

ACPE-03

Proposal for a Definition of Pedal Misapplication

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KATRI Test overview

Misapplication(Sudden brake)

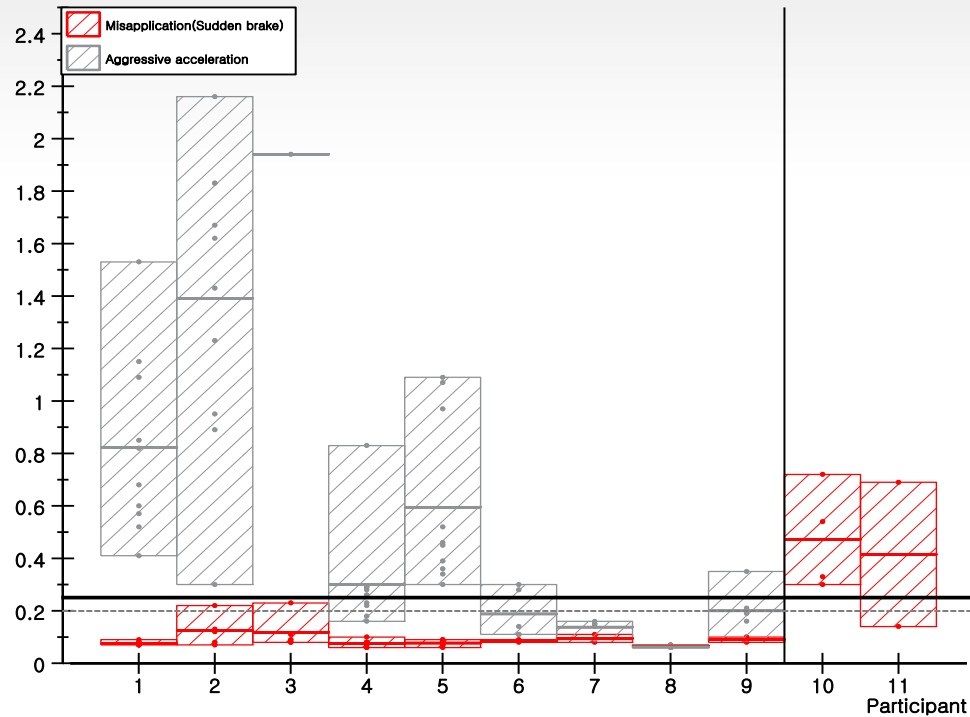


Aggressive acceleration

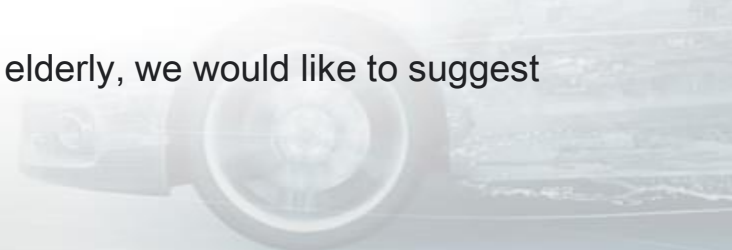


- ✓ Test location : KATRI Straight road
- ✓ Number of participants : 11 (Age 20~50)
- ✓ Test vehicle : Gasoline 2,000cc
- ✓ Test condition : Stationary & No obstacle
- ✓ Test content
Total of 165 reproduction tests were conducted, 55 times for misapplication and 115 times for aggressive acceleration

KATRI Test result



- ✓ Looking at 9 typical drivers, there is a possibility that 2 will not be detected within 0.2 seconds and all will be detected within 0.25 seconds
- ✓ Considering that pedal misoperation is mainly occur in the elderly, we would like to suggest **0.25 seconds** as a standard



