



**American  
Iron and Steel  
Institute**



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**METHODOLOGY USED IN FUTURE STEEL VEHICLE  
DESIGN WINS SAE VEHICLE INNOVATION COMPETITION**

**DETROIT, December 18, 2009** - The Accelerated Concept to Product (ACP) process, marketed by Engineering Technology Associates, Inc. (ETA) was the winner of the 2nd Annual Society of Automotive Engineers Detroit Section / Massachusetts Institute of Technology Enterprise Forum (MITEF) Vehicle Innovation Competition.

ACP is ETA's trade name for WorldAutoSteels's Future Steel Vehicle (FSV) Design Methodology, a multi-disciplinary approach utilizing computer-aided engineering tools to generate optimized design solutions. This comprehensive analysis helps manufacturers significantly reduce costs, improve efficiency, reduce mass, as well as improve product performance and fuel economy. The process develops non-intuitive solutions for structural performance including optimized shapes and component configurations that often mimic Mother Nature's own design efficiency.

"The roots of this unique design approach are showcased in prior AISI research programs with car companies like Chrysler's Lightweight Steel Body and Auto/Steel Partnership's Future Generation Passenger Compartment Project," said Jody Shaw, manager of technical marketing and product development, U. S. Steel and chairman of FSV.

"In the FSV program, we are fully integrating and enhancing the methodology and will see its first deployment in Phase 2 with preliminary results expected in May 2010 and full program results scheduled for release early in 2011. We anticipate that the mass savings that we will achieve with use of new advanced steel grades together with fully optimized structural design will result in FSV exceeding the 25% mass reduction results of the 2002 ULSAB-Advanced Vehicle Concept (ULSAB-AVC) project. The FSV project is aimed at further ensuring steel's role as the material of choice in automotive applications of the future."

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The FSV program – which anticipates a mass reduction in the range of 35 percent – introduces steel solutions for next-generation electrified powertrain vehicles. The project utilizes the most advanced steels, progressive manufacturing methods, and comprehensive design optimization technology.

“Contrary to conventional methods where just one or a few design variables are evaluated, the new design methodology simultaneously evaluates hundreds of design variables under multiple load conditions,” said Akbar Farahani, vice president of engineering and consulting, ETA. “Only those concepts which meet all of the design targets and manufacturing constraints are selected. Ultimately the final result is the optimal solution which addresses all of the loads, manufacturing, material, and cost constraints.”

The SAE competition selects inventions that provide innovative solutions to current automotive industry challenges. The award was presented to ETA on December 7 at the San Marino Club in Troy, Mich.

WorldAutoSteel, the automotive group of the World Steel Association, advances and communicates steel’s unique ability to meet the automotive industry’s needs and challenges in a sustainable and environmentally responsible way. We are committed to a low carbon future, the principles of which are embedded in our continuous research, manufacturing processes, and ultimately, in our advanced automotive steel products, for the benefit of society and future generations. To learn more about WorldAutoSteel and its projects, visit [www.worldautosteel.org](http://www.worldautosteel.org).

AISI serves as the voice of the North American steel industry in the public policy arena and through its business unit, Steel Market Development Institute, conducts research with its member companies in partnership with its customers to advance the use of steel in the marketplace. The Automotive Applications Council is a part of AISI’s SMDI. The council focuses on advancing the use of steel solutions in the highly competitive automotive market. For more news or information, visit [www.autosteel.org](http://www.autosteel.org).

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