Impact and Cost Benefit Analysis

Traffic efficiency and environmental impacts

Freek Faber
TNO

Final Event
26-27 June 2012
Autoworld, Brussels

www.eurofot-ip.eu

Impact assessment

Better understanding the impact of studied functions on efficiency and environment

Safety | Efficiency | Environment | Driver behaviour

Travel time, average speed, trip length

Fuel consumption, emissions

What can be expected from the euroFOT functions?

Eco system

FEA

LDW

Safety warning systems

CSW

BLIS

ACC+FCW

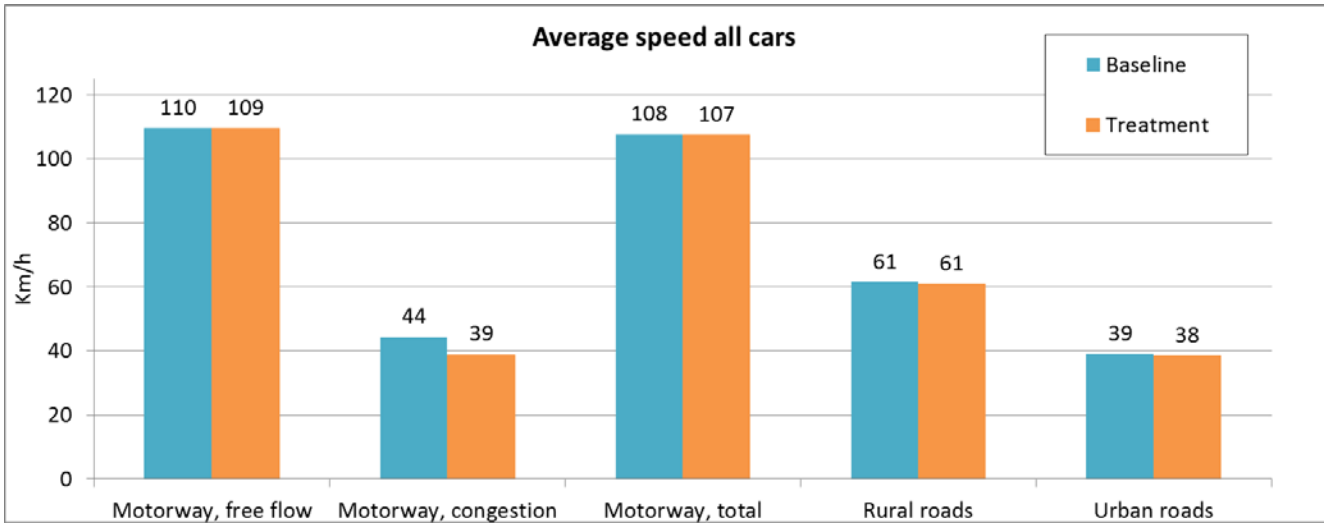
