Results on Behaviour, Acceptance, and Usage

Lane Departure Warning, Impairment Warning and Blind Spot Information System

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SEVENTH FRAMEWORK PROGRAMME

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Lateral control functions

Lane Departure Warning (LDW) warns drivers who unintentionally drift out of lane (crosses lane marker)

- For speeds > 60 km/h and lane markings present

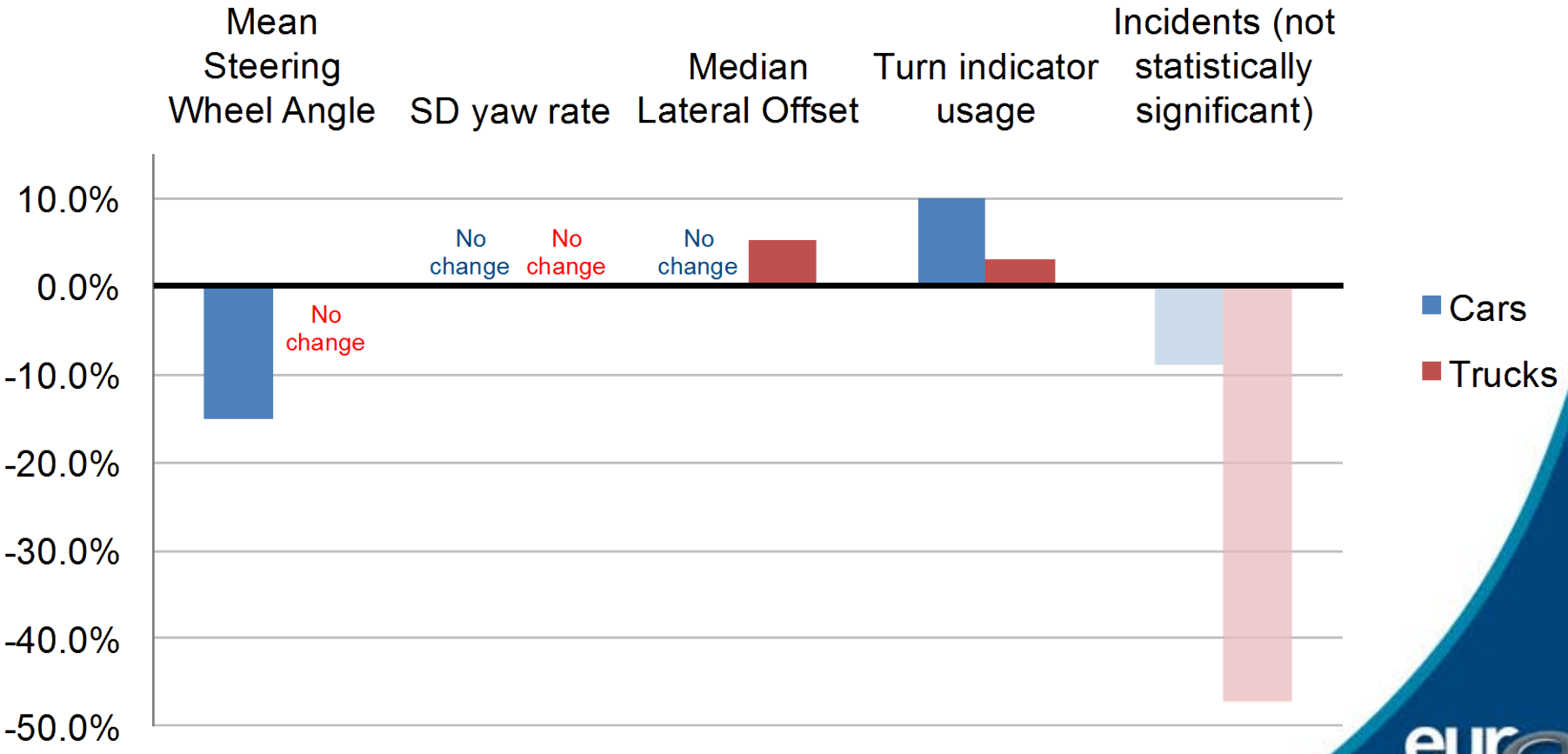
Impairment Warning (IW) warns drivers whose lane keeping performance indicates drowsiness/prolonged inattention

- For speeds > 60 km/h and lane markings present

Blind Spot Information System (BLIS) indictates if there is another vehicle present in the blind spot

- For speeds > 12 km/h

Empirical data analysis of LDW (trucks) and LDW+IW (cars)



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Empirical data analysis of LDW (trucks) and LDW+IW (cars)

LDW+IW LEADS TO:	Cars	Trucks
Increased night driving	NO	N/A
Increased use of nomadic devices during normal driving	YES	NO
increase in secondary tasks just prior to critical events	NO	NO
Increased visual distraction (drivers look away more from forward roadway when critical events occur)	NO	NO

