Relation between the Draft Scenario and the research result

Scenario 1 :
Left turn or Right turn at the intersection


## An example of the detail scenario

The subject vehicle drives at a speed of $30 \mathrm{~km} / \mathrm{h}$ (with a tolerance of $+0 /-2 \mathrm{~km} / \mathrm{h}$ ) toward the intersection, and decelerates by braking to a speed of not less than 16 $\mathrm{km} / \mathrm{h}$ at a point where the subject vehicle begins to steer left / right, and the TTC to the oncoming vehicle is not more than 2.8 seconds. When the subject vehicle turns left or right in the intersection, the speed is reduced to not less than $10 \mathrm{~km} / \mathrm{h}$, and then drives at a constant speed. The TTC to the oncoming vehicle is not more than 1.7 seconds at when the wrap ratio between the subject vehicle and the oncoming vehicle becomes 0\%.
2)Wrap ratio 0\%

TTC not more than

Not less than $10 \mathrm{~km} / \mathrm{h}$

## 1.7 sec .



Research result: Driving behavior of normal drivers

|  | Speed <br> (Average) | TTC <br> (Average) | Brake pedal <br> operation |
| :---: | :---: | :---: | :---: |
| 1) | $16 \mathrm{~km} / \mathrm{h}$ | 2.8 sec. | Observed <br> (all of data) |
| 2) | $10 \mathrm{~km} / \mathrm{h}$ | 1.7 sec. | Not observed <br> (73\% of data) |

$\square$

## Relation between the Draft Scenario and the research result

## Scenario 2 :

Right turn or Left turn of a forward vehicle

## An example of the detail scenario

## 1)Beginning of left turn (related vehicle)

TTC

2)Wrap ratio 0\%

TTC


Test vehicle $\square$ Related vehicle
Both the forward vehicle and the subject vehicle drive at a speed of $40 \mathrm{~km} / \mathrm{h}$ (with a tolerance of $+0 /-2 \mathrm{~km} / \mathrm{h}$ ) on the straight road. The forward vehicle decelerates by braking to a speed of $10 \mathrm{~km} / \mathrm{h}$ (with a tolerance of $+0 /-2 \mathrm{~km} / \mathrm{h}$ ) in order to turn right or left at the corner, and the subject vehicle also decelerates by braking to keep appropriate distance with the forward vehicle. At when the forward vehicle begins to turn right or left, the speed of the subject vehicle is not less than $26 \mathrm{~km} / \mathrm{h}$ and the TTC to the frontal vehicle is not more than 4.7 seconds. After that, the subject vehicle decelerates to a speed of not less than $20 \mathrm{~km} / \mathrm{h}$, and then drives at a constant speed. The TTC to the forward vehicle is not more than 2.5 seconds at when the wrap ratio between the subject vehicle and the oncoming vehicle becomes $0 \%$.

Research result: Driving behavior of normal drivers

|  | Speed <br> (Average) | TTC <br> (Average) | Brake pedal <br> operation |
| :---: | :---: | :---: | :---: |
| 1) | $26 \mathrm{~km} / \mathrm{h}$ | 4.7 sec. | Observed <br> (97\% of data) |
| 2) | $20 \mathrm{~km} / \mathrm{h}$ | 2.5 sec. | Not observed <br> (all of data) |

## Relation between the Draft Scenario and the research result

## Scenario 3 :

Curved road with guard pipes and a stationary object
An example of the detail scenario

2)Offset ratio -100\% TTC


The subject vehicle drives at a speed of 30 (with a tolerance of $+0 /-2$ $\mathrm{km} / \mathrm{h}) \mathrm{km} / \mathrm{h}$ toward the curve of which the radius is not more than 25 m at the outer side of the road, and decelerates by braking to a speed of not less than $22 \mathrm{~km} / \mathrm{h}$ at a point where the subject vehicle enters the curve. The TTC to the stationary object is not more than 1.6 seconds at when the subject vehicle begins to turn in the curve. In the curve, the subject vehicle drives outer lane than the centre of the road. After that, the subject vehicle continue to turn in the curve at a constant speed of not less than $21 \mathrm{~km} / \mathrm{h}$. The TTC to the stationary object is not more than 1.1 second at when the wrap ratio between the subject vehicle and the stationary vehicle becomes $0 \%$, or at when the offset ratio* between the subject vehicle and the centre of the stationary pedestrian target or the stationary bicycle target becomes - $100 \%$.

Research result: Driving behavior of normal drivers

|  | Speed <br> (Average) | TTC <br> (Average) | Brake pedal <br> operation |
| :--- | :---: | :---: | :---: |
| 1) | $22 \mathrm{~km} / \mathrm{h}$ <br> (Pedestrian target) | 1.6 sec. <br> (Pedestrian target) | Observed <br> (87\% of data) |
| 2) | $21 \mathrm{~km} / \mathrm{h}$ <br> (Pedestrian target) | 1.1 sec. <br> (Pedestrian target) | Observed <br> (57\% of data) |

Scenario 4 :
Lane change due to road construction
1)Beginning to steer for lane change

TTC not more than
4.2 sec .


An example of the detail scenario
The subject vehicle drives a straight road at a speed of $40 \mathrm{~km} / \mathrm{h}$ (with a tolerance of $+0 /-2 \mathrm{~km} / \mathrm{h}$ ), and begins to steer in order to change the lane in front of the signboard which notifies reducing the lane. No other vehicles approach the subject vehicle. The TTC to the signboard is not more than 4.2 seconds at when the subject vehicle begins to steer. During changing the lane, the speed of the subject vehicle is constant, and the TTC to the signboard is not more than 3.3 seconds at when the offset ratio between the subject vehicle and the centre of the signboard becomes -100\%.
2)Offset ratio -100\%

TTC


Research result: Driving behavior of normal drivers

|  | Speed <br> (Average) | TTC <br> (Average) | Brake pedal <br> operation |
| :--- | :---: | :---: | :---: |
| 1) | $39 \mathrm{~km} / \mathrm{h}$ | 4.2 sec. | Not observed <br> (79\% of data) |
| 2) | $38 \mathrm{~km} / \mathrm{h}$ | 3.3 sec. | Not observed <br> (75\% of data) |

