

Seven taxi caps in Helsinki area since October, 2002

# Recording ISA – experience from Finland

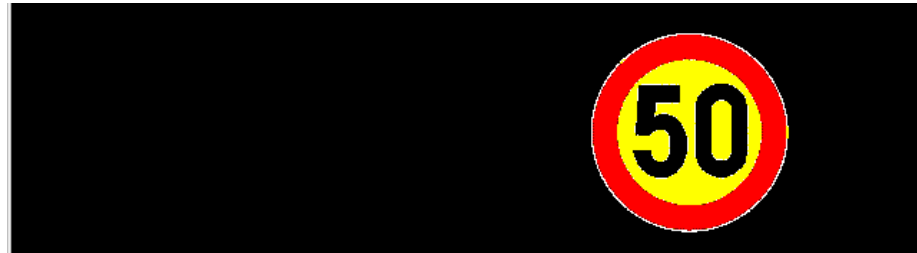
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# KISS

**K**ep **I**t **S**imple you **S**tupid

# Alternative ISA variants

Informing



Warning



Recording

Ylinopeutta  
ajomatkasta  
44 %

Ylinopeuden ka.  
kun ylinopeutta  
25,2 km/h

Maksimi-  
nopeus,  
126,2 km/h

Mandatory



(picture is a loan from Swedish ISA - site)

# What is recording ISA?

- Feedback about speed behaviour is given periodically **afterwards**.
- **No real-time speed information** needs to be given to the driver.



## How?

- A small device installed in the car including data logger, GPS and a GSM -modem
- Reliable speed information from the GPS –system
- Digital roadmaps available

# Why recording ISA?

- **Informing and warning ISA** do not motivate speeding drivers very much. Speedometers have been used for a long time.
- Legislation for **mandatory ISA** takes many years and you don't get it without success stories in ISA. Liability problem?
- **Recording ISA** keeps driver in the loop, is not so vulnerable to the errors and motivates concentration on strategic level
- Everything that is needed for recording ISA will be there soon



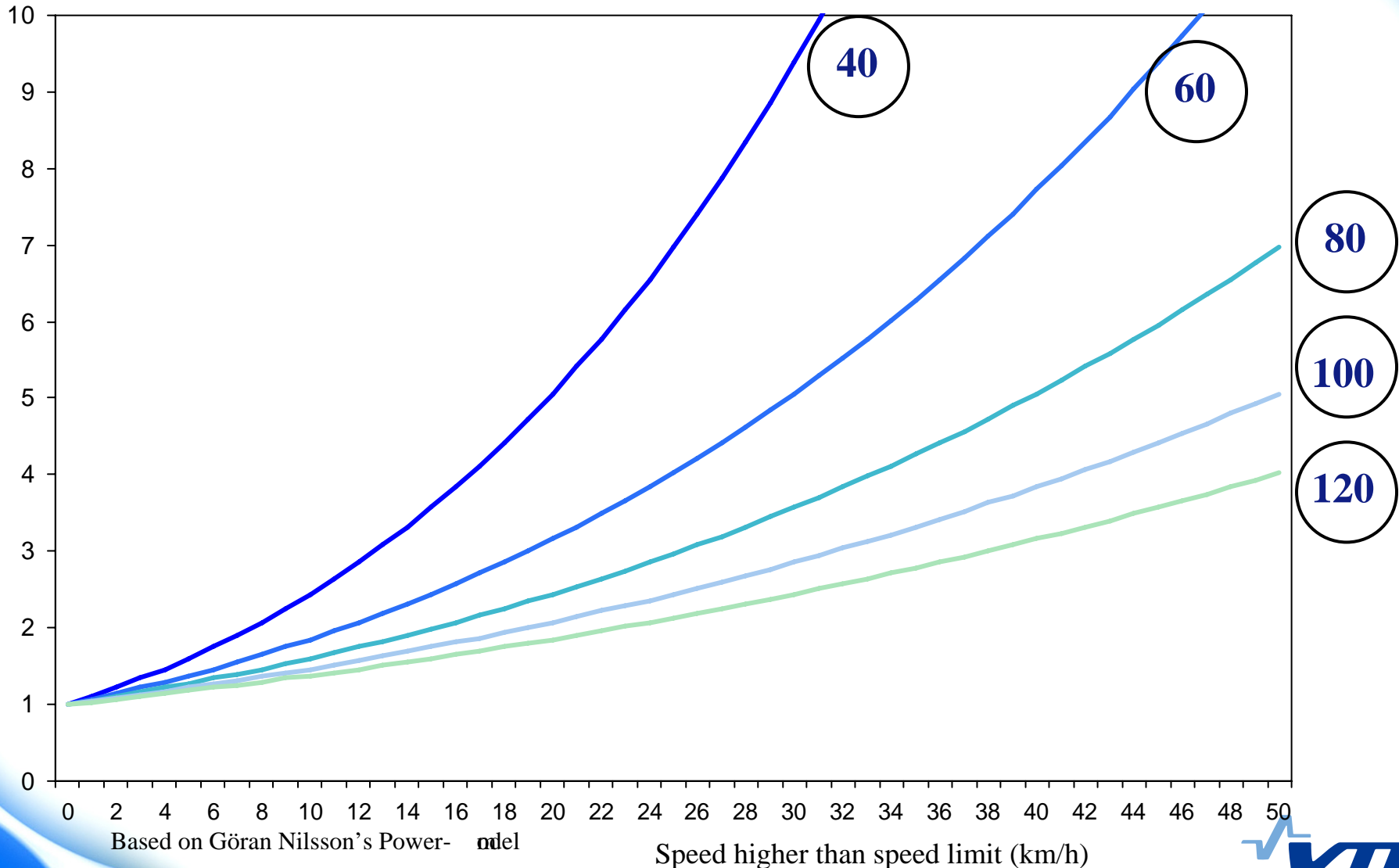
## Feedback to the managers of the taxi company

