

ONLY

6

YEARS UNTIL EV ADOPTION REACHES CRITICAL MASS<sup>1,2</sup>

APPROXIMATELY

130

EV MODELS TO BE INTRODUCED BY 2022<sup>3</sup>

# TRUST THE DRIVE

## CHARTING THE SHORTEST, MOST EFFICIENT PATH TO VIABLE ELECTRIC, CONNECTED, AUTONOMOUS VEHICLES

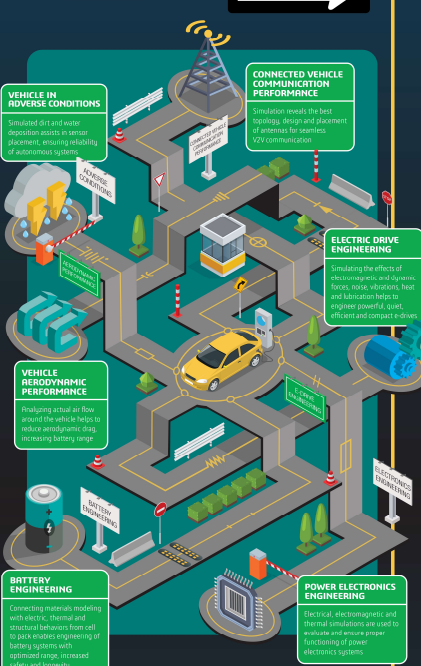
Global demand is mounting for a safer, more efficient, and more environmentally-friendly alternative to traditional gas-fueled vehicles, and both entrepreneurs and major manufacturers are racing to meet it. The emerging consensus is that Electric, Connected and Autonomous Vehicles (ECAV) will be the answer—but designers and engineers must simultaneously resolve many challenges in order to bring viable solutions to market. And they must do so quickly.



### THE ECAV ROADMAP: NAVIGATING THROUGH THE MAZE OF COMPLEX AND INTERCONNECTED SYSTEMS

Virtual testing through simulation helps to find the right path through the endless possibilities presented by new technologies.

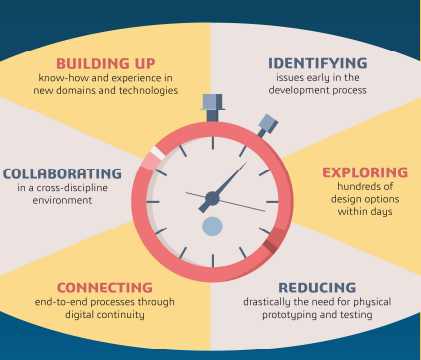
#### KEY AREAS



### THE SIMULATION ADVANTAGE

ECAV developers need to quickly reach a parallel level of quality and regulatory standards with traditional vehicle manufacturers in order for their solutions to be viable in the marketplace. The need for rapid parallel advancement in all areas of ECAV development makes simulation an indispensable part of the development process, accelerating creation of optimal designs.

Integration of different simulation disciplines on the 3DEXPERIENCE platform enables the creation of a true 3DEXPERIENCE twin—a virtual replication of a complex system for fast and flexible performance assessment and optimization.



### SIMULATION CAN:

- REDUCE AERODYNAMIC DRAG BY **25%**
- REDUCE ELECTRIC DRIVE DEVELOPMENT TIME AND COST BY **33%**
- SHORTEN ANTENNA PLACEMENT TESTING FROM **4 WEEKS TO 1 DAY\***
- REDUCE BATTERY DEVELOPMENT CYCLE TIME BY UP TO **50%** AND BATTERY ENCLOSURE WEIGHT BY UP TO **33%\*\***

### CONCLUSION

Digital Simulation enables engineers to navigate the full range of solution possibilities associated with key ECAV challenges, test hypotheses, and rapidly refine designs for optimal outcomes.

- ✓ Lower Costs
- ✓ Faster Development
- ✓ Faster to Market
- ✓ Increased Safety
- ✓ Reliable Vehicles

1. <https://eviate.com/ev-timeline>  
 2. Bloomberg NEF report: <https://bnef.furl.co/story/evs2018?essen=true>  
 3. IEF Global EV Outlook 2018: <https://webstore.iea.org/global-ev-outlook-2018>

\* Based on Dassault Systemes Customer Benchmark Results  
 \*\* Statement Courtesy of Saïed Emami, Senior Technical Specialist, Romeo Power, referring a recent production example