User impressions of LDW for cars and trucks

LDW was generally appreciated by drivers, i.e. they found LDW useful, effective and intuitive

However: LDW drivers indicated somewhat lower levels of satisfaction and lower willingness to buy compared to other euroFOT functions

LDW future challenge

Likely answer: LDW has a weaker coupling between warnings and situational risk than for other functions → most drivers see drifting out of lane as a problem only when there are vehicles or places nearby that need to be avoided

Future lateral control systems would benefit e.g. from improved traffic and driver assessment to increase contextual relevance of warnings

Acceptance also seems coupled to type of HMI - In euroFOT steering interventions were perceived better than acoustic warnings.

User impressions of IW (cars)

IW rates highly positive in terms of acceptance, satisfaction and usefulness

- These ratings are stable, i.e. they do not change over time

Many respondents feel that IW increases safety

Trust in IW is high and does not change with time

- Indicates that drivers agree with IW's assessment of their level of attention/drowsiness

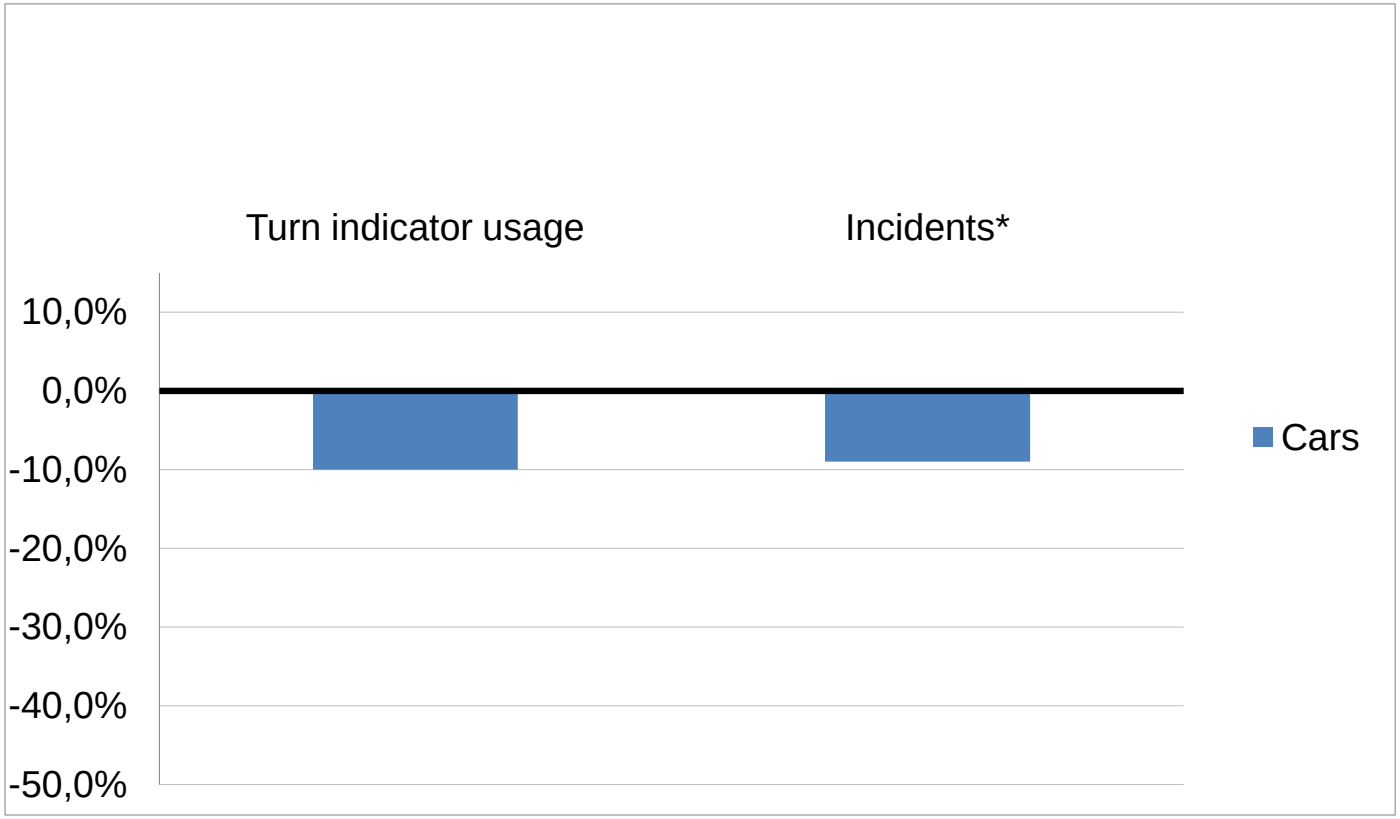
IW future challenge

IW detects impaired driving well, and drivers agree with the system's assessment

The problem comes next: how to offer meaningful oppurtunities for action?

