



Altair Announces Winners of 8th Annual Altair Enlighten Awards

August 4, 2020

Industry's only award dedicated to vehicle lightweighting acknowledges greatest advancements around the globe

TROY, Mich., Aug. 04, 2020 (GLOBE NEWSWIRE) -- [Altair](#) (Nasdaq: ALTR), a global technology company providing solutions in product development, high-performance computing (HPC), and data analytics, is pleased to announce the winners of the 2020 Altair Enlighten Awards. Presented jointly with the [Center for Automotive Research](#) (CAR), the **8th Annual Enlighten Awards** acknowledge the world's best initiatives to reduce vehicle weight and meet emissions targets, inspiring breakthrough advancements that push the industry towards a more sustainable future.



The Harley-Davidson LiveWire is a dynamic electric motorcycle. To meet targets for range, acceleration, and handling, the vehicle's energy capacity was improved 90% while the ratio of energy capacity to vehicle mass (kWh/kg) was increased by 60%. Chassis stiffness was increased 143% and 97% in the two primary directions of interest with rolling chassis mass reduced 2.3 kg.



ASMC Suspension Steering Knuckle from Marelli (right view)



Mubea's full composite Tension Leaf Spring to substitute multi-layer steel leaf springs with a weight advantage of up to 75%.



CAD rendering of the 2021 Toyota Sienna resin third row seatback panels developed by Toyota Motor North America Research & Development with supplier partner BASF and manufactured by Flex-N-Gate. The design and materials met lightweighting and improved customer performance targets while still achieving a lower cost.

"As we sit at the crossroads of science, engineering, art, and design, creating a more sustainable future is the essence of Altair as we are a pioneer in lightweighting technologies and methodologies," said James Scapa, founder and chief executive officer of Altair. "I am proud to see that the Altair Enlighten Awards have become a sought-after recognition that acknowledges the world's greatest automotive lightweighting innovations, while inspiring interest from industries, engineers, policymakers, educators, students, and the public."

Presented in four categories, the Enlighten Awards recognize commercial automotive lightweighting achievements and technologies. The 2020 winners include:

- **Full Vehicle winner:** [Harley Davidson Motor Company](#) utilized electrification to improve energy capacity of its [Livewire](#) electric motorcycle by 90 percent, while increasing the ratio of energy capacity to vehicle mass by 60 percent. In addition to further improvements, this initiative established mass and stiffness design and optimization practices for future motorcycle programs.
 - **Runner-up:** Nissan for its new [Sentra 2020 platform](#), designed to dramatically improve safety and dynamic performance without increasing weight by using simulation to place the right materials in the right locations.
- **Module winner:** An industry first, [Toyota](#) created a free standing two occupant injection molded back-frame with no molded reinforcement for the [2021 Sienna](#). It consolidated 15 components to one part with one injection, driving down costs by 15 percent, reducing mass by 30 percent and improving safety performance by two times.

- **Runner-up:** [ZF](#) created the first-to-market electric park brake (EPB) with more than 75 million vehicles fitted with EPB for world roadways. The Heavy Duty EPB offers a weight savings of 25 pounds or more for large trucks and SUVs when compared to conventional drum-in-hat park brakes.
- **Enabling Technology winner:** [Mubea](#) developed a glass fiber-reinforced polymer (GFRP) [Tension Leaf Spring](#) with weight savings of up to 75 percent compared to a standard multi-layer steel spring. The company used a scripted and automated workflow that begins from a parametrized spring model in which all spring parameters can be adapted.
 - **Runner-up:** DuPont's BETASEAL [bonded thermoplastic liftgates](#) for its use of BETASEAL X2500 structural adhesive, which quickly joins thermoplastic inner and outer panels and enables modular lightweight assembly. The company's Magna thermoplastic liftgates bonded with BETASEAL X2500 structural adhesive have realized a 20-30 percent weight savings compared to welded steel liftgates.
 - **Honorable mention:** [Mazda's](#) computer-aided engineering (CAE) multi-disciplinary design optimization (MDO) methodology captures top technology trends by applying simulation-driven design and data analytics for product design.
- **Future of Lightweighting winner:** [Marelli](#) developed a new advanced sheet compression molded suspension steering knuckle that ensures a 25 percent mass savings compared to the aluminum version used on the Jeep® Compass and a 50 percent savings compared to the cast iron version.
 - **Runner-up:** Nissan's ultimate lightweight aluminum/ carbon fiber reinforced polymer (CFRP) body side panel using topology design reduced weight by utilizing a multi-material structure of aluminum and short fiber carbon fiber reinforced thermal plastic (CFRTP). Compared to conventional steel body side panels, it can reduce weight by approximately 50 percent.

"We are proud to offer the automotive industry's only award dedicated to vehicle lightweighting and are thrilled to see how many advancements are made through the use of optimization technologies," said Richard Yen, Altair senior vice president, global industry verticals. "Each year the entries are more and more impressive, making it increasingly difficult to select the winners as entrants are making great strides in lightweighting, and using inventive approaches through simulation and materials."

"On behalf of myself and the Toyota North American Research and Development team, it is an honor to accept this Altair Enlighten Award for the resin back-frame in the new Toyota Sienna 3rd row seat. We are excited to release this industry-leading seat back that focuses on customer satisfaction with lighter touch and ease of operation," said Todd Muck, senior principal engineer, Toyota TSPO – Advanced Development Group. "Strong teamwork and collaboration allowed us to accept the monumental challenge of lightweighting and improved performance while still achieving a lower cost. The final design, which demonstrates a reduction in both weight and cost, is a testament to our entire Toyota development team and the invaluable support of our supplier partner, BASF. We turned a dream into reality by creating something entirely new for this vehicle segment."

"Design optimization is critical for every new product in the automotive industry and lightweighting is a key component. We are honored to collaborate with Altair in acknowledging these design innovations in the automotive sector," said Carla Bailo, president and chief executive officer at CAR. "CAR's multidisciplinary approach gives us a clear viewpoint on critical issues facing the global automotive industry and it is thrilling to see advancements in lightweighting making an immediate impact."

Winners will be announced in an awards ceremony on August 4, 2020 at 7:30 a.m. ET, which can be viewed for free here: <https://www.cargroup.org/mbs/2020-enlighten-award/>. For more information on the Enlighten Award, please visit <https://www.altair.com/enlighten-award/>.

About Altair (Nasdaq: ALTR)

Altair is a global technology company that provides software and cloud solutions in the areas of product development, high performance computing (HPC), and data analytics. Altair enables organizations across broad industry segments to compete more effectively in a connected world while creating a more sustainable future. To learn more, please visit www.altair.com.

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