



FOR SAFER CARS  
EURO NCAP  
www.euroncap.com

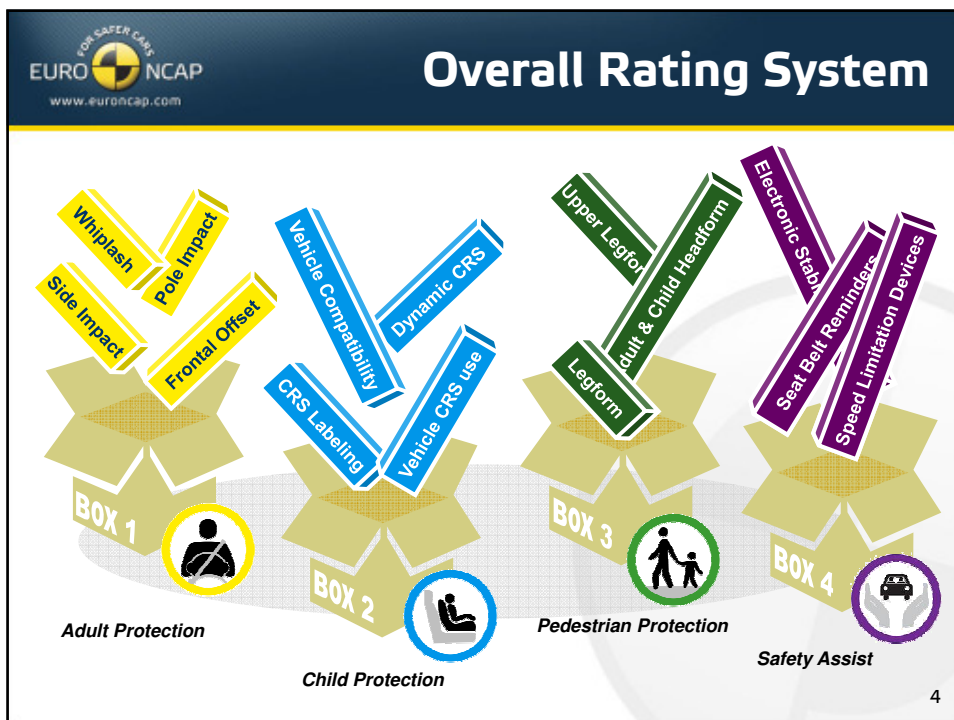
## Future Vehicle Safety Assessment for Customer Information

Director and Professor Andre Seeck



10<sup>th</sup> International Symposium  
and Exhibition on Sophisticated  
Car Occupant Safety Systems  
Karlsruhe, Germany  
8 December 2010

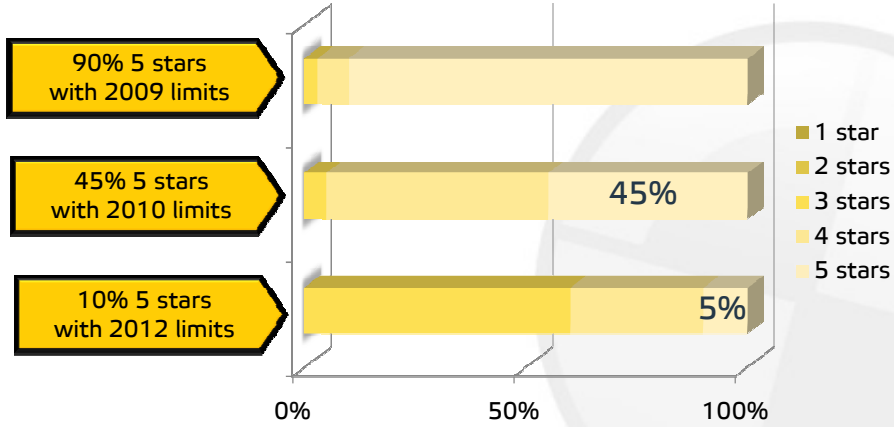
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## Overall Rating Development