- You can't stop and sleep everywhere, it might take some time to get your hands on a cup of coffee, you may be close to home and hence tempted to continue driving, etc.

Empirical data analysis of BLIS (cars)



User impressions of BLIS (cars)

Usability and acceptance scores for BLIS are high

This rating does not change over time

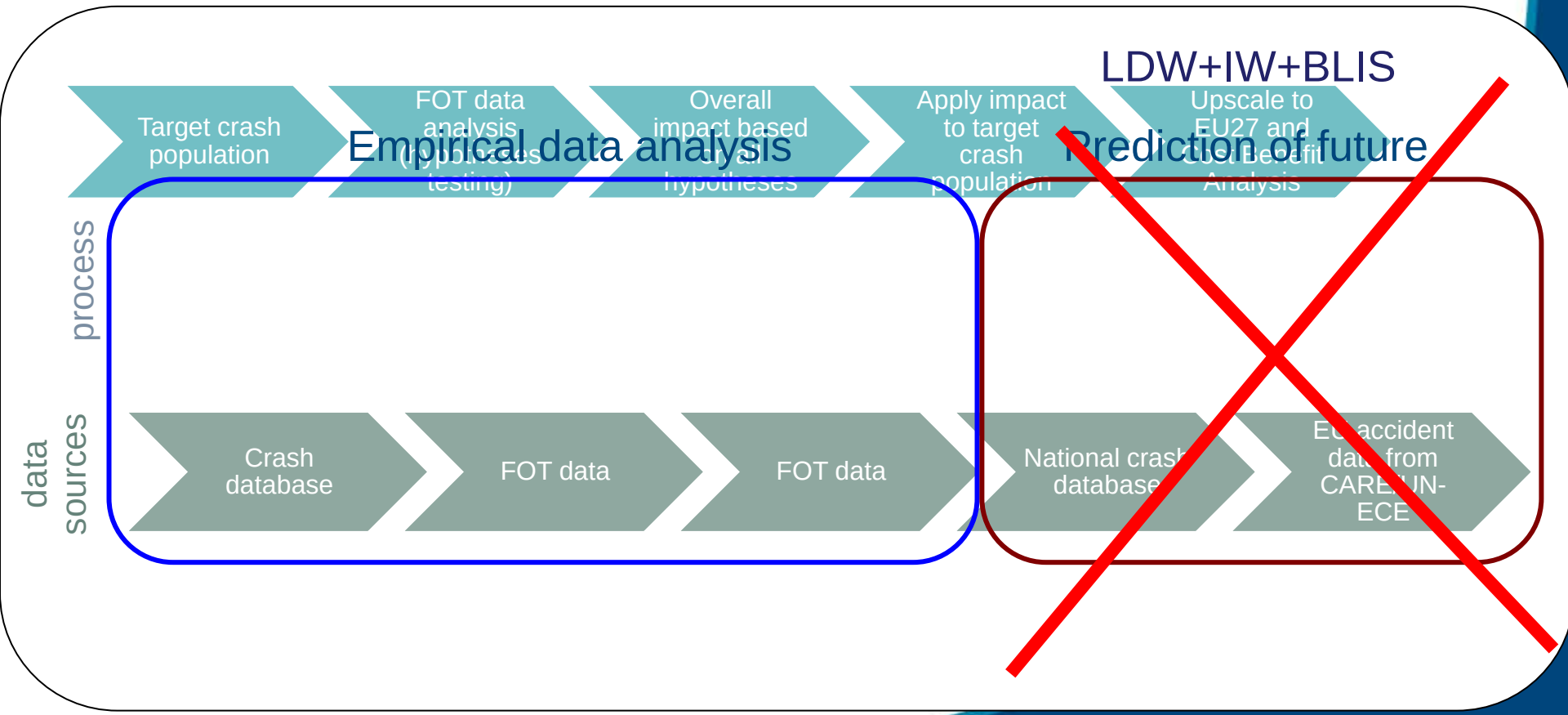
80 % of drivers feel that BLIS increases safety

BLIS is perceived as most useful on highways in normal traffic

BLIS does not increase workload

No benefit analysis for Lateral Control functions – empirical data does not support it

Trends are positive, but we cannot predict a change in fatalities/injuries based on e.g. turn indicator usage or an insignificant decrease in lateral incidents



8 Functionalities, 28 Partners, 1000 Vehicles

1 Field Operational Test, **8 Functionalities**

28 Partners, 1000 Vehicles, 1 Field Operational Test

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