

euroFOT - European Large-Scale Field Operational Test on In-Vehicle Systems

Key Results

Aria Etemad

Ford Research & Advanced Engineering Europe

Final Event

26-27 June 2012

Autoworld, Brussels



www.eurofot-ip.eu

eur
FOT

Bringing intelligent vehicles to the road

euroFOT Overview

- First **E**uropean Large-Scale **F**ield **O**perational **T**est on In-Vehicle Systems
- Total budget: Euro 22 million
- Total funding: Euro 14 million
- Project duration: May 2008 till June 2012
- Coordinator: Aria Etemad
Ford Research & Advanced Engineering Europe
- 28 partners from 10 different countries:
 - ♂ 8 OEMs
 - ♂ 4 Suppliers
 - ♂ 6 Universities
 - ♂ 5 Research Institutes
 - ♂ 5 SMEs

euroFOT Objectives (1)

- Perform coordinated tests of Intelligent Vehicle Systems with **ordinary drivers in real traffic**
- Investigate performance, driver behaviour, and user acceptance
- Assess the impacts on safety, efficiency, and the environment using collected data



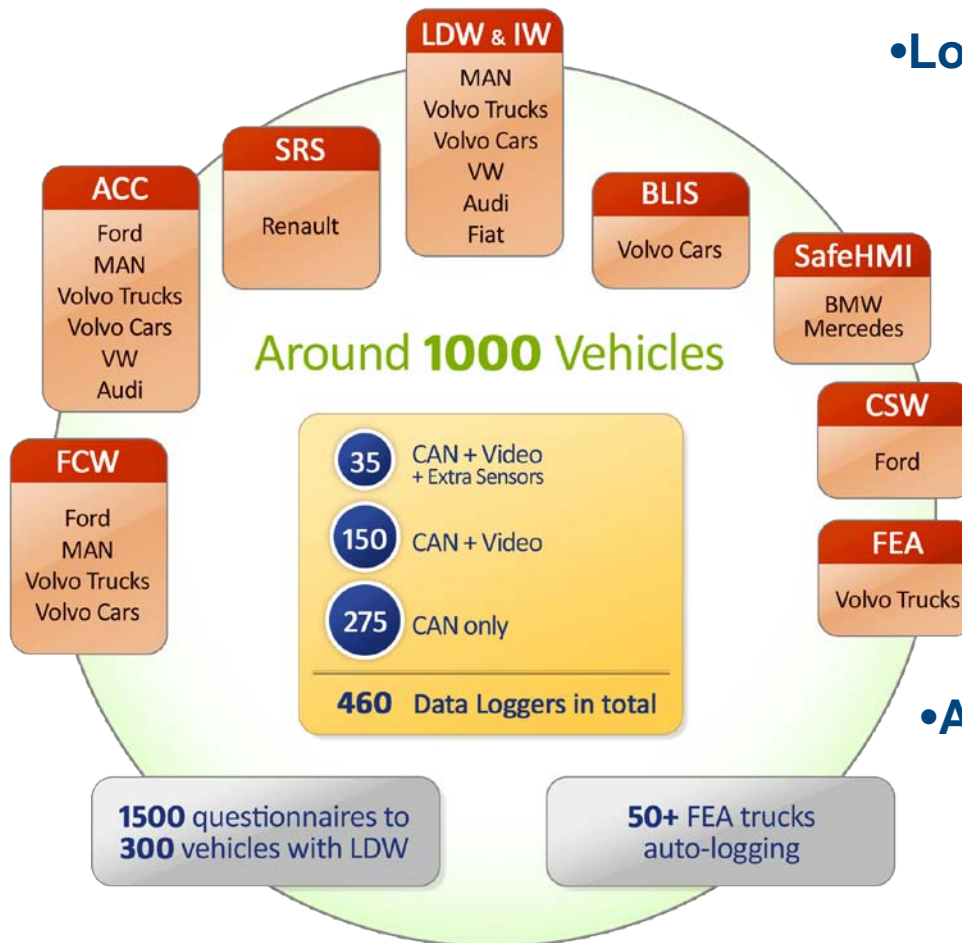
euroFOT Objectives (2)

- Apply a common European approach for Field Operational Tests
- Improve public awareness on the potentials of driver support functions and a wider socio-economic acceptance

Test Management Centres



Functions under test



•Longitudinal control functions

- ⌘ Forward Collision Warning (FCW)
- ⌘ Adaptive Cruise Control (ACC)
- ⌘ Speed Restriction System (SRS)

