



DSC 2018 EUROPE VR
Driving Simulation & Virtual Reality Conference & Exhibition



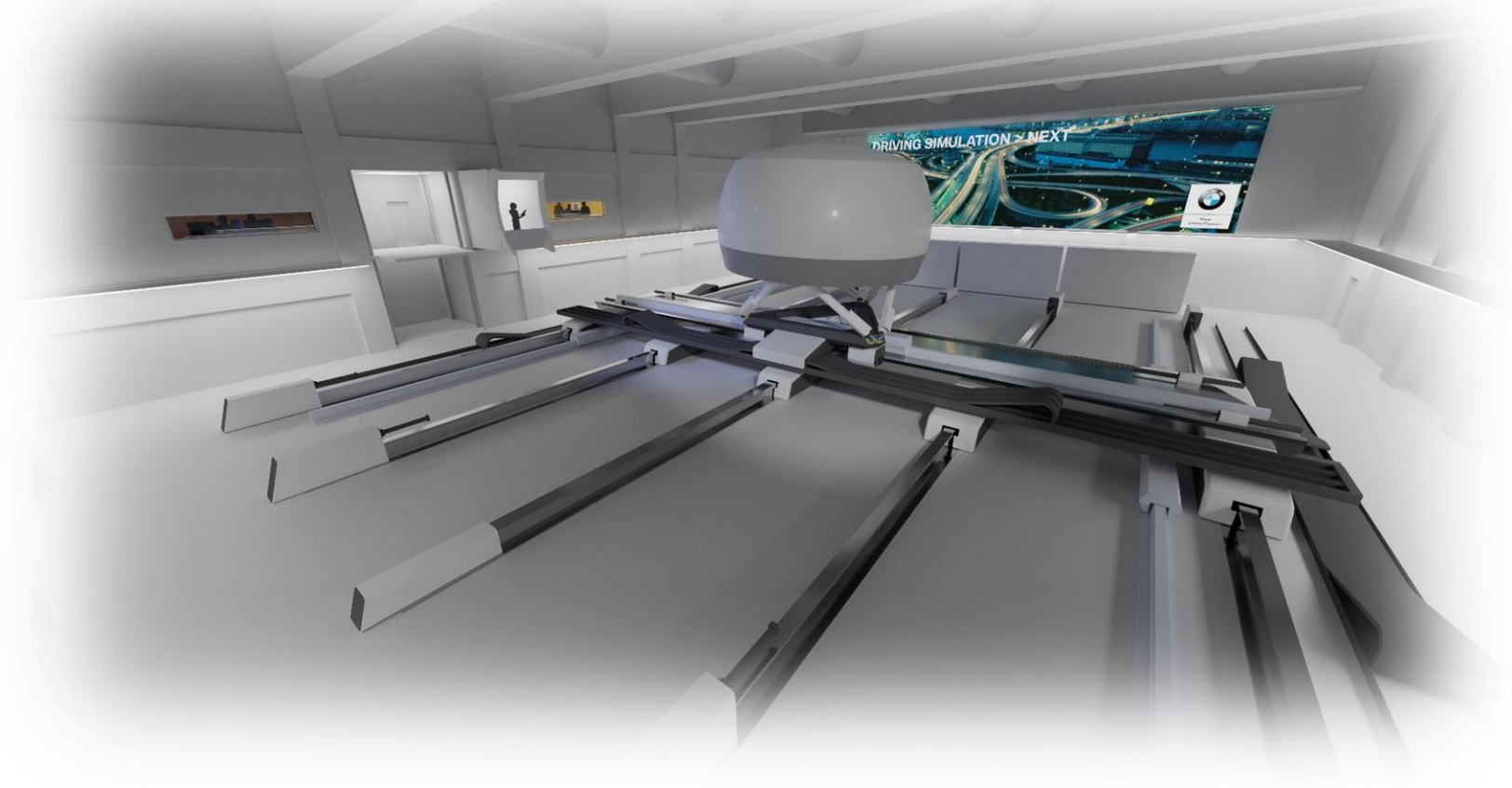
AVSIMULATION

High performance driving simulator design for a new research center

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INTRODUCTION

- New simulation building in BMW GROUP's R&D centre
- Setting a new world reference in the field of simulation
- New driving techniques and systems → new functions in the simulation



Extreme performances

- Main focus points:
 - User experience
 - Drivers
 - Experiment manager
 - Simulator's operator
 - Performance as a tool for R&D
 - Optimized manoeuvres and procedures for efficiency of everyday use
 - Automatic performance measurement included
 - Reliability
 - Maintenance
 - New procedures and tools
 - Flexibility for upgrades
 - Benefit of the latest technologies in the coming years
 - Be ready for the next use cases

Extreme performances – details

- Aim for an homogenous level of high performances on all functions
- Motion system of the latest generation
- Visual system:
 - more than ten LED 120Hz projectors for 360° with a very fine rendering
 - 3D compliant
- Sound system: flexible matrix system
- Exchangeable mockups:
 - Full equipped mockups delivered
 - Motorized exchange system
 - Compliant with RHD and LHD mockups
- High grade simulation control system
 - Centralized management of the simulators,
 - Safety system included

New challenges

- Conjunction of high performances → less off-the-shelf components available on the market
 - Ex: projectors, cable management systems ...
 - Bench testing the latest generations of components
 - Weight optimization on all components
- Not one but two simulators in the same building !
- Design of the domes
 - Carbon structure, 7m inner diameter
 - Holds the projection system
 - Optimized shape for the visual field of view
 - Doors for the passengers & the mockups
 - Safety hatches in the floor
 - A/C included
- Flexibility for future upgrades
- Certification of the whole simulators