



4N

Combining creative excellence and engineering prowess with CATIA V6

Dassault Systèmes is the only company I know that proposes such advanced solutions for watch design.



François Quentin
CEO - Watch Designer
4N

Challenge

4N needed to transform the innovative ideas of its designer François Quentin into a viable and precise revolutionary watch.

Solution

4N used CATIA V6 to design the watch and to simulate its complex mechanical moving elements and their interactions. 4N also became a DS partner by joining the 3DS Fashion Lab.

Benefits

CATIA was essential in managing the entire watch assembly and implementing changes rapidly throughout the design process, which considerably shortened design time.



A “tour de force” in watch design

4N was founded by watchmaker François Quentin in 2009, and the 4N brand was born the same year. An independent designer since 1986, François Quentin has gained considerable experience over the years designing models for French and Swiss watchmakers. The 4N watch grew from his desire to create a watch unlike any other on the market, with a simple digital display and a mechanical alternative to analog moving-hand timepieces. The 4N was born. The name stands for “4 numbers”, a reference to the four digits used to indicate time. “Never before has a watch displayed time in this way, with large numbers and powered by complex kinematics,” said François Quentin, CEO - Watch Designer, 4N. The 4N addresses the modern luxury watch market and appeals to collectors of exceptional timepieces.

Out-innovating other watches

François Quentin’s biggest challenge was to provide the level of innovation expected from a luxury watch. “In general, watchmakers try to make their products unique by incorporating specific complications like a perpetual calendar or a striking mechanism, such as the minute repeater,” explained Quentin. “I was looking more for something in the way time is displayed. My approach focused on the movements of the different mechanical elements in marking time. I needed to do something that had never

been done.” Quentin added a level of complexity to his already ambitious challenge: create a watch that was robust, efficient and easy to read.

Quentin used Dassault Systèmes’ CATIA V6 to design the 4N watch model and to validate the moving mechanisms, consisting of over 200 internal elements. This proved considerably more efficient than sketches and 2D drawings created with the CAD tools traditionally used in watch design.

“Compared to the design tools I used in the past, CATIA enabled me to create a complete and precise 3D model of the casing and the internal mechanism with all its intricacies as well as to perform virtual simulations to make sure there were no design errors,” said Quentin. “When I showed the model to potential manufacturers, the level of detail provided by CATIA conveyed exactly what I wanted to communicate and confirmed that my design was feasible. This marked a considerable qualitative leap with respect to



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designs created using any other solutions." CATIA also proved essential for managing the way in which the different elements were assembled and the ease with which changes were made and propagated throughout the design. "It considerably shortened design time," he declared.

Ambassador to 3DS Fashion Lab: sharing a passion for design

Quentin recently joined forces with Dassault Systèmes to further advance the boundaries of watch design. He formed a partnership with Dassault Systèmes to address the specific needs of this high-range sector and is currently the 3D Fashion Lab's ambassador of to the watch making industry. "At Dassault Systèmes, I discovered people who are as passionate as I am about design," said Quentin. "Together we took watch making to new heights using V6 solutions such as CATIA, SIMULIA, DELMIA and 3DVIA. For example, we used SIMULIA to perform stress tests on the watch's bracelet and DELMIA to show a manikin wearing the watch and displaying it in different positions. With 3DVIA, we illustrated a customer living the buying experience by virtually having him walk through a showroom where the 4N is presented. All these applications enabled me to deal with aspects of the 4N that I would not have seen before. My product took on a whole new dimension," he said.

Quentin joined the 3DS Fashion Lab because he is convinced that V6 PLM solutions will play important role to play in watch design. Creative ideas can easily come to life with powerful design tools, virtual mock-ups, and simulations. Replacing time-consuming physical prototypes cuts design time also drastically reduces costs. "Dassault Systèmes is the only company I know that offers such advanced solutions for watch making," concluded Quentin.



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