VRU-proxi IWG
Accidentology analysis summary

Brussels, 20-22 March 2018
Summary

1. Introduction
2. Contributors & accident criteria
3. Accidentology results
4. Conclusions
Part I

Introduction
Introduction

TOR

• The IWG shall primarily focus on low speed manoeuvres in any direction based on accident data
• The group shall focus on vehicles of categories M and N
• The work of the IWG shall be:
  ❖ Forward motion:
    – Vehicle turning - BSIS
    – Vehicle driving straight or taking off from standstill
  ❖ Reversing motion
  ❖ Direct vision

Accidentology data analysis update with latest information

- Switzerland
- Taïwan
- Netherlands
Part II

Contributors & accident criteria
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Data year</th>
<th>Driving speed criteria</th>
<th>Accident scenario (opposite vehicle manoeuvre)</th>
<th>Fatalities</th>
<th>Opposite vehicle category</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Straight (S)</td>
<td>Turn to Driver Side (TODS)</td>
<td>Turn Opposite to Driver Side (TODS)</td>
<td>Take Off (TO)</td>
</tr>
<tr>
<td>BELGIUM</td>
<td>2014-2016</td>
<td>≤ 30 kph</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>FRANCE</td>
<td>2011</td>
<td>≤ 30 kph</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>JAPAN</td>
<td>2010-2014</td>
<td>≤ 20 kph</td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>CANADA</td>
<td>2011-2015</td>
<td>&lt; 40 kph</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>NETHERLANDS</td>
<td>2005-2013</td>
<td>Urban or unknown and &lt;= 51 kph</td>
<td>x</td>
<td>x</td>
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<tr>
<td>SPAIN</td>
<td>2010-2013</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>FINLAND</td>
<td>2012-2016</td>
<td></td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>TAIWAN</td>
<td>2011-2013 (p)</td>
<td>2009-2013 (b)</td>
<td>x (p)</td>
<td>x (p)</td>
<td>x (p)</td>
<td>x (p)</td>
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<tr>
<td>GERMANY</td>
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<td>2010 - 2016 (p)</td>
<td>x (p)</td>
<td>x (p)</td>
<td>x (p)</td>
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<td>POLAND</td>
<td>2011, 20032, 2013, 2014, 2015</td>
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<td>SWITZERLAND</td>
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<tr>
<td>HUNGARY</td>
<td>2014, 2015, 2016</td>
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</tbody>
</table>

**Legend:**
- **Green** indicates all the accident criteria requested and available (see matrix).
- **Yellow** indicates driving speed could not be detailed.
- **Gray** indicates driving speed and accident scenario could not be detailed.
All data can not be considered and compared (except Reversing scenario)

Comparable indicators are necessary:
- Average numbers per year
- Percentages with the total number of road fatalities for the accident data period covered as a denominator

<table>
<thead>
<tr>
<th>Country</th>
<th>R</th>
<th>S + TO</th>
<th>TDS</th>
<th>TODS</th>
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<tbody>
<tr>
<td>FRANCE</td>
<td>X</td>
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<td>X</td>
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<td>BELGIUM</td>
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<td>X</td>
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<tr>
<td>CANADA</td>
<td>X</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>JAPON</td>
<td>X</td>
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<td></td>
<td>X</td>
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<tr>
<td>NETHERLANDS</td>
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<tr>
<td>GERMANY</td>
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</table>
Part III

Accidentology results
Reversing scenario – All speeds

Average number of pedestrian fatalities per year in accidents involving reversing M/N vehicles

Average number of bicyclist fatalities per year in accidents involving reversing M/N vehicles
Reversing scenario – All speeds

1.2% of road fatalities in France
Maximum 0.7% of road fatalities in other countries

% of pedestrian fatalities in accidents involving reversing M/N vehicles

All speeds

Maximum 0.3% of road fatalities

% of bicyclist fatalities in accidents involving reversing M/N vehicles
Straight and taking-off scenarii

