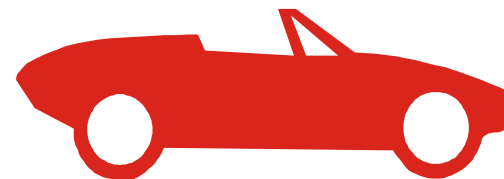


ISA – are we already at the deployment stage?

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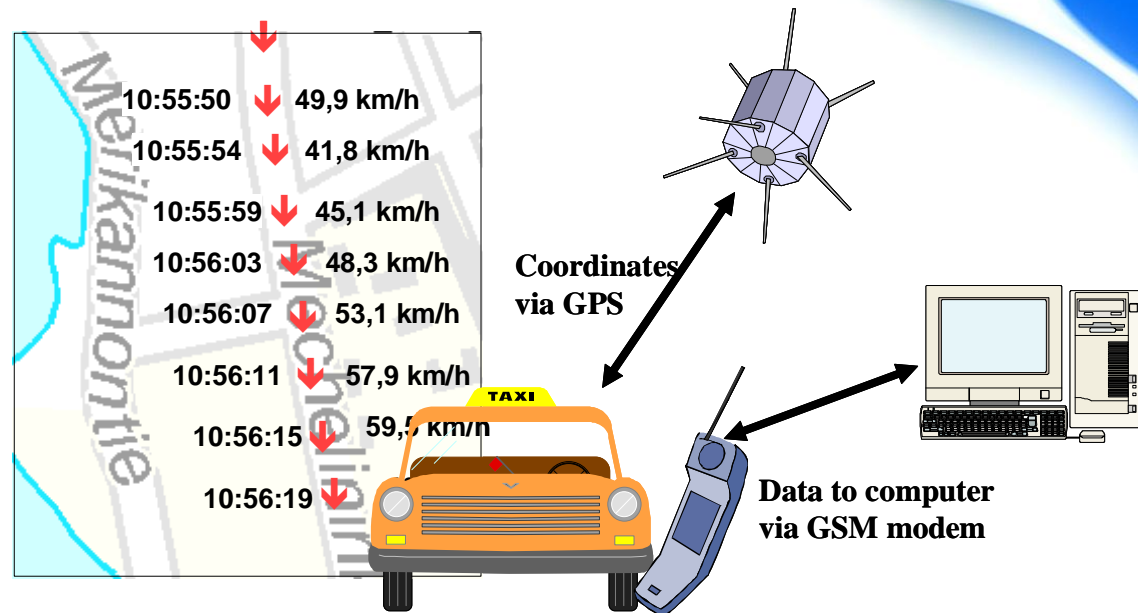


Introduction – my ISA

- ❖ Intelligent Speed Adaptation has a great safety potential
- ❖ Three levels of intervention have been mentioned
 - Advisory, Voluntary and Mandatory
- ❖ In addition to these three levels, a fourth level - **recording ISA** - has been introduced and piloted in Finland
- ❖ Feedback given to the driver periodically, not online
 - not as vulnerable to errors
 - motivates concentration to the strategic level
- ❖ Recording driving behaviour will also enable the collection and use of other traffic safety related indicators – measuring Naturalistic Driving



Recording ISA



Recording ISA system (SPEEDAUDIT+)

- ❖ GPS for detection of location and speed and modem for sending the collected data to server
- ❖ Other sensors like 3-D acceleration measurements
- ❖ Feedback reports generated by need using internet

