

Wind River Platform for Medical Devices

Medical device manufacturers are constantly striving to develop safe, secure, intelligent, and connected products. They have to constantly balance the stringent regulatory requirements of worldwide agencies such as the U.S. Food and Drug Administration (FDA) with the aggressive time-to-market deadlines and cost pressures that govern the industry. After deployment, these devices stay in the market for more than a decade and need periodic software and hardware upgrades based on changing customer needs.

The key to successful products is to provide exciting applications with outstanding system performance and reliability, all while delivering a safe, secure, and high-quality product to market on time. To accomplish this, companies must optimize their software across the entire product life cycle, from design and development and quality assurance to the remote management of deployed devices. Medical device manufacturers must rely on a proven embedded development platform that helps reduce the risk, cost, and time needed to develop, deploy, and field complex medical devices.

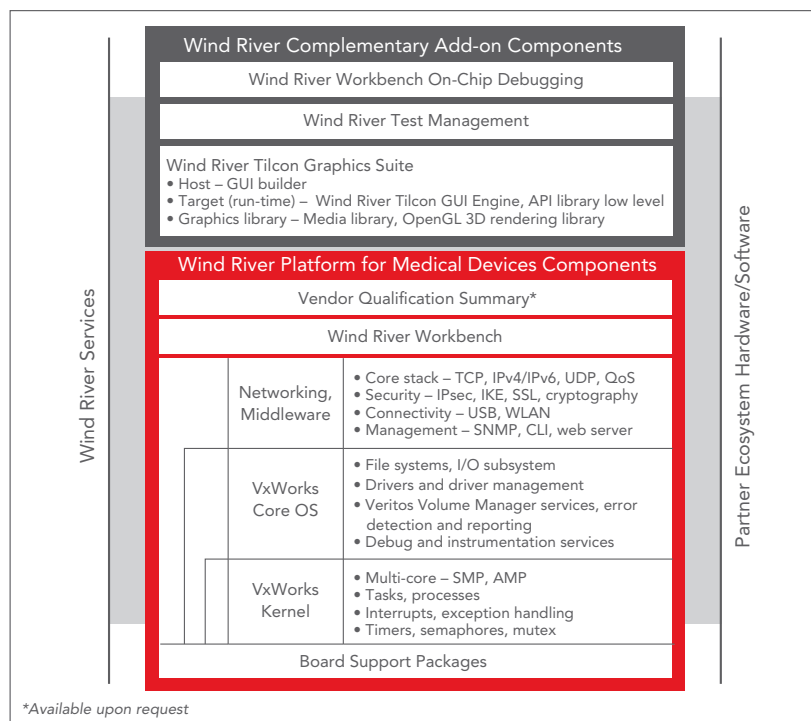
Wind River Platform for Medical Devices is a complete, flexible, optimized commercial off-the-shelf (COTS) development and run-time platform that works out of the box and across the enterprise. The platform provides a powerful, scalable development and on-chip debugging environment built on industry standards and industry-leading tools; the industry's most trusted commercial-grade real-time operating system (RTOS); and tightly integrated middleware. This proven technology package is backed by a 25-year track record, reliable performance in more than a billion devices, an exceptional ecosystem of hardware and software partners, and the industry's most comprehensive support organization.

Proven Solution

Wind River Platform for Medical Devices is based on the world's most widely adopted RTOS, VxWorks. Built on a highly scalable, deterministic, hard real-time kernel, VxWorks enables companies to scale and optimize their run-time environments, using only the specific technologies required by their devices. From the smallest footprint requirement to

the highest performance level, VxWorks gives developers the flexibility to build their optimal solutions quickly and easily while meeting cost, quality, and functionality requirements.

VxWorks supports POSIX and industry-standard protocols such as IPv6 and TIPC, ensuring maximum code portability and interoperability that accelerate time-to-market. Developers can leverage and reuse the same code, applications, board support packages (BSPs), and drivers across multiple projects. The platform includes frameworks for file systems, power management, and interconnectivity as well as comprehensive security capacities that begin at the core operating system level for absolute application and device security. VxWorks is the only RTOS to achieve Wurldtech's Achilles Certification for hardened device security.



Wind River Platform for Medical Devices components within a comprehensive Wind River solution

Vendor Qualification Summary

Wind River Platform for Medical Devices provides a comprehensive vendor qualification summary that fits right in with your risk-based supplier qualification. This is in accordance with FDA quality system regulation 21CFR820.50 Purchasing Controls that requires manufacturers to evaluate suppliers for their ability to meet requirements, including quality requirements. This summary includes descriptions of the controls and processes Wind River uses to design and develop its platform components. Having this qualification summary prepared in advance for your project is a clear way to reduce time, risk, and costs.

Multi-core Support

Wind River Platform for Medical Devices features multi-core support capabilities within the operating system, network stack, and development tools, to provide the easiest path to multi-core technology for embedded software developers. The multi-core-enabling capability of the VxWorks platforms is complemented by Wind River's unmatched service and support offerings.

Integrated Middleware

Wind River Platform for Medical Devices includes comprehensive networking and middleware technology that is pre-integrated, tested, and validated. Middleware capabilities include (but are not limited to) core network stack, network security, and connectivity including USB and network management. Leveraging these standard technologies saves development time and allows you to focus on adding value and differentiating functionality in your device.

Graphics

Wind River Tilcon Graphics Suite is integrated with Wind River Platform for Medical Devices. It enables the development and deployment of rich user interfaces for multifunctional embedded medical devices, to create better end-user experiences. Its unique codeless development architecture enables device software developers to easily produce, maintain, and rebrand user interfaces at a fraction of the cost of traditional graphics software. It boasts a complete set of tools including an interface builder, APIs for application integration, and a robust graphics run-time engine to render the graphic objects.

Optimized Development Tools

Wind River Platform for Medical Devices includes the industry-leading Wind River Workbench development suite and provides an option to use Wind River Workbench On-Chip Debugging and Wind River Test Management. From hardware and board initialization to application development, the suite offers deep capability across the development process in a single integrated environment, with complete platform integration, including powerful tools for debugging, code analysis, and test.

Workbench On-Chip Debugging enables customers to quickly identify problems between the hardware and software, using multi-core debugging technology. Based on the Eclipse framework, Workbench can be extended through in-house, third-party, open source, and commercial plug-ins.

Wind River Test Management is a test automation system for monitoring and optimizing the testing of embedded device software. The system lets teams optimally execute complex device tests while gathering critical run-time information from the production software under test. This helps realize time-to-market goals while controlling costs and mitigating risks.