HORIBAMIRA

TEVVA Battery Cell Selection and Digital Twin Development

Case Study Overview

A UK-based electric truck OEM needed to compare the performance of their production battery packs versus two newly identified cell suppliers.

We developed an empirical simulation model using cell supplier data and OEM specific vehicle data. We ran the simulation model against various driving scenarios and generated data that would allow the OEM to weigh the two cell options and shortlist one. The battery cell was electrically and thermally characterised to develop a digital twin and this was made available to the OEM for optimisation and calibration of their Battery Management System (BMS).

Successes and Benefits

- Our ecosystem significantly reduced the OEM's programme risk to incorporate the new cell

- Our experience and battery development processes minimised the time taken to conduct this work and left the OEM with digital assets to expedite future work

- We identified other opportunities to help the OEM:
    - Developed a BMS that would work effectively with the newly identified battery cells and the OEM's system architecture
    - Tested the battery at a pack level to corroborate the results seen during the model-based & XiL based testing