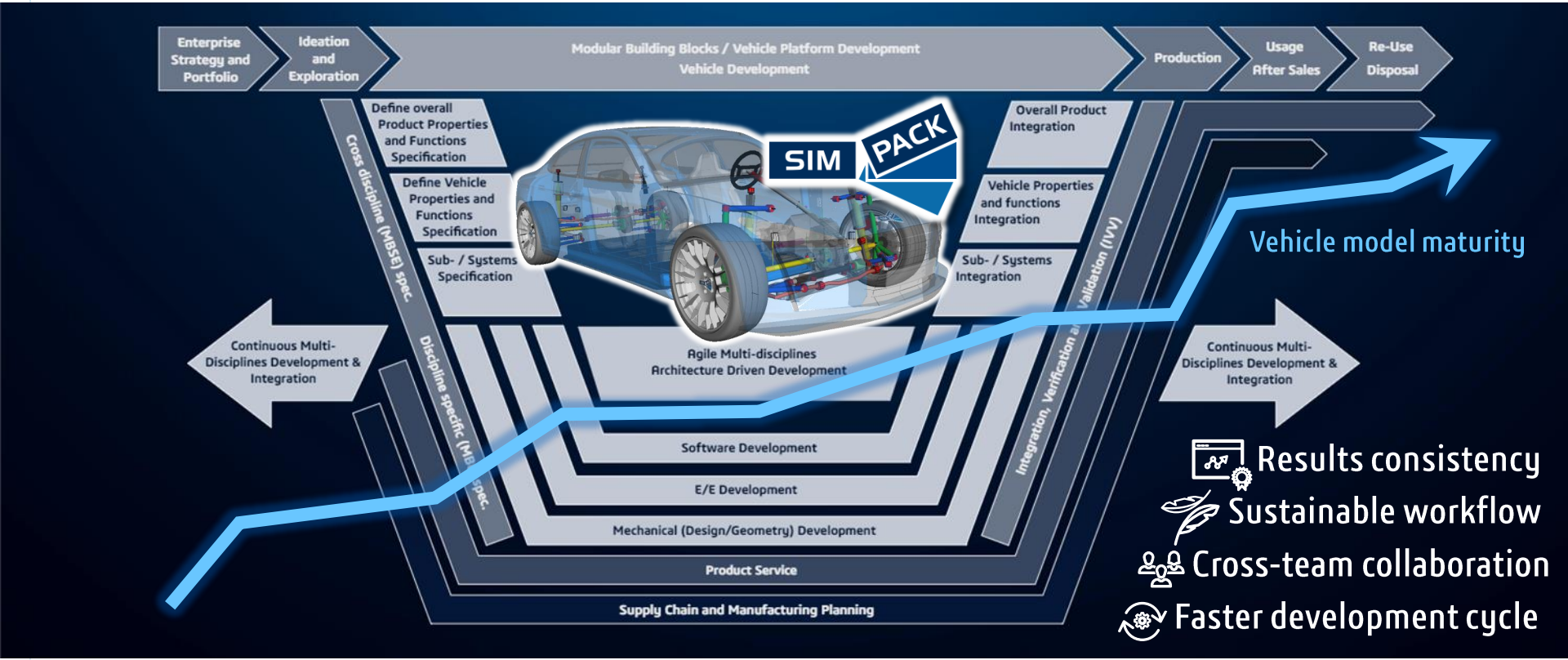
SIMULIA SIMPACK

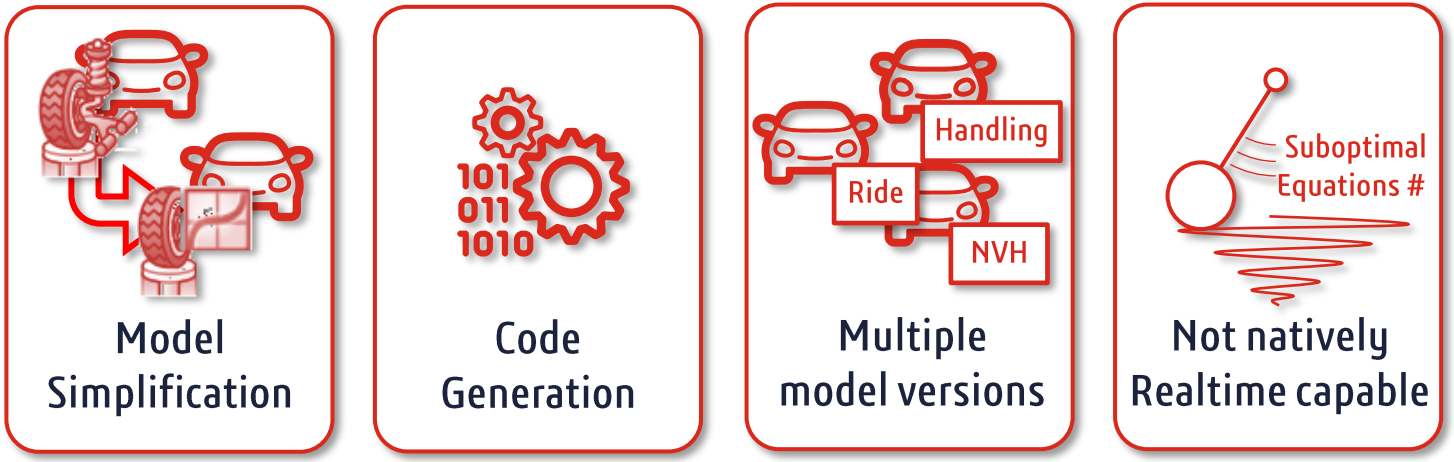
Continuous Vehicle Evaluation, Bridging the Gap
between High-Fidelity Offline
and Real-Time Multibody Simulation

