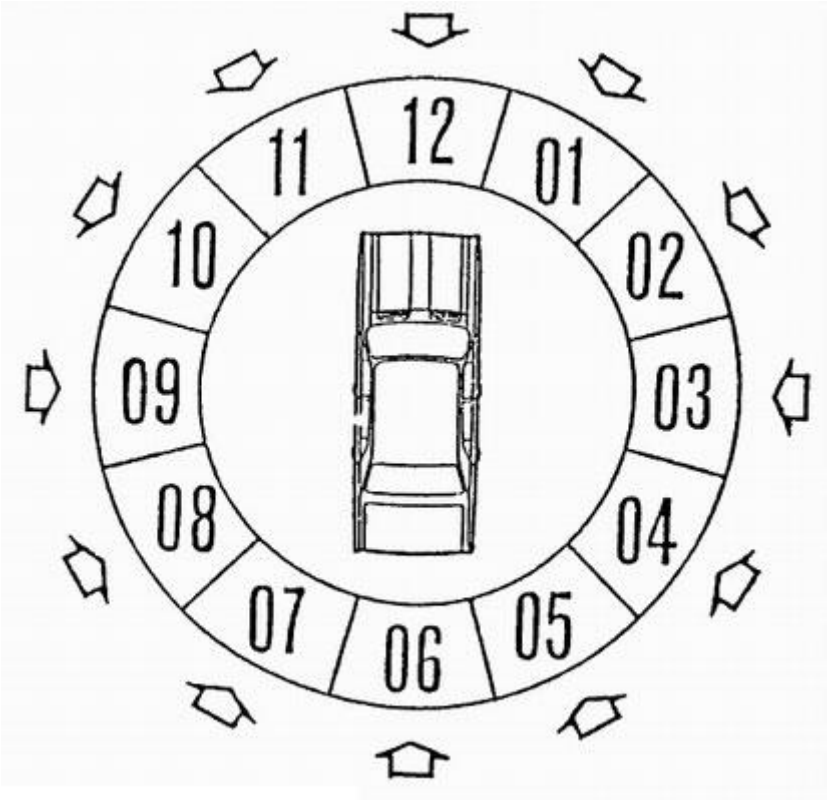
Table: PARTICIPANT

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)

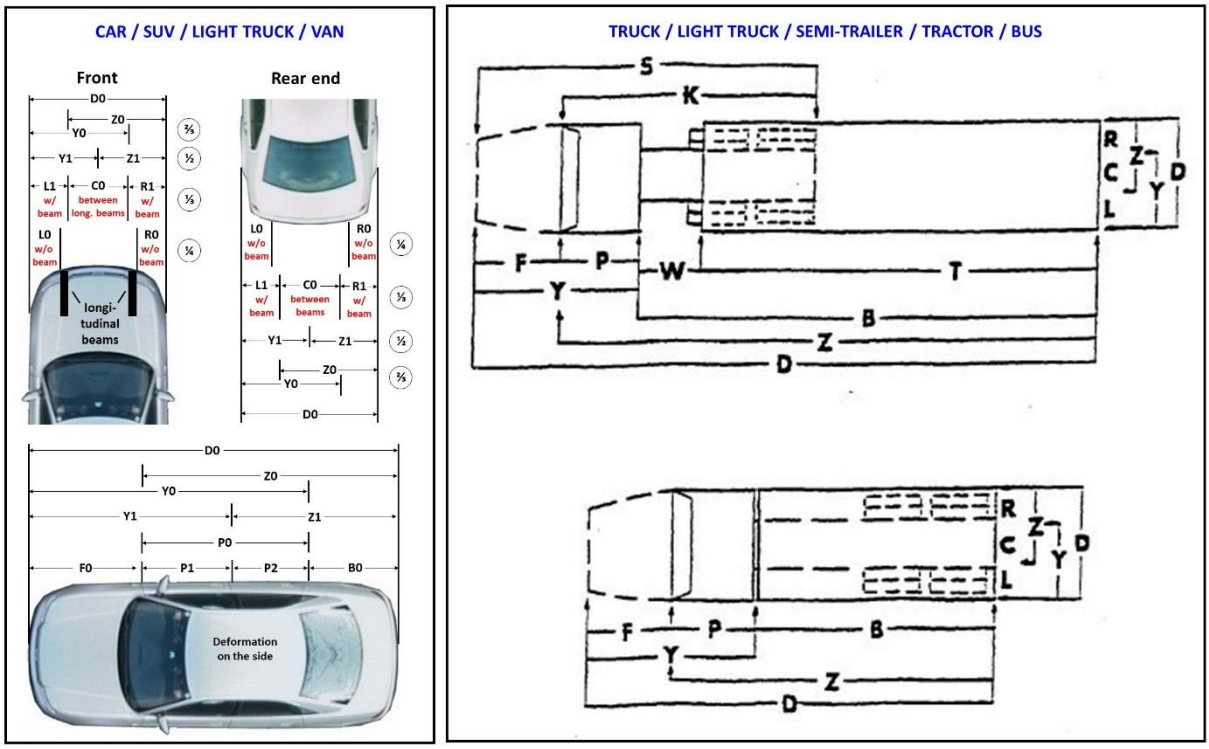
Table: PARTICIPANT

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)

