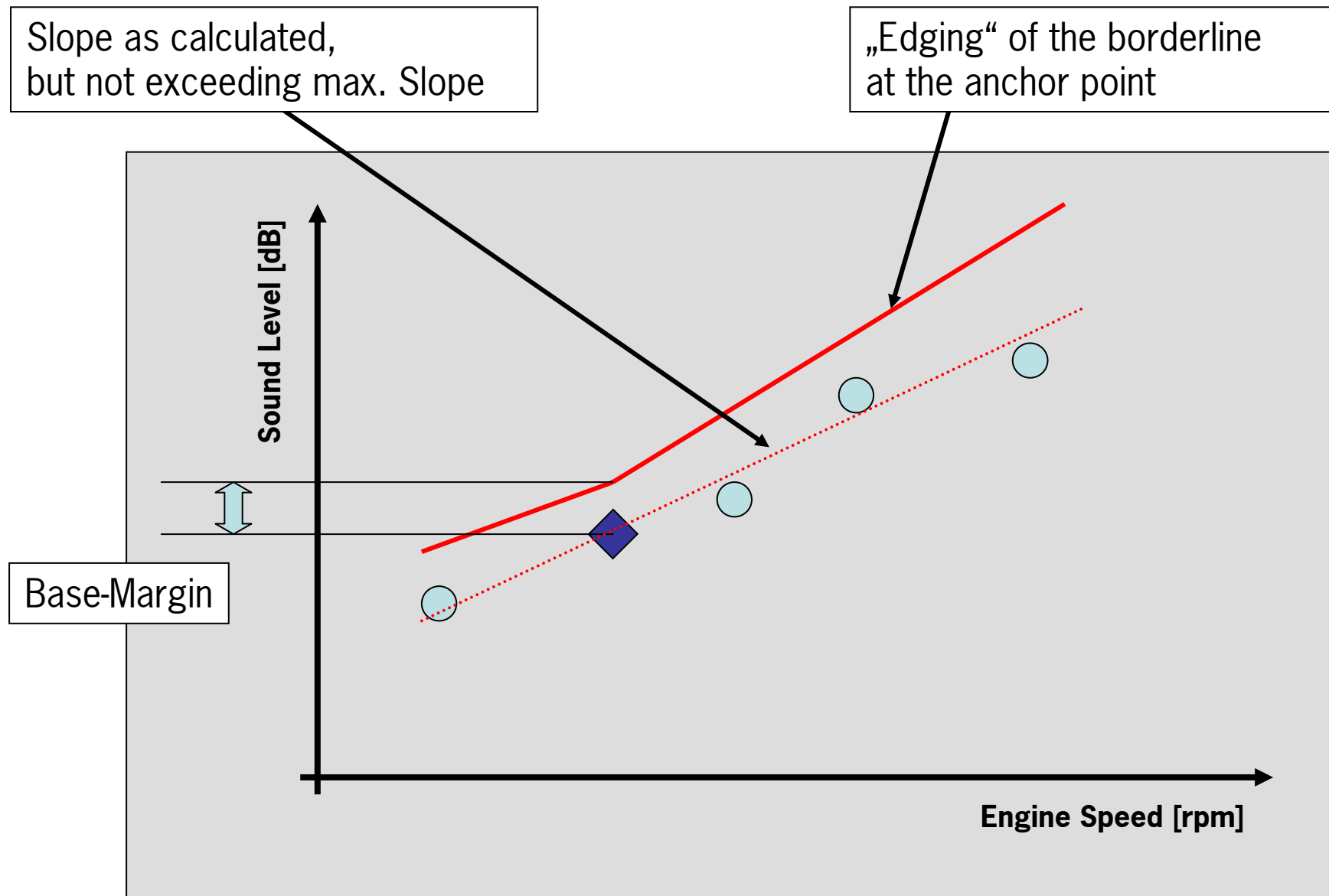# Analysis Principles of the Database

- The database contains about 130 vehicles that can be analyzed. Electrical vehicles are not considered. Some vehicle are two times in the database, and thus two times analyzed.

- The rating critical is used for vehicles which have less than 2 dB distance from the borderline. This is necessary because for a statement of compliance this is the absolute minimum.

- The majority of the market must be considered as uncritical vehicles. Thus a big majority of the vehicles must be able to pass ASEP easily.

- With a Base Margin of 1 dB this cannot be achieved. A minimum of 2dB has to be considered.

- Together with the edging it is possible to keep the margin around the anchor point low but allow more far away from the anchor point a margin, that avoids making normal vehicles fail the test.