Average number of pedestrian fatalities per year in accidents involving M/N vehicles going straight or taking-off

- Driving speed $\leq 51$ kph: NL
- Driving speed $\leq 40$ kph: CA
- Driving speed $\leq 30$ kph: FR, BE
- Driving speed $\leq 20$ kph: JA

Average number of bicyclist fatalities per year in accidents involving M/N vehicles going straight or taking-off

Vuthy PHAN

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Straight and taking-off scenarii

% of pedestrian fatalities in accidents involving M/N vehicles going straight or taking-off

Driving speed ≤ 51 kph: NL
Driving speed ≤ 40 kph: CA
Driving speed ≤ 30 kph: FR, BE
Driving speed ≤ 20 kph: JA

% of bicyclist fatalities in accidents involving M/N vehicles going straight or taking-off

2.6% of road fatalities in France
Maximum 1.3% of road fatalities in other countries

2.3% of road fatalities in Japan
Maximum 0.3% of road fatalities in other countries

Vuthy PHAN
Turning on driver side

Average number of pedestrian fatalities per year in accidents involving M/N vehicles turning on driver side

- Driving speed ≤ 51 kph: NL
- Driving speed ≤ 40 kph: CA
- Driving speed ≤ 30 kph: FR, BE
- Driving speed ≤ 20 kph: JA

Average number of bicyclist fatalities per year in accidents involving M/N vehicles turning on driver side

<table>
<thead>
<tr>
<th>Country</th>
<th>FRANCE</th>
<th>BELGIUM</th>
<th>CANADA</th>
<th>JAPAN</th>
<th>NETHERLANDS</th>
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<tr>
<td>Pedestrian</td>
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<table>
<thead>
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<th>Country</th>
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<th>JAPAN</th>
<th>NETHERLANDS</th>
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<tr>
<td>Bicyclist</td>
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<td>32</td>
<td>5</td>
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</tbody>
</table>

Vuthy PHAN

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Turning on driver side

% of pedestrian fatalities in accidents involving M/N vehicles turning on driver side

Driving speed $\leq 51$ kph: NL
Driving speed $\leq 40$ kph: CA
Driving speed $\leq 30$ kph: FR, BE
Driving speed $\leq 20$ kph: JA

% of bicyclist fatalities in accidents involving M/N vehicles turning on driver side

3.1% of road fatalities in Japan
Maximum 0.5% of road fatalities in other countries

Maximum 0.8% of road fatalities
Turning on opposite to driver side

Average number of pedestrian fatalities per year in accidents involving M/N vehicles turning on opposite to driver side

Driving speed $\leq 51$ kph: NL
Driving speed $\leq 40$ kph: CA
Driving speed $\leq 30$ kph: FR, BE
Driving speed $\leq 20$ kph: JA

Average number of bicyclist fatalities per year in accidents involving M/N vehicles turning on opposite to driver side
Turning on opposite to driver side

% of pedestrian fatalities in accidents involving M/N vehicles turning on opposite to driver side

Driving speed ≤ 51 kph: NL
Driving speed ≤ 40 kph: CA
Driving speed ≤ 30 kph: FR, BE
Driving speed ≤ 20 kph: JA

% of bicyclist fatalities in accidents involving M/N vehicles turning on opposite to driver side

Maximum 0.8% of road fatalities

Maximum 2.5% of road fatalities
Conclusions

- Any additional accidentology data would be welcome to complete the study.
- Some figures may be overestimated because in some answers the vehicle speed (30 to 50 kph) was exceeding the “low speed” scope (20 kph).
- In every country the number of fatalities in each scenario of the IWG is low compared to the global number of fatalities.

Next actions:

- Include data without vehicle speed criteria in TDS and TODS scenarii
- Consider « seriously injured » VRU in the analysis to double check the conclusions
- Differentiate accident scenarii according to vehicle categories