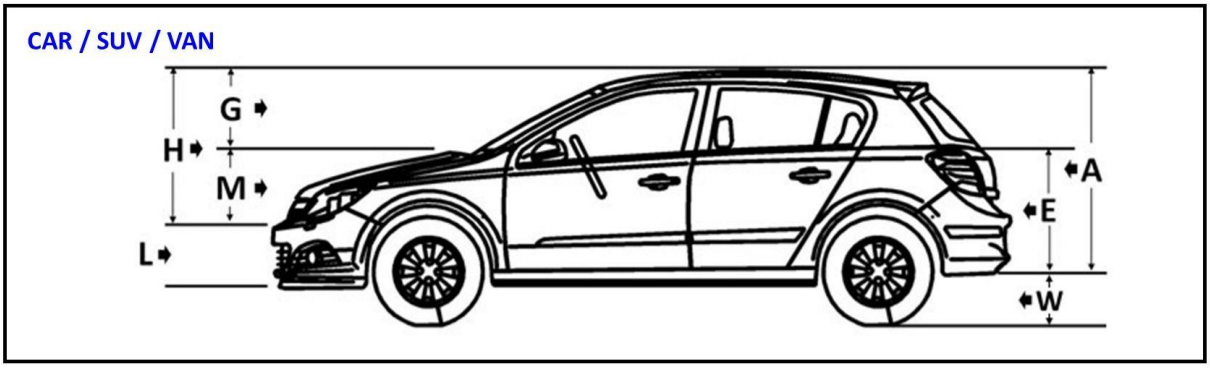
Table: PARTICIPANT

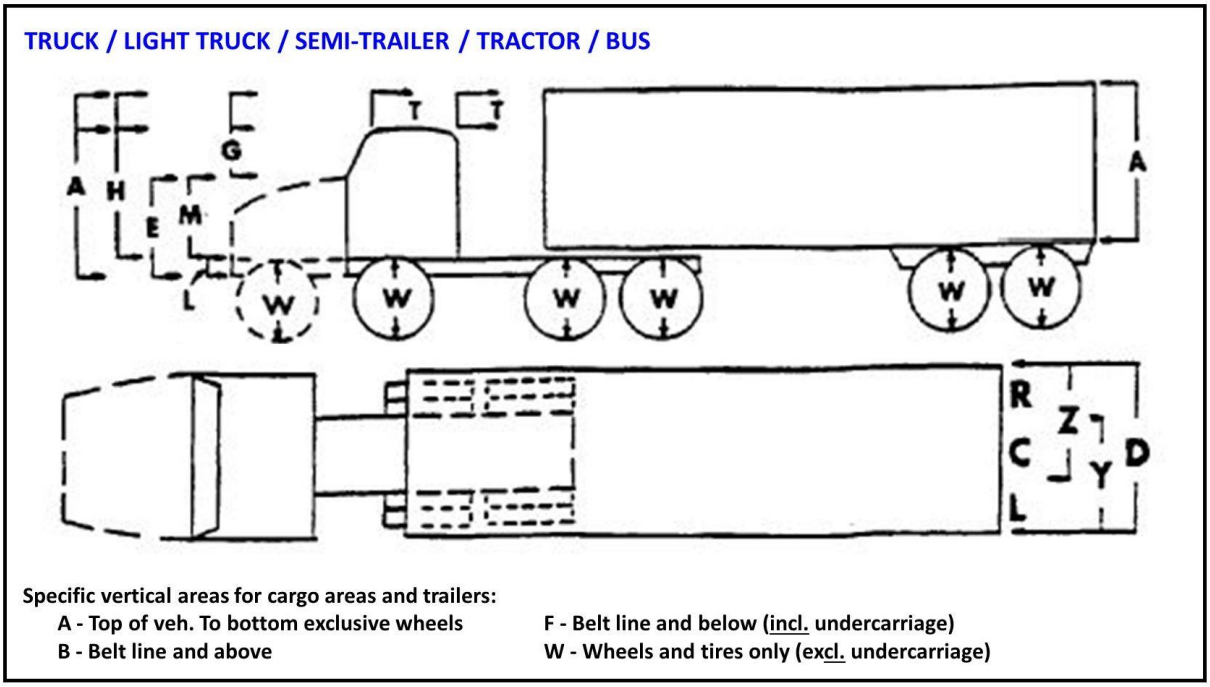
Label: Secondary collision - CDC/TDC Specific vertical area

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)

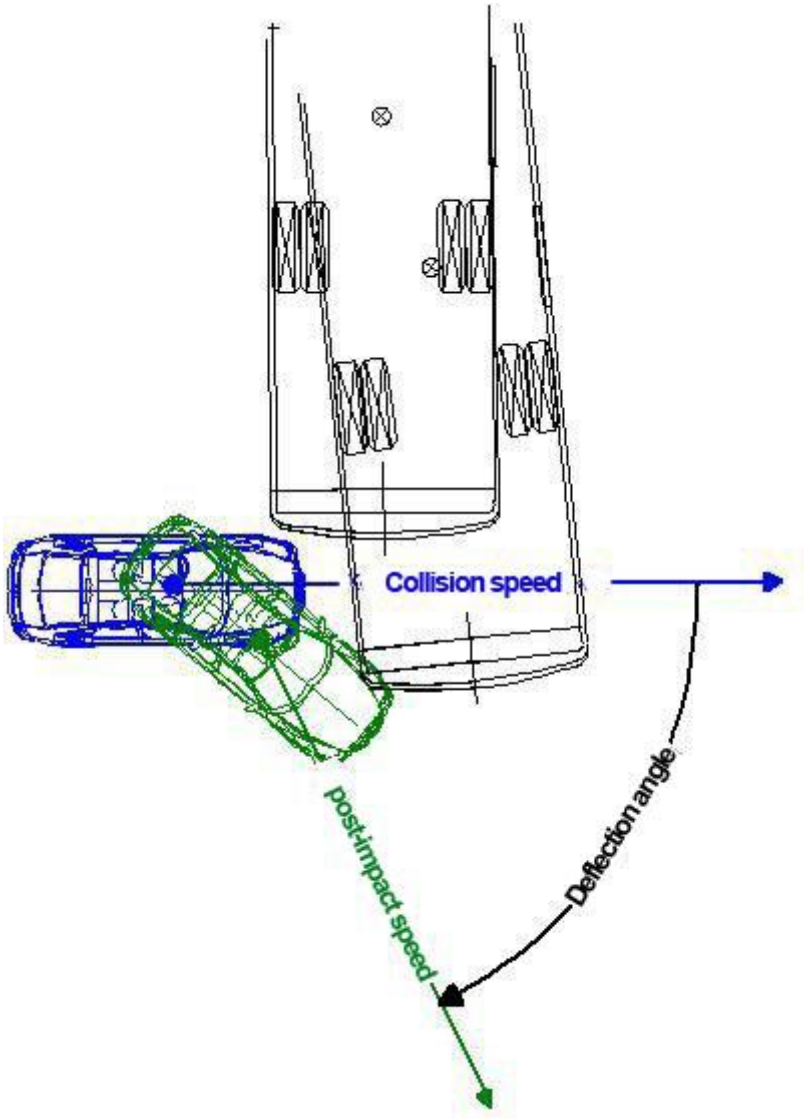
Table: PARTICIPANT

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)

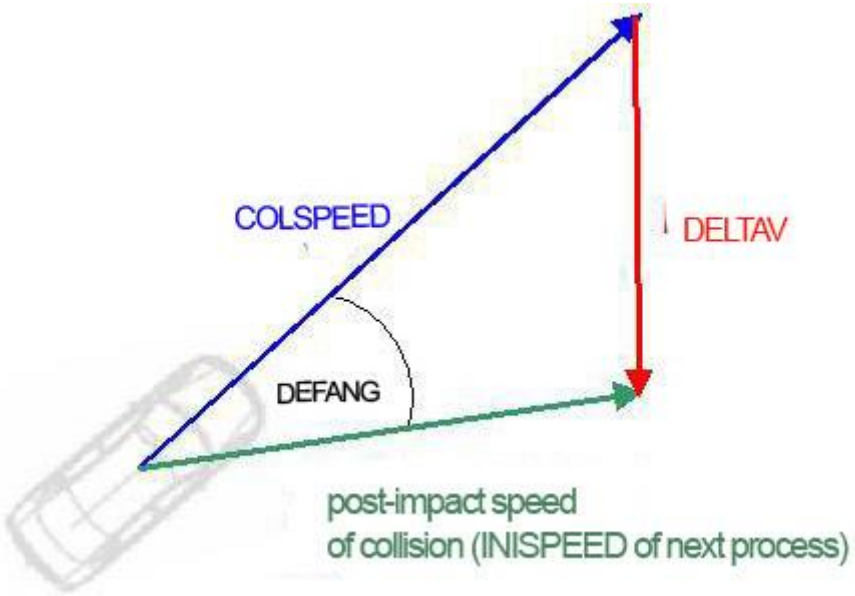
Table: PARTICIPANT

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)

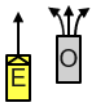
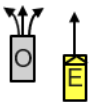
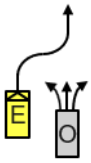
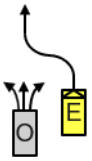
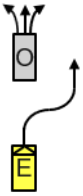
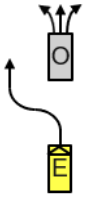
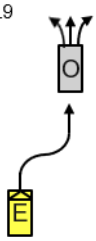
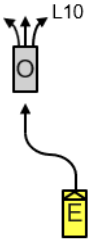
Table: PARTICIPANT

