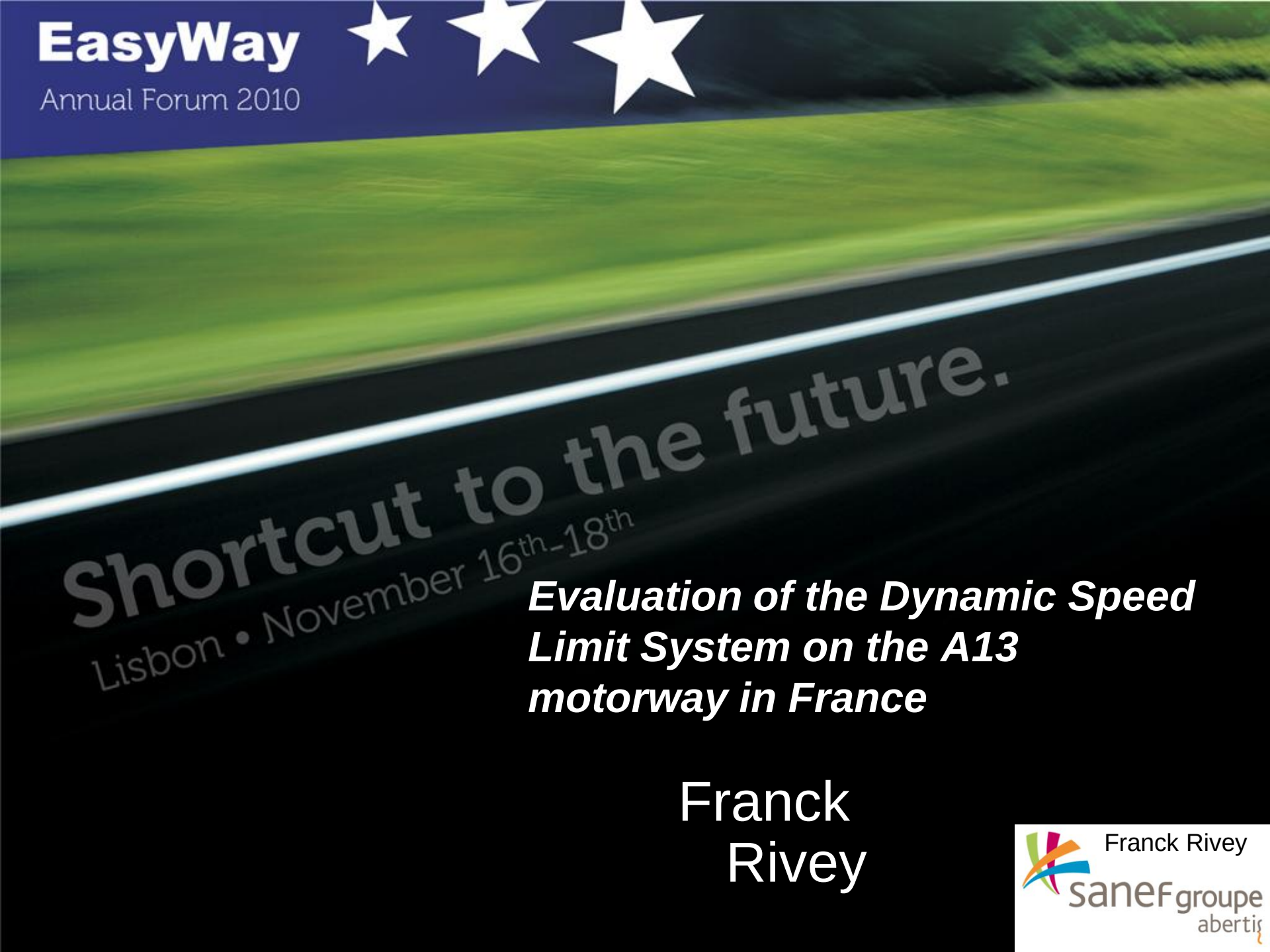
EasyWay

Annual Forum 2010

Shortcut to the future.

Lisbon • November 16th–18th



Evaluation of the Dynamic Speed Limit System on the A13 motorway in France

Franck Rivey

Franck Rivey

Sanef Group Key figures

- **1,757 km** of motorway + 280 km under equity interests
- **3,577** employees
- **1.414 billion** euros in turnover for 2009
- **860,000** electronic toll collection tags in circulation
- **257 million** euros of investments in 2009, up 18% compared with 2008
- **250 million** euros of investments planned over 3 years in connection with green commitments

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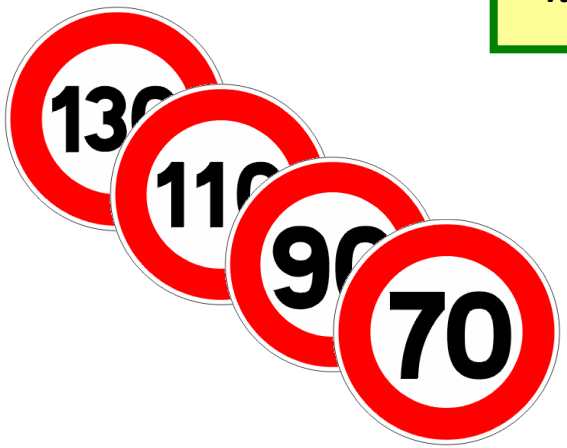
Dynamic Speed Limit : System Architecture