Speed support systems

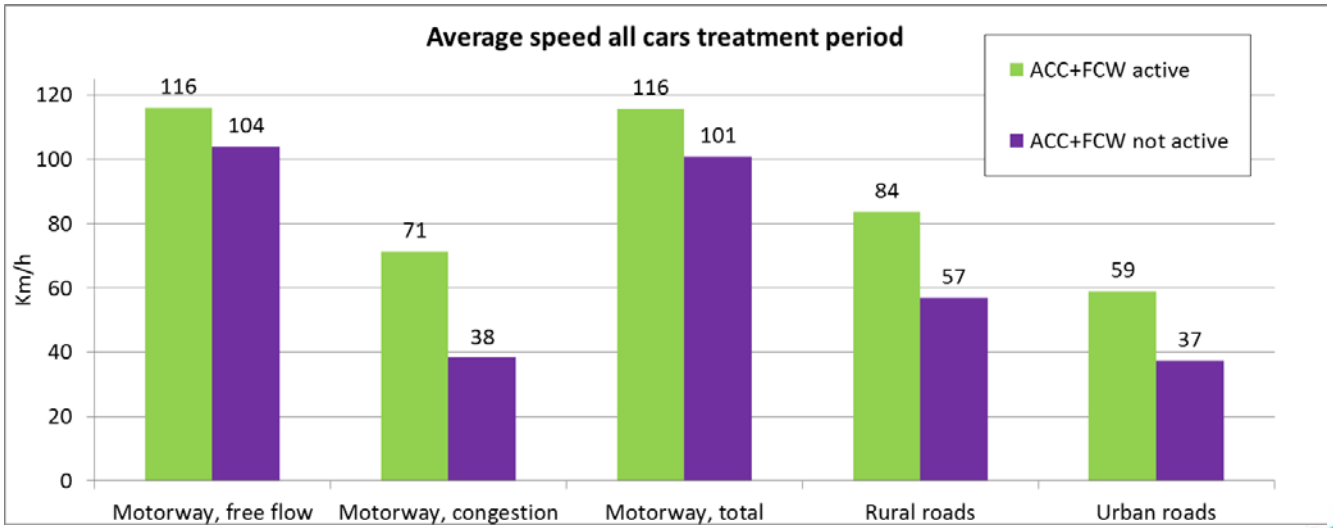
SRS

Routing system

Navigation

ACC+FCW





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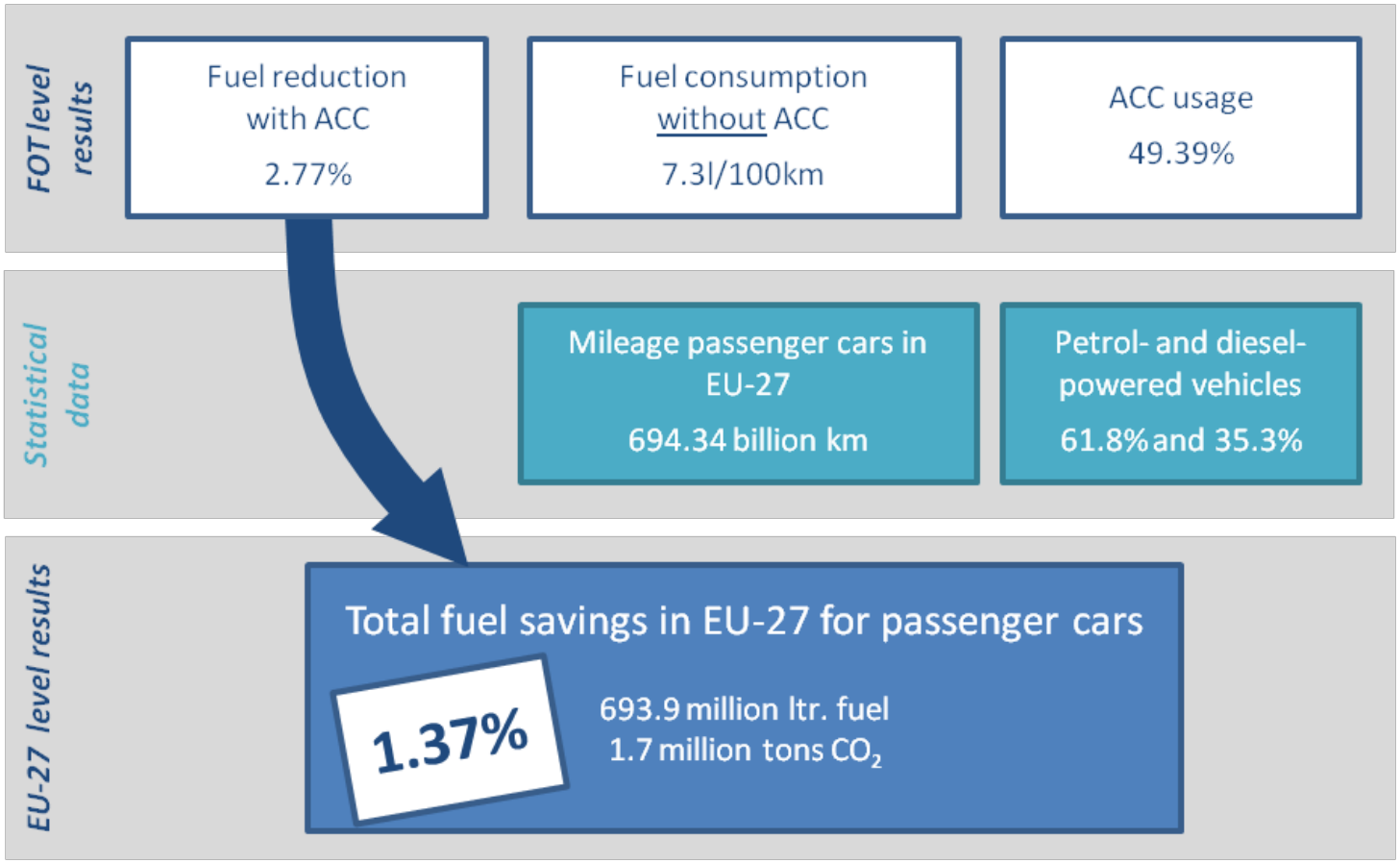
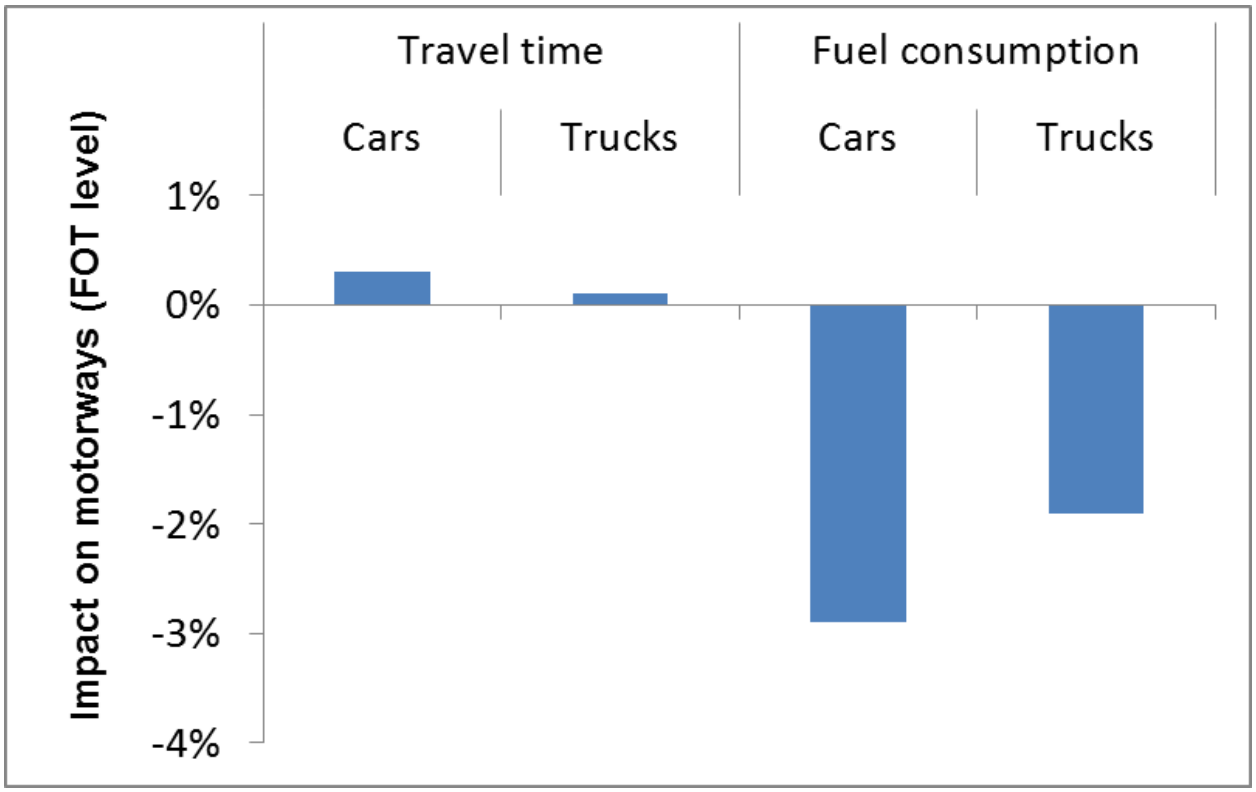
ACC+FCW