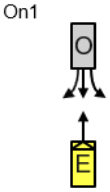
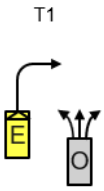
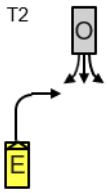
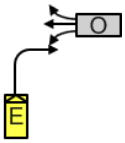
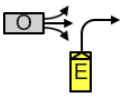
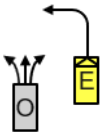
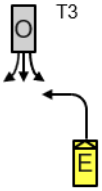
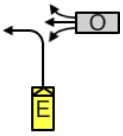
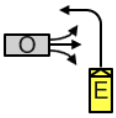
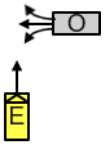
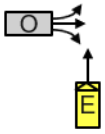
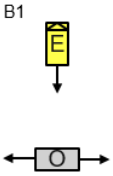
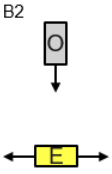
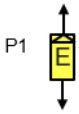
Label: Pre-Crash Scenario

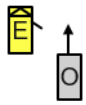
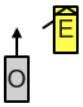
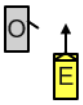
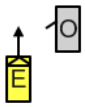
Valid date period: 2021-01-01

Mandatory variable: Yes

Range: 0 - 9999

Driving, lane chang-ing (no dynamic object)	D1 	D2 	D3 	D4 	D5 		D Other driving
Following front, run-ning up Same lane/ adjacent lane	L1 						L Other long.
Object be-hind, rear ending Same lane/ adjacent lane	L4 						
Ego pass-ing	L2 	L3 					
Lane changing	L5 	L6 	L7 	L8 	L9 	L10 	

Oncoming Same lane/ adjacent lane	On1 			On2 			On Other oncom-ing
Turning nearside	T1 	T2 	T14 	T10 			T Other turning
Turning far-side	T5 	T3 	T9 	T4 			
Crossing	C1 	C2 					C Other crossing
Other acci-dents	O1  Inability	O2  Obstacle	O3  Breakdown	O4  Animal			O 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 year of data release

[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 year of data release

[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

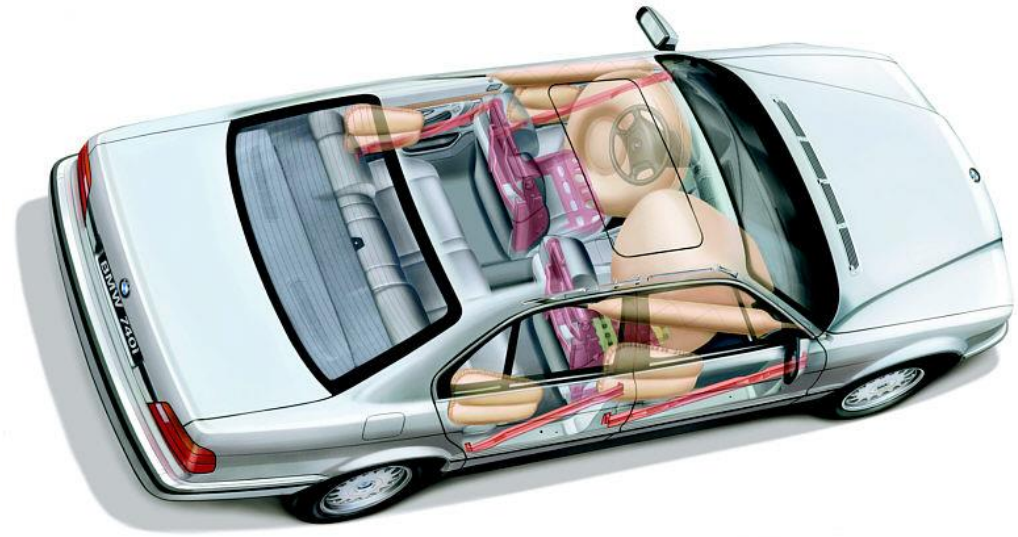
Appendix A Airbag Coding Examples

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

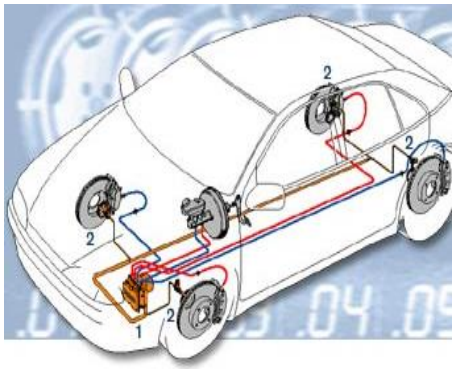
Prevents skidding by avoiding the brakes locking the wheels

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

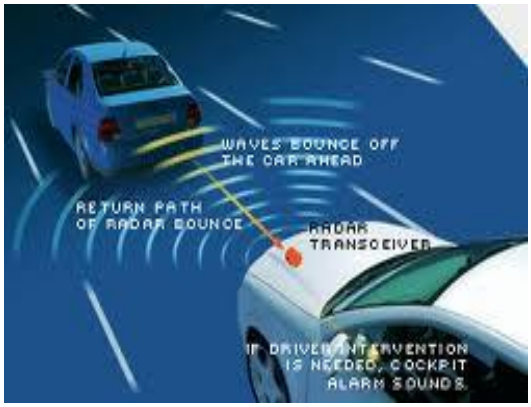
speed without braking. When the cruise control is engaged, the throttle can still be used to accelerate the car, but once the pedal is released the car will then slow down until it reaches the previously set speed.

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.

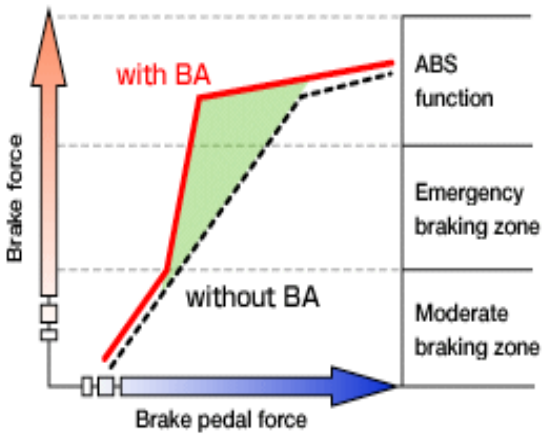
Mercedes originally invented the brake assist system in the 1990's.

"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.