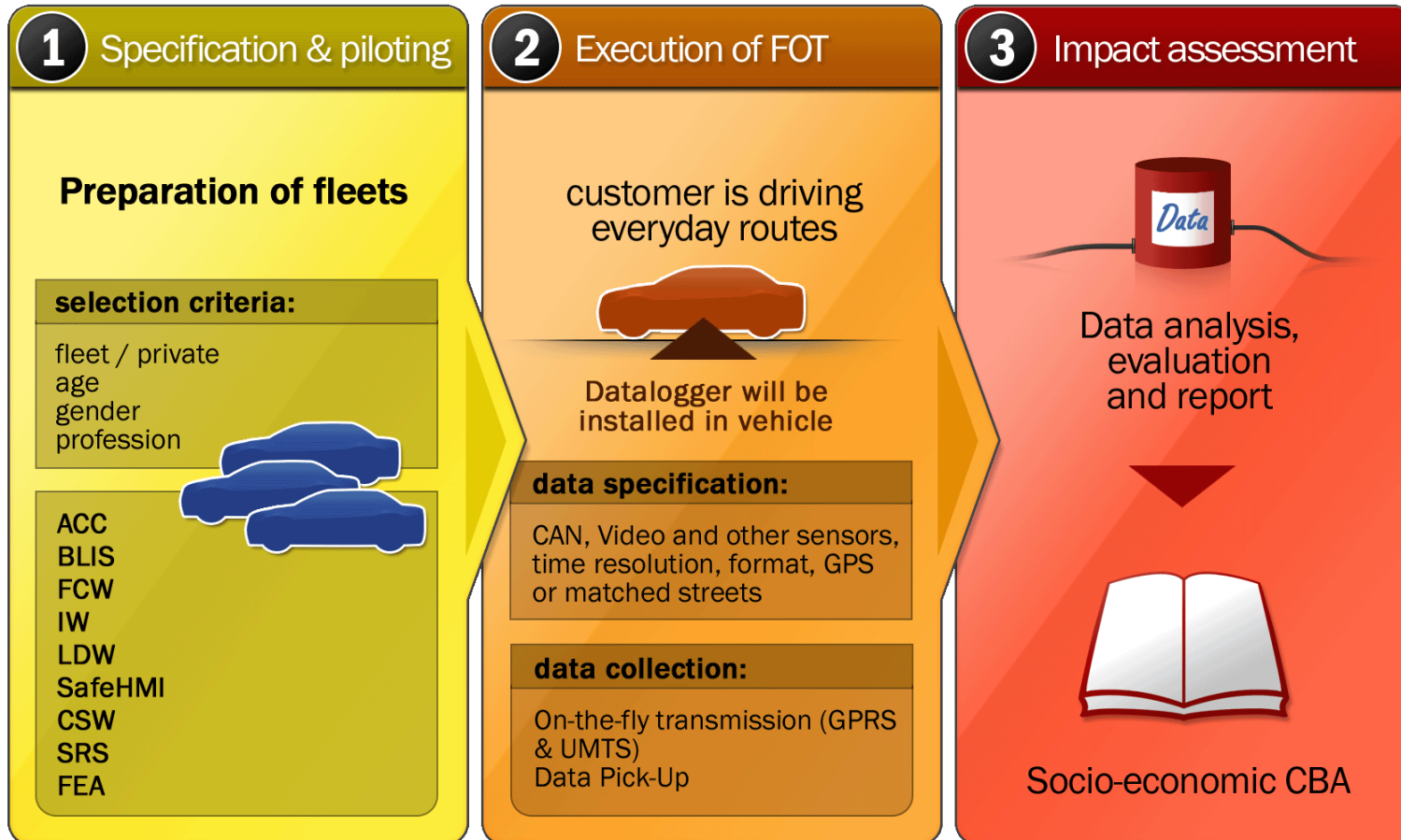
•Lateral control functions

- ⌘ Blind Spot Information System (BLIS)
- ⌘ Lane Departure Warning (LDW)
- ⌘ Impairment Warning (IW)

•Advanced applications

- ⌘ Curve Speed Warning (CSW)
- ⌘ Fuel Efficiency Advisor (FEA)
- ⌘ Safe Human Machine Interaction (SafeHMI)