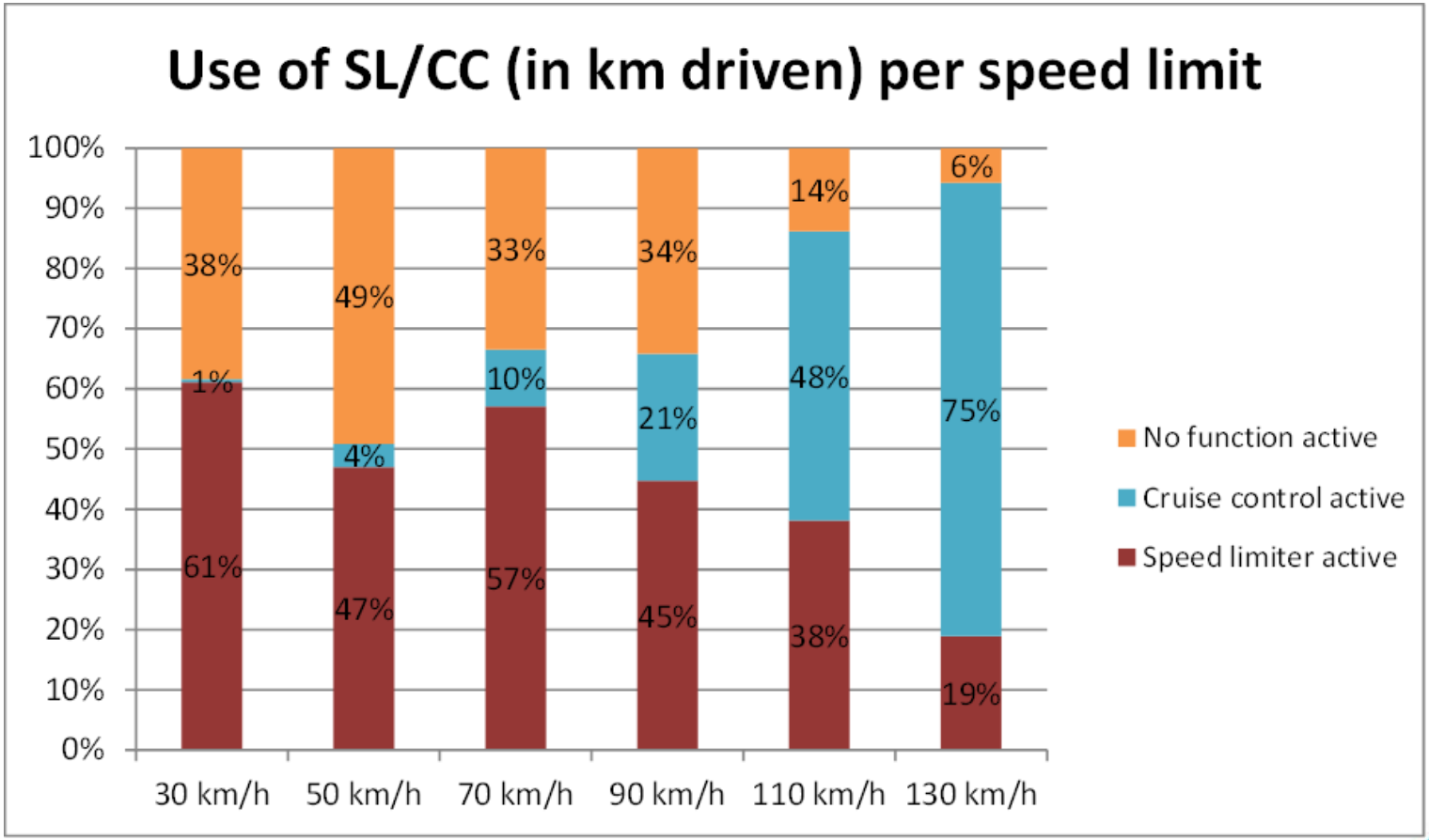

FOT level results
Fuel reduction with ACC
2.77%
Fuel consumption without ACC
7.3l/100km
ACC usage
49.39%
Statistical data
Mileage passenger cars in EU-27
694.34 billion km
Petrol- and diesel-powered vehicles
61.8% and 35.3%
EU-27 level results
Total fuel savings in EU-27 for passenger cars
1.37%
693.9 million ltr. fuel
1.7 million tons CO_2