27.2. - 21.3 2003

Driver number	Driven, km	Speeding, km	Overspeed		Risk increase (%) by speed limit:			
			%	average, km/h	30-40	50-70	80-100	Total
42	136,7	106,7	78	17,6	<b>155</b>	<b>135</b>	<b>196</b>	<b>161</b>
58	416,1	287,3	69,1	17,1	<b>82</b>	<b>121</b>	<b>175</b>	<b>127</b>
143	45,1	35,4	78,6	10,9	<b>169</b>	<b>91</b>	49	<b>110</b>
46	221,8	154,6	69,7	13,8	<b>78</b>	<b>117</b>	<b>98</b>	<b>104</b>
138	150,6	94	62,4	13,1	<b>96</b>	<b>86</b>	<b>120</b>	<b>97</b>
99	125,8	75	59,6	15,8	69	<b>92</b>	<b>107</b>	<b>93</b>
134	157,6	118	74,9	15,2	56	<b>103</b>	<b>96</b>	<b>92</b>
15	713,2	471,8	66,2	12,9	<b>103</b>	67	<b>101</b>	<b>87</b>
49	374,7	259,8	69,3	13,2	72	<b>96</b>	<b>85</b>	<b>86</b>
95	153,2	100,3	65,5	13,4	75	<b>77</b>	<b>92</b>	<b>83</b>
27	371,1	269,7	72,7	12,5	<b>81</b>	<b>78</b>	84	81
145	1888,3	1196,8	63,4	10,9	<b>79</b>	65	62	67
66	1566,6	783	50	13,8	30	62	<b>112</b>	65
107	3270,8	1886,6	57,7	11	64	63	66	64
13	354,2	203,6	57,5	11,6	50	42	85	60
21	381,6	216,8	56,8	9,8	63	55	58	59
25	1942,2	1142,5	58,8	10,3	54	51	69	58
6	186,3	103	55,3	9,6	57	62	47	58
22	173,1	103,7	59,9	10,1	47	64	52	57
51	1618,4	813,8	50,3	9,2	<b>102</b>	34	49	55
4	27,4	13,3	48,6	11	30	63	0	54

# Relative risk for a fatal accident by speed

Relative risk (risk = 1 when obeying the speed limit)



# The effects of feedback?

During March - May 2003 the management of the taxi company has given feedback regarding too high speeds to 13 drivers.