Bruno Passone
EuroMED SIMULIA Multibody & Tires Technical Manager

DIGITAL TWIN ACROSS THE V-CYCLE

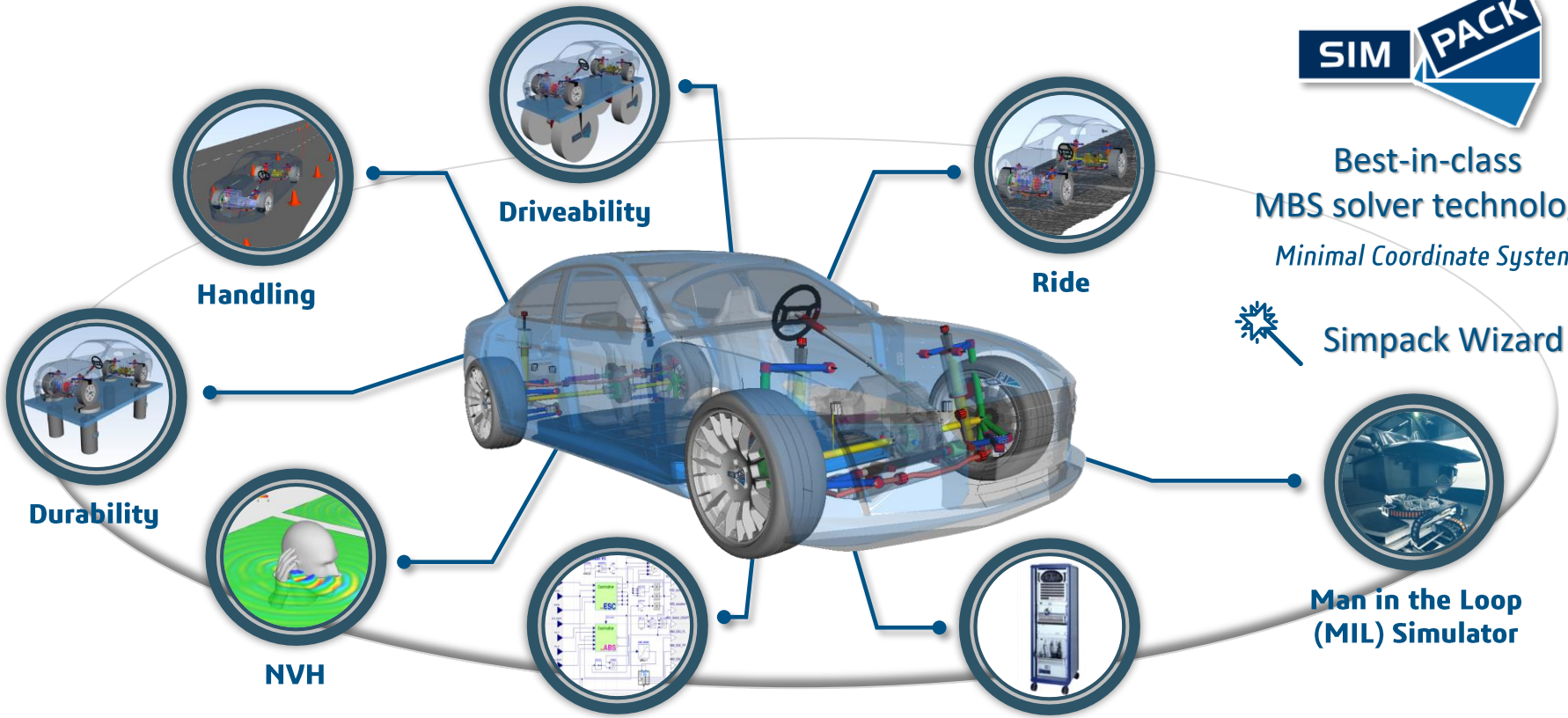


ENGINEERING/TECHNOLOGICAL CHALLENGES



Engineering time lost to cope with tool chain, instead of solving engineering problems

A UNIQUE DIGITAL TWIN



SIM PACK

Best-in-class
MBS solver technology

Minimal Coordinate System

Simpack Wizard

SIMULIA

DASSAULT SYSTEMES

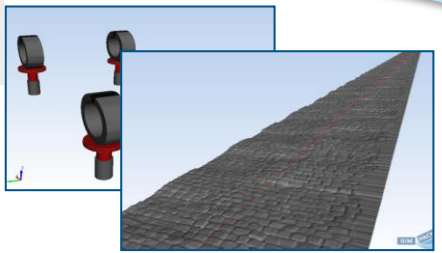
SIMULIA SIMPACK REALTIME

No simplification. No compromise. Direct Realtime.