ACC+FCW

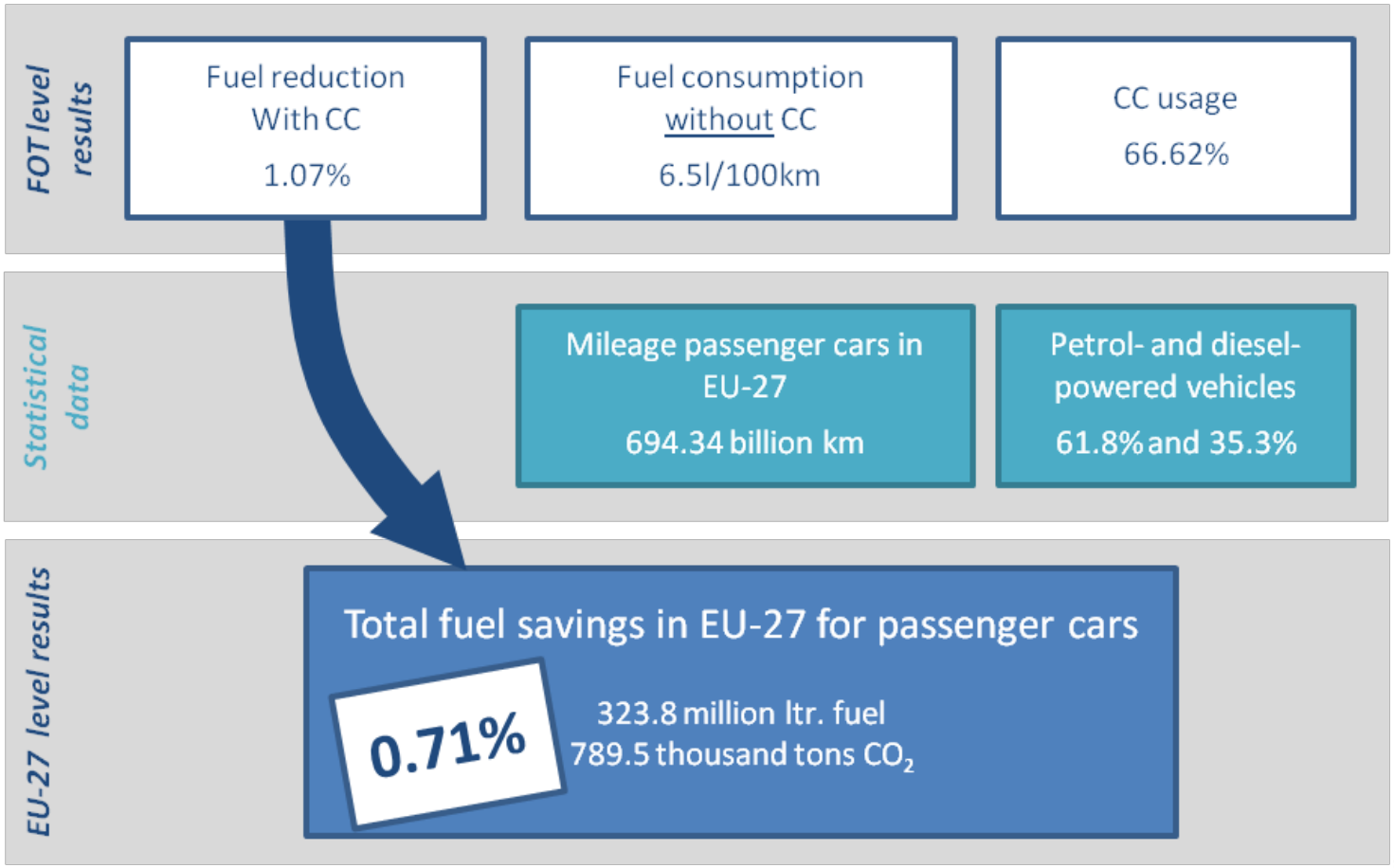
- Marginal increase in travel time
- Reduction in fuel consumption