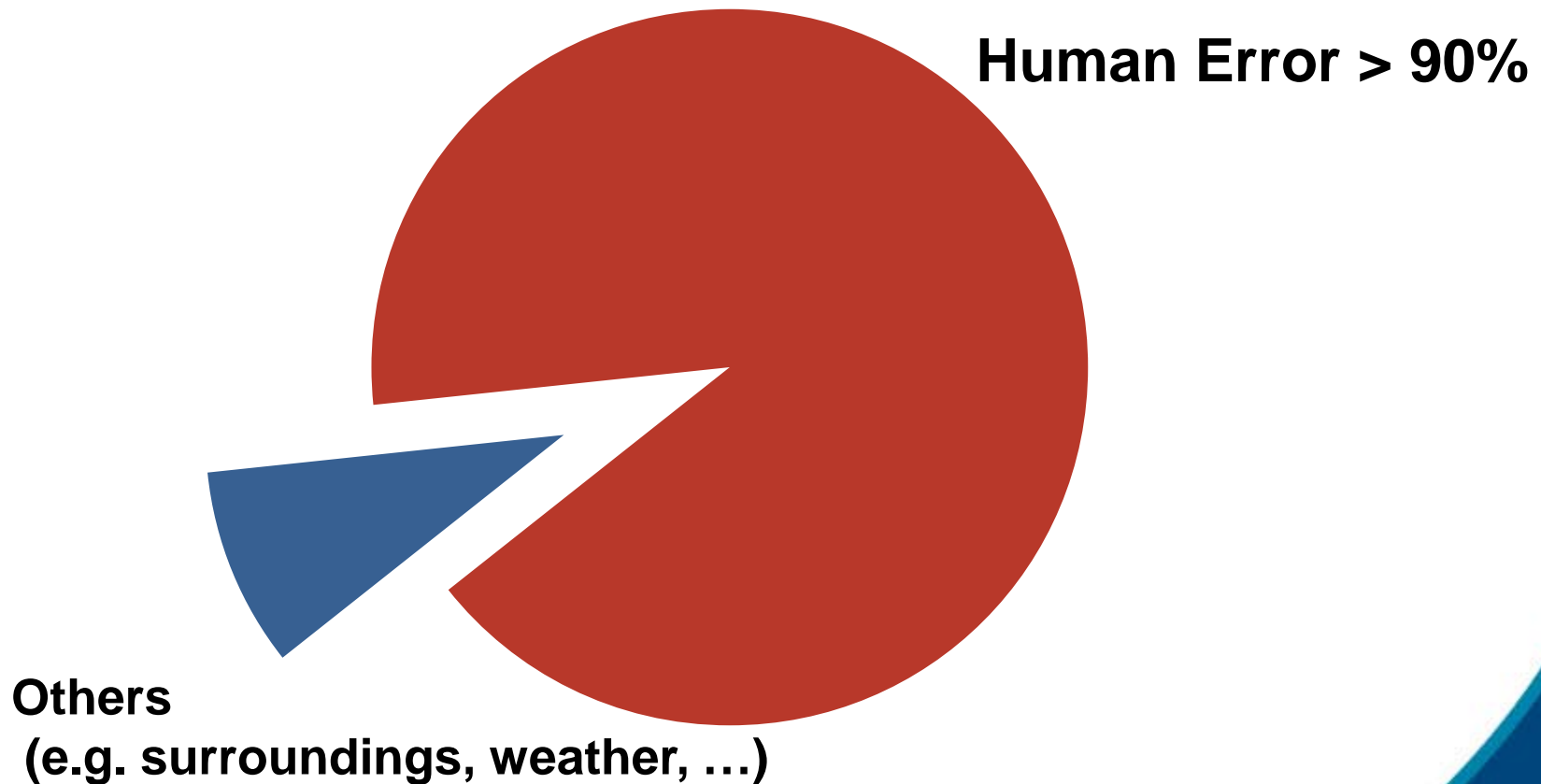
Project plan







Causes of accidents



Source: GIDAS Database











euroFOT integrated project

Key Results



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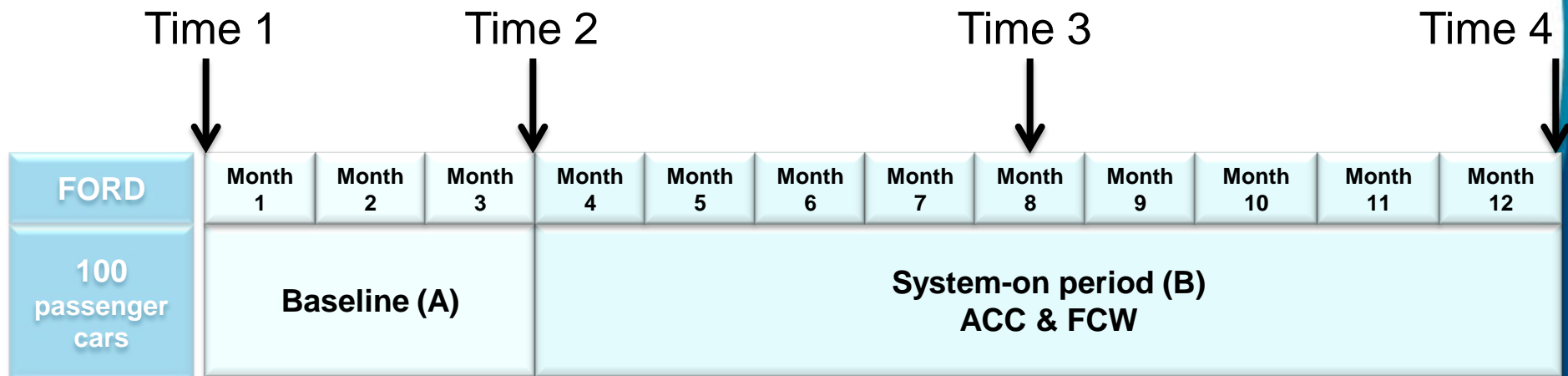
FOT status

	French VMC	German VMC Operation Centre 1					German VMC Operation Centre 2		Italian VMC	Swedish VMC	
											
Target number of vehicles	35	100	100	40	(20)	15	15	500	100	80	
No. of vehicles participated FOT	35 (+5)	98 (+2)	57	32	(20)	15	15	533	100	80	
No. of vehicles currently running	35 (+5)	98 (+2)	57	0	2	15	3	401	100	15	
No. of involved drivers	35	130	80	32	(20)	45	60	533	204	86	
FOT start date	October 2010	April 2010	January 2011	June 2010	January 2011	August 2010	February 2010	February 2010	February 2010	May 2010	

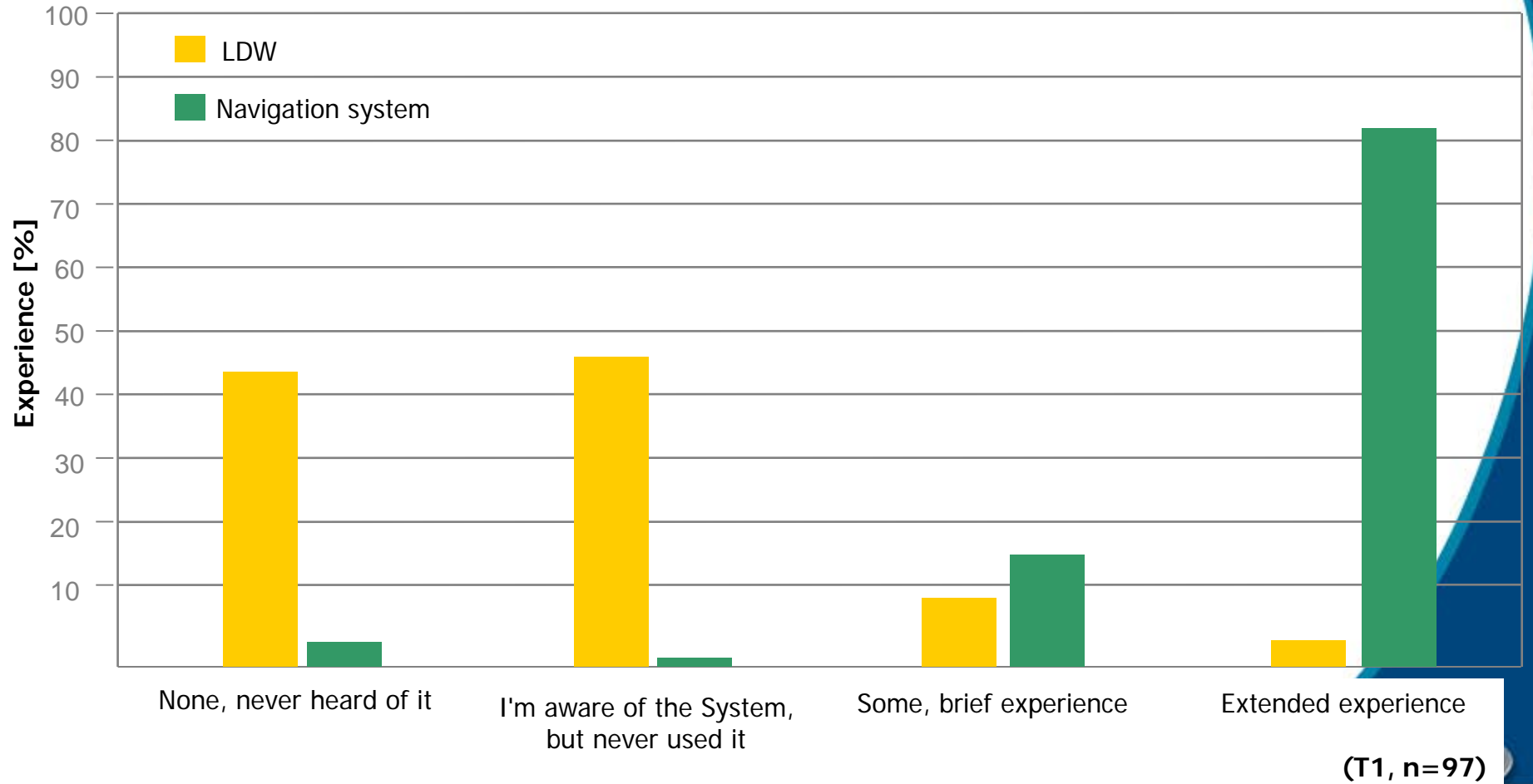
972 vehicles participated with 1068 drivers