- 6 of the drivers soon quitted driving in that company
- 4 of the drivers seem to obey speed limits better after feedback
- 1 driver seems to drive using as high speeds as before feedback
- 2 drivers have not driven with the cars having measuring equipment

General feedback has been given also. It seems that even other drivers than those given personal feedback have been driving avoiding highest speeds.

# How could one use the collected speed information?

- as a part of the quality controlling systems for companies
- part of the driving license acquiring process
- monitoring special groups (e.g. speed limit offenders, young drivers...) like Alcolock
- as a background data in traffic planning, research and enforcement
- follow-up of driving styles and exposure measurement in environmental studies

## Data for traffic planners

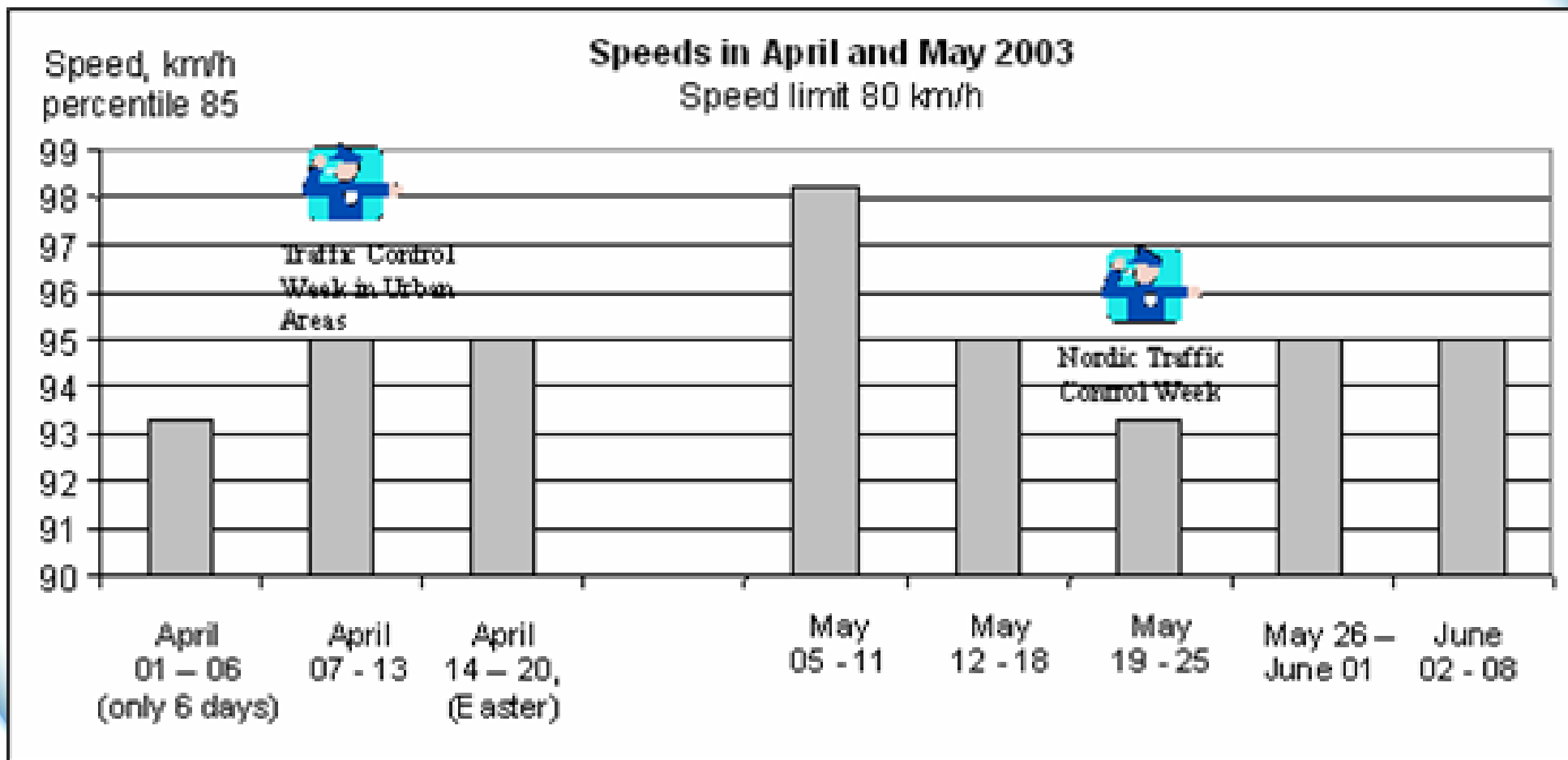
Average speed, from 09:00 to 15:00



Average speed, from 22:00 to 07:00



## Data for research purposes





## Speedaudit - Define data -period

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23.05.2003 - 04.12.2003

[Home](#)
[New Period](#)
[New Latest](#)

Cars

[Search](#)

Drivers

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Organisation

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Statistics

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Manage

[Password](#)
[Logout](#)

Users

[Registered Users](#)
[Current Users](#)