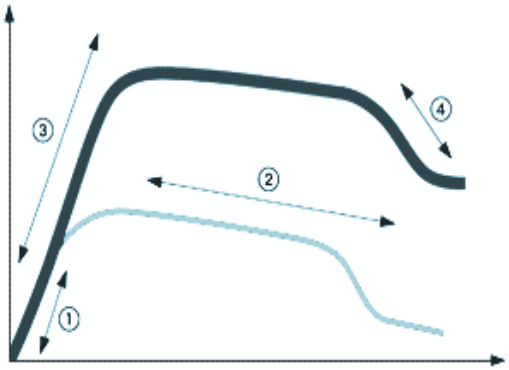
Legal

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

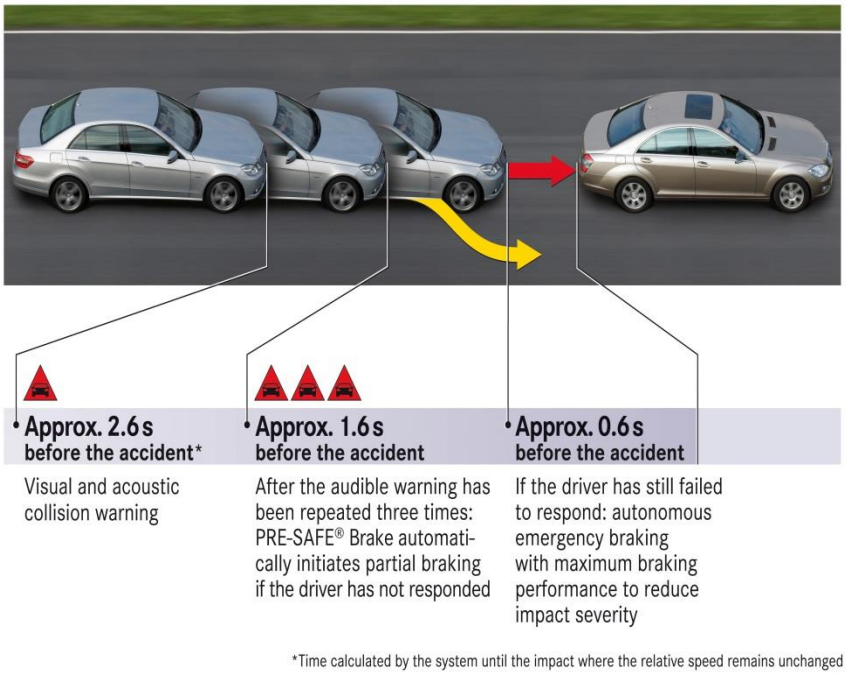
Collision warning incorporating braking. No automated steering control - only braking. With the aid of radar, LIDAR and/or camera systems, this technology actively assesses the driving environment for potential hazards. In particular current systems address rear end collisions but an oncoming vehicle 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

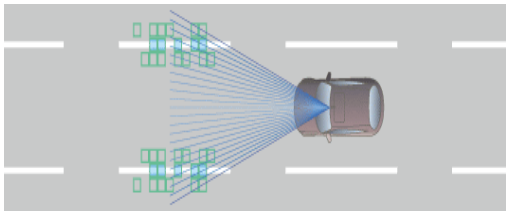
Technical Specs

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

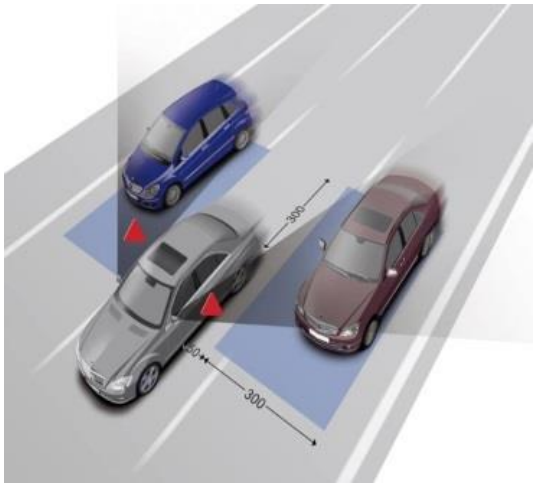
Lane Assist can be switched on and off by the driver. At the beginning of a new journey, the system restarts with the last on/off status: if the system has been switched off, it remains off at the beginning of the next journey. The system does not switch on by default at the start of a journey. Lane 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

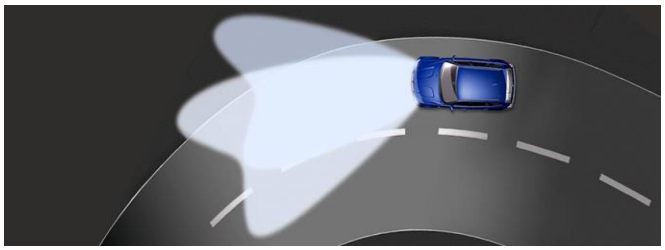
Technical Specs

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.

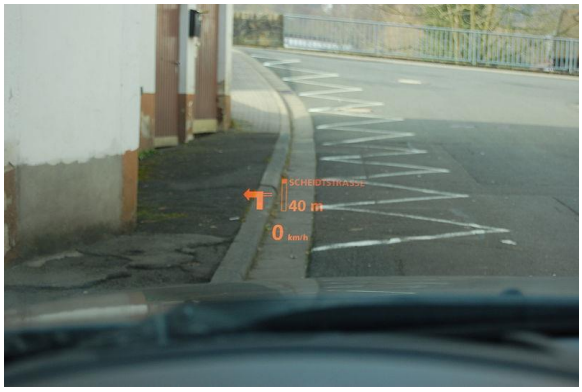
Many car and van models have driver-controlled speed limiters fitted or available as an optional accessory which can be set by the driver to any desired speed; the limiter can be overridden if required by pressing hard on the accelerator. The limiter may be considered as setting the maximum speed (with 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.

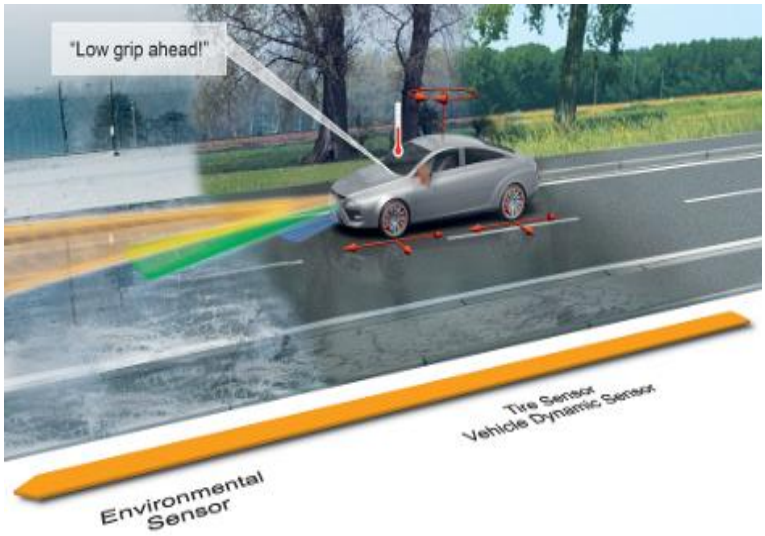
Newer micro-display imaging technologies are being introduced, including liquid crystal display (LCD), liquid crystal on silicon (LCoS), digital micro-mirrors (DMD), and organic light-emitting diode (OLED).

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

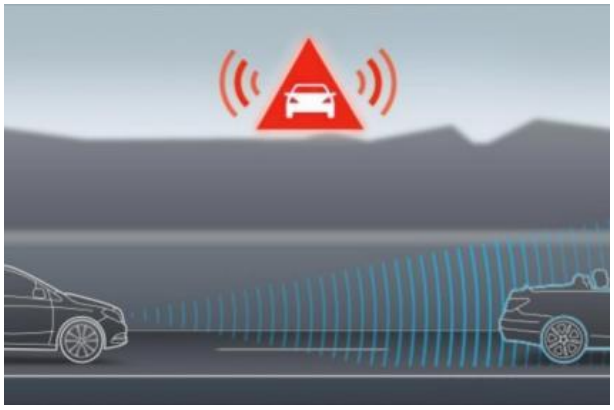
Technical Specs

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.

