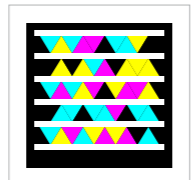


# 4N: A revolution in timekeeping with CATIA V6

By *Dora Lainé*

4N uses CATIA Version 6 (V6) to transform the innovative ideas of its designer and founder – François Quentin – into a viable, precise and revolutionary watch. The solution is used to simulate its complex mechanical moving elements and the way they interact together. CATIA was essential in managing the entire watch assembly and implementing changes rapidly throughout the design, considerably shortening design time.



Use your smartphone to learn more about the 4N watch

The French company 4N was founded by watchmaker François Quentin in 2009, the same year the brand 4N was born. Quentin, an independent designer since 1986, has gained considerable experience over the years designing models for French and Swiss watchmakers. His desire to create a watch like no other, with a simple digital display and a mechanical alternative to analog timepieces with moving hands, gave rise to the 4N watch model. The name stands for “4 numbers” in reference to the four digits that represent the time

indication (tens of hours, hours, tens of minutes and minutes). “Never before has a watch displayed time in this way, with large numbers and powered by complex kinematics,” says Quentin, CEO and Watch Designer, 4N. The 4N brand is intended for the modern luxury watch market and collectors of exceptional timepieces. unique by incorporating clever inventions such as sounds that tell time when there is not enough light to see or a stopwatch feature,” Quentin explains. “I was looking more for something in the way time is displayed. My approach focused on the movement of the different mechanical elements as time passes. It was important to do something that was never done before.” Then Quentin added an extra level of complexity to his already ambitious challenge: create a watch that was robust, efficient and easily readable.

Quentin used Dassault Systèmes’ (DS) CATIA V6 to design the 4N watch model and to validate the moving mechanisms, comprising more than 200 elements inside the watch. This proved considerably more efficient than the hand sketches and 2D drawings derived from CAD tools traditionally used in watch design. “Compared to the design tools I used in the past, with CATIA V6 I was able to create a complete and precise 3D model of the casing and the internal mechanism with all its intricacies and to perform virtual simulations to make sure there were no design errors,” Quentin says. “When I showed the model to potential manufacturers, the level of detail provided by CATIA conveyed exactly what I wanted

to communicate and confirmed the feasibility of my design. It was a considerable qualitative leap with respect to designs created using any other solutions.”

CATIA also proved essential for managing the way the different elements were assembled and the ease with which changes were made and propagated throughout the design. “It considerably shortened design time,” he says.

### AMBASSADOR TO 3DS FASHION LAB: SHARING A PASSION FOR DESIGN

Quentin recently joined forces with DS to further advance the concept of watch design. He formed a partnership with the company to address the specific needs of this sector and is serving as ambassador of the 3DS Fashion Lab for the watchmaking industry. “At Dassault Systèmes, I discovered people who are as passionate as I am about design,” Quentin says. “Together, we took watchmaking to new heights using V6 solutions including CATIA, SIMULIA, DELMIA and 3DVIA.”

For example, SIMULIA was used to perform stress tests of the watch’s bracelet, whereas DELMIA was used to illustrate a manikin wearing the watch and displaying it in different positions. With 3DVIA, Quentin depicted a customer living the buying experience by

having him walk through a virtual showroom where the 4N is presented. “All these applications enabled me to address aspects of the 4N I would not have envisioned before. My product took on a whole new dimension,” he says.

Quentin says he joined the 3DS Fashion Lab because he is convinced that V6 PLM solutions have an important role to play in watch design. Creative ideas can easily come to life thanks to powerful V6 design tools, virtual mock-ups, and simulations. And by replacing physical prototypes, design time and costs are drastically reduced. “Dassault Systèmes is the only company I know that proposes such advanced solutions for watch making,” Quentin concludes.

For more information:  
[www.4-n.fr](http://www.4-n.fr)  
[www.3ds.com/V6](http://www.3ds.com/V6)

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**François Quentin**  
 CEO and Watch Designer, 4N



Photorealistic CATIA model of 4N watch mechanism



**François Quentin**  
 An independent designer since 1986, François Quentin has a wealth of experience in the watchmaking world that has enabled him to design many contemporary models for French and Swiss watchmakers. At age 47, he has already gained a wide range of skills. With an avid interest in mechanics and computers, Quentin works in business sectors requiring skills that are as diverse as they are specific, from machine tooling to mechanical optics to web design.

**OUT-INNOVATING OTHER WATCHES**  
 Quentin’s biggest challenge was to provide the level of innovation expected of a luxury watch. “In general, watchmakers try to make their products