CASE STUDY

Advanced Electric Machines

OCTOPUS Project

Delivering a compact, integrated and cost-effective e-axle with Bentley Motors

AEM is working in partnership with Bentley and eight other leading UK organisations to deliver the ultimate passenger car e-axle solution for use beyond the luxury car market and beyond.

For passenger car OEMs performance, efficiency and sustainability are the key drivers of their next-generation vehicle platforms. Combining these features into a single fully-integrated system will enable class-leading performance across the sector.

Bentley Motors deliver the ultimate in refinement and performance with a commitment to offering the most sustainable solution possible. Working with the OCTOPUS team, Bentley are setting the ultimate challenge for our market-leading technologies.

OCTOPUS project will deliver an e-axle, free of rare earth materials, that uses next-generation integrated power electronics to create marketing-leading power density, packaging characteristics, and sustainability in line with Bentley's needs.

This isn't the first time AEM and Bentley Motors have partnered on a project of this nature. AEM previously worked with Bentley on APEX, its first Innovate-funded programme focused on proving the performance and the sustainability of its SSRD technology.

OCTOPUS builds on APEX with leading-edge materials and manufacturing processes, and world-class test and validation solutions to deliver a fully integrated e-axle system.

THE OPPORTUNITY

The opportunity is to apply this cutting-edge approach to an iconic UK brand. However, the goal is not simply to narrow its application to best-in-class performance vehicles. This is a technology that can be applied to all cars.

The simulation toolkit, test programmes and test rigs can be applied to the automotive and broader transport markets. These can be developed to become vital assets to other automotive organisations leading the development of electrification technologies.

The wire production methodology and additive manufacturing process routes developed through the OCTOPUS project will also be suitable for use in the wider component manufacturing markets.

THE CHALLENGE

How do we use the UK's best technologies and science and engineering facilities to:

- → Remove rare earth materials while delivering industry-leading performance/
- → Integrate world-leading technologies into a single, efficient package?
- → Build the system cost-effectively and efficiently?
- → Make sure that we recycle and reuse as many of the materials in the system as we can?

11 Teal Farm Way, Washington, NE38 8BG, United Kingdom | +44 (0)191 4477 010 | info@advancedelectricmachines.com