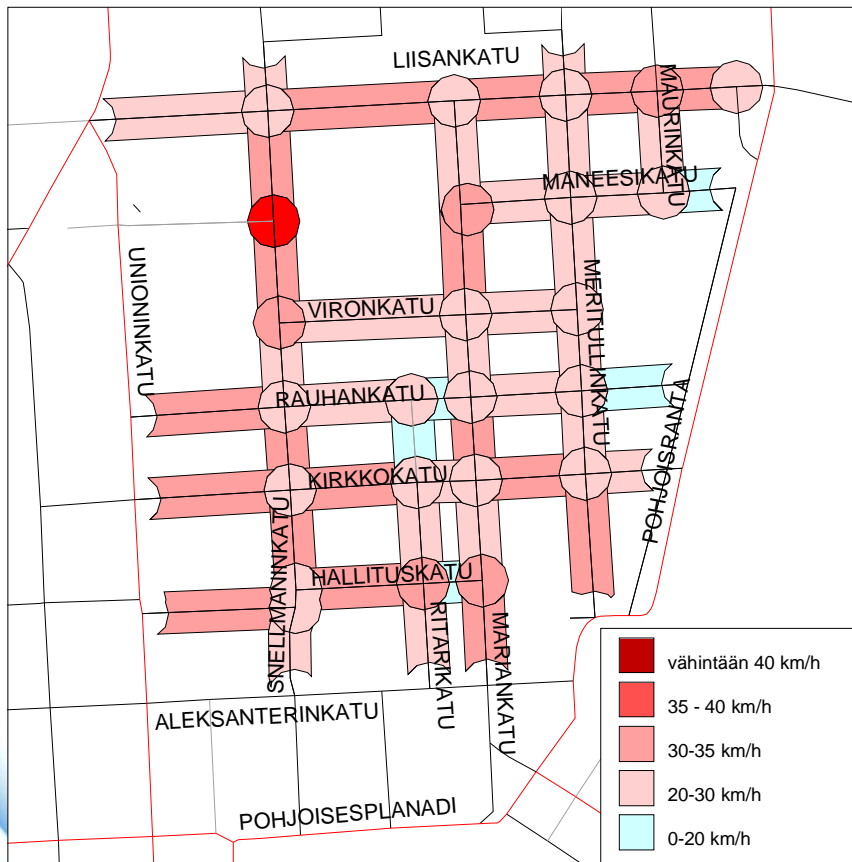
Why recording ISA?

To motivate drivers towards a more moderate driving behaviour:

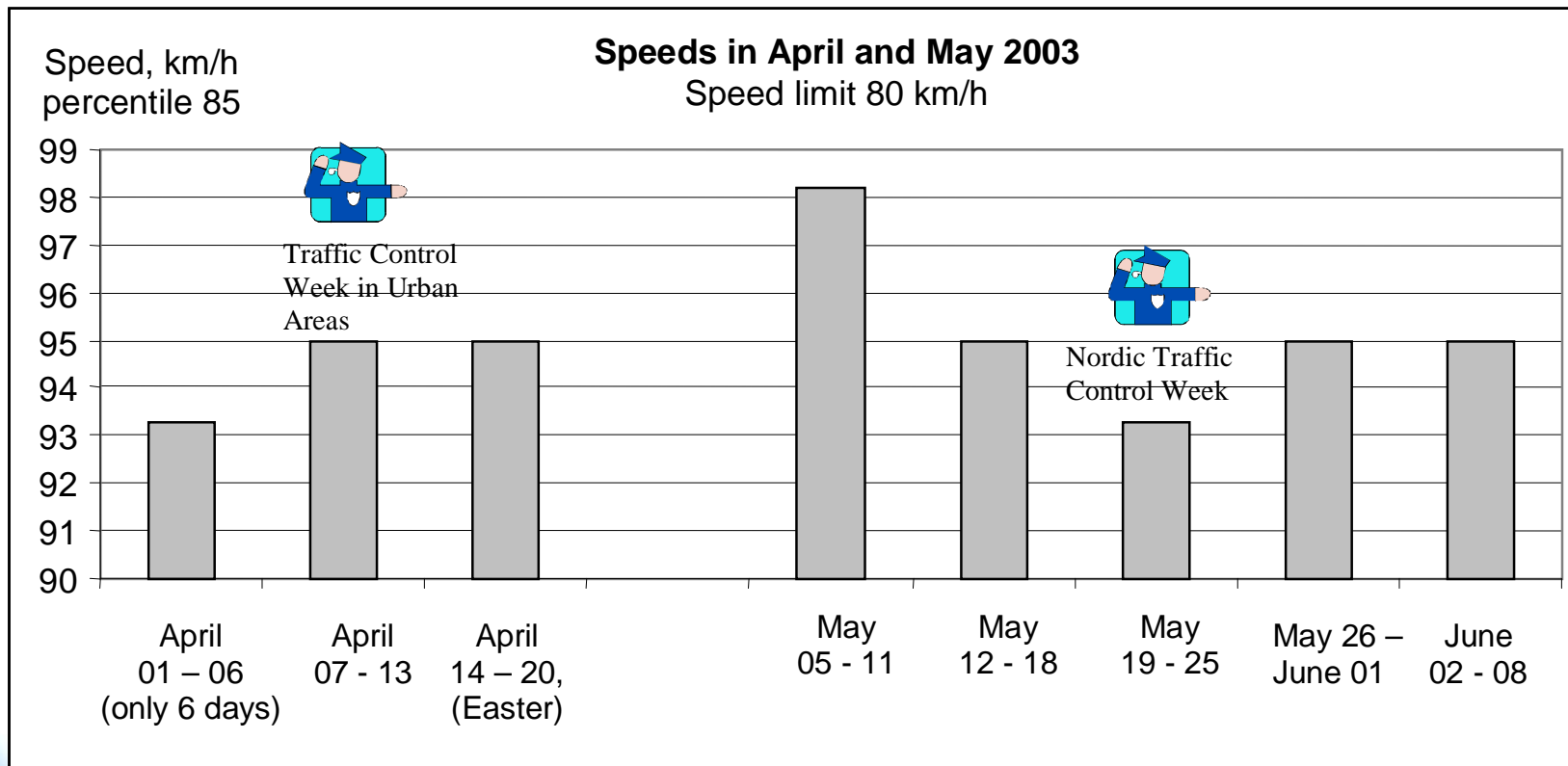
- ❖ easy to accept, quick adoption and no legal problems
- ❖ quality assurance system for transport companies and their customers
- ❖ a monitoring system for speed offenders -as ALCOLOCK
- ❖ guiding novel drivers towards moderate driving behaviour (two phase driving licence)
- ❖ saves lives as well as energy and environment