Speed Regulation System



Speed Regulation System



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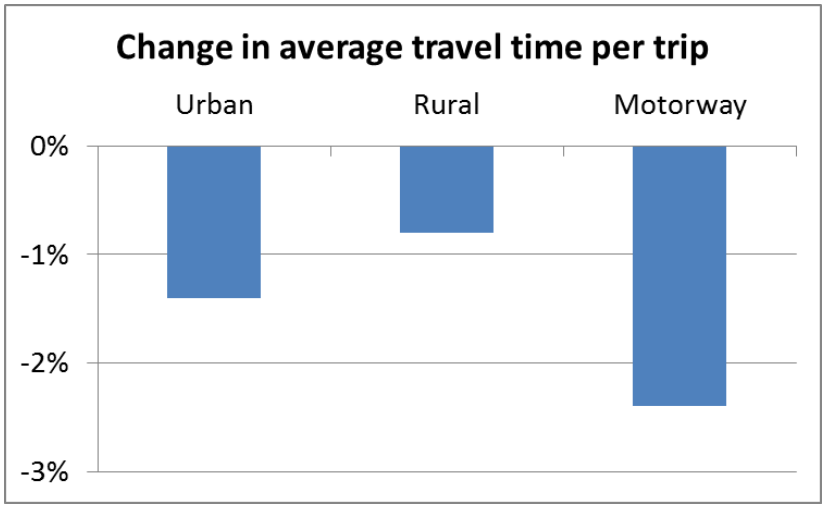
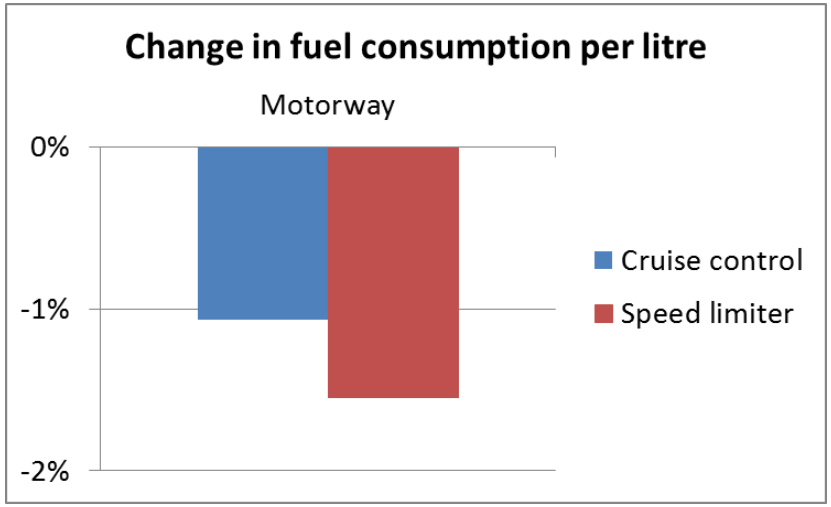
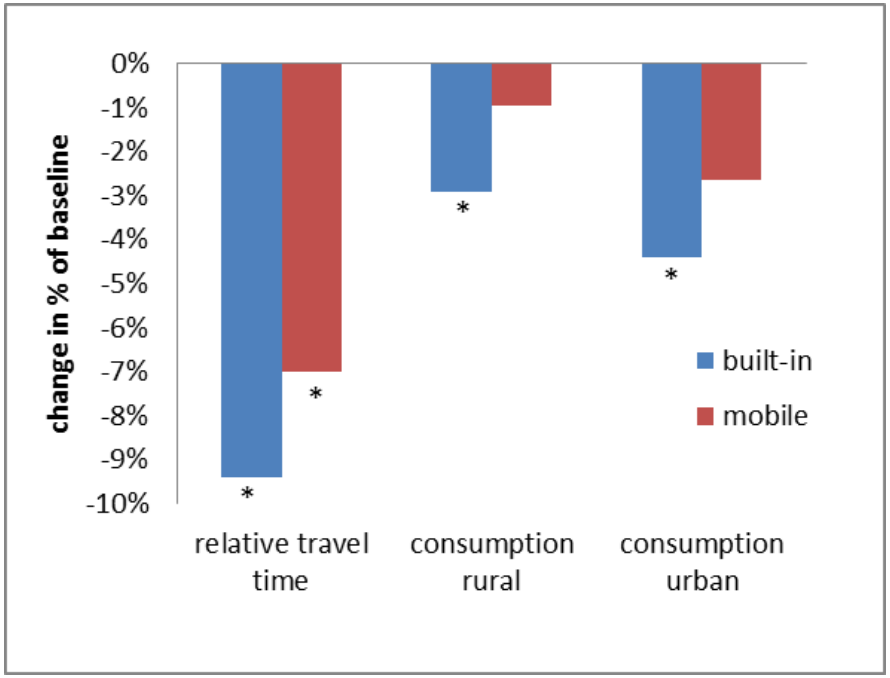
Speed Regulation System





Navigation systems

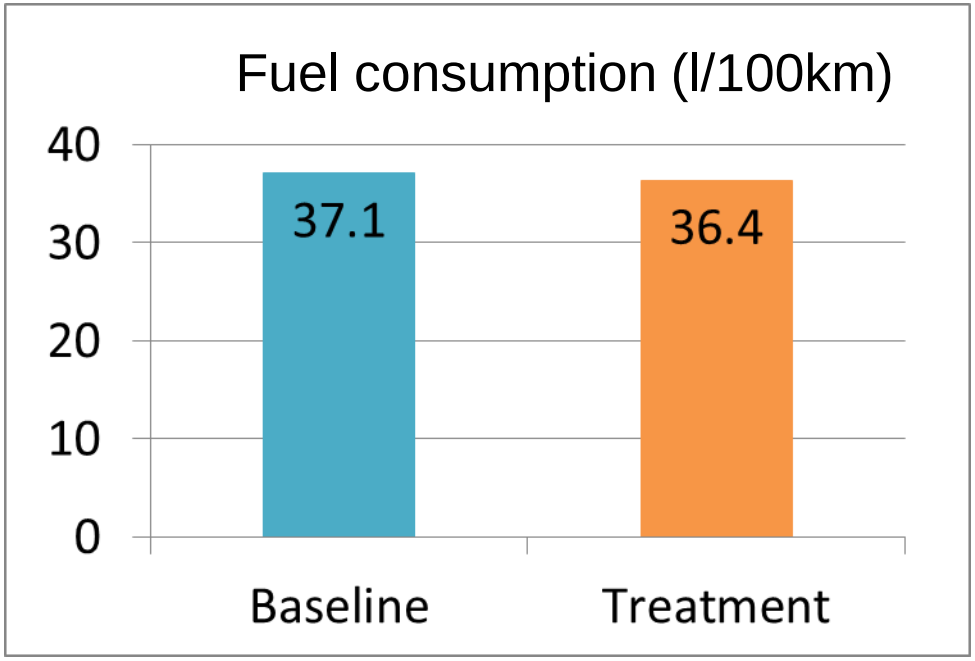
- Both systems reduce relative travel times significantly
- With built-in systems, fuel consumption is significantly reduced in rural and urban areas



