

How does an FOT meet stakeholder needs: a researcher perspective

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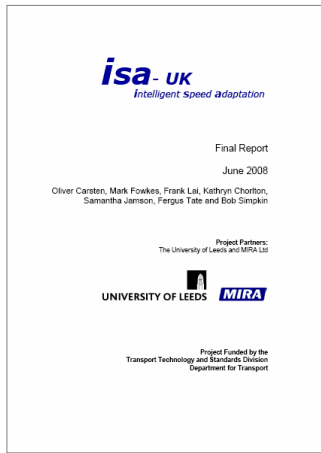
Who cares?

Area	Industry	Public Authorities	Politicians
Public acceptability	✓✓	✓	✓✓✓
User acceptance	✓	✓	
System usage		✓	
Safety impacts	✓	✓	?
Environmental impacts	✓	✓	?
Traffic efficiency impacts		✓	?
Costs	✓✓	✓	Depends on who pays

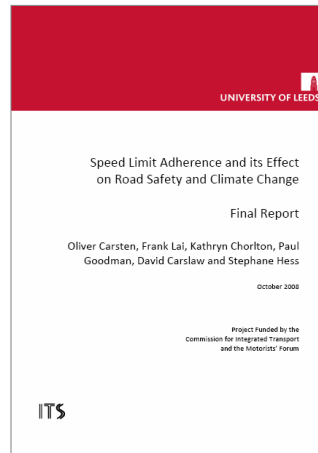


Two projects

ISA-UK (2000-2006)



CfIT ISA (2007-2008)



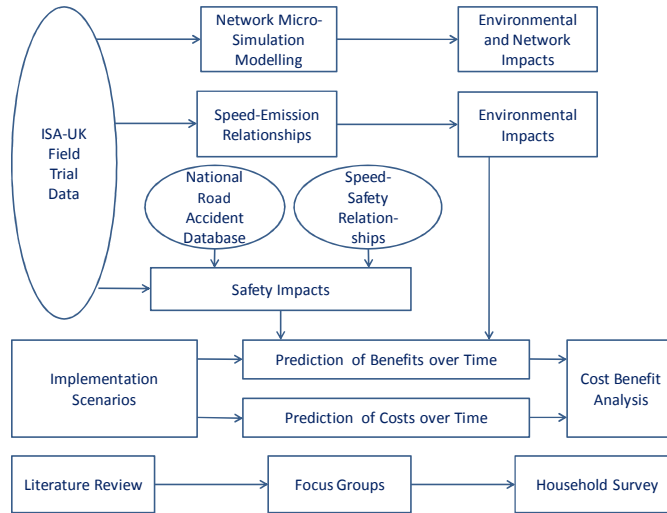
Major tasks of project:

- Four FOTs to investigate long-term behaviour with ISA in everyday driving
- Build and obtain feedback on one motorcycle and one large truck
- Experimental work on the Leeds driving simulator to investigate overtaking behaviour
- **Implementation scenarios — predict future penetration, predict accident savings, calculate costs and benefits**

- Funded by the Commission for Integrated Transport and the Motorists' Forum — two advisory bodies to the Secretary for State for Transport
- Objectives:
 - Estimate the impact on the number of people killed or injured from raising adherence to speed limits through the voluntary introduction of ISA
 - Estimate the impact on carbon emissions, other pollutants (including noise) and fuel consumption
 - Identify and estimate other benefits and disbenefits, e.g. journey time reliability
 - Perform cost-benefit analyses on introducing and operating ISA
 - Estimate the critical mass at which benefits increase rapidly as compared to the numbers of vehicles fitted with ISA
 - Advise how a greater take-up and usage of ISA on a voluntary basis can be encouraged
 - Identify any disbenefits of ISA and to advise how these can be overcome

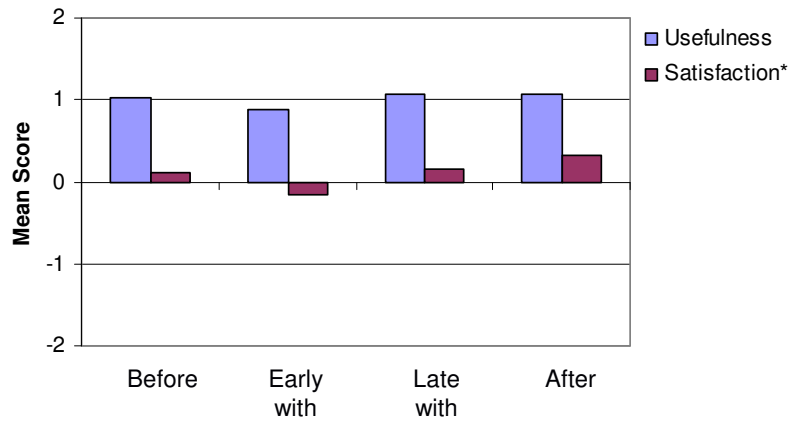
- Focus was on
 - Safety impacts
 - Environmental impacts
 - Costs and benefits
 - Public acceptability
 - Incentives