### Safe Landing

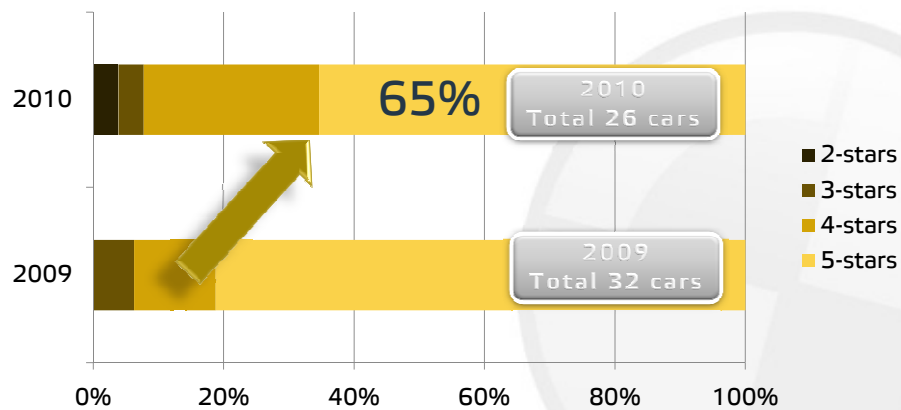
(Analysis based on results of 30 vehicles published in 2009)



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## Overall Rating Development

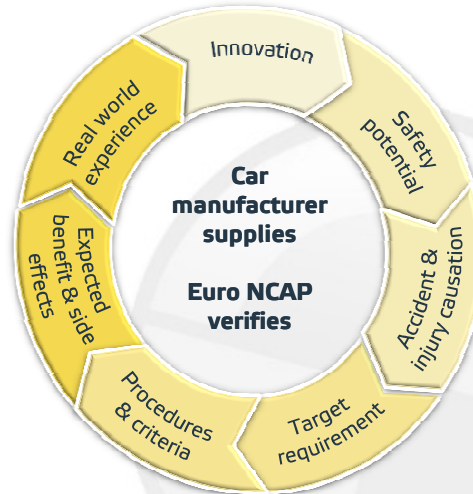
### Actual effect of soft landing



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## Euro NCAP Advanced

- Beyond NCAP Method
- A Safety Reward complementary to the Star Rating System



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## Euro NCAP Advanced

- Currently 12 systems applied
- Range of different technologies AEB, eCall, LDW, Blindspot, etc.
- First results released in Paris



EURO NCAP advanced



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### ■ Press conference & visits to stands



- More systems expected in 2011
- Uptake technologies expected in 2013, in particular AEB
- Evaluate first applications with applicants by end of 2010/early 2011

# Strategic Agenda 2015

Improve Methods to Assess Occupant Protection

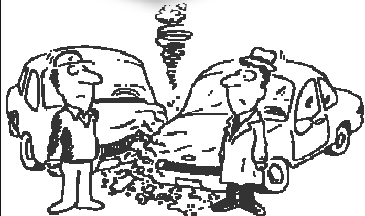
Sustain Safety Improvements for Vulnerable Road Users

Reward & Assess Emerging Avoidance Technologies



# Occupant Protection

Improve Methods to Assess Occupant Protection



## Front and Side Impact

- Board approved new ToR for Front and Side Impact, November 2010
- Two new WGs in 2011
  - Frontal impact
  - Side Impact
- Coordination committee: Front/Side/Child

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## New Dummies & Sensors

### 2010



- H350 (male 50<sup>th</sup>%ile)
- **36** channels (*standard*)
- Calibration: head, neck, chest, spine, femur and tibia

### 2014



- H350 (male 50<sup>th</sup>%ile)
- **51** channels (*extended chest measurements*)
- Calibration: head, neck, chest, spine, femur and tibia



- H35 (female 5<sup>th</sup>%ile)
- **51** channels (*extended chest measurements*)
- Calibration: head, neck, chest, spine, femur and tibia

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## New Dummies & Sensors

### 2010



- ES-2 (male 50<sup>th</sup> %ile)
- 45 channels
- Calibration: head, neck, shoulder, ribs, abdomen, spine, pelvis

### 2014



- WS50 (male 50<sup>th</sup> %ile)
- 64 channels
- Calibration: head, neck, shoulder, ribs, abdomen, spine, pelvis



- WS5 (female 5<sup>th</sup> %ile)
- 64 channels
- Calibration: head, neck, shoulder, ribs, abdomen, spine, pelvis

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## New Dummies & Sensors

### 2010

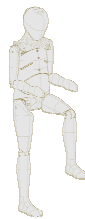


- P3
- 6 channels (*standard*)
- Calibration: neck, spine



- P18m
- 9 channels (*standard*)
- Calibration: neck, spine

### 2014



- Q10<sup>+</sup>
- 36 channels
- Calibration: head, neck, chest, shoulder, spine, abdomen, pelvis



- Q6
- 51 channels
- Calibration: head, neck, chest, shoulder, spine, abdomen, pelvis

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## Barriers

2010



2014



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## Offset Deformable Barrier

2010

- 64 km/h impact
- Front seats: 2x H350
- Rear seats: P3, P18m
- Channels: 87
- ECE barrier
- No load cell wall

2014

- 64 km/h impact
- Front seats: H350+H35
- Rear seats: Q10+/Q6
- Channels: 138
- ECE or PDB barrier
- No load cell wall

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## Full Width Barrier

### 2010

- Not included.

