ANL releases award-winning vehicle simulation modeling software

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Argonne National Laboratory's Powertrain System Analysis Toolkit (PSAT) enables designers to overcome time and cost constraints for advanced vehicle design, such as hybrid and fuel cell vehicles. Because it would be impossible to build and test every different powertrain option manually, PSAT provides the modeling and simulation capabilities for automotive designers to quickly examine the multitudes of possible configurations and understand the impacts of performance and fuel economy.

"PSAT is rapidly becoming the powertrain simulation tool of choice for both the OEMs and their suppliers to select appropriate advanced technologies and bring them to market faster" stated Larry Johnson, Director of Argonne's Transportation Technology R&D Center. "The next generation of engineers will rely on PSAT as more and more universities incorporate PSAT into their curricula."

"OEM's have limited resources and research funds for new technologies. We have to pick and choose very carefully where we put our money and in what technology. In PSAT, DOE and Argonne have developed a tool that helps speed up the process and allows us to look at many different technologies much sooner than we would otherwise. We need a model that's intuitive, easy to use, and provides accurate results. PSAT gives us that." Randy Yost, Engineering Specialist, General Motors

The latest Powertrain System Analysis Toolkit (PSAT V6.1) includes many new features and improvements. These changes were driven by

user feedback in industry and universities. Some of the enhancements include: the ability to implement any proprietary component models, data sets, control strategies or drive cycles through the interactive graphical user interface; simple differentiation between light duty and heavy duty vehicle simulation; enhanced component models and data components; html report of simulations and tests.

"PSAT is a unique forward looking model which realistically simulates fuel economy and performance of advanced vehicles" said Don Hillebrand, Director of Argonne's Center for Transportation Research. "This comprehensive model accounts for transient behavior and control system characteristics from the driver to the wheels."

Aymeric Rousseau, PSAT team lead at Argonne stated, "PSAT can simulate an unrivaled number of pre-defined vehicle configurations including: conventional, electric, fuel cell, series hybrid, parallel hybrid, and power split hybrid and offers a wide range of analysis tools to facilitate the understanding of complex power trains."

Source: Argonne National Laboratory