i.e. stakeholder issues

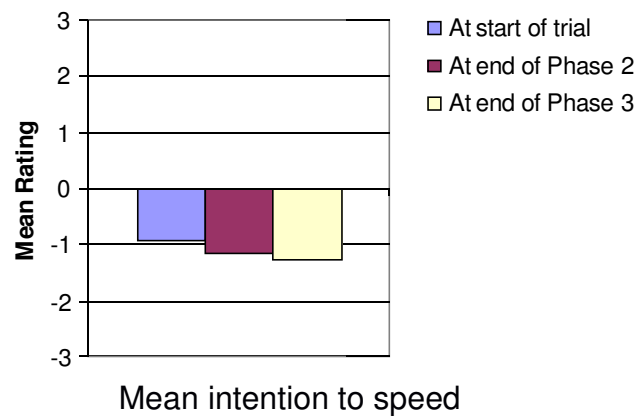


A few results

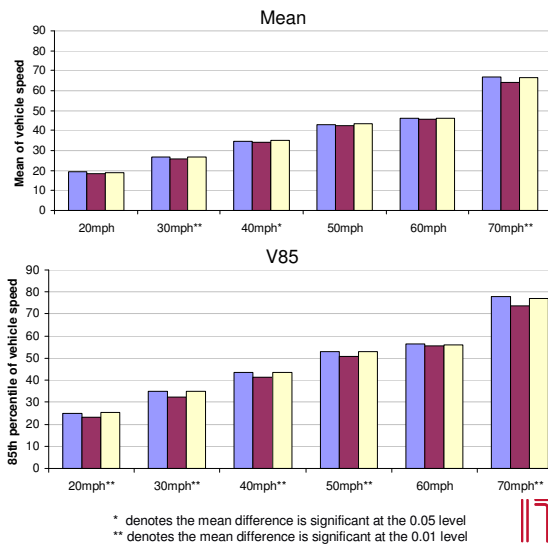
Acceptance of FOT participants



Intention to speed



Did ISA affect speed?



Accident prediction and cost-benefit analysis (latest version)

“Recipe”:

- Predict traffic growth (DfT advice)
- Predict accident trends without ISA
- Predict additional safety impact of ISA (via *observed* change in speed patterns)
 - **Depends on ISA type and road type**
- Analyse costs and benefits over 60 years from 2010

Estimating accident reductions with ISA

- Based on models from the literature of relationships between speed and crash risk
- These models have been calculated from real-world data
- *They are not drawn from the police reported contributory factors for accidents*

Predicted accident reduction by type of ISA

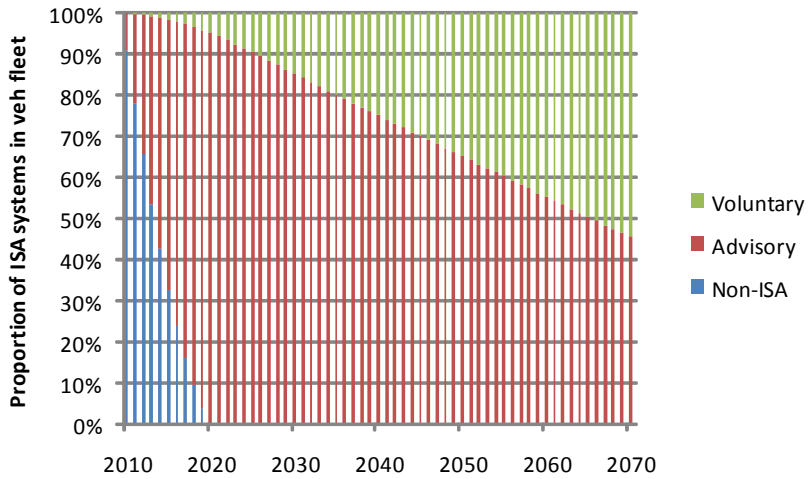
Reduction in Injury Accidents with ISA

ISA Variant	Overall Reduction
Advisory ISA	-2.7%
Voluntary (Overridable) ISA	-12.0%
Mandatory (Non-Overridable) ISA	-28.9%

