

FREE VIRTUAL EVENT

ATCX DRIVING INNOVATION IN ELECTRIC POWERTRAIN

Why Simulation is the Key to Deliver the Electric Transportation Revolution

30th March, 2021

We are witnessing the development of Next Generation Smart products, facilitated by the drive towards a zero-emissions world. These products are electric, connected and mechatronic in nature; developed across industry (automotive, aerospace, defence etc). The new beating heart of these products is the electric powertrain, consisting of batteries, gears, and e-motors.

This is the age of digital and simulation will be the key technology for electric powertrain development. It is predictive and intelligent, reducing physical test requirements by representing complex physics (electrical, electromagnetics, thermal, CFD etc) while injecting innovation through optimisation and AI technologies. Performance of the various components and resulting system can be optimised, while machine learning can be deployed to create accurate surrogate models (e.g. batteries) to accelerate simulation times, all delivered to the timescales demanded by the design process.

Unique Agenda Showcasing New Advance in Simulation Technology

The strong agenda below has been curated to illustrate how Altair and our customers are pushing simulation technology to deliver Next Generation products that are cost-effectively developed and contain high levels of product differentiation.

The battery session commences with a demystification of cell modelling and the utilization of various simulation environments (i.e. 1D to 3D) to rapidly develop and optimise a complete battery pack. This requires the simulation of complex multi-physics behaviour including the incorporation of the Battery Management System. The gears session showcases gear / e-motors coupling to assess Noise and Vibration together with how the efficiency of oiling strategies can be assessed. Finally, the electric motor session will demonstrate how motor configurations can be optimized for electromagnetic and structural performance attributes.

Featuring presentations from:



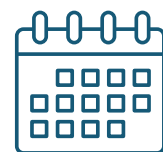
PORSCHE

SAFRAN

Equipmake



Sendyne®



Add to calendar

Tuesday, 30th March

9:00 am - 1:00 pm BST
10:00 am - 2:00 pm CEST

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#ONLYFORWARD

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9:00 (BST)	Welcome and Introduction		
	Keynote Session		
9:15 (BST)	Delivering the Electric Revolution with Intelligent Simulation Technologies Dr. Royston Jones, CTO and Dr. Anthony Hahnel, Technical Director Altair		
9:40 (BST)	Driving Innovation into Lotus Electrified Powertrains Richard Lively, Director of Engineering - Chassis and Powertrain Group Lotus		
10:05 (BST)	Enabling Electric Flight for Everyone Dr. Chris Harley, Business Development Manager Vertical Aerospace		
10:30 (BST)	Transformative Flight Transportation Bryan Sandoz, Director of Mechanical Engineering Terrafugia		
10:55 (BST)	Short Break		
11:00 (BST)	Battery Session Chaired by: Dr. Anna Wise, Head of Battery Technology Innovate UK	Gears Session Chaired by: Howard Marshall, Head of Transmission & E-Drives Ricardo	e-Motor Session Chaired by: Cleef Thackwell Lead Motor Design Engineer Jaguar Land Rover
11:10 (BST)	Part 1: Developing Predictive Electro Thermal Cell Models for Pack Level Deployment Martin Kemp Regional Manager Altair -- Dr. Denis Cumming Senior Lecturer The University of Sheffield -- John Milios CEO Sendyne -- Dr. Gregory Offer Reader Imperial College London -- Prof. Jun Xu Director of Vehicle Energy & Safety Laboratory University of North Carolina	Electric Machine Noise and Vibration Assessment Using MASTA / Flux Andrew Lawton Principal Research Engineer Smart Manufacturing Technology (SMT)	Multi-Physics Design of e-Motors Using Optimization with Examples from Porsche and AMG Dr. Lars Fredriksson VP Global Automotive Altair
11:35 (BST)	Part 2: Rapid Battery Layout Optimization using OD / 1D in a Systems Environment Andrew Dyer Senior Tech Specialist Altair -- Gabriele Piombo, EngD Partner University of Warwick -- Prof. James Marco, Professor - Systems Modelling and Simulation University of Warwick	Mass Optimization of a 3D Printed, Small Series Prototype e-Drive Housing Sebastian Wachter Specialist in Design Methodology Porsche	Creating the World's Most Power Dense Electric Motor James Eves Team Manager Altair -- Jonathan Stevens Senior Development Engineer Equipmake -- Andy Jones Innovation Program Manager HiETA Technologies
12:00 (BST)	Part 3: Simulation Technology Facilitating Battery Pack Range Optimization Dr. Richard Boyd Technical Specialist Altair	Predictive Assessment of Oil Distribution with a Complex Aerospace Gearbox Housing Dr. Miloš Stanić Senior Product Manager Altair	Electric Machines for Aerospace - Technology Needs for Aircraft's Energy Transition Sergi RIBA SANMARTI Electrical Motor Designer Safran Ventilation Systems
12:25 (BST)	Live Battery Panel Discussion All Presenters	Live Gears Panel Discussion All Presenters	Live e-Motor Panel Discussion All Presenters
12:55 (BST)	Summary and Close		