Variable Speeds Software Platform

Software triggers speed change

Traffic operators



New speeds are automatically sent to the VMS panels installed on the motorway

la radio des autoroutes Sanef
107.7 FM
programme RadioFrance

Other partners

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Dynamic Speed Limit : Objectives

- **Improve safety**
  - **Reducing speed will decrease the number of accidents**
  - **A gain in safety for our road patrols, for Sanef's personnel**

- **Improve traffic indicators**
  - **Harmonise the flow of vehicules to obtain a gain in traffic capacity**
  - **Decrease traffic jams intensity by delaying traffic jams emergence**

- **A better driving confort**
  - **Less lane changes, less risks of rear-end collisions**
  - **Less stress and fatigue due to accordion driving**

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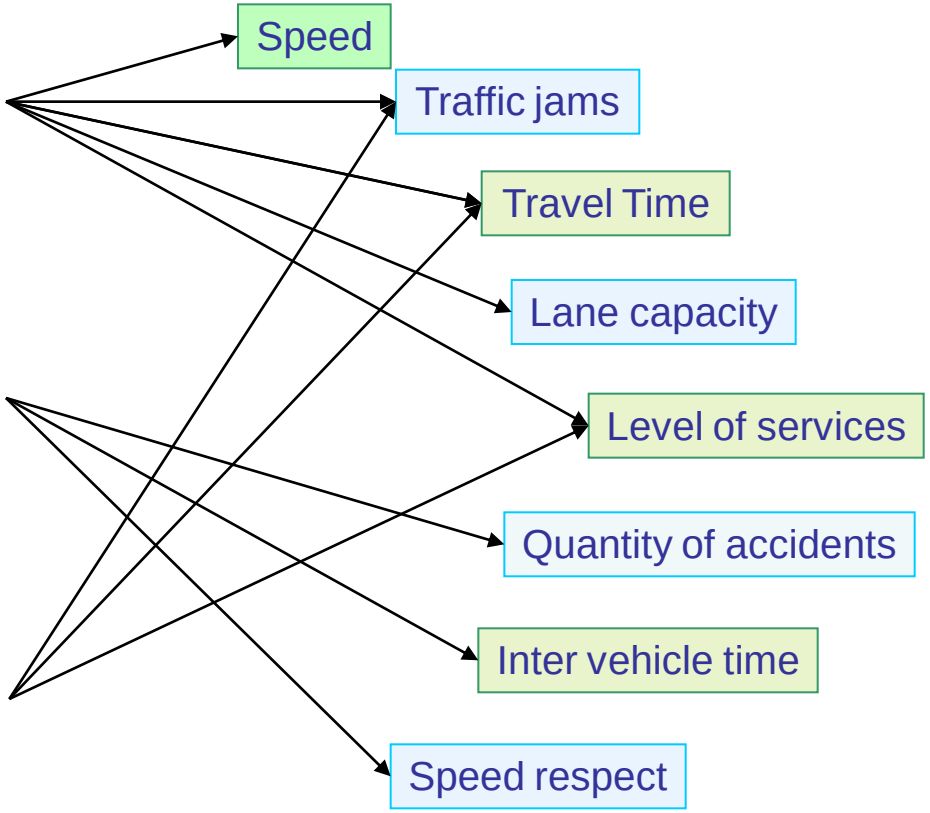
Dynalic Speed Limit : How to evaluate results

Improve Traffic indicators

Improve safety

A better driving comfort



Comparaison periods :

- June 2009 w/ June 2007
- September 2009 w/ September 2008
- October 2009 w/ October 2008