Methodology:

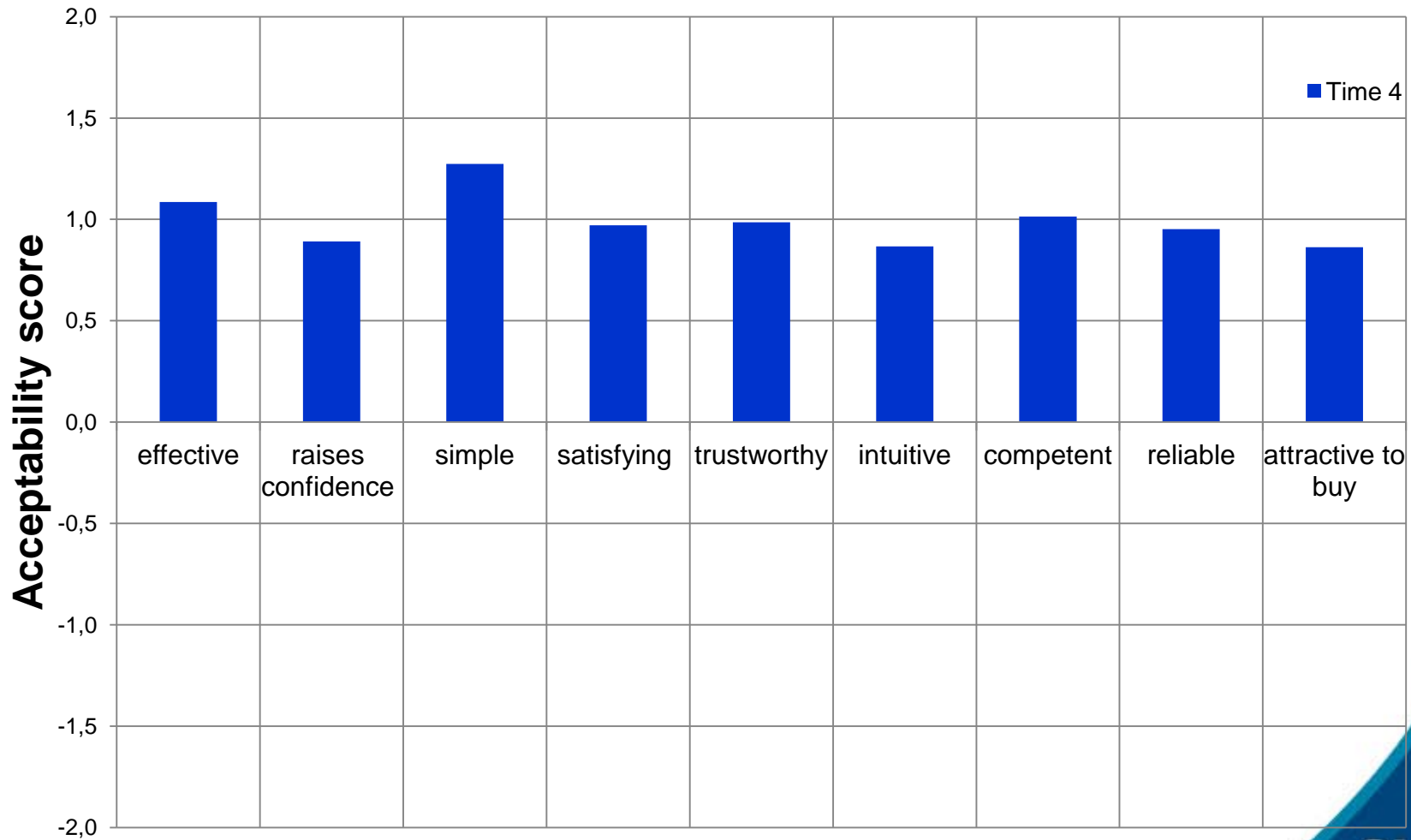
Time based questionnaires



Questionnaire analysis: Experience

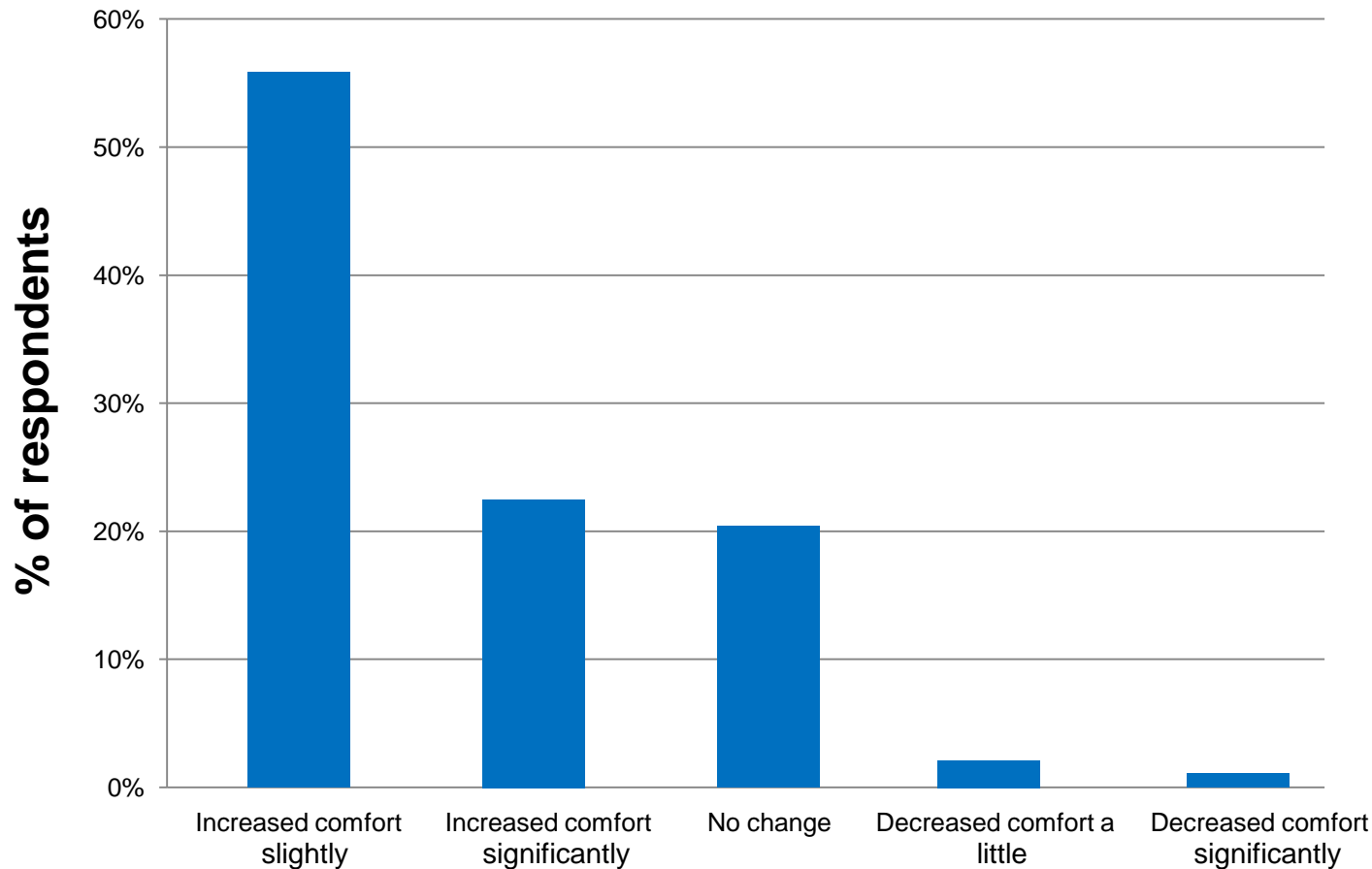