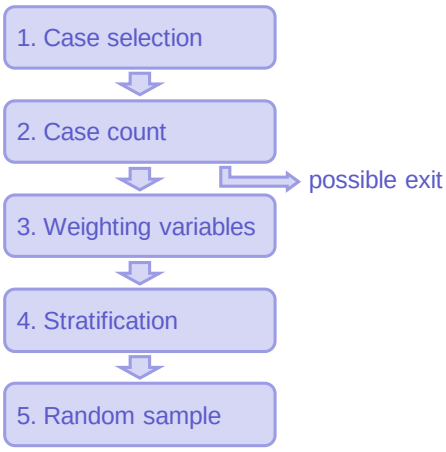
The final objective of the algorithm is to detect and classify just about all the traffic signs along the way. Colour segmentation was included for the purpose of obtaining a reply in real time, since segmentation based on colour is faster than the one based on shape. Two different methods are used to 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 - stationary traffic

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

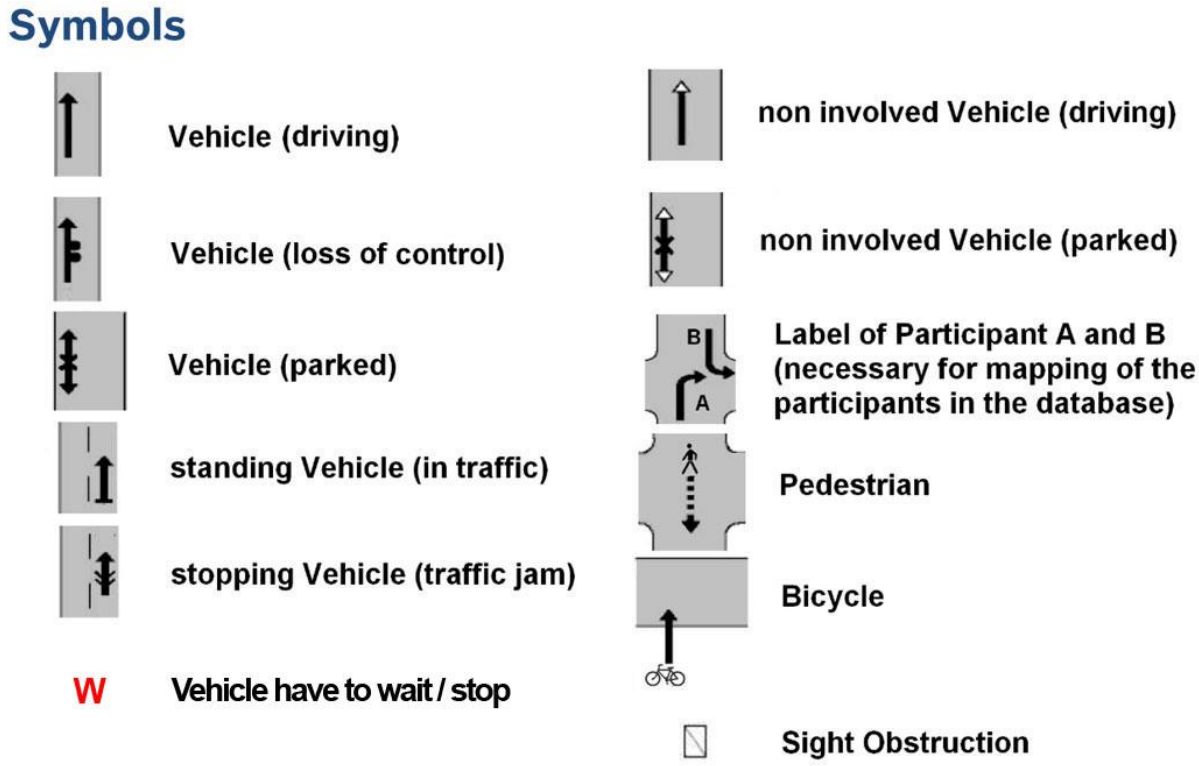
774 - Other - sudden technical failure - steering control

775 - Other - sudden technical failure - other

799 - Other - all other accidents

99999 - unknown

Defined labels:



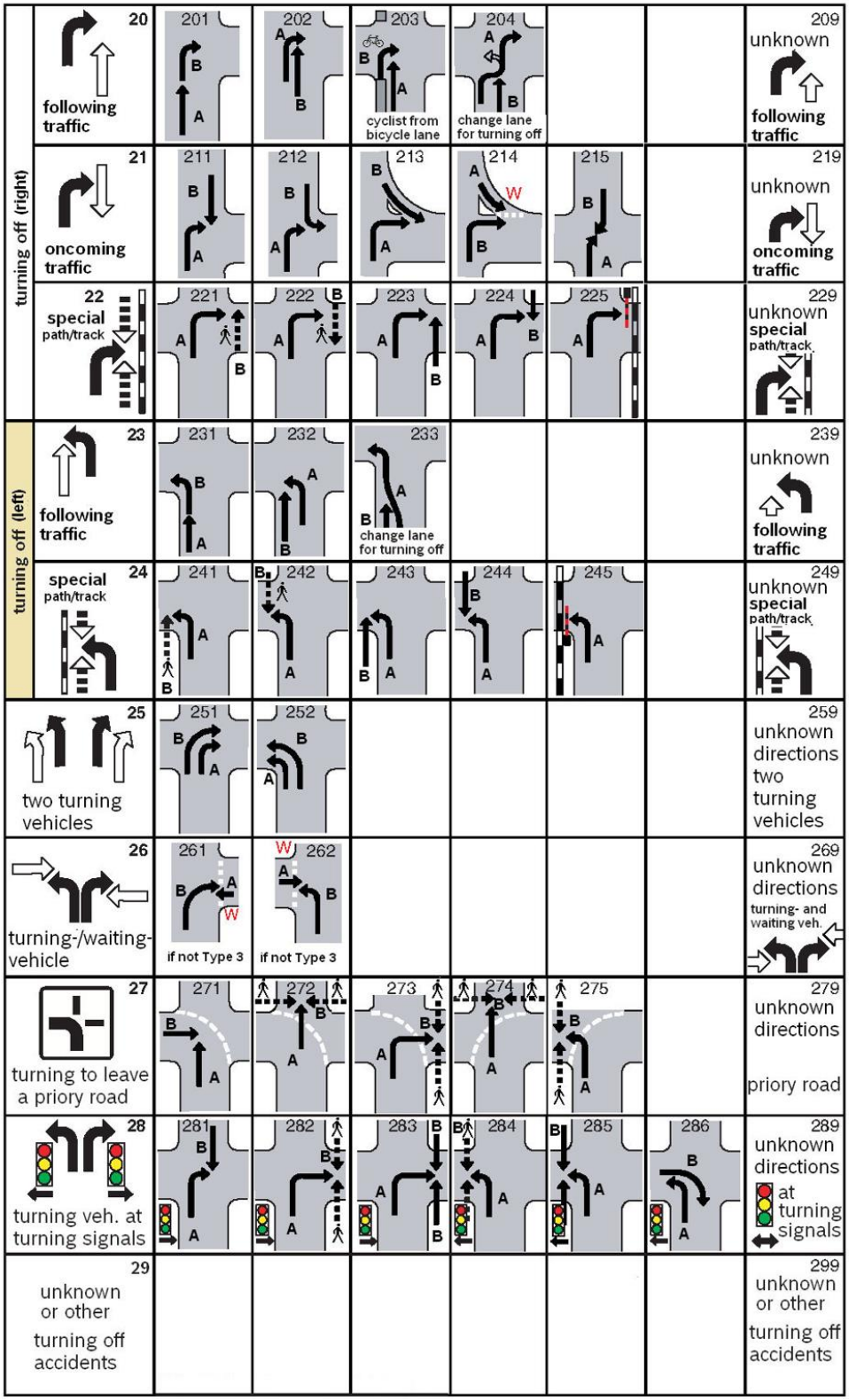
Left-hand traffic

Type 1: Loss of control accident

without other influence	10 curve	101 bend to right	102 bend to left	103 bend to right overtaking	104 bend to left overtaking			109 run of curve unknown
	11 turning priority rd.	111	112	113 bend to right overtaking	114 bend to left 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