A database of 20 million measurements already available

EXAMPLE OF USE - traffic planning



EXAMPLE OF USE - research



EXAMPLE OF USE - feedback

SPEEDAUDIT - Speeding-report

Vtt vieras
2003-05-23 - 2003-08-17

[Speed table](#) [Speed figure](#) Speeding

Created	Badge	Cars	Drivers	Begin	End	Speed limit
05.12.03 04.28	EWGOSC		107 , 128 , 181 , 191 , 218 , 237 , 25 , 49 , 66 , 76	2003-05-23	2003-08-17	80

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, kmph:	<input type="text" value="25"/>	<input type="button" value="Calculate"/>		
Sort 1	Sort 2	Sort 3	Speeding, count	Speeding, aver.	Results	
Speed limit / Increasing	Speeding / Decreasing		5	25	READY Look Delete	<input type="button" value="Refresh"/>

Results **Time period:** 2003-05-23 - 2003-08-17 **Measurements -count:** 94096

Speed, kmph	Limit, kmph	Speeding, kmph	Measurements, km	Measurements, count	Driver	Date	Start	End	Relative speeding, kmph	View map
131.0	80	51.0	0.5	5	66	04.06.2003	05:27:43	05:27:58	64	Map
127.1	80	47.1	0.7	7	218	03.07.2003	03:49:09	03:49:29	59	Map
125.7	80	45.7	0.9	9	107	02.08.2003	23:31:33	23:31:57	57	Map
123.9	80	43.9	0.9	9	107	20.06.2003	06:05:06	06:05:30	55	Map
121.8	80	41.8	0.9	9	107	15.06.2003	06:41:31	06:41:56	52	Map
120.9	80	40.9	0.9	9	66	16.06.2003	00:33:04	00:33:30	51	Map
118.5	80	38.5	0.5	5	107	16.08.2003	03:31:50	03:32:10	48	Map
116.9	80	36.9	7.4	76	66	11.07.2003	23:55:22	23:59:59	46	Map



The effects of feedback?