Questionnaire analysis: Acceptability



(T4, n=174)

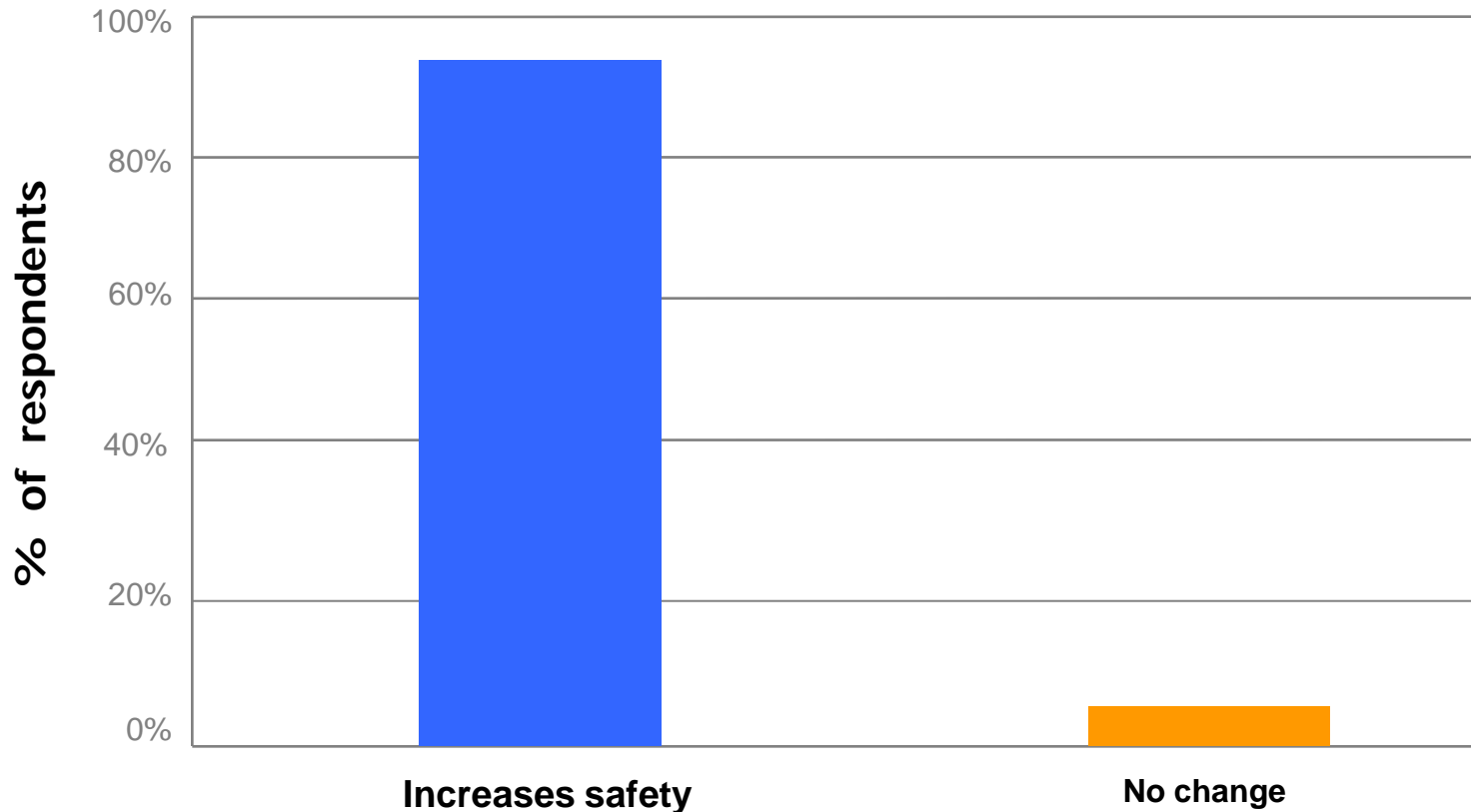
Perceived driving comfort (ACC)