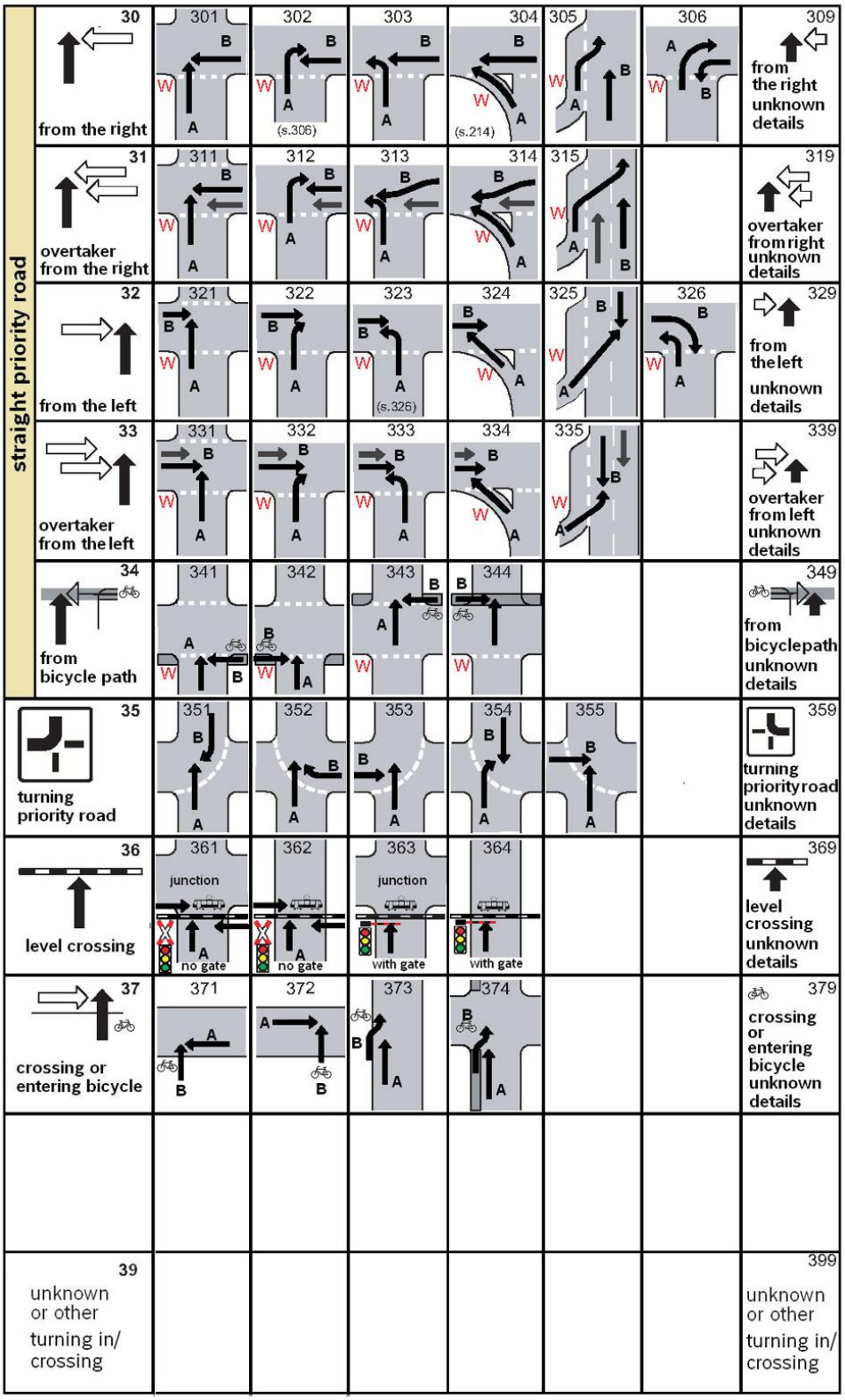
Left-hand traffic

Type 2: Turning off accident



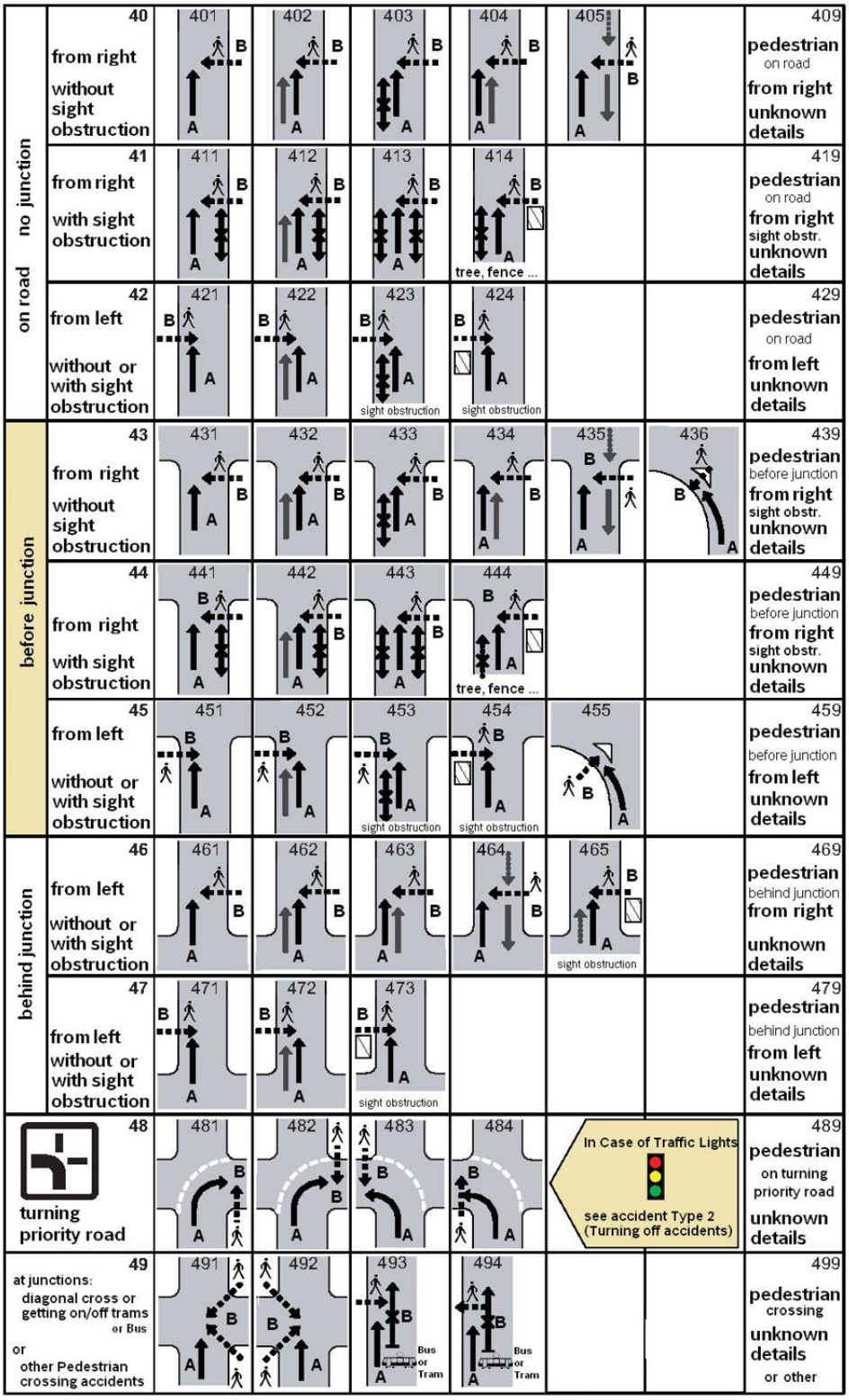
Left-hand traffic

Type 3: Turning in / crossing accident



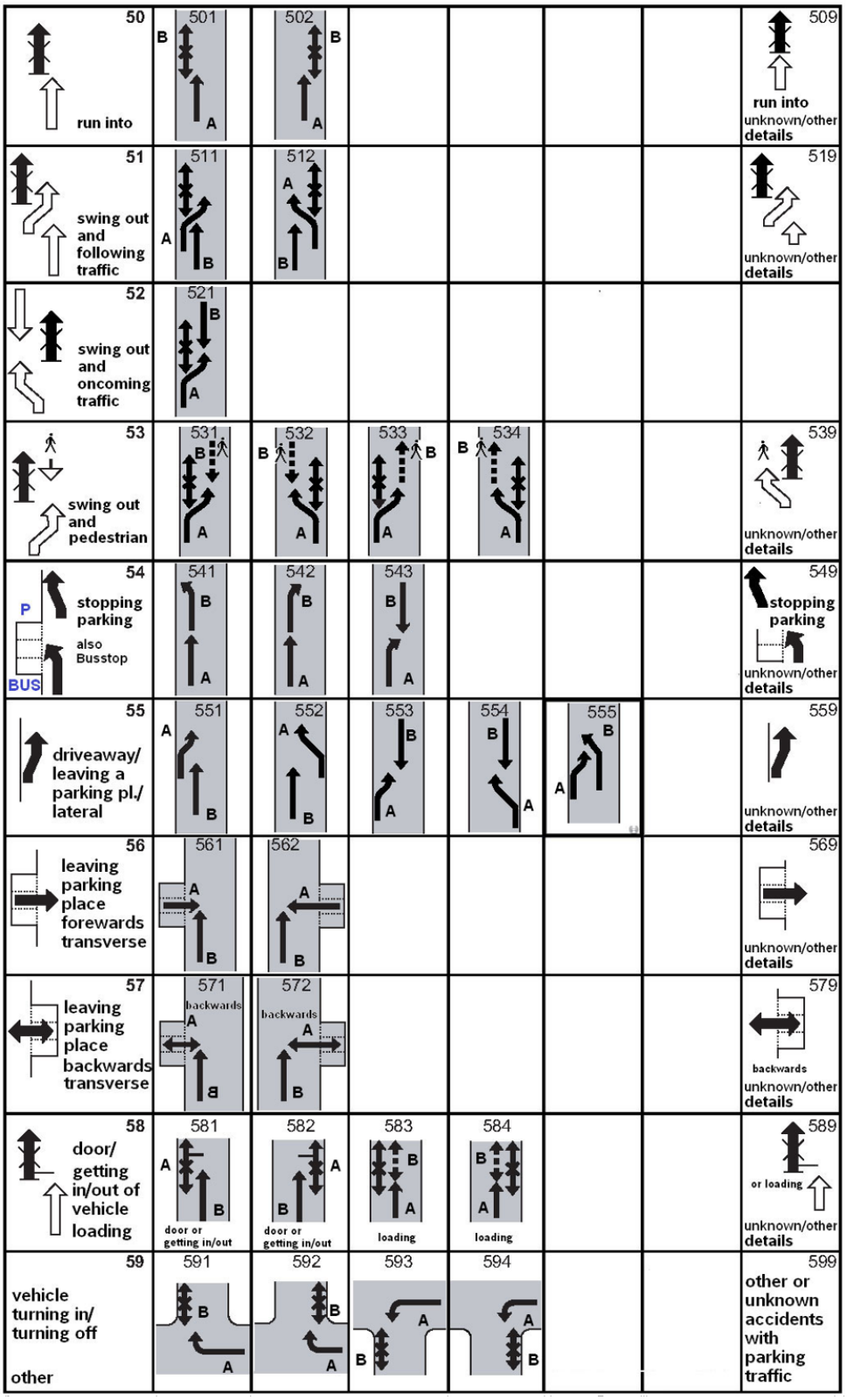
Left-hand traffic

Type 4: Pedestrian crossing road accident



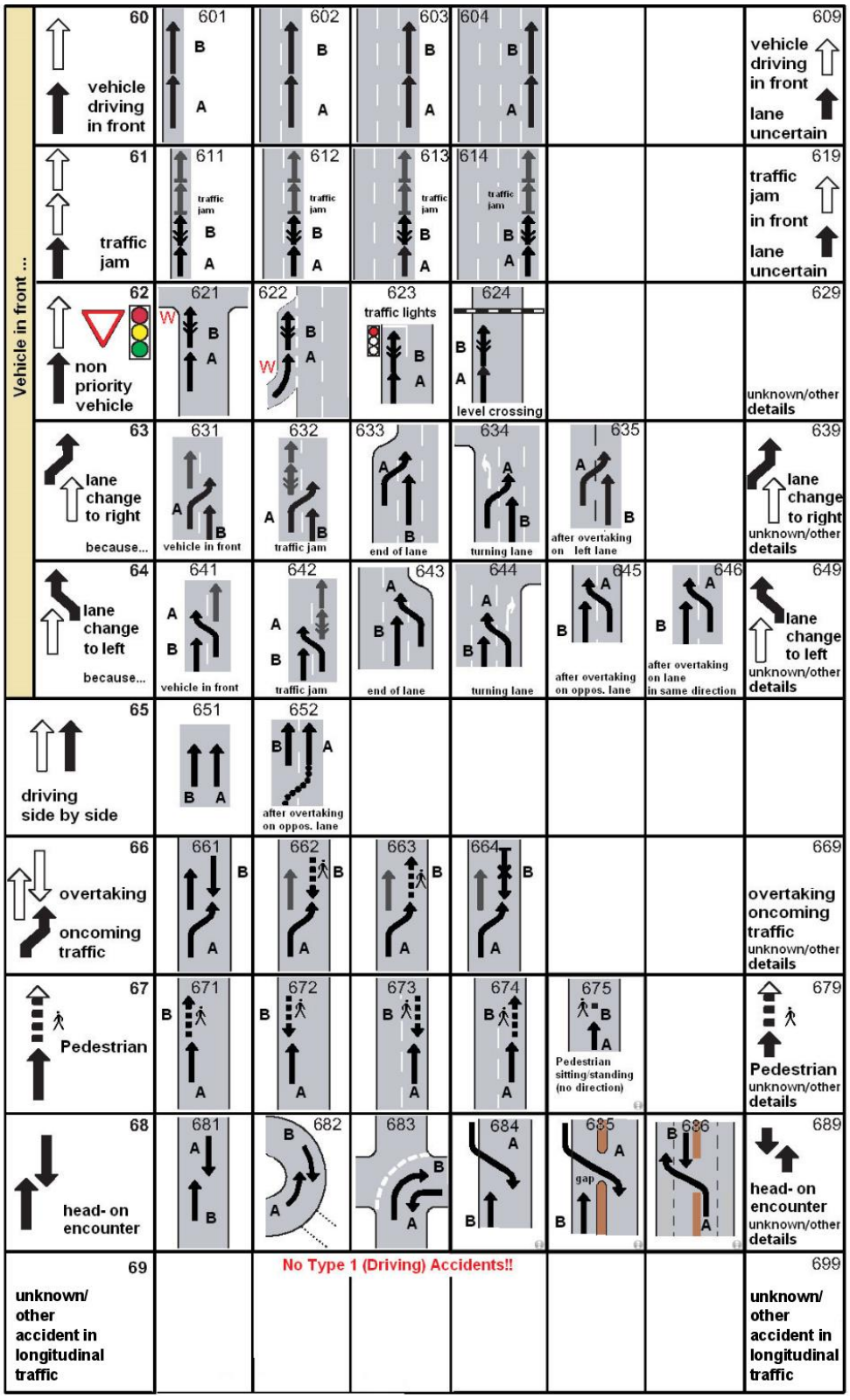
Left-hand traffic

Type 5: Stationary traffic accident



Left-hand traffic

Type 6: Longitudinal traffic accident



Left-hand traffic

Type 7: Other accident

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

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

V1.18 – 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) 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 142 - Baojun 143 - Beijing 226 - Changan 227 - Changhe 527 - FAW

		528 - Foton 618 - Geely 726 - Haval 727 - Haika 728 - Howo 908 - JAC 1719 - Roewe 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 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
Variable GVWEIGHT	Edit	Codes changed 100000 → 1 200000 → 2 …

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 *RECODE FOR DP*: DELETE dataset
Variable SYSUSE	Update	Variable label and description
Variable SYSUSE	Deleted label	3 – misuse 77777 – not applicable *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 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 (skate-board, skates, kick scooter etc.) 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 5 - AIS 5
Variable VEHMAKE	Label added	39 - Avon Cycles Limited 725 - Humber Limited 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 Variable AISREGIO1-9	edit	Version update to AIS05 update 2008 (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 723 - HERO HONDA 724 - HINDUSTAN MOTORS 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. 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
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 GR - Greece 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 1 - incomplete 2 - completely coded, not yet checked 3 - completely coded, not plausible 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 D - Distributed L - Left C - Center R - Right Y - L and C Z - R and C
Variable CDC2VERT	add label	Lateral location D - Distributed L - Left C - Center R - Right Y - L and C 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 0 - not yet defined 1 - incomplete 2 - completely coded, not yet checked 3 - completely coded, not plausible 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 added Link to IGLAD Homepage added Participant list and contact persons
General	added uniform Layout added numeration added page numbers 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.* *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:* *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 **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 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?* *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?* *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 / **selection criteria /** **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 **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.*	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 information with other drivers or their representatives and anyone else involved in the crash were not exchanged; or 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.* *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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	
Location / area	*Spots and size of area where accidents are recorded.*	
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.*	
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.*	
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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when 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.*	
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.* *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:* *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 **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.*	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?* *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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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.* *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:* *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 **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.*	Sample size absolute [number per year]:100 within investigation area [%]:unknown within full national sample [%]:unknown