* Significant result

Fuel Efficiency Advisor

- Tendency towards fuel saving
- Effect size 1.9%
- Not statistically significant



Safety warning systems

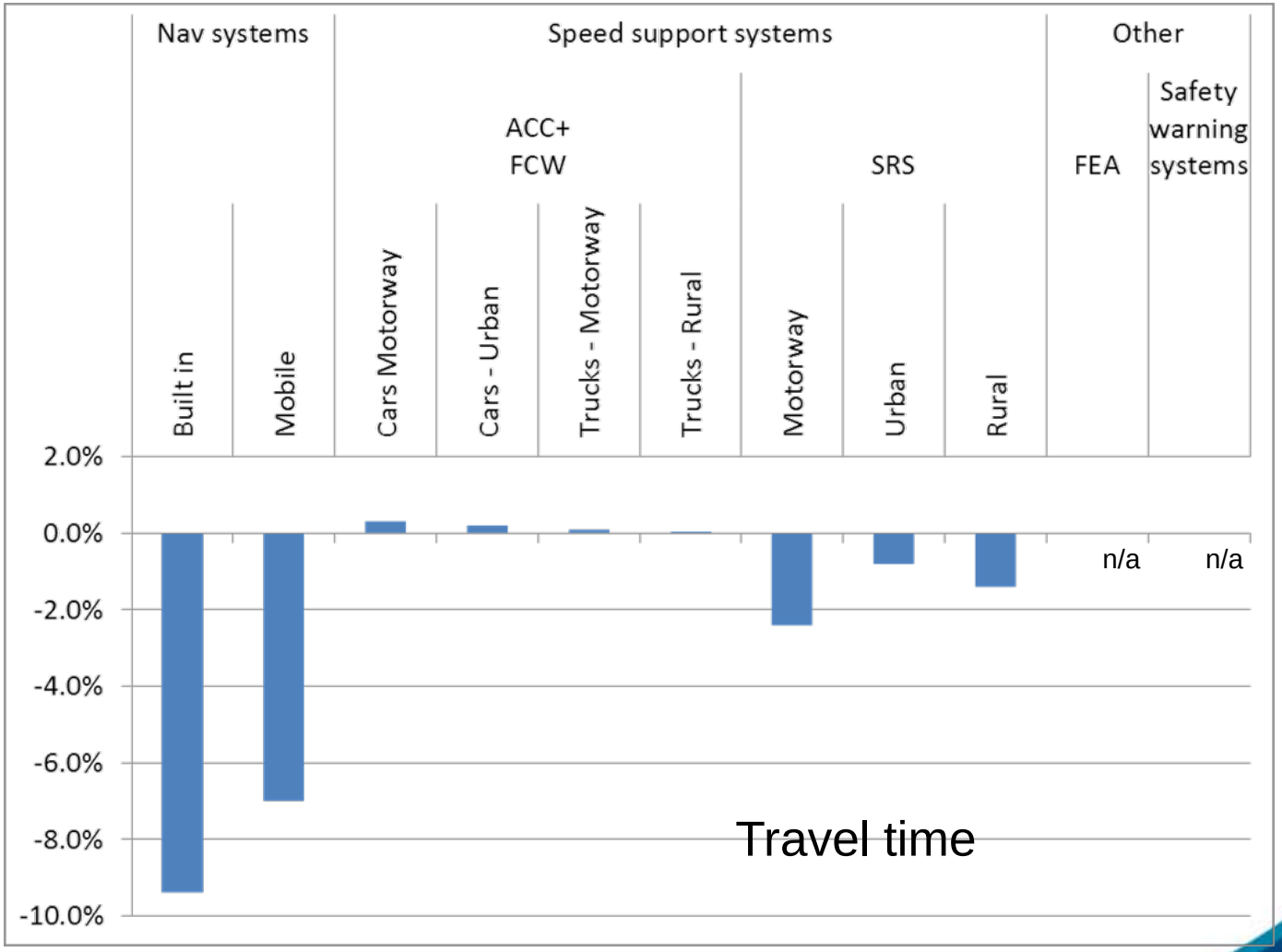
Direct effects

- No effects expected
- Data give no reason to change that expectation
  - Low frequency of warning (except BLIS)
  - No startle (sudden response) after warnings

