



Sirona Develops Advanced Dental Solution with VxWorks

Dental Technology Leader Delivers Innovative, Networked X-ray Product in Short Market Window

Sirona

Industry

Medical devices

Solutions

- Wind River Platform for Medical Devices
- Wind River Professional Services

Benefits

- Delivered a high-quality, innovative networked dental X-ray solution
- Met aggressive time-to-market goals



Sirona, a global dental technology leader, has served dealers and dentists with innovative solutions for more than 130 years. Sirona develops, manufactures, and markets a complete line of dental products, including CAD/CAM restoration systems (CEREC); digital intra-oral, panoramic, and 3D imaging systems; dental treatment centers; and hand pieces.

The Challenge

Sirona's success depends on its ability to develop tools that give dentists a competitive advantage. The company places a strong emphasis on driving innovation.

In 2000, Sirona embarked upon a new product line of extraoral 2D/3D X-ray devices used during dental surgeries. These devices capture the patient's whole jaw in a single span. The field of view is large enough to avoid the stitching of several 3D X-ray images, minimizing radiation exposure. The products feature excellent user workflow, high availability, robust performance, and high quality.

The Sirona development team's key design challenge was to provide a network connection with high levels of stability and performance.

"The network connection is used to send X-ray images from the device to our PC software, where the images will be processed and displayed," says Michael Dalpiaz, head of embedded software imaging systems, Sirona. "Reliability was critical to our success, but rapid time-to-market was equally important."

In order to tackle these challenges, the company needed an innovative, efficient, reliable real-time operating system (RTOS) solution.

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— Michael Dalpiaz, Head of Embedded Software Imaging Systems, Sirona

The Approach

Sirona selected Wind River® Platform for Medical Devices, an embedded software development offering that combines VxWorks®, the industry’s leading RTOS; Wind River Workbench, an embedded software development suite; and networking and connectivity runtime technologies.

The Sirona team placed special value on the robustness and availability of the RTOS and network stack. Platform for Medical Devices includes an extensive portfolio of protocols and technologies based on industry standards. This proprietary set of technologies includes security components such as IPsec and IKE, firewall and NAT, cryptography, RADIUS client, Secure Sockets Layer (SSL), and digital certificates. The platform also provides support for core network stack elements such as IPv4, IPv6, TCP, UDP, QoS along with SNMP, CLI, and web services for network management.

The team felt confident using Wind River solutions because of the company’s long-time reputation as an industry leader and its ability to provide comprehensive customer support. “Support was critical because we had to be able to work effectively with VxWorks within a very tight schedule,” Dalpiaz says. “Wind River Professional Services provided a very useful

quick start training for our new employees so they could hit the ground running. The Wind River support and education team members were all highly qualified, with in-depth knowledge about tools and processes that helped us succeed.”

Another key benefit the Wind River solution offered Sirona is its partnership with Freescale. Sirona uses Freescale PowerPC and appreciates the Wind River team’s long-term knowledge and support of this architecture through board support packages (BSPs).

“Having a supported BSP frees us up to focus on our core competencies,” Dalpiaz says. “This joint solution helps us minimize risk and shorten development time.”

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The Result

“Wind River Platform for Medical Devices provides us with a robust, industry-recognized RTOS solution. This, combined with comprehensive Wind River Professional Services, enabled us to meet very aggressive time-to-market goals,” Dalpiaz concludes. “Moving forward, we’re considering using more Wind River solutions.”