### Definition

Search id \*

### Query

Cars	<input type="text" value="2216"/> <input type="text" value="2217"/> <input type="text" value="2228"/> <input type="text" value="2231"/> <input type="text" value="2233"/>	Drivers	<input type="text" value="4"/> <input type="text" value="5"/> <input type="text" value="6"/> <input type="text" value="7"/> <input type="text" value="10"/> <input type="text" value="12"/> <input type="text" value="13"/> <input type="text" value="14"/> <input type="text" value="22"/> <input type="text" value="25"/>	Selected / Total	0 / 156
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Time period -days

Day	Month	Year	Day	Month	Year	Number
Start: <input type="text" value="21"/>	<input type="text" value="11"/>	<input type="text" value="2003"/>	End: <input type="text" value="4"/>	<input type="text" value="12"/>	<input type="text" value="2003"/>	Days: <input type="text" value="14"/>

Time

Hours	Minutes	Hours	Minutes
Start: <input type="text" value="9"/>	<input type="text" value="30"/>	End: <input type="text" value="14"/>	<input type="text" value="30"/>

Starting time only = +- 5 minutes.

Speed limit

# Speedaudit - Speed table-report

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23.05.2003 - 04.12.2003

Speed table [Speed distribution](#) [Over speed](#)

Created	Search id	Cars	Drivers	Begin	End	Speed limit
17.03.2004 15:27	<a href="#">Speed Table</a>		63 , 76 , 107 , 128 , 232	21.11.2003	04.12.2003	

