

Wind River Platform for Infotainment

The worldwide automotive market faces structural, financial, and process challenges that have never before occurred in this industry, threatening the very survival of many companies once viewed as industry stalwarts. Open source software represents a game-changing opportunity for automotive original equipment manufacturers (OEMs) to meet these challenges head-on and revolutionize their software development processes at the same time. Wind River's solutions for in-vehicle infotainment devices ensure successful commercial productization of open source software. Combining open source software with select software components and products from leading automotive and consumer electronics partners, only Wind River can deliver a verified platform, help you tailor it, and stand behind it for your entire vehicle life cycle. Wind River makes open source work for you.

Open Source

OEMs and their suppliers seek to build a strategic, extensible platform that will serve as the foundation for next-generation in-vehicle infotainment (IVI) devices across model years. Open source software is now a viable alternative for OEMs to use as the basis for new IVI devices. Platforms based on open source components can do the following:

- Lower product development costs to boost margins via worldwide supported standard Linux distributions.
- Increase the rate of innovation and speed time-to-market to better compete with aftermarket and consumer personal navigation devices.
- Reduce the gap between proven automotive components and the consumer electronics with which they are integrated.
- Improve the differentiation between models to drive vehicle sales growth.

Open source components are not full commercial products and require integration and validation before they can be embedded in the dashboard of a production automobile.

OEMs and their Tier 1 suppliers look to a commercial vendor that will take these open source components and create a validated, future-proof product like proprietary products of old.

Wind River's Solution

Wind River's solution approach is based on software systems integration that delivers integrated, tested, and validated IVI software systems, combining a software platform foundation with scalable customization and consulting services. The solution approach tests and integrates open source components, Wind River-unique and semiconductor-unique software, and third-party partner products to reduce development cycles and allow Tier 1 suppliers to focus on innovation and differentiation. Wind River adds world-class commercial business terms and software support offerings to complete the custom solution delivery.

The software foundation delivers a reference platform, as the starting point for your commercial project, and the tools you need to add your innovation and differentiation and validate the resulting product to move to production.

Reference Platform

The reference platform is based on GENIVI Alliance Platform version 1.0 software, which consists of Linux-based core services, enhanced and verified automotive middleware, and open application layer interfaces. The GENIVI Alliance, of which Wind River is a founding member, is a nonprofit organization of leading industry manufacturers and suppliers committed to developing an open source platform for the industry. The GENIVI platform establishes a foundation of common software packages upon which automobile manufacturers and their suppliers can add their innovative features and services to create differentiated IVI devices. The GENIVI Alliance's current foundation software is based on Moblin version 2.1, as is Wind River Platform for Infotainment.

Wind River's reference platform includes proprietary software from semiconductor hardware platform providers such as Intel that optimizes the chipset capabilities for the software platform. The reference platform also includes Wind River proprietary software that pre-integrates and validates open source and third-party components with the software stack.

Preintegrated Software Partners

Wind River has selected leading third-party independent software partners and pre-integrated their components and products to enhance the baseline software platform. These include Gracernote, SMSC, Cybercom, Fluendo, i-Anywhere, and Intel software. Complete development and distribution agreements are integrated into Wind River's standard agreement, easing your sourcing process. Wind River carefully integrates, tests, and validates these components to reduce Tier 1 development cycles. Wind River also includes

solution components expected of commercial products such as documentation and use cases for the solution set.

Development Kit

The software product includes a software development kit (SDK) that begins with Wind River Workbench, the industry's leading device software development environment. Workbench offers intuitive Eclipse-based views and perspectives that help developers find and fix problems in complex code early in the development cycle. Workbench accelerates application development, helps reduce device code complexity, and improves code quality. Using native Eclipse integration capabilities, Workbench enables developers to take advantage of homegrown or commercial plug-ins for application design, development, and test, to further speed application development and reduce time-to-market.

Automated Software Testing

Framework for Automated Software Testing (FAST), an optional framework for automated system and device testing, can cut development costs, improve quality, and reduce testing cycle time. The framework acts as a meta-test execution tool for commercial Linux platforms such as Wind River Platform for Infotainment. It can easily be integrated with proprietary test suites, test suites from third parties, or open source test suites.

FAST can help determine compliance, measure performance, and prove stability of IVI devices based on Wind River Platform for Infotainment. The testing framework accepts the results of a build, executes your selection of hundreds of Wind River-authored tests and tens of thousands of existing scripts, archives the relevant test artifacts, and provides the results in a single report, all in a fully automated process. Wind River leverages as many open source and existing test frameworks as possible so testing is comprehensive, without sacrificing time-to-market.

Software Systems Integration Services

Wind River Services offers a strong track record of success in the automotive industry. Our design and development engineers have years of automotive expertise, and our proven project management methodology, resulting in a mature and efficient development process for complex device software, ensures your project's success. Since 2006, Wind River Services has been certified at CMMI Level 3, as defined by the Software Engineering Institute. Our methodology allows us to quickly and effectively design, implement, verify, and support your IVI software platform. With a broad offering of services spanning the entire project life cycle, we partner with your team to deliver on time and on budget, with full features and high quality.

Platform Optimization

Beginning with Wind River Platform for Infotainment, Wind River architects, develops, and deploys the foundation platform for your specific device, including baseline platform, board support package (BSP), drivers, and applications.

Combining customer-specific hardware and software components, frameworks, services, and applications, Wind River optimizes the baseline platform for use.

Optimizations such as performance tuning and boot-time adjustments ensure that your device meets OEM specifications and consumer expectations, improving take rate and driving revenue.

Customization Services

Wind River will customize the platform to fulfill OEM or Tier 1 supplier requirements. Wind River will develop, integrate, test, and verify customer-specific features, from design through A Sample to start of production. Wind River will integrate OEM and Tier 1 differentiating features and applications and ensure software compliance with GENIVI specifications. Customizations can include hardware enablement, third-party and legacy code integration, and application integration to deliver an innovative, differentiated device.

Testing Services

Customers opting for FAST are offered a full complement of services to ensure that you maximize your returns from the testing framework. Wind River can help you integrate your existing test suites into FAST, write new tests specific to the software supporting your new device, and incorporate additional open source tests into your instantiation of FAST. Wind River will help you test your specific device, augmenting your development and quality assurance teams, to help maintain quality and project timeliness.

Support

Wind River supports and maintains the platform through an end-to-end product development program. Wind River's Service Capability and Performance-certified customer support organization delivers ongoing support for customer projects from start to deployment, including maintenance and managing upgrades of various upstream sources. Options for long-term support mean Wind River is standing beside you throughout your entire support obligations to your customers before and after start of production. Wind River's automotive solutions model delivers consistent, worldwide customer support that is well-versed in the unique demands of the automotive industry and the technology that drives it.