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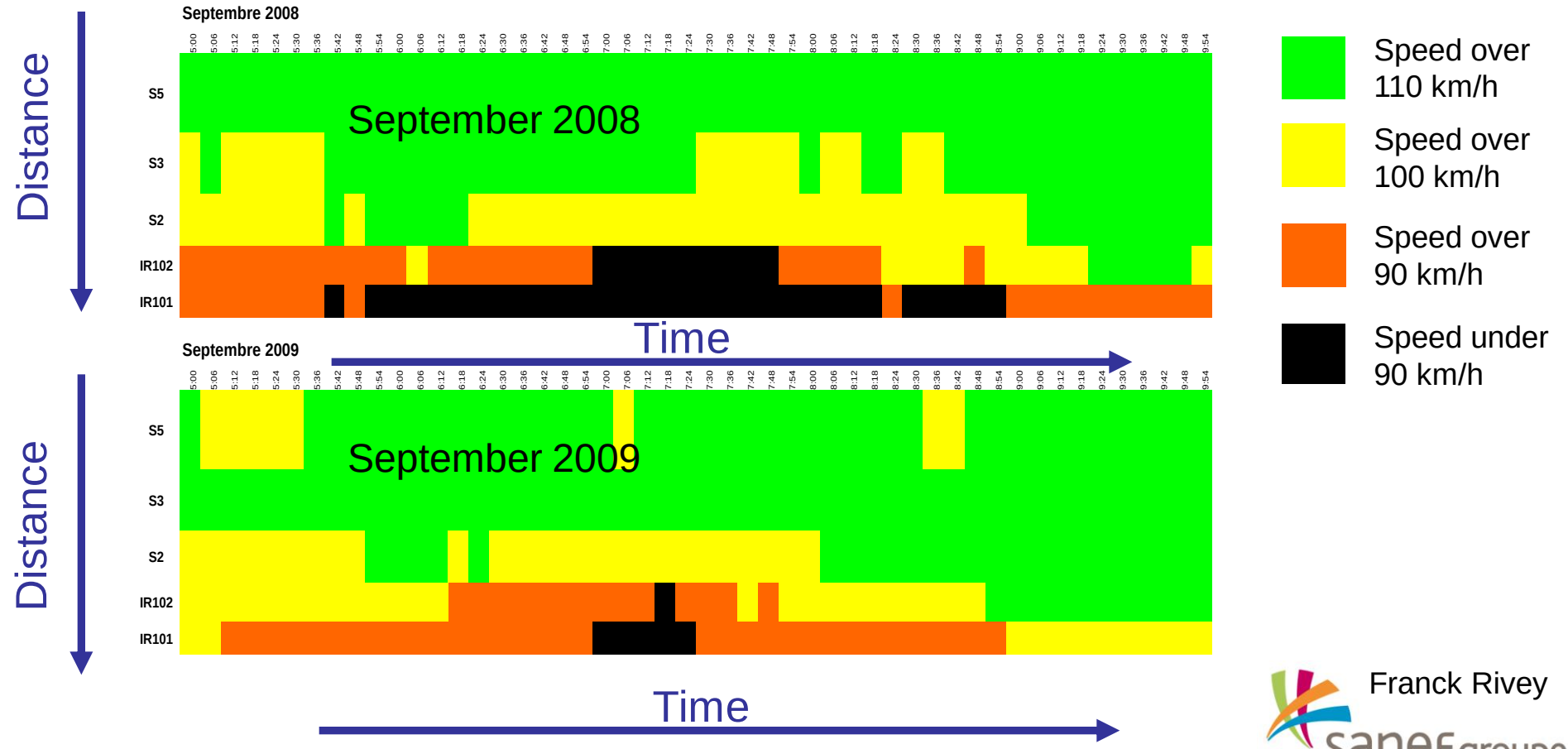
Indicator analyse : Speeds

Speeds comparison between September 2008 and 2009



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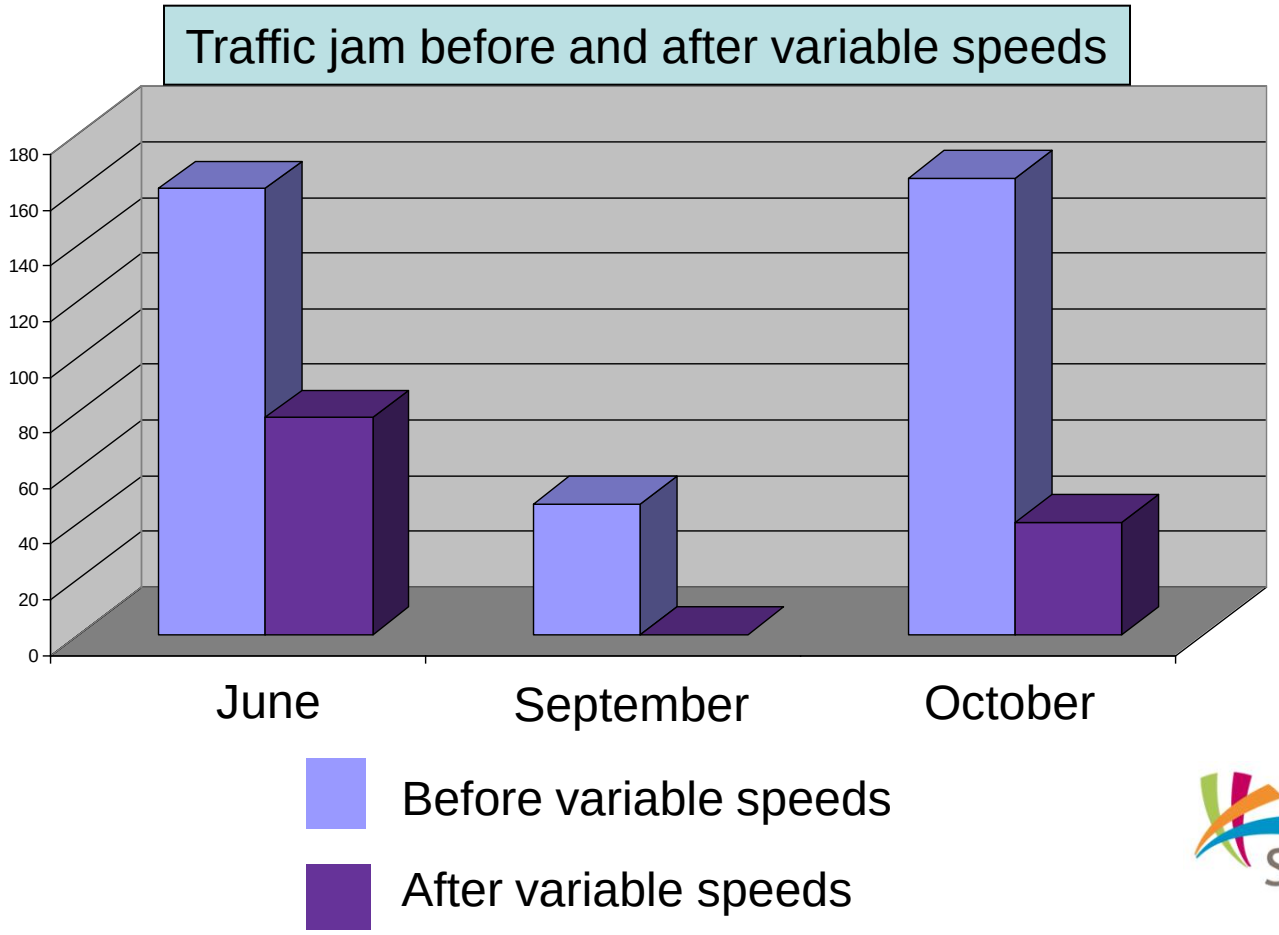
Indicator analyse : Bottleneck volumes

