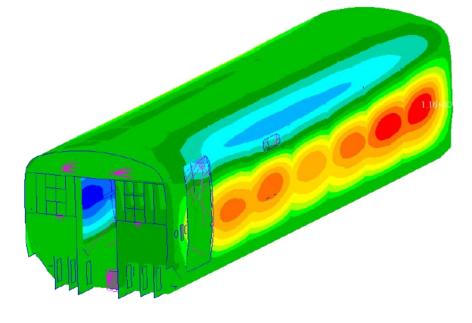
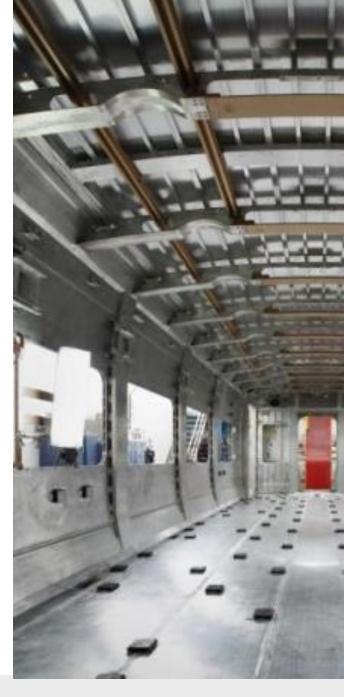


Carbody Structure (IP1)

- >> Reduction of the carbodyshell weight by using lighter materials (by 15% 20%)
- >>> First use of composite materials in primary structure for HS vehicles
- >> Projects: PIVOT (+PIVOT2)
- >> Talgo leadership of TD 1.3

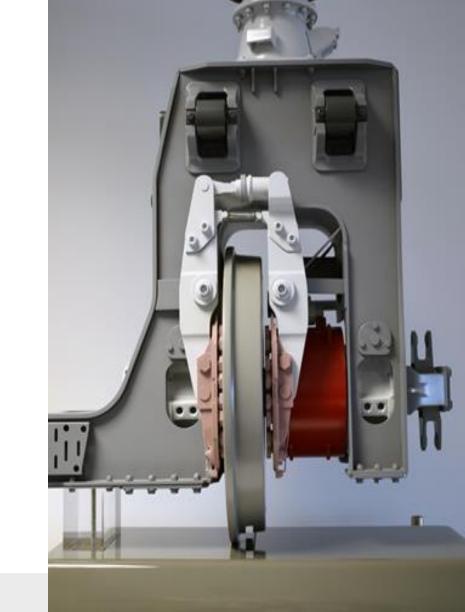






IWR Motorized Wheelset (IP1)

- >> Real-scale prototype of a motor-wheel low-floor independentlyrotating-wheelset assembly
- >> New traction concept by using the independent wheel with a permanent magnet motor
- >> Projects: PINTA, PINTA2 (+PINTA3)

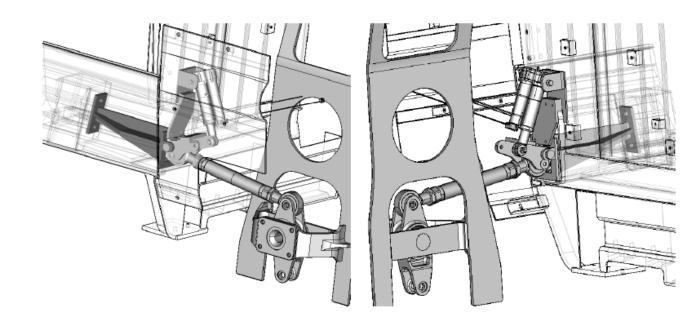


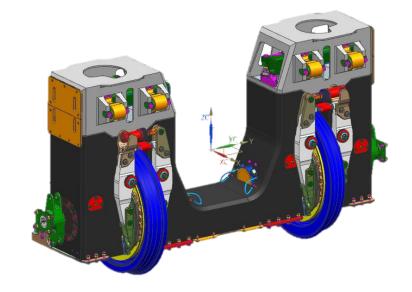


IWR: Independent Wheel Rotation

Running Gear (IP1)

- ≫Active steering systems
- >> Active suspensions
- >> New materials for lightening running gear structures
- >> Projects: PIVOT (+PIVOT2)







N&V + Energy efficiency (CCA)

- >> Train energy consumption tool
- >> Prediction and mitigation tools for rolling stock noise
- Measurement of S2R overall achievements for noise and energy efficiency
- >> Projects: FINE1 (+FINE2Plus)





Thank you very much

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