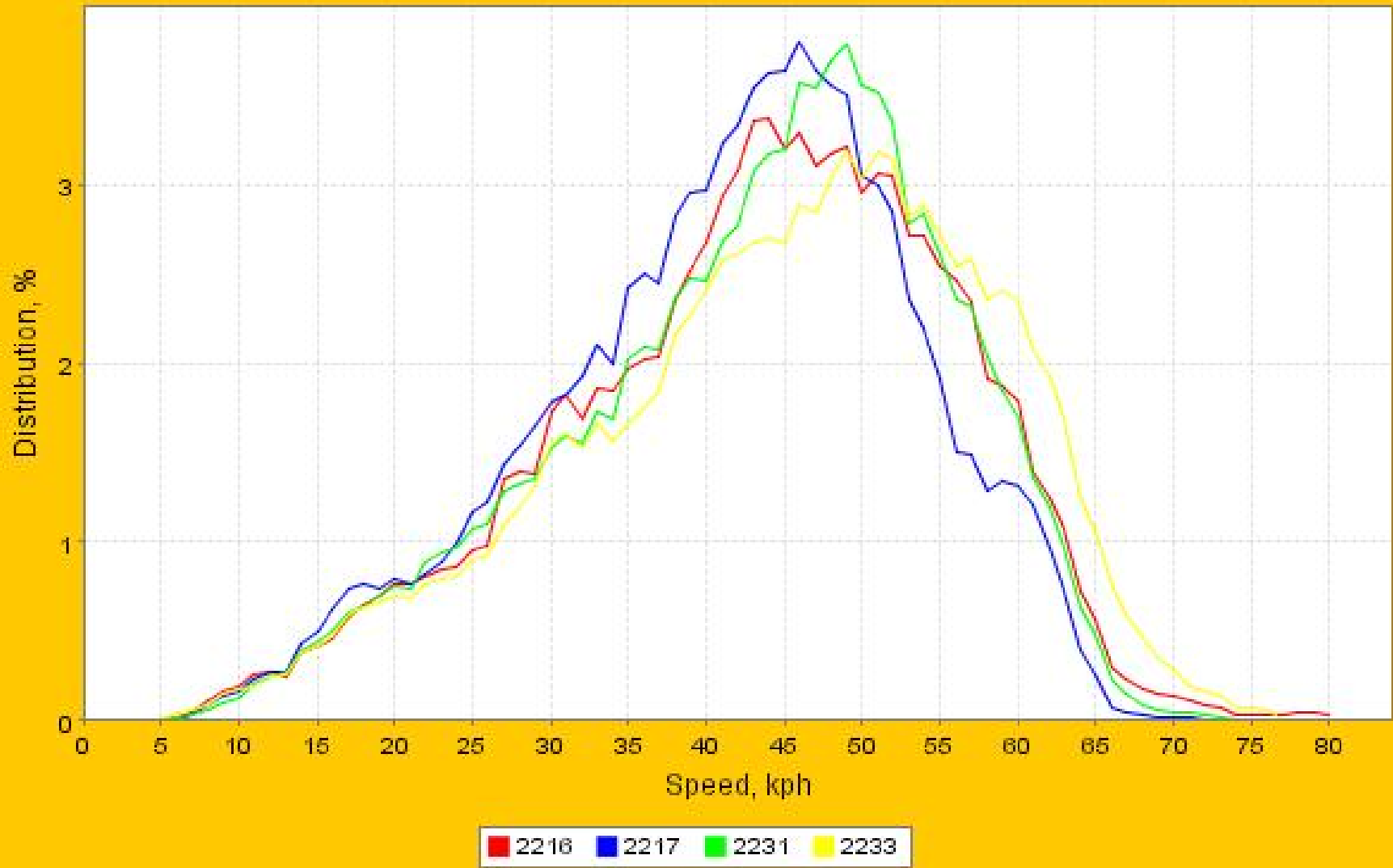
Calculate values by:  Sort:   
 Increasing  Decreasing

Classification	Sort	Results	
Driver	Average risk index / Decreasing	<a href="#">READY</a> <a href="#">Look</a> <a href="#">Delete</a>	<input type="button" value="Refresh"/>

Results **Time period:** 2003-11-21 - 2003-12-04 **Measurements count:** 105846

Driver	Driven, km	Speeding, km	Speeding		Risk index by speed limit			
			%	av.,kph	30 - 40	50 - 70	80 - 120	Average
107	1948.6	1082.8	55.6	9.6	1.6	1.5	1.4	1.5
63	1676.1	904.8	54.0	8.3	1.9	1.6	1.2	1.4
232	1385.9	735.5	53.1	9.1	1.4	1.4	1.4	1.4
76	1025.7	416.0	40.6	7.6	1.5	1.2	1.3	1.3
128	1010.8	424.3	42.0	6.0	1.3	1.2	1.2	1.2
	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>	<a href="#">Look</a>

# Speed distribution



## Speedaudit - Speeding-report

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23.05.2003 - 04.12.2003[Speed table](#) [Speed distribution](#) Over speed

Created	Search id	Cars	Drivers	Begin	End	Speed limit
18.03.2004 10:41	<a href="#">Winter days</a>			21.11.2003 09:30	04.12.2003 14:30	50