Measured as hours * kilometers before and after variable speeds



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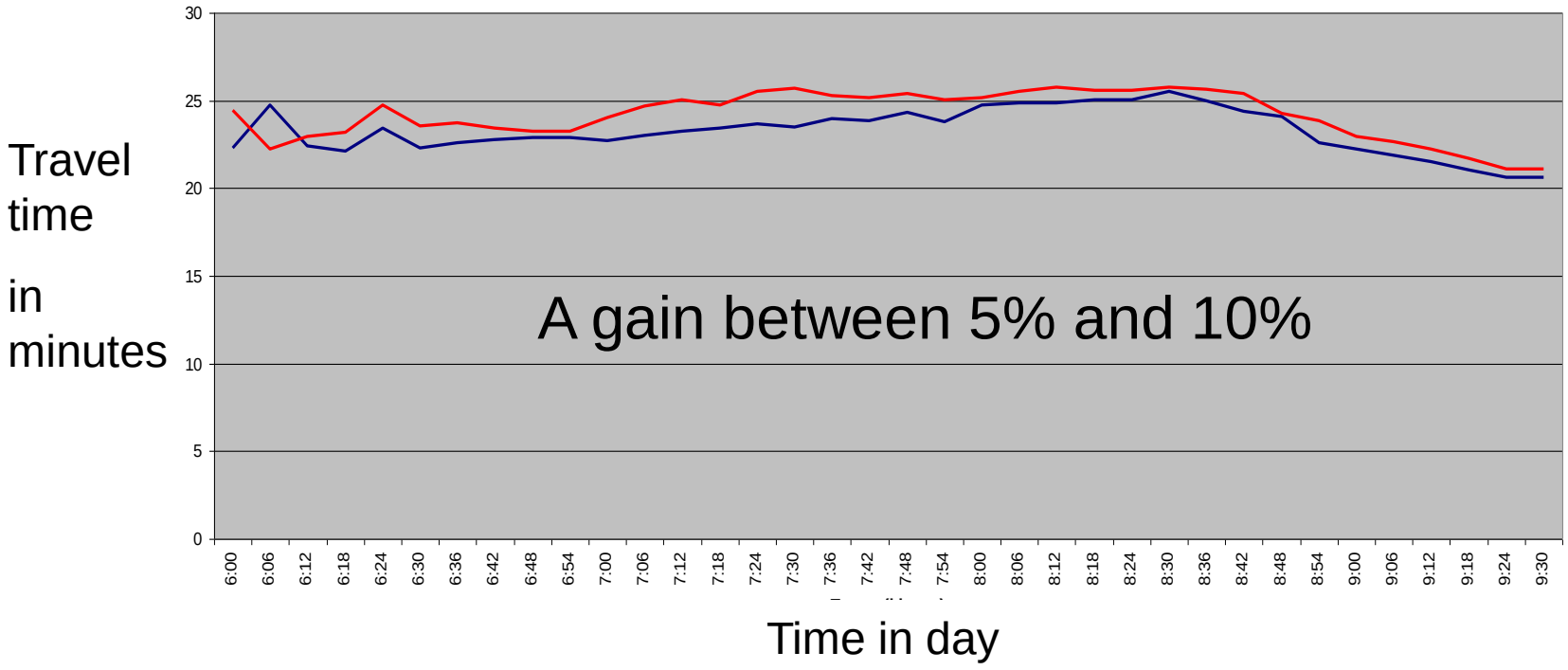
Indicator analyse : Travel times