### 2014

- 56? km/h impact
- Front seats: 1x H35
- Rear seats: 1x H35
- Channels: 87
- Rigid barrier
- Load cell wall: 128\*2

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## Mobile Deformable Barrier

### 2010

- 50 km/h impact
- Front seats: 1x ES-2
- Rear seats: P3, P18m
- Channels: 60
- ECE MDB barrier

### 2014

- 50? km/h impact
- Front seats: 1x WS5
- Rear seats: Q10+/Q6
- Channels: 115
- ECE MDB barrier
- Alternative to Q10+:  
 WS5F adds 28  
 channels

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### 2010

- 29 km/h impact
- Front seats: 1x ES-2
- Rear seats: -
- Channels: 45
- ISO pole

### 2014

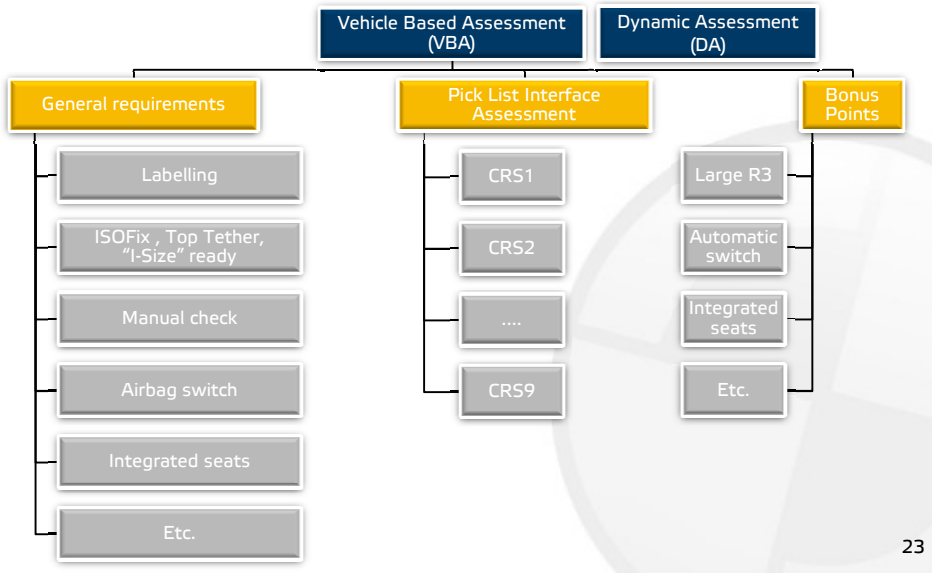
- 29 km/h impact
- Front seats: 1x WS50
- Rear seats: -
- Channels: 64
- ISO pole

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- Proposals represent estimated 60% increase in crash test expenses (cars not included)
- Unlikely to be affordable with current sponsorship model
  - WGs to review options for cost reduction as part of mandate
  - Board to review (new) membership forms

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# Child Safety



# Vulnerable Road Users

Sustain Safety Improvements for Vulnerable Road Users



### ■ Current issues

- APP protocol (Assessment Of Active Pedestrian Protection Systems) accepted at November 2010 BoD
- New protocol addition addresses pop-up bonnets – forthcoming test protocol 5.2
- Ad-hoc group on “Active Systems” is adjourned

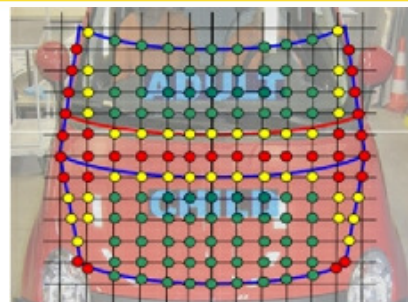


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### ■ “Grid” method

- Predefined grid
- Manufacturer's assignment of colours

Green	HIC < 650
Yellow	650 < HIC < 1000
Orange	1000 < HIC < 1350
Brown	1350 < HIC < 1700
Red	1700 < HIC