ACC leads to an increase of perceived driving comfort:

♂ 77% of drivers feel that ACC increases comfort

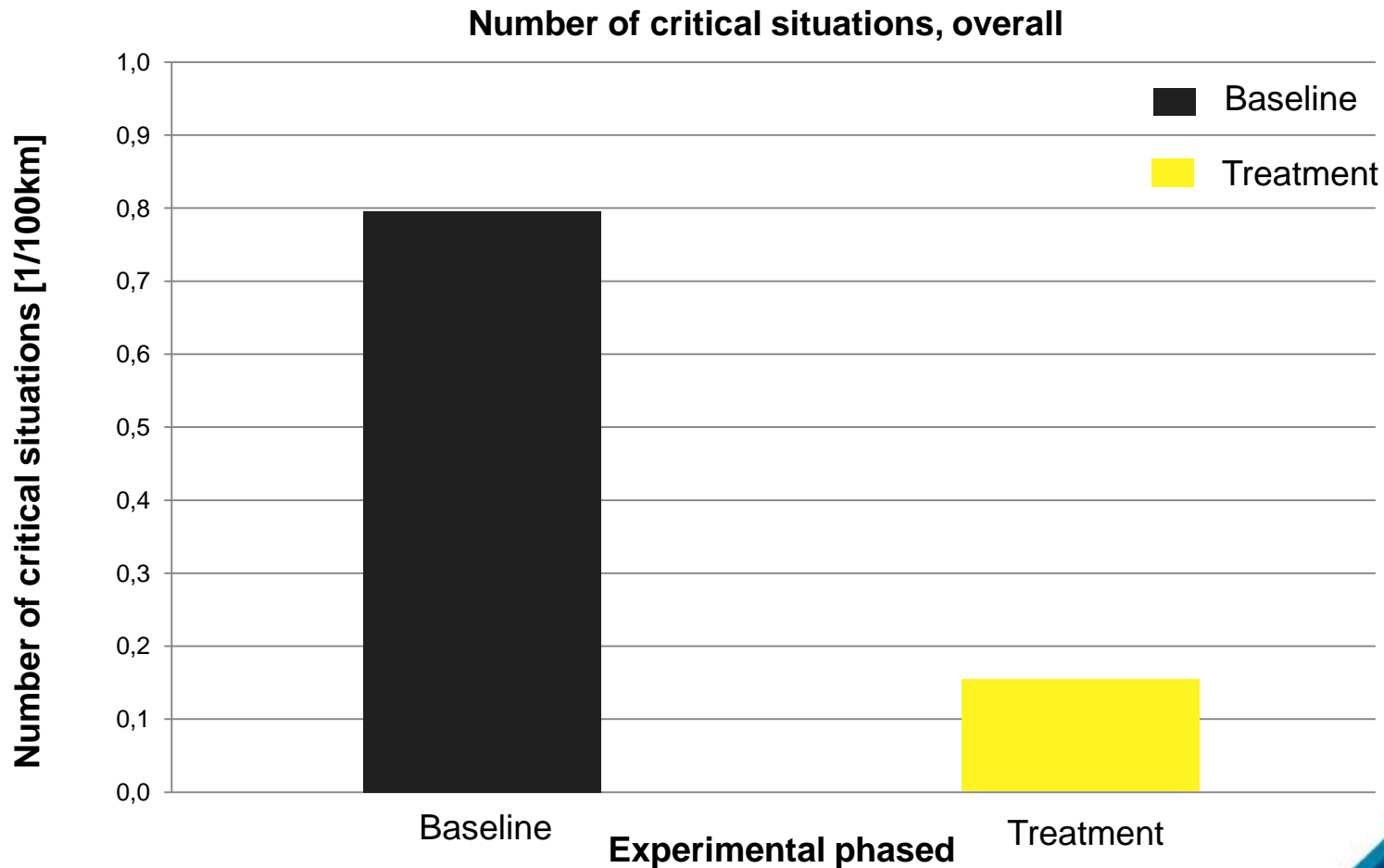
Perceived driving safety (ACC)