Travel time comparison before and after variable speeds



Before variable speeds

After variable speeds

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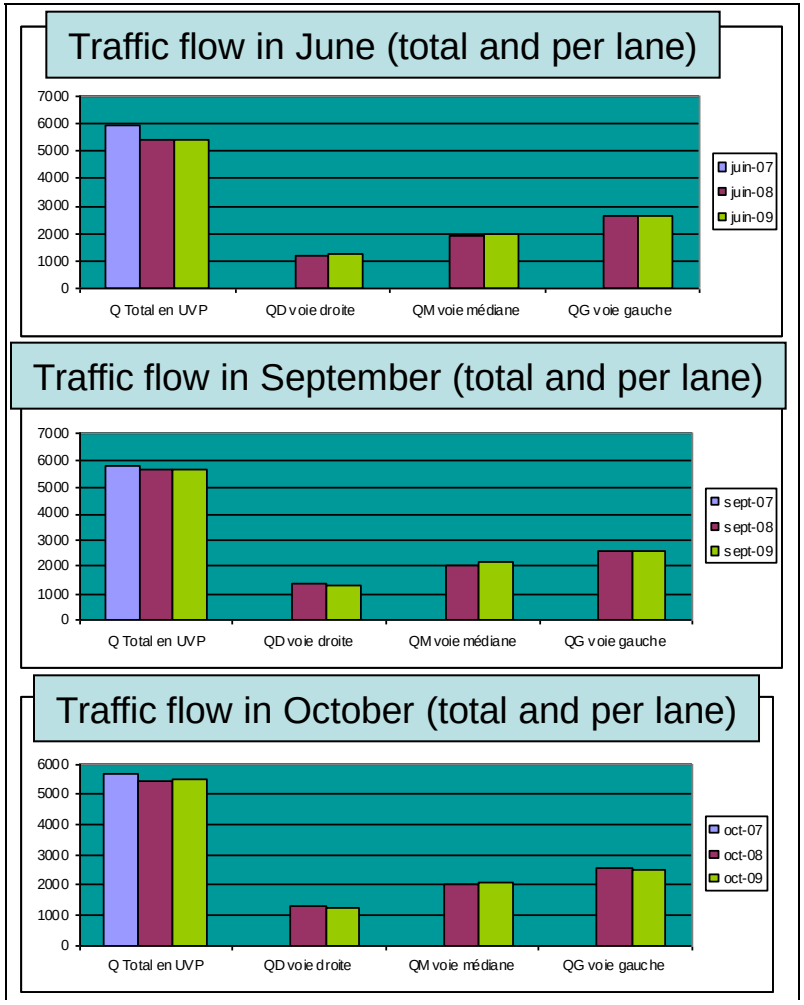
Indicator analyse : Lane capacity



Before variable speed

After variable speed

No evidence of change in lane capacities

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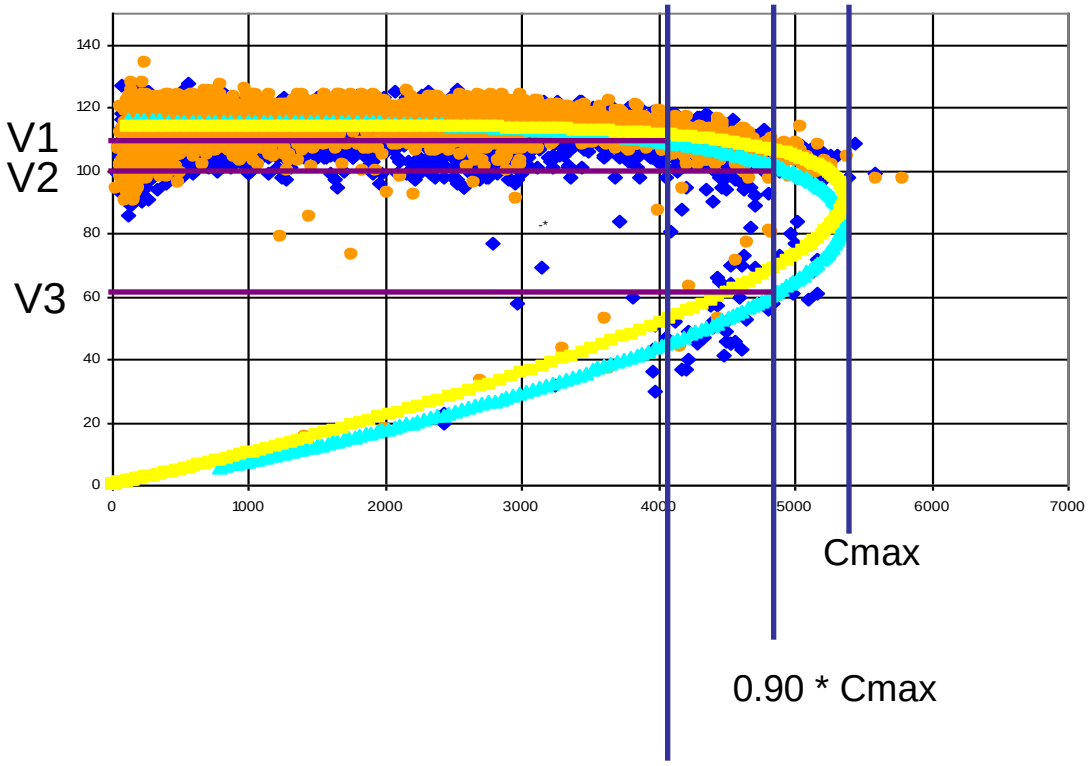
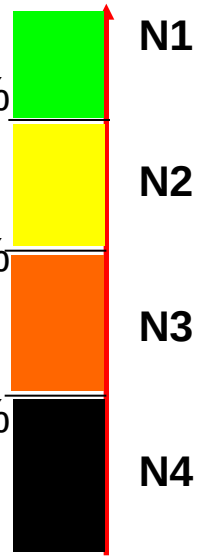
Indicator analyse : Level of services, concept