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

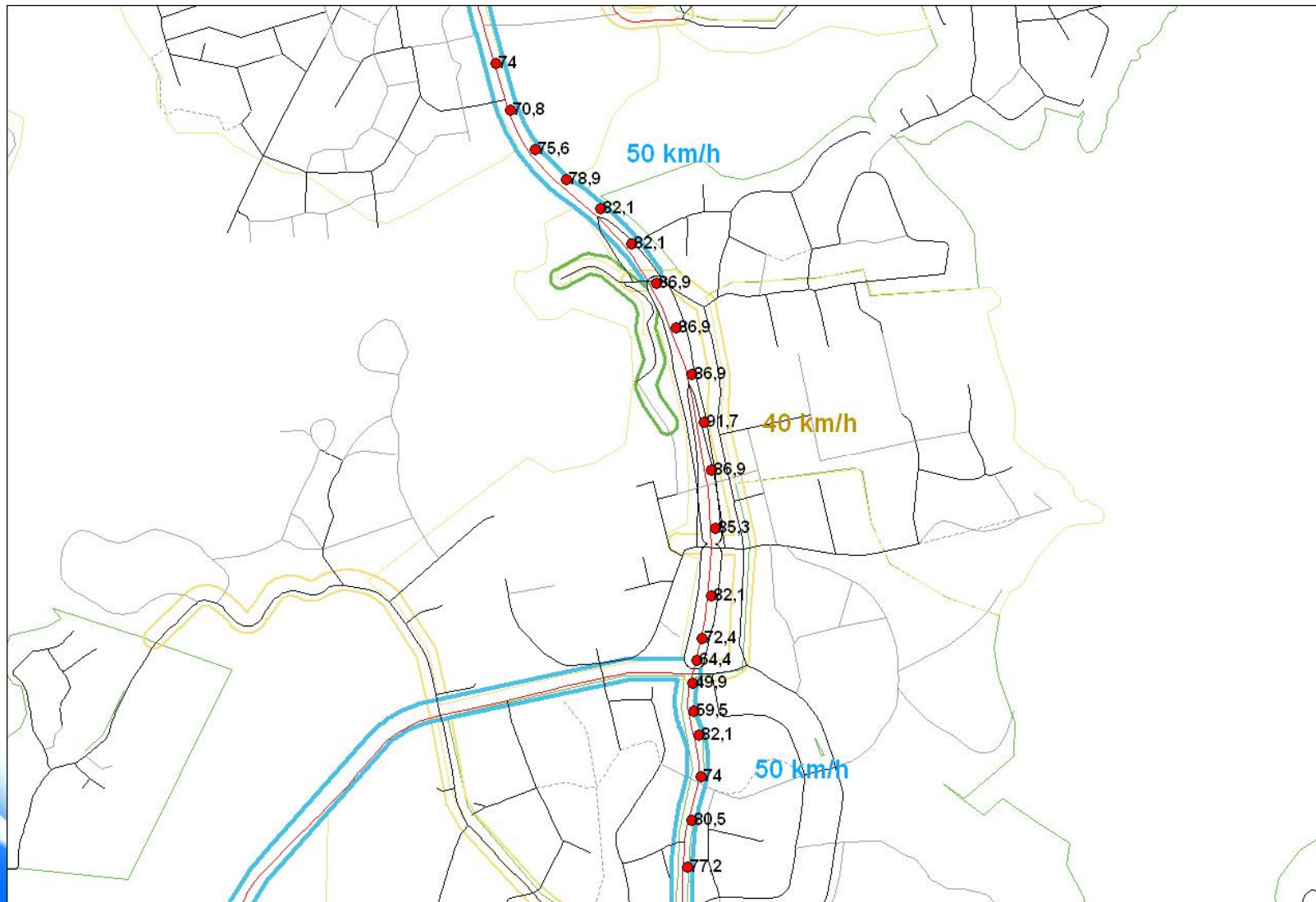
- ❖ 6 of the drivers soon quitted driving in that company
- ❖ 4 of the drivers seem to obey speed limits better after feedback
- ❖ 1 driver seems to drive using as high speeds as before feedback
- ❖ 2 drivers have not driven with the car having measuring equipment

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

Driving style - Speeding and feedback

- ❖ The results suggest that personal feedback is needed at least when there are economic motivations for speeding.
- ❖ There were implications that repeated periodic feedback is needed.
- ❖ The feedback needs to be concretised. "You often drive too fast" causes just explanations. "You drove XX % faster than the average (company) driver in the city centre" and "you drove xx km/h through this specific intersection" makes the driver think.