EDR data at stationary

		-5s	-4.5s	-4s	-3.5s	-3s	-2.5s	-2s	-1.5s	-1s	-0.5s	0s
1	SPD[km/h]	0	0	0	4	6	13	27	37	42	44	44
	APS[%]	0	0	49	0	67	82	100	99	83	13	100
2	SPD[km/h]	0	1	2	2	3	4	10	17	24	34	42
	APS[%]	0	0	0	0	11	100	74	0	100	100	100
3	SPD[km/h]	0	0	0	0	1	3	5	12	20	29	30
	APS[%]	48	0	0	0	0	20	39	99	99	99	0
4	SPD[km/h]	0	1	1	1	3	4	6	11	14	19	29
	APS[%]	9	0	0	10	0	57	87	43	60	99	99
5	SPD[km/h]	0	0	0	0	0	0	3	10	17	31	29
	APS[%]	0	0	0	0	74	99	99	99	65	99	99
6	SPD[km/h]	0	0	0	0	0	0	1	4	12	17	25
	APS[%]	0	0	0	2	8	9	36	89	89	100	100
7	SPD[km/h]	0	0	0	0	0	0	0	0	6	13	22
	APS[%]	0	0	0	0	0	0	0	69	53	52	0
8	SPD[km/h]	0	0	0	0	0	0	3	6	8	12	19
	APS[%]	0	0	0	0	0	44	0	10	99	99	7
9	SPD[km/h]	0	0	0	0	2	9	17	19	19	18	18
	APS[%]	0	7	0	5	100	90	0	0	0	0	0
10	SPD[km/h]	0	0	0	1	2	2	2	3	5	11	17
	APS[%]	0	6	7	7	7	0	2	13	33	95	99
11	SPD[km/h]	0	0	0	0	0	0	0	0	2	9	16
	APS[%]	2	2	2	2	2	3	4	28	88	100	100
12	SPD[km/h]	0	0	0	0	0	0	0	0	2	6	15
	APS[%]	0	0	0	0	0	0	5	26	26	99	99
13	SPD[km/h]	0	0	0	1	1	2	4	5	5	9	12
	APS[%]	13	13	7	14	23	28	34	64	70	83	83
14	SPD[km/h]	0	0	0	0	0	0	0	2	4	6	11
	APS[%]	0	0	0	0	0	0	68	0	0	100	100
15	SPD[km/h]	0	0	0	1	1	2	2	2	2	4	10
	APS[%]	0	0	3	3	1	0	0	5	18	59	99
16	SPD[km/h]	0	0	0	0	0	0	0	0	0	0	4
	APS[%]	0	0	0	0	0	0	0	0	81	45	29
17	SPD[km/h]	0	0	0	0	0	0	0	4	11	36	23
	APS[%]	0	0	0	0	0	0	31	43	99	99	99
18	SPD[km/h]	0	4	16	25	23	23	27	30	35	38	40
	APS[%]	100	100	100	100	100	100	100	100	100	100	100
19	SPD[km/h]	0	0	0	0	0	0	0	0	7	15	4
	APS[%]	0	0	0	0	0	0	0	85	83	0	0
20	SPD[km/h]	0	0	1	1	4	5	8	12	15	61	8
	APS[%]	0	0	0	12	3	23	82	99	99	99	99

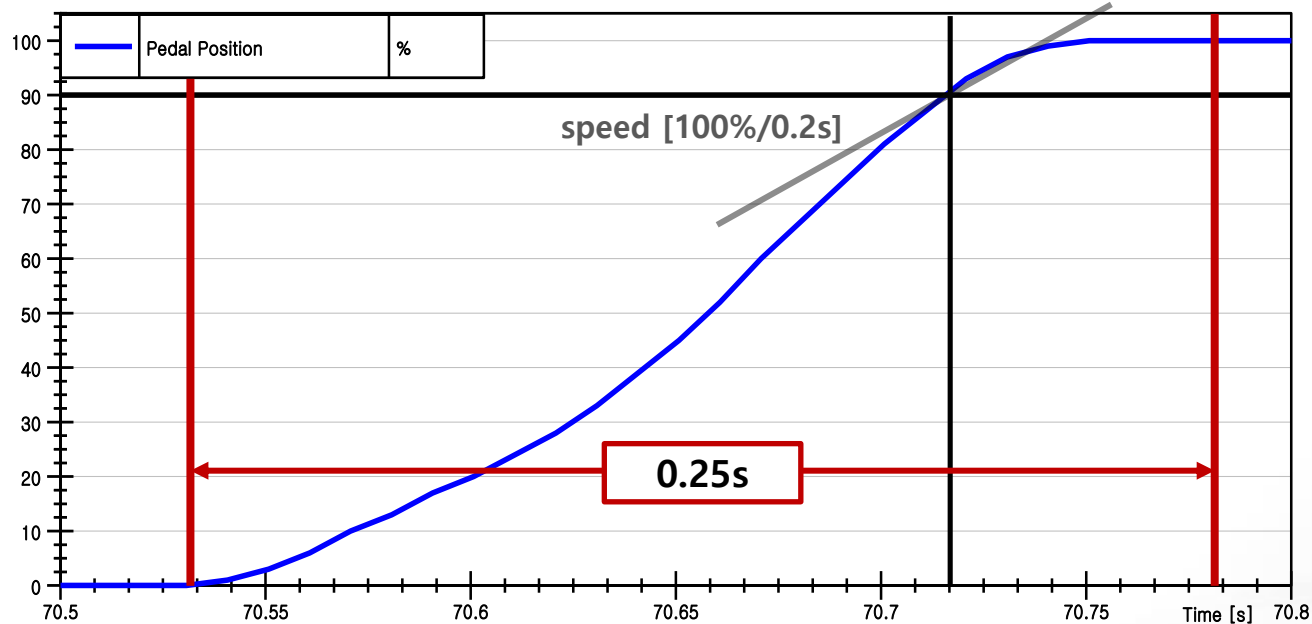
EDR data of pedal misoperation accidents in stationary state

- In 16 of the 20 pedal misoperation accidents, the pedal was pressed more than 90%
- And in all cases, the pedal was pressed 99 or 100% of the time
- Since the resolution of EDR is $\pm 1\%$, full stroke pedals are detected at 99 and 100%
- Full stroke (APS 99% and/or APS 100%) is presented as the pedal position standard

03 Definition of pedal misapplication

☑ Current definition:

Pedal misapplication, an application of the accelerator pedal with a position of more than [90%] and a pedal speed of more than [100%/0.2 s]



☑ Proposal :

Pedal misapplication, an application of the accelerator pedal with a position from OFF stroke (e.g. APS 0%) to full stroke (e.g. APS 99% and/or APS 100%) within 0.25 seconds

THANK YOU

