Proposal to Enhance Vehicle Safety for VRUs

MLIT, Japan
1. Background

2. Proposal (Our Priority)

3. Next Step
Traffic Accidents and Governmental Target

Vehicle Safety Target: ▲1,000 fatalities

Target

Fatalities Below 2,500

Injuries Below 50 m

Accidents 381,002

Fatalities 3,215

Injuries 460,715

Accidents [m]

Fatalities

Injuries [m]

Accidents [m]

7th Gov. Safety Program
8th Gov. Safety Program
9th Gov. Safety Program
10th Gov. Safety Program
Japan’s Vehicle Safety Policy regarding VRUs

**Motor Vehicle Safety Policy** (from FY2016 to FY2020) [June 24th 2016]

- **Safety Measures for Child and Elderly Person**
- **Safety Measures for Pedestrian and Cyclist**
  
  To improve awareness of VRUs (pedestrian and cyclist) for drivers
  
  e.g. AEBS, Advanced light system, Night-time pedestrian warning,
  
  Driver’s visibility around vehicle

**Emergency Measures for Elderly Drivers and Children**

[June 18th 2019]

- **Countermeasures for car accidents involving elderly drivers and death of children**
  
  - Promotion of Safety Support Car
  
  - Introduction of new driver’s license system limiting vehicle type
Injuries and Fatalities by Road User Type (2018)

- Pedestrians account for 35.6% (1,258) of total fatalities. (If includes cyclists, up to 48.4% (1,711).)
- More than half of pedestrian fatalities are elderly persons (Age 65+).

**Injuries (529,378)**

- Pedestrian: 9.5%
- Cyclist: 15.9%
- Vehicle: 64.1%
- Motorbike: 10.3%
- Others: 0.1%

**Fatalities (3,532)**

- Pedestrian: 35.6%
- Cyclist: 12.8%
- Vehicle: 33.9%
- Motorbike: 17.4%
- Others: 0.3%

Source: 2018 Road traffic accident statistics (National Police Agency)
M1/N1 contributes to more than half of total fatalities and injuries among pedestrians, at low speed (below 20km/h).

**Injuries**

- M1/N1: 84.2%
- M2: 0.6%
- N2: 11.5%
- M3: 3.0%
- N3: 0.7%

**Fatalities**

- M1/N1: 58.5%
- M2: 2.5%
- N2: 18.2%
- M3: 10.7%
- N3: 10.0%

Source: Road traffic accident statics from 2014 to 2018 (5-year-accumulation) (ITARDA)

Number of Injuries: 135,932  Number of fatalities: 998
CtoP Injury and Fatality Composition by Vehicle Motion
(M1/N1, Forward motion below 20km/h)

**Injuries**
- Turning left: 10.4%
- Moving Off: 12.7%
- Going Straight: 29.5%
- Turning right: 42.2%

**Fatalities**
- Turning left: 14.3%
- Moving Off: 14.1%
- Going Straight: 17.3%
- Turning right: 54.3%

Source: Road traffic accident statics from 2014 to 2018 (5-year-accumulation) (ITARDA)
Number of Injuries: 125,471  Number of fatalities: 736 (*excluding other hitting points)
Injuries

- 21.6% Moving Off
- 52.8% Going Straight
- 26.0% Moving Off
- 24.3% Going Straight
- 36.1% Moving Off
- 17.5% Going Straight

Fatalities

- 21.0% Moving Off
- 45.7% Going Straight
- 30.5% Moving Off
- 18.1% Going Straight
- 62.2% Moving Off
- 15.7% Going Straight

Source: Road traffic accident statics from 2014 to 2018 (5-year-accumulation) (ITARDA)
Number of Injuries: 15,939   Number of fatalities: 104 (*excluding other hitting points)
CtoP Injury and Fatality Composition by Hitting Position
(M1/N1, Turning right below 20km/h)

Injuries
- 10.7%
- 46.8%
- 33.1%
- 0.9%
- 8.5%

Fatalities
- 7.5%
- 62.8%
- 29.0%
- 0.3%
- 0.5%

Source: Road traffic accident statics from 2014 to 2018 (5-year-accumulation) (ITARDA)
Number of Injuries: 59,493  Number of fatalities: 400 (*excluding other hitting points)
CtoP Injury and Fatality Composition by Hitting Position
(M1/N1, Turning left below 20km/h)

<table>
<thead>
<tr>
<th>Injuries</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turning left</td>
<td>31.5%</td>
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<tr>
<td></td>
<td>39.3%</td>
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<tr>
<td></td>
<td>10.0%</td>
</tr>
<tr>
<td>17.4%</td>
<td>6.7%</td>
</tr>
<tr>
<td>1.8%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: Road traffic accident statistics from 2014 to 2018 (5-year-accumulation) (ITARDA)
Number of Injuries: 13,059  Number of fatalities: 105 (*excluding other hitting points)
Proposal (Our Priority)

Scope: **M1** and **N1**

Vehicle Motion: **Moving off**, **Going straight** (may include Turing left)

(*Maximum operational speed: 20km/h*)

Detection Target: **Pedestrians** (may include cyclists)

Required Performance: **Driver’s vision around the vehicle** (especially front and passenger-side direction)

Advanced technology to provide awareness for drivers
• At this IWG, MLIT provided information of the necessity to enhance driver’s awareness of VRUs by focusing on M1/N1’s accidentology.

• If CPs and other stakeholders kindly support it, we would like to proceed the discussion on drafting the forward motion of M1/N1.

• Japan welcomes comments from CPs and stakeholders.
Thank you for your attention.