Predicted ISA penetration under the Market Driven scenario



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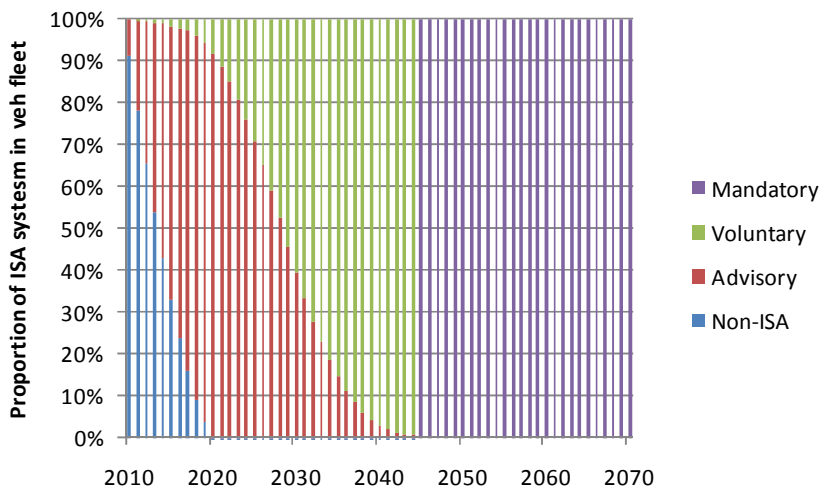


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Predicted ISA penetration under the Authority Driven scenario

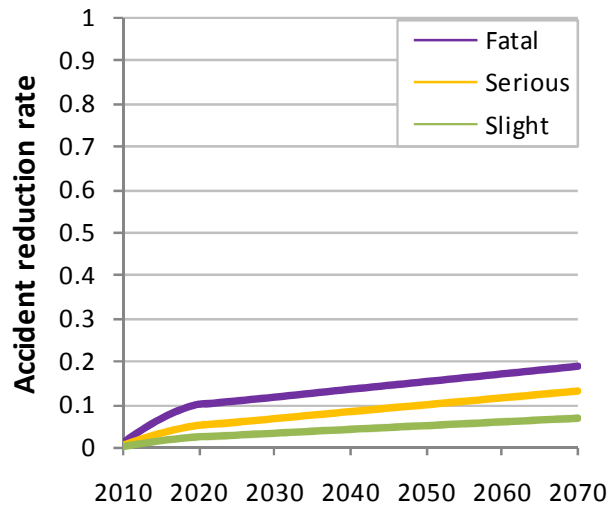


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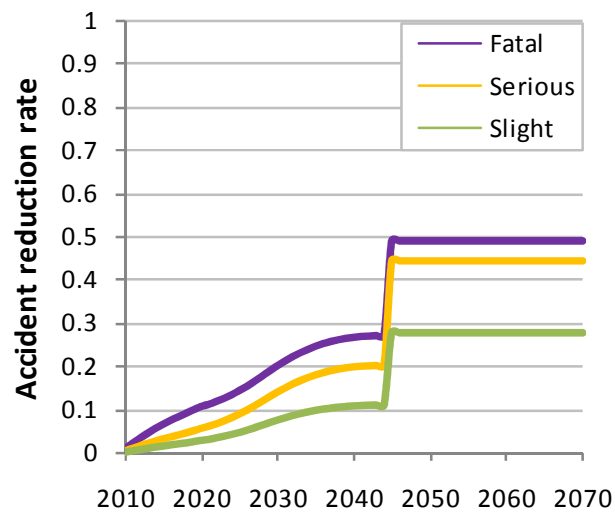


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Crash reduction over time for Market Driven ISA



Crash reduction over time for Authority Driven ISA



Estimation of CO₂ effects from UK FOT speed profiles

Speed Limit (mph)	Change with Voluntary ISA	Change with Mandatory ISA
30	-0.4%	-0.4%
40	-1.2%	-1.2%
60	+0.3%	+0.3%
70	-3.4 %	-5.8%

Comparison of predicted outcomes

Crashes Saved 2010 to 2070

	Slight Crashes	Serious Crashes	Fatal Crashes
Market Driven	4%	8%	13%
Authority Driven	15%	25%	30%

- Benefit to cost ratios (accidents + fuel + CO₂):
 - Market Driven scenario 3.4
 - Authority Driven scenario 7.4

Conclusions

- In an FOT, the “scaling up” of the results is at least as important as the basic data collection and analysis
- The predictions on impacts and the CBA cause far more controversy than the attitudinal and behavioural results
- Politicians are very nervous creatures