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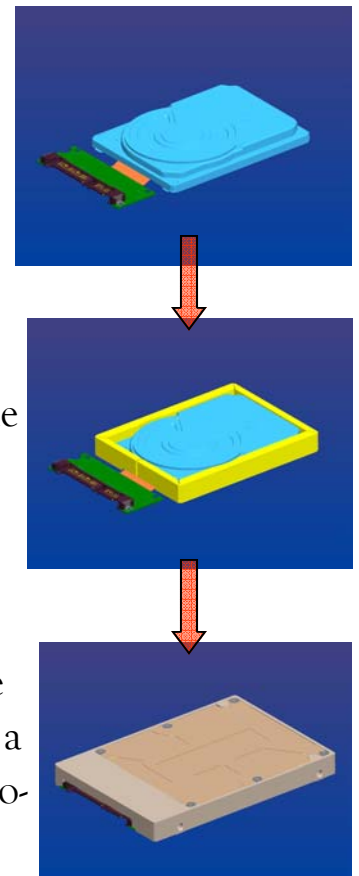
DELL

LATITUDE ATG

The Latitude ATG is a tough, All Terrain Grade laptop designed for industries like construction, manufacturing, oil and gas, as well as public organizations like police forces. Built and tested to meet MIL-STD 810F, a tough military standard of durability, the Latitude ATG is designed to meet almost any physical challenge and the most demanding work environments. With experience designing products to meet the MIL-810F requirements and a history of supporting Dell on other projects, Porticos was a smart choice to design the ATG.



The two most challenging aspects of the ATG project were isolation of the hard drive and display, and designing the hinge and latch systems to accommodate the new design. What made the hard drive even more difficult was the need for it to fit into the same space currently allocated in the non-ATG D620 Latitude platform. The solution was to take a physically smaller Hitachi hard drive and design a protective case that would function as the interface to the existing electrical connections and protect the hard drive from shock and vibration. The hard drive with its mated rigid flex was secured in a frame molded from EAR Specialty C8002 isolation material, then sandwiched between two sheets of 3M "G Sheet". To meet the thickness limitations while still addressing stiffness goals, a titanium stamping was mated to a magnesium casting to form the mechanical enclosure. Similar isolation solutions were chosen to support the display.



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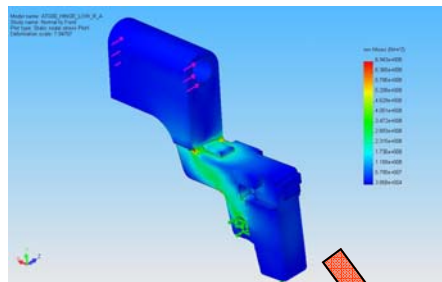
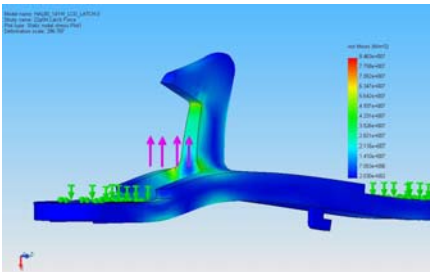
Case Study

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After modeling the hinge mechanism and latches in Pro-Engineer, the Porticos engineers conducted finite element analysis (FEA) using the COSMOS analysis tool. The design was optimized to address high stress areas and the results were shared with the manufacturing source.



In addition to the structural analysis conducted, Failure Mode Effect and Analysis (FMEA) and Design For Assembly (DFA) were conducted with feedback being incorporated into the final Pro-E 3D CAD geometry and drawings.

With it's shock-mounted, removable hard drive, a shock-mounted LCD screen, a dust and spill-resistant keyboard, port covers and even highly durable, textured paint to protect against scratches, scuffs and daily wear, the Latitude ATG is prepared for life working in the field.



INNOVATIVE DESIGN