Efforts to reduce pedestrian traffic accidents

Overview

National database for traffic accident patterns

Outline of the accident

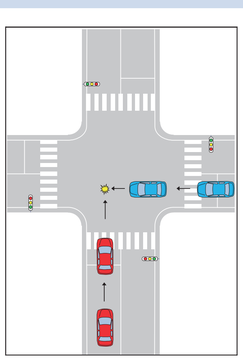
Code	CTC-O1
Road Type	General road　Highway
Road configuration	Intersection　(with signal　no signal)　Near intersection　Curve Tunnel･Bridge　Other road　Place for general traffic
Primary party (P)	Car　Motorcycle　Bicycle　Pedestrian
Secondary party (S)	Car　Motorcycle　Bicycle　Pedestrian
Action type(P)	Straight　Overtaking　Change of lane　Turning rig Turning right Back　Crossing　Other
Direction (S)	Same　facing　from left　from rigth　Stopped
Type of accident	Car to car (　Head on　Rear end　Crossing　Overtaking Passing each o　Turn left　Turn right Collision　Other　)

The number of accidents fitted to the code above in 2016

	Fatal		Serious injury		Slight injury		Casualty	
No of accidents / %	18	0.5%	286	0.8%	4,613	1.0%	4,917	1.0%
Injuries / %	22	0.6%	325	0.9%	6,701	1.2%	7,048	1.1%

Total number of accidents in 2016

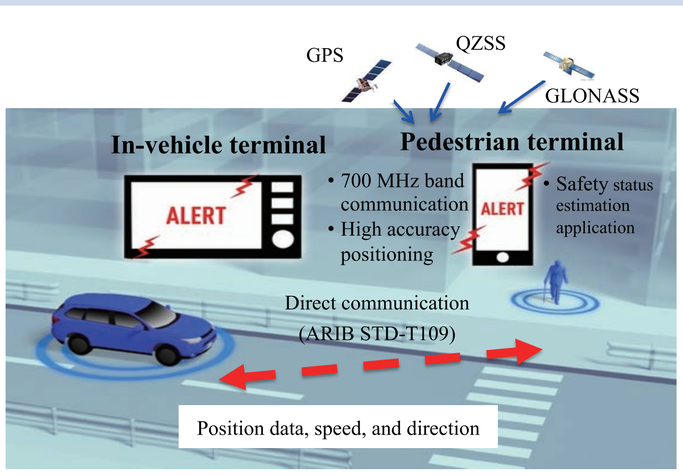
	Fatal	Serious injury	Slight injury	Casualty
No of accidents / %	3,790	35,380	460,031	499,201
Injuries	3,904	37,356	581,497	622,757



✓ Classified traffic accidents into 255 patterns

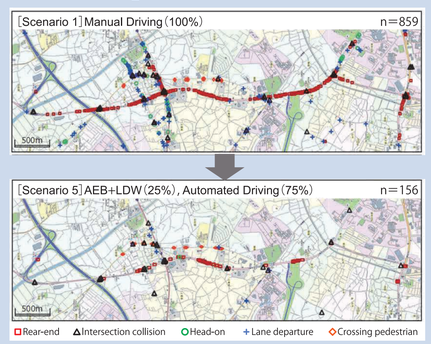
✓ Published as national database

Vehicle to Pedestrian(V2P) Communication Technology



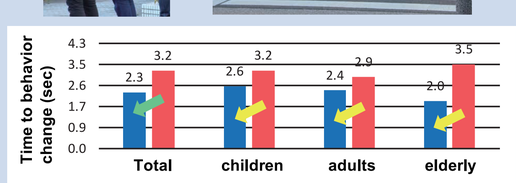
Realization of a safety support system for pedestrians to reduce traffic fatalities

Simulation to predict the impact of ADS*



*ADS : Automated Driving Systems

Verification of effectiveness at FOT



National database for traffic accident patterns

Patterning of J-TAD

To estimate ADAS effectiveness, J-TAD* was classified by 255 patterns to cover 80% of fatalities in 2013, using classifications below. And they have been kept for fixed point observation. However, because of decreased rate(75% in 2016), patterns will be modified and finalized to improve this rate to more than 80% as the national accident database.

