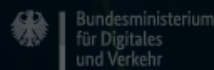
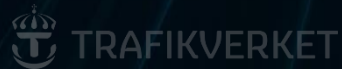
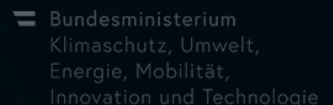
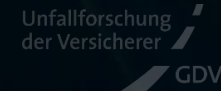
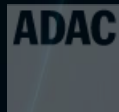


FOR SAFER CARS

# EURO NCAP



Rijksoverheid



# Contents

01

## Why Virtual Testing?

What can virtual testing offer?

02

## Implementation Steps

Method, ATD models and HBM

03

## Critical Success Factors

For adoption of HBM

04

## Outlook

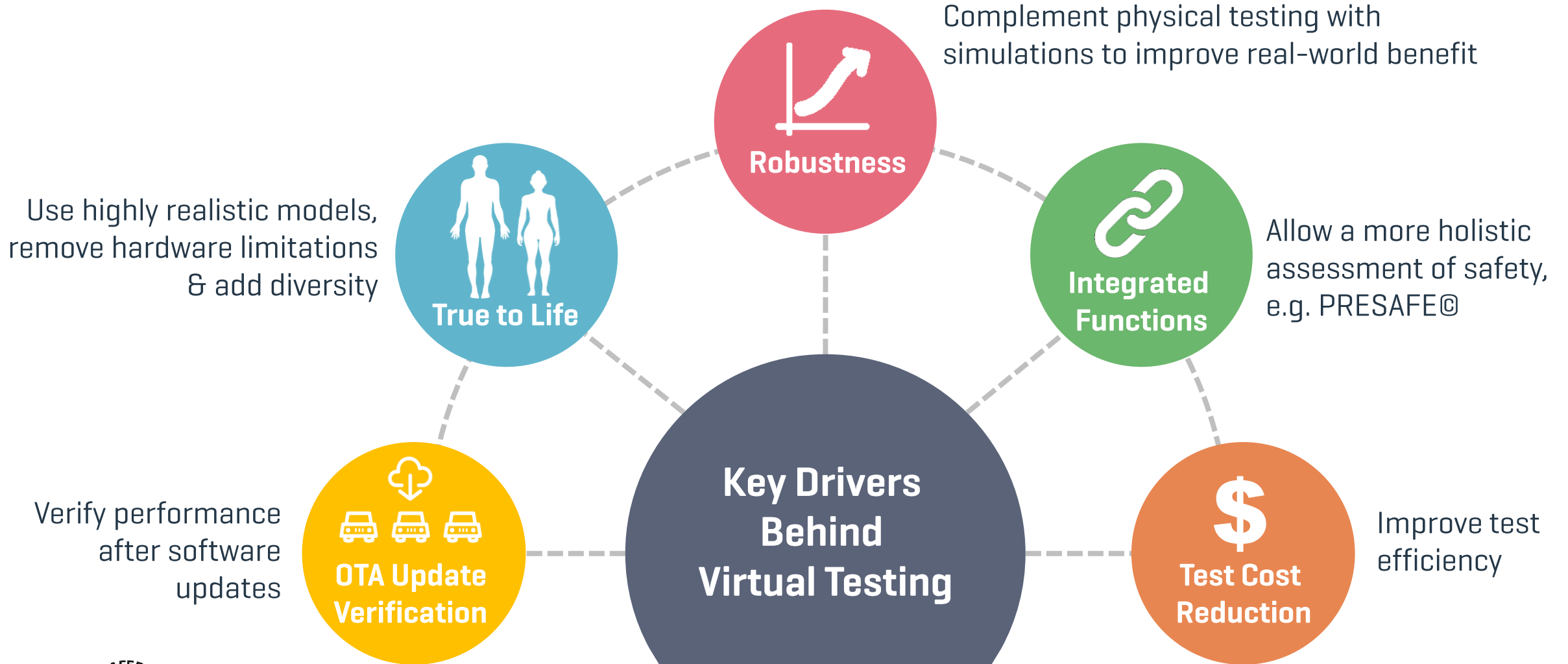
Euro NCAP Planning

05

## Closing Remarks

Wrap up and time for questions

# Why Virtual Testing?



# Implementation Steps

## 01 – METHOD

How to use CAE simulations in a rating environment?