Sort 1:	<input type="text" value="Speed limit"/>	Sort 2:	<input type="text" value="Speeding"/>	Sort 3:	<input type="text"/>
	<input checked="" type="radio"/> Increasing <input type="radio"/> Decreasing		<input type="radio"/> Increasing <input checked="" type="radio"/> Decreasing		<input checked="" type="radio"/> Increasing <input type="radio"/> Decreasing
Min. number of observations :	<input type="text" value="5"/>	Min. average speeding, kph:	<input type="text" value="15"/>	<input type="button" value="Calculate"/>	

Sort 1	Sort 2	Sort 3	Speeding, count	Speeding, aver.	Results	<input type="button" value="Refresh"/>
Speed limit / Increasing	Speeding / Decreasing		5	15	READY <a href="#">Look</a> <a href="#">Delete</a>	

Results **Time period:** 2003-11-21 - 2003-12-04 **Measurements count:** 9502

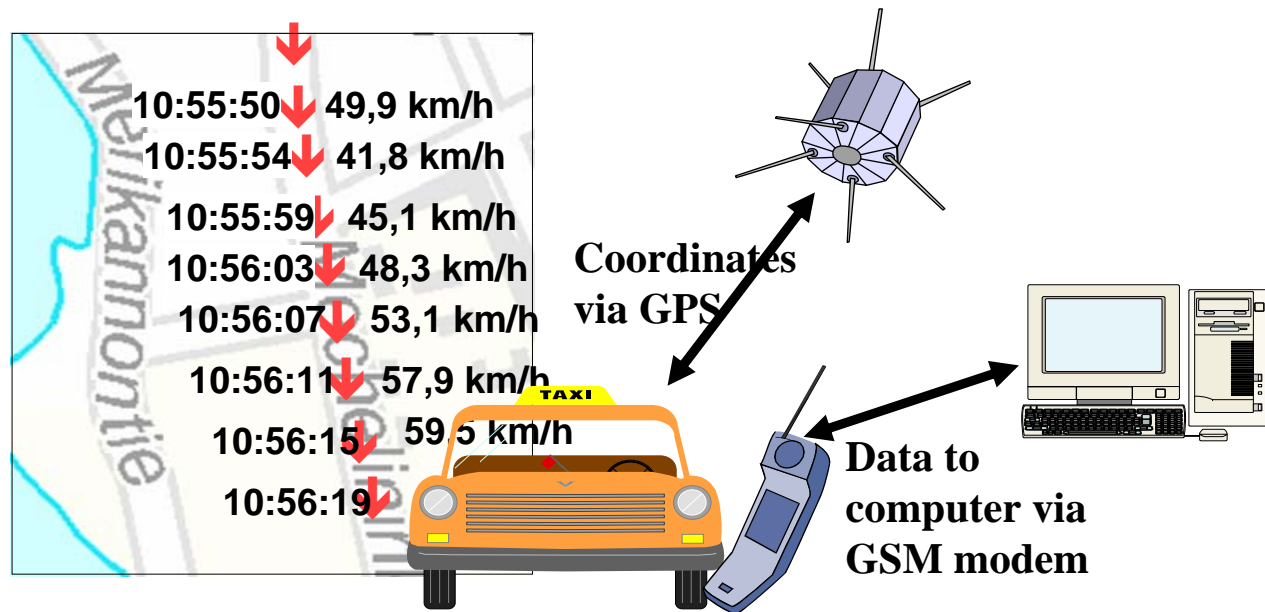
Speed, kph	Limit, kph	Speeding, kph	Measurements, km	Measurements, count	Driver	Date	Start	End	Relative speeding, %	View map
68.0	50	18.0	0.7	8	283	21.11.2003	10:05:22	10:05:56	36	<a href="#">Map</a>
67.0	50	17.0	0.5	6	284	22.11.2003	09:37:15	09:37:43	34	<a href="#">Map</a>
67.0	50	17.0	0.4	5	283	23.11.2003	11:37:44	11:38:02	34	<a href="#">Map</a>
66.5	50	16.5	1.0	12	284	22.11.2003	09:38:56	09:39:56	33	<a href="#">Map</a>



# Real-time is an enemy of overall comprehension !



# Thank you for your attention!



Seven taxi caps in Helsinki area since October, 2002