

K2 Medical Systems Moves to 3D Design of Fetal Monitor Medical Devices with SpaceClaim

An estimated 90 percent of all U.K. hospitals have at least one of K2's medical devices. The Company also counts success in the following other countries: Belgium, Cyprus, Gibraltar, United Arab Emirates, China, Australia, and New Zealand. Additionally, the Company is currently expanding into the U.S. marketplace.

One of the company's leading products is the K2MS Guardian, which provides full electronic capture of patient information during childbirth including: CTG, partogram, labor events, outcome information, fetal blood sampling results, and cord blood gas results direct from the blood gas analyzer. This information can be shown in real-time to enhance communication within and outside the delivery suite to improve patient care and reduce human error.

ABOUT K2 MEDICAL SYSTEMS

K2 Medical Systems (K2MS), formerly known as Perinatal Research Group, was established in 1989 and is a privately held medical device company based in the United Kingdom. The Company is dedicated to improving maternity care with a vision of bringing midwives, doctors, and technologists together to develop innovative solutions to improve maternity care for clinicians, mothers, and their babies.



THE DESIGN CHALLENGE

Generate and manage high-quality 3D design data more efficiently, and improve collaboration between design teams from product concept through to production and ongoing maintenance of manufacturing data

K2MS wanted to generate and manage 3D design data more efficiently with the following goals in mind:

1. Improve collaboration between design teams of differing technical disciplines
2. Remove CAD data redundancy and duplication caused by systems that could not directly import/export
3. Extend use of 3D tools throughout the complete product lifecycle, from concept through to production and ongoing maintenance of manufacturing data

The Company also wanted to retain ownership and use of design data rather than have it reside with third parties where it could not be fully exploited.

As a whole, K2MS engineers needed to manage 3D design data more efficiently and be able to create and edit 3D designs in a timely and cost-effective manner in order to enhance solid models for their medical devices to improve the interpretation of fetal monitoring during childbirth. The Company also needed to retain ownership of their designs and foster collaboration between engineers and the detailed-design team.

K2MS had previously managed the design of their medical devices by hand and without leveraging any technology tools. The designs were created collaboratively with detailed designers who used Pro/ENGINEER. K2MS would direct the team by a combination of verbal instructions and hand-drawn sketches. As a result, the process lacked the quality, accuracy, and nimbleness of 3D models. The benefits of the 3D data could never be fully realized by K2MS. This led to considerable inefficiencies in generating product and manufacturing documentation, and maintenance of the design data as the product matured.

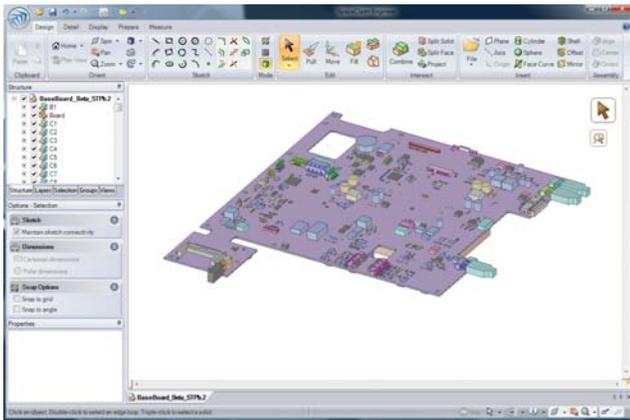
Overall, the process was wasteful and K2MS knew that having their own 3D software tool would bring significant benefits. It was at this time that they turned to SpaceClaim®.

K2MS CHOSE SPACECLAIM FOR 3D DIRECT MODELING, CONCEPTUAL DESIGN, AND MANUFACTURING DOCUMENTATION

K2MS chose SpaceClaim Engineer to improve the efficiency of their product design process, reduce the time from concept through detailed design, drive improved innovation, increase collaboration among engineers and detailed designers, and manage costs more efficiently.

Senior engineer and lead project manager, Angela Delbridge, leverages SpaceClaim to specifically edit and create design models that will optimize new features of the Platform medical device. With SpaceClaim, she now manages the design in 3D and is easily able to create, review, and modify the design across mechanical, electronic, and manufacturing engineering disciplines.

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SpaceClaim helps engineers collaborate and converge on key design decisions before sending models out for detailed design in CAD. Working in the context of cross-functional data, such as designing the enclosure around this circuit board, ensures optimal designs up-front

"After evaluating several other tools, it was SpaceClaim's ease-of-use and cost that were top ranking factors in our decision. Also, the tool offers compatibility; specifically the ability to have files in various formats, and that was also a key factor for us." Angela Delbridge

Angela finds the product to be a significant improvement from the hand-drawn designs she created previously. The overall process saves her an enormous amount of time in creating new innovations, and the integrity and accuracy of the models created in SpaceClaim help her better understand and explain the designs. Angela noted that SpaceClaim's ECAD import provides a key component to her work and is extremely helpful to check the fit of the circuit board designs from the electrical engineering team. Moreover, because 3D direct models are professionally created with SpaceClaim, the design engineers no longer need to try and decipher the model intent from a 2D design and then interpret the new design. Overall the new process reduces errors and rework, and saves K2MS both time and money.

"The current K2MS product developed in SpaceClaim has very tight internal space constraints and we can progress the design in confidence knowing that all the internal components are accurately modeled."

Angela Delbridge

By leveraging SpaceClaim Engineer for 3D Direct Modeling, Angela can effortlessly read the electronic and mechanical files necessary to make comments, recommendations, and maintain control, as well as manage and set approvals for the designs. Angela is able to document and control designs from documentation to production and delivery. She no longer needs to depend on the detailed designers to execute these final processes, hence enabling her to take on full ownership of the design, while providing an easy way for her to collaborate with the designers on edits and innovations.

Based on the benefits and success achieved with moving to 3D Direct Modeling, Angela intends to continue to use SpaceClaim for all future Company products, and therefore enhancing the Company's design capabilities.

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Angela Delbridge
Senior Engineer and Lead
Project Manager, K2 Medical Systems



150 Baker Ave. Ext., Concord, MA 01742 USA
Tel: +1 978.482.2100 Fax: +1 978.369.5864