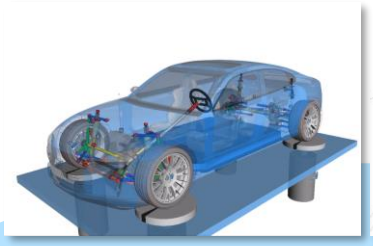
MODEL

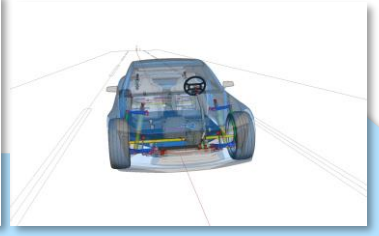
COMPONENTS

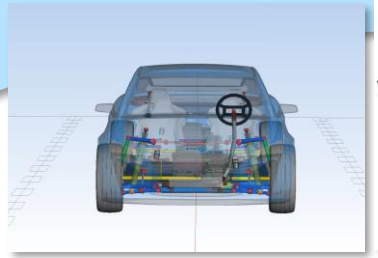
LOADCASE

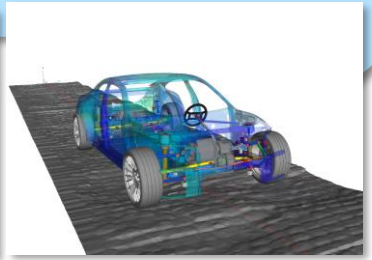


Offline









Realtime

Source:
APPLUS+ IDIADA

No model adaptation for DiL, run the high-fidelity model directly in realtime

SIMULIA

DASSAULT SYSTEMES

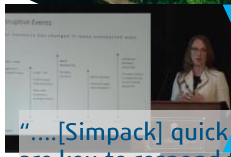
SIMPACK JOURNEY WITH AUTOMOTIVE OEMS

Nowadays deployed for **ALL** vehicle dynamics workflows

Suspension

Chassis

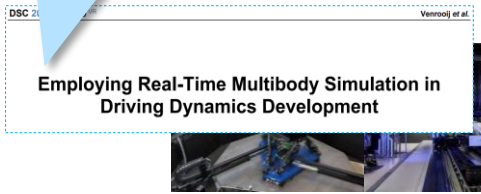
Drivetrain



GM

"....[Simpack] quick [illegible]d of results and realtime capabilities are key to respond to questions at the speed of the design"

R.Strauss Director Virtual Design Development and validation – Thermal,Aero, Chassis Loads and Vehicle Dynamics @ SIMULIA NAM Conference



BMW

Dassault/Renault 3DEXPERIENCE partnership

Source: https://media.renaultgroup.com/renault-group-and-dassault-systemes-strengthen-their-partnership-to-accelerate-the-car-manufacturers-transformation-with-the-3dexperience-platform/

RENAULT

MB

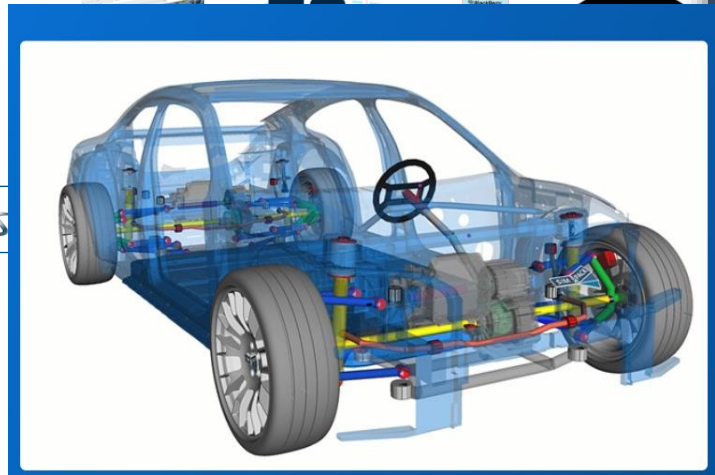
JLR

SIMULIA

THE REAL-TIME SIMULATION PIONEERS

Experience the high-fidelity model

VI-Certified



DESIGN & SIMULATION June 24, 2025

How SIMULIA Simpack Pioneered Real-time Multibody Dynamics

The simulation of multibody systems in real-time environments has long been a goal in mechanical systems modeling, particularly for applications in hardware-in-the-loop (HIL), driver-in-the-loop (DIL), and virtual prototyping and Simpack played a key role in making real-time multibody dynamics feasible for complex systems by introducing several key technologies.

Tom Burton

Instant KPI assessment

Source: DS Simpack Realtime Demonstrator

Visit our booth!

SIMULIA

DASSAULT SYSTEMES