Application of Parameters for Construction of the Borderline

Slope as calculated,
but not exceeding max. Slope

„Edging" of the borderline
at the anchor point

Sound Level [dB]

Engine Speed [rpm]

Base-Margin

Data Base Analysis with various Limitation Parameters

Explanation for the Overview-Table

Max Slope

„Edging"

Base Margin

Slope 6.0	Edging 1.0		
Margin	Fail	Critical	Pass
0	69	52	8
1	29	75	25
2	13	55	60
3	7	22	100
4	4	9	116
5	3	4	122

With a max. slope of 6dB/1000rpm and a Base Margin of 2dB and an Edging of the borderling of 1dB/1000rpm, the database delivers this result:

13 vehicles fail
56 vehicles are critical
60 vehicles pass

Data Base Analysis with various Limitation Parameters

Slope 5.0 - Edging 0.0

Margin	Fail	Critical	Pass
0	111	18	0
1	50	77	2
2	22	90	17
3	18	32	79
4	11	11	107
5	8	10	111

Slope 5.5 - Edging 0.0

Margin	Fail	Critical	Pass
0	111	18	0
1	46	81	2
2	20	92	17
3	17	29	83
4	10	10	109
5	8	9	112

Slope 6.0 - Edging 0.0

Margin	Fail	Critical	Pass
0	108	21	0
1	43	84	2
2	20	89	20
3	16	27	86
4	8	12	109
5	6	10	113

Slope 6.5 - Edging 0.0

Margin	Fail	Critical	Pass
0	105	24	0
1	41	86	2
2	20	86	23
3	14	27	88
4	6	14	109
5	5	9	115

Slope 7.0 - Edging 0.0

Margin	Fail	Critical	Pass
0	104	25	0
1	41	86	2
2	18	88	23
3	11	30	88
4	5	13	111
5	5	6	118

Slope 5.0 - Edging 0.5

Margin	Fail	Critical	Pass
0	87	41	1
1	39	80	10
2	18	69	42
3	14	25	90
4	10	8	111
5	6	8	115

Slope 5.5 - Edging 0.5

Margin	Fail	Critical	Pass
0	82	46	1
1	37	82	10
2	18	64	47
3	13	24	92
4	8	10	111
5	4	9	116

Slope 6.0 - Edging 0.5

Margin	Fail	Critical	Pass
0	79	49	1
1	34	85	10
2	18	61	50
3	11	23	95
4	6	12	111
5	3	8	118

Slope 6.5 - Edging 0.5

Margin	Fail	Critical	Pass
0	78	50	1
1	34	84	11
2	16	62	51
3	8	26	95
4	5	11	113
5	3	5	121

Slope 7.0 - Edging 0.5

Margin	Fail	Critical	Pass
0	78	50	1
1	34	84	11
2	14	64	51
3	7	27	95
4	5	9	115
5	2	5	122

Slope 5.0 - Edging 1.0

Margin	Fail	Critical	Pass
0	76	46	7
1	32	74	23
2	16	60	53
3	12	20	97
4	7	9	113
5	4	8	117

Slope 5.5 - Edging 1.0

Margin	Fail	Critical	Pass
0	72	49	8
1	29	76	24
2	15	57	57
3	10	19	100
4	5	10	114
5	3	7	119

Slope 6.0 - Edging 1.0

Margin	Fail	Critical	Pass
0	69	52	8
1	29	75	25
2	13	56	60
3	7	22	100
4	4	9	116
5	3	4	122

Slope 6.5 - Edging 1.0

Margin	Fail	Critical	Pass
0	67	54	8
1	29	75	25
2	11	56	62
3	6	23	100
4	4	7	118
5	2	4	123

Slope 7.0 - Edging 1.0

Margin	Fail	Critical	Pass
0	67	54	8
1	25	79	25
2	9	58	62
3	6	19	104
4	4	5	120
5	2	4	123

Slope 5.0 - Edging 1.5

Margin	Fail	Critical	Pass
0	68	48	13
1	25	71	33
2	15	53	61
3	10	15	104
4	4	11	114
5	3	7	119

Slope 5.5 - Edging 1.5

Margin	Fail	Critical	Pass
0	65	51	13
1	25	69	35
2	13	52	64
3	7	18	104
4	4	9	116
5	3	4	122

Slope 6.0 - Edging 1.5

Margin	Fail	Critical	Pass
0	62	54	13
1	24	69	36
2	11	51	67
3	6	18	105
4	4	7	118
5	2	4	123

Slope 6.5 - Edging 1.5

Margin	Fail	Critical	Pass
0	62	54	13
1	20	73	36
2	9	53	67
3	6	14	109
4	4	5	120
5	2	4	123

Slope 7.0 - Edging 1.5

Margin	Fail	Critical	Pass
0	61	55	13
1	17	76	36
2	8	53	68
3	6	11	112
4	3	5	121
5	2	4	123