- Respecting IPR
- Trust in predictions
- Ensure real-world benefit
- Quality controls & data processes



## 02 – ATD MODEL

VT load cases using ATD model

- Model acceptance & version control
- Known engineering criteria
- Simple load case variations



## 03 – HBM MODEL

VT load cases using HBM model

- Model acceptance & version control
- Anthropometric variations
- Injury risk assessment *aka* rating parameters



# Critical Success Factors for HBM Adoption

## High level of biofidelity (validation level)

- ATD design limitations removed
- [e.g directional dependance] Internationally agreed biomechanical basis

01

## Anthropometrically representative

- Agreed anthropomorphic references
- Includes dimensions, landmarks, postures, ...
- Tools to position

02

## Common output

- From kinematics to IR assessment
- Biomechanical based criteria, or alternative injury risk measures on body region level
- Transfer functions to dummy criteria

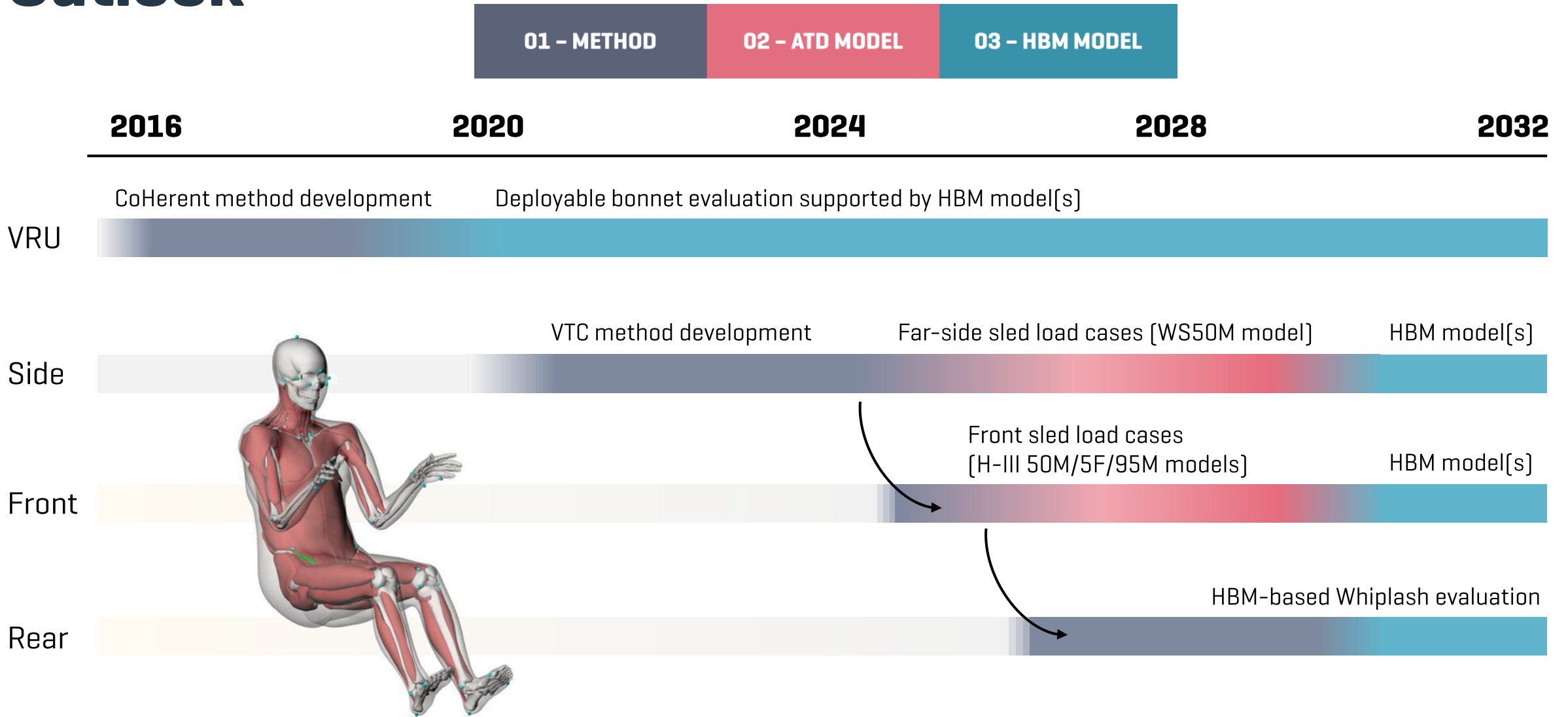
03

## Control, operationability and serviceability

- Affordable run-time, stability, etc.
- Code independence, version control, ...
- Tech support, etc.

04

# Outlook



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