ACC leads to an increase of perceived driving safety:

♂ 94% of drivers feel that ACC increases safety

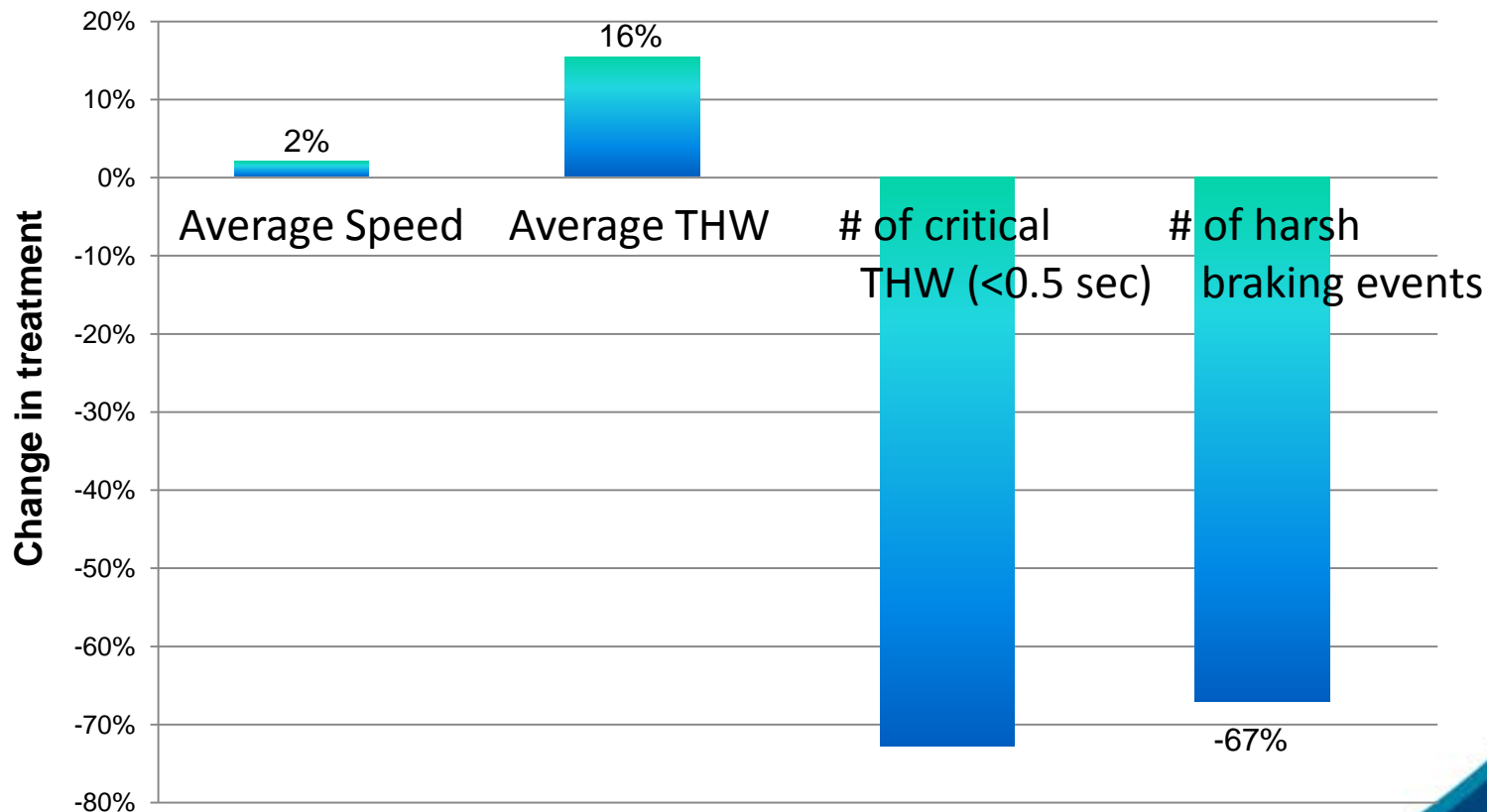
Number of critical situations (ACC)



ACC leads to a decreased number of critical situations: **-80%**

ACC on motorways

Changes from baseline to treatment phase for cars
Time Headway (THW) = distance to leading vehicle



Further results

- 18 public deliverables with > 1500 pages from 76 authors
- 35.000.000 kilometers driven
- Over 100 TB data collected