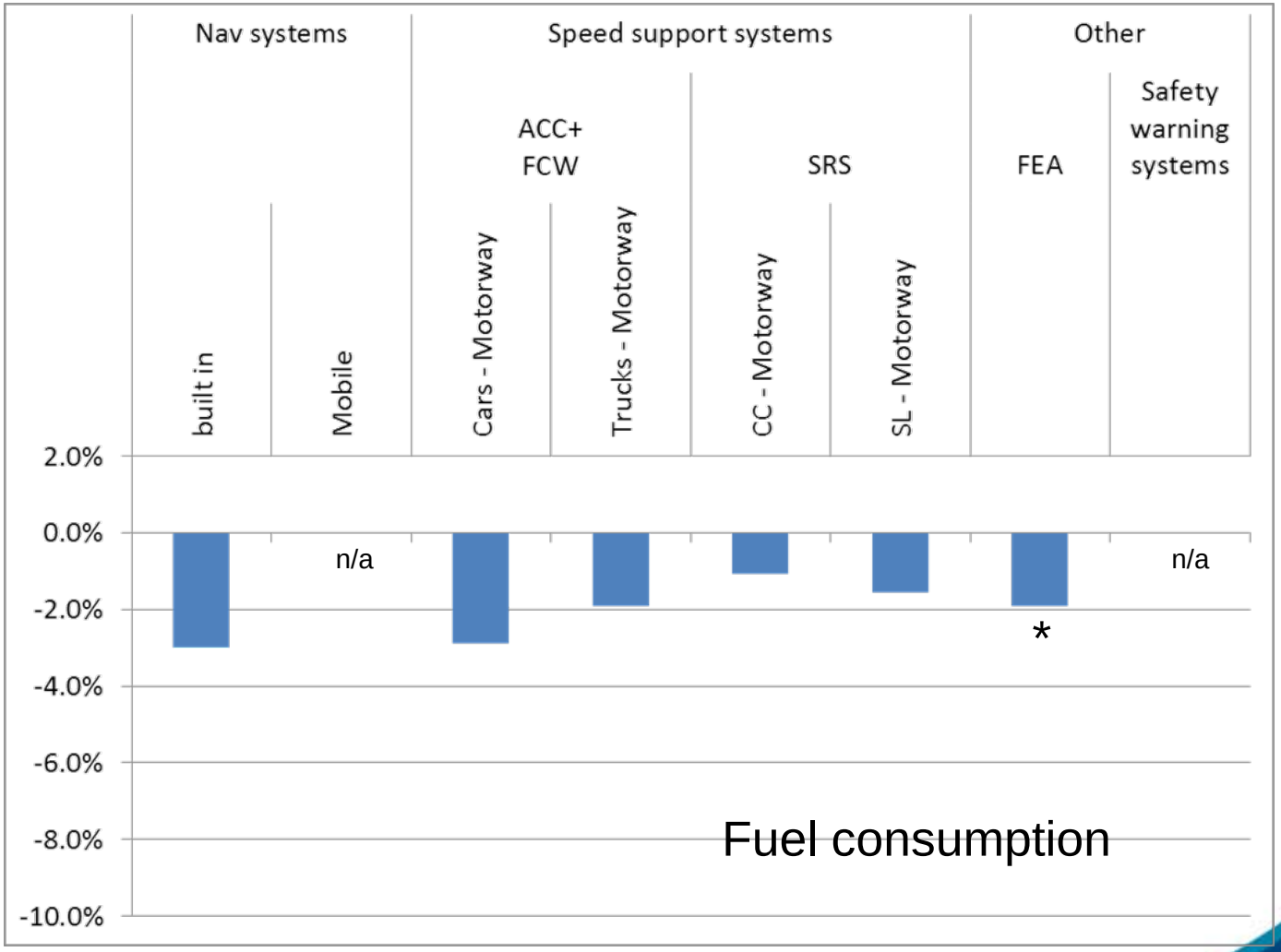
Indirect effects

- No reduction in accidents determined
- Therefore, no accident related congestion determined

Summary efficiency impacts



Summary environmental impacts



8 Functionalities, 28 Partners, 1000 Vehicles

1 Field Operational Test, **8 Functionalities**

28 Partners, 1000 Vehicles, 1 Field Operational Test

8 Functionalities, **28 Partners**, 1000 Vehicles

1 Field Operational Test, 8 Functionalities

28 Partners, **1000 Vehicles**, 1 Field Operational Test

8 Functionalities, 28 Partners, 1000 Vehicles

1 Field Operational Test