Driving style - Speeding and feedback



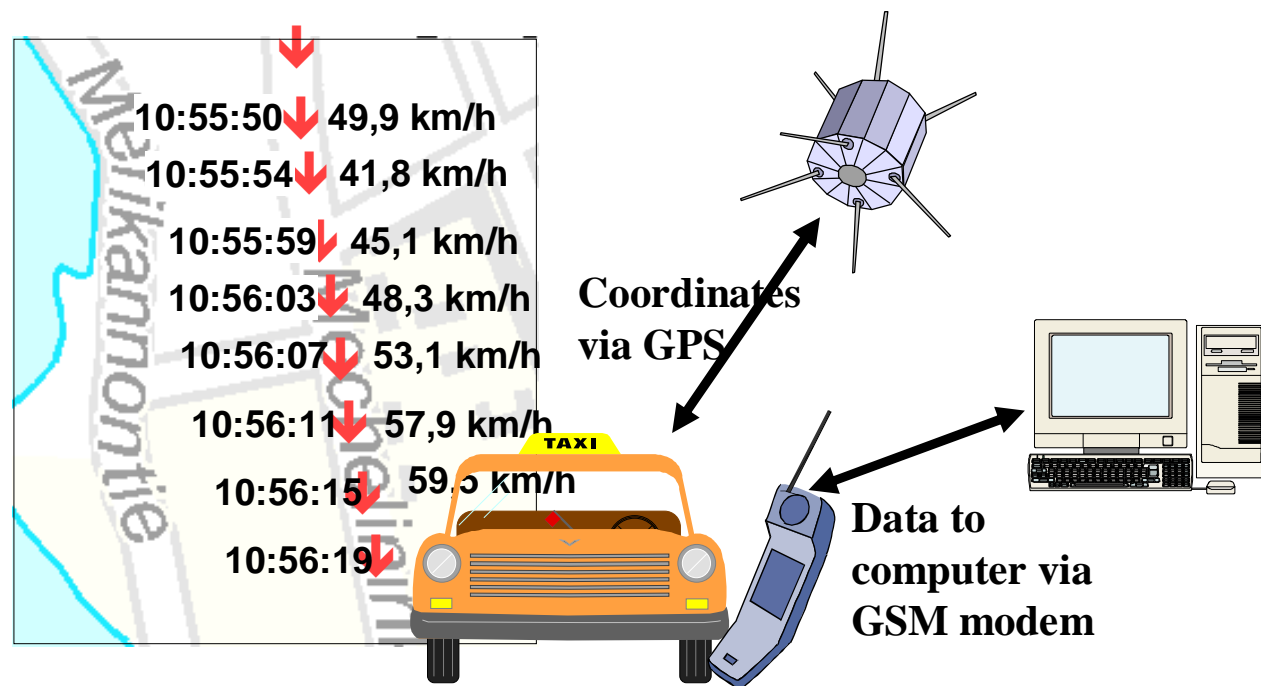
Possibilities for exploitation

- ❖ Part of driver training process
- ❖ For monitoring special groups like speed limit offenders
- ❖ New models for motor insurances - the background information (exposure and driving behaviour)
- ❖ A part of quality control system
- ❖ Traffic research and traffic planning

Special acknowledgements

- ❖ Finnish Ministry of Transport and Communications
- ❖ Finnish National Road Administration
- ❖ Finnish Vehicle Administration
- ❖ Taxi transport company Kovanen Yhtiöt Oy

You will get what you measure!



Thank you!

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