1: Forward view



4: Rear view

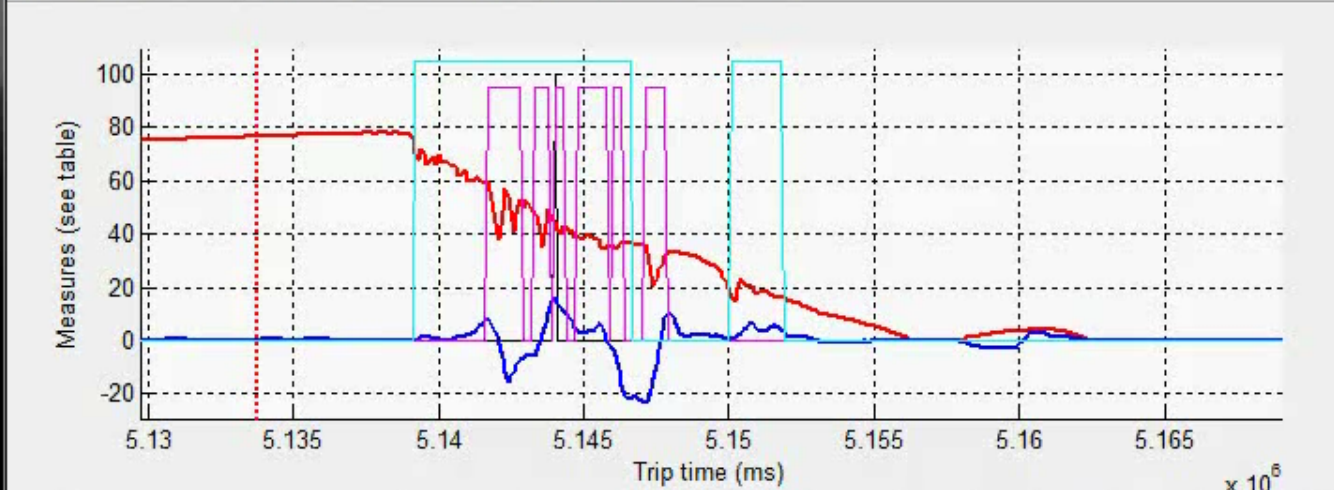


2: Driver view



Plotter 1 - FOT.ppt

File Edit View Insert Tools Desktop Window Help



	Signal	Source	Color	Style	Width	Marker	Face	Size	Y-sc...	Delete	Type
1	eSteeringWheelJerk	Event	k	-	1	none	none	6	100	<input type="checkbox"/>	plot
2	mVehicleSpeed	CAN	r	-	2	none	none	6	1	<input type="checkbox"/>	plot
3	mYawRate	CAN	b	-	2	none	none	6	1	<input type="checkbox"/>	plot



3: Feet view





Offiziere und Wissenschaftler
der »Hamburger Südsee-Expedition«,
darunter der Expeditionsleiter
Friedrich Fülleborn (4. v. l.), der Schiffs-
offizier Ferdinand Hefele (4. v. r.) und
der Maler Hans Vogel (2. v. r)

The Consortium



BMW Group
Forschung und Technik



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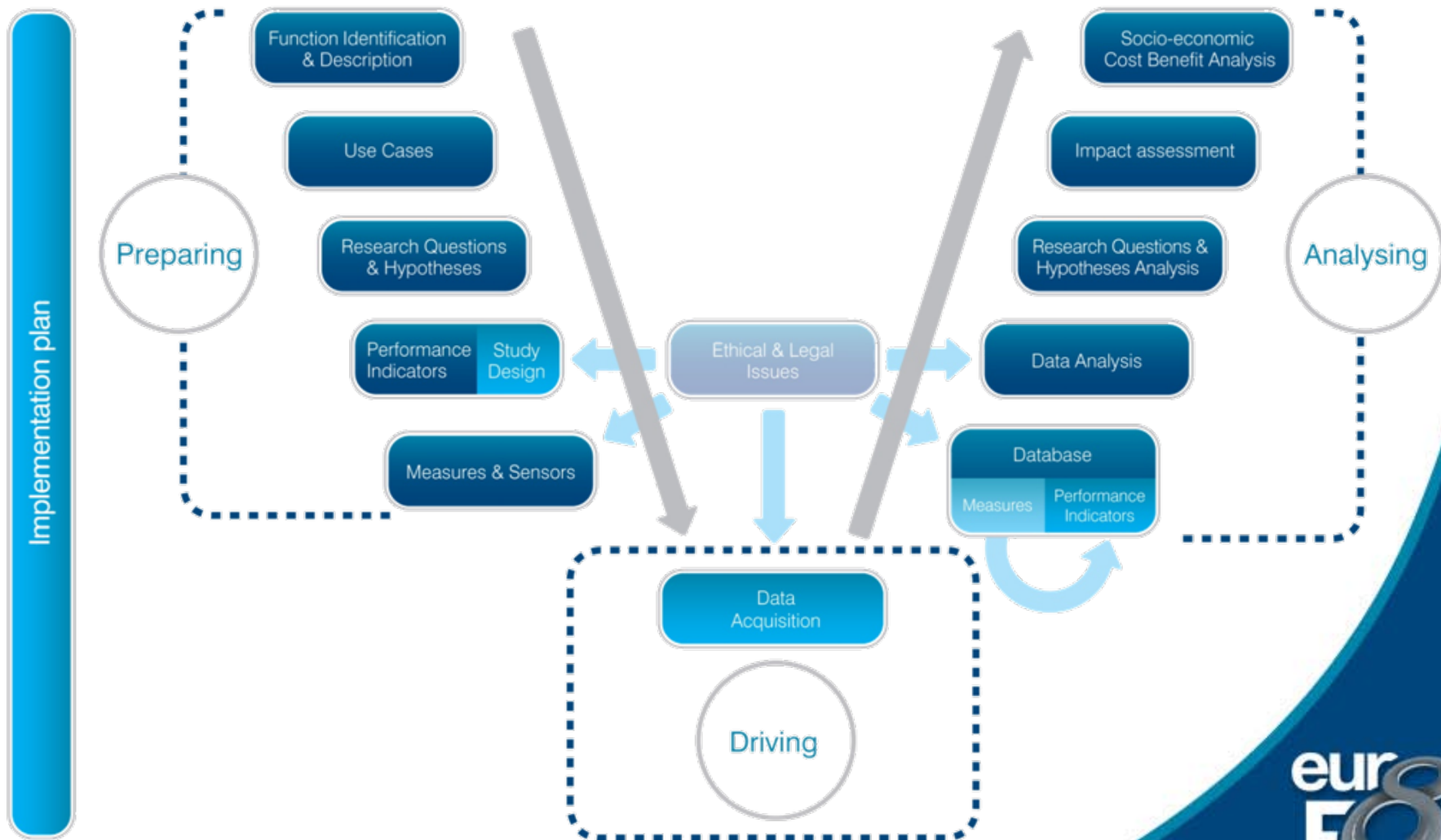


ADAS Management-Consulting

Advanced Driver Assistance and Safety

H Harman International
Automotive Division

The Exhibition



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