The level of service represents the user experience of its journey

Flow / Speed diagram



- V1
  where C = Cmax * 75 %
- V2
  where C = Cmax * 90 %
- V3
  where C = Cmax * 90 %



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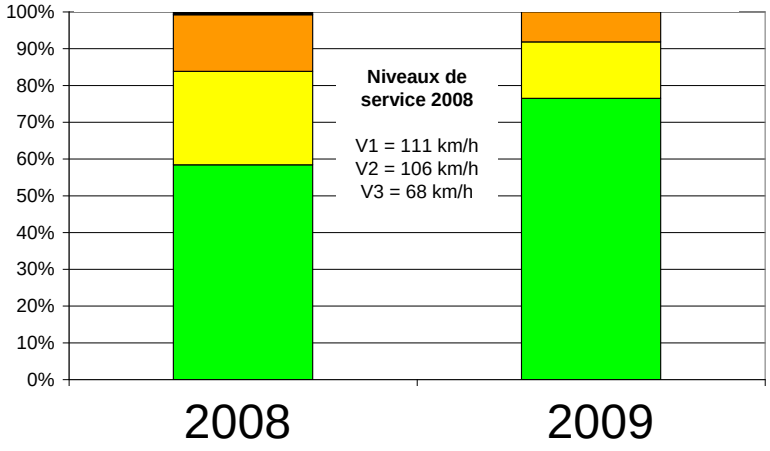
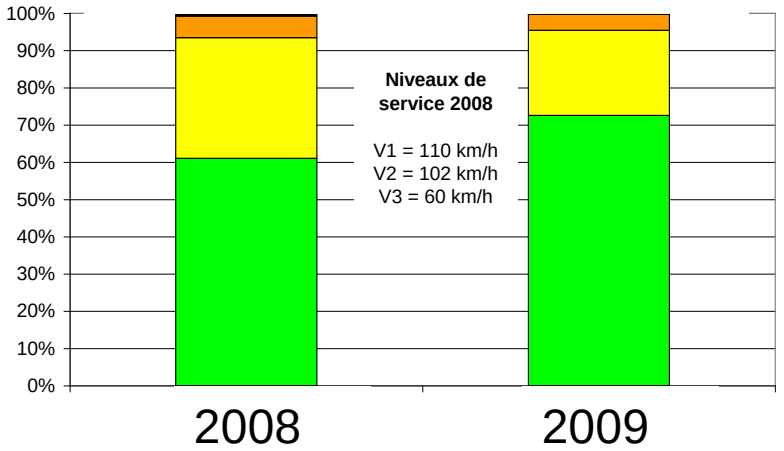
Indicator analyse : Level of services