*Feasibility currently evaluated on actual vehicles*

- Selected points are tested to verify assignment – test variability
- All points included in score

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### ■ Upcoming discussions

#### ➤ Phase 2

- Colour result predictability

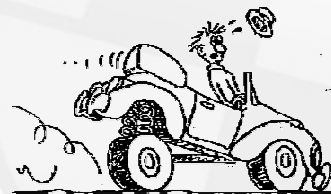
#### ➤ Phase 3

- Review of BLE test
- Grid method for bumper zone
- Introduction of Flex PLI



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Reward & Assess  
Emerging Avoidance  
Technologies



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## ■ Delivery of new protocols ...



Collision avoidance (2013)



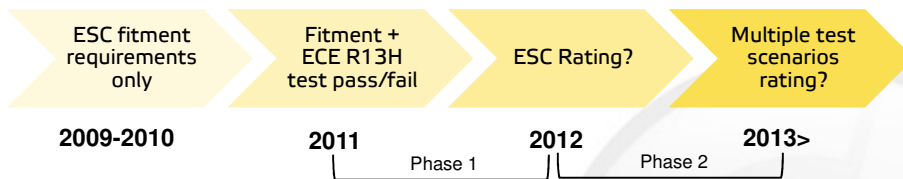
Intelligent speed assistance (2012)



ESC testing (2011)

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## ■ Roadmap for ESC



- Board has agreed to proceed to Phase 1 in 2011
- 2011 tests done at: IDIADA, Thatcham and UTAC
- New test protocol based on ECE R13H using pass/fail thresholds
- Tests are paid for by sponsor

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## Intelligent Speed Assistance

- Extension of SLD protocol
- Principles
  - Driver has the responsibility
  - Map and camera data is a support
  - Complete & reliable speed information not be available for many years
  - Give credit to vehicle manufacturers introducing ISA-systems

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## Collision mitigation

- Collision mitigation
  - First systems assessed by "Euro NCAP Advanced" – PreSafe®, CMBS, etc.
  - Development of generic methods – Car-2-car & Car-2-Pedestrian
    - "vFSS", "ASSESS" and "AEB"
- First independent PNCAP reviews in 2011

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Research Council for Automobile Repairs

P-Safe Working Group:

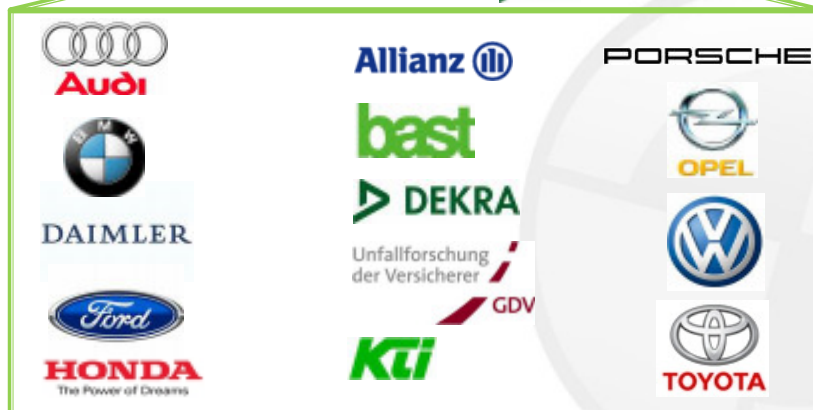
**AEB** (Autonomous Emergency Braking)

- Members:
  - » Thatcham
  - » Volvo
  - » Conti
  - » IIHS
  - » Folksam
  - » Loughborough
- Goal: test procedures for autonomous braking systems (incl. car to pedestrian)

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**vFSS** – vorausschauende Frontschutzsysteme  
Advanced Forward-Looking Safety Systems

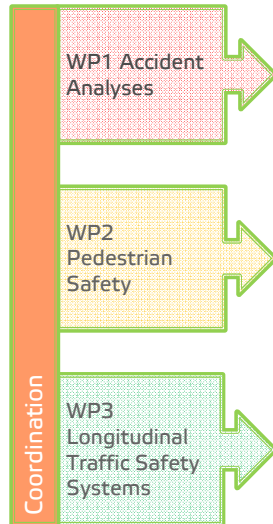
Chairmanship: Frank Leimbach   
Coordination: Jens König 



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# Collision mitigation

## vFSS – Advanced Forward-Looking Safety Systems



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Questions?

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