Software eases flow to fluid power trucks

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Eaton Corporation is using IBM modeling software to develop series hydraulic hybrid systems. Replacing a vehicle's conventional drive train and transmission, the series hydraulic hybrid (SHH) system promises dramatic fuel savings and environmental benefits. The system uses hydraulic pumps and storage tanks to capture and store energy, similar to what is done with electric motors and batteries in a hybrid electric vehicle.

This system increases fuel economy by recovering: vehicle braking energy that normally is wasted; operating the engine more efficiently, and allowing the engine to shut off when stopped or decelerating. Initial trials showed 50 percent improvement in fuel efficiency and one-third reduction in carbon dioxide emissions.

During the first half of next year, shipping giant UPS plans to use two package delivery trucks with the SHH system in Minneapolis.

Like many of the components that make up today's vehicles, the hydraulic hybrid systems are software intensive. IBM is supplying Telelogic Rhapsody modeling software that helps Eaton improve quality and save time in the development of these hybrid systems. Eaton project teams use Telelogic Rhapsody to model the software that makes the SHH system work.

"Using Telelogic Rhapsody software improves the quality of the application software that is integral to the series hydraulic hybrid system development process," said Steve Zielinski, chief engineer for software

in Eaton's Fluid Power Group. "IBM's Telelogic Rhapsody increases communication through graphic modeling, and provides validation through simulation and automated testing."

Provided by IBM