IS YOUR BATTERY FIT?
A guide to fast and flexible engineering decisions to win the e-mobility championship

THE BATTERY GRAND CHALLENGE

15X 50%
Sales of electric vehicles are expected to increase 15 times by 2030! The battery represents up to 50% of the total electric vehicle cost today.

NEW VEHICLES
The race is on globally to introduce new vehicle types—shared, connected, autonomous, and purpose-tailored vehicles on the ground, air and sea.

COST AND PERFORMANCE
Manufacturers are looking to reduce the high upfront battery costs, without compromising performance and safety. They must find ways to leverage technology innovations such as evolving Li-ion solutions, solid-state, and those to scale production and the supply chain.

KNOW-HOW
Decentralized know-how across organizations is preventing the agile engineering of the right-for-each-vehicle batteries and their timely delivery.

WHAT MAKES A WINNING BATTERY?

SAFETY  10+
LIFESPAN  $  RANGE  CHARGE RATE

VIRTUAL FIELD FOR BATTERY DEVELOPMENT
The 3DEXPERIENCE® platform offers a collaborative and connected environment of digitally united best-in-class solutions

Battery Cell Engineering
- Optimize cell KPIs for energy, lifespan and safety using multi-discipline simulations.

Battery Management System Design
- Simulate and implement operation strategies for the battery and its auxiliary systems, develop supervision algorithms for monitoring battery behavior.

Battery Cell Material Design
- Gain insight into the behavior of the electrode at the nanoscale level and predict the properties of the electrolyte to parameterize cell models.

Battery Module & Pack Engineering
- Ensure structural integrity and optimal thermal management of battery module and pack.

Battery System Engineering & Vehicle Integration
- Optimize battery system performance in context of the full vehicle for a large range of scenarios and operating conditions.

All Physics, All Scales  Data Driven  On Premise, On Cloud

Are you ready to take on the challenge? Let us help you!
To learn more, visit go.3ds.com/TrustTheDrive

REFERENCES
2. www.ev-volumes.com/country/list/world-plug-in-vehicle-volumes