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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.* *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:* *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 **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:100 within investigation area [%]:5% within full national sample [%]:0.05%
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.*	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?* *Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …*	with personal injury (AIS 2+)/ fatality; OR 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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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.* *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:* *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 **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:100 within investigation area [%]:5% within full national sample [%]:0.05%
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.*	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?* *Accident severity can be expressed in different ways: injury severity, damage costs, tow away, …*	with personal injury (AIS 2+)/ fatality; OR 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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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.* *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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	Alternating shifts: 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 **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: approximately 150 cases per year investigation area: approximately 2 % from all accidents (approximately 7 % from injured accidents) national sample: approximately 0,2 % from all accidents (approximately 1 % from injured accidents)
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	All time (SSd) 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) 20% of cases: all over France
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: 50 (SSD + PSD) investigation area: 10% national sample: 0.8%
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.*	retrospective (SSD) on-the-spot (PSD)
Sources of accident notification	*What is the origin of the notification of the accident?*	Police office (SSD) Rescue team (PSD)
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, …*	Injury accidents
Participant selection	*Do you collect only accidenst with participants of a specific type?*	Injury in passenger car (SSD) Passenger car involved (PSD)
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?*	
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.* *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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	Alternating shifts: daily alternating shifts (one per day) week A 0:00 - 6:00 or 12:00 - 18:00 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 **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: About 600 investigation area: 12,5% national sample: 0.15%
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *selecting the accident? Are there any practical / methodological limitations?*	1. Accident selection by random sample ensures representative subsample of accidents in the sample area 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 statistics or not tagged as suicide (though being o ne) 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.* *Can also be a consortium of several organizations.If data owner is a consortium, please provide it's members.*	consortium: FAT 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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	Alternating shifts: Week 1: 0:00 - 6:00, 12:00 - 18:00 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 **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: 1,000 investigation area: 25 % national sample: 0.38 %
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.*	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 in investigation area
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, …*	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* *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) 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. 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.* *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) 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:* *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), - Pune (Mumbai Pune Expressway - 94 km road & Old mumbai pune highway) - Ahmedabad (Whole city) - Kolkata (Whole city) - Jaipur (Whole city)