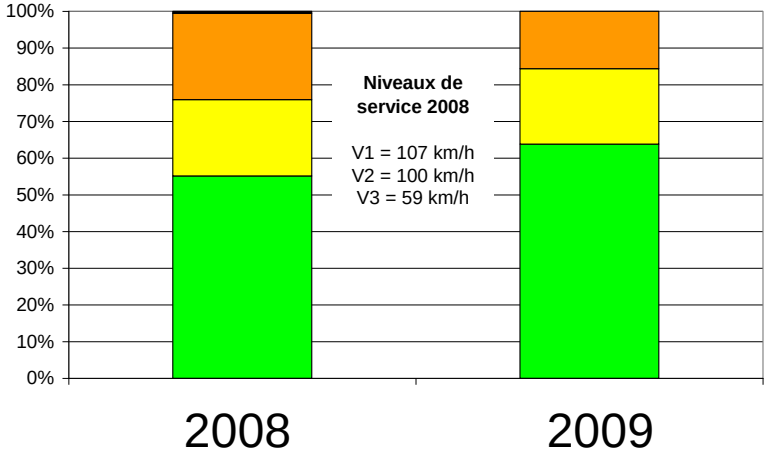
Station #2 September



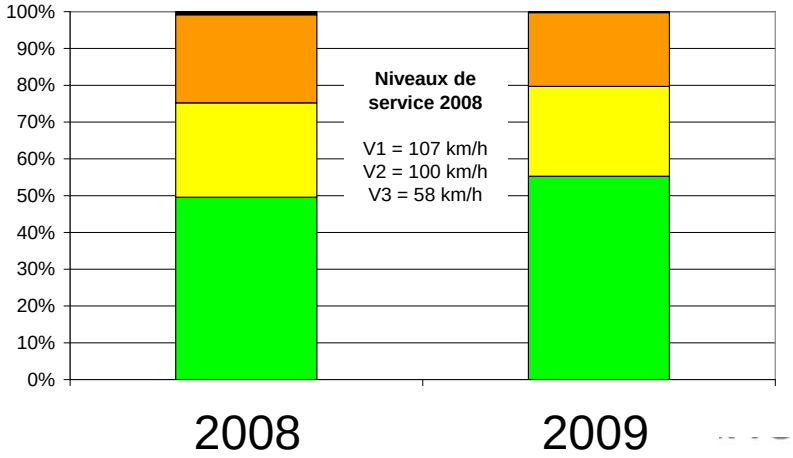
Station #2 October

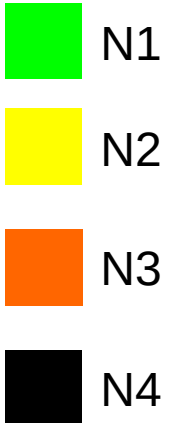


Station #102 September



Station #102 October





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Indicator analyse : Accidents

		Accidents			
Year	Month	w/ Injury	w/o Injury	Total	Change
2007	June	3	12	35	
	September	0	7		
	October	3	10		
2008	June	9	4	29	- 17 %
	September	0	5		
	Octobrer	4	7		
2009	June	5	5	24	- 17%
	September	1	4		
	October	3	6		

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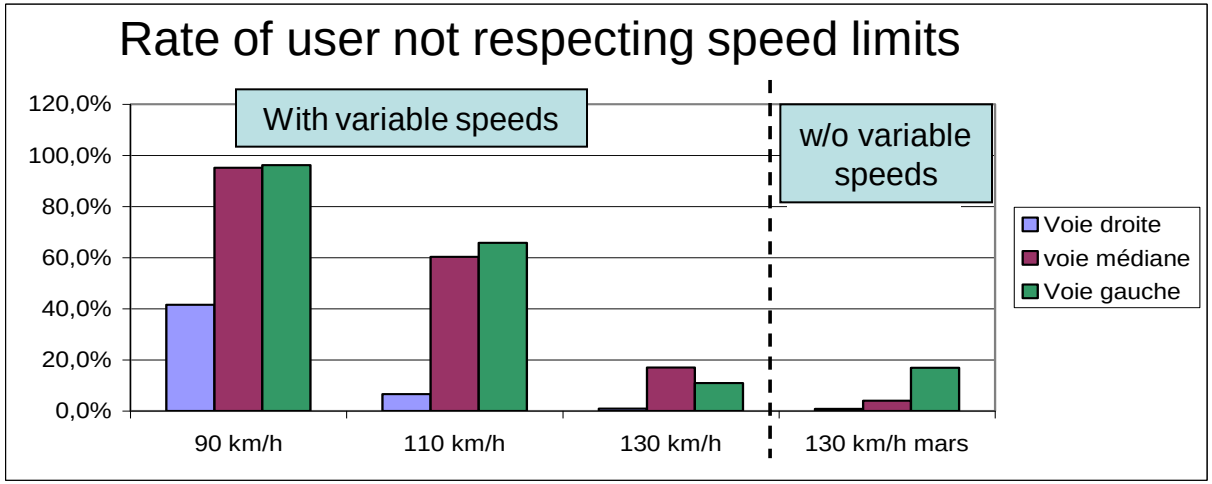
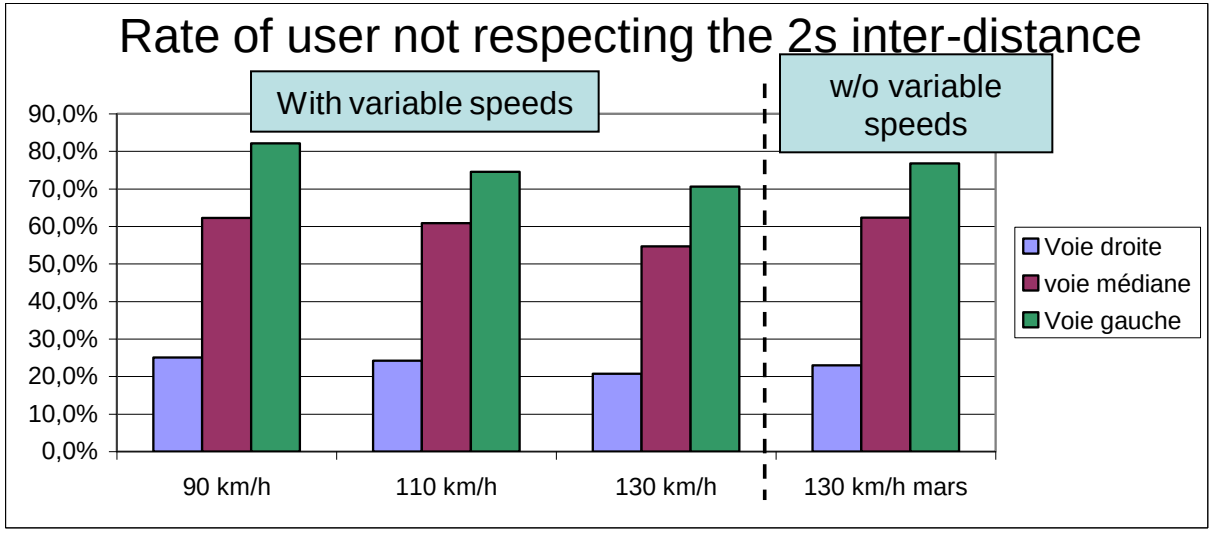
Indicator analyse : User behaviour



