NUVATION

The Story

One of the largest independent electronic design services companies in North America, Nuvation Engineering offers hardware design, software development, FPGA core design, integration and testing services from its operations in San Jose, California and design centre in Ontario, Canada. Its broad customer base ranges from Fortune 50 and military aerospace companies to venture-backed start-ups in North America, Western Europe, Japan, Australia, New Zealand, Israel, and other locations.

" Altium Designer supports us in our 'right first time' designs, it improves schedule and reduces budget for our customers. Being able to do that gives us a real competitive advantage. Our engineers love it, there are partnership opportunities and value for money is excellent. "

Mike Worry, CEO and founder, Nuvation Engineering

Nuvation Engineering offers what it calls accelerated design services to a wide range of customers, who typically demand fast design turnaround of products with challenging design specifications. Its designs range in complexity from simple four-layer boards to 40-layer designs; single board designs with up to 10 GHz data transmission; and an array of custom RF designs for microwave, terrestrial and space applications.

Nuvation's engineering process must be predictable and repeatable so that customers' requirements can be met within agreed timeframes. In the more than 600 projects that the company has completed during its 12 years of operation, it has developed a set of 'best-of-breed' processes and methodologies to achieve consistently short design times. It has found that the best way to develop products on schedule and within budget is to get the designs 'right first time', no matter how complex.

To enable the 'right first time' design ethos, Nuvation has in place a strong peer design review process. At specific stages of the design cycle, engineers working on a project and engineers external to the project review the design together.

Nuvation's continuous improvement process means that the company achieves a predictable, repeatable and highly efficient design methodology by having the best designers, tools and methodologies that allow them to control and predict that process.

When Nuvation was investigating ways to improve its hardware development cycles more than two years ago, it assessed all the major hardware EDA design tools in the marketplace. After a six-month study in benchmarking across various standards, it chose Altium Designer because it was quick to learn, easy to use, efficient, and it had IP core-design re-use.

Nuvation used to sub-contract out its board layout, but now Altium Designer is Nuvation's default tool for schematic and board layout. Altium Designer's integrated schematic and layout capability has improved Nuvation's design workflow. If there is an iteration in the schematic because of a part's availability, or an iteration in the layout to fit a certain circuit, Nuvation designers can make changes very quickly and ripple that back and forth seamlessly between the schematic, the BOM and the layout.

Using Altium Designer, Nuvation engineers have built up an extensive library of schematic symbols, layout footprints and design blocks that they re-use in different designs. Being able to re-use design blocks has meant that Nuvation now completes designs much faster for customers, design schedules are shortened and customers' budgets are reduced.

Altium Designer's ability to export and import designs and library data to and from other tools has allowed a seamless integration into Nuvation's design process. If a customer wants a design done in a different tool set, Nuvation engineers can do the design internally in Altium Designer, then port it to the customer's preferred tool set when they are finished.

Altium Designer's 3D capabilities allow Nuvation engineers to view mechanical layouts and fit boards into housings. The 3D feature gives them a realistic and rendered view of a PCB and allows real-time clearance checking. The 3D feature is particularly useful when they are trying to integrate the design into a housing or they have 3D key pad areas.

Using Altium Designer, Nuvation's broad range of RF design requirements has posed no problem for engineers. Although the company uses some RF modelling tools that are specifically for RF design, Altium Designer has been the company's 'go-to' tool for the schematics in many of these designs.

Nuvation also uses Altium Designer for designing FPGAs. Altium Designer provides a generic set of FPGA macro components, which are symbolic representations of blocks of functionality that a user may want to add to an FPGA design.

Altium Designer has helped Nuvation engineers design complex products faster. With an integrated design tool, all members of the engineering design team design to one common standard, and peer design reviews are carried out effectively and efficiently.

Using Altium Designer for board layout as well schematic design has given Nuvation an additional competitive advantage in a demanding marketplace. Nuvation engineers can be confident in the integrity of their designs, and develop 'right first time' products consistently. The result: improved design workflow efficiencies, faster throughput, and reduced design times and budgets for demanding customers.