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: 725 Investigation area: 12 % National sample: 0.155 %
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *selecting the accident? Are there any practical / methodological limitations?*	Case completeness, Crash scene must be identifiable through scene evidence, One of the 2 Involved vehicles with highest severity must be available for inspection, 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.* *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) 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:* *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), - Discontinued_Pune (Mumbai Pune Expressway - 94 km road & Old mumbai pune highway) - Ahmedabad (Whole city) - Kolkata (Whole city) - Jaipur (Whole city) - Nagpur (Rural district limited to only 6 Regions)
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: 850 Investigation area: 12 % National sample: 0.155 %
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *selecting the accident? Are there any practical / methodological limitations?*	Case completeness, Crash scene must be identifiable through scene evidence, One of the 2 Involved vehicles with highest severity must be available for inspection, 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: investigation area: 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. If necessary, we will review the classification by injury.
Participant selection	*Do you collect only accidents with participants of a specific type?*	All accidents [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.* *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:* *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. (other Spanish national communities don't consider the sharing of cases for investigation aims. Strong privacy restrictions)
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.*	
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.*	on-the-spot retrospective
Sources of accident notification	*What is the origin of the notification of the accident?*	Retrospective investigation 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?* *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 / **selection criteria /** **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 **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.*	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.* *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:* *Shifts (please provide hours), daytime only, weekday, weekend.*	Altering shifts according to sampling plan, ALL days all year around 07-14 14-21 on-scene
Location / area	*Spots and size of area where accidents are recorded.*	Gothenburg + 6 municipalities
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.*	100 crashes/year until 2014
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.*	On-scene & retrospective (night) see "time"
Sources of accident notification	*What is the origin of the notification of the accident?*	Emegency services 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?* *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. Not single vehicle crash with motorcycle, moped, bicycle, pedestrian
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?*	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. * reconstructions on all cases were the field data is good enough (more problems in reconstructing low severity accidents) * 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.* *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. For details, see: "Crash Investigation Sampling System: Design Overview, Analytic Guidance, and FAQs", pp. 20, FAQ question 5.
Time	*Time of data investigation:* *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: 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 **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.*	2000 – 3000 crashes per year within investigation area, ca. 5% within full national sample, ca. 0.03%
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.*	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?* *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 / **selection criteria /** **limitations**	*Is there any additional constraint or procedure that is applied when* *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 and in which a passenger vehicle is towed from the scene for any reason", which requires the involvement of at least 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.

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.

http://iglad.net/