WIND RIVER

Airvana Saves Time, Money with Wind River

Global Provider of Mobile Broadband Network Infrastructure Turns to Wind River Linux for Femtocell Development

Airvana provides high-performance wireless technology and products that enable operators to deliver compelling broadband services to mobile subscribers. Airvana's business is growing rapidly as business users and consumers increasingly use mobile devices for communication, entertainment, and Internet access.

Airvana products include HubBub 3G femtocell solutions based on North American Code Division Multiple Access (CDMA) and Universal Mobile Telecommunications System (UMTS) wireless standards, in addition to 3G mobile broadband infrastructure network elements. Airvana has partnership and original equipment manufacturer (OEM) agreements with leading companies including Alcatel-Lucent; Hitachi Communication Technologies, Ltd.; Motorola; Nokia-Siemens Networks; Nortel; Pirelli Broadband Solutions; Qualcomm; Tatara Systems; and Thomson.

The Challenging Femtocell Market

Airvana's CDMA and UMTS HubBub femtocells are small, inexpensive personal mobile access points allowing subscribers to use existing CDMA/UMTS handsets in their homes and offices, with improved coverage and increased broadband wireless performance. Femtocells are deployed using the Internet protocol to deliver high-quality voice, multimedia, and data services, using existing broadband Internet connections such as DSL, cable, and fiber networks.

Femtocell product development presented Airvana with multiple challenges:

- Highly configurable solution to satisfy multinational customer requirements
- Cost-effective hardware and software platform
- Reliable operation

"Wind River offers solid technology, a wide range of industry partners, professional development services, and competitive cost. If you have expectations of quality, reliability, on-time delivery, and cost, I highly recommend Wind River."
—Paul D'Arcy, Director of Engineering, Airvana

Company Profile: Airvana

- Global provider of high-performance technology and products for the mobile broadband network infrastructure
- Products deployed in 70 commercial networks on six continents
- Headquarters in Chelmsford, MA

Industry

- Mobile broadband network infrastructure and devices

Solutions

- Wind River General Purpose Platform, Linux Edition
- Wind River Workbench
- Wind River Professional Services
- Freescale PowerPC system-on-chip (SoC) technology

Results

- Reduced product development time—operating system port to femtocell hardware platform immediately available using the Wind River partner ecosystem
- Allowed Airvana team to focus on femtocell-specific intellectual property development
- Enabled the development of a customized, fully programmable platform to support multiple customer requirements

Airvana undertook a detailed analysis of software and hardware solutions available to address the requirements. On the software side, Airvana quickly focused on Linux as the operating system providing the feature set and performance required to deliver the femtocell solution. The next question centered on the development support model: roll-your-own (RYO) Linux or a third-party supported environment.

"Given the market potential of the femtocell application space, the competition is never far behind," says Paul D'Arcy, Director of Engineering at Airvana. "The development team needed to focus on delivering femtocell-specific intellectual property (IP). We required an OS platform that would enable us to quickly leverage our IP. We understood that if we diluted the development effort with RYO, we would end up over budget, late, or both."

History and Practicality Pave Way to Wind River

Part of what led Airvana to Wind River Linux was history. The company had previously used Wind River VxWorks to deliver a reliable, high-performance macro base station solution. The choice of processor technology for the femtocell platform was also a factor. Freescale PowerPC SoC technology was supported by both VxWorks and Wind River Linux operating systems technology. Femtocell performance, capacity, and emerging application support requirements favored Wind River Linux as the operating system of choice. Airvana selected Wind River General Purpose Platform, Linux Edition.

"The big advantage was the fact that the Wind River Linux distribution was readily available and ported to our choice of femtocell processor technology," D'Arcy says. "The RYO Linux option would have cost us additional time and effort and negatively impacted an already aggressive femtocell development schedule."

Wind River General Purpose Platform, Linux Edition provided the operating system in addition to the Wind River Workbench integrated development and debug environment. The complete solution, strengthened by Wind River's strong partner ecosystem and Wind River Professional Services, provided the ideal fit for Airvana.

"We liked the idea of having access to a Linux distribution verified against our hardware platform and the knowledge that we could engage Wind River for support on bug fixes, driver development, and feature back porting," D'Arcy says. "The cost of access to Wind River technology was also a factor—kernel, application development seats, and Wind River Professional Services access was available at competitive costs and flexible licensing options."

Wind River Technologies, Partnerships Provide Tailored Fit

Wind River Advanced Networking Technologies (ANT), an integral part of the Wind River solution since the company acquired Interpeak, provides Airvana with key communication components.

"We wanted to use Wind River ANT's tested IPsec solution as opposed to other open source options," D'Arcy says. "The availability of Wind River ANT as a replacement for the Linux stack was an immediate enabler for our femtocell development. In addition, the Wind River ANT stack is certified IPv6 Ready, which will be a requirement for future product releases."

Wind River Advanced Networking Technologies provides comprehensive networking and network management capabilities such as core security, wireless, and mobility support. It saves time and reduces cost by giving Airvana developers the flexibility to build application software that can move easily from project to project, regardless of the underlying operating systems.

Another key benefit is Wind River's extensive partner ecosystem, which allows Airvana to optimize its development efforts. For example, Wind River works collaboratively with Airvana's semiconductor vendor, Freescale, for hardware and drivers.

Moving Forward with Wind River

As Airvana moves forward with next-generation femtocell development, it plans to continue using Wind River Linux technology.

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Airvana
Mobile Broadband. **Everywhere.**

For additional information about the products mentioned in this case study, visit

www.windriver.com
www.airvana.com

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