Speed limits are not well respected

But speeds have decrease



Inter-distance are not well respected, before or after variable speeds

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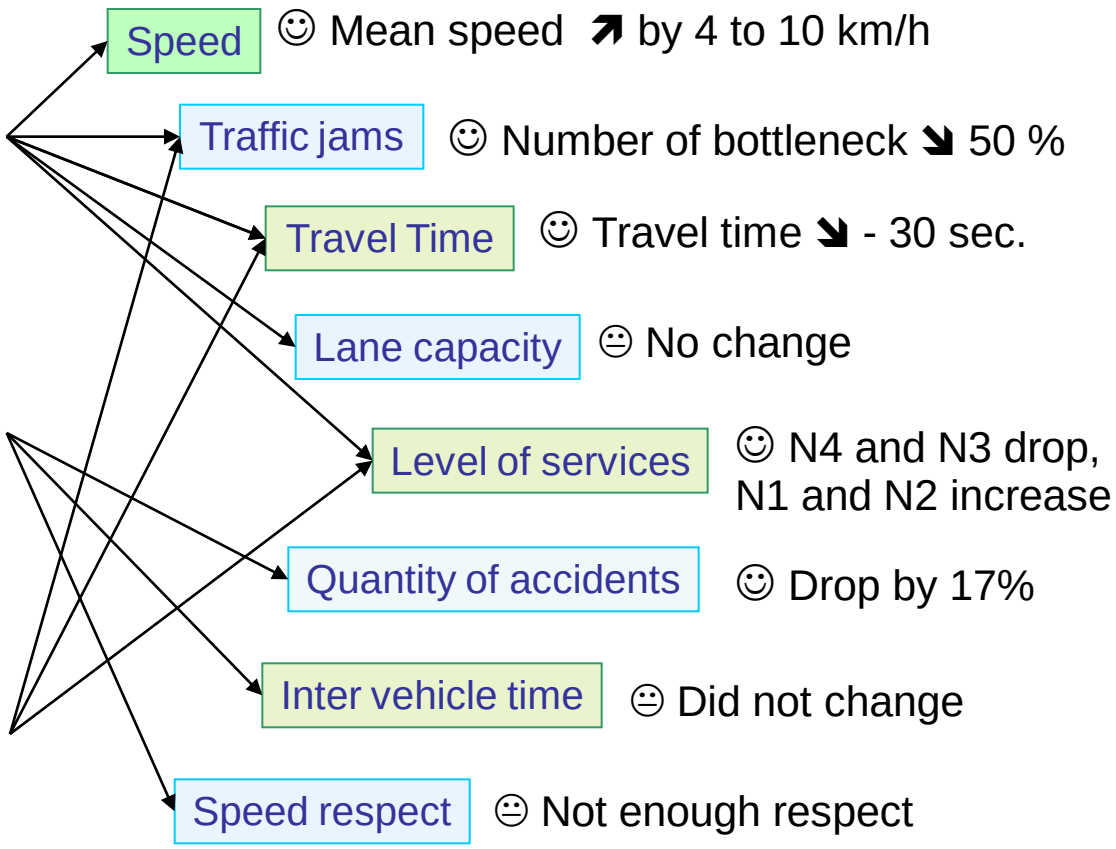
As a conclusion

Improve Traffic indicators

Improve safety

A better driving comfort



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sanef groupe

Thank you for your attention

Franck RIVEY

f.rivey@sapn.fr