*Japan Traffic Accident Database

Sample of Accident Pattern

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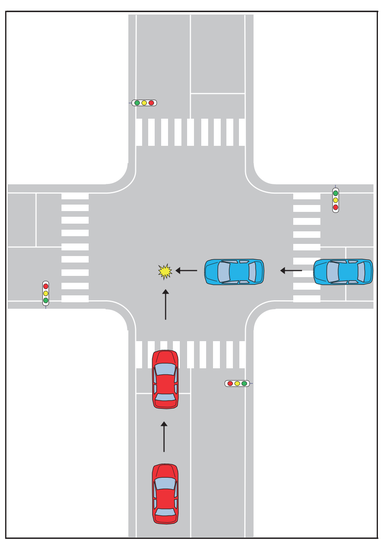

Fig.1 Accident pattern sheet (CTC-01)

Table1 Item and classification for patterning

Item	Classification
Type of Collision	Head on, Rear end, Crossing, Single, Vehicle to pedestrian, Vehicle to bicycle, etc.
Primary Party	Car, Motorcycle, Bicycle, Pedestrian
Secondary Party	Car, Motorcycle, Bicycle, Pedestrian
Type of Road	General road, Highway
Location	Intersection, Near intersection, Curve, Straight, Bridge, Tunnel, Others
Traffic Control	Signal, Stop sign, No control
Traveling Maneuver of Primary Party	Go straight, Turn left, Turn right, etc.
Relative position of Secondary Party	Same direction, Opposite direction, Right side, Left side, Others

The details of the number of injury accidents

Day/Night		
Dawn	321	6.5%
Noon	2,985	60.7%
Dusk	428	8.7%
Night	1,183	24.1%

Weather		
Sunny	2,916	59.3%
Cloudy	1,247	25.4%
Rainny	664	13.5%
Foggy	3	0.1%
Snowy	87	1.8%

Road surface condition		
Dry	3,983	81.0%
Wet	811	16.5%
Ice/Snow covered	122	2.5%
Unpaved	1	0.0%

Median strip & structure		
Median strip	456	9.3%
Median line	2,171	44.2%
No median strip/lin	2,290	46.6%
Outside of roads	0	0.0%

road type		
National highways	963	19.6%
Principal local road	872	17.7%
General local road	3,062	62.3%
Others	20	0.4%

Area type			
Urban	DID	2,023	41.1%
	Other	1,727	35.1%
Suburb		1,167	23.7%

Traffic violation (Primary party)			
Ignoring traffic signal		3748	76.2%
Traffic distribution		0	0.0%
Speeding		1	0.0%
Prohibition on cutting across roads		1	0.0%
Not keeping distance between vehic		0	0.0%
Prohibition on changing course		0	0.0%
Improper overtaking		0	0.0%
Illegal right turn		0	0.0%
Illegal left turn		0	0.0%
Interruption for a vehicle with priorit		85	1.7%
Improper going at intersections	Vehicle from the ···	129	2.6%
	Vehicle oncoming lan	1	0.0%
	Pedestrian	0	0.0%
	Other	46	0.9%
Interruption for a pedestrian		0	0.0%
Interruption for a bicycle crossing ··		0	0.0%
Not slowing at designated area		7	0.1%
Not stopping at designated area		204	4.1%
Violation of mandatory safe driving	Improper maneuverin	10	0.2%
	Not pay attention fo	126	2.6%
	No observe traffic n	28	0.6%
	Not confirm safety f	511	10.4%
	Other	3	0.1%
Other violation		14	0.3%
Unknown/No violation		3	0.1%

Danger recognition sped	Primary party		Secondary party	
10 kph or less	480	9.8%	177	3.6%
20 kph or less	664	13.5%	1188	24.2%
30 kph or less	936	19.0%	1329	27.0%
40 kph or less	1717	34.9%	1467	29.8%
·····				
Unknown	11	0.2%	11	0.2%

Human factor (Primary party)				
Delay in noticing	Inattention to road	dozen off	10	0.2%
		Other inattentive driving	1746	35.5%
		Dropping items/Picking up items	64	1.3%
		Gazing or operating TV/NAVI	64	1.3%
		Distracted driving to search for roads or si	99	2.0%
		Distracted driving to see landscape or ·····	224	4.6%
		Distracted driving to see other vehicles ····	83	1.7%
		Other distracted driving	396	8.1%
	Failure to confirm	No safety check	714	14.5%
		Improper safety check	883	18.0%
Judgement error	failure to observe	Not paying attention to parties becase of ··	12	0.2%
		Failure to observe surrounding traffic·····	100	2.0%
	Improper forecast	Failure to driving sense	9	0.2%
		Wrong notion that the secondary party ·····	12	0.2%
		Other improper forecast	18	0.4%
	Traffc environment		404	8.2%
Impropre peration		Misapplicaion of accelerator and brake peda	18	0.4%
		Weak braking/Delay of braking	18	0.4%
		Sudden braking	0	0.0%
		Improper steering	0	0.0%
		Steering when braking	0	0.0%
		Other operation mistake	14	0.3%
Unknown/No human factor			29	0.6%

Age group	Primary party		Secondary party	
6yo or less	0	0.0%	0	0.0%
7-15yo	0	0.0%	0	0.0%
16-24yo	712	14.5%	428	8.7%
25-49yo	1828	37.2%	2524	51.3%
·····				
75yo or more	546	11.1%	180	3.7%

Fig.2 In-depth analyzed sheet (CTC-01)

This database was also used by another organization for SIP-adus study.