



PRESS RELEASE

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Ricardo shares vision for future hybrid transmissions at CTi Shanghai

With hybrid vehicles set to capture a significantly greater market share during the transition to electrified transportation, Ricardo will share its vision as to how high efficiency, low-cost Dedicated Hybrid Transmissions (DHTs) can be created using the company's highly advanced SELECT-R transmission design toolchain

There can be little doubt that electric propulsion will play an increasing role in the major automotive markets of Europe, the Americas and Asia. While battery electric cars have already made significant inroads into these markets, the transition to fully electrified transportation is likely to be characterized by a period of increasing and more significant volumes of hybrid vehicles.

In order to maximize vehicle fuel-efficiency, DHTs tend to be more complex to design than previous conventional systems other than, perhaps, some very advanced high multiple ratio automatic transmissions. This increased system complexity of DHTs means that it is no longer a realistic prospect to rely on human ingenuity alone in the design process, to deliver an optimal solution in terms of operational fuel-efficiency, cost and parts count.



SELECT-R is Ricardo's advanced transmission system synthesis and selection toolchain and process. Initially, the technology was created as a method to generate and select increasingly complex AT layouts. To do this, a means of algebraic transmission layout codification was developed, which allowed rapid objective interrogation of vast numbers of transmission layouts, enabling ranking of attributes such as 'shiftability', efficiency, manufacturing feasibility.

At the prestigious CTi Shanghai on 18 September, Tony O'Neil, chief engineer for the commercial vehicle and off highway market, will describe how SELECT-R technology has been further developed to consider multi-path parallel axis transmissions, as well as mixtures of transmission types. Further enhancements have focussed on inclusion of E-machines to generate hybridized driveline system layouts, coupled to the already broad variety of transmission architecture styles. Refinement of the existing conventional methods for attribute ranking have enabled consideration of ECVT modes in shiftability, for example, while further refinement of unbiased control strategies for system efficiency simulation have allowed objective ranking of hybrid system efficiencies. The already existing means of determining speeds and torque throughout the transmission system also permits sizing and comparison of hybrid system components.

As such, the SELECT-R toolchain represents a powerful enabler for the next generation of fuel and cost-efficient hybrid vehicles, from passenger cars to commercial vehicles. Using this approach, Ricardo is able to deliver highly efficient and cost optimized DHT designs, without compromising vehicle performance.

"On behalf of Ricardo Asia I am very pleased that we are able to share our unique perspective on the development of dedicated hybrid transmissions for performance, cost and efficiency," commented Ricardo Asia president Gary Tan. "With hybrid vehicle volumes set to increase significantly over the coming years across many international markets, SELECT-R is another example – alongside 48V hybrid propulsion systems – in which Ricardo is demonstrating leadership for the benefit of its customers in China and elsewhere."

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NOTES TO EDITORS:

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